



T2S-0705-SYS

Annex 2: General Functional Specifications (GFS)

Draft sections provided for CR-705 –
CRDM Business Interface Impact on T2S

Updates of existing GFS sections are shown as underlined text when it is new, or as crossed text when it is removed.

For new GFS sections included, the text is not shown underlined because everything is new. Whether a section is new is marked at the beginning of the section in green.

2.3.3 Lifecycle Management and Matching

The LCMM domain deals with instructions received through the Interface domain. It is responsible for (i) the validation and matching of settlement instructions, before they are submitted to the Settlement domain, and (ii) the management and execution of maintenance instructions, and (iii) the computation and management of Penalties for failed settlement instructions. This domain is also in charge of checking the possible impact of reference data ~~static data~~ changes on pending instructions, managing the revalidation and the consequences of such impact when relevant, while keeping tracks of the changes in the lifecycle of instructions. The services provided by this domain are available continuously during the whole day T2S operating hours, with the exception of the maintenance window.

The LCMM domain encompasses five modules:

2.3.3.1 Instruction Validation

The Instruction Validation module validates all incoming instructions received during the settlement day, based on a harmonised set of validation rules. This module checks the consistency of incoming Inbound LCMM Messages (Incoming Settlement Instructions, Settlement Restrictions and maintenance instructions) sent by a CSD or by directly connected T2S Party and LCMM Instructions with T2S Reference Data ~~Static Data~~. No syntax (or format) checks are performed by this module, as this kind of validation is carried out by the Interface domain.

If an Inbound LCMM Message, a Settlement Instruction or a Settlement Restriction fulfils a Restriction Processing Type, this module is in charge of rejecting the Inbound LCMM Message or putting the LCMM Instruction On Hold.

This module is also in charge of revalidating all the instructions at the SOD (Start of Day) of every business day or those instructions that can have been impacted by a reference data ~~static data~~ change.

2.3.3.5 Penalty Mechanism

The Penalty Mechanism module is responsible for the daily calculation and preparation for reporting of Penalties for failed settlement instructions as well as the complementary features, which are necessary for T2S Actors in this context. Every business day, the Penalty Mechanism module analyses all the failed Settlement Instructions from previous business day in order to compute the necessary Penalties. This module also handles requests from CSDs to modify an existing Penalty, as well as the recalculation of Penalties that have been modified or impacted by a reference data ~~static data~~ change. This module prepares the information, including the aggregation of amounts (daily or monthly), for the ad-hoc reports for Penalties.

3.2.2 Dynamic data managed by the domain

The T2S System User sends or receives communication to/from T2S. A communication is a collective term for single messages and files. A file is a communication with specific header, which may contain zero, one or more single requests (e.g. two separate Static Data Maintenance requests). A single message is a communication containing exactly one request (e.g. one Static Data Maintenance request), containing the necessary business data to be processed by T2S.

Inbound Individual Message:

This entity is used to store the relevant information about a single inbound message after a positive technical message validation by the U2A Request Parsing function or by Message Parsing function. Also, the target Processing Module attribute as a result of the Information Router function is stored.

ATTRIBUTE	DESCRIPTION
Sender Message Reference	This attribute stores the identification of the message, which is delivered by the sender.
Entry Business Date	The attribute stores the business day, when T2S received the message.
Processing Module	This attribute stores the module (component) to which the message is forwarded. Possible values are (exhaustive list): <ul style="list-style-type: none"> - Inbound Processing Module (INTF) - Outbound Information Management (LQMG) - Liquidity Operations (LQMG) - Query Management (SRQA) - Instruction Validation (LCMM) - Operational Monitoring (OPSR) - Scheduling (OPSR) - Billing (OPSR) - Party Data Management (SDMG) - Security Data Management (SDMG) - Securities Account Data Management (SDMG) - T2S Dedicated Cash Account Data Management (SDMG) - Rules and Parameters Data Management (SDMG)

Outbound Individual Message:

The entity is created by Create Business Payload function to store the request type, processing module and payload of the outbound communication.

ATTRIBUTE	DESCRIPTION
Request Type	This attribute stores the request type for the message according to ISO 20022 standard.
Processing Module	This attribute stores the module (component) from which the message has been received. Possible values are (exhaustive list): <ul style="list-style-type: none"> - Inbound Processing Module (INTF) - Outbound Information Management (LQMG) - Liquidity Operations (LQMG) - Query Management (SQRA) - Report Management (SQRA) - Status Management (LCMM) - Instructions Matching (LCMM) - Instruction Maintenance (LCMM) - Operational Monitoring (OPSR) - Scheduling (OPSR) - Billing (OPSR) - Party Data Management (SDMG) - Security Data Management (SDMG) - Securities Account Data Management (SDMG) - T2S Dedicated Cash Account Data Management (SDMG) - Rules and Parameters Data Management (SDMG)

3.2.4.1 Description of the module

The Inbound Processing Module receives:

I U2A - XHTML request;

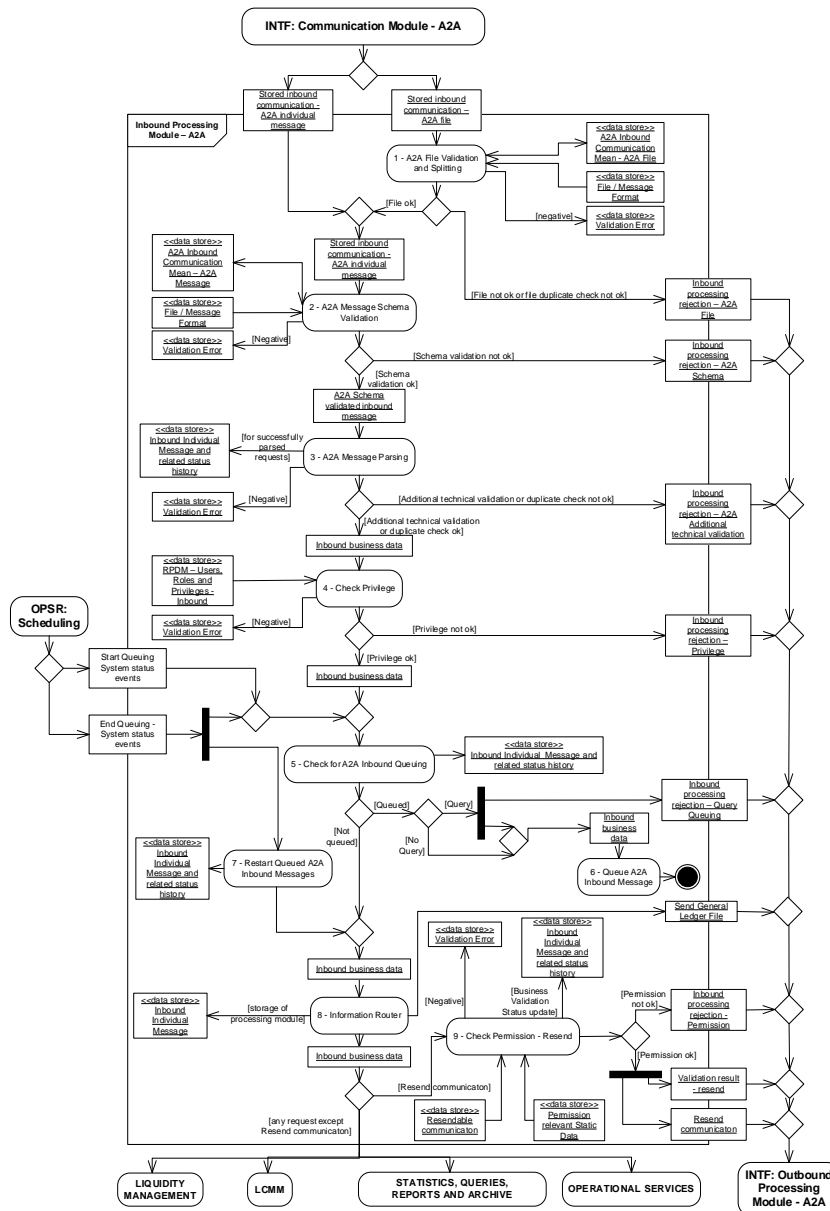
I Stored inbound communication – A2A file;

I Stored inbound communication – A2A individual message;

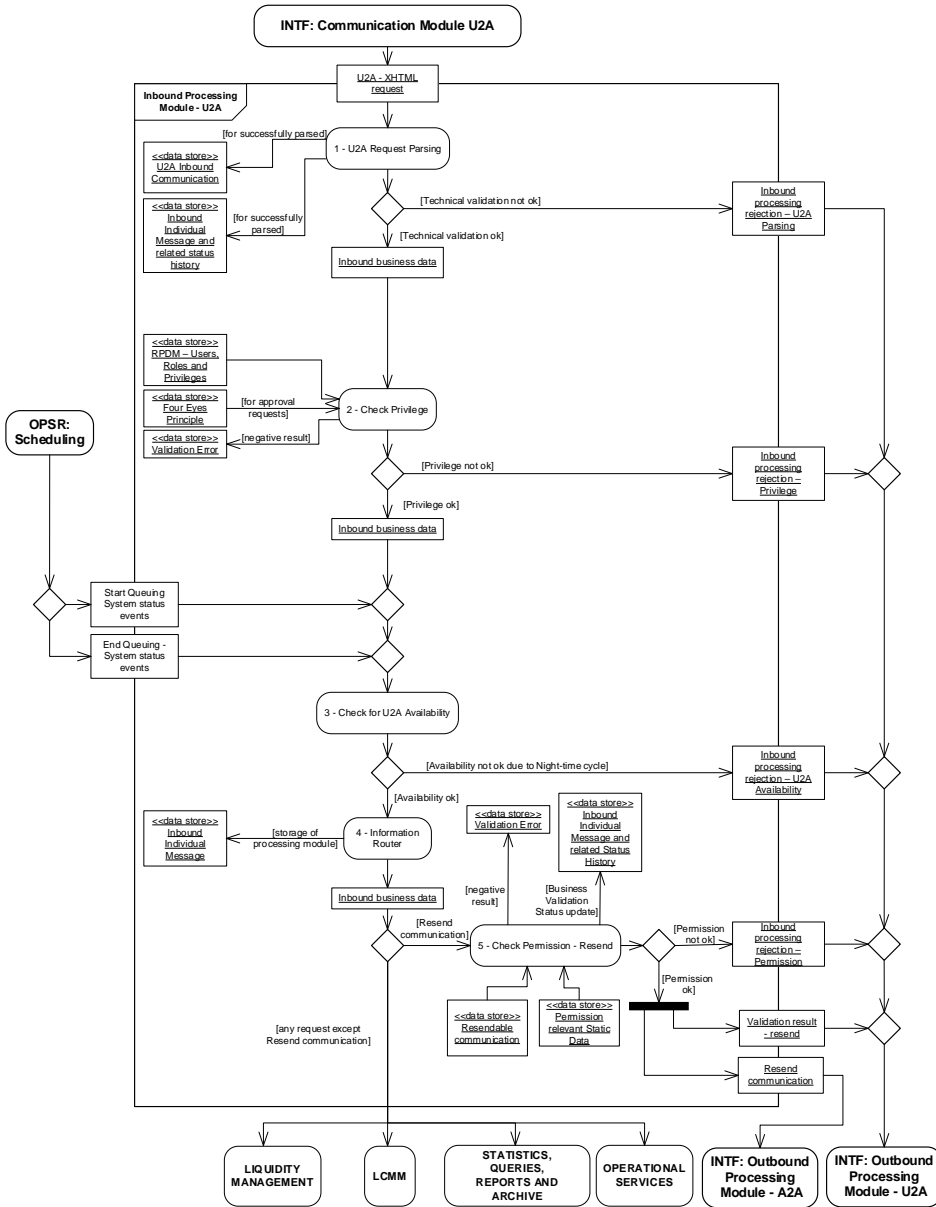
and performs a series of technical verification checks. The processing of this module includes the part of the authorisation check which is based on privileges. Roles Based Access Control (RBAC) is done in T2S by using the defined static data of T2S. The management of privileges (creation, update or deletion) is done in CRDM the **Static Data domain**.

3.2.4.2 Diagram of the module

Inbound Processing Module for Application-to-Application mode (A2A)



Inbound Processing Module for User-to-Application mode (U2A)



3.2.4.3 Description of the functions of the module

8 – Information Router

...

MODULE	MESSAGE	FLOW (INTERNAL FORMAT)	REMARKS	URD REFERENCES
...				
SDMG: Static Data Modules		Static Data Maintenance approval request	Only U2A	{T2S.12.170}
	Static Data Maintenance Request	Static Data Maintenance request	incl. Standing/Predefined liquidity transfer order, Security CSD links same day creation / maintenance and including Link securities account to DCA	{T2S.12.170} {T2S.13.140} {T2S.16.165}
	Notification from Collateral System	Static Data Maintenance request	eligible securities for auto-collateralisation and close links	
...				

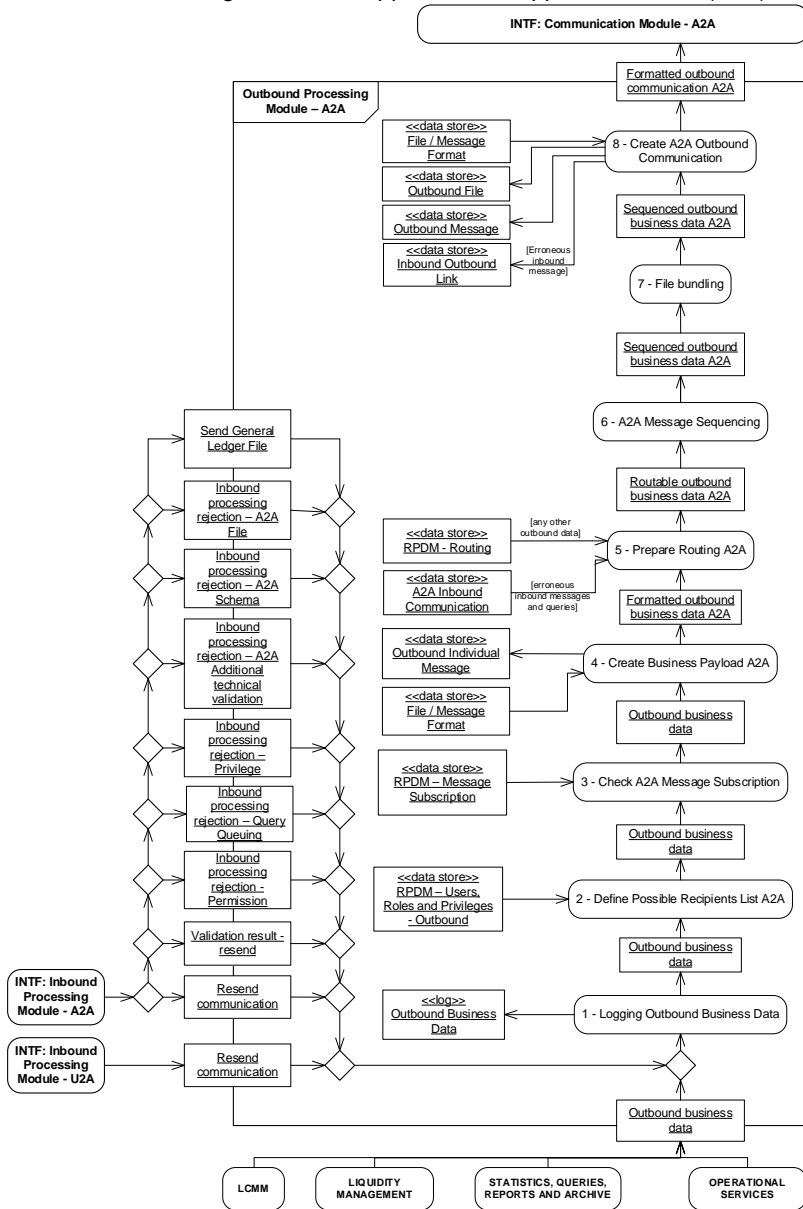
3.2.4.4 Description of the Input/Output of the module

The Inbound Business Data flow described before is used as place holder for the various different business flows, which have to be delivered to the back end modules (special case is the Resend Message flow, which is sent to the Outbound Processing Module).

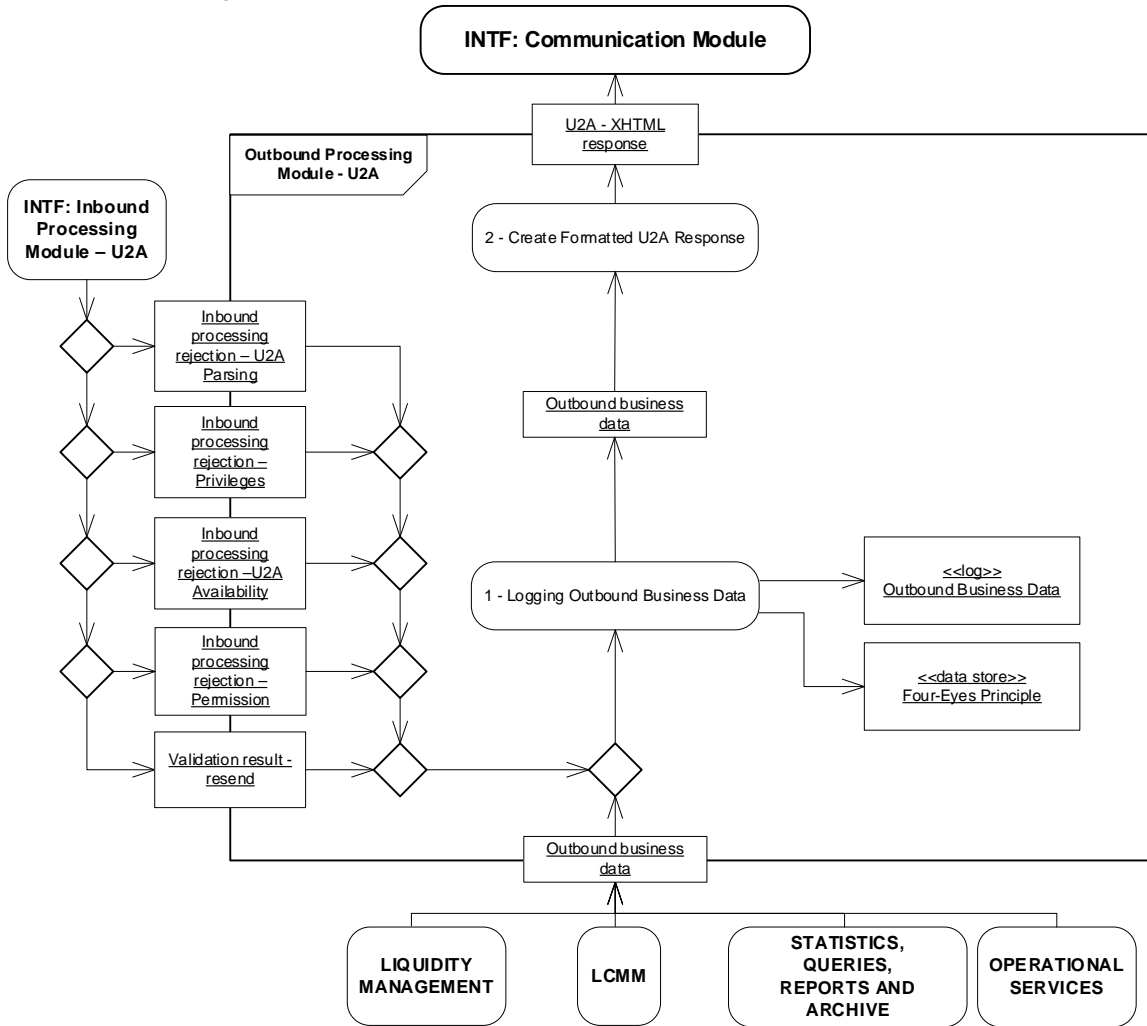
FLOW	IN/OUT	DESCRIPTION	FROM	TO
....				
Static Data Maintenance approval request	OUT			SDMG: Static Data Modules
Static Data Maintenance request	OUT			SDMG: Static Data Modules
...				

3.2.5.2 Diagram of the module

Outbound Processing Module for Application-to-Application mode (A2A)



Outbound Processing Module for User-to-Application mode (U2A)



3.2.5.3 Description of the functions of the module

3 – Check A2A Message Subscription

All messages, which are used by T2S, are available for message subscription **{T2S.13.020}** (except the above mentioned, which are always delivered. The message subscription definition is stored and maintained by T2S System Users in CRDM ~~the Static Data Management~~ **{T2S.13.030}**. The respective Message Subscription definitions for the message subscription services are based on the following parameters:

- I Message type;
- I Instruction type;
- I Message status;
- I Instruction status;
- I **Party**;
- ...

4 – Create Business Payload A2A

MODULE	MESSAGE	FLOW (INTERNAL FORMAT)	REMARKS	URD REFERENCES
...				
SDMG: Static Data Modules	Static Data Maintenance Response	Static Data Maintenance response	incl. Standing/Predefined liquidity transfer order, Security CSD links same day creation / maintenance and including Link securities account to DCA	{T2S.12.190} {T2S.13.140}
...				

5 – Prepare Routing A2A

When defining a routing configuration, a T2S actor can specify through the compression setting whether T2S must compress the relevant data before sending them to the recipient. This function forwards the respective compression information for respective handling in Communication Module.

The definition of the conditional routing by the Rule Sequence number is stored in CRDM ~~the Static Data domain~~.

3.2.5.4 Description of the Input/Output of the module

The Outbound Business Data flow described before is used as place holder for the various different business flows, which have to be received from the back end modules (special case is the Resend Communication flow, which is received from the Inbound Processing Module.

FLOW	IN/OUT	DESCRIPTION	FROM	TO
....				
Static Data Maintenance response	IN		SDMG: Static Data Modules	
Static Data Maintenance approval response	IN		SDMG: Static Data Modules	
...				

3.2.6.1 General aspects

The T2S GUI supports the following non-exhaustive list of maintenance and querying functions

{T2S.12.250}. It enables users to:

- I Issue online query requests to T2S (e.g. such as balance requests, status requests, ~~valid list of codes for an attribute of a static data entity (T2S.11.330)~~);
- I Display results in a readable and standardised way;
- I Export a query result by using common industry-wide standard formats (The extract includes exactly the same information, which is provided by the query without update, including the query parameters and the query timestamp.);
- I Input and maintain settlement instructions and liquidity transfer orders;
- I ~~Maintain static data for parties, securities, securities and cash accounts, users, roles, privileges, system configuration rules and parameters;~~
- I Maintain calendar and diary;
- I ~~Maintain eligible assets, collateral value of securities and close links.~~

3.2.6.3 Four-Eyes Principle

ACTION	PRINCIPLE	RESULT
...		
Update	Two-Eyes	Requested changes are applied by creating a new revision 13 of the relevant object on the back end module side and that new revision becomes immediately available for processing.
	Four-Eyes	Requested changes are applied by creating a new revision 14 of the relevant object on the back end module side, but this new revision is not yet available because an action from a second user is required (status "Awaiting Approval"). This can be twofold: I In case the update is confirmed the new revision becomes available for processing, I In case the update is not confirmed the new revision is "Revoked".
...		

~~13 or history record in case of Static Data updates that are valid as of a certain date.~~

~~14 see above~~

The following attribute is considered by the entities of the respective back end modules

ATTRIBUTE	DESCRIPTION

ATTRIBUTE	DESCRIPTION
Approval Status	It defines whether a request has been approved or revoked by an authorised T2S System User or if it is in the middle of an approval process or rejected by T2S. The exhaustive list of possible values is as follows: Approved Awaiting Approval Rejected Revoked Queued 15

The next diagram depicts the interaction between different types of users with T2S:

When updating data in T2S that is subject to an independent user verification (Four-Eyes principle), the initial request is sent by a user with a Four-Eyes privilege. As a result, the back end module creates a new revision 16 with a status "Awaiting Approval" in the Approval Status attribute of the applicable static data class.

~~15 only relevant for Static Data~~

~~16 or history record in case of Static Data updates that are valid as of a certain date~~

...

The Interface domain receives an incoming initial request in the U2A mode from a T2S System User, ~~such as a Static Data Maintenance Request~~. In case this request fails the technical validation (see UC-INTF-4: Interface via U2A for details), the Interface domain rejects the request. After a successful technical validation, the Interface domain forwards the request to the relevant back end module. The forwarded request contains both the relevant business data and the information that the request requires a second user action. The relevant back end module performs the business validation.

3.4 Lifecycle Management and Matching

3.4.1 General Introduction

The Lifecycle Management and Matching (LCMM) domain is responsible for:

- | The business validation of Settlement Instructions, maintenance instructions (Cancellation Instruction, Amendment Instruction, Hold/Release Instruction) and Settlement Restrictions (for reservation, blocking and earmarking);
- | The matching of the Settlement Instructions (those that need to be matched in T2S), before they can be submitted to the Settlement domain;
- | The management and execution of maintenance instructions;
- | The checking of the possible impact of reference data ~~static data~~ changes on pending instructions, the revalidation and management of the consequences of such impact when relevant, while keeping tracks of the changes in the lifecycle of instructions;
- | The communication of the status updates and the allegements to the relevant T2S Actors in a consistent way via the Interface domain, according to the message subscription service.

[...]

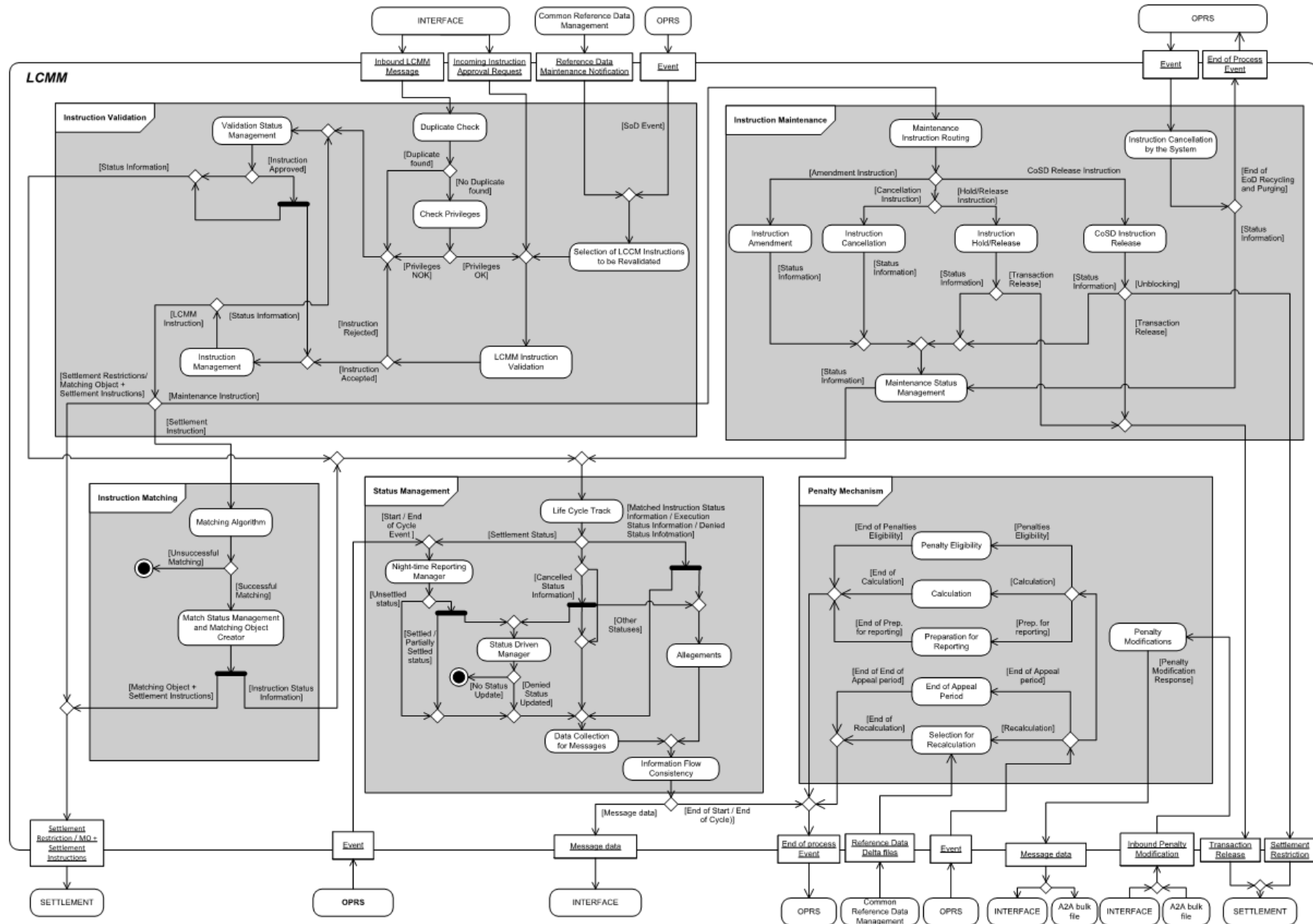
The Instruction Validation module checks the consistency of incoming Inbound LCMM Messages (Incoming Settlement Instructions; Settlement Restrictions and maintenance instructions) sent by a CSD or directly connected T2S Party and LCMM Instructions with T2S Reference Data ~~Static Data~~ and Dynamic Data. If an Inbound LCMM Message, a Settlement Instruction or a Settlement Restriction fulfils a Restriction Processing Type, this module is in charge of rejecting the Inbound LCMM Message or putting the LCMM Instruction On Hold. Once the instructions are validated, this module stores the outcome of the different validations and reports all errors to the Instructing Parties, if any.

[...]

This module is also in charge of revalidating all the instructions at the SOD (Start of Day) of every business day or those instructions that could have been impacted due to a reference data ~~static data~~ change except those awaiting for approval (Four-Eyes principle). Then, the validated instructions are forwarded to the appropriate subsequent module: Instruction Matching module in case the instructions need to be matched in T2S, Instruction Maintenance module, or Settlement domain, for their further processing.

[...]

The Penalty Mechanism module is responsible for the daily calculation and preparation for reporting of Penalties for failed settlement instructions as well as the complementary features, which are necessary for T2S Actors in this context. Every business day, the Penalty Mechanism module analyses all the failed Settlement Instructions from previous business day in order to compute the necessary Penalties. This module also handles requests from CSDs to modify an existing Penalty, as well as the recalculation of Penalties that have been modified or impacted by a reference data ~~static data~~ change. This module prepares the information, including the aggregation of amounts (daily or monthly), for the ad-hoc reports for Penalties



3.4.2 Dynamic data managed by the domain

3.4.2.7 Description of the data related to Penalties

[...]

Penalty Reference Data for Securities

This entity stores specific information of the Sub-amount, i.e. the information from ~~Static Data~~ CRDM related to the Security of the underlying instruction (Security Subject to penalties and related Security penalty data) and for the corresponding business day.

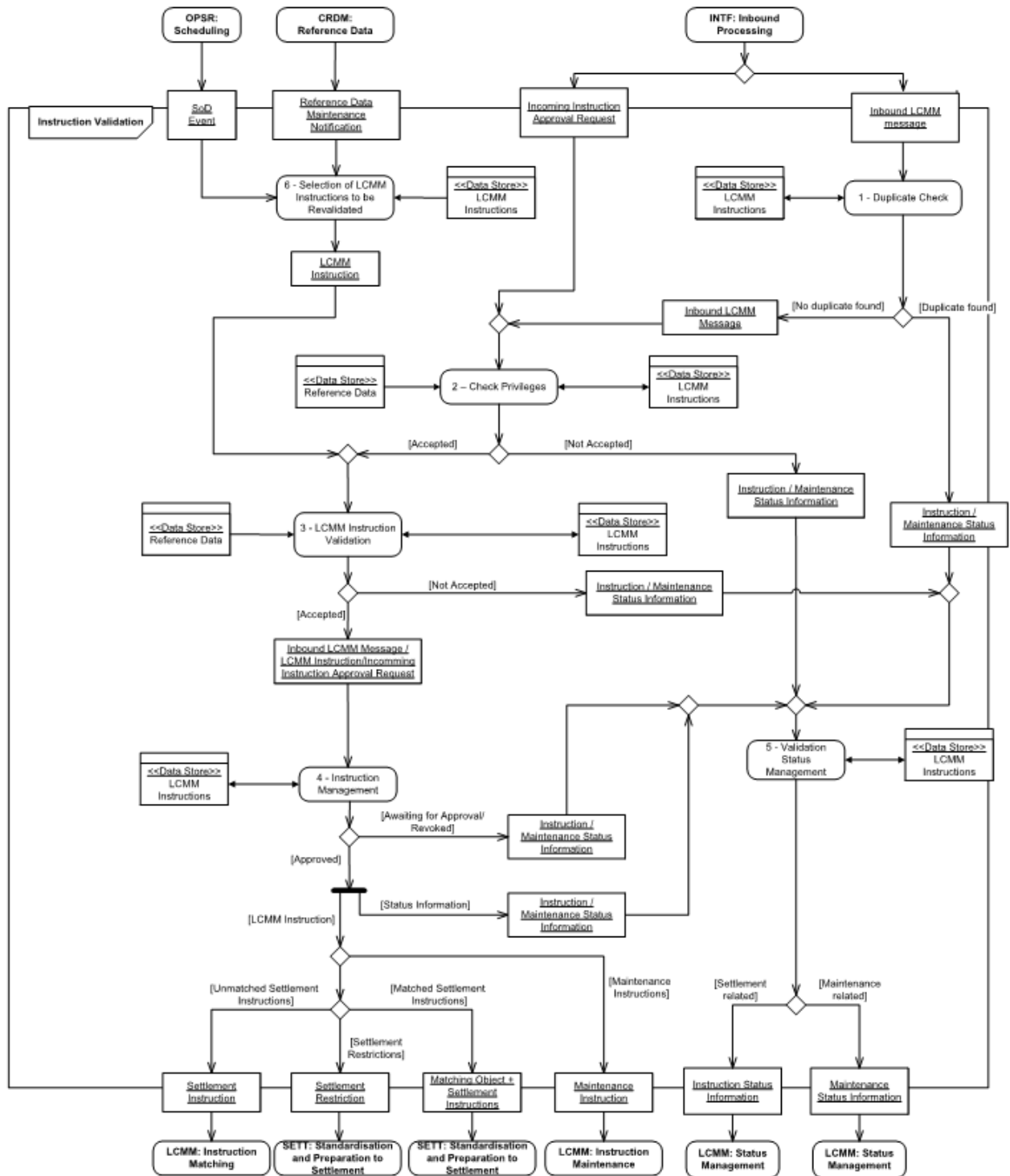
It is linked to the following entities:

- | The Sub-amount it applies to;
- | The Securities subject to Penalties it refers to;
- | The Security Penalty Rate used;
- | The Daily Price used.

[...]

3.4.3 Instruction Validation

3.4.3.1 Diagram of the module



3.4.3.2 Description of the module

LCMM Validation is the process of checking the consistency of Inbound LCMM Messages containing information to create Settlement Instructions, Settlement Restrictions and maintenance instructions (Hold/Release, Amendment and Cancellation Instructions) sent to T2S by a CSD or directly connected T2S Party, with the information stored in the T2S Reference Data Static Data and Dynamic Data. It also checks the consistency of already existing LCMM Instructions that need to be revalidated. This service is available continuously during the settlement day, except during the maintenance window **{T2S.03.210}**.

[...]

After an unsuccessful validation, the Instruction Validation module either rejects the Inbound LCMM Message, or cancels the LCMM Instruction when it already exists in T2S (i.e. revalidation is triggered by a Reference Data Static Data update or at the Start of Day).

The Instruction Validation module sends information on the validation process outcome to the Status Management module.

3.4.3.3 Description of the functions of the module

3 – LCMM Instruction Validation

[...]

In case of Inbound LCMM Messages or LCMM Instructions with an Intended Settlement Date in the past, the function performs the corresponding validation checks with the Reference Data Static Data valid for the day of the Intended Settlement Date in the past and for the current day 61. In case of future-dated Inbound LCMM Messages or LCMM Instructions, the function performs the validation checks with the Reference Data Static Data valid for that future date available at the current day.

[...]

ISIN Code Validation

Reference Id	LCMM.IVA.SMIV.3.2
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The sub-function does the following checks related to the ISIN of the instruction processed:

| Eligible ISIN Check

- The ISIN 67 code exists in T2S Reference Data Static Data {T2S.05.080};
- The ISIN code is eligible for settlement in the corresponding

[...]

Intended Settlement Date Validation

Reference Id	LCMM.IVA.SMIV.3.3
--------------	-------------------

This validation verifies that:

- | The Intended Settlement Date is a T2S settlement day for the Settlement currency as defined in T2S Reference Data Static Data 68 {T2S.05.120};

[...]

Settlement Quantity Validation

Reference Id	LCMM.IVA.SMIV.3.4
--------------	-------------------

The following checks are performed on the Original Settlement Quantity:

- | The Original Settlement Quantity is equal or greater than zero;

| In case the Original Settlement Quantity is greater than zero, the following checks are applied:

- The Original Settlement Quantity is greater than or equal to the Settlement Unit Minimum (in units or nominal) for the ISIN code, as it is defined in T2S Reference Data Static Data, unless the instruction is related to corporate actions {T2S.05.090},

[...]

T2S Dedicated Cash Account Validation

Reference Id	LCMM.IVA.SMIV.3.5
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The following checks are performed concerning the T2S dedicated cash account for Settlement Instructions which Payment Type Code is against payment ("APMT"):

| If the T2S Dedicated Cash Account is included:

- it exists in T2S Reference Data Static Data and the Intended Settlement Date 70 is between its Opening Date and Closing Date,

- an active link exists to the Securities Account in T2S Reference Data ~~Static Data~~ **{T2S.05.040}** **{T2S.05.060}**;
 - it's associated Currency must be consistent with the Currency of the Settlement Instruction **{T2S.05.070}**.
 - the relevant party must be authorized to operate the Cash Account on the Intended Settlement Date;
- ! If the T2S Dedicated Cash Account is not included, a default T2S Dedicated Cash Account for the currency of the cash leg of the Settlement Instruction is defined for the Securities Account in T2S Reference Data ~~Static Data~~ **{T2S.05.060}**.
- [...]

Restriction Type Validation

Reference Id	LCMM.IVA.SMIV.3.9
--------------	-------------------

The validation checks that the Restriction Type included in the Inbound LCMM Message or in the LCMM Instruction is valid for the Intended Settlement Date according to Reference Data ~~Static Data~~.

Instructing Party Validation

Reference Id	LCMM.IVA.SMIV.3.10
--------------	--------------------

T2S considers as Instructing Party the party specified in the Originator of the message field of the Inbound LCMM Message. If the originator of the message is not specified, T2S considers as Instructing Party the sender of the message.

The Instructing Party of the Inbound LCMM Message or of the LCMM Instruction is checked as follows:

- ! The Instructing Party exists in T2S Reference Data ~~Static Data~~ and the Intended Settlement Date is between its Opening Date and Closing Date;
 - ! The Instructing Party is authorised to use the Securities Account according to the privileges defined in T2S Reference Data ~~Static Data~~ **{T2S.05.040}** **{T2S.05.050}**;
 - ! The Instructing Party is authorised to use the counterparty's Securities Account in case of "Already Matched" instruction according to the privileges defined in T2S Reference Data ~~Static Data~~ **{T2S.05.040}**.
- [...]

Settlement Process Indicator Validation

Reference Id	LCMM.IVA.SMIV.3.11
--------------	--------------------

The check ensures that the settlement process indicators are valid considering the Instructing Party and the instruction type, as defined in T2S Reference Data ~~Static Data~~ **{T2S.05.140}**:

[...]

Currency Validation

Reference Id	LCMM.IVA.SMIV.3.12
--------------	--------------------

The checks ensures for all Inbound LCMM Message or LCMM Instruction, except FOP instructions even if the Original Settlement Amount contains a value **{T2S.05.070}**, that:

- ! The Settlement currency is a valid Currency in accordance with the list of currencies defined by the standard ISO 4217 (codes for the representation of currencies and funds) **{T2S.05.070}**;
 - ! The number of decimals of the Original Settlement Amount does not exceed the number of decimals specified for the given Settlement currency in Reference Data ~~Static Data~~ **{T2S.16.320}**;
 - ! The Currency
- [...]

Specific Restriction Validation

Reference Id	LCMM.IVA.SMIV.3.16
--------------	--------------------

The check verifies whether the combination of parameters contained in the Inbound LCMM Message, the Settlement Instruction or the Settlement Restriction, fulfils any rule of the different Restriction Processing Types. Restriction Processing Types. In case one Restriction Processing Type is found, no subsequent checking of any rules for that Restriction Type is performed **{T2S.05.125}**.

Each Restriction Processing Type defined in Reference Data Static Data specifies the set of rules (i.e. restriction rules) including all the criteria or combinations of attributes for the triggering of the Restriction Processing Type.

[...]

5– Validation Status Management

Introduction

[...]

Updates the status and reason code of the LCMM Instructions after an unsuccessful revalidation. These instructions get the Cancellation Status “Cancelled” and the reason code “Cancelled due to Reference Data Static Data Change” **{T2S.05.280}**,

Update the status and reason code of any linked T2S generated Settlement Instructions that have been created for realignment purpose by setting their Cancellation Status to “Cancelled” and the reason code “Cancelled due to Reference Data Static Data change”,

[...]

Updates the status and reason code of the LCMM Instruction, i.e. Cancellation Status “Cancelled” and reason code “Cancelled due to Reference Data Static Data Change” **{T2S.05.280}**,

[...]

6 – Selection of LCMM Instruction to be Revalidated

Introduction

Reference Id	LCMM.IVA.SIR.1.1
--------------	------------------

The function is responsible for selecting validated LCMM Instructions that have to be revalidated due to a Reference Data Static Data change and because of the Start of Day procedures, including LCMM Instructions affected by a night-time Reference Data Static Data update during the night-time settlement cycles and at the beginning of daytime. The Instruction Validation module receives Reference Data Static Data Maintenance Notifications that are relevant for LCMM.

Selection of LCMM Instructions to be revalidated that are affected by Reference Data Static Data update notifications

Reference Id	LCMM.IVA.SIR.2.1
--------------	------------------

The sub-function identifies the LCMM Instructions that have to be revalidated due to a Reference Data Static Data Maintenance Notification from the Static Data CRDM domain **{T2S.05.280}**. These maintenance notifications include information about the Reference Data Static Data modified to allow the identification of LCMM Instructions that need revalidation.

There are two types of Reference Data Static Data Updates that LCMM could receive from Reference Data Static Data domain:

- | Reference Data Static Data Updates that imply the revalidation of the approved pending Settlement Instructions and Settlement Restrictions regardless their intended settlement date.

- | Reference Data Static Data Updates that imply the revalidation of the approved pending Settlement Instructions and Settlement Restrictions which have an intended settlement date later than the current business date.

The process only considers the Settlement Instructions and Settlement Restrictions (excluding those with Approval Status value “Awaiting Approval”) affected by the Reference Data Static Data update that:

- | do not have the Settlement Status “Settled”;

- | do not have the Cancellation Status “Cancelled”.

The process then forwards the selected LCMM Instructions to the LCMM Instruction Validation function for their revalidation.

[...]

3.4.3.4 Description of the Input/Output of the module

FLOW	IN/OUT	DESCRIPTION	FROM	TO
[...]				
Reference Data Static Data Maintenance Notification	IN		SDMG: Static Data CRDM: Reference Data	
[...]				

3.4.3.5 Data accessed by the module

DATA	DATA ENTITY	ACCESS MODE	COMMENTS
<u>STATIC DATA CRDM</u>			
<u>Reference Data Static Data</u>	Restriction Type	Read	Accessed for checking purposes
	[...]		

3.4.4 Instruction Maintenance

3.4.4.3 Description of the functions of the module

[...]

1 – Instruction Cancellation by the System

Reference Id	LCMM.IMA.ICS.1.1
--------------	------------------

This function cancels Settlement Instructions, Settlement Restrictions and Cancellation Instructions after a standard period of time as defined in Reference Data ~~Static Data~~ {T2S.11.910}.

6 – Conditional Securities Delivery (CoSD) Instruction Release

Introduction

Reference Id	LCMM.IMA.CRC.1.1
--------------	------------------

This function processes the Administering Parties' maintenance instructions intended to release or cancel a Settlement Instruction identified as a CoSD. A CoSD Settlement Instruction is a Settlement Instruction that has been identified by T2S as a CoSD on its Intended Settlement Date based on criteria rules defined in T2S Reference Data ~~Static Data~~.

3.4.4.5 Data accessed by the module

DATA	DATA ENTITY	ACCESS MODE	COMMENTS
STATIC DATA CRDM			
<u>Reference Data</u> Static Data	CoSD Rule	Read	
[...]			

3.4.5 Instruction Matching

3.4.5.3 Description of the functions of the module

1 – Matching Algorithm

[...]

Among the identified Unmatched Settlement Instructions, the function selects the one having the smallest Original Settlement Amount difference with the processed Settlement Instruction, provided that the difference is within the band of the tolerance amount established for the specific currency in Reference Data ~~Static Data~~

[...]

3.4.5.5 Data accessed by the module

DATA	DATA ENTITY	ACCESS MODE	COMMENTS
STATIC DATA CRDM			
Tolerance Amount	Tolerance Amount	Read	For each currency there are two different bands
[...]			

3.4.6 Status Management

3.4.6.2 Description of the module

[...]

Settlement Instruction reason codes:

[...]

Cancelled Status reason codes:

- Recycling period reached
- CoSD Cancellation
- Cancelled due to Reference Data ~~Static Data~~ change
- Instruction under Four-Eyes principle cancelled due to revocation
- Standard period for unmatched

[...]

Settlement Restriction reason codes:

[...]

Cancelled Status reason codes:

- Recycling period reached
- Cancelled by the T2S Actor
- Cancelled due to Reference Data ~~Static Data~~ change
- Instruction under Four-Eyes principle cancelled due to revocation

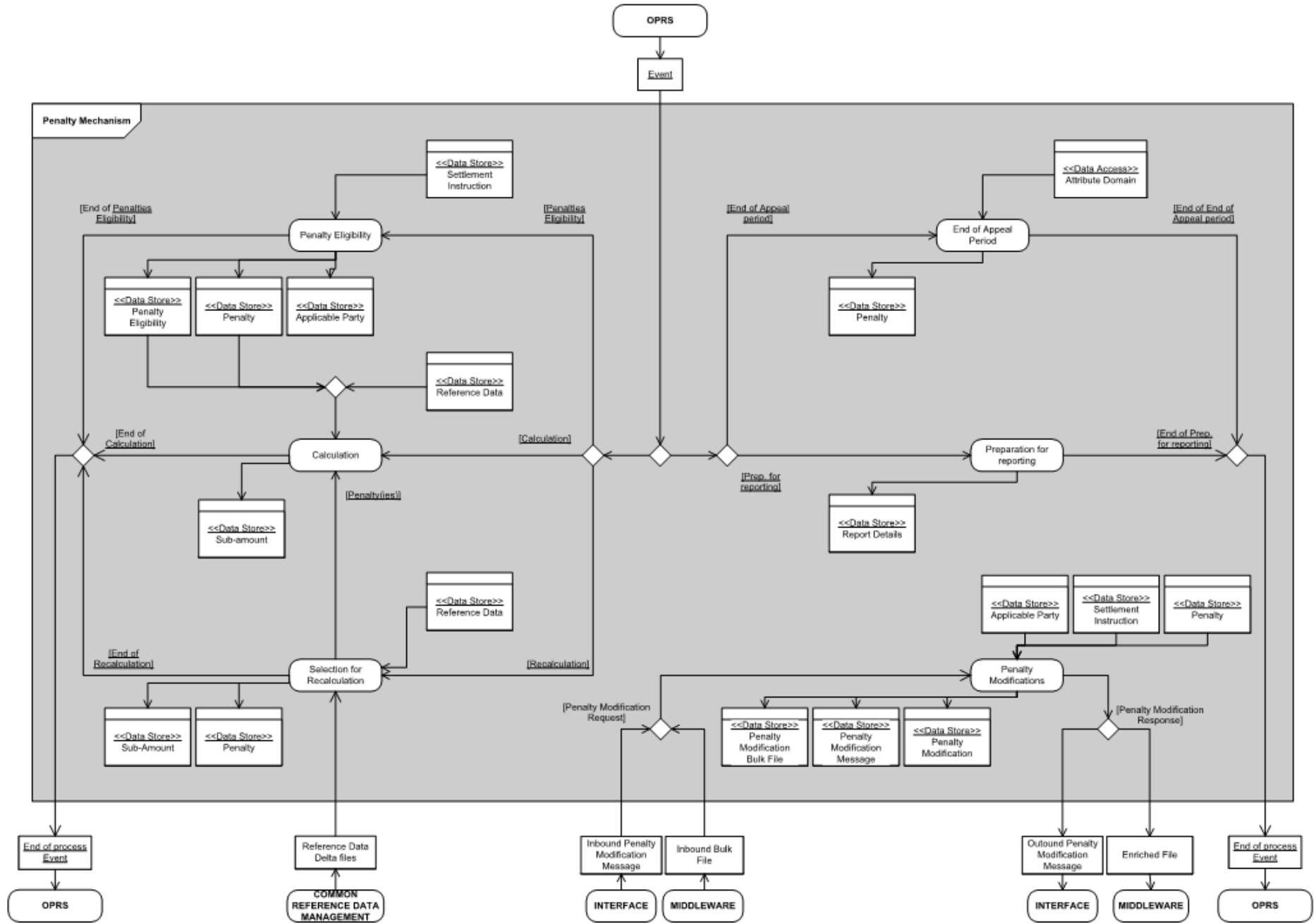
[...]

3.4.6.5 Data accessed by the module

DATA	DATA ENTITY	ACCESS MODE	COMMENTS
STATIC DATA CRDM			
Allegement Delay Period	Attribute Domain	Read	In order to identify which Allegement Delay Period should apply.
<u>Message Reference Data</u> Message Static Data	Auto-collateralisation Rule	Read	To collect the necessary information for the sending of Message Data to the Interface
	[...]		

3.4.7 Penalty Mechanism

3.4.7.1 Diagram of the module



3.4.7.2 Description of the module

[...]

The recalculation of Penalties is the process consisting on calculating again and updating existing Penalties (i.e. that have already been calculated on previous business days) after changes of values of the related T2S Reference Data ~~Static Data~~ or after the execution of a modification requested by a T2S Actor.

[...]

3.4.7.3 Description of the functions of the module

1 – Penalty Eligibility

[...]

Then, the sub-function determines the attributes Payment Type of the SI and, when possible, the Currency of the Penalty as follows **{T2S.22.060}**:

I In case the underlying Settlement Instruction Payment Type Code is "APMT" (i.e. against payment), then the Payment Type of the SI is recorded as "APMT" and the Currency is set with the same value as the Currency of the Amount of the Settlement Instruction;

I In case the underlying Settlement Instruction Payment Type Code is "FREE" (i.e. free of payment), then the Payment Type of the SI is recorded as "FREE" and the Settlement Type of the Security is checked to determine the Currency:

- If the Settlement Type is "FAMT" (i.e. Face amount), the Currency of the Security is retrieved from Reference Data ~~Static Data~~ and: if it is a T2S Settlement Currency (i.e. "EUR" or "DKK"), the Currency of the Penalty is set with the same value as the Currency of the Security; otherwise, the Currency of the Penalty is set to "EUR";
- If the Quantity Settlement Type is "UNIT" (i.e. Units), the Currency of the Penalty is not determined and left empty until it is determined by the Calculation function.

Once all activities of this sub-function are finished, the Get and Store Applicable Party Data sub-function is triggered.

[...]

2 – Penalty Calculation

[...]

First, the sub-function checks if the Security is Subject to Penalties for each Sub-amount (i.e. for the Date of each Sub-amount) and stores the result in the Security subject to penalties flag of the relevant Sub-amount.

I For Sub-amounts with Security subject to penalties flag is "False" the processing ends.

I For each Sub-amount with Security subject to penalties flag "True", the sub-function retrieves and stores the necessary Penalty Reference Data for Securities attributes and Reference Data ~~Static Data~~ information to calculate the Penalty. Note that in case of LMFPs, if any of the Sub-amounts has a Date before the Date used to cope with Reference Data ~~Static Data~~ purged or Retention Date (e.g.: Sub-amount Date is "d-98", being "d" the current business day), the Penalty Reference Data retrieved and stored for calculation is the first available one **{T2S.22.240}** i.e.: data from "d-90".

[...]

[...]

In case the Daily Price is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True".

[...]

[...]

In case it is "UNIT":

[...]

Finally, in case the Sub-amount can be calculated, the step checks if an FX conversion is needed. For this purpose, the process verifies whether the Currency of the Penalty is different from the Currency of the Daily Price. If they are equal, the Conversion flag of the Sub-amount (securities) is set to "False" and the step Determine rate is triggered; if they are different, the Conversion flag of the Sub-amount (securities) is set to "True" and:

- If the Currency of the Penalty is "EUR", only one Euro Foreign Exchange Rate is retrieved and stored for the relevant Currency of the Daily Price and Date.

- (i) In case the Euro Foreign Exchange Rate is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and the processing ends.

- (ii) Otherwise, the step Determine rate is triggered.

- If the Currency of the Penalty is not "EUR" (i.e. it is "DKK"), an additional Euro Foreign Exchange Rate is necessary to pivot from "EUR" to "DKK", thus retrieved and stored.

- (i) In case any of the two Euro Foreign Exchange Rates is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and the processing ends.

- (ii) Otherwise, the step Determine rate is triggered.

In case it is "FAMT":

[...]

Finally, in case the Sub-amount can be calculated, the step checks if a FX conversion is needed. For this purpose, the process verifies whether the Currency of the Penalty is different from the Currency of the Security. If they are equal, the Conversion flag of the Sub-amount (securities) is set to "False" and the step Determine rate is triggered; if they are different, the Conversion flag of the Sub-amount (securities) is set to "True" and:

- If the Currency of the Penalty is "EUR", only one Euro Foreign Exchange Rate is retrieved and stored for the relevant Currency of the Security and Date.

- (i) In case the Euro Foreign Exchange Rate is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and the processing ends.

- (ii) Otherwise, the step Determine rate is triggered.

- If the Currency of the Penalty is not "EUR" (i.e. it is "DKK"), an additional Euro Foreign Exchange Rate is necessary to pivot from "EUR" to "DKK", thus retrieved and stored.

- (i) In case any of the Euro Foreign Exchange Rates is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and the processing ends.

- (ii) Otherwise, the step Determine rate is triggered.

[...]

Determine rate:

Reference Id	LCMM.PEM.CAL.4.3.
--------------	-------------------

Depending on the Calculation Method of the Penalty the step performs the following actions:

- For "CASH" and "MIXE" Calculation Methods, the step retrieves the Cash Discount Penalty Rate (expressed as a daily flat rate) of the corresponding Currency of the Penalty and Date of the Sub-amount.

Then:

- In case the Cash Discount Penalty Rate is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and processing ends.

- Otherwise, the Sub-amount is sent to the Calculate Sub-amount sub-function.

- For "SECU" Calculation Method, the step determines whether the Common MIC (Market Identifier Code) is an SME Growth Market or not. Then, for the relevant Date and Security the sub-function requests Reference Data ~~Static Data~~ the Financial Instrument Type, Liquidity (if the Financial Instrument Type is equal to "SHRS") and the Security Penalty Rate (for SME or for non-SME depending on the SME Growth Market flag) **{T2S.22.145}**:

- In case either the Financial Instrument Type, Liquidity or Security Penalty Rate is not available in Reference Data ~~Static Data~~, the Sub-amount is flagged as cannot be calculated "True" and the processing ends.

- Otherwise, the Sub-amount is sent to the Calculate Sub-amount sub-function.

I For "BOTH" Calculation Method, the above described actions for "CASH" and "SECU" are performed. Once the rate has been determined, the sub-function sends the Penalty and all Sub-amounts flagged as cannot be calculated "False" to the Calculate Sub-amount sub-function.

[...]

Validation of the Penalty Modifications sent via Bulk File

Reference Id	LCMM.PEM.MOD.2.1
--------------	------------------

Upon reception of the Inbound Bulk File, which may contain one or several Penalty Modifications, the sub-function checks if the sender is authorised to perform the action of sending the file on behalf of the instructing CSD. For this purpose the function checks:

I If the BIC and Parent BIC of the Instructing Party 113 of the Inbound Bulk File correspond to an existing Party defined as "CSD" in T2S Reference Data ~~Static Data~~, and if so

I If the Distinguished Name (DN) of the sender, the BIC and Parent BIC of the CSD are defined in the "white list" configuration table stored in the Attribute Domain in T2S Reference Data ~~Static Data~~.

[...]

4 - Selection for Recalculation

Introduction

Reference Id	LCMM.PEM.SFR.1.1
--------------	------------------

The Selection for Recalculation function is triggered every T2S settlement day by the Recalculation of Penalties (RECA) Event, received from the Scheduling Module {T2S.03.390} {T2S.03.400}.

Every business day the ~~Static Data~~CRDM Domain provides the Penalty Mechanism Module with the Flow containing the updates (i.e.: insertions, deletions and modifications) occurred since the previous business day deadline (i.e.: since the last file provided with data updates) on the Reference Data ~~Static Data~~ used to calculate Penalties. The Flow includes Security Penalty Data updates, Cash Discount Penalty Rate updates, Euro Foreign Exchange Rate updates and List of SME Growth Market updates.

[...]

Updates on Security Subject to Penalties and related data

Reference Id	LCMM.PEM.SFR.2.1
--------------	------------------

For each Security Subject to Penalties and related data update received in the Flow from ~~Static Data~~CRDM Domain, this sub-function processes it and searches for any affected Penalty.

[...]

Updates on Cash discount penalty rates

Reference Id	LCMM.PEM.SFR.3.1
--------------	------------------

For each Cash Discount Penalty Rate update received in the Flow from ~~Static Data~~CRDM Domain, this sub-function processes it and searches for any affected Penalty.

[...]

Updates on Euro Foreign Exchange Rates

Reference Id	LCMM.PEM.SFR.4.1
--------------	------------------

For each Euro Foreign Exchange Rate update received in the Flow from ~~Static Data~~CRDM Domain, this sub-function processes it and searches for any affected Penalty.

[...]

Updates on List of SME Growth Markets

Reference Id	LCMM.PEM.SFR.5.1
--------------	------------------

For each update in the List of SME Growth Markets received in the Flow from ~~Static Data~~CRDM Domain, this subfunction processes it and searches for any affected Penalty.

[...]

5 - Appeal Period End Process

[...]

Upon reception of the End of Appeal Period Process (EAPP) Event, this function compares the value of the Appeal Period End Day stored in Reference Data ~~Static Data~~ (13th business day of every month) with the value of the system parameter, Current Nth business day of the month, and if they are the same, the function selects all the Penalties whose Detection Date is in the previous calendar month and updates their Modifiable flag from "True" to "False".

[...]

6 - Preparation for Reporting

[...]

Once the Preparation for Reporting function has prepared the information, the relevant report can be generated upon reception of the corresponding Event. For the creation of these reports, T2S relies on ~~Static Data~~CRDM Domain. The information specifying which event triggers which report for the data of a party, is stored in the Report Configuration in Reference Data ~~Static Data~~. T2S will create only reports pre-defined in the Report Configuration.

[...]

Preparation for Monthly Aggregated Amounts of Penalties Report

Reference Id	LCMM.PEM.PPR.4.1.
--------------	-------------------

Upon reception of the Report Preparation of Monthly Aggregated Amounts (SRPM) Event, this function compares the value of the Appeal Period End Day stored in Reference Data ~~Static Data~~ (13th business day of every month) with the value of the system parameter, Current Nth business day of the month, and if they are the same, this sub-function retrieves and prepares the necessary data for the possible generation of any pre-defined Monthly Aggregated Amounts of Penalties on the relevant business day defined by the Monthly Reporting Day stored in Reference Data ~~Static Data~~ (14th business day of the month) **{T2S.13.460}** **{T2S.13.470}**, i.e.

[...]

3.4.7.4 Description of Penalties status transactions

[...]

The Selection for Recalculation function can update the Status of the Penalty depending on the type of the Reference Data ~~Static Data~~ update received:

- ! In case an insertion of Securities subject to penalties impacts a Penalty with Status Not Computed ("NCOM"), the Penalty Status is updated to Active ("ACTV") with Reason Updated ("UPDT"); and
- ! In any other case, the Penalty Status remains as Active ("ACTV") but the Reason is changed to Updated ("UPDT").

[...]

3.4.7.5 Description of the Input / Output of the module

FLOW	IN/OUT	DESCRIPTION	FROM	TO
[...]				
Reference Data Static Data Delta File	IN	Flow with the Static Data updates over Security Penalty Data, Cash Discount Penalty Rates, Euro Foreign Exchange Rates and in the List of SME Growth Markets	SDMG: Static Data CRDM: Reference Data	
[...]				

4.1.5 QU: Queries

ID	CRITERIA		
	COMMUNICA- TION MODE	QUERY CATEGORY	QUERY TYPE
159	U2A	Instructions	Settlement Instruction Query
160	U2A	Instructions	Settlement Instruction Current Status Query
161	U2A	Instructions	Settlement Instruction Status Audit Trail Query
162	U2A	Instructions	Settlement Instruction Audit Trail Query
163	U2A	Security Accounts	Securities Account Position Query
164	U2A	Security Accounts	Securities Account Position History Query
165	U2A	Cash Accounts	T2S Dedicated Cash Account Balance Query
166	U2A	Cash Accounts	T2S Dedicated Cash Account Posting Query
167	U2A	Cash Accounts	Outstanding Auto-Collateralisation Credit Query
168	U2A	Cash Accounts	T2S Overall Liquidity Query
169	U2A	Cash Accounts	Cash Forecast Query
170	U2A	Cash Accounts	Limit Query
171	U2A	Cash Accounts	Limit Utilisation Journal Query
172	U2A	Cash Accounts	Limit Utilisation Query
173	U2A	Cash Accounts	Total collateral value per T2S Dedicated Cash Account Query
174	U2A	Cash Accounts	Collateral Value per T2S Dedicated Cash Account Query
175	U2A	Cash Accounts	Collateral Value of a Security

ID	CRITERIA		
	COMMUNICA- TION MODE	QUERY CATEGORY	QUERY TYPE
			Query
176	U2A	Cash Accounts	Immediate Liquidity Transfer Order Detail Query
177	U2A	Cash Accounts	Immediate Liquidity Transfer Order List Query
178	U2A	Static Data	Securities Account List Query
179	U2A	Static Data	T2S Dedicated Cash Account List Query
180	U2A	Static Data	Data Changes Queries
181	U2A	Static Data	Static Data Audit Trail Query
182	U2A	Static Data	Securities Reference Data Query
183	U2A	Static Data	ISIN List Query
184	U2A	Static Data	Securities Deviating Nominal Query
185	U2A	Static Data	Securities CSD Link Query
186	U2A	Static Data	Party Reference Data Query
187	U2A	Static Data	Party List Query
188	U2A	Static Data	Restricted Party Query
189	U2A	Static Data	Securities Account Reference Data Query
190	U2A	Static Data	Cash Account Reference Data Query
193	U2A	Static Data	Total amount of standing and predefined orders Query
194	U2A	Static Data	Liquidity Transfer Order Detail Query
195	U2A	Static Data	Liquidity Transfer Order List

ID	CRITERIA		
	COMMUNICA- TION MODE	QUERY CATEGORY	QUERY TYPE
			Query
196	U2A	Static Data	Liquidity Transfer Order Lin Set Query
197	U2A	Static Data	Liquidity Transfer Order of Liquidity Transfer Order Lin Set Query
198	U2A	Static Data	System Entity Query
199	U2A	Static Data	Attribute Domain Query
200	U2A	Static Data	Attribute Value Query
201	U2A	Static Data	Privilege Query
202	U2A	Static Data	Role Query
203	U2A	Static Data	T2S System User Query (T2 Actor Query)
204	U2A	Static Data	Restriction Query
205	U2A	Static Data	SWIFT BIC Query
206	U2A	Static Data	Report Configuration List Query
207	U2A	Static Data	Report Configuration Detail Query
208	U2A	Dynamic Queries	Data Changes Queries
209	U2A	Dynamic Queries	Report Query
210	U2A	Dynamic Queries	Invoice Query
211a	U2A	Dynamic Queries	Cumulative Invoice Query
211b	U2A	Dynamic Queries	Itemised Billing Data Query
211c	U2A	Penalty	Cash Discount Penalty Rate Query
211d	U2A	Penalty	Daily Price Query
211e	U2A	Penalty	Euro Foreign Exchange Ref erence Rate Query
211f	U2A	Penalty	Monthly Net Penalty Amour

ID	CRITERIA		
	COMMUNICA- TION MODE	QUERY CATEGORY	QUERY TYPE
			Query
211g	U2A	Penalty	Penalty Details Query
211h	U2A	Penalty	Penalty List Query
211i	U2A	Penalty	Securities Penalty Rate Que
211j	U2A	Penalty	Securities Subject to Cash Penalties Query
211k	U2A	Penalty	SME Growth Market
212	A2A	Instructions	Settlement Instruction Quer
213	A2A	Instructions	Settlement Instruction Cur- rent Status Query
214	A2A	Instructions	Settlement Instruction Statu Audit Trail Query
215	A2A	Instructions	Settlement Instruction Audi Trail Query
216	A2A	Security Accounts	Securities Account Position Query
217	A2A	Security Accounts	Securities Account Position History Query
218	A2A	Cash Accounts	T2S Dedicated Cash Account Balance Query
219	A2A	Cash Accounts	T2S Dedicated Cash Account Posting Query
220	A2A	Cash Accounts	Outstanding Auto- Collateralisation Credit Quer
221	A2A	Cash Accounts	T2S Overall Liquidity Query
222	A2A	Cash Accounts	Cash Forecast Query
223	A2A	Cash Accounts	Limit Query
224	A2A	Cash Accounts	Limit Utilisation Journal Que ry
225	A2A	Cash Accounts	Limit Utilisation Query

ID	CRITERIA		
	COMMUNICA- TION MODE	QUERY CATEGORY	QUERY TYPE
226	A2A	Cash Accounts	Total collateral value per T2S Dedicated Cash Account Query
227	A2A	Cash Accounts	Collateral Value per T2S Dedicated Cash Account Query
228	A2A	Cash Accounts	Collateral Value of a Security Query
229	A2A	Cash Accounts	Immediate Liquidity Transfer Order Detail Query
230	A2A	Cash Accounts	Immediate Liquidity Transfer Order List Query
231	A2A	Static Data	Securities Account List Query
232	A2A	Static Data	T2S Dedicated Cash Account List Query
233	A2A	Static Data	Data Changes Queries
234	A2A	Static Data	Static Data Audit Trail Query
235	A2A	Static Data	Securities Reference Data Query
236	A2A	Static Data	ISIN List Query
237	A2A	Static Data	Securities Deviating Nominal Query
238	A2A	Static Data	Securities CSD Link Query
239	A2A	Static Data	Party Reference Data Query
240	A2A	Static Data	Party List Query
241	A2A	Static Data	Restricted Party Query
242	A2A	Static Data	Securities Account Reference Data Query
243	A2A	Static Data	Cash Account Reference Data Query
246	A2A	Static Data	Total amount of standing ar

ID	CRITERIA		
	COMMUNICA-TION MODE	QUERY CATEGORY	QUERY TYPE
			predefined orders Query
247	A2A	Static Data	Liquidity Transfer Order Detail Query
248	A2A	Static Data	Liquidity Transfer Order List Query
249	A2A	Static Data	Liquidity Transfer Order Line Set Query
250	A2A	Static Data	Liquidity Transfer Order of F Liquidity Transfer Order Line Set Query
251	A2A	Static Data	Attribute Domain Query
252	A2A	Static Data	Attribute Value Query
253	A2A	Static Data	T2S System User Query (T2 Actor Query)
254	A2A	Static Data	Report Configuration List Query
255	A2A	Static Data	Report Configuration Detail Query
256	A2A	Dynamic Queries	Data Changes Queries
257	A2A	Dynamic Queries	Report Query
258	A2A	Dynamic Queries	Invoice Query
259a	A2A	Dynamic Queries	Cumulative Invoice Query
259b	A2A	Dynamic Queries	Itemised Billing Data Query

4.1.6 RE: Reports

ID	CRITERIA				
	COMMUNICA-TION MODE	INFORMATION BASIS	TRIGGERING	CLASSIFICATION	CATEGORY
260	A2A	Party	Fixed time	Complete Report	Current Settlement Day Cash Information Report
261	A2A	Party	Fixed time	Complete Report	Following Settlement Day Cash Forecast Report
262	A2A	Party	Fixed time	Complete Report	Statement of allegements
263	A2A	Party	Fixed time	Complete Report	Statement of pending instructions
264	A2A	Party	Fixed time	Complete Report	Statement of holdings
265	A2A	Party	Fixed time	Complete Report	Statement of transactions
266	A2A	Party	Fixed time	Complete Report	Statement of static data
267	A2A	Party	Fixed time	Complete Report	Statement of accounts
268	A2A	Party	Fixed time	Delta Report	Statement of allegements
269	A2A	Party	Fixed time	Delta Report	Statement of pending instructions
270	A2A	Party	Fixed time	Delta Report	Statement of holdings
271	A2A	Party	Fixed time	Delta Report	Statement of transactions
272	A2A	Party	Business Event	Complete Report	Current Settlement Day Cash Information Report
273	A2A	Party	Business Event	Complete Report	Following Settlement Day Cash Forecast Report
274	A2A	Party	Business Event	Complete Report	Statement of allegements
275	A2A	Party	Business Event	Complete Report	Statement of pending instructions
276	A2A	Party	Business Event	Complete Report	Statement of holdings
277	A2A	Party	Business Event	Complete Report	Statement of transactions

ID	CRITERIA				
	COMMUNICA- TION MODE	INFORMATION BASIS	TRIGGERING	CLASSIFICATION	CATEGORY
278	A2A	Party	Business Event	Complete Report	Statement of static data
279	A2A	Party	Business Event	Complete Report	Statement of accounts
280	A2A	Party	Business Event	Delta Report	Statement of allegements
281	A2A	Party	Business Event	Delta Report	Statement of pending instructions
282	A2A	Party	Business Event	Delta Report	Statement of holdings
283	A2A	Party	Business Event	Delta Report	Statement of transactions
283a	A2A	Penalty	Business Event	Complete Report	Daily Penalty List
283b	A2A	Penalty	Business Event	Complete Report	List of Modified Penalties
283c	A2A	Penalty	Business Event	Complete Report	Monthly Aggregated Amounts