



Disclosure report

TARGET2-Securities assessment against the principles for financial market infrastructures

February 2023

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1 Executive summary

TARGET2-Securities, or T2S, is a settlement infrastructure owned by the Eurosystem which enables the simultaneous exchange of securities and cash on a delivery-versus-payment basis in central bank money. In October 2022 there were 21 central securities depositories (CSDs) from 20 European countries – and by extension their local market communities – connected to T2S. CSD participants can exchange securities against cash that is held in accounts with a central bank, so the money used to settle transactions is central bank money. As a result, principal risk is greatly reduced.

In 2021 the T2S turnover amounted to a total value of €178.30 trillion, corresponding to a daily average of €691.10 billion. In volume terms, T2S processed a total of 187,377,873 transactions in 2021, corresponding to an average of over 726,271 transactions settled per day against both Euro and Danish krone.

Currencies other than the euro can be used for settlement in T2S if the central bank concerned is connected to the platform and willing to allow its domestic currency to be used for central bank money settlement of securities transactions in T2S. In addition to the euro, the Danish krone is available for settlement.

The management of T2S is based on a three-level governance scheme: (i) level 1 is the ECB's Governing Council, which has ultimate responsibility for the platform; (ii) level 2, consists of the Market Infrastructure Board (MIB), which has been mandated by the Governing Council to manage the daily operations of the platform; and (iii) level 3 is the "4CB", i.e. the four central banks (the Deutsche Bundesbank, the Banco de España, the Banque de France and the Banca d'Italia) which developed the platform and operate it, the latter together with the T2S Coordination function of the ECB. These four central banks each have segregated roles as (a) part of level 1 as their Governors are part of the ECB's Governing Council, (b) part of level 2, and (c) part of level 3 of the T2S governance structure. The Governing Council entrusted the 4CB with operating T2S on behalf of the Eurosystem. Within the T2S governance structure, the CSD Steering Group (CSG) and the Non-Euro Currencies Steering Group (NECSG) are responsible for articulating and coordinating the views of participating CSDs and non-euro area national central banks that have signed the Currency Participation Agreement.

The main risks to which T2S is exposed are legal, liquidity,¹ operational and information security, and general business risks. The T2S Operator² applies the generic risk management frameworks of the Eurosystem, the European System of Central Banks (ESCB) and the Single Supervisory Mechanism (SSM). In addition, it has developed specific and complementary operational and information security

¹ T2S is not itself subject to liquidity risk. References to liquidity risk should be understood to mean the liquidity risk to which its participants are exposed.

² The T2S Operator comprises the four central banks responsible for operating T2S (the Deutsche Bundesbank, the Banca d'Italia, the Banco de España, and the Banque de France and the Banca d'Italia) and the ECB.

frameworks for TARGET services which are aimed at identifying, assessing, mitigating, reporting and monitoring risks specific to T2S.

Extensive documentation on T2S has been made publicly available on the websites of the ECB and the Eurosystem central banks. This includes the legal documentation in the form of the Guideline on T2S,³ which outlines the terms and conditions under which participants may join T2S and the pricing policy, as well as the T2S Framework Agreement and the T2S Currency Participation Agreement, which the non-euro central banks sign with the Eurosystem when they authorise the participation of their currencies in T2S as settlement currencies. The provision of T2S services to participating CSDs and central banks is governed by the Framework Agreement and the Currency Participation Agreement. In addition, detailed technical documentation is available in the form of the T2S User Requirements (URD), the User Detailed Functional Specifications (UDFS) and the User Handbook (UHB).

³ Guideline ECB/2012/13 of 18 July 2012 on TARGET2-Securities (recast), OJ L 215, 11.8.2012.

2 Summary of major changes since the last update of the disclosure framework

This is the first time that T2S has published a disclosure report. The self-assessment on which the report is based is the first time since its go-live that T2S has been comprehensively assessed against the Principles for Financial Market Infrastructures (PFMI) of the Committee on Payment and Market Infrastructures and the International Organisation of Securities Commissions (CPMI-IOSCO). Shortly before the go-live a comprehensive pre-assessment was performed on the T2S project in 2015. In the course of 2018 the ECB oversight function launched the first comprehensive assessment of T2S since its go-live. The T2S comprehensive assessment process is based on the analysis of a self-assessment questionnaire completed by the T2S operation function (i.e. the T2S Operator) as well as an analysis of the supporting documentation on T2S. The final assessment report, approved by the ECB's Governing Council in 2019, presented the oversight function's view on the extent to which T2S meets the PFMI.

Since its go-live in June 2015 T2S has regularly been enhanced through yearly technical and functional releases. The T2S yearly releases allow identified gaps to be closed and the efficiency of the platform to be improved.

This summary is an accurate reflection of the first self-assessment of T2S against the PFMI since T2S went live in 2015. The self-assessment was performed and assessed the status of PFMI compliance for 2018/2019.

3 General background information on TARGET2-Securities

3.1 General description of TARGET2-Securities and the markets it serves

T2S is aimed at facilitating post-trading integration by offering core, neutral and borderless pan-European cash and securities settlement in central bank money so that CSDs can provide their customers with harmonised and commoditised delivery-versus-payment settlement services in an integrated technical environment with cross-border capabilities. The objective is to achieve harmonised and commoditised delivery-versus-payment settlement in central bank money in euro (and possibly other currencies)⁴ for substantially all securities in Europe. This is performed via a single technical platform integrated with central banks' Real-Time Gross Settlement (RTGS) systems for all participating currencies.

Settlement

Settlement in T2S is carried out exclusively in central bank money. Reliability, scalability and robustness are key parameters for T2S, in view of the substantial volumes of transactions to be settled and will become ever more important as volumes settled in T2S continue to increase.

Participation

CSDs are the gateways through which market participants can access T2S services. CSDs' participants continue to contract with one or more CSDs for the settlement (across the accounts of those CSDs) of securities eligible for such settlement.

Some CSD participants have chosen to establish a direct connection to T2S – i.e. to access and use T2S services without using the relevant CSD/central bank as a relay or proxy. These so-called directly connected parties (DCPs) have no contractual relationship with the Eurosystem but only with their respective CSD. The contract with the CSD establishes what the rights and obligations of the DCP are, and the CSD remains legally responsible vis-à-vis the Eurosystem for the DCP's actions.

The Eurosystem has concluded the T2S Framework Agreement for the delivery of the T2S services exclusively with the CSDs participating in T2S.

Eurosystem central banks and non-euro central banks whose currencies are available for settlement in T2S are the gateways through which market participants access the liquidity services provided in T2S, maintaining the cash accounts of their RTGS participants for all securities-related payment transactions in their currency in T2S.

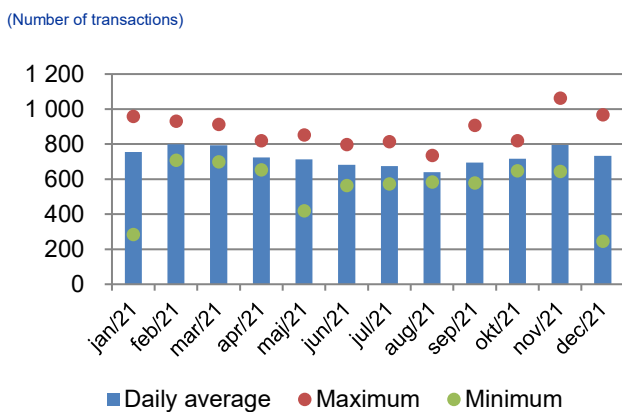
⁴ Participants have also been able to settle in Danish krone in T2S since 29 October 2018.

The Eurosystem central banks and the one non-euro central bank (so far) that has authorised its currency to become settlement currencies in T2S have signed the Currency Participation Agreement for the provision of the T2S services. DCPs that have chosen to establish a direct connection to T2S access and use T2S services without using the relevant central bank as a relay or proxy.

Key indicators

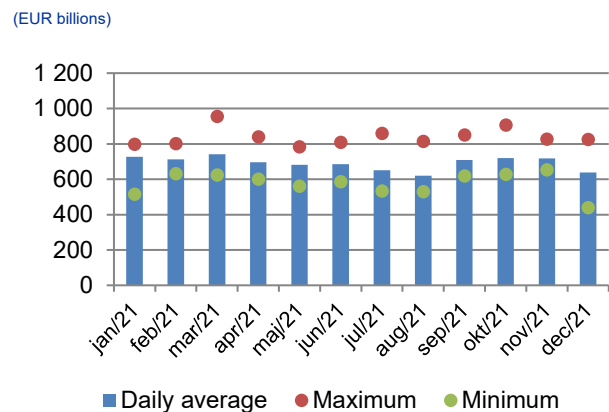
As per Chart 1, in 2021⁵ T2S settled on average 726,271 transactions per day. The daily average volume per month ranged from 639,876 (in August) to 798,571 (in February). The highest daily volume settled was in November (1,061,928 transactions) and the lowest in December (245,181 transactions). In 2021 T2S settled an average value of €691.10 billion per day. Chart 2 shows the evolution of daily average T2S traffic in value terms. The daily average value per month ranged from €620.04 billion (in August) to €741.88 billion (in March). The highest daily value was recorded on 10 March (€955.75 billion) and the lowest on 29 December (€438.34 billion).

Chart 1
Daily average T2S volumes



Source: ECB.

Chart 2
Daily average T2S values



Source: ECB.

3.2 General organisation of T2S

The T2S platform is owned by the Eurosystem. It is operated on behalf of the Eurosystem by four Eurosystem national central banks (4CB) – the Deutsche Bundesbank, the Banco de España, the Banque de France and the Banca d’Italia – and with the T2S Coordination at the ECB providing a coordination function. The groups listed below support the Eurosystem in running T2S as part of the governance framework.

⁵ Updated figures will be available in the forthcoming 2022 T2S Annual Reports published by the Eurosystem.

The management of T2S is based on a three-level governance scheme: level 1 is the Governing Council of the ECB which has ultimate responsibility for T2S; level 2, consists of the MIB, which has been mandated by the Governing Council to manage the daily operations of the platform; and level 3 consists of the four Eurosystem national central banks that provide the service (4CB), as well as the T2S Coordination function at the ECB.

3.3 Legal and regulatory framework

Each CSD that participates in T2S needs to be designated under the national legislation implementing the Settlement Finality Directive.⁶ The details of the legal framework are described in the section on Principle 1 of the PFMI.

T2S is overseen by the Eurosystem, which assesses it against the applicable principles⁷ and key considerations of the CPMI-IOSCO PFMI. In addition, the Eurosystem has set up the T2S Cooperative Arrangement to ensure that all authorities with a legitimate interest in the smooth functioning of T2S are adequately involved, i.e. overseers of securities settlement systems operated by CSDs and payment systems using T2S services, central banks of issue for currencies settled in T2S, national competent authorities for the supervision of CSDs which have signed the T2S Framework Agreement, and the European Securities and Markets Authority as the coordinator of these authorities.

3.4 System design and operation

T2S is based on a technically centralised platform and all participants, irrespective of their location, have access to the same services, functionalities and interfaces.

T2S is a service that the Eurosystem offers to CSDs that allows for the core, neutral and borderless settlement of securities transactions on a delivery-versus-payment basis in central bank money. Settlement is performed on a single technical platform connected to central banks' RTGS systems for all participating currencies.

Dedicated cash account services are provided in T2S by the Eurosystem central banks and the non-euro central banks who have authorised the participation of their currencies in T2S as settlement currencies.

Communication between T2S and its participants is harmonised and based on ISO 20022 standards, and is provided by either SWIFT or SIA.

⁶ Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

⁷ See the [Applicability of CPMI-IOSCO Principles for Financial Market Infrastructures to TARGET2-Securities](#).

The T2S platform has been developed and is operated by the four service-providing central banks known as the 4CB (the Deutsche Bundesbank, Banco de España, Banque de France and Banca d'Italia), or level 3 of the T2S governance structure, which includes as well the T2S Coordination function at the ECB.

Any market participant wanting to settle securities transactions using the T2S platform needs to have access to a securities account with one of the CSDs connected to T2S, and a dedicated cash account with one of the central banks connected to the platform. These accounts are operated simultaneously on T2S – i.e. the settlement model is integrated for fast, low-risk and efficient settlement. For each transaction, the delivering and receiving legs are matched by T2S and contain the relevant securities and cash information for each counterpart (i.e. each leg can contain securities and cash information). T2S then settles most transactions on a delivery-versus-payment basis so that the money and securities transactions are settled simultaneously.

Securities settlement can take place during two T2S periods: (a) night-time settlement (NTS) and (b) daytime real-time settlement (RTS).

(a) The NTS runs from 20:00 CET and is divided into two cycles – the first cycle and the last cycle. The first cycle is subdivided into five sequences and the last cycle into four sequences. Within each of the different sequences certain types of transactions are settled. At the end of the last NTS cycle, T2S submits, for partial settlement, all eligible transactions that failed to be settled in an earlier attempt during the night.

(b) The RTS process starts after the completion of the NTS and runs until 18:00 CET but may be interrupted by the maintenance window. T2S Release 5.0 in June 2021 made the daily maintenance window optional. When activated, the maintenance window starts at 03:00 CET and ends at 05:00 CET. During the maintenance window T2S is closed for all settlement activities. Once the maintenance window is over, settlement and booking activity resumes and runs throughout the settlement day until 18:00 CET. During the RTS period, partial settlement takes place at 08:00 CET, 10:00 CET, 12:00 CET, 14:00 CET and 15:45 CET.

T2S offers the highest possible level of reliability and resilience, as well as sophisticated business contingency arrangements commensurate with the systemic importance of the T2S platform. The basis of the business continuity concept of T2S consists of a two-region/four-site architecture, whereby T2S is operated in two regions for settlement processing and accounting services, and each region has two separate sites. Regular rotations within and between the regions ensure that both regions are fully ready and prepared to switch-over in the event of any incident. This architecture enables T2S to fulfil the highest service levels, minimise operational risk and avoid systemic risk.

4 Principle-by-principle summary narrative disclosure

This section provides a summary disclosure for each applicable principle to enable readers to understand the approach adopted by the T2S Operator to comply with the principles. The summary provided for each principle should be seen as a complement to the T2S documentation which has already been made publicly available on the websites of the ECB and the central banks since the launch of T2S.

Principle 1 Legal basis

A financial market infrastructure (FMI) should have a well-founded, clear, transparent and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

The two material legal aspects needed for T2S to provide services to the participating CSDs and central banks are settlement finality and default procedures. As concerns finality, the moment of entry of a transfer order into a system and the moment of its irrevocability are defined in each participating system's rules, as required by the Settlement Finality Directive, and these moments are harmonised across the participating systems and made binding by the Collective Agreement signed by each participating CSD and the central banks. Settlement finality of transfers is achieved upon the simultaneous bookings in securities and cash accounts in T2S, given that CSDs commit to making all necessary arrangements with regard to their operational processes and contractual terms, in particular their rules, to ensure the unconditionality, irrevocability and enforceability of settlements processed on the T2S platform. Defaults of CSDs' participants are handled under individual CSDs' rules and national legislation as far as the participating CSDs are concerned, and under Annex IIa to the Guideline on TARGET2 as far as the central banks are concerned. In the event that another currency area decides to use the T2S platform, any default of a CSD's participant would be dealt with under the national legislation and rules of the respective CSD.

The provision of services by the T2S platform to participating CSDs and central banks is regulated by the T2S Framework Agreement, which must be signed by each participating CSD and its national central bank on behalf of the Eurosystem in the case of a euro area CSD, and by the participating CSD and the ECB in the case of a non-euro area CSD. The T2S Framework Agreement is governed by German law. The relationship regarding the provision of T2S services between the Eurosystem and the non-euro central banks is regulated by the T2S Currency Participation Agreement, which is also governed by German law. The governance and other relevant legal arrangements for T2S are set out in the T2S Guideline which is binding on each participating national central bank.

The legal framework for the immobilisation or dematerialisation of securities and the transfer of securities by book entry are addressed under the general requirement

introduced by the Central Securities Depositories Regulation.⁸ As such they are not addressed in the T2S legal framework. T2S, as a platform, only offers its services for immobilised or dematerialised securities and functions on a book-entry basis,⁹ thus supporting the compliance of CSDs in this respect.

When the legal documentation supporting T2S is initially produced and every time it is revised it is reviewed by two Eurosystem committees: the MIB, consisting of payment and settlement system senior officials, and the Legal Committee (LEGCO), consisting of senior legal representatives. In addition, the CSDs using the T2S platform are part of the T2S governance structure and processes, and as such also actively contribute to the drafting of any revisions. All parties check the documentation in order to ensure consistency with national laws and regulations.

The T2S Framework Agreement and the T2S Currency Participation Agreement are implemented under German law and all signing parties have agreed to the jurisdiction of the Court of Justice of the European Union. Therefore, Germany is the only relevant jurisdiction for these agreements, ensuring enforceability.

Principle 2 Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI and support the stability of the broader financial system, other relevant public interest considerations and the objectives of relevant stakeholders.

T2S lays the foundations for a single market for securities settlement and thus contributes to achieving greater integration of Europe's financial market.

There are three separate levels of governance for T2S:¹⁰

- Level 1, the Governing Council of the ECB, shall be responsible for the direction, overall management and control of T2S and for ultimate decision-making in relation to T2S.
- Level 2 consists of the MIB to which the Governing Council has delegated the daily management of T2S services. The MIB provides assistance to the ECB's decision-making bodies in respect of the maintenance and further development of T2S in line with the objectives of the ESCB under the Treaty on the Functioning of the European Union (TFEU), business needs and technical advancement. The composition and mandate of the MIB is laid down in Decision ECB/2019/3. In line

⁸ See Article 3 of the Central Securities Depositories Regulation (Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014).

⁹ See Schedule 5, para. 4.5.3, of the T2S Framework Agreement.

¹⁰ According to Article 3 of the Guideline on TARGET2-Securities (ECB/2012/13).

with Article 9(3) of the T2S Guideline (ECB/2012/13), the MIB reports on a regular basis to the Governing Council on the development and operation of T2S.

- Level 3 (the service-providing central banks or 4CB) built and now operates the T2S platform on behalf of the Eurosystem. The 4CB do not take part in the decision-making on T2S, rather they assume responsibility for developing and operating T2S in line with the requirements of the MIB and the Governing Council.¹¹ The 4CB provide regular reports on the operation of T2S to the MIB.

The Governing Council is established under the terms of the TFEU, which also determines its composition. Its members are appointed by the European Council (for the ECB's Executive Board members) and by the EU Member States (for governors of the Eurosystem's national central banks).

T2S is also subject to auditing by the Eurosystem's Internal Auditors Committee and undergoes yearly technical and operational examinations conducted by external examiners. Auditors report directly to the Governing Council. Furthermore, the Governing Council is responsible for the oversight of T2S and has established the Market Infrastructure and Payments Committee (MIPC) to assist it in this task. The oversight function is segregated from the T2S operational function both at committee level and within the national central banks.

Any major decisions on the functioning or structure of T2S are made by the Governing Council. Its decisions are based on input from level 2, which also consults the T2S stakeholders at both the national and the European level and considers their views.

Principle 3

Framework for the comprehensive management of risks

An FMI should have a sound risk management framework for comprehensively managing legal, credit, liquidity, operational and other risks.

The Governing Council of the ECB decides on the general operational aspects of T2S, including the T2S risk management framework.

There are three PFMI categories of risk to which T2S is exposed, i.e. operational risk, legal risk and general business risk. These risks are adequately catered for by the T2S risk management framework.

A common risk management framework was adopted in 2021 for all TARGET services, including T2S. The framework is based on the Three Lines Model.¹² The TARGET services first line manages risks on a day-to-day basis and is made up of

¹¹ Pursuant to Article 6 of the Guideline on TARGET2-Securities (ECB/2012/13), the MIB is the successor to the T2S Board referred to in the Guideline.

¹² For details, see "The IIA's Three Lines Model – An update of the Three Lines of Defense", the Institute of Internal Auditors.

operational experts and managers whose main role is to ensure the efficient and smooth operation of TARGET services, while the TARGET services second line defines the operational risk management principles and frameworks, monitors their implementation and provides an independent and holistic view of TARGET services risks to the steering level (i.e. the MIB, CSG and NECSG). The second line is composed of risk experts, who are independent from the first line, and they have a direct reporting line to the steering level. Lastly, the third line is represented by the Eurosystem Internal Auditors Committee and provides assurance and consulting activities for the steering level, based on the highest level of independence and objectivity in accordance with a predefined audit charter.

In addition to the regular reporting, any significant risks to T2S that are detected must be reported immediately to the Governing Council.

Participants (Eurosystem central banks in their role as clients of T2S, and the CSDs as clients of T2S and of the non-euro central banks whose currencies are settlement currencies in T2S) are also required (by the terms of their participation) to have security procedures in place, in particular with regard to information security.

Legal risk is managed by having all legal arrangements and contracts reviewed by lawyers from each national central bank. This ensures that risks of conflicts of law are minimised and also that the legal arrangements are in line with national legislation in each country.

At operational level, detailed plans are in place for dealing with emergencies, and there are back-up systems at various widely dispersed geographical locations. These plans and procedures are regularly tested.

Principle 4

Credit risk

An FMI should effectively measure, monitor and manage its credit exposure to participants and those arising from its payment, clearing and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.

It is important to note that T2S as a technical platform is not exposed to credit risk itself. Auto-collateralisation is a form of intraday credit provided by the central banks using T2S. If at the end of the day the auto-collateralisation has not been reimbursed, it will be changed into intraday credit and possibly into overnight lending in accordance with the rules of the relevant central bank.

Each central bank defines the maximum credit for each of its participants in the T2S static data, as well as which collateral it will accept from the list of eligible collateral and which haircuts will be applied. Within this maximum headroom, the payment bank

operating in T2S may restrict credit availability further to its participants, but it cannot extend the headroom available to itself. In normal circumstances, within this maximum limit defined by the central bank, credit is only restricted by the amount of eligible collateral that the counterparty can mobilise. Nevertheless, in exceptional circumstances, a central bank may need to restrict a counterparty's access to credit further. T2S provides tools for use in such exceptional circumstances. Limits can be configured in real time by the central bank acting as credit provider.

Principle 5

Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

T2S, as it is a technical platform, can only have a very limited role in mitigating risks related to collateral. CSD customers' securities accounts remain legally attributed to the relevant participating CSD and central bank customers' cash accounts remain legally attributed to the relevant participating central banks. For this reason, T2S does not have credit exposures or bear any credit, liquidity or market risk owing to the collateralisation of central bank credit operations which may be executed in these accounts. However, T2S supports central banks in the conduct of collateralised credit operations and the provision of collateral management services,¹³ by providing the tools to manage both domestic and cross-border collateral. The mitigation of collateral risk remains the responsibility of the relevant central bank, with T2S providing the means to facilitate this part of risk management by the central bank.

To help mitigate market risk, the platform allows central banks to upload daily to T2S the list of (marketable) assets eligible for use as collateral with updated valuation information. The central banks apply haircuts before uploading the valuation data and the check for close links between the issuer and user of collateral. It should be noted that while T2S supports this procedure, the actual risk mitigation is a function of the central banks.

T2S, being a single platform, helps reduce the risk of inconsistencies between different lists of eligible collateral which could occur between different platforms. In addition, it provides opportunities and encouragement for the harmonisation of procedures, thus further reducing the risk of errors.

¹³ See Recital 2 of the T2S Guideline.

Principle 7

Liquidity risk

An FMI should effectively measure, monitor and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Liquidity risk for an FMI is understood to be the risk that arises when the FMI, its participants or other entities cannot settle their payment obligations when due as part of the clearing or settlement process. T2S, as a technical platform that operates on a delivery-versus-payment principle, does not itself face liquidity risks. T2S offers several tools and functionalities to support CSDs and national central banks in managing their liquidity risk, such as:

- Delivery-versus-payment settlement, which enables both the cash leg and the securities leg of transactions to be settled simultaneously, with the liquidity then being immediately available on the dedicated cash account.
- Auto-collateralisation, which is automatically triggered by T2S to let settlement occur when the liquidity on the dedicated cash account does not suffice to settle the total amount.
- Optimisation algorithms in T2S, which allow the identification and selection of pending settlement instructions (and also settlement restrictions) that are able to settle successfully when they are submitted together in a settlement attempt.
- Partial settlement, which is automatically triggered by T2S settling the maximum quantity of securities available, and also when the resources available on the dedicated cash account are not enough to settle the total amount.
- Technical netting, which limits the resources needed for settlement to the net quantities or amounts of settlement instructions (and also settlement restrictions and liquidity transfers) which are submitted together for settlement on an all-or-none basis.
- Recycling, which occurs in anticipation of finding the required securities and/or cash in subsequent settlement attempts, so that failed transactions can be settled successfully during the settlement day.
- Cash/securities blocking and reservation, which can be performed on cash balances and securities positions, linking the settlement of funds to a specific purpose (e.g. certain types of instruction).
- Prioritisation, which can be applied to settlement instructions that compete for the use of the same cash and/or securities resources, and maximising settlement (amount and quantities) is taken into account in the general settlement objective.

- A hold/release mechanism, which provides great flexibility to T2S actors to delay the settlement of specific settlement instructions that may affect liquidity needs.
- A linking tool, which allows T2S actors to link instructions in order to ensure that a settlement instruction settles at the same time, before or after another settlement instruction.

T2S supports T2S participants in identifying, measuring and monitoring settlement and funding flows on an ongoing and timely basis. The liquidity monitoring process of T2S provides information on settled amounts, cash balances, blocking, reservations and whether the floor and ceiling thresholds defined by T2S actors on their T2S dedicated cash accounts have been reached.

Principle 8

Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

By signing the T2S Framework Agreement and the Collective Agreement, the CSDs and central banks participating in T2S have agreed that T2S is the sole technical point of reference regarding the finality of settlement for both securities and cash settlement, and that the rules as laid down and implemented in T2S are binding for any CSD or central bank participating in T2S.

The T2S Framework Agreement, signed between the CSDs and the Eurosystem, requires them to “make all necessary arrangements” to harmonise the moment of entry of transfer orders into the system and the moment of their irrevocability. These arrangements were formalised in the Collective Agreement between the CSDs and central banks, which came into force on 20 March 2018. The moment of entry for transfer orders, which are to be settled in T2S and are subject to matching, is defined as the moment at which they are declared by the T2S platform to be compliant with the rules of T2S. They are irrevocable from the moment they are given the status of “matched” on the T2S platform.

For all other transfer orders, the rules of entry and irrevocability are set by the rules of the relevant settlement system. As all CSDs participating in the T2S platform must be designated in accordance with the Settlement Finality Directive and the relevant national transpositions, they are also obliged to define and document the moments of entry and irrevocability in their own system rules. T2S supports the CSDs and central banks by providing reports that give them an overview of the status of any outstanding transfer orders. From these reports, it is possible to see which transfer orders have been “entered” into the relevant system and which are “irrevocable”, according to the rules of that system.

Participation in T2S is only possible for systems designated in accordance with the Settlement Finality Directive and the relevant national transpositions. It is therefore the responsibility of the CSDs and central banks to ensure legal certainty and this is outside the scope of T2S.

In T2S, the settlement of transfers achieves immediate finality given that, by signing the T2S Framework Agreement, CSDs commit to making all necessary arrangements with regard to its operational processes and contractual terms, in particular its rules, to ensure the unconditionality, irrevocability and enforceability of the settlements processed on the T2S platform (Article 21(4) of the Framework Agreement).

Principle 9

Money settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

T2S settles exclusively in central bank money, settlement in commercial bank money is not part of the services it provides.

Principle 11

Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

T2S provides a single point of reference for all participating CSDs and acts only upon properly authenticated instructions of a CSD. Therefore, securities account positions of the participating CSDs on the T2S platform are only changed in T2S. The T2S database ensures a full audit trail. The participating CSDs are responsible for all necessary arrangements to recognise and give validity to the securities records on the T2S platform, including in their contractual terms and conditions vis-à-vis their participants.

T2S supports the settlement of corporate actions by processing all settlement-related parts of corporate actions through regular settlement processing. Furthermore, T2S provides reporting which allows the securities issuer as well as the holder to receive securities settlement-related information regarding the processing of corporate actions and their holdings via the responsible participating CSD.

T2S enables the CSDs to check positions for consistency at any time by allowing CSDs to query the holdings and instructions on their securities accounts in T2S in real-time for information and reconciliation purposes. T2S allows CSDs to subscribe to reports specifying the holdings and instructions on their securities accounts as requested or required by the CSDs. CSDs may also subscribe to receive real-time messages about their instructions.

Only securities in immobilised and dematerialised book-entry form can be set up by CSDs in T2S. CSDs are responsible for ensuring that their users only set up this kind of security.

Principle 12

Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Principal risk might occur with linked obligations when one obligation is settled (securities or cash transfer), but the other is not.

The vast majority of transactions on the T2S platform are settled on a delivery-versus-payment basis which does not entail any principal risk. The T2S Framework Agreement, signed by all parties, states that after the moment of settlement transactions cannot be revoked or unwound.

Additionally, T2S provides T2S actors with the conditional securities delivery (CoSD) functionality that allows the settlement of a transaction in T2S to be linked to the fulfilment of a settlement condition outside T2S. Based on a set of predefined rules, eligible settlement instructions will be automatically put on CoSD hold, and securities or cash resources will be blocked in the account of the T2S participant. Once the T2S platform receives confirmation that the settlement condition has been fulfilled outside T2S, e.g. settlement of the cash leg outside T2S, the transaction is released for settlement in T2S.

T2S ensures that both obligations – the transfer of the financial instrument and the cash transfer – are linked and settled simultaneously with immediate finality. The CoSD functionality ensures the settlement of securities transactions between T2S accounts upon fulfilment of an external condition, such as the cash settlement outside T2S.

Principle 13

Participant default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

A CSD's insolvency is addressed in the T2S Framework Agreement which gives the Eurosystem, acting jointly with the relevant competent authorities, the right to suspend a CSD, with immediate effect, from using some or all T2S services. The financial default of a CSD can occur if circumstances arise that undermine its financial soundness, thus preventing the CSD from conducting its business in an orderly manner. Should the financial default lead to the winding down of the CSD, this will be managed and executed in line with the appropriate plan, defined by the CSD and communicated to the competent authority, in order to limit the systemic risk deriving from this event. The detailed procedures are set out in the agreed Manual of Operational Procedures between the CSDs, the central banks, and the Eurosystem. The suspension of a CSD immediately triggers crisis management procedures (as set out in the operational rules mentioned above) in order to inform the market and manage the consequences of the suspension.

The operational default of a CSD or central bank is caused by technical and/or business incidents that have an impact on the normal interaction and communication of a CSD or central bank with T2S. This would prevent the defaulting CSD or central bank from meeting its obligations and could also have a spillover effect on other CSDs and/or central banks participating in T2S owing to the links and interdependencies between them. The consequences of the default of a CSD or a central bank are managed in T2S in line with the provisions defined in the T2S Framework Agreement and the T2S Currency Participation Agreement and as set out in the T2S Manual of Operational Procedures.

The Eurosystem does not maintain any contractual relationship with the participants in the systems that participating CSDs and central banks operate. In the event of the default of a CSD's participant and/or a central bank's participant, the CSD and the central bank respectively are directly responsible to the relevant competent authorities for compliance with any legal and regulatory requirements (e.g. suspension of such participant) and these responsibilities are not delegated to the Eurosystem. T2S does, however, facilitate compliance with such requirements by providing the necessary operational tools to the CSDs and central banks for managing the business of the defaulting participant.

Principle 15

General business risk

An FMI should identify, monitor and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations

and services as a going concern if those losses materialise. Furthermore, liquid net assets should at all times be sufficient to ensure a recovery or orderly winding-down of critical operations and services.

The T2S risk management framework identifies general business risk as one of the TARGET services operational risks faced by the operator of the platform that could result in a financial loss, jeopardising the achievement of the cost recovery objective. All identified risks are presented to the MIB via regular risk reports. The general business risks for T2S, being a technical platform serving the CSDs and central banks as clients of T2S, are (i) the risk of costs being higher than initially planned; (ii) the risk of revenues being lower than initially planned; (iii) the risk of new investment not being recovered (investment risk); and (iv) the risk of facing a one-time loss if the operational risk materialises.

T2S is run on a cost recovery basis. The T2S Operator carries out quarterly reviews of the system's financial performance, comparing the costs and revenues of the system with the projections made. Once a year a report on the overall financial performance of the system is submitted to the Governing Council. If necessary, the Governing Council may decide on remedial actions if the system's financial performance were to fall considerably short of the approved cost recovery objectives. Remedial actions might consist of, for example, an extension of the payback period, adjustment of the pricing scheme, dismantling of specific services, downsizing of the system's capacity, or a renegotiation of the running costs with the service-providing central banks (4CB). These remedial actions would be envisaged in the context of general risk management and are distinct from the measures that could be invoked in the context of the recovery plan.

Principle 17

Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

The TARGET Services Risk Management Framework (TS RMF) outlines roles and responsibilities and the overall activities that are needed for strong risk management. The TS RMF is dedicated to the risk management of TARGET services in operation, and also covers T2S.

The TS RMF is consistent with the overall Eurosystem/ESCB/SSM Operational Risk Management framework (ORM).¹⁴

The TS RMF deals with the management of the risks affecting the operations of the TARGET services and is based on the ORM framework, the SIPS regulation¹⁵ and on the CPMI-IOSCO PFMI standards. It encompasses all risks and risk categories that are applicable to TARGET services. These risks are labelled as “TARGET services operational risks” and are defined as the risk of negative financial, business and/or reputational impacts on the Eurosystem resulting from inadequate or failed internal governance and business processes, people, systems and external events insofar that such a risk is under the MIB remit.

Thus, T2S operational risks include all risks that may affect the T2S operations, encompassing the risks that projects and releases could pose to T2S. Additionally, a T2S information security policy and T2S security requirements and controls have been defined to support the management of information security-related risks. A risk management manual sets out the process for assessing information technology (IT) risks.

In order to strengthen the risk management of all Eurosystem market infrastructures and applications that constitute the TARGET services, the MIB decided to implement the Three Lines Model. This model includes different management and audit bodies with varying degrees of independence and specificity that aim to implement, organise and oversee the management of risks within the TARGET services. Within this model, the TS RMF supports the regular collection and consolidation of risk information and the creation of action plans for information and endorsement of the MIB, via harmonised risk management processes that apply to all TARGET services, including T2S, and covering all risk types.

The T2S ORM processes include the identification, assessment/responses, approval/reporting and monitoring of risks.

The Eurosystem, through its internal governance – i.e., the MIB and the T2S Operator level – regularly monitors and manages T2S risks. Systems, policies, procedures and controls are documented in the T2S operational procedures agreed between the CSDs, central banks, and the T2S Operator, i.e., within the rules related to ORM. Operational risk is discussed in the relevant technical groups (i.e. the Operations Manager Group and the Project Manager Group) and at the steering level (i.e. the MIB, CSG and NECSG). A quarterly risk report is prepared to monitor the status of each risk, including the validity of its root causes and the timely application of the risk responses.

The T2S Operator continuously monitors volumes and resources, from both a functional and a technical point of view. Furthermore, T2S has a long-term capacity

¹⁴ The Eurosystem/ESCB/SSM ORM Framework comprises all Eurosystem/ESCB and SSM tasks and processes and related outcomes that manage operational risks which could jeopardise the achievement of the objectives of the Eurosystem/ESCB or the ECB within the SSM.

¹⁵ Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28)

planning process which forecasts the expected usage and workload of the T2S system. The T2S capacity planning is reviewed on a quarterly basis, thus allowing the T2S Operator to adjust the size of the platform accordingly. In the event that the planned capacity is insufficient, the T2S Operator can activate additional dormant capacity at short notice, e.g. if a CSD or central bank notifies the T2S Operator of a special event and after the relevant technical groups have been involved.

The business continuity and disaster recovery objectives are broken down according to the severity of the incident and based on the two regions/four sites approach. The T2S infrastructure is based in two different geographical regions, with each region operating two sites. Procedures to recover data and prevent data loss in the event of a failover are in place and are described in Schedule 6 of the T2S Framework Agreement.

Principle 18

Access and participation requirements

An FMI should have objective, risk-based and publicly disclosed criteria for participation, which permit fair and open access.

Participants on the T2S platform comprise the central banks and CSDs. The Eurosystem central banks are required to participate in order to allow the platform to use central bank money for settlement.

Access criteria for CSDs are set out in Article 15 of the T2S Guideline and Article 5 of the T2S Framework Agreement. Article 18 of the T2S Guideline and Article 5 of the T2S Currency Participation Agreement contain the eligibility conditions for the inclusion in T2S of currencies other than the euro. Such currencies are eligible for use in T2S provided that the non-euro area central bank, or other central bank, or other authority responsible for such currency enters into a Currency Participation Agreement with the Eurosystem and that the Governing Council has approved the eligibility of such currency. For the currencies of countries outside the European Economic Area (EEA), further risk considerations may apply.

The T2S access criteria are clearly set out in the relevant legal documents. These are publicly available and ensure that all participants and potential participants are offered equal treatment. The access criteria were discussed with all potential participants before finalisation, to ensure that access would be fair, equal, and open. In accordance with the criteria, CSDs are eligible to access T2S services provided that they:

- 1) have been notified in accordance with Article 10 of the Settlement Finality Directive or, in the case of a CSD from a non-EEA jurisdiction, they operate under a legal and regulatory framework that is equivalent to that in force in the European Union;

- 2) have been positively assessed by the competent authorities against (i) Regulation (EU) No 909/2014 of the European Parliament and of the Council (4), for CSDs located in an EEA jurisdiction; or (ii) the Principles for Financial Market Infrastructures of the Committee on Payment and Market Infrastructures and the International Organisation of Securities Commissions dated April 2012 or a legal framework implementing those principles, for CSDs located in a non-EEA jurisdiction;
- 3) make each security/International Securities Identification Number for which they are an issuer CSD (or technical issuer CSD) available to other CSDs in T2S upon request;
- 4) commit to offering other CSDs in T2S basic custody service on a non-discriminatory basis;
- 5) commit towards other CSDs in T2S to carry out their central bank money settlement in T2S if the currency is available in T2S.

The participation criteria for T2S are applied equally to all participating CSDs and central banks and are based on avoiding risk for both the T2S platform and the FMIs using it.

The Eurosystem reviews and assesses the CSDs' continued compliance with the access criteria on an annual basis. The participating CSDs must promptly inform the Eurosystem of any change affecting their compliance with the access criteria.

Although CSD and central bank participants are considered T2S users, the Eurosystem, as the operator of T2S, does not have any contractual relationship with the customers of participating CSDs or central banks or any influence on the access criteria established by CSDs and central banks as the operators of their systems.

Principle 20

FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

T2S facilitates, from a technical perspective, the establishment of links between participating CSDs for their cross-CSD settlement activities. It allows CSDs to set up the relevant static data to establish links to other CSDs in T2S. The static data should reflect what the CSDs have agreed in the legal arrangements they have concluded between themselves. These legal arrangements are outside the scope of T2S. Once these links are reflected in the T2S static data, CSDs and their participants can initiate cross-CSD settlement instructions in T2S.

It is the CSDs' responsibility to ensure that the link arrangement between them meets all regulatory and legal requirements. T2S facilitates the creation of such links, as T2S provides a standardised approach to most of the technical content of a link.

Furthermore, T2S automates the realignment process¹⁶ between CSDs on a real-time basis without the need for any additional procedures. The definition of the CSD access criteria for participation in T2S also facilitates the establishment of such links, as well as the interoperability of CSDs from a legal perspective.

CSDs have to implement their own risk management frameworks for identifying, monitoring and managing the legal, credit, liquidity, custody and operational risks arising from an established link. These CSD risk management activities are outside the scope of T2S. Beyond the queries and reports described below, T2S does not have a mandate to actively perform any risk management activity on CSD links.

T2S supports the CSDs in their proprietary risk management activities by providing reports and query functionality through which the CSDs can obtain relevant data and information. For example, CSDs may use T2S queries and reports to monitor securities positions, postings and instructions. CSDs can also subscribe to receive real-time status messages about any realignment instruction crediting or debiting accounts.

Principle 21

Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

The scope of the services offered by T2S is limited to those set out in the T2S Framework Agreement and the T2S Currency Participation Agreement, and in other related documents. These have been defined in agreement with the CSDs and central banks. The T2S project development phase was launched after market consultations, based on a decision by the ECB's Governing Council. Experts from the CSDs, central banks and other market participants contributed to the drafting of the T2S User Requirements Document, and most of the other documents defining the scope of T2S, such as the T2S General Functional Specifications (GFS), the T2S User Detailed Functional Specifications and the T2S User Handbook.

In addition, if a new requirement is identified, or if there are any changes to the agreed requirements, T2S participants (CSDs or central banks) can make a change request using the change and release management procedure. Members of national communities may make change requests through their CSD or their central bank.

¹⁶ When T2S matches a pair of settlement instructions, or receives an already matched pair of instructions, it verifies whether the instructions submitted require realignment instructions on accounts other than those of the T2S Parties submitting the instructions (e.g. on the accounts of the Issuer CSD). If T2S identifies a need to realign, it generates the required realignment instructions, on the basis of the cross-CSD links in the Common Static Data, automatically validates the realignment instruction, and links all settlement instructions to ensure all-or-none settlement.

The overall objective of T2S is to facilitate pan-European post-trading integration by supporting core, borderless and neutral 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.

Operational goals and objectives are set through discussions with all participating CSDs and central banks. The participants also represent the interest of the markets they serve. A precondition for pursuing these operational goals and objectives is the maintenance of the financial sustainability of the provision of T2S services. To this end, the Governing Council of the ECB sets the T2S pricing policy upon a recommendation from the MIB. The MIB monitors cost and revenue trends on a regular basis in order to provide the Governing Council with relevant recommendations.

The evaluation of the efficiency and effectiveness of T2S is part of the regular service level agreement reporting, which is prepared by the Eurosystem on a monthly basis. The values of the indicators are compared against the agreed, committed service levels in the production environment.

Principle 22

Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement and recording.

T2S supports the CSDs and central banks in using internationally accepted communication procedures. T2S uses the ISO 20022 universal financial industry (UNIFI) message scheme as the standard for all T2S communications. In addition, the use of the ISO 20022 standard enables T2S to comply with the Giovannini communication protocol. Furthermore, the standards¹⁷ for matching adopted by the European Securities Services Forum (ESSF) and the European Central Securities Depositories Association (ECSDA) are used.

Participants may choose between two value-added network providers selected by the Eurosystem for providing communication services for linking the CSDs and central banks to T2S. These are SWIFT and SIA.

T2S promotes straight-through processing (STP) through the implementation of a single IT platform for all securities transactions in Europe and the adoption of ISO 20022 for messaging, which allows STP for the entire end-to-end processing of post-trading service processes. T2S is implemented on an open architecture environment

¹⁷ See the ECSDA Status Report on Matching Harmonisation: http://ecsd.eu/wp-content/uploads/2014/07/2012_06_06_ECSDA_Matching_Implementation_Report.pdf

that allows communication and interoperability between different segments of the securities clearing and settlement infrastructure.

Principle 23

Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

The legal basis of T2S is publicly available and transparent. The T2S Guideline and the T2S Decision¹⁸ are based on Article 22 of the Statute of the European System of Central Banks and of the European Central Bank (ESCB Statute¹⁹), Article 127(2)(4) of the Treaty on the Functioning of the European Union (TFEU)²⁰ in conjunction with Article 17 and Article 18.1 of the ESCB Statute, and Article 127(1) TFEU in conjunction with Article 2 of the ESCB Statute, and as such they are both published in the Official Journal of the European Union and on the T2S homepage.²¹ They form part of the Eurosystem's legal framework.

The relations between T2S (represented by the Eurosystem) and parties using its services are subject to the following contracts (based on collectively negotiated and publicly available templates): (i) the standardised T2S Framework Agreement to be signed by each eligible CSD and (ii) the T2S Currency Participation Agreement to be signed by the respective non-euro area central bank of issuance for each eligible currency other than the euro.

The operational, functional and technical documentation (URD, UDFS, UHB and GFS) is available to the CSDs and central banks and the general public on the T2S website.

All decisions of the Governing Council on pricing for T2S services have been published on the ECB's website. Any subsequent price change will also be published on the ECB's website.

¹⁸ Decision ECB/2012/6 of 29 March 2012 on the establishment of the TARGET2-Securities Board and repealing Decision ECB/2009/6, OJ L 117, 1.5.2012.

¹⁹ Protocol (No 4) of the Treaty on the Functioning of the European Union on the Statute of the European System of Central Banks and of the European Central Bank, OJ C 326, 26 October 2012.

²⁰ Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, OJ C 326, 26 October 2012.

²¹ <https://www.ecb.europa.eu/paym/t2s/html/index.en.html>.

The quantitative information disclosed to the public about T2S can be found in the T2S Annual Report, which is published on a yearly basis.

5 List of publicly available resources

The following documents are publicly available; for a general overview see <https://www.ecb.europa.eu/paym/target/t2s/html/index.en.html>:

- [Framework Agreement](#)
- [Currency Participation Agreement](#)
- [T2S Guideline](#) (with amending decisions)
- [T2S Annual Report](#)
- [T2S Glossary](#)
- [User Detailed Functional Specifications](#) (version 7.2)
- [T2S User Handbook](#) (version 7.2)
- [T2S User Requirements](#) (version 10.2)
- [T2S General Functional Specifications](#) (version 10.2)