

2.3.2 ReferenceStatic Data Management

The Common Reference Data management component (CRDM)~~Static Data Management domain~~ provides T2S System Users with an integrated and consistent set of common information.

[...]

2.3.3 Lifecycle Management and Matching

[...]

The LCMM domain encompasses five modules:

[...]

2.4 Security Management

[...]

In the current functional design, the access control to T2S is performed by the Interface domain and by the Business Interface layers of the specific Common Components.

- I Should the function enforce any integrity requirement, i.e. safeguarding the accuracy and completeness of information through the various processing, transmitting and storage methods?
 - To what extent must the input to application be validated to ensure that this data is correct and appropriate?
 - To what extent must validation checks be incorporated into applications to detect any corruption of information through processing errors or deliberate acts?
 - To what extent must the output of an application be validated to ensure that the processing of stored information is correct and appropriate?

In the current functional design, the integrity and the segregation of information are ensured by the CRDM component~~Static Data Management domain~~.

- I Should the function enforce any authentication (origin and recipient sides) requirements, i.e. determining whether someone or something (function, component...) is, in fact, who or what it is declared to be?
 - What is the level of trust required in the identity of the counterparty before giving authorisation for accessing/transmitting the information?
 - What are the legal requirements enforcing the application to:
 - Ensure that a party cannot deny having received or sent a message (non repudiation requirement)?
 - Log the needed legal proofs for being able to establish this non repudiation in a long-term period?
 - Appeal to a notarisation service for trusted third party witnesses legally recognised in case of dispute?
 - Make use of timestamps proving the existence of a document at a given time?

In the current functional design, the authentication requirements are ensured by the Interface domain and by the Business Interface layers of the specific Common Components.

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- I Should the function enforce any monitoring requirements, i.e. detecting unauthorised information processing activities and recording appropriate information for future investigations?
 - What are the legal requirements in terms of monitoring and logging activities?
 - What event must be logged such as access, change of system configuration, use of privileges, and deactivation of protection systems, faults, system administrator and operator activities...?
 - What information details (user ids, date time...) must be logged and how long must the archived data be retrievable for future investigations?
 - How is the logged and archived information protected against tampering and unauthorised access?

[...]

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)

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.

3.2.4.3 Description of the functions of the module

[...]

2 – A2A Message Schema Validation

Reference Id **INTF.INP-A2A.MSV.1.1**

The function *A2A Message Schema Validation* receives the *Stored inbound communication – A2A individual message* flow and stores the *A2A Inbound Communication Mean – A2A Message* data store.

This function checks the type of the delivered message (nature of the communication, e.g. ~~static data maintenance request~~) **{T2S.12.130}**. Unless the message is supported by T2S, the communication is rejected.

[...]

4 – Check Privilege

Reference Id **INTF.INP.CHP.1.1**

The *Check Privilege* function receives the *Inbound business data* flow for the U2A and A2A access. It checks the privileges **{T2S.11.360}**, which are assigned to the T2S System User (Based on the System User Reference) **{T2S.12.250}** and validates if the sender of an incoming communication is authorised to execute the intended T2S function (administrative or business operation) **{T2S.12.060}**. There are two different types of privileges available:

- | System Privileges;
- | Object Privileges **{T2S.11.361}**.

Both are described in the ~~Static Data Management~~ CRDM domain.

[...]

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	{T2S.12.170} {T2S.13.140} {T2S.16.165}

MODULE	MESSAGE	FLOW (INTERNAL FORMAT)	REMARKS	URD REFERENCES
			and including Link securities account to DCA	
	Notification from Collateral System	Static Data Maintenance request	eligible securities for auto-collateralisation and close links	
...				

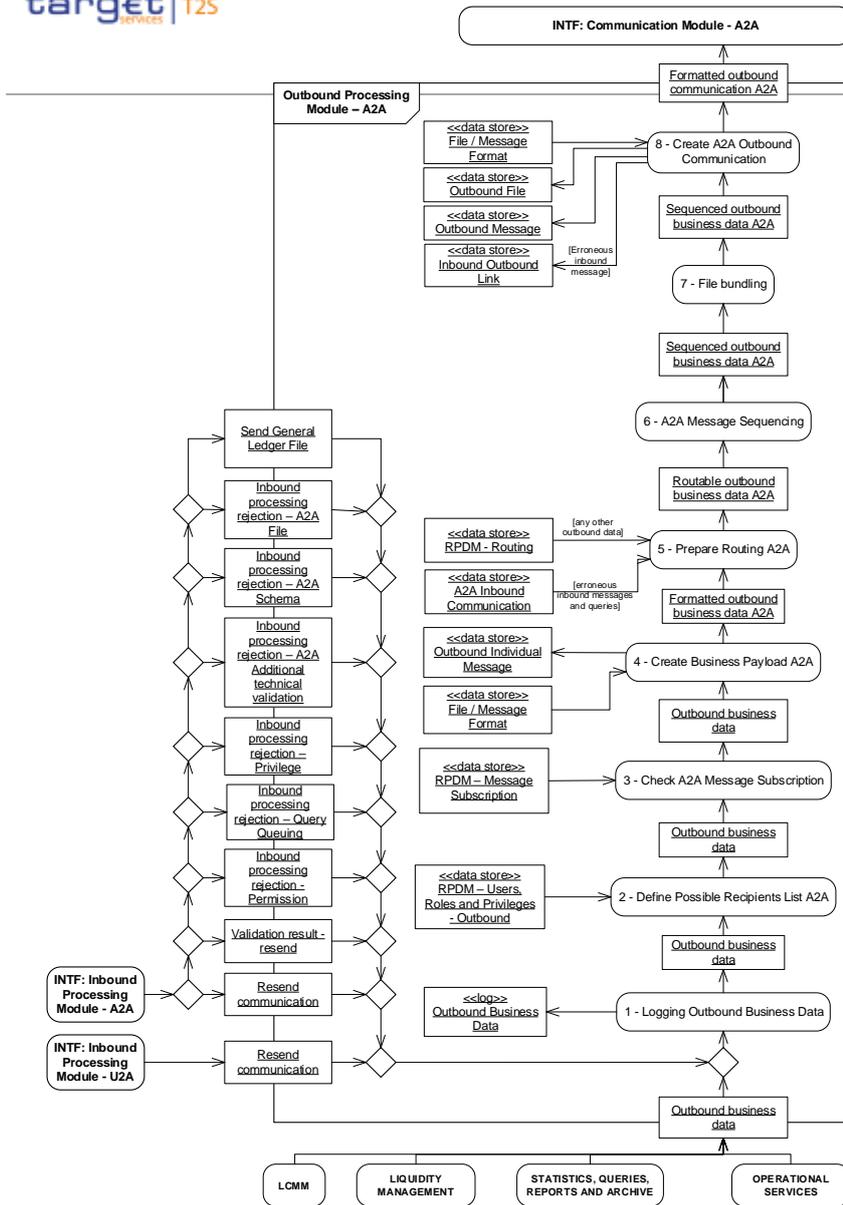
3.2.4.4 Description of the Input/Output of the module

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).

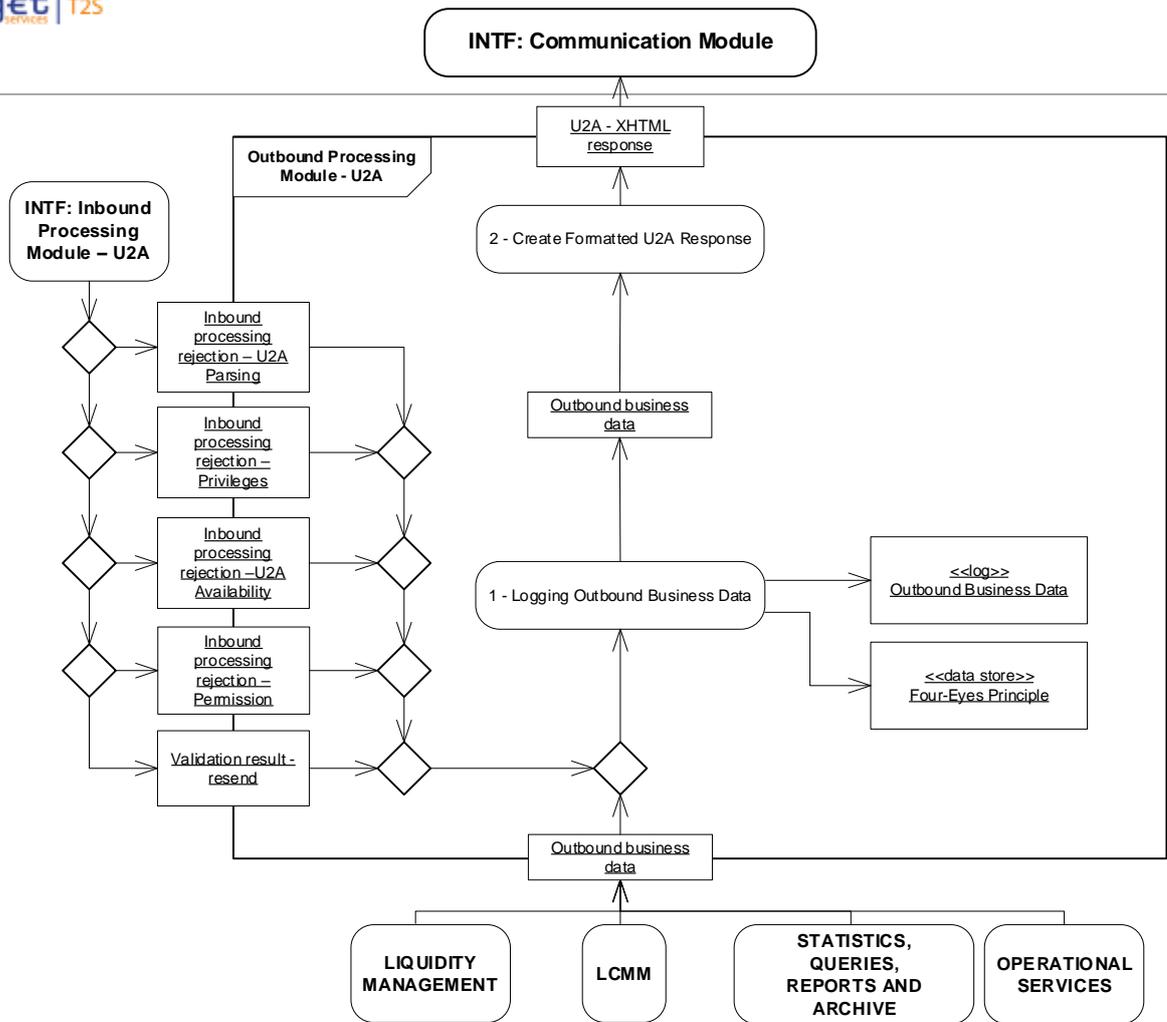
FLOW	IN/OUT	DESCRIPTION	FROM	TO
....				
Static Data Maintenance approval request	OUT			SDMG: Static Data Modules
Static Data Maintenance request	OUT			SDMG: Static Data Modules
...				

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

...

The business data include all necessary data (e.g. ~~from the Static Data Management modules~~ **{T2S.12.190}** or from the *Life Cycle Management and Matching* **{T2S.12.220}**) to generate the appropriate messages in correct structure, syntax and format **{T2S.12.030}**. For the T2S communication via XML messages the ISO 20022/UNIFI is the single standard **{T2S.12.040}** (including queries **{T2S.14.010}**).

MODULE	MESSAGE	FLOW (INTERNAL FORMAT)	REMARKS	URD REFERENCES
...				
SQRA: Query Management	Query Result	Queried data	Including Static Data information	{T2S.14.010} {T2S.14.020}
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

A detailed description of messages used for the A2A communication within T2S will be available in the User Detailed Functional Specifications (UDFS) whereas further details of T2S GUI (screens, buttons, system requirements, etc.) will be explained in the User Handbook (UHB). Some functionality (e.g. specific queries ~~{T2S.14.020}~~ or static data maintenance functionality ~~{T2S.16.163}~~) is only available via U2A. T2S GUI is based on English language only ~~{T2S.19.280}~~.

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 43 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 44 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: <ul style="list-style-type: none"> 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".
...		

~~43 or history record in case of Static Data updates that are valid as of a certain date.~~

~~44 see above~~

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

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 ⁺⁵

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⁺⁶ with a status "Awaiting Approval" in the Approval Status attribute of the applicable referenceStatic data class.

⁺⁵ only relevant for Static Data

⁺⁶ or history record in case of Static Data updates that are valid as of a certain date

...

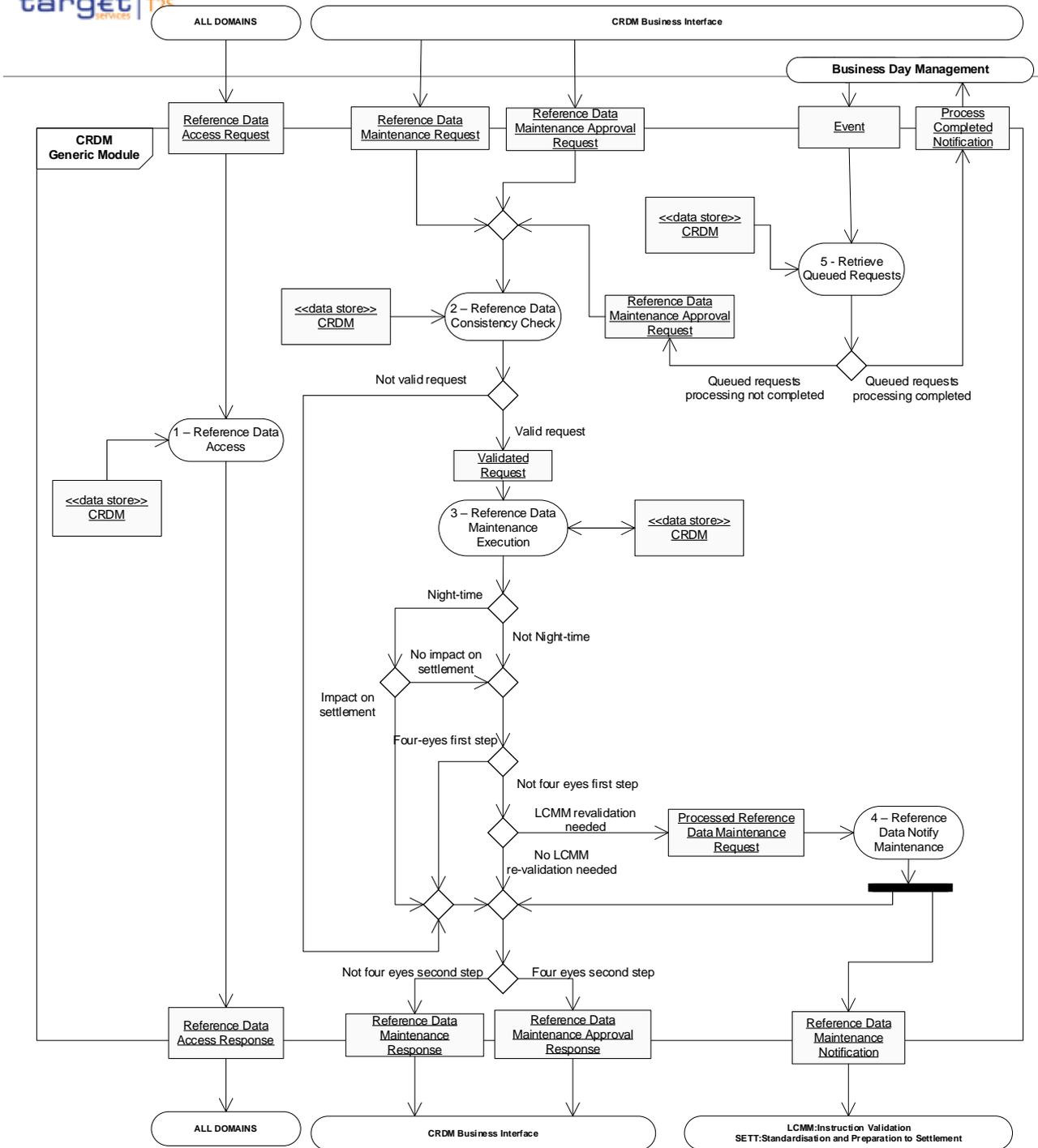
The Interface domain receives an incoming initial request in the U2A mode from a T2S System User, ~~such as a Static Data Maintenance Request~~. In case this request fails the technical validation (see UC-INTF-4: Interface via U2A for details), the Interface domain rejects the request. After a successful 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.

3.3.1 General Introduction

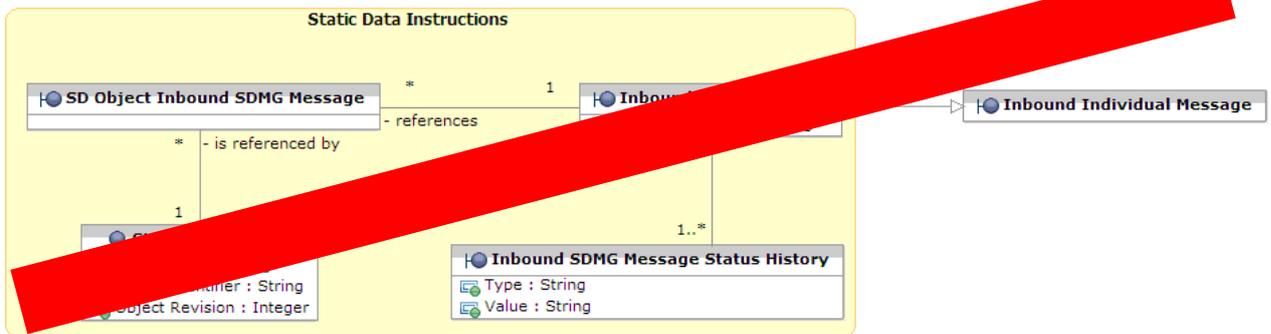
Reference Data Management for T2S is carried out through the Common Reference Data Management component (CRDM). CRDM ~~Static Data Management Domain~~ includes the entire set of functions that T2S provides for managing reference data for parties (e.g. CSDs, CBs, CSD participants, payment banks), securities, securities accounts, T2S dedicated cash accounts, configuration rules and system parameters. CRDM ~~Static Data Management~~ allows authorised T2S system users to maintain and access ReferenceStatic data objects.

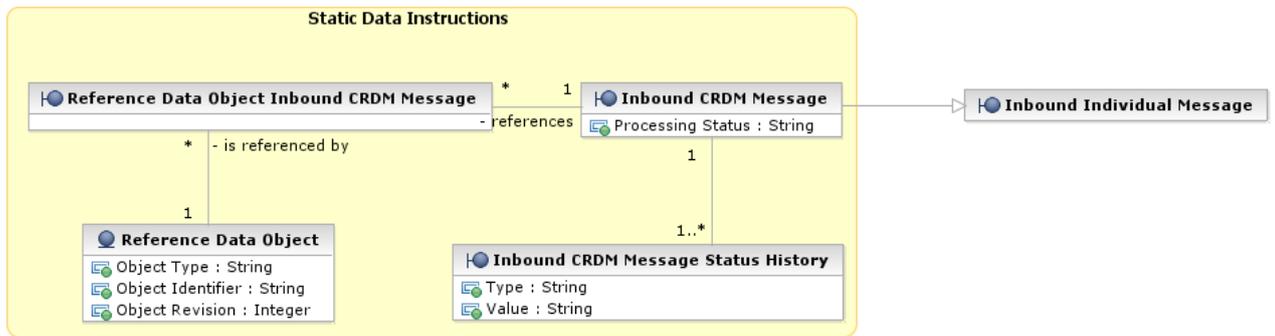
[...]

The following generic activity diagram describes at module level the common set of functions for the different types of ReferenceStatic data objects managed by CRDM, belonging to the ~~Static Data Management~~ domain.



3.3.2 Dynamic data managed by the domain





1 – Inbound CRDMSDMG Message

This entity stores information concerning all ReferenceStatic data maintenance instructions, i.e. ReferenceStatic data Maintenance Requests and ReferenceStatic data Maintenance Approval Requests, received by the Inbound-Processing module of the Interface domainbusiness interface of the CRDM component **{T2S.16.167}**. It is a specialisation of the Inbound Individual Message entity (refer to the dynamic data description of the Interface domain for more information), with an additional attribute for storing the current processing status of the request.

[...]

Each Inbound CRDMSDMG Message is linked to one or many occurrences of Inbound CRDMSDMG Message Status History, storing the full history of its status values. In addition, a one-to-zero-to-many association exists between the Inbound CRDMSDMG Message entity and the Static Reference Data Object entity, owing to the fact that:

[...]

The processing status transition diagram for Inbound CRDMSDMG Messages is provided below:

[...]

2 – Inbound CRDMSDMG Message Status History

This entity stores the full history of the status values of all Inbound CRDMSDMG Messages. Every time the ReferenceStatic data Management domain creates a new Inbound CRDMSDMG Message, it also creates a new occurrence of Inbound CRDMSDMG Message Status History and it stores the value assigned to the initial processing status in both entities. Every time the ReferenceStatic data Management domain updates the value assigned to the processing status of an Inbound CRDMSDMG Message, it creates a new revision of the relevant occurrence of Inbound CRDMSDMG Message Status History to store the new value of the processing status, propagating it also into the Processing Status attribute of the Inbound CRDMSDMG Message entity.

[...]

Each occurrence of Inbound CRDMSDMG Message Status History is linked to the relevant Inbound CRDMSDMG Message.

[...]

3 – ReferenceStatic data Object

[...]

A ReferenceStatic data object has a link to one or many *Inbound CRDMSDMG Messages*, i.e. to those messages, being either a *ReferenceStatic data Maintenance Request* or a *ReferenceStatic data Maintenance Approval Request* that updated the related ReferenceStatic data object.

[...]

3.3.3 Functions

[...]

CRDMStatic data supports the processing of ReferenceStatic data Maintenance Requests **{T2S.13.140}** using either the Two-Eyes principle or the Four-Eyes principle, whereas the latter is available in user-to-application mode only **{T2S.16.170}** **{T2S.16.310}**:

[...]

1 – ReferenceStatic data Access

[...]

In the case of queries coming from T2S users, this *ReferenceStatic data Access Request* is sent by the *Query Management* module, after it has been checked at syntax level by the CRDM Business InterfaceInterface domain.

[...]

In case the T2S system user is not allowed to access any of the referenced objects (i.e. though being authorised to use this function by the CRDM Business InterfaceInterface domain, the T2S system user has not been previously granted the object privilege to access the referenced objects), no data are retrieved and a negative access response, containing the applicable error code, is issued.

2 – ReferenceStatic data Consistency Check

[...]

Consequently, it can receive as input both *ReferenceStatic data Maintenance Requests* and *ReferenceStatic data Maintenance Approval Requests* that the CRDM Business InterfaceInterface domain has checked at syntax level.

[...]

If validation is not successful (i.e. the request violates at least one of the concerned business rules), the maintenance process stops, the function sets the status of the request to "Rejected" and the function forwards the relevant information (i.e. status and error codes) to the *Out-bound-Processing* module of the CRDM Business InterfaceInterface domain, in order to inform the requestor about the object maintenance rejection.

[...]

3 – ReferenceStatic data Maintenance Execution

[...]

As last step of the processing, in all cases, the function forwards the relevant information (i.e. a ReferenceStatie data maintenance response or a ReferenceStatie data maintenance approval response) to the CRDM Business Interface ~~*Outbound Processing*~~ module of the Interface domain, in order to inform the requestor about the result of the corresponding request.

[...]

5 – Retrieve Queued Requests

[...]

After having completed the processing of all the pending requests, the *Retrieve Queued Requests* function sends to the Business Day Management~~*Scheduling*~~ module a *Process Completed Notification*.

3.3.4 Input/Output

FLOW	IN/OUT	DESCRIPTION	FROM	TO
<u>ReferenceStatie</u> data Access Request	In	Request of access specific information of <u>ReferenceStatie</u> data	All domains	
<u>ReferenceStatie</u> data Access Response	Out	Information retrieved from <u>ReferenceStatie</u> data as specified with Access Request		All domains
<u>ReferenceStatie</u> data Maintenance Request	In	Request of insert/modify/delete information present in <u>ReferenceStatie</u> data	INTF: Inbound Processing Module <u>CRDM Business Interface</u>	
<u>ReferenceStatie</u> data Maintenance Approval Request	In	Request of confirmation/rejection of a pending <u>ReferenceStatie</u> data maintenance request	INTF: Inbound Processing Module <u>CRDM Business Interface</u>	
<u>ReferenceStatie</u> data Maintenance Response	Out	Response with result of <u>ReferenceStatie</u> data Maintenance Request		INTF: Outbound Processing Module <u>CRDM Business Interface</u>
<u>ReferenceStatie</u> data Maintenance Approval Response	Out	Response with result of <u>ReferenceStatie</u> data Maintenance Approval Request		INTF: Outbound Processing Module <u>CRDM Business Interface</u>

FLOW	IN/OUT	DESCRIPTION	FROM	TO
Event	In	Event received by the end of each night-time settlement sequence.	Business Day Management Scheduling	
Process Completed Notification	Out	Notification of the end of processing of all the pending Reference Static data maintenance requests.		OPSR- Business Day Management Scheduling
Reference Static data Maintenance Notification	Out	Notification of maintenance with possible impacts on pending settlement instructions.		LCMM: Instruction Validation SETT: Standardisation and Preparation to Settlement

3.3.5 Data Accessed

DATA	DATA ENTITIES	ACCESS MODE	COMMENT
<u>REFERENCE</u>STATIC DATA			
All	All	Read/Write	None
DYNAMIC DATA			
Dynamic Data of the CRD- MStatic data domain.	Inbound CRDMSDMG Message, Reference Static data Object	Read/Write	None

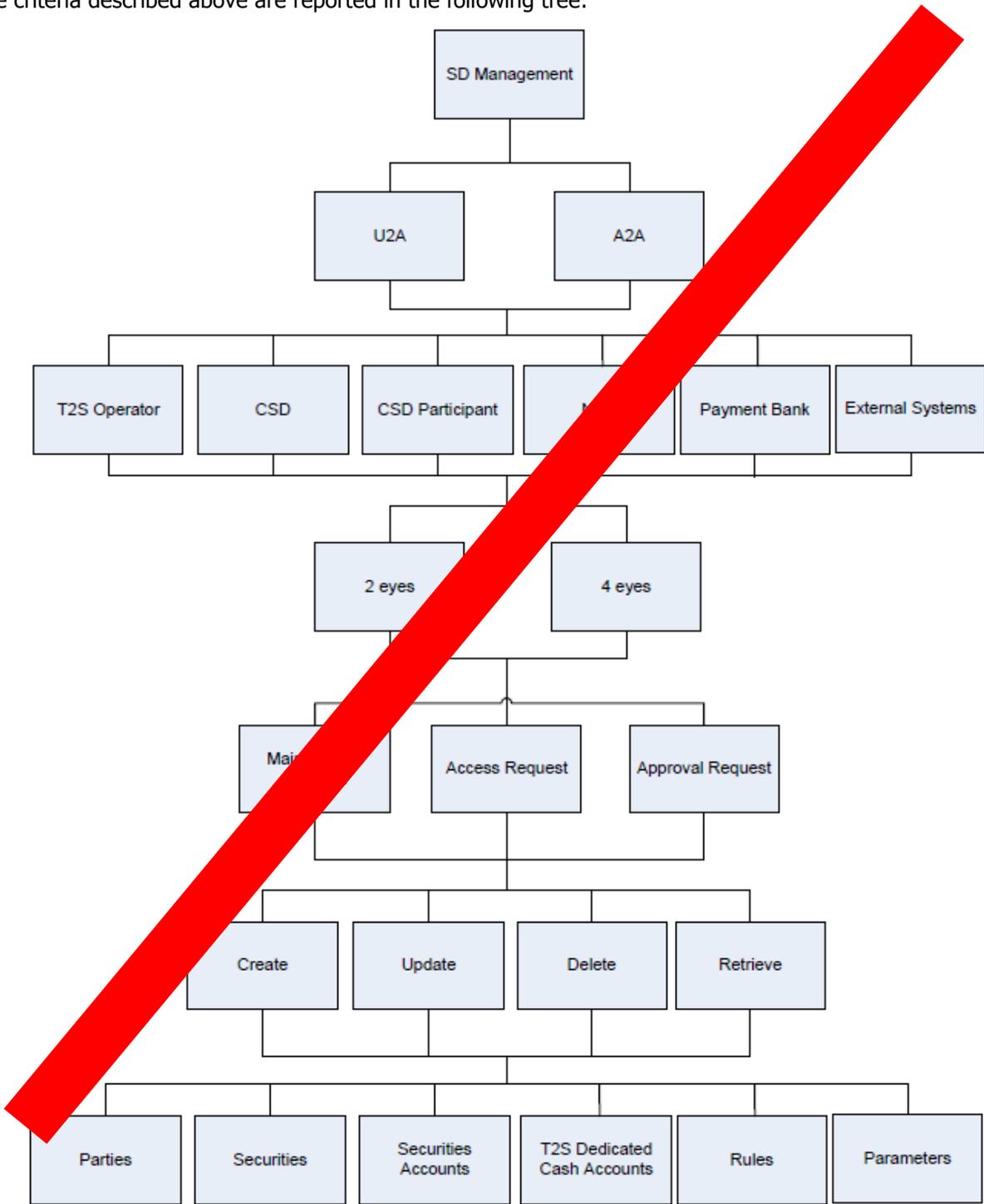
3.3.10 Reference Static data Management (SM) Use Cases

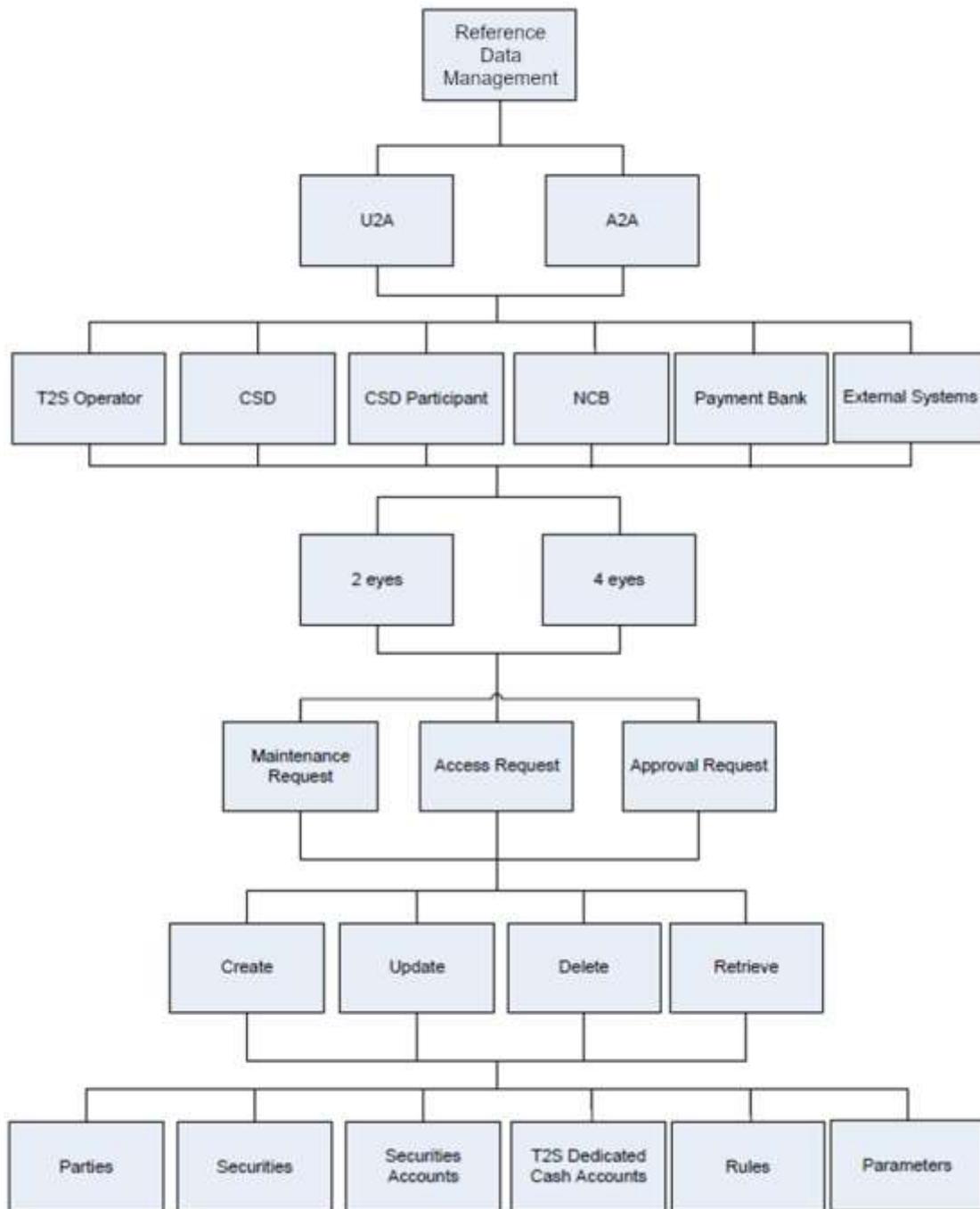
Scope

This category of use cases describes the interaction between a T2S system user and the CRDM Static data management component Domain.

[...]

The criteria described above are reported in the following tree:





3.3.11.2 Data model and description of the entities

The data model for *Rules and Parameters Data Management* module is actually made of several components, each of which is related to a specific set of rules and parameters. A list of such components is given hereafter:

- | users, roles and privileges;
- | message subscription;
- | conditional routing;

- | report configuration;
- | attribute domains;
- | Business Day Management~~Scheduling~~;
- | market-specific attributes;
- | restriction types;
- | conditional securities delivery;
- | billing configuration;
- | other rules and parameters.

The following part of this section provides a description of the data model and the entities for all the above listed components.

3.3.13.2 Processing of UC-SM-1 Reference~~Static~~ data Maintenance

[...]

Business assumption

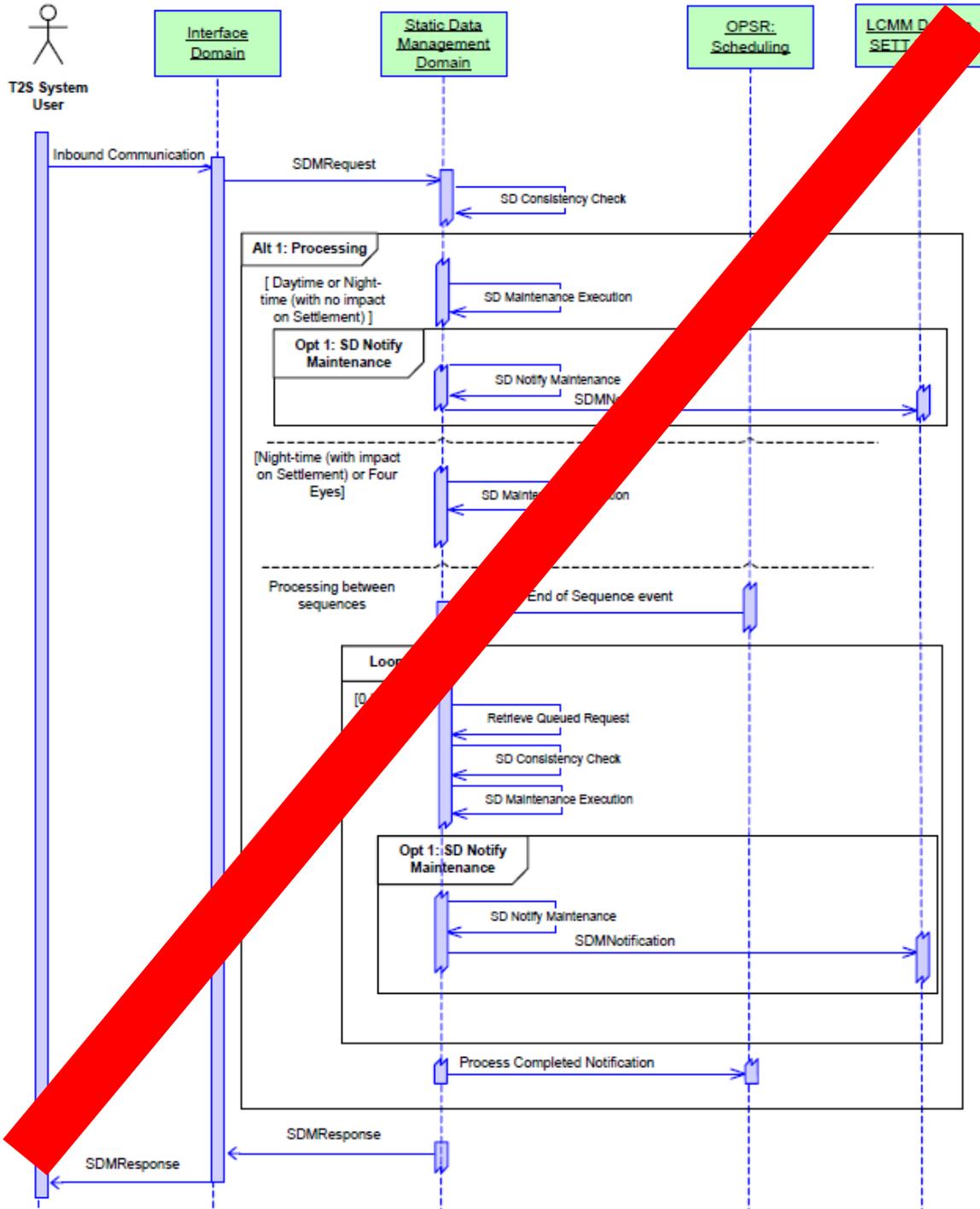
Depending on the type of request, the Reference~~Static~~ data object involved and the phase of the settlement day, the CRDM~~Static data Management~~ domain processes a Reference~~Static~~ data Maintenance Request according to different scenarios.

[...]

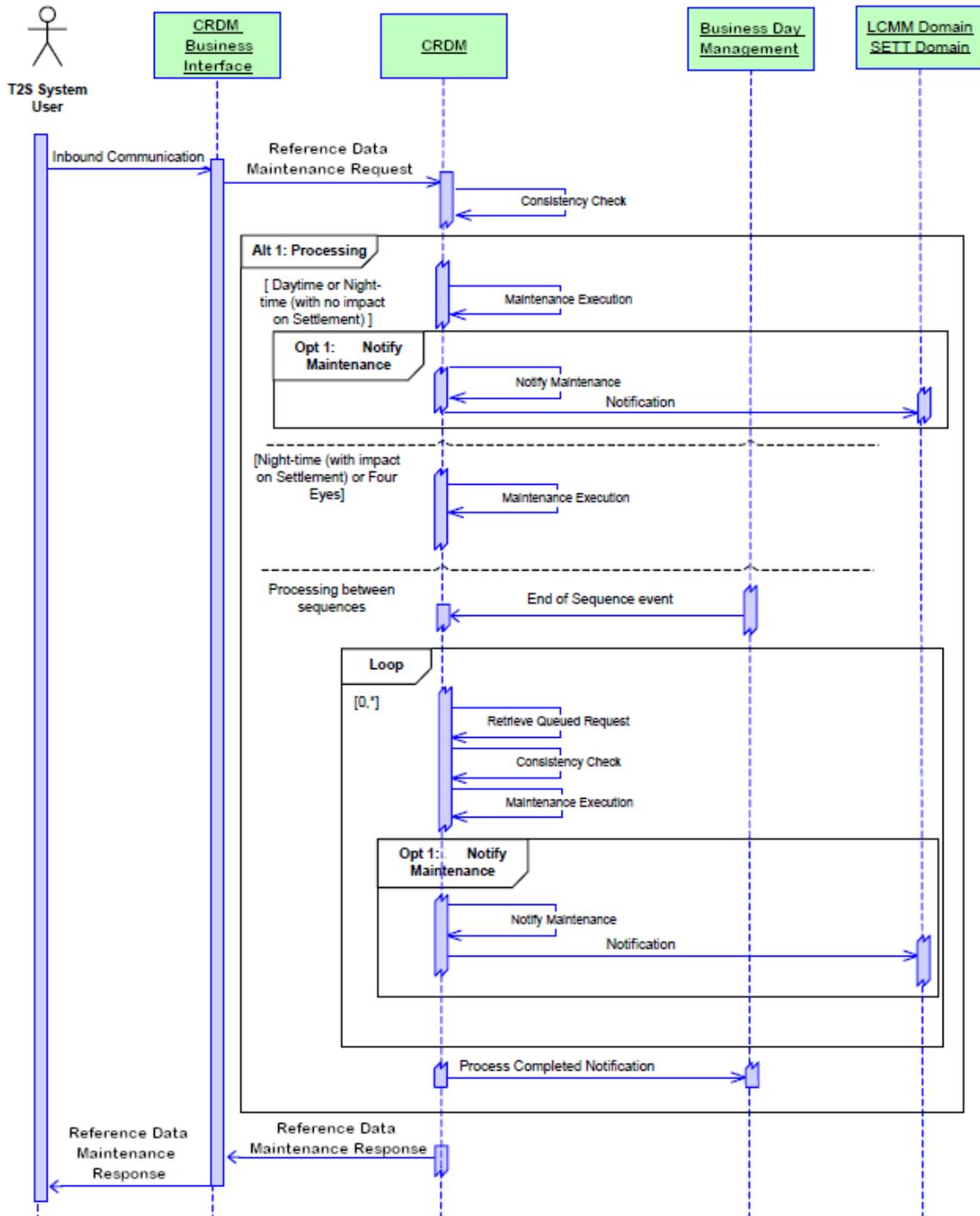
In the case of an update of a limit, CRDM~~Static~~ data forwards a Reference~~Static~~ data Maintenance Notification to the Settlement domain, so that it can check if it must trigger a forced auto-collateralisation reimbursement.

[...]

Processing (positive scenario)

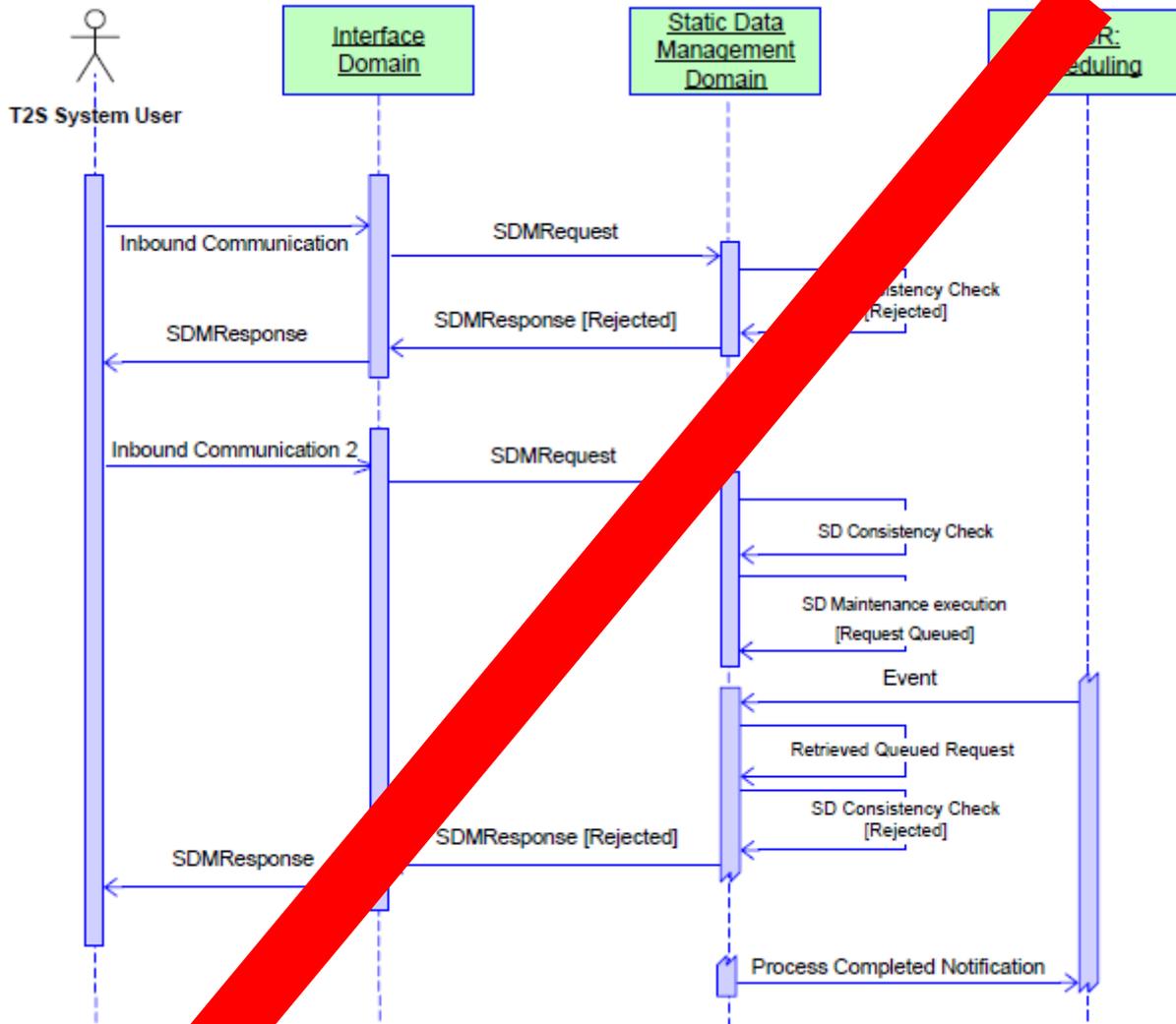


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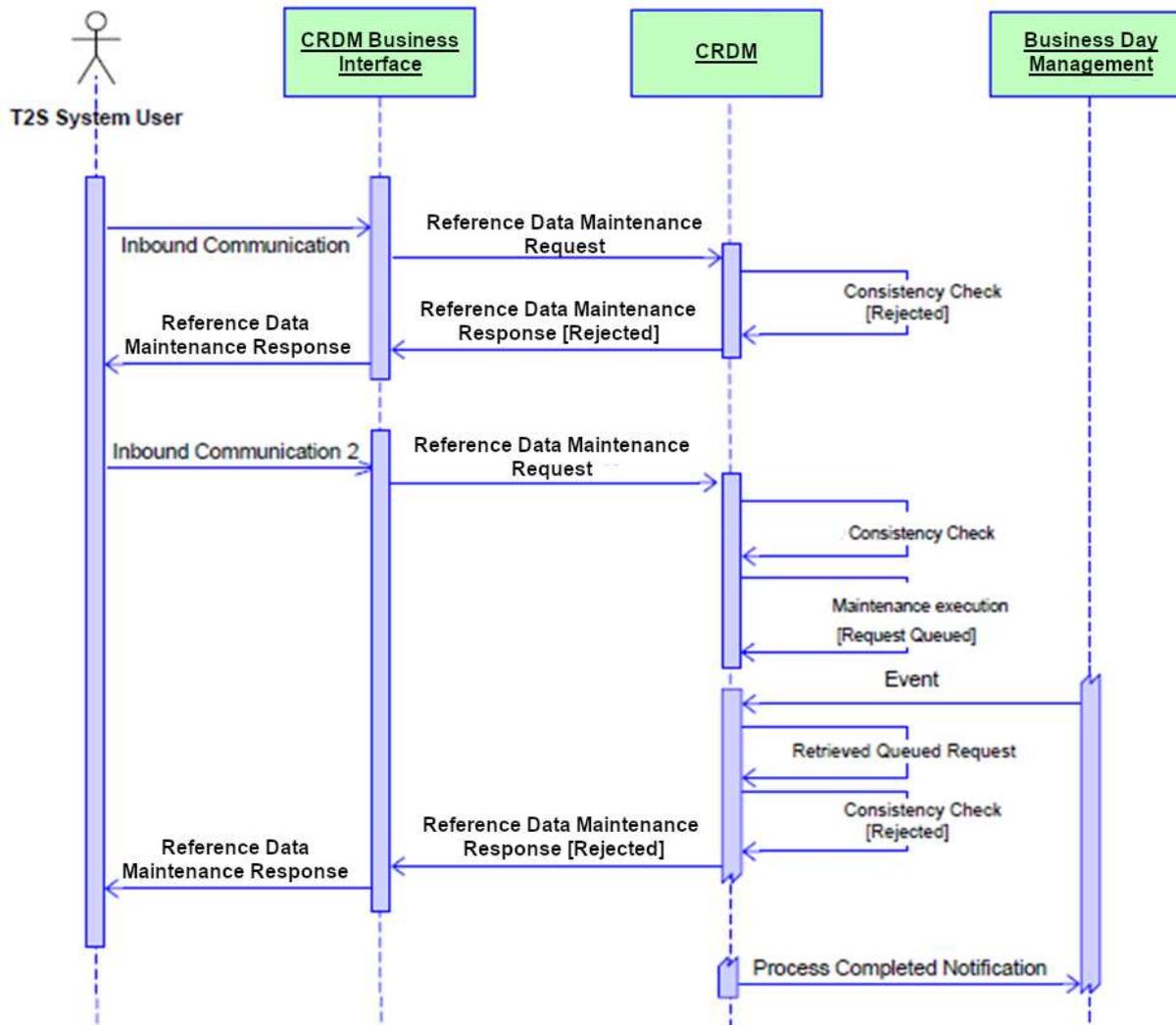


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Processing (negative scenario)



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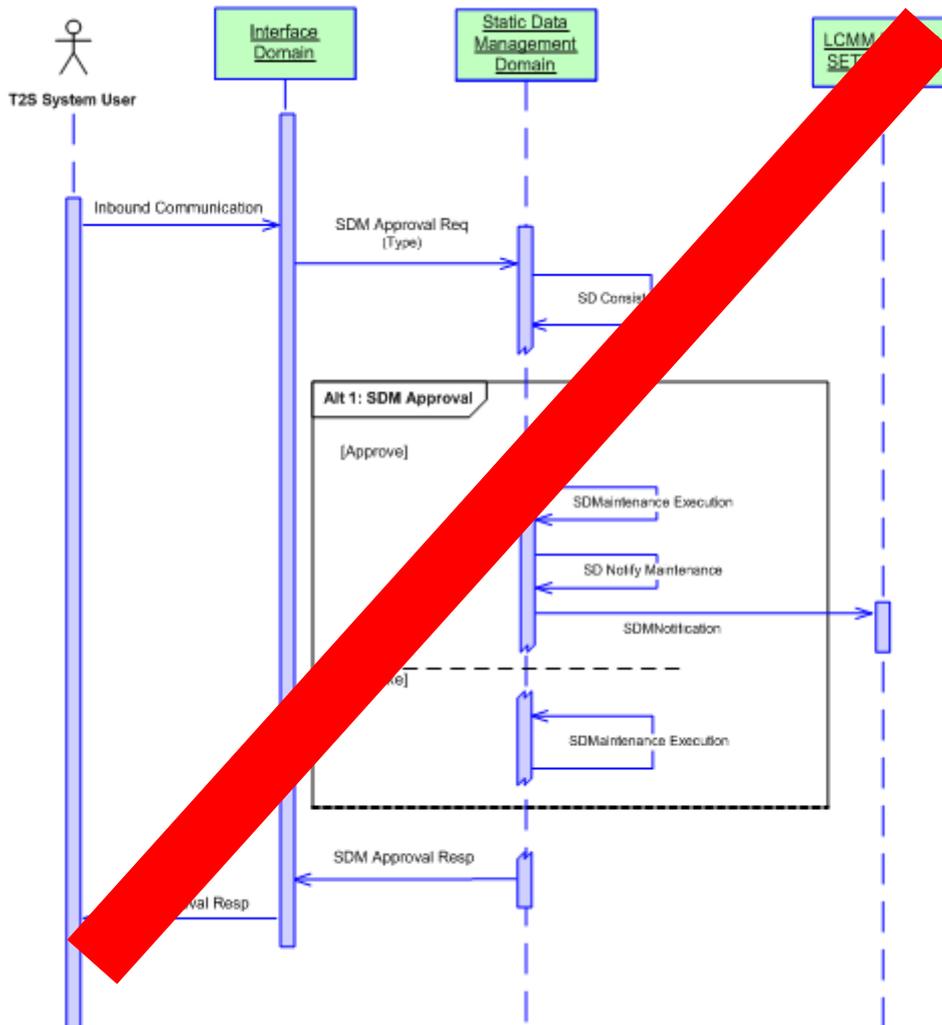
3.3.13.3 Processing of UC-SM-2 Reference Data Approval

[...]

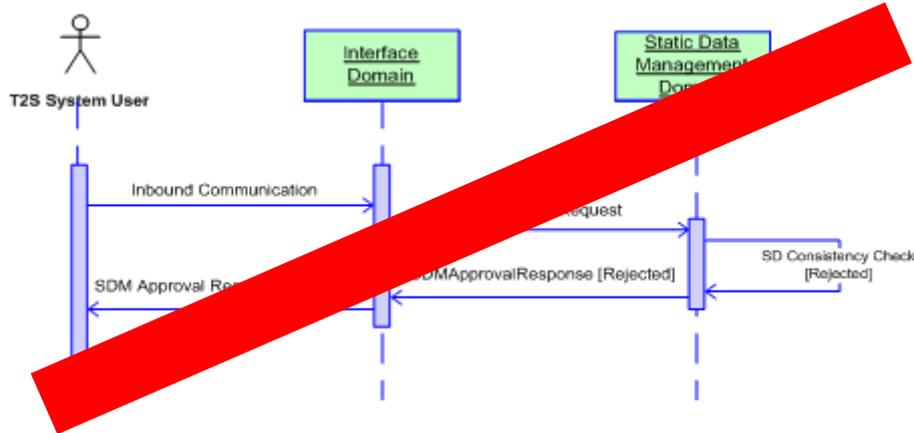
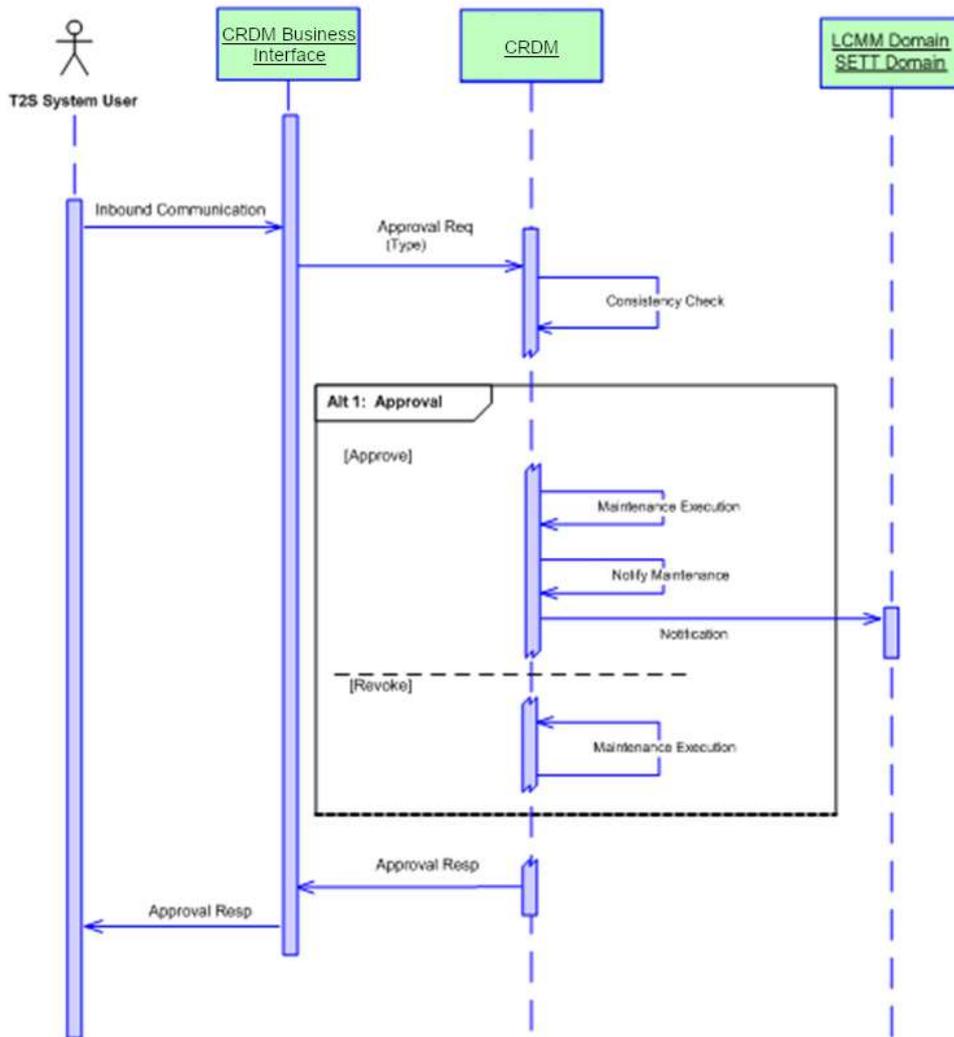
Processing

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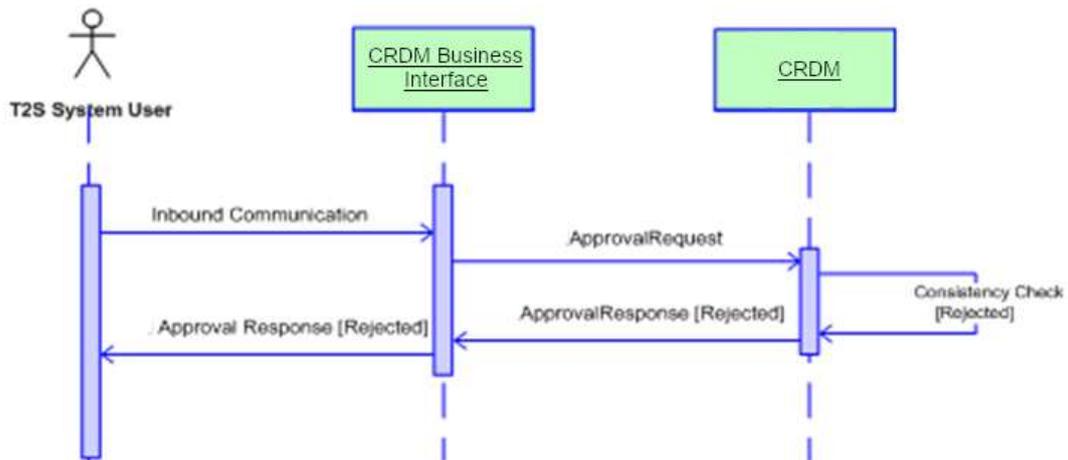
The following sequence diagrams show both possible scenarios:



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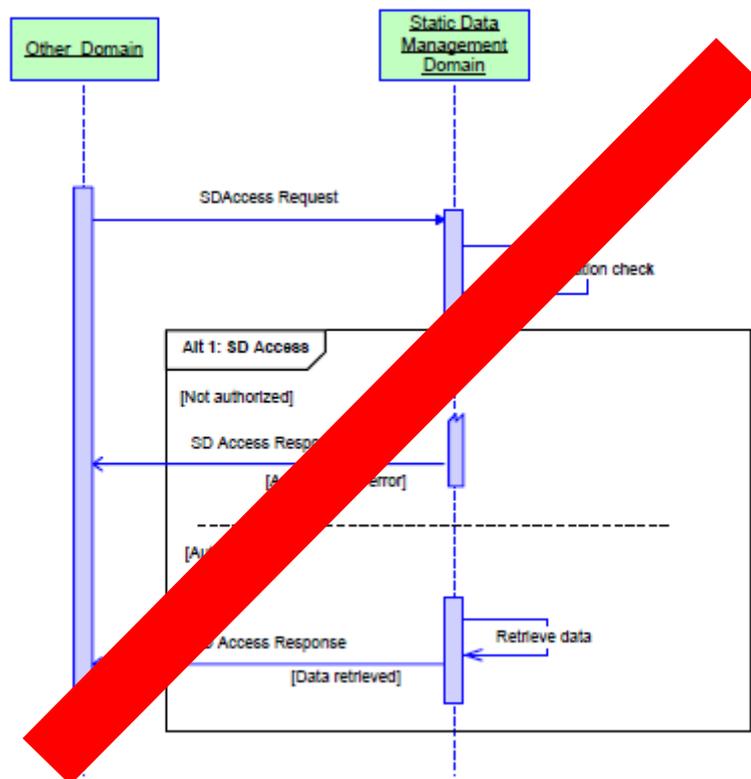


3.3.13.4 Processing of UC-SM-3 Reference Static data Access

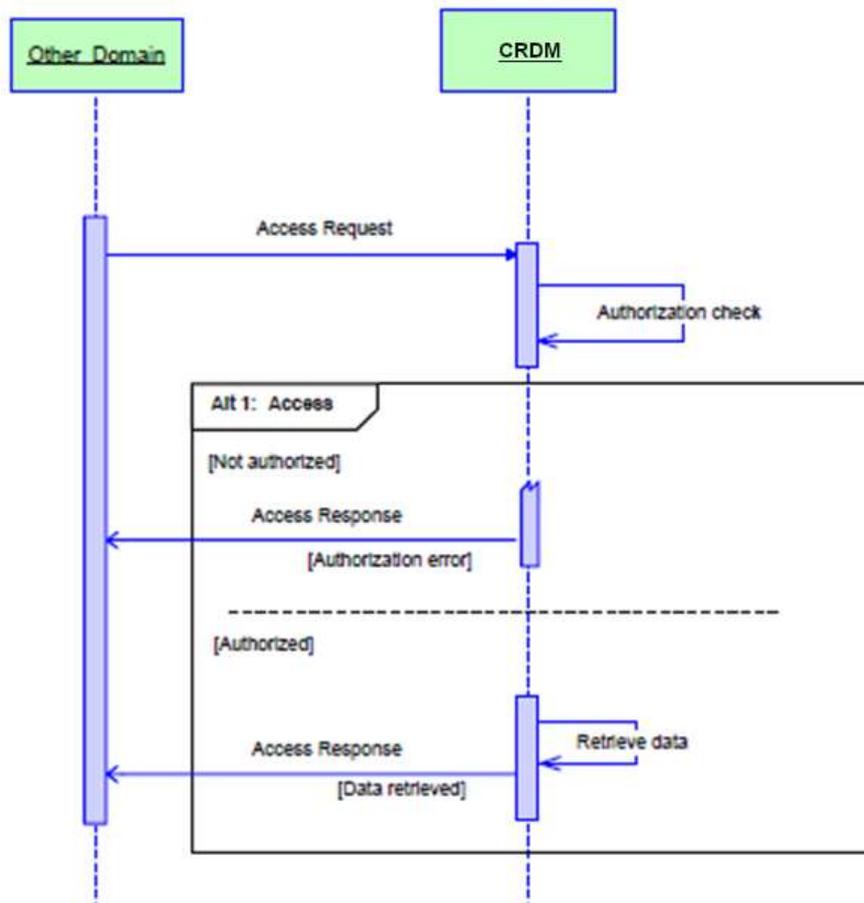
[...]

Processing

The following sequence diagram details the scenario and its two possible (i.e. positive or negative) results:



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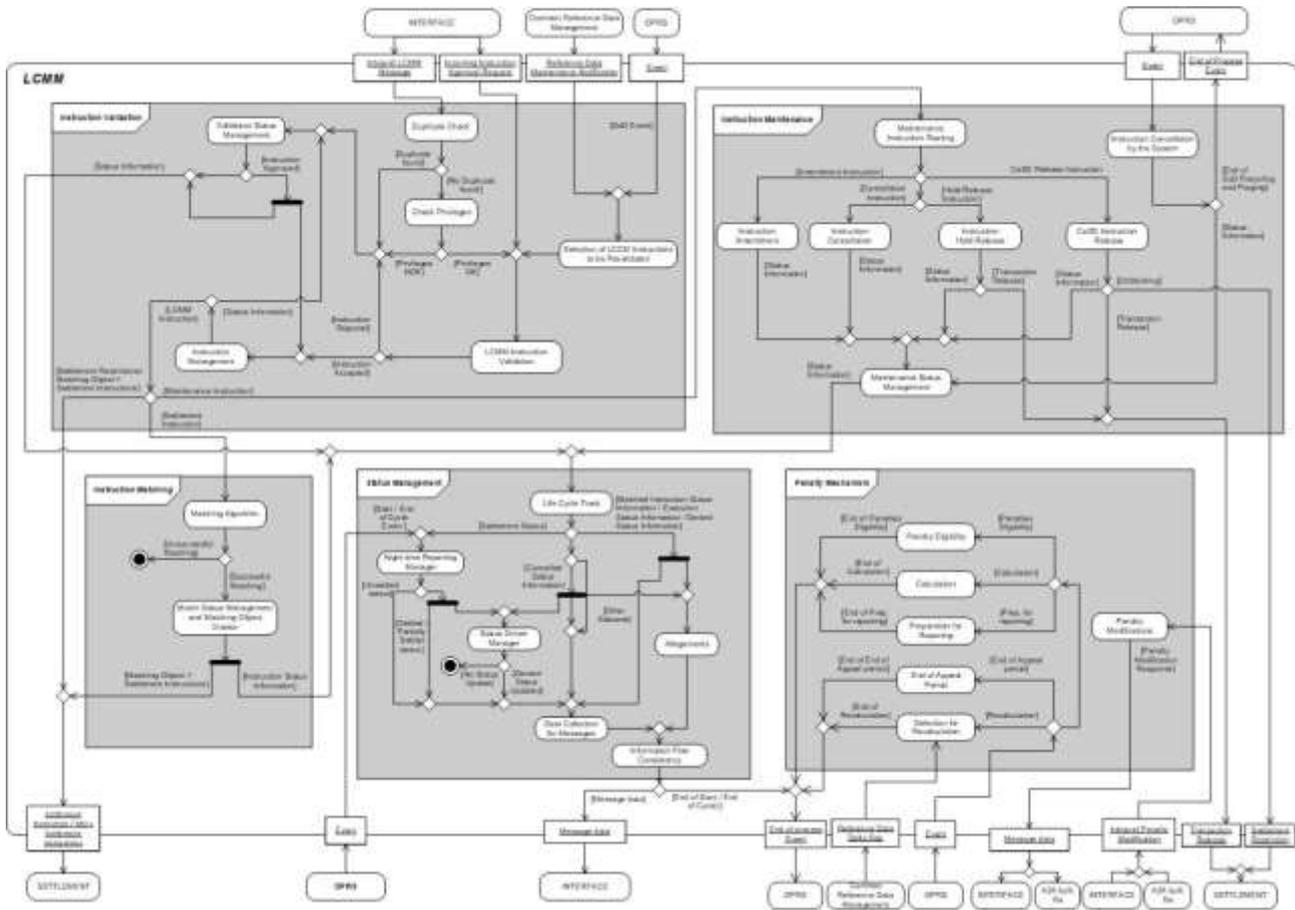


3.4.1 General Introduction

[...]

Diagram

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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 CRDM related to the Security of the underlying instruction (Security Subject to penalties and related Security penalty data) and for the corresponding business day.

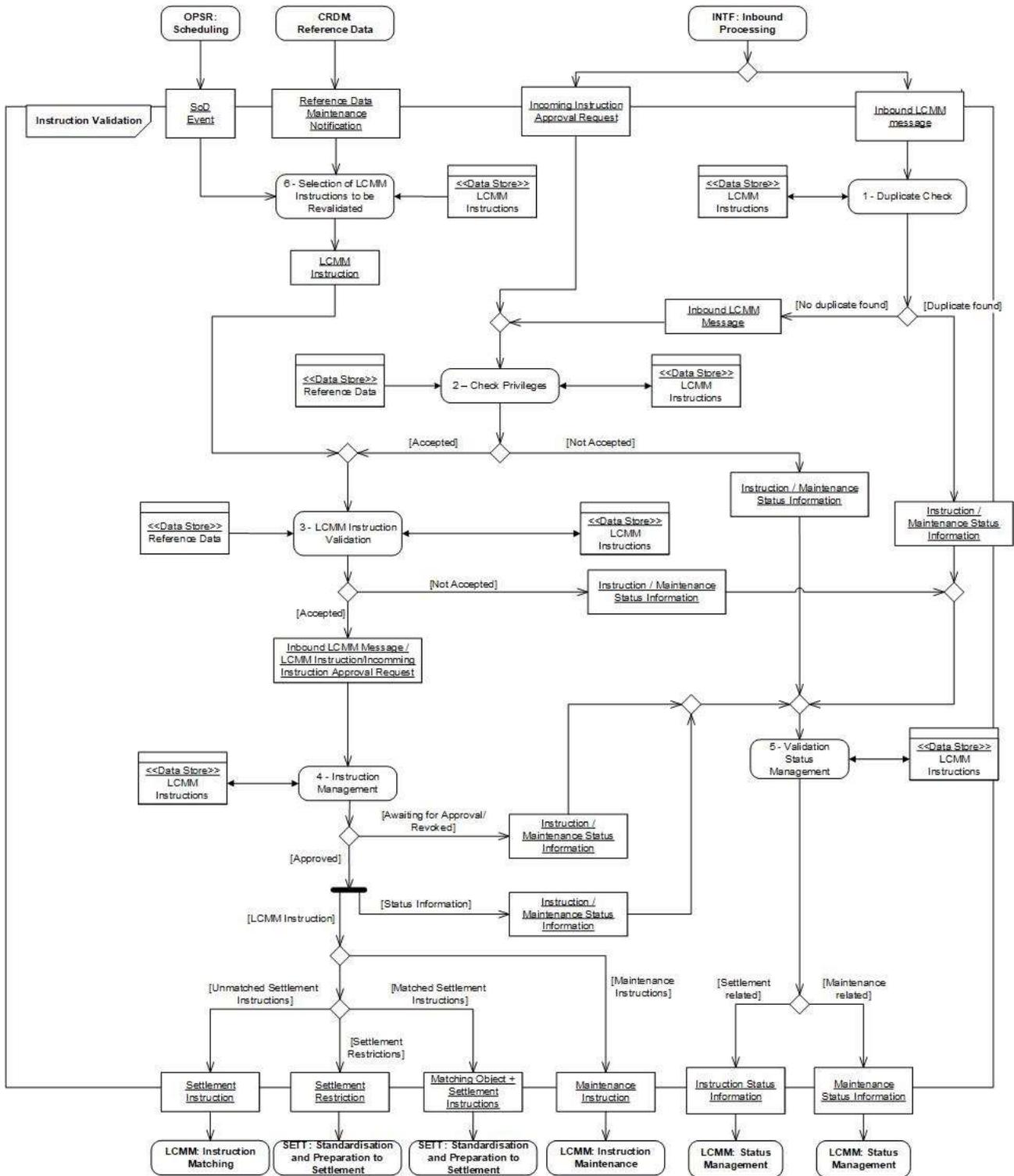
It is linked to the following entities:

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

[...]

3.4.3.1 Diagram of the module

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3.4.3.3 Description of the functions of the module [...]

6 – Selection of LCMM Instruction to be Revalidated
[...]

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The sub-function identifies the LCMM Instructions that have to be revalidated due to a Reference Data Maintenance Notification from the CRDM domain **{T2S.05.280}**.

[...]

3.4.3.4 Description of the Input/Output of the module

FLOW	IN/OUT	DESCRIPTION	FROM	TO
[...]				
<u>Reference Data</u> Maintenance Notification	IN		<u>CRDM: Reference Data</u>	
[...]				

3.4.3.5 Data accessed by the module

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

3.4.4.5 Data accessed by the module

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

3.4.5.5 Data accessed by the module

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

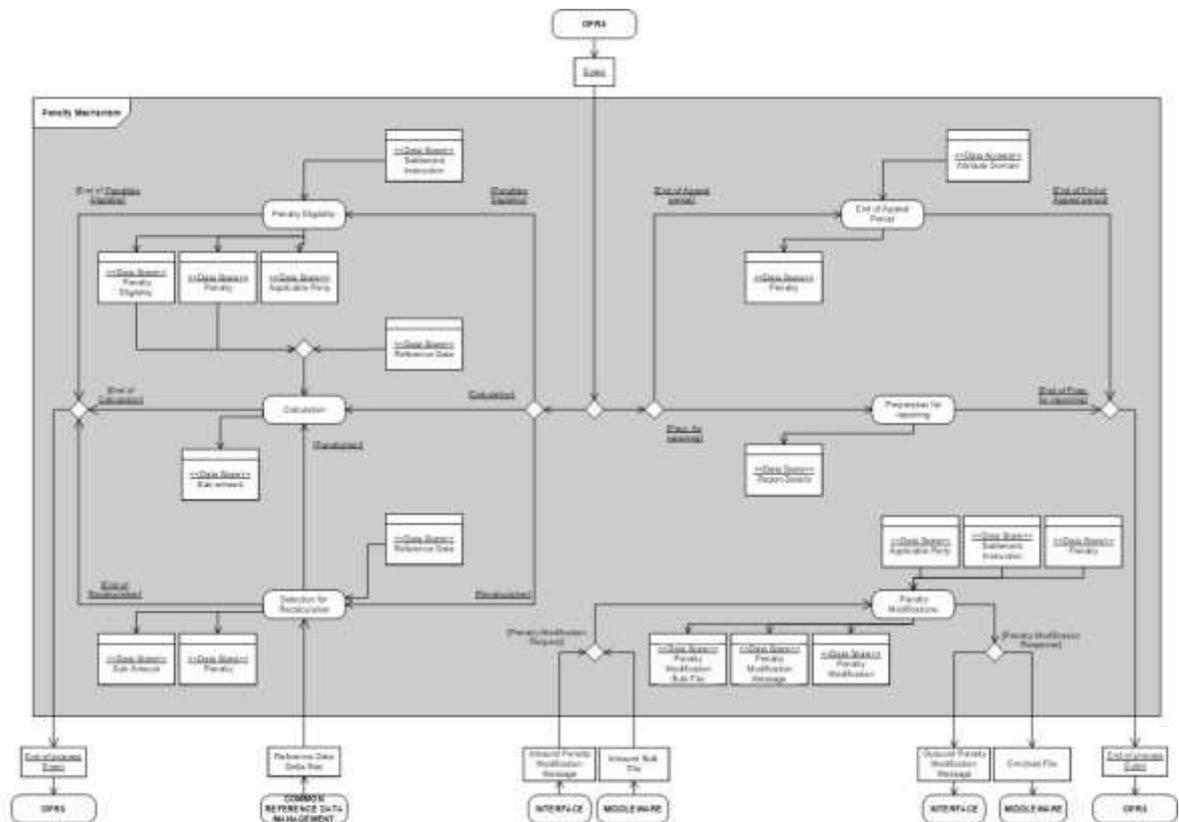
3.4.6.5 Data accessed by the module

DATA	DATA ENTITY	ACCESS MODE	COMMENTS
CRDM			

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Allegement Delay Period	Attribute Domain	Read	In order to identify which Allegement Delay Period should apply.
Message Reference Data	Auto-collateralisation Rule	Read	To collect the necessary information for the sending of Message Data to the Interface
	[...]		

3.4.7.1 Diagram of the module



3.4.7.3 Description of the functions of the module

1 – Penalty Eligibility

[...]

4 - Selection for Recalculation

Introduction

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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 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 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 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 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 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 CRDM Domain, this subfunction processes it and searches for any affected Penalty.

[...]

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 CRDM Domain.

[...]

3.4.7.5 Description of the Input / Output of the module

FLOW	IN/OUT	DESCRIPTION	FROM	TO
[...]				
Reference 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	CRDM: Reference Data	
[...]				

3.6.1 General Introduction

...
 Standing and Predefined *Liquidity Transfer Orders* are maintained in ~~Static Data Management~~ CRDM. When a Standing or Predefined *Liquidity Transfer Order* is triggered by time or business events, an Immediate Outbound *Liquidity Transfer* is created and processed {T2S.06.206}.

Definition of a Liquidity Transfer

The term “*Liquidity Transfer*” covers all liquidity adjustments on *T2S Dedicated Cash Accounts* allowed according to the conditions listed below:

- l Credited and debited *T2S Dedicated Cash Accounts* must be denominated in the same currency {T2S.06.060};
- l *Liquidity Transfers* are possible from an RTGS account to a *T2S Dedicated Cash Account* (via *Inbound Liquidity Transfer*) and vice versa (via *Outbound Liquidity Transfer*) provided this is allowed by the relevant CB(s) {T2S.06.060} {T2S.06.113} {T2S.06.150} {T2S.06.240} {T2S.06.390} {T2S.06.410};
- l In case the *Liquidity Transfer* is sent from T2S to the RTGS system (*Outbound Liquidity Transfer*) it is necessary that the receiving RTGS account is set up in ~~T2S static data~~ CRDM;

Multi currency aspects of Liquidity Transfers

Since T2S is technically capable of providing cash settlement in Euro or non-Euro central bank money, *Liquidity Transfers* are possible in all T2S settlement currencies {T2S.02.050}.

A central bank must open an RTGS Dedicated Transit Account in T2S for each T2S settlement currency the respective CB is offering settlement for that currency, but in case of several CBs belonging to one RTGS system only one RTGS Dedicated Transit Account is opened. These accounts are managed in ~~Static Data Management domain~~ CRDM.

Four-Eyes principle

Predefined and Standing *Liquidity Transfer Orders* are maintained in ~~Static Data~~ the reference data. ~~They can be set up in U2A mode, using the Four Eyes principle. The procedure is in analogy to all static data.~~ After triggering a Predefined/ Standing *Liquidity Transfer Order* by a time or business event the Four-Eyes Principle is no longer taken into account.

Underlying transfer types in T2S

Predefined and Standing *Liquidity Transfer Orders* are defined, changed and removed (amount changed to zero or *Liquidity Transfer Order* deleted) via ~~the Static Data Management~~ CRDM {T2S.06.231}. At a pre-defined point in time or after a chosen business event, *Liquidity Management* interacts with ~~Static Data Management in~~ CRDM order to receive all information needed for *Liquidity Transfer Orders*.

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3.6.3.3 Description of the functions of the module

1 – Check Immediate / Inbound Liquidity Transfer

...
Validation/Revalidation

The following paragraphs identify a non-exhaustive list of validations/ revalidations of *Immediate / Inbound Liquidity Transfers* to be performed (based on ~~Static Data~~ the reference data):

- | The Business Sending Party is existing and an active T2S Party **{T2S.06.540}**;
- | The involved *RTGS Accounts* are existing and active, in case of *Outbound Liquidity Transfer*;
- | The involved *T2S Dedicated Cash Accounts* are existing and active (example: neither blocked by restrictions nor logically deleted) **{T2S.06.560}**;
- | The involved *T2S Dedicated Cash Accounts* in case of an *Internal Liquidity Transfer* are linked to the same *RTGS account* or belong to the same *Payment/Settlement Bank* or one or both of the involved accounts is a *T2S Central Bank account*. This rule is not applicable if one of the involved accounts is a *Dedicated Transit Account* i.e. if one of the involved accounts is a *Dedicated Transit Account Internal Liquidity Transfers* are always possible **{T2S.06.114}** **{T2S.06.241}**;
- | The currency is eligible as *T2S settlement currency* (~~i.e. exists in Static Data entity Currency~~) and is the same as the currency of the *T2S Dedicated Cash Accounts* involved **{T2S.06.530}**;
- | ...

3 – Create Timed Liquidity Transfer

Triggers of the function

<u>Reference Id</u>	LQMG.LIO.TLT.1.1
---------------------	-------------------------

The *Create Timed Liquidity Transfer* function generates an *Immediate Liquidity Transfer* after having received one of the following business or time events from the *Scheduling module* **{T2S.06.067}** **{T2S.06.280}**, ~~based on the static data~~:

...
Multiple liquidity provider functionality at the end of night time settlement phase

<u>Reference Id</u>	LQMG.LIO.TLT.3.1
---------------------	-------------------------

For the execution of the multiple liquidity provider functionality this function **{T2S.06.067}**:

- | Retrieves from ~~Static Data~~ the reference data entity Liquidity Transfer Order, for each of the involved liquidity providers of the *T2S Dedicated Cash Account*, the sequence in which the liquidity providers are to be reimbursed (the main liquidity provider being the last one to be reimbursed);
- | ...

3.6.3.5 Data accessed by the module

DATA	DATA ENTITIES	ACCESS MODE	COMMENTS
Static Data <u>CRDM</u>	T2S Dedicated Cash Account T2S Dedicated Cash Account Restriction External RTGS Account External RTGS Account Restriction Liquidity Transfer Order Liquidity Transfer Order Link Liquidity Transfer Order Link Set Currency Party Party Code Party Restriction Role Privilege Object SD Secured Object SD Secured Object Group T2S System Status	Read	
...			

3.6.5.2 Description of the module

Introduction

This module is in charge of creating *Liquidity Transfers* related to the End-of-Day procedures of T2S.

The CB Business Procedures module performs at End-of-Day the End-of-Day Liquidity Transfer for Cash Sweep. Based on *Business event [EoD Liquidity Transfer]* received from the *Scheduling* module, the *CB Business Procedures* module checks the balances of all *T2S Dedicated Cash Accounts* (data store Cash Balance). The linked external *RTGS accounts* are retrieved from the reference data Static Data (via the function *Collate End-of-Day Liquidity Transfer Info*) and the respective Outbound *Liquidity Transfers* are triggered (using the flow *EoD Liquidity Transfer Information*) via the *Liquidity Operations* module. Thus, all the remaining cash on each *T2S Dedicated Cash Account* is automatically transferred to the corresponding external RTGS account {**T2S.06.220**} {**T2S.03.180**} {**T2S.06.050**} In case of a negative balance on a central bank's *T2S Dedicated Cash Account* the Outbound *Liquidity Transfer* for the cash sweep is a direct debit transfer instead of a credit transfer.

The *CB Business Procedures* module consists of two functions:

- | *Account Balance Check;*
- | *Collate End-of-Day Liquidity Transfer Info.*

3.6.7.4 Processing of UC-LT-4: Execution of Standing and Predefined Liquidity Transfer Orders from T2S to RTGS

Business assumption

A *T2S Dedicated Cash Account* holder or another T2S Actor granted with the respective privilege is able to define Standing and Predefined *Liquidity Transfer Orders* to be executed during the settlement day of T2S. Standing and Predefined *Liquidity Transfer Orders* are maintained and stored in Static Data CRDM and are activated by the occurrence of the defined Time/Business event.

...

3.8.2.2 Static Functional description

EVENT TYPE	DESTINATION DOMAIN:MODULE	CURRENCY-SPECIFIC
[...]		
Start of Day	CRDMSDMG: All LCMM: Instruction Validation SETT: Standardisation and Preparation to Settlement	No
Start of SD Update	CRDMSDMG: All	No
[...]		

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[...]

PROCESS COMPLETED NOTIFICATION	SOURCE DOMAIN:MODULE
End of Process Event (EOD Recycling and Purging)	LCMM: Instruction Maintenance
End of Process Event (End of Cycle)	LCMM: Status Management
Event (End of Process)	LQMG: Liquidity Operations
Process Completed Notification	CRDMSDMG: All
[...]	

4.1.5 QU: Queries

ID	CRITERIA		
	COMMUNICATION 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

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ID	CRITERIA		
	COMMUNICATION MODE	QUERY CATEGORY	QUERY TYPE
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 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	Reference 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 Nominations Query
185	U2A	Static Data	Securities CSD Link Query
186	U2A	Static Data	Party Reference Data Query
187	U2A	Static Data	Party List Query

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ID	CRITERIA		
	COMMUNICATION MODE	QUERY CATEGORY	QUERY TYPE
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	<u>Reference</u> 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 Query
196	U2A	Static Data	Liquidity Transfer Order List Set Query
197	U2A	Static Data	Liquidity Transfer Order of Liquidity Transfer Order List 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 (T2S Actor Query)
204	U2A	Static Data	Restriction Query
205	U2A	Static Data	SWIFT BIC Query
206	U2A	Static Data	Report Configuration List Query

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ID	CRITERIA		
	COMMUNICATION MODE	QUERY CATEGORY	QUERY TYPE
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 Reference Rate Query
211f	U2A	Penalty	Monthly Net Penalty Amount Query
211g	U2A	Penalty	Penalty Details Query
211h	U2A	Penalty	Penalty List Query
211i	U2A	Penalty	Securities Penalty Rate Query
211j	U2A	Penalty	Securities Subject to Cash Penalties Query
211k	U2A	Penalty	SME Growth Market
212	A2A	Instructions	Settlement Instruction Query
213	A2A	Instructions	Settlement Instruction Current Status Query
214	A2A	Instructions	Settlement Instruction Status Audit Trail Query
215	A2A	Instructions	Settlement Instruction Audit Trail Query
216	A2A	Security Accounts	Securities Account Position Query

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ID	CRITERIA		
	COMMUNICA-TION MODE	QUERY CATEGORY	QUERY TYPE
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 Query
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 Query
225	A2A	Cash Accounts	Limit Utilisation Query
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	Reference Static Data	Data Changes Queries
234	A2A	Static Data	Static Data Audit Trail Query

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ID	CRITERIA		
	COMMUNICA-TION MODE	QUERY CATEGORY	QUERY TYPE
235	A2A	Static Data	Securities Reference Data Query
236	A2A	Static Data	ISIN List Query
237	A2A	Static Data	Securities Deviating Nomin Query
238	A2A	Static Data	Securities CSD Link Query
239	A2A	Static Data	Party Reference Data Quer
240	A2A	Static Data	Party List Query
241	A2A	Static Data	Restricted Party Query
242	A2A	Static Data	Securities Account Referen Data Query
243	A2A	Static Data	Cash Account Reference De Query
246	A2A	Static Data	Total amount of standing a predefined orders Query
247	A2A	Static Data	Liquidity Transfer Order De tail Query
248	A2A	Static Data	Liquidity Transfer Order Lis Query
249	A2A	Static Data	Liquidity Transfer Order Lin Set Query
250	A2A	Static Data	Liquidity Transfer Order of Liquidity Transfer Order Lin Set Query
251	A2A	Static Data	Attribute Domain Query
252	A2A	Static Data	Attribute Value Query
253	A2A	Static Data	T2S System User Query (T Actor Query)
254	A2A	Static Data	Report Configuration List Query

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ID	CRITERIA		
	COMMUNICATION MODE	QUERY CATEGORY	QUERY TYPE
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				
	COMMUNICATION 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

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ID	CRITERIA				
	COMMUNICA- TION MODE	INFORMATION BASIS	TRIGGERING	CLASSIFICATION	CATEGORY
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 In- formation 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
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