USER REQUIREMENTS

T2S Programme Office

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EUROPEAN CENTRAL BANK

EUROSYSTEM

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TARGET2-SECURITIES

USER REQUIREMENTS

MANAGEMENT SUMMARY

EUROPEAN CENTRAL BANK

EUROSYSTEM

T2S is a business application and the technical platform, on which it is run, to support CSDs by providing core, borderless and neutral settlement services. The objective is to achieve harmonised and commoditised delivery-versus-payment settlement in central bank money in euro (and possibly other currencies) in substantially all securities in Europe. T2S thereby supports the Lisbon agenda in securities markets.

This management summary addresses **high-level executives** of financial market participants, issuers and CSDs. These institutions were invited to assess the impact of T2S at a very senior level, considering all aspects of their securities business (life cycle management, custody operations, funding and collateral, retail and wholesale client servicing, market-making, new issues, etc.) in order to determine the extent of their support for this potentially transformational change.

Purpose and expectations

The user requirements posted on the ECB's website[1] define the features required by CSDs and financial market participants for core, borderless and neutral settlement of securities in Europe. They are the result of six months of very intensive cooperation involving hundreds of experts from CSDs, banks and central banks (see the list of contributors), with the ECB coordinating the work and drafting the results.

The requirements were published on 18 December 2007 and were subject to consultation until 2 April 2008. During these three months the T2S team at the ECB actively facilitated discussion so that all financial market participants and CSDs had the opportunity to gauge the impact of, and opportunities offered by, T2S.

The Eurosystem invited CSDs, issuers and financial market participants to provide in-depth analysis of the user requirements, all of which were open for review during the consultation period.

After the consultation period, the ECB Project Team analysed the responses and revised requirements where appropriate. The requirements have been reviewed within the framework of the current governance structure, involving the Technical Groups, the Advisory Group and, ultimately, the Governing Council. The ECB Project Team has actively provided feedback to respondents, including stakeholders not represented in these groups.

The final user requirements – together with an updated economic and business case analysis, a legal analysis, an action plan for harmonisation, an evaluation of the market support for the project and the governance structure for the next project phase – form the supporting documentation for the ECB Governing Council decision, expected in summer 2008 as to whether to build T2S.

[1] http://www.ecb.europa.eu/paym/t2s/html/index.en.html

The context – completing the single market in financial services

The European financial services industry has made considerable progress in reducing cost and risk, as well as in promoting competition within the single market, since the establishment of the euro. But there can be no doubt that significant further improvement is required, particularly in securities markets.

Progress towards a mature single market has been achieved by a combination of market forces and action undertaken by the public sector to enable market forces to be effective. Some of this action has been legislative, to stimulate harmonisation across national borders, and some has involved the creation of core infrastructure to support the competitive market. The Eurosystem has been active in the payments industry by providing core borderless infrastructure for real-time settlement in central bank money (i.e. TARGET2) and by supporting the banking industry in delivering pan-European payment instruments (i.e. SEPA). .

Much less progress has been made in integrating national securities markets, largely because of the much greater intrinsic complexities of securities, which has permitted the development of national differences both in market practices and in legal, regulatory and fiscal regimes. Thus, although Europe is comparable to the United States in terms of its economic size, its post-trade sector is fragmented into numerous national markets. Whereas firms in the United States can operate in a single, large domestic market, in Europe they have to operate across many smaller, national markets and bear the higher costs of doing so. Because of this lack of integration, Europe lags behind the United States in terms of both the volume of transactions and the cost of those transactions[2].

The cost gap is particularly large for cross-border settlement. The result is a significant cost burden for cross-border wholesale transactions and very significant limitations for retail transactions. The Lisbon agenda recognises the need to eliminate these gaps, to promote the welfare of European citizens by achieving fully efficient capital markets.

The gap in the trading area is being forcefully addressed, in particular by the Markets in Financial Instruments Directive (MiFID), which is stimulating competition between trading platforms, whether traditional stock exchanges or new multilateral trading facilities.

On the post-trading sector, the European Council recently concluded[3] that "the continuous fragmentation of the sector leads to unnecessarily high costs, especially for cross-border securities transactions in the EU, which constitutes a considerable competitive disadvantage for European capital markets."

Two significant measures are already being implemented in order to achieve progress. First, a great deal of work is under way with a view to harmonising practices, legislation, regulation and tax in order to remove the "Giovannini barriers". Second, all exchanges, central counterparties and CSDs have undertaken, under the "Code of Conduct for Clearing and Settlement", to abide by various measures designed to stimulate fair

[2] See, for example, "The Direct Costs of Clearing and Settlement", Nera Economic Consulting, June 2004.

[3] Council Conclusions on Clearing and Settlement, Luxembourg, 9 October 2007:
http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ecofin/96349.pdf

and open competition. These include access rights, as well as seeking to ensure that clients are offered appropriate and transparent prices for unbundled services in order to put an end to cross-subsidies and the locking-in of clients.

One missing element is **core, borderless and neutral securities settlement** to crystallise the gains from harmonisation and to provide support for competition between service providers in the securities industry. T2S is neutral in that it will not favour or discriminate against specific countries, market infrastructures or groups. It will foster the required transformation in intermediation between issuers and investors by stimulating the development by financial market participants of a competitive and efficient European market.

Although there have been successful mergers between European CSDs in the past – and there may be more in the future – it seems that this process of consolidation by merger is unlikely to deliver an integrated market infrastructure for Europe. Accordingly, given the importance of progress in this area, it is necessary to find a way of establishing **a single settlement process involving a large number of CSDs**.

T2S will meet this need.

What is T2S?

T2S is a business application and the technical platform, on which it is run, for core, neutral and borderless securities settlement to support the Lisbon agenda.

It will provide harmonised and commoditised delivery-versus-payment settlement in central bank money in euro (and possibly other currencies) in more or less all securities circulating in Europe.

Settlement will be extremely **safe**, because it will involve payment in central bank money. Reliability, scalability and robustness (as provided by TARGET2) are also vital, in view of the huge volumes of transactions to be settled even in today's fragmented markets (with two million settlement instructions being processed every day), and will become more vital still as volumes increase.

Much of the growth will be in cash trading and in collateral markets, which contribute greatly to liquidity but are low-margin activities. Such trades are only viable in risk/return terms if settlement is both timely and reliable.

Settlement also needs a sound legal basis. T2S will build on a set of European initiatives in this area (following the implementation of the Settlement Finality Directive, the Financial Collateral Directive, MiFID and other measures), and the Eurosystem will seek to foster further harmonisation.

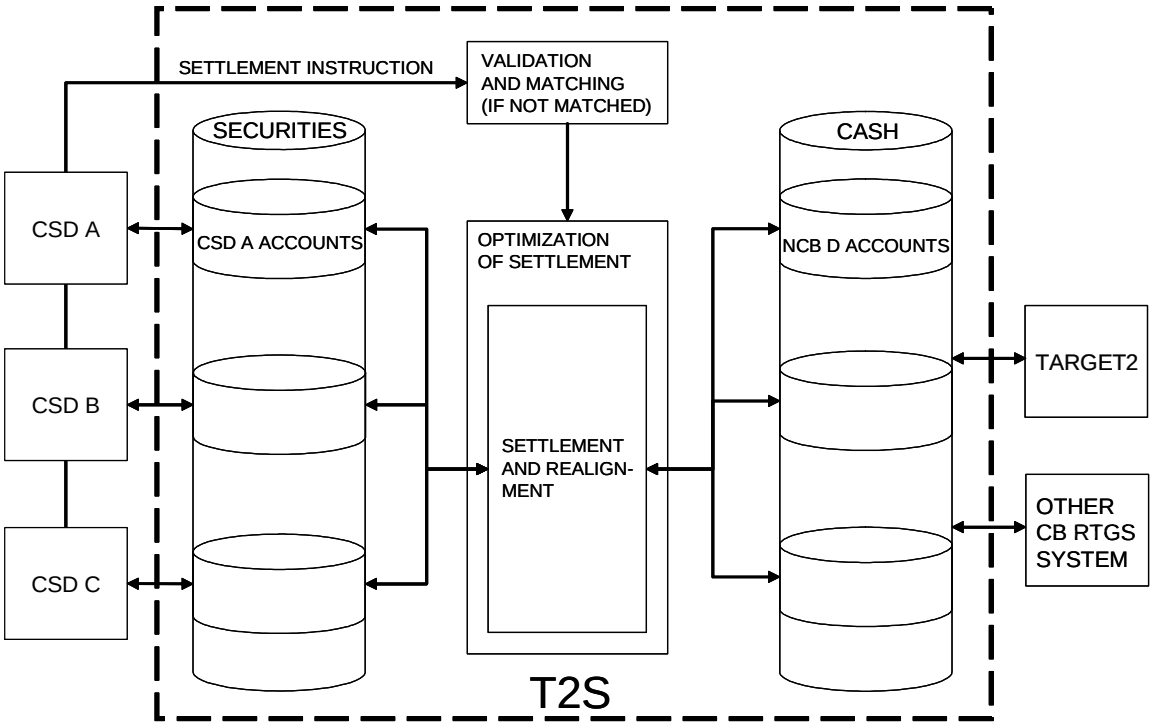
CSDs are the gateways through which market participants can access T2S services. Participants will continue to contract with one or more CSDs for the settlement (across the accounts of those CSDs) of securities eligible for such settlement. Moreover, it will be the CSDs – not market participants – that contract with the Eurosystem for T2S services.

Each CSD is invited to agree to move its settlement to T2S and offer its clients borderless settlement of trading and collateral operations. Most CSDs should be able, over time, to reduce their internal costs by restructuring and downsizing their own settlement processes.

CSDs will continue to operate, provide and improve efficient and safe services – particularly in relation to national requirements in areas such as registration, taxes, regulatory reporting, and some aspects of direct holdings by retail investors – at prices which are (as required by the Code of Conduct) a transparent and fair reflection of the cost of providing those services.

T2S will create opportunities for CSDs and market participants to develop their businesses in new ways in order to exploit efficiencies or to offer new services. As core, neutral infrastructure, T2S will support the different business models adopted by CSDs and market participants without discrimination.

Some CSDs may wish to consider **investing in asset servicing** in order to support their clients' growing operations in securities Europe-wide. This may imply significant changes to their current business model. While T2S provides the core functionality to make cross-border settlement as simple as domestic settlement, access to European securities via any individual CSD is dependent on that CSD being able and willing to accept securities issued in other CSDs. To use a railway analogy, T2S provides the "tracks" for cross-border settlement, but requires changes to the "trains" (i.e. the CSDs) to meet the demands of their "passengers" as regards this service. While T2S is, in itself, not sufficient to meet these passengers' demands, it creates incentives for train companies to make these changes. Such incentives barely exist today, since the necessary shared tracks have not been created by a neutral player.



As the diagram indicates, CSDs will keep all of their clients' securities positions in T2S, which will map to each CSD's **account structure** (including direct holdings), without accommodating all of the ancillary

account information maintained by CSDs for their clients. Thus, each securities account held in T2S will be attributable to only one CSD.

Similarly, T2S will maintain **dedicated central bank money** accounts representing a CSD client's claims in central bank money on that client's chosen national central bank. Each account may be used to settle transactions relating to the client's security accounts in one or more CSDs. This cash account structure will foster efficiency improvements for clients that use more than one CSD.

When a CSD client does not have access to central bank money, it may be authorised by a payment bank to operate a dedicated cash account in T2S. This will provide CSD clients with a choice of payment bank.

T2S will provide **DVP settlement in real time** with auto-collateralisation and optimisation procedures, irrespective of which CSD and NCB provide the respective underlying securities and central bank money accounts. It will be able to do so by providing realignment in real time when securities issued in one CSD are settled in another CSD.

CSDs joining T2S will thus be able to offer their clients cross-border settlement in central bank money – a service that is hardly available today.

T2S will enable **direct connectivity** by CSDs' clients and CCPs. These will be able to input settlement instructions directly into T2S and receive information on the results where the relevant CSD allows such a connection under its general terms and conditions. For other services that are not available in T2S, they will connect to the relevant CSDs. Direct connectivity can make it easier for market participants to operate direct memberships of multiple CSDs and for CSDs to reach a wider set of international clients.

The decision on direct or indirect connectivity will depend, inter alia, on the pricing of such services by the CSDs and on whether or not the user finds it possible to concentrate its activities in fewer CSDs as the market develops. Offering both direct and indirect options provides maximum flexibility for financial market participants, entails no significant additional cost for T2S and may well be a driver towards harmonisation.

T2S will **match settlement instructions** relating to cross-CSD settlement, as well as those input directly into T2S. It will also accept matched instructions from other infrastructures which apply the same matching rules. Since multiple matching facilities might exist, there needs to be a rule to determine the location of matching. Where CSDs cannot match both sides of the trade, the matching will take place in T2S.

T2S will deliver settlement at **low cost**, reflecting the very significant economies of scale in such services. Once T2S is serving all EU countries, these economies of scale should make the unit cost considerably lower than the lowest price charged by a European CSD at current volumes. If volumes rise (stimulated by the reform programme set out above) to US levels, the cost is expected to fall very significantly, towards US levels.

The low projected unit cost applies to both cross-border and domestic settlement. There are no borders within T2S.

T2S will provide Europe-wide core securities settlement services, since its design will accommodate settlement in **central bank money in other currencies** where the relevant central bank and the market wish to support such services. The sooner these central banks and markets make such decisions, the better the prospects of accommodating them in the build phase. Where non-euro currencies join, T2S will interact with the RTGS system of the relevant central bank in the same way as it will with TARGET2.

T2S is expected, in time, to become the **single provider** of core securities settlement services for CSDs. This model of a single provider of "backbone" services is one that some countries have adopted for distribution networks in other industries (e.g. telecoms). Such core infrastructure is tightly controlled as regards reliability and pricing, and is available to all producers on equal terms. Provision of core settlement services by the Eurosystem fits with this model.

Moreover, competition between CSDs (and the resulting benefits) has been very limited. For many securities there are hardly any alternatives to the local market CSDs. CSDs were set up not to compete with one another, but to be the central infrastructure within each country, with tight regulation so as to keep a low risk profile. A shift to competition with other CSDs in order to be the preferred gateway to T2S may thus require changes in the mandates and/or regulatory structures of some CSDs. The provision of core services by T2S, by lowering the barriers to entry to new markets, has the potential to create new opportunities for competition.

The Eurosystem has decided that T2S will be run on a full cost recovery and not-for-profit basis. T2S will ensure the full accountability and transparency of costs and prices, in full compliance with the industry Code of Conduct, so that the market can scrutinise operating and investment efficiency. These factors support the Eurosystem's decision to **control T2S via its ownership** rights. It will, of course, continue to keep the market involved, building on the open and cooperative culture developed in preparing the current user requirements.

The ownership decision also establishes clear accountability for the important task of managing the risks inherent in the creation of systemically important infrastructure that could become a single Europe-wide point of failure. These risks are not new: every current CSD is a systemically important single point of failure for its own market. Nevertheless, there is no doubt that the scale of the risks will be larger in T2S. It is important that the Eurosystem should not be constrained in its ability to manage those risks, alongside those relating to the equally important TARGET2 system, which will be operationally coupled to T2S.

The impact of T2S

Designing a common settlement service is in itself a driver in promoting **harmonisation**. The impact of T2S on harmonisation is already being felt, building on valuable work by CSDs. The Euroclear Group's experience in bringing together several national CSDs has created valuable impetus in this regard.

There has been considerable support for keeping T2S lean. The temptation to develop specific functionalities in T2S to support national specificities has been resisted. Instead, processes for CSDs and users have been

identified that allow markets to continue to support national specificities using a basic T2S functionality. The provision of an internal technical account for "direct holding markets" will allow bulk stock exchange transactions undertaken by brokers acting for retail investors to be allocated for settlement individually by buyer and seller without re-matching each split. This functionality should support, at very low cost, the desire of several markets to allow the recording of each individual investor's holdings.

Each national market will need to come to a decision on whether or not it wishes to retain its existing specificities. Where a national specificity is not perceived to provide value, the development of T2S will increase the incentives to remove it. One such incentive is the greater likelihood of part of the activity in domestic securities shifting to another CSD which does not oblige international users to incur the costs of extra processes to accommodate the national specificity. Moreover, where there are implicit subsidies which support national specificities, the transparent and uniform charging policy of T2S will make the true costs more apparent, in a way which properly reflects (in line with the Code of Conduct) the resource costs of choices made by intermediaries, issuers and markets. This transparency may well lead to a reduction in the divergence of practices across market segments.

T2S will, in cooperation with financial market participants, facilitate further harmonisation in market practices at the European level in relation to the use of T2S. During the consultation phase, a list of areas was identified where harmonisation would facilitate the use of T2S by market participants. It is likely that this work will expose further barriers of the kind already identified by Giovannini, as well as helping users to identify the irreducible costs of unresolved barriers in the new efficient borderless settlement environment. The Eurosystem is now proposing an action plan to assist ongoing harmonisation initiatives, making use of the features of T2S, the fact that the market is well represented in the Advisory Group, and its own influence.

Adoption of T2S will, as noted above, reduce pure settlement costs – particularly for what are today cross-border trades. This is expected to increase cross-border volumes.

This shift to borderless markets in T2S will, in turn, deliver significant benefits to end-users, particularly in smaller countries. Issuers will have access to deeper markets for fund-raising without needing to consider issuing in a different country, and investors will be able to benefit from portfolio diversification at lower cost. These benefits will require little or no adjustment by intermediaries, especially on the capital-raising side.

T2S will also create a single pool of assets – substantially all the securities held by participating CSDs – exchangeable for each other via central bank money at low cost, in real time, and in an extremely reliable settlement system. Market participants will also be able to centralise liquidity in a single central bank cash account. Together, these features will create valuable new options for commercial and investment banks in terms of managing collateral, optimising their funding costs and avoiding failed deliveries. These gains will include the benefits of enhanced competition among third-party collateral managers and liquidity providers, since it will be easier to unbundle such services from custody provision. From the indications given by

market participants, the reduction in costs is likely to be very substantial. This will feed through to reduced trading spreads and lower service prices, thereby improving welfare.

There will be other effects on, and gains through, enhanced competition, specifically in the areas of custody and securities trading.

Some CSDs will want to enhance their asset servicing abilities both for their "domestic" securities and for securities which they wish to offer their clients but are "domestic" to another CSD. Others may choose to specialise in issuer services and/or services for individual investors. This will reinforce the competition-enhancing effects of the Code of Conduct.

Banks providing custody will need to consider their strategy, since their wholesale customers in particular (but in time also their retail clients) are likely to wish to reduce their number of suppliers by seeking partners with pan-European, or at least regional, services.

The outcome of this process is very likely to be favourable in terms of service quality and price, particularly in the context of real progress on harmonisation through the Giovannini process.

What's next?

T2S will provide a core neutral and borderless securities settlement service to support securities markets in Europe. The requirements for T2S spell out in sufficient detail the vision of the hundreds of market participants that have worked with the T2S team to produce a design to meet this need.

The T2S team at the ECB wishes to thank all respondents in the public consultation phase for their considerable efforts and the ongoing dialogue.

USER REQUIREMENTS

CHAPTER 1

GENERAL INTRODUCTION

EUROPEAN CENTRAL BANK

EUROSYSTEM

1 General introduction

1.1 Introduction

Following the decision of the ECB Governing Council in March and late April 2007, the ECB has been mandated to organise a governance structure around a team of experts to prepare the definition of the User Requirements for TARGET2 Securities (T2S). The user requirements set out below are the result of six months of very intensive co-operative work by hundreds of experts from CSDs, banks and central banks under the leadership of the ECB. They define the characteristics of a core, borderless and neutral infrastructure for settlement of securities in Europe: T2S.

The attached user requirements were issued to the market on 18 December 2007, for the start of a three-month consultation period that ended 2 April 2008. All replies received after this deadline were handled with due consideration. The ECB's T2S team actively facilitated discussion during this period so that each market intermediary had the opportunity to gauge T2S's impact and opportunities.

Firms provided a technical analysis of these user requirements. All user requirements were potentially subject to review during the consultation period. All comments received were made public on the internet, unless it was clearly indicated that the author did not consent to such publication.

During April and May 2008 the ECB Project Team analysed the responses, revising the requirements where appropriate. This was done under the current governance structure including the Advisory Group and the Technical Groups.

This result, together with an updated economic and business case analysis, revised timetable for implementation and governance proposals, constitutes the documentation supporting ECB decision-making bodies for their decision of whether to build T2S. Once approved, the entire URD will be subject to strict change-control management.

As a general introduction, this chapter presents the principles established by the ECB Governing Council to define T2S User Requirements and the governance structure put in place for this phase of the project. In addition, this chapter presents the method for organising and presenting user requirements in subsequent chapters and directs readers to the glossary of terms and to the conventions used for the illustrations.

1.2 General Principles of T2S

The overall objective of T2S is to facilitate post-trading integration by supporting core, borderless and neutral pan-European cash and securities settlement in central bank money so that CSDs can provide their customers with harmonised and commoditised settlement services in an integrated technical environment with cross-border capabilities.

In pursuing this overall objective, T2S aims in particular

- to remain lean and thus limited to those functions required for core settlement purposes;
- to remain neutral in that T2S will not favour or discriminate against specific countries, securities holding models, market infrastructures or groups of market participants, thus ensuring a level playing field;
- to generate economic benefits to the European post-trading industry as a whole by reducing cross-border and, at least in the long run, also domestic settlement cost, back office cost, liquidity and collateral needs as well as fostering competition through the provision of a single pan-European platform for delivery-versus-payment settlement in central bank money. It shall thus promote the welfare of European citizens by contributing to efficient capital markets.
- to overcome fragmentation of the European securities settlement infrastructure, to facilitate, in cooperation with financial market participants, further harmonisation in market practices at the European level in relation to the use of T2S and thus to contribute to overcoming fragmentation of the European post-trading industry.

Principle 1: The Eurosystem shall take on the responsibility of developing and operating T2S by assuming full ownership

In line with the Governing Council's decision of July 2006, T2S is fully owned and operated by the Eurosystem. The Eurosystem is committed to keeping market participants closely involved in a transparent manner, in particular for functional changes to T2S. A governance structure has been set up to achieve this objective.

Principle 2: T2S shall be based on the TARGET2 platform and hence provides the same levels of availability, resilience, recovery time and security as TARGET2

The Governing Council decided that T2S is developed and operated on the TARGET2 platform. Four Eurosystem central banks (the Deutsche Bundesbank, the Banco de España, the Banque de France and the Banca d'Italia, jointly referred to as the 4CB) are ready to develop and operate T2S on TARGET2 via the Single Shared Platform. Use is made of the valuable experience and knowledge that is available in the market. The intention is to exploit synergies and provide an efficient solution to central securities depositories (CSDs) and users. Enhanced liquidity management mechanisms are provided as a result of the proximity between T2S and T2. The existing operational structures and support organisation, business continuity and disaster recovery arrangements shall be reused to the maximum extent possible.

"T2S on T2" must be understood as an open concept that does not impose constraints on the user requirements.

Principle 3: T2S shall not involve the setting-up and operation of a CSD, but instead serves only as a technical solution for providing settlement services to CSDs

T2S is purely an IT settlement solution operated by the Eurosystem and provided to CSDs for the benefit of their customers. Therefore, it neither constitutes a CSD or a securities settlement system in the meaning of

Article 2 of Directive 98/26/EC (Settlement Finality Directive) in itself, nor is it intended to become one in the future. The scope of T2S is restricted to settlement, including settlement instructions resulting from corporate actions or portfolio transfer, for example. This therefore excludes the possibility of T2S engaging in any asset-servicing businesses (such as event set-up, computation of benefits and response management of corporate actions).

Principle 4: T2S shall support the participating CSDs in complying with oversight, regulatory and supervisory requirements

T2S is set up in such a way as to allow participating CSDs to comply with the relevant regulatory, supervisory and oversight requirements, as well as to strive for a high degree of harmonisation in meeting those requirements.

Principle 5: The respective CSD customers' securities accounts shall remain legally attributed to the CSD and the respective central bank customers' cash accounts shall remain legally attributed to the central bank.

Each CSD continues to be legally responsible (under their applicable laws) for opening, maintaining and closing the securities accounts of its customers in T2S and, where relevant, those of the clients of these customers as well. The same principle applies for central banks (euro as well as non-euro central banks) in relation to T2S cash accounts. Securities account balances and cash account balances in T2S are available to CSDs, central banks and their customers on a real-time basis.

Principle 6: The T2S settlement service allows CSDs to offer their customers at least the same level of settlement functionality and coverage of assets in a harmonised way

The aim of developing a common technical solution for settlement is to enable CSDs to use T2S to perform their entire settlement processing in a harmonised way. T2S should cover the full functionality needed for such a harmonised service and should enable enhanced liquidity management. If this is not achieved, CSDs will be forced to maintain duplicate settlement infrastructures, with a cost impact through both duplication and reduced economies of scale. The objective of T2S is to provide a level of functionality that frees CSDs from maintaining securities balances on a separate platform or from duplicating processes.

The scope of instruments eligible for T2S shall be all securities that have an International Securities Identifying Number (ISIN) and are held by a CSD operating in T2S.

Principle 7: Securities account balances shall only be changed in T2S

The T2S settlement model requires that the 'finality' of the settlement, in T2S, meaning the unconditionality, irrevocability and enforceability of the settlement processed in T2S, has to be determined by reference only to the accounts located in T2S. This implies the immediate legal value of all debits and credits (i.e. changes) to securities account balances (and, equally, to cash account balances) operated in T2S. The rules of participating CSDs have to be clear that securities account balances will only be changed in T2S. The

proprietary aspects, including the completion of the legal transfers of securities, are determined in accordance with the laws of the country that has notified the CSD that has opened the securities account to the European Commission in accordance with the procedures foreseen under Directive 98/26/EC (Settlement Finality Directive), as amended, or, in the case of a non-EEA country, thus where no notification to the European Commission is provided, the law of the country where the CSD is located.

Principle 8: T2S shall settle exclusively in central bank money

As stated above, T2S is a service for enhancing the efficiency of securities settlement across Europe while at the same time keeping central banks' cash account management within the central banks. Its scope is therefore limited exclusively to central bank money and does not extend to the settlement of commercial bank money.

Principle 9: The primary objective of T2S is to provide efficient settlement services in euro

When setting up T2S, the primary objective of the Eurosystem is to ensure efficient and safe settlement services in euro. The extension of T2S to other currencies is possible and contributes to the wider policy objective of an integrated securities market in Europe (see Principle 10).

Principle 10: T2S shall be technically capable of settling currencies other than the euro

T2S is technically capable of providing settlement not only in euro central bank money but also in non-euro central bank money. T2S handles all currencies in T2S on an equal basis. Currencies other than the euro need to fulfil the eligibility conditions for inclusion in T2S as set out in the T2S Guideline. Non-euro area central banks are expected to adapt to a harmonised, standardised interface.

Principle 11: T2S shall allow users to have direct connectivity

CSDs retain the business and legal relationship with their customers. All securities account balances are available in T2S, irrespective of the choice of connectivity. From a T2S point of view, the connectivity choice refers solely to the way in which users interface with T2S in order to send and maintain settlement instructions and access information services, i.e. use messages, queries and reports as defined in the T2S user requirements. Irrespective of the way in which they connect to T2S, settlement instructions are subject to equal processes within T2S. The connectivity choice is also neutral to CSDs, since all the necessary information, even from directly connected users, is available to CSDs.

Principle 12: CSDs' participation in T2S shall not be mandatory

CSDs' participation in T2S is a business decision on the part of the CSDs and their local market community. When deciding whether or not to join T2S, CSDs are expected to follow the interests of their shareholders and customers.

Principle 13: All CSDs settling in central bank money and fulfilling the access criteria shall be eligible to participate in T2S

All CSDs settling in central bank money in Europe and fulfilling the access criteria for CSDs which are set out in the T2S Guideline are invited to join T2S, regardless of their location inside or outside the euro area. In particular, participating CSDs have to be designated as securities settlement systems and notified in accordance with the Settlement Finality Directive (SFD) as amended in order to benefit from protection under the SFD or have to operate under a legal and regulatory framework that is equivalent to that in force in the European Union. Consequently, transfer orders processed in T2S acquire adequate protection under the relevant laws and rules of the individual CSDs that are designated under the SFD or the equivalent framework.

Principle 14: All CSDs participating in T2S shall have equal access conditions

The criteria for CSDs to access T2S are non-discriminatory and are set out in the T2S Guideline. All participating CSDs have access to all T2S services. A single, transparent and publicly available price list is applied (see also Principle 19 on compliance with the Code of Conduct). In line with European principles of competition, the Eurosystem provides its services to participating CSDs on a non-discriminatory pricing basis (in a similar manner as for other existing Eurosystem infrastructures, such as TARGET2).

Principle 15: All CSDs participating in T2S shall do so under a harmonised contractual arrangement

With reference to their contractual relationship with T2S, all CSDs receive the same service level and are subject to a harmonised contractual arrangement. This means that all CSDs willing to participate in T2S adhere to the same harmonised conditions for T2S's core functions. Specific optional services to be provided to a CSD would need to be covered by a specific contractual arrangement. Any other CSD willing to use such specific services would also be eligible to apply under the same harmonised conditions for the specific optional services.

Principle 16: All CSDs participating in T2S shall have a calendar of opening days with harmonised opening and closing times for settlement business

The participating CSDs shall adopt the T2S calendar. For settlement of euro, this is the same as the TARGET2 calendar. Settlement in other currencies may deviate from the calendar for euro settlement. Delivery versus payment (DvP) settlement via T2S shall not be possible outside these calendars. Within the T2S calendar, a CSD which closes due to a national holiday needs to provide a minimum level of service (e.g. to allow the realignment of settlement carried out in other CSDs).

The opening and closing times cover daytime and night-time settlement. They are compatible with, though perhaps not identical to, TARGET2 operating hours. T2S provides exact cut-off times within the single T2S operating timetable – different cut-off times might for instance be required for specific operations (DvP notification submission, automatic lending operations, etc.).

Principle 17: T2S settlement rules and procedures shall be common to all participating CSDs

To minimise costs and simplify processes, T2S provides harmonised services to all participating CSDs and aims to harmonise all rules and procedures related to the services it provides. In addition to these harmonised rules and procedures, CSDs may maintain additional national rules and procedures, provided that such rules and procedures do not conflict with those of T2S.

When further harmonisation of post-trading processing in Europe is needed in order to derive full benefits from T2S, the Eurosystem supports the T2S Stakeholders in achieving this.

Principle 18: T2S shall operate on a full cost-recovery and not-for-profit basis

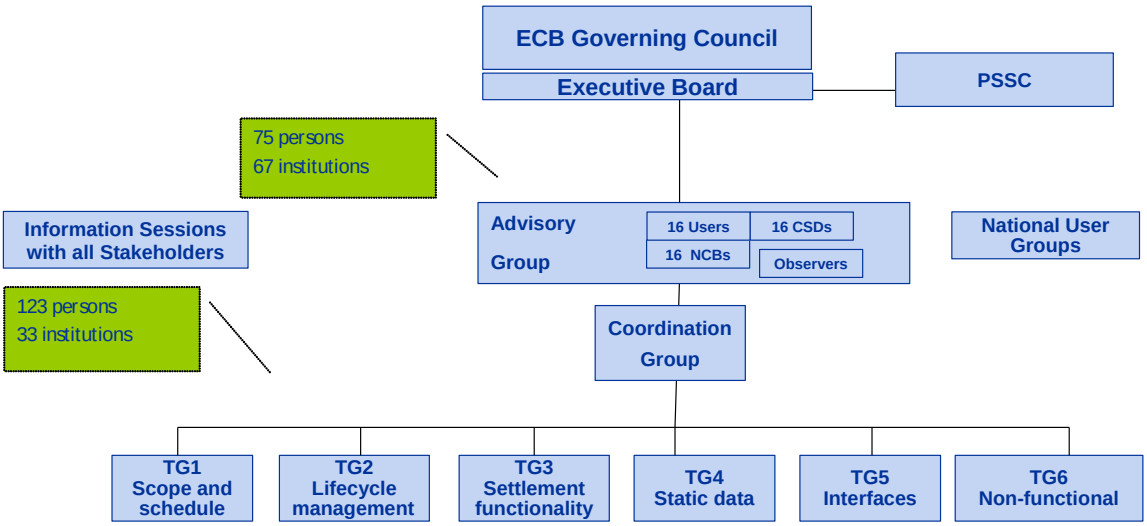
The Eurosystem prices the development and operation of T2S on a full cost-recovery and not-for-profit basis. While delivering a very high level of service in terms of quality, security and availability, T2S also seeks to be as cost-efficient as possible.

Principle 19: T2S services shall be compatible with the principles of the European Code of Conduct for Clearing and Settlement

T2S shall be compatible with the principles of the European Code of Conduct for Clearing and Settlement with regard to price transparency, the unbundling of services and accounting separation. Compatibility of T2S with the Code of Conduct enables CSDs also to remain compliant.

1.3 Governance structure for preparing User requirements

An ad-hoc Governance structure was set up by the Governing Council for preparing the T2S User Requirements (see below). CSDs, market participants and central banks have invested considerable resources by involving themselves (among others) in the Advisory Group and the six Technical Groups that have been set up. Approximately 190 persons from 80 institutions have participated in these groups, working in a co-operative spirit under the very tight deadline that was set by the Governing Council. The ECB has led this process in an open and transparent manner. All decisions have been taken by means of consensus.



1.4 Organisation and presentation of the user requirements

The T2S User Requirements document is organised into chapters presenting the various aspect of the T2S project.

- Chapter 1: General Introduction – describes the purpose of this document; recalls the principles approved by the Governing Council, which are the main pillars of T2S; and provides guidance on how to read this document.
- Chapter 2: Scope – aims at identifying the T2S stakeholders, presenting the overall context diagram and requirements on securities categories, types of transactions, settlement currencies and interaction with external CSDs.
- Chapter 3: Processing Schedule and Calendar – identifies requirements for the main periods of the daily schedule, the processes which will be available within each period and the calendar of opening days.
- Chapter 4: Role Requirements – aims at describing the role of the various actors interacting with the T2S environment.
- Chapter 5: Instruction Life cycle Management and Matching Requirements – identifies requirements for the life cycle of an instruction prior to settlement: validation, instruction maintenance, matching and settlement eligibility.
- Chapter 6: Provision of Liquidity, Collateral Management and Monitoring of Liquidity – identifies requirements related to the use of central bank money in the T2S environment.
- Chapter 7: Settlement Processing Requirements – identifies requirements for the core aspects of the settlement processing in T2S.
- Chapter 8: Settlement Optimisation and Auto-collateralisation Processing – identifies requirements for the main features of the optimisation routine in the T2S environment, including the auto-collateralisation process.
- Chapter 9: Specific Settlement Processing requirements – identifies requirements for processing specific categories of securities and settlement procedures; focusing in particular on corporate actions settlement, cross-CSD settlement and in/out settlement.
- Chapter 10: Securities Positions and Cash Balance Holdings – identifies requirements for recording securities and cash balances and for managing limits by the relevant parties.
- Chapter 11: Configuration Requirements – identifies requirements concerning the configuration information that needs to be stored for smooth processing in T2S.
- Chapter 12: Interfaces and Connectivity Requirements – identifies requirements related to the technical communication of the T2S interface with the different T2S actors, other T2S components, and other systems owned by NCBs.
- Chapter 13: Messages and Reports Requirements – identifies requirements for the subscription requirements, message flows, and reports that T2S will provide.
- Chapter 14: Queries Requirements – identifies requirements for the queries that are available in T2S.

- Chapter 15: Statistical Information and Billing – identifies requirements for the information to be stored in T2S for statistical and billing purposes.
- Chapter 16: Static Data Requirements – identifies requirements pertaining to the management of all static data in T2S. Static data mainly concern reference data about CSDs and T2S Parties, securities and cash accounts, currencies.
- Chapter 17: Volumes and Performance Requirements – contains the volumetric calculations and aims at describing the scalability and archiving requirements and performance and response time requirements.
- Chapter 18: Information Security Requirements – identifies requirements for the processes necessary to ensure an appropriate level of security in the system.
- Chapter 19: Technical Architecture – aims at describing general design principles and, more specifically, resilience requirements.
- Chapter 20: IT Service Management and Business Continuity – aims at describing the services that will be available from the IT provider and the business continuity requirements.
- Chapter 21: Migration – aims at describing the processes for the data relocation from a CSD to the T2S infrastructure and the associated changes in the processes and technical environment of a CSD.

These chapters are complemented by the annex on the Glossary and Standards.

1.4.1 Presentation of the requirements

Individual requirements are grouped according to topic and in principle each requirement is presented with attributes.

The different user requirements have following attributes:

Requirement short text

Reference ID	The unique reference is contained in this field.

Requirement label

- Requirement short text: this is a way to identify the topic that is covered by the requirement. It helps the reader to quickly find a requirement within a document.
- Reference ID: The identification of the requirement is a unique number, which will be valid for this requirement throughout the project. After agreement, it will be possible for any party to refer to this requirement via this ID. Requirements' substance and wording will evolve over time. Using the identification number, users will be possible to trace any modification of the requirements. Furthermore, the acceptance tests will be related to the user requirements.
- Requirement label: This is the requirement, formulated in an unambiguous way. Requirements must be clear, concise and measurable. The words "shall" "will" or "must" in a requirement indicate a compulsory feature of the system. The words "may" and "should" indicate options.

1.4.2 Glossary

A number of concepts are used in a specific context throughout the document. Sometimes, these words are used with a slightly different meaning by some market players. To fully understand the user requirements, it is therefore recommended to ensure that a common vocabulary is available. The glossary at the end of the document defines the words or the concepts that are not otherwise defined in the document.

1.4.3 Graph and model conventions

In the course of the document, dataflow diagrams and data models help the reader understand the requirements. These diagrams and models are made according to standards that are described in annex on Glossary and Standards.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 2

SCOPE

EUROPEAN CENTRAL BANK

EUROSYSTEM

2 Scope

Chapter 2 provides an overview of the business scope of T2S. The analysis uses the general principles of T2S (Chapter 1) as a starting point.

Section 2.1 presents the **stakeholders** of T2S. As defined in the annex on Glossary and Standards, these include any entity that has a valid interest in the operation (or simply the outcome) of the T2S project and T2S.

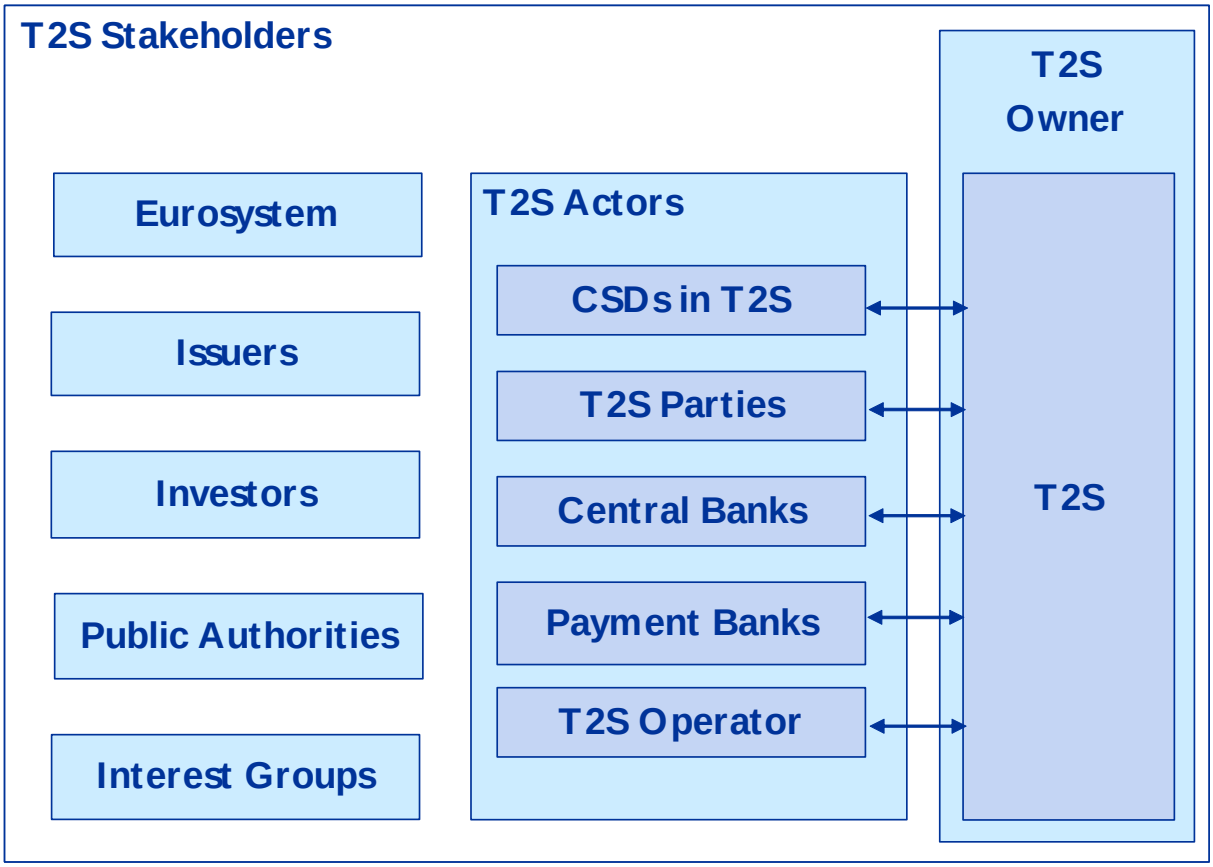
Section 2.2 presents a high-level **context diagram** of the technical interactions between the T2S actors and the T2S system. No reference to the business or contractual relationships between these actors is included (as for example on the relationship between CSDs and their clients). Neither does the diagram predicate any specific decision on the IT architecture of T2S. Both aspects form the subject of analysis to be conducted in the next stage of the project.

Sections 2.3 – 2.6 cover the high-level user requirements for the **assets, currencies, transaction types** and **interactions with external CSDs**. These requirements are mostly of a scope-defining nature and, as such, rather generic. Where relevant, this chapter includes cross-references to later chapters of the URD, which cover further detailed requirements of a technical nature that refer to specific processes.

2.1 Stakeholders

The objective of this section is to define and, where necessary, to distinguish between the terms used in the T2S governance and policy documents and in the T2S User Requirements in relation to T2S Stakeholders. A T2S Stakeholder is any organisation, legal entity, governmental institution or agency, public and private interest group or individual who has a valid interest in the governance of, policy for, or the operation of, T2S.

Figure 2-1: T2S Stakeholders



2.1.1 Eurosystem

The Eurosystem comprises the ECB and the national central banks (NCBs) of those countries that have adopted the euro.

2.1.2 Issuers

Issuers are entities such as corporations or governments that issue securities.

2.1.3 Investors

Investors are parties that make an investment in securities. These can be wholesale and/or retail investors.

2.1.4 Public authorities

Public authorities with an interest in T2S include, in particular, the EU Council of Ministers of Economic Affairs and Finance (Ecofin), the European Parliament and the European Commission. They also include national public authorities of the Member States of the EU, as well as agencies responsible for financial regulation and supervision.

2.1.5 Interest groups

Interest groups represent the interests of specific groups of society. In relationship to T2S, these are mainly, but not exclusively, financial market interest groups like the European Central Securities Depositories Association (ECSDA), the European Credit Sector Association (ECSA) and the Federation of European Securities Exchanges (FESE).

2.1.6 T2S actors

A T2S actor is any legal entity or organisation interacting either directly or indirectly through a central securities depository (CSD) in T2S with T2S for the purpose of securities settlement. T2S actors are:

- CSDs in T2S;
- T2S Parties;
- T2S Operator;
- Central Banks in T2S; and
- Payment Banks.

2.1.6.1 CSDs in T2S

A CSD in T2S is a CSD that (i) is recognised under Article 10 of the Settlement Finality Directive; (ii) settles in central bank money in a T2S eligible currency; and (iii) is a legal entity that has entered into a contractual relationship for the use of T2S. The usage of this term in the context of the T2S User Requirements corresponds to the definition for T2S governance and policy.

2.1.6.2 T2S Parties

A T2S Party is a legal entity or, in some markets, an individual that has a contractual relationship with a CSD in T2S for the processing of its settlement-related activities in T2S. It does not necessarily hold a securities account with the CSD. Examples of such parties (non-exhaustive) are:

- direct and indirect CSD participants (including those acting as Payment Banks for other CSD participants);
- stock exchanges and multilateral trading platforms that route pre-match trades or settlement instructions to CSDs on behalf of trading participants;
- central counterparties (CCPs);
- central banks as CSD participants;
- CSDs as participants of other CSDs; and
- securities processing outsourcers that process securities transactions on behalf of other financial institutions.

Note: the T2S Party is a subset of the T2S User, as defined in the context of T2S governance and policy. The T2S Party in the T2S User Requirements is any T2S User of a CSD in T2S. For the definition of T2S Users, see annex on Glossary and Standards.

2.1.6.3 T2S Operator

The T2S Operator is the legal and/or organisational entity/entities that operates/operate T2S.

2.1.6.4 Central Bank in T2S

A Central Bank in T2S is an NCB that provides cash account services to banks for securities settlement in T2S in central bank money.

2.1.6.5 Payment Bank

A Payment Bank is either a central bank or a private bank used to settle the cash leg of securities settlements: it provides the cash account to support the settlement of the securities transactions of another financial institution in central bank money (CeBM). The Payment Bank is a subset of the T2S User, as defined in the context of T2S governance and policy. The Payment Bank in the T2S User Requirements is any T2S User of a Central Bank in T2S.

2.1.7 T2S Owner

The T2S Owner is the legal or organisational entity that owns the T2S business application (i.e. software developed and operated by the 4CB on behalf of the Eurosystem).

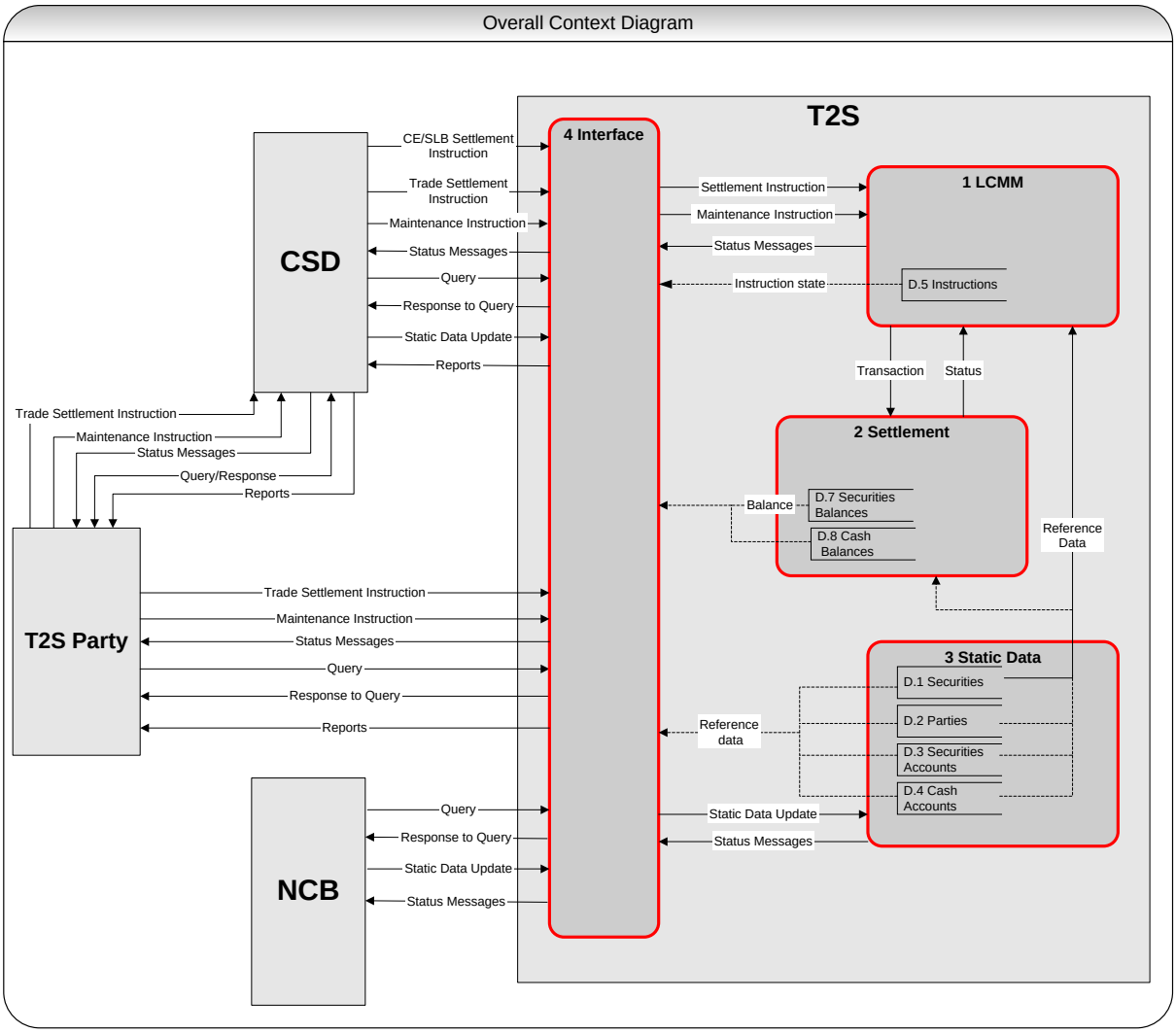
2.1.8 T2S System Users

A T2S System User is an individual or a technical process/application that can log into T2S with a login name and password. For example, a user may be an individual who has interactive access to T2S online functions, or an application programme that requests services from T2S. The term User in the T2S User Requirements is shorthand for T2S System User. Each T2S Actor may have one or more T2S System Users.

Note: T2S System User is not to be confused with T2S User. The first refers to an operational interaction with T2S, whereas the second is used in the governance and policy context (see annex on Glossary and Standards).

2.2 Overall context diagram

Figure 2-2 – Overall context diagram



The overall context diagram serves as an introduction to T2S with a high-level representation of T2S data flows. It defines the boundaries of T2S in its broadest definition by illustrating the interaction with different T2S actors and the information flows involved within the system. The purpose of this diagram is to depict the flow of information among the different components of T2S, such as Life Cycle Management and Matching (LCMM), Settlement, Interface and Static Data. This diagram does not represent the business relationships between different actors and T2S (Section 2.1).

The following analysis is a high-level illustration to promote common understating of the business processes in T2S. It is not an implementation or an IT architectural proposal.

The diagram depicts the flow of information exchange between a CSD and T2S. It also depicts the flow of information that can be exchanged between a directly connected T2S Party and T2S. Solid arrows show the flow of information between the T2S actors and T2S, as well as between the different components within T2S. Dotted arrows show the reading or update of specific information from a data store.

Section 6.3 describes the role of NCBs in monitoring cash liquidity.

2.2.1 Life Cycle Management and Matching (LCMM)

LCMM manages the life cycle of the settlement instructions in T2S. This component includes instruction validation, matching, eligibility, instruction and status maintenance.

LCMM is the hub for information dissemination between T2S and the instructing parties for all processes related to the life cycle of a settlement instruction. A settlement instruction reaches LCMM via the T2S interface. This may originate from the CSD or any directly connected T2S Party. LCMM validates the instruction against the static data and the single set of harmonised validation rules, as defined by T2S. Following successful validation and subsequent matching, T2S routes the settlement instructions to the settlement component.

The LCMM in T2S captures any cancellation, amendment, or hold/release request for a settlement instruction, sent by either a CSD or a directly connected T2S Party. T2S sends a confirmation/rejection message to the CSD/directly connected T2S Party after completing the necessary validations and checks. Chapter 5 provides the details of these processes.

2.2.2 Settlement

The settlement component includes the checking of the securities positions, the updating of the positions in securities accounts and their posting to cash accounts. In order to maximise settlement, T2S applies sequencing and optimisation rules.

The settlement component sends settlement messages to the LCMM, which forwards them to the CSD and/or the directly connected T2S Party. When T2S sends the message to the directly connected T2S Party, the message subscription service provides a real-time copy of the message to interested T2S Party recipients, which may be the CSD itself or other designated recipient of the T2S Party. Chapter 13 provides additional details of the message subscription service.

The CSD needs to instruct T2S accordingly whenever an update of securities or cash accounts takes place due to a corporate action (CA), securities lending/borrowing (SLB), etc. LCMM captures and then validates this settlement instruction. Following validation, LCMM sends the instruction to the settlement component. In settlement, T2S updates the securities positions and cash balances where settlement is successful. The settlement component does not update positions and balances if the settlement attempt was not successful. LCMM sends the confirmation/rejection to the concerned CSD or directly connected T2S Party. Chapter 7 provides the detailed descriptions of these processes.

2.2.3 Static data

The static data component manages all static data necessary for processing settlement in T2S. For static data updates, the CSD (or the NCB) instructs T2S accordingly. T2S Interface captures the messages and sends them to the static data component**.** The static data component sends the confirmation/rejection via the interface to the concerned CSDs. Chapter 16 provides the detailed descriptions of these processes.

2.2.4 Interface

T2S interface is the single point of communication between T2S and instructing parties. The interface component manages the flow of all inbound and outbound T2S messages (including queries and reports). The format and the syntax checks of all inbound messages take place in this process.

For any query (on balances, transaction statuses or static data), the CSD/directly connected T2S Party shall interact with T2S as shown in the diagram. T2S also sends pre-defined sets of reports at pre-defined time/event to the CSDs and directly connected T2S Parties. Depending on the configuration of the relevant message subscription, T2S automatically provides CSDs/directly connected T2S Parties with transaction status information. Chapters 12 and 13 cover the relevant user requirements.

2.3 Securities categories

In principle, T2S shall cover all securities with an official international securities identification number (ISIN)[1], held in book-entry form with a CSD in T2S and fungible from a settlement procedure perspective. Any related actions connected to such electronic settlement (physical delivery, registration, etc.) shall remain with the CSDs. Securities that are not part of any connected CSD's scope are not part of T2S either. The underlying principle is that T2S should provide the functionality for covering the CSDs' current service level and types of assets.

"Fungible" from a settlement perspective means that amounts/fractions of a certain security issue (designated by a specific ISIN) are interchangeable during the settlement process. This means that no additional security identifier relating to a specific balance or part of a balance is required to complete valid settlement. However, some securities may require prior or subsequent steps to the settlement procedure in order to register, to identify or to update additional codes (registration codes, reference numbers, etc.). CSDs shall execute these procedures as they do today. T2S shall only perform the settlement-processing layer associated with the ISIN.

Scope: Securities categories – eligibility criteria

Reference ID	T2S.02.010

The T2S scope shall include all securities that comply with the following eligibility criteria, i.e. that:

- have an ISIN code, as instrument identifier;
- are held with a CSD in T2S;
- settle in book-entry form; and
- are fungible (from a settlement processes perspective).

[1] For further details on the use of ISINs in T2S, please refer to Chapter 16

These criteria should cover all securities currently settling in EU CSDs. Eurobonds, for example, have an ISIN code, settle in book-entry form and are fungible. Therefore, they are eligible for settlement in T2S if they are held with a CSD in T2S. In addition, certain securities, compliant with the first three criteria, but non-fungible from a settlement perspective, may still be entered in and processed by T2S under specific conditions. T2S would identify these securities as specific non-standardised securities pertaining to certain markets. Chapter 9 provide further information on the settlement procedures for non-standardised securities.

Indicative list of eligible securities

Table 2.1 presents an indicative but non-exhaustive list of the eligible securities based on information provided by the CSDs. The four broad categories follow the CFI (ISO 10962) classification[2].

Table 2-1: Indicative list of "standardised" securities

Securities categories	Securities sub-categories (groups)	Examples of securities settled in CSDs
Equities		
	Shares (common/ordinary)	Equity shares
	Preference shares	Preference shares
	Preferred shares	
	Convertible shares	
	Preferred convertible shares	
	Preference convertible shares	
	Units (i.e. unit trusts/mutual funds)	Undertakings for collective investment in transferable securities (UCITS), venture capital funds, Kuxe securities, trust-preferred securities (TruPS), mutual funds, equity funds, real property funds, index funds, forward market funds, other funds, mixed security and real property funds, hedge funds, pension funds, exchange-traded funds (ETFs)
	Equities (others)	Global bearer certificates/depository receipts, savings shares
Debt instruments		

[2] Eurobonds do not constitute a specific sub-category under the CFI. They are simply covered as bonds under debt instruments.

Securities categories	Securities sub-categories (groups)	Examples of securities settled in CSDs
	Bonds	Bonds, debentures, public notes, Type A federal bonds, Type B federal bonds, TPS bonds, funding debentures, participating debentures, inflation-linked bonds, other linked bonds, bonds cum warrants, bonds ex warrant, exchangeable bonds, savings bank bonds, corporate bonds
	Convertible bonds	Convertible bond,
	Bonds with warrants attached	Convertible bond cum warrant, convertible bond ex warrant
	Medium-term bonds	
	Money market instruments	Treasury notes/bills
	Asset-backed securities (ABSs)	Asset-backed securities (ABSs), asset-backed commercial paper, collateral debt obligations
	Mortgage-backed securities (MBSs)	Mortgage bonds, mortgage-backed securities (MBSs)
	Debt instruments (others)	Bonds with put option, callable bonds/puttable bonds
		Covered bonds, European covered bonds, commercial paper, municipality paper, Treasury financial paper, credit-linked notes, certificates of deposit, stripped bonds, stripped coupons, fractional interests, residuals
Entitlements (rights)		
	Allotment rights	
	Subscription rights	Subscription rights
	Purchase rights	
	Warrants	Warrants, covered warrants
	Entitlements (others)	
Others/miscellaneous		

Securities categories	Securities sub-categories (groups)	Examples of securities settled in CSDs
	Certificates	Security certificates, index certificates, interest rate certificates, currency certificates, other certificates, subscription certificates, liquidation share certificates, profit-sharing certificates, registered profit-sharing certificates, profit-sharing certificates cum warrants, profit-sharing certificates ex warrant, participating certificates, savings bank certificates, land charge deeds and charge certificates, product certificates, commodity certificates, metal certificates

2.4 Types of transaction

Scope of services

Reference ID	T2S.02.020

T2S shall provide services for securities settlement and the related cash settlement using a number of transaction types.

The scope of T2S shall be restricted to settlement services, including the functionalities required to support settlement activities relating to the asset-servicing business. Activities that extend beyond the provision of settlement services, such as the management of corporate actions, lie outside the T2S business scope. However, the system shall process the settlement instructions in relation to those CSD processes. T2S shall settle only those settlement transactions with a CeBM cash leg (or no cash leg). T2S will not provide settlement in commercial bank money (CoBM).

Transaction types covered by T2S

Reference ID	T2S.02.030

T2S shall provide for a set of transaction types that allow transactions to be distinguished according to one or more of the following parameters:

- priority;
- deadline;
- life cycle type;
- matching mechanism; and
- settlement process.

Based on these parameters, T2S will allocate a specific transaction type to each transaction for further processing.

T2S shall also process the above parameters as settings when instructing parties or CSDs update them during the life cycle of the transaction.

The list of transaction types covered by T2S is to be found in Chapter 5, Section 5.7 (Transaction Types).

2.5 Settlement currencies

2.5.1 Cash settlement in T2S

2.5.1.1 Euro CeBM

The Eurosystem's prime focus is efficiency and security in the euro area securities settlement environment. As a result and in accordance with Principles 8, 9 and 10, the focus of T2S, at least during its first production phase, is to provide settlement services in euro CeBM. The cash settlement will take place on T2S dedicated cash accounts.

The service would be available to those CSDs outside the euro area that choose to settle in euro CeBM. T2S shall cover securities denominated in foreign currency and settling in euro CeBM, provided they are held with a CSD in T2S. Settlement in CoBM is outside the scope of T2S.

Scope: Settlement currencies – euro CeBM

Reference ID	T2S.02.040

T2S shall provide cash settlement in euro CeBM.

Chapter 6 provides the detailed requirements on liquidity provisioning and monitoring.

2.5.1.2 Non-euro CeBM

According to Principle 10, T2S must be multi-currency capable from its first release. However, such a service will be provided by T2S only if the relevant non-Eurosystem NCB(s) explicitly request(s) this. The provision for settlement in non-euro CeBM requires the willingness of those NCBs to authorise the technical operation of part of their RTGS cash accounts (or T2S dedicated cash accounts) by the Eurosystem. The initiative should come from the relevant NCB, in coordination with its local market community.

In this scenario, the non-euro RTGS will need to interact with T2S according to the standard T2S interface specifications. These interface specifications will be similar to those used for T2S – TARGET2 interaction. T2S will not provide dedicated payment interfaces per currency as this would increase development and operating costs for all stakeholders.

Scope: Settlement currencies – non-euro CeBM

Reference ID	T2S.02.050

T2S shall be technically capable of providing cash settlement in non-euro CeBM.

Scope: Settlement currencies – many-to-many relationship between securities and cash accounts

Reference ID	T2S.02.060

The T2S dedicated cash account structure shall allow a CSD participant to link non-euro dedicated T2S cash account(s) to any securities account it holds through a CSD in T2S.

The T2S dedicated cash account structure shall allow a CSD participant to hold a T2S dedicated cash account in any T2S eligible settlement currency.

The settlement instructions shall include the currency codes as an attribute. ISO 20022 instruction messages include settlement currency information.

Scope: Settlement currencies – different issuance and settlement currencies

Reference ID	T2S.02.070

The system shall support the settlement of T2S eligible securities issued in one currency and settled in another T2S settlement currency.

Scope: Settlement currencies – multiple currency accounts

Reference ID	T2S.02.080

The T2S dedicated cash account structure shall support CSD participants in maintaining T2S dedicated cash accounts in more than one T2S settlement currency.

The possibility of providing non-euro CeBM in T2S does not create a multi-currency FX settlement platform. Each single settlement transaction continues to involve a single cash leg in a single currency. This does not, of course, exclude the possibility to settle the same ISIN in more that one currency (provided that there is not more than one currency per transaction).

2.5.2 Cash settlement outside T2S

T2S parties maintain their securities balances in T2S. However, the cash settlement of transactions affecting these securities balances may need to be completed by the use of cash, which cannot be settled in T2S (either non-T2S CeBM or CoBM). This is possible via a generic T2S functionality called Conditional Securities Delivery (CoSD) as described in detail in Chapter 9.

Scope: Settlement currencies – cash settlement outside T2S

Reference ID	T2S.02.090

When the cash leg of a delivery-versus-payment (DVP) transaction settles outside T2S, the system shall support the associated securities settlement via the use of the CoSD service.

2.6 Interaction with external CSDs

Securities issued in an external CSD (i.e. a CSD that is not a CSD in T2S) could be settled through T2S, provided a link exists between the two CSDs.

This section provides a high-level description of the different scenarios for interaction between T2S and the external CSDs.

One of the major benefits of T2S is that the settlement of cross-CSD transactions can be as efficient as domestic settlement. T2S will achieve this by bringing together the securities accounts of multiple CSDs (as well as dedicated cash accounts of NCBs) in a single technical platform. Settlement processing in T2S will book the transfer of securities and cash between participants of different CSDs simultaneously. This eliminates the current highly complex and costly interaction processes between various platforms, which are often not synchronised, entail delays and could pose a risk in terms of failing to achieve settlement finality. T2S will also automate the realignment process between CSDs on a real-time basis without needing to use additional procedures.

Cross-border transactions involving external CSDs will benefit from the T2S architecture. The aim in this context is to achieve real-time settlement wherever feasible, but the need to interact with external CSDs/platforms makes the settlement procedure more complex in some cases.

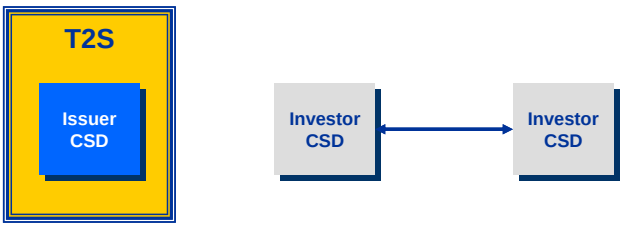
When external CSDs are involved, four scenarios need to be distinguished to explain the settlement procedure:

1. The Investor CSDs are external and the Issuer CSD is in T2S.
2. One Investor CSD is external with one Investor CSD and the Issuer CSD in T2S.
3. One Investor CSD and the Issuer CSD are external with one Investor CSD in T2S.
4. The Issuer CSD is external and the Investor CSDs are in T2S.

The following section describes these scenarios in detail.

Scenario1: the Investor CSDs are external and the Issuer CSD is in T2S

Figure 2-3 – Scenario 1: the Investor CSDs are external and the Issuer CSD is in T2S



From the perspective of T2S, this appears as a transaction between the two Investor CSDs in the Issuer CSD (Domestic Settlement). Actually, the Investor CSDs are external CSDs, but they are participants of a T2S CSD (which is the Issuer CSD since it is the CSD where they are holding their omnibus account).

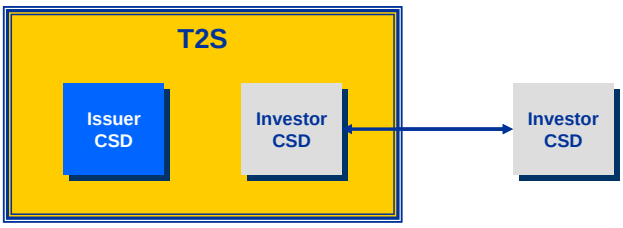
Scope: Scenario 1 interaction with external CSDs

Reference ID	T2S.02.100

When a settlement transaction takes place between two Investor CSDs that are not connected to T2S (externals) and where the Issuer CSD is connected to T2S (internal), T2S shall settle the transaction in the accounts of the Issuer CSD, as is the case in a domestic transaction.

Scenario2: one Investor CSD is external, while one Investor CSD and the Issuer CSD are in T2S

Figure 2-4 – Scenario2: one Investor CSD is external, with one Investor CSD and the Issuer CSD in T2S



From the perspective of T2S, this looks like a settlement between the T2S Party and the external CSD as participant of the Issuer CSD (since the external CSD is holding its omnibus account in the Issuer CSD).

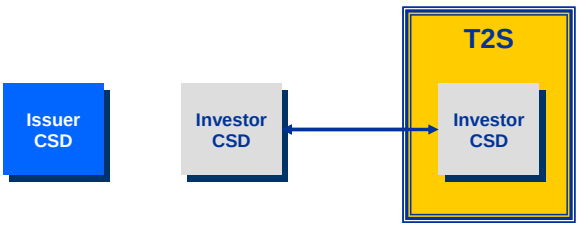
Scope: Scenario 2 interaction with external CSDs

Reference ID	T2S.02.110

When a settlement transaction involves one external Investor CSD, with the other Investor CSD and the Issuer CSD in T2S, T2S shall settle the transaction either as a domestic or as a T2S cross-CSD settlement, depending on the link arrangement.

Scenario3: one Investor CSD and the Issuer CSD are external, while one Investor CSD is in T2S

Figure 2-5 – Scenario3: one Investor CSD and the Issuer CSD are external, with one Investor CSD in T2S



T2S cannot achieve simultaneous real-time settlement in this scenario. From the perspective of T2S, settlement between the T2S Party and an inter-CSD account is conditional on the final settlement within the Issuer CSD.

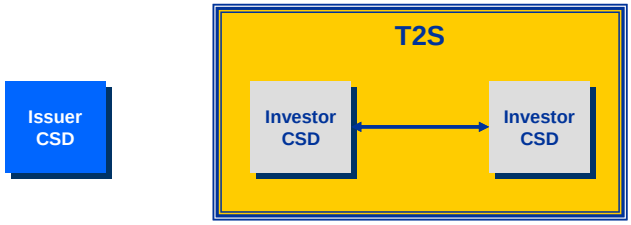
Scope: Scenario 3 interaction with external CSDs

Reference ID	T2S.02.120

When a settlement transaction involves one T2S-connected Investor CSD, while the other Investor CSD and the Issuer CSD are not in T2S (external CSDs), T2S shall settle the transaction on condition of final settlement in the Issuer CSD.

Scenario 4: the Issuer CSD is external, while the Investor CSDs are in T2S

Figure 2-6 – Scenario 4: the Issuer CSD is external, with the Investor CSDs in T2S



In this case, even if the Issuer CSD is outside T2S, the settlement within T2S will not be conditional. T2S only needs to send an unsynchronised realignment to the external Issuer CSD. The fact that the dedicated cash account of the buyer and the securities account of the seller (both sides of the transaction) are maintained in T2S will allow this procedure and avoid the risk of failure within the Issuer CSD. However, the procedure may also require extensive due-diligence studies confirming that the Investor CSDs operate their accounts with the Issuer CSD in such a way that the realignment will never fail.

Scope: Scenario 4 interaction with external CSDs

Reference ID	T2S.02.130

When a settlement transaction takes place between two investor CSDs that are connected to T2S, while the Issuer CSD is not connected to T2S (external), T2S shall settle the transaction in the accounts of the Investor CSDs, as is the case in a cross-CSD T2S transaction. This settlement in T2S is not dependent on the final settlement in the issuer CSD, where only an asynchronous realignment shall take place.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 3

PROCESSING SCHEDULE AND CALENDAR

EUROPEAN CENTRAL BANK

EUROSYSTEM

3 Processing schedule and calendar

The objective of this chapter is to outline the T2S processing schedule and the T2S calendar.

Section 3.1 presents the draft schedule of the T2S settlement day. It proposes a single harmonised timeframe for the centralised settlement procedures in euro CeBM. It represents a balance between the user requirements for a pan-European timetable and the constraints and business needs of existing local schedules. This is in accordance with the market's request for harmonised post-trading practices in the EU. The planned start of T2S operations (2013) should provide enough time to review the harmonisation proposals and to facilitate the adaptation strategies required by market participants.

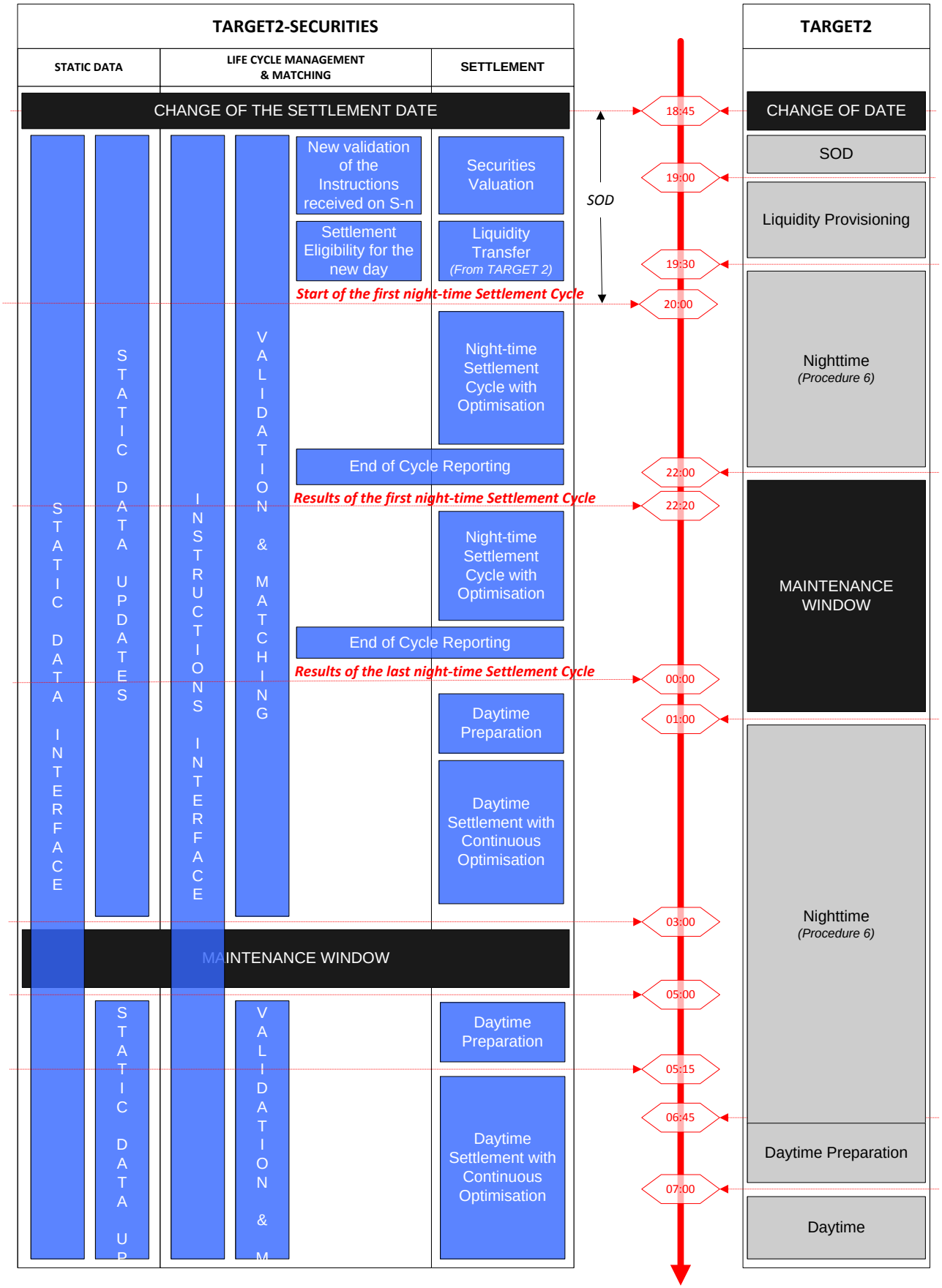
Section 3.2 presents the high-level requirements for the calendar of T2S. For DVP settlement in euro CeBM, the calendar is the same as that for TARGET2, which is currently followed by all euro area markets. The requirements consider the potential inclusion of other currencies (still in CeBM accounts) and the accommodation of opening days in the relevant markets.

3.1 General structure of a settlement day

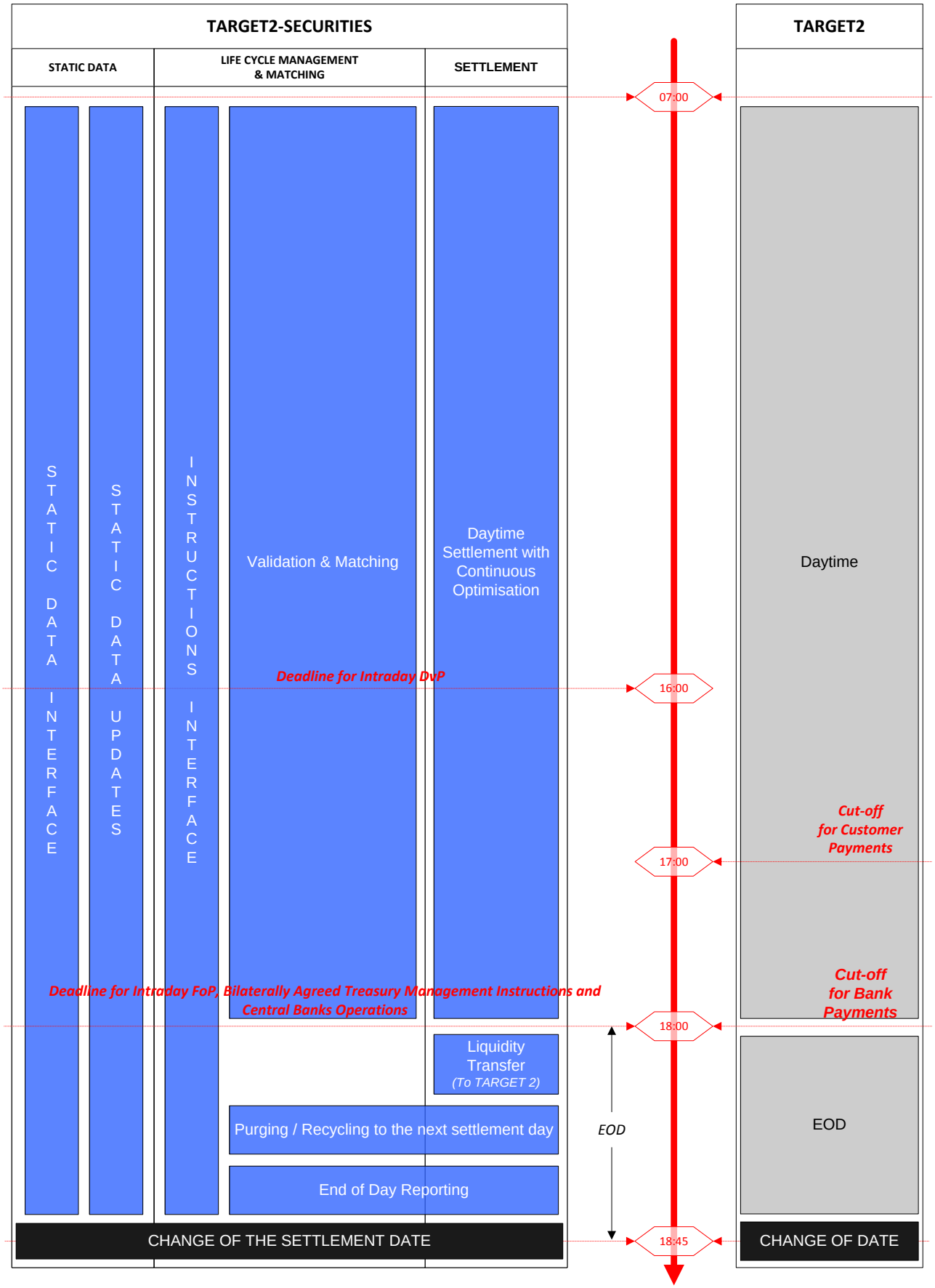
3.1.1 High-level T2S processing timetable

Disclaimer
The timing and deadlines of the proposed processing timetable are only indicative at this early stage of the project. The reader should therefore focus on the sequencing of events and processes, rather than on the exact timing proposed.

Figure 3-1 – High-level settlement processing timetable


TARGET2-SECURITIES
STATIC DATA
LIFE CYCLE MANAGEMENT & MATCHING
SETTLEMENT
TARGET2
CHANGE OF THE SETTLEMENT DATE
STATIC DATA INTERFACE
STATIC DATA UPDATES
INSTRUCTIONS INTERFACE
VALIDATION & MATCHING
New validation of the Instructions received on S-n
Settlement Eligibility for the new day
Securities Valuation
Liquidity Transfer (From TARGET 2)
SOD
Start of the first night-time Settlement Cycle
Night-time Settlement Cycle with Optimisation
End of Cycle Reporting
Results of the first night-time Settlement Cycle
Night-time Settlement Cycle with Optimisation
End of Cycle Reporting
Results of the last night-time Settlement Cycle
Daytime Preparation
Daytime Settlement with Continuous Optimisation
MAINTENANCE WINDOW
STATIC DATA UP
VALIDATION & M
Daytime Preparation
Daytime Settlement with Continuous Optimisation
18:45
19:00
19:30
20:00
22:00
22:20
00:00
01:00
03:00
05:00
05:15
06:45
07:00
CHANGE OF DATE
SOD
Liquidity Provisioning
Nighttime (Procedure 6)
MAINTENANCE WINDOW
Nighttime (Procedure 6)
Daytime Preparation
Daytime

1


TARGET2-SECURITIES
TARGET2
STATIC DATA
LIFE CYCLE MANAGEMENT & MATCHING
SETTLEMENT
07:00
STATIC DATA INTERFACE
STATIC DATA UPDATES
INSTRUCTIONS INTERFACE
Validation & Matching
Daytime Settlement with Continuous Optimisation
Daytime
Deadline for Intraday DvP
16:00
Cut-off for Customer Payments
17:00
Deadline for Intraday FoP, Bilaterally Agreed Treasury Management Instructions and Central Banks Operations
Cut-off for Bank Payments
18:00
Liquidity Transfer (To TARGET 2)
Purging / Recycling to the next settlement day
EOD
End of Day Reporting
CHANGE OF THE SETTLEMENT DATE
18:45
CHANGE OF DATE

Explanations relating to the diagram:

- All times are given in Central European Time (CET);
- "S" stands for Settlement Date;
- "SOD" stands for start-of-day procedures;
- "EOD" stands for end-of-day procedures;
- The current TARGET2 User Detailed Functional Specification is the source for the current TARGET2 availability and the liquidity-provisioning period, defined in this chapter. Only settlement procedure 6[1] is currently foreseen in the TARGET2 Ancillary System Interface during night-time. Meeting the requirements for T2S night-time settlement will require the use of dedicated cash accounts in T2S;

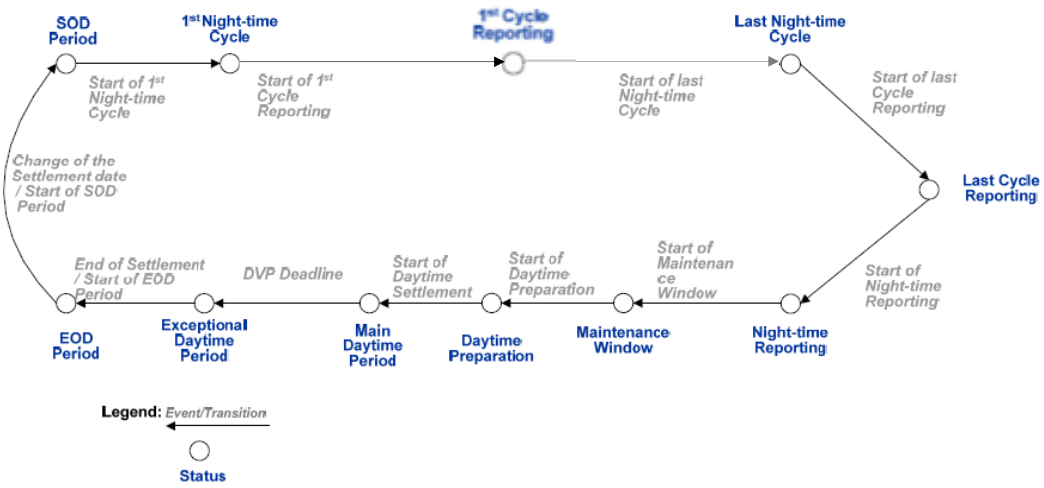
3.1.2 Main periods of the settlement day

3.1.2.1 Management of the settlement day

Management of the settlement day periods

Reference ID	T2S.03.010

T2S shall assign a status to the schedule of the settlement day. The value of this status corresponds to the ongoing period or main process of the settlement day. The following diagram represents the successive schedule statuses during the settlement day and the events triggering the change of status:



Management of settlement day events

Reference ID	T2S.03.015

T2S shall associate an event to each transition between the statuses (periods) of the settlement day. For each event, T2S shall manage a *planned time*, a *revised time* and an *effective time*.

[1] The payment bank can dedicate a liquidity amount to settle balances that come from a specific Ancillary System.

Planned time

Reference ID	T2S.03.016

The planned time is the time of the standard schedule that T2S applies by default for every settlement day. The T2S operator shall update the planned time only when there is a permanent change in the regular schedule.

Revised time

Reference ID	T2S.03.017

The revised time corresponds to the time foreseen for the current settlement day. It is normally identical to the planned time when the schedule corresponds to regular processing without delays. It is different only on exceptional circumstances, i.e. when the regular processing in accordance with the schedule is delayed (e.g. in cases of contingencies). The T2S operator in that case updates the revised time; the planned time remains unchanged.

Effective time

Reference ID	T2S.03.018

T2S automatically assigns the effective time when an event actually occurs. The effective time will always be identical to the revised time when the event refers to a deadline (e.g. DVP deadline). However, the effective time could differ from the revised time when the event refers to the start of a window that is conditional upon the completion of previous processes (e.g. the maintenance window can only start after the completion of night-time reporting, even if the revised time for the event "Start of Maintenance Window" has been reached).

3.1.2.2 Change of settlement date

Change of settlement date

Reference ID	T2S.03.020

T2S shall change its settlement date before the start of a new settlement day.

At this stage of the project, 18:45 is the proposed, indicative time for the change of the settlement date.

Following the change of the settlement date:

- T2S shall validate settlement instructions against static data valid as of the new settlement date; and
- T2S shall settle instructions on the new settlement date.

3.1.2.3 Start-of-day procedures

Start-of-day period

Reference ID	T2S.03.030

The T2S schedule shall include a start-of-day ("SOD") period. This period shall start after the change of the settlement date and shall end prior to the start of night-time settlement.

This period includes processes that are critical for the smooth preparation of the night-time settlement procedures, such as the identification of eligible instructions.

Start-of-day – eligible instructions identification

Reference ID	T2S.03.040

The "SOD" period shall include the identification of the instructions eligible for settlement in the course of the new settlement day.

Settlement eligibility for the new settlement day shall:

- include instructions eligible for the upcoming settlement day (including recycled fails from previous settlement days); and
- disregard instructions with a future settlement date.

Start-of-day – settlement instruction validation

Reference ID	T2S.03.050

The "SOD" period shall include the validation of all settlement instructions received by T2S by the end of S-1.

T2S shall validate settlement instructions against static data valid as of the new settlement date. The requirement shall also apply to settlement instructions already validated on S-n: Settlement instructions received and previously validated against static data on S-n, may not be valid for the new settlement date. Therefore, the change of settlement date shall trigger a new validation check of settlement instructions.

Start-of-day – securities valuation

Reference ID	T2S.03.060

The "SOD" period shall include the securities valuation for the new settlement day.

Auto-collateralisation with central banks or with payment/settlement banks requires the valuation of securities positions. The calculation of valuations shall apply the prices valid for the new settlement day S (generally S-1 market prices). During the "SOD" period, T2S shall calculate the initial value of the balances in securities eligible for auto-collateralisation. Once the settlement starts, the valuation shall run continuously as a fully integrated procedure in the settlement process to provide a continuous up-to-date valuation of the balances after every debit or credit.

Start-of-day – liquidity transfer

Reference ID	T2S.03.070

The "SOD" period shall include the liquidity transfer from CeBM payment systems (TARGET2 or other RTGS system).

This process shall provide T2S dedicated cash accounts with liquidity from payment systems. The instructions of the payment banks shall initiate these transfers in the payment systems either manually or automatically. Although important for this period, the functionality shall be available throughout the settlement day.

3.1.2.4 Night-time settlement

Night-time settlement period

Reference ID	T2S.03.080

The T2S schedule shall include a night-time settlement period. It shall start after the end of the "SOD" period and end prior to the maintenance window.

The night-time period mainly processes settlement instructions that were input on previous days with an intended settlement date that corresponds to the current settlement date. With the change of settlement date, T2S shall identify these settlement instructions during the "SOD" period. Therefore, T2S shall perform night-time settlement on existing settlement instructions that are collected and prioritised at the start of the process and subsequently placed in a settlement queue for settlement.

The night-time cycles shall operate in line with the T2S sequencing and optimisation rules described in Chapter 8.

Sequencing rules for night-time settlement will typically start with the settlement of corporate actions by dedicating a settlement window for these instructions.

- For these corporate actions, which require the blocking of the settlement of other transactions before the completion of the corporate action process, the CSDs will use the tools that allow them to block settlement at an ISIN level or on balances. Night-time settlement shall first process transactions that are not relevant for corporate action processing. T2S shall attempt the settlement of transactions that affect blocked balances, or balances pertaining to a blocked ISIN (including those resulting from the corporate action), only after the CSD releases or removes the block on the related ISIN and/or balances.
- T2S shall not restrict any transaction type to the night-time settlement period. T2S shall process the transactions that miss the first night-time cycle during the first settlement opportunity (including daytime settlement) that follows their receipt by T2S.

20:00 is the proposed time for the start of night-time settlement.

Night-time settlement continuous service

Reference ID	T2S.03.090

T2S shall process settlement instructions received during the night-time settlement period and eligible for settlement at the first settlement opportunity, i.e.:

- during the night-time settlement cycle that follows their receipt by T2S; or
- during daytime settlement when they are received while the last night-time cycle is running.

Night-time settlement cycles

Reference ID	T2S.03.100

The night-time settlement shall include two settlement cycles with minimal time gaps between them.

The duration of the night-time cycles shall depend on settlement volumes. In this context, 22:20 and 00:00, the times by which T2S shall provide the reports and settlement related messages of the first night-time cycle and the last night-time cycle respectively, are purely indicative.

Night-time settlement recycling

Reference ID	T2S.03.110

At the end of each night-time settlement cycle, T2S shall carry over all eligible settlement instructions that have failed to the next night-time settlement cycle (or to daytime settlement if it is the last night-time cycle).

Night-time settlement cycles reporting

Reference ID	T2S.03.120

T2S shall report the results of each night-time settlement cycle at the end of that cycle, as defined in Chapter 13.

Night-time settlement period reporting

Reference ID	T2S.03.130

T2S shall report the results of the entire night-time settlement period (with all cycles included) at the end of night-time settlement, but before the maintenance window.

Partial settlement during night-time settlement

Reference ID	T2S.03.135

T2S shall activate partial settlement procedure at the beginning of the last night-time settlement cycle, with deactivation at the closure of the night-time settlement period.

3.1.2.5 Maintenance window

Maintenance window

Reference ID	T2S.03.140

The T2S schedule shall include a technical window for system maintenance.

Maintenance window in less critical timing

Reference ID	T2S.03.150

T2S shall undertake system maintenance during the period in which the lowest volumes and least critical settlement activity are expected. This period shall be between 03:00 and 05:00, based on today's business activity.

Since T2S and TARGET2 will run on the same technical infrastructure, the T2S/TARGET2 operator shall consider the possibility of aligning the TARGET2 maintenance window with the T2S maintenance window in order to reduce the cost of these procedures.

3.1.2.6 Daytime processing

Daytime settlement period

Reference ID	T2S.03.160

The T2S schedule shall include a daytime settlement period. It shall start after the end of the maintenance window.

The daytime settlement period is used mainly for T+0 (same-day or intraday settlement). In addition, this period is available for resolving failures from night-time settlement. The current draft schedule foresees the start of daytime settlement at 05:00 and a completion in accordance with the harmonised end-of-day deadlines.

Partial settlement during daytime settlement

Reference ID	T2S.03.165

T2S shall activate partial settlement procedure

- at 10:00 CET, with deactivation at 10:15 CET
- at 12:00 CET, with deactivation at 12:15 CET
- at 14:00 CET, with deactivation at 14:15 CET
- at 15:45 (15 minutes before the DVP cut-off time), with deactivation at the closure of the same day T2S DVP settlement.

3.1.2.7 End-of-day procedures

End-of-day period

Reference ID	T2S.03.170

The T2S schedule shall include an end-of-day ("EOD") period. It shall start after the end of the daytime processing and shall finish prior to the change of the settlement date.

The "EOD" period will permit CSDs and their participants to perform critical end-of-day activities, such as fulfilling reporting requirements.

From the start of the end-of-day procedure (indicative time: 18:00), securities and cash positions will be stationary since no settlement can occur until the start of the next settlement day's night-time settlement.

Transfer of liquidity in the end-of-day period

Reference ID	T2S.03.180

The "EOD" period shall include the automated liquidity transfer from the T2S dedicated cash accounts to the relevant RTGS accounts in the relevant RTGS systems.

End-of-day period – cancellation and recycling

Reference ID	T2S.03.190

The "EOD" period shall cancel T2S transactions that have past their last recycling day.

End-of-day internal securities account consistency check

Reference ID	T2S.03.195

T2S will ensure that the end-of-day securities position for the current business day for every securities account is equal to the previous business day's position plus the movements of the current business day. In case of an inconsistency, T2S will follow the Problem Management Procedures as outline in Chapter 20.4.

End-of-day period reporting

Reference ID	T2S.03.200

The "EOD" period shall include end-of-day reporting, e.g. statements of holdings and instructions.

3.1.3 Service availability

T2S shall provide very high service availability during settlement days. However, T2S shall restrict service availability during the maintenance window.

Availability of life-cycle management and matching services

Reference ID	T2S.03.210

T2S life cycle management and matching shall be available continuously during settlement days, except during the maintenance windows.

Availability of static data services

Reference ID	T2S.03.220

T2S static data services shall be available continuously during settlement days with the exception of the maintenance windows. However, the processing of static data maintenance instructions for the daytime and night-time periods shall be different.

- Static data changes shall be implemented real-time (immediately) without any unnecessary delay during the daytime settlement processing.

- The T2S platform shall continuously accept and validate static data maintenance requests during the night-time settlement processing, but implement the requested changes only outside the night-time cycle sequences when the intraday static data changes affect the settlement process.

Additionally, T2S shall only accept static data maintenance instructions requesting creation, update or deletion of:

- T2S dedicated cash account links to securities accounts (section 16.8.4)
- Rule-based models for maintaining the configuration of Message subscription service, Restriction types and Conditional securities delivery (sections 11.10 and 11.13)

as of a future date

Additionally, T2S shall accept static data maintenance instructions requesting intra-day creation of:

- Securities CSD links (section 16.7.4)
- CSD Account links (section 16.8.10)
- Eligible counterpart CSD (section 16.8.11)

Static data maintenance instructions requesting the update or deletion of these entities shall only be allowed as of a future date.

Changes as of a future date shall take effect as per this date in the start of day process.

Availability of interface services

Reference ID	T2S.03.230

T2S interface services shall be available continuously during settlement days. However, T2S shall restrict the availability of interface services during the maintenance window.

- T2S shall queue settlement instructions that are received during the maintenance window, for processing at the end of the maintenance period.
- T2S shall queue static data updates that are received in application-to-application mode during the maintenance window, for processing at the end of the maintenance period.
- The static data interfaces in user-to-application mode shall not be available during the maintenance window. Queries shall not be available during the maintenance window.

T2S actors should evaluate the proposed availability in the context of the whole schedule. T2S shall report all results and data of the previous processes to the CSDs and the directly connected T2S parties just before the maintenance window. These results and data will not change until the end of the maintenance window.

During the next phase of the project, the advantages of having an ongoing availability of interfaces and an ongoing matching of incoming instructions during the maintenance window needs to be balanced against the cost.

Availability of settlement services

Reference ID	T2S.03.240

T2S settlement services shall be available continuously during the night-time and the daytime settlement periods.

There shall be no settlement outside the night-time and daytime settlement periods.

3.1.4 Specific deadlines

The following T2S settlement day deadlines or "cut-off" times shall be applicable in T2S (the timing is indicative). The fine-tuning of these deadlines will take place at a later stage.

Deadline for intraday DVP

Reference ID	T2S.03.250

T2S shall set a deadline (16:00) for receiving DVP instructions for same-day settlement.

T2S shall attempt to settle all DVP instructions, eligible for settlement and arriving before the expiry of the deadline, on a same-day basis. T2S shall move all non-cancelled DVP instructions that arrive after this deadline to the night-time settlement period of the next settlement day. In addition, T2S shall stop the recycling of same-day settlement DVP fails resulting from earlier settlement attempts after this deadline. After this deadline, T2S shall recycle the remaining non-cancelled DVP fails to the next settlement day.

This fulfils the requirement of allowing one hour for treasury management before the 17:00 TARGET2 deadline for customer payments.

Deadline for bilaterally agreed treasury management instructions

Reference ID	T2S.03.270

T2S shall set a deadline (18:00) for receiving bilaterally agreed treasury management instructions for same-day settlement.

T2S shall attempt for settlement on same-day basis all bilaterally agreed treasury management instructions that are eligible for settlement and arrive until this deadline. T2S shall not re-use the cash potentially generated by bilaterally agreed treasury management instructions for other settlement purposes (i.e. recycling of DVP failures).

Deadline for intraday FOP

Reference ID	T2S.03.280

T2S shall set a deadline (18:00) for receiving FOP instructions for same-day settlement.

T2S shall attempt to settle all FOP instructions, eligible for settlement and arriving until this deadline, on a same-day basis. T2S shall move all non-cancelled FOP instructions that arrive after this deadline to the night-time settlement period of the next settlement day. In addition, T2S shall stop the recycling of same-day settlement FOP fails that result from earlier settlement attempts after this deadline. After this deadline, T2S shall recycle the remaining non-cancelled FOP fails to the next settlement day.

Deadline for central bank operations

Reference ID	T2S.03.290

T2S shall set a deadline (indicative at or some time prior to 18:00) for receiving settlement instructions for same-day central bank operations.

T2S shall attempt to settle on a same-day basis all central bank operations (FOP or DVP) that are eligible for settlement and arrive until this deadline. T2S shall not re-use the cash potentially generated by central bank operations for other settlement purposes (i.e. recycling of DVP fails).

Deadline for the first night-time settlement cycle

Reference ID	T2S.03.300

T2S shall set a deadline (20:00) for receiving settlement instructions for settlement in the first night-time settlement cycle.

T2S shall attempt to settle all settlement instructions that are eligible for settlement and arrive until this deadline in the first night-time settlement cycle. T2S shall move settlement instructions that arrive after this deadline to the next settlement opportunity.

Currency-specific changing of daily event scheduling deadlines

Reference ID	T2S.03.303

T2S shall allow the T2S Operator to change the event scheduling deadlines of the settlement day independently for a T2S settlement currency in exceptional circumstances or contingency situations, based on a request by the relevant central bank. The change will be valid for the current settlement day only.

3.2 Calendar

T2S calendar – Opening and closing days for free-of-payment settlement

Reference ID	T2S.03.305

T2S shall be open for settlement of FOP transactions from Monday to Friday every week.

The settlement of FOP transactions will be possible, for example, on TARGET2 closing days.

T2S calendar – Opening and closing days for euro CeBM in T2S

Reference ID	T2S.03.310

T2S shall be open for settlement of transactions against payment and/or free-of-delivery transactions in euro CeBM on the opening days set out in the TARGET2 calendar.

This is already the case today for euro area markets settling in CeBM.

T2S calendar – Opening and closing days for non-euro CeBM in T2S

Reference ID	T2S.03.320

T2S shall be open for settlement of transactions against payment and/or free-of-delivery transactions in non-Euro CeBM according to the opening days of the relevant Central Bank.

When T2S offers non-euro CeBM settlement, the system shall accommodate the relevant opening days for these currencies.

The inclusion of non-euro currencies in T2S (CeBM) implies that T2S shall accommodate the working days applicable for such non-euro currencies, which may differ from those in the TARGET2 calendar.

T2S calendar – Weekends

Reference ID	T2S.03.340

During weekends, T2S shall move to the settlement date of Monday after the end of the Friday settlement day (at 18:45 on Friday) and perform the related schedule until the end of night-time settlement period. Real-time-settlement for Monday may already start, if the NTS ends before 3.00 am on Saturday. On Monday, T2S shall start performing the schedule at 05:00 with the preparation of daytime settlement as the continuation of the same settlement day or continue the RTS if started already before 3.00 am on Saturday.

T2S calendar – Standard service availability

Reference ID	T2S.03.350

T2S interfaces and processes shall not be available on regular basis during weekends.

T2S shall not be available from 03:00 on Saturday to 05:00 on Monday.

T2S calendar – Technical capability for extending standard services

Reference ID	T2S.03.360

T2S shall ensure the technical capability to provide for the availability of interfaces and processes on seven days a week.

It shall be possible, based on specific needs (migration, issuance in direct holding countries), to make T2S interfaces and processes available to CSDs on weekends whenever this is required. In these cases, the service availability of T2S shall be tailored to the specific request.

USER REQUIREMENTS

CHAPTER 4

ROLE REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

4 Role requirements

The aim of this chapter is to describe requirements concerning access rights of T2S actors to business functions and data, based on their role and responsibilities in the marketplace and in T2S.

Each section of this chapter describes the roles available for one of the following T2S actors: T2S operator (4.1), CSD (4.2), T2S party (4.3), NCB (4.4) and payment bank (4.5). Furthermore, each section differentiates between two different roles for each T2S actor: system administrator (for users responsible for management and configuration tasks within their own organisation) and business user (for users in charge of business operations).

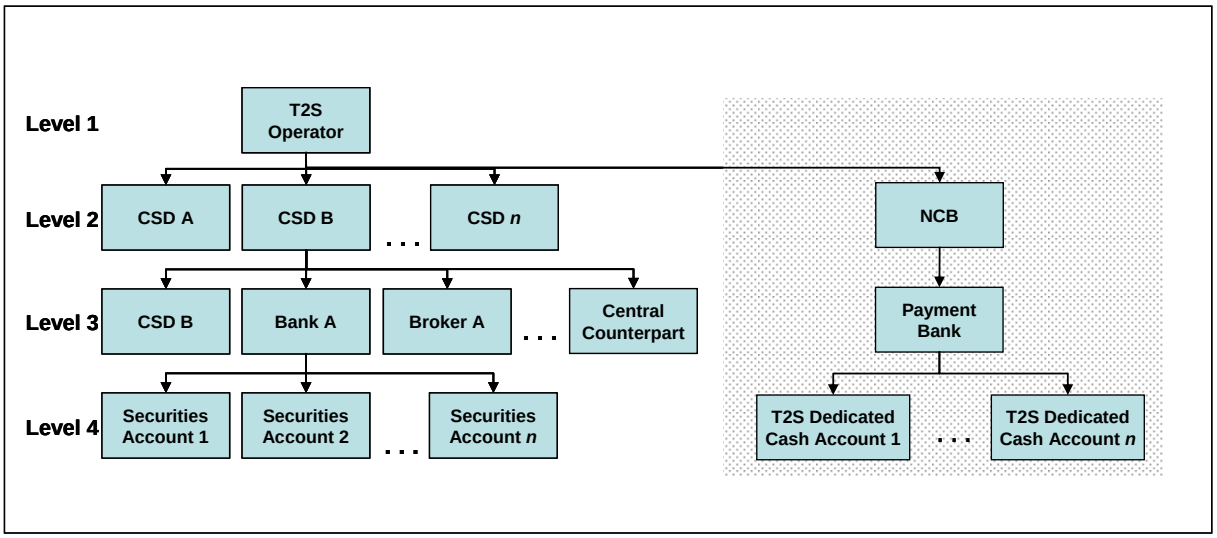
Reference ID	T2S.04.010

Access to data and applications in T2S will be dependent on the T2S actor's business role. At this stage in the project, it is too early to define the specific applications and functions that a role will include. However, the broad categories of functions and data to which a T2S actor must have access, or to which its access must be restricted, are definable based on the T2S actor's business roles and responsibilities in the marketplace and in T2S.

T2S shall place no restriction on the possible roles that a T2S system administrator (section 4.1.1) can configure for T2S actors. The legal, regulatory and contractual requirements of and between the T2S actors will define the necessary constraints on the access to functionality within T2S. Some CSDs may configure different roles for their participants in order to provide a differentiated service offering. Some CSDs may want to offer direct connectivity to T2S while others will not, and it will be feasible for a CSD to allow users with direct connectivity online access to positions and transactions in T2S, as provided in some markets today.

The business requirements for roles establish the principles that will govern access to sets of functions and data in the system. The model below defines the hierarchical configuration of relationships between T2S actors, as defined in the T2S static data. It does not predicate a specific technical configuration of roles for T2S.

Figure 4-1 – Hierarchy of T2S Roles in T2S



T2S shall support a hierarchical model of roles and access rights to ensure the segregation of both functions and data. The area of the slide shaded in grey represents the data set-up for T2S dedicated cash accounts required in the static data of T2S. An NCB, acting as a CSD in its home country and providing dedicated cash accounts in T2S, will have the role of NCB and CSD and will exist in T2S as both a CSD and an NCB.

4.1 T2S Operator

Reference ID	T2S.04.020

The T2S operator is the top level of the hierarchical role and access rights model. The T2S operator role classification includes all T2S system users of the entity, which will be responsible for the day-to-day operation and management of T2S. The T2S actors managed by this entity shall be CSDs and NCBs participating in T2S. At the highest level, the T2S operator shall have access to all data and functionality in the subordinate level.

4.1.1 T2S system administrator

Reference ID	T2S.04.030

The T2S system administrator role shall be responsible for

- the user administration for all T2S system users of the T2S operator;
- the user administration for the CSD system administrators;
- the user administration for the NCB system administrators;
- the day-to-day monitoring of system operations, applications, processes, and communication channels;
- the configuration of privileges and default roles in T2S (refer to chapter 11 for more information);
- the assignment/de-assignment of privileges to default roles and users of the T2S operator;
- the configuration of roles for T2S business and operations support users;

- the archiving of production data and the retrieval of archived data;
- contingency operations, e.g. starting and stopping processes outside of the normal operating schedule, in T2S;
- and the configuration of CSDs and NCBs as system entities (refer to chapter 11 for more information).

4.1.2 T2S business and operations support

Reference ID	T2S.04.040

The T2S business and operations support role shall be responsible for:

- maintaining T2S party static data, excluding securities accounts, for CSDs participating in T2S;
- maintaining T2S party static data, excluding T2S dedicated cash accounts, for NCBs participating in T2S;
- providing business and operations support to CSDs and NCBs;
- maintaining T2S domains for global and CSD-specific attribute lists, i.e. the valid list of values for a field (refer to chapter 11 for more information);
- technical support (e.g. network and communications) for directly connected T2S parties;
- and query and maintenance of privileges and roles for all T2S actors for provision of business and operations support.

Maintenance and query privileges of CSDs, the CSDs' participants, and NCBs with respect to business data, such as securities and cash positions and transactions, shall be limited to contingency response situations only. The T2S system administrator shall restrict access to maintenance and query functionality to a subset of T2S business and operations support users, based on the support requirements of CSDs and NCBs. For example, maintenance privileges in relation to a CSD could be limited only to the business support user for that specific CSD.

Staff on the T2S Service Desk shall have the role of T2S business and operations support. Chapter 20.2.1 of this document further describes the responsibilities of the service desk function for T2S.

4.2 Business role CSD

Reference ID	T2S.04.050

The CSD role classification shall include all T2S system users of a CSD participating in T2S. It does not include the T2S system users of the CSD's participants. T2S makes no differentiation between the roles of Investor CSD and Issuer CSD. Most CSDs take on both aforementioned roles. With the exception of possible national specificities, T2S will provide the harmonised scope of services to CSDs.

4.2.1 CSD system administrator

Reference ID	T2S.04.060

The CSD system administrator role shall be responsible for:

- the user administration for all of the CSD's T2S system users, including the assignment/de-assignment of roles and privileges;
- the configuration of roles with a set of privileges for the T2S system users of the CSD's T2S parties;
- the configuration of groups of secured static data objects with a set of individual secured static data objects for the T2S system users of the CSD's T2S parties;
- and the day-to-day monitoring of system applications, processes, and communication channels at the CSD.

CSDs shall be responsible for defining and granting privileges to use functionalities for their T2S parties. Therefore, it shall be possible for CSDs to configure roles and access rights for their T2S parties to functionality, based on their business requirements.

4.2.2 CSD business user

Reference ID	T2S.04.070

The CSD business user role shall be responsible for:

- maintaining the CSD's securities account static data in T2S;
- the parameterisation of its securities account structure;
- maintaining T2S party static data, including securities accounts, for its participants;
- maintaining CSD-specific instrument static data and, where applicable, the instrument static data across all CSDs;
- maintaining any settlement restrictions;
- the possibility of querying T2S dedicated cash account balances linked to the securities accounts of its participant at that CSD, when granted this privilege by the relevant NCB and payment bank;
- maintaining privileges for all positions, settlement instructions and static data for the CSD and its participants that are required for business support.

4.3 Business role T2S party

Reference ID	T2S.04.080

The T2S party role shall include all T2S system users that a CSD maintains for the legal entities with which it has a legal relationship and which have direct connectivity to T2S. The model shall support two types of role: T2S party system administrator and T2S party business user.

4.3.1 T2S party system administrator

Reference ID	T2S.04.090

The T2S party system administrator role shall be responsible for user administration for all T2S system users of the T2S party of a specific CSD, including the assignment/de-assignment of roles and privileges.

4.3.2 T2S party business user

Reference ID	T2S.04.100

The scope of functions and processes that a T2S party business user can access shall depend on the business services provided by the CSD. However, the data access of a T2S party shall be limited to its own accounts, positions and transactions.

4.4 Business role NCB

Reference ID	T2S.04.110

The NCB role classification shall include all T2S system users of a NCB as a liquidity provider through T2S dedicated cash accounts.

4.4.1 NCB system administrator

Reference ID	T2S.04.120

The NCB system administrator role shall be responsible for

- the user administration for all T2S system users of the NCB, including the assignment/de-assignment of roles and privileges;
- the configuration of roles with a set of privileges for the T2S system users of the NCB's participating payment banks;
- and the configuration of groups of secured static data objects with a set of individual secured static data objects for the T2S system users of the NCB's T2S parties.

4.4.2 NCB business user

Reference ID	T2S.04.130

The NCB business user role describes all T2S system users in NCBs that require access to the static and transactional data of payment banks operating T2S dedicated cash accounts. The role shall enable the T2S system user of the NCB to:

- maintain the payment banks with dedicated T2S cash accounts as T2S parties;
- maintain the limits for payment banks on T2S dedicated cash accounts;

- query all T2S dedicated cash accounts for which the NCB is responsible;
- query the credit line utilisation on T2S dedicated cash accounts;
- grant/revoke a CSD the privilege of querying T2S dedicated cash account balances;
- identify the postings resulting in the utilisation of liquidity;
- identify the expected postings of cash on a T2S dedicated cash account;
- identify the owner of every T2S dedicated cash account;
- identify the cash leg of a settlement instruction(s), posted on the T2S dedicated cash account by providing a unique transaction reference;
- and query the balances and postings on T2S dedicated cash accounts for which the NCB is responsible.

However, it will not be possible for the NCB to query the settlement instructions, securities transactions and securities positions of a T2S securities account unless the CSD participant and the CSD have granted this privilege explicitly to an NCB for the securities account. This also includes the securities leg associated with a cash posting.

4.5 Business role payment bank

Reference ID	T2S.04.140

The payment bank role includes all T2S system users of payment banks that require access to the T2S dedicated cash account balances and postings of the T2S dedicated cash accounts they provide for the purpose of securities settlement.

4.5.1 Payment bank system administrator

Reference ID	T2S.04.150

The system administrator role for payment banks shall be responsible for the user administration of the T2S system users of the payment bank, including the assignment/de-assignment of roles and privileges.

4.5.2 Payment bank business user

Reference ID	T2S.04.160

The business user role for payment banks includes all T2S system users of payment banks providing a T2S dedicated cash account for securities settlement. The role shall enable the T2S system user of the payment bank to:

- maintain the limits for payment banks on T2S dedicated cash accounts;
- grant/revoke a CSD the privilege of querying its T2S dedicated cash account balances;
- maintain standing instructions for the transfer of liquidity between the relevant RTGS account and the T2S dedicated cash account(s);

- query all its T2S dedicated cash accounts and the balances on those accounts;
- query the credit line utilisation on T2S dedicated cash accounts;
- query the postings resulting in the utilisation of liquidity;
- maintain limits for banks using their T2S dedicated account(s) for securities settlement;
- query the corresponding securities transaction of a cash posting against the T2S dedicated cash account(s);
- and query the balances and postings on its T2S dedicated cash account(s).

It will not be possible for the payment bank to query the settlement instructions, securities transactions securities positions of a T2S securities account unless the CSD participant and the CSD have granted this privilege explicitly to the payment bank for the securities account. This also includes the securities leg associated with a cash posting.

USER REQUIREMENTS

CHAPTER 5

INSTRUCTION LIFE CYCLE MANAGEMENT AND MATCHING REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

5 Instruction life cycle management and matching requirements

This chapter focuses on the life cycle of settlement instructions within T2S and the management of these instructions by T2S actors. It analyses the life cycle of an instruction, the different paths through the system that it can take and the life cycle status attached to each of these paths ("validated", "rejected", "matched", "unmatched", etc.).

The chapter consists of seven sections.

Section 5.1 provides a high-level overview of the different processes in life cycle management and matching.

Section 5.2 presents the different instruction and life cycle types in T2S.

Section 5.3, which looks at business validations, describes the consistency and authorisation checks that the incoming instructions have to pass in order for T2S to accept them for further processing.

Section 5.4, which looks at instruction maintenance, covers the different processes in managing settlement instructions.

Section 5.5, which looks at matching, details the procedure which ensures that T2S can rely on instructions from T2S actors agreeing the settlement-relevant terms of each transaction.

Section 5.6, which looks at settlement eligibility, defines the conditions that a settlement instruction must fulfil in order to be eligible for settlement in T2S.

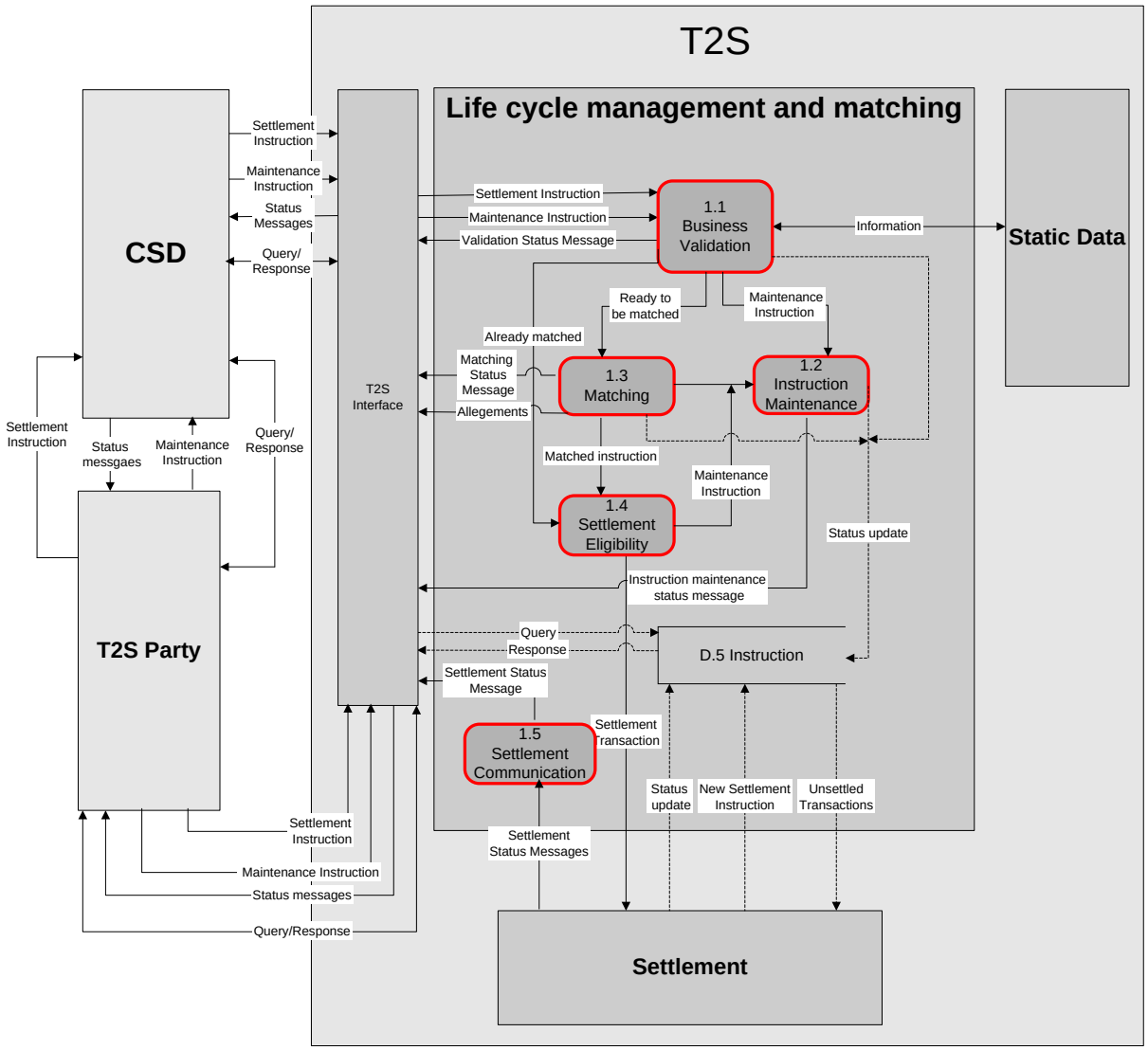
Section 5.7 provides examples of life cycle and transaction types.

5.1 High level description of life cycle management and matching

This diagram depicts the different high-level processes and interactions of the life cycle management and matching of T2S (LCMM), as well as various T2S actors and other T2S components. It does not seek to pre-empt any future decision on the IT design and technical implementation of T2S.

Life cycle management and matching consists of four main processes (validation, instruction maintenance, matching and settlement eligibility) and a communication function, as set out in the following diagram (see also the overall T2S diagram in Chapter 2).

Figure 5-1: Life cycle management and matching



1.1 Business Validation

Validation is the process of checking the consistency of instructions sent to T2S. These consistency checks[1] ensure that the incoming instruction is consistent with T2S static data. LCMM immediately validates all incoming instructions received during the opening day on the basis of a harmonised set of validation rules (see Section 5.3). After validation, the status of the instruction is either "accepted" or "rejected". LCMM forwards validated instructions either for matching or for settlement eligibility. Incoming instructions can be one of the three following types: "ready for matching", "matched" or "matching not required".

Input

[1] Throughout Chapter 5, "validation" is understood as "business validation". It must be distinguished from the format and syntax checks performed by the interface module ("technical validation") before instructions enter the life cycle management and matching process.

Input	
Settlement instruction	From CSD or directly connected T2S party
Maintenance instruction	From CSD or directly connected T2S party
Information	Information taken by T2S from static data

Output	
Information	Requesting information in static data which is required for validation
Validation status message	Responses to CSD/directly connected T2S party regarding instruction status (“accepted” or “rejected”)
Settlement instruction	Accepted settlement instruction forwarded to the matching process
Maintenance instruction	Forwarded to instruction maintenance
Already matched instruction/matching not required	Forwarded to the settlement eligibility process
Status update	Status update in the instruction data store

1.2 Instruction maintenance

Instruction maintenance consists of instructions to amend, cancel, hold or release a settlement instruction. T2S shall only allow the modification of process indicators. The amendment of process indicators is possible until settlement or cancellation.

Any T2S party or CSD may cancel its instructions unilaterally prior to matching.

Once matching has occurred, T2S actors can cancel instructions only bilaterally, i.e. both parties must send a cancellation instruction (“binding matching”) for the cancellation to take effect.

T2S will provide hold and release mechanisms. T2S parties and CSDs can use these mechanisms on a voluntary basis. These mechanisms allow T2S parties and CSDs to hold or release instructions prior to settlement.

Input	
Maintenance instruction	Maintenance of instruction from validation process

Output	
Instruction maintenance	Amending, cancelling or holding/releasing instructions
Maintenance instruction status message	Status message sent to CSD or directly connected T2S party after the maintenance attempt on an instruction
Status update	Status update sent to the instruction data store

1.3 Matching

Matching in securities settlement is the process of comparing the settlement details provided by the buyer and the seller of securities in order to ensure that they agree on the settlement-related terms of the transaction. T2S provides real-time matching facilities throughout the operating day (except for maintenance windows). Following a matching attempt, the instruction is given the status “matched” or “unmatched”. T2S provides information to the instructing parties on the result of the matching process.

Input	
Accepted settlement instruction	From validation process

Output	
Matching status message	Matching status message to CSD/directly connected T2S party
Matched instruction	Forwarding matched instruction to the settlement eligibility process
Status update	Status update in the instruction data store
Allegements	If the counterpart’s instruction is not in T2S

Data store	
D.1 Instruction data store	1) This data store contains details of the status of an instruction as it changes in the course of its life cycle. 2) This status is updated after validation, matching, instruction maintenance and settlement. 3) The instructing parties and T2S actors can query the status of their instructions throughout their life cycle in T2S. 4) Where settlement triggers auto-collateralisation, T2S creates a new settlement instruction. 5) LCMM submits unsettled settlement instructions which are still eligible for

Data store	
	settlement to the settlement process for future settlement.

1.4 Settlement eligibility

The settlement eligibility process performs the final validation regarding the settlement date, the status of the instruction (on hold or other), etc. before an instruction is submitted to the settlement process. T2S applies a harmonised set of settlement eligibility rules (see Section 5.6).

Input	
Matched instruction	From matching process
Already matched instruction/Matching not required	From validation process

Output	
Instruction to be settled	Forwarded to the settlement process.

1.5 Communication of settlement status

The communication function receives the settlement status message from LCMM and forwards it to the T2S interface for transmission to the directly connected T2S parties and CSDs as per the message subscription service (see Chapter 13).

Input	
Settlement status message	Received after each settlement attempt

Output	
Settlement status message	Forwarded to the interface function

In addition, T2S informs directly connected T2S parties and CSDs of the result of all life cycle processes and the subsequent statuses of the instructions. T2S immediately notifies the relevant directly connected T2S parties and CSDs of any changes to the status of instructions.

T2S shall provide multiple-statuses reporting that gives more flexibility and brings more efficiency than single-status reporting.

In this context, T2S shall provide the values of the different statuses for each instruction in a status message.

T2S communicates the rejection, failure or cancellation of instructions together with the reason.

T2S reports any unsuccessful attempt to act on a settlement instruction to the relevant directly connected T2S party or CSD, together with the reason for the failure.

As noted above, T2S provides allegement facilities.

Chapter 13 describes the messages that T2S provides. The T2S message subscription allows directly connected T2S parties and CSDs to customise their information needs in relation to content, frequency, automation, etc.

5.2 Instruction and life cycle types

This section introduces the different instruction types and the various life cycles that a specific instruction type may go through in T2S. The term "life cycle" refers to the set of processes that the instruction goes through between its receipt in T2S and its settlement.

5.2.1 Instruction types

The instruction types covered by T2S are the following:

- **FOP** (free of payment) consists of DFP (deliver free of payment) and RFP (receive free of payment). In both cases, securities are delivered/received without payment being made.
- **DVP** (delivery versus payment) and RVP (receive versus payment) define an exchange of securities for cash.
- **DWP** (deliver with payment) defines the delivery of cash and securities from one party to another. For example, trade netting by a CCP may result in such instructions.
- **PFOD** (payment free of delivery) defines an exchange of cash without the delivery of securities.
- **Settlement restriction** (the action of setting or removing a settlement restriction) comprises the blocking, earmarking and reservation of positions within the overall position in a security in a securities account as well as the blocking and reservation of a cash balance in a T2S dedicated cash account.

Please refer to the glossary for a precise definition of instruction types.

In T2S, an instruction type may result in different life cycle types, depending on a number of different attributes, such as the ISO transaction code and the type of instructing party (CSD or CSD participant).

5.3 Validation

Validation is the process of checking whether the instruction is valid for forwarding to the matching process or the settlement process once the system has successfully validated its format and syntax.

5.3.1 Validation of incoming settlement instructions

Decisional table

Reference ID	T2S.05.010

To process an instruction, T2S shall consider the information included in the instruction and other attributes. The information considered includes:

- the instruction type;
- the instructing party;
- the ISO transaction code;
- other information from the static data (e.g. on ownership of the accounts).

A set of attributes from which T2S cannot derive the complete processing shall result in the rejection of the instruction.

Harmonised set of validation rules

Reference ID	T2S.05.020

T2S shall validate all incoming instructions. T2S shall apply a set of harmonised validation rules. This section includes a non-exhaustive list of detailed validation requirements. After encountering the first negative validation result, T2S shall continue to validate as far as possible (taking into account potential independencies between the validated data) and report all negative results together in a single message. Only after performing all logically possible validations shall T2S reject the instruction.

Duplicate check

Reference ID	T2S.05.030

T2S shall check for and reject duplicate/multiple submission of new instructions on the basis of a combination of the T2S actor identifier and the instruction reference assigned by the instructing party. In doing so, the duplicate check will compare each incoming instruction with the instructions that are not settled or not cancelled yet and those instructions settled or cancelled in the past predetermined period of 3 calendar months.

T2S shall also check and reject duplicate/multiple submission of instruction pool references on the basis of a combination of the Pool owner identifier and the pool reference assigned by the instructing party. In doing so, the duplicate check will compare each incoming instruction with the instructions that are not settled yet and those instructions settled in the past predetermined period of 3 calendar months.

Mandatory fields

Reference ID	T2S.05.035

T2S shall check the existence of the following fields depending on the instruction type:

- intended settlement date;
- trade date;
- currency;
- settlement amount as defined in the ISO 20022 standards;
- share quantity (for equities) or nominal amount (for fixed income securities);

- buy/sell;
- ISIN;
- BIC of the counterpart delivering the securities;
- BIC of the counterpart receiving the securities;
- CSD of the counterpart[2];
- deliverer's securities account (to be included only by delivering party);
- receiver's securities account (to be included only by the receiving party).

These fields shall be validated only if the fields are mandatory for the specific instruction type in question.

Proxy check

Reference ID	T2S.05.040

If the instructing party is not the owner of the account, T2S shall check that it is authorised to send instructions on behalf of the account owner.

Securities account check

Reference ID	T2S.05.050

When T2S receives an instruction, T2S shall check that the T2S party concerned has a securities account in the corresponding CSD in T2S and is authorised to use it.

Note: the settlement function performs the same validation again on the intended settlement date.

Cash account check

Reference ID	T2S.05.060

T2S shall check the authorisations related to the cash accounts for payments in T2S. In the event of securities-related settlement, T2S shall verify that the cash account for the cash leg of the securities settlement has a link with the securities account or with the T2S party holding the securities account.

Rejection of instructions where the cash or securities account is flagged as being under insolvency proceedings

Reference ID	T2S.05.065

T2S shall trigger the rejection of incoming settlement instructions on a T2S dedicated cash account or a securities account that has been flagged as being under insolvency proceedings, when those settlement instructions are intended to either debit the T2S Dedicated Cash Account or to debit the T2S securities account of the insolvent party.

[2] T2S shall investigate the removal of the CSD of the counterpart as a mandatory field before the go-live of T2S.

Currency check

Reference ID	T2S.05.070

T2S shall check that the settlement currency is valid in accordance with the list of currencies defined by the standard ISO 4217 (codes for the representation of currencies and funds). T2S shall check that the currency of the cash leg of an instruction is a T2S settlement currency. T2S shall check that the currency of the cash leg is the same as the currency of the cash account. T2S shall not perform both checks on FOP instructions, even where the field for the settlement amount contains a value.

ISIN check

Reference ID	T2S.05.080

T2S shall check that the ISIN exists and that it is eligible for settlement in the corresponding CSD on the intended settlement date. Nevertheless, T2S shall allow CSDs to send instructions for non-settlement eligible ISIN(s) as long as they are still active (not logically deleted).

Minimum settlement unit check

Reference ID	T2S.05.090

T2S shall check the settlement unit against the minimum settlement unit or nominal when the quantity is greater than zero.

Multiple or deviating settlement unit check

Reference ID	T2S.05.100

T2S shall check against the multiple or deviating settlement unit or nominal. T2S shall not perform this check on some instructions related to corporate actions. Nevertheless, T2S shall always check that the number of decimals in the settlement quantity of an instruction is not higher than the number of decimals defined in the multiple settlement unit.

Trade date check

Reference ID	T2S.05.110

T2S shall check that the trade date is identical to or earlier than the intended settlement day.

Intended settlement date check

Reference ID	T2S.05.120

T2S shall check that the intended settlement date is a T2S settlement day for the settlement currency and that the intended settlement date falls into the time period in the past after which and in the future prior to which T2S shall accept a settlement instruction.

Market-specific restriction check

Reference ID	T2S.05.125

T2S shall check whether a restriction type applies to the settlement instruction or to an instruction for an intra-position movement to determine its further processing in T2S by checking whether the information from the instruction matches to a rule and parameter defined in any of the restriction types. If the validation process finds a match for a restriction type, then validation shall apply restriction type according to its configuration and shall perform no subsequent checking of any rules and matrices for that restriction type.

Eligible Counterpart CSD Validation

Reference ID	T2S.05.126

In case the issuer CSD is not on T2S, T2S shall verify that

- the CSD of the T2S Party allows settlement for the security with the CSD of the counterpart in the settlement instruction and
- the CSD of the counterpart in the settlement instruction allows settlement with the CSD of the T2S Party.

T2S shall validate the information in the settlement instruction against the data in the eligible Counterpart CSD entity as defined by T2S.16.910 and T2S.16.920.

Automatic hold of instruction for additional validation or processing by the CSD

Reference ID	T2S.05.127

T2S shall hold a settlement instruction, including T2S internally generated realignment settlement instructions, automatically for additional validation or processing by the CSD when the settlement instruction fulfils predefined conditions of a restriction type (see section 11.10.2 – Restriction Processing Type = “CSD Validation Hold”), requiring T2S to hold the settlement instruction. The settlement instruction in T2S shall support a dedicated attribute CSD Validation Hold/Release Status to manage the CSD validation hold and release independently from the CSD hold and release. T2S shall only allow the CSD that defined such restriction for itself to release the settlement instruction.

Rejection of instruction based on market-specific restriction

Reference ID	T2S.05.128

T2S shall reject a settlement instruction or an instruction for an intra-position movement automatically when the settlement instruction fulfils predefined conditions of a restriction type of a CSD, requiring T2S to reject the settlement instruction (see section 11.10.2 – Restriction Processing Type = “Rejection”).

Acceptance of instructions where the parties, accounts or securities are blocked from settlement

Reference ID	T2S.05.129

T2S shall accept a settlement instruction or an instruction for an intra-position movement when a specific restriction blocks from settlement

- the T2S dedicated cash account through a restriction on the NCB as a party operating the T2S dedicated account;
- the T2S dedicated cash account through a restriction on the RTGS account to which the T2S dedicated cash account is linked;
- the T2S dedicated cash account through a restriction on the settlement bank/payment bank owning the T2S dedicated cash account;
- the T2S dedicated cash account;
- the security;
- the securities account through a restriction on the CSD as a party operating the securities account;
- the securities account through a restriction on the CSD participant as a party operating the securities account;
- or the securities account.

Process indicator check

Reference ID	T2S.05.140

T2S shall check that settlement-related process indicators are valid for the type of instruction and the instructing party in question.

The settlement-related process indicators will be used to perform certain actions in the settlement of an instruction.

T2S shall also allow T2S actors to make use of the non-settlement-related link indicator “INFO” to link instructions for information purposes.

Process indicator check for partial settlement

Reference ID	T2S.05.141

It shall be possible for CSD participants and CSDs to specify whether or not partial settlement of a settlement instruction is allowed by making use of the partial settlement indicator (possible values: “Yes” and “No”).

Process indicator check for auto-collateralisation

Reference ID	T2S.05.143

It shall be possible for T2S actors to allow auto-collateralisation for a settlement instruction by making use of the auto-collateralisation indicator.

Further information about the use of the auto-collateralisation indicator can be found in Chapter 8.

Process indicator check for setting settlement priority

Reference ID	T2S.05.145

It shall be possible for T2S actors to assign different levels of settlement priority to their instructions.

Further information about the different levels of settlement priority can be found in Section 7.2.2 on prioritisation (T2S.07.130 – T2S.07.200).

Process indicator check for linking instructions

Reference ID	T2S.05.147

It shall be possible for T2S actors to link their own instructions by making use of the ISO settlement link indicators After ("AFTE"), Before ("BEFO") and all-or-none ("WITH"). These link indicators will be used in the settlement process.

After means that an instruction has to be settled after or at the same time as the linked instruction.

Before means that an instruction has to be settled before or at the same time as the linked instruction.

All-or-none means that an instruction has to be settled at the same time as the linked instruction.

The settlement of linked transactions is described in detail in Section 9.2.1.

Validation of connected settlement instructions

Reference ID	T2S.05.148

If an instruction is linked to one or more linking instructions with After ("AFTE"), Before ("BEFO"), or all-or-none ("WITH"), T2S shall check that the information contained in the new instruction is consistent with the present linked instructions (i.e. intended settlement date and securities account holder).

If an instruction is linked to a settlement restriction previously sent, T2S shall check that initial restriction is still active (i.e. the restriction is still in place). Section 10.1.3 provides further information on settlement restrictions.

Issuing date check

Reference ID	T2S.05.150

In the case of securities traded on grey markets, T2S shall check that the intended settlement date is identical to or later than the intended issue date. This check shall not apply for technical housekeeping instructions sent by the issuer CSD (e.g. to prepare for issuance).

Validation check when an external CSD is present

Reference ID	T2S.05.160

T2S shall perform some minimum validations required for instructions involving at least one external CSD. T2S shall not validate information regarding CSD participants in the external CSD, even though these instructions will contain such information.

See chapter 2 on cross-CSD settlement and external CSDs for further information about external settlement.

Already matched instructions

Reference ID	T2S.05.170

Already matched instructions must enter T2S as a single instruction containing the information of the two counterparties. T2S shall create two separate instructions with the same unique matching reference.

Cross-CSD settlement identification for a matched pair of settlement instructions

Reference ID	T2S.05.174

When T2S receives a matched pair of settlement instructions, it shall check whether the instructions are requiring realignment instructions on other accounts (e.g. on the accounts of the issuer CSD). When T2S identifies the need to realign, T2S shall generate the required realignment instructions, based on the cross-CSD links in static data, at the same moment it creates the matched pair of settlement instructions. T2S shall validate the realignment instruction and automatically link all settlement instructions to ensure all-or-none settlement.

Two DVP instructions linked for settlement eligibility purposes

Reference ID	T2S.05.186

T2S actors may link two DVP instructions that include specific ISO transaction codes (such as a repurchase agreement or other defined types) by any of the links specified in requirement T2S.05.148.

If those two DVP instructions have the same intended settlement date, T2S actors may make use of the hold and release mechanism in order to space out the eligibility of both instructions.

ISO transaction code

Reference ID	T2S.05.200

T2S actors may make use of the ISO transaction codes set out under ISO 20022 (e.g. TRAD, SECL and REPU).

Validation of maintenance instructions

Reference ID	T2S.05.210

In the event of instructions being held/released, cancelled or amended, T2S shall check that the previous or related reference is present and that the instruction with that reference exists. T2S shall check that the maintenance instruction is valid and consistent with the previous or related instruction.

T2S shall allow T2S actors to make use of both the previous reference (i.e. instructing party's reference) and the related reference (i.e. T2S internal reference assigned to the instruction by T2S).

Instructing party check for instruction maintenance purposes

Reference ID	T2S.05.220

T2S shall identify the instructing party for any settlement instruction for the purposes of instruction maintenance (see Section 5.4 below).

Non-settlement-related information

Reference ID	T2S.05.230

T2S shall neither validate nor match non-settlement-related information added to instructions by T2S actors for their own ends.

Corporate action reference for corporate action related settlement instructions

Reference ID	T2S.05.235

T2S shall allow the indication of a corporate action reference in a settlement instruction, if the settlement instruction relates to a corporate action.

Status after validation

Reference ID	T2S.05.240

After the validation process, instructions entering T2S as “to be matched” shall be given the status “accepted” or “rejected”. Instructions entering T2S as “already matched” (e.g. pre-matched trades in CSDs) shall be given the status “rejected” or “matched”.

Information provided after validation

Reference ID	T2S.05.250

T2S shall inform T2S actors regarding the outcome of the validation process and will indicate the reason for the rejection of any instruction.

Full audit trail

Reference ID	T2S.05.270

T2S shall keep an audit trail documenting events and status changes during the entire life cycle of an instruction. This shall indicate the date and time of every change and the unique identifier of the T2S system user making the change (see Chapter 16 for further information).

5.3.2 Revalidation of instructions owing to updates of static data

Revalidation after changes in data

Reference ID	T2S.05.280

T2S shall revalidate both the content and the settlement eligibility of all relevant pending instructions when settlement-related static data have changed. T2S shall cancel the instructions that do not pass the revalidation and inform both the CSD and the instructing party of the result of the revalidation.

5.4 Instruction maintenance

Instruction maintenance is the process of amending, cancelling, holding and releasing settlement instructions.

Availability of instruction maintenance

Reference ID	T2S.05.290

CSD participants may use the instruction maintenance function regardless of whether the CSD or T2S matches their instructions.

Authorisation check for instruction maintenance

Reference ID	T2S.05.300

T2S shall allow CSDs or an authorised CSD participant to define settlement instructions instructed by them as being modifiable or non-modifiable by the CSD participants. This indication will define the ability of CSD participants to hold, release, amend or cancel these settlement instructions.

Instruction maintenance by an authorised CSD participant

Reference ID	T2S.05.310

T2S shall allow CSDs to hold, release, amend and cancel their participants' instructions until actual settlement occurs.

T2S shall allow an authorised CSD participant to hold, release, amend and cancel instructions generated by them for another T2S Party until actual settlement occurs, provided that they have been granted power of attorney by those T2S Parties.

5.4.1 Hold and release mechanisms

Hold and release mechanisms allow CSD participants and CSDs to hold back or release instructions for settlement. They allow CSD participants to match and confirm the settlement terms of any transaction without initiating actual settlement. T2S actors may send maintenance instructions to hold and release as many times as required.

Hold and release mechanism availability

Reference ID	T2S.05.350

T2S shall provide a hold and release mechanism. CSD participants and CSDs may use this mechanism on a voluntary basis. T2S shall support the hold and release of partially settled instructions.

Hold and release mechanism check

Reference ID	T2S.05.360

T2S shall only allow the T2S actor that has put an instruction on hold to release it. If there are two hold instructions for the same instruction (one by the CSD participant and one by the CSD), release instructions must also come from both.

Hold and release mechanism until settlement occurs

Reference ID	T2S.05.370

A T2S actor may hold instructions until actual settlement occurs, and even beyond the intended settlement date. T2S shall consider all instructions on hold at the end of the intended settlement date as having failed and recycle them according to the T2S recycling rules for unmatched and matched instructions (see T2S.05.430 and T2S.05.460).

Rejection of an instruction to hold

Reference ID	T2S.05.380

T2S shall cancel an instruction to hold a settlement instruction if T2S already has settled the settlement instruction. T2S shall inform the instructing party accordingly.

Information on execution or cancellation of a hold/ release instruction

Reference ID	T2S.05.385

T2S shall inform the instructing party, as well as interested parties authorised to access this information, immediately after the successful execution or cancelled execution of a hold or release instruction on a settlement instruction through a status advice. When T2S cancels the execution of the hold or release, it will provide the reason for cancelling the execution in a status advice.

5.4.2 Amendment of instructions

Amendment options

Reference ID	T2S.05.390

T2S shall allow T2S System Users to amend process indicators until an instruction settles partially or fully, or cancellation occurs. Nevertheless, T2S only shall allow T2S System Users to amend the settlement priority of the pending part of the partially settled instruction.

No calculations foreseen

Reference ID	T2S.05.400

T2S shall not perform any calculations. CSD participants and CSDs are responsible for amending instructions before settlement where necessary.

T2S may amend instructions only by filling in default values (e.g. default accounts) from static data.

Information on execution or cancellation of an amendment instruction

Reference ID	T2S.05.405

T2S shall inform the instructing party, as well as interested parties authorised to access this information, immediately after the successful execution or cancelled execution of an amendment instruction on a settlement instruction through a status advice. When T2S cancels the execution of the amendment, it will provide the reason for cancelling the execution in a status advice.

5.4.3 Cancellation of instructions

Cancellation check

Reference ID	T2S.05.420

T2S shall verify both that the instruction that the T2S actor wishes to cancel exists in T2S and that its cancellation is possible. T2S actors' ability to cancel their instructions depends both on the status of the instruction and on the type of transaction. T2S shall support the cancellation of the pending part of the partially settled instructions.

Cancellation of unmatched instructions

Reference ID	T2S.05.430

T2S shall cancel unmatched instructions on the latest date between either 20 working days after the intended settlement date or the date of the last status change in accordance with the ESSF/ECSDA recommendation. The last status change shall be any change in the business status of the instruction (including generation of an instruction). T2S shall inform the instructing party when T2S cancels unmatched instructions.

Unilateral cancellation

Reference ID	T2S.05.440

T2S shall allow CSD participants to cancel settlement instructions unilaterally prior to matching.

Bilateral cancellation

Reference ID	T2S.05.441

T2S shall allow only bilateral cancellations for matched instructions, i.e. both parties must send a cancellation instruction ("binding matching").

Matching of cancellation instructions

Reference ID	T2S.05.442

T2S shall cancel both settlement instructions when it matches both instructions to cancel the settlement instructions and T2S has not settled the instructions in the meantime.

T2S matching exceptions for cancellation instructions

Reference ID	T2S.05.443

T2S shall not match cancellation instructions that enter T2S, specified as “already matched” in a processing attribute for a settlement instruction.

Match status of a cancellation instruction

Reference ID	T2S.05.444

T2S shall assign the cancellation instruction the match status “matched” when T2S successfully accepts (creates) an already matched cancellation instruction. T2S shall assign the settlement instruction the match status “unmatched” when T2S successfully accepts (creates) an unmatched cancellation instruction. T2S shall assign an unmatched cancellation instruction the match status “matched” after T2S matches it successfully.

Confirmation of cancellation

Reference ID	T2S.05.445

T2S shall inform the originator of a cancellation instruction when the cancellation instruction is either executed (i.e. cancellation of the settlement instruction was successful) or cancelled (i.e. settlement instruction could not be cancelled).

Allegement of cancellation

Reference ID	T2S.05.446

For bilateral cancellation, T2S will check whether the cancellation instruction from the counterpart exists. If the counterpart instruction does not exist, then

- the cancellation instruction will remain pending until it matches with a valid counterpart cancellation instruction;
- and T2S will send an allegement for the cancellation to the counterpart of the settlement instruction.

Deadline for cancellation

Reference ID	T2S.05.450

T2S shall allow the cancellation of instructions until actual settlement occurs. In the event that settlement fails, T2S shall cancel instructions if there is a pending (bilateral) cancellation instruction before reforwarding the instruction for settlement.

Cancellation instructions shall stay in the system and await the cancellation instruction of the counterpart when bilateral cancellation is required. T2S shall cancel a cancellation instruction upon settlement of the underlying settlement instruction and inform its sender that the cancellation was not successful.

Recycling and cancellation of matched instructions

Reference ID	T2S.05.460

T2S shall recycle all unsettled matched instructions from any T2S actor for an indefinite period of time.

Cancellation of CoSD

Reference ID	T2S.05.470

T2S shall allow an administering party to cancel an instruction unilaterally for conditional securities delivery (CoSD) (e.g. when one of the parties does not fulfil the external condition for settlement), even after T2S has blocked the relevant securities holding for a CoSD.

T2S parties may also request the cancellation of a instruction that triggers a CoSD after the CoSD blocking but T2S will only cancel the instruction upon an additional cancellation request by the administering party. In this respect, T2S shall inform the administering party when both T2S parties send a cancellation instruction.

If a CoSD involves more than one administering party, the CoSD settlement instruction will remain pending unless T2S receives cancellation from each administering party in conditional settlement of the instruction. When T2S has received the cancellation request from all administering parties, then T2S will process the cancellation.

Status after cancellation

Reference ID	T2S.05.480

The instruction is given the status “cancelled” after successful cancellation. T2S shall inform relevant parties of the reason for the cancellation.

5.5 Matching

“Matching” is the process of comparing the settlement details provided by the buyer and the seller of securities in order to ensure that they agree on the settlement terms of the transaction. Matching is in any event a service offered and charged by CSDs to their users (irrespective of whether it takes place in T2S or in a CSD).

T2S shall provide a full matching functionality. The T2S matching process will be a specific functionality compliant with ECSDA rules.

Instructions may enter T2S either as “to be matched” or as “already matched”. Instructions entering T2S as “already matched” must comply with the T2S matching rules. When instructions enter T2S as “already matched”, there should be no disruption to the settlement process on account of the matching location.

In this context, when a CSD takes the business decision to retain/adapt/develop its matching functionality, two possibilities exist:

- A participant connects directly to T2S: Matching will take place in T2S.
- A participant connects indirectly to T2S: CSDs must have the means of ascertaining immediately whether or not they can match both sides internally. Where this is not the case, CSDs will forward the instruction immediately to T2S in order to ensure early matching.

Although this is not a T2S user requirement, its implementation in the systems of the participating CSDs is necessary in order to ensure the functional operability of the following user requirements.

The requirement shall exclude certain types of transaction that require matching by the CSD:

- external settlement;
- value-added services such as securities lending;
- potentially non-fungible securities/registered shares.

Note: Instructions from stock exchanges, trading platforms and CCPs may enter the T2S settlement process either directly or through a CSD.

5.5.1 Requirements related to matching

Continuous real-time matching facilities

Reference ID	T2S.05.490

T2S shall provide real-time matching facilities throughout the settlement day (as defined in Chapter 3). However, matching shall not be available during the maintenance window.

T2S matching exceptions

Reference ID	T2S.05.500

T2S shall not match instructions that enter T2S with the status “already matched” (e.g. pre-matched trades in CSDs, corporate actions-related instructions) or “matching not required” (e.g. settlement restrictions).

Match status

Reference ID	T2S.05.520

T2S shall assign the settlement instruction the match status “matched” when T2S successfully accepts (creates) an already matched settlement instruction. T2S shall assign the settlement instruction the match status “unmatched” when T2S successfully accepts (creates) an unmatched settlement instruction. T2S shall assign an unmatched instruction the match status “matched” after T2S matches it successfully.

Cross-CSD settlement identification for when a pair of settlement instructions match

Reference ID	T2S.05.528

When T2S matches a pair of settlement instructions, it shall check whether the instructions are requiring realignment instructions on other accounts (e.g. on the accounts of the issuer CSD). When T2S identifies the need to realign, T2S shall generate the required realignment instructions, based on the cross-CSD links in

static data, at the same moment it creates the matching information for the settlement instructions. T2S shall validate the realignment instruction and automatically link all settlement instructions to ensure all-or-none settlement.

Information provided after matching

Reference ID	T2S.05.530

T2S shall inform T2S actors regarding the outcome of the matching.

Allegement facilities for matching

Reference ID	T2S.05.540

T2S shall send an allegement message for any unmatched instruction after the first unsuccessful matching attempt where this was because of a missing counterpart instruction. However, T2S shall send the allegement only after having waited for the missing counterpart instruction for a predetermined period.

T2S shall send an allegement cancellation for a previously sent allegement when that allegement is no longer valid as the result of a cancellation by the sender of the settlement instruction that T2S alleged.

T2S shall send an allegement removal for a previously sent allegement when that allegement is no longer valid because of T2S matching the settlement instruction.

Cancellation of matched instructions

Reference ID	T2S.05.560

Matched instructions shall remain matched until actual settlement occurs, except in cases described in the user requirements related to cancellation rules (Section 5.4.3).

5.5.2 Mandatory matching fields

Mandatory matching fields

Reference ID	T2S.05.570

Mandatory matching fields are those instruction fields that T2S matches in instructions. The instruction type (DVP, DWP or FOP) shall determine the mandatory matching fields. The current list of mandatory matching fields is documented in the table below.

DVP / DWP	**FOP**[3]
Instruction type code	Instruction type code
Intended settlement date	Intended settlement date

[3] In line with current market practices, in T2S DVD instructions will consist of two linked FOP instructions (link between a RFOP and a DFOP).

DVP / DWP	FOP[3]
Trade date	Trade date
Currency	
Settlement amount	
Share quantity (for equities) or nominal amount (for fixed income securities)	Share quantity (for equities) or nominal amount (for fixed income securities)
Buy/sell	Deliver/receive
ISIN code	ISIN code
BIC of the counterpart delivering the securities	BIC of the counterpart delivering the securities
BIC of the counterpart receiving the securities	BIC of the counterpart receiving the securities
CSD of the counterpart[4]	CSD of the counterpart

Tolerance amount for matching

Reference ID	T2S.05.580

T2S shall match the settlement amount with a certain tolerance level (i.e. in the event that there is no perfect match). The tolerance amount shall have two different bands per currency, depending on the countervalue, in line with ECSDA rules. Once T2S has matched two instructions with a difference in the settlement amount that is less than the tolerance amount, T2S shall settle the instruction with the seller's settlement amount.

For example, the general tolerance amount proposed by the ECSDA for matching the settlement amount field in euro is currently €25 when the countervalue is above €100,000 or €2 when it is €100,000 or less.

5.5.3 Non-mandatory matching fields

Non-mandatory matching fields

Reference ID	T2S.05.590

T2S shall support non-mandatory matching fields. Non-mandatory matching fields are fields in the settlement instruction that T2S matches when they are present. There are two types of non-mandatory matching fields:

1. An "additional matching field" is non-mandatory matching attribute of a settlement instruction, which becomes a mandatory matching criterion when either of the parties in its settlement instruction provides a value for the attribute.

[4] T2S shall investigate the removal of the CSD of the counterpart as a mandatory matching field before the go-live of T2S.

The exhaustive list of additional matching fields can be found in the table below.

DVP	FOP
Opt-out ISO transaction condition indicator	Opt-out ISO transaction condition indicator
Ex/cum ISO transaction condition indicator	Ex/cum ISO transaction condition indicator
n/a	Currency
n/a	Settlement Amount
n/a	Credit/Debit

The possible scenarios for the opt-out ISO transaction condition indicator are as follows:

Deliverer's instruction	Receiver's instruction	T2S platform action
Blank	Blank	matching
Opt-out	Blank	No matching
Blank	Opt-out	No matching
Opt-out	Opt-out	matching

The possible scenarios for the ex/cum ISO transaction condition indicator are as follows:

Deliverer's instruction	Receiver's instruction	T2S platform action
blank	blank	Matching
ex	ex	Matching
ex	blank	No matching
blank	ex	No matching
cum	ex	No matching
ex	cum	No matching
cum	cum	Matching
cum	blank	No matching
blank	cum	No matching

2. An "optional matching field" is a non-mandatory matching attribute of a settlement instruction, which becomes a mandatory matching criterion when both parties provide a value for the attribute in their settlement instructions.

The exhaustive list of optional matching fields can be found in the table below.

DVP	FOP
Common trade reference	Common trade reference
Client of delivering CSD participant[5] (the data type of the field shall be in line with the ISO 20022 standard definition)	Client of delivering CSD participant[5] (the data type of the field shall be in line with the ISO 20022 standard definition)
Client of receiving CSD participant (the data type of the field shall be in line with the ISO 20022 standard definition).	Client of receiving CSD participant (the data type of the field shall be in line with the ISO 20022 standard definition).
T2S securities account number of the delivering party	T2S securities account number of the delivering party
T2S securities account number of the receiving party	T2S securities account number of the receiving party

5.6 Settlement eligibility

A settlement eligibility check is necessary to select the suitable instructions for the settlement process. The settlement eligibility check considers the intended settlement date, the matching status and the hold/release status of the instructions.

T2S performs the settlement restriction within the settlement process.

5.6.1 Requirements related to settlement eligibility

Harmonised set of settlement eligibility criteria

Reference ID	T2S.05.600

T2S shall provide a set of harmonised settlement eligibility criteria. T2S shall forward for settlement only those instructions that meet these eligibility criteria.

Intended settlement date eligibility check

Reference ID	T2S.05.610

T2S shall consider for settlement only instructions with an intended settlement date identical to or earlier than the current settlement date.

T2S shall also take the specific cut-off times into account for settlement eligibility (e.g. the deadline for intraday DVP, for central bank operations).

[5] The ESF/ECSDA standards say “second layer market participant (sub-account/customer of counterparty)”.

Instruction status eligibility check

Reference ID	T2S.05.620

T2S shall consider for settlement only instructions that are "matched", "already matched" or "accepted" for which matching is not required given the type of instruction whenever those instructions do not have the status "on hold" or are linked to a missing instruction (if it is required for further processing according to the type of link).

Non-eligible instructions for settlement

Reference ID	T2S.05.625

T2S shall regard the following instructions as being ineligible for settlement:

1. Instructions before their intended settlement date.
2. Instruction received by the settlement eligibility process after its cut-off time
3. Instructions on hold.
4. Instructions linked to a missing instruction (if it is required for further processing according to the type of link).

T2S shall consider the last three groups of instructions at the end of the intended settlement date as having failed.

Settlement Status

Reference ID	T2S.05.630

The settlement status of a settlement instruction shall have the value "unsettled" until it successfully settles. T2S shall assign the value "partially settled" to the settlement status when the quantity in the settlement instruction settles only partially. T2S shall assign the value "settled" to the settlement status after the quantity in the settlement instruction settles in full. T2S shall inform relevant parties in accordance with the requirement T2S.13.130.

5.7 Examples of life cycle and transaction types

This section provides examples of the different life cycle and transaction types in T2S.

Transaction types are described in generic terms (e.g. securities lending or transfer of securities), and each is linked with a life cycle type. These can be regarded as examples of the main business cases covered by T2S. The table of transaction types includes those process indicators which do not impact on the life cycle and are used mainly for settlement specificities (*e.g.* all-or-none indicator).

The following is a non-exhaustive list of different **transaction types**:

- **Originator:** whether the instructing party is a CSD participant, a CSD, etc.

- ISO transaction code
- Life cycle type: see Section 5.2
- **Link indicator:** indicators of some settlement constraints such as the all-or-none link
- Special features: special conditions under which the instructions may be executed; for example, the administering party must be identified in the case of conditional instructions.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
STANDARD					
Back-to-back	CSD	TRAD	DVP already matched	Delivery – Redelivery (AFTER)	Facilities to ensure the back-to-back execution of buy and sell instructions. A unique ISIN where, for example, one or more "block" buy orders are delivered by several "allocated" sell orders.
Back-to-back	CSD participant	TRAD	DVP	Delivery – Redelivery (AFTER)	Facilities to ensure the back-to-back execution of buy and sell instructions. A unique ISIN where, for example, one or more "block" buy orders are delivered by several "allocated" sell orders.
Basket	CSD	TRAD	DVP already matched	AON	Instructions to buy/sell may be sent linked together for all or nothing execution. They may contain different ISINs.
Basket	CSD participant	TRAD	DVP	AON	Instructions to buy/sell may be sent linked together for all or nothing execution. They may contain different ISINs.
Cash transfer	CSD participant		Payment	None	
Mark-up/Mark-down	CSD participant	MKUP MKDW	FOP for special purpose (same owner or corporate actions)	None	Securities will be settled as mark-ups and mark-downs of the quantity of issued securities. This will be identical to the process employed in the issuance and redemption of securities.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
UCITS increase/decrease	CSD participant	SUBS REDM	FOP for special purpose (same owner or corporate actions)	None	Special type of mark-up/down related to the fund industry.
Standard (buy/sell)	Stock exchange, trading platform or CCP	TRAD	DVP already matched	None	Standard instructions received by a stock exchange or CCP which enter T2S already matched. Zero quantity DVP transactions are accepted, as they might be the result of netting by the CCP.
Standard (buy/sell)	CSD	TRAD	DVP already matched	None	Instructions received by CSD to settle standard (buy/sell) instructions.
Standard (buy/sell)	CSD participant	TRAD	DVP	None	Instructions received by CSD participants to settle standard (buy/sell) instructions.
Securities conversion	CSD participant	OWNE		None	
Transfer of securities	CSD	OWNE	FOP already matched	None	Instruction to transfer securities between accounts of different CSD participants.
Transfer of securities	CSD participant	OWNE	FOP	None	Instruction to transfer securities between accounts of different CSD participants.
Transfer of securities between accounts with the same owner	CSD participant	OWNI	FOP for special purpose (same owner or corporate actions)	None	Instruction to transfer securities between accounts owned by the same CSD participant.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
SPECIAL					
Auto-collateralisation	T2S		DVP already matched	None	
Auto-collateralisation substitution	T2S			None	
Buy-in/sell-out	CSD	TRAD	DVP	None	
Buy-in/sell-out	CSD	TRAD	DVP already matched	None	
Buy-in/sell-out	CSD participant	TRAD	DVP	None	
Coupon reattachment	CSD participant		FOP for special purpose (same owner or corporate actions)	None	The coupon reattachment transforms the coupon (as created by the stripping of the coupon) back into the original security. The un-stripping is possible recollecting the whole series of principal and related coupons.
Coupon stripping	CSD participant		FOP for special purpose (same owner or corporate actions)	None	The detachment (or stripping) of the coupon transforms the bond into a different bond plus a number of separate zero coupons with different maturities representing the coupon payments.
Delivery with payment	CSD or CCP	SETR NETT	DWP already matched	None	Instruction delivering cash and securities. This may be the netting resulting from different instructions.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
Market claim transaction	CSD		DVP already matched	None	Instruction generated by the CSD to compensate a market claim.
Market claim transaction	CSD		Payment	None	Instruction generated by the CSD to compensate a market claim.
Market claim transaction	CSD		FOP for special purpose (same owner or corporate actions)	None	Instruction generated by the CSD to compensate a market claim.
Collateral-related					
DBV	CSD	POOL	DVP already matched	AoN	Instructions to lend against a set of securities (collateral). Instructions are sent via the CSD systems and linked together for all-or-none execution. These may contain different ISINs and are a special type of “basket”.
Monetary policy operation	CSD	REPU RVPO	DVP for already matched repos	None	Repo for monetary policy purposes.
Pledge (collateral management)	Stock exchange, trading platform or CCP	COLL	FOP for special purpose (same owner or corporate actions)	None	The movement of pledging is processed as an FOP instruction.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
Pledge (collateral management)	CSD	COLL	FOP already matched	None	The movement of pledging is processed as an FOP instruction.
Pledge (collateral management)	CSD participant	COLL	FOP	None	The movement of pledging is processed as an FOP instruction.
Repo	CSD participant	REPU RVPO	DVP	AFTER, BEFORE. NONE	
Securities lending	CSD	SECL SECB	DVP already matched	None	Securities lending instruction sent in order to cover a failure. The instruction needs a link to the failing instruction to ensure the correct destination for the securities. This instruction may be generated only by CSDs where an appropriate lending procedure is in place.
Securities lending	CSD participant	SECL SECB	DVP	None	Securities lending instruction sent for business reasons. The instruction does not need a link to the failing instruction to ensure the correct destination for the securities.
Corporate action-related					
0 Securities issuance and redemption	CSD		FOP for special purpose (same	None unless instructed by	Instructions for the issuance and redemption of securities will be sent directly by CSDs. Accounts for issuing new

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
			owner or corporate actions)	issuer CSD	securities are set up in the issuing CSD.
0 Securities issuance and redemption	CSD		DVP already matched	None unless instructed by issuer CSD	Instructions for the issuance and redemption of securities will be sent directly by CSDs. Accounts for issuing new securities are set up in the issuing CSD.
1 No settlement	CSD		Block position	None unless instructed by issuer CSD	Corporate actions which do not result in a settlement activity, such as annual general meetings).
2 Cash distribution	CSD		PFOD	None unless instructed by issuer CSD	Corporate actions that result in the distribution of cash, such as dividends and coupon payments.
3 Securities distribution	CSD			None unless instructed by issuer CSD	Corporate actions that result in securities distribution based on the positions in a given security on a given date. This involves the following steps: collecting information (enquiring regarding positions); blocking the positions; and the sending of a DFP instruction by a CSD.
3 Securities distribution	CSD		FOP for special purpose (same owner or corporate actions)	None unless instructed by issuer CSD	Corporate actions that result in securities distribution based on the positions in a given security on a given date. This involves the following steps: collecting information (enquiring regarding positions); blocking the positions; and the sending of a DFP instruction by a CSD.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes
4 Redemption	CSD		DVP already matched	None unless instructed by issuer CSD	Redemption is effected as DVP. A CSD may send an instruction to block the ISIN, query the position and effect the redemption.
5 Securities conversion	CSD			None unless instructed by issuer CSD	A corporate action that involves the substitution of securities and is generally part of a sequence that requires querying, blocking and substitution.
6 Booking out	CSD		FOP for special purpose (same owner or corporate actions)	None unless instructed by issuer CSD	The booking out of securities may be performed as a sequence of instructions including the cancellation of pending instructions.
Primary market and IPO	Issuer CSD	PLAC	FOP for special purpose (same owner or corporate actions)	None	A special instruction covering the chain of instructions on the part of an IPO which is necessary to account the securities from the issuer to the primary holder and on to the end investors. It will be processed on an AoN basis.

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes	Special features of instruction maintenance
CONDITIONAL						
Cash external to T2S	CSD participant	TRAD	FOP conditional	None	The actual settlement is kept on hold, once the securities have been reserved, waiting for the administrative party to confirm the continuation/abandonment of the settlement.	An administrative party is required to oversee operations related to cash. DVP will not be executed by T2S.
Cross-CSD transactions (realignment)	T2S	TRAD	FOP for special purpose (same owner or corporate actions)	None		
Issuer CSD external to T2S	CSD participant	TRAD	FOP conditional	None	The actual settlement is kept on hold, once the securities have been reserved, waiting for the securities to be settled in the issuer CSD before the T2S settlement is executed. The issuer CSD will perform the final settlement, releasing the booking of securities in	

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes	Special features of instruction maintenance
					T2S.	
Issuer CSD external to T2S	CSD participant	TRAD	DVP conditional	None	T2S will put actual settlement on hold, once the securities have been reserved, waiting for the securities to be settled in the issuer CSD before the T2S settlement is executed.	The issuer CSD will perform the final settlement, releasing the booking of securities in T2S.
Registered securities	CSD participant	TRAD	DVP conditional	None	T2S will settle registered securities in book-entry form if they are fungible and have an ISIN. Registration will occur outside T2S. T2S will put actual settlement on hold, once the securities have been reserved, waiting for the securities to be registered before executing the final settlement.	Static data shall establish whether or not securities require registration. Reservation of cash is not expected to continue overnight. CSDs will be processing the registration and sending the confirmation to the CSD participant.
Registered securities	CSD participant	TRAD	FOP conditional	None	T2S will settle registered securities in book-entry form if they are fungible and have an ISIN. Registration will occur outside T2S. T2S will put actual settlement on hold, once securities have been reserved, waiting for the securities	Static data shall establish whether or not securities require registration. Reservation of cash is not expected to continue overnight. CSDs will be processing the registration and

Transaction type	Originator	ISO transaction code	Life cycle type	Link indicator	Notes	Special features of instruction maintenance
					to be registered before executing the final settlement.	sending the confirmation to the CSD participant.
Registered securities	CSD participant	TRAD		None	T2S will settle registered securities in book-entry form if they are fungible and have an ISIN. Registration will occur outside T2S. T2S will put actual settlement on hold, once securities have been reserved, waiting for the securities to be registered before executing the final settlement.	Static data shall establish whether or not securities require registration. Reservation of cash is not expected to continue overnight. CSDs will be processing the registration and sending the confirmation to the CSD participant.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 6

PROVISION OF LIQUIDITY, COLLATERAL MANAGEMENT AND MONITORING OF LIQUIDITY

EUROPEAN CENTRAL BANK

EUROSYSTEM

6 Provision of liquidity, collateral management and monitoring of liquidity

Chapter 6 deals with the provision of liquidity for settlement in T2S, the impact of NCBs' management of collateral on the user requirements and the monitoring of liquidity by NCBs.

Section 6.1 describes the user requirements applicable to the structure of cash accounts used for T2S settlements ("T2S dedicated cash accounts"). It defines the types of transaction allowed on T2S dedicated cash accounts. The ability to limit the use of cash available on T2S dedicated cash accounts by setting limits is detailed in chapter 10. Finally, the section explains the different functions and tools offered by T2S for providing cash on T2S dedicated cash accounts, such cash forecast procedures that help payment banks allocate sufficient liquidity to their T2S dedicated cash accounts.

Section 6.2 defines the user requirements for liquidity transfers between relevant RTGS accounts and T2S dedicated cash accounts.

Section 6.3 defines the user requirements resulting for the interoperability with central bank collateral management systems. It covers user requirements resulting from collateral management procedures expected for monetary policy operations and intraday credit provision, and also deals with the provision of intraday credit through auto-collateralisation procedures.

6.1 Provision of liquidity

This section describes the cash account structure for T2S settlements and identifies the main sources of liquidity that a T2S dedicated cash account holder can use to obtain cash on its T2S dedicated cash account(s).

6.1.1 Cash account structure for T2S and types of cash transactions allowed in T2S

6.1.1.1 Features of the cash account structure

Types and features of cash accounts used for T2S settlements

Reference ID	T2S.06.010

Cash settlements in T2S shall take place exclusively on T2S dedicated cash accounts. T2S dedicated cash accounts must be exclusively a central bank money account opened on the books of a NCB and will be dedicated to the settlement of T2S operations.

Denomination of T2S dedicated cash account in T2S settlement currency

Reference ID	T2S.06.020

Under the conditions set in the user requirements relating to non-euro cash settlements in T2S in Chapter 8, T2S shall be able to ensure cash settlement on T2S dedicated cash accounts in central bank money in euro as well as in any other T2S settlement currency, i.e. a currency accepted in T2S as a cash settlement asset.

A T2S dedicated cash account shall be denominated in euro if it is held on the books of an NCB of the euro area or on the books of any other NCB allowed by the Eurosystem to provide settlement services in central bank money in euro.

A T2S dedicated account shall be denominated in a T2S settlement currency other than euro if it is held on the books of an NCB issuing the relevant currency, or on the books of any other NCB allowed by the issuing NCB to provide settlement services in central bank money in the relevant currency.

Access conditions of T2S actors to T2S dedicated cash account

Reference ID	T2S.06.030

T2S dedicated cash accounts for T2S actors shall only be opened by the respective NCBs on whose books the T2S dedicated cash accounts are held.

Background information

In order to hold a T2S dedicated cash account, the T2S actor must meet the criteria set by the NCB on whose books it holds its cash account.

Number of T2S dedicated cash accounts held by each T2S dedicated cash account holder

Reference ID	T2S.06.040

A T2S dedicated cash account holder shall be able to hold one or several T2S dedicated cash accounts in the same currency or in different T2S eligible currencies.

Relationship between T2S dedicated cash accounts and RTGS accounts

Reference ID	T2S.06.050

For each T2S dedicated cash account and in accordance with the rules of the relevant central bank(s) (to be determined by the Eurosystem for the euro), the T2S dedicated cash account holder must identify in the static data the RTGS account in TARGET2 (for euro) or the RTGS account in other payment systems (for non-euro currencies) to which the T2S dedicated cash account must be linked. This link identifies the RTGS account on which the liquidity available on a T2S dedicated cash account (in the relevant currency) must automatically be repatriated at the end of the day and from which liquidity must be used to reimburse the pending amount of intraday credit (initially granted to the T2S dedicated cash account holder through auto-collateralisation) that must be reimbursed at the end of the day.

T2S shall enable the T2S dedicated cash account holder to link several T2S dedicated cash account to one RTGS account.

The RTGS account(s) to which the T2S dedicated cash account(s) is (are) linked shall either belong to the T2S dedicated cash account holder or to a third party acting as a payment bank in any RTGS system for the relevant T2S dedicated cash account holder. The T2S dedicated cash account and the linked RTGS account of a same currency may be in the books of different NCBs. During real-time settlement cycles, liquidity transfers between T2S dedicated cash accounts and RTGS accounts shall be settled on a real-time basis.

Liquidity transfers between RTGS accounts and T2S dedicated cash accounts

Reference ID	T2S.06.060

T2S shall ensure that a T2S dedicated cash account holder is able to receive on or send liquidity from its T2S dedicated cash account(s) from/to any RTGS account with any NCB provided that both accounts are denominated in the same currency and that this is permitted by the relevant central banks.

During real-time settlement cycles, T2S shall settle liquidity transfers between RTGS accounts and T2S dedicated cash accounts on a real-time basis.

Prioritisation of "multiple liquidity providers" functionality – use of liquidity

Reference ID	T2S.06.063

In addition to regular liquidity transfers from RTGS accounts to T2S mentioned above, T2S shall also provide T2S dedicated cash account holders with a "multiple liquidity providers" functionality.

According to this functionality, dedicated cash account holders shall have the possibility to receive liquidity from several RTGS accounts and use it in T2S in accordance with a priority defined in static data (priority defined in static data either by the liquidity receiver or by another party, e.g. the main liquidity provider, if granted with adequate access rights).

When this functionality is used, each liquidity provider must determine in static data the amount of cash to be transferred by default from their RTGS account to the T2S dedicated cash account of their client (the liquidity receiver hereunder). These transfers will be executed ahead of the start of T2S night-time settlement cycles. Every day, liquidity providers shall be able to replace the amount by default with an *ad hoc* amount of cash to be transferred to their client before the night-time settlement cycles of T2S (in accordance with the T2S and RTGS time schedules and, in any case, before the execution of the liquidity transfer). With this functionality, the amounts of liquidity effectively transferred shall be stored in T2S in order to be used in the reimbursement process.

Prioritisation of "multiple liquidity providers" functionality– use and reimbursement of liquidity

Reference ID	T2S.06.067

Liquidity received by the liquidity receiver on its T2S dedicated cash account shall be available for the latter to settle its transactions during the night-time settlement process.

When at the end of the night-time settlement process, cash remains available on the T2S dedicated cash account of the liquidity receiver, T2S shall trigger liquidity transfers with a view to reimbursing the liquidity providers in the relevant RTGS systems[1].

The reimbursement process followed by T2S shall take place in accordance with the priority of liquidity providers defined in static data, in such a way that the liquidity is used to reimburse in priority the most remote liquidity provider and that the main liquidity provider is the last one to be reimbursed. In this chain of reimbursements, T2S shall aim at reimbursing each liquidity provider up to the maximum amount of cash lent (i.e. amount of cash effectively transferred from the RTGS account to T2S), before starting to reimburse the next liquidity provider.

When, after reimbursing all other liquidity providers, there is cash remaining on the T2S dedicated cash account of the liquidity receiver, the latter (if opting for this facility) shall be able to automatically return all the remaining cash available to the RTGS account of its main liquidity provider, even if this amount exceeds the amount of liquidity effectively granted ahead of night-time settlements.

Ability for a T2S dedicated cash account holder to centralise all settlements on one T2S dedicated cash account

Reference ID	T2S.06.070

For each settlement currency, T2S shall enable a T2S dedicated cash account holder to settle all its proprietary and clients' instructions with all CSDs participating in T2S on one single T2S dedicated cash account.

Ability for a T2S dedicated cash account holder settle on several T2S dedicated cash accounts

Reference ID	T2S.06.080

Alternatively, for each settlement currency, T2S shall as well enable a T2S dedicated cash account holder to settle its proprietary and clients' instructions with one, several or all CSDs participating in T2S, on different T2S dedicated cash accounts.

Ability to use different T2S dedicated cash accounts for the settlement of trading related transactions and corporate actions

Reference ID	T2S.06.090

[1] These automated liquidity transfers must only take place in the context of this prioritisation of multiple liquidity providers functionality and must only apply to liquidity receivers resorting to this functionality. For other liquidity transfers between RTGS systems and T2S ahead of night-time settlement, this means that, if this specific functionality is not used and if no standing or predefined liquidity transfer order is specified, T2S is not expected to rebalance cash automatically from T2S to the RTGS system at the end of the night-time settlement process.

T2S shall enable T2S dedicated cash account holders to use a different T2S dedicated cash accounts for the settlement of the cash leg of trading-related instructions and for the settlement of the cash leg settlement of corporate action instructions.

When a T2S dedicated cash account holder uses different T2S dedicated cash accounts for trading-related instructions and for corporate action instructions, the T2S dedicated cash account holder is required to determine in its instructions the cash account on which cash proceeds of a corporate action have to be credited.

Ability for a T2S party to settle on the T2S dedicated cash accounts of third party T2S dedicated cash account holder(s)

Reference ID	T2S.06.100

T2S shall enable a T2S party to settle on the T2S dedicated cash account(s) of one or more T2S dedicated cash account holder(s) with which it has a specific contractual relationship to that purpose i.e. the T2S dedicated cash account that will be used for settlement will either be the T2S dedicated cash account populated on the settlement instructions or the default T2S dedicated cash account linked to the securities account. The T2S dedicated cash account populated on the instructions will prevail.

6.1.2 Types of transactions settling on T2S dedicated cash accounts

Auto-collateralisation transactions settling on T2S dedicated cash accounts

Reference ID	T2S.06.110

T2S shall settle the cash leg of auto-collateralisation operations for T2S Actors on T2S dedicated cash accounts in T2S.

Enable payment agents to settle cash leg of corporate action transactions on T2S dedicated cash accounts

Reference ID	T2S.06.111

T2S shall enable payment agents, representing securities issuers, to settle the cash leg of corporate actions on T2S dedicated cash accounts (e.g. dividend and interest payments).

Corporate action transactions settling on T2S dedicated cash accounts

Reference ID	T2S.06.112

T2S shall settle cash leg of a corporate action for a T2S Actor, received from a payment agent that settles the cash leg of a corporate action in T2S, in the actor's T2S dedicated cash account.

Liquidity transfers between T2S dedicated cash account and RTGS account

Reference ID	T2S.06.113

T2S shall settle liquidity transfers between a T2S dedicated cash account and the RTGS account and vice versa.

Liquidity transfers between cash accounts belonging to payment bank(s) and/or NCB(s)

Reference ID	T2S.06.114

T2S shall settle liquidity transfers between;

- two T2S dedicated cash accounts linked to the same RTGS account or between T2S dedicated cash accounts of the same payment bank (including the T2S dedicated cash accounts of another T2S party the payment bank acts for as liquidity provider) ;
- two T2S NCB cash accounts;
- a T2S dedicated cash account of a payment bank and a T2S NCB cash account and vice versa.

Auto-collateralisation related cash transfers

Reference ID	T2S.06.115

T2S shall settle liquidity transfers between a T2S dedicated cash account of a T2S Actor and the T2S dedicated cash account or the T2S NCB account of its NCB.

Cash settlement of other instructions

Reference ID	T2S.06.116

T2S shall settle the cash leg of all trade-related and other instructions on T2S dedicated cash accounts in T2S.

Optional retransfer of corporate action proceeds

Reference ID	T2S.06.117

T2S shall enable a T2S Actor, receiving cash proceeds from corporate actions on its T2S dedicated cash account, to specify whether T2S should keep the cash proceeds on the T2S dedicated cash account or to retransfer these cash proceeds from the T2S dedicated cash account to the RTGS account (outside T2S) with which the T2S dedicated cash account is linked.

T2S foresees the automatic triggering of a liquidity transfer, based on an event (T2S.16.660). The T2S Actor must define a standing liquidity transfer order for the T2S dedicated cash account in static data to opt for an automated retransfer of cash proceeds to an RTGS account. T2S will automatically trigger the liquidity transfer from the standing order when it receives cash proceeds from a corporate action.

Optional retransfer of corporate action cash proceeds

Reference ID	T2S.06.118

T2S shall perform an automated and immediate transfer of cash proceeds arising from settlement of corporate action related settlement instructions on a T2S dedicated cash account to the RTGS account when

the T2S Actor has setup a standing liquidity transfer order with the business event "corporate action rebalancing liquidity (CARL)".

Possibility to reserve liquidity on T2S dedicated cash accounts

Reference ID	T2S.06.120

A T2S dedicated cash account holder shall be able to reserve liquidity on one or several of its T2S dedicated cash account(s) for the settlement of a specific instruction or of a set of specific instructions.

Typology of transactions can not settle on T2S dedicated cash accounts and exceptions

Reference ID	T2S.06.130

As a matter of principle, apart from those exceptions mentioned above, T2S shall not settle clean payments. Clean payments are cash transfers that are not the counterpart of a securities transfer nor the proceeds of a corporate action.

6.1.3 Sources of liquidity on T2S dedicated cash accounts

Sources of liquidity on T2S dedicated cash accounts

Reference ID	T2S.06.150

For the cash settlement of trading-related transactions and of corporate actions, T2S shall enable T2S dedicated cash account holders to benefit from four sources of liquidity on their T2S dedicated cash accounts:

- cash received from their relevant RTGS accounts or from the relevant RTGS accounts belonging to other participants in RTGS systems (see the sub-sections below for details on liquidity transfers between relevant RTGS accounts and T2S dedicated cash accounts);
- the cash proceeds of their selling transactions or of corporate actions in which they have an entitlement (see the sub-sections above for details on settlement optimisation and on cash transactions allowed on T2S dedicated cash account);
- the liquidity transfers made from one of their T2S dedicated cash account to another of their T2S dedicated cash account (see the sub-section above for details on the cash transactions allowed on T2S dedicated cash accounts);
- intraday credit provision on T2S dedicated cash account through auto-collateralisation (see the sub-section below for details on auto-collateralisation).

6.2 Liquidity Transfer Order Life Cycle Management

This section describes the life cycle of the liquidity transfers orders in T2S with its business process flow and status management requirements.

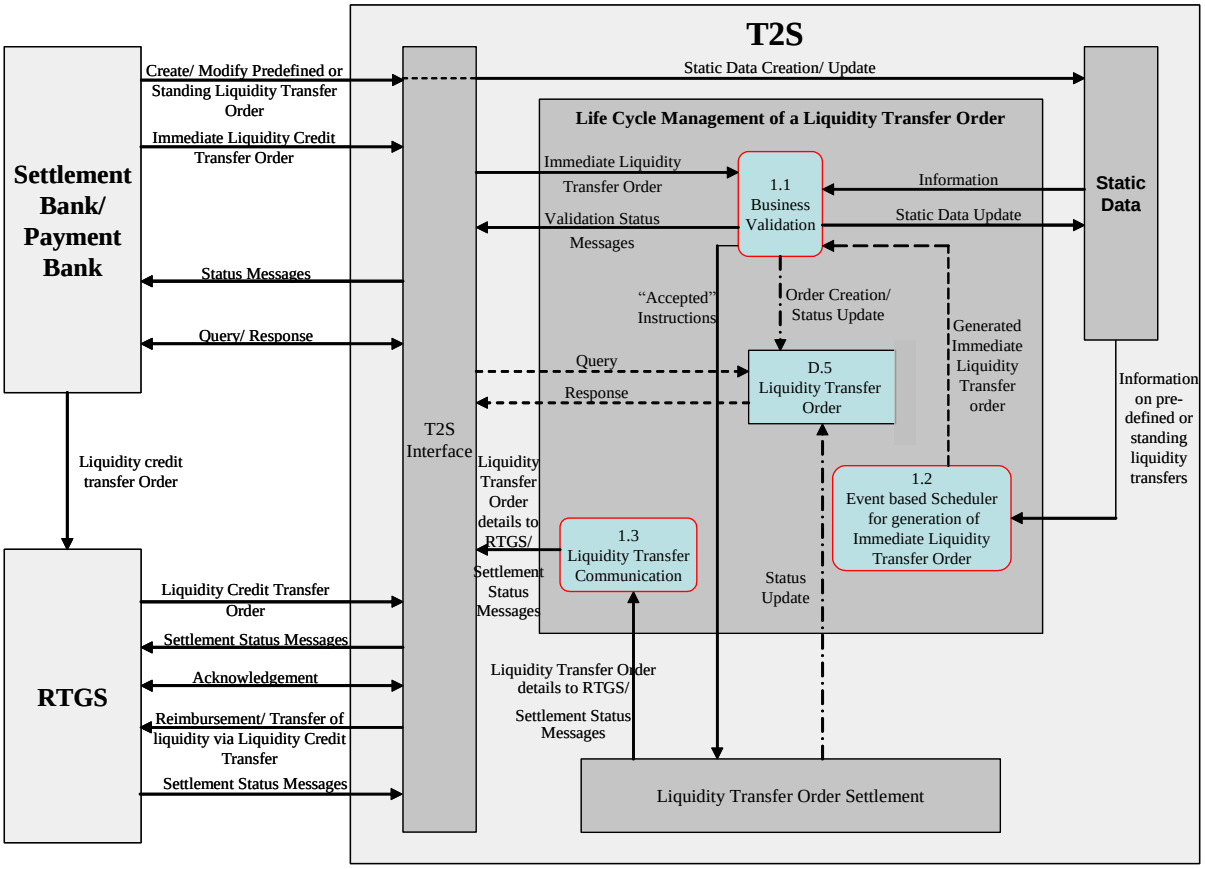
This section consists of 4 sub-sections:

- Sub-section 6.2.1 provides a high level overview of the different processes in life cycle management of liquidity transfers.
- Sub-section 6.2.2 describes the different types of liquidity transfers and their associated business processes.
- Sub-section 6.2.3 details the business validations for liquidity transfer orders, such as the consistency and authorisation checks that incoming orders (immediate liquidity transfer order) have to pass for T2S to accept them for further processing.
- Sub-Section 6.2.4 defines the settlement of liquidity transfer, such the communication between the RTGS and T2S when T2S settles a liquidity transfer.

6.2.1 High level description of liquidity transfer order life cycle management

This diagram depicts the different high-level processes of the liquidity transfer order life cycle management of T2S and its interactions with the various T2S Actors and other T2S components. It does not seek to pre-empt any future decision on the IT design and technical implementation of T2S. Liquidity transfer Orders life cycle management consists of three main processes: business validation, liquidity transfer settlement and a communication function.

Figure 6-1: Life cycle Management of a Liquidity transfer order



6.2.1.1 Business Validation

Business validation is the process of checking the correct content of an immediate liquidity transfer order, as well as validating the consistency of information between static data and immediate liquidity transfer order sent to T2S. Liquidity transfer order life cycle management immediately validates all incoming liquidity transfer orders, received from a T2S Actor, based on a set of validation rules. After validation, T2S shall either accept or reject the liquidity transfer order.

Input	
Immediate Liquidity Transfer Order	From settlement banks or payment banks
Information	Information T2S from static data for validation

Output	
Validation status message	Responses to the settlement bank/payment bank regarding the validation status of the immediate liquidity transfer order
Immediate Liquidity Transfer Order	Forwarding of the accepted immediate liquidity transfer order to the liquidity transfer order settlement process
Status update	Status update (as defined in Table 6-1) of the immediate liquidity transfer in the data store

Table 6-1 List of business-validation-related statuses for an immediate liquidity transfer order

Status	Description
Accepted	Accepted Status of an immediate liquidity transfer order implies that the order that is generated or received from a T2S party, has passed through all the business validations and is ready for its settlement
Rejected	Rejected Status of an immediate liquidity transfer order implies that the order that is generated or received from a T2S party, has not passed through all the business validations

6.2.1.2 Event-Based Scheduler

An event-based scheduler in T2S shall trigger the creation of an immediate liquidity transfer from pre-defined and standing liquidity transfer orders, maintained in static data, based on a specified type of business event or specific time.

6.2.1.3 Communication of a liquidity transfer order

The communication function publishes to the interface component a request to forward the settlement status change of a liquidity transfer order and also the liquidity transfer order to the T2S interface for transmission to the payment bank/settlement bank as per the message subscription service (see Chapter 13).

Input	
Settlement status message	Received after every successful or unsuccessful attempt to settle of a liquidity transfer order
Liquidity Transfer Order	Received in case of transfer of liquidity from T2S to RTGS, after the transfer amount is successfully booked within T2S

Output	
Settlement status message	Immediately forwards settlement status (as defined in table 6-2) to the interface function after every receipt of a status message from Liquidity Transfer Order Settlement
Liquidity Transfer Order	Immediately forwards the liquidity transfer order to interface function which shall forward the order to the RTGS system

Table 6-2 List of settlement-related statuses for an immediate liquidity transfer order

Status Value	**Significance**
Settled	Settled Status of an immediate liquidity transfer order defines that an “Accepted” order has been successfully executed by the “Liquidity Transfer Settlement” process
Partially Settled	The Status “Partially Settled” for an immediate liquidity transfer order defines that an “Accepted” order has been executed successfully by the liquidity transfer order settlement process but the settlement occurred for a part of the intended transfer amount specified in the order.
Unsettled	The status “Unsettled” for an immediate liquidity transfer order defines that the liquidity transfer order settlement process has executed an “Accepted” order successfully, but the transfer amount failed to settle.
Not Executed	The status “Not Executed” for an immediate liquidity transfer order defines that the liquidity transfer order settlement process has not attempted an “Accepted” order for settlement.

T2S communicates the status of a liquidity transfer order and its rejection or failure (in case not successful) together with the reason to the settlement bank / payment bank. T2S shall also communicate the changes in statuses of a liquidity transfer order

Chapter 13 describes the messages that T2S provides for management of immediate liquidity transfer orders. Chapter 14 describes the queries that T2S provides for NCB, settlement banks and payment banks concerning liquidity management.

6.2.1.4 Life cycle process requirements

The liquidity transfers need to be processed (validated, accepted) and booked immediately within the liquidity transfer settlement. T2S shall communicate the status of a liquidity transfer order for any change in the balance to the owner of a T2S dedicated cash account. T2S shall communicate immediately the status of the liquidity transfer to the corresponding RTGS system through a settlement status message, when the liquidity transfer involves a RTGS account.

6.2.2 Liquidity transfer order business process

A liquidity transfer order shall be a tool to transfer liquidity to the T2S dedicated cash account of a payment bank (or a settlement bank) in order to provide liquidity to facilitate securities settlement, for the current business day in T2S.

A liquidity transfer can occur between

- a T2S Dedicated cash account and another T2S Dedicated cash account (or)
- a RTGS account and a T2S dedicated cash account

T2S shall handle a liquidity transfer as a credit transfer, i.e. the service running the account to be debited shall trigger the execution of the liquidity transfer.

Therefore, a liquidity transfer from an RTGS system (e.g. TARGET2) to T2S shall be initiated in the RTGS system, while a liquidity transfer from T2S to an RTGS system shall be initiated by T2S.

Every payment bank is responsible for providing sufficient liquidity for settlement in T2S, irrespective of whether it holds an account in TARGET2 or in any other RTGS system that provides liquidity.

When a payment banks holds an RTGS account, the payment bank shall control the management of the liquidity transfers in favour of the T2S dedicated cash accounts.

If a payment bank does not hold an RTGS account, it must instruct (outside T2S) the holder of the RTGS account, linked to its T2S dedicated cash account, to transfer liquidity.

Therefore, the holder of the T2S dedicated cash account has to monitor the account balance on its T2S dedicated cash account. The holder of the account to be debited by a liquidity transfer shall be able to issue orders for the transfer of liquidity (the immediate liquidity transfer order, the predefined liquidity transfer order or the standing liquidity transfer order).

Important from a treasurer's perspective is the fact that the debit account holder keeps full control of "outgoing" liquidity.

6.2.2.1 General Requirements

Use of messages provided for in the cash management standard

Reference ID	T2S.06.195

Consistent with T2S.12.040, for liquidity management purposes, ISO-20022 compliant messages provided for in the cash management standard (e.g. liquidity transfer order) shall be used.

Payments to transfer liquidity from the RTGS account to T2S dedicated cash accounts shall use the liquidity transfer orders.

Use of messages as status advice for a liquidity transfer order

Reference ID	T2S.06.196

T2S shall inform NCBs, settlement banks and payment banks of the result of all changes to the status of a liquidity transfer as a result of processing, according to their message subscription configuration in T2S.

Provision of liquidity in T2S

Reference ID	T2S.06.200

Settlement banks and payment banks shall be able to adjust the liquidity available for settling instructions in T2S using immediate liquidity transfer orders, predefined liquidity transfer orders and standing liquidity transfer orders.

Initiator of immediate liquidity transfers

Reference ID	T2S.06.205

The holder of the cash account to be debited or a T2S Actor (e.g. CSDs) it has authorised to do so always shall initiate immediate liquidity transfer orders.

Immediate liquidity transfers from pre-defined and standing liquidity transfer orders

Reference ID	T2S.06.206

T2S shall generate an immediate liquidity transfer order from standing and pre-defined liquidity transfer orders. The holder of the cash account to be debited or a T2S Actor (e.g. CSDs) it has authorised to do so always shall maintain pre-defined and standing liquidity transfer orders in static data.

CSD (or another party) acting on behalf of a payment bank

Reference ID	T2S.06.210

It shall be possible for CSDs, acting on behalf of payment and settlement banks under a power-of-attorney or other contractual agreement to do so, to initiate liquidity transfers. T2S shall check whether the payment or settlement bank has authorised the CSD to do so. T2S static data shall store the existence of this contractual.

T2S shall thus be able to perform some validation on the flag for contractual agreement for liquidity transfers from T2S to an RTGS system (e.g. TARGET2). The same rule should also be valid for other parties authorised by the account holder of the account to be debited.

Automatic liquidity transfers

Reference ID	T2S.06.220

Liquidity used in T2S for settlement shall be taken into account when calculating the fulfilment of minimum reserve requirements, i.e. T2S shall transfer liquidity automatically to the relevant RTGS account in the RTGS system (e.g. TARGET2) at the end of the settlement day.

On an optional basis, a T2S Actor can use additional automated predefined and standing liquidity transfer orders from T2S to an RTGS system, e.g. immediately after the start of daytime settlement (at 05:00hrs) and/or at the end of DVP settlement (at 16:00hrs).

Priority of liquidity transfers

Reference ID	T2S.06.230

T2S shall settle liquidity transfers in real-time in T2S except during night-time settlement during a running settlement cycle.

Attribute Requirements

Reference ID	T2S.06.231

A liquidity transfer orders shall have the attributes as defined in Static data Section 16.8.5

Status Requirements

Reference ID	T2S.06.232

T2S shall uniquely set a status when a liquidity transfer order passes through its life cycle as defined in tables 6-1 and 6-2

Definition of a “floor” for a T2S dedicated cash account

Reference ID	T2S.06.233

The account holder of the T2S dedicated cash account shall have the possibility to define a minimum amount of liquidity (i.e. a liquidity floor) that should be available on the T2S dedicated cash account. T2S shall check the minimum amount, defined by the account holder of the T2S dedicated cash account after each posting on the T2S dedicated cash account. When the liquidity available falls below the defined minimum

amount, T2S shall alert the treasurers at the account holder of the T2S dedicated cash account through a message.

Definition of a "ceiling" for a T2S dedicated cash account

Reference ID	T2S.06.234

The account holder of the T2S dedicated cash account shall have the possibility to define a maximum amount of liquidity (i.e. a liquidity ceiling) that should be available on T2S dedicated cash account. T2S shall check the maximum amount defined by the account holder of the T2S dedicated cash account after each posting on the T2S dedicated cash account. When liquidity available exceeds the defined maximum amount, T2S shall alert the treasurers at the account holder of the T2S dedicated cash account through a message.

6.2.2.2 Types of Liquidity transfer order

T2S supports three types of liquidity transfers from T2S dedicated cash accounts to RTGS cash accounts and between T2S dedicated cash accounts of the same party

- Immediate Liquidity Transfer Order
- Pre-defined Liquidity Transfer Order
- Standing Liquidity Transfer Order

Immediate liquidity transfer order

An immediate liquidity transfer order is an order to transfer a specified amount of money between two cash accounts in real-time on the receipt and acceptance of the order.

Predefined liquidity transfer order

A Pre-defined Liquidity transfer order is an order to transfer a specified amount of money from one cash account to another cash account to be executed only once at a defined time or event.

Standing liquidity transfer order

A Standing Liquidity transfer order is an order to transfer a specified amount of money from one cash account to another. The order shall be executed repetitively at a defined time or event.

The following table depicts the different types of Liquidity transfer orders with its acceptance and execution

No.	Type of Incoming Orders	Acceptance in T2S	Execution in T2S
1.	Immediate Liquidity Transfer Order	Liquidity credit transfer instruction	Immediate on acceptance of the order

No.	Type of Incoming Orders	Acceptance in T2S	Execution in T2S
2.	Pre-defined Liquidity Transfer Order	Generates a liquidity transfer order instruction, based on parameters defined in T2S static data for predefined liquidity transfer orders	Immediate on acceptance of the generated immediate liquidity transfer order
3.	Standing Liquidity Transfer Order	Generates a liquidity transfer order instruction, based on parameters defined in T2S static data for standing liquidity transfer orders	Immediate on acceptance of the generated immediate liquidity transfer order

6.2.2.3 Immediate liquidity transfer order

Processing of immediate liquidity transfer orders from a T2S dedicated cash account to an RTGS account

Reference ID	T2S.06.240

Immediate liquidity transfer orders should be initiated by the account holder of the account that will be debited or by a related CSD acting on behalf of the account holder.

Processing of immediate liquidity transfer orders between T2S dedicated cash accounts of the same account holder

Reference ID	T2S.06.241

T2S shall allow the transfer of liquidity using an immediate liquidity transfer order between two T2S dedicated cash accounts of the same payment bank or settlement bank.

6.2.2.4 Predefined liquidity transfer orders

Input of predefined liquidity transfer orders

Reference ID	T2S.06.270

T2S shall allow the input of predefined liquidity transfer orders by the account holder of the account to be debited, or by another T2S Actor (e.g. CSD) operating on its behalf under a contractual agreement.

Processing of predefined liquidity transfer orders for the settlement or payment bank

Reference ID	T2S.06.271

T2S shall allow the specification and processing of a pre-defined liquidity transfer orders only for transfers between RTGS accounts and T2S dedicated cash accounts of the same payment or settlement bank, or of another T2S party for which the payment or settlement bank acts as liquidity provider.

For the sake of transparency, a payment bank shall be able to define predefined orders only for liquidity transfers between the RTGS account and the related T2S dedicated cash accounts.

It shall not be possible to put in place predefined orders to transfer liquidity between different T2S dedicated cash accounts of the same payment bank.

Definition of the time of execution for predefined liquidity transfer orders

Reference ID	T2S.06.280

T2S shall allow the specification of a date in combination with a time or event on which T2S shall generate and execute the liquidity transfer from a predefined liquidity transfer order.

Predefined liquidity transfer orders to increase or decrease liquidity in T2S

Reference ID	T2S.06.290

T2S shall allow the use of predefined liquidity transfer orders to increase or decrease liquidity on a T2S dedicated cash account.

6.2.2.5 Standing liquidity transfer order

Processing of standing liquidity transfer orders

Reference ID	T2S.06.330

T2S only shall allow the input of standing liquidity transfer orders by the account holder of the account shall to be debited, or by another T2S Actor (e.g. CSD) operating on its behalf under a contractual agreement. A payment or settlement bank shall be able to define standing orders only for liquidity transfers between its RTGS account and the related T2S dedicated cash accounts.

Processing of standing liquidity transfer orders for the settlement or payment bank

Reference ID	T2S.06.331

T2S shall allow the specification and processing of standing liquidity transfer orders only for transfers between the RTGS accounts and the T2S dedicated cash accounts of the same payment or settlement bank only or of another T2S party for whom the payment or settlement bank acts for as liquidity provider.

Deletion of standing liquidity transfer orders for the settlement or payment bank

Reference ID	T2S.06.332

A payment bank or settlement bank or authorised party, acting on its behalf, can delete an existing standing liquidity order by sending a deletion.

Definition of the time of execution for standing liquidity transfer orders

Reference ID	T2S.06.340

A payment bank or settlement bank, or authorised party acting on its behalf, shall have the possibility to define standing liquidity transfer orders to be executed at different points in time and events during the T2S settlement day.

Changing the amount of the standing liquidity transfer order

Reference ID	T2S.06.350

When a payment bank or settlement bank, or authorised party acting on its behalf, changes a standing liquidity transfer order, the change shall take effect in T2S as from the next execution of the standing order (e.g. as from the next point in time of its execution, or as from the next occurrence of the event). When a payment bank or settlement bank, or authorised party acting on its behalf, changes the amount of the standing liquidity transfer order to zero T2S shall neither execute at the next point in time or event, nor delete it. T2S shall retain it in the system as standing liquidity transfer order with an amount of zero.

Definition of several standing liquidity transfer orders

Reference ID	T2S.06.360

T2S shall allow a payment bank or settlement bank, or authorised party acting on its behalf, to define several standing liquidity transfer orders for execution at the same point in time on the same event.

6.2.2.6 Generic requirements for pre-defined and standing liquidity transfer orders

Increasing the liquidity on T2S dedicated cash accounts by a specified amount

Reference ID	T2S.06.390

T2S shall allow a payment bank or settlement bank, or authorised party acting on its behalf, to increase the liquidity on its T2S dedicated cash account by a transfer from the RTGS account to the T2S dedicated cash account.

Decreasing of the liquidity on T2S dedicated cash accounts by a specified amount

Reference ID	T2S.06.410

T2S shall allow a payment bank or settlement bank, or authorised party acting on its behalf to define a specified amount for transfer from the T2S dedicated cash account to the RTGS account of the related payment or settlement bank at a certain point in time and for a given event.

6.2.2.7 Generating an immediate liquidity transfer from static data

T2S shall treat the pre-defined and standing liquidity transfer orders as immediate liquidity transfers. T2S shall generate immediate liquidity transfer orders from pre-defined or standing liquidity transfer orders, which are defined via static data (with a unique liquidity transfer order identifier), through the event-based scheduler on the occurrence of the defined event or time.

In the event of generation the attributes of a liquidity transfer order shall be set as below:

- Currency, Transfer cash amount, RTGS system, RTGS account, Target Dedicated Cash Account of the instructing party shall be set as defined in the Static data.
- Sending party shall be set as T2S.
- Instructing party shall be set as the Payment bank/ Settlement bank/ NCB.
- The order reference must be set as the Liquidity transfer order reference (i.e. the unique reference defined by the instructing party for the liquidity transfer order) as defined in the static data (See T2S.16.660).

6.2.3 Business Validation of an immediate liquidity transfer order

Business validation is the process of checking the correct content of an immediate liquidity transfer order as well as the consistency of information between static data and immediate liquidity transfer orders sent to T2S.

6.2.3.1 Validation of incoming liquidity transfer order

Business Validation Rules

Reference ID	T2S.06.510

T2S shall validate all incoming liquidity transfer orders. This section includes a list of detailed validation requirements. After encountering the first negative validation result, T2S shall continue to validate as far as possible (taking into account potential independencies between the validated data) and report all negative results together in a single message. Only after performing all logically possible validations shall T2S reject the order.

Mandatory fields for liquidity transfer orders between RTGS and T2S

Reference ID	T2S.06.520

T2S shall check the existence of the following fields for a liquidity transfer order instruction between an RTGS account and T2S dedicated cash account

- currency
- transfer cash amount
- RTGS system
- RTGS account
- Target Dedicated Cash Account (i.e. T2S dedicated cash account to be credited)

Mandatory fields for liquidity transfer orders within T2S

Reference ID	T2S.06.521

T2S shall check the existence of the following fields for a liquidity transfer order instruction from a T2S dedicated cash account to another T2S dedicated cash account

- currency
- transfer cash amount
- source dedicated cash account (i.e. T2S dedicated cash account to be debited)
- target T2S dedicated cash account (i.e. T2S dedicated cash account to be credited)

Currency Check

Reference ID	T2S.06.530

T2S shall check that the currency is a valid currency as part of the technical message validation. T2S shall check that the currency of the liquidity transfer order is a valid T2S settlement currency, as defined for the cash account in the static data, as a business validation.

Instructing Party Authorisation Check

Reference ID	T2S.06.540

T2S shall identify the instructing party as an “active” settlement bank/ payment bank/ NCB known in T2S static data.

Sending Party Check

Reference ID	T2S.06.550

T2S shall accept the immediate liquidity transfer order only if the sender of the order has authorisation to submit the transfer order from the instructing party. T2S shall perform this check only if the sender of the liquidity transfer order is different from the instructing party in the order.

Account Validity Check

Reference ID	T2S.06.560

T2S shall allow a liquidity transfer order only if the order has T2S dedicated cash account(s) are neither blocked nor logically deleted.

Duplicate Check

Reference ID	T2S.06.570

T2S shall check for and reject a duplicate submission of an incoming order (i.e. immediate liquidity transfers, which are received from a settlement or payment bank or an RTGS system) on the basis of a combination of the T2S actor identifier and the order reference assigned by the instructing party. The duplicate check shall compare the reference of each incoming order with the reference of liquidity transfer orders that are not settled yet and those orders settled in the past predetermined period of 3 business days.

Information provided after validation

Reference ID	T2S.06.580

After successful business validation process, T2S shall generate the liquidity transfer order in T2S. T2S shall inform T2S actors (according to the subscription), regarding the outcome of the validation process and shall indicate the reason for the rejection of any order.

Amount Check

Reference ID	T2S.06.590

T2S shall check for the existence of the transfer amount. T2S shall allow an amount of zero only for the maintenance of an existing standing liquidity transfer.

Full Audit trail

Reference ID	T2S.06.600

T2S shall keep an audit trail documenting events and status changes during the entire life cycle of a liquidity transfer order, which includes

1. Date and timestamp of change
2. User ID of process or user making the change
3. Type of status change
4. Attribute value of status change.

6.2.4 Settlement of a Liquidity transfer order

6.2.4.1 Settlement process of a immediate liquidity transfer order

Immediate execution of immediate liquidity transfer orders

Reference ID	T2S.06.610

Immediate liquidity transfer orders shall be executed in real time and its validation status is “Accepted” in T2S.

Forwarding the immediate liquidity transfer to Settlement

Reference ID	T2S.06.620

The immediate liquidity transfers shall be queued on a first-in-first-out basis for settlement. This shall include the orders received from a T2S party and the orders, which T2S generated on the basis of a pre-defined or standing liquidity transfer orders.

Insufficient liquidity to execute immediate liquidity transfer orders not generated by T2S

Reference ID	T2S.06.630

In cases where the immediate liquidity transfer order is initiated by the account holder of the account to be debited and the liquidity available on the account to be debited (RTGS account or T2S dedicated cash account) is not sufficient, no liquidity shall be transferred (i.e. there will not be any partial execution of immediate liquidity transfer orders).

In cases where the immediate liquidity transfer order is initiated by a CSD (or another party) authorised by the account holder of the account to be debited and the liquidity available on the account to be debited (RTGS account or T2S dedicated cash account) is not sufficient, the amount of liquidity available on the account should be transferred.

In the case of non-execution (or partial execution), the payment bank (the CSD acting on behalf of the payment bank) shall be alerted. How the alert shall be communicated will have to be defined at a later stage.

(Note: It has to be taken into account that this user requirement is related to the transfer of liquidity to or from the T2S dedicated cash account. Auto-collateralisation is not relevant for the user requirements related to interactions with an RTGS system (e.g. TARGET2) due to the fact that

(i) auto-collateralisation will take place during T2S settlement and

(ii) the liquidity resulting from auto-collateralisation will be made available on the T2S dedicated cash account of the account holder (i.e. the payment bank) and will immediately be used to settle a transaction.

Just to provide the full picture, it should be mentioned that liquidity resulting from intraday-repos with NCBs, as well as liquidity stemming from monetary policy operations (in repo countries), shall be settled on the T2S dedicated cash account, but an automatic transfer to the RTGS account in an RTGS system (e.g. TARGET2) will be triggered by T2S immediately thereafter. The cash leg of repos between market users shall be settled on T2S dedicated cash accounts).

6.2.4.2 Settlement process of a predefined liquidity transfer order

Execution of predefined liquidity transfer orders

Reference ID	T2S.06.640

A predefined liquidity transfer order shall be automatically executed at a given point in time/event during the settlement day. For the same time/event only one predefined liquidity transfer order can be defined per T2S dedicated cash account.

A payment bank can put in place (at maximum) one predefined liquidity transfer order per T2S dedicated cash account to be executed at the same time/event. But it will be possible to define different predefined liquidity transfer orders to increase/decrease the liquidity available on the T2S dedicated cash account at different points in time/events during the T2S settlement day.

Partial execution of predefined liquidity transfer orders

Reference ID	T2S.06.650

In cases where the liquidity available on the account to be debited (RTGS account or T2S dedicated cash account) is not sufficient to cover the predefined liquidity transfer order, as much liquidity as possible shall be transferred (partial execution). The payment bank shall be alerted accordingly. How the alert shall be communicated will have to be defined at a later stage.

(Note: It has to be taken into account that this requirement is related to the transfer of liquidity to or from the T2S dedicated cash account. Auto-collateralisation is not relevant for this user requirement due to the fact that

(i) auto-collateralisation will take place during T2S settlement and

(ii) the liquidity resulting from auto-collateralisation will be made available on the T2S dedicated cash account of the account holder (i.e. the payment bank) and will immediately be used to settle a transaction).

The amount of liquidity not transferred shall not be stored in a memory, i.e. it shall not be transferred after additional liquidity arrived at the account that was debited.

6.2.4.3 Settlement process of a standing liquidity transfer order

Execution of standing liquidity transfer orders

Reference ID	T2S.06.660

A standing liquidity transfer order shall be automatically executed at a given point in time/event during the settlement day. For the same time/event multiple standing liquidity transfer orders can be defined per T2S dedicated cash account. It shall also be possible to define different standing liquidity transfer orders to increase/decrease the liquidity available on the T2S dedicated cash account at different points in time/events during a T2S settlement day.

All the standing liquidity transfer orders shall be executed at the specified time/ event.

Partial execution of standing liquidity transfer orders

Reference ID	T2S.06.670

In cases where the liquidity available on the account to be debited (the RTGS account or the T2S dedicated cash account) is insufficient, as much liquidity as possible shall be transferred (i.e. partial execution of standing liquidity transfer orders). The payment bank shall be alerted accordingly. The way the alert shall be communicated will have to be defined at a later stage.

(Note: It has to be taken into account that this user requirement is related to the transfer of liquidity to or from the T2S dedicated cash account. Auto-collateralisation is not relevant for this user requirement due to the fact that

(i) auto-collateralisation will take place during T2S settlement and

(ii) the liquidity resulting from auto-collateralisation will be made available on the T2S dedicated cash account of the account holder (i.e. the payment bank) and will immediately be used to settle a transaction.)

The amount of liquidity not transferred shall not be stored in a memory, i.e. it shall not be transferred after additional liquidity arrived at the account that was debited.

6.2.4.4 Communication between RTGS and T2S during a transfer of liquidity from RTGS to T2S

This section details the communication requirements for settlement process of a liquidity transfer from a RTGS account to a T2S Dedicated Cash account via

- An immediate liquidity transfer order
- A pre-defined liquidity transfer order
- A standing liquidity transfer order

Successful execution of liquidity transfer

Reference ID	T2S.06.680

On a successful execution of an immediate liquidity transfer order (which is received or generated) in T2S, T2S sets the settlement status of the immediate liquidity transfer to “settled” and shall confirm (i.e. settlement status message) the RTGS system via a “Confirmation of Credit”.

Unsuccessful execution of liquidity transfer

Reference ID	T2S.06.690

In case of failure in execution of an immediate transfer order (which is received or generated) in T2S, T2S sets the settlement status of the immediately liquidity transfer as “unsettled”. The cancellation status of the immediate liquidity transfer order is set to “cancelled” with a reason code. T2S must notify (i.e. settlement status message) RTGS system of the failure in cases where the RTGS is involved.

6.2.4.5 Communication between T2S and RTGS during a transfer of liquidity from T2S to RTGS

This section details the communication requirements for the settlement process of a reimbursement of liquidity from a T2S Dedicated Cash Account via

- An immediate liquidity transfer order
- A pre-defined liquidity transfer order
- A standing liquidity transfer order

Successful execution of liquidity transfer order

Reference ID	T2S.06.700

T2S shall set the settlement status of the liquidity transfer order as “Settled” or “Partially Settled” in T2S and shall communicate the liquidity transfer order to the respective RTGS system. T2S shall require a confirmation (i.e. settlement status message) from an RTGS system to process correctly the successful

execution of the liquidity transfer by the RTGS system. If no confirmation of a successful execution of a liquidity transfer order is received from the RTGS within a predefined timeframe, necessary operational procedures will be followed.

Unsuccessful execution of liquidity transfer order

Reference ID	T2S.06.710

T2S shall require a settlement status message with a reason to keep track of a failed execution of a liquidity transfer in an RTGS system. Upon receipt of the failure settlement status message from an RTGS system, T2S shall set the RTGS status of the liquidity transfer order in T2S.

6.3 Collateral Management

6.3.1 Specific requirements resulting from monetary policy operations and intraday credit (without auto-collateralisation)

There are no special requirements for T2S resulting from the mobilisation of collateral for monetary policy operations and intraday credit (except for the use of auto-collateralisation).

6.3.2 Specific requirements resulting from intraday credit out of auto-collateralisation

Information on eligible securities

Reference ID	T2S.06.720

T2S shall receive information on eligible collateral, and closed links from a Eurosystem central database every time when they are updated (normally once per settlement day).

This information will enable T2S to calculate the collateral value in line with the rules of the Eurosystem in order to process auto-collateralisation in a very short timeframe.

It shall also be possible to receive information on eligible collateral and close links from NCBs that do not belong to the Eurosystem in order to make use of auto-collateralisation for settlement in non-euro currencies using the same interface.

Sending settlement confirmation/blocking confirmation

Reference ID	T2S.06.730

T2S shall inform connected collateral management systems of central banks, CSDs and directly connected T2S parties about transfers and/or the blocking securities in order to perform auto-collateralisation by sending a settlement confirmation/blocking confirmation if the receiver has subscribed to those messages in the message subscription service.

Sending settlement confirmation/unblocking confirmation

Reference ID	T2S.06.740

T2S shall inform connected collateral management systems of central banks, CSDs and directly connected T2S parties about transfers and/or the unblocking of securities from the reimbursement of intraday credit out of auto-collateralisation by sending a settlement confirmation/unblocking confirmation if the receiver has subscribed to those messages in the message subscription service.

Release of free collaterals

Reference ID	T2S.06.750

After access to overnight facilities in TARGET2 (or for non-euro currencies in another RTGS system), T2S shall be able to

- transfer securities from the securities account of a central bank (in T2S) to the securities account of a T2S party and to
- unblock securities on the securities account of a T2S party

on the basis of a settlement instruction/unblocking instruction received from a connected collateral management system of central banks.

USER REQUIREMENTS

CHAPTER 7

SETTLEMENT PROCESSING REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

7 Settlement processing requirements

This chapter aims at providing an overview of T2S settlement processing, defining user requirements for transaction sequencing and prioritisation and defining user requirements for booking and the provision check in relation to cash and securities accounts .

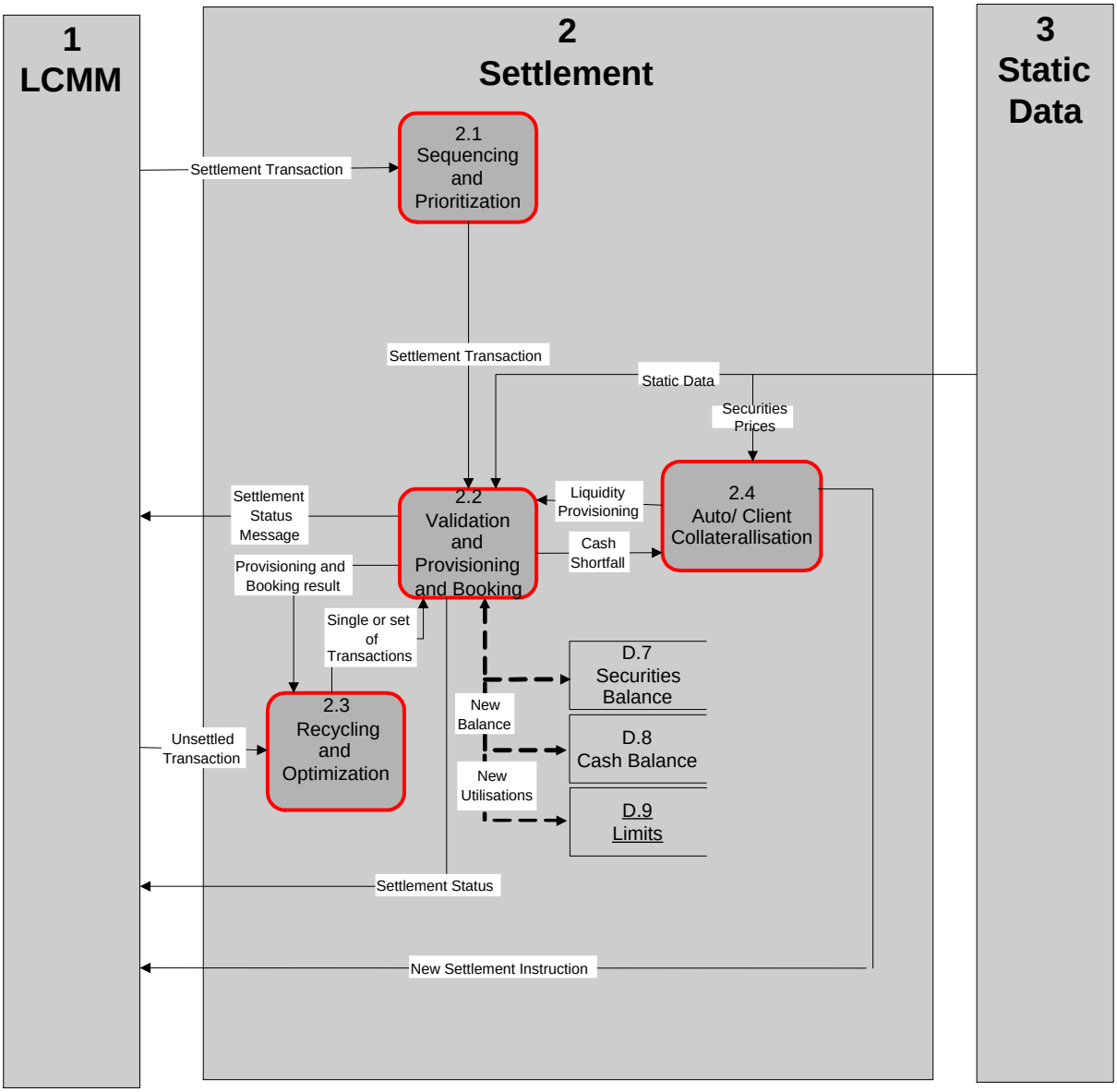
- Section 7.1 is an overview of T2S settlement processing, based on a context diagram that identifies the information received by, circulating inside and sent out of T2S settlement processing;
- Section 7.2 defines sequencing, i.e. the way T2S will submit transactions for settlement during the night-time settlement cycles and during the daytime real-time settlement process. The section also defines the different priority levels available in T2S, which are relevant when submitting transactions for optimisation;
- Section 7.3 describes T2S booking requirements, i.e. the requirements applied to the posting of debit and credit movements on cash and securities accounts (e.g. booking on a gross basis, under the exclusive control of T2S, the final and unconditional booking process). The section also details the applicable securities and cash provision check requirements to ensure settlement. This last section also covers the provision check when securities and/or cash have been blocked or reserved, or when some other restrictions apply to securities accounts or T2S dedicated cash accounts.

7.1 Settlement processing overview

7.1.1 Context diagram

This diagram gives an overview of T2S settlement processing, based on the business requirements expressed in this chapter. It does not pre-empt future decisions in relation to the IT design and technical implementation of T2S. In that respect, the opportunity to have an instruction database for the settlement process should be analysed, for instance.

Figure 7-1 Settlement presented as a flow diagram



7.1.2 Process description

7.1.2.1 Prioritisation and sequencing (box 2.1)

In T2S, settlement will take account of sequencing and prioritisation rules. These rules determine the order in which instructions will be submitted for settlement attempts (after being received from Life cycle management and matching). The priority of settlement transaction will be based on the transaction type, the oldest settlement date, or the priority level assigned by the T2S parties for the transactions. These transactions, once sequenced and prioritised would be forwarded to the validation and provision and booking function for settlement.

Input

Input	
Settlement transaction	Sent from LCMM

Output	
Settlement transaction	Sequenced and prioritised settlement transaction

7.1.2.2 Validation and provisioning and bookings (box 2.2)

The settlement process usually involves three different steps:

- validation consists of the validation of static data (e.g. securities exist and settlement accounts are valid);
- the provision check of cash and securities availability; and
- bookings, i.e. if the provision is successful, settlement will take place with bookings, i.e. the update of the securities and/or cash balance.

On successful static data validation and after the provision check and booking of securities and/or cash, the settlement process would send the settlement status message to LCMM. For provisioning (referred to below as the provision check), this function would read the available security and/or cash balances from their respective data stores, and would also be obtaining single or set of transactions stemming from optimisation procedures or as a result of an incoming settlement transaction for immediate settlement. If there is a cash shortfall, it would trigger the auto-collateralisation process for liquidity provision when applicable. After the run of a settlement attempt the provision check and booking might show a need for T2S to trigger the recycling and optimisation functionality (depending on daytime/ night-time settlement). Based on the booking result, a settlement status message would go to LCMM to update the settlement instruction data store. On successful bookings the security and/or cash balances would be updated in their respective data stores.

Input	
Settlement transactions	Sequenced and prioritised pairs of settlement instructions.
Static data	Information required to perform static data validations.
Single transaction or set of transactions	After each optimisation attempt/cycle.
Unsettled transactions	Read from LCMM.
New balance	Read from Security and/or cash data store.
Liquidity provision	As a result of auto-collateralisation.

Output	
Settlement status message	Sent to LCMM
Provision and booking result	Sent to recycling and optimisation for fails
Settlement status	Sent to LCMM to update the instruction status.
Resulting status	Update of transaction data store
New balance	Update of securities and/or cash balance
Cash shortfall	Trigger for auto collateralisation

7.1.2.3 Recycling and Optimisation (box 2.3)

Failed trades which have not expired are recycled. Recycling occurs in anticipation of finding the required securities and/or cash in the subsequent settlement runs, for successful settlement of the failed transactions. Recycling functions in slightly different manners for daytime and night-time settlement. For night-time settlement, all failed transactions are recycled by default for each settlement cycle. During daytime settlement, failed transactions are recycled if the fails can be expected to settle successfully on the basis of either new settlement transactions or additional available securities and/or cash.

Optimisation cycles are specific processes aimed at increasing settlement efficiency. Such processes detect and resolve settlement gridlocks, as well as performing technical netting of obligations in cash and securities, with a view to settling new transactions as well as transactions that could not be settled in earlier attempts. Optimisation procedures will be available both during the night-time batches and during the daylight real-time window.

Input	
Provision and booking result	From the provision and booking function
Unsettled transactions	Taken from LCMM.

Output	
A number of transactions	After technical netting.

7.1.2.4 Auto/Client-collateralisation (Box 2.4)

T2S will provide auto-collateralisation services to facilitate the securities settlement to financial institutions that central banks have identified as eligible or clients that settlement banks have specified as eligible.. T2S will trigger auto-collateralisation when a participant does not have sufficient cash to settle the underlying transaction(s). The auto-collateralisation operation only will provide the residual cash amount required for

the settlement of the initial transaction(s) when the participant does not have sufficient funds to settle the full amount of the transaction(s).

The auto-collateralisation facility will be available during both the night-time and the daytime real-time settlement windows. T2S shall use the credit, granted through auto-collateralisation exclusively for the settlement of the underlying transactions that triggered the auto-collateralisation operation. Auto-collateralisation is optional to use on account, position and transaction level. T2S will ensure that full collateralisation of credit through auto-collateralisation as well as its reimbursement before or at the end of the business day. T2S will support auto-collateralisation between NCB and payment/settlement bank using both pledge and repo. and between payment/settlement bank and its clients (also known as client-collateralisation) using only repo. The auto-collateralisation function will receive securities prices from static data.

Input	
Cash shortfall	This acts as the trigger for auto-collateralisation.
Securities prices	Securities prices from static data.

Output	
Liquidity provision	For successful settlement
New transaction	Auto-collateralisation creates a settlement instruction and sends it to LCMM.

7.2 Sequencing and prioritisation

Settlement in T2S will take place in both a night-time and a daytime settlement window.

During the night-time settlement window, a range of different types of transactions will be submitted for settlement. Sequencing is the pre-determined order defined in T2S in which the different types of transactions will be submitted for settlement. The different night-time sequences are identified hereunder. Settlement order requirements have been identified for the real-time settlement day.

For settlement during the night-time and daytime settlement windows, T2S and T2S actors will be able to assign priority levels to instructions. T2S shall optimise and recycle settlement instructions according to their priority levels in such a way that if several instructions compete with respect to using the same securities and/or cash resources, preference for settlement is given to the instruction with the highest level of priority. In addition to the priority level, T2S shall also consider the intended settlement date of the transaction in order to favour the settlement of instructions with the oldest settlement date.

For real-time settlement, the prioritisation shall not apply to instructions submitted for a first settlement attempt during the real-time settlement window, but only to instructions in the settlement queue (i.e. failed instructions). This is the case as the increase of positioning will trigger an optimisation for the ISIN concerned, so that there should not be a conflict between new instructions settled in the order of arrival and instructions to be recycled with a priority assigned. Consequently, during the real-time settlement window, instructions shall be submitted for a first settlement attempt in the order of their arrival in the settlement procedure (after validation and matching).

During the real-time settlement window, the priority level (and the intended settlement date) shall only be taken into account by the settlement procedure for instructions that failed to settle in a prior settlement attempt and are consequently submitted for recycling and optimisation procedures.

7.2.1 Sequencing

For night-time settlement, sequencing refers to the order in which the settlement of certain sets of instructions is attempted in T2S. These sets of transactions are:

- corporate action related settlements;
- free-of-payment rebalancing of securities between the different securities accounts of a T2S party;
- NCB specific operations (e.g. collateralisation operations, such as substitution of collateral or calls for additional collateral); and
- trading-related instructions.

The sequences are processed separately in a fixed order in order to avoid the use of security positions for any transaction other than those in the sequence.

7.2.1.1 Night-time settlement cycles

Reference ID	T2S.07.010

During the night-time settlement window, T2S shall run at least two settlement cycles. During these settlement cycles, all eligible transactions already entered into T2S for the intended settlement date of the relevant night-time settlement window (or earlier intended settlement date) shall be submitted to settlement.

Within each cycle and sequence, T2S shall optimise the settlement of transactions.

Background information

The exact number of night-time cycles and their duration are not yet defined. They shall depend on the estimated volume for 2013 and on business requirements.

7.2.1.2 Sequencing for the first night-time settlement cycle

Reference ID	T2S.07.020

T2S shall start the first night-time settlement cycle with four settlement sequences. During each of the sequences, T2S shall settle different types of securities-related transactions. The four types of securities-related transactions are identified hereunder:

1. corporate action related settlements;
2. free-of-payment rebalancing of securities between the different securities accounts of a T2S party;
3. NCB specific operations (e.g. collateralisation operations, such as substitution of collateral or calls for additional collateral); and
4. trading-related instructions.

The second, third and fourth sequences shall also recycle transactions that could not be settled in the previous sequence(s).

Each of the four types of securities-related transactions is defined hereunder. A configuration of the different types of transactions shall be possible.

Sequence 1 – Corporate actions related settlements

Reference ID	T2S.07.030

T2S shall submit for settlement corporate action transactions with the relevant intended settlement date in the first sequence. This first sequence aims at making sure that all securities and cash positions available at the start of the night-time settlement window (i.e. not reserved for any other purposes) are used for the settlement of these corporate action transactions.

CSDs participating in T2S are required to submit corporate action transactions to T2S before the start of the night-time settlement cycle in order to enable T2S to submit these transactions for settlement during the first sequence of the first night-time settlement cycle.

Sequence 2 – Free-of-payment rebalancing of securities

Reference ID	T2S.07.040

T2S shall treat the rebalancing of securities positions amongst the different accounts of a same T2S party in Sequence 2. T2S shall settle these securities transfers in Sequence 2 under the cumulative conditions that the securities transfer takes place between accounts held by the same T2S party and that these securities transfers correspond to a FOP instruction. In Sequence 2, T2S shall as well as recycle all instructions that failed to be settled in the first sequence.

Background information

This second sequence aims at allowing each T2S party to shift securities between the different securities accounts it holds with one or several CSDs. Only free-of-payment transactions can be settled during this sequence. Securities transfers are processed during this sequence under the provision that they take place

between the securities accounts of the same T2S parties. Securities transfers taking place between the securities accounts of different T2S parties shall not be submitted for settlement during this sequence.

Sequence 3 – NCB-specific operations

Reference ID	T2S.07.050

When specific central banks operations need to be settled during the night, T2S shall settle credit operations with central banks in Sequence 3, in particular collateralisation operations such as substitutions of collateral, or instructions calling for additional collateral submitted by national central banks in guarantee of their credit operations. In Sequence 3, T2S shall also recycle all instructions that failed to be settled in the first two sequences.

Sequence 4 – Trading-related and other instructions

Reference ID	T2S.07.060

T2S shall submit for settlement in Sequence 4 all trading-related instructions entered into T2S for this intended settlement date, as well as recycled instructions with an older intended settlement date that could not be settled in an earlier attempt. In Sequence 4, T2S shall also recycle all instructions that failed to be settled in the first three sequences. T2S shall run this fourth sequence in at least one additional settlement cycle during the night.

7.2.1.3 Additional night-time settlement cycles

Reference ID	T2S.07.070

T2S shall run at least a second settlement cycle during the night. As for the fourth sequence of the first night-time settlement cycle, the additional settlement cycle(s) shall submit to settlement:

- all new instructions with the current intended settlement date entered into T2S after the launch of the previous night-time settlement cycle and before the launch of the relevant cycle; these instructions include, for instance, securities instructions providing securities liquidity via lending (securities lending), that are aimed at settling instructions that could not settle in an earlier settlement attempt;
- all recycled instructions that could not be settled through an earlier settlement attempt; these recycled instructions cover all instructions that could not be settled in the previous night-time cycle(s), including trading-related instructions, corporate action instructions, FOP rebalancing and operations with central banks that could not be settled during the first settlement cycle.

7.2.1.4 Partial settlement for the last night-time settlement cycle

Reference ID	T2S.07.080

At the end of the last night-time settlement cycle, T2S shall submit for partial settlement all transactions eligible for this partial settlement functionality that failed to be settled in an earlier attempt during the night.

Background information

Requirements applicable to partial settlement are defined in chapter 8.

7.2.1.5 Daytime settlement

Organisation of daytime settlement

Reference ID	T2S.07.090

During the real-time settlement window, T2S shall submit transactions for real-time settlement attempts while running optimisation procedures in parallel with the real-time settlement attempts.

Cut-off time for DVP settlements

Reference ID	T2S.07.100

During the real-time settlement window, until the cut-off time for DVP settlements, T2S shall:

- submit for settlement all new transactions entered during the current settlement day with an intended settlement date of the current settlement day or earlier; and
- recycle and optimise transactions that could not be settled in an earlier attempt (failing to be settled either during the night-time settlement cycle or during the current settlement window).

The cut-off time for DVP settlements will be 4.00 p.m. in accordance with the user requirements regarding the T2S schedule. After this cut-off time, DVP transactions that could not be settled in an earlier attempt will not be recycled for the same settlement day value, but will be recycled into the next settlement day if they still meet the settlement eligibility criteria.

Cut-off time for the settlement of other operations

Reference ID	T2S.07.110

After the first cut-off time for DVP settlements, and until the cut-off time for end-of-day settlement (6.00 pm according to the user requirements regarding schedule), T2S will submit for settlement:

- FOP transactions that could not be settled in an earlier attempt and FOP transactions entered into T2S after this first deadline;
- secured money market transactions, i.e. bilaterally agreed treasury management transactions; and
- NCB operations.

The cash potentially generated by secured money market trades or by NCB operations will not be re-used for other settlement purposes in T2S (i.e. recycling of DVP failures).

7.2.1.6 Real-time settlement attempts

Submission of transactions to real-time settlement attempts

Reference ID	T2S.07.120

During the daytime real-time settlement window, T2S shall submit transactions for a first settlement attempt in the order in which transactions are entered in the settlement process (i.e. after matching, validation, etc.).

Background information

For a more detailed description, please refer to the section on optimisation.

7.2.2 Prioritisation

Need for prioritisation for optimisation procedures

Reference ID	T2S.07.130

T2S shall enable T2S actors to assign several different levels of priority to transactions. For some specific transactions identified in static data, T2S shall also automatically assign predetermined levels of priority. These levels of priority (either instructed by T2S actors or predetermined in T2S) shall apply only in the optimisation procedures.

Background information

The levels of priority determined by T2S actors or automatically predetermined in T2S shall apply during the night-time full optimisation process and during the daytime continuous optimisation process. The level of priority of a transaction shall be without prejudice to the real-time settlement rule, since during the real-time period, transactions are submitted for a first settlement attempt in the order of their arrival in the settlement process.

Processing of prioritisation levels

Reference ID	T2S.07.140

During its night-time and daytime recycling and optimisation processes, T2S shall favour the settlement of transactions with a higher level of priority over that of transactions with a lower level of priority.

During the daytime settlement window, new transactions submitted for a real-time settlement attempt shall be settled in the order of their submission for the settlement attempt.

Background information

Details on the way the levels of priority are taken into account during the settlement process are provided in the section on optimisation.

Different levels of priority

Reference ID	T2S.07.150

T2S shall enable T2S actors to assign to each of their transactions one of the four different levels of priority identified hereunder:

1. reserved priority;
2. top priority;
3. high priority; or
4. normal priority.

7.2.2.1 Reserved priority

Reference ID	T2S.07.160

T2S shall enable only participating CSDs and central banks to assign a "reserved priority". This level of priority shall be assigned by CSDs or central banks for specific instructions such as intraday corporate actions or some central banks' specific operations related to the provision/ reimbursement of their credit operations.

T2S shall also provide them with the ability to determine parameters in T2S static data allowing T2S to identify transactions that T2S shall automatically process with this reserved level of priority. T2S shall also enable CSDs and central banks to assign the reserved level of priority at an instruction level. Central banks and CSDs shall be able to resort to this reserved priority by default for all their specific operations or to opt out if they do not see a need for such a reserved level of priority. T2S shall not provide other T2S actors with the possibility of using the reserved priority.

When a reserved level of priority applies to an instruction, based on the choice of a CSD or a central bank, this level of priority must prevail over the level of priority assigned to the relevant transaction by any other T2S Actor.

7.2.2.2 Top priority

Reference ID	T2S.07.170

T2S shall automatically assign top priority to transactions according to the settlement priority defaults. To that end, the parameters for identifying transactions to which this top priority level must be assigned shall be predetermined in T2S static data and shall apply by default to all the relevant transactions.

T2S shall not allow top priority to be assigned to any other category of transactions (either by default or at a transaction level).

7.2.2.3 High priority

Reference ID	T2S.07.180

T2S shall enable T2S actors to assign high priority to OTC transactions (without CCP) in the relevant settlement instructions.

7.2.2.4 Normal priority

Reference ID	T2S.07.190

T2S shall assign normal priority to all OTC instructions when they enter T2S, but shall enable T2S parties to assign them a high priority on an instruction-by-instruction basis. T2S shall also enable T2S actors to assign normal priority to their high-priority OTC instructions, if they had previously opted for high priority at the instruction level.

Applicability of the priority levels

Reference ID	T2S.07.200

For levels 3 and 4, only the deliverer can change the priority level of an instruction (only the deliverer can change normal priority to high priority and change high priority to normal priority).

7.3 Provision check for and the posting of settlement

7.3.1 Booking process

Booking steps in the settlement process

Reference ID	T2S.07.210

The settlement of transactions in T2S shall take place when the booking of the cash and securities debits and credits resulting from the relevant transactions take place on the appropriate T2S dedicated cash and securities accounts (either accounts identified in the instructions being settled or accounts predetermined by default).

Need for provision check

Reference ID	T2S.07.220

Booking shall take place only if the provision check on the accounts referred to in the settlement instruction (or on the accounts predetermined by default) is satisfactory, as described below.

Booking on a gross basis

Reference ID	T2S.07.230

Each and every transaction shall be booked on a gross basis. This is without prejudice to the use of technical netting effects in the provision check when several transactions are submitted together for settlement (either for optimisation purposes or because they are linked by a T2S Actor).

Exclusive control of T2S over the booking process

Reference ID	T2S.07.240

T2S shall keep full and exclusive control of the booking process. Consequently, no credit or debit can take place on the cash and securities accounts in T2S without their being processed by the T2S booking process.

Final and unconditional booking process

Reference ID	T2S.07.250

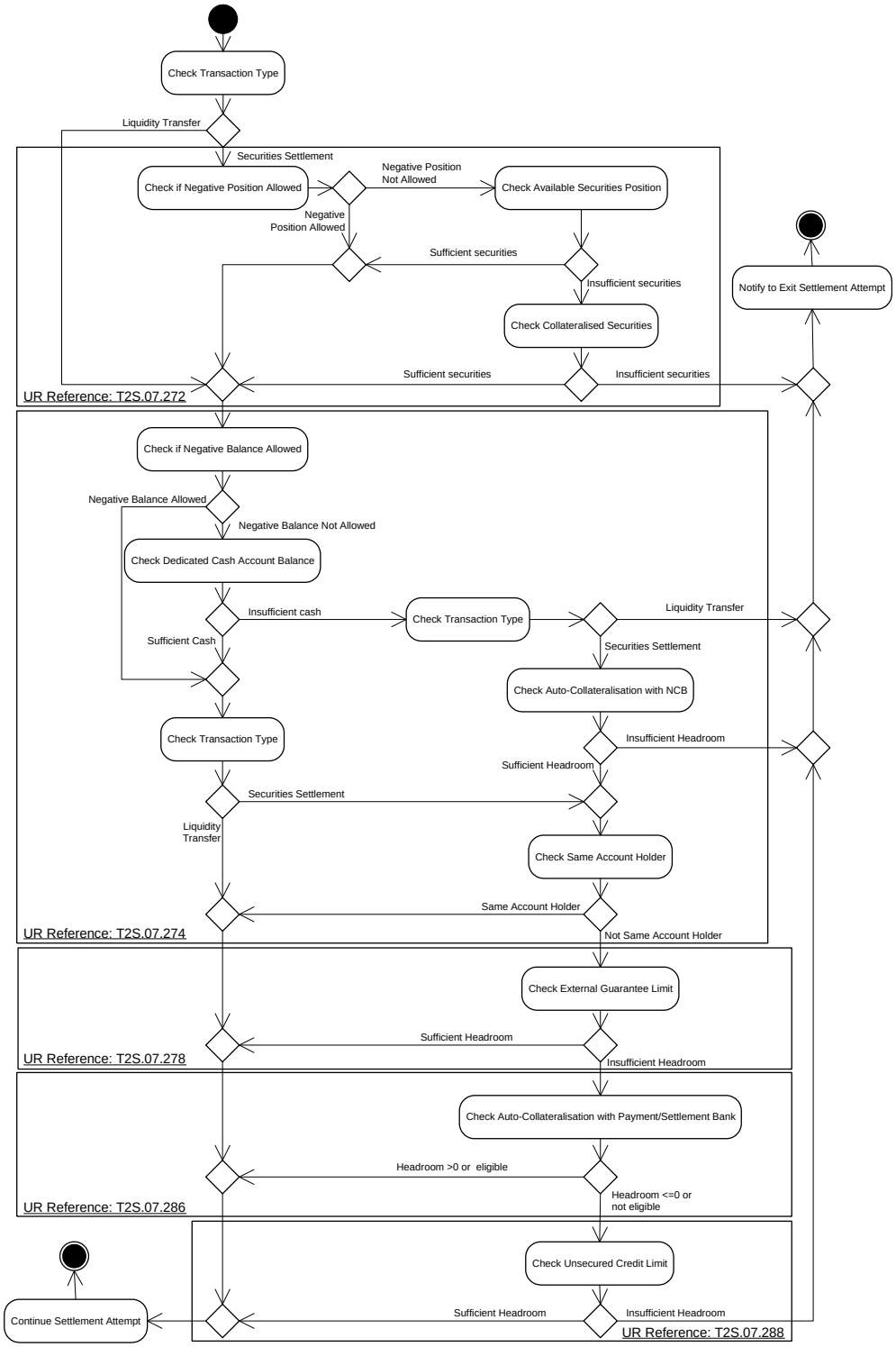
Once booked by T2S on the T2S parties' securities accounts and T2S dedicated cash accounts, cash and securities debits and credits must be final, i.e. irrevocable and unconditional. The irrevocability of these booking must not be conditional on any external event (e.g. such as another booking in the payment or settlement system/arrangement of an external central bank registrar, commercial bank or CSD).

7.3.2 Validation and requirements for the provision check

Validation ensures

- that the settlement transactions are still valid based on the current status of static data and
- that the parties, security, currency and accounts involved in settlement are not blocked from settlement.

The provision check in T2S ensures that the delivering party has sufficient securities and/or cash and receiving party has sufficient liquidity to settle before posting the settlement.



Validation

Reference ID	T2S.07.260

T2S shall validate the settlement transaction or the set of settlement transactions against static data before it performs the provision check. If validation fails, then T2S shall exit the settlement process for the settlement transaction or set of settlement transactions. If validation is successful, then T2S subsequently shall perform the provision check to determine whether the counterparts to the transaction have sufficient securities and liquidity to settle their underlying instructions.

Sequence of provision check

Reference ID	T2S.07.270

T2S shall perform the provision check in the following sequence:

1. Provision check of available securities position on the securities account (only for the settlement of securities)
2. Provision check for the T2S dedicated cash account and auto-collateralisation
3. Provision check on the external guarantee limit
4. Provision check on the auto-collateralisation limit of the client of the payment bank
5. Provision check on the unsecured credit limit

When the provision check 1 is not successful, then T2S shall indicate that insufficient securities are available to settle the transaction, end the provision check and trigger the termination of the settlement process for the transaction. When the provision check is successful, then T2S shall indicate that a securities account has sufficient securities to settle the transaction and initiate the provision check for the cash leg(s).

When the provision check 2, 3, 4 or 5 is not successful, then T2S shall indicate that insufficient cash is available to settle the transaction, end the provision check and trigger the termination of the settlement process for the transaction. When the provision check is successful, then T2S shall indicate that a transaction has sufficient liquidity to settle.

Provision check of available securities position on the securities account

Reference ID	T2S.07.272

T2S shall check for the securities leg of a settlement instruction to deliver securities that the position in the security in the balance type on the securities account, specified in the settlement transaction, is sufficient to settle the transaction. This step in this provision check is successful if the securities position in the relevant balance type on the securities account is equal to or greater than the quantity/nominal specified in the leg of settlement transaction to deliver. If this check determines that the securities account does not have sufficient securities, then T2S shall check for collateralised positions in the security for that same securities account to determine whether the execution of collateral substitution would result in a sufficient position to settle the transaction. If this is the case, then the provision check is successful and T2S shall execute the provision

check for liquidity on T2S dedicated cash account for the settlement of cash leg(s). When the provision check is not successful, then T2S shall trigger the termination of the settlement process for the settlement transaction or set of settlement transactions.

T2S shall not perform this check for securities accounts, which allow negative securities positions according to their static data configuration.

Provision check for the T2S dedicated cash account and auto-collateralisation

Reference ID	T2S.07.274

T2S shall perform a provision check to determine whether sufficient cash is available on the T2S dedicated cash account(s) involved in the settlement of the transaction or set of transactions. The provision check shall validate whether the T2S dedicated cash account that T2S will debit to settle a transaction has sufficient cash in the balance type. T2S shall perform this check for

- a liquidity transfer to debit a T2S dedicated cash account;
- and the cash leg of a settlement instruction to deliver cash.

T2S shall not perform this check for T2S dedicated cash accounts, which allow negative balances according to their static data configuration (e.g. central bank accounts, technical accounts).

T2S shall perform the provision check on

- the T2S dedicated cash account in the settlement instruction when it exists settlement instruction,
- or on the default T2S dedicated cash account, when the instruction specifies no T2S dedicated cash account.

When T2S performs the provision check for a liquidity transfer to debit a T2S dedicated cash account, then the provision check shall determine the amount of the liquidity transfer that T2S is to settle and shall exit the provision check to continue settlement.

When T2S performs the provision check for the cash leg of a settlement transaction and there is sufficient cash to settle the transaction, T2S shall check whether the T2S party holding the securities account is the same as T2S party holding the T2S dedicated cash account. If the T2S party is the same, then T2S shall exit the provision check and shall continue the settlement process for the transaction. If the party is not the same, then T2S shall check the external guarantee limit of the party holding the securities account.

When T2S performs the provision check for the cash leg of a settlement transaction and there is not sufficient cash to settle the instruction, T2S shall check whether the transaction is eligible for auto-collateralisation. If the transaction is eligible for auto-collateralisation and the available headroom for the auto-collateralisation limit on the T2S dedicated cash account is not sufficient to settle the transaction, then T2S shall exit both the provision check and the settlement process for the transaction.

If the transaction is eligible for auto-collateralisation and the available headroom is sufficient to settle the transaction, then T2S shall check whether the party holding the securities account is the same as party holding the T2S dedicated cash account. If this is the case, then T2S shall exit the provision check to

continue the settlement process for the transaction. If this is not the case, then T2S shall check the external guarantee limit for the T2S party holding the securities account.

Provision check for the external guarantee limit

Reference ID	T2S.07.278

T2S shall check whether the party, settling on the T2S dedicated cash account of a payment/settlement bank, has sufficient headroom for its external guarantee limit on its credit memorandum balance. The provision check shall identify the relevant credit memorandum balance

- by the combination of the T2S dedicated cash account and the securities account in the settlement instruction when it exists in the settlement instruction,
- or by the combination of the securities account and the default T2S dedicated cash account when the instruction specifies no T2S dedicated cash account.

If this provision check is successful, then T2S shall exit the provision check and continue the settlement process for the transaction. If this provision check is not successful, then T2S shall perform a provision check for a possible auto-collateralisation between the client and its payment/settlement bank (client-collateralisation) after determining the residual liquidity required to settle.

Provision check for the auto-collateralisation limit between the payment/settlement bank and its client (client-collateralisation)

Reference ID	T2S.07.286

When the client of the payment/settlement bank has insufficient headroom on its external guarantee limit, then T2S shall check whether the settlement transaction is eligible for auto-collateralisation between the payment/settlement bank and its client (client-collateralisation). If the transaction is not eligible for such auto-collateralisation, then T2S shall check the unsecured credit limit.

If the transaction is eligible for such auto-collateralisation, then T2S shall check the available headroom for the auto-collateralisation limit for the client's credit memorandum balance. If no headroom is available (headroom ≤ 0), then T2S shall check the unsecured credit limit. If the client of the payment/settlement bank has available headroom for auto-collateralisation limit on its credit memorandum balance, then T2S shall exit the provision check and inform settlement about the result of this provision check.

Provision check for the unsecured credit limit

Reference ID	T2S.07.288

T2S shall check the headroom for the unsecured credit limit for credit memorandum balance of a client of a payment/settlement bank when the client has insufficient headroom on its external guarantee limit and no headroom on its auto-collateralisation limit for its credit memorandum balance, or is not eligible for auto-collateralisation. If this provision check is unsuccessful, then T2S shall indicate that insufficient cash is available to settle the transaction. If the provision check is successful, then T2S shall indicate that a transaction has sufficient liquidity to settle.

Provision check for blocking purposes

Reference ID	T2S.07.350

When a blocking instruction is submitted for settlement, T2S shall perform a provision check on the securities account and/or T2S dedicated cash account referred to in the relevant instruction.

If sufficient securities and/or cash are available on the relevant accounts, T2S shall block the number of securities and/or the amount of cash specified in the settlement instruction on the relevant securities and/or T2S dedicated cash account(s).

If the number of securities and/or the amount of cash available on the securities account and/or the T2S dedicated cash account are not sufficient to cover the number of securities and/or the amount of cash specified in the blocking instruction, the blocking shall not take place.T2S shall recycle the blocking instruction until the full securities and/or cash is available in the securities account and/or T2S dedicated cash account.

T2S will use these securities and/or cash proceeds to settle the blocking instruction, provided that they are not dedicated to be used for any other purpose (e.g. credit received from auto-collateralisation to settle an underlying transaction or cash/securities to be redelivered in linked transactions such as back-to-back transactions can not be used for blocking purposes).

Provision check for reservation purposes

Reference ID	T2S.07.351

When a reservation instruction is submitted for settlement, T2S shall perform a provision check on the securities account and/or T2S dedicated cash account referred to in the relevant instruction.

If sufficient securities and/or cash are available on the relevant account(s), T2S shall reserve the number of securities and/or the amount of cash specified in the settlement instruction on the relevant securities and/or T2S dedicated cash account(s).

If the number of securities and/or the amount of cash available on the securities account and/or the T2S dedicated cash account are not sufficient to cover the number of securities and/or the amount of cash specified in the reservation instruction, T2S shall:

- reserve the number of securities and/or the amount of cash already available on the relevant account; and
- complement it with any incoming securities and/or cash proceeds arriving on this account, provided that these securities or cash proceeds are not dedicated to be used for any other purpose (e.g. credit received from auto-collateralisation to settle an underlying transaction cannot be used for reservation purposes; similarly, cash or securities to be redelivered in linked transactions such as back-to-back transactions can not be used for reservation purposes).

In that respect, the number of securities and/or amount of cash additionally reserved should be equal to the difference between (i) the number and/or amount mentioned in the initial reservation instruction and (ii) the number of securities/ amount of cash initially available on the relevant account.

CoSD blocking

Reference ID	T2S.07.352

When a CoSD blocking instruction is submitted for settlement, T2S shall perform a provision check on the securities account and/or T2S dedicated cash account referred to in the relevant instruction.

If sufficient securities and/or cash are available on the relevant accounts, T2S shall block the number of securities and/or the amount of cash specified in the settlement instruction on the relevant securities and/or T2S dedicated cash account(s). If the number of securities and/or the amount of cash available on the securities account and/or the T2S dedicated cash account are not sufficient to cover the number of securities and/or the amount of cash specified in the CoSD blocking instruction, the blocking shall not take place, and will be recycled.

Provision check on cash and securities reserved/ blocked

Reference ID	T2S.07.360

When a T2S party wants to use securities and/or cash that are reserved/blocked on its securities account and/or T2S dedicated cash account, the T2S party shall specify it in the settlement instruction by referring to the initial reservation/blocking instruction.

When an instruction refers to an initial reservation/blocking instruction, T2S shall perform its provision check on the number of securities and/or amount of cash reserved/blocking through the initial reservation/blocking instruction.

If there are sufficient securities and/ or cash reserved/ blocked for the settlement of the relevant transaction, T2S shall book the settlement by using the securities and/or cash already reserved/ blocked.

If the securities and/or cash reserved/blocked are not sufficient to cover the amount specified in the settlement instruction, the T2S provision check shall consider the securities and/or cash reserved/blocked, as well as on any other securities and/or cash available on the securities and/or T2S dedicated cash account (excluding securities and/or cash reserved/blocked on the relevant accounts for any other purposes).

When T2S resorts to additional cash and/or securities available on the cash and/or securities accounts, T2S shall use in priority the reserved/ blocked amounts of cash and/or securities referred to in the instruction being settled.

Provision check on several layers of securities and/or cash previously reserved/blocked

Reference ID	T2S.07.370

When a T2S party has reserved/blocked securities and/or cash on the same securities and/or T2S dedicated cash account through different subsequent reservation/blocking instructions, T2S shall enable the T2S party to use the different layers of securities and/or cash for the settlement of one settlement instruction. To that end, the T2S party is required to refer to the different initial reservation/blocking instructions.

When several reservations/ blockings of securities and/or cash have been performed on the same securities account and/or T2S dedicated cash account, and when a T2S party submits to T2S a settlement instruction referring to one (or some) of the initial reservation/blocking instructions, the T2S provision check shall not consider the additional numbers of securities and/or amount of cash reserved/blocked through reservation instructions other than those referred to in the instruction being settled.

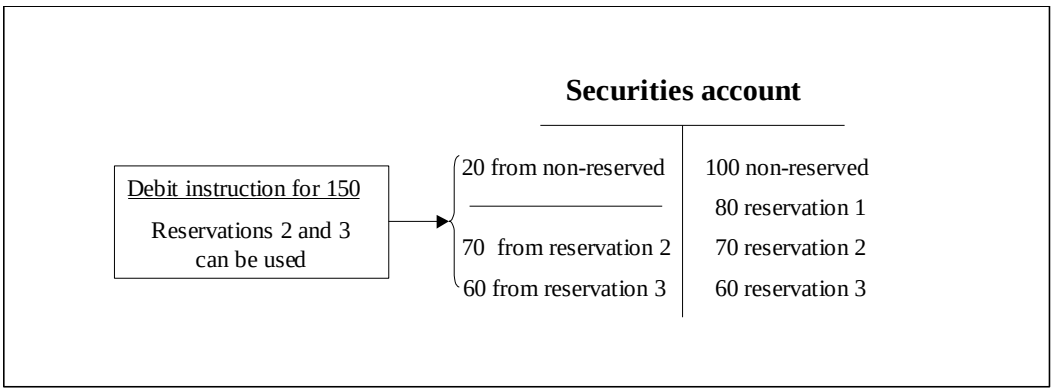
However, if the securities/ cash reserved/blocked through the relevant reservation/blocking instructions here mentioned above are not sufficient to satisfy the provision check, T2S shall also take into account additional securities and/or cash available on the relevant securities and T2S dedicated cash accounts, provided that these securities and/or cash have not been reserved/blocked for any other purpose.

When T2S resorts to additional cash and/or securities available on the cash and/or securities accounts, T2S shall use in priority the reserved/blocked amounts of cash and/or securities referred to in the instruction being settled.

Background information

In the example hereunder, T2S shall in priority use the securities reserved in 2 and 3, since the instruction being settled refers to initial reservation instructions 2 and 3. Since the amount of securities reserved in 2 and 3 is not sufficient for settlement, T2S shall use the remaining available securities (non-reserved). Securities reserved in 1 shall not be used, as the initial reservation instruction 1 is not referred to in the instruction being settled (as they may be reserved for any other purpose).

Example:



Procedure for unused reserved or blocked cash and securities positions at the end of the day

Reference ID	T2S.07.380

If at the end of the T2S settlement day, the reserved/blocked cash has not been used to any purpose, T2S shall release the relevant cash. However, in the case of a CoSD, the instructions for the CoSD blocking of cash will be reattempted for the next T2S settlement day.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 8

PROCESSING REQUIREMENTS FOR SETTLEMENT OPTIMISATION AND AUTO-COLLATERALISATION

EUROPEAN CENTRAL BANK

EUROSYSTEM

8 Processing requirements for Settlement optimisation and auto-collateralisation

This chapter details the requirements for settlement, optimisation and recycling procedures, as well as for auto-collateralisation with central banks or payment/settlement banks.

Section 8.1 sets the T2S objectives for settlement, optimisation and recycling and details the main optimisation features. The optimisation requirements for the night-time and daytime settlement process are also detailed, including references to the use of auto-collateralisation (with central banks or payment/settlement banks) and partial settlement procedures (conditions for triggering partial settlement including thresholds, restrictions applicable, etc…). Finally, the last paragraphs of Section 8.1 cover requirements applicable to the settlement of non-euro-denominated transactions and to settlements and optimisations involving several currencies.

Section 8.2 provides a detailed description of auto-collateralisation requirements with central banks or payment/settlement banks (auto-collateralisation between payment/settlement banks and their clients is also called as client-collateralisation). In particular, it defines the roles of NCBs, payment/settlement banks and their clients in that perspective. The conditions for triggering auto-collateralisation and the requirements applicable to the cash leg of auto-collateralisation operations are also defined. This section also provides requirements on collateral management, i.e. identification of collateral on stock and on flow, the valuation of collateral and the collateralisation procedures. In addition, an identification of the types of transactions eligible for auto-collateralisation (trading-related and corporate actions, single transactions or sets of transactions) is provided. Finally, the last paragraphs of this section define requirements applicable to the reimbursement of credits provided through auto-collateralisation, including automated reimbursements and substitutions of collateral.

8.1 Settlement, optimisation and recycling procedures

This section describes user requirements for the settlement process for both the night-time and daytime real-time settlement process, jointly with the optimisation and recycling procedures to be used to maximise settlement efficiency.

To that end, this section describes the objectives that T2S settlement, optimisation and recycling procedures shall meet. This section also describes the main optimisation tools and procedures in T2S. Finally, this section details requirements for running optimisation procedures during both the night-time and the daytime settlement windows.

8.1.1 Objectives of T2S settlement, optimisation and recycling procedures

General objectives of the settlement, optimisation and recycling procedures

Reference ID	T2S.08.010

T2S settlement, optimisation and recycling procedures shall maximise the volume and value of settlement with the available securities and cash resources, in order to minimise the number and value of unsettled transactions at the end of the night-time settlement process and the number and value of fails at the end of the settlement day. For that purpose, T2S optimisation procedures shall find the optimum balance between the maximisation of volumes (number of transactions settled) and value (cash countervalue of DVP transactions).

Background information

The optimum balance between the maximisation of volume and value aims at optimising the overall settlement efficiency. The combination of both aims at avoiding situations where only volume optimisation would be sought (which could lead to the settlement of low value retail transactions being favoured to the detriment of transactions with a higher value) or situations where only value optimisation would be sought (which could lead to the settlement of high value transactions being favoured to the detriment of many retail transactions with a lower value).

Objectives of the settlement procedure during the night-time settlement window

Reference ID	T2S.08.020

During the night-time settlement process, T2S shall submit for settlement attempt (in the different sequences and cycles mentioned in Chapter 7) all eligible transactions for this intended settlement date and transactions recycled from the previous days. None of the transactions eligible for settlement during the night-time settlement window shall remain unsettled at the end of the night-time settlement window without having been submitted for at least one settlement attempt.

Objectives of the real-time settlement procedure during the daytime settlement window

Reference ID	T2S.08.030

During the daytime settlement window, T2S shall submit transactions to a “real-time settlement” attempt without delay after the transaction becomes eligible for settlement. T2S shall consequently minimise the time lag during which a settlement instruction eligible for settlement is queued before being submitted to a settlement attempt. To that purpose, the processing time for submitting an instruction to a settlement attempt, to perform the provision check and ensure the booking process (or exclude transaction from booking if the provision check is not satisfied) shall be minimised.

Optimisation objectives during the night-time settlement window

Reference ID	T2S.08.040

During the night, T2S shall maximise the number and value of settlements with the available securities and cash resources. In order to reduce the number and value of transactions failing to settle, T2S shall employ:

- optimisation algorithms identifying chains of transactions (e.g. such as empty circles, back-to-back transactions) to resolve gridlock situations;
- auto-collateralisation operations with central banks and/or payment/settlement banks providing intraday credit for the settlement of transactions for which the payment/settlement bank has insufficient cash and/or for which the client of the payment/settlement bank has insufficient external guarantee headroom; while seeking to maximise the number and value of transactions settled during the night, T2S shall minimise the number and value of auto-collateralisation operations necessary in the optimisation process;
- partial settlement, in order to minimise the value of transactions remaining unsettled at the end of the night-time settlement window; while pursuing this objective, T2S shall minimise the number of transactions submitted to partial settlement as described in the section on partial settlement.
- When necessary, T2S shall combine the three procedures together (optimisation algorithms, auto-collateralisation and partial settlement).

When using optimisation algorithms, auto-collateralisation and partial settlement, T2S shall take into account rules applicable regarding the level of priority and intended settlement date of the transactions (see below).

Optimisation objectives during the daytime settlement window

Reference ID	T2S.08.050

During the daytime settlement window, T2S shall run optimisation procedures in parallel with the real-time settlement process in order to reduce the number and value of pending transactions.

T2S shall run optimisation procedures on pending transactions during the daytime settlement window as frequently as possible. These continuous optimisation procedures shall aim at taking into account as soon as possible changes of situation (such as new cash or securities availability on a securities account or T2S dedicated cash account, or new unsettled transactions), in order to identify chains of transactions that can be submitted together for a settlement attempt.

Similarly to night-time optimisation, in order to increase the volume and value of settlement and hence, to reduce the value and volume of pending transactions, continuous optimisations shall employ:

- optimisation algorithms identifying chains of transactions (e.g. such as empty circles, back-to-back transactions) to resolve gridlock situations;
- auto-collateralisation operations with central banks and/or payment/settlement banks providing intraday credit for the settlement of transactions for which the payment/settlement bank has insufficient cash and/or for which the client of the payment/settlement bank has insufficient external guarantee headroom;
- partial settlement, in order to minimise the value of transactions remaining unsettled at the end of the settlement day; while pursuing this objective, T2S shall minimise the number of transactions submitted to partial settlement as described in the section on partial settlement.

When necessary, T2S shall combine the three procedures (optimisation algorithms, auto-collateralisation and partial settlement).

Similarly to night-time optimisation procedures, T2S shall take into account rules applicable regarding the level of priority and intended settlement date of the transactions (see here under) when resorting to optimisation algorithms, auto-collateralisation and partial settlement during the daytime settlement window.

Recycling objectives: favouring the settlement of oldest transactions

Reference ID	T2S.08.060

When several transactions with the same level of priority compete for settlement, T2S shall submit recycled transactions for settlement and optimisation procedures in a way that favours the settlement of transactions with the oldest intended settlement date.

When several pending transactions with the same level of priority and the same intended settlement date are recycled, T2S shall settle the relevant transactions in a way that maximises the volume and value of settlement.

Recycling objectives: limiting the length of time during which a transaction remains unsettled

Reference ID	T2S.08.070

T2S shall use securities and cash resources in optimisation procedures for oldest transactions first in order to reduce the time during which a transaction remains unsettled beyond the intended settlement date.

8.1.2 Main features of optimisation procedure in T2S

This section details the types of optimisation procedures expected from T2S, including partial settlement.

Except for transactions linked or optimised across currencies, the user requirements below assume that all transactions are settled in the same currency on the cash side.

Optimisation procedures during the night-time and daytime settlement windows

Reference ID	T2S.08.080

T2S shall provide optimisation procedures for both the night-time and the daytime settlement windows.

During the night-time settlement window, T2S optimisation procedure shall cover all transactions submitted for settlement (either new transactions or recycled transactions that could not be settled in a previous settlement attempt).

During the daytime settlement window, T2S optimisation procedure shall be run in parallel of real-time settlements and shall cover transactions that could not be settled in an earlier attempt.

Role of technical netting in the optimisation procedures

Reference ID	T2S.08.090

T2S shall include technical netting in its optimisation procedures. The technical netting aims at limiting resources necessary for the settlement of a set of transactions submitted together for a settlement attempt.

Without jeopardising the fact that booking takes place on a gross basis, T2S shall reduce, through technical netting, the final net balance to be credited and debited on securities accounts and T2S dedicated cash accounts. When performing its provision check, T2S shall consider the final net balance that results from the booking of all the transactions submitted together for the settlement attempt (and not from each and every transaction).

Use of technical netting

Reference ID	T2S.08.100

Technical netting shall be used to the largest extent possible in T2S optimisation procedures in order to maximise the number and the value of transactions that can be settled with a given amount of securities and/ or cash.

The purpose of T2S optimisation procedures shall be:

(i) to select sets of transactions with a view to reducing the net amount of debits and credits that result from the booking of the relevant set of transactions; and

(ii) to ensure that these net amounts of debits and credits can be booked with the cash and securities resources available on the securities accounts and T2S dedicated cash accounts referred to in the instructions being settled.

The way these two steps are performed is different during the night-time and the daytime settlement windows, as described in the following sections.

Use of technical netting on the securities and cash sides

Reference ID	T2S.08.110

T2S shall apply technical netting on the securities and/or cash side of transactions submitted for optimisation. In order to optimise the securities side of settlements, T2S shall select several transactions involving the same ISIN with a view to minimising the number of securities necessary to ensure settlement. In order to optimise the cash side of settlements, T2S shall select several transactions involving the same or different ISINs with a view to minimising the amount of cash necessary to ensure settlement.

8.1.3 Optimisation procedures during the night-time settlement window

Optimisation procedures with technical netting during the night-time settlement window

Reference ID	T2S.08.120

During the night-time settlement window, T2S shall submit all eligible transactions for settlement and shall, hence, optimise all these transactions together.

For optimisation purposes, T2S shall:

- consider the number of securities and the amount of cash available on the securities accounts and T2S dedicated cash accounts where settlement has to take place;
- consider whether the net debits and credits resulting from the transactions submitted to settlement satisfy the provision check, including the check against limits headroom; and
- de-select (when necessary, i.e. when no auto-collateralisation or partial settlement is possible) in an optimised way the transactions that cause the net debits and credits to exceed the amount of securities and cash resources available on the securities accounts and T2S dedicated cash accounts.

When the provision check fails due to a lack of cash and/or insufficient external guarantee headroom, T2S shall consider whether auto-collateralisation will allow the settlement.

Criteria to be used for the de-selection of transactions

Reference ID	T2S.08.130

When several transactions can be deselected, T2S shall de-select transactions with a lower priority before transactions with a higher priority.

When several transactions with the same level of priority can be deselected, T2S shall de-select transactions with the most recent intended settlement date before transactions with the oldest settlement dates.

When several transactions with the same level of priority and the same intended settlement date can be de-selected, T2S shall de-select them in a way that minimises the number and value of unsettled transactions.

When ensuring optimisation during the night, T2S will identify sets of transactions as given in the examples of daytime optimisations below. Consequently, when minimising the number and value of unsettled transactions, T2S shall consider identifying at least back-to-back transactions and chains of transactions that could be settled. If possible, these transactions shall be included in the selection of transactions to be settled (i.e. not de-selected), before any additional transactions are included.

8.1.4 Optimisation procedures during the daytime settlement window

Submission of pending transactions for optimisation with technical netting during the daytime settlement window

Reference ID	T2S.08.140

During the daytime settlement window, T2S shall use technical netting to optimise the pending transactions that failed to be settled in an earlier attempt during the previous night-time settlement window or during the current daytime procedure.

When a transaction fails to be settled in a first settlement attempt during the real-time settlement window due to a lack of cash and/or insufficient external guarantee headroom, T2S shall trigger (when possible and applicable) an auto-collateralisation attempt before the optimisation procedures with technical netting.

Optimisation procedures with technical netting during the daytime settlement window

Reference ID	T2S.08.150

In parallel with real-time settlements, T2S shall continuously run optimisation procedures covering pending transactions in a way that identifies sets of transactions that can be submitted together for settlement.

These continuous runs of optimisation procedures shall aim at taking into account:

- additional securities and/or cash resources available on the securities accounts and/or T2S dedicated cash accounts of the T2S party failing to settle; these additional securities and/or cash resources can be the proceed either of a trading-related transaction or from a corporate action; and
- any new unsettled transaction due to a lack of securities or cash.

Optimisation procedures in the daytime settlement window when additional securities are available

Reference ID	T2S.08.160

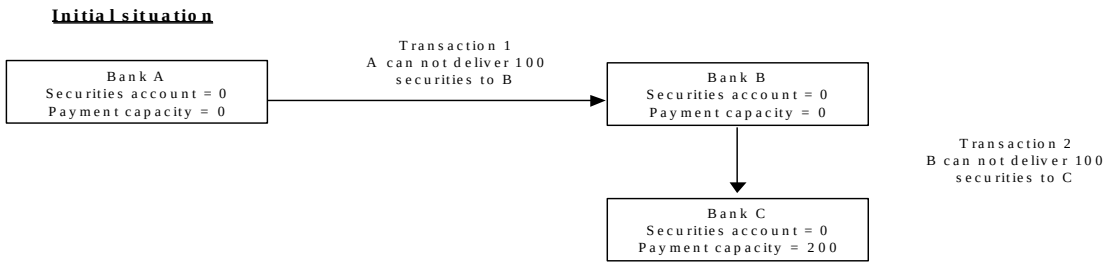
When additional securities for a given ISIN become available on the securities account of a T2S party that failed to settle other transactions due to a lack of securities on the same securities account and for the same ISIN, T2S shall identify the transactions that are pending for settlement due to lack of securities on the same securities account and for the same ISIN.

If such pending transactions exist, T2S shall submit these pending transactions for settlement in a way that meets optimisation objectives.

Background information

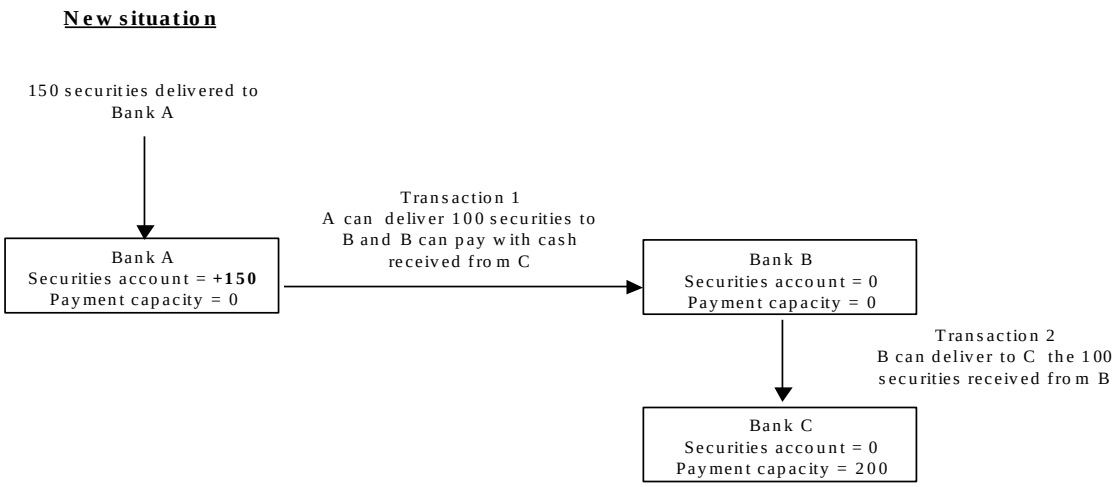
For the above-mentioned cases, optimisations shall aim at identifying at least back-to-back transactions and chains of transactions that would maximise the use of additional securities resources.

Example 1: back to back transactions



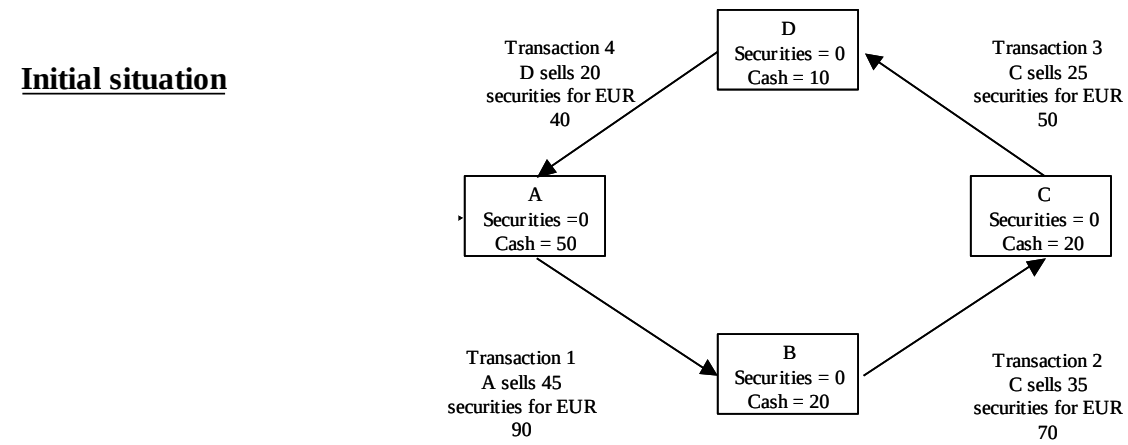
A back-to-back chain of transaction is identified by the optimisation procedure. However, in the initial situation, A has no securities on its securities account, which prevents the settlement of the chain of transactions between A, B and C.

A new situation is created by the delivery of 150 securities on the securities account of bank A. Considering that bank A has a pending transaction waiting for settlement on its securities account, T2S shall use the 150 securities received by submitting the chain of back-to-back transactions identified for settlement. In this case, 100 of the 150 securities received are used for the settlement of the chain of pending transactions.



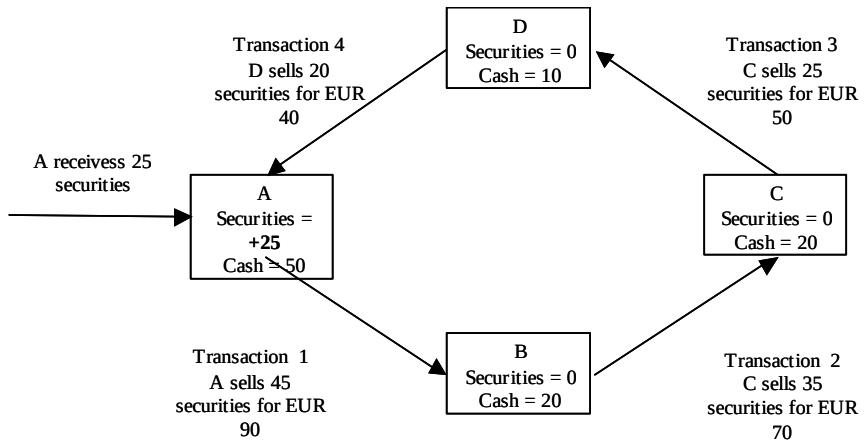
<u>Example 2:</u> complex chain of transactions

In the initial situation, none of the banks A, B, C or D has sufficient securities to settle their respective transactions.



The delivery of 25 securities on the securities account of bank A creates a new situation. Considering that bank A has a pending transaction waiting for settlement on its securities account, T2S shall use the 25 securities received by submitting the chain of back-to-back transactions identified for settlement. In this case, all the securities received on the securities account of bank A can be used for the settlement of the whole chain of transactions.

New situation



Optimisation procedures in the daytime settlement window when additional cash is available

Reference ID	T2S.08.170

When additional cash becomes available on a T2S dedicated cash account, T2S shall identify the pending transactions which failed to be settled in an earlier attempt due to a lack of cash on this T2S dedicated cash account and/or insufficient external guarantee headroom overrun on the affected credit memorandum.

If such transactions exist, T2S shall submit them for settlement.

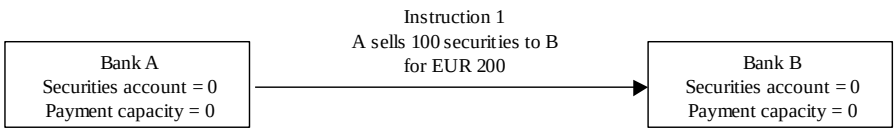
Optimisation procedures in the daytime settlement window when a new transaction fails to be settled

Reference ID	T2S.08.180

When a transaction fails to be settled on a first attempt during the daytime settlement window, T2S shall submit this failed pending transaction to the continuous optimisation procedures in order to identify if this new pending transaction can be settled together with other pending transactions in order to solve gridlock situations.

When such a chain of transaction is identified, T2S shall submit all the transactions together to the real-time settlement process. The whole chain of transactions shall be submitted to a settlement attempt in the order of arrival of this whole chain of transactions in the real-time settlement process.

Initial situation



Background information

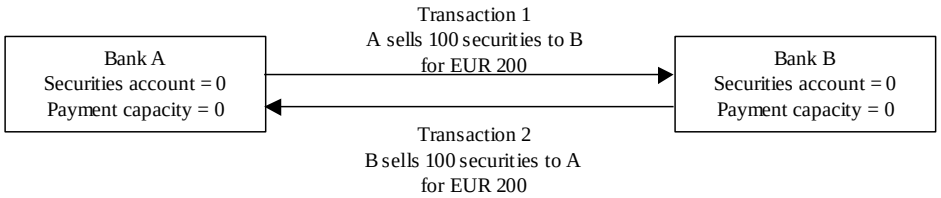
For instance, T2S shall aim at identifying chains of transactions such as empty circles, etc. so that the new pending transaction may be settled. The complexity of the empty circle solved depends on the number of T2S parties involved in the circle.

Example 1: simple empty circle

In the initial situation, bank B has a pending purchasing transaction with bank A. This means that bank B cannot settle due to a lack of securities on bank A's side and lack of cash on bank B's side.

Due to the lack of cash and securities on banks A and B's sides, a second transaction between bank A and bank B fails to be settled. This new unsettled transaction creates a new situation which enables an empty circle to be identified and the settlement of both unsettled transactions to be ensured.

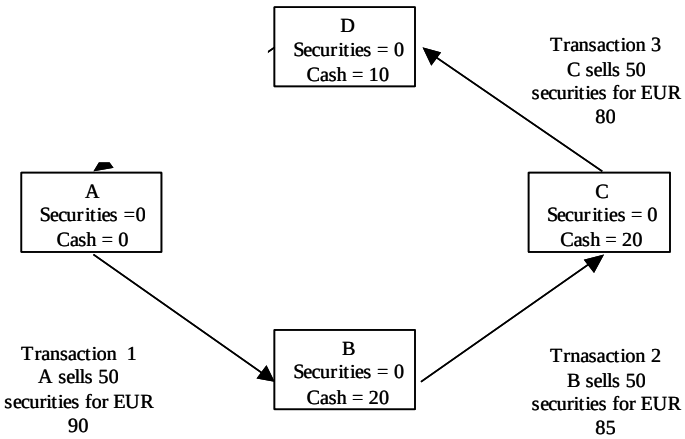
New situation



Example 1: complex empty circle

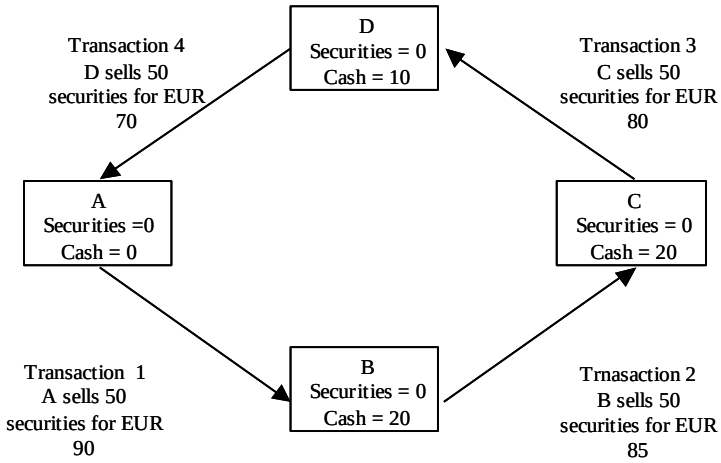
In the initial situation, transactions 1, 2 and 3 cannot be settled due to lack of cash and securities on the accounts of A, B, C and D.

Initial situation



Due to lack of cash and securities on the accounts of A and D, transaction 4 fails to be settled. This new unsettled transaction creates a new situation which enables an empty circle to be identified and the settlement of both unsettled transactions to be ensured.

New situation



Criteria for selecting transactions in the daytime continuous optimisation process

Reference ID	T2S.08.190

If, during the daytime settlement window, T2S has to make a choice between several pending transactions in the selection process for continuous optimisation procedures, T2S shall favour transactions with the highest levels of priority over transactions with the lower levels of priority. If T2S has to make a choice between several transactions with the same level of priority in the selection process, T2S shall favour transactions with the oldest intended settlement date over transactions with the more recent intended settlement date.

8.1.5 Partial settlement procedures

Availability of partial settlement procedures

Reference ID	T2S.08.210

T2S shall use partial settlement for transactions that could not be settled in an earlier settlement attempt due to lack of securities when the settlement transaction fulfils all criteria for partial settlement.

Timing for partial settlement procedures

Reference ID	T2S.08.220

T2S shall activate partial settlement procedure and start submitting eligible instructions for partial settlement when it receives a T2S time-based or event-based trigger to initiate partial settlement. T2S shall deactivate partial settlement procedure and stop queuing eligible instructions to partial settlement procedure when it receives a time-based or event-based trigger to terminate partial settlement.

T2S shall support the definition of several T2S parameters for activating and deactivating partial settlement procedure during the night-time and daytime settlement period.

T2S shall submit all instructions at least once for partial settlement that T2S has identified as eligible for partial settlement prior to deactivation of the partial settlement procedure.

Main features of partial settlement

Reference ID	T2S.08.230

T2S shall apply partial settlement to FOP and DVP instructions when the instruction is eligible for partial settlement based on the criteria below. When submitting an unsettled transaction for partial settlement, T2S shall attempt to settle the maximum amount of securities available on the securities account of the seller, taking into account the threshold type chosen by the counterparts. The part of the transaction that settles is referred to as the "settled leg", whereas the part of the transaction that cannot be settled is referred to as the "pending leg".

Main features of partial settlement: keeping track of the initial transaction

Reference ID	T2S.08.240

When submitting a transaction for partial settlement, T2S shall keep track of the initial transaction reference for the pending leg.

Triggering partial settlement: agreement and threshold conditions

Reference ID	T2S.08.250

T2S must submit transactions for partial settlement only if the conditions mentioned below regarding the agreement of the T2S parties for using the partial settlement functionality and regarding the minimum amount for triggering partial settlement are met.

Agreement on partial settlement at an instruction level

Reference ID	T2S.08.270

T2S shall enable a T2S party to set a partial settlement-processing attribute at instruction level. T2S shall trigger partial settlement on all matched instructions unless at least one of the counterparts submits its settlement instruction as not eligible for partial settlement (partial settlement flag no/false). T2S shall trigger partial settlement when both counterparts indicate at instruction level that they allow partial settlement (partial settlement process attribute yes/true) or when the value for the attribute is not present. T2S shall allow T2S parties to change the partial settlement processing attribute as it requires during the day until T2S settles the instruction partially or fully.

Conditions in terms of thresholds

Reference ID	T2S.08.290

T2S shall only submit transactions for partial settlement if they meet the thresholds criteria defined below. These thresholds shall be set in T2S static data.

Main features of thresholds

Reference ID	T2S.08.300

Thresholds applicable to partial settlement must be expressed in cash value or in quantity. The threshold in cash value determines the numeric value under which no partial settlement should take place. The threshold in quantity determines the quantity of the underlying security under which no partial settlement should take place. The threshold in quantity may be defined through the combination of attributes of the securities reference data. T2S shall not combine these two threshold types.

Applicability of thresholds in quantity

Reference ID	T2S.08.310

T2S shall apply a harmonised threshold for quantity when both counterparts indicate for their instructions that T2S shall apply a partial settlement threshold in quantity.

T2S shall apply to all eligible FOP instructions the threshold for the quantity, regardless of the threshold specified at the instruction level.

Background information:

The market has agreed that the harmonised threshold in quantity shall be defined by the minimum settlement unit and the settlement unit multiple of the underlying security defined in T2S securities reference data.

Applicability of thresholds in cash value

Reference ID	T2S.08.315

T2S shall apply harmonised threshold in cash value to all eligible DVP instructions unless both counterparts indicate in their instructions that T2S is to apply threshold in quantity. The threshold in cash value shall be common to all T2S parties, set as parameter for each T2S settlement currency and separate for equity and debt instruments.

Background information:

The market has agreed that the harmonised threshold in cash value shall be 10,000EUR or the equivalent in another T2S settlement currency for equity-instruments and 100,000EUR or the equivalent in another T2S settlement currency for debt instruments. The instruments belonging to either group shall be defined by the first character of the ISO10962 Classification of Financial Instruments set in T2S securities reference data.

Partial settlement in optimisation procedures

Reference ID	T2S.08.380

When T2S submits a chain of pending settlement transactions for settlement when partial settlement is active, T2S shall check for every settlement transaction in chain whether it is eligible for partial settlement. T2S shall apply partial settlement for those settlement transactions in the chain that are eligible.

When determining the maximum quantity that can settle for a pending transaction, T2S in its optimisation procedure shall take into account the securities position on the securities account, the cash resources available for the T2S dedicated cash accounts as well as securities and cash received in the process of settling the relevant chain of transactions.

Limitation of partial settlements in optimisation procedures

Reference ID	T2S.08.390

When several transactions are optimised together (including technically linked by T2S for optimisation purposes) in a way that gives rise to a chain of securities or cash redeliveries, T2S shall try to reduce the number of redelivery transactions submitted to partial settlement.

When selecting transactions submitted to, or excluded from, partial settlement, T2S shall take into account the level of priority and the intended settlement date of the relevant transactions (favouring transactions with a higher level of priority and then transactions with the oldest intended settlement date).

Application of partial settlement to transactions linked by T2S parties

Reference ID	T2S.08.400

T2S shall not submit transactions linked by T2S actors for partial settlement.

8.1.6 Settlement and optimisation procedures applicable to non-euro-denominated transactions

Non-euro settlements

Reference ID	T2S.08.440

Provided that an appropriate arrangement has been put in place between T2S and a central bank issuing a given non-euro currency (or a central bank authorised to hold accounts denominated in this currency and to settle transactions on these accounts), T2S shall be technically able to settle transactions in central bank money on T2S dedicated cash accounts denominated in this currency. Currencies accepted by T2S are referred to as "T2S settlement currencies" below.

Settlement procedures applicable to transactions denominated in non-euro currencies

Reference ID	T2S.08.450

Under the conditions mentioned above, T2S shall be technically able to provide the settlement and optimisation procedures (including partial settlement) already envisaged for euro-denominated settlements for non-euro-denominated settlements. This shall only be applicable to non-euro transactions denominated in the same T2S settlement currency (for the settlement of sets of transactions involving several currencies, see below).

Provided that an appropriate agreement has been reached with the central bank issuing the relevant non-euro currency, T2S shall also provide an auto-collateralisation functionality for non-euro-denominated transactions, in the same way as auto-collateralisation is provided for euro-denominated settlements.

Payment/settlement banks shall also be able to determine limits (e.g. auto-collateralisation limit) for each of the eligible non-euro T2S settlement currencies for which T2S provides settlement services.

8.1.7 Settlement and optimisation procedures applicable to sets of transactions denominated in several currencies

Sets of linked transactions whose cash leg is denominated in different currencies

Reference ID	T2S.08.460

T2S shall not enable T2S parties to denominate the cash leg of one single transaction in several T2S settlement currencies. However, T2S shall enable T2S parties to submit linked transactions whose cash legs are denominated in different T2S settlement currencies, provided that the cash leg of each of the transactions is denominated in one, and only one, T2S settlement currency. When transactions denominated in different T2S settlement currencies are linked together by T2S parties, or when T2S needs to link several transactions denominated in different T2S settlement currencies for optimisation purposes (see below), T2S shall submit all the relevant transactions together for settlement as linked transactions.

Optimisation procedures applicable to sets of transactions denominated in several currencies

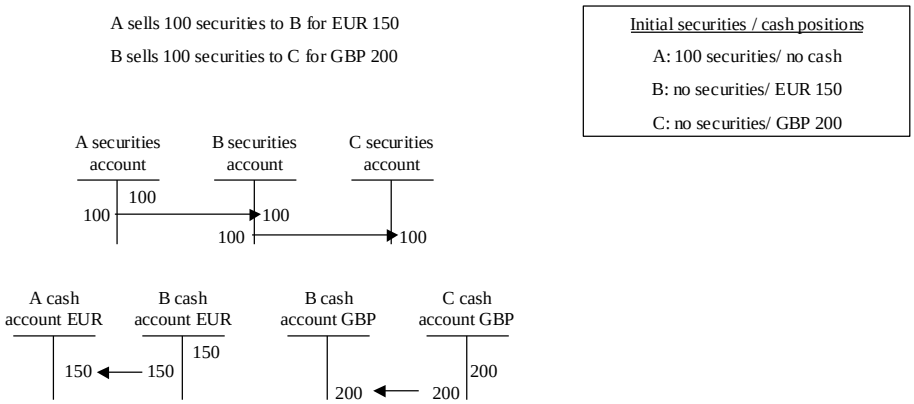
Reference ID	T2S.08.470

During the night-time settlement window and in the daytime continuous optimisation process, when several transactions involving the same ISIN are denominated in different T2S settlement currencies, T2S shall only optimise the securities legs of the relevant transactions in order to reduce the net securities debit resulting from the submission for settlement of this set of transactions.

T2S shall not seek to optimise the cash legs of transactions denominated in different T2S settlement currencies (i.e. T2S shall not offer any technical cross-currency cash netting).

Background information:

Example: in this example, T2S should optimise the securities delivery side (back-to-back) to the extent that C has enough GBP to pay B and that B has enough euro to pay A. An inability of B to pay in euro, for instance, would not have allowed any optimisation (no cross-currency optimisation on the cash side).



8.2 Auto-collateralisation

Provision of auto-collateralisation functionality

Reference ID	T2S.08.480

T2S shall provide auto-collateralisation functionality during the whole T2S settlement period in order to facilitate the settlement of underlying securities-related instructions that would fail to settle due to a lack of cash on a T2S dedicated cash account and/or insufficient external guarantee headroom on a credit memorandum balance.

The auto-collateralisation functionality is available with central banks and with payment/settlement banks to eligible T2S parties as defined in T2S static data. T2S will trigger auto-collateralisation with central banks in case of lack of cash on the T2S dedicated cash account of the payment/settlement bank to which the settlement instruction is referring. T2S will trigger auto-collateralisation with a payment/settlement bank (client-collateralisation) in case of insufficient external guarantee headroom on the credit memorandum balance of a client of the payment/settlement bank, owner of the securities account to which the settlement instruction is referring.

8.2.1 Central banks' role in intraday credit provision through auto-collateralisation

Central banks' ability to provide intraday credit through auto-collateralisation

Reference ID	T2S.08.490

The provision of auto-collateralisation with a central bank shall depend on the agreement of that central bank.

However, the Eurosystem has already agreed on the provision of auto-collateralisation in Euro with the central banks of the Eurosystem.

Central banks' account structure for auto-collateralisation

Reference ID	T2S.08.500

In order to provide intraday credit through auto-collateralisation in T2S to one or several eligible payment/settlement banks, each national central bank shall open a T2S central bank cash account on which all debits corresponding to its intraday credit provisions through auto-collateralisation will be posted.

8.2.2 Payment/settlement banks' role in intraday credit provision through auto-collateralisation

Payment/settlement banks' ability to provide intraday credit through auto-collateralisation

Reference ID	T2S.08.505

The provision of auto-collateralisation with a payment/settlement bank (client-collateralisation) shall depend on the agreement of that payment/settlement bank.

Payment/settlement banks accounts structure for auto-collateralisation

Reference ID	T2S.08.507

In order to provide intraday credit through auto-collateralisation in T2S to one or several eligible clients, payment/settlement banks shall open one securities account (via their CSD) dedicated to auto-collateralisation for each of their clients. T2S shall use these accounts when transferring the collateral from the client to the payment/settlement bank during the auto-collateralisation process.

8.2.3 Conditions for triggering auto-collateralisation

Additional provision check conditions applicable to the triggering of auto-collateralisation operations

Reference ID	T2S.08.560

T2S shall generate auto-collateralisation operations only when they allow settling the underlying settlement transaction(s) and when sufficient headroom exists on the auto-collateralisation limit. When triggering auto-collateralisation, T2S shall also consider the unsecured credit limit headroom available that could complement the auto-collateralisation operation in case of auto-collateralisation with payment/settlement banks (client-collateralisation).

8.2.4 Settlement of the cash leg and securities leg of auto-collateralisation operations

Use of intraday credit provided through auto-collateralisation to settle the underlying transactions

Reference ID	T2S.08.570

When it generates auto-collateralisation operations with central banks or payment/settlement banks, T2S shall submit them to the settlement on an all-or-none basis together with the underlying settlement instructions in order to ensure that the amount of intraday credit provided through auto-collateralisation is automatically and exclusively used to settle the underlying instruction(s).

Settlement of securities leg of auto-collateralisation with central bank in the case of a Repo country

Reference ID	T2S.08.572

In case of auto-collateralisation operation with a central bank based on Repo, T2S shall transfer the eligible securities to the central bank's securities account with reference to the payment/settlement bank.

Settlement of securities leg of auto-collateralisation with central bank in the case of a pledge country

Reference ID	T2S.08.574

In case of auto-collateralisation operation with a central bank based on Pledge, T2S shall move the eligible securities to the account of the T2S party pledged to the central bank providing the credit.

Settlement of securities leg of auto-collateralisation with payment/settlement banks (client-collateralisation)

Reference ID	T2S.08.577

T2S shall always generate auto-collateralisation operations with payment/settlement banks (client-collateralisation) based on Repo and thus transfer the eligible securities to payment/settlement bank's securities account with reference to its client.

8.2.5 Management and identification of eligible collateral in the settlement of auto-collateralisation operations

Use of collateral on stock and on flow

Reference ID	T2S.08.600

When generating auto-collateralisation operations, T2S shall use in the following order:

- collateral on flow: securities earmarked, eligible for auto-collateralisation and being credited through the set of transactions for which the auto-collateralisation is triggered, if the settlement transaction indicates a securities account linked (for the purpose of auto-collateralisation) to the T2S dedicated cash account or credit memorandum balance on which the auto-collateralisation is triggered and
  - if that securities account is earmarked for auto-collateralisation;
  - or if the settlement transaction indicates that receipt of securities is into the position earmarked for auto-collateralisation of that securities account.
- collateral on stock: securities earmarked, eligible for auto-collateralisation and already available in the position earmarked for auto-collateralisation on one of the securities accounts linked (for the purpose of auto-collateralisation) to the T2S dedicated cash account or the credit memorandum balance on which auto-collateralisation is triggered.

When the collateral value of the securities on flow is not sufficient to cover the amount of credit granted, T2S shall complement collateral on flow with collateral on stock.

Earmarking at the level of securities position

Reference ID	T2S.08.610

T2S shall allow the possibility of earmarking by a T2S party at the level of securities position in a securities account for specific purposes, by means of settlement restrictions. Receipt and delivery of securities into/from different position types has been elaborated in T2S.08.651.

Link between securities account and T2S dedicated cash account or credit memorandum balance for auto-collateralisation

Reference ID	T2S.08.630

T2S shall allow T2S parties to indicate for each of their securities accounts whether T2S can use securities from that account when generating auto-collateralisation operations with central banks or payment/settlement banks on a specific T2S dedicated cash account or a credit memorandum balance (i.e. when the lack of cash occurs on a specific T2S dedicated cash account or when insufficient external guarantee headroom occurs on a specific credit memorandum balance).

When such a link exists between a securities account and a T2S dedicated cash account or credit memorandum balance, T2S will use securities from that account in auto-collateralisation operations based on the earmarking options.

Indication to use collateral on flow

Reference ID	T2S.08.640

T2S shall enable T2S parties to determine whether they agree to use securities being purchased as collateral on flow in an auto-collateralisation operation with a central bank or with a payment/settlement bank:

- When a settlement instruction indicates to deliver the securities into the position earmarked for the purpose of auto-collateralisation, the securities will be available for auto-collateralisation on flow with central bank or with a payment/settlement bank.
- When the settlement instruction indicates to deliver the securities into an account earmarked for the purpose of auto-collateralisation, the securities will also be available for auto-collateralisation on flow with central bank or with a payment/settlement bank, even when the settlement instruction indicates to deliver the securities into the available position of that account.

Earmarking at the level of securities account

Reference ID	T2S.08.650

T2S shall allow the possibility of earmarking by a T2S party at the level of a securities account for specific purpose. In case there is a conflict to use the earmarked securities for a delivery/ receipt due to contradictory choices between account level and instruction level (i.e. when a settlement instruction refers to a earmarking purpose different from earmarking purpose at account level), the choice at account level overrides the choice at instruction level (i.e. T2S will credit or debit the earmarked position according to the purpose of earmarking at account level and not according to the purpose of earmarking at the instruction level).

If earmarking is done at the securities account level for a specific purpose, it will NOT be possible to earmark securities at position level (in the same account), for a different purpose.

Receipt/Delivery of securities into/from different position types

Reference ID	T2S.08.651

T2S shall allow a T2S party to specify whether it wishes to receive securities or deliver securities from a specific earmarked position at the level of the settlement instruction.

If the T2S Party specifies in the settlement instruction to deliver securities from its earmarked position a quantity of securities greater than its earmarked position, then T2S shall fail the settlement of the instruction. When the earmarked securities position is sufficient for settling the instruction, then T2S shall reduce the earmarked position by the delivered quantity.

If the T2S Party specifies in the settlement instruction to receive securities into its earmarked position and no earmarked position exists, then T2S shall generate an earmarked position with the received quantity. If an earmarked position exists, then T2S shall increase the earmarked position by the quantity received.

Partial settlement rules will apply in a standard way for settlement instructions.

8.2.6 Conditions for the selection of collateral

Conditions for the selection of collateral

Reference ID	T2S.08.690

When generating auto-collateralisation operations and based on the latest value of the eligible collateral, T2S must select securities that have no close link with the T2S party for which auto-collateralisation is triggered in such a way that the total amount of securities collateralised with central bank or payment/settlement bank:

- is at least equal to the amount of intraday credit provided; and
- does not exceed a maximum percentage of the value of the credit granted, defined by the central bank or the payment/settlement bank providing the credit.

8.2.7 Collateral movements in auto-collateralisation operations with central banks

Ability for central banks to choose between several types of collateralisation procedures

Reference ID	T2S.08.700

Based on the type of collateral movement chosen by each central bank providing credit, T2S shall collateralise the intraday credit provided through auto-collateralisation either:

(i) by transferring the securities from the securities account of a T2S party to the securities account of the central bank providing the credit; or

(ii) by transferring the securities from the account of the bank receiving the credit to another account of this settlement bank (the second securities account being pledged to the central bank providing the credit); or

(iii) by reserving the securities on the securities account of the settlement bank receiving the credit; in such a case, the securities shall be reserved in favour of the central bank providing the credit and T2S shall no longer enable the securities account holder to use the relevant securities as long as they are reserved.

Each national central bank is required to determine in T2S static data the collateralisation procedure for which it opts, i.e. (i) transfer to an account opened in its name, or (ii) transfer to an account pledged in its

favour, or (iii) reservation of securities. This choice will apply to all eligible settlement banks to which the relevant central bank provides intraday credit through auto-collateralisation.

Implementation of the central banks' choice on auto-collateralisation on stock

Reference ID	T2S.08.710

When auto-collateralisation takes place on the basis of collateral on stock, T2S shall either :

- debit the relevant securities account and credit the securities account of the central bank providing intraday credit (aforementioned option (i)) or the securities account pledged to the relevant central bank (aforementioned option (ii)); or
- reserve the securities on the securities account of the eligible settlement bank receiving the credit (aforementioned option (iii)).

In any case, all the securities transfers or reservations shall be linked to the corresponding cash movement, in such a way that none of these operations can be settled if one of them cannot be settled.

Implementation of the central banks choice on auto-collateralisation on flow

Reference ID	T2S.08.720

When auto-collateralisation takes place on the basis of collateral on flow, T2S shall

- debit the securities account of the T2S party selling the relevant securities;
- credit the securities account of the T2S party buying the securities;
- debit or reserve the securities on the securities account of the buyer (the debit or reservation shall take place according to the collateralisation procedure chosen by the central bank providing the credit); and
- where the securities have been debited on the account of the buyer (no reservation), T2S shall either transfer them to the account of the central bank or on an account pledged in favour of the central bank.

The three operations (securities reservation) or four operations (securities transfer) mentioned above shall be linked together and shall also be linked to the corresponding cash movement, in such a way that none of these operations are settled if one of them cannot be settled.

8.2.8 Types of underlying transactions eligible for auto-collateralisation

Underlying settlement instructions eligible for auto-collateralisation

Reference ID	T2S.08.730

T2S shall consider that the following underlying instructions are eligible for auto-collateralisation operations:

- all trading-related delivery versus payment or payment free of delivery settlement instructions; and
- all corporate actions related delivery versus payment or payment free of delivery instructions.

Types of settlement operations eligible for auto-collateralisation

Reference ID	T2S.08.740

T2S shall be able to trigger auto-collateralisation operations with central banks or payment/settlement banks on a set of settlement transactions, either linked by a T2S party or linked by T2S for optimisation purposes.

In such a case, T2S shall trigger auto-collateralisation with central banks or with payment/settlement banks on the basis of the net amount of liquidity needed to settle the set of settlement transactions.

Payment/settlement banks' use of auto-collateralisation with central banks for the settlement of proprietary, clients and settlement users' underlying transactions

Reference ID	T2S.08.750

T2S shall enable each payment/settlement bank to benefit from intraday credit provision through auto-collateralisation with central bank in order to facilitate the settlement on its T2S dedicated cash account(s) of:

- its underlying proprietary instructions ;
- its clients' underlying instructions (clients using custody services of the relevant payment/settlement bank); and/or
- underlying instructions pertaining to settlement users using the relevant payment/settlement bank for their cash settlements.

T2S party use of auto-collateralisation with payment/settlement banks (client-collateralisation) for the settlement of proprietary, clients and settlement users' underlying transactions

Reference ID	T2S.08.755

T2S shall enable each T2S party to benefit from intraday credit provision through auto-collateralisation with payment/settlement banks (client-collateralisation) of:

- its underlying proprietary instructions ; and/or
- its clients' underlying instructions (clients using custody services of the relevant T2S party).

8.2.9 Modification of auto-collateralisation limits during the settlement process

Modification of the auto-collateralisation limit with central banks during the settlement process

Reference ID	T2S.08.800

T2S shall enable each central bank to increase or decrease at any moment of the settlement day the auto-collateralisation limit of an eligible payment/settlement bank reflecting the central bank limit on the amount of credit that can be granted to that payment/settlement bank through auto-collateralisation.

When a central bank modifies the auto-collateralisation limit during a night-time full optimisation cycle, T2S shall store this limit and apply it as of the start of the following full optimisation cycle or at the start of the real-time settlement window, if the new limit was entered by the central bank during the last optimisation cycle of the night.

When a central bank modifies the auto-collateralisation limit during the daytime real-time settlement cycle, T2S shall apply this new limit without delay.

When the new auto-collateralisation limit applying to a payment/settlement bank is lower than the net pending amount of intraday credit already provided to that payment/settlement bank through auto-collateralisation, T2S shall:

- no longer trigger any auto-collateralisation operation in favour of the payment/settlement bank until the net pending amount of intraday credit already provided to that payment/settlement bank through auto-collateralisation goes below the new limit;
- trigger the reimbursement of the pending amount of intraday credit by releasing the relevant pending auto-collateralisation reimbursement operations, assigning to them the reserved priority and submitting them to the settlement. The total value of these auto-collateralisation reimbursement operations should be the closest to but higher than the amount of intraday credit that T2S should reimburse in order to have a net pending amount of intraday credit lower than the new limit.

Modification of the auto-collateralisation limit with payment/settlement banks during the settlement process

Reference ID	T2S.08.810

Payment/settlement banks shall be able to increase or decrease at any moment of the settlement day the auto-collateralisation limit of an eligible client (client-collateralisation). When a payment/settlement bank modifies the auto-collateralisation limit during a night-time full optimisation cycle, T2S shall store this auto-collateralisation limit and apply it as of the start of the following full optimisation cycle, or at the start of the real-time settlement window (if the new limit has been entered by the payment/settlement bank during the last optimisation cycle of the night).

When a payment/settlement bank modifies the auto-collateralisation limit during the daytime real-time settlement window, T2S shall apply this new limit without delay.

When the new auto-collateralisation limit applying to a client is lower than the net pending amount of intraday credit already provided to that client through auto-collateralisation, T2S shall no longer trigger any auto-collateralisation operation in favour of the client until the net pending amount of intraday credit already provided to that client through auto-collateralisation goes below or equals the new limit.

8.2.10 Reimbursement of credits provided through auto-collateralisation

Management of auto-collateralisation reimbursement operations

Reference ID	T2S.08.815

Whenever T2S generates and settles an auto-collateralisation operation, T2S shall create on hold the reimbursement of that auto-collateralisation operation, corresponding to the exact reverse operation (i.e. same amounts, same accounts, etc).

It is the instruction of the payment/settlement bank that is on hold.

Payment/settlement banks' ability to trigger reimbursement of auto-collateralisation operations with central banks during the real-time window

Reference ID	T2S.08.820

T2S shall enable payment/settlement banks to trigger the reimbursement of their auto-collateralisation operations with central banks at any moment of the daytime real-time settlement window by releasing on hold reimbursement instructions.

Payment/settlement banks' ability to trigger reimbursement of intraday credit provided through auto-collateralisation to their clients during the real-time window

Reference ID	T2S.08.827

T2S shall enable payment/settlement banks to trigger the reimbursement of intraday credit provided through auto-collateralisation to their client at any moment of the daytime real-time settlement window by releasing the relevant pending auto-collateralisation reimbursement operations.

Automated reimbursement of pending intraday credit with central banks at the cut-off time

Reference ID	T2S.08.850

If, at the end-of-day cut-off time for intraday credit reimbursement in T2S, a payment/settlement bank has not already reimbursed all its pending intraday credit operations with a central bank, T2S shall automatically use all the liquidity available on the T2S dedicated cash account(s) held with the relevant central bank to reimburse the pending intraday credit operations.

Since reserved amounts of liquidity have to be released automatically by T2S at the end of the day, T2S shall use released amounts of reserved liquidity as available liquidity for the automated reimbursement of the pending intraday credits.

Transfer of auto-collateralisation that remains pending at the cut-off time

Reference ID	T2S.08.860

If, at the end-of-day cut-off time , the liquidity available on the T2S dedicated cash accounts is insufficient to fully reimburse the pending auto-collateralisation operations with central banks, T2S shall automatically create a new credit operation (via one or more securities settlement instruction(s)) for the lacking amount of cash.

T2S shall perform the following:

- Execute debit(s) on the T2S central bank cash account of the NCB providing the credit in the RTGS system and credit(s) on the T2S dedicated cash account that has the lack of cash.
- Simultaneously reallocate the equivalent collateral via a debit(s) from the securities account of the payment/ settlement bank receiving the cash and credit(s) on the regular intraday collateral securities account of the national central bank providing the credit in the RTGS system.

T2S shall settle the new credit operation on an all-or-none basis along with the reimbursement of the auto-collateralisation operation.

Additional Information:

T2S performs the reallocation of the equivalent collateral to the regular NCB securities account for intraday collateral via regular securities settlement instructions. The confirmation of settlement of these instructions allows the collateral management system of the NCB to trigger the necessary operations for the reimbursement of the intraday credit in the RTGS system.

8.2.11 Dynamic reimbursement of auto-collateralisation and automated substitution of collateral

Dynamic reimbursements of auto-collateralisation and automated substitution of collateral with central banks or payment/settlement banks

Reference ID	T2S.08.910

When T2S is attempting the settlement of a set of transactions that would result in lack of securities, T2S shall check if the lack of securities will be resolved if T2S combines the settlement of the set of transactions with the settlement of pending auto-collateralisation reimbursement operations. If such pending auto-collateralisation reimbursement operations would resolve the lack of securities, T2S shall release them and submit them to the settlement on an all-or-none basis with the underlying set of transactions.

As part of the normal settlement process, depending on the amount of cash received in the underlying settlement instruction and the amount of cash or external guarantee headroom already available, the new settlement attempt integrating the auto-collateralisation reimbursement might result in the generation of a new auto-collateralisation operation for the remaining lack of cash or external guarantee headroom.

USER REQUIREMENTS

CHAPTER 9

SPECIFIC SETTLEMENT PROCESSING REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

9 Specific settlement processing requirements

This chapter provides requirements relating to the settlement of specific categories of securities (9.1), to specific settlement procedures (9.2), to corporate actions settlements (9.3) and to cross-CSD settlements and in/out T2S settlements (9.4).

Section 9.1 deals with requirements applicable for the settlement of specific categories of securities such as the settlement of funds shares and coupon stripping/ reattachment.

Section 9.2 covers specific settlement procedures such as:

- the settlement of linked transactions for transactions that have to settle on an all-or-none basis;
- transfers of baskets of collateral when several lines of securities have to be transferred against one payment leg;
- the blocking and reservation of cash or securities and the use of reserved positions of cash and/or securities;
- conditional securities deliveries, where securities are blocked and released upon instruction of an administering party.

Section 9.2 also includes descriptions of the possible need for:

- the settlement of multilateral instructions for markets where no CCP intervenes in the settlement process;
- the settlement of borrowing and lending operations, for which no additional specific requirements have been identified.

Section 9.3 deals with corporate actions settlements, including cross-CSD corporate actions settlements through CSD links.

Finally, section 9.4 addresses cross-CSD settlements, i.e. settlements between several CSDs in T2S, as well as with in/out T2S settlements, i.e. settlements between a CSD in T2S and a CSD outside T2S.

9.1 Settlement of specific categories of securities

Whereas T2S will be able to settle most categories of securities without a specific settlement process, some particular settlement procedures will be necessary for the settlement of e.g. funds shares (like UCITS), for coupon stripping and reattachment, for registered securities and for some additional specific categories of securities.

9.1.1 Funds shares

Funds shares require specific settlement features because there are frequent increases/decreases in the volume of funds shares and because decimals of holdings can exist. These procedures may apply to other types of securities as well.

Increases/ decreases in funds shares volumes

Reference ID	T2S.09.010

T2S shall provide the ability to settle frequent increases/ decreases in the volume of funds shares corresponding to the mark-up/ mark-down process managed outside T2S by the fund managers. These increases/ decreases in the volume of funds shares shall be settled according to the standard T2S process for securities increases/ decreases in T2S via securities issuances and redemptions; see requirements T2S.09.320 and T2S.09.330. These processes may be settled in real-time.

Decimals in funds shares

Reference ID	T2S.09.020

T2S shall provide T2S Parties the ability to settle decimals of holdings on the securities accounts for funds shares or other securities settled in decimals.

9.1.2 Coupon stripping/reattachment

As examples of complex securities reorganisations, the processes of coupon stripping/reattachment are described hereunder. For further explanations on settlement of corporate actions see section 9.3.

Coupon stripping/reattachment functionality

Reference ID	T2S.09.030

T2S shall provide CSDs with the ability to strip coupons[1] from their debt instruments in such a way that T2S Parties can settle separately the principal of the debt instrument with the remaining coupons and the different stripped coupons. T2S shall also provide T2S Parties with the ability to reattach coupons and the principals of debt instruments.

Coupon stripping process

Reference ID	T2S.09.040

T2S shall provide CSDs with the ability to ensure coupons' stripping by settling the following transactions:

- a FOP delivery of the original debt instrument from the T2S Party's, and/or the holder's, securities account to the technical issuance account of that debt instrument (ISIN);
- a FOP delivery of the principal with the remaining coupons from the technical issuance account of that debt instrument to the T2S Party's, and/or the holder's, securities account;
- FOP deliveries of coupons from the technical issuance accounts of each stripped coupon to the T2S Party's, and/or the holder's, securities account, the number of deliveries being equal to the number of coupons detached from the initial debt instrument;
- all these transactions should be instructed and processed as linked transactions to be settled on an all-or-none basis.

[1] Here "coupons" may refer to either all coupons of the remaining periods or only the coupon of the current interest-bearing period.

T2S shall not verify that the volume/value of the delivered coupons equals the volume/value of the stripped coupons.

Once coupons are detached from the original debt instrument, each coupon and principal may be settled separately, like any other securities.

Coupon reattachment process

Reference ID	T2S.09.050

T2S shall provide the ability to reattach coupons to the principal to reconstitute the original debt instrument by settling the following transactions:

- a FOP delivery of the principal with the remaining coupons from the T2S Party's, and/or the holder's, securities account to the technical issuance account of that debt instrument (ISIN);
- FOP deliveries of valid coupons from the T2S Party's, and/or the holder's, securities account to the technical issuance accounts of each coupon, the number of deliveries being equal to the number of coupons that have not reached their maturity date (i.e. coupons that remain valid for settlement and have not already been paid/redeemed);
- FOP deliveries of the reconstituted original debt instrument from the technical issuance account to the T2S Party's, and/or the holder's, securities account;
- all these transactions should be instructed and processed as linked transactions to be settled on an all-or-none basis.

9.2 Specific settlement procedures

Types of specific settlements expected from T2S

Reference ID	T2S.09.060

When required (e.g. at the instruction level or at a securities account level), T2S shall settle specific settlement instructions such as linked transactions, transfer of baskets of collateral, conditional securities deliveries and multilateral instructions.

9.2.1 Settlement of linked transactions

Four examples of links have been identified at the settlement level:

- The first example of a link could be used by CSDs for linking the settlement of several transactions composing a corporate action to settle on an all-or-none basis.
- The second example of a link is of a technical nature. It is used by T2S in order to submit several transactions together such that none of them settled if one of them does not settle (e.g. provision of intraday credit through auto-collateralisation with the settlement of the underlying transaction).

- The third example of a link aims at linking a delivery of securities with one or several redelivery[2] transactions, in order to avoid the risk that the redelivery may take place before the initial securities delivery. This type of link is referred to as a linked securities redelivery.
- The fourth example of a link aims at linking one or several receipts of securities to one securities redelivery, in order to avoid the risk that a T2S Party may receive securities if their redelivery is not possible. This type of link is referred to as a linked securities receipt. The settlement link indicators are described in Chapter 5 (UR T2S.05.147).

T2S shall accept linked instructions

Reference ID	T2S.09.070

Linked instructions shall be possible on a one-to-one, one-to-many or many-to-many basis. T2S shall not link instructions, unless the link is received within at least one instruction, sent by a T2S Party involved in all of the transactions to be linked.

Linked settlement of several transactions is all-or-none

Reference ID	T2S.09.080

T2S shall settle linked instructions in a way that ensures that none of them settles if one of them does not settle. This settlement procedure is referred to as the all-or-none rule.

T2S automatic linking of settlement instructions

Reference ID	T2S.09.090

T2S shall automatically link some specific types of instructions and settle them in a way that ensures that none of them settles if one of them does not settle.

T2S shall automatically link the settlement of at least the following sets of instructions:

- an auto-collateralisation instruction with its underlying settlement instruction, in order to ensure that the intraday credit granted through the auto-collateralisation operation is exclusively used for the settlement of the underlying instruction (see section on auto-collateralisation);
- an optimised reimbursement of auto-collateralisation with the underlying transaction in order to ensure that (i) the cash proceeds of the underlying transaction are exclusively used for the reimbursement of the auto-collateralisation operation and (ii) the collateral released is delivered to the buyer in the underlying transaction (see auto-collateralisation);
- a repo operation with a central bank (other than auto-collateralisation) with a liquidity transfer instruction from T2S to the relevant RTGS account: the credit provision through repo on a T2S dedicated cash account shall be linked with a cash transfer from T2S dedicated cash account to the relevant RTGS account.

Linked securities redeliveries

[2] Also known as onward delivery – it is to a further counterparty, rather than a repeat of the original delivery

Reference ID	T2S.09.100

T2S shall enable a T2S Party to link one or several redeliveries of securities to one securities receipt, in such a way that the securities are not redelivered if they are not received by the T2S Party. However, the receipt and the redeliveries shall not settle all-or-none, i.e. even if the redeliveries cannot settle, the delivery shall settle independently if possible.

Background information:

This functionality aims at enabling a T2S Party involved in a back-to-back transaction to link the onwards deliveries of securities (second step of the back-to-back) to their receipt (first leg of back-to-back). This functionality can also be used for the settlement of transactions in a direct holding environment.

Linked securities receipt

Reference ID	T2S.09.110

T2S shall enable a T2S Party to link one or several receipts of securities to one securities redelivery, in such a way that the incoming securities transaction(s) do(es) not settle if the securities cannot be redelivered. However, the receipt and the redeliveries shall not settle all-or-none, i.e. if the receipts cannot settle, the redelivery shall settle independently if possible.

Background information:

For instance, this functionality aims at enabling a CCP to link a buy-in to the redelivery of the securities in such a way that the buy-in settles only if the redelivery of the securities can settle.

Eligibility of linked transactions for partial settlement

Reference ID	T2S.09.120

Transactions linked together by T2S system users are not eligible for partial settlement.

Level of priority applied to the set of linked transactions

Reference ID	T2S.09.130

T2S shall settle sets of linked instructions according to the level of priority of the instruction having the highest level of priority in the set of instructions (the whole set of linked instructions shall be settled according to this level of priority).

9.2.2 Transfer of baskets of collateral

Ability for T2S Parties to transfer baskets of collateral

Reference ID	T2S.09.140

T2S shall enable T2S Parties to transfer a basket of collateral composed of more than one line of securities (ISIN codes) against one cash transfer, the party may transfer as many securities lines (ISIN codes) as necessary.

Securities and T2S dedicated cash accounts used for deliveries of baskets of collateral

Reference ID	T2S.09.150

T2S shall enable T2S Parties to use securities from several securities accounts for the transfer of baskets of collateral, but the corresponding cash leg will only be settled on one T2S dedicated cash account. The T2S Party must specify in the instructions the securities accounts to be debited and the T2S dedicated cash account to be credited.

Background information:

The T2S Party can send several FOP deliveries from different securities accounts and a DVP from the securities account that is linked to required T2S dedicated cash account. All these instructions shall be linked with link indicator "WITH" and settle on all-or-none basis.

Settlement procedure applicable to deliveries of baskets of collateral

Reference ID	T2S.09.160

T2S shall settle the collateral transfer and the corresponding cash leg on a DVP mode in a way that ensures that all securities are transferred if and only if the cash leg can settle, i.e. they will settle in an all-or-none mode.

Eligibility of basket of collateral deliveries for partial settlement

Reference ID	T2S.09.170

T2S shall not submit baskets of collateral transfer instructions to partial settlement.

9.2.3 Blocking and reservation of cash or securities

A blocking of cash or securities prevents the transfer of a position in a specific security/currency in a specific securities account/T2S dedicated cash account.

A reservation of cash or securities reserves a securities or cash position for the settlement of one or more settlement instructions. The process results in the transfer of the reserved holdings/cash to another securities account/T2S dedicated cash account, followed by the deletion of the reservation.

Processing of blocking/reservation instructions

Reference ID	T2S.09.180

T2S shall be able to process blocking/reservation information received as a specific (blocking/reservation) instruction.

Reference to a reservation/blocking instruction

Reference ID	T2S.09.190

A T2S Party shall be able to refer to an existing reservation/blocking in another settlement instruction, by means of the reservation’s/blocking’s unique reference number. Such reference shall be interpreted so that

the provisioning process shall include the reserved/blocked amount of cash or securities in its provisioning check – see also Provision check on cash and securities reserved/blocked, section 7.3.

The reserved/blocked securities/cash will be used first (ahead of unreserved/unblocked securities/cash) for settlement of the instruction.

Deletion of a reservation/blocking instruction

Reference ID	T2S.09.200

A reservation/blocking shall be automatically deleted when all the reserved/blocked securities or cash have been used for settlement of one or more settlement instructions.

9.2.4 Conditional securities deliveries

Conditional securities deliveries (CoSD) should serve as a special functionality in order to settle a small number of exceptional instructions that require the fulfilment of a settlement condition outside T2S before allowing the securities settlement to take place in T2S. This type of settlement allows, for instance, a CSD to coordinate an exceptional Free of Payment delivery in T2S with a cash settlement outside T2S on behalf of its participants.

T2S shall be able to block securities, cash or both and put the instruction on hold in order to make sure that these securities or cash can only be delivered to the receiving T2S Party, when the latter fulfils the relevant conditions outside T2S. The fulfilment of the external settlement conditions shall be managed by an administering party, which will trigger the release of the instruction and depending on the type of CoSD, the delivery of the blocked securities, cash or both in T2S, once the condition is fulfilled.

The condition can relate to cash settlement in a CoBM or CeBM currency not eligible in T2S, but could also be any other condition that would need to be fulfilled prior to settlement. Hence the functionality can be widely used for the treatment of exceptions where the delivery of securities settlement is dependent on actions outside T2S.

The activation of the CoSD functionality will be automatic, based on rules defined, created and maintained by the CSDs in T2S. These rules will also identify the administering party, i.e. the CSD in charge of organising/ managing the fulfilment of the external conditions and triggering the securities delivery to the receiver once these external conditions are fulfilled.

Activation of CoSD

Reference ID	T2S.09.210

T2S shall enable CSDs to define in static data the rules according to which instructions shall be submitted to the CoSD functionality. These rules must determine the conditions according to which an instruction shall be automatically submitted to the CoSD functionality by T2S. It shall be possible to assign more than one condition to a CoSD. These rules shall also identify the administering party able to trigger the securities

delivery or the cancellation of the CoSD. It shall be possible to have more than one administering party per CoSD.

T2S shall check incoming instructions and – according to the above mentioned rules – submit them automatically when applicable to the CoSD procedure.

Background information:

The business data can be for instance the market, the ISIN, the security type, or the currency, and will be communicated by the CSD or the directly connected T2S Party in its settlement instruction. The rules can be based for instance on the registration obligation for a specific market or the need for cash settlement in commercial bank money.

CoSD settlement process

Reference ID	T2S.09.220

T2S shall automatically block the securities position, cash or both and put the settlement instruction on hold. Once the relevant securities, cash or both are blocked, T2S shall inform the administering party (i.e. the CSD defined by the rules previously mentioned) that the securities, cash or both have been blocked. Other parties (i.e. instructing parties, account holders) shall also be informed, as per T2S interface user requirements.

Securities, cash or both shall remain blocked and the delivery instruction shall remain pending until T2S receives from the administering party:

- a release instruction, requesting that the securities are freed and delivered to the receiving party (based on the information contained in the initial instruction);
- or a cancellation request to free the securities and cancel their delivery to the receiving party.

If a CoSD involves more than one administering party, the CoSD settlement instruction will remain pending unless T2S receives a release or cancellation request from each administering party in conditional settlement of the instruction. When T2S has received the release from all administering parties, then T2S will settle the instruction. When T2S has received the cancellation request from all administering parties, then T2S will process the cancellation.

CoSD messages

Reference ID	T2S.09.230

T2S shall send a blocking status message and an “on hold” status message to the relevant T2S Parties.

A “blocking” status message will be sent by T2S to inform the (administering) CSD and/or the directly connected T2S Party, that the securities, cash or both have been blocked for the processing of the original instruction.

A “hold” status message will be sent by T2S to inform the (administering) CSD and/or the directly connected T2S Party that the transaction related to the original instruction is prepared for settlement and waiting for release.

Once the condition outside T2S is completed, only the administering CSD is allowed to send the release message.

If the receiving party is outside T2S, the status information shall be relayed by the CSD responsible for the account within T2S.

CoSD recycling

Reference ID	T2S.09.240

If at the end of the day, T2S does not receive any release or cancellation instruction, the original settlement instruction shall be recycled for the following settlement day based on the T2S recycling rules (i.e. securities should remain blocked and the delivery instruction should remain on hold and the blocking of cash will be reattempted for the next T2S settlement day).

CoSD cancellation process

Reference ID	T2S.09.250

T2S shall enable the instructing parties to ask for a cancellation of the settlement, according to the rules defined in Chapter 5. After receipt of the cancellation request from the two instructing parties, the administering party shall also send a cancellation after checking the external condition. Only the administering party shall be allowed to cancel (on its responsibility) if the external condition could not be fulfilled.

A cancellation confirmation shall be sent to the (administering) CSD and the directly connected T2S Party, if any.

If a CoSD involves more than one administering party, the CoSD settlement instruction will remain pending unless T2S receives cancellation from each administering party in conditional settlement of the instruction. When T2S has received the cancellation request from all administering parties, then T2S will process the cancellation.

9.2.5 Settlement of multilateral instructions

Multilateral instructions

Reference ID	T2S.09.260

When multilateral instructions have to be settled without CCP intervention, CSDs wanting to use T2S core settlement functionalities shall open securities and T2S dedicated cash accounts in their name (as many as they may require) and intervene in the settlement process. No specific requirements will be developed for this purpose.

9.2.6 Borrowing and lending operations in securities

The settlement of borrowing and lending operations, except for auto-collateralisation, does not imply any special requirements upon T2S. However, for the purpose of clarification, a short description of the recommended process follows.

In case of lending operations with securities as collateral, the CSD, or any other T2S Party administering the borrowing and lending, should send to T2S a settlement instruction (to lend the security) and one or multiple blocking instructions (collateral). These instructions will have to be linked before they enter T2S, in order for T2S to simultaneously open the lending and block the collateral. T2S shall send to the party administering the borrowing and lending, settlement confirmation messages to activate the opening and the closing of the lending.

Except in the case of auto-collateralisation (for which the information will be available within T2S), T2S will not hold any data about the valuation of the collateral.

To implement an “automatic” closing of lending operation, the party administering the borrowing and lending will have to send instructions both to open the lending and to close the lending (preferably at the same time) with the same settlement date, or a future date. The closing instruction will have to be set in a "HOLD" mode and released by the instructing party after the successful settlement of the opening of the lending. T2S will ensure these are not settled together in technical netting, if instructed for the same settlement date. T2S will be able to settle the closing lending instruction as soon as the closing instruction has been released.

This procedure is compliant with current market practices. From a T2S messaging perspective, the lending operation is transparent: the opening and closing lending instructions are settlement instructions. CSD and directly connected T2S Parties will be able to identify lending operations by using a specific transaction type in the settlement instruction, and T2S shall retrieve this transaction type in the statement messages.

9.3 Corporate actions settlement

When describing the settlement related requirements for corporate action processing in T2S, it is helpful to group the different types of corporate actions according to the settlement activity they generate:

1. No settlement involved, i.e. all corporate actions which do not result in settlement activity. Examples are Ordinary and Extraordinary Annual General Meetings.

2. Securities distributions (FOP), i.e. all corporate actions which result in the distribution of securities. Examples are Bonus Issues, Scrip Dividends, Stock Dividends, Intermediate Securities Distributions, Rights Distributions and Spin-offs.

3. Securities exchanges (DVD), i.e. all corporate actions where securities are exchanged into other securities (also referred to as reorganisations). Examples are Conversions, Exchanges, Mergers,

Redenomination, Stock Splits, depending on the accounting procedure, and Reverse Splits. Corporate actions where the investor exchanges securities against other securities and at the same time pays an associated amount of cash, e.g. at a Subscription, are also included in this group. The cash leg may take place via the CSD or elsewhere.

4. Cash distributions with securities delivery (DVP), i.e. all corporate actions where securities are redeemed in exchange for cash (also referred to as reorganisations), i.e. mainly Final Maturity, Drawings, Partial Calls, and Full Calls. DWP (delivery with payment) and RVP are also included in this group.

5. Cash distributions only (PFOD), i.e. all corporate actions which result in the distribution of cash only. Examples are Capital Gains, Cash Dividends, Interest Payments and Share Premium Dividends.

The following table summarises the above groups of corporate actions and the generated settlement activities.

Generic group of corporate action	**Example of corporate action**	**Instruction sent to T2S**
1- No settlement involved	Annual General Meetings	Possibility to block securities
2- Securities distribution	Rights Distribution	Securities instructions (FOP)
3- Securities exchanges	Conversions	Securities instructions linked on all-or-none basis (DVD)
4- Cash distribution with securities delivery	Final maturity of debt instruments	Securities and Payment instructions (DVP)
5- Cash distribution	Cash dividends	Payment instructions free of delivery (PFOD)

When the requirements refer to a CSD in the following sections, they are referring to the Corporate Action Managing Entity[3].

- Settlement of corporate actions which result in the distribution of securities

The needs for settlement of this group of corporate actions are covered by the ability to instruct T2S with a receipt of securities or a delivery of securities, free of payment (FOP). Since this is already part of generic T2S requirements for the processing of FOP instructions, there is no extra requirement.

- Settlement of corporate actions which result in the exchange of securities

This is covered by the delivery versus delivery transaction (DVD) consisting of two FOP instructions.

- Settlement of corporate actions which result in cash distributions with securities delivery

This is covered by the delivery versus payment instruction (DVP), already a generic T2S requirement.

[3] The Corporate Action Managing Entity is the entity appointed by the Issuer to manage the corporate action.

- Settlement of corporate actions which result in the distribution of cash

This is covered by the payment free of delivery instruction (PFOD), already a generic T2S requirement. The CSD can settle this pure cash movement either on its T2S dedicated cash account or on the relevant RTGS account. However, according to an ECSDA standard[4], the cash distribution via T2S dedicated cash accounts should prevail – "For financial instruments held within an SSS *(Securities Settlement System)*, all cash relating to corporate actions and market claims should have the default of being distributed via the SSS system."

If the cash is paid on the RTGS account, then the CSD must go directly through RTGS, without having any interaction with T2S.

Settlement of corporate actions in T2S

Reference ID	T2S.09.270

Settlement of corporate action instructions will take place in accordance with the sequencing rules defined in section 7.2.

As far as intraday corporate action settlements are concerned, corporate action instructions will be processed through real-time procedures according to their order of arrival in the settlement queue – see also Daytime settlements, section 7.2.1.5.

It is possible to assign a reserved priority to the corporate action instructions to make sure they settle before any other intraday pending instructions, see also Prioritisation, section 7.2.2.

The corporate action instructions can also be linked together to ensure an all-or-none settlement; see also Settlement of linked transactions, section 9.2.1.

Unblocking positions in connection with the settlement of corporate actions

Reference ID	T2S.09.280

Where positions that are blocked/reserved should be used in the settlement of a corporate action, the CSD shall be able to re-use in its instructions the reference of the blocking/reservation confirmation received from T2S. In that case, T2S shall automatically unblock the position before processing the settlement instruction.

Linking of unblocking of positions with the settlement of corporate actions

Reference ID	T2S.09.290

Unblocking instructions and settlement instructions may be linked together, so that the unblocking and the settlement shall be executed in an all-or-none basis. This ensures that the blocked/reserved position is used for the settlement of the corporate action and nothing else.

Settlement of securities issuance in T2S – increasing the issued balance of a security

[4] ECSDA's RESPONSE TO THE GIOVANNINI REPORT BARRIER 3, CORPORATE ACTIONS – PART 1 MANDATORY DISTRIBUTIONS, 30 June 2005.

Reference ID	T2S.09.320

In order to settle an increase of the issued balance of an ISIN, the CSD shall be able to debit a technical account (an Issuer CSD Balance account) belonging to that CSD in T2S, and credit either a safekeeping account of an entitled holder (an Investor CSD account) or another technical account (an Issuer account) belonging to the issuer. In the latter case the securities should be "parked" on the Issuer account, waiting for the final distribution orders (i.e. debiting the Issuer account and crediting the accounts of the holders), e.g. in relation to an Initial Public Offering.

The settlement instructions representing the increase in the issued balance may be FOP, DVP or DVD instructions.

Background information:

The (negative) holdings on the Issuer CSD Balance accounts will not represent any title. The booking on those types of accounts will only be for reconciliation purposes, and will follow the double entry book-keeping principle for all securities transfers in T2S.

Settlement of securities redemption in T2S – decreasing the issued balance of a security

Reference ID	T2S.09.330

In order to settle the decrease of the issued balance of an ISIN, the CSD shall be able to credit a technical account (an Issuer CSD Balance account) belonging to that CSD in T2S, and debit either a safekeeping account of an entitled holder (an Investor CSD account) or another technical account (an Issuer account) belonging to the issuer. In the latter case the securities must have been "parked" on the Issuer account, as a result of redemption (i.e. crediting the Issuer account and debiting the accounts of the holders), waiting for the final decrease of the issued balance.

The settlement instructions representing the decrease of the issued balance may be FOP, DVP or DVD instructions.

9.4 Cross-CSD settlements and in/out T2S settlements

One of the major benefits of T2S is that the settlement of cross-CSD transactions can be as efficient as intra-CSD settlement. This will be achieved by bringing together the securities accounts of multiple CSDs (as well as T2S dedicated cash accounts) on a single technical platform. To that purpose, T2S shall ensure that bookings for securities transfers between participants with different CSDs can all be made simultaneously with the cash movements. This will eliminate the current highly complex and costly processes of interactions between various platforms, which are often not synchronised and entail delays.

For cross-CSD settlements[5] between two CSDs participating in T2S, T2S shall automate the realignment process between CSDs on a real-time basis without needing to use additional procedures. There will be no need for any separate messaging activities in parallel to the messages sent by the users. Instead of having a set of instructions being sent between the CSDs involved in a cross-CSD transaction, T2S shall automatically realign the positions of the investor CSDs, other investor CSDs and/or the issuer CSD. The realignment will be based on the information set in the Static Data of T2S.

T2S will go through the same generic settlement process irrespective of the nature of the transaction (Intra-CSD, Cross-CSDs or with External CSDs). However, this process will generate a different number of movements depending on the nature of the transaction and the links between the CSDs.

For further details and more scenarios in addition to what is mentioned below, see chapter 2.

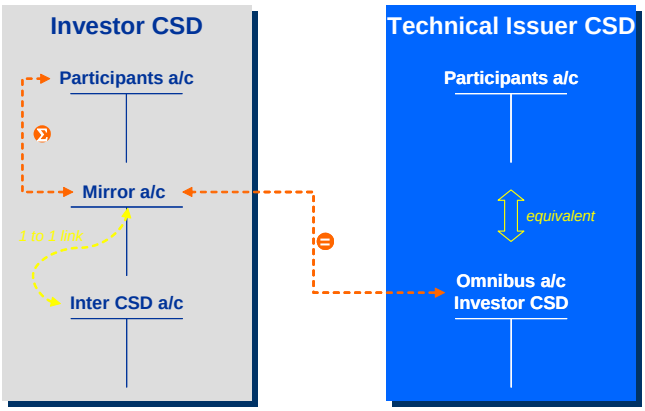
Account set-up between an Investor CSD and its Technical Issuer CSD

Reference ID	T2S.09.340

For any relationship between an Investor CSD and a Technical Issuer CSD, the Investor CSD shall open at least one account with its Technical Issuer CSD for a specific ISIN. This shall be one or more omnibus account(s) in which the total holdings equal the holdings held within the Investor CSD.

The Investor CSD shall have at least one Mirror Account in its own set of accounts in T2S, representing its holdings on the omnibus account in the Technical Issuer CSD. An Inter CSD Account shall be linked to each Mirror Account. The balance of the Inter CSD Account is usually equal to zero except when the Technical Issuer CSD is external to T2S and securities are transferring in/out of T2S, from/to an External CSD.

An Investor CSD shall be able to use several omnibus accounts within the Technical Issuer CSD in order to segregate the holdings of its participants within the Technical Issuer CSD.

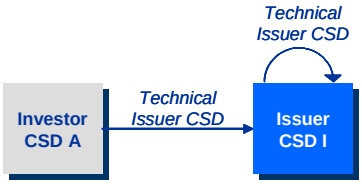


Settlement of a link between an Investor CSD and a Issuer CSD in T2S

Reference ID	T2S.09.350

[5] Cross-CSD settlements are settlement where both the buyer and seller CSDs, as well as the Issuer CSD, are participating in T2S. In/out T2S settlements are settlements where at least one settling party or the Issuer CSD is not participating in T2S.

For a link where the Technical Issuer CSD for an Investor CSD's specific ISIN is also the Issuer CSD of that ISIN, the cross-CSD settlement shall be processed as follows:



- The selling Party shall instruct T2S against the buying Party without giving the intermediary settlement chain;
- The buying Party shall instruct T2S against the selling Party without giving the intermediary settlement chain;
- No additional input shall be required from the CSDs;
- T2S shall derive all the necessary security and cash movements according to the links configured in the Static Data;
- T2S shall settle all the resulting security and cash movements simultaneously on an all-or-none basis;
- The settlement of the cash leg will take place in the T2S dedicated cash accounts.

When the Investor CSD is a buyer CSD, the securities shall be transferred from the seller's account with the Issuer CSD onto the omnibus account of the Investor CSD, provided that the seller (i.e. a participant in the Issuer CSD) has the securities in question. In the Investor CSD, the securities shall be credited to the buyer (i.e. a participant in the Investor CSD) and debited to the Mirror Account.

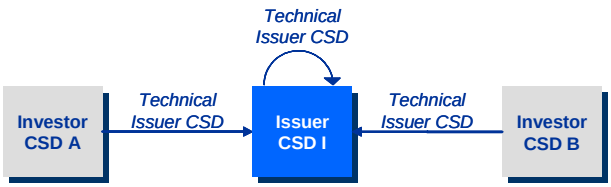
When the Investor CSD is a seller CSD, the process works in the opposite direction. The main difference is that two provisioning checks shall be performed – one on the accounts of the seller in the Investor CSD, and the other on the omnibus account of the Investor CSD in the Issuer CSD.

Settlement of a transfer of securities from an Investor CSD linked with the Issuer CSD to another Investor CSD linked to the Issuer CSD in T2S

Reference ID	T2S.09.360

When settlement takes place between two Investor CSDs having a link with the Issuer CSD, this means that:

- Both Investor CSDs hold omnibus accounts with the Issuer CSD;
- The Investor CSDs maintain Mirror Accounts of the omnibus accounts;
- The Investor CSDs do not need to have inter-CSD accounts with each other.



For the settlement of this transaction, the securities shall be transferred from the seller's account with its Investor CSD onto the mirror account of the Issuer CSD with the selling Investor CSD. This transfer is reflected at the same moment by a debit of the selling Investor CSD's omnibus account with Issuer CSD and

by a credit of the buying CSD's omnibus account with the Issuer CSD. Finally, the mirror account of Issuer CSD with the buying CSD is debited and the account of the buyer within the buying Investor CSD is credited:

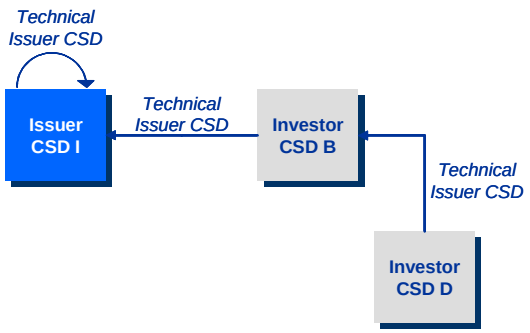
- The selling Party shall instruct T2S against the buying Party without giving the intermediary settlement chain;
- The buying Party shall instruct T2S against the selling Party without giving the intermediary settlement chain;
- No additional input shall be required from the CSDs;
- T2S shall derive all the necessary security and cash movements according to the links configured in the Static Data;
- T2S shall settle all the resulting security and cash movements simultaneously on an all-or-none basis;
- The settlement of the cash leg will take place in the T2S dedicated cash accounts.

Settlement of relayed links in T2S

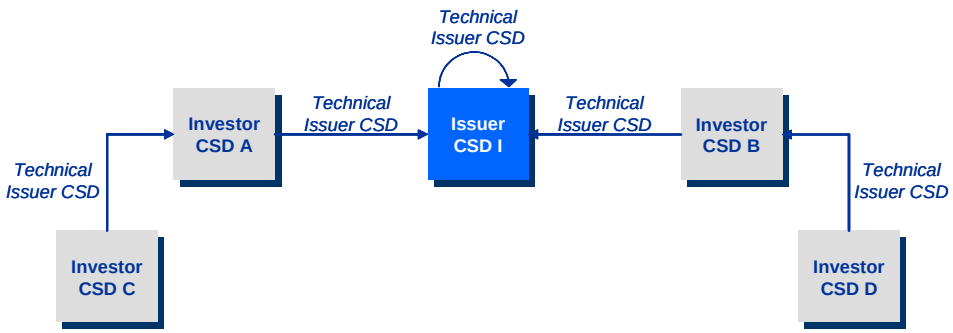
Reference ID	T2S.09.370

A relayed link is a situation whereby an Investor CSD does not have an account directly with the Issuer CSD, but rather with another Investor CSD (Technical Issuer CSD). In that case, the Investor CSD must decide which CSD is the Technical Issuer CSD for each eligible security.

The process of realignment for a transaction through a relayed link shall not be different than for a transaction in a direct link. In the simple case of a settlement between a T2S Party of an Investor CSD and a T2S Party of the Investor CSDs Technical Issuer CSD, there is no need for realignment at the level of the Issuer CSD.



In the more complex case of a settlement between T2S Parties in two Investor CSDs, where none of them acts as the Technical Issuer CSD for the other, there is a need for realignment at the level of their Technical Issuer CSD and potentially at the level of the Issuer CSD.



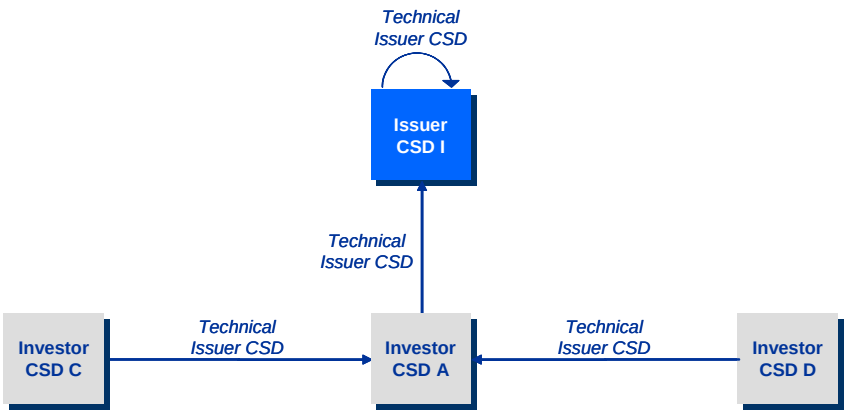
The buying and selling parties shall settle their transaction between themselves as any other DVP, DVD or FOP transaction. To that purpose, T2S shall handle the automatic realignment for all the CSDs involved in the realignment chain based on the static data information of the respective CSD's Technical Issuer CSD for the involved securities.

For all scenarios of relayed links, the same process shall apply:

- The selling Party shall instruct T2S against the buying Party without giving the intermediary settlement chain;
- The buying Party shall instruct T2S against the selling Party without giving the intermediary settlement chain;
- No additional input shall be required from the CSDs;
- T2S shall derive all the necessary security and cash movements according to the links configured in the Static Data;
- T2S shall settle all the resulting security and cash movements simultaneously on an all-or-none basis;
- The settlement of the cash leg will take place in the T2S dedicated cash accounts.

Settlement of a transfer of securities from an Investor CSD linked with a Technical Issuer CSD to another Investor CSD linked with the same Technical Issuer CSD in T2S

Reference ID	T2S.09.380



A special form of relayed link may apply in this case if the Technical Issuer CSD A (in the picture above) maintains separate omnibus accounts in the Issuer CSD for its linked Investor CSDs C and D, see below example of static data set-up:

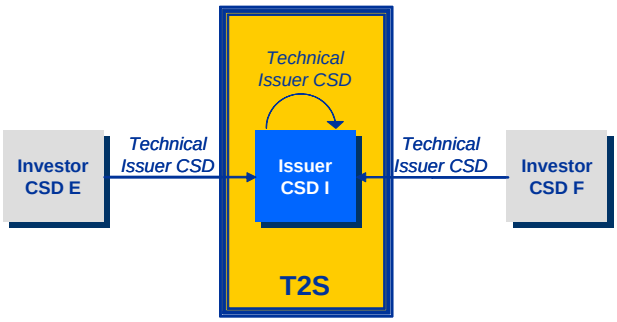
Investor	Technical Issuer	Participant a/c	Mirror a/c	Omnibus a/c	Inter CSD a/c	Date From	Date To
CSD A	CSD I	CSD C	1	1	1	01/01/2008	
CSD A	CSD I	CSD D	2	2	2	01/01/2008	

In this case T2S shall generate realignment instructions not only between the Investor CSDs C and D and the Technical Issuer CSD A, but also between the two separate omnibus accounts of the Technical Issuer CSD A (in the Issuer CSD I). Since the settlement instructions are all linked, they should only settle in an all-or-none mode.

Settlement of a transfer of securities between two External Investor CSDs and the Issuer CSD is in T2S

Reference ID	T2S.09.390

This requirement relates to the settlement of a transfer of securities from an External Investor CSD in relationship with the Issuer CSD in T2S to another External Investor CSD in relationship with the Issuer CSD, where participant E of CSD E (External) sells securities to participant F of CSD F (External) with the following links:



From the perspective of T2S, this looks like a transaction between the two Investor CSDs (CSD E and CSD F as participants of CSD I) in the Issuer CSD (CSD I) (Domestic Settlement in the Issuer CSD):

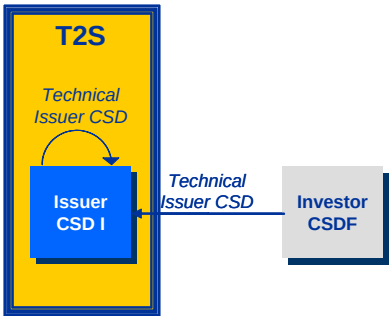
- CSD E (as participant of CSD I) shall instruct T2S against participant F at CSD F;
- CSD F (as participant of CSD I) shall instruct T2S against participant E at CSD E;
- In the case of a DVP settlement in T2S currency, the External CSDs (CSD E and CSD F, as participants of CSD I) need to have T2S dedicated cash accounts directly or via a T2S payment bank;
- T2S shall derive the security movement and the cash movement (if any[6]) and settle both simultaneously on an all-or-none basis.

Settlement of a transfer of securities between an Investor CSD that is External to T2S and an Investor CSD in T2S when the Issuer CSD is also in T2S

[6] In the case of Conditional Securities Delivery (CoSD), there is no cash movement in T2S. The settlement procedure is the same as for FOP but the final settlement in T2S is conditional upon the cash settlement outside T2S.

Reference ID	T2S.09.400

This requirement relates to the settlement of a transfer of securities to an External Investor CSD in relationship with the Issuer CSD from the Issuer CSD, where participant I of CSD I (a CSD in T2S) sells securities to participant F of CSD F (External CSD) with the following links:



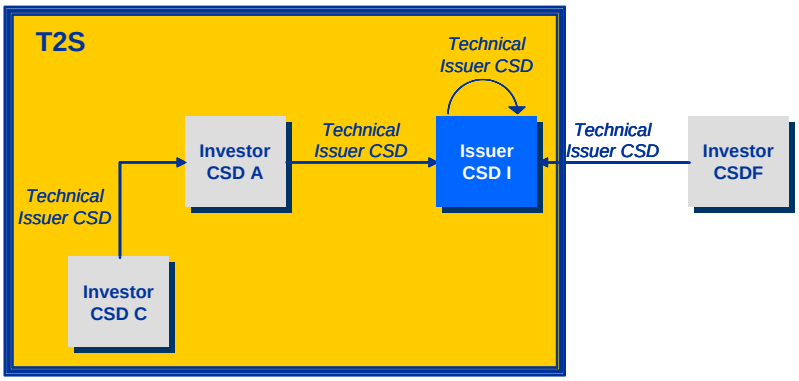
From the perspective of T2S, this looks like a transaction between participant I of CSD I (Issuer) and the External CSD F as participant of the Issuer CSD (CSD I) (Domestic Settlement in the Issuer CSD):

- Participant I shall instruct T2S against participant F at CSD F;
- CSD F (as participant of the Issuer CSD I) shall instruct T2S against participant I;
- In the case of a DVP settlement in T2S currency, the External CSD (CSD F, as participant of CSD I) needs to have a T2S dedicated cash account directly or via a T2S payment bank;
- T2S shall derive the security movement and the cash movement (if any) and settle both simultaneously on an all-or-none basis.

This requirement also relates to the settlement of a transfer of securities from an Investor CSD in relationship with a Technical Issuer CSD in T2S to an External Investor CSD in relationship with the Issuer CSD (the seller within T2S), where participant C of CSD C (T2S CSD) sells securities to participant F of CSD F (External):

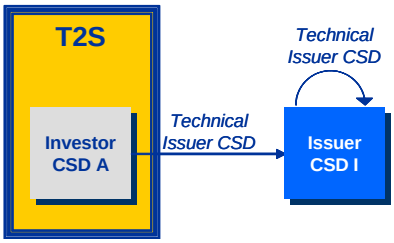
From the perspective of T2S, this looks like a transaction between participant C of CSD C and the External CSD F as participant of the Issuer CSD (CSD I) (Cross-CSD Settlement):

- Participant C shall instruct T2S Participant F against CSD F without giving the intermediary settlement chain in T2S;
- CSD F (as participant of the Issuer CSD I) shall instruct T2S against participant C without giving the intermediary settlement chain in T2S;
- In the case of a DVP settlement in T2S currency, the External CSD (CSD F, as participant of CSD I) needs to have a T2S dedicated cash account directly or via a T2S payment bank;
- T2S shall derive the security movements and the cash movement (if any), and settle both simultaneously on an all-or-none basis;



Settlement of a transfer of securities between an Investor CSD in T2S and an External Investor CSD when the Issuer CSD is also External to T2S

Reference ID	T2S.09.410



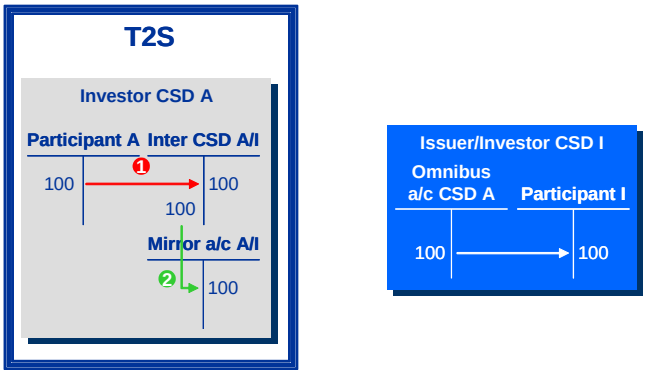
This requirement relates to the settlement of a transfer of securities from an Investor CSD in relationship with the Issuer CSD to the External Issuer CSD, where participant A of CSD A (a CSD in T2S) sells securities to participant I of CSD I (External) with the following links:

From the perspective of T2S, this looks like a conditional settlement of a transaction between participant A of CSD A and CSD A (as its own participant):

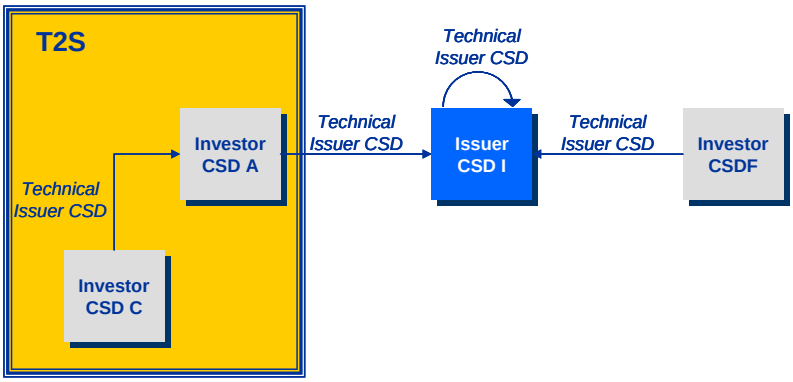
- Participant A shall instruct T2S against participant I at CSD I;
- CSD A shall instruct T2S against participant A;
- In the case of a DVP settlement in T2S currency, CSD A needs to have a T2S dedicated cash account directly or via a T2S payment bank;
- T2S shall derive the security movement from the participant A to the Inter-CSD account A/I and the cash movement (if any) according to the links configured in the Static Data;
- CSD A (as participant of the External CSD I) shall instruct the External Issuer CSD I, outside of T2S;
- T2S shall settle the security movement from the participant A to the Inter-CSD account A/I (# 1 below) and the cash movement (if any) as CoSD (Conditional Securities Delivery-External Delivery) administered by CSD A
    - Securities are blocked;
    - The final settlement is on hold;
    - The final settlement is released by CSD A after the confirmation of the settlement within the External Issuer CSD (CSD I);

- T2S books security movement from the participant A to the Inter-CSD account A/I (# 1 below) and the cash movement (if any).

- After the confirmation of the settlement within the External Issuer CSD (CSD I), CSD A shall instruct T2S with the security movement from the Inter-CSD account A/I to the Mirror account A/I (unilateral FOP) (# 2 below);
- T2S shall settle movement #2.



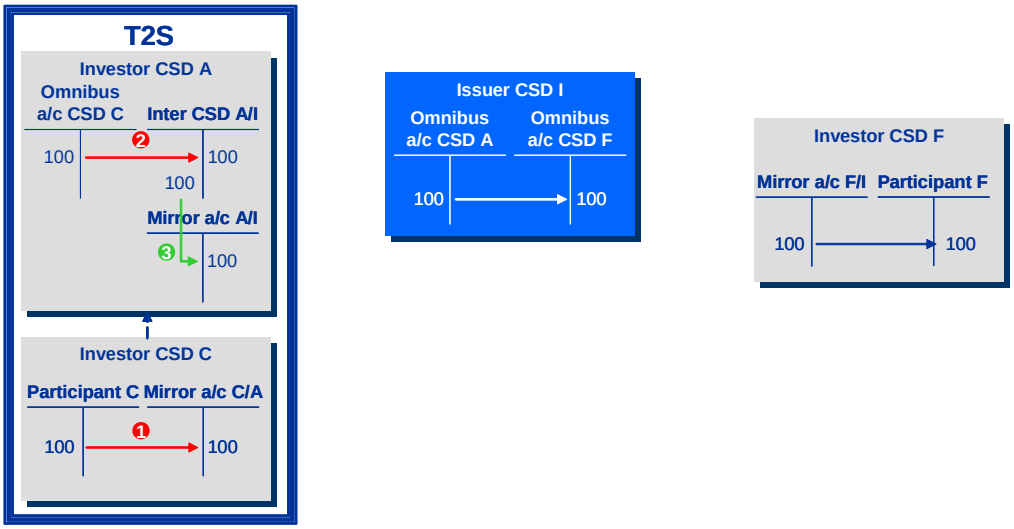
This requirement also relates to the settlement of a transfer of securities from an Investor CSD in relationship with a Technical Issuer CSD in T2S to an External Investor CSD in relationship with the External Issuer CSD (the seller within T2S), where participant C of CSD C (a CSD in T2S) sells securities to participant F of CSD F (External) with the following links:



From the perspective of T2S, this looks like a transaction between participant C of CSD C and CSD A (as its own participant):

- Participant C shall instruct T2S against participant F at CSD F without giving the intermediary settlement chain in T2S;
- CSD A shall instruct T2S against participant C without giving the intermediary settlement chain in T2S;
- In the case of a DVP settlement in T2S currency, CSD A needs to have a T2S dedicated cash account directly or via a T2S payment bank;
- T2S shall derive the security movements #1 and #2 below, and the cash movement (if any), according to the links configured in the Static Data;
- CSD A (as participant of the External CSD I) shall instruct the External Issuer CSD I, outside of T2S;

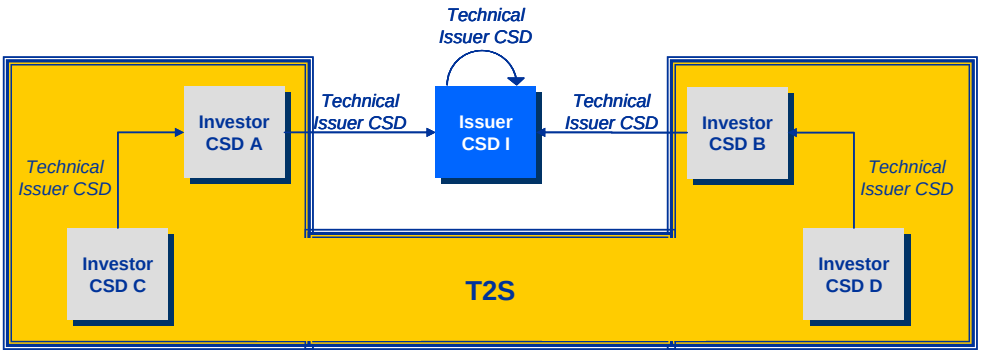
- T2S shall settle security movements #1 and #2, and the cash movement (if any), as CoSD (Conditional Securities Delivery – External Delivery) administered by CSD A;
  - Securities are blocked;
  - The final settlement is on hold;
  - The final settlement shall be released by CSD A after the confirmation of the settlement within the External Issuer CSD (CSD I);
  - T2S books security movement #1 and #2 and the cash movement (if any).
- After the confirmation of the settlement within the External Issuer CSD (CSD I), CSD A shall instruct T2S with security movement #3 (unilateral FOP);
- T2S shall settle movement #3.



Settlement of a transfer of securities between two Investor CSDs in T2S and an Issuer CSD that is External to T2S

Reference ID	T2S.09.420

This requirement relates to the settlement of a transfer of securities from an Investor CSD in relationship with a Technical Issuer CSD to another Investor CSD in relationship with a different Technical Issuer CSD, where participant C of CSD C (a CSD in T2S) sells a security to participant D of CSD D (a CSD in T2S) with the following links:

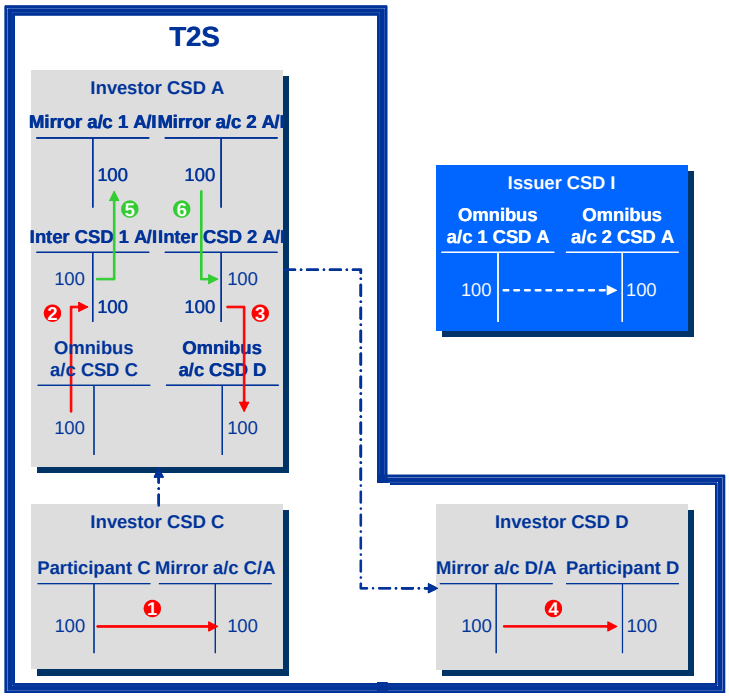


In this case, even if the Issuer CSD is outside T2S, the settlement within T2S will not be conditional: only an unsynchronised realignment needs to be sent to the External Issuer CSD. The mirroring in T2S of the omnibus accounts within the External CSD will allow this procedure and avoid the risk of failure within the Issuer CSD. However, the procedure may also require appropriate due-diligence studies confirming that Investor CSDs operate their accounts with the Issuer CSD in such a way that the realignment will never fail.

From the perspective of the T2S Parties (participant C and participant D), this looks like a domestic transaction:

- Participant C shall instruct T2S against participant D without giving the intermediary settlement chain;
- Participant D shall instructs T2S against participant C without giving the intermediary settlement chain;
- T2S shall derive the security movements #1, #2, #3 and #4, and the cash movement (if any), according to the links configured in the Static Data;
- T2S shall settle the security movements #1, #2, #3 and #4, and the cash movement (if any), simultaneously on an all-or-none basis;
- CSD A (as participant of the External CSD I) shall trigger the realignment in the External Issuer CSD (CSD I);
- When the realignment is settled in the External Issuer CSD (CSD I), CSD A shall instruct T2S with security movement #5 (unilateral FOP), and CSD B shall instruct T2S with security movement #6 (unilateral FOP);
- T2S shall settle security movements #5 and #6.

This requirement also relates to the settlement of a transfer of securities from an Investor CSD in relationship with a Technical Issuer CSD to another Investor CSD in relationship with the same Technical Issuer CSD, where participant C of CSD C (a CSD in T2S) sells a security to participant D of CSD D (a CSD in T2S) with the following links:



From the perspective of the T2S Parties (participant C and participant D), this looks like a domestic transaction:

- Participant C shall instruct T2S against participant D without giving the intermediary settlement chain;
- Participant D shall instruct T2S against participant C without giving the intermediary settlement chain;
- T2S shall derive security movements #1, #2, #3 and #4, and the cash movement (if any), according to the links configured in the Static Data;
- T2S shall settle the security movements #1, #2, #3 and #4, and the cash movement (if any), simultaneously on an all-or-none basis;
- If CSD A is using the same omnibus account in the Issuer CSD I for the holdings of CSD C and CSD D (the mirror account (Inter CSD account) in CSD A is then also the same), there is no need to interact with the External Issuer CSD (no need to instruct the External Issuer CSD and no need to instruct T2S with security movement #5 and #6);

Investor	Technical Issuer	Participant a/c	Mirror a/c	Omnibus a/c	Inter CSD a/c	Date From	Date To
CSD A	CSD I	CSD C	1	1	1	01/01/2008	
CSD A	CSD I	CSD D	1	1	1	01/01/2008	

- Otherwise, CSD A (as participant of the External CSD I) shall trigger the realignment in the External Issuer CSD (CSD I);
    - When the realignment is settled in the External Issuer CSD (CSD I), CSD A shall instruct T2S with the security movement #5 (unilateral FOP) and security movement #6 (unilateral FOP);
    - T2S shall settle the security movements #5 and #6.

Investor	Technical Issuer	Participant a/c	Mirror a/c	Omnibus a/c	Inter CSD a/c	Date From	Date To
CSD A	CSD I	CSD C	1	1	1	01/01/2008	
CSD A	CSD I	CSD D	2	2	2	01/01/2008	

USER REQUIREMENTS

CHAPTER 10

SECURITIES POSITIONS AND CASH BALANCES

EUROPEAN CENTRAL BANK

EUROSYSTEM

10 Securities positions and cash balances

This chapter focuses on requirements concerning securities positions and cash balances. Section 10.1 includes detail on all requirements concerning the conceptual securities positions data model (10.1.1), positions rebuilding functionalities in case of software or other technical problems (10.1.2) and requirement for blocking, restricting and earmarking positions (10.1.3). Section 10.3 describes the conceptual cash balances data model for T2S dedicated cash accounts. Finally, section 10.2 provides the whole set of requirements concerning cash limit management within T2S (please read chapter 6 for more information on the application of limits in the T2S settlement process).

10.1 Securities Positions

10.1.1 Attribute Requirements for Securities Positions

Reference ID	T2S.10.010

The position in a securities account is the amount of a security held on the account at a specific point in time. T2S shall update the position each time a settlement occurs. T2S shall not store intraday positions, but will store end-of-day positions for previous business days and the latest position for the current business day. T2S shall not store forecasted securities positions, i.e. the securities positions of a future settlement date, derived from the latest available position and pending settlement instructions.

Table 10-1 – List of Attributes for the Entity Security Position

Attribute	Description
Security Position Identifier	This attribute is the unique technical identifier of a securities position.
System Entity Identifier	This attribute is the unique technical identifier of the system entity (CSD) which operates the account in T2S.
Securities Account Identifier	This attribute is the unique technical identifier of a securities account in T2S.
Security Identifier	This attribute is the unique technical identifier of a security in T2S.
Position Date	This data item is the date of the position.
Position	This attribute is the position as of the *Position Date* for the combination of T2S account and security.

The following scenario provides an example of position tracking using the entity *Security Positions*. The example assumes that a securities account starts with a zero position. The table below provides the list of settlement transactions, used as the basis generating the positions.

S.I.	Security	Account	Deliver/ Receive	Qty	Value Date	Actual Settlement
1	1234	4747	Receive	150	25/6/2007	25/6/2007
2	1234	4747	Receive	50	25/6/2007	25/6/2007
3	1234	4747	Receive	50	1/7/2007	2/7/2007 (morning)
4	1234	4747	Receive	100	2/7/2007	2/7/2007 (afternoon)

Settlement instructions 1 and 2 both settle and generate settlement confirmation transactions on 25 June 2007 on the same settlement account during night-time settlement. The completion of settlement triggers the update of the position on the securities account for the security. The position is calculated and created, as documented in the following table.

Position ID	Security	Account	Date	Position
1	1234	4747	25/6/2007	200

Settlement instructions 3 and 4 both settle on 2 July 2007. Transaction 3 is a late settlement from the previous business day and settles in the morning. The settlement creates a new position as of 2 July 2007, with a total position of 250. The new position is the total position from the previous position (Position ID 1) of 200 on 25 June 2007 plus the 50 from the settled instruction.

Position ID	Security	Account	Date	Position
1	1234	4747	25/6/2007	200
2	1234	4747	2/7/2007	250

On the same day in the afternoon, settlement instruction 4 settles on the account. This updates the existing position (Position ID 2) to a total of 300.

Position ID	Security	Account	Date	Position
1	1234	4747	25/6/2007	200
2	1234	4747	2/7/2007	350

10.1.2 Process of Rebuilding of Securities Positions

Securities Position Rebuild

Reference ID	T2S.10.020

T2S shall provide functionality to rebuild securities positions from settled transactions in real time and, when necessary, intraday. Rebuilding positions is the process of deleting securities positions backwards in time from the current position to some stable position in the past to deal with software application errors and other technical errors resulting in corrupted securities positions. This utility will only be available to a system administrator of the T2S Operator. This functionality will be for the aforementioned exceptional circumstances only. Appropriate operation rules and procedures will govern the use of the utility by the T2S operator and will define the communication plan to market participants.

The consistency and synchronisation of positions with the CSD or directly connected T2S party will be an issue if either stores the positions redundantly in their systems. In such a case, the T2S Operator will inform the relevant parties of the actions necessary to resynchronise the positions using the communication plan.

T2S will carefully control such risks, but it must have the capability to delete the securities position history and to rebuild it from the history of settled instructions:

- for all of T2S for a given period,
- for a CSD for a given period,
- for one security in an individual CSD for a given period,
- for one security across all CSDs for a given period,
- for an individual securities account for a given period,
- for one security in an individual securities account for a given period.

T2S will limit the operational impact in that it will constrain its use to a specific type of error as listed above.

Securities Position Rebuild Consistency Check

Reference ID	T2S.10.022

The rebuilding of positions will not affect information on blocked, reserved and/or earmarked positions, since T2S stores these separately as restrictions. However, the position rebuild process shall perform a subsequent validation to ensure that any restrictions pertaining to the rebuilt positions are consistent. The process shall document all restrictions that are inconsistent with a rebuilt securities position in report from. For example, the consistency check must verify that a restriction does not block a securities position greater than the available securities position. This means that if a rebuilt securities position specifies a holding of 100 shares in a given account for a given security as of a given date, but a restriction specifies 150 shares for the same position as of the same date as blocked, then the consistency check must output the restriction as inconsistent with the position.

10.1.3 Blocked, Reserved and Earmarked Positions

Reference ID	T2S.10.030

This entity shall support the blocking, earmarking and reservation of positions within the overall position in a security in a securities account. T2S shall define the blocking, reservation and earmarking of positions as settlement restrictions. T2S must permit parties to:

- block a specific quantity or nominal of a security position in a securities account for a specific purpose;
- reserve a specific quantity or nominal of a security position in a securities account for a specific purpose;
- and earmark a specific quantity or nominal of a security position in a securities account for a specific purpose.

T2S will update the valid from date from the intended settlement date of the settlement restriction instruction to block, reserve or earmark. T2S will update the valid to date from the intended settlement date of the settlement restriction instruction to remove the block, earmark or reservation.

Blocking of a securities position is a process of preventing the transfer of a specified amount of securities in one securities account to any other securities account by associating it to a specific transaction or to a specific purpose. Blocking in T2S may never result in a negative securities balance, i.e. it is not possible to block an amount of securities greater than the securities balance on a securities account. For example, an instruction for a voluntary corporate action from a CSD participant would result in the blocking of specified quantity of securities in that securities account from use in ordinary settlement.

Reservation of a securities position is a process that prevents the transfer of a securities position in a specific security in one securities account to any other securities account except for the purpose for which the position was reserved. The settlement of the underlying settlement instruction results in the actual transfer of the reserved holdings to another securities account and in the subsequent removal of the reservation. It is possible to reserve a position greater than the securities position available on the securities account. When a reservation results in a negative securities position, all incoming securities are reserved automatically until the quantity of the reservation is filled. For example, the settlement of the underlying instruction or the completion of an underlying process, such as a conditional securities delivery, results in the transfer of the reserved positions to another securities account and in the subsequent removal of the reservation.

Earmarking specifies that a position in a specific security in a specific account is to be used for a specific purpose only. For example, a bank can earmark a securities position in a securities account for use as eligible collateral (e.g. for auto-collateralisation). Earmarking in T2S shall never result in a negative securities position, i.e. it is not possible to earmark a securities position on a securities account that is greater than the available position.

T2S defines blocking, reservation and earmarking as classes of market-specific restrictions.

Table 10-2 – List of Attributes for the Entity Blocked, Earmarked and Reserved Positions

Attribute	Description
Blocking Identifier	This attribute shall define the unique technical identifier of the blocking or reservation information. It shall serve as the unique reference of the restriction in T2S.
Securities Account Identifier	This attribute shall define the unique technical identifier of an account in T2S.
Security Identifier	This attribute shall specify the unique technical identifier of a security in T2S.
Restriction Type Identifier	This attribute shall define the unique technical identifier of a restriction type in T2S. Please refer to chapter 11.10.2.
Position	This attribute shall specify the position that T2S shall block the combination of T2S account and security.
Valid Timestamp From	This attribute is the date and time from which a position is blocked or restricted from settlement.
Valid Timestamp To	This attribute is the date and time to which a position is blocked from settlement. If no date is given, then the restriction is valid indefinitely. T2S will automatically remove the restriction after the date and time specified by this attribute.
Unique Transaction Identifier	This attribute shall specify the unique identifier of a transaction when T2S creates the blocked or reserved securities position from and for a specific settlement instruction.

10.1.3.1 Scenarios for Collateralised Positions

This section describes different scenarios for the use of the securities positions and blocking for collateralised securities. The basis for the scenarios is that a securities account holds a position of 5,000 shares in NOKIA, which the owner wants to use in part as collateral. The examples assume that the business user blocks a position of 2,000 shares as collateral from 15 January 2007 up to and including 27 February 2007. The settlement of a buy transaction increases the number of shares by 2,000 on 23 January 2007, while the settlement of a sell transaction decreases the number of shares by 4,000 on 15 February 2007. The following table provides a history of positions, based on these changes.

Position ID	Security	Account	Date	Position
1	NOKIA	ABC Bank 1	1/1/2007	5,000

Position ID	Security	Account	Date	Position
2	NOKIA	ABC Bank 1	23/1/2007	7,000
3	NOKIA	ABC Bank 1	15/2/2007	3,000

Scenario 1 – Positions in a Separate Securities Collateral Account

Reference ID	T2S.10.040

In this scenario, a CSD uses separate securities accounts to identify separate collateralised positions. The CSD transfers the position, required as collateral, from the main account to a collateral account of the account holder. T2S allows the CSD to create a restriction at the securities account level; the CSD creates a settlement restriction on the account level for the account "ABC Bank 2" as a collateral securities account by assigning it the restriction type "Collateral Account". Section 11.10.2 of chapter 11 describes the configuration of market-specific restriction types with their processing parameters. The blocking level for this type of restriction could be "blocked". T2S would block all positions in that securities account as collateral.

Even if the securities account is blocked, the CSD will not have to remove such restriction when sending instructions, as long as it is configured for the restriction type as an authorised instructing party. However, an explicitly blocked securities position can only be transferred when the block is removed. Otherwise, the result could be a negative securities account position in that security, i.e. more is blocked than actually held in the account.

Standing settlement restrictions on an account level must be created by the CSD during the configuration phase, where the date in the *Blocked and Reserved Position* entity is the date from which the restriction is valid. The date from can be the date of the initial configuration of the CSD data in T2S. The settlement restriction specifies no end date, since the classification of the account, as a collateral account, is indefinite. T2S will apply a settlement restriction on the account level to all securities positions in the account.

Account	Restriction Type	Date from	Date to	Security	Position
ABC Bank 2	Collateral Account	1/1/1900	n/a	n/a	n/a

The position will appear as follows before collateralisation is undertaken:

Security	Account	Date	Position	Available	Blocked
NOKIA	ABC Bank 1	1/1/2007	5,000	5,000	0

Blocking 2,000 shares in Nokia for collateral in this scenario requires a transfer of shares between accounts as an FOP as of 15 January 2007.

Security	Deliver from	Deliver to	Date	Position

Security	Deliver from	Deliver to	Date	Position
NOKIA	ABC Bank 1	ABC Bank 2	15/1/2007	2,000

The FOP transaction results in an updated position for both ABC Account 1 and ABC Account 2. The transaction reduces the position in NOKIA of the ABC Bank 1 account by 2,000 shares as of 15 January 2007 and creates a new position of 2,000 NOKIA shares in the ABC Bank 2 account. The position in the latter appears as a blocked position, depending on the definition of the settlement restriction.

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	1/1/2007	5,000	5,000	0	n/a
NOKIA	ABC Bank 1	15/1/2007	3,000	3,000	0	n/a
NOKIA	ABC Bank 2	15/1/2007	2,000	0	2,000	Collateral

Settlement of the buy transaction of 23 January 2007 creates a new position record for the ABC Bank 1 account, thereby updating the position history as follows:

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	1/1/2007	5,000	5,000	0	-
NOKIA	ABC Bank 1	15/1/2007	3,000	3,000	0	-
NOKIA	ABC Bank 2	15/1/2007	2,000	0	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	5,000	5,000	0	-

Settlement of the sell transaction on 15 February 2007 creates a new position for the ABC Bank 1 account, thereby updating the position history as follows:

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	1/1/2007	5,000	5,000	0	-
NOKIA	ABC Bank 1	15/1/2007	3,000	3,000	0	-
NOKIA	ABC Bank 2	15/1/2007	2,000	0	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	5,000	5,000	0	-
NOKIA	ABC Bank 1	15/2/2007	1,000	1,000	0	-

Releasing 2,000 NOKIA shares out of the collateral account requires the transfer of shares from the collateral account to ABC Bank 1 as a FOP as of 28 February 2007.

Security	Deliver from	Deliver to	Date	Position
NOKIA	ABC Bank 2	ABC Bank 1	28/2/2007	2,000

The FOP transaction results in an updated position for both ABC Account 1 and ABC Account 2 in the positions. The transaction increases the ABC Bank 1 account's position in NOKIA by 2,000 shares as of 28 February 2007 and reduces the balance in the collateral account to zero.

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	1/1/2007	5,000	5,000	0	-
NOKIA	ABC Bank 1	15/1/2007	3,000	3,000	0	-
NOKIA	ABC Bank 2	15/1/2007	2,000	0	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	5,000	5,000	0	-
NOKIA	ABC Bank 1	15/2/2007	1,000	1,000	0	-
NOKIA	ABC Bank 1	28/2/2007	3,000	3,000	0	-
NOKIA	ABC Bank 2	28/2/2007	0	0	0	Collateral

Scenario 2 – Blocking Positions for Collateral in the Same Securities Account

Reference ID	T2S.10.050

In this scenario, the T2S party or its CSD creates a settlement restriction on a specific position for use as collateral within its current securities account. This has no impact on the position history, because a transfer between accounts does not occur.

The collateralisation process results in a settlement restriction for the ABC Bank 1 account on 2,000 NOKIA shares from 15 January 2007 to 27 February 2007. The restriction type defines the purpose for the blocking as collateral. The restriction level for this type of settlement restriction is "blocked", which ensures that the position is not used for settling open trades. The type of collateralisation requires the definition of a settlement restriction, as documented in the following table:

Account	Restriction Type	Date from	Date to	Security	Position
ABC Bank 2	Collateral Account	15/1/2007	27/2/2007	NOKIA	2,000

The position appears as follows before collateralisation and input of the settlement restriction:

Security	Account	Date	Position
NOKIA	ABC Bank 1	1/1/2007	5,000

The input of the settlement restriction does not generate a new securities position. The securities positions remain unchanged. The position queries will determine the restriction on the position in the account based on the settlement restriction dates at run-time. The positions will appear as follows after at the effective date of the settlement restriction.

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	15/1/2007	5,000	3,000	2,000	Collateral

The settlement of the buy transaction on the 23rd January 2007 creates a new position for ABC Bank 1 account, thereby updating the position history as follows:

Security	Account	Date	Position
NOKIA	ABC Bank 1	1/1/2007	5,000
NOKIA	ABC Bank 1	23/1/2007	7,000

The position appears as follows at 23 January after the buy transaction settles:

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	15/1/2007	5,000	3,000	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	7,000	5,000	2,000	Collateral

The settlement of the sell transaction on 15 February 2007 creates a new position record for the ABC Bank 1 account, thereby updating the position history as follows:

Security	Account	Date	Position
NOKIA	ABC Bank 1	1/1/2007	5,000
NOKIA	ABC Bank 1	23/1/2007	7,000
NOKIA	ABC Bank 1	15/2/2007	3,000

The positions appear as follows at 23 January after the buy transaction settles:

Security	Account	Date	Position	Available	Blocked	Restriction Type

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	15/1/2007	5,000	3,000	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	7,000	5,000	2,000	Collateral
NOKIA	ABC Bank 1	15/2/2007	3,000	1,000	2,000	Collateral

The securities positions do not change when the settlement restriction reaches its end date, but the position appears as follows:

Security	Account	Date	Position	Available	Blocked	Restriction Type
NOKIA	ABC Bank 1	15/1/2007	5,000	3,000	2,000	Collateral
NOKIA	ABC Bank 1	23/1/2007	7,000	5,000	2,000	Collateral
NOKIA	ABC Bank 1	15/2/2007	3,000	1,000	2,000	Collateral
NOKIA	ABC Bank 1	28/2/2007	3,000	3,000	0	

10.2 Limits

Limit management

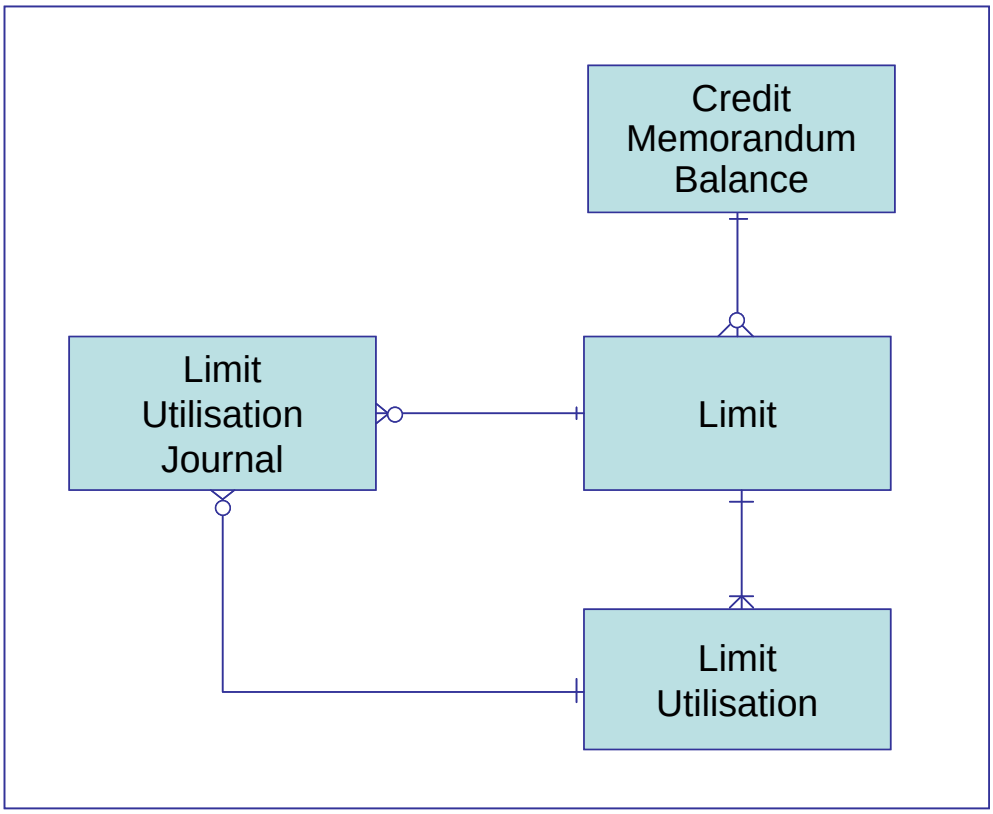
Reference ID	T2S.10.060

This limit management shall support the definition and maintenance of limits through the credit memorandum balance for

- a specific T2S dedicated cash account;
- one securities account of a party, linked to a T2S dedicated cash account for securities settlement;

or a group of securities accounts of a party, linked to a T2S dedicated cash account for securities settlement.

Figure 10-1 – Conceptual T2S Limit Data Model



10.2.1 Defining Limits

Auto-collateralisation limit between NCB and payment/settlement bank

Reference ID	T2S.10.061

T2S shall allow the NCB to define and maintain an auto-collateralisation limit for the maximum net amount of intraday credit that a settlement/payment bank can obtain for a T2S dedicated cash account through the collateralisation of securities with its NCB.

Auto-collateralisation limit between payment bank and T2S Actor for which it acts as a liquidity provider

Reference ID	T2S.10.062

T2S shall allow the payment/settlement bank to define and maintain an auto-collateralisation limit for the maximum net amount of intraday credit that its client can obtain through the collateralisation of securities with the payment/settlement bank (client-collateralisation) for a T2S dedicated cash account from which the client receives liquidity.

External guarantee limit

Reference ID	T2S.10.063

T2S shall allow the payment/settlement bank to define and maintain an external guarantee limit for the cap of credit secured outside T2S that its client can obtain with the payment/settlement bank for a T2S dedicated cash account from which the client receives liquidity.

Unsecured credit limit

Reference ID	T2S.10.064

T2S shall allow the payment/settlement bank to define and maintain an unsecured credit limit for the cap of credit unsecured in T2S that its client can obtain with the payment/settlement bank for a T2S dedicated cash account from which the client receives liquidity.

10.2.1.1 Limit Model

Attribute requirements for limits

Reference ID	T2S.10.086

This Limit entity shall store all attributes that T2S requires to define a limit.

Table 10-3 – List of Attributes for the Entity Limit

Attribute	**Description**
Limit Identifier	This attribute shall define the unique technical identifier of a limit.
System Entity Identifier	This attribute shall define the unique technical identifier of the system entity (NCB) which operates the T2S dedicated cash account in T2S.
Credit Memorandum Balance Identifier	This attribute specifies the unique identifier of the credit memorandum balance for which the user defined the limit
T2S Dedicated Cash Account of the Credit Provider	This attribute shall specify the T2S dedicated cash account, linked to the credit memorandum balance.
Limit Type	This attribute shall specify the type of limit. - External guarantee limit - Unsecured credit limit - Auto-collateralisation limit
Limit Currency	This attribute shall specify the currency of the limit.
Limit Amount	This data item specifies the limit amount for the party for the T2S dedicated cash account. It can be set to zero if the party for the T2S dedicated cash account has no limit.

Attribute	Description
Valid From	This attribute specifies the date from which the credit limit is valid.

Resetting limit utilisation at end-of-day

Reference ID	T2S.10.087

T2S shall reset the limit utilisation of all limits to zero at the end-of-day.

10.2.2 Limit Utilisation

Reference ID	T2S.10.090

T2S shall track the limit utilisation for all parties at each moment of the T2S settlement day. T2S shall create a new occurrence in the *Limit Utilisation* entity for T2S settlement days on the first instance that the settlement process generates a cash movement/limit headroom usage for the T2S party with a limit on a T2S Dedicated Cash Account/s or Credit Memorandum Balance/s. T2S shall not generate any occurrence if the settlement generates no cash movement/limit headroom usage.

Table 10-4 – List of Attributes for the Entity Limit Utilisation

Attribute	Description
Limit Utilisation Identifier	This attribute shall define the unique technical identifier of an occurrence of limit utilisation.
System Entity Identifier	This attribute shall define the unique technical identifier of the system entity (NCB) which provides T2S dedicated cash accounts in T2S.
Limit Identifier	This attribute shall define the technical identifier of the limit. It shall link the limit utilisation to the underlying limit.
Currency	This data item specifies the currency of the limit amounts.
Limit Utilisation	This data item specifies the most current amount of liquidity drawn down by the party for the settlement of securities transactions with the limit/credit provider for the day.
Remaining Headroom	This data item specifies the most current amount of credit available to the party for the settlement of securities transactions with the limit/credit provider for the day.
Date	This attribute specifies the T2S settlement day to which the limit utilisation applies.

10.2.3 Journaling of Limit Utilisation

Reference ID	T2S.10.100

T2S shall track each change in a party's limit utilisation for every T2S settlement day. T2S shall create a new occurrence in the *Limit Utilisation Posting* entity when a process generates a cash movement relevant for the limit of the T2S party or for a specific T2S dedicated cash account.

Table 10-5 – List of Attributes for the Entity Limit Utilisation Posting

Attribute	Description
Limit Utilisation Posting Identifier	This attribute shall define the unique technical identifier of an occurrence of a posting against a limit.
System Entity Identifier	This attribute shall define the unique technical identifier of the system entity (NCB) which operates the T2S dedicated cash account in T2S.
Limit Identifier	This attribute shall define the unique technical identifier of the limit. It shall link the limit utilisation to the underlying limit.
Limit Utilisation Identifier	This attribute shall define the unique technical identifier an occurrence of limit utilisation. It shall link the posting against the limit utilisation for the T2S settlement day.
Transaction Source	This attribute shall define the object in which T2S stores the transaction that generated the change in the limit utilisation so that the source of the reference can be determined.
Transaction Reference	This attribute shall specify the unique technical identifier of the transaction that generated the change in the limit utilisation.
Currency	This data item shall specify the currency of the limit amounts.
Debit / Credit	This attribute shall specify whether the cash posting is increasing or decreasing the limit utilisation.
Amount	This attribute shall define the amount that the settlement process credits or debits against the limit utilisation.
Limit Utilisation After	This data item shall specify the amount of liquidity drawn down by the party for the settlement of securities transactions with the credit provider.
Remaining Headroom After	This data item shall specify the amount of liquidity available to the party for the settlement of securities transactions with the credit provider.
Date	This attribute shall specify the T2S settlement date to which the limit utilisation applies.

T2S shall track the daily utilisation of limits as well as associated cash movements and collateralisation transactions, updating the balance.

10.3 Cash Account Balances

Reference ID	T2S.10.110

Cash balances track the amount of funds in a T2S dedicated cash account at a specific point in time. Cash positions shall support the tracking of historic balances. Cash balances in T2S dedicated cash accounts change through a transfer of funds to/from RTGS system from/to the T2S dedicated cash account, through the settlement of the cash leg of a securities settlement instruction, or a corporate action payment. Section 6.1.2 in chapter 6 of the user requirements provides details as to the type of transactions that change the balances in T2S dedicated cash accounts. An occurrence of a cash balance should be zero at the end of the day for previous business days, since T2S transfers the liquidity back to the relevant RTGS account. An occurrence stores the intraday balance for the current settlement day, but again, at the end of that day the balance will be zero because of the transfer of the remaining liquidity to the RTGS account.

Table 10-6 – List of Attributes for the Entity Cash Balances

Attribute	Description
System Entity Identifier	This attribute shall define the unique technical identifier of the system entity (NCB) which operates the T2S dedicated cash account in T2S. T2S shall use the identifier to segregate the cash positions of the NCBs.
T2S Dedicated Cash Account Identifier	This attribute is the unique identifier of a T2S dedicated cash account.
Cash Balance Date	This data item is the date of the cash position.
Currency Code	This attribute specifies the cash account currency, and therefore the currency of the balance (ISO 4177 Currency Code).
Cash Balance	This attribute specifies the balance as of the *Cash Balance Date*.

10.3.1 Rebuilding of T2S Dedicated Cash Account Balances

Reference ID	T2S.10.120

T2S shall provide functionality to rebuild T2S dedicated cash account balances from cash postings in real time and, when necessary, intraday. The rebuilding of cash balances is the process of deleting balances from a defined point in time to deal with software application errors and other technical errors resulting in corrupted cash balances. This utility will only be available to a system administrator of the T2S Operator.

This functionality will be for the aforementioned exceptional circumstances only. Appropriate operation rules and procedures will govern the use of the utility by the T2S operator and will define the communication plan to market participants. The T2S Operator will inform the relevant parties about the actions necessary to resynchronise the balances using the communication plan. T2S will carefully control such risks, but it must have the capability to rebuild cash balances:

- for all of T2S for a given period,
- for an NCB for a given period,
- for one T2S dedicated cash account of a party for a given period.

T2S will limit the operational impact in that it will constrain its use to a specific type of error as listed above.

10.3.2 Blocked and Reserved Cash Balances

Reference ID	T2S.10.130

This entity shall support the blocking and reservation of a cash balance in a T2S dedicated cash account. T2S shall define the blocking or reservation settlement restrictions. T2S must permit parties to:

- block a specific cash balance in a T2S dedicated cash account for a specific purpose;
- and reserve a cash balance in a T2S dedicated cash account for a specific purpose.

Blocking a cash balance involves preventing the transfer of a specified amount of funds in a specific currency in one cash account to any other cash account by associating it to a specific transaction or to a specific purpose. Blocking in T2S may never result in a negative cash balance, i.e. it is not possible to block an amount of funds greater than the cash balance on a cash account.

Reserving a cash balance involves preventing the transfer of a specified amount of funds in a specific currency in one cash account to any other cash account except for the purpose for which the funds were reserved. The settlement of the underlying settlement instruction results in the actual transfer of the reserved funds to another cash account and the subsequent removal of the reservation. It is possible to reserve an amount greater than the balance on the cash account. When a reservation results in a negative cash amount, all incoming cash is reserved automatically until the amount of the reservation is filled.

Table 10-7 – List of Attributes for the Entity Blocked and Reserved Cash Balances

Attribute	Description
Blocking Identifier	This attribute shall define the unique technical identifier of the blocking or reservation information. It shall serve as the unique reference in T2S.
T2S Dedicated Cash Account Identifier	This attribute shall define the unique technical identifier of the T2S dedicated cash account.

Attribute	Description
Restriction Type Identifier	This attribute shall define the unique technical identifier of a restriction type in T2S. Please refer to chapter 11.10.2.
Currency	This attribute shall specify the currency code of the cash balance.
Cash Balance	This attribute shall specify the amount of cash that T2S shall block for the T2S dedicated cash account.
Valid Timestamp From	This attribute shall define the date and time from which a cash balance is blocked or restricted from settlement.
Valid Timestamp To	This attribute shall define the date and time to which a cash balance is blocked from settlement. If no date is given, then the restriction is valid indefinitely. T2S will automatically remove the restriction after the date and time specified by this attribute.
Unique Transaction Identifier	This attribute shall specify the unique identifier of a transaction when T2S creates the blocked or reserved cash balance from and for a specific settlement instruction.

USER REQUIREMENTS

CHAPTER 11

CONFIGURATION REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

11 Configuration requirements

The aim of this chapter is to describe requirements concerning configuration information that needs to be stored for smooth processing in T2S. Such information may be either business or technical data.

Configuration requirements for business-related information cover two main areas: processing schedule and settlement processing.

Sections 11.1, 11.2 and 11.4 deal with data related to the T2S calendar and to managing both the business date and the whole set of processing schedule events (please read chapter 3 for more details on the general structure of the settlement day and the T2S calendar).

Sections 11.5, 11.7 and 11.12 define requirements concerning, respectively, the tolerance amount allowed for matching settlement instructions, the management of default priority level for settlement based on the party type, and the harmonised setting for partial settlement at the system level (please read chapter 7 for more details on settlement processing requirements).

With respect to technical information, this chapter mainly addresses requirements related to user profiles via the features of managing roles and privileges (section 11.9) and to the features of configuring services and messages needed to properly shape the T2S functionalities that each T2S party will be using, and the information each CSD and T2S party will receive from T2S (section 11.10).

In addition, section 11.6 defines a full set of requirements concerning attribute domain management (e.g. valid list of codes for instruction types, valid list of ISO country codes, list of market-specific restriction and blocking types), while section 11.3 includes all the requirements concerning data and functionalities segregation in T2S.

Finally, section 11.11 defines requirements for the SWIFT BIC Directory used to validate the input of BICs as party and technical address identifiers, while sections 11.12, 11.13 and 11.14 deal with all the parameters concerning partial settlement thresholds, conditional securities delivery and the recycling periods for pending settlement instructions.

11.1 Business date

Reference ID	T2S.11.005

T2S shall have an internal business date, which will determine the date of processing. This date shall be independent of the system date in the operating system. T2S will initiate processing for a new business day before midnight, according to the daily processing schedule. When this occurs, all processes must use the T2S business date instead of the operating system date to identify transactions for settlement and for

updating balances. A business date, independent from the operating system date, will also facilitate testing in that it supports the simulation of specific business days.

All business dates must have a valid date format and must be a working day, according to the T2S calendar.

Manual Update of Business Date

Reference ID	T2S.11.010

Only an authorised T2S system administrator shall be able to change the business date manually in T2S through an online user interface. A manual update of the business date in the T2S production environment will be limited to business contingency situations. For example, backdated processing may be required in the event of a catastrophic failure.

Automated Update of Business Date

Reference ID	T2S.11.020

A process shall exist to calculate the next business day from the current business day and to update the business date to the next business day. It shall be possible for T2S to schedule or trigger this update in the daily processing cycle of T2S.

Resetting Processes after Business Date Update

Reference ID	T2S.11.030

Mechanisms shall stop all continuously running processes using the business date before the business day change so that all applications register the switchover to the new business day.

11.2 Daily processing schedule

Reference ID	T2S.11.040

The T2S system administrator shall maintain the T2S processing schedule as well as dependencies in scheduling between processes, regardless of the actual scheduled time. For example, the start of process B must wait for the successful completion of process A even if process A runs longer than the scheduled start time for process B.

It is not a requirement to store the processing schedule and processing dependencies as part of the T2S application, since standard software products that run alongside the application fulfil the requirements for time- and event-driven process automation for T2S.

11.3 System entity management

Reference ID	T2S.11.050

System entity management in T2S defines all functionality needed to support a participating CSD's or NCB's segregation of processing capabilities and data across its participants. Moreover, each CSD is legally responsible for the service it offers its participants – the service offerings of the CSDs may differ to various extents. Therefore, the CSD must be able to configure its service offering by granting or denying its parties access to specific functions and facilities of T2S. A system entity defines the legal entity by which T2S must segregate the data and access rights of the CSDs and NCBs in T2S and the T2S operator.

The second dimension of system entity management is the segregation of data across entities. A CSD must not be able to access the T2S parties, positions and transactions of the other CSDs. Similarly, an NCB must not be able to access the payment banks, balances and cash transactions of the other NCBs. The configuration of CSDs and NCBs as different system entities shall allow for the partitioning of data on the technical and functional levels in T2S.

Defining System Entities

Reference ID	T2S.11.060

T2S shall define system entities according to a hierarchical structure. The top level in the hierarchy shall define the T2S operator. The second level of the hierarchy shall define the CSDs participating in T2S, and NCBs for cash settlement. This means that the T2S operator will be responsible for configuring the CSDs and the NCBs as system entities in the technical platform. The CSDs shall be able to create, maintain and access data for their T2S parties. NCBs shall be able to create, maintain and access data for their payment banks.

Individual CSDs and the NCB shall be unique occurrences in the party static data (please read chapter 16 for more information).

The T2S operator must configure each system entity before an authorised T2S system user with the business role of T2S business user can enter the entity's party and other static data, as well as other configuration information.

Entity Attribute Requirements for System Entity Definition

Reference ID	T2S.11.070

Entity attributes specify the information needed for configuring system entities in T2S.

Table 11-1 – System Entity Definition

Attribute	**Definition**
System Entity Identifier	The system entity identifier shall define the unique technical identifier assigned to each CSD, NCB and to the T2S operator; the T2S system administrator shall manually assign this technical identifier. This identifier is the field that T2S shall use to segregate data.

Attribute	Definition
Mnemonic	The mnemonic shall specify a unique short code used to identify the system entity to the T2S system user.
Entity Name	This attribute shall specify the full name of a system entity.
Operating Entity	This Boolean attribute shall indicate whether the relevant system entity is the T2S operator. The system entity configuration shall allow only one occurrence with operating entity set to "true" in the system entity definition.
Direct Holding CSD	This Boolean attribute shall specify whether the CSD operates in a direct holding market.
Direct Holding Technical Offset Account	This attribute shall specify the technical offset account that T2S requires for settlement of instructions in a direct holding market.
Party identifier	This attribute shall specify the unique technical identifier of the T2S Operator, CSD or NCB as a party in party reference data corresponding to the system entity to support the hierarchical link between the T2S Operator (Level 1) and the NCBs and CSDs (Level 2).

Segregation of Data

Reference ID	T2S.11.080

Static and transactional data shall be segregated by system entity where applicable, using the system entity identifier. This means that the system entity identifier must be an attribute of specific static data and transactional entities in T2S as the prerequisite for data segregation.

Data partitioning based on the system entity identifier shall allow T2S system administrators to undertake backup, recovery and other data operations for a single CSD or NCB. For example, if a CSD requires a full export of its data, then the T2S system administrator can only perform the data export operation for the data of the relevant CSD's partition. It would also be possible to create a backup only for one or a list of CSD(s) or NCB(s). Without data partitioning, a data export would result in an unloading of data for all CSDs and NCBs, or alternative, ad-hoc software procedures would be required to unload CSD-specific or NCB-specific data. Moreover, a backup operation would cover all CSDs and NCBs, complicating the recovery of data for only one CSD or NCB.

Implementing data segregation requires the partitioning of data by CSD and NCB based on their system entity identifiers.

Querying and Selecting System Entities

Reference ID	T2S.11.090

It shall be possible for a T2S system administrator to query system entities and to select an occurrence for update or display. It shall also be possible to enter new system entities.

Parameter Window for Update and Display

Reference ID	T2S.11.100

A parameter window shall exist in the online user interface in which a user is able to enter the mnemonic or technical identifier of a system entity for update or display. If the user does not know either code, then the user shall be able to execute a search that displays the list of valid system entities.

List of System Entities for Input

Reference ID	T2S.11.110

Functions on the T2S operator level shall require the input, as either technical identifier or mnemonic, of the system entity when querying, entering, changing and maintaining data. T2S shall display a list of valid system entities for any field in which the system entity can be input.

Maintaining System Entities

Reference ID	T2S.11.120

System entity maintenance refers to the process of adding, changing and deleting system entities in T2S. Access to this functionality shall be restricted to the T2S system administrator of the T2S operator.

Adding a System Entity

Reference ID	T2S.11.130

It shall be possible for a user to add a new system entity with all required attributes. The reader should note that the database administrator may have to create the database partition for the new CSD or NCB before the relevant T2S system users can enter data for that CSD or NCB.

Updating a System Entity

Reference ID	T2S.11.140

It shall be possible for a user to update an existing system entity.

Deleting a System Entity

Reference ID	T2S.11.150

It shall not be possible for a user to delete an existing system entity.

11.4 Closing day calendar

Reference ID	T2S.11.160

T2S shall have a calendar specifying those dates on which T2S is not open for settlement. Since the system shall support currencies other than euro, the calendar model in T2S shall support the differentiation of closing days by currency. The user shall not specify Saturdays and Sundays explicitly as non-operating days in the calendar. The application shall identify these days through the system calendar of the operating system.

Entity Attribute Requirements for the Calendar

Reference ID	T2S.11.170

Entity attribute requirements specify the information required for determining the non-opening days of T2S by currency.

Table 11-2 – Non-Operating Day Calendar Definition

Attribute	Definition
Settlement Currency Code	This attribute shall specify the currency code according to ISO 4217.
Non-Business Date	This attribute shall specify the date on which T2S is not open for the given settlement currency.

Calendar Updates

Reference ID	T2S.11.180

The T2S business and operations support user shall be able to modify the closing day calendar.

11.5 Tolerance amount

Reference ID	T2S.11.190

The tolerance amount is the acceptable difference in the cash value (by currency) allowed for successful matching of settlement instructions between the settlement instructions of the deliverer and the receiver of securities against payment. T2S shall provide the T2S business and operations support user with functionality to maintain tolerance amounts in currency for the matching of settlement instructions.

- T2S shall support the definition of tolerance amounts by currency and cash value range.
- The definition of tolerance amounts shall specify a valid-from date to allow changes to take effect as of a specific date.

Table 11-3 – Tolerance Amount

Attribute	Definition
Tolerance Amount Identifier	This attribute shall define the unique numeric identifier of the tolerance amount.
Currency Code	This attribute shall define the currency of the tolerance amount according to ISO 4217.
Valid From	This attribute specifies the date from which a given set of tolerance ranges for a currency is valid.
Cash Value Amount Limit	This attribute shall define the cash value up to (and including) which the tolerance amount is valid. The cash value for the last limit in a range must be the maximum numeric value of the attribute amount.
Tolerance Amount	This attribute shall specify the actual value in currency of the tolerance amount for a given currency and cash value.

The following table illustrates how T2S shall represent tolerance values for euro in T2S. The values and ranges are for illustration only and do not represent the actual tolerance configuration for T2S.

Table 11-4 – Configuration Example for Tolerance Amount

Currency	Valid From	Cash Value Amount Limit	Tolerance Amount
EUR	1/1/2007	100,000	2
		999,999,999,999	25

11.6 Attribute domain management

Reference ID	T2S.11.200

Attribute domains in T2S shall provide the valid list of values allowed for an attribute (table column or a data field in physical terms). They include a list of all the valid values that a user can enter for an attribute of a static or transactional data entity (e.g. the valid country codes for the issue country of a security). T2S will use attribute domains for field validations and for documenting the business definition of a value in an attribute. Some examples of attribute domains required for T2S are:

- valid list of codes for instruction types;
- valid list of ISO country codes;
- and account status.

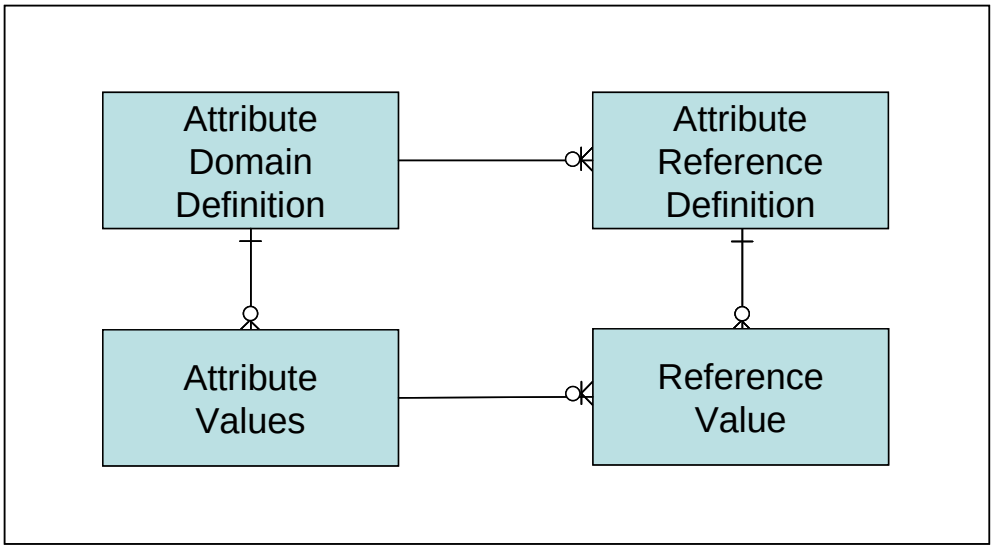
The requirement for a new attribute domain may arise at any time during the life cycle of a T2S application. Therefore, T2S shall provide a general static data component that will allow an authorised T2S system user to logically create, modify and deactivate attribute domains using a general component in static data. Operational and technical restrictions limit the actions that a user can trigger in the database using the attribute domain management. T2S shall allow the registration and deactivation of attribute domains using pre-defined database tables. The T2S system user will not create, modify and delete tables physically in the database using the online user interface for domain management, but shall maintain logical definitions of attribute domains within pre-defined physical database tables. However, a software developer must implement its use in the software component requiring the domain.

Attribute Domain Model

Reference ID	T2S.11.210

The attribute domain model specifies the entities required in T2S to support the domain management function.

Figure 11-1 – Conceptual Model for Attribute Domain Management



Attribute Value

Reference ID	T2S.11.220

The *Attribute Value* entity is the pre-defined physical table in which all valid values for a logically defined attribute domain shall be stored.

Table 11-5 – Attribute Requirements for Entity Attribute Value

Attribute	**Definition**
Attribute Value Identifier	This attribute shall define the unique technical identifier of an attribute value for a domain. The identifier shall be unique across all domains.

Attribute	Definition
Attribute Domain Identifier	This attribute shall define the unique technical identifier of the attribute domain for which the value is relevant. It links the attribute to its domain.
Attribute Value	This attribute shall specify the value of the attribute.
Attribute Value Description	This attribute shall provide the text description of the attribute value.

Reference Value

Reference ID	T2S.11.230

The *Reference Value* entity represents the pre-defined physical table in which the additional columns for a logically defined attribute domain shall be stored.

Table 11-6 – Attribute Requirements for Entity Reference Value

Attribute	Definition
Reference Value Identifier	This attribute shall define the unique technical identifier of a reference value for an attribute reference definition. The identifier shall be unique across all attribute reference definitions.
Attribute Reference Identifier	This attribute shall define the unique technical identifier of the relevant attribute reference definition.
Reference Value	This attribute shall specify the value of the attribute reference definition.
Reference Value Description	This attribute shall provide the text description of the attribute reference definition.

Attribute Domain Definition

Reference ID	T2S.11.240

The *Attribute Domain Definition* entity shall provide the definition of a logical domain in pre-defined physical database tables. An attribute domain definition shall require the specification of a unique identifier for the domain as well as its business description. It shall define the attribute domain and the logical format of its values. The actual column of the pre-defined database table (*Attribute Value* entity) defines the physical limitation for the logical format.

Table 11-7 – Attribute Requirements for Entity Attribute Domain Definition

Attribute	Definition

Attribute	Definition
Attribute Domain Identifier	This attribute shall define the unique technical identifier of an attribute domain in T2S. The authorised T2S system user shall assign this sequence to the logical domain.
Attribute Domain Name	This attribute shall specify the name of the attribute domain.
Attribute Domain Description	This attribute shall provide a short documentation of the attribute domain, i.e. its purpose for and use in T2S.
Attribute Format	This attribute shall specify whether the format of the code for the attribute value is alphabetic, alphanumeric or numeric.
Minimum Code Length	This attribute shall specify the minimum length of the code for a value in the attribute domain.
Maximum Code Length	This attribute shall specify the maximum length of the code for a value in the attribute domain. The maximum length may not be longer than the maximum length of the physical column.
Case	This attribute shall specify if the code for a value in the attribute domain is uppercase, lower case, or both for alphabetic and alphanumeric code formats.

Attribute Reference Definition

Reference ID	T2S.11.250

The *Attribute Reference Definition* entity shall support the definition of additional values, mapped to an attribute, specified by an attribute domain definition. It shall allow an authorised T2S system user to add additional columns to an attribute domain in pre-defined physical database tables. Business descriptions of an attribute reference definition must include its purpose. It shall define the attribute reference and logical format of its values. The actual column of the pre-defined database table (*Reference Value* entity) defines the physical limitation for the logical format.

Table 11-8 – Attribute Requirements for Entity Attribute Reference Definition

Attribute	Definition
Attribute Domain Identifier	This attribute shall define the unique technical identifier of an attribute domain in T2S using the attribute domain definition.
Attribute Reference Identifier	This attribute shall define the unique technical identifier of an attribute reference definition in T2S. The authorised T2S system user shall assign this identifier.

Attribute	Definition
Attribute Reference Name	This attribute specifies the name of the attribute reference.
Attribute Reference Description	This attribute shall provide a short documentation of the attribute reference, i.e. its purpose for and usage in T2S.
Attribute Reference Format	This attribute shall specify whether the format of the code for a reference value is alphabetic, alphanumeric or numeric.
Minimum Reference Value Length	This attribute shall specify the minimum length of the code for a reference value in the attribute reference definition.
Maximum Reference Code Length	This attribute shall specify the maximum length of the code for a reference value in the attribute reference definition.
Case	This attribute shall specify if the code for a reference value in the attribute reference definition is uppercase, lower case, or both for alphabetic and alphanumeric code formats.
Mandatory	The attribute shall specify if the input of a reference code for attribute value is mandatory.

Defining an Attribute Domain: An Example for Settlement Instruction Types

T2S will use values, stored in attribute domains, for field validation and for displaying the business definition of a code. The type of settlement instruction is an example of an attribute domain that T2S will require for processing. For example, T2S would need the attribute domain to validate incoming settlement instructions and to establish the types of instructions that could logically be a source of potential matching in the settlement matching process.

The attribute domain for settlement instructions will require the user to specify the domain attributes, such as name and description, and the format definition for the code.

Table 11-9 – Example of Table Code Definition for Settlement Instruction Type

Attribute	Value
Attribute Domain Identifier	1000
Attribute Domain Name	T2S Settlement Instruction Type
Attribute Domain Description	This attribute domain specifies the settlement instruction type that T2S accepts for processing.

Attribute	Value
Code Format	Alphanumeric
Minimum Code Length	3
Maximum Code Length	5
Case	Upper Case

The aforementioned definition specifies that T2S will identify the attribute domain for settlement instruction type by the identifier "1000". Any code entered into the attribute domain must have at least three characters and a maximum of five characters. Any letter used in the code must be in upper case.

The matching in T2S requires every settlement instruction type to have a complementary settlement instruction type with which to match. For example, a delivery-versus-payment instruction must be matched with a receive-versus-payment instruction. Hard coding is one option to ensure this mapping relationship, but it is not good development practice. Changes in mappings would require code changes in the software.

However, attribute domain definitions shall allow the user to configure this type of mapping without affecting the source code. The user needs to define an additional column for the attribute domain of valid settlement instruction types for the fulfilment of this mapping requirement. The reference value definition shall provide the user with the capability to add a column for the required mapping value for defined code. The following table illustrates how the business user would define this additional column as reference value.

Table 11-10 – Example for Reference Value Definition of Complementary Settlement Instruction Type

Attribute	Example
Reference Value Name	Mapping Value
Reference Value Description	This reference code maps a settlement instruction type to its complementary value for settlement matching.
Reference Value Format	Alphanumeric
Minimum Reference Code Length	3
Maximum Reference Code Length	5
Case	Upper Case
Mandatory	Yes

The defined configuration would create a logical domain with three columns, as documented by the following table. The instruction type and its associated text would be stored in the Attribute Value physical

entity and the complementary instruction type, in the Reference Value entity. It would allow the user to enter the code for the type of settlement instruction, the description of the code and the code of the complementary settlement instruction type used for settlement matching.

Table 11-11 – Attribute Domain of Settlement Instruction Types: An Example

Instruction Type	Code Text	Complementary Instruction
DFP	Deliver Free of Payment	RFP
RFP	Receive Free of Payment	DFP
DVP	Delivery-versus-payment	RVP
RVP	Receive-versus-payment	DVP

Attribute Domain User Interface

Reference ID	T2S.11.270

T2S shall provide one component with which the authorised T2S system user shall maintain all attribute domains. This user shall manage the domain lists through a harmonised user interface application using a single code base. T2S shall not have distinct and separate applications for managing attribute domains with different formats. The application software must have the necessary flexibility to support the maintenance of diverging attribute domain definitions.

Querying and Selecting an Attribute Domain

Reference ID	T2S.11.280

An authorised T2S system user will be able to query existing attribute domains to select one for update or display. A search parameter window in the online user interface will allow the user to search for an attribute domain by inputting either the name or identifier of the table. If the user does not enter any value for the given search criterion, then the application shall display a list of all available attribute domains. The results list shall display the name and identifier of the attribute domain to enable identification by the user.

Displaying and Maintaining Attribute Domains

Reference ID	T2S.11.290

Attribute domain maintenance refers to the process of adding, changing and deleting attribute domains. It also includes the maintenance of the list of valid values for a domain that a user can enter for an attribute in a static and transactional data entity.

Creating Attribute Domains

Reference ID	T2S.11.300

T2S shall provide the user with the functionality to create a new attribute domain using an online application. The user interface shall provide the user with a window into which the user can enter the attribute domain definition. The user interface shall provide the user with another window for adding any supplementary reference code definitions to the attribute domain.

Changing an Attribute Domain

Reference ID	T2S.11.310

T2S shall support the changing of an attribute domain. The user interface shall provide the functionality to change the format of the attribute domain and any attribute reference codes. It will also be possible to add and delete attributes and an attribute domain's reference definitions. If the user changes the format of either the attribute domain or the attribute reference code, then the application shall verify whether the valid list of attributes includes codes not compatible with the new format. If this is the case, then the system shall display an online message stating that the user cannot change the format until the user deletes the offending value or changes it into an acceptable format.

Deleting an Attribute Domain

Reference ID	T2S.11.320

T2S shall allow the physical deletion of an attribute domain when T2S does not require the attribute domain to ensure the referential integrity of data. T2S shall perform a logical deletion in all other cases.

List of Valid Codes

Reference ID	T2S.11.330

T2S shall provide a standard function for the online user interface that allows the user to display the valid list of codes for an attribute of a static data entity.

11.7 Settlement priority defaults

Reference ID	T2S.11.340

T2S shall support the configuration of default priority levels based on T2S party types and instruction and transaction types as specified in section 7.2.2 of chapter 7. Settlement in T2S shall automatically assign a specific priority for the processing of a settlement instruction based on the type of party in T2S.

11.8 Sequencing rules

Reference ID	T2S.11.350

T2S shall support the configuration of sequencing based on T2S party types and instruction and transaction types as specified in section 7.2 of chapter 7. Settlement in T2S shall automatically assign a specific sequence for the processing of a settlement instruction based on the sequence configured for a combination type of instruction and transaction type.

11.9 Roles and privileges for authorisation

Reference ID	T2S.11.355

The business requirements for T2S define the functional capabilities for configuring roles and privileges for authorising T2S system users to execute specific functions or view specific data. The requirements do not predicate a specific technical solution or software product. They define the functional scope that any proposed solution or application must provide to ensure the configurability of access rights to T2S.

11.9.1 Privileges

Reference ID	T2S.11.360

A privilege defines a specific T2S functional capability within a process or application. For example, within securities static data, possible privileges are: add new security, delete security, update security and display security. The definition of privileges is the means of granting and restricting access to functionality and data for specific roles, T2S parties and T2S system users.

A privilege shall be uniquely identifiable, both internally in the application and to the T2S system administrator.

Classification of privileges

Reference ID	T2S.11.361

Privileges shall be classified as follows:

- System privileges
- Object privileges

System privilege: T2S shall allow an administrator to define privileges without narrowing the scope to a single or a homogeneous group of certain static data objects (e.g. securities accounts, cash accounts).

Object privilege: T2S shall also allow an administrator to define privileges only in relation to a single static data object or a group of static data objects (e.g. securities accounts, cash accounts).

Grants

Reference ID	T2S.11.362

While granting a privilege the administrator should be able to specify:

- a binary setting (allow / deny) specifying, whether the associated functionality is allowed or explicitly denied;
- a binary setting (administration option) that specifies whether the grantee of the privilege is allowed to grant the same privilege to another user or role;
- a binary setting (four eyes principle) that specifies whether the grantee of the privilege is allowed to use the function associated to the privilege according to two eyes or four eyes principles.

Displaying and Maintaining Privileges

Reference ID	T2S.11.370

Privilege maintenance refers to the process of adding, changing and deleting privileges used for authorisation in T2S.

- It shall be possible for a T2S system administrator to add a new privilege. The T2S system administrator shall enter the details of the privilege in an input window.
- It shall be possible for a T2S system administrator to update an existing privilege from a list of available privileges.
- It shall be possible for a T2S system administrator to logically delete an existing privilege by executing a delete function. The T2S system administrator shall not be able to delete an active privilege granted to a user or a role.
- It shall be possible for a T2S system user to grant or revoke access to an existing privilege, to a role or a T2S party or another T2S system user based on the binary setting of the “administration option” that is set in the grant of the privilege it received.
- It shall not be possible that a T2S system user, a party or a role gains contradicting privileges.
- It shall be possible to display a privilege in read-only mode.

Secured static data object and Grouping static data objects as secured group

Reference ID	T2S.11.375

Secured static data objects are objects belonging to object types of different static data entities such as securities accounts, T2S dedicated cash accounts, etc.

Grouping of static data objects refers to the process of adding, changing and deleting static data objects into/from a homogeneous secured group.

It shall be possible for a T2S system administrator or a privileged T2S system user to associate/de-associate privileges to secured objects and secured groups. Secured objects and secured groups can also be linked to “restriction profiles” (see section 11.14) via privileges.

It shall be possible for a T2S system administrator or a privileged T2S system user to:

- form a group of business objects of the same object type as a secured group,
- update an existing secured group,
- delete an existing secured group,

- to use a defined secured group when granting privileges,
- display an existing secured group(s) in a read-only mode.

11.9.2 Roles

Reference ID	T2S.11.400

A role is the set of privileges to which the authorisation application allows or denies the user access. A role consists of one or more privileges.

CSD-Specific Roles

Reference ID	T2S.11.410

CSDs retain the legal relationship with their customers and remain responsible for the services that they provide to their customers. CSDs participating in T2S must continue to comply with legal and regulatory requirements. Therefore, the authentication and authorisation application shall allow for the configuration of CSD-specific roles. It must be possible for the CSDs to differentiate access to T2S services and functions based on their regulatory and legal requirements. A CSD must be able to configure valid roles for its T2S parties.

CSD T2S-Party-Specific Roles

Reference ID	T2S.11.420

CSDs will not continue to manage the T2S system user administration for directly connected T2S parties.

Each CSD will need to create and authorise a system administrator for itself that will be responsible for maintaining users and roles for each T2S party of the CSD, so that the system administrator of the T2S party will have access only to those roles that the CSD permits.

Accordingly, the authorisation and authentication component of T2S will allow each CSD to grant its clients access to a different set of roles, depending on the services provided by the CSD to each T2S party.

Maintaining and Displaying Roles

Reference ID	T2S.11.430

Role maintenance refers to the process of adding, changing and deleting roles used for authorisation in T2S.

- It shall be possible for a T2S system administrator or a privileged T2S system user to add a new role.
- It shall be possible for a T2S system administrator or a privileged T2S system user to update an existing role by selecting it for update from a list of available roles.
- It shall be possible for a T2S system administrator or a privileged T2S system user to logically delete an existing role by executing a delete function. The user shall not be able to delete a role assigned to an active user (i.e. user that is not logically deleted).
- It shall be possible to display a role with its assigned privileges in read-only mode.

- The T2S system administrator or a privileged T2S system user shall be able to add and remove privileges from a role.

A privileged T2S system user shall only be able to maintain or display roles to which she or he has been granted adequate privileges.

11.9.3 T2S system users

Reference ID	T2S.11.440

A T2S system user is an individual or application that can communicate with T2S using a login name and password and/or certificate for authentication. For example, a T2S system user may be an individual who has an interactive access to T2S online functions, or an application programme that uses services from T2S. The authentication and authorisation component shall support attributes defining named T2S system users. T2S requires the encryption of user information in Table 11-12.

Table 11-12– T2S System User Definition

Attribute	**Definition**
Login Name	Authentication shall require a unique account name for a T2S system user. The account name shall define the code used to identify a T2S system user for authentication.
Name	Authentication shall require named T2S system users. The name shall store the surname and first name of the T2S system user.
Password	This attribute shall specify the password that the T2S system user shall use to authenticate herself / himself/ itself.
Certificates	This attribute shall specify the certificates that the T2S system user shall use to authenticate herself / himself/ itself.
Authentication	This attribute shall define the type of authentication applied by the authentication component for a T2S system user. Simple authentication shall require the T2S system user to enter the system password only. This shall be applicable only for U2A. Simple Certificate authentication shall require the T2S system user to use a certificate without entering a password in T2S. This shall be applicable only for A2A. Advanced Certificate authentication shall require the T2S system user to use a certificate along with entering additionally the system password in T2S. This shall be applicable for U2A only. Smartcard authentication shall require the T2S system user to identify herself / himself / itself to the system using a smartcard in addition to entering the password.

Attribute	Definition
Lockout Status	The lockout status shall define whether the authentication component blocks the T2S system user from logging into T2S.
Lockout Timestamp From	A timestamp shall define the date and the time from which the authentication component shall lock out a T2S system user from the system. The timestamp shall allow the system to lock a T2S system user out of the system at a future date. It allows those leaving an organisation to be restricted from the system as of their expected leaving date, while allowing access until that date.
Password Change on Next Login	This attribute shall define if the T2S system user must change the password for the account on the next login. A password change on next login is usually mandatory when a new T2S system user account is created or when the password for an existing T2S system user changes. This attribute is applicable only for authentication types requiring passwords.

T2S System User Assignment to T2S Party and System Entity

Reference ID	T2S.11.450

T2S system user information shall specify the T2S party of a T2S system user. The authorisation component will use this information to restrict the T2S system user's access to the static and transactional data pertaining to the user's T2S party and related sub-entities only.

For example, a T2S system user assigned to the T2S operator system entity may access all data of the T2S operator, CSDs and their participants and account. However, T2S shall provide roles to restrict the access of this T2S system user to business data of the CSDs by denying access to business functions that display the business data.

If the T2S party is a participant of a T2S-connected CSD, then the assignment shall restrict access of the T2S system user to the static and transactional data of the user's financial institution. CSD-specific roles and privileges shall restrict access to specific types of data for this T2S system user, where necessary. The assignment of the T2S system user to a T2S party also shall establish the relationship between T2S system user and system entity.

Displaying and Maintaining T2S System Users

Reference ID	T2S.11.460

T2S system user maintenance refers to the process of adding, changing and deleting users in T2S. Access to this functionality shall be restricted to system administrators.

Adding a T2S System User

Reference ID	T2S.11.470

It shall be possible for a system administrator to add a new T2S system user for its own organisation. In addition, a T2S system administrator shall be able to create system administration users for CSDs and NCBs in T2S, a CSD system administrator shall be able to create T2S party system administrators, and an NCB system administrator shall be able to create system administrators of payment banks.

Updating a T2S System User

Reference ID	T2S.11.480

It shall be possible for a system administrator to update an existing T2S system user of its own organisation by selecting it for update. In addition, a T2S system administrator shall be able to maintain CSD and NCB system administrators, a CSD system administrator shall be able to maintain T2S party system administrators, and an NCB system administrator shall be able to maintain payment bank system administrators.

Deleting a T2S System User

Reference ID	T2S.11.490

It shall be possible for a system administrator to delete a T2S system user of its own organisation by executing a delete function. In addition, a T2S system administrator shall be able to delete CSD and NCB system administrators, a CSD system administrator shall be able to delete T2S party system administrators, and an NCB system administrator shall be able to delete payment bank system administrators.

Locking a T2S System User

Reference ID	T2S.11.500

It shall be possible for a system administrator to lock a T2S system user out of the system without deleting the user by setting the attribute "lockout status" to "yes". When this status is set, the current system time and date shall appear in the field specifying the start of lockout. The system administrator can opt to use the default timestamp or may set it to any date and time in the future. Therefore, a T2S system user’s access to the system can be restricted as of his/her planned leaving date.

Unlocking a T2S System User

Reference ID	T2S.11.510

It shall be possible for a system administrator to unlock a login account by setting the attribute "lockout status" to "no". When this status is set, the current system date is to appear in the field for the lockout timestamp. This action shall require the T2S system user to reset the password at next login.

Password Reset

Reference ID	T2S.11.520

A password reset occurs when a system administrator either inputs a password for a new T2S system user or changes the password of an existing T2S system user. A password reset shall require the T2S system user to renew his/her password at next login. The attribute "password change on next login" shall be set to "yes" to indicate this.

Role Assignment

Reference ID	T2S.11.530

It shall be possible for a system administrator to assign existing roles to or to deactivate roles for a T2S system user when adding a new T2S system user or updating an existing T2S system user. The application shall automatically assign to the T2S system user the privileges associated with that existing role.

11.10 Services and service configuration

Allegement Period

Reference ID	T2S.11.545

T2S shall enable the T2S Operator to specify two standard delay periods for sending an allegement to the counterpart of the unmatched instruction.

- “Allegement from first unsuccessful matching attempt” shall be defined as the standard delay period from the first unsuccessful matching attempt of a settlement instruction.
- “Allegement before intended settlement date” shall be defined as the standard delay period measured backwards from the FOP cut-off time on the intended settlement day.

T2S will send out an allegement at the earliest point in time between the two standard delay periods. T2S shall calculate the standard delay period in hours and minutes.

Allegement period attribute requirements

Reference ID	T2S.11.547

The following table specifies the attributes that T2S shall require for the allegement period.

Table 11-12 bis– Attribute Requirements for the allegement periods

Attribute	Description
Allegement period	This attribute shall specify the allegement period: • Allegement from first unsuccessful matching attempt; • Allegement before intended settlement date.
Hours and minutes	This attribute shall specify the number of hours and minutes of the delay period.

Based on the user requirements, the configuration parameters would consist of two entries.

Table 11-12 ter– Configuration parameters for the allegement periods

Recycling Type	Hours and minutes
Allegement from first unsuccessful matching attempt	1h
Allegement before intended settlement date	5h

11.10.1 Message subscription service

Reference ID	T2S.11.640

T2S shall provide a rules-based, date-dependent message subscription service. The message subscription service shall allow CSDs and CBs to configure, for themselves or for their T2S parties with direct connectivity to T2S, a subscription to copies of messages sent between a directly connected T2S party and T2S in real time using push mode messaging. T2S shall support the following parameters for the subscription of messages:

- Message type;
- Instruction type;
- Message status;
- Party or account qualifier;
- Party or account identifier depending on party or account qualifier;
- and ISIN.

Rules for the message subscription service shall define the sequence in which T2S will apply a logical set of parameters to identify a message subscription requirement for a T2S message. The message subscription matrix will define the specific parameter values within a rule that T2S will compare to identify a message subscription requirement for a T2S message. T2S shall allow the configuration of message subscriptions by the combination of CSD/CB and recipient, where the recipient is the CSD, the CB or one of their T2S parties....."

Message Subscription Rule Set and Matrix Example

System Entity: CSD X

Recipient: Interested Party B

Rule Set Valid From: 1 January 2007

Rule Sequence	Party/ Account	Party/Account Identifier Qualifier	Message Type	Instruction Type	Message Status	T2S Dedicated Cash Account	ISIN
1						X	
						Cash A/C 9876	
2	X	X	X				
	Account	Account ABC	Settlement Instruction				
3	X	X					
	Party	Bank A					
	Party	Bank B					

The example shows a rule set consisting of three rules for *Interested Party B*, which is a T2S Party of *CSD X*. The configuration is valid from 1 January 2007. The first rule specifies that the message subscription must compare the content of the T2S dedicated cash account in a message against the content of the entries, defined under this rule, for the T2S dedicated cash account.

The second rule specifies that the message subscription will perform the comparison of message content on the party or account qualifier, the party or account identifier and the message type. The final rule stipulates that the message subscription compare the message content against the party or account qualifier and the party or account identifier only.

Using the example for matrix entries, T2S checks the subscription for a new message starting with rule one. If the message contains a T2S dedicated cash account and the value in the message field is equal to *Cash Account 9876*, then the message subscription service sends a copy of the message to *Interested Party B*. The process terminates once the message subscription finds a match, since the match results in T2S a message to the recipient. If the values do not match, then the subscription service checks the message using the matrix entries of the next rule.

In the second rule, the matrix entry defines a specific account and a specific type of message as message subscription values. If the message is a settlement instruction from *Account ABC*, then the message subscription service sends a copy to *Interested Party B*. If the values do not match, then the subscription service checks the message using the matrix entries of the next rule.

In the final rule, the matrix specifies specific parties, *Bank A* and Bank B, for which the message subscription generates copies of all instructions for the recipient *Interested Party B*. In this scenario, *Bank A* and *Bank B* could be directly connected parties for which a centralised securities business processing service provider *Interested Party B* wishes to receive copies of all messages between the banks and T2S. If the values in the

message do not match after the final rule, then the message subscription service sends no copies for a message.

Message Subscription Rule Set

T2S shall store different message subscription rule sets for each system entity, i.e. CSD or NCB. T2S shall differentiate rule sets within a system entity by a valid-from date. Each rule within a rule set shall have a sequence, which defines the order in which T2S shall process a rule.

The conceptual entity *Message Subscription Rule Set* will link the rules, defined in T2S for the message subscription configuration for a CSD or an NCB, to one related set of rules.

Table 11-13 – List of Attributes for the Entity Message Subscription Rule Set

Attribute	Description
Message Subscription Rule Set	This attribute shall specify the unique technical identifier of a message subscription rule set for a CSD or an NCB.
System Entity Identifier	This attribute shall specify the CSD or the NCB for which the rule set applies.
Recipient	This attribute shall specify the party identifier of the receiver(s), subscribing to the message copy.
Rule Set Valid From	This attribute shall define the date from which the rule set is valid.

The conceptual entity *Message Subscription Rule* shall define the individual rules of a rule set.

Table 11-14 – List of Attributes for the Entity Message Subscription Rule

Attribute	Description
Message Subscription Rule Identifier	This attribute shall specify the unique technical identifier of a message subscription rule.
Message Subscription Rule Set	This attribute shall specify the unique technical identifier of the underlying message subscription rule set for the rule.
Rule Sequence	This attribute shall define the order in which T2S shall process the rule.
Party or Securities Account Qualifier	This attribute shall store a Boolean value indicating whether the specification of a party or securities account is a valid criterion for the rule definition. The attribute also shall qualify whether a party or securities account identifier is stored in the attribute *Party or Securities Account Identifier*.

Attribute	Description
Party or Securities Account Identifier	This attribute shall store a Boolean value indicating whether the specification of a specific party or securities account is a valid criterion for the rule definition.
Message Type	This attribute shall store a Boolean value indicating whether the specification of a message type is a valid criterion for the rule definition.
Instruction Type	This attribute shall store a Boolean value, indicating whether the specification of an instruction type is a valid criterion for the rule definition.
Instruction Status	This attribute shall store a value indicating whether the specification of an instruction status is a valid criterion for the rule definition.
T2S Dedicated Cash Account	This attribute shall store a Boolean value indicating whether the specification of a T2S dedicated cash account is a valid criterion for the rule definition.
ISIN	This attribute shall store a Boolean value indicating whether the specification of a security is a valid criterion for the rule definition.

Message Subscription Matrix

T2S shall store matrix entries for a rule in a rule set. A matrix entry shall define an occurrence of a valid set of values, specifying the actual criteria against which the message subscription service must validate a message, in order to determine if T2S shall send a copy to one (or multiple) specific recipient(s).

Table 11-15 – List of Attributes for the Entity Message Subscription Matrix Entry

Attribute	Description
Message Subscription Matrix Identifier	This attribute shall specify the unique technical identifier of an entry in the message subscription matrix.
Message Subscription Rule Identifier	This attribute shall specify the unique technical identifier of a message subscription rule.
Party or Securities Account Qualifier	This attribute shall specify a value indicating whether the party or securities account is a valid for the matrix entry. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.
Party or Securities Account Identifier	This attribute shall specify a party or securities account identifier, depending on the value in the attribute *Party or Securities Account Qualifier*. This attribute shall specify a value only when the underlying rule defines the attribute as a valid

Attribute	Description
	subscription criterion.
Message Type	This attribute shall specify a valid T2S message type, such as a settlement instruction. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.
Instruction Type	This attribute shall specify a valid instruction type based on ISO 20022. The valid values for this attribute shall depend on the message type. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.
Instruction Status	This attribute shall store a value indicating whether the specification of an instruction status is a valid criterion for the rule definition.
Message Status	This attribute shall specify a valid message status. The valid values for this attribute shall depend on the message type. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.
T2S Dedicated Cash Account	This attribute shall specify a valid T2S dedicated cash account. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.
ISIN	This attribute shall specify a valid ISIN. This attribute shall specify a value only when the underlying rule defines the attribute as a valid subscription criterion.

11.10.2 Restriction Types

An objective of T2S and of market participants is to achieve harmonised securities account structures as well as harmonised validations and processing of settlement instructions. Nevertheless, T2S must support the T2S Operator, CSDs and NCBs with the capability to provide specific validations and processing of settlement instructions to fulfil legal, regulatory and supervisory requirements in the markets that they service. Therefore, T2S will allow the T2S Operator, CSDs and NCBs to define their own restriction types. Restriction types are attributes that define the specific processing characteristics for a securities position, cash balance, securities account, T2S dedicated cash account, party or settlement instruction to ensure configurability of specific requirements, as prescribed by national legal and regulatory requirements and practices.

Functional Processing Requirements

Configuration of restriction types

Reference ID	T2S.11.661

T2S shall support the rules-based, date-dependent configuration of restriction types by the T2S Operator, CSDs and NCBs. T2S shall support the following parameters for the configuration of restriction types:

- Securities movement type (receive or deliver);
- Payment (free or against);
- Transaction identification;
- Party type of the account owner
- Party type of the party instructing on behalf of the account owner;
- Specific party;
- Security Identifier
- One or more CSD-specific securities attributes;
- One or more CSD-specific securities account attributes;
- And/or a combination of values for the same CSD-specific attribute for a securities account: one for the receiving account and the delivering account to restrict certain types of settlement instructions and instructions for intra-position movements between securities accounts.

Configuration of restriction types, applying to all CSDs and NCBs in T2S

Reference ID	T2S.11.666

T2S shall allow the T2S Operator to define harmonised restriction types that shall be used by all CSDs and NCBs. All changes to the harmonised restriction types shall be subject to the approval through the T2S change management process.

Restriction processing types

Reference ID	T2S.11.662

T2S shall support a *Restriction Processing Type* to enable the configuration of restrictions.

- Rejection:

Reject a settlement instruction validation (see T2S.05.128);

- CSD Validation Hold:

Set the CSD validation status automatically to “hold” when accepting a settlement instruction (see T2S.05.127);

- Reservation:

Create a reservation of a cash balance or securities position for a specific purpose;

- Blocking:

Block of a party, securities account, security or T2S dedicated cash account from settlement (see T2S.05.129);

- Position Type / Earmarking:

Define and manage position types for securities positions.

Configuration of type of restriction profile

Reference ID	T2S.11.663

T2S shall support for the specification of a restriction type whether the defined configuration represents a positive or negative set of parameters. A positive parameter set shall specify the rules and combinations of attributes, requiring T2S to apply the restriction. A negative parameter set shall specify the rules and combinations of attributes for which T2S should not apply a restriction.

Configuration of rules and matrices for restriction types

Reference ID	T2S.11.664

Rules for restriction types shall define the sequence in which T2S will apply a logical set of parameters to determine whether a restriction applies. The restriction matrix will define the specific parameter values within a rule that T2S will compare to identify whether a restriction applies. T2S shall allow authorised users to

- Add new rules for a restriction type;
- Reorder the sequence of rules for a restriction type;
- Delete rules for a restriction type if the user has deleted all occurrences under that rule;
- Add and delete matrices in a rule.

Adding a restriction type

Reference ID	T2S.11.670

It shall be possible for an authorised system user to add a restriction type in T2S. T2S shall provide a function for the CSD or NCB system administrator to enter the attributes of and rule and matrices for the restriction type. A user can add a new restriction type valid as of a day in the future.

Updating a restriction type

Reference ID	T2S.11.680

It shall be possible for an authorised system user to update an existing restriction type by selecting it for update. An authorised system user of a CSD or NCB can update a restriction type valid as of a day in the future.

Deleting a restriction type

Reference ID	T2S.11.690

It shall be possible for an authorised system user to delete logically a restriction type as of a date in the future by setting its valid to date. However, T2S shall not allow an authorised system user to delete a restriction type assigned to and still active for a T2S party, securities account, T2S dedicated cash account, security or position.

Adding a market-specific securities attribute to a restriction type

Reference ID	T2S.11.693

T2S shall allow an authorised system user to add one or more predefined market-specific securities attributes to the list of parameters for the configuration of a restriction type (section 16.8.11).

Adding a market-specific securities account attribute to a restriction type

Reference ID	T2S.11.694

T2S shall allow an authorised system user to add one or more predefined market-specific attributes of a securities account to the list of parameters for the configuration of a restriction type (section 16.8.11). T2S shall allow an authorised user to add the same pre-defined market-specific securities account attributes twice to the list of parameters. Depending on whether the restriction profile is positive or negative, T2S shall interpret such a combination to define whether a restriction on a transaction between two accounts, having a given combination of the market-specific securities account attributes, applies.

Data Model Requirements

Restriction Type Entity

Reference ID	T2S.11.651

T2S shall support a rules-based, date-dependent data model for the configuration of restriction types. The following table defines the attribute requirements for specifying the characteristics of a restriction. T2S shall store the definition of the restriction type and rule sets for each restriction type. T2S shall differentiate rule sets within a system entity by a valid-from date. Each rule within a rule set shall have a sequence, which defines the order in which T2S shall process a rule. The conceptual entity *Restriction Type* will link the rules, defined in T2S for the restriction configuration to one related set of rules.

Table 11-16 – List of Attributes for the Entity Restriction Type

Attribute	**Description**
System Entity Identifier	This attribute shall specify the CSD or the NCB for which the restriction type is valid.
Restriction Type Identifier	This attribute shall define the unique technical identifier of a restriction type in T2S.
Restriction Type	This attribute shall specify a code that identifies the restriction. T2S shall allow CSDs or the NCBs to configure their own types.
Restriction Description	This attribute shall specify a text description of the restriction.
Valid From	This attribute shall specify the date from which the restriction type is valid.
Valid To	This attribute shall specify the date to which the restriction type is valid.
Object	• This attribute shall specify whether the restriction applies to a security, securities

Attribute	Description
Restriction Type	account, securities position in a securities account, T2S dedicated cash account or cash amount in a T2S dedicated cash account. T2S shall use this attribute in the application logic to identify and trigger the required validations. Valid object restriction types are: • Securities account • Security • T2S dedicated cash account • Securities position • Cash amount • Party • Settlement instruction • System entity
Restriction Processing Type	This attribute specifies how T2S shall apply the restriction in processing. • Rejection: Rejection in settlement instruction validation (see T2S.05.128) • CSD Validation Hold: Setting the CSD validation status automatically to "hold" when accepting a settlement instruction (see T2S.05.127) • Reservation: Creating a reservation of a cash balance or securities position for a specific purpose • Blocking: Blocking of a party, securities account, security, T2S dedicated cash account, securities position or cash balance (see T2S.05.129) • Position Type / Earmarking: Define and manage position types for securities positions. Please refer to the glossary for the definition of the terms "Blocking" and "Reservation".
Positive / Negative Parameter Set	This Boolean attribute specifies whether the rules and matrices for the restriction type represent a positive or negative set of parameter. A positive parameter set shall specify the rules and combinations of attributes, requiring T2S to apply the restriction. A negative parameter set shall specify the rules and combinations of attributes for which T2S should not apply a restriction.

Adding market-specific attributes to a restriction type

Reference ID	T2S.11.652

T2S shall enable an authorised T2S system user to add one or more market-specific attributes of a security or a securities account to a restriction type to enable the configuration of rules and matrices, based on these assigned market-specific attributes.

Table 11-16a– Attribute requirements for the assignment of a market-specific attributes for securities and securities accounts to a restriction type

Attribute	Description
Market-Specific Attribute Assignment Identifier	This attribute shall define the unique technical identifier of a value for a market-specific securities attribute for a restriction profile.
Restriction Type Identifier	This attribute shall specify the unique technical identifier of the restriction type for which the rule applies.
System Entity Identifier	The system entity identifier shall define a CSD or the T2S operator to which the configuration applies.
Market-Specific Attribute Identifier	This attribute shall define the unique technical identifier of the market-specific attribute definition, as defined in table 16-33.
Debit Credit	When a user assigns a market-specific party or securities account attribute to the restriction type, applying to a settlement instruction, this attribute shall specify whether the market-specific party or securities account attribute refers to the instruction that debits or credits the securities or to both. When a market-specific party or securities account attributes applies, regardless of whether the securities leg of the instruction is in debit or credit, then the user can add it only once to the market-specific restriction type. The attribute shall not be applicable in for market-specific securities attributes. T2S shall internally set a default value indicating that the attribute is not relevant. <u>Value Description</u> C The market-specific party or securities account attribute applies to the securities leg of the settlement instruction in credit D The market-specific party or securities account attribute applies to the securities leg of the settlement instruction in debit B The market-specific party or securities account attribute applies to both the securities leg of the settlement instruction in debit and in credit X Not relevant

Restriction Type Rule Entity

Reference ID	T2S.11.653

T2S shall enable an authorised T2S system user to define a set of rules for a restriction type by adding one or more rules and specifying the sequence in which T2S should check the rules. Each rule shall define the criteria that apply for that rule. The conceptual entity *Restriction Type Rule* shall define the individual rules of a rule set.

Table 11-16b– – List of Attributes for the Entity Restriction Type Rule

Attribute	Description
Restriction Type Rule Identifier	This attribute shall specify the unique technical identifier of a message subscription rule.
Restriction Type Identifier	This attribute shall specify the unique technical identifier of the restriction type for which the rule is.
System Entity Identifier	The system entity identifier shall define a CSD or the T2S operator to which the configuration applies.
Rule Sequence	This attribute shall define the order in which T2S shall process the rule.
Securities Movement Type	This attribute shall store a Boolean value indicating whether the specification of a securities movement type is a valid criterion for the rule.
Payment	This attribute shall store a Boolean value indicating whether the specification of a payment type is a valid criterion for the rule.
Transaction Identification	This attribute shall store a Boolean value indicating whether the specification of the transaction identification is a valid criterion for the rule.
Party Type	This attribute shall store a Boolean value indicating whether the specification of a party type is a valid criterion for the rule.
Specific Party Identifier	This attribute shall store a Boolean value, indicating whether the specification of a specific party is a valid criterion for the rule.
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S.
Market-specific attribute identifier	This is a placeholder for any number of market-specific attributes, where a Boolean value for each market-specific attribute indicates whether the specification of the market-specific attribute is a valid criterion for the rule.

Restriction Type Matrix Entity

Reference ID	T2S.11.654

T2S shall store matrix entries for a rule in a rule set. A matrix entry shall define an occurrence of a valid set of values, specifying the actual criteria against which the T2S must validate a settlement instruction to determine if a restriction type applies.

Table 11-19c– – List of Attributes for the Entity Restriction Type Matrix Entry

Attribute	Description
Restriction Type Matrix Identifier	This attribute shall specify the unique technical identifier of an entry in the message subscription matrix.
Restriction Type Rule Identifier	This attribute shall specify the unique technical identifier of a message subscription rule.
System Entity Identifier	The system entity identifier shall define a CSD or the T2S operator to which the configuration applies.
Securities Movement Type	This attribute shall specify a valid value from the list of valid values for the attribute *Securities Movement Type*. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid criterion. <u>Value Description</u> RECE Receive DELI Deliver
Payment	This attribute shall specify a valid value from the list of valid values for the attribute *Payment*. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid criterion. <u>Value Description</u> APMT Against payment FREE Free of payment / separate payment
Transaction Identification	This attribute shall specify a valid value from the list of valid values for the attribute *Transaction Identification*. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid criterion.
Party Type	This attribute shall specify a valid value from the list of valid values for the attribute *Party Type* as defined in party reference data. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid criterion.
Specific Party Identifier	This attribute shall specify a valid value of a party in T2S. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid

Attribute	Description
	criterion.
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S.
Market-specific attribute identifier	This placeholder attribute shall specify a valid value from the list of valid values for a market-specific attribute. This attribute shall specify a value only when the Boolean value in underlying rule defines the attribute as a valid criterion.

Restriction Type Definition with Rule Set and Matrix Example:

In this example, the CSD needs to configure a restriction type that enables T2S to reject a settlement instruction for a security, subject to withholding tax, on a tax-exempted securities account. Therefore, the CSD must first configure specific attributes for the tax status for both securities accounts and securities in T2S, as specified in requirement T2S.16.760. In addition to the attribute, the CSD would also specify the valid values for each attribute, as documented below:

- Securities Tax Status

Value Description

N Not exempted

X Exempted

- Securities Account Tax Status

Value Description

N Not exempted

X Exempted

The configuration of the restriction type requires the CSD to configure the set of parameters, specified in the following table. The restriction would apply to the settlement instruction (*Object Restriction Type* = "Settlement Instruction"), resulting in a rejection in validation (*Restriction Processing Type* = "Rejection") if a valid entry is found in the set of matrices set-up for the restriction type (*Restriction Profile* = "Positive").

Restriction ID	**12345**
System Entity	CSD X
Valid From	1 January 2009
Valid To	-
Restriction Type	TAX
Restriction Description	The purpose of this restriction is to reject instructions on taxable securities on tax-exempted securities accounts.

Restriction ID	**12345**
Object Restriction Type	Settlement Instruction
Restriction Processing Type	Rejection
Positive / Negative Parameter Set	Positive

Furthermore, it requires the CSD to add its specific attributes for both the securities and securities account reference data as valid criteria to the configuration of the restriction type.

Assignment ID	Restriction ID	System Entity	Specific Attribute	Debit Credit
1	12345	CSD X	Securities Tax Status	B
2	12345	CSD X	Securities Account Tax Status	B

It results in the extension of the resulting set of criteria for the rules and matrices for the restriction type by the specific attributes *Securities Tax Status* and *Securities Account Tax Status*. The definition of the restriction type requires the CSD to create only one rule in which it marks the two aforementioned attributes as valid criteria. The CSD must define two entries under this rule. The first entry specifies if the security in the settlement instruction is not tax-exempted, but the securities account in the settlement instruction is tax-exempted, then T2S is to reject the instruction. The second entry specifies if the security in the settlement instruction is tax-exempted, but the securities account in the settlement instruction is not tax-exempted, then T2S is to reject the instruction. T2S will accept settlement instruction with any other combination of values for these fields.

Rule Sequence	Securities Movement Type	Payment	Transaction Identification	Party Type	Party Identifier	Security identifier	Securities Tax Status	Securities Account Tax Status	
1							Y	Y	Rule
							N (not exempted)	X (exempted)	Matrix Occurrence
							X (exempted)	N (not exempted)	Matrix Occurrence

11.11 SWIFT BIC directory

Reference ID	T2S.11.700

T2S shall maintain the current SWIFT BIC Directory within static data. T2S shall use the directory to validate the input of BICs as party and technical address identifiers.

SWIFT BIC Directory Attribute Requirements

Reference ID	T2S.11.710

The Entity *SWIFT BIC Directory* shall store the attributes needed to identify the legal entity to which SWIFT assigned the BIC. T2S shall assign a unique internal identifier to the BIC. T2S only shall store the internal identifier in static and transactional data so that a change of BIC for a legal entity does not affect these data.

Table 11-17 – List of Attributes for the SWIFT BIC Directory Entity

Attribute	**Description**
BIC Technical Identifier	This attribute shall specify the unique technical identifier of a BIC in T2S.
BIC Source	This attribute shall specify the channel through which the BIC entered T2S. For example: - Manual input - Automated monthly SWIFT BIC Directory update - Update through BIC Data+
BIC Type	This attribute shall define whether the BIC is an official BIC or an internal technical BIC.
BIC	This attribute shall store the eight-character BIC, consisting of bank code (financial institution), country code and location code.
BIC Branch Code	This attribute shall specify the three-character branch code for the financial institution.
Financial Institution Name	This attribute shall provide three text fields with a length of 35 characters each to store the name of the financial institution.
City Name	This data item shall specify a 35-character name of the city in which the financial institution resides.
Branch Information	This attribute shall provide two text fields with a length of 35 characters each to identify the branch of the financial institution.

Automated BIC Directory Update

Reference ID	T2S.11.720

T2S shall support the automated update of the SWIFT BIC Directory in T2S using the monthly SWIFT BIC Directory update and the update through BIC Data+.

11.12 Partial settlement parameters and thresholds

Partial settlement threshold

Reference ID	T2S.11.730

T2S shall specify the harmonised threshold setting for partial settlement at the T2S operator level. The setting at the T2S operator level shall apply for all T2S settlement instructions when the instruction is eligible for partial settlement.

The threshold in quantity for both unit-quoted securities and nominal-quoted securities shall be equal to the minimum settlement unit and the settlement unit multiple of the underlying security defined in T2S securities reference data.

The entity, documented in the following table, specifies the threshold in cash value that T2S shall apply to trigger partial settlement:

- minimum cash value and currency for equity instruments;
- minimum cash value and currency for debt instruments;
- minimum settlement quantity.

Table 11-18 – Entity Attribute Requirements for Partial Settlement Threshold

Attribute	Description
Threshold Identifier	This attribute shall specify the unique technical identifier of a threshold in T2S.
Threshold Type	This attribute shall define whether the threshold is in: - cash-value - or quantity
Instrument Type	This attribute shall define whether the threshold is for: - unit-quoted securities (determined as equity by the first character of the ISO10962 Classification of Financial Instruments set in T2S securities reference data) - nominal-quoted securities (determined as debt instrument by the first character of ISO10962 Classification of Financial Instruments set in T2S securities reference data)
Numeric Value Type	This attribute shall be applicable only if the threshold type is defined in numeric value. The attribute shall define whether the numeric value is in:

Attribute	Description
	- cash value - or quantity
Threshold Value	This attribute shall specify the partial settlement threshold as an amount in cash.
Currency	The attribute shall specify the currency of the threshold value in cash.

The threshold in cash value for unit-quoted securities, determined as equities by the first character of the ISO10962 Classification of Financial Instruments set in T2S securities reference data, shall be equal to 10,000EUR.

The threshold in cash value for nominal-quoted securities, determined as debt instruments by the first character of the ISO10962 Classification of Financial Instruments set in T2S securities reference data, shall be equal to 100,000EUR.

The threshold in quantity for both unit-quoted securities and nominal-quoted securities shall be equal to the minimum settlement unit and the settlement unit multiple of the underlying security defined in T2S securities reference data.

T2S partial settlement parameter

Reference ID	T2S.11.735

The T2S partial settlement parameter shall define at which moment of time or based on which event T2S shall activate or de-activate partial settlement procedure as part of the continuous optimisation process. T2S shall start submitting eligible instructions for partial settlement by activating the parameter. T2S shall stop queuing eligible instructions to partial settlement by de-activating the T2S system partial settlement parameter.

11.13 Conditional securities delivery parameters

Reference ID	T2S.11.740

T2S shall support the rules-based, date-dependent configuration of conditional securities delivery. Conditional securities delivery in T2S refers to a procedure in which the final posting of securities and/or cash is dependent on the successful completion of an additional action or event external to T2S and confirmed by an administering party.

T2S shall allow CSDs:

- to configure conditional securities delivery by CSD;
- to name a conditional securities delivery;

- to define the conditions that T2S applies to settlement instruction to identify its settlement as conditional;
- to specify the administrating party;
- and to define whether T2S shall block securities, cash or both when an instruction is marked for conditional delivery.

Rules for the conditional securities delivery shall define the sequence in which T2S will apply a logical set of parameters to determine whether a conditional securities delivery applies for a matched pair of settlement instructions. The conditional securities delivery matrix will define the specific parameter values within a rule that T2S will compare to identify whether T2S shall generate a conditional securities delivery.

T2S shall support the following parameters for the configuration of conditional securities delivery:

- ISIN
- Settlement Currency
- CSD
- Securities Account
- Country of Issuance
- Place of Settlement
- Transaction Type
- Issuer CSD in T2S
- Delivering CSD in T2S
- Receiving CSD in T2S
- BIC of Issuer CSD
- BIC of Delivering CSD in T2S
- BIC of Receiving CSD in T2S

The following table provides a sample configuration of conditional securities delivery. It is an example for illustration purposes only and may not reflect the actual configuration required in T2S. T2S will compare every parameter set under a rule to determine whether it matches to those of the matched pair of settlement instructions. When T2S finds a match under a rule, it applies the process configuration of the parameter. When T2S finds no match, it continues the comparison with the next rule in the sequence.

The first rule of the example stipulates that T2S shall compare the values for the country of issuance of the security and the place of settlement in the instruction to determine whether conditional securities delivery is or is not relevant. In this case, T2S checks whether the country of issue of the security in the instruction is Spain and whether the place of settlement is CSD A. If T2S finds no match, then T2S checks the next rule to determine if the settlement currency is USD to determine whether settlement may be conditional. If T2S cannot match on the currency, then settlement remains unconditional.

Table 11-19 – Parameter Configuration

Rule Sequence	Country of Issuance	Settlement Currency	Place of Settlement	Transaction Type	Issuer CSD in T2S	Delivering CSD in T2S	Receiving CSD in T2S	ISIN	Securities Account
1	X		X						
	ES		CSD A						
2		X							
		USD							

Linked to each occurrence of conditional securities delivery parameters under a given rule is the process configuration. The process configuration specifies for an occurrence of parameters under a COSD rule whether the settlement instruction that matches with that parameter occurrence is to settle conditionally or not. T2S shall support a Boolean attribute within the process configuration to allow the user to specify whether the COSD applies. If the user specifies that COSD is applicable for an occurrence of parameters, then T2S shall require the user to configure at least one condition and the administering party of that condition.

Table 11-20 – Process Configuration

Conditional Securities Delivery	Yes

Condition	**Administering Party**
Securities Blocking	CSD A
Cash Blocking	CSD A

The process configuration above specifies that T2S settlement will block both the securities and cash for the conditional settlement when processing instructions fulfilling the specified conditions. CSD A, as administering party, would confirm the fulfilment of both conditions.

11.14 Recycling periods for pending settlement instructions

Recycling periods as T2S configuration parameters

Reference ID	T2S.11.900

T2S shall support the configuration of one set separate recycling periods for all T2S Actors for

- Unmatched pending settlement instruction;
- And matched pending settlement instructions.

Although a recycling period for the latter is not foreseen currently in T2S, the configuration of a recycling period for matched pending instructions should be possible nevertheless as such business requirement may change.

Recycling period attribute requirements

Reference ID	T2S.11.910

Table 11-21– Attribute Requirements for the recycling periods

Attribute	Description

Attribute	Description
Recycling type	• This attribute shall specify whether the recycling period applies to • Unmatched pending settlement instruction; • or matched pending settlement instructions.
Recycling period Relevant	This attribute shall specify a Boolean attribute, which defines whether a recycling period is valid for the specified recycling type. Value Description N Recycling period not relevant Y Recycling period required
Working days	This attribute shall specify the number of working days a pending instruction is recycled if a recycling period (Recycling Period Relevant = Y) is relevant for a recycling type.

Based on the user requirements, the configuration parameters would consist of two entries.

Table 11-22– Configuration parameters for the recycling periods

Recycling Type	Recycling Period Relevant	Working Days
Unmatched pending settlement instruction	Y	20
Matched pending settlement instruction	N	n/a

11.15 Acceptable time deviation between the intended settlement date and the reception of a settlement instruction in T2S

Time deviation between the intended settlement date and the reception date of a settlement instruction as T2S configuration parameter

Reference ID	T2S.11.920

T2S shall support the configuration of one set of acceptable time deviation between the intended settlement date and the reception date of a settlement instruction in T2S for all T2S Actors for settlement instructions, which intended settlement date is

- in the past;
- and in the future.

from the reception date of the settlement instruction in T2S.

The acceptable time deviation may have no limitation.

Acceptable time deviation period

Reference ID	T2S.11.930

The acceptable time deviation period between the intended settlement date in the past or in the future and the reception date of a settlement instruction in T2S shall be unlimited.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 12

INTERFACES AND CONNECTIVITY REQUIREMENTS

EUROPEAN CENTRAL BANK

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12 Interfaces and connectivity requirements

Chapter 12 defines the characteristics of the T2S Interface and sets out user requirements from the point of view of the various T2S actors, in the context of other T2S processes as well as other systems owned by NCBs (notably TARGET2).

Section 12.1 gives a high-level description of processes including the T2S actors and T2S components involved.

Section 12.2 lists the user requirements related to the tools and syntax used by the T2S Interface; it also provides an overview of some examples of technical access to T2S. It lists user requirements for technical validations to be carried out at the level of the T2S Interface and covers interaction with other T2S components.

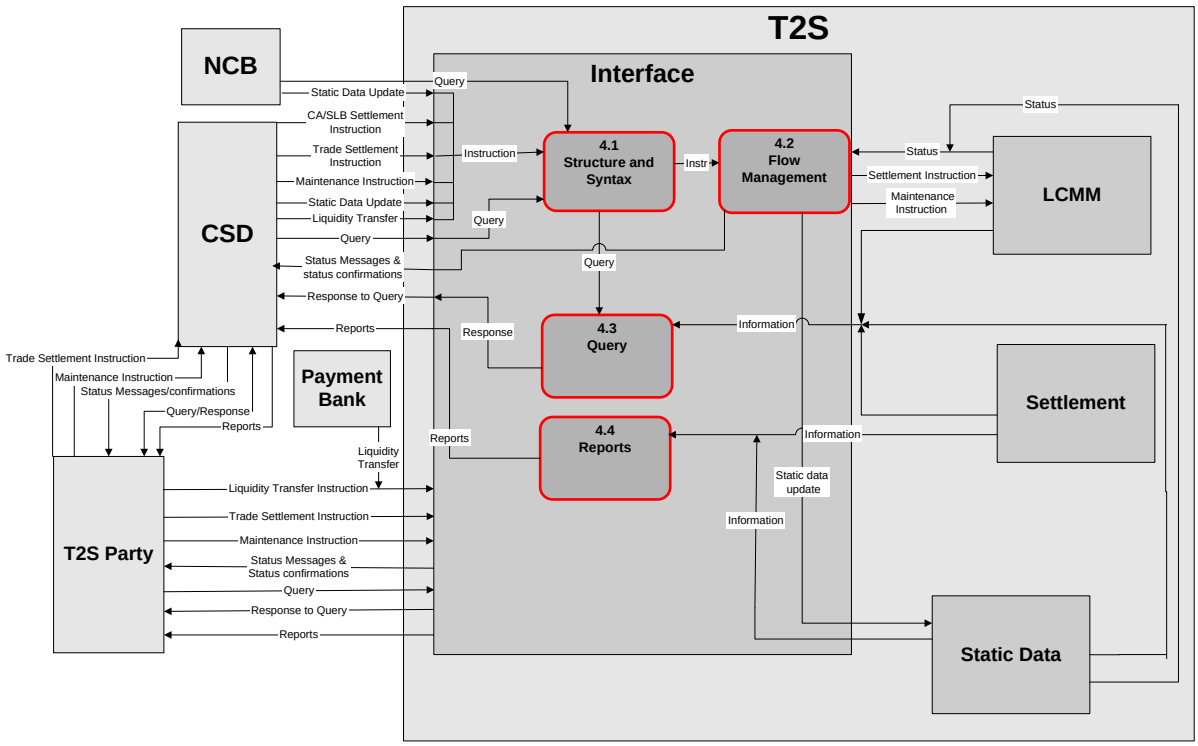
Section, 12.3 sets out technical user requirements related to the connectivity of CSDs and T2S parties to the T2S Interface. It also covers those requirements of systems owned by NCBs (TARGET2 and other RTGS systems, collateral management systems) with which T2S will have to comply.

12.1 Context diagram of interfaces

12.1.1 Context diagram

This context diagram depicts the different high-level processes and interactions of the T2S Interface with various T2S actors and other T2S components. This diagram aims at providing an overview of the interfaces processing based on the business requirements. However, it does not aim at pre-empting any future decision that may be taken for the IT design and technical implementation of T2S.

Figure 12-1: Context diagram



12.1.2 Process description

12.1.2.1 Structure and Syntax (4.1)

This function of the interface will receive instructions from T2S actors and perform the basic structure and syntax validations, and then forward these valid instructions to the flow management function. In the case of queries, after the format and syntax validations are done, these queries are handled by query function.

Input	
Instruction	From T2S actors.

Output	
Instruction	After format and syntax checks, the instruction is forwarded to flow management function.
Query	After format and syntax checks, the query is forwarded to query.

12.1.2.2 Flow Management (4.2)

The flow management function in interface acts as an information router. This function receives validated instructions from the format and syntax functions, and then routes the instructions to the desired components of T2S, like LCMM, static data, etc. It also captures status messages from LCMM and static data components, and in turn routes them to the desired T2S actor.

Input	
Instruction	From format and syntax function.
Status	Captures the status messages from LCMM and Static Data components.

Output	
Settlement Instruction	Sent to LCMM component
Maintenance Instruction	Sent to LCMM component
Cash and Collateral Management	Sent to Settlement component
Static Data Update	Sent to Static data component
Status Messages & Status Confirmations	Sent to T2S actors as per message subscription service (see chapter 13).

12.1.2.3 Query (4.3)

The query function will receive, validate and manage queries in relation to instructions/balances/static data sent by the CSDs, directly connected T2S parties and NCBs. This function would also manage responses to the queries.

Input	
Query	Query from CSDs, directly connected T2S parties and NCBs.
Information	Information retrieved from LCMM (regarding instruction) OR from Settlement (regarding security and cash balances) OR from Static data (regarding static data).

Output	
Response	Response to the query sent to CSD or directly connected participants.

12.1.2.4 Reports (4.4)

This Reports function will manage the sending out of a pre-defined set of reports (either event-based or time-based), to the CSDs, NCBs and directly connected T2S parties as per the message service subscription (see chapter 13).

Input	
Information	Information retrieved from Static data, LCMM and settlement components to create reports.

Output	
Report	

12.2 Interface requirements

This section describes Interface requirements for T2S, in relationship with connectivity requirements (section 12.3) and communication requirements related to messages, queries and reports, which are documented in chapters 13 and 14.

There are three aspects: characteristics of the technical interface, validations, and interactions with other T2S components.

12.2.1 Technical interface

This describes the Interface component, its syntax and protocol, and gives an outline of its usage from a business perspective.

12.2.1.1 Tool

Connectivity options

Reference ID	T2S.12.010

T2S Interface shall provide all T2S connectivity options.

Connectivity options are described in section 12.3 of this chapter.

Data storage and retrieval

Reference ID	T2S.12.020

T2S shall store and enable retrieval of information received from the T2S actors, including non-settlement related information. This information should be retrievable by those with appropriate access rights.

As an example, CSDs will be able to retrieve tax data from instructions sent by their participants directly connected to T2S.

Generate outbound communication

Reference ID	T2S.12.030

T2S Interface shall generate outbound communication from information received from the life cycle management component and static data component (e.g. status and confirmation messages).

T2S Interface should build messages, reports and answers to queries, in the appropriate syntax and format, out of data received from the life cycle management component and static data component.

12.2.1.2 Communication standard and protocol

To comply with the removal of Giovannini[1] barrier one, and thus support harmonised standards, ISO 20022/UNIFI (UNIversal Financial Industry message scheme) shall be used as the standard for all T2S communications.

In addition, the use of the ISO 20022 standard will comply with the Giovannini communication protocol.

Use of the ISO 20022 standard

Reference ID	T2S.12.040

The T2S Interface shall use ISO 20022/UNIFI as its single standard for all communications, both inbound and outbound.

Compliance with the Giovannini protocol

Reference ID	T2S.12.050

The T2S Interface shall comply with Giovannini protocol recommendations for both inbound and outbound communications.

12.2.1.3 Access

The user requirements described here apply to technical access to the T2S Interface. They do not deal with the data made available to T2S actors. A high-level description of the user requirements related to roles and privileges is provided in chapter 11. More details will have to be worked out in the next phase of the T2S project.

Interface access

Reference ID	T2S.12.060

T2S shall provide interfaces to T2S actors.

According to their access rights, CSDs and directly connected T2S Parties (including NCBs in their role of CSD's participants) shall be able to input and maintain instructions and query data when related to securities (including securities accounts).

Subject to their access rights, NCBs and payment banks shall be able to input and maintain instructions and query data related to cash (including cash accounts).

The table below is a non-exhaustive list illustrating the access of different T2S actors to T2S. The list will need to be made more detailed and completed during the next phase of the T2S project.

Assumptions:

[1] The Giovannini recommendations, published in March 2006, are an agreed set of EU-wide data standards and technology recommendations aimed at creating an environment where all industry participants can interoperate, eliminating some of the complexity and cost of cross-border clearing and settlement.

- Making use of the Eurosystem Single Interface is not mandatory for T2S actors (neither user-to-application mode (U2A) nor application-to-application mode (A2A)).
- CSDs will be responsible for granting direct technical connectivity to information related to securities accounts in T2S according to their service configuration.
- NCBs will be responsible for granting direct technical connectivity to information related to cash accounts as well as to other liquidity managing functions in T2S.

The following codes are used in the table:

s send messages

r receive messages

q query information

(q) query in exceptional situations (e.g. after losing the reports received from T2S because of problems in the back-office system of the CSD or directly connected T2S party)

m perform maintenance

Table 12-1: Examples of access to T2S interface and functions

(The information provided in this column will need to be made more detailed in the next phase of the T2S project, e.g. listing the different types of settlement instruction and documenting who is allowed to send them – e.g. some can be sent only by CSDs.)	**CSDs**	**Directly connected T2S party**[2]	**Payment bank**	**NCBs**
Instructions, status and confirmation messages				
Settlement instructions	s	s		
Status messages	r	r		
Confirmation messages	r	r		
Queries / maintenance				
Instructions				
Settlement instructions (incl. related status and confirmation messages)	q	q		
Liquidity transfers	q		q	q
Balances				

[2] Directly connected T2S parties will have full access according to the level of direct connectivity they have chosen with their CSD.

(The information provided in this column will need to be made more detailed in the next phase of the T2S project, e.g. listing the different types of settlement instruction and documenting who is allowed to send them – e.g. some can be sent only by CSDs.)	**CSDs**	**Directly connected T2S party**[2]	**Payment bank**	**NCBs**
Securities accounts	q	q		
Cash accounts	q		q	q
Static data				
Liquidity transfers				
Liquidity transfers (standing orders)	q/m		q/m	q/m
Liquidity transfers (predefined orders)	q/m		q/m	q/m
Limits				
Buyer limits			q/m	q/m
Settlement bank's limit for making use of auto-collateralisation by third parties			q/m	q/m
NCB's limits for auto-collateralisation				q/m
Reservations				
Cash			q/m	q/m
Accounts				
Securities accounts	q/m	q		
Cash accounts	q		q	q/m
T2S actors				
CSDs	q/m	q		
T2S parties	q/m	q	q	q
NCBs			q	q
Securities	q/m	q	q	
T2S				
...				

(The information provided in this column will need to be made more detailed in the next phase of the T2S project, e.g. listing the different types of settlement instruction and documenting who is allowed to send them – e.g. some can be sent only by CSDs.)	**CSDs**	**Directly connected T2S party**[2]	**Payment bank**	**NCBs**
Reports				
Set of reports	r/(q)	r/(q)		
…				
…				

12.2.2 Interface validations

These user requirements relate to technical and communication validations that are not performed either by the network providers (i.e. providers of communication network and services) or by the T2S life cycle management and matching component. These validations can differ depending on whether the communication flow is inbound or outbound (as defined in chapters 13 and 14).

12.2.2.1 Inbound

Inbound communication is always initiated by an authorised T2S party (i.e. having appropriate connection to T2S and appropriate access rights and configuration as per chapter 11) and received by the T2S Interface.

The syntax, format and structure required by T2S will be based on XML technology, the ISO 20022 standard and Giovannini protocol recommendations, as mentioned above (to be further detailed in a latter phase of the project).

Technical validation

Reference ID	T2S.12.070

T2S shall verify that inbound communication is compliant with T2S required syntax, format and structure.

File requirements

Closely linked to the message requirements (refer to chapter 13), the file structure requirements shall be based on the same standard and technology (i.e. ISO 20022 and XML), and benefit from the same secured communication environment in T2S and between T2S and the external world (as described in chapter 18).

File validation 1

Reference ID	T2S.12.080

The T2S Interface shall validate that files to be exchanged between T2S and the other systems of the T2S actors comply with the same standard as the messages.

File validation 2

Reference ID	T2S.12.090

T2S shall ensure that inbound files are not lost, that outbound files are neither lost nor duplicated in the past for a predetermined period of 3 business days and that the recommendations of the Giovannini file transfer rulebook are applied (generic rules for file construction and best practices for file transfer operations for any and all file transfers, on any network).

File processing rule

Reference ID	T2S.12.100

If there are file transfer or structure problems, T2S shall ensure that files are rejected entirely.

This does not apply if there are validation problems at the level of individual instructions in the file. In this case, the file is completely processed and rejection messages are sent for the individual invalid instructions.

Identify the sender

Technical address validation

Reference ID	T2S.12.110

T2S shall check that the communication is received from a secured and recognised technical address.

Identification of instructing/communicating party

Reference ID	T2S.12.120

T2S shall identify the T2S actors which sent the communication.

Identify the communication: communication means and nature

Reference ID	T2S.12.130

T2S shall identify the communication means used (e.g. message, file) and the nature of the communication (e.g. settlement instruction, static data query) to route it to the appropriate components in T2S.

For instance, settlement instructions will always go through the life cycle management and matching component, whereas some queries (e.g. account data) will be handled by the Static Data component.

12.2.2.2 Outbound

Outbound communication is always initiated by the T2S Interface and received by an authorised T2S actor.

Identify the recipient: Identification of communicating party

Reference ID	T2S.12.140

The T2S interface shall identify the T2S actors entitled to receive the communication.

Retrieve Static Data information

Reference ID	T2S.12.150

For all outbound communication, T2S Interface should retrieve from T2S Static Data:

- the message subscription preference of the communication recipient.
- the technical address to which this communication should be routed (when there are multiple technical addresses, routing should take them all into account).

Ensure delivery: communication delivery

Reference ID	T2S.12.160

T2S shall ensure that outbound communication has been routed to the appropriate technical address and delivered on due time to the receiving T2S actors.

T2S shall make sure that an outbound communication generated by T2S reaches the T2S actor or its network provider if the network provider guarantees delivery.

12.2.3 Interaction with other T2S components

This section highlights the need for internal communication between the T2S Interface and some other T2S components.

12.2.3.1 Static Data

Routing

Reference ID	T2S.12.170

The T2S Interface shall route all Static Data maintenance messages (see chapter 13, table 13-3, “message glossary”) to the Static Data process.

Interface information

Reference ID	T2S.12.180

The T2S Interface shall inform Static Data about the T2S actor initiating the communication.

Static Data information

Reference ID	T2S.12.190

T2S Static Data should inform T2S Interface about the event to be communicated, including all necessary data, so that T2S Interface can generate the appropriate messages, reports and queries answers.

12.2.3.2 Life cycle management and matching

Routing

Reference ID	T2S.12.200

T2S Interface shall route all settlement messages (including maintenance messages) to life cycle management and matching.

Interface information

Reference ID	T2S.12.210

T2S Interface shall inform Lifecycle management and matching about the T2S actor initiating the communication.

Lifecycle management and matching information

Reference ID	T2S.12.220

T2S Lifecycle management and matching should inform T2S Interface about the event to be communicated, including all necessary data, so that T2S Interface can generate the appropriate messages, reports and queries answers.

12.3 Connectivity requirements

This section deals with the types of connections that will be established between T2S and the systems interfaced with T2S and defines the basic services offered. It therefore covers:

- the common connectivity needs of all T2S actors,
- the specific connectivity needs of CSDs and directly connected parties,
- the connectivity needs of TARGET2 and any other RTGS system,
- the connectivity needs of collateral management system.

Supporting the Eurosystem Single Interface concept

Reference ID	T2S.12.230

T2S shall follow the Eurosystem Single Interface concept. This Eurosystem Single Interface shall handle all incoming and outgoing communication with all T2S actors. It handles allocation to the appropriate communication medium and undertakes technical validation.

Access to the Eurosystem Single Interface

Reference ID	T2S.12.240

T2S actors connecting to T2S shall comply with the formats and specifications defined by the Eurosystem Single Interface.

12.3.1 CSDs and T2S parties

Access to the information and control tool

Reference ID	T2S.12.250

The T2S graphical user interface (GUI) shall support the following non-exhaustive list of maintenance and quering functions:

- issue online query requests to T2S (such as balance requests, status requests, etc),
- process answers received from T2S,
- display results in a standard way,
- input and maintain settlement instructions and liquidity transfer orders,
- maintain static data security management, account management, system and party management,
- maintain calendar and diary,
- maintain eligible assets, collateral value of securities and close links,
- export the results of a query using common industry-wide standard formats. The content of the exported information shall be exactly the same as the one provided by the query even if the window does not display it and also include the query parameters and the timestamp of the data provided.

The roles and privileges assigned to a user will determine which functions the user can execute and the data that the user can display and maintain.

Message transfers

Reference ID	T2S.12.260

T2S connectivity services shall support store-and-forward and real-time file transfers. These services shall operate in both push and pull mode for both files and single messages. The services will be part of the network tender which is envisaged to select the network providers for T2S.

Catalogue of connectivity services

Reference ID	T2S.12.280

A catalogue of connectivity services shall be developed as part of the T2S overall service catalogue.

The content of the connectivity service catalogue shall include the network providers offering connectivity to T2S and the services offered by these providers, including;

- Detailed Services,
- Service Levels, detailing performances, availability and support commitments,
- Volume related services,
- Connectivity solutions,
- Backup/Alternative network access solutions.

Possibility of specialised connections for different types of activities

Reference ID	T2S.12.300

T2S Network providers shall offer T2S actors the possibility to combine several channels for several types of activities (e.g. one channel for the instructions and another one for queries and reports).

Backup connectivity

Reference ID	T2S.12.310

Each CSD shall implement a backup connectivity solution in respect of business contingency/continuity.

Backup connectivity offered by providers

Reference ID	T2S.12.320

Backup options shall be offered by connectivity providers in the service catalogue.

Definition of a "basic" level of service

Reference ID	T2S.12.330

All T2S Connectivity providers shall offer the same "basic" level of services. These services shall be further developed as part of the service catalogue.

At least a minimum level of network service (defined via a Service Level Agreement) shall be available for each T2S actor.

12.3.2 NCBs' systems

12.3.2.1 TARGET2 and other potential RTGS systems

The interface between T2S and the RTGS is used to exchange messages in order to transfer liquidity between RTGS accounts (e.g. in TARGET2) and T2S dedicated cash accounts (in T2S).

Open concept for RTGS connectivity

Reference ID	T2S.12.340

The interface between T2S and TARGET2 / potentially any other RTGS system shall be designed following an "open" concept in such a way that the same interface specifications can be used to connect another RTGS system to T2S. In particular, this interface shall make use of a set of standard messages.

12.3.2.2 Collateral management systems

Open concept for connectivity to collateral management systems

Reference ID	T2S.12.360

The interface with collateral management systems shall be designed following an "open" concept in such a way that the same interface can be used to connect any collateral system for euro and non-euro NCBs. In

particular, this interface shall make use of a single set of standard messages used by all collateral management systems.

USER REQUIREMENTS

CHAPTER 13

MESSAGES AND REPORTS REQUIREMENTS

EUROPEAN CENTRAL BANK

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13 Messages and reports requirements

The aim of this chapter is to describe the messages and reports requirements in the context of T2S. These messages and reports requirements aim at meeting the needs of both T2S and T2S actors to receive specific messages and reports (which will sometimes contain specific data required for efficient settlement).

The messages and reports requirements are part of the business requirements related to T2S communication, which also include queries (covered in chapter 14) and interactions with other Eurosystem platforms like TARGET2 (covered in chapter 6).

These requirements also relate to chapter 12, dealing with the T2S Interface component, where the technical interface, the communication standard and protocol, the interface validations and interactions with other T2S components are described in detail.

Important related information about non-functional aspects such as security features, integrity of the transported data, service level to be ensured by network providers, etc, is documented in chapters 18 to 20.

Readers may find it helpful to refer to all of those chapters when reading the below messages and reports requirements.

In line with the strong wishes for T2S expressed both by market representatives and by the Eurosystem, T2S is a business application and the technical platform, on which it is run, offering harmonised settlement services. Thus, T2S will offer flexibility in the way T2S actors will communicate using standardised messages. T2S actors may “subscribe to” (select) messages they want to receive from a pre-defined list based on ISO 20022 messages used to support settlement, reconciliation and reference data. There will be neither “mandatory” nor “optional” messages in the sense that T2S actors must subscribe to all messages they wish to receive. This is referred to as the message subscription service, offered to and under the responsibility of each and every directly connected T2S actor.

Once T2S actors have subscribed and their choices are stored in Static Data, T2S will communicate with T2S actors using pre-defined messages and (whenever appropriate) message flows described in this chapter. Section 13.3 describes various message flows to illustrate the communication expected in several important business scenarios for settlement and non-settlement related activities.

Finally, several reports will be available in T2S to support business monitoring, as detailed in the last section of this chapter.

13.1 Message subscription requirements

The below set of requirements refer to the message subscription mechanism designed to satisfy T2S actors’ preferences (stored in Static Data, chapter 11) for real-time communication.

Definition of the message subscription

Reference ID	T2S.13.010

T2S shall offer all CSDs, CBs and directly connected T2S parties the flexibility to choose the messages they do or do not wish to receive so as to handle their business activities, whether related to settlement or not. This service will be referred to as a "subscription" service and will give the CSDs and CBs the possibility to subscribe, for themselves and their T2S parties, to messages or copy of messages, according to their access rights (including third parties). In this case, copy refers to a message sent to a party (who is neither the sender of the message, nor the counterparty to the instruction) communicating the exact same information as that sent to the sender of the message/counterparty to the instruction. It is also possible to receive copies of inbound messages via A2A which were triggered via U2A provided that the respective message is subject to copies.

CSDs and CBs may select the messages from a defined list. T2S will not send any message not subscribed beforehand by the CSD, the CB or directly connected T2S party concerned

CSDs and directly connected T2S parties may select the messages from a defined list (see Messages Glossary below, 13.4). T2S will not send any message not subscribed beforehand by the CSD or directly connected T2S party concerned.

Scope of the message subscription

Reference ID	T2S.13.020

The message subscription service shall include all business relevant messages in T2S and shall not include the acknowledgements.

Maintenance of the message subscription

Reference ID	T2S.13.030

"Subscription needs will be maintained by CSDs, CBs and directly connected T2S parties (via their CSD and CB) in T2S Static Data. Details in relation to how this is achieved will be determined during a future phase of the T2S Project. The criteria that should be included in the Static Data table(s) are listed here."

Details in relation to how this is achieved will be determined during a future phase of the T2S Project. The criteria that should be included in the Static Data table(s) are listed here.

Criteria for message subscription

Reference ID	T2S.13.040

"Each CSD and CB will be able to specify, for themselves and for their directly connected parties, their subscription needs for real-time push mode information by setting values for different criteria (i.e. set of data to be present in the message and conditions to be fulfilled for the message to be sent by T2S)."

The criteria are:

- Message type;
- Instruction type;
- Instruction status;
- Instructing party;
- Participant;
- Securities account;
- Cash account;
- ISIN;
- Currency of instruction;
- Copy flag (Y/N);
- ISO transaction code.

Subscription needs shall also have a determined validity period (i.e. valid from [date] to [date]), which will be stored in Static Data. The validity period may be open-ended.

This list of criteria may evolve (i.e. some criteria may be added or removed) during the next phase when detailed user requirements and functional specifications are defined.

Use of criteria for message subscription

Reference ID	T2S.13.050

T2S shall allow CSDs and CBs, for themselves and their directly connected T2S parties, to:

- use the above criteria for different technical addresses, as defined in chapter 16 (see section 16.8.3, this is restricted to CSDs and directly connected T2S parties in T2S);
- combine the above criteria (among them);
- ignore the above criteria but still subscribe to all messages in all cases;
- exclude one or several criteria but still subscribe to all the messages for the remaining criteria, using an "exclusion indicator";
- ignore the above criteria without subscribing to any messages at all.

13.2 Messages requirements

The following requirements relate to T2S messages covering validation, matching and settlement. Additional user requirements related to messages can be found in chapters 5 and 7, where life cycle management and settlement processes are described in detail.

Generation criteria for messages

Reference ID	T2S.13.060

T2S shall send event-driven messages (i.e. "real-time" generation and sending).

Events that will trigger the generation and sending of a message are described in chapter 5, under life cycle management. They are also illustrated by the flows of messages (refer to 13.3, detailed message flows).

Night-time settlement communication

Reference ID	T2S.13.070

T2S shall send settlement-related messages, such as the settlement status message and the settlement confirmation, after each cycle of night-time settlement.

For a given instruction, only the last valid statuses at the end of the cycle shall be sent. Statements and reports will be sent at the end of each night-time cycle and/or at the end of night-time settlement (as explained in “Reports” section, 13.5).

T2S sending files during night-time period

Reference ID	T2S.13.080

During the night-time period, T2S shall only send settlement related messages (e.g. settlement confirmations and settlement failure notifications) bundled into files to T2S actors. All other messages (e.g. matching notifications, reports, query responses, static data related messages) are sent individually.

Cash management inbound messages

Reference ID	T2S.13.083

T2S shall process inbound cash messages for liquidity transfers as described in chapter 6. Cash management messages should follow the same logic as securities messages (e.g. validation in T2S of inbound payment instructions).

Cash management outbound messages

Reference ID	T2S.13.086

T2S shall generate cash management messages for liquidity transfers (e.g. confirmations, alerts) as described in chapter 6. Cash management messages should follow the same logic as securities messages (e.g. validation status sent by T2S after validation of inbound payment instructions).

Acceptance of a message

Reference ID	T2S.13.087

T2S shall send an acknowledgement for a message it receives from a directly connected T2S Actor in application-to-application mode after performing an authentication check on that message. The authentication check requires some minimum validations. T2S shall not perform any further technical or business validations on files or messages before sending the acknowledgement.

Transmission of a message

Reference ID	T2S.13.088

T2S must receive an acknowledgement when the recipient successfully receives the message from T2S.

13.2.1.1 Settlement confirmation

Reference ID	T2S.13.090

T2S shall send a settlement confirmation message, once the settlement has been completed successfully. T2S shall send this message to all relevant T2S actors, which includes the instructing parties and the holders/operators of all the affected accounts, in accordance with their choice in the message subscription service. In the example of cross-CSD settlement with a realignment between two investors CSDs in the issuer CSD, the issuer CSD shall receive information only on the accounts held in its book. The issuer CSD shall not receive the information on the original settlement instructions between the participants of the investor CSDs.

Confirmation of validation through status messages

Reference ID	T2S.13.100

T2S shall send a “negative” validation status when the validation of an instruction fails and a “positive” validation status when the validation of an instruction succedes. In case of “negative” validation status, T2S shall report on all errors, in the limit of validations performed by T2S for a single instruction, and provide the relating reason codes. When T2S creates automatically settlement instructions (e.g. realignment instructions in case of cross-CSD settlement), T2S shall also send validation status messages to all relevant T2S parties (e.g. accounts holders) when these settlement instructions are created by T2S.

Recycling information and status messages

Reference ID	T2S.13.110

T2S shall send a status message after each recycling attempt (during matching and settlement recycling processes), whenever the settlement status or its reason of the instruction/transaction has changed.

Status refers to a combination of the instruction statuses as explained in life cycle management (chapter 5) and the reason code associated with this status if applicable.

Reference ID	T2S.13.120

T2S will not communicate the number of recycling attempts per instruction/transaction.

However, elements such as the processing dates (e.g. expected settlement date, actual settlement date) and the audit trail described in non-functional chapters 19 and 20 should give sufficient information about failures and recycling to a CSD or a directly connected T2S party.

Settlement status

Reference ID	T2S.13.130

When an instruction is settled, then T2S shall send a settlement confirmation.

T2S shall send a status message only if the instruction could not settle including the settlement status and the reason code as assigned by life cycle management (chapter 5) to inform the instructing parties and the holders/operators of all the affected accounts why settlement failed. T2S shall send a status message after the

first unsuccessful attempt to settle, as per subscription service. The frequency for sending status messages during the recycling process is described above (see "Recycling information and status messages"). In the example of cross-CSD settlement with a realignment between two investors CSDs in the issuer CSD, the issuer CSD shall receive information only on the accounts held in its book. The issuer CSD shall not receive the information on the original settlement instructions between the participants of the investor CSDs.

Source in status messages

Reference ID	T2S.13.133

T2S shall report in the status messages the source of input (e.g. amendment of instruction made by a CSD following a corporate action on a pending instruction sent by a directly connected T2S party).

Management of the schedule information

Reference ID	T2S.13.136

T2S shall generate an information message indicating the new status of the settlement day at each change of this status. T2S shall send this message to CSDs and directly connected parties according to their message subscription. Event and status management details can be found in chapter 3.

Static data maintenance messages

Reference ID	T2S.13.140

CSDs, NCBs or any parties authorised by them shall be able to send static data maintenance instructions to T2S, which will respond with a static data maintenance status message and/or a static data confirmation message.

Information can be related to an account, an ISIN or a T2S party.

Only CSDs, NCBs or any parties authorised by them can maintain Static Data in T2S. T2S parties (directly connected or not) will have to go through them for any maintenance of Static Data to avoid synchronisation problems, as described in chapter 11.

Checking pending instructions because of static data maintenance

Reference ID	T2S.13.150

When static data maintenance occurs, T2S shall check which settlement instructions must be revalidated as a result of the static data change. If the result of the validation is negative, T2S shall send a status message that includes the appropriate reason code to the CSD or the directly connected T2S party to inform about the cancellation of the pending instructions.

13.3 Detailed message flows

The following message flows have been developed to cover generic and some specific scenarios (they are **not** an exhaustive illustration of all possible cases). The messages illustrated in these flows can of course be

used freely by CSDs and directly connected T2S parties, depending on their processing needs. The message flows will not be "imposed" by T2S, which will not perform any control to check whether it is being used as described here.

The summary below lists helpful message flows with a short description of the scenarios covered.

There are two sets of flows:

- Settlement related message flows: "pure" settlement scenarios are covered;
- Non-settlement related message flows: other activities, like static data operations, are covered for the settlement part that is treated in T2S.

Section 13.4 is a glossary of all the messages in the scope of T2S and describes their respective functions.

Table 13-1: Settlement related message flows

Settlement related message flows	Scenarios covered	Specific messages
Basic Scenario	Made of two cases: one for a CSD interacting with T2S and the other for a directly connected T2S party interacting with T2S.	*Regular set of messages:* Settlement instruction Status messages Settlement confirmation
Direct Holding Scenario	To illustrate direct holdings systems needs.	*Regular set of messages*
Third Party Scenario	Interaction between a Third Party to an instruction and T2S – typically to illustrate Regulated Markets and CCPs needs.	*Regular set of messages*
Amendments Scenario	Settlement instruction amendment of process indicators at different stages of the life cycle.	Amendment instruction Amendment status messages
Cancellations Scenario	Cancellation of a settlement instruction at different stages of the life cycle. Cancellation by the system (previously called "purging").	Cancellation instruction Cancellation status messages

Settlement related message flows	Scenarios covered	Specific messages
Allegement Scenario	Covers allegement, update of allegement, cancellation of allegement and removal of allegement as per SMPG recommendations.	Settlement allegement Allegement removal Allegement cancellation
Hold & Release Scenario	Hold & Release mechanism can be activated unilaterally or bilaterally by the counterparties. Both cases are illustrated in the flows with a distinction for bilateral hold and release as the initial instruction might enter T2S "released" or "on hold" (2 different flows).	On hold instruction On hold status message Release instruction Release status message
Conditional Securities Delivery Scenario	Describes the use of Conditional Securities Delivery (CoSD) service in T2S. The instruction to settle is received in T2S but its settlement is conditioned by the fulfilment of an obligation outside T2S (e.g. cash settlement in non-T2S currency, registered securities, issuer CSD outside T2S).	Settlement instruction Blocking status On hold status Release instruction
External CSD Scenario	Illustrates two specific cases that do not fit into the "Basic Scenario" flow of messages where the issuer CSD is outside T2S. In one of them (issuer and investor CSDs outside), the mechanism of CoSD can be reused.	Blocking instruction Release instruction "Re-alignment" (i.e. regular FOP)

Table 13-2: Non-settlement related message flows

Non-settlement related message flows	Scenarios covered	Specific messages illustrated (copy messages included)
Corporate actions	Several cases are covered, depending on settlement treatment in T2S of corporate actions	Balances query Statement of holdings

Non-settlement related message flows	Scenarios covered	Specific messages illustrated (copy messages included)
		Instructions query Statement of instructions Blocking instruction Unblocking instruction Cancellation messages Amendment messages
Static Data	Describes the set of messages to be used for Static Data information and Static Data maintenance related to: - financial instruments- securities and cash accounts - CSD/T2S parties	Static Data query Static Data information Static Data maintenance instruction Static Data maintenance status Static Data maintenance confirmation
T2S Events and Statuses management information **Refer to chapter 3**	Refers to the set of messages that will be designed to inform T2S actors about statuses of the settlement day. No flows have been drawn as the list and timing of statuses can be found in chapter 3. However, an additional information message is detailed in the message glossary.	Settlement day status message

13.3.1 Flow of settlement related activities

The message flows regarding settlement related activities are described on the following pages.

Messaging General User Requirements

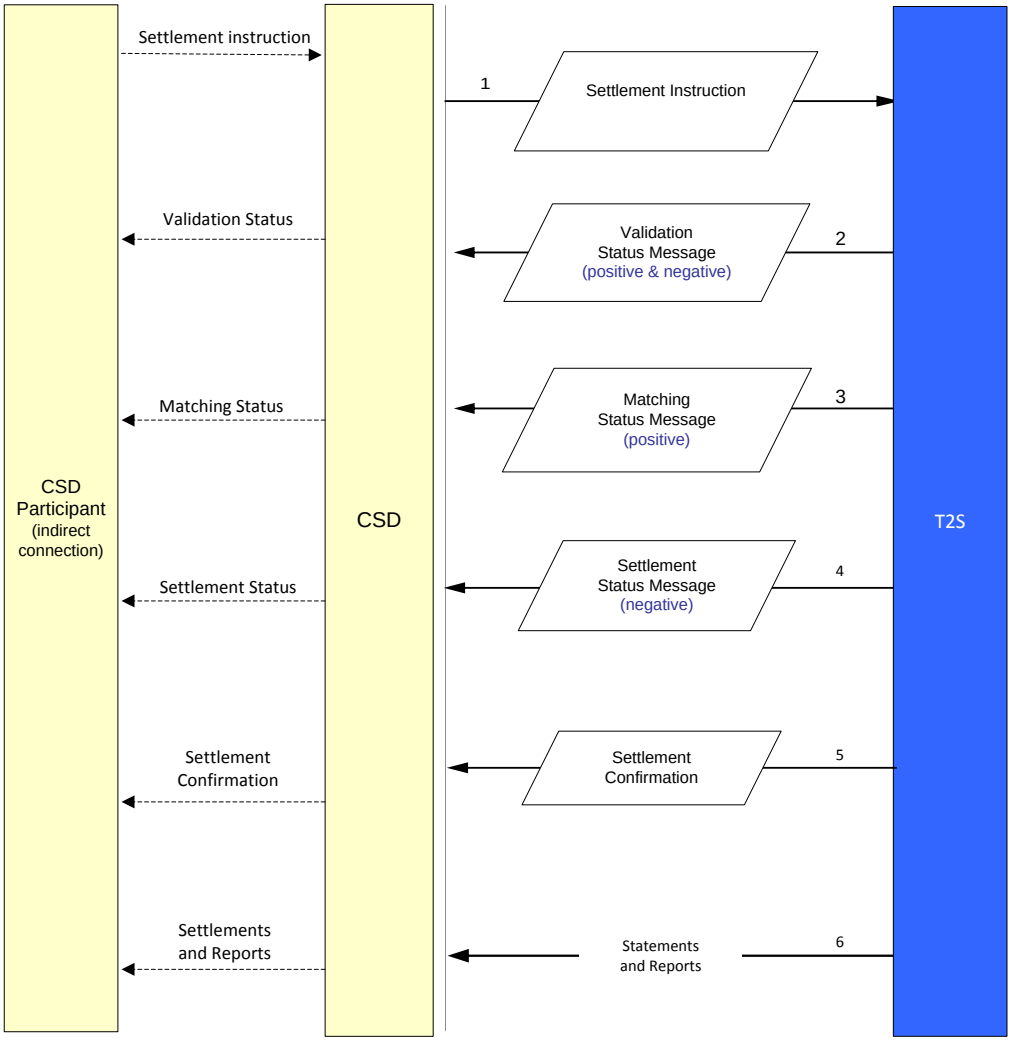
Important: As a general requirement, messages sent by T2S shall be event-driven. Events that should trigger the generation and sending of the messages are defined by the Life Cycle Management and Matching.

Basic scenario - CSD

In this scenario, a standard instruction is sent by a **CSD** to T2S.
Exceptionally, the communication flow between the CSD and its participant is "assumed" to ease the understanding, although it is not the scope of T2S message flows.
Only one side is represented (assumption= same flows for the counterpart, also connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements and reports sent EOD.

Message

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



Unless matching is required for the participant and such preference is stored in Static Data (see chapter 5), FOP unilateral transaction will not go through the matching process for own accounts transfers, when transfers are within the same CSD.

FOP bilateral transactions (e.g. external transfers) will be treated like any standard transaction through a matching process.

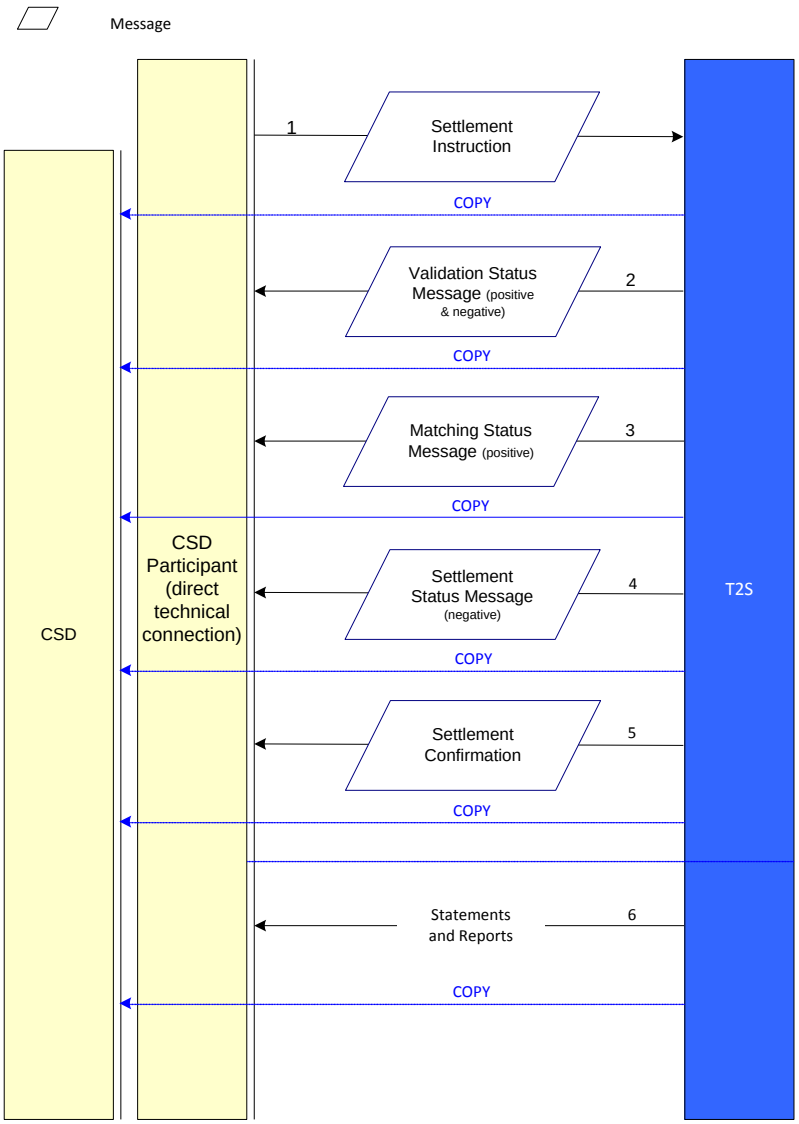
Messaging General User Requirements

Important: As a general requirement, messages sent by T2S shall be event-driven. Events that should trigger the generation and sending of the messages are defined by the Life Cycle Management and Matching.

Basic scenario - CSD Participant

In this scenario, a standard instruction is sent by a **CSD Participant** to T2S. The CSD (i.e. account operator) subscribed to receive a copy of all messages in this example.
Only one side is represented (assumption= same flows for the counterpart, also connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements and reports sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



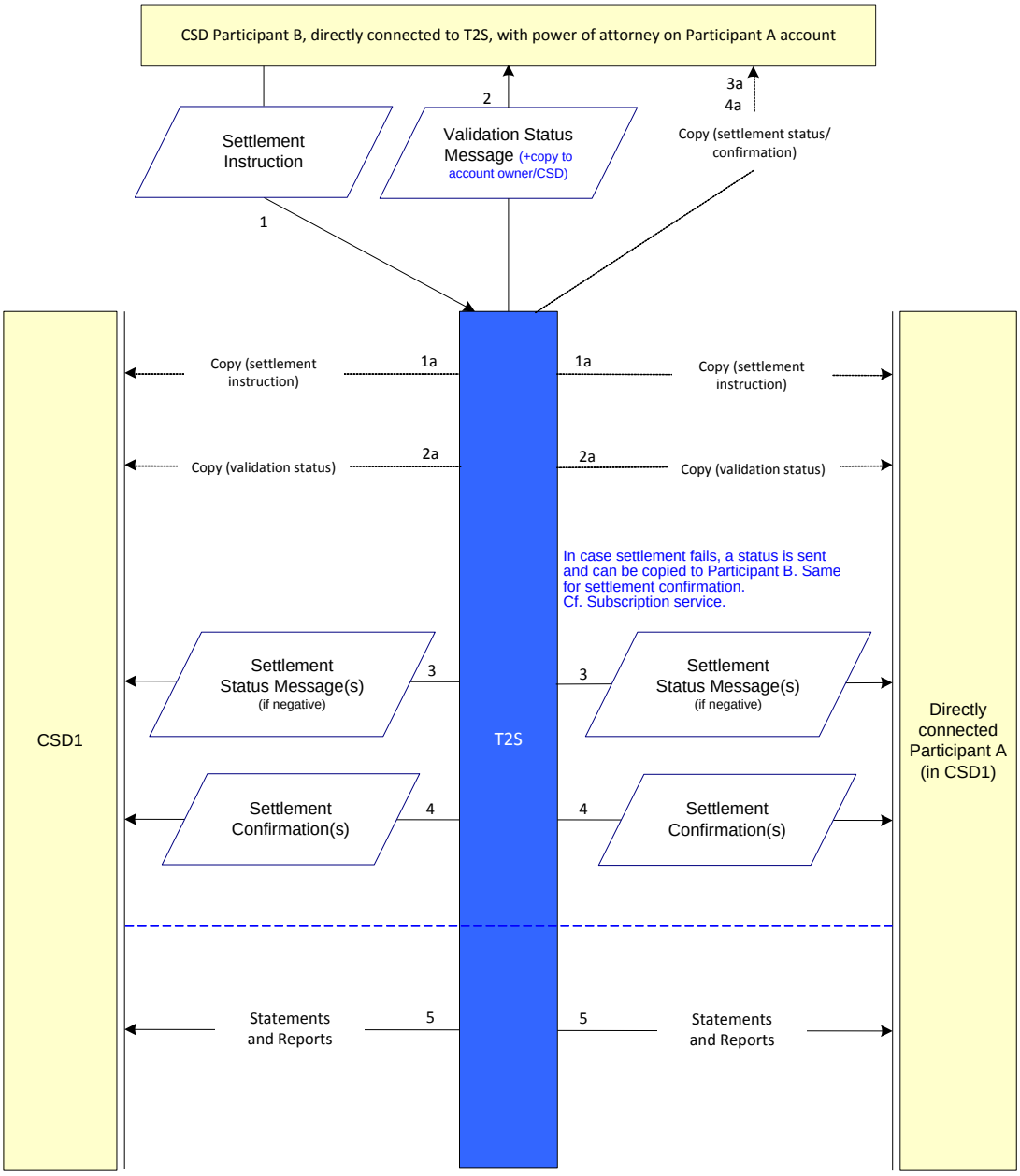
Messaging General User Requirements

Important: In the context of the subscription service, T2S can inform the CSD and the directly connected CSD Participant whenever they act as instructing party vis-à-vis T2S. In the context of the subscription service, T2S can inform the CSD and the directly connected CSD Participant whenever the settlement impacts at least one of their own accounts, whether it is securities or cash account.

Basic scenario - Instructing Third Party

In this scenario, a standard instruction is sent by a **CSD Participant B** to T2S, **on behalf of CSD Participant A**. Both are directly connected and are participants of **CSD1**.
It is assumed that CSD Participant B is sending already matched instructions to T2S (e.g. case of a Trading Platform or a CCP). Only one side is represented (assumption= same flows for the counterpart, also connected to T2S). Messages are being sent on a push mode basis. Messages are sent in real time, except for statements and reports sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



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External CSD settlement User Requirements

Important: T2S will not send re-alignment instructions to the issuer CSD if the issuer CSD is not connected to T2S. The re-alignment process will be handled by the investor CSDs in coordination with the issuer CSD outside T 2S.

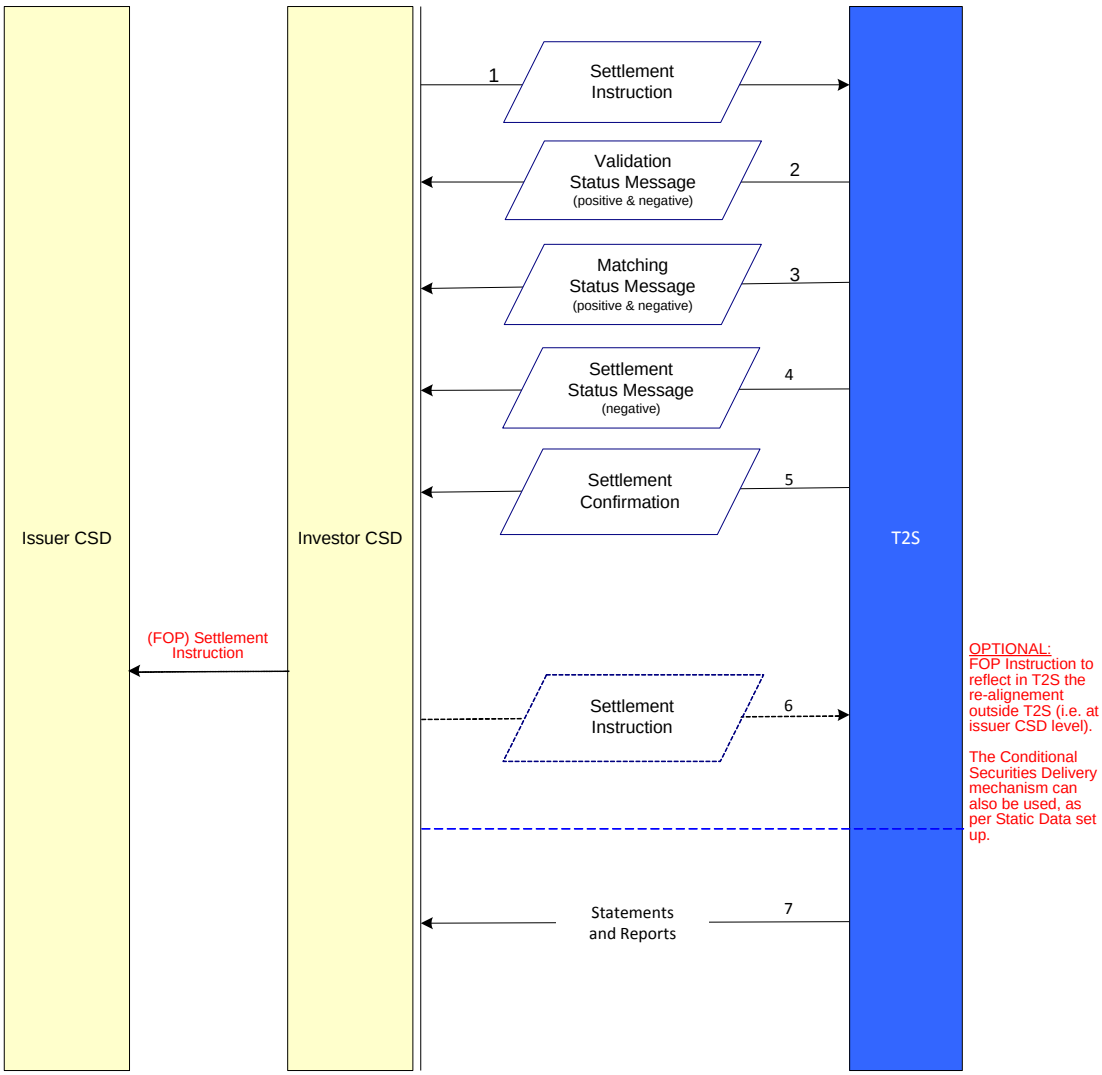
If the issuer CSD is inside T2S and the investor CSDs are outside T2S, the re-alignment will take place in T2S based on settlement instructions (usually free-of-payment) to be send by the issuer CSD.

If the issuer CSD is outside T2S and at least one investor CSD is inside T2S, the Conditional Securities Delivery mechanism can be used by the investor CSDs, to block the position in T2S and hold the instruction until the settlement is confirmed in the issuer CSD's books (see next flow).

External CSD Scenario (only IssuerCSD is outside T2S)

The below scenario illustrates the case in which **both investor CSDs participate** into T2S but the **issuer CSD does not** (i.e. external CSD). Only one side of investor CSDs is represented (assumption= same flows for the counterpart, also connected to T2S). Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



External CSD settlement User Requirements

Important: T2S will not send re-alignment instructions to the issuer CSD if the issuer CSD is not connected to T2S. The re-alignment process will be handled by the investor CSDs in coordination with the issuer CSD outside T2S.

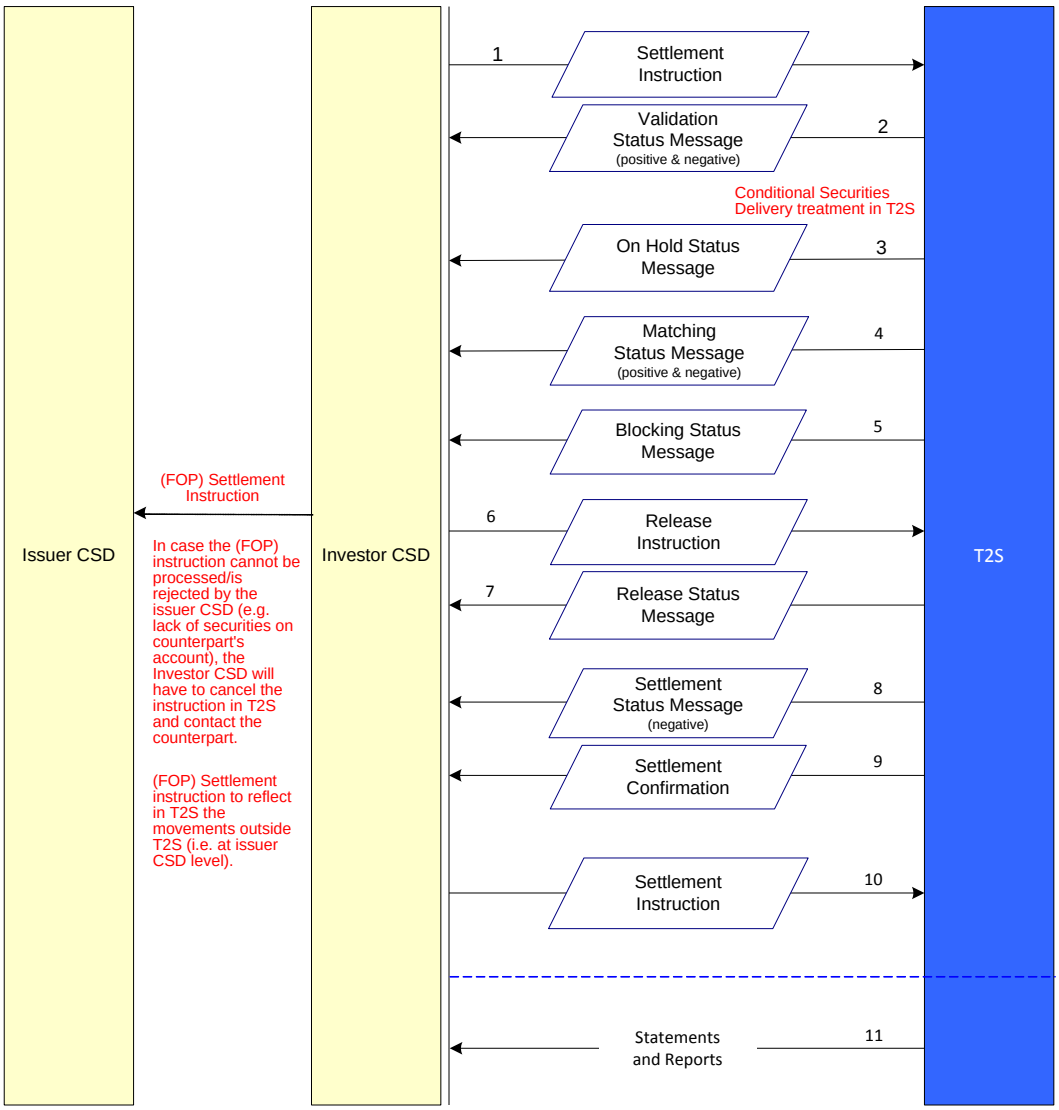
If the issuer CSD is inside T2S and the investor CSDs are outside T2S, the re-alignment will take place in T2S based on settlement instructions (usually free-of-payment) to be send by the issuer CSD.

If the issuer CSD is outside T2S and at least one investor CSD is inside T2S, the Conditional Securities Delivery mechanism can be used by the investor CSDs, to block the position in T2S and hold the instruction until the settlement is confirmed in the issuer CSD's books (illustration below).

External CSD Scenario (Issuer CSD & one Investor CSD outside T2S)

The below scenario illustrates the case in which **both investor CSDs participate** into T2S but **its counterpart and the issuer CSD do not** (i.e. external CSDs).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



Allegement User Requirements

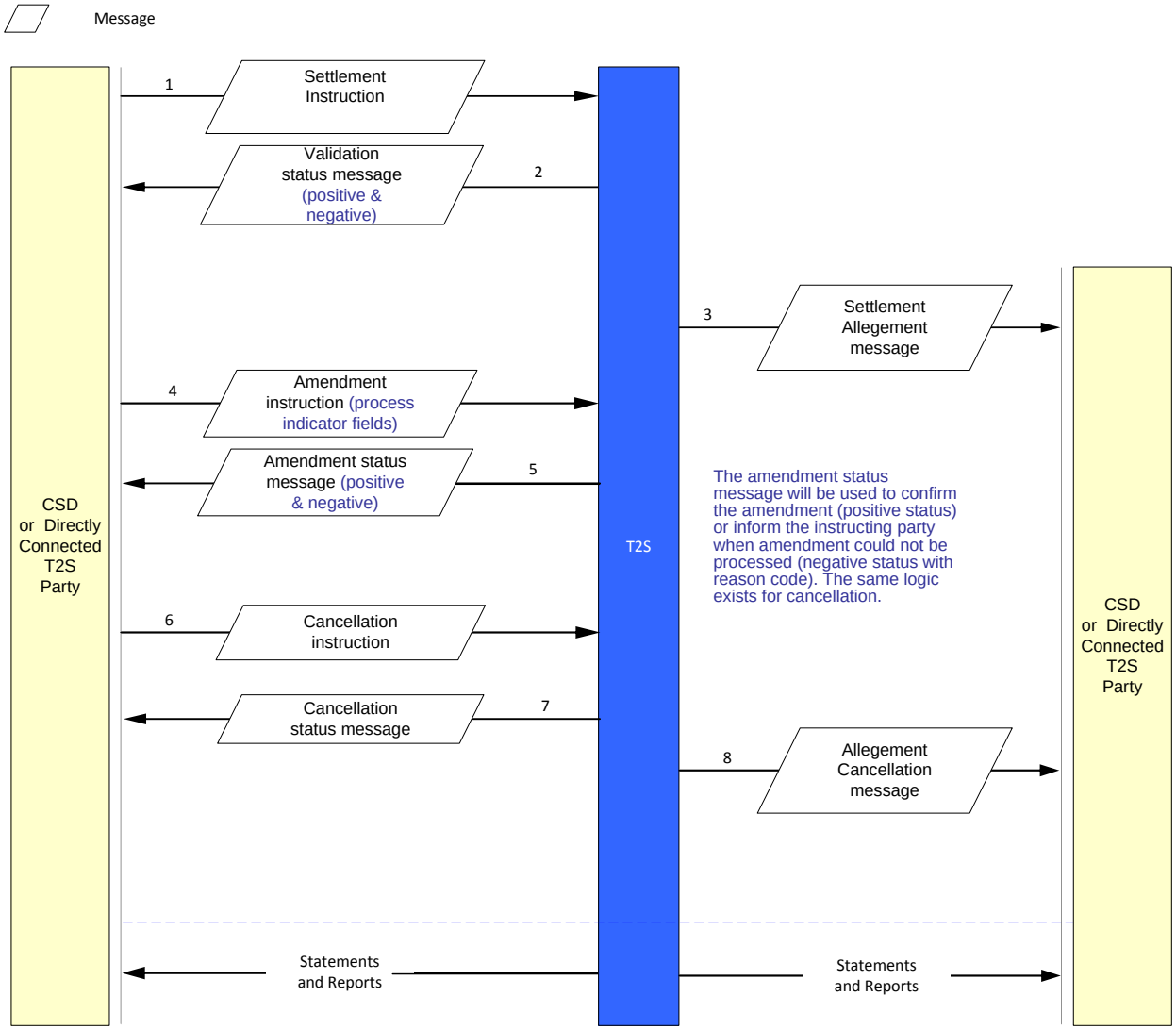
Important: Allegement can be used for any unmatched instruction that requires matching, like settlement instruction, cancellation instruction, etc.

Allegement Scenario (with cancellation)

Unmatched settlement instruction:
The counterpart subscribes to allegement messages.

If the instructing party modifies a process indicator, T2S does not send a new allegement. If the instructing party cancels the unmatched instruction, then T2S generates an allegement cancellation, referencing the original allegement.
At the end of the day, T2S sends an allegement report to T2S Actor, when subscribed to such report. T2S sends allegement messages in real-time on a push-mode basis.

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



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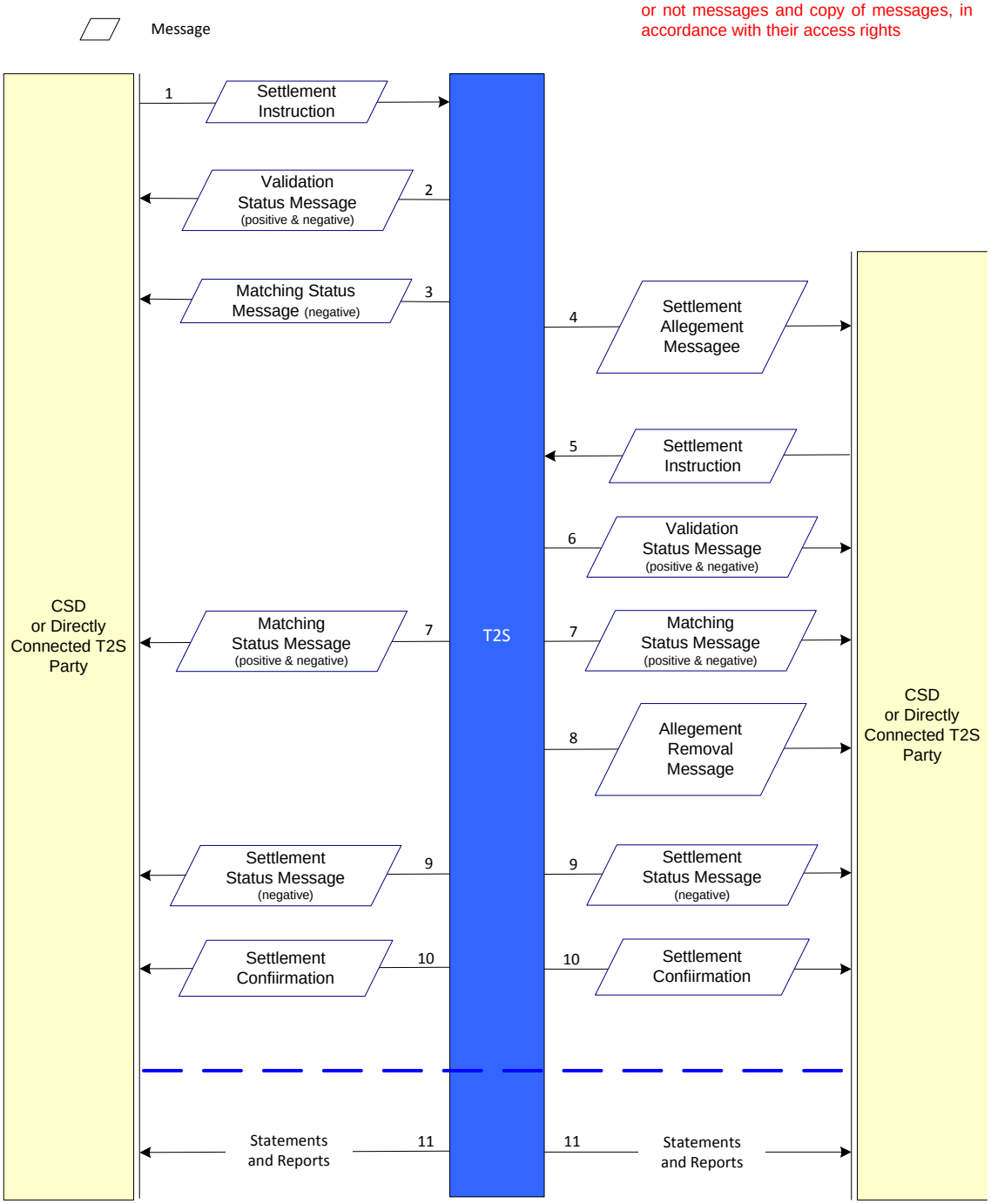
Allegement User Requirements

Important: Allegement can be used for any unmatched instruction that requires matching, like settlement instruction, cancellation instruction, on hold instruction, etc.

Allegement Scenario (with removal)

Unmatched settlement instruction. The counterpart **has subscribed to receive** allegement messages. After allegement is sent, the counterpart sends its instruction which can be matched in T2S.
Allegement is "removed" (since it is not outstanding anymore) using a removal allegement message.
At the end of the day, T2S is sending statements/reports - one of them will be related to allegements (see <<Reports>> chapter).
Messages are being sent on a push mode basis. Messages are sent in real time, expect for statements and reports sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



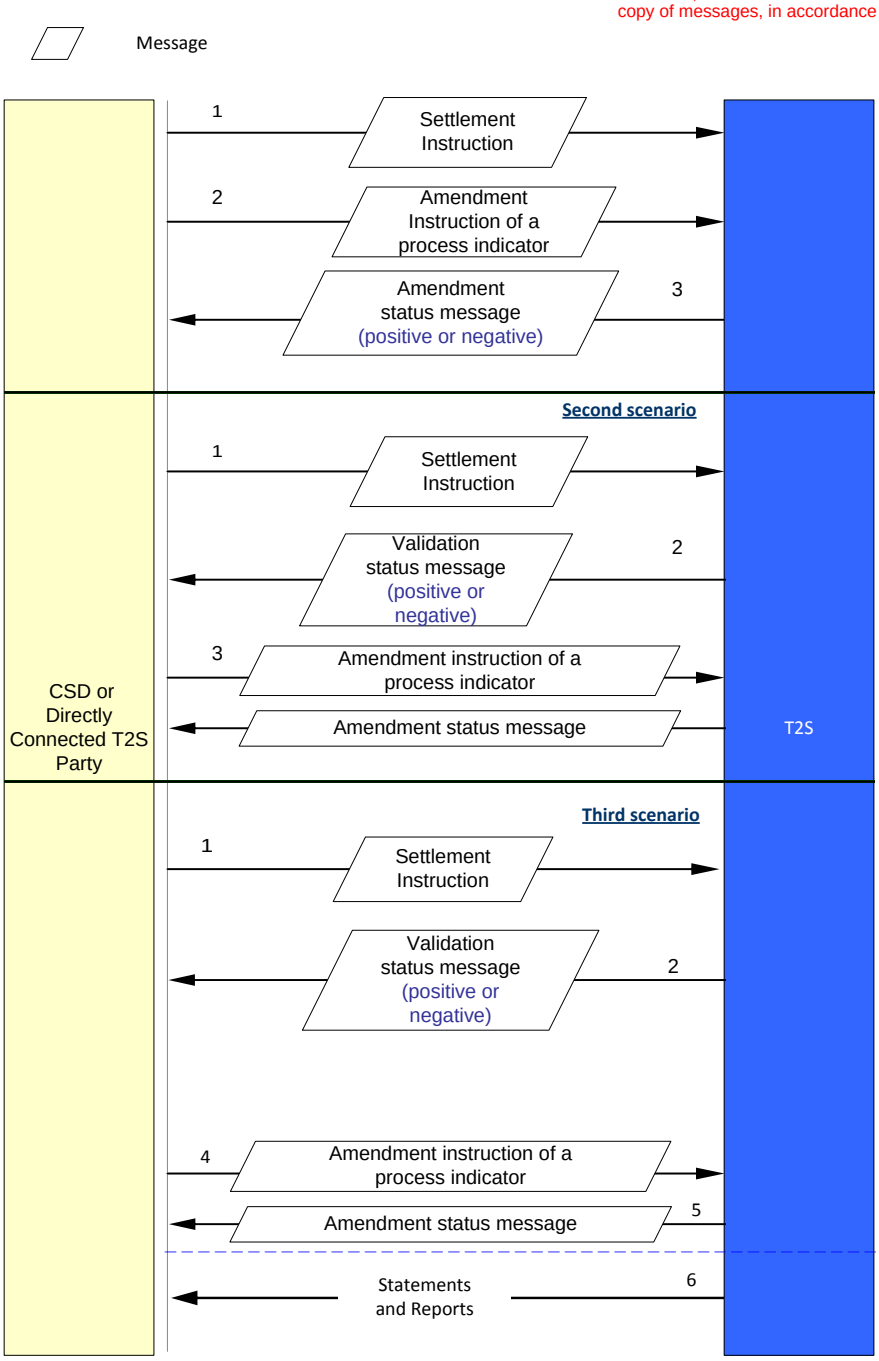
Amendment User Requirements

Important: T2S shall allow CSDs and directly connected T2S Actors to modify process indicators.
Life cycle management and matching requirements foresee the modification of process indicators until a settlement instruction partially or fully settles or cancellation of the instruction occurs. Nevertheless, T2S shall allow T2S Actors to amend the settlement priority of the pending part of the partially settled instruction.

Amendment scenarios (before matching)

Amendment before successful matching of several settlement instructions.
Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



The amendment status message will be used to confirm the amendment (positive status) or inform the instructing party when an amendment could not be processed (negative status with reason code).

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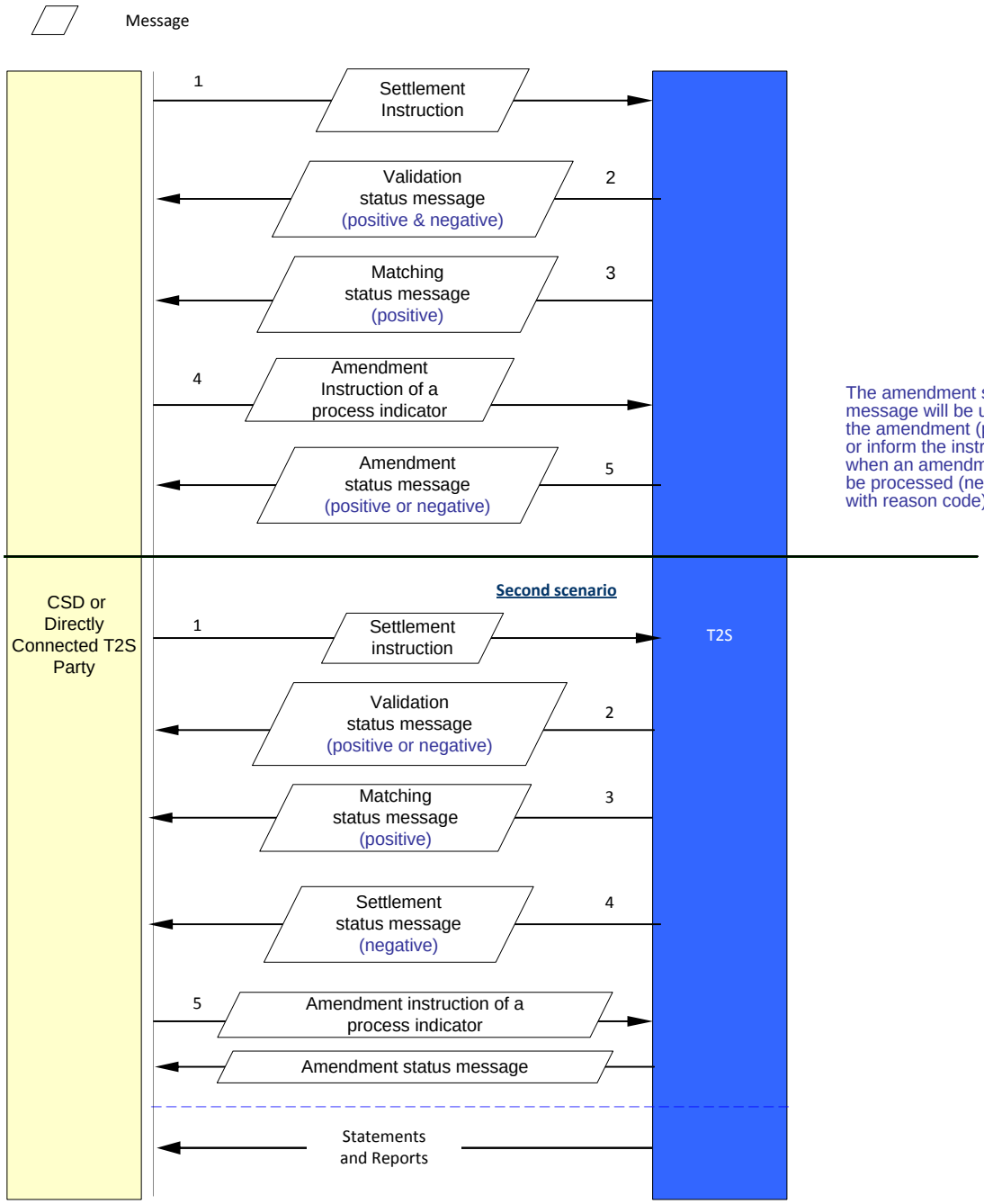
Amendment User Requirements

Important: T2S shall allow CSDs and directly connected T2S Actors to modify process indicators.
Life cycle management and matching foresees the modification of process indicators until a settlement instruction partially or fully settles or the cancellation of the instruction occurs. Nevertheless, T2S shall allow T2S Actors to amend the settlement priority of the pending part of the partially settled instruction.

Amendment scenarios (before settlement)

Amendment before successful matching of several settlement instructions.
Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



The amendment status message will be used to confirm the amendment (positive status) or inform the instructing party when an amendment could not be processed (negative status with reason code).

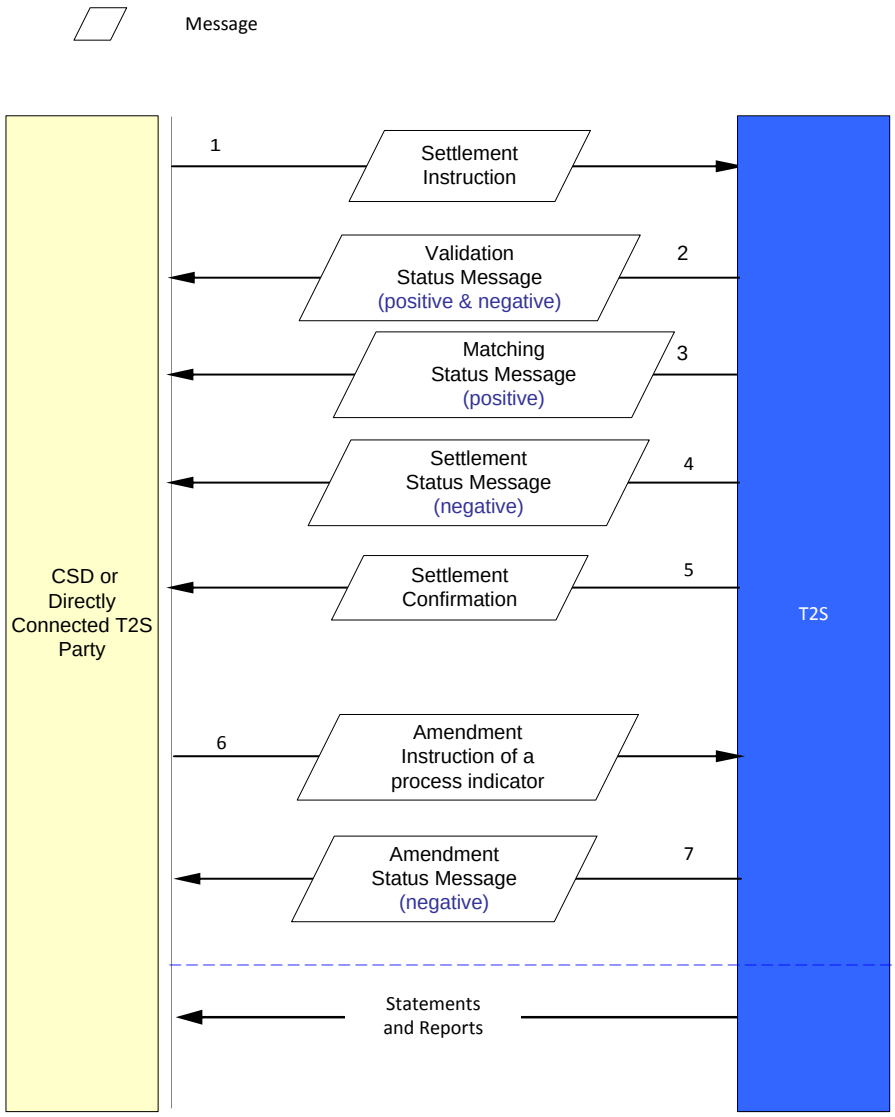
Amendment User Requirements

Important: If the amendment process fails in T2S, then the amendment instruction is cancelled because the original instruction has been settled or cancelled.

Amendment scenarios (after settlement)

Amendment after successful settlement of a standard instruction sent by a directly connected T2S Party or a CSD .
Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



The amendment status message will be used to confirm the amendment (positive status) or inform the instructing party when an amendment could not be processed (negative status with reason code).

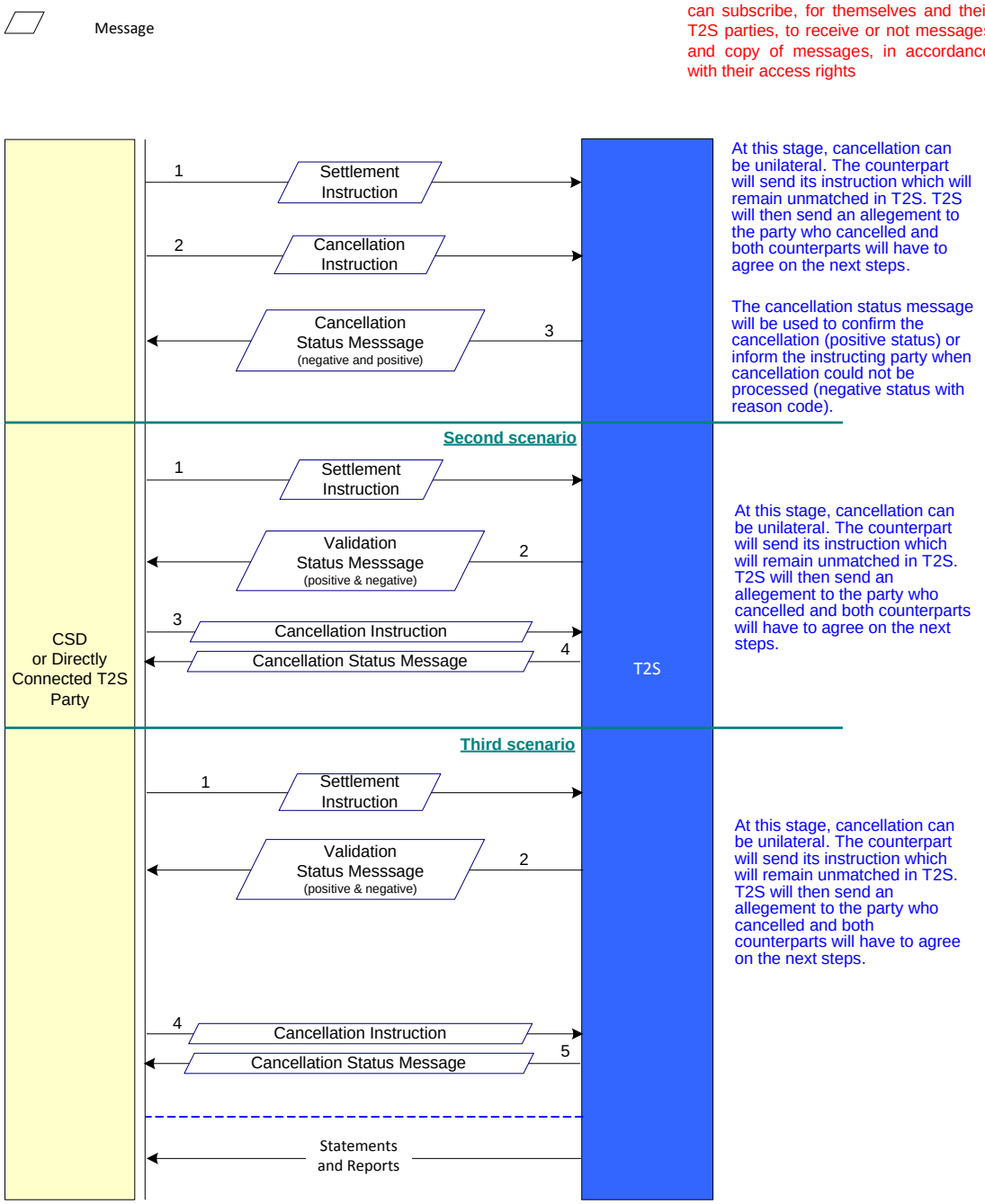
Cancellation User Requirements

Important: Cancellation can be unilateral before successful matching but shall be bilateral after successful matching and before the settlement process (expect in some specific cases, like for instance when instructions have been received Already 'matched', received from a T2S Actor allowed to cancel unilaterally anytime before instructions enter the settlement process, or when a CSD needs to process a corporate event affecting matched instructions still pending). Unilateral usage of the hold and release mechanism is allowed after successful matching and before the settlement process. If the cancellation process fails in T2S, then the cancellation instruction goes through recycling until it is processed or rejected if the original instruction has already settled.

Cancellation scenarios (before matching)

Cancellations before successful matching of several settlement instructions.
Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



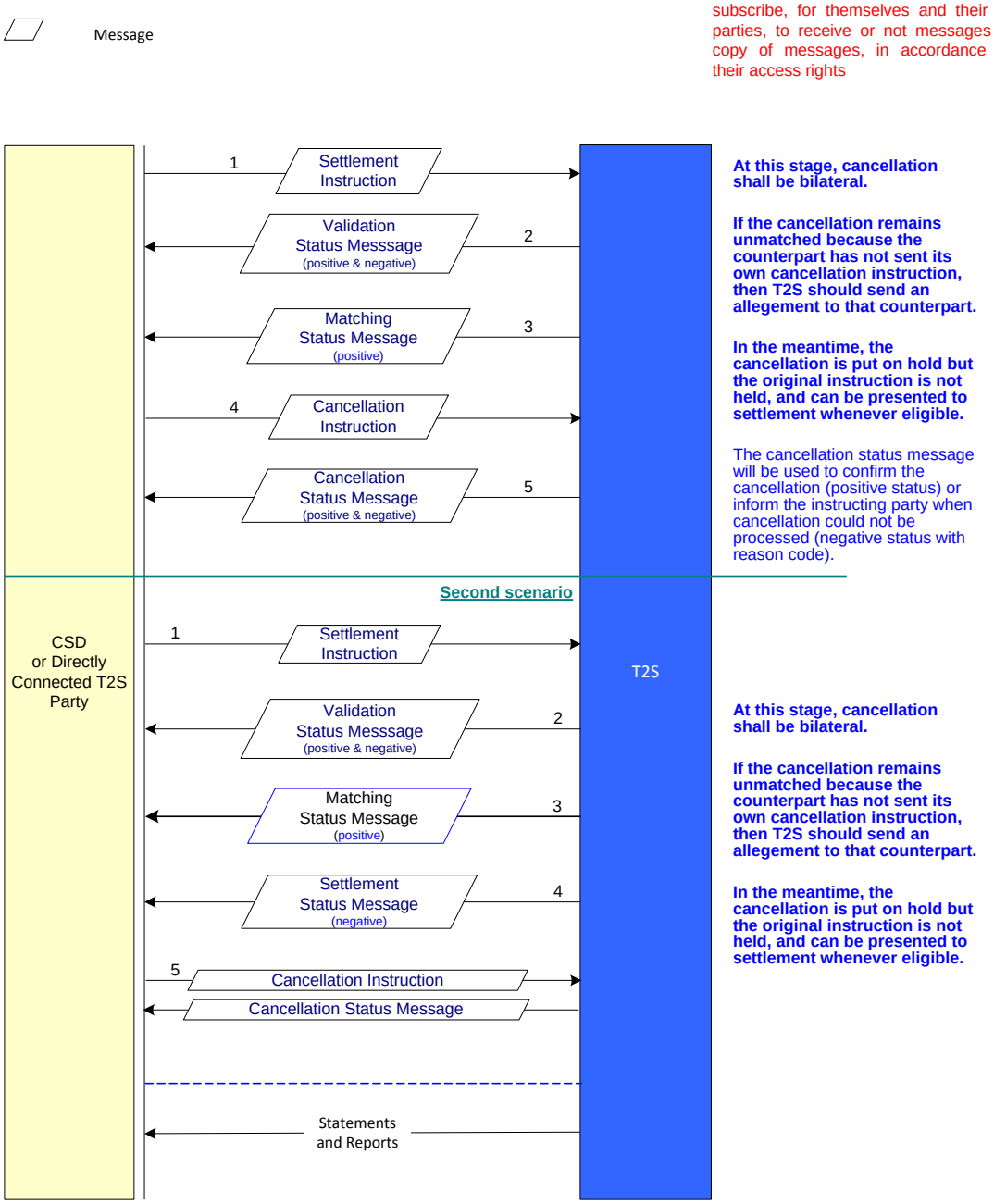
Cancellation User Requirements

Important: Cancellation can be unilateral before successful matching but shall be bilateral after successful matching and before the settlement process (expect in some specific cases, like for instance when instructions have been received already 'matched', received from a T2S Actor allowed to cancel unilaterally anytime before instructions enter the settlement process, or when a CSD needs to process a corporate event affecting matched instructions still pending). Unilateral usage of the hold and release mechanism is allowed after successful matching and before the settlement process. If the cancellation process fails in T2S, then the cancellation instruction goes through recycling until it is processed or rejected if the original instruction has settled.

Cancellation scenarios (before settlement)

Cancellations before successful settlement of several settlement instructions.
Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



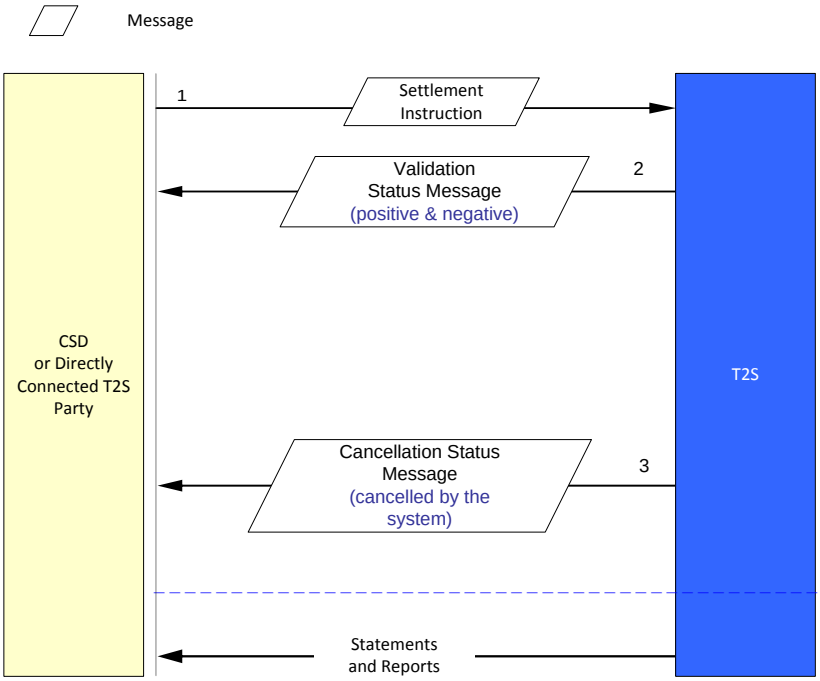
Cancellation User Requirements

Important: If the cancellation mechanism is automatically activated by T2S for a given instruction, T2S shall inform the CSD or the directly connected T2S Party that the instruction was cancelled by the system, using the cancellation set of messages. Automatic cancellation rules that apply to invalid or unmatched or failed/outdated instructions are part of Life Cycle Management and Matching requirements, and are compliant with ECSDA recommendations.

Cancellation scenario (automatic cancellation)

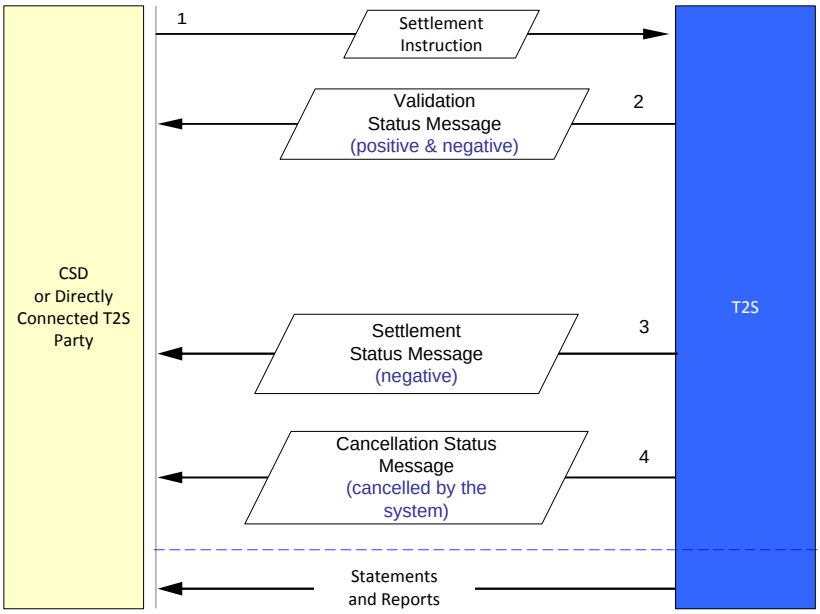
Automatic cancellation of a CSD or a directly connected T2S Party instruction:
- When unmatched after 20 days (1st flow)
- When failed to settle and there is an automatic cancellation setup in place (2nd flow)

Only one side is represented (assumption= same flows for the counterpart, connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real time, except for statements sent EOD.



As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.

The cancellation status message will be used to confirm the cancellation (positive status) or inform the instructing party when a cancellation could not be processed (negative status with reason code).



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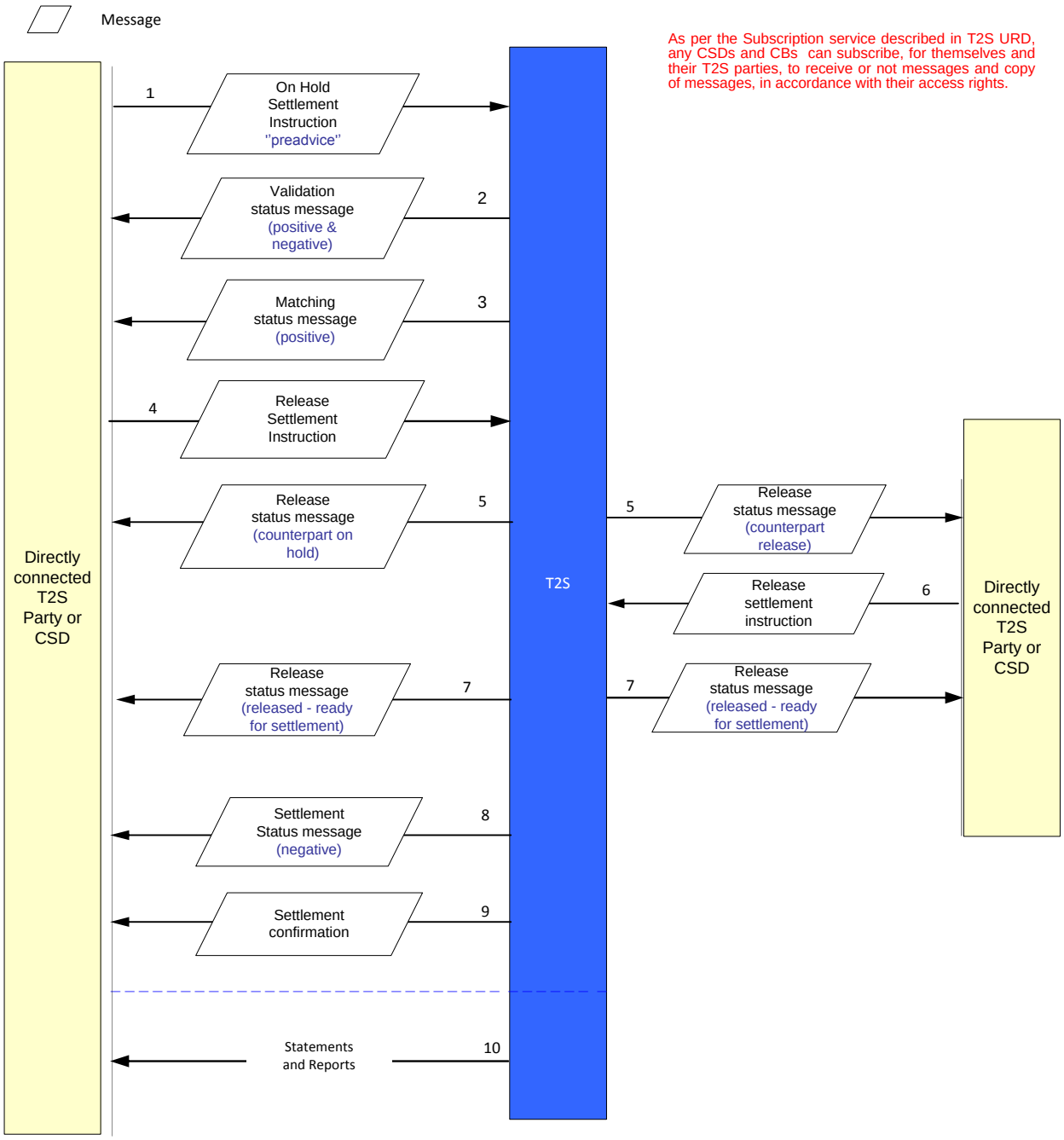
Hold and Release User Requirements

Important: CSDs and the directly connected CSD Participants shall be able to send to T2S "on hold" settlement instructions and "released" settlement instructions. In return, T2S shall send "on hold" and "released" status messages.

The hold and release mechanism can be used unilaterally or bilaterally (by the counterparts) anytime prior settlement.

Bilateral Hold before Release scenario

Bilateral "on hold" and "release" scenario - instructions are received "on hold" then "released" by both counterparts.
Only one side is represented (assumption= **same flows for the counterpart**, connected to T2S, **except for the Hold and Release flows**).
Messages are being sent on a push mode basis. Messages are sent in real-time, except for statements sent EoD.



Hold and Release User Requirements

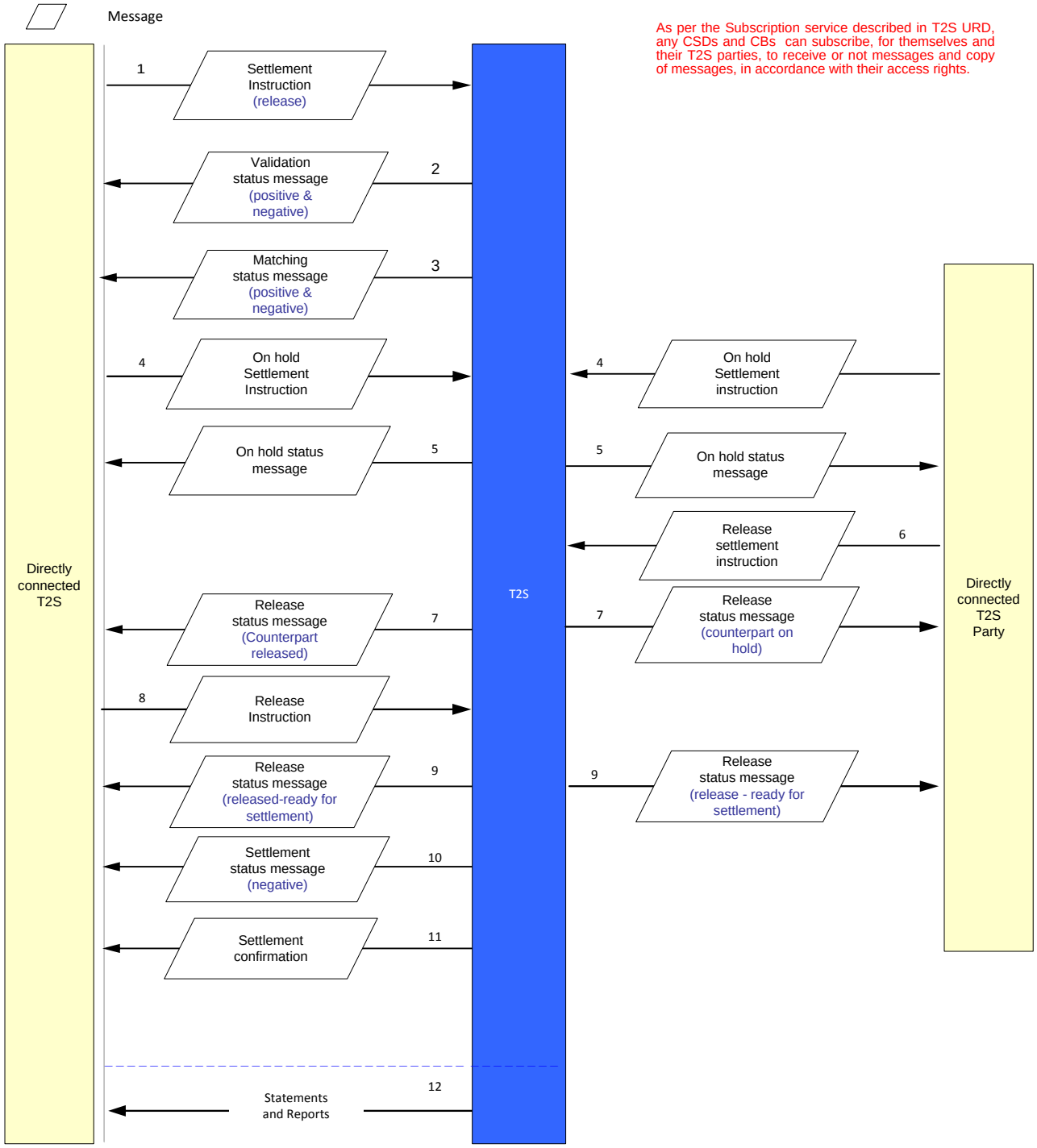
Important: CSDs and the directly connected CSD Participants shall be able to send to T2S "on hold" settlement instructions and "released" settlement instructions. In return, T2S shall send "on hold" and "released" status messages.

The hold and release mechanism can be used unilaterally or bilaterally (by the counterparts) anytime prior settlement.

Bilateral Hold after Release scenario

Bilateral hold and release scenario - instructions are received "released" then put "on hold" by both counterparts.
Only one side is represented (assumption= same flows for the counterparty, connected to T2S, **except for the Hold and Release flows**).

Messages are being sent on a push mode basis. Messages are sent in real-time, except for statements sent EoD.



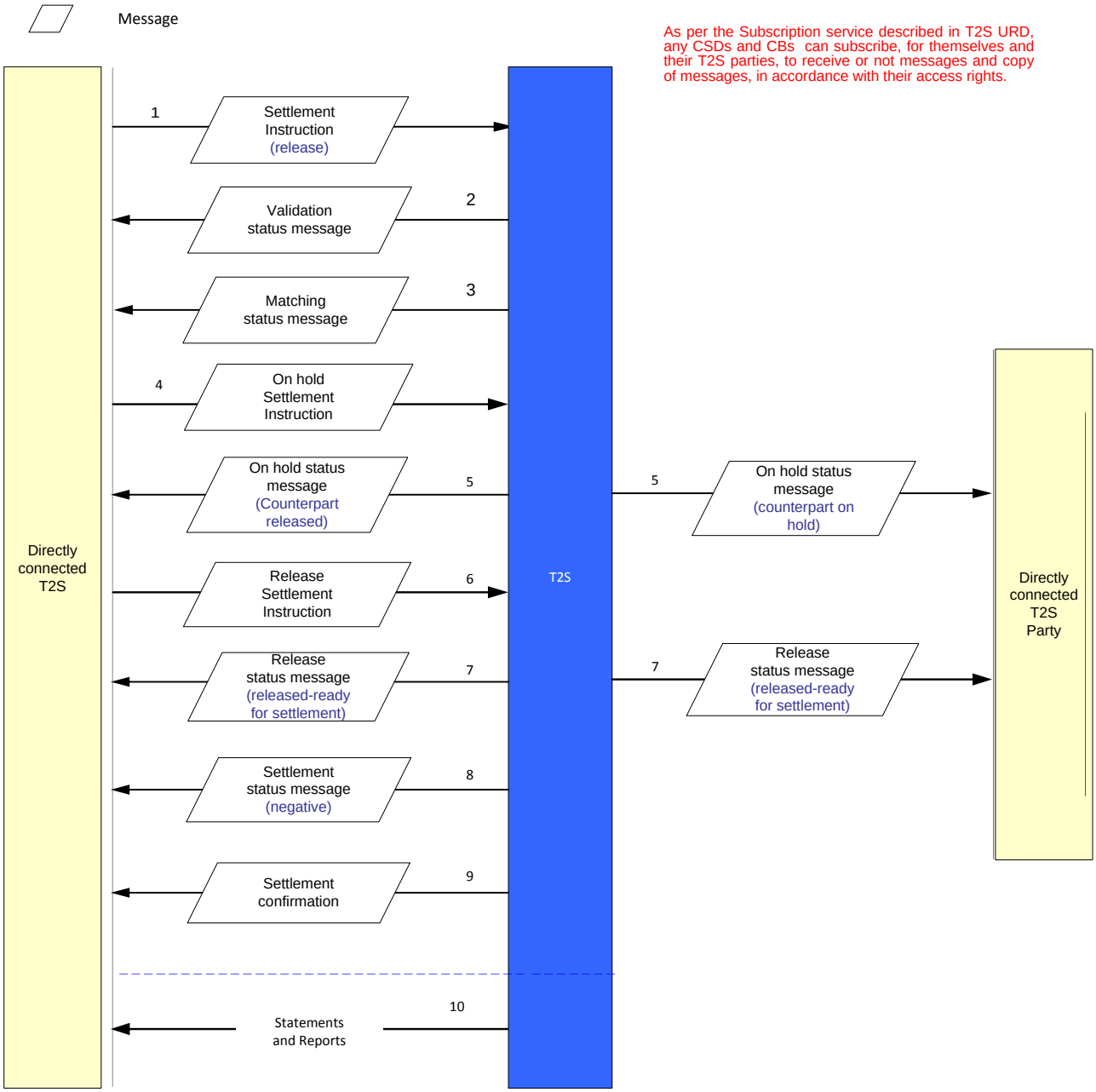
Hold and Release User Requirements

Important: CSDs and the directly connected CSD Participants shall be able to send to T2S "on hold" settlement instructions and "released" settlement instructions. In return, T2S shall send "on hold" and "released" status messages.

The hold and release mechanism can be used unilaterally or bilaterally (by the counterparts) anytime prior settlement.

Unilateral Hold Release scenario

Unilateral hold and release scenario - instructions are received "released" then, one of them is put "on hold" by one of the counterparts.
Only one side is represented (assumption= same flows for the counterparty, connected to T2S, **except for the Hold and Release flows**).
Messages are being sent on a push mode basis. Messages are sent in real-time, except for statements sent EoD.



Conditional Securities DeliveryUser Requirements

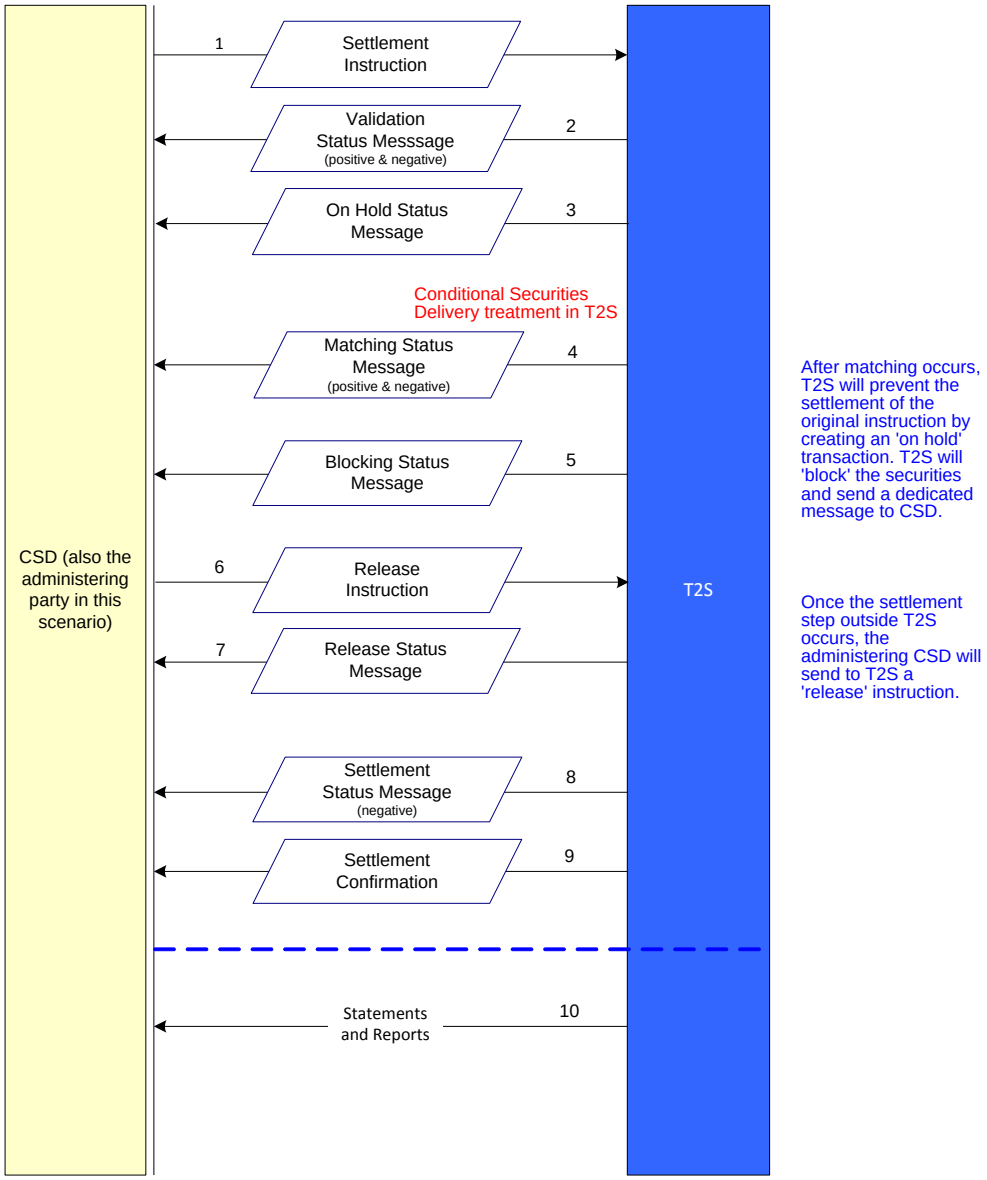
Important: In the case of conditional securities delivery (CoSD) instructions, T2S shall send a blocking status message and an 'on-hold' status message to the other systems of the CSD and/or the directly connected T2S Party, according to subscription service.
If CoSD instruction is cancelled (by counterparties) after blocking or if the condition outside T2S cannot be fulfilled (e.g. registration rejected). The administering CSD will be allowed to send a unilateral cancellation to T2S and unblock the positions.

CoSD Scenario

Standard instruction with **settlement conditioned by a step/process to be performed outside T2S** (e.g., cash settlement outside T2S because T2S has no link with the National Central Bank or cash settlement is in commercial bank money or registration obligations).
In this scenario, instructions are received from a CSD on behalf of its participants. In addition, the CSD is defined as the administering party in Static Data for this scenario.
Only one counterparty and only the 'securities side' are represented.
Messages are being sent on a push mode basis. Messages are sent in real-time, except for statements sent EoD.

Message

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



1

Conditional Securities Delivery User Requirements

Important: In the case of conditional securities delivery (CoSD) instructions, T2S shall send a blocking status message and an 'on hold' status message to the other systems of the CSD and to the directly connected CSD Participants, according to subscription service.

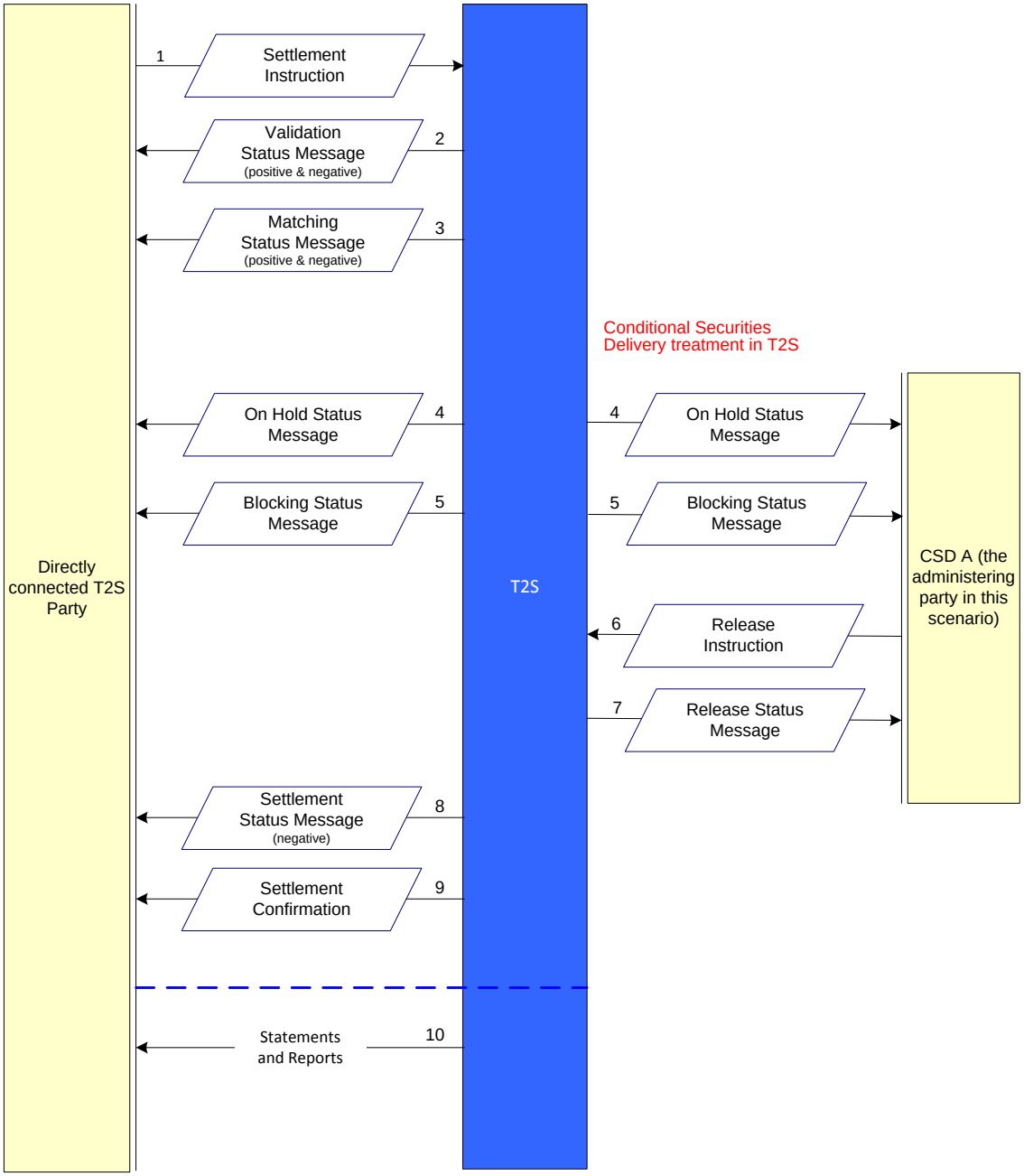
If a CoSD instruction is cancelled (by counterparties) after blocking or if the condition outside T2S cannot be fulfilled (e.g. registration rejected), the administering CSD will be allowed to send a unilateral cancellation to T2S and unblock the positions. See cancellation scenarios.

CoSD Scenario

Standard instruction with **settlement conditioned by a step/process to be performed outside T2S**(e.g., cash settlement outside T2S because T2S has no link with the National Central Bank or cash settlement is in commercial bank money or registration obligations).
In this scenario, instructions are received from two directly connected CSD participants. In addition, CSD A is defined as the administering party in Static Data for this scenario.
Only one counterpart and only the <<securities side>> are represented.
Messages are being sent on a push mode basis. Messages are sent in real-time, expect for statements and reports sent EoD.

Message

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



1

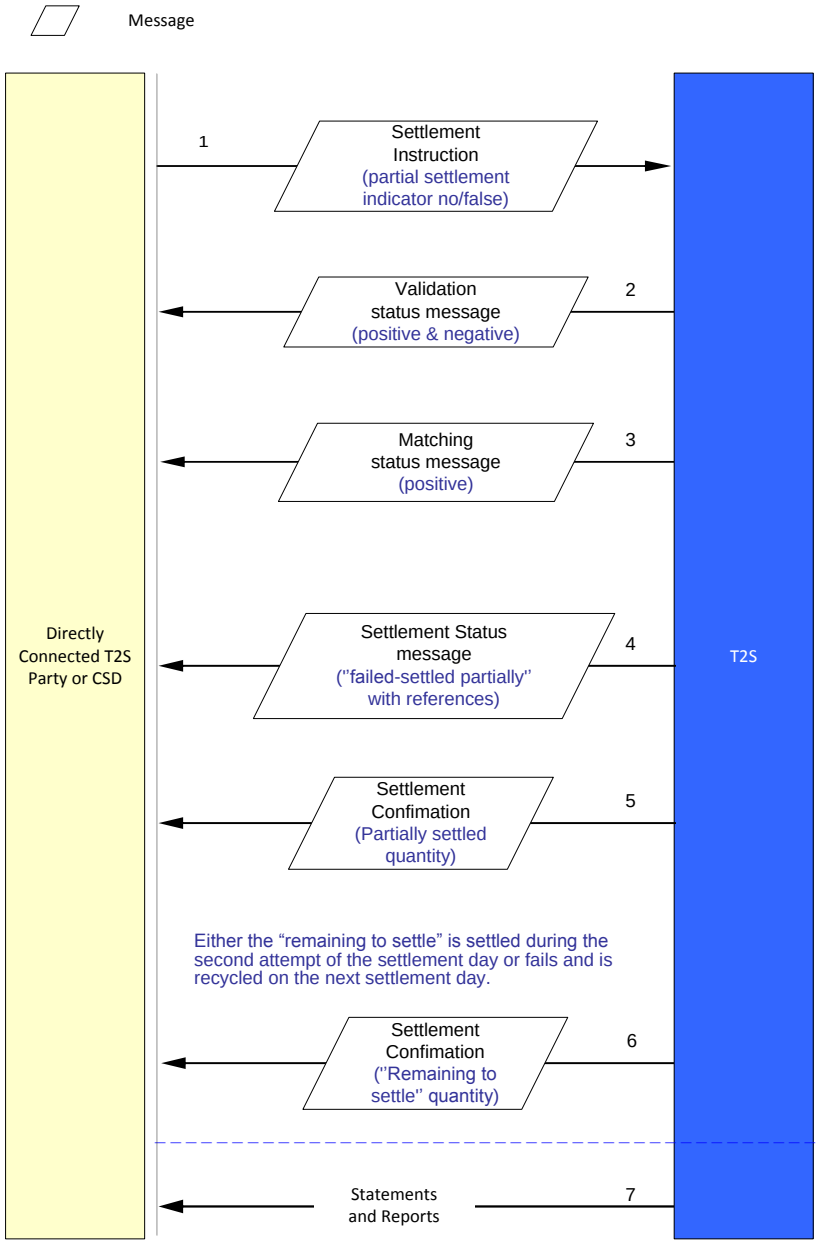
Partial Settlement User Requirements

Important: T2S shall inform the other systems of the CSD or the directly connected CSD participant when partial settlement occurs. Partial settlement procedure is applied to all T2S instructions, unless one of the counterparts indicates at instruction level that partial settlement is not allowed (partial indicator set to no/false). When an instruction is partially settled, T2S shall not automatically cancel the original instruction and create two new ones. It is foreseen that T2S will report to the relevant parties the ''settled leg'', when referring to the settled quantity of the original instruction, and the ''pending leg'' when referring to the remaining quantity of the original instruction.

Partial Settlement scenario

Standard instructions, with **partial settlement indicator** set to **yes/true and partially settled in T2S**.
Only one side is represented (assumption= same flows for the counterpart, also connected to T2S).
Messages are being sent on a push mode basis. Messages are sent in real-time, except for statements sent EoD.

As per the Subscription service described in T2S URD, any CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights.



Flow of messages:

4= The settlement status message will inform the instructing party that full settlement failed and that partial settlement took place, and also report the references.

5= A first settlement confirmation is sent for the part that could be settled and the "remaining to settle" is recycled (presented for settlement the same day for a second attempt).

If during the second attempt, the "remaining to settle" is partially settled, then a settlement status message and a settlement confirmation are again sent.

The "remaining to settle" after the second attempt is recycled to the next settlement day.

6= When the "remaining to settle" is settled, an additional settlement confirmation message is sent.

13.3.2 Flow of non-settlement related activities

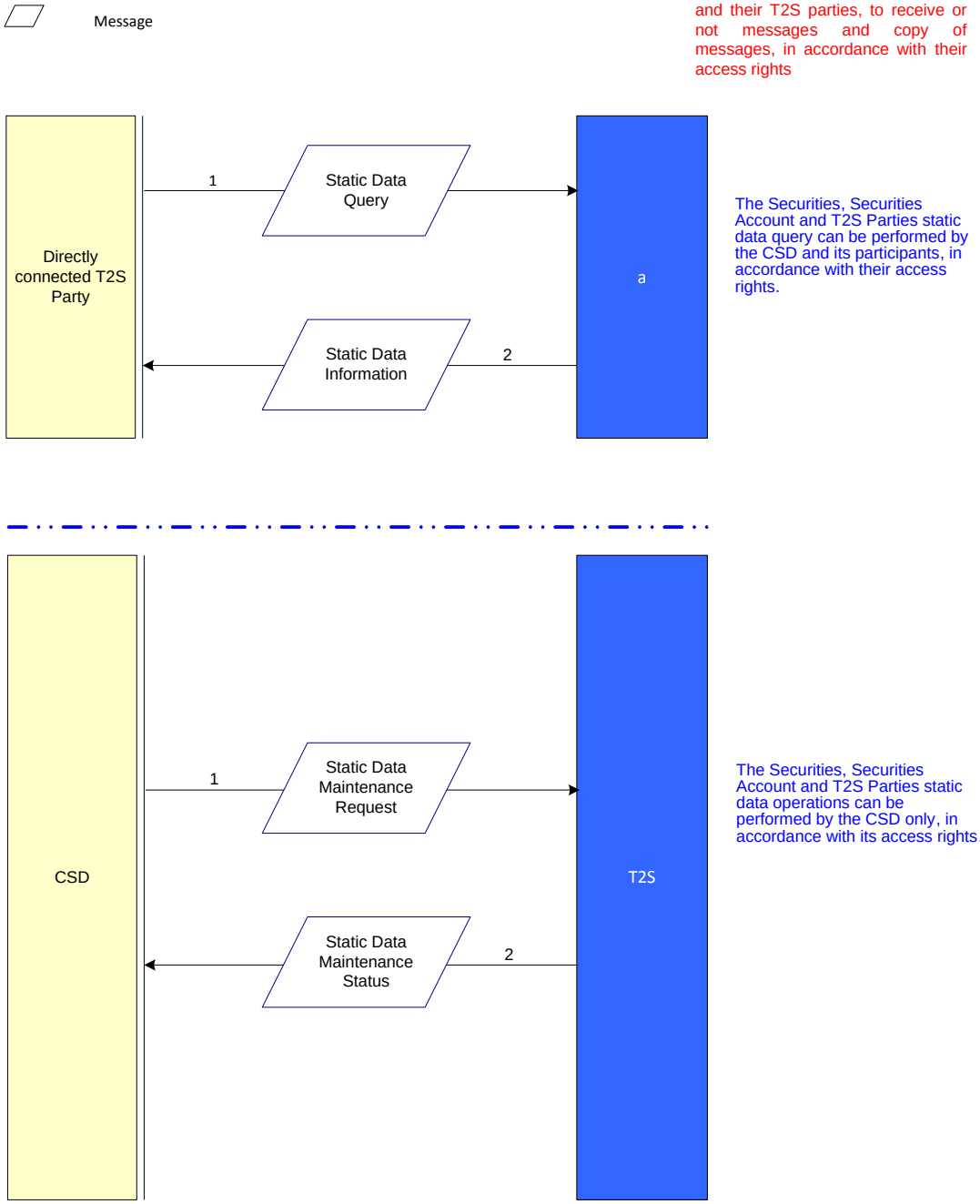
Static Data MaintenaceUser Requirements

Important: CSDs and CSDs' participants can query static data in accordance with their access rights, but only CSDs can maintain static data for securities, securities accounts and T2S Parties C
Securities static data operations can be either 'Setup ISIN' (issuance activity), 'Change ISIN data', 'Inactivate/ Activate ISIN', 'Block/Unblock ISIN' or other type of operations, as described in T2S user requirement
Securities account static data operations can be either 'Open account', 'Modify account', 'Suspend/Activate account', 'Close account' or other type of operations, as described in T2S user requirements.
T2S Party static data operations can be either 'Identify T2S Party', 'Authorize T2S Party (give access rights)', 'Update T2S Party', 'Remove T2S Party', 'Block/Unblock T2S Party' or other type of operations, as described in T2S user requirements.

Securities static data operations

Static data query (1st flow) and maintenance (2nd flow).
As a general requirement, messages are being sent on a push mode basis and in real time.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



1

Cash Account User Requirements

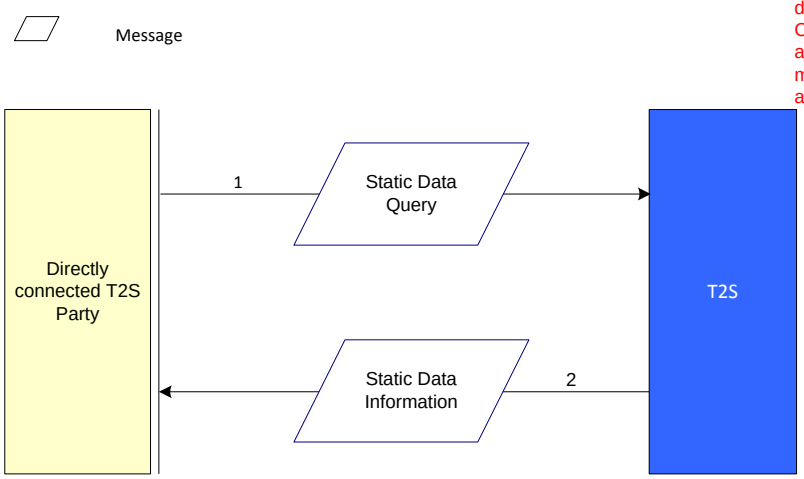
Important: CSDs and CSDs' participants can query static data in accordance with their access rights, but only NCBs and payment banks can maintain static data cash accounts.

Cash account static data operations can be either 'Open account', 'Modify account', 'Suspend/Activate account', 'Close account' or other type of operations related to limits and standing/pre-defined orders, as described in T2S User requirements.

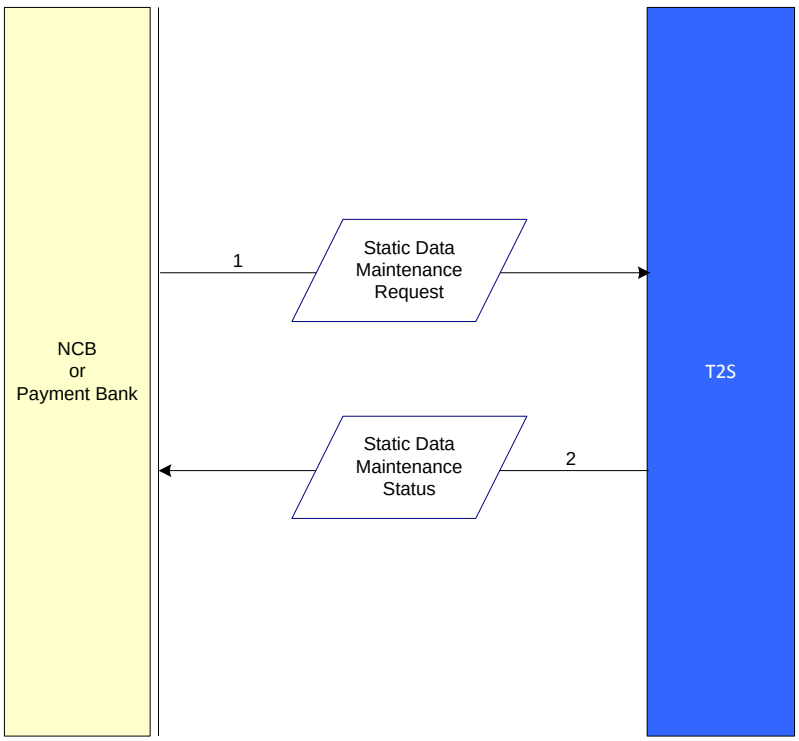
Cash Account static data operations

Cash Account static data query (1st flow) and maintenance (2nd flow).
As a general requirement, messages are being sent on a push mode basis and in real-time.

As per the Subscription service described in T2S URD, CSDs and CBs can subscribe, for themselves and their T2S parties, to receive or not messages and copy of messages, in accordance with their access rights



The Account static data query can be performed by the CSD and its participants, in accordance with their access rights.



The Cash Account static data maintenance operations can be performed only by the NCB and the Payment Bank, in accordance with their access rights.

2

13.4 Messages glossary

Messages being used in the Detailed Message Flows and/or needed for processing in T2S are the following.

In the table which constitutes the glossary, the third column contains requirements in relation to message-specific fields; it is NOT an exhaustive list of fields per message, but only a preliminary analysis based on some T2S needs already identified during the user requirement drafting phase.

The content of messages to be used for T2S will be further detailed during the next phase and also during business validation group meetings organised by SWIFT (the standard body taking the lead in developing ISO 20022 settlement and reconciliation messages).

This glossary aims at summarising the business needs for messaging of T2S and the T2S actors and making sure these are communicated to SWIFT and reflected in the version of the ISO 20022 messages that will be used as from the T2S go-live date. Please note that the names and functions of the messages that will be developed in ISO 20022 might differ slightly (e.g. “status message” versus “status advice”; “amendment message” versus “Securities Settlement Conditions Modification Request”), but the business need for T2S should be covered.

T2S shall provide multiple-statuses reporting that gives more flexibility and brings more efficiency than single-status reporting. In this context, T2S shall provide the values of the different statuses for each instruction in a status message.

Table 13-3: Message glossary

Message Name	Message function	Message specific fields/requirements
Settlement instruction	To instruct a settlement.	- If settlement is related to a specific activity, the instructing party should be able to communicate this to T2S using an ISO transaction code (e.g. corporate actions, lending & borrowing) and a corporate action reference for corporate actions. - Should provide enough flexibility for corporate actions (CA) settlement (i.e. not all fields are necessary when instruction is used to settle a CA). - When used in relation to a CA: should allow mentioning the CA reference that will be used in all messages sent for the settlement processing of the CA (to and from T2S). - Should contain a processing indicator to specify whether instruction is “already matched” before entering T2S.

Message Name	Message function	Message specific fields/requirements
		- Should allow instructing the settlement of operations related to increase and decrease of issuance account (sometimes referred to as “mark-up/mark-down”). - Should cover all type of instructions being part of T2S scope, including Delivery with Payment, single instruction with both buying and selling legs, bulk orders/block-trade instructions, DVP and RVP with securities quantity equal to zero, and others as defined in chapter 5. - If settlement has to go through a specific process, instructing party should be able to communicate which process to T2S using a flag (e.g. partial settlement flag, position reservation flag, possibility of auto-collateralisation on flow, etc). - Should allow linking instructions, with different types of link: "for information" versus "for processing" and make use of a “counter” to specify the number of linked/to be linked instructions. - Should allow enough fields for references for markets’ or parties’ specific use (e.g. at least five references identified in the case of CCP instructions). - Should allow communicating (to the CSD) the end-investor cash account (i.e. held by the final client with its commercial bank) although this account will not be used during the settlement process.
Validation Status	To report the status of a settlement instruction after it has gone through T2S validation process.	- Should refer to the original settlement instruction. - Should allow positive and negative statuses. If negative, it should allow as many statuses as failures to validate. - When negative status: should specify why the instruction failed validation.
Matching Status	To report the status of a settlement instruction after it has gone through	- Should refer to the original settlement instruction. - Should allow positive and negative statuses.

Message Name	Message function	Message specific fields/requirements
	T2S matching process.	
Settlement Status	To report the status of a settlement instruction after it has gone through T2S settlement process.	- Should refer to the original settlement instruction. - Should allow negative statuses. - When negative status: should specify why the instruction failed settlement. - Where there is partial settlement, specific fields are needed to specify that partial settlement took place (flag) and give the quantities of the settled and unsettled parts of the original instructions.
Settlement confirmation	To confirm a settlement.	- Should refer to the original settlement instruction. - Where there is partial settlement, specific fields are needed to specify the partially settled quantity and the remaining to settle quantity.
Security blocking instruction	To block a security.	- Should contain all necessary details to identify the element to be blocked. - Should allow specification of the reason for blocking.
Party blocking instruction	To block a T2S party.	- Should contain all necessary details to identify the element to be blocked. - Should allow specification of the reason for blocking.
Account blocking instruction	To block an account.	- Should contain all necessary details to identify the element to be blocked. - Should allow specification of the reason for blocking.
Position blocking instruction	To block a position.	- Should contain all necessary details to identify the element to be blocked. - Should allow specifying the reason for blocking and the restriction type used for the blocking, in line with restriction types configured in Static Data. - When used to block a position because of a CA, then should allow specifying that it is “blocked for CA / option xyz”

Message Name	Message function	Message specific fields/requirements
		(option xyz being the CA option chosen by the client).
Blocking status	To report the status of (any) blocking instruction.	- Should refer to the original blocking instruction. - Should allow negative statuses. - When negative status: should allow specification of the reason why the blocking failed.
Blocking confirmation	To confirm (any) blocking.	- Should refer to the original blocking instruction and provide a blocking reference that can be re-used in the unblocking instruction.
Security Unblocking instruction	To unblock a security.	- Should contain all necessary details to identify the element to be unblocked. - Should allow specification of the reason for unblocking.
Party Unblocking instruction	To unblock a T2S party.	- Should contain all necessary details to identify the element to be unblocked. - Should allow specification of the reason for unblocking.
Account Unblocking instruction	To unblock an account.	- Should contain all necessary details to identify the element to be unblocked. - Should allow specification of the reason for unblocking.
Position Unblocking instruction	To unblock a position.	- Should contain all necessary details to identify the element to be unblocked. - Should allow specification of the reason for unblocking.
Unblocking status	To report the status of (any) unblocking instruction.	- Should refer to the original unblocking instruction.- Should allow positive and negative statuses. - When negative status: should allow specification of the reason why the unblocking failed.
Unblocking confirmation	To confirm (any) unblocking.	- Should refer to the original unblocking instruction.
Amendment instruction	To amend a settlement instruction already in T2S.	- Should refer to the original settlement instruction.- Should allow amendment of process indicators as per chapter 5 (lifecycle management and matching requirements).

Message Name	Message function	Message specific fields/requirements
Amendment status	To report the status of an amendment instruction.	- Should refer to the original settlement instruction and to the amendment instruction. - Should allow both positive status (i.e. when amendment is successfully processed) and negative statuses. - When negative status: should allow specification of the reason why the amendment instruction could not be processed. - Should include the amended fields.
Cancellation instruction	To cancel an instruction.	- Should refer to the original settlement instruction and should allow inclusion of the reason for cancellation (e.g. corporate action).
Cancellation status	To report the status of a cancellation instruction.	- Should refer to the original settlement instruction and also refer to the cancellation instruction. - Should allow both positive status (i.e. when cancellation is successfully processed) and negative statuses. - When negative status: should allow specification of the reason why the cancellation instruction could not be processed.
Settlement Allegement	To inform that a counterparty has alleged an instruction against the account owner.	- Should follow lifecycle management and matching requirements as described in chapter 5.
Allegement Removal	To remove a settlement allegement (when it is no longer outstanding).	- Should follow lifecycle management and matching requirements as described in chapter 5.
Allegement Cancellation	To cancel a settlement allegement (e.g. when related settlement instruction is cancelled)	- Should follow lifecycle management and matching requirements as described in chapter 5.
On hold	To hold a settlement	- Should refer to the original settlement instruction.

Message Name	Message function	Message specific fields/requirements
instruction	instruction.	- Should allow specification of the reason.
On hold status	To report the status of an on hold instruction.	- Should refer to the original settlement instruction and to the on hold instruction previously sent. - Should allow positive and negative statuses. - In case of negative status: should allow specification of the reason why the on hold instruction could not be processed.
Release instruction	To release a settlement instruction.	- Should refer to the original settlement instruction and to the on hold instruction.
Release status	To report the status of a release instruction.	- Should refer to the original settlement instruction and to the release instruction previously sent. - Should allow positive and negative statuses. - When negative status: should allow specification of the reason why the release instruction could not be processed.
Reservation instruction[1]	To reserve a position for a specific process.	- Should allow reserving a position and linking it with an existing settlement instruction (using reservation reference), if need be.
Reservation status	To report the status of a reservation instruction.	- Should refer to the original reservation instruction - Should allow positive (i.e. when reservation is successfully processed) and negative statuses. - When negative status: should allow specification of the reason why the reservation instruction could not be processed.
Securities Balance query	To query balances (holdings).	- Should allow querying intra-day and end-of-day balances as per the Queries user requirements.
Statement of Holdings	To report the balances, answers the Securities balance query.	- Should be compliant with the Reports (section 13.5) and Queries user requirements (chapter 14).
Instructions	To query instructions.	- Should allow querying of any type of instruction (e.g.

[1] The need for a message to "un-reserve" will have to be defined in the next phase in collaboration with the ISO 20022 standards development body; some market participants have proposed reusing the unblocking message or the cancellation message.

Message Name	Message function	Message specific fields/requirements
query		settlement instructions, blocking instructions) in any status (e.g. matched, unsettled) as per the Queries user requirements (chapter 14).
Statement of Instructions	To report instructions, answers the Instructions query.	- Should be compliant with the Reports (section 13.5) and Queries user requirements (chapter 14).
Static Data query	To query T2S static data.	- Should allow querying static data as per the Queries user requirements (chapter 14).
Static Data information	To report static data answers the Static Data query.	- Should be compliant with the Reports (section 13.5) and Queries user requirements (chapter 14).
Static Data maintenance instruction	To instruct a static data maintenance.	- Should allow instructing any type of maintenance (e.g. addition, deletion, amendment) of any data held in the T2S Static Data component.
Static Data maintenance status	To report the status of a Static Data maintenance instruction.	- Should refer to the Static Data maintenance instruction. - Should allow positive (i.e. when static data maintenance is successfully processed) and negative statuses. - When negative status: should allow specification of the reason why the Static Data maintenance instruction could not be processed. - Should describe the data maintained (at least maintenance performed and the new value of relevant static data).
Settlement day status	To report the statuses of the settlement	- Should allow reference of the event, status and time (planned/revised/effective), as per chapter 3.
Cash management messages	To instruct and report on liquidity transfers in the context of liquidity management.	- Should comply with the Liquidity management user requirements (chapter 6).

13.5 Requirements for Reports

This chapter describes the reports that T2S will send to T2S actors. These are not, and should not, be considered as Regulatory Reports.

13.5.1 General Report Requirement and Rules

13.5.1.1 General Report Requirement

All reports shall be set up as XML messages

Reference ID	T2S.13.160

This allows for synergies with existing messaging infrastructures in TARGET2. Preferably, the message types and XML structures should to the largest possible extent comply with the ISO 20022 standards on settlement messages that are to be developed in the next years. In fact, since these activities will go on in parallel with T2S, it would make sense to work closely with the ISO standards body on the development of the messages in T2S. On the other hand, where the standard is not able to meet the T2S demands, it may be necessary to define some harmonised proprietary messages for T2S.

Like for real-time messages, the details of T2S reports will be further described in the next phases and in collaboration with the standards body in charge of their development in ISO 20022.

The following requirements describe the rules that shall apply to all reports, unless a related exception is explicitly stated in one of the other requirements:

13.5.1.2 Rules

General Rule

Reference ID	T2S.13.170

All reports shall be available in user-to-application mode and in application-to-application mode.

Securities Instructions, Balance and Static Data Reports Rule

Reference ID	T2S.13.180

All securities instructions, balance and static data reports shall be available for all CSDs in T2S, T2S parties and NCBs.

This requirement results from the fact that T2S parties can connect to T2S directly or indirectly through the CSD in T2S. As the information demand from a direct or indirect connection view should be identical, so is the related set of reports to be provided to CSDs and directly connected T2S parties.

T2S reports can be either based on an event or sent at a fixed time

Reference ID	T2S.13.190

This rule results from the fact that certain reports can be triggered by an event that varies in time, or certain information is required by the market at a fixed time. Where a CSD or directly connected T2S party in T2S requires information at a time not so triggered, the information can also be retrieved via queries. Additionally, T2S should allow them to retrieve reports timed at the previous end of day, night cycle and end cycle that had already been sent by T2S; prior reports should have to be queried.

In addition, T2S shall send successive versions of defined reports with the information that changes from the previous version to the next version of that report (delta reporting). The additional information shall include the attributes of the reported items as provided in the previous version of the report including a cancellation, modification, and new instructions.

Timeliness of reports

Reference ID	T2S.13.200

T2S shall send reports based on the latest available data.

Report recipients

Reference ID	T2S.13.210

Reports containing information either on individual accounts or on a set of accounts can be sent to CSDs and directly connected T2S parties.

Reference ID	T2S.13.220

When processing reports, T2S shall comply with all defined access rights, permissions and restrictions, as described in chapter 11.

A **directly connected T2S party** can only receive reports on:

- its own securities and cash balances, those of its clients and those of any other T2S actor for which the appropriate authorisation was granted,
- instructions that were submitted by the party (or a third party with access rights – supported by power of attorney to do so on behalf of the party) and instructions that refer to the securities or cash account of the party (or any sub-account thereof),
- its own static data, as well as some generic static data on instruments and the daily schedule.

A **CSD in T2S** can receive reports only on:

- instructions that were submitted by the CSD in T2S itself, or by its participants,
- securities and cash balances of dedicated T2S cash account(s) of the CSD in T2S itself and of its participants and
- static data of the CSD in T2S itself, and of its participants, where privileges permit. Additionally, a CSD can query all static data that relate to its admission rule, for securities as well as for parties.

Where a CSD in T2S acts as an investor CSD into an issuer CSD in T2S, it is treated like a participant in that CSD in T2S.

An **NCB** (acting in its role as central bank) can only have access to cash balances and static data that refer to the RTGS cash accounts for which it is responsible. Additionally, an NCB can act as participant of a CSD in T2S. In this case the NCB has all access rights that any other CSD participant in T2S would have. And finally, some NCBs are also acting as CSDs in T2S. Of course, when acting in this role, they would have all access rights of a CSD in T2S for that part of their activities.

13.5.2 Report types

13.5.2.1 Statement of Holdings

Statement of Holdings

Reference ID	T2S.13.230

T2S shall transmit information on security positions in T2S upon a pre-defined event (e.g. end-of-day or end of night-time cycle).

13.5.2.2 Statement of Transactions

Statement of Transactions

Reference ID	T2S.13.240

T2S shall transmit information on the transactions settled in T2S for a particular settlement day. This report should be based on an event (e.g. end-of-day or end of night-time cycle).

Statement of Pending Instructions

Reference ID	T2S.13.250

T2S shall transmit the statuses of instructions which do not have a final status in T2S (e.g. matched and unmatched) on each settlement day. This report should be event driven (e.g. end-of-day or end of night-time cycle).

Statement of Settlement Allegements

Reference ID	T2S.13.260

T2S shall transmit information on the transactions that a counterpart has alleged against a CSD or directly connected T2S party on a particular settlement day, to allow the directly connected T2S party or CSD in T2S to identify missing and spurious instructions. This report should be based on an event for the end-of-day, and can be sent at certain fixed times of the day. However, as noted above, if an allegement is cancelled or removed (according to Securities Market Practice Group –SMPG– recommendations), the reporting will be made using a real-time message.

Statement of accounts at End-of-Day

Reference ID	T2S.13.270

T2S shall allow T2S Actors in their role as NCBs, payment banks and settlement banks to subscribe to end-of-day statement of account for their T2S dedicated cash accounts.

The report shall return the following information:

- T2S Actor (NCB, settlement bank or payment bank);
- currency;
- T2S dedicated cash account;
- opening balance at start-of-day;
- amount;
- debit / credit indicator;
- statement number / sequence number;
- unique identifier of the posting;
- instructing party reference;
- transaction reference of the underlying transaction which generated the posting which may be
    - a settlement instruction (including corporate actions, auto-collateralisation, reimbursement, realignment, etc.);
    - a liquidity transfer;
- and date and time of posting;
- end closing balance at end-of-day.

Statement of Static Data

Reference ID	T2S.13.280

T2S will confirm any changes to static data to the CSD and the directly connected T2S party in T2S. These reports should be based on an event (e.g. end-of-day).

Billing Data Report

Reference ID	T2S.13.290

T2S shall transmit to the CSD only the data providing details backing an invoice at the end of the billing period. This report should be based on an event (e.g. start of day-time phase on the first business day after the end of the billing period).

13.5.2.3 Cash Forecast Reports

Current Settlement Day Cash Information Report

Reference ID	T2S.13.300

T2S shall transmit to T2S actors a cash forecast reflecting valid and eligible instructions (i.e. matched and ready for settlement) that have entered T2S but have not settled (e.g. pending transactions that failed to settle in an earlier attempt and queued transactions that have not yet been submitted to settlement), as well as the liquidity that can be obtained through auto-collateralisation against eligible collateral. This report should be based on an event and fixed time (e.g. end of night-time cycle and at a specific moment[2] during the day-time continuous optimisation cycle on settlement day).

Cash forecasts shall be enriched continuously during the day with additional incoming information on new transactions for the following settlement day as well as on failing transactions that need to be recycled during the following settlement day.

This report should be based on events (e.g. after the end of the deadline for the intraday DVP and before the start of the night-time settlement cycle) or on demand, as described in chapter 14 (see cash forecasts query).

Following Settlement Day Cash Forecast Report

Reference ID	T2S.13.310

T2S shall transmit to T2S actors a cash forecast reflecting cash needs and proceeds expected from the settlement of corporate actions and trading related transactions for each future settlement day, as well as the liquidity that can be obtained through auto-collateralisation against eligible collateral.

Cash forecasts shall be enriched continuously during the day with additional incoming information on new transactions for the following settlement day as well as on failing transactions that need to be recycled during the following settlement day.

This report should be based on events (e.g. after the end of the deadline for the intraday DVP and before the start of the night-time settlement cycle) or on demand, as described in chapter 14 (see cash forecasts query).

[2] Additional information that would enrich the cash forecast will be known during the day, at different moments (e.g. morning feed from a Trading Platform, fails at DVP deadline, CCPs midday operations etc). The specific moment depends then on whenever additional information is received during the daytime period.

USER REQUIREMENTS

CHAPTER 14

QUERIES REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

14 Queries requirements

The aim of this chapter is to describe the requirements relating to the different real-time queries issued by T2S actors to monitor securities positions, cash balances, instructions status and static data. Queries are made available by T2S in addition to reports (see chapter 13).

This chapter also details the conditions for using T2S queries and the content of the related responses.

14.1 General query requirements and default rules

14.1.1 General query requirements

All queries and responses shall be set up as XML messages.

Reference ID	T2S.14.010

All queries and responses shall be set up as XML messages. This allows for synergies with existing messaging infrastructures in TARGET2. The message types and XML structures will to the largest possible extend comply with the ISO20022 standards on settlement messages that are to be developed in the next years. In fact, since these activities will go on in parallel with T2S, it makes sense to align the development of T2S messages with the ISO standardisation body. T2S shall avoid the use of proprietary messages in an attempt to harmonise standards.

14.1.2 Default rules

The following requirements describe the default rules that shall apply to all queries, unless an exception is stated in the detailed requirements of individual queries.

User-to-application mode and application-to-application mode

Reference ID	T2S.14.020

All queries shall be available in user-to-application mode. All queries shall be available in application-to-application mode, except for the preliminary list of queries only available in user-to-application mode:

- SWIFT BIC query (and response);
- System Entity query (and response);
- Role and Privileges query (and response);
- Market-Specific Restrictions (and response).

Balance and static data queries

Reference ID	T2S.14.030

All securities instructions, balances and static data queries shall be available for all CSDs in T2S, directly connected parties and NCBs, according to the access rights described in chapter 11.

This requirement results from the fact that T2S parties can connect to T2S directly or get data indirectly through their CSD. In the latter case, the CSD may choose to route the user's query through to T2S. Directly connected parties may only query T2S if granted authorisation to do so by the CSDs holding their accounts. However, the queries should be identical whether it comes from a direct or indirect connection provided by or through a CSD.

It is likely that the needs of the CSDs and their participants can be fulfilled through the same set of queries. While CSDs in T2S may have broader needs for information, resulting from their account and asset servicing functions, these needs could be met by granting CSDs broader access rights to query information.

It is possible that CSDs could require additional fields to be added into the search criteria of the queries.

In all queries defined in this chapter, it shall be possible to define ranges of values as query parameters for some of the query fields. The concerned fields shall be defined in the next project phase.

T2S availability for queries

Reference ID	T2S.14.040

T2S shall accept all queries at any point in time during T2S opening days. In a user-to-application mode, it will not be possible to send queries to T2S during the maintenance window. In that case, a message will be returned indicating that T2S is currently under maintenance.

T2S shall process all queries in real time, based on the latest available data

Reference ID	T2S.14.050

T2S shall process all queries in real time, based on the latest available data. An exception to this real-time rule is described in section 14.2.2.

Processing queries

Reference ID	T2S.14.060

When processing queries, T2S shall take into account all access rights as defined in chapter 11. T2S will only return results where the party that has submitted the query has the right to access the underlying data.

Thus, a T2S party can query the following – subject to access rights:

- its own securities positions and cash balances;
- instructions submitted by the T2S party itself (in case of direct connectivity), or by a third party that has the access rights in T2S supported by a power of attorney;
- its own static data, as well as some generic static data relating to e.g. instruments and the daily schedule.

A CSD in T2S can query the following – subject to access rights:

- instructions that were submitted by the CSD itself, or by its directly connected parties;

- securities and cash balances of dedicated T2S cash account(s) of the CSD itself and of its T2S parties in T2S;
- static data of the CSD itself, and of its T2S parties;
- static data of securities.

An NCB (acting in its role as central bank) can query:

- cash balances of the accounts kept at this NCB;
- and static data that refer to the cash accounts for which it is responsible.

Additionally, an NCB can act as a T2S party of a CSD. In this case, the NCB has access rights as any other T2S party. Finally, if an NCB plays the role of a CSD, that NCB, when acting as a CSD, would have all the access rights of a CSD.

14.2 Securities Balance Queries

This section describes ways of querying securities accounts positions. As it is envisaged to perform these queries using the balance queries provided by ISO 20022 standards, the term “securities balance queries” is used in this chapter for querying securities positions.

14.2.1 Query types

Two securities balance queries will be provided:

Basic Type	Scope
Securities Balance Query	Get (current) position, in an account view
Securities Balance History Query	Get closing position over a time period at the close on the dates specified, in an account view

The time period available for the Securities Balance History Queries is defined as part of the archiving functionality, which is detailed in chapter 17.

T2S shall provide two types of securities balance queries to all T2S actors

Reference ID	T2S.14.070

T2S shall provide the following securities balance queries to all T2S actors:

Table 14-1: Overview securities balance queries

Query Type	Query Will Revert the following to T2S actors
Securities Balance Query	The Securities Balance Query shall return an account view on the position at a particular point in time, the latest securities position or at the close of settlement if requested after

Query Type	Query Will Revert the following to T2S actors
	close of settlement, where all positions are summarised in the account structure that is compatible with the query. The query is a standard functionality open to all actors in T2S. Taking the TARGET2 query as the basis (blueprint) for this type of query and adjusting it to meet the necessary requirements for its adaptation to the account and balance types of T2S.
Securities Balance History Query	The Securities Balance History Query shall return all positions that occurred during a particular time period, where all positions are summarised at the account structure that is compatible with the query parameters.

14.2.2 Availability of query and response mode

Handling balance queries during night-time settlement

Reference ID	T2S.14.080

During the night-time settlement cycles, T2S shall store balance queries sent in application-to-application mode, reply with a message that the system is currently running a cycle and respond at the end of the cycle with the latest position.

Balance queries sent in user-to-application mode during a cycle shall not be stored in T2S for further processing, and the T2S actor should receive a real time message that a cycle is currently running.

14.2.3 Query parameters

Securities Balance Queries

Reference ID	T2S.14.090

T2S shall provide the option to specify a Securities Account Number or a range of Securities Account Numbers that restricts the query to positions located on the specified account(s). In case the Securities Account Number(s) is (are) not specified, the query shall return positions on all accounts within the access rights (as detailed in chapter 11) of the party that sent the query:

- For T2S parties: all the securities accounts pertaining to the party.
- For a CSD: all the securities accounts that are held with the CSD (a CSD wishing to query its inter-CSD accounts in an issuer CSD would have to send a separate query as a T2S participant in that CSD).

CSD and T2S parties may act as service providers for indirect parties or e.g. remote brokers. CSDs need to be able to query on the securities accounts of a particular client (e.g. indirect party). In these cases, T2S actors should understand that accounts should be opened in T2S under the name of final beneficiary (direct position systems and segregated accounts).

14.2.4 Securities Balance Query by CSD or T2S party

Reference ID	T2S.14.100

This query shall allow a CSD or T2S party (or other entity with authorisation to access a T2S party's securities accounts) to query positions (either real-time or for particular dates) in all securities across all accounts of the specific T2S party. A CSD may query the positions of any of its participants. A query by a directly connected T2S party shall return all securities positions of the directly connected T2S party's accounts. The query shall return the concerned CSD (where the account is held), T2S party, date, securities account number, ISIN of the security, the total position, the blocked position and the free position. Unless otherwise specified by the sender of the query, T2S will only return non-zero securities positions in the accounts.

N.B. Securities positions for previous days are the end-of-day positions; the current position is the latest position for the current day.

14.2.5 Securities Balance Query by T2S party account

Reference ID	T2S.14.110

This query shall allow querying positions in all securities in a specific securities account of a specific T2S party as of a specific date. The CSD is a participant of itself in this context. This query shall require the securities account number and the date as search criteria.

14.2.6 Parameters for querying securities balances

Reference ID	T2S.14.120

Both types of securities position queries shall require the user to specify one or a combination of parameters for the queries. Below is a non-exhaustive indicative list of these parameters:

- CSD
- T2S party
- Securities Account
- Security (ISIN Code)
- Country of Issuance
- Date (range)
- Restriction Type

Securities Balance Queries by ISIN Code

Reference ID	T2S.14.130

T2S shall provide the option to specify an ISIN. If the ISIN is not specified, the query returns data for all ISINs.

Securities Balance Queries by Country of Issuance

Reference ID	T2S.14.140

T2S shall provide the option to specify a Country of Issuance. The query shall then only check for positions according to the specified country of issuance. If the Country of Issuance is not specified, the query returns data for all Countries of Issuance.

Securities Balance Queries by Restriction Type

Reference ID	T2S.14.145

T2S shall provide the option to specify a Restriction Type (as outlined in chapter 11.10.2 of the URD). The query shall then only check for positions according to the specified restriction type. If no Restriction Type is specified in the query, then all securities positions irrespective of their restriction type shall be returned, including those with blank fields within the Restriction Types.

14.2.7 Querying Securities Balance History

Reference ID	T2S.14.150

T2S shall provide a functionality to query historic securities positions in securities accounts. Securities positions for previous days will always be the end-of-day position. The query shall support the following non-exhaustive indicative list of parameters.

- CSD
- T2S party
- Securities Account
- Security (ISIN Code)
- Country of Issuance
- Date
- Restriction Types

T2S Parties shall have the option to freely combine these criteria with:

Securities Balance History Query by Date.

Reference ID	T2S.14.160

T2S shall provide the option to specify a date (date YYYYMMDD). The query shall then return the position depending on the requested date:

- If the date requested is prior to the actual date, the returned position would reflect the end-of-day position.
- If the date requested is equal to the actual date (intraday request), the returned position would reflect the position at actual day and time (date YYYYMMDD + time HH:MM:SS).

Securities Balance History Query by Time Period.

Reference ID	T2S.14.170

T2S shall provide the option to specify a timeframe [FROM-TO], where the FROM variable is mandatory, and the TO variable is optional. Both times are to be provided as date YYYYMMDD. The query shall then reflect all positions at the end of each settlement period occurring during the specified timeframe. If only the FROM variable is specified, the query shall give back all changes from the FROM date up to the current date/time.

14.2.8 Securities Balance History Query by Security or Country of Issuance

Reference ID	T2S.14.190

T2S shall provide the option to specify a Country of Issuance. The query shall then only check for positions where the country of issuance has been specified. If the Country of Issuance is not specified, the query returns data for all Countries of Issuance.

Alternatively, T2S shall allow the specification of a country code (i.e. the two first characters of an ISIN). This search will output all positions in securities that meet the specified criteria across all securities accounts.

14.2.9 Securities Balance History Query by T2S party

Reference ID	T2S.14.200

This query shall allow a CSD or a T2S party (or an entity with authorisation to access a T2S party's securities accounts) to query positions in all securities across all accounts of that specific T2S party as of a specific time-frame. This query shall require as minimum query parameters the T2S party (note that a CSD is always a participant of itself) and the date. A CSD shall be able to query the positions for any of its T2S parties. A query by a T2S party shall return all securities positions for the T2S party's accounts. Furthermore, T2S shall provide the user with the option to output zero positions in the results list.

The query shall return the CSD, T2S party, date, and securities account number, ISIN of the security, the total position, the blocked position and the free position.

14.2.10Securities Balance History Query by T2S party Account

Reference ID	T2S.14.210

This query shall allow a CSD or a T2S party (or an entity with the authorisation to access a T2S party's securities accounts) to query positions in all securities in a securities account of the T2S party as of a specific time-frame. The CSD is a participant of itself in this context. This query shall require as minimum query parameters the securities account and the date. A CSD shall be able to query the positions for any of its participants. A query by a T2S party shall provide for all securities positions for its accounts. Furthermore, T2S shall provide the user with the option to output zero positions in the results list.

The query shall return the CSD, T2S party, date, securities account number, the ISIN of the security, the total position, the blocked position and the free position.

Securities Balance History Query by Restriction Type

Reference ID	T2S.14.215

This query shall allow a CSD or a T2S party (or an entity with authorisation to access a T2S party's securities account) to query a position in all securities that reflects the queried Restriction Type across all accounts of that specific T2S party as of the specific time-frame. The query shall then provide securities positions with the specified restriction type. If no Restriction Type is specified in the query, then all securities positions irrespective of their restriction type shall be returned, including those with blank fields within the Restriction Types. T2S shall also return data with expired, cancelled and active Restrictions Types, included in the queried timeframe.

Securities balance queries may be queried with multiple criteria.

Reference ID	T2S.14.220

T2S shall provide the option to specify the following fields independently. If more than one field is specified, the query shall combine the parameters through AND logic:

- CSD;
- Securities Account Number;
- T2S actor;
- ISIN Code;
- Restriction Type.

Some examples of such combinations that can appear in different business contexts are provided below.

Table 14-2: Examples of combinations of parameters in securities balance queries

Example No.	**Business Requirements**	**Query Type**	**Party**	**Query Fields**
1	Get current positions	Balance/Balance Detail	T2S Actor	None
2	Get current position on a specific account	Balance/Balance Detail	T2S Actor	Account Number = "ABC"
3	Get position changes since 15 June, noon	Balance History	T2S Actor	FROM=2007.06.15.12:00:00
4	Get current position in an ISIN	Balance/Balance Detail	T2S Actor	ISIN = DE0005190003

Example No.	Business Requirements	Query Type	Party	Query Fields
5	Get position history in an ISIN	Balance History	T2S Actor	ISIN = DE0005190003, FROM=2007.01.01.00:00:00
6	Get all holders of an ISIN (e.g. at record date for corporate actions)	Balance	CSD in T2S	ISIN = DE0005190003
7	Get position in some ISIN which is already blocked for voluntary corporate action	Balance	CSD in T2S	ISIN = DE0005190003, Restriction Type = "Blocked for CA"
8	Get all earmarked positions in some ISIN (refer to chapter 10 for the position and balance types)	Balance	CSD	ISIN = DE0005190003, Restriction Type = "Earmarked"
9	Get available positions in some ISIN	Balance/Balance Detail	CSD	ISIN = DE0005190003, Restriction Type = "Available",
10	Get all positions in one particular issuer CSD (as investor CSD)	Balance	CSD	Country of Issuance = "ES"

14.2.11 Content of the responses

In the responses to all securities balance queries

Reference ID	T2S.14.230

T2S shall list all positions that meet the specified criteria.

In the responses to all securities balance queries – position with restrictions

Reference ID	T2S.14.240

T2S shall list all positions together with their associated earmarked, restricted or blocked positions.

In the responses to all securities balance queries – position timestamp

Reference ID	T2S.14.250

T2S shall always add a position timestamp (with date YYYYMMDD and time HH:MM:SS) that specifies the T2S system time at which the position snapshot was taken.

This is required to support a "statement of accounts" query. A statement of account would actually translate into "all changes since the last statement of account query". The timestamp above provides the information for intraday positions.

14.3 Settlement Instruction Queries

This section describes the options for querying instructions.

Reference ID	T2S.14.259

T2S shall allow T2S Actors to perform queries on settlement instruction based on the actor's roles and privileges. For example,

- for T2S Actors all instructions that have been sent by either the T2S Actor or by other T2S Actors that have been authorised by the T2S Actor to do so;
- for CSDs in T2S all instructions that refer to accounts legally attributed to the CSD, and all instructions that the CSD has sent (these might refer to Inter-CSD accounts in issuer CSDs in T2S);
- for NCBs:
  - Where NCBs act as parties in a CSD, they can query instructions like any user in a CSD, and with the related rights.
  - Where NCBs act as a CSD, they can query instructions like any CSD.

14.3.1 Settlement Instruction Query

Reference ID	T2S.14.261

T2S shall provide a settlement instruction query, which allows the T2S Actors to select settlement instructions based on the following set of business attributes in the settlement instruction:

- Instruction Type;
- ISO Transaction Code;
- Unique Instruction Reference of Party
- Unique T2S Technical Identifier of the Settlement Instruction
- Related Instructions Reference of Party;
- Instruction Priority;
- Trade Date;
- Intended Settlement Date;
- Actual Settlement Date;
- Securities Account Identifier;
- T2S Dedicated Cash Account Identifier;

- BIC or Party Identifier of Instructing Party;
- BIC or Party Identifier of Allowed Instructing Party;
- BIC of Counterpart;
- ISIN;
- Country of Issue;
- Place of Settlement;
- Issuer CSD
- Deliverer CSD in T2S
- Receiver CSD in T2S
- Settlement Currency;
- Settlement Cash Amount;
- Quantity or nominal of securities range;
- CoSD Identified by T2S;
- Cum/Ex ISO transaction condition Indicator;
- Opt-out ISO transaction condition Indicator;
- Pool Identification of a set of instructions;
- Partial settlement Indicator;
- Auto-collateralisation Indicator;
- Status Type and status value (e.g. match status, settlement status).

T2S shall return all settlement instructions in ISO 20022 format that fulfil the specified criteria.

Note: “CoSD identified by T2S” identifier is an enriched data within T2S system and is not an attribute as available in the settlement instruction message received by T2S.

Reference ID	T2S.14.262

The settlement instruction query of a T2S Actor must specify at least one of the following business attributes:

- Unique Instruction Reference of Party;
- Linked Instruction Reference;
- Unique T2S Technical Identifier of the Settlement Instruction;
- Securities Account Identifier;
- T2S Dedicated Cash Account Identifier;
- BIC or Party Identifier of Instructing Party;
- BIC or Party Identifier of Allowed Instructing Party;
- BIC of Counterpart;
- ISIN.

Reference ID	T2S.14.263

The settlement instruction query shall allow a T2S Actor to specify one or more values for each of the following business attributes:

- Instruction Type;
- ISO Transaction Code;
- Country of Issue;
- Settlement Currency.

Reference ID	T2S.14.264

The settlement instruction query shall allow a T2S Actor to specify ranges for each of the following business attributes:

- Intended settlement date;
- Trade date;
- Quantity or nominal of securities range when the ISIN is specified;
- Settlement Cash Amount;
- Actual Settlement date.

Table 14-3: Examples of settlement instruction queries

Example	Business Requirements	Party	Query Fields
1	Select a specific instruction	T2S Actor	Instruction Reference = ABCD
2	Select all instructions in an ISIN in a given period	T2S Actor	ISIN = DE0005190003 and (1.1.2008 ≤ Intended Settlement Date ≤ 15.1.2008)
3	Select all unsettled instructions in one ISIN	T2S Actor	Settlement status = Unsettled and ISIN = DE0005190003
4	Select all matched instructions for a specific securities account	T2S Actor	match status = matched and securities account = 123654
5	Select all instructions for a specific T2S dedicated cash account	T2S Actor	Cash Account = 7654321
6	Select all instructions with a specific counterpart	T2S Actor	Counterparty BIC = ABCD

14.3.2 Settlement Instruction Current Status Query

Reference ID	T2S.14.271

The settlement instruction status query shall allow a T2S Actor to query settlement instructions based on the current business processing status or a combination of current business processing statuses by specifying:

- Status Type (e.g. match status, settlement status)

- Status value (e.g. matched or unmatched for match status or settled, partially settled or pending for settlement status

Reference ID	T2S.14.272

The settlement instruction status query shall support the following set of additional business attributes as selection criteria:

- Instruction Type;
- ISO Transaction Code;
- Unique Instruction Reference of Party;
- Unique T2S Technical Identifier of the Settlement Instruction;
- Related Instructions Reference of Party;
- Instruction Priority;
- Trade Date;
- Intended Settlement Date;
- Actual Settlement Date;
- ISIN;
- Country of Issue;
- Place of Settlement;
- Issuer CSD
- Deliverer CSD in T2S
- Receiver CSD in T2S
- Settlement Currency;
- Securities Account Identifier;
- T2S Dedicated Cash Account Identifier;
- BIC or Party Identifier of Instructing Party;
- BIC or Party Identifier of Allowed Instructing Party;
- BIC of Counterpart.

T2S shall return all settlement instructions with their latest status and their current attribute values in ISO 20022 format that fulfil the specified criteria.

Table 14-4: Examples of settlement instruction status queries

Example	Business Requirements	Party	Query Fields
1	Select all pending instructions	T2S Actor	Settlement Status = unsettled or partially settled
2	Select all matched instructions DVP instructions	T2S Actor	Match Status = matched and instruction type = DVP
3	Select all pending instructions with	T2S	Settlement Status = unsettled or partially

Example	Business Requirements	Party	Query Fields
	high priority	Actor	settled and priority = High
4	Identify market claims in an ISIN where the settlement date rule applies (today greater than or equal to the record date at end-of-day today).	CSD	ISIN = DE0001142412 and Intended Settlement Date = [Record Date Today] and Settlement Instruction Status = unsettled or partially settled and Match Status = matched

14.3.3 Settlement Instruction Status Audit Trail Query

Reference ID	T2S.14.275

The settlement instruction status audit trail query shall allow a T2S Actor to query settlement instructions based on the business processing status or a combination of business processing statuses on a specific date or in a specific period in the past by specifying:

- Status Type (e.g. match status, settlement status);
- Status value (e.g. matched or unmatched for match status or settled, partially settled or pending for settlement status;
- Date range (date/time from – date/time to) of status transition.

Reference ID	T2S.14.277

The settlement instruction status audit trail query shall support the following set of additional business attributes as selection criteria:

- Instruction Type;
- ISO Transaction Code;
- Instruction Priority;
- Trade Date;
- Intended Settlement Date;
- Actual Settlement Date;
- CoSD Identified by T2S;
- ISIN;
- Country of Issue;
- Settlement Currency;
- Settlement Cash amount
- Quantity or nominal of securities range;
- Securities Account Identifier;
- T2S Dedicated Cash Account Identifier;
- BIC or Party Identifier of Instructing Party;
- BIC or Party Identifier of Allowed Instructing Party;

- BIC of Counterpart.

T2S shall return all settlement instructions with their latest status and their current attribute values in ISO 20022 format that fulfil the specified criteria.

Note: "CoSD identified by T2S" identifier is an enriched data within T2S system and is not an attribute as available in the settlement instruction message received by T2S.

Table 14-5: Examples of settlement instruction status queries

Example	Business Requirements	Party	Query Fields
1	Select all instructions that settled on [Specific Date in Past]	T2S Actor	Settlement Status = unsettled or partially settled and Settlement Status Date = [Specific Date in Past]
2	Select all instructions that were cancelled and matched on [Specific Date in Past]	T2S Actor	Match Status = matched and Match Status Date = [Specific Date in Past] and Processing Status = Cancelled and Processing Status Date = [Specific Date in Past]
3	Identify market claims in an ISIN where the settlement date rule applies (today greater than or equal to the record date at end-of-day today).	CSD	ISIN = DE0001142412 and Intended Settlement Date => [Record Date Today] and Settlement Instruction Status = unsettled or partially settled and Match Status = matched

14.3.4 Settlement Instruction Audit Trail Query

Reference ID	T2S.14.281

The settlement instruction audit trail query shall allow a T2S Actor to query the changes and amendments to a settlement instruction by specifying either the:

- unique instruction reference of the party;
- the unique T2S technical identifier of the settlement instruction.

Reference ID	T2S.14.282

The settlement instruction audit trail query shall output the following information for the specified settlement instruction:

- unique instruction reference of the party;
- the unique T2S technical identifier of the settlement instruction;
- the list of attributes with the previous and new value for each attribute;
- date/time of update;

- T2S system user who performed the update.

14.4 Static Data Queries

This section contains an outline of static data queries.

Static Data Queries – General requirement

Reference ID	T2S.14.525

T2S shall provide static data queries to all directly connected T2S actors A T2S actor shall be able to perform only those queries for which the actor has the necessary privileges. The queries shall return only those data for which the T2S actor has the necessary access right. This requirement applies to all static data queries.

Static Data Audit Trail Query

Reference ID	T2S.14.530

T2S shall provide a static data audit trail query. It shall allow a T2S actor to query all revisions to an occurrence of static data and its related static data elements. The query shall support the following selection criteria:

- Type of Static Data
  - securities reference data
  - securities CSD links
  - securities valuations
  - party reference data, including CSD-specific account attributes
  - securities account reference data, including CSD-specific account attributes
  - T2S dedicated account reference data
  - close links
  - party technical addresses
  - authorised instructing parties
  - party and account settlement restrictions
  - CSD account links for cross-CSD settlement
- The mnemonic or identifier of the static data occurrence;
- The period covering the audit trail (date from – date to).

The query will provide the following output:

- Type of static data
- The mnemonic or identifier of the static data occurrence or its related static data occurrence
- The date and time of the update
- The name of the changed field

- The field value before update
- The field value after update
- The name of the T2S system user making the change.

Note: The related static data elements are any of those listed, in the type of static data.

Example: In case of a query on a party reference data by a T2S system user, the query shall output the party details as an audit trail and the details of the changes to its related static data elements such as securities accounts, etc as listed in the types of static data. However, this shall be subject to the access rights of the T2S system user.

14.4.1 Securities Reference Data Queries

Securities Reference Data

Reference ID	T2S.14.540

T2S shall provide a securities reference data query that supports the following parameters:

- ISIN;
- CFI code;
- Maturity date;
- Issue currency;
- Country of issuance;
- Technical Status (Inactive, active and deleted);
- Current Market Status (e.g. when-issued, issued, matured, etc.).
- Auto-collateralisation currency;
- Securities Maintaining CSD.

The query shall provide the following results set:

- ISIN;
- short and long name of the security from the entity Securities Name;
- all attributes of the securities stored in the entity Securities.

ISIN List Query

Reference ID	T2S.14.550

T2S shall provide a securities reference data query that supports the following parameters:

- ISIN;
- CFI code;
- Maturity date;
- Issue currency;
- Country of issuance;
- Technical Status (Inactive, active and deleted);

- Current Market Status (e.g. when-issued, issued, matured, etc.).
- Auto-collateralisation.

The only output of the query shall be the ISIN, the security identifier, the security short name, the market status of the security and the technical status of the security.

Securities Deviating Nominal

Reference ID	T2S.14.553

T2S shall provide a query that outputs the deviating settlement nominal for an ISIN.

Securities CSD Link

Reference ID	T2S.14.557

T2S shall provide a query that outputs the securities CSD links for an ISIN, for a CSD and for all CSDs (both issuer and investor CSDs).

14.4.2 Party Reference Data

Party Reference Data Query

Reference ID	T2S.14.560

T2S shall provide a party reference data query that supports the following selection criteria:

- system entity identifier;
- party identifier;
- the CSD of the party
- BIC of party;
- party type;
- open from date – open to date;
- closed from date – closed to date;
- party status.

The query shall provide the following results set:

- party identifier;
- BIC of party;
- party short name;
- party long name;
- current party address;
- CSD-specific party attributes.

Party List Query

Reference ID	T2S.14.563

T2S shall provide a party reference data query that supports the following parameters:

- the CSD or NCB of the party;
- and the party status.

The only output of the query shall be the party identifier, the CSD or NCB of the party, the BIC of the party, the party status, and the party short name.

SWIFT BIC Query

Reference ID	T2S.14.565

It will output the SWIFT BIC directory. T2S shall provide a query that returns a valid list of BIC with the corresponding financial institution name and address by allowing a text string search of the financial institution name and city attributes of the SWIFT BIC directory.

Restricted Party Query

Reference ID	T2S.14.567

T2S shall provide a query which provides a list of the restricted parties in T2S and supports the following parameters:

- the CSD or NCB of the party;
- party type;
- restriction type;
- restricted-on date.

The only output of the query shall be the party identifier, the BIC of the party, the party status, the party short name; the restriction type, the restriction description and the restriction identifier.

14.4.3 Securities Account Reference Data

Securities Account Reference Data Query

Reference ID	T2S.14.600

T2S shall provide a securities account reference data query that supports the following selection criteria:

- system entity identifier;
- party identifier;
- securities account number;
- the CSD of the party
- BIC of party holding the securities account;
- party type holding the securities account;
- securities account open-from date – open-to date;
- securities account closed-from date – closed-to date;
- securities account status;
- T2S account type;

- end investor account flag.
- pricing scheme.

The query shall output all the attributes of the securities account reference data.

Securities Account List Query

Reference ID	T2S.14.605

T2S shall provide a securities account reference data query that supports the following parameters:

- the CSD of the party;
- the BIC of the party or the party identifier;
- and the securities account status.

The only output of the query shall be the securities account identifier, party identifier, the BIC of the party, the securities account status, the pricing scheme end investor account flag and the BIC of the party's CSD.

14.4.4 T2S Dedicated Cash Account Reference Data

T2S Dedicated Cash Account Reference Data Query

Reference ID	T2S.14.640

T2S shall provide a T2S dedicated cash account reference data query that supports the following selection criteria:

- system entity identifier;
- T2S dedicated cash account number;
- party identifier;
- the NCB of the party;
- BIC of party;
- party type;
- open-from date – open-to date;
- closed-from date – closed-to date;
- T2S dedicated cash account status;
- RTGS account number;
- currency.

The query shall output all the attributes of the T2S dedicated account reference data.

Cash Account List Query

Reference ID	T2S.14.650

T2S shall provide a T2S dedicated cash account reference data query that supports the following parameters:

- the NCB of the party;

- the BIC of the party or the party identifier holding the T2S dedicated cash account;
- currency;
- and the T2S dedicated cash account status.

The only output of the query shall be the T2S dedicated cash account identifier, party identifier of the party holding the T2S dedicated cash account, the T2S dedicated cash account status, and the NCB.

T2S Dedicated Cash Account Links by Party or Securities Account

Reference ID	T2S.14.660

T2S shall provide a query to identify which T2S dedicated cash accounts are linked to a party or a securities account.

- The query shall retrieve all T2S dedicated cash account links for all parties and securities accounts of a CSD when an authorised T2S system user specifies the party identifier or party BIC of a CSD.
- The query shall retrieve all T2S dedicated cash account links for a party when an authorised T2S system user specifies the party identifier or party BIC of a party.
- The query shall retrieve all T2S dedicated cash account links for a securities account when an authorised T2S system user specifies a securities account identifier.

T2S Securities Account Links by T2S Dedicated Cash Account

Reference ID	T2S.14.665

T2S shall provide a query to identify which securities accounts or parties are linked to T2S dedicated cash accounts when an authorised T2S system user specifies:

- the party identifier or party BIC of an NCB;
- the party BIC or party identifier of a T2S dedicated cash account holder;
- the T2S dedicated cash account number;
- or the RTGS account number.

14.4.5 Calendar and Diary Queries

Calendar Query

Reference ID	T2S.14.690

T2S shall provide T2S Calendar Query functionality to all directly connected T2S actors. T2S shall respond to this query with the T2S Calendar.

Diary Queries

Reference ID	T2S.14.700

T2S shall provide T2S Diary Query functionality to all directly connected T2S actors. T2S shall respond to this query with the T2S Daily Schedule that contains all diary events of the T2S business day and their timing.

14.4.6 System Entity Query and Response

System Entity Query

Reference ID	T2S.14.710

T2S shall enable an authorised T2S System User of a T2S Actor to query system entities, specified in chapter 11. The authorised T2S System User shall have the option to specify a mnemonic or a technical identifier in order to select a specific system entity only. T2S shall respond to this query with the list of all system entities whose mnemonic and/or technical identifiers are compliant with the query parameters. If the user does not specify any values for such parameters, then T2S shall respond to this query with the set of all the system entities.

T2S shall limit the result set of the system entity query to those system entities, which the T2S System User is authorised to see. For example, the result set for a system user of a specific CSD only will contain the system entity of that CSD, while the result set for a system user of the T2S Operator will contain all system entities.

14.4.7 Attribute Domains

Attribute Domains

Reference ID	T2S.14.730

T2S shall provide Attribute Domain Query functionality to all directly connected T2S actors, as defined in chapter 11. T2S shall respond to this query with a list of attribute domains selected on the basis of the values entered for the query parameters.

In the Attribute Domain Query, T2S Actors shall have the option to specify either the name or the identifier of the domain. T2S shall respond to this query with the list of all attribute domains whose name and/or identifier comply with the specified query parameters. If the T2S actor does not specify any values for such parameters, then T2S shall respond to this query with the set of all attribute domains.

14.4.8 T2S Actors, Roles and Privileges

Privilege Query

Reference ID	T2S.14.740

T2S shall provide Privilege Query functionality to all its directly connected T2S actors with a system administrator role. T2S shall respond to this query with list of privileges selected on the basis of the value entered for the query parameter.

In the Privilege Query, T2S actors shall be able to specify the privilege name. T2S shall respond to this query with the list of all privileges whose names comply with the specified parameter. If the T2S actor does not specify any value for the parameter, then T2S shall respond to this query with the set of all privileges.

Role Query

Reference ID	T2S.14.760

T2S shall provide Role Query functionality to all its directly connected T2S actors with a system administrator role. T2S shall respond to this query with list of roles selected based on the value entered for the query parameter.

The rules for Role Query are the same as for Privilege Query, but the optional search parameter would be the role name.

T2S Actor Query

Reference ID	T2S.14.770

T2S shall provide T2S Actor Query functionality to all its directly connected T2S actors with a system administrator role. T2S shall respond to this query with list of T2S actors selected on the basis of the values entered for the query parameters. The rules for T2S Actor Query are the same as for Privilege Query, but the optional search parameter would be the T2S Actor name, the login name or other criteria such as active T2S parties, deleted T2S parties, T2S parties of a specific system entity / organisational unit, etc.

14.4.9 Market-Specific Restriction Types

Market-specific restriction Query

Reference ID	T2S.14.800

T2S shall provide querying of market-specific restriction types to all its directly connected T2S actors. The query shall support the following selection criteria:

- System entity identifier;
- Restriction type;
- Object restriction type;
- Restriction classification.

The query response shall provide a list of all market-specific restriction types with all attributes that meet the specified criteria. If the T2S actor does not specify any parameters, then T2S shall respond to this query with the set of all restrictions. The T2S actor shall be able to query only those market-specific restriction types that relate to its CSD or NCB.

14.4.10 Availability of query and response mode

Generally, all static data queries should be accepted at any point in time, and they should be answered in real time, as per the rules defined above (specific rules apply to maintenance window and batches run, see above).

One specific rule will apply in case of a cycle-driven static data update as part of the end-of-day / start-of-day activities. For the time of the cycle-driven update, all queries would be stored during the cycle, and would be answered only after the cycle-driven update is finished.

14.5 Cash Balance Queries

This section describes ways to query cash account balances.

Cash balances

Reference ID	T2S.14.811

T2S shall provide NCBs, settlement banks and payment banks, in accordance with their access rights, with the possibility to query the current balance of one or more T2S dedicated cash accounts.

The query shall support the following selection parameters for payment banks and settlement banks:

- a specific NCB;
- a specific T2S party (Settlement bank, payment bank);
- a specific T2S dedicated cash account;
- a T2S settlement currency.

The query shall support an additional parameter as NCB, which allow the NCB to query all balances of all T2S dedicated cash accounts for which it is responsible. The parameter will specify whether the NCB acts in its capacity as central bank or T2S party.

The query shall return the following information:

- T2S party (settlement bank, payment bank);
- T2S dedicated cash account;
- debit/credit indicator
- current balance (available balance + sum of blocked balances + sum of reserved balances);
- sum of blocked balances;
- sum of reserved balances;
- available balance
- date and timestamp of balance;

Examples and further descriptions regarding the cash balance query:

- If the query specifies a T2S party and no T2S dedicated cash account, then the query result shall include the balances of all T2S dedicated cash accounts of the party.
- If the query specifies a T2S party and a T2S settlement currency without a T2S dedicated cash account, then the query result shall include the balances of all T2S dedicated cash accounts of the party in the specified currency.

- If the query specifies a T2S dedicated cash account, then the query result shall be the cash balance of the specified T2S dedicated cash account.
- If the query specifies a T2S party that is an NCB, and the NCB has specified in the query parameter that it is querying in its role as NCB, then the query result will provide the balances of all T2S dedicated cash accounts of the T2S parties, which hold accounts with it.

Total current collateral value of securities on stock per T2S dedicated cash account

Reference ID	T2S.14.830

T2S shall allow

- NCBs to query the total current collateral value of securities that payment/settlement banks have earmarked and that is available (on stock) for auto-collateralisation for a specific T2S dedicated cash account or on the level of the payment/settlement bank (i.e. for all its T2S dedicated cash accounts);
- Payment/settlement banks to query the total current collateral value of securities that the payment/settlement bank itself has earmarked and is available (on stock) for auto-collateralisation with the NCB for a specific T2S dedicated cash account or on the level of the payment/settlement bank (i.e. for all its T2S dedicated cash accounts);
- Payment/settlement banks to query the total current collateral value of securities that their clients have earmarked and is available (on stock) for auto-collateralisation for a T2S dedicated cash account that the client uses for settlement or on the level of the client (i.e. for all T2S dedicated cash accounts of the payment/settlement bank that the client uses);
- Clients of a payment/settlement bank to query the total current collateral value of securities that they have earmarked and is available (on stock) for auto-collateralisation with the payment/settlement bank for a specific T2S dedicated cash account that the client uses for settlement or on the level of the client.

The total collateral value is the sum of all securities positions of a payment/settlement bank or client of a payment/settlement bank, eligible for auto-collateralisation. The collateral value of securities, calculated by the query, will not include securities on flow, as the settlement process will use these automatically.

The query shall support the following selection parameters for NCBs, payment/settlement banks and clients of payment/settlement banks:

- a specific T2S party using auto-collateralisation (NCB, settlement bank, payment bank, T2S Actor for which the payment/settlement bank acts a liquidity provider);
- a specific T2S dedicated cash account;
- a T2S settlement currency.

The query shall return the following information:

- Querying party;
- T2S dedicated cash account;
- Client for which the payment/settlement bank acts as a liquidity provider or payment/settlement bank for which the NCB provides liquidity

- Currency of valuation and account;
- total collateral value;
- date and timestamp.

Examples and further descriptions regarding this query:

- If the querying party is an NCB and the query specifies a payment/settlement bank, but no T2S dedicated cash account, then the query result shall include the total collateral value, earmarked for auto-collateralisation on payment/settlement bank's securities accounts for each of its T2S dedicated cash accounts.
- If the querying party is a payment/settlement bank and the query specifies itself as a party, but no T2S dedicated cash account, then the query result shall include the total collateral value, earmarked for auto-collateralisation on the payment/settlement bank's securities accounts for each of its T2S dedicated cash accounts.
- If the querying party is a payment/settlement bank and the query specifies a payment/settlement bank' client, but not a T2S dedicated cash account, then the query result shall include the total collateral value of the positions, earmarked for auto-collateralisation on the client's securities accounts, for each of the payment/settlement bank's T2S dedicated cash accounts that the client uses.
- If the query specifies a T2S settlement currency without a T2S dedicated cash account, then the query result shall return the collateral value of the relevant T2S dedicated cash accounts in the specified currency.

Current collateral value of securities on stock per T2S dedicated cash account and security

Reference ID	T2S.14.831

T2S shall allow

- NCBs to query for a specific T2S dedicated cash account the total current collateral value of every securities position that a payment/settlement bank has earmarked and that is available (on stock) for auto-collateralisation;
- Payment/settlement banks to query for a specific T2S dedicated cash account the total current collateral value of every securities position that its client has earmarked and that is available (on stock) for auto-collateralisation;
- Payment/settlement banks to query for a specific T2S dedicated cash account the total current collateral value of every securities position that it has earmarked and that is available (on stock) for auto-collateralisation;
- Clients of payment/settlement banks to query for a specific T2S dedicated cash account the total current collateral value of every securities position that it has earmarked and that is available (on stock) for auto-collateralisation.

The query shall allow the specification of a T2S dedicated cash account and use the querying party as a selection parameter.

The query shall return the following information:

- T2S dedicated cash account;
- currency of valuation and account;
- ISIN and mnemonic;
- securities position summed across all securities accounts;
- valuation price;
- collateral value;
- date and timestamp.

Current collateral value of a security by securities account

Reference ID	T2S.14.832

T2S shall allow NCBs, payment/settlement banks and clients of payment/settlement banks (in accordance with their access rights) to query for a specific security the current collateral value of the security, earmarked and available (on stock) for auto-collateralisation, in every securities account linked to a specific T2S dedicated cash account. The collateral value of securities, calculated by the query, will not include securities on flow, as the settlement process will use these automatically. This query provides the breakdown of the collateral value for a combination of T2S dedicated cash account and securities account (T2S.14.831).

The query shall allow the specification of a specific T2S dedicated cash account identifier, ISIN and querying party as mandatory selection parameters.

The query shall return the following information for every position, earmarked and available for auto-collateralisation:

- T2S dedicated cash account;
- currency of valuation and account;
- securities account identifier;
- ISIN and mnemonic;
- securities position;
- valuation price;
- collateral value;
- date and timestamp.

Outstanding Auto-collateralisation credit

Reference ID	T2S.14.840

The amount of outstanding credit stemming from auto-collateralisation shall be available to NCBs, payment/settlement banks and clients of payment/settlement banks, according to their access rights.

The query shall support the following selection parameters:

1. Querying party,
2. T2S party (payment/settlement bank, or client of the payment/settlement bank).

The query shall return the following information:

1. Querying party ,
2. T2S party (payment/settlement bank, CSD, or client of the payment/settlement bank),
3. Currency,
4. T2S dedicated cash account,
5. Auto-collateralisation limit set by NCB on a T2S dedicated cash account of the payment/settlement bank or set by payment/settlement bank for its client,
6. Outstanding auto-collateralisation on a T2S dedicated cash account of the settlement/payment bank or of a client of the payment/settlement bank,
7. Sum of auto-collateralisation limit set by payment/settlement bank on each of its T2S dedicated cash accounts ,
8. Sum of outstanding auto-collateralisation credit on a T2S dedicated cash account of the payment/settlement or a client of the payment/settlement bank.

Notes:

1. The query response must provide the auto-collateralisation limit and its utilisation in the same currency (it can be in any ISO currency).
2. When the query party is an NCB and the party contains a payment/settlement bank, then T2S shall limit the result set to the payment/settlement that it queried.
3. When the query party is a payment/settlement bank and the party contains the client of payment/settlement bank, then T2S shall limit the result set to the client of the payment/settlement that it queried.
4. When the query party is a payment/settlement bank and the party contains the payment/settlement bank, then T2S shall limit the result set to the payment/settlement bank and exclude the clients of the payment/settlement that it queried.
5. When the query party is a client of a payment/settlement bank, then T2S shall limit the result set to that client of payment/settlement bank.

Cash Account Related Queries

Reference ID	T2S.14.860

In addition to the queries described above, there shall be some screens available in the T2S Interface (U2A mode) providing a consolidated view of the balances available on the different T2S dedicated cash accounts of each payment bank in order to facilitate the liquidity management of the treasurer(s) at the payment bank itself.

This shall be available for directly connected payment banks, settlement banks and their NCB.

Query of Cash postings on T2S dedicated cash accounts

Reference ID	T2S.14.861

T2S shall allow T2S Actors in their role as NCBs, payment banks and settlement banks to query postings on T2S dedicated cash accounts that are within their sphere of responsibility.

The query shall support the following selection criteria:

- a specific T2S Actor (NCB, settlement bank or payment bank);
- a specific T2S settlement currency;
- a specific T2S dedicated cash account;
- a specific date;
- and from a specific time.

The query shall return the following information:

- T2S Actor (NCB, settlement bank or payment bank);
- T2S settlement currency;
- T2S dedicated cash account;
- Amount;
- debit / credit indicator;
- statement number / sequence number (if already available and generated);
- unique identifier of the posting;
- instructing party reference;
- transaction reference of the underlying transaction which generated the posting which may be
    - a settlement instruction (including corporate actions, auto-collateralisation, reimbursement, realignment, etc.)
    - a liquidity transfer;
- and date and time of posting.

Additional query requirements:

1. One of the following attributes is mandatory when querying:
    - T2S Actor (NCB, settlement bank or payment bank);
    - T2S settlement currency;
    - or a T2S dedicated cash account.
2. If the query parameters do not include a date, then the query will assume the current day.
3. If the query parameters specify a time, then the query will provide all postings made as of and after the specified time. If the time is not specified, then the query shall assume 00:00 as the default.
4. If the query specifies a T2S Actor and neither a T2S dedicated cash account nor T2S settlement currency, then the query will provide the postings on all of the actor's T2S dedicated cash accounts.

5. If the query specifies a T2S Actor and a T2S settlement currency, then the query will provide the postings on all of the actor's T2S dedicated cash accounts operated in the specified currency.

6. If the query specifies a T2S dedicated cash account, then the query will return all postings on the specified dedicated cash account only.

Information Relating to Overall Liquidity

Reference ID	T2S.14.870

The amount of the overall liquidity available to a payment bank shall be provided (including possible intraday credit stemming from auto-collateralisation on stock).

The treasurer of a payment bank or settlement bank or NCB can use this information to get an overview of the sum of liquidity available for the institution.

Since T2S will allow the payment bank to reserve liquidity in any of its T2S dedicated cash accounts, the treasurer of the payment bank, settlement bank or NCBs will need to be able to query both reserved liquidity and liquidity available for normal operations.

Securities on flow shall not be considered because they will be used automatically during the settlement process.

The query shall support the following selection parameters:

1. A specific T2S party (Settlement bank, payment bank).

The query shall return the following information:

1. T2S party (Settlement bank, payment bank),
2. Currency,
3. Intraday credit limit (i.e. auto-collateralisation limit) set by NCB,
4. Intraday credit limit (i.e. auto-collateralisation limit) utilisation,
5. Sum of the value of eligible securities in the security accounts (linked to each T2S dedicated cash account) for auto collateralisation,
6. Sum of cash available (across all its T2S dedicated cash accounts),
7. Sum of cash blocked (across all its T2S dedicated cash accounts),
8. Sum of cash reserved (across all its T2S dedicated cash accounts),
9. Sum of liquidity available (across all its T2S dedicated cash accounts).

a. Here, sum of liquidity available = [value of eligible securities (5)] + [sum of cash available in the T2S dedicated cash account (6)] + [sum of cash blocked (7)] + [sum of cash reserved (8)]

Notes:

1. The query response must provide the credit limits and the cash balances in the same currency (it can be in any ISO currency).

2. If the NCB query by T2S Party, then the query shall output the response for a list of T2S parties, so that the NCB gets an overview for its sphere of responsibility.

3. When the query initiator is a NCB,

a. if the query input has a T2S party, then the response shall be limited to the T2S party.

b. if the query input does not have a T2S party, then the response shall include every T2S party under the sphere of responsibility of the NCB.

4. The query response shall be limited by controlled access to the data, as setup for NCB/ settlement bank/ payment bank.

14.5.1 Cash balance query

This section describes the ways to query on cash balances.

Cash forecast query

Reference ID	T2S.14.890

The cash forecast query shall enable an authorised T2S System User of an NCB or T2S Party (settlement bank/ payment bank) to determine on demand for a combination of T2S Party and intended settlement date the expected cash balances.

The query shall provide the following parameters:

- T2S Party (Mandatory)
- Settlement currency (must be a valid T2S settlement currency if entered)
- Intended settlement date (must be current settlement date or current settlement date plus 1 business day)

The settlement date of the query must always be the current settlement date or current settlement date plus 1 business day. If settlement date is not specified, then it shall be assumed to be the current settlement date

When a T2S party (i.e. a NCB/ settlement bank/ payment bank), requests for cash forecast at a party level, then the query shall output a forecast for all the T2S party's T2S dedicated cash account.

Per T2S dedicated cash account, the query shall

I. Determine the cash available on the T2S dedicated cash account;

II. Calculate the sum of liquidity transfer orders and settlement instructions (accepted, matched, unsettled, ineligible) on the T2S dedicated cash account;

III. Determine the amount of outstanding intraday credit from auto-collateralisation for the T2S dedicated cash account;

IV. Calculate the sum I, II and III.

The query shall be available throughout the daytime settlement window.

14.5.2 Limit Queries

Query of Limits

Reference ID	T2S.14.930

NCBs, payment/settlement banks and clients of payment/settlement banks shall be able to query limits in accordance to their access rights. NCBs shall be able to query limits of payment/settlement banks. Payment/settlement banks shall be able to query their own limits and those of their clients. The query shall support the following selection parameters:

- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit),
- Credit consumer (BIC of the party receiving the credit),
- T2S dedicated cash account,
- Limit currency,
- Limit amount with comparison operator (e.g. greater than 10,000,000),
- Valid-as-of date,
- Technical status (active, deleted),
- Limit identifier.

The query shall return the following information:

- NCB,
- Credit provider (party name and party identifier/BIC),
- Credit consumer (party name and party identifier/BIC),
- T2S dedicated cash account,
- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit),
- Limit currency,
- Limit amount,
- Valid from date,
- Technical status (active, deleted),
- Limit identifier.
- Securities accounts linked to limit.

Notes:

- If the query parameter does not specify a T2S party as credit consumer, then the query result set will include all limits where the querying party acts as credit provider to credit consumers, after filtering the data according to the other parameters.
- If the query parameter specifies a T2S party as credit consumer, then the query result set will include only the limits where the querying party acts as credit provider to the specified credit consumer, after filtering the data according to the other parameters.

Limit utilisation journal query

Reference ID	T2S.14.933

NCBs shall be able to query the journal for limit utilisation of its payment/settlement banks. Payment/settlement banks shall be able to query their own journal for limit utilisation and those of their clients. Clients of payment/settlement banks shall be able to query their own journal for limit utilisation.

The query shall support the following mandatory parameters:

- Credit consumer (party identifier)
- Date

The query shall support the following optional parameters:

- T2S dedicated cash account
- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit)

The query shall output the following data:

- NCB
- Credit provider (party identifier, party name, BIC)
- Credit consumer (party identifier, party name, BIC)
- Date
- T2S dedicated cash account
- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit)
- Debit/Credit
- Limit currency
- Limit Amount
- Limit utilisation after
- Remaining available headroom
- Transaction reference and type of transaction (there may be more than one transaction for one level change)

Limit Utilisation query

Reference ID	T2S.14.935

NCBs shall be able to query the limit utilisation and remaining headroom of its payment/settlement banks. Payment/settlement banks shall be able to query their own limit utilisation and remaining headroom and those of their clients. Clients of payment/settlement banks shall be able to query their own limit utilisation and remaining headroom.. The query shall support the following selection parameters:

- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit),
- Credit consumer (party identifier),
- Limit currency,
- Percentage utilisation with comparison operator (e.g. utilisation greater 90%),

- Limit identifier.

The query shall return the following information:

- NCB
- Credit provider (party name, BIC and party identifier);
- Credit consumer (party name, BIC and party identifier);
- T2S dedicated cash account;
- Date and Timestamp;
- Limit type (external guarantee limit, unsecured credit limit, auto-collateralisation limit),
- Limit currency
- Limit
- Limit utilisation
- Remaining headroom.

Notes

- If the query parameter does not specify a T2S party as credit consumer, then the query result set will include the limit utilisations of all parties, where the querying party acts as credit provider to credit consumers, after filtering the data according to the other parameters.
- If the query parameter specifies a T2S party as credit consumer, then the query result set will include all the limit utilisation for the specified party as credit consumer, where the querying party acts as credit provider, after filtering the data according to the other parameters.

14.5.3 Liquidity transfer order queries

T2S static data stores pre-defined and standing liquidity transfer orders. The section specifies the requirements for querying pre-defined and standing liquidity transfer orders, as defined in static data.

Liquidity transfer order list query

Reference ID	T2S.14.936

T2S shall enable NCBs, settlement banks and payment banks to query a list of predefined and standing liquidity transfer orders, according to their access rights (T2S.14.060).

The query shall support the following selection parameters:

- a specific T2S party (NCB, settlement bank, payment bank);
- a specific T2S dedicated cash account;
- and/or a specific T2S settlement currency.

Furthermore, the query shall support a parameter as to whether the query shall output keys fields of the liquidity transfer only, i.e. those fields from which a user can identify the transfer order.

The query shall return the following information as output when the query should output key fields only:

- NCB of the T2S party;

- T2S party;
- currency;
- debit cash account;
- credit cash account;
- amount;
- all cash (yes/no);
- liquidity transfer order identifier;
- execution type;
- valid from date;
- valid to date.

The query shall return all attributes of a predefined or standing liquidity transfer order when the querying party does not select the key field option:

- NCB of the T2S party;
- T2S party;
- currency;
- credit cash account;
- debit cash account;
- valid from date;
- valid to date;
- the execution type and the description of the execution type;
- execution event and execution event description for triggering the execution;
- unique technical identifier of the predefined or standing liquidity transfer order;
- authorization status;
- deletion Status;
- last change date/timestamp;
- user ID and name of user for last update.

Examples and further descriptions regarding the liquidity transfer order list query:

If the query parameter specifies T2S party, then the query result set will include all liquidity transfer orders, defined for the party's T2S dedicated cash accounts.

If the query parameter specifies a T2S dedicated cash account, then the query result set will include all liquidity transfer orders, defined for the specified T2S dedicated cash account.

If the query parameter specifies T2S party and a T2S settlement currency, then the query result set will include all liquidity transfer orders for the party's T2S dedicated cash accounts in the specified T2S settlement currency.

Liquidity transfer detail query

Reference ID	T2S.14.937

T2S shall enable NCBs, settlement banks and payment banks to query the details of a specific predefined or standing liquidity transfer orders, according to their access rights (T2S.14.060).

The query shall support only the unique technical identifier as parameter.

The query shall return all attributes of a predefined or standing liquidity transfer order when the querying party does not select the key field option:

- NCB of the T2S party;
- T2S party;
- currency;
- debit cash account;
- valid from date;
- valid to date;
- the execution type and the description of the execution type;
- execution event and execution event description for triggering the execution;
- unique technical identifier of the predefined or standing liquidity transfer order;
- revision number;
- authorization status;
- deletion Status;
- last change date/timestamp;
- user ID and name of user for last update.

Total amount of predefined and standing liquidity transfer orders

Reference ID	T2S.14.938

T2S shall provide an NCB/ settlement bank/ payment bank with the possibility to query the overall amount of Not yet executed predefined liquidity transfer orders, and the overall amount of Not yet executed standing liquidity transfer orders defined by settlement banks/ payment banks in its sphere of responsibility.

The query shall support the following selection parameters:

1. A specific T2S party (Settlement bank, payment bank).

The query shall return the following information:

1. T2S party (Settlement bank, payment bank),
2. Currency,
3. Total DEFINED amount of predefined liquidity transfer orders,
4. Total amount of NOT YET EXECUTED predefined liquidity transfer orders,
5. Total DEFINED amount of standing liquidity transfer orders,
6. Total amount of NOT YET EXECUTED standing liquidity transfer orders.

Notes:

1. The query shall respond with a list of the above amounts in each currency as defined by the settlement/ payment bank.
2. The total amount in the response means, the sum of all the individual order amounts.
3. If the query input has a T2S party, then the response shall be limited to the T2S party.
4. When the query initiator is a NCB, If the query input does not have a T2S party, then the response shall include every T2S party under its sphere of responsibility.
5. When the query initiator is a settlement bank/ payment bank, If the query input does not have a T2S party, then the response shall include details pertaining only to the query initiator.
6. The query response shall be limited by controlled access to the data, as setup for NCB/ settlement bank/ payment bank.

14.5.4 Liquidity transfer order queries for multiple liquidity providers

The T2S multiple liquidity provider model supports the sequencing of standing liquidity transfer orders from RTGS accounts. T2S stores a set of sequenced standing liquidity transfer orders for a T2S dedicated cash account as a liquidity transfer order link set (T2S.16.661). This section defines the queries that T2S will provide for a T2S Actor to retrieve sets of sequenced liquidity transfer orders.

Liquidity transfer order link set query

Reference ID	T2S.14.975

T2S shall enable NCBs, settlement banks and payment banks, according to their access rights (T2S.14.060), to query the sets of sequenced liquidity transfer orders. T2S shall as well enable CSD that initiated a liquidity transfers on behalf of payment and settlement banks according to the requirement T2S.06.210.

The query shall support the following selection parameters:

- A specific T2S party (Settlement bank, payment bank);
- A specific T2S dedicated cash account;
- Valid as of a specific date;
- And/or a specific T2S settlement currency.

The query shall return the following information:

- NCB of the T2S party;
- T2S party of the T2S dedicated cash account;
- Currency;
- T2S dedicated cash account identifier;
- Valid from date;
- Valid to date;
- Unique technical identifier of the link set;
- Authorisation status;

- Deletion status;
- Last change date/timestamp;
- User ID and name of user for last update.

Query to retrieve the sequenced liquidity transfer order for a link set

Reference ID	T2S.14.939

T2S shall enable NCBs, settlement banks and payment banks, according to their access rights (T2S.14.060), to query all liquidity transfer orders of a liquidity transfer order link set. T2S shall as well enable CSD that initiated a liquidity transfers on behalf of payment and settlement banks according to the requirement T2S.06.210.

The query shall support the unique technical identifier of a liquidity transfer order link set as selection parameter.

Furthermore, the query shall support a parameter as to whether the query shall output the complete list of fields for each liquidity transfer order in the link.

The query shall return for the specified identifier all attributes identifying a standing liquidity transfer order in a link set, as specified by requirement T2S.16.662. If the query specifies that the complete list of fields for each liquidity transfer order in the link as output, then the query will return, in addition to the aforementioned attributes, all the attributes of the standing liquidity transfer order (T2S.16.660), which are:

- NCB of the T2S party;
- T2S party;
- Currency;
- Debit cash account;
- Valid from date;
- Valid to date;
- The execution type and the description of the execution type;
- Execution event and execution event description for triggering the execution;
- Unique technical identifier of the standing order;
- Authorisation status;
- Deletion status;
- Last change date/timestamp;
- User ID and name of user for last update.

14.5.5 Query on Immediate Liquidity Transfer Orders

T2S shall process the immediate liquidity transfer orders, which T2S receives from a T2S Actor, and those T2S generates based on the static data definitions for predefined and standing orders. The section specifies the requirements for querying these immediate liquidity transfer orders.

Immediate Liquidity transfer order list query

Reference ID	T2S.14.940

T2S shall enable a T2S Actor to query a list of immediate liquidity transfer orders, according to their access rights (T2S.14.060).

The query shall support the following selection parameters:

- a specific T2S party (NCB, settlement bank, payment bank, CSD acting on behalf of a settlement bank or payment bank as authorised);
- a specific T2S dedicated cash account;
- and/or a specific T2S settlement currency.

The query shall return the following information as output:

- NCB of the T2S party;
- T2S party;
- currency;
- debit cash account;
- credit cash account;
- amount;
- Immediate liquidity transfer order identifier;
- Immediate liquidity transfer order reference;
- T2S generated order (yes/ no);
- Settlement status.

Examples and further descriptions regarding the liquidity transfer order list query:

- If the query parameter specifies T2S party, then the query result set will include all liquidity transfer orders, defined for the party's T2S dedicated cash accounts.
- If the query parameter specifies a T2S dedicated cash account, then the query result set will include all liquidity transfer orders, defined for the specified T2S dedicated cash account.
- If the query parameter specifies T2S party and a T2S settlement currency, then the query result set will include all liquidity transfer orders for the party's T2S dedicated cash accounts in the specified T2S settlement currency.

Immediate Liquidity transfer order detail query

Reference ID	T2S.14.950

T2S shall enable a T2S Actor to query the details of a specific immediate liquidity transfer order, according to their access rights (T2S.14.060).

The query shall support only the unique immediate liquidity transfer order identifier as parameter.

The query shall return all attributes of an immediate liquidity transfer order:

- NCB of the T2S party;

- T2S party;
- currency;
- debit cash account;
- credit cash account;
- amount;
- immediate liquidity transfer order identifier;
- immediate liquidity transfer order reference;
- Settlement Status;
- RTGS status;
- T2S generated order (yes/ no);
- Predefined order reference
- Standing order reference.

Notes:

- If the immediate liquidity transfer order was not generated by T2S, then the generated flag is set to “No”.
- If the immediate liquidity transfer order was generated based on a standing order then the standing order reference shall be returned along with the generated flag as “Yes” and predefined order reference as spaces.
- If the immediate liquidity transfer order was generated based on a predefined order then the predefined order reference shall be returned along with the generated flag as “Yes” and standing order reference as spaces.

14.6 CSD Securities Account Monitoring

Monitoring facility

Reference ID	T2S.14.960

T2S shall provide CSDs in T2S with a tool to help them monitor their participant securities accounts. This tool should enable each CSD in T2S to access data on its participant securities account; it should be able to view:

- Holdings;
- Transactions of pending, failed and settled status;
- Instructions, in whichever status they may be;
- Cash Liquidity (under authorisation of their participant or account beneficiary).

14.7 Management of the schedule information

Reference ID	T2S.14.970

T2S shall allow CSDs and directly connected parties to query the status of the settlement day. T2S shall also allow CSDs and directly connected parties to query the events of the settlement day with their planned, revised and effective time. Event and status management details can be found in chapter 3.

USER REQUIREMENTS

CHAPTER 15

STATISTICAL INFORMATION AND BILLING

EUROPEAN CENTRAL BANK

EUROSYSTEM

15 Statistical information and billing

T2S shall provide tools allowing for:

- multi-dimensional analysis for statistical purposes;
- calculating bills and producing invoices for the CSDs with an adequate level of detail.

15.1 Statistical information

Reference ID	T2S.15.010

T2S shall store in a separate environment all information for each account, including position changes and event information. It will also store data on instruction life history, including all status changes and associated timestamps, and on queries and reports, including volumes generated. This information shall be made available to authorised parties (i.e. T2S operators and, on an optional basis, CSDs and NCBs) through management information tools.

15.1.1 Data extraction

Reference ID	T2S.15.020

T2S shall provide a business-oriented way to navigate inside the data structure to select and filter among the data authorised for the user those that are suitable for the multi-dimensional analysis.

15.1.2 Reporting tool

Reference ID	T2S.15.030

T2S shall provide tools allowing ad-hoc and regular multi-dimensional analysis capabilities. These tools shall also store report structures for regular production of statistical reports and time series analysis.

It shall offer multiple presentation options (charts, pie-charts, etc.).

15.1.3 Data stored

Reference ID	T2S.15.040

T2S shall store data in an “atomic” way, to support the production of multi-dimensional analysis as well as time series. T2S will also store counters to monitor the level of use of various elements of the system over time.

15.2 Billing of CSDs

The pricing principles and the detailed billing model will be established in the next steps of the project. The requirements below present the billing function's general aspects.

Reference ID	T2S.15.050

T2S shall be able to automatically produce bills composed of items as follows: static data, fixed fees, variable fees and billable events.

15.2.1 Billable services

Reference ID	T2S.15.060

T2S shall store information on services provided to T2S parties, such as, for instance, access to auto-collateralisation or other core services provided by T2S through the CSD to the T2S parties.

15.2.2 Billable events

Reference ID	T2S.15.070

All events related to an instruction's life cycle shall be billable, i.e. the number of events shall be registered in view of potential billing.

Similarly, events related to a query or the production of a business report shall be stored by T2S party to allow for potential billing.

Typically, events like instruction matching and settlement shall be stored for each T2S party.

15.2.3 Billable instruction types

Reference ID	T2S.15.080

Each instruction type shall be numbered for each T2S party. Typically, FOP and DVP shall be accounted for separately.

In addition, instructions should also be counted separately based on the different values for the End Investor Account Flag specified for the involved Securities Accounts.

15.2.4 Billable transmission volumes

Reference ID	T2S.15.090

Transmission volumes triggered by business reports and/or queries need to be registered to allow for potential billing.

15.3 Invoicing

Reference ID	T2S.15.100

T2S shall be able to automatically produce invoices presenting the bills calculated for each CSD.

15.3.1 Invoice presentation

Reference ID	T2S.15.110

The invoice for each CSD shall include an indicative split into each Account related to that CSD, and will therefore be composed of:

- the invoice;
- the information used to calculate the bill for the CSD;
- all relevant detailed information for each Account.

Individual CSD participants are invoiced by the CSDs based on the information provided by T2S and complemented by additional data possessed by the CSDs.

15.3.2 Invoice cycle

Reference ID	T2S.15.120

The invoice shall be produced on a monthly cycle covering a one-month period of activities.

15.3.3 Invoice storage

Reference ID	T2S.15.130

The invoices produced shall be stored electronically and will be available for later inquiries by authorised parties.

15.3.4 Fee schedules

Reference ID	T2S.15.140

T2S shall store a fee schedule for the billable elements.

USER REQUIREMENTS

CHAPTER 16

STATIC DATA REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

16 Static data requirements

The aim of this chapter is to describe the set of requirements pertaining to the management of all static data in T2S. Static data mainly concern reference data about CSDs and T2S Parties, securities and cash accounts, and currencies.

The first part of this chapter (sections 16.1-16.5) defines a set of general requirements applicable for the management of each type of static data within T2S. More specifically, section 16.1.1 describes the high-level processes and interactions of T2S static data with T2S actors and other T2S processes. Then, section 16.2 specifies the requirements for uniquely identifying static data objects in T2S, while section 16.3 details the standardised tracking of states for static data management in T2S. Finally, section 16.4 provides the list of requirements for ensuring a full audit trail and a history of static data, and section 16.5 documents the standards applicable to the change management functions for all static data entities.

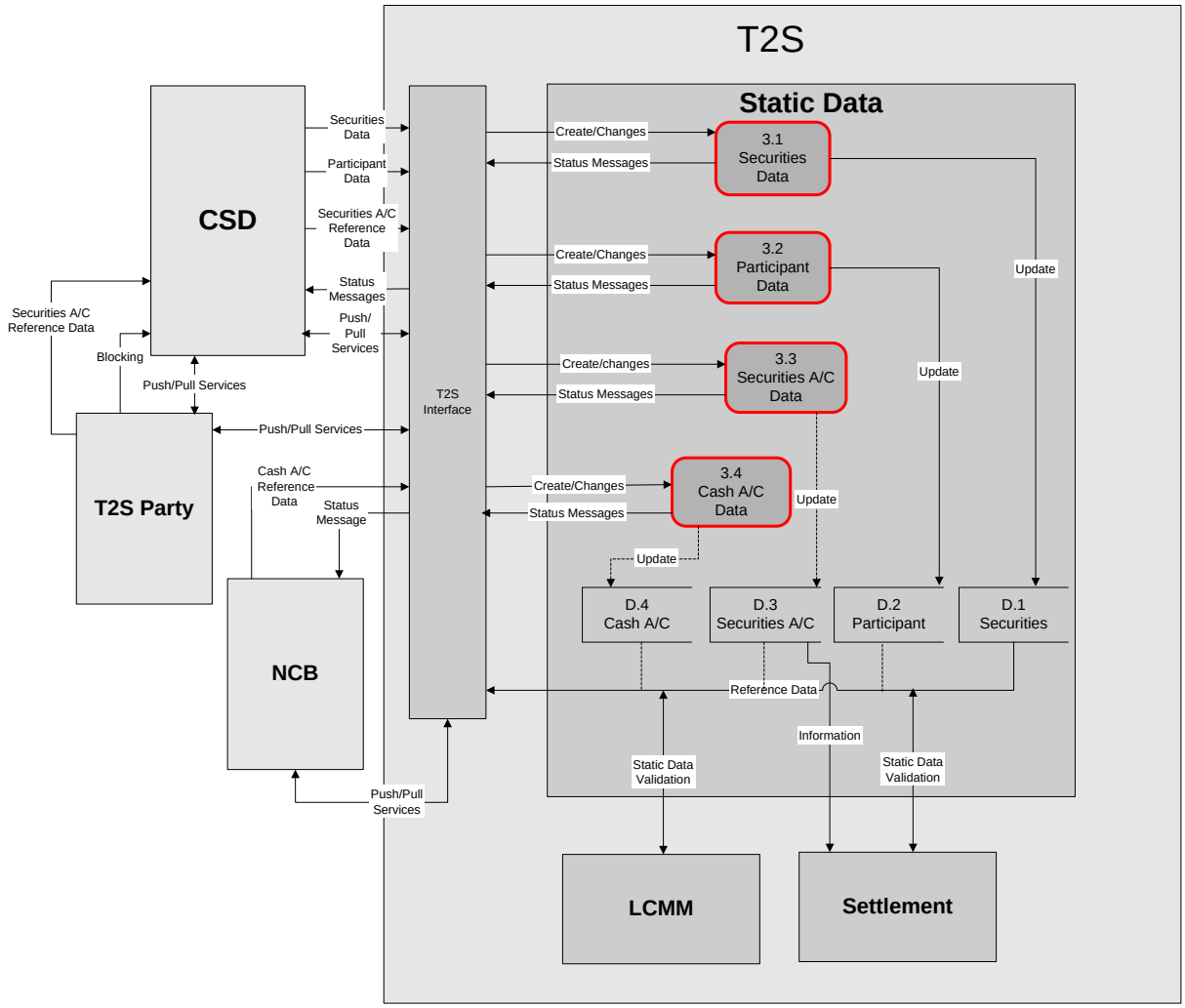
The second part of this chapter (sections 16.6-16.8) describes the actual business reference data defined within T2S. More precisely, sections 16.6 and 16.7 respectively define reference data for currencies (e.g. currency code, currency name) and securities (e.g. ISIN, securities name, valuation). Section 16.8 describes the detailed reference data for parties, securities accounts and T2S dedicated cash accounts. More specifically, sections 16.8.1 and 16.8.2 describe the hierarchical model that defines the relationships between the parties in T2S. Section 16.8.3 specifies all information required for defining and processing a securities account in T2S, while section 16.8.4 includes requirements for T2S dedicated cash accounts of payment banks in T2S and their links with the relevant RTGS accounts. Finally, sections 16.8.8 to 16.8.9 define some more technical requirements related to close links, cross-CSD settlement and parties' technical addresses needed by the settlement process (see chapter 7 for more details on settlement process requirements).

16.1 Static Data Context Diagram and Process Description

16.1.1 Context Diagram

This context diagram depicts the different high-level processes and interactions of T2S static data with T2S actors and other T2S processes, based on the following business requirements. It does not aim to pre-empt any future decision regarding the IT design and technical implementation of T2S.

Figure 16-1 Static Data Context Diagram



16.1.2 Process Descriptions

16.1.2.1 Securities Data (3.1)

CSDs shall be able to maintain the securities reference data in T2S for those securities for which they are responsible. T2S shall provide CSDs with the capability to block or unblock ISINs. T2S shall allow an investor CSD to block or unblock ISINs for itself. T2S shall allow Issuer CSDs and technical issuer CSDs to block or unblock ISINs for its investor CSDs.

Input	
Create/changes instruction	
Output	
Status message	

Data Store	
D.1 Securities	1) This data store specifies all securities reference data. 2) CSDs/directly connected T2S parties can query securities reference data. 3) LCMM uses the information available in this data store for validation purpose. 4) Settlement uses the information available in this data store for validation purpose.

16.1.2.2 Participant Data (3.2)

T2S shall allow CSDs to maintain the reference data for their participants in T2S. T2S shall allow CSDs to block and unblock their participants. The T2S operator shall maintain the reference data pertaining to a CSD or an NCB in T2S. NCBs shall maintain reference data pertaining to their payment banks.

Input	
Create/changes instruction	
Output	
Status message	

Data Store	
D.2 Participants	1) This data store specifies all information pertaining to party data. 2) CSDs, NCBs and directly connected T2S parties can query their party information. 3) LCMM uses the information available in this data store for validation purposes. 4) Settlement uses the information available in this data store for validation purposes.

16.1.2.3 Securities A/C Data (3.3)

CSDs shall maintain the securities account reference data in T2S for their participants. Moreover, CSDs can block or unblock securities accounts of their participants.

Input	
Create/changes instruction	
Output	
Status message	

Data Store

Data Store	
D.3 Securities A/C Data	1) This data store specifies all information pertaining to a securities account. 2) CSDs and directly connected T2S parties can query all data regarding their securities account information. 3) LCMM uses the information available in this data store for validation purposes. 4) Settlement uses the information available in this data store for validation purposes.

16.1.2.4 T2S Dedicated Cash A/C Data (3.4)

NCBs shall maintain the T2S dedicated cash account reference data for their payment banks. Moreover, NCBs can block or unblock the T2S dedicated cash accounts of their settlement and payment banks.

Input	
Create/changes instruction	
Output	
Status message	

Data Store	
D.4 Cash A/C Data	1) This data store specifies all information pertaining to T2S dedicated cash accounts. 2) NCBs and payment banks can query all data regarding their T2S dedicated cash accounts. 3) LCMM uses the information available in this data store for validation purposes. 4) Settlement uses the information available in this data store for validation purposes.

16.2 Static Data Identifier Requirements

Technical Identifier

Reference ID	T2S.16.010

Occurrences in static data entities require a unique sequence as primary identifier. The allocation of this primary identifier shall occur sequentially from a database counter. It shall be the object identifier, used to identify the occurrence of a static or transactional data entity. When a user or application appends a new occurrence in an entity, the application programme shall assign the current value of the counter as the technical identifier to that occurrence, and increment the counter by one for assignment to the next occurrence. The database administrator shall configure a counter for exclusive use as a primary identifier for

a static data entity. For example, security static data will use a different counter as technical identifier than T2S party data.

Revision Number

Reference ID	T2S.16.020

The revision number is the counter within a technical identifier of an occurrence of static data that is incremented by one when a user or application updates an attribute of that occurrence. Its primary use is to ensure the uniqueness of an occurrence when there are several revisions to that occurrence.

16.3 Static Data Status Information Requirements

Reference ID	T2S.16.030

Status information is required to define the technical state of a static data occurrence and any updates to that occurrence in T2S. Every static data entity shall include status information. These status attributes are not included in the attribute requirements for entities in the subsequent sections to avoid repetitiveness.

16.3.1 Deletion Status

Reference ID	T2S.16.040

Every occurrence in static data shall have an attribute that defines if it is active or deleted, i.e. whether it is available for use by processing functions and applications. The deletion status is a technical status and independent from the business status of a static data occurrence. For example, an occurrence of a security in securities reference data may have a business status “Matured”, but can still be in an active state. It will not be necessary to delete a security logically on the exact day it reaches the end of its life. A CSD or issuer may need to perform certain operations even after maturity or another business event in certain circumstances. The business status of a static data occurrence will determine the operations T2S will allow for the occurrence. The deletion status determines whether the static data occurrence is active in T2S.

Active Setting

Reference ID	T2S.16.050

The active setting shall specify that an occurrence of static data is available for processing. For example, T2S shall accept and process settlement instructions only when the deletion status of the security and the account are active. Otherwise, T2S shall reject them.

Deleted Setting

Reference ID	T2S.16.060

The deleted setting shall specify that an occurrence of static data is no longer available for processing: it shall define a record as deleted from further use in T2S. When an application or user logically deletes an occurrence, the user must be able to use the occurrence of static data for historic queries and information requests (e.g. a backdated position query on a deleted account). However, T2S shall reject new settlement instructions for a logically deleted record. Neither must it be possible for a user to amend logically deleted data.

16.3.2 Approval Status

Reference ID	T2S.16.070

Every occurrence of static data shall have an approval status to define whether the user has approved or rejected changes in attribute values of that occurrence, or if the update is awaiting approval by the user.

Awaiting Approval Setting

Reference ID	T2S.16.080

"Awaiting approval" shall define any change to static data that has been input and requires confirmation by a second user, but approval by the second user is outstanding. T2S processes and applications must not use unapproved changes.

Approved Setting

Reference ID	T2S.16.090

"Approved" shall define any change to static data entered by a user or an application into T2S that requires confirmation by a second user and has been confirmed to be correct by the second user. Any update not requiring approval shall be "approved" by default.

Rejected Setting

Reference ID	T2S.16.100

"Rejected" shall define any change to static data entered by a user or an application into T2S that requires confirmation by a second user, but has been cancelled by the second user as incorrect.

16.4 Data Revision and Data History

Reference ID	T2S.16.110

T2S shall undertake a differentiation of static data between data revision and data history. Data revision shall denote any update to static data that is not a result of chronological record keeping. Data history shall denote the chronological record of changes to reference data, subject to change in its lifetime, but that remains valid for a specified period.

For example, T2S shall keep a chronological record, i.e. data history, for legal addresses for account relationships in T2S, since the owner of the account may move corporate headquarters and legal jurisdiction. Even though the new address and jurisdiction are in effect, the previous jurisdiction remains valid for backdated regulatory reporting. Additionally, the address will require data revision. If an application or user makes a correction to the address due to an erroneous input, it needs to generate a revision to identify the modified data, the application or user that undertook the change and the date and time of the change.

As a general principle, if a T2S system user can access specific static and transactional data, the same user can access its revisions and, if relevant, the data history.

16.4.1 Data Revision

Reference ID	T2S.16.120

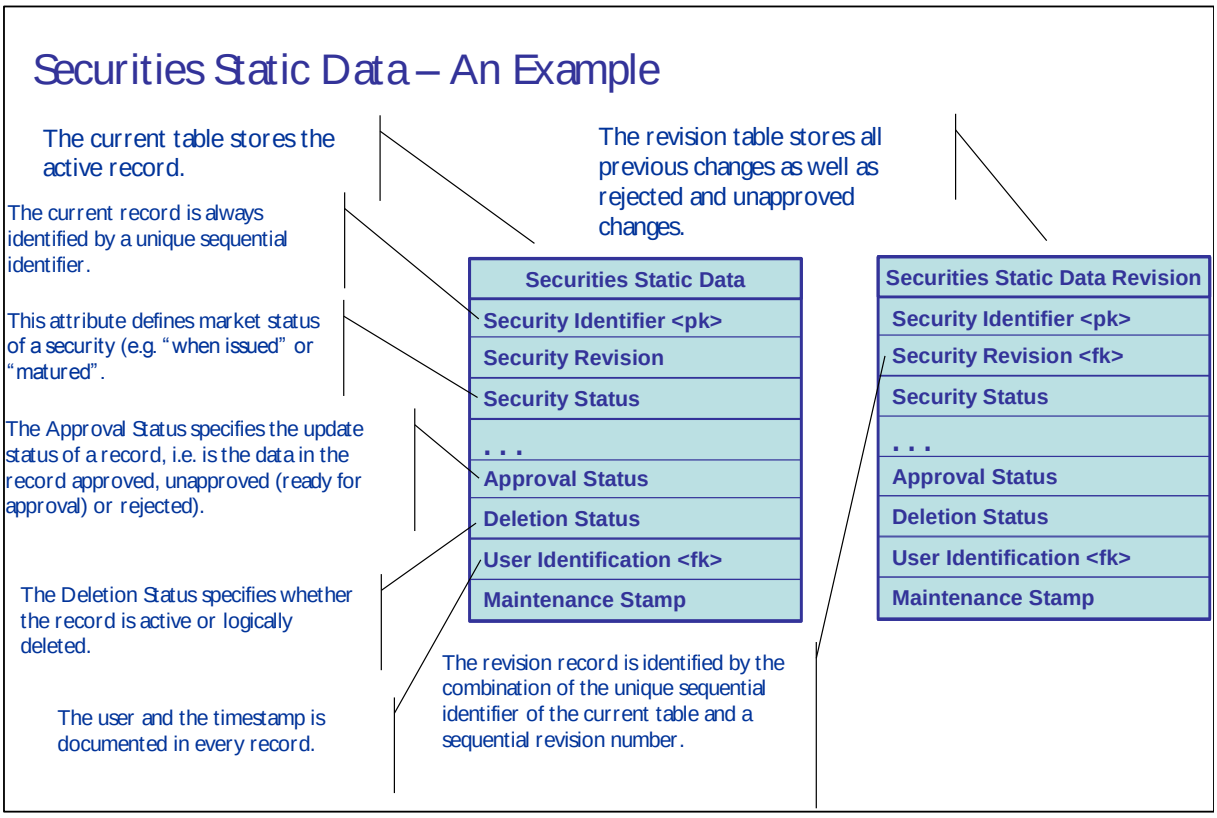
T2S shall store data revisions in its physical static data model. T2S shall not simply log changes to a text file and archive the text file as is the case in many applications today.

Data Revision Implementation

Reference ID	T2S.16.130

Storing data revisions in the database requires replicating all static data structures with their attributes as revision tables. A current static data entity shall store only the occurrences that are currently valid for processing in T2S. Therefore, the technical identifier shall uniquely identify each record in the table. All previous states of the record, which include both approved and rejected changes, as well as entered but not yet approved changes, shall be stored in the corresponding static data revision entity. Since many records may exist for an occurrence in the revision table, the technical identifier in combination with a sequential revision number shall uniquely identify each record. This shall ensure uniqueness of occurrences in the revision table. The following diagram provides an example of revision for security static data.

Figure 16-2 – Securities Static Data – A Revision Example



Audit Trail

Reference ID	T2S.16.140

Each data revision shall document the modified data at the attribute level, the user performing the change and the timestamp of the change. Every static data entity shall include the audit trail attributes.

Table 16-1 – Audit Trail Attribute Requirements

Attribute	Definition
User	Every static data entity shall include the technical identification of the user who updated an occurrence (record). It must be possible to identify explicitly the individual or application that changed the data by linking the technical identifier to the user name in the authentication application.
Timestamp	Every static data entity shall include the date and time to document when a user updated an occurrence (record). The timestamp is a snapshot of the operating system date and time when a change is committed.
Approval Status	Every static data entity shall include the approval status to document the processing status of an update.

16.4.2 Data History

Reference ID	T2S.16.150

T2S shall store all data requiring a history with a valid-from date and, if necessary, a valid-to date. Only information with a definite end-date shall require a valid-to date. For example, a change of legal address will not require an end-date. When the legal address changes, the user enters the new address with a valid-from date. Any application programme can identify immediately the active legal address for a given date merely by comparing the date with the valid-from date. There is no requirement for a valid-to date in this scenario, since T2S will always require a current legal address for an active T2S party.

Adding an end-date would only increase the complexity of the maintenance process without adding value in terms of business information and data consistency. In the case of the example, tracking a valid-to date for change of address would require both writing a new record and updating the valid-to date of the previous record with the new valid-from date minus one calendar day. The use of a valid-to date in these circumstances does not simplify data reading or querying. It merely avoids the use of a maximum value function in an SQL statement.

However, there are cases where a valid-to date for a set of information is mandatory. In these cases, it sets the end marker for the information chronology. The status of a relationship between a CSD and a security in T2S is one such example. A data entity in T2S will define the securities for which a CSD acts as either an investor CSD or an issuer CSD. For example, CSD ABC acts as investor CSD for security XYZ as of a given date in the past. Today, CSD ABC could decide that it no longer wishes to be an investor CSD for security XYZ as of a given date in the future. In this case, the valid-to date allows the CSD to specify today the future date from which the CSD will no longer accept the security for settlement.

16.5 Static Data Management

Reference ID	T2S.16.160

Static data management refers to the functionality that T2S shall provide for maintaining static data in T2S regardless of the type of conceptual entity. T2S will apply the same functional principles for the deletion of a security, as it will for the deletion of a T2S dedicated cash account or securities account.

Real time static data update

Reference ID	T2S.16.163

T2S shall allow the update of static data in real-time in user-to-application mode. T2S shall allow the update of static data in real-time in application-to-application mode, except for the following preliminary list of static data maintenance functionality only available in user-to-application mode:

- Tolerance amounts

- Attribute domains (settlement priority defaults, sequencing rules)
- Message subscriptions
- Conditional securities delivery rules
- Market-specific restriction types and their profiles
- Partial settlement thresholds
- System entities
- Closing day calendar

Message-based update

Reference ID	T2S.16.165

T2S shall use static data update messages for updating all static data.

File–based update

Reference ID	T2S.16.167

T2S shall allow T2S Actors to send multiple static data update messages in one file at any time during the day. For example, a CSD may want to update security reference data only at the end of the business day. T2S will allow the CSD to send all its updates of these data in one file. T2S shall then process the file message by message. This process would correspond to an end-of-day batch update.

16.5.1 Static and Dynamic Data Change Management

Reference ID	T2S.16.170

Static and dynamic data change management specifies the business requirements for processing and approving updates to static and dynamic data made by one T2S system user by another T2S system user within the same organisation, i.e. T2S party, often referred to as dual authorisation. T2S shall provide a flexible configurable change management component for static and dynamic data so that T2S actors can parameterise their change approval processes (dual authorisation) for the various static and dynamic data entities according to their legal, regulatory, audit and operational requirements. Dual authorisation on dynamic data will apply to those business objects that an authorised T2S System User can change manually such as:

- Input settlement instruction;
- Input maintenance instructions of a settlement instruction;
- Input an immediate liquidity transfer order.

Change Approval Configuration

Reference ID	T2S.16.180

T2S shall provide the T2S actors with the capability to parameterise the entities and types of updates made by a T2S system user or T2S process that require approval from a second independent T2S system user or T2S process.

Update Type

Reference ID	T2S.16.190

It must be possible to differentiate, in the configuration of the change approval, between an automated update through an interface and an interactive manual update by an individual for a static data entity at the party level. For example, it should be possible to specify that an update of security static data by an automated interface should not require an independent change approval, but a manual update by a person is subject to such an approval.

Change Type

Reference ID	T2S.16.200

It shall be possible to specify in the configuration whether change approval is required for adding, changing or deleting an occurrence in a specific static and dynamic data entity for a specific party. For example, the changing of account data may not require authorisation by an independent approval, but its deletion does.

Combination of Change and Update Type

Reference ID	T2S.16.210

T2S shall support the configuration of change approval, based on the combination of change type and update type (manual or automated).

Change Processing Algorithms

Reference ID	T2S.16.220

Any application used to maintain static and dynamic data shall verify if the change to an occurrence of static and dynamic data it is processing is subject to independent change approval. The static data maintenance application shall read the change approval configuration for its entity / entities and shall process the update according to the configured parameters.

Processing a New Occurrence

Reference ID	T2S.16.230

When a new occurrence in a static and dynamic data entity is subject to independent change approval, the static and dynamic data maintenance application shall create it immediately in the relevant current static and dynamic data entity with a status "awaiting approval". If the independent approver approves the change, then static and dynamic data change management shall reset the status from "awaiting approval" to "approved" in the current data. If the independent approver rejects the new occurrence, then static and dynamic data change

management shall delete the update from the current entity and write it to the revision entity with the status "rejected". If a new occurrence is not subject to approval, then static and dynamic data change management shall create it in the applicable current static and dynamic data entity with a status "approved".

Processing an Update of an Occurrence

Reference ID	T2S.16.240

When a T2S system user or T2S process updates an occurrence of static and dynamic data, which is subject to an independent approval, static and dynamic data change management shall create the changed version of data as a new occurrence in the relevant revision entity with a status "awaiting approval". The current version shall remain unchanged and all applications shall use it until an independent source approves the update. If the independent approver accepts the change, then static and dynamic data change management shall write the changed occurrence to the current entity with the status "approved" and delete it in the revision entity. Static and dynamic data change management also deletes the previously valid version of the data from the current entity and creates it as part of the audit trail in the revision entity. If the update is not approved, then static and dynamic data change management updates the status of the change to "rejected" and it remains as an unapproved change in the revision entity.

16.5.1.1 Change Approval Information Requirements

It must be possible for an authorised T2S system user to

- identify all static and dynamic data changes awaiting approvals;
- search for specific static and dynamic data changes;
- search and display historic change information, both approved and rejected changes;
- and approve and reject static and dynamic data changes.

Changes Awaiting Approval

Reference ID	T2S.16.250

The user shall be able to identify static and dynamic data changes awaiting approval. Access to this facility shall be restricted to those individuals who have the necessary access rights to approve static and dynamic data changes. It shall be possible to identify changes awaiting approval by:

- the type of data (e.g. security static data, account static data, etc.);
- the period in which the update was made;
- the user account of the person who performed an update;
- and by a specific mnemonic (e.g. ISIN, account number).

Approve or Reject Change Detail

Reference ID	T2S.16.260

It shall be possible for an authorised T2S system user to approve or reject a change made by another T2S system user or T2S process. When an authorised user selects a static and dynamic data change for approval or rejection, T2S shall provide the following information:

- the mnemonic, identifying the static and dynamic data occurrence;
- the old and new values for each changed field;
- and the type of change (add, update or logical deletion).

16.5.2 Deleting a Static Data Occurrence

Reference ID	T2S.16.270

The deletion of an occurrence of static data shall only occur logically. The physical deletion of static data shall not be possible in T2S.

Reactivation of a Logical Deletion

Reference ID	T2S.16.290

In some instances, it will be necessary to reactivate a logically deleted occurrence of static data. A generic function shall exist that allows the user to specify the static data entity and the identifier of an occurrence in that static data entity, and to reset the deletion status of a record in that entity from “deleted” back to “active”.

Physical Deletion

Reference ID	T2S.16.300

Only archiving processes shall delete static data from the active T2S database. To ensure the referential integrity of data, the physical deletion of static data occurrences from the active database shall be performed only after archiving processes have removed and archived the related transactional and position data as of a cut-off date that is determined by a retention period. The physical deletion of a static data occurrence shall only be possible for logically deleted occurrences. Data history and data revisions that are before the archive date shall be included in any physical deletion process even if the current record is still active – since the transactional data for which they are relevant would be removed by the archiving.

16.5.3 Update Constraints

Reference ID	T2S.16.310

T2S shall not allow a T2S system user or T2S process to perform an update of an occurrence of static data if the previous update of the same occurrence remains on the change approval queue. T2S shall not support the concurrent update of an occurrence of static data. When a T2S system user or T2S process selects an occurrence for editing, T2S shall lock the occurrence so that a second T2S system user or T2S process cannot access it for update.

16.6 Currency Reference Data

Reference ID	T2S.16.320

A currency is not a security according to Directive 2004/39/EC. In the T2S context, the notion of currency shall apply to:

- the currencies eligible for settlement in T2S;
- the currency in which a cash leg of a settlement instruction in T2S settles;
- the currency of the security denomination;
- and the currency of T2S dedicated cash accounts and limits.

The static data shall store the list of valid currencies defined by standard ISO 4217 and foresee an attribute of the currency that determines whether the currency is eligible for settlement in T2S.

Table 16-2 – Attribute Requirements for the Entity Currency

Attribute	Description
Currency Code	This attribute shall define the unique code of the currency according to ISO 4217.
Currency Name	This attribute shall specify the currency name.
Number of Decimals	This attribute shall specify the number of decimals a currency has.
T2S Settlement Currency	This attribute shall specify if the currency is a T2S settlement currency. The attribute shall differentiate between the currencies in which T2S settles and other currency codes that are required for validation and reporting purposes.

Maintaining Currencies

Reference ID	T2S.16.330

Currency maintenance refers to the process of adding, changing and deleting currencies in T2S.

Adding a Currency

Reference ID	T2S.16.340

It shall be possible for the T2S system administrator to add a new currency.

Updating a Currency

Reference ID	T2S.16.350

It shall be possible for the T2S system administrator to update an existing currency by selecting the relevant ISO currency code.

Deleting a Currency

Reference ID	T2S.16.360

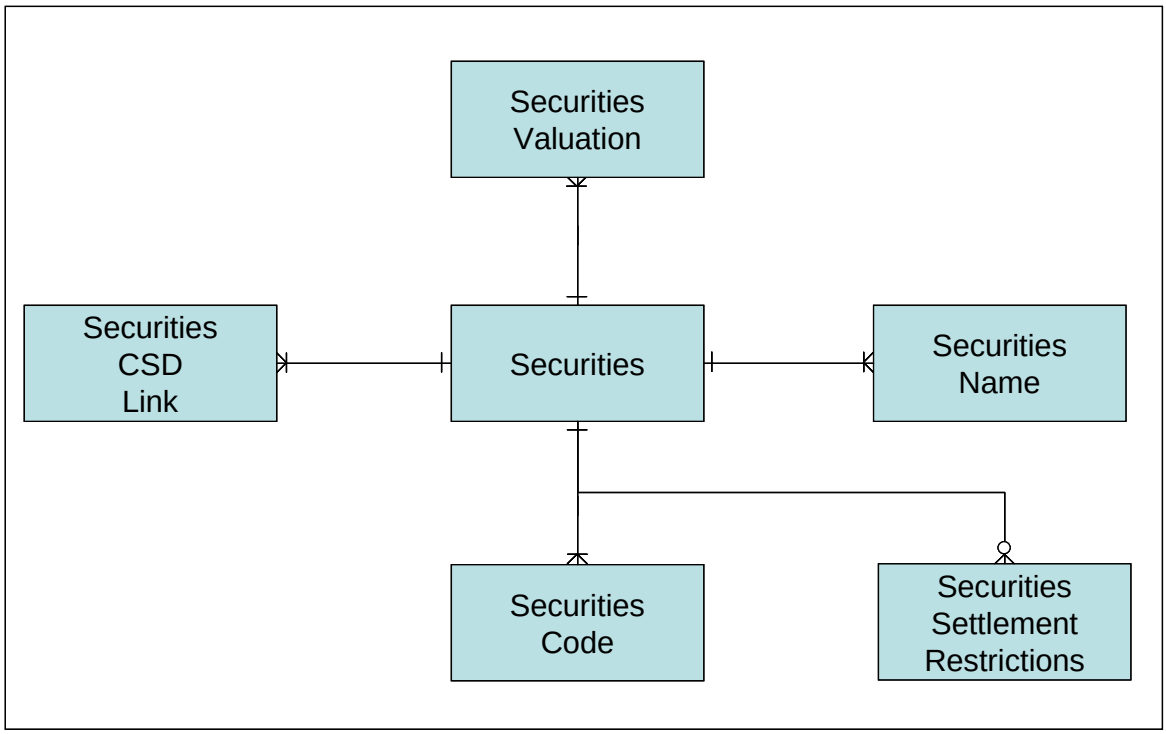
T2S shall provide a function to allow the T2S system administrator to delete logically an existing currency by entering the ISO currency code. However, T2S shall not allow the T2S system administrator to delete a currency assigned to an active security, an unsettled instruction or active cash balance.

16.7 Securities Reference Data Model

Reference ID	T2S.16.370

This section defines the business requirements for securities reference data. Securities reference data in T2S shall be restricted to, but will include all, the data required for settlement and auto-collateralisation in central bank money. The securities reference data model defines conceptual structures that are required in T2S for storing the attributes of securities. The description represents a logical model and not a physical implementation. Technical fields for the audit trail and static data change management are not included to avoid redundancy.

Figure 16-3 – Conceptual Securities Data Model



16.7.1 Securities

Reference ID	T2S.16.380

The *Securities* entity shall hold all attributes that exist only once for a security, i.e. where a 1:n relationship between the security and a set of information pertaining to the security is not needed. The T2S scope includes all securities that:

- have an ISIN code as instrument identifier;
- are held with a CSD in T2S;
- settle in book entry form;
- and are fungible (from a settlement processes perspective).

Certain "non-standardised securities" that comply with the first three criteria but are not fungible from a settlement perspective may still be entered in and processed by T2S under specific conditions (Chapter 9 provides further information on the settlement procedures of non-standardised securities.) Securities reference data shall require every security to have an ISIN code, compliant to ISO 3166.

The creation of a new security will be effective immediately unless it requires dual entry approval. This also applies to updates of all attributes for the *Securities* entity.

Table 16-3 – Attribute Requirements for the Securities Entity

Attribute	Description
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S.
CFI	This attribute shall classify the instrument according to ISO 10962. It shall be the objective of T2S to use a harmonised securities classification, but this shall not preclude the use of CSD- or market-specific classifications for processing.
Current Security Market Status	This attribute shall define the status of a security in its life cycle (e.g. "when issued", issued or matured). It shall not define a blocking status for an instrument – this shall be stored as a security restriction.
Final Maturity or Expiry Date	This attribute shall store the final maturity or expiry date of an instrument, where applicable. It shall remain possible to process instructions and settlements for a security that has matured if it has not been explicitly restricted from settlement through a settlement restriction.
Settlement Type	This attribute shall specify whether the security settles in units or as a nominal.
Minimum Settlement Unit	This attribute shall define the minimum quantity or nominal of the security for settlement.
Settlement Unit Multiple	This attribute shall define that the settlement quantity or nominal must be a multiple of the value in this data item. The value must be greater than zero.

Attribute	Description
Issue Currency	This attribute uniquely identifies the issue currency of a security in the system using the ISO 4217 standard.
Country of Issuance	This attribute shall uniquely identify the country in which the issuer issued the security.

16.7.2 Securities Name

Reference ID	T2S.16.390

This entity shall specify the valid long and short descriptions of an instrument. The name of a security can change over time owing to mergers or acquisitions. Therefore, several names may exist for a security, although only one name can exist for a security at any given point in time. A security name must be stored on a timeline basis. This storing mechanism shall ensure that application programmes have the correct name for backdated queries and reporting. A harmonised convention shall apply to the naming of securities in T2S according to ISO standards.

Naming Conventions and Standards

Reference ID	T2S.16.400

The security short name shall fulfil the requirements of ISO 18774. ISO 18773 Part 1 and Part 2 shall be the naming convention in T2S for the security long name.

Attribute Requirements

Reference ID	T2S.16.410

The following table specifies the attributes that T2S shall require for tracking the names of securities.

Table 16-4 – Attribute Requirements for the Securities Name Entity

Attribute	Description
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link the security name to the security.
Valid From	This attribute shall define the date from which the instrument name is valid. Since the instrument name may change over time, it is necessary to define the period in which a name is valid.
Security Short Name	This attribute specifies the security's short description (FIDS) according to ISO 18774 to identify an instrument. Example: International Business Machines, 4.75% Preferred Non-voting Extendible

Attribute	Description
	Redeemable Fixed Rate Interest: IBM Pfd Nvtg Extbl Red FRI 4.75%. T2S shall display this name in addition to the ISIN.
Security Long Name	This attribute specifies the long description of the security.

16.7.3 Securities Code

Reference ID	T2S.16.420

This entity shall store the external security codes, which uniquely identify a security to market participants. The ISO 6166 standard shall provide the convention for the unique identification of a security: the ISIN. The entity shall link the T2S technical securities identifier to the external code.

Table 16-5 – Attribute Requirements for the Securities Code Entity

Attribute	Description
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link the security code to the technical identifier of the instrument.
Valid From	This attribute shall define the date from which the instrument code is valid. This date can be before the actual issue date of an instrument for “when-issued” securities, but may not be a date in the future for a new security entered into the system. On an initial migration of instrument data into T2S, this date could be set to the date of the initial load.
Code Type	This attribute shall define the code type assigned to the unique internal instrument identifier. Although the model can support local market codes, T2S shall support only the ISIN as valid code type.
Security Mnemonic	This attribute shall specify the unique market code of a security, defined by the code type. T2S shall use this attribute to store the ISIN.

16.7.4 Securities CSD Link

Reference ID	T2S.16.460

This Securities CSD Link logical entity shall assign a security to a CSD in T2S in order to define the eligibility of the instrument for settlement in that CSD. An attribute within this entity shall specify which CSD is responsible for maintaining the instrument static data.

Table 16-6 – List of Attributes for the Securities CSD Link Entity in T2S

Attribute	Description
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link security CSD link to the instrument.
CSD Identifier	This attribute shall define the unique technical identifier of a CSD in T2S.
Link Type	This attribute shall define the type of relationship link between the instrument and the CSD. The link type shall specify an issuer link (Issuer CSD), investor link (Investor CSD) or technical issuer CSD.
Valid From	This attribute shall define the date from which the link between CSD and security is active.
Valid To	This attribute shall define the date to which the link between CSD and security is active.
Security Maintenance	This attribute shall specify if the CSD is responsible for maintaining the instrument defined by the link.

Processing of Securities CSD Links

Reference ID	T2S.16.470

The following scenario attempts to describe how the *Securities CSD Link* entity shall represent multiple relationships between a security and CSDs, which includes their timeline dependencies as well as the assignment of responsibilities for the maintenance of instrument static data. In this example, two CSDs settle the same instrument in T2S.

No.	Security Identifier	CSD Identifier	Valid From	Valid To	CSD Type	Instrument Maintenance
1	1234	5678	1/1/2007	-	Issuer	Yes
2	1234	9876	1/1/2007	-	Investor	No

In the table above, record one defines CSD 5678 as the issuer CSD in T2S with maintenance responsibility for security 1234 as from 1 January 2007. Record 2 defines CSD 9876 as the investor CSD with no maintenance responsibility for the security as from 1 January 2007.

As of 1 July 2007, the status of the relationship for CSD 5678 changes from issuer CSD to investor CSD, but maintenance responsibility for the security 1234 remains with this CSD. This reassignment would result in an additional record (record 3) with a change in the CSD Type from “Issuer” to “Investor”. The update of the valid-to date of record one is simultaneous. The table below documents the updated Securities CSD Link entity records.

No.	Security Identifier	CSD Identifier	Valid From	Valid To	CSD Type	Instrument Maintenance
1	1234	5678	1/1/2007	30/6/2007	Issuer	Yes
2	1234	9876	1/1/2007	-	Investor	No
3	1234	5678	1/7/2007	-	Investor	Yes

A reassignment for the maintenance of the security static data from CSD 5678 to CSD 9876 takes effect on 1 September 2007. The reassignment creates record four for CSD 5678 with the security maintenance attribute no longer set to "Yes" and sets the end-date of record three. The process also creates record five with the security maintenance attribute set to "Yes" and sets the end-date of record two.

No.	Security Identifier	CSD Identifier	Valid From	Valid To	CSD Type	Instrument Maintenance
1	1234	5678	1/1/2007	30/6/2007	Issuer	Yes
2	1234	9876	1/1/2007	31/8/2007	Investor	No
3	1234	5678	1/7/2007	31/8/2007	Investor	Yes
4	1234	5678	1/9/2007	-	Investor	No
5	1234	9876	1/9/2007	-	Investor	Yes

Starting from 1 January 2008, CSD 5678 has decided not longer to provide settlement services for the security. The valid-to date is set at 31 December 2007 in the most current record of the CSD (record four) for that combination of CSD and security, as documented in the following table.

No.	Security Identifier	CSD Identifier	Valid From	Valid To	CSD Type	Instrument Maintenance
1	1234	5678	1/1/2007	30/6/2007	Issuer	Yes
2	1234	9876	1/1/2007	31/8/2007	Investor	No
3	1234	5678	1/7/2007	31/8/2007	Investor	Yes
4	1234	5678	1/9/2007	31/12/2007	Investor	No
5	1234	9876	1/9/2007	-	Investor	Yes

Consistency of Maintenance Responsibility in Securities CSD Link

Reference ID	T2S.16.480

Every security shall have a CSD assigned to it with this maintenance responsibility. No more than one combination of CSD and security shall exist with maintenance responsibility at any given point in time. T2S shall not allow a security without any party having maintenance responsibility. The CSD in an issuer link for a security shall always have responsibility for maintaining the security. The maintenance facility for Securities CSD Link in T2S shall ensure the integrity and consistency of the information.

Batch Update of Links

Reference ID	T2S.16.490

T2S shall provide the facility to perform mass updates on the link information. T2S may have to add or remove links for a specific CSD as part of an initial migration or a CSD entering or leaving a market.

16.7.5 Deviating settlement Unit

Reference ID	T2S.16.500

Every security has a multiple settlement quantity or nominal. A multiple of that defines the standard lot sizes eligible for settlement on condition of being equal or greater than the minimum settlement unit. However, securities exist that have several odd lot sizes outside of the multiple that can settle. Therefore, T2S shall store deviating settlement units for a security that T2S shall allow for settlement. There shall be no limit for the number of deviating settlement units that T2S shall store for a security.

Table 16-7 – List of Attributes for the Deviating Security Nominal Entity

Attribute	**Description**
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link the security to the deviating nominal.
Deviating Settlement unit	This attribute shall store the deviating settlement unit for a security.

16.7.6 Securities Settlement Restrictions Model

Reference ID	T2S.16.510

It shall be possible for a CSD and the T2S operator to block a security from settlement. For example, it may be necessary to restrict settlement in a security for all CSDs. For example, CSDs will need to restrict settlement in a security for corporate action processing affecting securities positions and settlement instructions. A CSD will not need to restrict a security for settlement that only requires the end-of-day position. The following table specifies the proposed business attribute requirements for settlement restrictions at the security level. The holding model defines the blocking of accounts and securities holdings within an account.

Table 16-8 – List of Attributes for Securities Settlement Restrictions

Attribute	Description
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link the restriction to the security static data.
Settlement Restriction Type	This attribute shall define the reason for restricting the security from settlement. The restriction type of security level across all CSDs shall be harmonised. Restrictions at the CSD level shall be harmonised to the maximum extent possible, but market-specific restriction types shall be definable.
Party Identifier	This attribute is the unique technical party identifier of the CSD or the T2S Operator in T2S.
Valid-From Timestamp	This attribute shall specify the date and time from which the security is restricted from settlement.
Valid-To Timestamp	This attribute shall specify the date and time until which the security is restricted from settlement. A restriction shall be valid until further notice when no end timestamp when this attribute specifies a value. T2S shall remove the restriction automatically after the date and time when the attribute specifies a timestamp.

16.7.7 Securities Valuation

Reference ID	T2S.16.520

T2S shall store the dirty price with the haircut already deducted of a security for the valuation positions in securities for collateralisation. The working assumption is that both central banks and payment/settlement banks, offering auto-collateralisation, will provide prices for the securities each has identified as eligible for auto-collateralisation.

Table 16-9 – List of Attributes for Securities Valuation

Attribute	Description
Security Identifier	This attribute shall specify the unique technical identifier of a security in T2S.
Valuation Date	This attribute shall specify the date for which valuation data applies.
Valuation Currency	This attribute shall define the currency of the price for the valuation.

Attribute	Description
Price	This attribute specifies the price of the security as of the valuation date in the collateral valuation currency.
Party Identifier	This attribute specifies the unique technical identifier of the payment/settlement bank or central bank that provided the securities price for its collateral valuation.

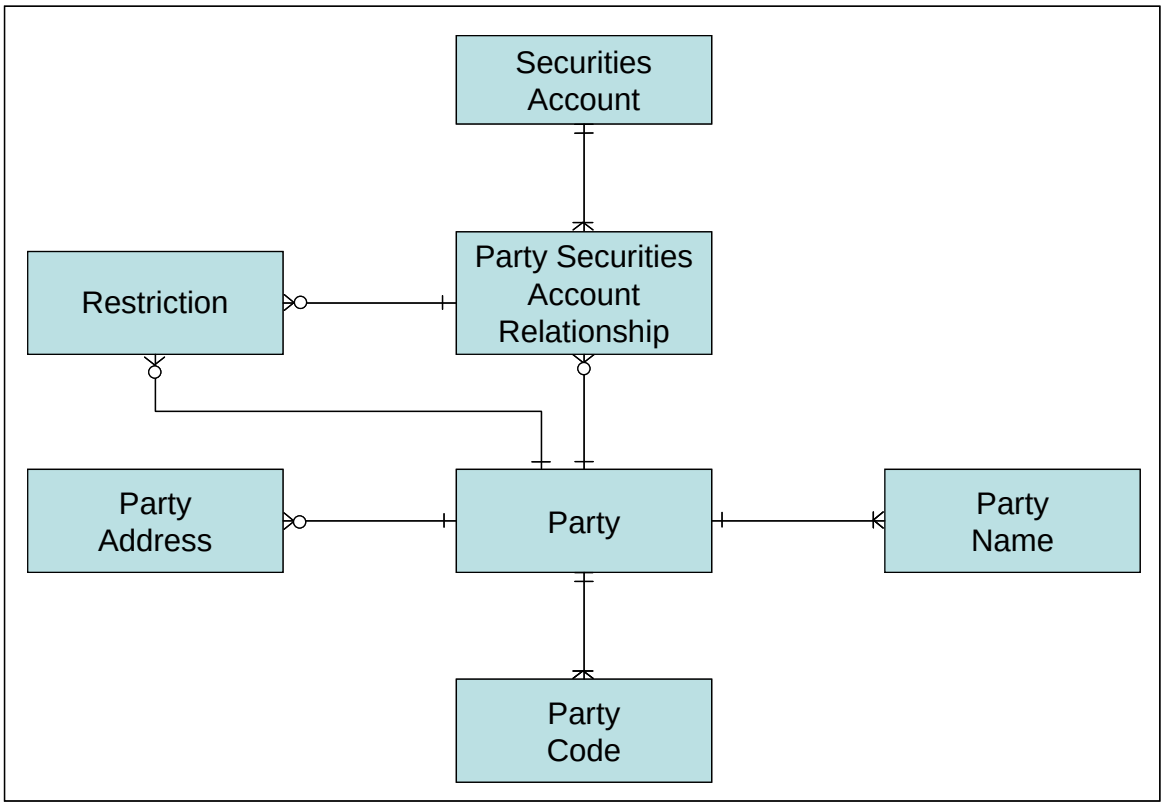
16.8 Party Reference Data Model

Reference ID	T2S.16.530

This section defines the business requirements for party reference data. Party reference data is not to be confused with the term "T2S Party". "T2S Party" is a business concept used to describe a category of T2S stakeholders in T2S. The party reference data refers to the set of information that T2S will store for legal entities and their related accounts.

Party reference data in T2S shall be restricted to, but will include all, data required for settlement and auto-collateralisation in central bank money. The model for party reference data defines conceptual structures that are required in T2S for storing the attributes of legal entity and account information. The description represents a logical model and not the physical implementation. Technical fields for the audit trail and static data change management are not included to avoid redundancy.

Figure 16-4 – Conceptual Party Reference Data Model



16.8.1 Hierarchical Party Model

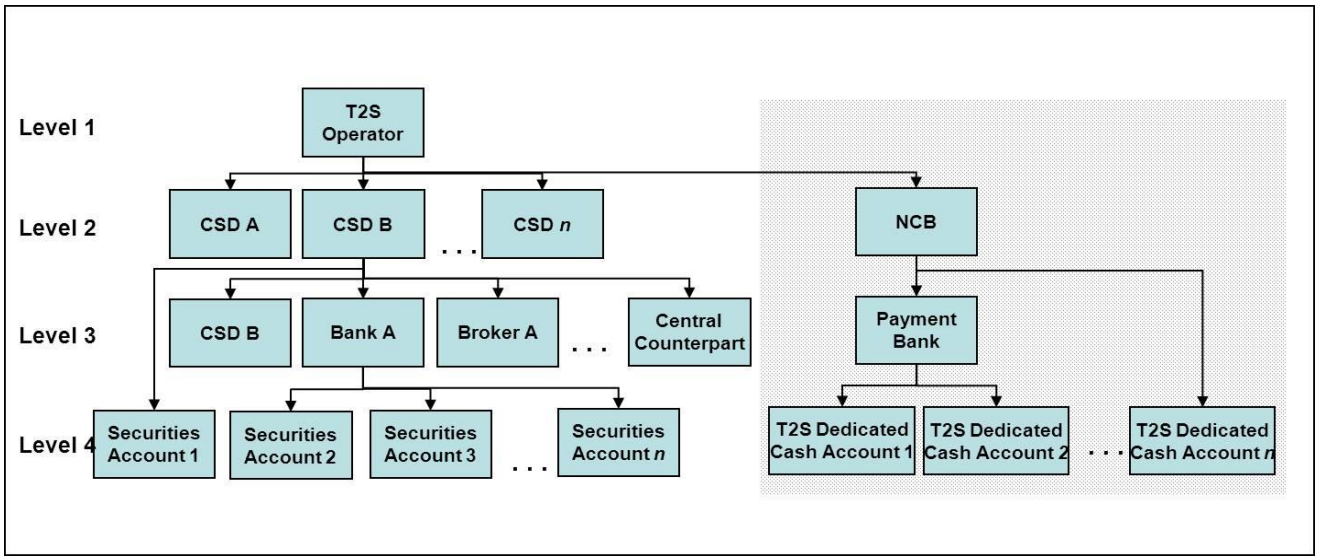
Reference ID	T2S.16.540

The party reference data shall support a hierarchical structure, which shall also define the relationships between the parties. The T2S operator shall constitute the top level of the hierarchy. The second tier of the party hierarchy shall be the CSD and NCB.

The hierarchical structure for the CSD shall support all T2S party data pertaining securities settlement. This leg of the hierarchical structure shall identify the assignment of the securities account to the CSD participant or the CSD. CSD participants shall include central counterparts, trading platforms, stock exchanges and financial institutions with a contractual relationship to a CSD. The hierarchy shall link the securities account operated by the CSD participant to the relevant CSD. The securities accounts can be either omnibus accounts or end-investor accounts for markets with direct holdings systems.

The NCB leg of the hierarchy shall include all data relating to the NCB and the T2S dedicated cash accounts held by payment banks with the NCBs. The third tier of the hierarchy shall be the payment banks operating T2S dedicated cash accounts. This leg of the hierarchical structure shall identify the assignment of the T2S dedicated cash account to the payment bank or the NCB. The hierarchy shall link the T2S dedicated cash account operated by the payment bank to the relevant NCB.

Figure 16-5 – Hierarchical Party Model



16.8.2 Party

Reference ID	T2S.16.550

This entity shall specify all attributes for the definition of a party in T2S. A party shall denote any legal or organisational entity required in T2S. This entity shall store the parties from the first three levels: the T2S operator, the CSDs, the participants of the CSD, the NCB and payment banks.

Table 16-10 – List of Attributes for the Party

Attribute	Description
Party Identifier	This attribute shall define the unique technical identifier of a party in T2S.
System Entity Identifier	This attribute specifies the system entity code of the party with which it has a contractual relationship.
Opening Date	The attribute “Opening Date” defines the actual date the T2S Actor, defined by the Party Link Identifier, established the contractual relationship with the party, as defined by the occurrence of that party in the Party entity.
Close Date	This attribute shall specify the date that the contractual relationship with the party has legally ended.
Party Status	This attribute shall define the business status of a party for processing in the system. This attribute shall not specify a blocking status. The user shall use the restriction functions to

Attribute	Description
	restrict temporarily a participant from securities settlement processing.
Party Type	This attribute specifies a classification of the partner. At a minimum, the party types shall include: - T2S Operator - Payment Bank - Central Securities Depository (CSD) - CSD Participant - External CSD - National Central Bank (NCB)

Party Name

Reference ID	T2S.16.560

The *Party Name* entity shall specify the valid short and long names of a party in T2S. A party name can change over time owing to mergers, acquisitions or just plain name changes. Therefore, several names may exist for a party although only one name can exist for a party at any given point in time. This entity shall ensure that the system can identify the correct name for a party at any given point in time.

Table 16-11 – List of Attributes for the Party Name

Attribute	Description
Party Identifier	This attribute shall be the unique technical identifier of a party in T2S. It shall link the name back to the party.
Valid From	This attribute shall define the date from which the party name is valid. Since the party name may change over time, it is necessary to define period in which a name is valid.
Party Long Name	This attribute shall specify the full name of the party.
Party Short Name	This attribute shall specify the short name of the party.

Party Code

Reference ID	T2S.16.570

The *Party Code* entity shall store the codes that the financial market uses to identify a party. T2S shall use the BIC to identify a party. The BIC is a bank identifier code based on ISO 9362. SWIFT is the designated

registration authority for assigning BICs and publishing BICs in the BIC Directory. The BIC is not unique for a market participant; therefore, T2S shall use the primary BIC of a legal entity to identify a party in T2S. If the party does not have a BIC, then it must ensure that SWIFT assigns the BIC. Since a market participant may have relationships with more than one CSD, T2S shall qualify the code with the entity identifier of the CSD or NCB to ensure uniqueness.

Table 16-12 – List of Attributes for the Party Code Entity

Attribute	Description
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD to with which the party has its contractual relationship. This attribute shall qualify the code type in order to ensure uniqueness for cases where a financial institution has a relationship with more than one CSD.
Party Identifier	This attribute shall be the unique technical identifier of a party in T2S. It shall link the party code to the party.
Valid From	This attribute shall define the date from which the party code is valid.
Code Type	This attribute shall define the code type assigned to the unique internal party identifier. This attribute shall only support a code type for the BIC, according to the ISO 9362 standard.
Party Mnemonic	This attribute shall specify the unique market code of a party based on the code type.

Party Address

Reference ID	T2S.16.580

This entity shall store the valid addresses for parties. There shall be one legal address per party. T2S shall store address information for the T2S operator, CSD, NCB and payment banks. T2S shall not store addresses for CSD participants.

Table 16-13 – List of Attributes for the Party Address Entity

Attribute	Description
Address Identifier	This attribute shall specify the unique technical identifier of an address in T2S.
Party Identifier	This attribute shall specify the unique technical identifier of a party in T2S. It shall link the address to the party.
Valid From	This attribute shall define the date from which the party address is valid.

Attribute	Description
Jurisdiction	This attribute shall specify the country of jurisdiction for the party. This attribute shall be mandatory for a legal address. It shall be the same country as in the legal address, except for supranational institutions.
Street	This attribute shall contain the name of the street for the address.
House Number	This attribute shall contain the house number for the address.
City	This attribute shall specify the name of the city for the address.
Postal Code	This attribute specifies the postal code for the address.
State or Province	This attribute specifies the state or province for the address. Its use shall depend on the country code of the address.
Country Code	This attribute shall specify the country code of the address. The two-character ISO country code (ISO3166-1) shall identify the country.

Auto-Collateralisation Rules

Reference ID	T2S.16.581

This entity shall store for NCBs and payment/settlement banks the attributes to allow an NCB and payment/settlement banks to configure its auto-collateralisation rules for T2S. T2S shall allow and require the input of these data in party reference data for occurrences of party reference data, where the attribute Party Type in party reference data specifies “NCB” or “payment/settlement bank”.

Table 16-14a – List of Attributes for a NCB Auto Collateralisation Rules Entity

Attribute	Description
Party Identifier	This attribute shall specify the unique technical identifier of the National Central Bank or payment/settlement bank as a party in T2S.
Maximum Credit percentage	This attribute shall specify the maximum percentage of credit that the NCB grants for collateralised securities. This attribute shall not be relevant for payment banks.
Use of Maximum Credit percentage	This attribute has a Boolean value and shall specify whether the NCB uses the Maximum Credit percentage for calculations in monetary policy operations. This attribute shall not be relevant for payment banks.
Collateralisation Procedure	This attribute shall specify the type of collateralisation procedure application for the NCB, as defined by requirement T2S.08.700.

Attribute	Description
	• Repo • Pledge • Pledge Subaccount For payment/settlement banks, this attribute shall always have the default value of "Repo"

16.8.3 Securities Account Reference Data

Securities Account

Reference ID	T2S.16.590

Securities account reference data specify all information required for defining and processing a securities account in T2S. In some direct holding markets, account operators open and close end-investor accounts directly in the systems of the CSD. Securities accounts in T2S must be opened and closed through the CSD to ensure the consistency and integrity of securities account reference data between the systems of the CSD and T2S. This can be an automated process. When the CSD system opens an account, it will immediately trigger the opening of the account in T2S. The same applies for the closing of an account. The CSDs shall define their account numbers themselves. T2S shall ensure that the account number is unique at the time of creation. It shall not be possible to modify the securities account number.

Table 16-15 – List of Attributes for the Securities Account Entity

Attribute	Description
Securities Account Identifier	This attribute shall define the unique technical identifier of a securities account in T2S.
System Entity Identifier	This attribute shall specify the entity identifier of the CSD with which the party of the securities account has its contractual relationship. This attribute shall qualify the code type in order to ensure uniqueness for cases where a financial institution has a relationship with more than one CSD.
Securities Account number	This attribute shall define the unique securities account number. It is provided by the CSD at the time of the securities account creation and should be in line with ISO20022 specifications for securities accounts. T2S shall check uniqueness of the provided account number.

Attribute	Description
Open/Close Status	This attribute shall define the business status of the account. It shall determine the business processing allowed for the account in T2S. T2S shall not use this status field for temporarily restricting an account from settlement processing.
Opening Date	This attribute shall specify the date as of which a securities account is legally opened by the CSD.
Closing Date	This attribute shall specify the date as of which a securities account is legally closed by the CSD.
Market-Specific Restriction Identifier	This attribute shall specify the identifier for the market specific restriction, which determines the relevant rules for the processing the account in T2S.
Hold/Release Default	This attribute shall specify the default setting of specific securities settlement instructions received for the account (e.g. stock exchange trades from Frankfurt Stock Exchange).
Negative Position	This attribute shall define whether the securities account can hold a negative position in a security. Certain types of CSD technical accounts, such as issuer accounts, must have the capability to store negative values.
T2S Account Type	This attribute shall classify the account for the maintenance of CSD account links. It shall allow the following values: - CSD participant account - CSD mirror account - Inter-CSD account - T2S technical offset account (for direct holding markets) - CSD Omnibus account - Issuance account
Pricing Scheme	This attribute shall specify the pricing scheme to be applied to the Securities Account. It shall allow the following values: ▪ Account (pricing scheme by account) ▪ ISIN (pricing scheme by ISIN)
End Investor Account Flag	This attribute shall provide the user with an option to specify additional flags for the Securities Account (e.g. End Investor Account in direct holding market).

Assignment of a new securities account to T2S dedicated cash accounts

Reference ID	T2S.16.591

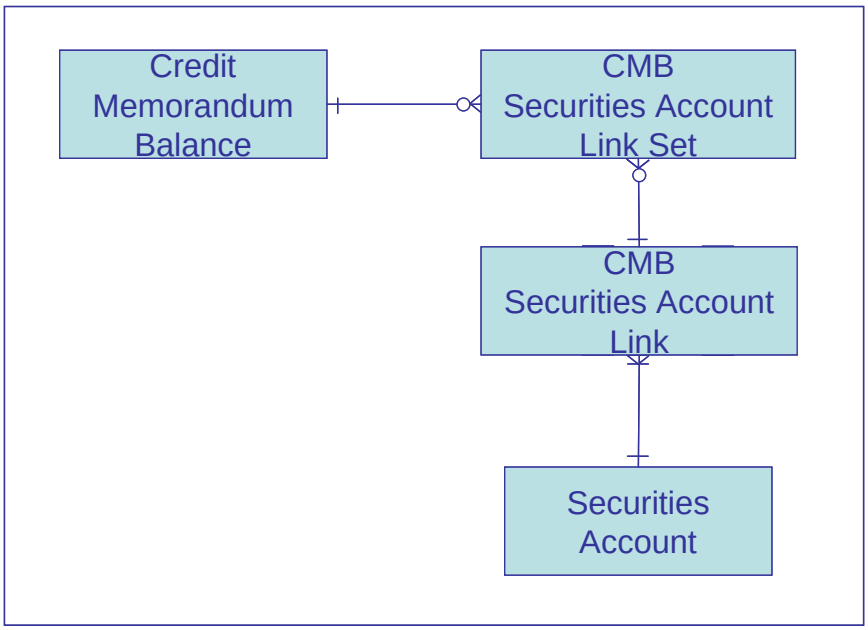
When an authorised T2S system user creates a new securities account, T2S shall require the user to assign the securities account to one or more T2S dedicated cash accounts of at least one payment/settlement bank that acts as its liquidity provider. T2S shall validate the primary BIC of the party holding the securities accounts against the list of primary BICs that the payment/settlement bank has assigned to its T2S dedicated cash accounts to ensure that the T2S system user only links securities accounts to eligible T2S dedicated cash accounts.

- When a user creates the first link between a securities account of a T2S Party and a T2S dedicated cash account, then T2S shall require the authorised T2S system user to specify the valid from date equal to the opening date of the securities account.
- When a user creates a link between a securities account of a T2S Party and a T2S dedicated cash account where a link between any securities account of that T2S Party and that T2S dedicated cash account already exists, then T2S shall require the authorised T2S system user to specify the valid from date greater than or equal to the current business day.

In both cases, the T2S system user must specify the default dedicated cash account for the new securities account.

When a user creates the first link between a securities account of a T2S Party and a T2S dedicated cash account, it shall create the necessary information in the entities CMB Securities Account Link Set and CMB Securities Account Link.

Figure 16-6 – Credit Memorandum Balance Conceptual Linking Model for Securities Accounts



Credit Memorandum Balance

Reference ID	T2S.16.616

The *Credit Memorandum Balance* entity shall define the unique identifier of a credit memorandum balance. T2S shall generate a credit memorandum balance as specified in requirements T2S.16.611 and T2S.16.614.

CMB Securities Account Link Set

Reference ID	T2S.16.582

The *CMB Securities Account Link Set* entity shall define the group of credit memorandum balances that T2S can use for securities settlement for an individual securities account. The entity shall define the date from which the relationship between credit memorandum balances and the securities account is valid.

Table 16-16 – List of Attributes for the CMB Securities Account Link Set Entity

Attribute	Description
Link Set Identifier	This attribute shall specify the unique technical identifier of a set of credit memorandum balances, linked to a securities account.
Securities Account Identifier	This attribute shall define the unique technical identifier of the securities account.
Currency	This attribute specifies the currency of the credit memorandum balance link set.
Valid From	This attribute shall define the date from which the set of credit memorandum balance links is valid.
Valid To	This attribute shall define the date to which credit memorandum balance links is valid.

CMB Securities Account Link entity

Reference ID	T2S.16.650

The CMB *Link* entity specifies all the credit memorandum balances linked as of a given date to a securities account of a T2S party.

Table 16-17 – List of Attributes for the Credit Memorandum Balance Link Entity

Attribute	Description
Credit Memorandum Balance Link Identifier	This attribute shall specify the unique technical identifier of this entity.
Link Set Identifier	This attribute shall specify the unique technical identifier of a set of credit memorandum balances, linked to a securities account.

Attribute	Description
Credit Memorandum Balance Identifier	This attribute shall specify the unique technical identifier of the credit memorandum balance in T2S.
Default Credit Memorandum Balance	This Boolean attribute shall specify whether the credit memorandum balance is the balance of the default T2S dedicated cash account for the securities account.

Party and Securities Account Relationship

Reference ID	T2S.16.595

T2S shall support a Party Securities Account Relationship entity to specify a time-dependent relationship between a T2S Party and a securities account. The purpose of the entity is

- to associate a securities account to a T2S Party as the account operator/ sub-custodian; and
- to allow a CSD in T2S to transfer the relationship of a securities account from one account operator/sub-custodian to another account operator/sub-custodian within the CSD. For example, the functionality will enable a CSD to transfer the relationship of an end-investor securities account from one account operator to another.

Table 16-18b – List of Attributes for Party Securities Account Relationship

Attribute	Description
Relationship Identifier	This attribute shall specify the unique technical identifier of an occurrence of a party to securities account relationship.
System Entity Identifier	This attribute shall specify the entity identifier of the CSD with which the party of the securities account has its contractual relationship. This attribute shall qualify the code type in order to ensure uniqueness for cases where a financial institution has a relationship with more than one CSD.
Party Identifier	This attribute specifies the unique technical identifier of the T2S Actor with which the securities account has its relationship.
Securities Account Identifier	This attribute specifies the unique technical identifier of the securities account.
Valid From	This attribute specifies the date from which the relationship between the T2S Actor and the securities account is valid.
Valid To	This attribute specifies the date to which the relationship between the T2S Actor and the

Attribute	Description
	securities account is valid.

Setting Date Values

Reference ID	T2S.16.596

When a T2S Actor opens a new securities account, T2S shall generate automatically the relationship between securities account and party. T2S shall set value in the attribute *Valid From* to the opening date of the securities account.

Specification of Mandatory Attributes

Reference ID	T2S.16.597

When the CSD transfers the account relationship from one securities account operator/ sub-custodian to another, the CSD must specify:

- the party identifier of the party from which the CSD wishes to transfer the securities account relationship;
- the party identifier of the party to which the CSD wishes to transfer the securities account relationship;
- the date as of which the CSD wishes to transfer the relationship;
- the new T2S dedicated cash account link set for the securities account;
- and the new securities account privilege of the new account operator.

Relationship Transfer of Linked Information

Reference ID	T2S.16.598

A relationship transfer shall result in the simultaneous:

- closing of the old relationship by T2S setting the value in the attribute *Valid To* for the party from which the CSD wishes to transfer the relationship to the date of the transfer;
- creation of the new relationship by T2S creating a new occurrence in *Party Securities Account Relationship* entity for the party to which the CSD wishes to transfer the securities account relationship;
- in the replacement of the T2S dedicated cash account link set of the old account operator / sub-custodian with the T2S dedicated cash account link set of the new account operator / sub-custodian;
- and the transfer of restrictions on the securities account or positions of that securities account to the new account operator / sub-custodian.

Example: CSD A wishes to transfer the relationship of a securities account 1, opened 1 January 1997, as of 1 July 2008 from the party account operator 1 to the party account operator 2.

Before Transfer:

Relationship Identifier	System Entity Identifier	Party Identifier	Securities Account Identifier	Valid From	Valid To
123456	CSD A	Operator 1	Securities Account 1	1 January 1997	-

After Transfer:

Relationship Identifier	System Entity Identifier	Party Identifier	Securities Account Identifier	Valid From	Valid To
123456	CSD A	Operator 1	Securities Account 1	1 January 1997	30 June 2008
1234567	CSD A	Operator 2	Securities Account 1	1 July 2008	-

Viewing positions prior to transfer

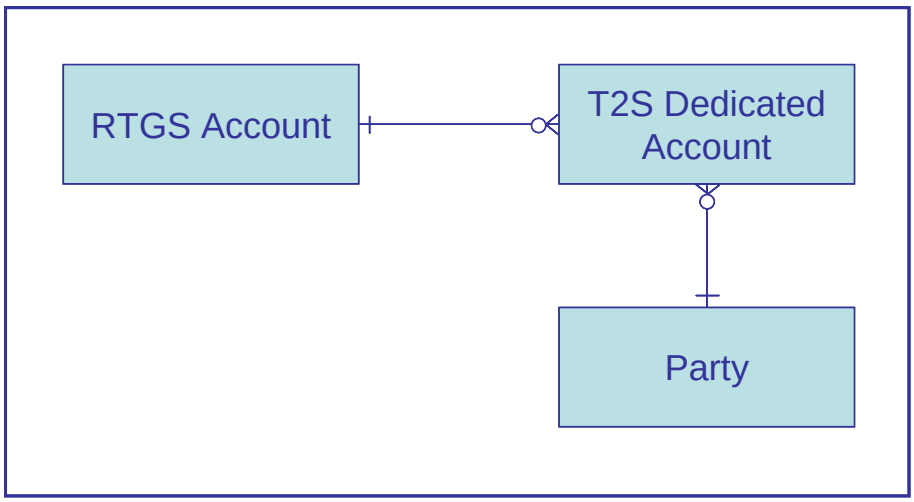
Reference ID	T2S.16.599

With the transfer of the relationship to the new account operator/sub-custodian, the new account operator/sub-custodian must be able to view those transactions and positions of the end-investor account that existed in T2S prior to the transfer (e.g. positions, restrictions and settlement instructions).

16.8.4 T2S Dedicated Cash Accounts

The T2S dedicated cash account model specifies the requirements for the set-up and maintenance of T2S dedicated cash accounts of NCBs and payment/settlement banks for securities settlement.

Figure 16-7 – Conceptual T2S Dedicated Cash Account Data Model



T2S Dedicated Cash Account

Reference ID	T2S.16.600

The *T2S Dedicated Cash Account* entity shall specify the T2S dedicated cash accounts of payment/settlement banks in T2S.

The entity

- shall link the T2S dedicated cash account to the relevant RTGS account for the automated end-of-day reimbursement;
- and shall provide the reference link to the payment/settlement bank or NCB that owns the account and the NCB as system entity that operates the account.

The NCBs shall define their account numbers themselves. T2S shall ensure that the account number is unique at the time of creation. It shall not be possible to modify the T2S dedicated cash account number.

Table 16-19 – List of Attributes for the Entity T2S Dedicated Cash Account

Attribute	**Description**
System Entity Identifier	This attribute shall specify the entity identifier of the NCB that operates the T2S dedicated cash account.
Party Identifier	This attribute shall be the unique technical party identifier of the payment bank that owns the T2S dedicated cash account.
T2S Dedicated Cash Account Identifier	This attribute shall specify the unique technical identifier of the T2S dedicated cash account in T2S.
T2S Dedicated Cash Account number	This attribute shall define the unique T2S dedicated cash account number. It is provided by the NCB (or party authorised) at the time of the dedicated cash account creation and should be in line with ISO20022 specifications for cash accounts. T2S shall check uniqueness of the provided account number.
Currency	This attribute shall specify the currency of the T2S dedicated cash account.
Floor Notification Amount	This attribute shall specify the lower threshold for notifying the cash manager. If the balance of the T2S dedicated cash account falls below this amount, then T2S immediately informs the liquidity manager of the account owner.
Ceiling Notification Amount	This attribute shall specify the upper threshold for notifying the cash manager. If the balance of the T2S dedicated cash account exceeds this amount, then T2S immediately inform the liquidity manager of the account owner.
Account Status	This attribute specifies the current business status of the T2S dedicated cash account

Attribute	Description
	(e.g. open or closed).
Opening Date	This attribute shall specify the date that the payment bank opens the T2S dedicated cash account.
Closing Date	This attribute shall specify the date that the payment bank closes the T2S dedicated cash account.
RTGS Account Number	This attribute shall specify the RTGS account linked to the T2S dedicated cash account.

Adding a T2S Dedicated Cash Account

Reference ID	T2S.16.610

It shall be possible for an authorised NCB business user to add a new T2S dedicated cash account for a payment or settlement bank in T2S. T2S shall assign new T2S dedicated cash accounts an *opened* business status and the current business day as the opening date.

Credit Memorandum Balance for a new T2S dedicated cash account of a payment/settlement bank

Reference ID	T2S.16.611

T2S shall allow the creation of a credit memorandum balance for a new T2S dedicated cash account (DCA). When triggering the creation of the CMB, the NCB user can provide the following (optional) parameters:

- T2S central bank cash account (providing intraday credit to the T2S DCA)
- Intraday collateral receiving securities account
- Regular collateral securities account

Auto-collateralisation limit to a new T2S dedicated cash account

Reference ID	T2S.16.612

T2S shall require an authorised NCB business user to set-up the auto-collateralisation limit for a T2S dedicated cash account when this user adds a new T2S dedicated cash account for a payment/settlement bank. If the user does not enter a limit, then a default of zero is set up.

Authorisation of T2S Actors to use the T2S dedicated cash account for securities settlement

Reference ID	T2S.16.614

It shall be possible for an authorised system user of the payment/settlement bank to authorise its client to use its T2S dedicated cash account for securities settlement by linking the primary BIC of that party to the T2S dedicated cash account. This step creates a credit memorandum balance for a client of a payment/settlement

bank using the T2S dedicated cash account of the payment/settlement bank on which the payment/settlement bank shall be able to set limits.

Limits when authorising clients to use a T2S dedicated cash account

Reference ID	T2S.16.592

T2S shall require the payment/settlement bank to set-up client limits on each T2S dedicated cash account it authorises its client to use (i.e. for credit memorandum balance created by the link between the client and the T2S dedicated cash account). If the user does not enter a limit, then a default of zero is set up.

Closing a T2S Dedicated Cash Account

Reference ID	T2S.16.620

It shall be possible for an authorised NCB business user to close a T2S dedicated cash account by setting the business status to “closed” and confirming the change. T2S shall not allow an authorised business user to close an account if:

- there is an un-settled instruction specifying the T2S dedicated cash account for the settlement of the cash leg;
- or there is a cash balance remaining on the T2S dedicated cash account.

External RTGS Account

Reference ID	T2S.16.655

The *External RTGS Account* entity shall specify all the external RTGS accounts of a payment/settlement bank to which an authorised T2S system user can link a T2S dedicated cash account. This entity shall also provide the reference link to the payment/settlement bank that owns the account and the NCB that operates the account.

Table 16-20 – List of Attributes for the External RTGS Account Entity

Attribute	**Description**
External RTGS Account Identifier	This attribute shall define the unique technical identifier of an external RTGS account in T2S.
System Entity Identifier	This attribute shall specify the entity identifier of the NCB with which the party of the external RTGS account has its contractual relationship.
Party Identifier	This attribute shall link the External RTGS account to a party, either the NCB or the payment/settlement bank with which the NCB has its relationship.
RTGS External Account Reference	This data item shall store the external RTGS account number as the RTGS system requires it.

Attribute	Description
RTGS System	This attribute shall define the RTGS system in which the RTGS account is held.
RTGS Account Status	This attribute shall define the current business status of the external RTGS Account (e.g. open or closed).
Currency	This attribute shall specify the currency of the external RTGS account.

Adding an External RTGS Account

Reference ID	T2S.16.656

It shall be possible for an authorised NCB business user to add a new external RTGS account for a payment, settlement bank or NCB in T2S. T2S shall assign new external RTGS account an *opened* business status and the current business day as the opening date.

Closing a External RTGS Account

Reference ID	T2S.16.657

It shall be possible for an authorised NCB business user to close an external RTGS account by setting the business status to “closed” and confirming the change. T2S shall not allow an authorised business user to close an account if:

- there is an un-settled payment instruction specifying the external RTGS account;
- the external RTGS account has an active link to a T2S dedicated cash;
- or is defined in a current (not closed, not expired) standing liquidity transfer order.

Restricting an External RTGS Account

Reference ID	T2S.16.658

T2S shall allow an authorised NCB business user to restrict an RTGS account using party and account settlement restrictions (T2S.16.680). The restriction of an RTGS account shall result in the restriction of all T2S dedicated cash accounts linked to the RTGS account from settlement.

Removing a restriction on an External RTGS Account

Reference ID	T2S.16.659

T2S shall allow an authorised NCB business user to remove a restriction on an RTGS account using party and account settlement restrictions (T2S.16.680). The removal of a restriction on an RTGS account shall result in the removal of all T2S dedicated cash accounts linked to the RTGS account for settlement.

16.8.5 T2S Dedicated Cash Account Liquidity Transfer Order

Reference ID	T2S.16.660

T2S static data shall store and support the maintenance of the following liquidity transfer orders:

- pre-defined liquidity transfer orders;
- and standing liquidity transfer orders.

Table 16-21 – List of Attributes for the T2S Dedicated Cash Account Liquidity Transfer Order Entity

Attribute	Description
Liquidity Transfer Order Identifier	This attribute shall specify the unique technical identifier assigned to the liquidity transfer order.
Liquidity Transfer Order Reference	This attribute shall specify the unique reference assigned to the predefined and standing liquidity transfer orders, by the instructing party.
Party Identifier	This attribute shall be the unique technical party identifier of the payment bank that owns the T2S dedicated cash account.
Debit Cash Account Identifier	This attribute shall specify the unique technical identifier of the T2S dedicated cash account or the relevant RTGS cash account that T2S must debit.
Credit Cash Account Identifier	This attribute shall specify the unique technical identifier of the T2S dedicated cash account or the relevant RTGS cash account that T2S must credit.
Currency	The attribute shall specify the currency of the amount.
Amount	This attribute shall specify the amount to be debited or credited through the liquidity transfer order.
All Cash	This attribute shall specify a Boolean value that determines whether T2S shall transfer any remaining liquidity on the debit cash account. When this attribute specifies a positive value “Y”, then the amount in the transfer order shall be zero.
Valid From Date	This attribute shall specify the date that from which the liquidity transfer order is valid.
Valid To Date	This attribute shall specify the date that to which the liquidity transfer order is valid.
Execution Type	This attribute shall specify whether T2S shall execute the liquidity transfer order based on an event or at a specific time.
Execution	This attribute shall specify the time or the event that triggers the transfer order.

The static data for a predefined and a standing liquidity transfer order shall be allowed to be modified. This modification instruction shall contain the unique reference (i.e. liquidity transfer order reference) to the liquidity transfer order to enable the modification of any of the below attributes

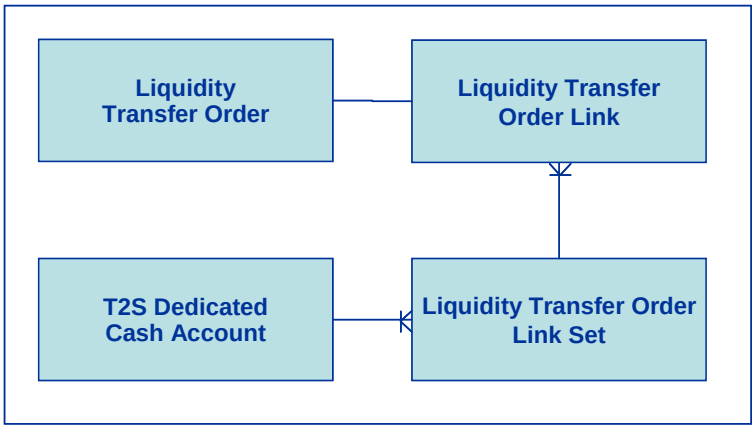
- Debit Cash Account Identifier
- Credit Cash Account Identifier

- Currency
- Amount
- All Cash
- Valid From Date
- Valid To Date
- Execution Type
- Execution

16.8.6 Multiple Liquidity Providers

The T2S multiple liquidity provider model specifies the requirements for sequencing the provision of liquidity from RTGS accounts of multiple liquidity providers to a T2S dedicated cash account.

Figure 16-8 – Conceptual Multiple Liquidity Provider Data Model



Liquidity Transfer Order Link Set

Reference ID	T2S.16.661

The *Liquidity Transfer Order Link Set* entity shall define a group of standing liquidity transfer orders that provide liquidity from one or more RTGS of one or more liquidity providers to a T2S dedicated cash account. The entity shall define the date from which the relationship between cash account and standing liquidity transfer order(s) is valid.

Table 16-22 – List of Attributes for the Liquidity Transfer Order Link Set Entity

Attribute	Description
Link Set Identifier	This attribute shall specify the unique technical identifier of a set of liquidity transfer orders.
T2S Dedicated Cash Account Identifier	This attribute shall define the unique technical identifier of the T2S dedicated cash account.

Attribute	Description
Valid From	This attribute shall define the date from which the set of liquidity transfer orders is valid.
Valid To	This attribute shall define the date to which the set of liquidity transfer orders is valid.

Liquidity Transfer Order Link

Reference ID	T2S.16.662

The *Liquidity Transfer Order Link* entity specifies all the standing liquidity transfer orders linked as of a given date to a T2S dedicated cash account.

Table 16-23 – List of Attributes for the Liquidity Transfer Order Link Entity

Attribute	Description
Liquidity Transfer Order Link Identifier	This attribute shall specify the unique technical identifier of the *Liquidity Transfer Order Link*.
Link Set Identifier	This attribute shall specify the unique technical identifier of a set of liquidity transfer orders.
Liquidity Transfer Order Identifier	This attribute shall specify the unique technical identifier assigned to the liquidity transfer order.
Transfer Order Sequence	This attribute shall determine the sequence in which T2S will execute the standing liquidity transfers within the link set when the T2S dedicated cash account requires additional liquidity.

16.8.7 Party and Account Settlement Restriction

Party and Account Settlement Restriction

Reference ID	T2S.16.680

T2S shall allow an authorised T2S system user to block the settlement of instructions or liquidity transfers for a T2S party or an individual account of a T2S party. Specifically:

- A T2S Operator on behalf of an NCB shall be able to block/unblock the cash settlement for the NCB itself and all of its payment banks in T2S with immediate effect by placing a settlement restriction on the NCB. The blocking of the NCB on party level shall automatically block all the NCB's parties and T2S dedicated cash accounts from settlement.

- A T2S Operator on behalf of a CSD shall be able to block/unblock the securities settlement for the CSD and all of its CSD participants in T2S with immediate effect by placing a settlement restriction on the CSD. The blocking of the CSD on party level shall automatically block all the CSD participants and T2S securities accounts from settlement

- A CSD in T2S shall be able to block/unclock the securities settlement for any of its participants in T2S with immediate effect. The blocking at the participant level shall automatically block all securities accounts of that participant from settlement.
- A CSD in T2S shall be able to block a single securities account of one of its participants in T2S from settlement with immediate effect.
- The account operator in direct holding systems can block accounts of a participant via the CSD through an automated interface.
- An NCB in T2S shall be able to block the cash leg settlement processing of an instruction for any of its payment banks in T2S with immediate effect. The blocking at the participant level shall automatically block all T2S dedicated cash accounts and external RTGS accounts of that payment bank from settlement.
- An NCB in T2S shall be able to block a single T2S dedicated cash account in T2S for use in settlement.
- An NCB in T2S shall be able to block an external RTGS account from use in settlement.

Table 16-24 – List of Attributes for the Entity Party and Account Settlement Restriction

Attribute	Description
Entity Identifier	This attribute shall specify the entity identifier of the CSD or NCB that operates the account.
Account or Party Identifier	This attribute shall define the unique technical identifier of the securities account, T2S dedicated cash account, external RTGS account or party in T2S.
Link Type	This attribute shall determine whether the identifier specified in the attribute Account / Party Identifier is the technical identifier of a party, T2S dedicated account or securities account.
Settlement Restriction Type	This attribute shall specify the code defining the business reason for the settlement restriction.
Valid From Timestamp	This attribute shall define the date and time from which the restriction is valid.
Valid To Timestamp	This attribute shall define the date and time to which the restriction is valid.

16.8.8 Close Links

Reference ID	T2S.16.690

A financial market participant cannot submit any asset issued or guaranteed by itself or by any other entity with which it has a close link. “Close links” refers to a situation in which the counterparty is linked to an issuer/debtor/guarantor of eligible assets because:

(i) the counterparty owns 20% or more of the capital of the issuer/debtor/guarantor, or one or more undertakings in which the counterparty owns the majority of the capital own 20% or more of the capital of the issuer/debtor/guarantor, or the counterparty and one or more undertakings in which the counterparty owns the majority of the capital together own 20% or more of the capital of the issuer/debtor/ guarantor; or

(ii) the issuer/debtor/guarantor owns 20% or more of the capital of the counterparty, or one or more undertakings in which the issuer/debtor/guarantor owns the majority of the capital own 20% or more of the capital of the counterparty, or the issuer/debtor/guarantor and one or more undertakings in which the issuer/debtor/guarantor owns the majority of the capital together own 20% or more of the capital of the counterparty; or

(iii) a third party owns both the majority of the capital of the counterparty and the majority of the capital of the issuer/debtor/guarantor, either directly or indirectly, through one or more undertakings in which that third party owns the majority of the capital.

An attribute in the securities reference data in T2S will define a security as eligible for collateralisation for central bank money. However, this information will be insufficient to identify cases where a T2S party issues or guarantees an asset or where it has close links with another entity. T2S shall store the identifiers of all securities that are eligible for collateralisation, but not for a specific T2S party, in the party static data. An automated interface shall provide these data to T2S on a daily basis from the relevant Eurosystem database.

Table 16-25 – List of Attributes for the Close link

Attribute	Description
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD.
Party Identifier	This attribute shall define the unique technical identifier of the T2S party. It shall link the party in the close link to the party static data.
Security Identifier	This attribute shall define the unique technical identifier of a security in T2S. It shall link the security in the close link to the security static data.

16.8.9 Party Technical Addresses

Reference ID	T2S.16.700

The *Party Technical Address* Entity shall store the all BIC addresses to which a T2S party requests T2S to send copies of messages. The use of the BIC as technical address assumes a clean-up of the BIC directory by SWIFT until the live date of T2S. The entity shall provide the list of interested parties for copies of messages sent or received by a T2S party.

Table 16-26 – List of Attributes for the Party Technical Address

Attribute	Description
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD.
Party Identifier	This attribute shall define the unique technical identifier of the T2S party in T2S. It shall link the party in the technical address to the party static data.
Technical BIC Identifier	This attribute shall define the unique technical identifier of a BIC in the BIC directory of T2S. It shall link the technical address to the relevant record in the BIC directory.

16.8.10Cross-CSD Settlement

A major benefit of T2S is the efficient cross-CSD settlement for transactions involving multiple CSDs in T2S. Cross-CSD settlement in T2S will be as efficient as domestic intra-CSD settlement by concentrating the securities accounts of multiple CSDs and the T2S dedicated cash accounts of NCBs on a single technical platform. This enables T2S to book the transfer of securities between participants of different CSDs simultaneously, together with the movement of funds. T2S eliminates the current highly complex and costly processes of interactions between various platforms, which are often not synchronised, entail delays and pose a risk in terms of failing to achieve settlement finality. T2S shall automate the realignment process between CSDs on a real-time basis, without the need for additional procedures. Cross-border transactions, which involve external CSDs not participating in T2S, will benefit to some extent from the T2S architecture.

Efficient cross-CSD settlement in T2S shall require the definition of links between CSDs on the ISIN level.

Extension of Securities CSD Link

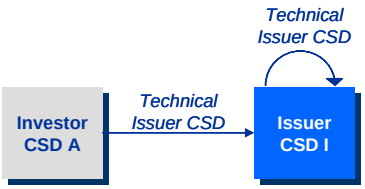
Reference ID	T2S.16.710

Processing cross-CSD links shall require an extension of the Securities CSD Link entity, which specifies whether a security is eligible for settlement in a CSD and whether the CSD is maintaining the security. Cross-CSD settlement shall require the extension of the entity with an additional attribute as defined in the following table.

Table 16-27 – Extension of Attributes for the Securities CSD Link in T2S Entity

Attribute	Description
Technical Issuer CSD	This attribute shall define the unique technical identifier of the technical issuer CSD in T2S when the CSD type in the link is "Investor". The technical issuer CSD for an investor CSD is the CSD where it holds its omnibus accounts, reflecting the holding of its participants. The technical issuer can be either external or internal to T2S, defined by the party type of the CSD.

The following table extends the previous example for securities CSD links documented in static data. An issuer CSD for a security in T2S shall always be its own technical issuer CSD, and the investor CSD in T2S for a security shall always require a technical issuer CSD for that security.



No.	Security Identifier	CSD Identifier	Valid From	Valid To	CSD Type	Instrument Maintenance	Technical Issuer CSD
1	1234	5678	1/1/2007	-	Issuer	Yes	-
2	1234	9876	1/1/2007	-	Investor	No	5678

CSD Account Links

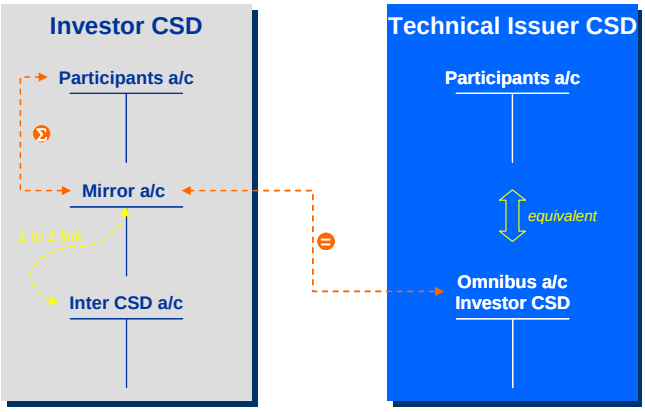
Reference ID	T2S.16.720

CSD account links shall define the link between an investor CSD's accounts and the omnibus accounts that the investor CSD holds with a technical issuer CSD to support the settlement of cross-CSD transactions using omnibus, mirror and inter-CSD accounts. In the technical issuer CSD, an investor CSD uses an omnibus account to hold the securities owned by its participants. This omnibus account is strictly equivalent to any account of the participant's technical issuer CSD. An omnibus account, held within a technical issuer CSD, reflects a mirror account within the investor CSD. At any moment, the position in credit of the omnibus account is in theory equal to the position in debit of the mirror account. An exception to this occurs when the issuer CSD is external to T2S and the securities are in transit from/to T2S to/from an external CSD. The inter-CSD account reflects the difference between the mirror account and the omnibus account.

An Inter-CSD Account has a link to each mirror account. The position of the inter-CSD account is usually equal to zero, except when the issuer CSD is external to T2S and securities are in transit from/to T2S to/from an external CSD. If the balance of the inter-CSD account is in credit, it requires a transfer of a quantity of securities equal to this position from T2S to the external CSD. If the balance of the inter-CSD account is in

debit, it requires a transfer of a quantity of securities equal to this position from the external CSD to T2S. When the transfer is completed, the balance of the inter-CSD account resets to zero and the balance of the mirror account is again in line with the balance of the omnibus account.

Figure 16-9 – Example of CSD Account Link



Attribute Requirements for the CSD Account Link Entity

Reference ID	T2S.16.730

The CSD Account Link entity shall provide the mapping of accounts between the participant accounts operated at the investor CSD to the omnibus accounts of the investor CSD operated with the technical issuer CSD.

Table 16-28 – Extension of Attributes for the CSD Account Link in T2S Entity

Attribute	**Description**
CSD Account Link Identifier	This attribute shall define the unique technical identifier of an occurrence of a CSD account link. T2S shall assign this identifier from a sequence.
Investor CSD Party Identifier	This attribute shall specify the unique technical identifier of the investor CSD as T2S stores it in the party reference data. It shall link the investor CSD party in the account link to the party reference data.
Technical Issuer CSD	This attribute shall specify the unique technical identifier of the technical issuer CSD as stored by T2S in the party reference data. It shall link the technical issuer CSD party in the account link to the party reference data.
CSD Participant Account Identifier	This attribute shall specify the unique technical identifier of the CSD's participant account as stored by T2S in the account reference data. It shall link the account in the account link to the account reference data. This account must be a valid account of the investor CSD. T2S shall require a value in this attribute only when the investor CSD wishes to define a relationship to an omnibus account with the issuer CSD for specific participant accounts.

Attribute	Description
Investor CSD Mirror Account	This attribute shall specify the unique technical identifier of the CSD's internal mirror account. The T2S account type must define the account as a mirror account in order to qualify it as a valid account for this attribute.
Investor CSD Inter-CSD Account	This attribute shall specify the unique technical identifier of the CSD's inter-CSD account. The T2S account type must define the account as an inter-CSD account in order to qualify it as a valid account for this attribute.
Valid From	This attribute shall specify the date from which the CSD account link is valid.
Valid To	This attribute shall specify the date until which the CSD account link is valid. An occurrence of the CSD account link shall require a value in this attribute when the relationship is removed/closed.

Use of Multiple Omnibus Accounts

Reference ID	T2S.16.740

For various reasons, an Investor CSD may decide use several omnibus accounts within the technical issuer CSD for segregating the holdings of its participants within the technical issuer CSD. T2S shall support the use of multiple omnibus accounts, but its use by the CSDs should be very limited in order not to add unnecessary complexity.

Table 16-29 – Example for the Use of Multiple Omnibus Accounts in a CSD Account Link Set

Investor	Technical Issuer	Participant a/c	Mirror a/c	Omnibus a/c	Inter CSD a/c	Date From	Date To
CSD A	CSD I	A	1	1	1	01/01/2008	
CSD A	CSD I	B	1	1	1	01/01/2008	
CSD A	CSD I	C	2	2	2	01/01/2008	
CSD A	CSD I	D	2	2	2	01/01/2008	
CSD A	CSD I	E	2	2	2	01/01/2008	
CSD A	CSD I	F	3	3	3	01/01/2008	

The participant account is null for the default CSD account link.

Table 16-30 – Example for the Default Omnibus Account

Investor	Technical Issuer	Participant a/c	Mirror a/c	Omnibus a/c	Inter CSD a/c	Date From	Date To
CSD A	CSD 1		1	1	1	01/01/2008	

16.8.11Market -Specific Attributes for Parties and Securities Accounts and Securities

Reference ID	T2S.16.750

T2S shall provide the functionality to allow a CSD to define additional attributes for securities account reference data, party reference data and securities reference data without requiring changes to the data model or the graphical user interface. Any market-specific attribute shall appear dynamically in the GUI after its definition in T2S by the CSD system administrator.

Market-specific attributes for parties, securities account and securities attributes are not intended to replace the reference data of a CSD. They merely represent the possibility of a CSD to add additional fields to a party, securities account and securities reference data for informational purposes and for the configuration of market-specific restriction types.

A CSD should configure any market-specific attributes as part of its migration of static data to T2S. The migration of static data to T2S should include the loading of market-specific attributes. It is possible to configure further market-specific attributes at anytime. However, the CSD must ensure the integrity of static data existing in T2S prior to the configuration of a market-specific attribute. For example, if the CSD makes an optional market-specific attribute mandatory, then the CSD must ensure that it loads values for static data records missing a value in the attribute by using available T2S tools. In this case, the CSD could query all records without values in the specified attribute, load the missing values through static data maintenance instructions and then set the attribute configuration to a mandatory field.

T2S also does not require a split of party and securities account reference data between the systems of the CSDs and T2S. The CSD is clearly the master of its customer reference data and must retain the master copy of these data in its systems, since it requires these data to provide value-added services (e.g. corporate actions, borrowing and lending, etc.). The CSD would replicate only those attributes that T2S requires for settlement in T2S. This is a very limited redundancy of a few attributes. A split of reference data between the two systems is neither mandated nor necessary.

16.8.11.1 Market-Specific Party, Securities Account and Securities Attribute Definitions

Reference ID	T2S.16.760

The *Party, Securities Account and Securities Attribute Definition* entity shall provide the definition of additional logical attributes in pre-defined physical database tables for the market-specific fields required for a securities account, party or security. An attribute definition shall require the specification of a unique

identifier for the attribute as well as its business descriptions. It shall define the attribute value and its logical format. The actual column of the pre-defined database table (*Market-Specific Party, Securities Account and Security Attribute Value* Entity) defines the physical limitation for the logical format.

Table 16-31 – Attribute Requirements for the Market-Specific Party, Securities Account and Securities Attribute Definition

Attribute	Definition
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD using the additional attribute.
Reference Data Object Qualifier	This attribute shall specify whether the market-specific attribute pertains to the reference data for parties, securities accounts or securities.
Market-Specific Attribute Identifier	This attribute shall define the unique technical identifier of the market-specific attribute definition.
Attribute Domain Name	This attribute shall specify the name of the attribute domain, which T2S shall use as a field label.
Attribute Domain Description	This attribute shall provide a short documentation of the attribute domain, i.e. what purpose it serves for the CSD or market.
Attribute Format	This attribute shall specify whether the format of the attribute value is alphabetic, alphanumeric or numeric.
Maximum Attribute Length	This attribute shall specify the maximum length of the attribute value.
Mandatory	This Boolean attribute shall specify whether the input of a valid value for market-specific attribute is mandatory.
Unique	This Boolean attribute shall specify whether the value in the market-specific attribute must be unique.
Attribute Domain Identifier	This attribute shall specify the identifier of the domain that defines the list of valid values for a market-specific attribute (Refer to chapter 11, section 11.6, for the requirements pertaining to the management of attribute domains). A market-specific field, defined as unique, should not have an attribute domain assigned to it. Otherwise, a value in the list of valid values could only be used once.

16.8.11.2 Market-Specific Party, Securities Account and Securities Attributes

Reference ID	T2S.16.770

The *Market-Specific Party, Securities Account and Securities Attribute* entity shall store the values for the market-specific attributes for parties, securities accounts and securities in T2S. The model places (shall place) no limitation on the number of market-specific attributes that a CSD can define for a party, securities account or security.

Table 16-32 – Attribute Requirements for the Market-Specific Party, Securities Account or Securities Attribute

Attribute	Definition
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD, using the additional attribute.
Reference Data Object Qualifier	This attribute shall specify whether the market-specific attribute pertains to the party, securities account or securities reference data. Valid Qualifiers: Party Reference Data Securities Account Reference Data Securities Reference Data
Reference Data Object Identifier	This attribute shall specify the party, securities account or securities identifier, depending on the value of the reference data object qualifier.
Market-Specific Attribute Identifier	This attribute shall define the unique technical identifier of the market-specific attribute definition.
Market-Specific Attribute Value	This attribute shall specify the value / content of the market-specific attribute as defined by the market-specific attribute identifier.

16.8.11.3 Market-Specific Party, Securities Account and Securities Attribute Validations

T2S shall support the following validations on market-specific attributes in both user-to-application and application-to-application mode for party, securities account and securities reference data maintenance.

Format validation

Reference ID	T2S.16.780

T2S shall validate the format of a market-specific attribute based on the values defined in Attribute Format and Maximum Length.

Mandatory check

Reference ID	T2S.16.790

If the CSD defines a market-specific attribute as mandatory, then T2S shall validate whether a value exists.

Uniqueness

Reference ID	T2S.16.800

If the CSD defines a market-specific attribute as unique, then T2S shall validate whether the content of the field is unique across all occurrences in the relevant static data entity, i.e. all parties or all securities accounts.

Valid list value

Reference ID	T2S.16.810

When a CSD specifies an attribute domain, i.e. a list of valid values, for a market-specific attribute by assigning an Attribute Domain Identifier, T2S shall validate whether the value in the market-specific attribute has a corresponding entry in the attribute domain.

Functional Processing of Market-Specific Attributes for Securities, Securities Accounts and Parties

Processing of market-specific attributes for securities reference data by securities-maintaining CSD

Reference ID	T2S.16.811

T2S shall require the securities maintaining CSD to provide all market-specific securities reference data attributes that it has configured for itself in T2S for a new security when it creates the new security in T2S. T2S shall reject the creation of a new security by the security-maintaining CSD, if it provides no value for a market-specific attribute that it has defined as mandatory.

Processing of market-specific attributes for securities reference data by an investor CSD

Reference ID	T2S.16.812

T2S shall require the investor CSD to provide all market-specific securities reference data attributes that it has configured for itself in T2S for a new security when it creates its link to the technical issuer CSD for the new security in T2S (T2S.16.720). T2S shall reject the creation of a security CSD link by the investor CSD, if it provides no value for a market-specific attribute that it has defined as mandatory.

Processing of market-specific attributes for securities account reference data by a CSD

Reference ID	T2S.16.813

T2S shall require the CSD to provide all market-specific securities account reference data attributes that it has configured for itself in T2S for a new securities account when it creates the new securities account in T2S. T2S shall reject the creation of a new securities account by the CSD, if it provides no value for a market-specific attribute that it has defined as mandatory.

Processing of market-specific attributes for party reference data

Reference ID	T2S.16.814

T2S shall require the CSD or NCB to provide all market-specific party reference data attributes that it has configured for itself in T2S for a new party when it creates the new party in T2S. T2S shall reject the creation of a new party by the CSD or NCB, if it provides no value for a market-specific attribute that it has defined as mandatory.

Processing of market-specific attributes for securities reference data

Reference ID	T2S.16.815

T2S shall require the CSD to provide all market-specific securities reference data attributes that it has configured for itself in T2S for a new security when it creates the new security in T2S. T2S shall reject the creation of a new security by the CSD, if it provides no value for a market-specific attribute that it has defined as mandatory.

16.8.11.4 Auto-Collateralisation

Auto-collateralisation eligibility for a securities account

Reference ID	T2S.16.898

T2S shall allow a payment/settlement bank as a CSD participant to specify whether its securities account is eligible for auto-collateralisation for a given combination of settlement currency and central bank. T2S shall allow a client of payment/settlement bank to specify whether its securities account is eligible for auto-collateralisation for a given settlement currency with its payment/settlement bank.

Auto-collateralisation eligibility for a security

Reference ID	T2S.16.899

T2S shall allow an NCB to specify whether a security is eligible for auto-collateralisation with the NCB for a given currency. T2S shall allow a payment/settlement bank to specify whether a security is eligible for auto-collateralisation with the payment/settlement bank for a given settlement currency.

Attribute requirements for auto-collateralisation eligibility

Reference ID	T2S.16.900

This entity shall store the eligibility for auto-collateralisation of

- securities in specific currencies with NCBs;
- securities in specific currencies for specific payment/settlement banks;
- securities accounts of payment/settlement banks in specific currencies with specific NCBs;
- and securities accounts of clients of payment/settlement banks in specific currencies with specific payment/settlement banks.

Table 16-33 – Attribute Requirements for the Auto-Collateralisation Attribute and Description

Attribute	Definition
Object Auto-Collateralisation Identifier	This attribute shall define the unique technical identifier of a combination of security and currency, securities account and currency or party and currency.
Party Identifier	This attribute shall define the unique technical identifier of the party for which the security or securities account is eligible for auto-collateralisation.
Object Type	This attribute specifies whether the value in the attribute object Identifier is the unique technical identifier of a securities account or security.
Object Identifier	This attribute shall define the unique technical identifier of a securities account or security in T2S, depending on the value in the attribute Object Type.
Currency	This attribute uniquely identifies the currency object (i.e. security, securities account or party) for which the auto-collateralisation is applicable

16.8.11.5 Eligible Counterpart CSD

Reference ID	T2S.16.910

T2S shall allow a CSD to define a combination of counterpart CSD and specific securities, or combination of counterpart CSD and a set of securities by issue country for which it allows settlement in case the issuer CSD is not on T2S.

16.8.11.6 Attribute Requirements for the eligible Counterpart CSD

Reference ID	T2S.16.920

The eligible Counterpart CSD and the eligible Counterpart CSD Securities entities shall store for a CSD those combinations of counterpart CSD and specific securities, combination of counterpart CSD and a set of securities by issuer CSD, or combination of counterpart CSD and a set of securities by issue country for which it allows settlement in case the issuer CSD is not on T2S.

Table 16-34 – List of Attributes for the eligible Counterpart CSD Entity

Attribute	Definition
Eligible Counterpart CSD Identifier	This attribute shall define the unique technical identifier of an occurrence of an eligible Counterpart CSD. T2S shall assign this identifier from a sequence.
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD.

Attribute	Definition
CSD Party Identifier	This attribute shall specify the unique technical identifier of the investor CSD that defines CSD conditional settlement link. It shall link the investor CSD to the party reference data.
Eligible Counterpart CSD	This attribute shall specify the unique technical identifier of the counterpart CSD, as stored by T2S in the party reference data, for which the conditional settlement link applies. It shall link the counterpart CSD to the party reference data.
Valid From	This attribute shall specify the date from which the eligible Counterpart CSD is valid.
Valid To	This attribute shall specify the date until which the eligible Counterpart CSD is valid. An occurrence of the eligible Counterpart CSD shall require a value in this attribute when the relationship is removed/closed.

Table 16-35 – List of Attributes for the eligible Counterpart CSD Securities Entity

Attribute	Definition
Eligible Counterpart CSD Securities Identifier	This attribute shall define the unique technical identifier of an occurrence of a CSD conditional settlement link. T2S shall assign this identifier from a sequence.
Eligible Counterpart CSD Identifier	This attribute shall define the unique technical identifier of an occurrence of an eligible Counterpart CSD to which the occurrence of eligible securities or issue countries is linked.
System Entity Identifier	This attribute shall specify the system entity identifier of the CSD.
Eligibility Type	This attribute shall specify whether the attribute eligible Value contains a specific security or an issue country of a security.
Eligible Value	This attribute shall specify a specific security, issuer CSD or an issue country of a security, depending on the value in the attribute Eligibility Type.

USER REQUIREMENTS

CHAPTER 17

VOLUMES AND PERFORMANCE REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

17 Volumes and performance requirements

17.1 Volume and scalability requirements

T2S shall be able to handle the respective daily average and peak settlement volume to be assessed in due course. Volume will be regularly evaluated using production data collected at the CSDs at least once a year during the project life in order to derive trends and calculate volume projections.

17.1.1 Volumetric calculations

The present volumetric calculations form an initial basis for the capacity sizing. Presently they include only the volumes dealt by CSDs of the Eurosystem. The figures will be amended during the T2S project life using observations and questionnaires completed by T2S parties.

17.1.1.1 Annual transaction volumes estimation

For the present volumetric forecasts, T2S considered figures from year 2006 in the ECB Blue Book 2007 and complementary elements communicated by CSDs and NUGs to establish yearly trends and peak days.

A constant progression of 15% per year has been applied based on Blue Book figures and communication from the CSDs.

Table 17-1 Volume estimates

Year	Annual volume of transactions	Daily average volume
2006	219,000,000	850,000
2007	252,000,000	980,000
...		
2013	583,000,000	2,260,000
2018	1170,000,000	4,540,000

Countries included: Belgium, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal and Finland.

The calculation has been extended to 2018 to reflect the depreciation period for the T2S build.

17.1.1.2 Workload estimation for the start of T2S

For this first workload calculation, only year 2013 figures are estimated.

To compensate for a possible error, T2S has considered the night-time workload as 90% and the day-time workload as 30% of the daily activity (i.e. a total of 120 % of the calculated daily average).

Table 17-2 Transactions volume in year 2013

Annual volume of transactions	**583,000,000**
Average daily volume	**2,260,000**
Average night-time volume	**2,030,000**
Average day-time volume	**677,000**
Peak-day workload	**9,380,000**
Peak night-time workload	**8,440,000**
Night-time peak-hour workload (10h/night)	**844,000**
Peak day-time work load	**2,810,000**
Day-time peak-hour workload (12h/day)	**234,000**

Average daily volume = Annual Volume of Transactions divided by 258 operating days in a year.

Average night-time volume and average day-time volume have an embedded margin of 20%.

Night-time volume is estimated to be 90% of the daily total, while day-time volume is estimated to be 30% of the daily total.

Peak-day workload is the average daily volume multiplied by a peak load factor provided in most markets by CSDs.

The same multipliers have been used to determine the peak night-time workload and peak day-time workload.

Day-time peak-hour workload is the day-time peak workload divided by the number of day-time operating hours.

Night-time peak-hour workload is the day-time peak workload divided by the number of night-time operating hours.

17.1.2 Requirements for scalability

Objective: The T2S system size, performance and capacity will accurately accommodate settlement activity (matching, settlement, reporting, etc.).

T2S application shall scale

Reference ID	T2S.17.010

T2S shall be able to handle the volumes evaluated in due time from regular data collection all along the T2S project duration and during the application operating life. *See Capacity Management T2S 18.480*

T2S application capacity shall be able to be quickly increased

Reference ID	T2S.17.020

T2S shall be able to increase capacity within three months.

Adaptation of the capacity to high volume

Reference ID	T2S.17.030

T2S shall be able to handle increasing settlement volume without degradation of service level.

Settlement and optimisation in parallel run without degradation of service level

Reference ID	T2S.17.040

T2S shall be able to run real-time settlement in parallel to a continuous optimisation algorithm without degradation of service level.

Settlement of operations should have no effect on other systems' service levels

Reference ID	T2S.17.050

In the context of T2S on TARGET2, settlement operations algorithms processing shall not have a performance impact on other system's activities and vice versa.

Access to data online for three months

Reference ID	T2S.17.060

Information (e.g. Balances, Transactions, Cash movements, Static data, etc.) will be kept available in the production environment for online queries during three months.

17.1.3 Requirements for archiving

Objective: T2S will give its participants access to data and its technical context for a requested duration.

Archiving function in T2S

Reference ID	T2S.17.070

T2S shall maintain a settlement-related central archive for a 10-year period. The period shall be configurable.

Archived elements

Reference ID	T2S.17.080

The central archive shall include T2S static and transactional data.T2S will archive incoming and outgoing files in their original format, all operational data (e.g. instructions, cash postings, cash balances, securities

positions, etc.), static data, data used for billing and any data relevant for audit and/or regulatory requirements.

Archiving time

Reference ID	T2S.17.090

T2S will archive files and instructions three months after the day they are in their final status (e.g. settled, cancelled, etc.).

Synchronisation of archiving of static data and transactions

Reference ID	T2S.17.100

In order to ensure the integrity of static and transactional data, static data revisions and static data history shall remain in the current database until archiving procedures copy the transactional data that reference it into the archiving database.

Archive retrieval medium

Reference ID	T2S.17.120

CSDs, NCBs and T2S operators will have direct access to archived data via interfaces (A-to-A or U-to-A). A CSD directly connected participant will have direct access via interfaces to their relevant archived data provided its CSD has authorised this.

Other T2S parties will ask their CSDs for retrieval and communication of archived data under message file or report format.

Archive retrieval period

Reference ID	T2S.17.130

The maximum time-frame for an authorised entity to get the requested archived data shall be three days.

17.2 Performance and response time requirements

Quantitative parameters for T2S system performance were collected for the sizing of T2S technical infrastructure and related financial quotation. These parameters will finally be agreed in the service level agreement.

17.2.1 Response time

Objective: To answer customer questions via a user-to-application interface within an agreed time limit.

Online response time for queries

Reference ID	T2S.17.140

T2S will respond in 95% of the basic queries in user-to-application or application-to-application mode within three seconds. A basic query is a query to retrieve a single object (status of one instruction, static data for one ISIN, etc.). In user-to-application mode, if the execution of the query exceeds 15 seconds ,T2S shall periodically inform the requestor that the query is still under processing until the delivery of the query results or cancellation of the query. The list of basic and of complex queries will be established as part of the GFS.

Time limit for updates

Objective: To update data in the agreed time limit with queries sent via a user-to-application interface.

Real-time definition: Real time, in systems terminology, means stable and repeatable program execution with the objective of meeting the individual timing requirements for each task.

Fast-computing alone does not guarantee predictability, which is the most important property of a real-time system.

User-to-application request for standard data update

Reference ID	T2S.17.160

Any data to be created, modified or deleted via the user-to-application interface shall be updated in real time.

The time limit is five seconds for 95% of standard changes.

17.2.2 File transfer

Objective: The system will send and receive files in parallel to the interactive activity without performance interaction.

File transfer

Reference ID	T2S.17.170

Processing files through the interface shall not affect the settlement processing and vice versa.

File transfer time limit

Reference ID	T2S.17.180

The File Transfer time will be limited to a maximum value independently from the transfer of the file to the network.

The requirements to the network providers will be presented in the next phase of the T2S project.

USER REQUIREMENTS

CHAPTER 18

INFORMATION SECURITY REQUIREMENTS

EUROPEAN CENTRAL BANK

EUROSYSTEM

18 Information security requirements

18.1 Introduction

T2S is a systemically critical system that will be operated and used by different organisations independent of each other. Considering the risks to such a system, information security management is a crucial part of T2S definition.

As a matter of fact, a very high level of security is requested in terms of confidentiality, authentication, integrity, access control and non-repudiation of the T2S information.

Therefore to ensure an appropriate level of security, a security management process shall be established so that (i) the proper implementation of the best practices formalised in ISO standard 17799[1] is enforced and (ii) an appropriate management of risks is guaranteed.

The following sections present a list of high-level security requirements and security policies as extracted from ISO 17799 and slightly amended where necessary. This will serve as a minimum for the development of the T2S Information Security framework, which shall be endorsed by the T2S Governance structure (timeline described in the table below).

For security reasons, specific security policies, detailed requirements and accurate security solutions (to be deployed in 2013) will not be published, but rather identified and shared with the T2S relevant parties under the control of the T2S governance structure.

Information Security Framework

The information security framework is based on two main elements: the information security policy and its sub-items (specific security policies and related user requirements) and the risk management function. The Information Security Policy consists of specific security policies addressing individual parts of the information technology environment. These policies are further defined in specific security requirements which provide a comprehensive framework of detailed controls which need to be in place, assessed and validated on a regular basis.

Another important aspect of Information Security Management is to identify potential risks, assess them and determine measures and procedures to mitigate such risks. This Risk Management function needs to be ongoing.

The table below presents the envisaged development plan of the T2S information security framework.

Component	Description	Timeline

[1] Recently revised to become ISO/IEC 27002:2005

Component	Description	Timeline
High-level Information Security requirements	The high-level Information security requirements are the basis for (i) the development of an Information Security Policy and (ii) the definition of T2S security requirements and controls.	As part of the URD – in the present document
Information Security Policy	The Information Security Policy for T2S is a high-level document endorsed by the T2S governing structure that embraces the security policy principles, the responsibilities and other relevant aspects related to information security in the T2S environment. It will be revised on a regular basis.	In the General Functional Specification phase
Risk management framework	The risk management framework shall provide the T2S Owner with a picture of the risk situation, in order to derive appropriate security requirements and controls.	When the Information Security Policy is endorsed by the T2S Governance structure
Security Requirements and Controls	The purpose of the T2S security requirements and controls is to define the specific information security requirements for the T2S.	When the Risk Management framework is defined
Information Security Management process	The information security management is a continuous process of identifying potential threats, verifying whether controls are comprehensive and effective, and minimising or eliminating security risks.	When T2S is in operation

18.2 Information Security Policy

Objective: To provide management direction and support for information security in accordance with business requirements and relevant laws and regulations.

18.2.1.1 Information security policy document

Reference ID	T2S.18.010

An Information Security Policy document shall be approved by the system owner and the governance body of T2S, published and communicated to all relevant parties as appropriate.

18.2.1.2 Review of the information security policy

Reference ID	T2S.18.020

The T2S information security policy shall be reviewed at planned intervals or if significant changes occur so as to ensure its continuing suitability, adequacy and effectiveness.

18.3 Organisation of information security

Objective: To manage information security for T2S.

18.3.1 Internal Organisation

18.3.1.1 Management commitment to information security

Reference ID	T2S.18.030

The system owner shall actively and visibly support information security for T2S through clear direction, demonstrated commitment, explicit assignment of roles and responsibilities, and acknowledgement of information security responsibilities.

18.3.1.2 Information security co-ordination

Reference ID	T2S.18.040

Information security activities shall be co-ordinated by the system owner, T2S governance body and other relevant parties with relevant roles and job functions.

18.3.1.3 Allocation of information security responsibilities

Reference ID	T2S.18.050

All information security responsibilities shall be clearly defined.

18.3.1.4 Authorisation process for information processing facilities

Reference ID	T2S.18.060

A management authorisation process for T2S shall be defined and implemented.

18.3.1.5 Contact with authorities

Reference ID	T2S.18.070

Appropriate contacts with relevant authorities shall be maintained.

18.3.1.6 Contact with special interest groups

Reference ID	T2S.18.080

Appropriate contacts with special interest groups shall be maintained.

18.3.1.7 Confidentiality agreements

Reference ID	T2S.18.090

Confidentiality or non-disclosure agreements shall be in place and regularly reviewed.

18.3.1.8 Independent review of information security

Reference ID	T2S.18.100

The T2S approach to managing information (system) security shall be reviewed independently by recognised experts at planned intervals or when significant changes to the security implementation occur.

18.3.2 External Parties

Objective: To maintain the security of T2S information processing facilities and information assets to be accessed, processed, communicated or managed by external parties.

18.3.2.1 Identification of risks related to external parties

Reference ID	T2S.18.110

The risks to T2S information assets and information processing facilities from business processes involving external parties shall be identified and appropriate security controls implemented before granting access.

18.3.2.2 Addressing security when dealing with customers

Reference ID	T2S.18.120

All identified security requirements shall be addressed using a defined process, with documented results, before giving customers access to T2S information or assets.

18.3.2.3 Addressing security in third-party arrangements

Reference ID	T2S.18.130

Agreements with third parties involving accessing, processing, communicating or managing T2S information or information processing facilities, or adding products or services to information processing facilities, shall cover all relevant security requirements.

18.4 Asset management

18.4.1 Responsibility for assets

Objective: To achieve and maintain appropriate protection of T2S assets.

18.4.1.1 Inventory of assets

Reference ID	T2S.18.140

All T2S physical and information assets shall be clearly identified and an inventory of all important assets shall be drawn up and maintained. Regular audits of such assets will be performed.

18.4.1.2 Ownership of assets

Reference ID	T2S.18.150

All information and assets associated with information processing facilities shall be “owned” for security purposes by a designated part of the T2S organisation.

18.4.1.3 Acceptable use of assets

Reference ID	T2S.18.160

Rules for the acceptable use of information and assets associated with T2S information systems and assets shall be identified, documented and implemented.

18.4.2 Information classification

Objective: To ensure that information receives an appropriate level of protection.

18.4.2.1 Classification guidelines

Reference ID	T2S.18.170

Information shall be classified in terms of value, sensitivity and criticality to T2S.

18.4.2.2 Information labelling and handling

Reference ID	T2S.18.180

An appropriate set of procedures for information labelling and handling shall be developed and implemented in accordance with the classification scheme adopted by T2S.

18.5 Human resource security

18.5.1 Prior to employment

Objective: To ensure that employees, contractors and third-party users understand their responsibilities and are suitable for the roles for which they are considered, and to reduce the risks of human error, theft, fraud or misuse of facilities.

18.5.1.1 Roles and responsibilities

Reference ID	T2S.18.190

Security roles and responsibilities of employees, contractors and third-party users shall be defined and documented in accordance with the T2S information security policy.

18.5.1.2 Screening

Reference ID	T2S.18.200

Background verification checks on all candidates for employment, contractors and third-party users shall be carried out in accordance with relevant laws, regulations and ethics. These checks shall be proportional to business requirements, the classification of the information to be accessed and perceived risks.

18.5.1.3 Terms and condition of employment

Reference ID	T2S.18.210

As part of their contracted obligation, employees, contractors and third-party users shall agree and sign the terms and conditions of their employment contract, which shall state their employee's and the T2S organisation's responsibilities for information security.

18.5.2 During employment

Objective: To ensure that all employees, contractors and third-party users are aware of information security threats and concerns and their responsibilities and liabilities; additionally, to ensure that they are equipped to support security policy in the course of their normal work and to reduce the risk of human error.

18.5.2.1 Management responsibilities

Reference ID	T2S.18.220

Management shall require employees, contractors and third-party users to apply security in accordance with established policies and procedures of the T2S organisation.

18.5.2.2 Information awareness, education and training

Reference ID	T2S.18.230

All employees of the T2S organisation and, where relevant, contractors and third-party users shall receive appropriate awareness training and regular updates on T2S policies and procedures, as relevant for their job function.

18.5.2.3 Disciplinary process

Reference ID	T2S.18.240

There shall be a formal disciplinary process for employees who have committed a security breach and appropriate contractual remedies against contractors and third-party users who have committed a security breach.

18.5.3 Termination or change of employment

Objective: To ensure that employees, contractors and third-party users exit an organisation or change employment in an orderly manner.

18.5.3.1 Termination responsibilities

Reference ID	T2S.18.250

Responsibilities for performing employment termination or change of employment shall be clearly defined and assigned.

18.5.3.2 Return of assets

Reference ID	T2S.18.260

All employees, contractors and third-party users shall return all T2S assets in their possession upon termination of their employment, contract or agreement.

18.5.3.3 Removal of access rights

Reference ID	T2S.18.270

The access rights of all employees, contractors and third-party users to T2S information and information systems shall be removed upon termination of their employment, contract or agreement or adjusted upon change.

18.6 Physical and environmental security

18.6.1 Secure areas

Objective: To prevent unauthorised physical access, damage and interference to T2S information systems.

18.6.1.1 Physical security perimeter

Reference ID	T2S.18.280

Security perimeters (barriers such as walls, card-controlled entry gates or manned reception desks) shall be used to protect areas that contain T2S information and information processing facilities.

18.6.1.2 Physical entry controls

Reference ID	T2S.18.290

Secure areas shall be protected by appropriate entry controls to ensure that only authorised personnel are allowed access.

18.6.1.3 Securing offices, rooms and facilities

Reference ID	T2S.18.300

Physical security for offices, rooms and facilities shall be designed and applied.

18.6.1.4 Protecting against external and environmental threats

Reference ID	T2S.18.310

Physical protection against damage from fire, flood, earthquake, explosion, civil unrest and other forms of natural or man-made disaster shall be designed and applied.

18.6.1.5 Working in secure areas

Reference ID	T2S.18.320

Physical protection and guidelines for working in secure areas shall be designed and applied.

18.6.1.6 Public access, delivery and loading areas

Reference ID	T2S.18.330

Access points such as delivery and loading areas and other points where unauthorised persons may enter the premises shall be controlled and, if possible, isolated from information processing facilities to avoid unauthorised access.

18.6.2 Equipment security

Objective: To prevent loss, damage, theft or compromise of assets and interruption to T2S activities.

18.6.2.1 Equipment siting and protection

Reference ID	T2S.18.340

T2S equipment shall be sited or protected to reduce the risks from environmental threats and hazards and opportunities for unauthorised access.

18.6.2.2 Supporting utilities

Reference ID	T2S.18.350

T2S equipment shall be protected from power failures and other disruptions caused by supporting utilities.

18.6.2.3 Cable security

Reference ID	T2S.18.360

Power and telecommunications cables carrying data or supporting information services shall be protected from interception or damage.

18.6.2.4 Equipment maintenance

Reference ID	T2S.18.370

T2S equipment shall be correctly maintained to ensure its continued availability and integrity.

18.6.2.5 Security of equipment off premises

Reference ID	T2S.18.380

Appropriate security shall be applied to off-site equipment, taking into account the risks of it being outside the T2S premises.

18.6.2.6 Secure disposal or re-use of equipment

Reference ID	T2S.18.390

All items of equipment containing storage media shall be checked to ensure that any sensitive data and licensed software has been removed or securely overwritten prior to disposal.

18.6.2.7 Removal of property

Reference ID	T2S.18.400

Equipment, information or software shall not be taken off site without prior authorisation.

18.7 Communications and operations management

These paragraphs will be reconsidered in the next phase of the project when the requirements specific to the T2S external networks and interfaces necessary to the T2S parties to directly connect T2S are established.

18.7.1 Operational procedures and responsibilities

Objective: To ensure the correct and secure operation of T2S information processing facilities.

18.7.1.1 Documented operating procedures

Reference ID	T2S.18.410

Operating procedures shall be documented, maintained and made available to all users who need them.

18.7.1.2 Change management

Reference ID	T2S.18.420

Changes to T2S information processing facilities and systems shall be controlled in a documented way, including a prior security impact analysis.

18.7.1.3 Segregation of duties

Reference ID	T2S.18.430

Duties and areas of responsibility shall be segregated to reduce opportunities for unauthorised or unintentional modification or misuse of the T2S assets.

18.7.1.4 Separation of development, test and operational facilities

Reference ID	T2S.18.440

Development, test and operational environments shall be separated to reduce the risks of unauthorised access or changes to the operational system.

18.7.2 Third-party service delivery management

Objective: To implement and maintain the appropriate level of information security and service delivery in line with third-party service delivery agreements.

18.7.2.1 Monitoring and review of third-party services

Reference ID	T2S.18.450

The services, reports and records provided by the third party shall be regularly monitored and reviewed, and regular audits shall be carried out.

18.7.2.2 Managing changes to third-party services

Reference ID	T2S.18.460

There shall be management of changes to the provision of services, including maintaining and improving existing information security policies, procedures and controls. This management shall take into account the criticality of business systems and processes involved after a thorough re-assessment of risks.

18.7.3 System planning and acceptance

Objective: To minimise the risk of systems failures.

18.7.3.1 Service delivery

Reference ID	T2S.18.470

It shall be ensured that the security controls, service definitions and delivery levels included in the third-party service delivery agreement are implemented, operated and maintained by the third party.

18.7.3.2 Capacity management

Reference ID	T2S.18.480

Resource use shall be monitored and tuned, and projections shall be made of future capacity requirements to ensure the required system performance.

18.7.3.3 System acceptance

Reference ID	T2S.18.490

Acceptance criteria for new information systems, upgrades and new versions shall be established, and suitable tests of the system(s) carried out during development and prior to acceptance.

18.7.4 Protection against malicious and mobile code

Objective: To protect the integrity of software and information by preventing and detecting the introduction of malicious code.

18.7.4.1 Controls against malicious code

Reference ID	T2S.18.500

Detection, prevention and recovery controls to protect against malicious code and appropriate user awareness procedures shall be implemented on the system components.

Reference ID	T2S.18.510

All the necessary updates of protection software shall be implemented on the system components to ensure a continuously up-to-date protection.

18.7.4.2 Controls against mobile code

Reference ID	T2S.18.520

Where the use of mobile code (e.g. Java scripts, Java applets, ActiveX controls, Flash animations, etc.) is authorised, the configuration shall ensure that the authorised mobile code operates according to a clearly defined security policy, and authorised mobile code shall be prevented from executing.

18.7.5 Back-up

Objective: To maintain the integrity and availability of T2S information and information processing facilities and communication services.

18.7.5.1 Information Backup

Reference ID	T2S.18.530

Backup copies of information and software shall be taken and tested regularly in accordance with the agreed backup policy.

18.7.6 Network security management

Objective: To ensure the protection of information in networks and the protection of the supporting infrastructure.

18.7.6.1 Security of network services

Reference ID	T2S.18.540

Security features, service levels and management requirements of all T2S network services shall be identified and included in a network services agreement, whether these services are provided in house or outsourced.

18.7.6.2 Network controls

Reference ID	T2S.18.550

T2S networks shall be adequately managed and controlled in order to be protected against threats and maintain security for the systems and applications using the network, including information in transit. This shall be done in line with the Giovannini protocol.

18.7.7 Media handling

Objective: To prevent unauthorised disclosure, modification, removal or destruction of assets and interruptions to business activities.

18.7.7.1 Managing removable media

Reference ID	T2S.18.560

There shall be procedures in place for removable media management.

18.7.7.2 Disposal of media

Reference ID	T2S.18.570

Media shall be disposed of securely and safely when no longer required, using formal procedures.

18.7.7.3 Information handling procedures

Reference ID	T2S.18.580

Procedures for the handling and storage of information shall be established to protect it from unauthorised disclosure or misuse.

18.7.7.4 Security of system documentation

Reference ID	T2S.18.590

System documentation shall be protected against unauthorised access.

18.7.8 Exchange of information and software

Objective: To maintain the security of information exchanged within the T2S organisation and with any external entity.

18.7.8.1 Information exchange policies and procedures

Reference ID	T2S.18.600

Formal exchange policies and procedures shall be in place to protect the exchange of information through the use of any types of communication facilities with any T2S party.

18.7.8.2 Exchange agreements

Reference ID	T2S.18.610

Agreements shall be established for the exchange of information and software between the T2S organisation and third parties.

18.7.8.3 Physical media in transit

Reference ID	T2S.18.620

Media containing T2S information shall be protected against unauthorised access, misuse or corruption during transportation beyond the T2S physical boundaries.

18.7.8.4 Electronic messaging

Reference ID	T2S.18.630

Information transmitted by electronic messaging shall be appropriately protected.

18.7.8.5 Business information systems

Reference ID	T2S.18.640

Policies and procedures shall be developed and implemented to protect T2S information associated with the interconnection of business information systems.

18.7.9 Monitoring

Objective: To detect unauthorised information processing activities.

18.7.9.1 Audit logging

Reference ID	T2S.18.650

Audit logs recording user activities, exceptions and information security events shall be collected and kept for an agreed period to assist in any future investigations, and for system and access control monitoring under the control of the system owner.

18.7.9.2 Monitoring system use

Reference ID	T2S.18.660

Procedures for monitoring use of information processing facilities shall be established and the results of the monitoring activities reviewed regularly.

18.7.9.3 Protection of log information

Reference ID	T2S.18.670

Logging facilities and log information shall be protected against tampering and unauthorised access.

18.7.9.4 Administrator and operator logs

Reference ID	T2S.18.680

System administrator and system operator activities shall be logged.

18.7.9.5 Fault logging

Reference ID	T2S.18.690

Faults shall be logged and analysed, and appropriate action taken.

18.7.9.6 Clock synchronisation

Reference ID	T2S.18.700

The clocks of the relevant information processing systems within T2S shall be synchronised with an agreed accurate time.

18.8 Access control

On this topic, other requirements can be found in other chapters: Chapter 4 for the roles description and chapter 11.9 for the roles and privileges configuration.

18.8.1 Business requirements for access control

Objective: To control access to T2S information.

18.8.1.1 Access control policy

Reference ID	T2S.18.710

An access control policy shall be established, documented and reviewed based on business and security requirements for access.

18.8.2 User access management

Objective: To ensure authorised user access and prevent unauthorised access to T2S information systems.

18.8.2.1 User registration

Reference ID	T2S.18.720

There shall be a formal user registration and de-registration procedure in place for granting and revoking access to all information systems and services.

18.8.2.2 Privilege management

Reference ID	T2S.18.730

The allocation and use of privileges relating to user access shall be restricted and controlled.

18.8.2.3 Review of user access rights

Reference ID	T2S.18.750

Management shall review users' access rights and activity at regular intervals using a formal process.

18.8.3 User responsibilities

Objective: To prevent unauthorised user access and the compromise or theft of information and information processing facilities.

18.8.3.1 Password use

Reference ID	T2S.18.760

Users shall follow the T2S password policy and good security practices in the selection and use of passwords.

18.8.3.2 Authentication Parameters

Reference ID	T2S.18.770

Authentication parameters define settings, required for login security. The application software providing the authentication facilities for T2S shall support parameters to ensure strong authentication.

Table 18 – Examples of authentication parameters

Attribute	Definition
Password Expiry	This attribute defines the maximum number of calendar days that a password is valid.
Minimum Account Name	This attribute specifies the minimum number of characters allowed in the account name.

Attribute	Definition
Length	
Password Complexity	This attribute allows the specification of the complexity of the password by the T2S system administrator. For example, it must be possible to specify that a password should contain at least one uppercase character, at least one symbol and at least one number.
Minimum Password Length	This attribute defines the minimum number of characters allowed for a password.
Password Reuse	This attribute specifies the number of password changes before a T2S system user may reuse a password. This includes the specification of rules defining password reuse – i.e. what constitutes reuse.
Maximum Login Attempts	This attribute specifies the maximum number of failed login attempts before the authentication application locks the T2S system user account.

18.8.3.3 Unattended user equipment

Reference ID	T2S.18.780

Users shall ensure that unattended equipment has appropriate protection.

18.8.3.4 Clear desk and clear screen policy

Reference ID	T2S.18.790

T2S should have a clear desk policy for papers and removable storage media and a clear screen policy for information processing facilities.

18.8.4 Network access control

Objective: To protect unauthorised access to T2S networked services.

18.8.4.1 Policy on use of network services (Security Requirements and Controls)

Reference ID	T2S.18.800

T2S information system(s) shall provide only those services that users have been specifically authorised to use.

18.8.4.2 User authentication for external connections

Reference ID	T2S.18.810

Appropriate authentication methods shall be used to control access by remote users.

18.8.4.3 Equipment identification in the network

Reference ID	T2S.18.820

Automatic equipment identification shall be considered as a means of authenticating connections from specific locations and equipment.

18.8.4.4 Remote diagnostic and configuration port protection

Reference ID	T2S.18.830

Physical and logical access to diagnostic and configuration ports shall be controlled.

18.8.4.5 Segregation in networks

Reference ID	T2S.18.840

Groups of information services, users, and information systems shall be segregated from a logical point of view.

18.8.4.6 Network connection control

Reference ID	T2S.18.850

For shared networks, especially those extending across the T2S boundaries, users' authorisation to connect to the network shall be restricted, in line with the access control policy and requirements of the business applications.

18.8.4.7 Network routing control

Reference ID	T2S.18.860

Routing controls shall be implemented for networks to ensure that computer connections and information flows do not breach the access control policy of the business applications.

18.8.5 Operating system access control

Objective: To prevent unauthorised computer access to operating systems.

18.8.5.1 Secure log-on procedures

Reference ID	T2S.18.870

Access to operating systems shall be controlled by a secure log-on procedure.

18.8.5.2 User identification and authentication

Reference ID	T2S.18.880

All users shall have a unique identifier (user ID) for their personal use only, and a suitable authentication technique shall be chosen to substantiate the claimed identity of a user.

18.8.5.3 Password management system

Reference ID	T2S.18.890

Systems for managing passwords shall be interactive and shall ensure quality passwords.

18.8.5.4 Use of system utilities

Reference ID	T2S.18.900

The use of utility programs that might be capable of overriding system and application controls shall be restricted and tightly controlled.

18.8.5.5 Session time-out

Reference ID	T2S.18.910

Inactive sessions shall shut down after a defined period of inactivity.

18.8.5.6 Limitation of connection time

Reference ID	T2S.18.920

Restrictions on connection times shall be used to provide additional security for high-risk applications.

18.8.6 Application and information access control

Objective: To prevent unauthorised computer access to operating systems.

18.8.6.1 Information access restriction

Reference ID	T2S.18.930

Access to information and application system functions by users and support staff shall be restricted in accordance with the “to be” defined access control policy (Security Requirements and Controls).

18.8.6.2 Sensitive system isolation

Reference ID	T2S.18.940

Systems classified by the system owner as sensitive shall have a dedicated (isolated) computing environment.

18.8.7 Mobile computing and communications

Objective: To ensure information security when using mobile computing and teleworking facilities.

18.8.7.1 Mobile computing and communications

Reference ID	T2S.18.950

A formal policy shall be in place, and appropriate security measures shall be adopted to protect against the risks of using mobile computing and communication facilities.

18.8.7.2 Teleworking

Reference ID	T2S.18.960

A policy, operational plans and procedures shall be developed and implemented for teleworking activities.

18.9 Information systems acquisition, development and maintenance

18.9.1 Security requirements of information systems

Objective: To ensure that security is an integral part of information systems.

18.9.1.1 Security requirements analysis and specification

Reference ID	T2S.18.970

Statements of business requirements for new information system(s), or enhancements to existing information systems shall specify the requirements for security controls.

18.9.2 Correct processing in applications

Objective: To prevent loss, unauthorised modification or misuse of data in applications.

18.9.2.1 Input data validation

Reference ID	T2S.18.980

Data input to applications shall be validated to ensure that it is correct and appropriate.

18.9.2.2 Control of internal processing

Reference ID	T2S.18.990

Validation checks shall be incorporated into applications to detect any corruption of information processing, errors or deliberate acts.

18.9.2.3 Message integrity

Reference ID	T2S.18.1000

Requirements for ensuring authenticity and protecting message integrity in applications shall be identified, and appropriate controls identified and implemented.

18.9.2.4 Output data validation

Reference ID	T2S.18.1010

Data output from an application shall be validated to ensure that the processing of stored information is correct and appropriate to the circumstances.

18.9.3 Security of system files

Objective: To ensure the security (integrity) of system files.

18.9.3.1 Control of operational software

Reference ID	T2S.18.1040

There shall be procedures in place to control the installation of components on operational systems.

18.9.3.2 Protection of system test data

Reference ID	T2S.18.1050

Test data shall be selected carefully. If sensitive information is used for testing purposes, it shall be protected and controlled.

18.9.3.3 Access control to program code

Reference ID	T2S.18.1060

Access to program code shall be restricted according to the system owner's decision.

18.9.4 Security in development and support process

Objective: To maintain the security of application system software and information, T2S environments shall be strictly controlled.

18.9.4.1 Change control procedures

Reference ID	T2S.18.1070

The implementation of changes shall be controlled by the use of formal change control procedures, and only undertaken after a prior impact analysis.

18.9.4.2 Technical review of applications after operating system changes

Reference ID	T2S.18.1080

Before operating system software is changed, all business-critical applications shall be reviewed and tested to ensure that there is no adverse impact on organisational operation or security.

18.9.4.3 Restrictions on changes to software packages

Reference ID	T2S.18.1090

Modifications to software packages shall be limited to necessary changes, which shall be strictly controlled.

18.9.4.4 Information leakage

Reference ID	T2S.18.1100

Opportunities for information leakage shall be prevented.

18.9.4.5 Outsourced software development

Reference ID	T2S.18.1110

Outsourced software development shall be supervised and monitored by the T2S organisation and must be consistent with the T2S security policies.

18.9.5 Technical Vulnerability Management

Objective: To reduce risks resulting from exploitation of published technical vulnerabilities.

18.9.5.1 Control of technical vulnerabilities

Reference ID	T2S.18.1120

Timely information about the technical vulnerabilities of information systems being used shall be obtained, T2S's exposure to such vulnerabilities evaluated, and appropriate measures taken to address the associated risk.

18.10 Information security incident management

18.10.1Reporting information security events and weaknesses

Objective: To ensure security events and weaknesses associated with information systems are communicated in a manner allowing timely corrective action to be taken.

18.10.1.1 Reporting information security events

Reference ID	T2S.18.1130

Information security events shall be reported through appropriate management channels without any delay, as defined by the system owner.

18.10.1.2 Reporting security weaknesses

Reference ID	T2S.18.1140

All employees, contractors and third-party users of T2S information systems and services shall be required to note and report any observed or suspected security weaknesses in systems or services.

18.10.2Management of information security incidents and improvements

Objective: To ensure a consistent and effective approach is applied to the management of information security incidents.

18.10.2.1 Responsibilities and procedures

Reference ID	T2S.18.1150

Management responsibilities and procedures shall be established to ensure a quick, effective and orderly response to information security incidents.

18.10.2.2 Learning from information security incidents

Reference ID	T2S.18.1160

There shall be mechanisms in place to enable the types, volumes and impacts of information security incidents to be quantified and monitored.

18.10.2.3 Collection of evidence

Reference ID	T2S.18.1170

Where the T2S Governance structure considers that a follow-up action against a person or organisation after an information security incident could lead to legal action (either civil or criminal), evidence shall be collected and presented in conformity with the rules for evidence laid down in the relevant jurisdiction(s).

18.11 Information security aspects of business continuity management

Objective: To counteract possible interruptions to business activities, to protect critical business processes from the effects of major failures of information systems or disasters, and to ensure their timely resumption.

18.11.1.1 Business continuity and risk assessment

Reference ID	T2S.18.1190

Events that can cause interruptions to business processes shall be identified, along with the probability and impact of such interruptions and their consequences for information security.

18.11.1.2 Including information security in the business continuity management process elements

Reference ID	T2S.18.1180

A managed process shall be developed and maintained for business continuity throughout the T2S organisation that addresses the information security requirements needed for T2S business continuity.

18.11.1.3 Developing and implementing continuity plans including information security

Reference ID	T2S.18.1200

Plans shall be developed and implemented to maintain or restore business operations and ensure availability of information at the required level and in the required time-scales following interruption to, or failure of, critical business processes.

18.11.1.4 Business continuity planning framework

Reference ID	T2S.18.1210

A single framework of business continuity plans shall be maintained to ensure that all plans are consistent, to consistently address information security requirements, and to identify priorities for testing and maintenance.

18.11.1.5 Testing, maintaining and re-assessing business continuity plans

Reference ID	T2S.18.1220

Business continuity plans shall be tested and updated regularly to ensure that they are up to date and effective.

18.12 Compliance

18.12.1Compliance with legal requirements

Objective: To avoid breaches of any law; statutory, regulatory or contractual obligations; or security requirements.

18.12.1.1 Identification of applicable legislation

Reference ID	T2S.18.1230

All relevant statutory, regulatory and contractual requirements and the T2S approach to meeting these requirements shall be explicitly defined, documented and kept up to date for each information system in the T2S organisation.

18.12.1.2 Intellectual property rights (IPR)

Reference ID	T2S.18.1240

Appropriate procedures shall be implemented to ensure compliance with legislative, regulatory, and contractual requirements on the use of material in respect of which there may be intellectual property rights, and on the use of proprietary software products.

18.12.1.3 Protection of organisational records

Reference ID	T2S.18.1250

Important T2S records shall be protected from loss, destruction and falsification, in accordance with statutory, regulatory, contractual, and business requirements.

18.12.1.4 Data protection and privacy of personal information

Reference ID	T2S.18.1260

Data protection and privacy shall be ensured as required in relevant legislation, regulations and, if applicable, contractual clauses.

18.12.1.5 Prevention of misuse of information processing facilities

Reference ID	T2S.18.1270

Users shall be deterred from using information processing facilities for unauthorised purposes.

18.12.1.6 Regulation of cryptographic controls

Reference ID	T2S.18.1280

Cryptographic controls shall be used in compliance with all relevant agreements, laws and regulations.

18.12.2Compliance with security policies and technical compliance

Objective: To ensure compliance of systems with T2S security policies and standards.

18.12.2.1 Compliance with security policy and standards

Reference ID	T2S.18.1290

Managers shall ensure that all security procedures within their area of responsibility are carried out so as to achieve compliance with security policy and any supplementary standards defined by the system owner.

18.12.2.2 Technical compliance checking

Reference ID	T2S.18.1300

Information systems shall be regularly checked for compliance with the security policy and any supplementary standards.

18.12.3 Information systems audit considerations

Objective: To maximise the effectiveness of, and minimise interference to/from, the information systems audit process.

18.12.3.1 Information systems audit controls

Reference ID	T2S.18.1310

Audit requirements and activities involving checks on operational systems shall be carefully planned and agreed to minimise the risk of disruptions to business processes.

18.12.3.2 Protection of information systems audit tools

Reference ID	T2S.18.1320

Access to information systems audit tools shall be protected to prevent any possible misuse or compromise of the system.

USER REQUIREMENTS

CHAPTER 19

TECHNICAL ARCHITECTURE

EUROPEAN CENTRAL BANK

EUROSYSTEM

19 Technical Architecture

19.1 Introduction

Considering the importance of T2S operations for the market, the most advanced architecture for business continuity, based on proven best practice, will be used. The state of the art for meeting such a high standard is the "two-regions / four-sites" architecture, already implemented and tested on Single Shared Platform for the similarly critical operations of TARGET2 – this will be used for T2S also. The T2S model should be based on the model already implemented on the TARGET2 Single Shared Platform.

The present chapter is a collection of user requirements to qualify the T2S architecture; it does not describe the design of technical solutions (system infrastructure, network, processing distribution amongst regions, etc.), as this adaptation of the TARGET2 architecture will be developed and described in the General Specifications phase of the T2S project.

The user requirements specific to the external networks and interfaces necessary for the CSDs and T2S parties to connect directly to T2S will be established in the next phase of the project (with reference to chapter 12: Interfaces and Connectivity Requirements).

TARGET2 Single Shared Platform architecture should be reused

Reference ID	T2S.19.010

In order to take advantage of synergies in term of security availability and infrastructure architecture, the TARGET2 Single Shared Platform architecture should be reused as much as possible for T2S.

T2S's technical environment will be installed on a two regions / four sites architecture

Reference ID	T2S.19.020

The technical environment for the T2S data centre and application shall follow the "two regions / four sites" architecture.

T2S's technical environment will be spread across each region

Reference ID	T2S.19.025

Inside a region, the distance between the two sites will be more than 3 kilometres.

T2S will be logically independent from TARGET2

Reference ID	T2S.19.030

Complete logical independence between TARGET2 and T2S operations will be always guaranteed (each system must be able to run independently of the other).

19.2 High resilience for High Availability

The T2S architectural concept must ensure high availability of T2S services, and therefore it will rely on appropriate state-of-the-art concepts.

T2S will have a high level of resilience

Reference ID	T2S.19.040

T2S must have a high level of resilience providing a seamless failover, a rapid recovery and timely resumption of operation.

Components supporting a high degree of resilience will be preferred. The system will also deploy, e.g. duplication and clustering of critical components, different trunks for lines, automated reaction to failures, etc.

Redundancy against single component failures

Reference ID	T2S.19.050

The system shall provide redundancy against single component failures by supporting replicated component deployment and automated failover.

System and application software will be kept updated in parallel in the two regions

Reference ID	T2S.19.060

The system and the application software will be kept updated in the two regions by means of hardware feature (asynchronous remote copy).

System and application software will be kept updated in the two sites of the same region

Reference ID	T2S.19.070

The system and the application software will be kept updated in the two sites of the same region.

Single interface to users independent of the region

Reference ID	T2S.19.080

T2S will offer a single interface to its users, i.e. they will not perceive in which region a certain module is running.

Rotation between regions invisible to users

Reference ID	T2S.19.090

Rotation will be invisible to users and market infrastructures, i.e. no configuration changes in customer systems are envisaged.

Rotation between two regions will be regularly applied

Reference ID	T2S.19.095

Rotation between two regions should be applied at least two times per year.

19.3 General Design Principles

T2S system shall be secured, scalable and resilient

Reference ID	T2S.19.100

The main elements of the design will be:

- a fully scalable central processing system and with proven resiliency,
- a storage subsystem with synchronous and asynchronous mirroring functionality,
- a data storage system (data warehouse) with synchronous mirroring functionality to ensure continuous reporting,
- a dedicated internal network to connect the different processing sites,
- homogeneous secure wide area networks with adequate services and security protection to link up the CSDs and directly-connected T2S parties (see Chapter 12),
- security systems (firewall, etc.),
- system and application software which is compliant with above-mentioned elements.

T2S system size shall be adapted to the forecast activity

Reference ID	T2S.19.110

The system shall be able to accommodate the estimated data volumes reassessed on a regular basis throughout T2S application life.

T2S architecture shall not be dependent on particular technology

Reference ID	T2S.19.120

Technology dependency shall not constrain the technical architecture of T2S.

T2S shall be made of independent modules

Reference ID	T2S.19.130

The system shall be made up of independent modules promoting technical component reusability.

T2S architecture shall support open interfaces

Reference ID	T2S.19.140

The system shall facilitate the exchange of information between its architectural components by supporting open interfaces.

T2S will use standard communication protocols

Reference ID	T2S.19.150

The system will use standard (de jure/de facto) communication protocols.

T2S data shall be stored on a central repository

Reference ID	T2S.19.160

All system data shall be stored on a central repository.

T2S architecture shall support a multi-tier architecture

Reference ID	T2S.19.170

The application architecture shall separate the data, business logic, and presentation layers.

T2S logical architecture shall enable parallel processing

Reference ID	T2S.19.180

The design shall be structured on a multiple instances configuration to enable parallel processing.

T2S static and transactional data shall be segregated by system entity

Reference ID	T2S.19.190

T2S shall partition static and transactional data by system entity, using the system entity identifier where applicable.

This means that the system entity identifier must be an attribute of all specific static data and transactional entities in T2S as the prerequisite for data segregation.

High performance internal network

Reference ID	T2S.19.200

A high-performance internal T2S network shall be provided to connect the two regions and the four sites.

High availability internal network

Reference ID	T2S.19.210

The internal network shall have a high-availability architecture.

Single internal network interface

Reference ID	T2S.19.220

The rotation principle requires a single, well-defined internal network interface.

T2S external message exchange shall be based on the ISO20022 standard

Reference ID	T2S.19.230

Network services shall offer an extensive support of standardised message exchange based on ISO20022.

T2S architecture design shall ensure maintainability

Reference ID	T2S.19.240

T2S architecture shall be built in a way that allows a high degree of maintainability.

T2S monitoring guaranteed by automated checks and control screens

Reference ID	T2S.19.250

Sufficient automatic checks and control screens shall be in place to ensure the monitoring of the system's functioning.

T2S errors and alerts shall be stored in a central monitoring utility

Reference ID	T2S.19.260

All error messages and alerts shall be stored on a secured central event log.

Messages and screens similar for all users

Reference ID	T2S.19.270

User messages and user screens shall follow a user style guide based on best practices.

The unique language of T2S will be the English language

Reference ID	T2S.19.280

The unique language of T2S shall be the English language (screens, documentation, support).

19.4 T2S environments

Distribution of test environments between the two regions

Reference ID	T2S.19.290

The four test environments will run concurrently in the same region. They will share their hardware resources and will be subject to the periodical rotations to the other region.

Four T2S test environments until the final migration wave

Reference ID	T2S.19.400

The Eurosystem shall establish four T2S test environments for the exclusive use of CSDs and central banks for user testing until four weeks after the successful go-live in T2S of the final migration wave i.e.:

- Interoperability test environment
- Migration test environment
- Community test environment
- Pre-production test environment

Availability of the T2S test environments

Reference ID	T2S.19.410

The Eurosystem shall establish the Interoperability, Migration and Community test environments four months prior to the start of CSDs' and central banks' functional interoperability testing with T2S to allow for the connectivity set-up and connectivity testing to the test environments under the assumption that each CSD and central bank will set-up and test its connectivity to at least one test environment in the four month period. The Eurosystem will phase in the connectivity set-up and testing of CSDs and central banks to the remaining test environments as required by the test schedule agreed between the Eurosystem, CSDs and central banks.

The Eurosystem will establish the Pre-production test environment for the go-live of the static data maintenance in T2S latest three months before the planned T2S Go-Live.

Two test environments after final migration wave

Reference ID	T2S.19.420

After the go-live of the final migration wave in T2S, the Eurosystem shall support two test environments:

- Interoperability test environment for future release testing (see T2S.19.425);
- Pre-production test environment (see T2S.19.430).

Permanent Interoperability test environment after final migration wave

Reference ID	T2S.19.425

After the go-live of the final migration wave in T2S, the Eurosystem shall provide one permanent test environment (Interoperability test environment) for the CSDs' and central banks' functional interoperability testing of T2S software/hardware updates.

Permanent Pre-production test environment after T2S go-live for dedicated use

Reference ID	T2S.19.430

From the go-live of the static data maintenance in T2S, the Eurosystem will dedicate a permanent Pre-production test environment for customer testing. The software and configuration of this test environment shall be as identical to the T2S production environment as possible to allow T2S Actors to test their business applications under production-like conditions.

Statistical Information

Reference ID	T2S.19.450

The Eurosystem shall provide the statistical information module for only two of the four test environments for User Testing and will remain in place after the decommissioning of the two additional test environments.

Processing Capacity for Test Environments

Reference ID	T2S.19.460

The cumulated processing capacity of the four test environments shall be up to 10% of the production capacity.

Description	Metric	Total Processing Volume for all environments (10% of Production Processing Capacity)
Peak night time work load	Messages	1,500,000
	Settlement Instructions	720,000
	Settlement Transactions	390,000
Peak day time daily work load	Messages	600,000
	Settlement Instructions	270,000
	Settlement Transactions	135,000
Night time peak hour work load	Messages	150,000
	Settlement Instructions	72,000
	Settlement Transactions	39,000
Day time peak hour work load (assuming an 12 hour work day)	Messages	60,000
	Settlement Instructions	22,000
	Settlement Transactions	11,000
Maximum U2A browsing requests per hour	HTTP requests	2,500
Maximum A2A queries per hour	Query requests	1,000

Migration Rehearsals

Reference ID	T2S.19.470

The Eurosystem will provide sufficient capacity for CSDs' and central banks' migration rehearsals. Both the Eurosystem, CSDs and central banks' require certainty that a group of CSDs and central banks' of a migration wave can migrate to T2S in the foreseen timeframe of a weekend. The migration weekend dress rehearsal simulates the migration weekend with the full scope of CSDs and central banks data requiring migration to T2S. Therefore, migration weekend dress rehearsals require sufficient capacity to verify and provide assurance to all actors on the feasibility and timings of the individual activities in the playbook for the migration weekend. Such exercise will be conducted in principle during weekends. Migration weekend rehearsals with a limited set of static and transactional data will be conducted during weekdays. Eurosystem, CSDs and central banks shall agree on scheduling of migration rehearsals in advance.

Volume Testing

Reference ID	T2S.19.475

The Eurosystem will provide sufficient capacity for CSDs' and central banks' volume testing. CSDs' and central banks' require certainty that their adapted systems can process the expected production volumes end-to-end with T2S in the foreseen T2S operational day. Therefore, volume testing of specific scenarios with T2S will require sufficient capacity for T2S to allow CSDs' and central banks' to undertake this validation. The Eurosystem, CSDs and central banks shall agree on scheduling of such tests in advance.

Storage Capacity for Test Environments

Reference ID	T2S.19.480

The overall storage capacity for four test environments shall be 20% of the storage capacity of the production environment. If required and with sufficient notice in advance, the Eurosystem will reallocate capacity not used by other T2S environments for execution of specific tests.

Three months of data

Reference ID	T2S.19.490

The test environments shall store a maximum of three months of transactional data based on the business day testing on the respective test environment.

Security for Test Environments

Reference ID	T2S.19.500

The T2S Information Security Requirements shall apply to the test environments as defined in the user requirements (Chapter 18). To achieve and maintain appropriate protection of T2S test assets (see Section 18.4.1), the implementation of the controls in the test environments will be adjusted to the criticality of the test data.

Operational Management of Test Environments

Reference ID	T2S.19.510

To the extent possible, the Eurosystem shall use the operational procedures, developed for the production environment, for the test environments in order to validate the effectiveness of the operational procedures and to ensure the practical training of the operational teams of the T2S Operator, CSDs and central banks.

CSD and Central Bank Connectivity for Test Environments

Reference ID	T2S.19.520

The Eurosystem shall allow CSDs and central banks to connect to all four test environments using the application-to-application (A2A) and user-to-application (U2A) interfacing.

DCP Connectivity for Test Environments

Reference ID	T2S.19.525

The Eurosystem shall allow DCPs to connect to the Community test environment and to the permanent T2S Pre-production test environment.

Operational Monitoring of Test Environments

Reference ID	T2S.19.530

The Eurosystem shall establish and undertake operational monitoring of all test environments.

Accessibility of Test Environments

Reference ID	T2S.19.540

The Eurosystem shall allow CSDs and central banks to access test environments only during the period when the system is open for testing activities (see T2S.19.550, T2S.19.570, T2S.19.600).

Standard opening hours of Test Environments

Reference ID	T2S.19.550

The test environments' standard opening hours are 07:00 and 19:00 CET from Monday to Friday except for 1 January, Catholic/Protestant Easter (Friday and Monday), 1 May, 25 December and 26 December.

Standard T2S settlement day on Test Environments

Reference ID	T2S.19.560

The Eurosystem will schedule all processes of a standard T2S settlement day for a test environment to run between the standard opening hours of test environments (see T2S.19.550).

Production-like T2S settlement day schedule on Test Environments

Reference ID	T2S.19.570

The test systems can be opened with the live timing for a limited period on request of the CSDs and central banks, based on an agreed calendar. The Eurosystem will then schedule all processes of a production-like T2S settlement day schedule for a test environment in the same way as T2S settlement day schedule for production. A test environment will not apply the production-like T2S settlement day schedule on 1 January, Catholic/Protestant Easter, 1 May, 25 December and 26 December and when maintenance or concurrent activities are scheduled.

Service support hours for the Test Environments

Reference ID	T2S.19.580

The Eurosystem shall provide support services for the test environments* during standard support hours from 7:00 to 19:00 CET from Monday to Friday.

(*) except for 1 January, Catholic/Protestant Easter (Friday and Monday), 1 May, 25 December and 26 December.

Service support hours for the Test Environments during production-like T2S settlement day schedule

Reference ID	T2S.19.590

The Eurosystem will provide the option to operate two types of production-like T2S settlement day schedules:

- A production-like T2S settlement day schedule will not require extended operational and technical support outside the support hours described in T2S.19.580. Consequently, there will be no guaranteed U2A access to T2S during the night-time. If a problem occurs during the night, the T2S Operator will address it at the beginning of the next business day with a possible delay of the start of the settlement day.
- When necessary from the purpose of the testing activity (e.g. verification of the operational readiness of the Eurosystem, CSDs and central banks), the Eurosystem will operate for a limited period of several days the community test environment with the production-like support for the successful execution of User Testing.

Additional service support

Reference ID	T2S.19.600

The Eurosystem shall provide support services for specific tests, such as migration and performance testing, as defined in the User Testing Calendar.

USER REQUIREMENTS

CHAPTER 20

IT SERVICE MANAGEMENT AND BUSINESS CONTINUITY

EUROPEAN CENTRAL BANK

EUROSYSTEM

20 IT Service management and business continuity

The present chapter aims at presenting the basic elements on which the IT service management shall be based. All services and functions requested for T2S will be deployed with the performance and security levels described in chapters 17 and 18 of the present URD.

The contractual relationship between T2S and T2S parties is under discussion at present. The contract sub-elements, including the description of the service level, will be defined in a later phase of the project.

The level of service provided to users, system performance measurement and related reporting will be agreed under the service management part of the T2S governance policy. This governance policy will also cover incident, problem, change, release and management policies. The contents of the present chapter will be used in the discussion of these policies and linked procedures.

The T2S service provider shall ensure that best practices for IT service management are being followed. IT Service Management recommendations of ITIL will be fully applied and the ISO 20000 IT Service Management Standards shall be followed as much as possible.

The **Information Technology Infrastructure Library (ITIL)** is a set of best practices for managing information technology (IT) infrastructure, development, and operations.

In essence, it can be considered as the world-wide *de facto* standard in IT service management.

The following sections present a list of high-level IT Service Management requirements as extracted from ITIL and slightly amended where necessary.

The first version of the list of services (service catalogue) will be provided in the General Functional specification phase. The targeted service level (also in chapter 17) will be clarified in the General Functional specification phase.

T2S will satisfy ITIL concepts

Reference ID	T2S.20.010

To ensure service support and delivery according to agreed service levels, the service provider of T2S shall use predefined processes based on the proven ITIL concept.

20.1 Operating times

Daily Operations timelines are defined in detail in chapter 3 and are outside the scope of this document.

The T2S System must be able to cope with these requirements.

20.1.1 Online Operating Window

Access to and update of data in T2S in online mode are a key element of the user requirements.

This access covers every kind of data (in U-to-A or A-to-A mode), be they static or settlement-related ones.

T2S calendar

Reference ID	T2S.20.020

A calendar will be established for T2S that is different from the TARGET2 calendar. The T2S calendar will be in line with the Central Bank calendar of T2S settlement currencies, i.e. in the euro zone the opening days will be the same for T2S and TARGET2(see T2S.03.305-320).

Night downtime

Reference ID	T2S.20.030

T2S is allowed a maintenance window downtime of a maximum of 2 hours per 24 hours at night (03:00 to 05:00 CET). Files received during this maintenance downtime will be queued (see T2S.03.230).

20.2 T2S service desk

A Service Desk will be available at the T2S service provider to promptly respond to any technical issues raised by the CSDs and T2S parties authorised by the CSDs.

T2S Service Desk

Reference ID	T2S.20.040

A T2S Service Desk with skilled staff must be established as a single point of contact for the CSDs and T2S parties authorised by the CSDs in case of technical incidents.

20.2.1 Service Desk operating time

T2S Service Desk operating on a 24-hour basis

Reference ID	T2S.20.050

The T2S Service Desk will be accessible 24 hours a day during operating days.

The service level will be different depending on the time of day.

20.2.2 Technical inquiry response time

Based on the level of complexity of the technical enquiry, the T2S Service Desk shall operate according to a published response time matrix and measure its performance against this matrix.

Call recording by the T2S Service desk

Reference ID	T2S.20.060

The T2S Service Desk will record all enquiries and provide confirmation to CSDs or directly connected instructing parties when calls are received.

Trouble management system

Reference ID	T2S.20.070

The Service Desk shall be supported by a Trouble Management System (TMS).

In addition, all activities of the T2S service provider related to IT Service management processes shall be supported by the Trouble Management System, which will cover the workflow and serve as an information base providing e.g. the status of an incident/problem, the actors involved, and details about reasons and solutions.

Online access to Trouble management system for CSDs and T2S parties authorised by the CSDs

Reference ID	T2S.20.080

CSDs and T2S parties authorised by the CSDs shall have online access to the tool.

The communication between the service desk and customers shall be based on use of telephone, fax and email.

20.2.3 Service Desk reporting

The CSDs will need to receive regular Management Information covering the performance of the T2S Service Desk as compared with the agreed service level.

Online access to Trouble Management System for CSDs

Reference ID	T2S.20.090

A Service Desk Management information report including types of inquiries, number of inquiries per month from directly connected instructing parties, number of unresolved inquiries and time elapsed will be provided to CSDs and directly connected instructing parties.

Monthly Service Desk Management Information reporting

Reference ID	T2S.20.100

A Service Desk Management information report will be provided monthly.

Service Information reporting

Reference ID	T2S.20.110

Reports – including key performance indicators – shall be made available to the governance structure and to the users for a Service Level Management of the T2S application.

20.3 Incident Management

By definition, an incident is any event which is not part of the standard operation of a service and which causes, or may cause, an interruption or a reduction in quality of that service.

Incident Management procedure shall be in place to restore normal service operation

Reference ID	T2S.20.120

An Incident Management service shall be in place.

The primary goal of Incident Management is to restore normal service operation as quickly as possible and minimise the adverse impact on business operations, thus ensuring that the best possible levels of service (quality and availability) are maintained as defined by the SLA.

Incident Management is to inform of errors as soon as possible

Reference ID	T2S.20.130

Incident Management shall inform / warn all relevant parties of errors or malfunctions at the earliest possible time.

20.4 Problem Management

Problem Management shall be in place to minimise the adverse impact of Incidents and Problems

Reference ID	T2S.20.140

A Problem Management service shall be in place.

The goal of Problem Management is to minimise the adverse impact of Incidents and Problems on the business that are caused by errors within the IT Infrastructure, and to prevent the recurrence of Incidents related to these errors. In order to achieve this goal, Problem Management seeks to get to the root cause of Incidents and then initiate actions to improve or correct the situation.

The Problem Management process has both reactive and proactive aspects. The reactive aspect is concerned with solving Problems in response to one or more Incidents. Proactive Problem Management is concerned with identifying and solving Problems and Known Errors before Incidents occur in the first place.

20.5 Change management

The goal of the Change Management process is to ensure that standardised methods and procedures are used for efficient and prompt handling of all Changes, in order to minimise the impact of Change-related Incidents upon service quality, and consequently to improve the day-to-day operations of the organisation.

Any changes shall be prepared and implemented under the control of a change management process.

Change management procedures shall be defined

Reference ID	T2S.20.150

Change management procedures shall be defined and implemented in order to efficiently track and manage changes and to mitigate the risks associated with these changes.

Change governance structure

Reference ID	T2S.20.160

A change governance structure shall be in place to collect, assess and prioritise requirements to be considered for the coming release. It shall also decide on the release contents.

Change governance policy

Reference ID	T2S.20.170

Change governance policy shall be defined under the responsibility of the application governance body.

Changes shall be grouped

Reference ID	T2S.20.180

Multiple changes to T2S shall be included in one single release if possible.

20.5.1 Emergency changes

In certain cases an incident may demand an urgent change of the application or system software in the production environment. Such a change clearly aims to ensure a quick restoration of T2S services and not to change the functionality. Due to its urgency, such a change cannot be processed by following the complete process for changes. Therefore such changes shall fall under a special category called emergency changes. However, even emergency changes shall be controlled by a lightweight change management procedure.

Changes are always under the control of the change manager

Reference ID	T2S.20.190

Emergency changes shall be immediately reported to and approved by the Change Manager.

Emergency procedures for short-term access to production environment

Reference ID	T2S.20.200

Procedures will be in place to allow dedicated personal short-term access to production data and production code.

Auditing and monitoring procedures on emergency changes

Reference ID	T2S.20.210

Procedures will be in place that automatically monitor and audit the activities performed on the system during the emergency phases.

20.5.2 Bug fixing response time

An identified software bug may be either of non-critical nature (and therefore can be scheduled for a regular systems maintenance activity) or of critical nature (and therefore requires an immediate correction).

Immediate reaction to critical bug fixing is required

Reference ID	T2S.20.220

Reaction to critical bug fixing shall be within a pre-defined time range.

20.6 Release Management

The focus of Release Management is the protection of the production environment and its services through the use of formal procedures and checks.

New releases will be prepared and implemented under the control of a release management process.

20.6.1 Release planning and communication

New releases will cover major changes in relation to the functionality of the application and/or infrastructure changes.

Release planning process

Reference ID	T2S.20.230

A release planning process must be established (except for emergency changes and minor changes without any functional impact).

Software development staging process

Reference ID	T2S.20.240

All releases shall follow the staging concept, i.e. installation in the production environment is only allowed after testing in the former stages, especially on the customer test environment.

Release communication 18 months in advance

Reference ID	T2S.20.250

Major releases shall be announced 18 months in advance. Detailed documentation in the release contents shall be available at the same time.

Detailed contents of release communicated 9 months in advance

Reference ID	T2S.20.260

Final announcement and detailed contents of major changes shall be given 9 months in advance.

20.6.2 Software life-cycle planning

The T2S application will be an evolving application, increasing and improving services by following a defined Software Development Life Cycle.

Changes and upgrades will be performed during the application life cycle. It will need to be determined case by case whether such changes will require the directly connected instructing parties to perform an end-to-end test. These cases need to be communicated to the directly connected instructing parties as early as possible to allow for adequate planning and to establish the correct test cases and procedures.

All other changes which may have an impact on directly connected instructing parties will also need to be announced at the earliest stage possible. An exception to this will be any form of emergency updates due to a problem in the production environment.

New requirements collection and prioritisation

Reference ID	T2S.20.270

There must be a defined planning process for gathering and analysing requirements concerning functional changes leading to a new software release.

Software development life cycle procedure

Reference ID	T2S.20.280

There must be a defined Software Development Life Cycle for planning and developing a new software release.

20.7 Configuration Management

T2S will ensure a continuous management of its configuration

Reference ID	T2S.20.290

Configuration Management aims to:

- account for all the IT assets and configurations within the organisation and its services,
- provide accurate information on configurations and their documentation to support all the other Service Management processes,
- provide a sound basis for Incident Management, Problem Management, Change Management and Release Management,
- verify the configuration records against the infrastructure and correct any exceptions.

20.8 Service Level Management

The goal of the Service Level Management process is to maintain and improve IT Service quality through a constant cycle of agreeing, monitoring and reporting upon IT Service achievements and instigating actions to eradicate poor service – in line with business or cost justification.

All services provided by T2S shall be managed through Service Level Agreements

Reference ID	T2S.20.300

All services provided by T2S shall be managed through Service Level Agreements (SLAs) by a defined Service Level Management process.

20.9 Capacity Management

The goal of the Capacity Management process is to ensure that cost-justifiable IT Capacity always exists and that it is matched to the current and future identified needs of the business.

Capacity Management process in place

Reference ID	T2S.20.310

The required IT capacity shall be provided by following a defined Capacity Management process.

See chapter 17 – Volumes and performance

20.10 Availability Management

The goal of the Availability Management process is to optimise the capability of the IT Infrastructure, services and supporting organisation to deliver a cost-effective and sustained level of availability that enables the business to satisfy its business objectives.

Availability Management process in place

Reference ID	T2S.20.320

A cost-effective and sustained level of availability (above 99.7% of the operating time) that enables the business to satisfy its business objectives shall be ensured via a defined Availability Management process.

20.11 Financial Management

The goal of the Financial Management process is to provide cost-effective stewardship of the IT assets and resources used to provide IT Services for T2S.

Financial Management process in place

Reference ID	T2S.20.330

A Financial Management process shall be defined and implemented to assist decision-making on IT investment by providing detailed business cases for changes to the IT Services provided by T2S.

20.12 IT Service Continuity Management

"The goal for ITSCM is to support the overall Business Continuity Management process by ensuring that the required IT technical and services facilities (including computer systems, networks, applications, telecommunications, technical support and Service Desk) can be recovered within required, and agreed, business time-scales."

IT Service Continuity Management process in place

Reference ID	T2S.20.340

An ITSCM process shall be put in place to ensure that T2S IT services can be recovered within the required and agreed time-scales.

20.12.1Business Continuity Model

Objective: To have procedures in place to trigger and complement the T2S system's high resilience.

Rotation procedure and process between the two regions

Reference ID	T2S.20.350

There must be in place a rotation procedure and process between the two regions that describes in detail the organisational and procedural arrangements.

Switch procedure between the two sites inside each region

Reference ID	T2S.20.360

There must be in place a switch procedure between the two sites inside each region that describes in detail the organisational and procedural arrangements for testing.

Each of the T2S sites must satisfy the agreed service level

Reference ID	T2S.20.370

Each of the four T2S sites must be able to fulfil the agreed service level.

Skilled staff must have access to the system in any circumstances

Reference ID	T2S.20.380

In addition to the resilient architecture, skilled staff must be available and they must be able to access the system (remotely and/or locally) under any circumstances without a decrease of agreed service level.

Business continuity model shall satisfy the widest range of possible system failures

Reference ID	T2S.20.390

The business continuity model foreseen for T2S shall be able to cope with trivial and serious failures as well as with site and regional area disaster scenarios.

The infrastructure and staff of the two regions shall be independent and not affected by the same regional security events

Reference ID	T2S.20.400

Out-of-region sites shall not be dependent on the same labour pool or infrastructure components used by the primary region and shall not be affected by a wide-scale evacuation or the inaccessibility of the region's population.

Disaster recovery period is under two hours

Reference ID	T2S.20.410

The maximum disaster recovery period of T2S shall be under two hours from the moment when the decision is taken by the Crisis managers. This time can be used to allow the T2S parties to control, prepare and reconcile their own environments towards re-establishing a functioning T2S environment.

20.12.2 Crisis Management

Crisis Management is an important element of Business Continuity, and as such a Governance issue. It is important to note that, differently from the incident management process, crisis management shall cover an interruption to the supply of the service to be provided.

Objective: To have a structure and procedures in place to manage incidents and events that exceed a pre-agreed severity threshold.

Crisis management process and crisis management structure will be defined by the T2S Governance structure

Reference ID	T2S.20.420

The crisis management process and crisis management structure will be defined by the T2S Governance structure.

Crisis management process to guarantee coordination of activities in crisis situations

Reference ID	T2S.20.430

The crisis management process is to guarantee effective coordination of activities within all the involved organisations in a crisis situation.

Crisis management process to guarantee appropriate communication in crisis situations

Reference ID	T2S.20.440

The crisis management process is to guarantee appropriate communication, i.e. an early warning and clear instructions to all concerned, if a crisis occurs.

Resilient crisis communication tools to guarantee appropriate communication in crisis situations

Reference ID	T2S.20.450

To ensure efficient communication in a crisis situation, a resilient communication infrastructure spanning the two regions shall be available.

Crisis management process to guarantee continued assessment of crisis consequences

Reference ID	T2S.20.460

The crisis management process is to guarantee a continued assessment of the crisis' actual and potential consequences.

Crisis management process to guarantee business continuity during and after the crisis

Reference ID	T2S.20.470

The crisis Management process is to guarantee a continuity of business operations during and immediately after the crisis.

Crisis management process to guarantee a structure for escalation and decision making process

Reference ID	T2S.20.480

The crisis Management process is to guarantee a clear structure for escalation and the decision-making process.

Crisis management process to guarantee information to the relevant T2S parties

Reference ID	T2S.20.490

The crisis Management process is to guarantee clear communication rules, including informing customers.

20.12.3 Additional contingency measures

Considering the required resilience of T2S and the Business Continuity measures to be implemented, it could happen that the T2S service is not available for a limited time (e.g. severe software bug).

Objective: To limit the possible impacts of a T2S interruption on other systems (e.g. TARGET2) and financial markets.

Business contingency procedures will be defined under the responsibility of the Governance structure

Reference ID	T2S.20.500

Business contingency procedures will be defined in under the responsibility of the Governance structure in line with best practices.

Additional contingency tools are not required

Reference ID	T2S.20.510

Considering that there is no time-critical settlement requirement, T2S shall not implement any additional contingency tools. In this context, critical settlements must be understood as a limited number of instructions for which the non-settlement in the next few hours may induce a systemic risk.

20.13 Documentation

T2S application shall be documented

Reference ID	T2S.20.520

A comprehensive set of T2S documentation shall be prepared covering inter alia following subjects:

- Architecture
- Storage
- Network documentation
- Service Desk Documentation
- Operational Procedures

- Training
- System acceptance
- Planning
- Service Level Information
- Testing

Documentation will be distributed under T2S governance structure control

Reference ID	T2S.20.530

The T2S Governance structure will establish the detailed contents and the distribution list for documentation.

Functional specifications will be communicated to the CSDs

Reference ID	T2S.20.540

T2S documentation on Functional Specifications, including optimisation and settlement algorithms, needs to be available to CSDs.

TARGET2-SECURITIES

USER REQUIREMENTS

CHAPTER 21

MIGRATION

EUROPEAN CENTRAL BANK

EUROSYSTEM

21 Migration

This chapter aims at describing a basis for migration principles and procedures.

Detailed migration policy and plans will be established by the involved parties at a later stage of the project.

21.1 Introduction

Migration in the context of T2S means the relocation of data from a CSD to the T2S infrastructure and the associated changes in the processes and technical environment of a CSD on a mutually agreed date. Such a migration event can consist of one CSD or a batch of CSDs. The drivers for that decision will include volume considerations, structural interaction between CSDs and considerations to maintain a level playing field between CSDs in T2S and CSDs not yet in T2S. Upon the successful completion of a migration, a freeze period is considered necessary to fine-tune the post-migration environment. Migration dates will be announced far in advance, along the lines of the three-monthly cycles, to enable all CSDs to join T2S as quick as possible and to leverage the new functionalities available. Migration will be planned on "non-sensitive" weekends (e.g. end of month, market driven special event, etc.).

The migration prerequisites do have to include user training sessions, user testing and functional certification, and a mutually agreed period of settlement process simulation. For these reasons, dedicated teams from the CSD(s) and T2S shall be established far in advance of the migration. These teams will also need to be working together in a highly integrated manner to minimise the risks that are naturally associated with any process and technology migration of this magnitude and importance.

The migration itself should be planned as a ‘soft migration’. All so-called static information could be loaded into the ‘live’ environment during a short time before and not necessarily during a big-bang weekend (the differential being updated during the migration weekend). The transaction and instruction data, on the other hand, require a transfer at close of settlement day Friday to start the migration weekend activities. That means that the settlement day (usually a Monday) would already be processed in the T2S environment. At present, it is envisaged that members of the CSD that migrate their settlement functionality to T2S will not be directly connected during the first days of Operation. A freeze period of a reasonable time-frame to ensure CSD/T2S processing and data integrity before a directly connected user should be enabled.

Summary of migration approach:

- CSD by CSD respectively, or groups of CSDs
- A migration freeze period of at least one month between migration dates
- Compliance with CSD
- Compliance with directly connected parties
- Static data loading period before the migration weekend

- Migration will happen over a weekend
- Directly connected parties should be enabled following a defined period after migration

21.2 Migration plan

Establish and announce migration dates to the market

Reference ID	T2S.21.010

The migration date shall be agreed between the CSD(s) and the T2S Governance body and communicated at a very early stage to the market.

Prepare a testing plan

Reference ID	T2S.21.020

This migration announcement should allow the participants of the relevant CSD(s) and the CSD(s) itself to plan and prepare their testing in advance of the migration.

21.3 Communication plan

A concentrated and joint effort between T2S and the respective CSD(s) needs to address the market and CSD participant communication. This communication process shall start with the decision taken by the CSD to migrate its settlement process to T2S and finish about four weeks after the successful migration.

Detailed communication plan

Reference ID	T2S.21.030

A detailed communication plan shall be established.

Areas of generic communications need to consider, for example:

- regular status updates of the migration
- specific information regarding potential changes, for example, in Securities Settlement Information

Areas of CSD customer-specific communications shall be the other element in this migration effort.

Communication plan contact list

Reference ID	T2S.21.040

A detailed migration weekend communications plan, including relevant communication via email and/or Internet about the progress of the migration to the CSD customers, shall be established.

Dedicated resources for communication plan

Reference ID	T2S.21.050

Dedicated resource responsibilities for communications need to be established and shared between CSD and T2S project teams during the migration period

Regular migration plan updates

Reference ID	T2S.21.060

The migration date is extremely dependent on the completion of successful testing, simulation and preparedness for the migration; therefore, this date shall be validated on a regular basis. If the migration date is shifted, this needs to be announced again with prior and mutual consent of the relevant CSD and the T2S Governance structure.

21.4 Testing- Simulation environment

Functional Tests and Test Cases are not covered in this document. They will be delivered by the Specification Phase.

T2S will plan integrated tests with all T2S parties

Reference ID	T2S.21.070

Integrated tests with RTGS systems, T2S and/or external network provider(s) shall be planned and communicated in time. For these tests, general test cases and test cycles will be provided for acceptance.

Testing and simulation environment

Reference ID	T2S.21.080

A technical infrastructure for the testing and simulation of processes, including telecommunications, applications, technical help desk and reports, must be available.

Testing environment calendar

Reference ID	T2S.21.090

The testing infrastructure also needs to be able to support testing and simulation over a period of settlement days to be established at a later stage of the project (for example, five consecutive settlement days).

Multiple accesses to the testing environment

Reference ID	T2S.21.100

The testing infrastructure will be available for use simultaneously by multiple CSDs and directly connected T2S parties at the early stage of the acceptance testing process.

Migration testing

Reference ID	T2S.21.110

Migration shall be tested in a test environment similar to the production environment.

(Critical and/or extended periods of non-availability need to be signalled as early as possible)

21.5 Retention of acceptance/T2S compliance testing documentation

Archiving of compliance testing

Reference ID	T2S.21.120

For audit and control purposes, T2S compliance testing documentation and testing results will be archived by T2S.

Retention duration period

Reference ID	T2S.21.130

T2S shall retain acceptance test records for 10 years.

21.6 Dedicated migration project teams

Dedicated migration project teams from CSD and T2S

Reference ID	T2S.21.140

It is indispensable to establish dedicated teams for the migration on both sides – the CSD as well as the T2S. The single mandate of these teams has to be successfully executing the migration and then monitoring and providing support in the early weeks of live operation.

Size of migration team

Reference ID	T2S.21.150

The size of the teams depends on the availability of automated planning and migration tools at both ends (CSD and T2S) and the data complexity and volumes.

Harmonised working procedure

Reference ID	T2S.21.160

These dedicated teams need to be working with harmonised and documented working procedures.

Detailed standard migration plans

Reference ID	T2S.21.170

A very detailed standard migration plan shall be developed detailing every steps and each step’s associated responsible party heading towards the migration weekend.

Standard fall-back plan

Reference ID	T2S.21.180

A standard fall-back plan shall be established and available before the first-ever migration period.

Weekend migration plans

Reference ID	T2S.21.190

The standard migration plan shall be complemented with a standard migration weekend plan, which over and above all the detailed tasks will also need to include check and compliance certification steps. These steps will need to be signed off by relevant seniors, and only after approving the successful completion of a migration step should the next series tasks in the plan be started. These control points should help mitigate potential risks in the migration, but will also determine whether the migration is advancing successfully or whether the process needs to be stopped and the fall back procedures need to be applied.

21.7 Tailored migration plans

Tailoring of standard migration plans

Reference ID	T2S.21.200

The standard migration plans shall be tailored for any migration. This tailoring effort shall be one of the first tasks for the dedicated project teams.

Main element for the migration plans

Reference ID	T2S.21.210

The plans shall include items like:

- set-up of accounts and account structures;
- set-up of the dedicated T2S Cash account;
- the assignment of a CSD to an ISIN and the responsibility to maintain such ISIN;
- input of all static information required in T2S, including registration of users;
- data transfer of balances; and
- data transfer of pending instructions and transactions.

Contingency plan for stopping migration

Reference ID	T2S.21.220

A full contingency plan shall be in place in case the migration needs to be stopped during the migration weekend and deferred to a later date.

Roll-back procedures

Reference ID	T2S.21.230

A roll-back procedure needs to be in place to reverse a launched migration procedure.

Tailored fall-back plan

Reference ID	T2S.21.240

The standard fall-back plan will be reviewed and tailored by the dedicated project teams during the migration period, as the primary focus of such a plan will be on the migration weekend.

Fall-back plan and roll-back procedures testing

Reference ID	T2S.21.245

The tailored fall-back plan and, in particular, the roll-back procedures shall be tested before the migration starts.

Migration live environment

Reference ID	T2S.21.250

The migration infrastructure will be available to load data, e.g. static data, before the actual migration weekend activities takes place (this could also be the respective T2S live environment on the condition that the Database will be designed with a ‘multi-entity capability’).

Migration live environment protection

Reference ID	T2S.21.260

The data shall be backed up and treated like any other live data in case it will be a separate migration environment.

Data transfer from migration live environment

Reference ID	T2S.21.270

In case of a separate migration environment, tools need to be in place to transfer the data from this environment to the life environment during the migration weekend.

21.8 Data migration tools

Migration tool development

Reference ID	T2S.21.280

Migration tools shall be developed to support the transfer of data from the CSD to T2S.

Generic migration tool requirements

Reference ID	T2S.21.290

Generic migration tools shall address areas like:

- ability to receive Excel files and migrate the data into the T2S database;
- ability to receive flat files and migrate the data into the T2S database; and
- ability to migrate the data into the T2S database via the standard channel of communication.

Specific migration tool

Reference ID	T2S.21.300

Specific migration tools shall be determined by the dedicated project teams during the course of the migration period, e.g. high volume data files structure and processing, to establish the instruction/transaction and securities database for a CSD.

Specific migration tool requirements

Reference ID	T2S.21.310

Technical resources shall be available in the T2S development area to address the requirements of specific migration tools at the earliest and develop these tools to be carefully tested before the first migration.

Requirements for initial migration

Reference ID	T2S.21.320

T2S shall require the migration of securities positions as settled transactions or settlement instructions that can immediately settle so that T2S can generate the initial position. This requirement shall enable the rebuilding of positions in T2S if need be.

21.9 Compliance certification plan

Agreed compliance certification steps

Reference ID	T2S.21.330

There shall be checkpoints during the course of the migration period as well as during the migration weekend which will need to be signed-off by specified stakeholders from the CSD as well as from the T2S side.

Agreed migration completion

Reference ID	T2S.21.340

The successful completion of the migration weekend needs to formally demonstrate that all checkpoints have been met and signed off by the relevant dedicated stakeholders. This will then form the basis for the mutual and formal certification of the T2S Governance structure and the CSD(s) that the migration is completed.

21.10 Migration for directly connected T2S parties

CSD customers planning to connect directly to T2S will likely need to go through two steps in the migration. The first step is to migrate like any other customer of the CSD to T2S.

Once the CSD migration has been successfully completed, a stabilisation period of some weeks needs to be considered. During that period the directly connected parties could start testing their direct link to T2S and all the associated links, processes, reports and formats.

Directly connected party migration plan

Reference ID	T2S.21.350

A migration date shall be mutually agreed between the CSD, T2S and the directly connected party, and detailed migration weekend plan covering tasks of the CSD, T2S and the directly connected party must be established.

Migration dedicated team

Reference ID	T2S.21.360

Dedicated project teams from the directly connected parties, the CSD and T2S must be set up.

Migration communication plan

Reference ID	T2S.21.370

A communication plan covering also the migration day shall be in place.

This part has to include email and Internet status updates.

21.11 T2S Training Material and Training sessions

Training material and training course availability

Reference ID	T2S.21.380

Training material and actual courses shall be available at the time the technical test and application infrastructure has been established at the latest.

Prioritisation list for training

Reference ID	T2S.21.390

Training courses shall be provided in priority order, i.e. first CSD joining needs to have top priority in training.

Web-based training courses

Reference ID	T2S.21.400

Training material shall be submitted to all CSDs upon availability using the Internet.

Web-based training courses availability

Reference ID	T2S.21.410

Web based online training courses will be available at least three months before the launch of T2S for CSDs and T2S parties.

Interactive training courses before testing

Reference ID	T2S.21.420

Coach-based training courses will be available at least one month before the start of T2S testing.

Regular sessions of interactive training courses

Reference ID	T2S.21.430

Coach-based training courses will be regularly offered to all CSDs / directly connected parties.

USER REQUIREMENTS

ANNEX

ON GLOSSARY AND STANDARDS

EUROPEAN CENTRAL BANK

EUROSYSTEM

1 Glossary

Title	Definition	Remark
Actual Settlement Date	the date on which the settlement is final, securities are debited from the account of the seller and credited to the securities account of the buyer and the funds are debited from the cash account of the buyer and credited to the cash account of the seller. The actual settlement date also is referred to as the effective settlement date.	
Administering Party	is the legal entity responsible for verifying that the external settlement conditions are fulfilled so that T2S can trigger the delivery of the reserved securities in the processing of a conditional securities delivery.	
Agent account	a securities account operated by a broker/dealer on behalf of a regulated market which is used to settle securities as a result of activating buy-in procedures.	
Allegement	a message to advise an account owner that another party has instructed against its account for which the account owner has no corresponding instruction in the securities settlement system.	
Application-to-Application (A2A)	defines a mode of technical communication that permits the exchange of information between software applications of T2S and a directly connected T2S actor.	
Asset segregation	a method of protecting client assets by holding them separately.	
Asset servicing	services, provided by a CSD or a custodian, in connection with the custody and/or safekeeping of financial instruments such as corporate action processing.	
Authentication	a security mechanism for verifying the identity of an individual or process.	
Authorisation	a security mechanism for verifying that an individual or process has the privilege to access certain function or data within a system.	
Authorised T2S System	an individual or process, granted a privilege by its role in T2S to execute a certain function, to	

Title	Definition	Remark
User	run a specific application or to access specific data.	
Attribute	defines a characteristic of a conceptual data store/entity. For example, the type of security is an attribute of the entity for security reference data.	
Auto-collateralisation	an intraday credit operation in central bank money that is triggered when the buyer has insufficient funds to settle securities transactions. Intraday credit provision is collateralised with securities already held by the creditor (collateral-on-stock), or through collateral-on-flow (through the eligible securities that are being purchased).	
Availability	the ability of a configuration item or IT service to perform its agreed function when required. Reliability, maintainability, serviceability, performance, and security determine availability. The calculation of availability is usually on a percentage basis and based on agreed service time and downtime. It is best practice to calculate availability using measurements of the business output of the IT Service.	ITIL Definition
Batch Processing	the electronic transmission or processing of a set of related transactions, such as payment orders or securities transfer instructions, as a group at discrete intervals of time.	Revised Blue Book definition since the definition uses the term batch to describe batch processing.
Beneficiary / Beneficial Owner	the party that is entitled to either receive the benefits of the ownership of a security or other financial instrument (e.g. income, voting rights and power of transfer). The beneficial owner is usually distinguished from "legal owner" of a security or financial instrument.	Derived from blue book definition of beneficial ownership.
Bilateral Cancellation of Settlement Instruction	defines the process, requiring both the deliverer and the receiver of securities of a matched settlement instruction to cancel their respective instruction to affect cancellation.	
Blocking of Cash Balance	a process of preventing the transfer of a specified amount of funds in a specific currency in one cash account to any other cash account by associating it to a specific transaction or to a	

Title	Definition	Remark
	specific purpose. Blocking in T2S may never result in a negative cash balance, i.e. it is not possible to block an amount of funds greater than the cash balance on a cash account.	
Blocking of Securities Position	a process of preventing the transfer of a specified quantity of a security in one securities account to any other securities account by associating it to a specific transaction or specific purpose. Blocking in T2S may never result in a negative position, i.e. it is not possible to block a holding greater than the securities position(s) on a securities account.	
Book Entry	a method whereby transfer of ownership of securities is effected involving debits and credits to accounts without the need for the movement of physical certificates or documents or through a pledge.	
Central Bank Money (CeBM) Settlement	settlement is described as being in central bank money if the payment moves directly and irrevocably between accounts on the books of the central bank.	
Central Counterparty (CCP)	an entity which interposes itself as the buyer to every seller and as the seller to every buyer for a specified set of contracts.	Blue Book Definition
Central Securities Depository (CSD)	an entity, which holds and administers securities and enables securities transactions to be processed by book entry. Securities can be held in a physical but immobilised or dematerialised form (i.e. such that they exist only as electronic records). In addition to safekeeping and administration of securities, a CSD may incorporate clearing and settlement functions.	Blue Book Definition
Change	the addition, modification or removal of anything that could have an effect on IT services. The scope should include all IT services, configuration items, processes, documentation etc."	ITIL Definition
Closing Day	defines a day, when T2S interfaces and process are not available toT2S actors with the exception of the T2S operator.	
Collateral	assets provided either in the form of the transfer of ownership of assets (in the case of title	Change of Blue Book

Title	Definition	Remark
	transfer or repurchase agreements) or in the form of a pledge or a charge granted over relevant assets (in the case of collateralised loans).	Definition to reflect the broader context of securities settlement.
Commercial Bank Money (CoBM) Settlement	settlement is described as being in commercial bank money if the payment moves between the accounts of non-central banks.	
Conditional Securities Delivery / Conditional Securities Settlement	a procedure in which the final securities and/or cash booking is dependent on the successful completion of an additional action or event (e.g. registration of shares, cash settlement outside T2S).	
Corporate Action on Flow	refers to the generation of claims from or a transformation of unsettled settlement instructions for a corporate action.	
Corporate Action on Stock	refers to the calculation and processing of an entitlement from a corporate action for the settled securities position.	
Credit Memorandum Balance (CMB)	a mechanism to track the credit provision of a payment/settlement bank to its client for a T2S dedicated cash account on which the payment/settlement bank can set and monitor the external guarantee limit, unsecured credit limit and auto-collateralisation limits.	
Cross-CSD Settlement	a term, describing securities settlement that takes place between participants of different CSDs, where both the CSD of the seller and the CSD of the buyer operate in T2S.	
CSD in T2S	A CSD that 1) fulfils the Article 10 of the Settlement Finality Directive; 2) settles in central bank money in a T2S eligible currency; and 3) is a legal entity that has entered into a contractual relationship for the use of T2S with the T2S operator.	
CSD Link	a relationship where one central securities depository (CSD) holds a securities account for another CSD. [this is not always the case, there may be other contractual arrangements	

Title	Definition	Remark
	forming a link]	
Custody	the safekeeping and administration of securities and other financial instruments on behalf of others.	
Data Extract	refers to process of selecting and downloading data from T2S and transmitting the data to the requestor, e.g. all changes in balances, instruction status or static data since the last data were retrieved from the T2S databases.	
Delivery-versus-Delivery (DVD)	a settlement mechanism, specifying a link between two securities transfers, to ensure that a delivery occurs if, and only if, another delivery occurs and vice versa.	
Delivery-versus-Payment (DVP)	a mechanism in an exchange-for-value settlement system which ensures that the transfer of one asset occurs if, and only if, the transfer of cash.	
Delivery-with-Payment (DWP)	a type of instruction and settlement mechanism, specifying the delivery of securities together with a cash payment.	
Dematerialisation	the elimination of physical certificates or documents of title that represent ownership of securities so that securities exist only as accounting records.	Blue Book Definition
Direct (Technical) Connectivity	a technical facility allowing T2S Parties to access T2S and use its securities settlement services without the need for a CSD to act as a technical interface. Direct connectivity affects neither the business or legal relationships between CSDs and the T2S party, nor the processing of the CSD's T2S party.	
Direct CSD Participant	a customer of a CSD that has a legal or contractual relationship with that CSD and is holding a settlement account with that CSD.	
Direct Holding System	an arrangement for registering ownership of securities whereby each final investor in the security is registered by a single body, which can be the issuer itself, a CSD or a registry.	
Double-Entry Accounting	an accounting principle whereby, for each credit (debit) made on the account of the	

Title	Definition	Remark
	beneficiary, there exists a corresponding debit (credit) on the account of the counterpart.	
Earmarking of a Securities Position	the process of specifying that a specified quantity of a security in one securities account is only eligible for specific type of transactions or processes. For example, a bank can earmark a securities position in a securities account for use as eligible collateral.	
Eligible for Settlement	the state in which a settlement instruction that can be submitted to the settlement process.	
Entity	in conceptual modelling terms, an entity is a collection of attributes used to define a person, place, event, object or thing that an information system needs to operate or about which an organisation collects data. Although an entity is conceptual, its physical implementation is one or more database tables.	
Eurosystem Single Interface	the harmonised technical channel to access different services provided by the Eurosystem (e.g. TARGET2, T2S).	
Event	an action that changes the state of a transaction in T2S. For example, a status change from “unmatched” to “matched” occurs when T2S matches a settlement instruction.	
External CSD	is a CSD that does not use the settlement services of T2S.	
External guarantee limit	the cap of credit secured outside T2S that the payment/settlement bank sets for its client. The external guarantee limit and the unsecured credit limit are identical from the T2S viewpoint, except for the sequence in which they are triggered. Usage of the external guarantee limit is triggered before auto-collateralisation.	
Finality of Settlement Instruction	settlement instructions, entered into a securities settlement system in a way that they are binding, irrevocable and enforceable against third parties, and are thus protected from insolvency or unwinding risks.	
Free-of-payment delivery (FOP)	the delivery of securities with no corresponding payment of funds.	Blue Book Definition

Title	Definition	Remark
Fungibility / Fungible Asset	a concept that characterises the method of holding securities by a CSD or other financial intermediary in which each of a number of issues of physical or dematerialised securities is held in a separate fungible pool. No owner has the right to any particular physical or dematerialised security in a particular pool; an owner does, however have a right to such an amount of physical or dematerialised securities as is shown in its account with a CSD or other financial intermediary.	Blue Book Definition
Gross Settlement	a transfer system in which the settlement of funds or securities transfer instructions occurs individually (on an instruction-by-instruction basis).	Blue Book Definition
Haircut	the difference between the market value of a security and its collateral value. Haircuts are taken by a lender of funds in order to protect the lender, should the need arise to liquidate the collateral, from losses owing to declines in the market value of the security.	Blue Book Definition
Hold and Release Mechanism	a process by which a CSD or instructing party may block a pending settlement instruction from settlement or remove a block on a pending settlement instruction.	
Immediate Liquidity Transfer Order	an instruction to transfer a specified amount of money from one cash account to another cash account in real-time on receipt of the instruction.	
Indirect CSD Participant	a financial institution established in the European Economic Area (EEA), which has entered into an agreement with a direct CSD participant to submit settlement instructions and receive transfers via such direct CSD participant's CSD account, and which has been recognised by the CSD as an indirect participant.	Cf. SFD
In- / Out-T2S Settlement	a transaction, where one party to the settlement holds an account in TARGET2-Securities, but the other party does not.	
Instructing Party	defines the entity that is the originator of the settlement instruction either on its own behalf or on behalf of its clients. An instructing party has the possibility to transmit settlement	

Title	Definition	Remark
	instructions to T2S through direct connectivity or via a connection through a CSD.	
Instruction Allocation	the process, undertaken by a broker or account operator in markets with direct holdings, of splitting the quantity of settlement instruction and apportioning it to end investor accounts by creating new settlement instructions.	
Instruction Amendment	is a manual or automated update of a value in an attribute of a settlement instruction in a securities settlement system.	
Instruction Enrichment	is the adding values to attributes of a settlement instruction from reference data or through calculation algorithms through a manual or automated process.	
Intended Settlement Date	the date on which the parties to a securities transaction agree that settlement is to take place. This intended settlement date also is referred to as the contractual settlement date or value date.	
Intermediary CSD	a third party CSD facilitating the transfer of securities between two CSDs, which do not have a direct relationship with each over.	
International Securities Identification Number (ISIN)	a code, uniquely identifying a specific security, based on the ISO standard 6166.. The number consists of 12 digits, with the first 2 digits containing the ISO 3166 country code, followed by 9 NSIN digits (national security identification number) and a final check digit.	
Intra-CSD Transaction	A transaction can be called intra-CSD in case both parties involved have their securities accounts with the same CSD. See settlement transaction.	
Investor CSD	a central securities depository that holds securities for at least one party of a transaction.	
Issuance account	a securities account, usually used to park securities being issued by an issuer in a CSD, before their final distribution to the relevant safekeeping accounts of their entitled holders. This is the only securities account allowed to have a negative balance when the securities are distributed	
Issuer CSD	the central securities depository in which the securities have been issued and distributed on	

Title	Definition	Remark
	behalf of the issuer. The issuer CSD is responsible for processing corporate actions in the name of the issuer. The issuer CSD maintains omnibus accounts in its books in the name of investor CSDs for the transfer of securities to the investor CSDs.	
Key Performance Indicator (KPI)[1]	A metric that is used to help manage a process, IT service or activity. Many metrics may be measured, but only the most important of these are defined as KPIs and used to actively manage and report on the process, IT service or activity. KPIs should be selected to ensure that efficiency, effectiveness, and cost effectiveness are all managed.	ITIL Definition
Liquidity Transfer Order	an instruction to transfer a specified amount of money from one cash account to another cash account. See also immediate liquidity transfer order, standing liquidity transfer order and current liquidity transfer order.	
Locked- In Instructions	settlement instructions, blocked for all processing except settlement. It is not possible to modify, cancel or hold locked-in instructions. This term is used exclusively in the context of settlement processing.	
Matching	the process used for comparing the trade or settlement details provided by parties in order to ensure that they agree on the terms of the transaction.	Blue Book Definition
Message Subscription	a service that allows a CSD or other authorised interested party with direct connectivity to T2S to subscribe to copies of messages sent between a directly connected T2S party and T2S in real-time using push mode messaging. Subscriptions are based on one or more of the following parameters: - Message type;	

Title	Definition	Remark
	- Instruction type; - Instruction status; - Participant; - Account; - ISIN.	
Net Settlement System	a funds transfer or securities settlement system whose settlement operations are completed on a bilateral or multilateral net basis.	Blue Book Definition
Netting	an agreed offsetting of positions or obligations by trading partners or participants. The netting reduces a large number of individual positions or obligations to a smaller number of obligations or positions. Netting may take several forms, which have varying degrees of legal enforceability in the event of the default of one of the parties.	Blue Book Definition
Non-Fungible Security	Non-fungible securities are financial instruments, held and transferred as separately identifiable instruments. Holdings of non-fungible securities are not interchangeable even though the instrument has identical characteristics.	
Non-Trade Related Instructions	instructions, related to any event other than trading activities, such as corporate actions or securities lending operations.	
Occurrence	an instance of information of an entity. It is a record in a database table or file in terms of physical implementation.	
Opening Day	defines a day, when matching and settlement takes place in T2S(also referred to as settlement day).	

Title	Definition	Remark
Operating Day	defines a day, when any subsets of T2S processes are available to T2S actors.	
Operating Hours	defines the hours when a specific T2S process, such as query or settlement, is scheduled to run.	
Optimisation Cycle	routine processes in a payment or securities settlement system to determine the order in which payments are accepted for settlement. Optimisation routines are used to improve system liquidity and increase settlement efficiency. Such processes detect and resolve settlement gridlocks with a view to settle new transactions as well as transactions that could not settle in an earlier attempt.	Blue Book definition amended for securities settlement.
Party	the generic term for the reference data pertaining to a T2S actor.	
Partial Settlement	a process that settles only a fraction of settlement instructions original volume and amount when full settlement is not possible due to lack of securities. The residual unsettled volume and amount may settle at a later stage during the intended settlement date. Any residual amount at the end of the intended settlement date results in the reporting of a failed settlement.	
Payment Bank	A payment bank is either a central bank or a private bank used to affect money settlements. In the context of securities settlement, a payment bank provides cash on behalf of a CSD participant to support the settlement of securities.	
Payment Capacity	the ability of a settlement bank to fund its purchases based on a settlement bank's relevant aggregate position on CeBM accounts as well as of the its potential intraday credit from its National Central Banks against available eligible collateral.	
Pending Transaction / Pending Instruction	a settlement instruction which is waiting for settlement and is still active.	
Posting	designates the action of updating a securities holding or cash balance by debiting and / or crediting an account. Also called "booking" in some markets.	

Title	Definition	Remark
Predefined Liquidity Transfer Order	an instruction to transfer a specified amount of money from one cash account to another cash account to be executed only once at a defined time or event.	
Prioritisation	refers to the possibility for CSD and instructing parties to indicate the priority in which settlement is to process eligible settlement instructions.	
Privilege	a right, either granted or denied, to execute certain functions within an application or to access and/or update certain data.	
Process Indicator	defines those attributes of a settlement instruction that determine whether the instruction is relevant for a specific action or activity in T2S (e.g. partial settlement, auto-collateralisation).	
Provisioning	the process that verifies if sufficient funds are available to the buyer or sufficient securities are held by the seller to settle a transaction.	
Pull Mode	a communication model using the request/response (also query/response) message exchange pattern. A service consumer requests or asks for specific information from a service provider and then waits to receive the response from the service provider.	
Purging	the process, which excludes failed, rejected, outdated or invalid instructions and transactions from matching and settlement in T2S after reaching the end of the recycling period.	
Push Mode	a communication model where the service provider actively passes event-driven and time-triggered messages to a service consumer based on a subscription by the consumer to the information.	
Query	refers to real-time function to fulfil ad hoc information demands. Queries can be sent to T2S continuously throughout the day, and will be answered in real-time. Queries are generally performed in a pull mode and are limited to the defined data and availability of related system resources.	
Ready-for-settlement	settlement instructions that have the appropriate format, status and date to be eligible for	

Title	Definition	Remark
instructions	settlement processing in T2S.	
Real-Time Gross Settlement system	a settlement system in which processing and settlement take place on an transaction-by-transaction basis (without netting) in real time (continuously). See Gross settlement.	Blue Book Definition
Recycling	the resubmission of failed, matched settlement instruction for a new settlement attempt, when still eligible for settlement, or reintroduction of an unmatched settlement instruction into the matching process after the previous matching attempt has failed.	
Recycling Period	the standard number of working days after the intended settlement date or the date of the last status change that an unmatched settlement instruction is recycled to be available for matching.	
Release	a collection of hardware, software, documentation, processes or other components required to implement one or more approved changes to IT services. The contents of each release are managed, tested, and deployed as a single entity.	ITIL Definition
Report	refers to an event-driven and time-triggered publishing of information in a defined, standard format.	
Repurchase agreement	an arrangement whereby an asset is sold while the seller simultaneously obtains the right and obligation to repurchase it at a specific price on a future date or on demand. Such an arrangement is similar to collateralised borrowing, with the exception that ownership of the securities is not retained by the seller.	Blue Book Definition
Reservation of Cash Balance	a process of preventing the transfer of a specified amount of funds in a specific currency in one cash account to any other cash account except for the purpose for which the funds were reserved. The settlement of the underlying settlement instruction results in the actual transfer of the reserved funds to another cash account and in the subsequent removal of the reservation. It is possible to reserve an amount greater than the balance on the cash account.	

Title	Definition	Remark
	When a reservation results in a negative cash amount, all incoming cash is reserved automatically until the amount of the reservation is filled.	
Reservation of Securities Position	is a process, which prevents the transfer of a securities position in a specific security in one securities account to any other securities account except for the purpose for which the position was reserved. The settlement of the underlying settlement instruction results in the actual transfer of the reserved holdings to another securities account and in the subsequent removal of the reservation. It is possible to reserve a position greater than the securities position on the securities account. When a reservation results in a negative securities position, all incoming securities are reserved automatically until the quantity of the reservation is filled.	
Role	a set of related privileges or privilege classes. The functions that a user performs to fulfil her/his responsibilities within an organisation define a role.	
Scalability	the ability of an IT service, process, configuration item, etc. to perform its agreed function when the workload or scope changes.	ITIL Definition
Secured static data object	Secured static data objects are objects belonging to object types of different static data entities such as securities accounts, T2S dedicated cash accounts, etc. These objects are secured when it is associated to a privilege set to a specific static data object or a homogeneous group of static data objects.	
Securities Collateral Substitution	the process by which an institution replaces securities, which have been previously provided as collateral, with other securities of at least equivalent market value.	
Security-Maintaining CSD	the central securities depository, assigned with the responsibility for maintaining the reference data for a security in T2S.	
Securities-Only Settlement	is a legal entity that holds a securities account for the purpose of settling securities	

Title	Definition	Remark
Institution	transactions for itself and on behalf of others. It does not hold its own cash account to settle the cash leg of a securities transaction, but requires the services of a settlement bank or a payment bank.	
Segregation of Holdings	a process which allows the separation of a position in a specific security between the intermediary and either each client or between a pool of clients.	
Segregation of Securities Position	is the splitting of a securities position in a securities into two or more securities positions in that securities account, qualified by a market-specific position (balance) type to support national specificities such as registration, tax processing, legal and regulatory requirements.	
Sequencing	refers to the order automatically set by T2S in which eligible settlement instructions are processed by the T2S settlement module.	
Service Level	the measured and reported achievement against one or more service level targets. The term service level also is used informally to mean service level target.	ITIL Definition
Service Level Agreement	an agreement between an IT service provider and a customer. The SLA describes the IT service, documents service level targets, and specifies the responsibilities of the IT service provider and the customer. A single SLA may cover multiple IT services or multiple customers.	ITIL Definition
Settlement Agent	an institution which manages the settlement process (e.g. the determination of settlement positions, monitoring the exchange of payments and securities, etc.) for transfer systems or other arrangements which require settlement and provides related services.	
Settlement Bank	is a financial institution that has both cash and securities accounts for the purpose of settling securities transactions for itself and on behalf of others.	Blue Book definition modified to include securities
Settlement Day	defines a day, when settlement takes place in T2S (also referred to as opening day).	
Settlement Component	A subset of applications in the T2S system containing settlement processes.	

Title	Definition	Remark
(Module)		
Settlement Confirmation	a status advice sent to the instructing party as either a message or in a report to inform it that an instruction settled.	
Settlement Fail	a securities settlement instruction that does not settle on the intended settlement date due to either a lack of securities on the seller side or an insufficient payment capacity on the buyer side.	
Settlement Instruction	A settlement instruction is an order, originating from both trading and non-trading operations, to deliver or receive securities (or rights in securities) with or without paying an amount of money to an ultimate beneficiary on behalf of an originator. In case of a sale, the buyer of the securities will need to provide the receive instruction while the seller will need to provide the delivery instruction for the same trade.	
Settlement Instruction Validation	the process of verifying the correctness of the business content of a settlement instruction.	
Settlement Transaction	a common term for the two settlement instructions necessary for any settlement activity – one instruction to debit a securities and/or cash account and one instruction to credit a securities and/or cash account.	
Shaping	the process of apportioning the quantity in a settlement instruction into lower amounts using several instructions, when the amount of that instruction exceeds a certain threshold.	
Standard Settlement Instructions (SSI)	A set of data (such as cash account, CSD information, and agent information) needed to settle transactions with a counterpart. The back offices of the counterparts usually exchange SSIs before commencing trading in order to have the settlement instructions stored in the trading and back office systems.	
Standing Liquidity Transfer	an instruction to transfer a specified amount of money from one cash account to another cash	

Title	Definition	Remark
Order	account to be executed repetitively at a defined time or event in the T2S processing cycle until the order is changed.	
Status Message	information sent to the instructing party on the status of an instruction or other relevant life cycle information – also referred to as “status advice” or "status report".	
System Entity	a system entity in T2S is the T2S operator, a central securities depository or NCB for which a segregation of processing capabilities and data is required.	
T2S Actor	defines any legal entity or organisation interacting either directly or indirectly through a CSD in T2S with T2S for the purpose of securities settlement. T2S actors are - CSDs in T2S - T2S Parties - T2S Operator - Central Banks - Payment Bank	
T2S Additional Matching Field	a non-mandatory matching attribute of a settlement instruction, which becomes a mandatory matching criterion when either of the parties to a settlement instruction provides a value for the attribute.	
T2S Dedicated Cash Account	an account exclusively used for securities settlement in T2S, linked to an RTGS account in TARGET2 or in another RTGS platform of a T2S eligible currency other than Euro.	

Title	Definition	Remark
T2S Operator	defines the legal and/or organisational entity/entities that operates T2S.	
T2S Optional Matching Field	a non-mandatory matching attribute of a settlement instruction, which becomes a mandatory matching criterion when both parties provide a value for the attribute in their settlement instructions.	
T2S Party	is a legal entity or in some markets an individual, that has a contractual relationship with a CSD in T2S for the processing of its settlement-related activities in T2S It does not necessarily hold a securities account with the CSD. Some non-exhaustive examples are - Indirect and direct CSD participants, - stock exchanges and multilateral trading platforms, which route pre-match trades or settlement instruction on behalf of trading participants to CSDs; - central counterparts (CCPs); - central banks as CSD participants; - CSDs as participants of other CSDs; - and a securities processing outsourcer that process securities transactions on behalf of other financial institutions. See also settlement bank, securities-only settlement institution and settlement agent for the different roles a T2S party can take.	

Title	Definition	Remark
T2S Settlement Currency	is a currency for which T2S provides settlement in central bank money on T2S dedicated cash accounts for securities transactions.	
T2S Stakeholder	Any organization; legal person or governmental entity; public and private interest groups; or individual that has a valid interest in the outcome of the TARGET2-Securties Project and the governance and operation of T2S.	
T2S Owner	the legal or organisational entity that owns the T2S business application (i.e. software developed and operated by the 4CB on behalf of the Eurosystem).	
T2S System Status Message	Information sent to a CSD or directly connected T2S party as to the state of a T2S application, process or event.	
T2S System User	A T2S system user is an individual or a technical process/application that can log into T2S with a login name and password. For example, a user may be an individual, who has interactive access to T2S online functions or an application programme that requests services from T2S.	
T2S User	in the context of governance and policy, T2S user defines a legal entity that has a contractual/legal relationship with a CSD, which has entered into a contractual relationship for the use of T2S. It also defines a payment bank, providing liquidity through an RTGS account in RTGS system to a financial institution, settling in T2S.	
Technical Acceptance of Settlement Instruction	the step in which T2S accepts a settlement instruction for further processing after validating that it fulfils of the required technical standards.	
Technical Issuer CSD	for an Investor CSD is the CSD where its omnibus accounts reflecting the holding of its participants are deposited. The technical issuer CSD could be different for each ISIN for a given Investor CSD. In most cases, the technical issuer CSD is the issuer CSD.	
Tolerance Amount	is the acceptable difference in the counter-value in currency, allowed for the matching of	

Title	Definition	Remark
	settlement instructions, between the against payment settlement instruction of deliverer and the receiver of securities.	
Trade-Related Instructions	are settlement instructions, resulting exclusively from trading activities.	
Transfer System	a generic term covering inter-bank funds transfer systems and exchange-for-value systems.	
Unsecured credit limit	the cap of unsecured credit in T2S that the payment/settlement bank sets for its client. The external guarantee limit and the unsecured credit limit are identical from the T2S viewpoint, except for the sequence in which they are triggered. Usage of the unsecured credit limit is triggered after auto-collateralisation.	
Use Case	an interaction between a user and a system or a component within a system by defining the discrete goal that the user wants to achieve with the system, without the requirement to reveal or to specify the system's internal structure.	
User Requirement	is a condition or capability needed by a stakeholder to solve a problem or achieve an objective.	
User-to-Application	defines a mode of technical communication that permits the exchange of information between software applications of T2S and a T2S system user through a graphical user interface (GUI).	
Unique Transaction Reference	a unique sequential number that T2S assigns to a settlement instruction to uniquely identify the settlement instruction.	

2 Standards used for context diagrams

In several chapters[1], context diagrams present the technical boundaries of the T2S system and its interactions with other systems or system components. These diagrams also show the different logical system components and their interactions.

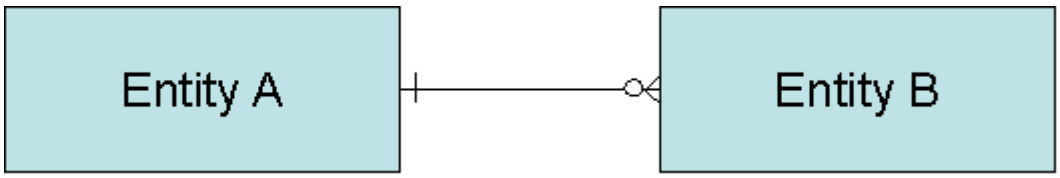
The following conventions based on the Gane Sarson methodology are used:

2 Settlement	This symbol depicts a component[2], with a component number and a component name.
D.1 Instruction	This symbol depicts a data store, with a data store number beginning with "D" and the data store name.
CSD	This symbol depicts an actor to the system.
——→	This symbol depicts an information flow between T2S and the actor or within the different functions of T2S.
- - - - - - - →	This symbol depicts a data store being read or updated by a function.

3 Standards used for conceptual static data models

A conceptual data model provides the logical organisation of data. It provides the formal representation of data required to perform a business process or activities. Some chapters provide entity relationship maps to define the data structures required to support the business processes in T2S. The diagrams use the entity relationship notation ("Crow's Foot" notation). For simplification, this annex only explains entity relationship modelling conventions in use in this requirements document.

<u>One-to-Many Relationships</u>

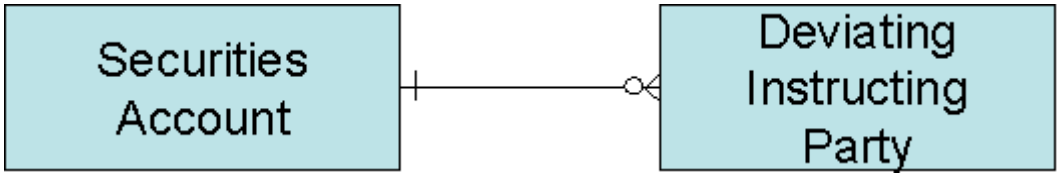


The diagram above represents a one-to-many relationship. For each occurrence of information (data record) in entity A, zero to any number of occurrences of information (data records) can exist in entity B. An

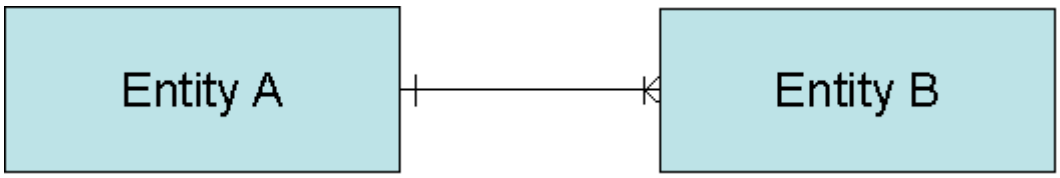
[1] Context diagrams are in chapters on scope, life cycle management, settlement, static data and interfaces.

[2] Here the term "component" is used in a generic way in order to capture conceptually a set of functions as part of a certain T2S activity (i.e. LCMM). The use of the term in the URD makes no reference to the functional or technical architecture of the T2S system.

occurrence in entity A can exist without a related occurrence in entity B. As in the example diagram below, a securities account may have zero, one or many deviating instructing parties linked to it.



The next diagram also represents a one-to-many relationship. For each occurrence of information (data record) in entity A, one or many of occurrences of information (data records) can exist in entity B. However, it is mandatory that each occurrence of information in A has at least one related occurrence in entity B. In others, an occurrence in entity A cannot exist if there is no related occurrence in entity B.



As in the example diagram below, a security must have at least a name to exist. However, a security also can have multiple names when, for example, the name of the issuer changes. The security will have an old and a new name.