



EUROPEAN CENTRAL BANK
EUROSYSTEM



General Information (Origin of Request) <input type="checkbox"/> User Requirements (URD) or GUI Business Functionality Document (BFD) <input checked="" type="checkbox"/> Other User Functional or Technical Documentation (SYS)		
Request raised by: 4CB	Institute: 4CB	Date raised: 14/12/2017
Request title: Common Reference Data Management for TIPS		Request ref. no: T2S 0674 SYS
Request type: Common	Urgency: Urgent	
1. Legal/business importance parameter: High	2. Market implementation efforts parameter: Low	
3. Operational/Technical risk parameter: Low	4. Financial impact parameter: No cost impact	
Requestor Category: 4CB	Status: Authorised at Steering Level	

Reason for change and expected benefits/business motivation:

The T2-T2S Consolidation project envisions that in the long term (i.e. in 2021) a Common Reference Data Management (CRDM) service, built as an enhancement of today's T2S SDMG, shall provide features to setup, maintain and query all reference data used by the different Eurosystem Market Infrastructure services.

To clarify the overall framework and the specific changes introduced by this CR in T2S SDMG, this section is organised in four parts: the first part describes the general principles of CRDM as defined in T2-T2S Consolidation. These principles are the basis for the changes impacting T2S, but not all of them are directly applicable to this CR. The text will make explicit which ones are applicable and which ones are not.

The second part provides information on the overall timeline and scope of CRDM, whereas the third part focuses on the limited scope of CRDM for TIPS.

Finally, the fourth part provides detailed information on the design and implementation approach that was adopted in order to identify all the detailed changes to be performed.

1. CRDM General Principles (as established in the T2-T2S Consolidation project)

CRDM shall allow:

- users to setup and maintain reference data that are common to multiple services only once and then to propagate them automatically to all the services that need these reference data for their processing activities;
- reducing the overall running cost related to the software for managing reference data, as the same features will not have to be implemented (i.e. replicated) within each service.

At functional level, CRDM shall cover the scope of common reference data required by the future RTGS, T2S, TIPS, ECMS and any other potential future Eurosystem Market Infrastructure service.

The access to CRDM shall be possible in U2A mode (for all functions) and in A2A mode (for a subset of functions, i.e. the same subset of functions currently covered by T2S SDMG).

The authentication process and the service authorization process (i.e. the authorization to submit a request to CRDM) shall take place at centralized level (in the Eurosystem Single Market Infrastructure Gateway, ESMIG), whereas the function-specific authorization process (to check that the acting user is entitled to trigger a given CRDM function on a given reference data object) shall take place at CRDM level. As far as T2S is concerned, the current authentication and authorization process will remain unchanged.

CRDM shall be open 22 hours a day during the week (i.e. as today in T2S, with an overnight maintenance window of two hours) and closed during the week-end.

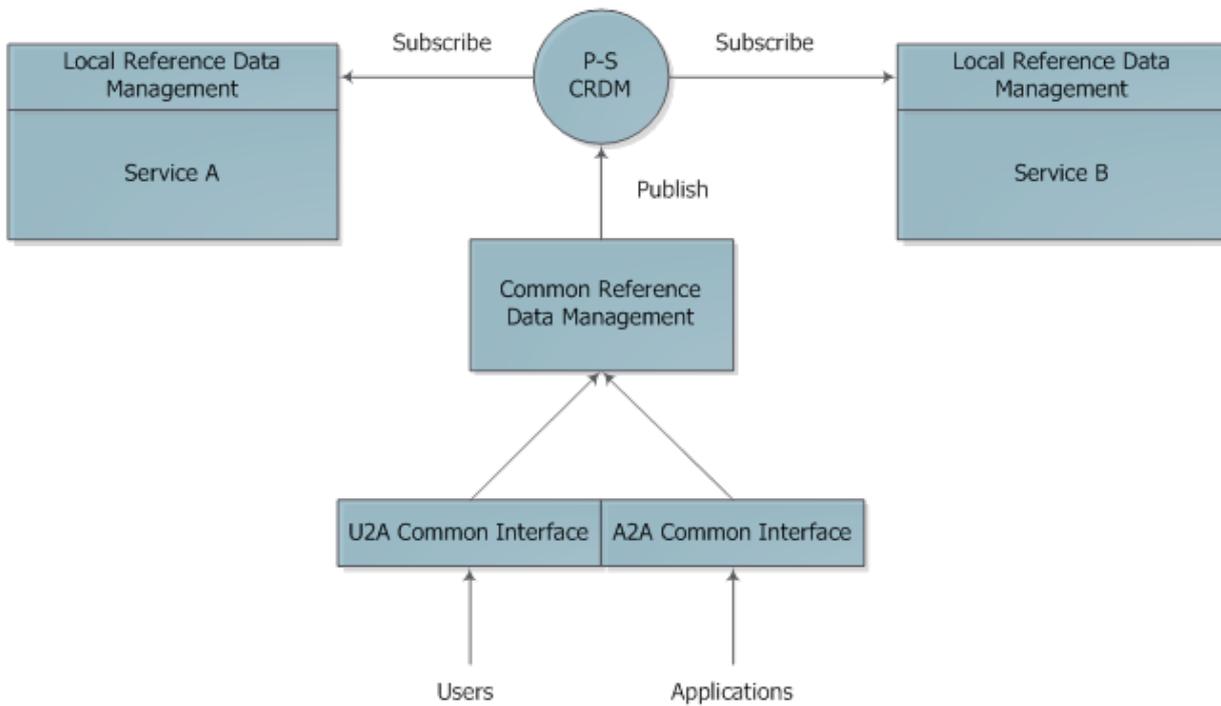
In order to ensure a timely and consistent propagation of common reference data to the relevant services, CRDM shall implement a publish-subscribe feature allowing each service receiving all the common reference data (and their changes) they require for their processing.

In a nutshell:

- CRDM shall publish all changes of common reference data (e.g. creations of new objects, updates of already existing objects) in real-time and notify them to the relevant subscriber services.
- Other subscriber services will get those changes (in pull mode) and apply them to their Local Reference Data Management component, according to their needs.

These reference data propagation features will be implemented as an enhancement of the current T2S SDMG features respectively related to the intraday notification of static data changes and to the EoD static data extraction process.

The following diagram shows a conceptual overview of the CRDM and its interactions with the other Eurosystem Market Infrastructure services:



As far as T2S is concerned, the above described reference data propagation feature will remain implemented as it currently is, i.e.:

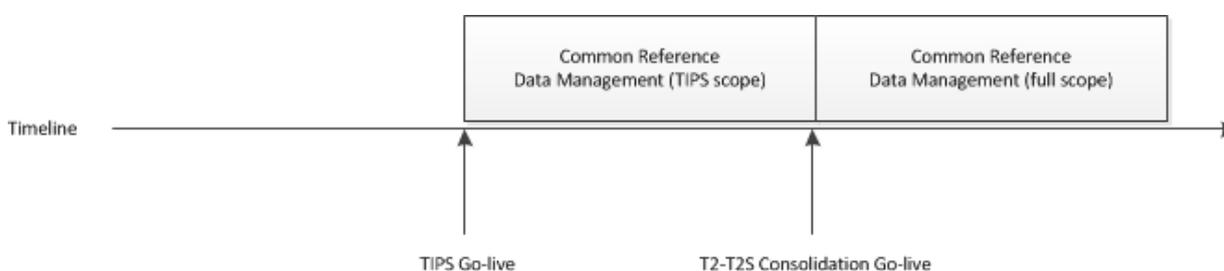
- Reference data changes that need to be propagated immediately to other T2S domains (e.g. LCMM and SETT) will be provided to the relevant domains by means of the already existing SDMG intraday notification feature.
- Reference data changes that are taken into account by other domains (e.g. INTF, SETT) as of the next business day will be provided to the relevant domains by means of the already existing SDMG End-of-Day data extraction feature.

As any other Eurosystem Market Infrastructure service, TIPS will rely on CRDM for the setup and maintenance of its reference data.

Only in well-defined contingency scenarios, e.g. to handle reference data changes that must be performed urgently and outside the CRDM availability window (e.g. during the week-end), TIPS users shall have the possibility to perform these reference data changes directly on the TIPS local reference data, by means of a dedicated 24x7 interface. This need merely results from the 24x7 nature of TIPS and it does not have any impact on CRDM or on T2S, as the local reference data component of TIPS is completely separated from the T2S application and infrastructure and because any reference data change performed locally in TIPS does not need to be propagated back to the CRDM.

2. CRDM timeline and scope

Owing to the tight timeline of the TIPS project and in order to avoid developing an ad hoc, throw-away reference data management component only for the interim period between the go-live of TIPS and the availability of the fully-fledged CRDM, the idea is to develop by November 2018 only a CRDM^{TIPS} component, covering only the functional scope of the TIPS reference data, and to deliver the full scope of CRDM in line with the T2-T2S Consolidation project, i.e. in 2021.



3. Scope of CRDM^{TIPS}

TIPS does not need the fully-fledged CRDM to be implemented by November 2018, but only the set of functions required to setup and maintain its reference data. More into detail, TIPS users will need to setup, maintain and query the following reference data objects:

TABLE 1 – TIPS REFERENCE DATA OBJECTS¹

Area	Object	Responsible TIPS Actor ²
Party	Party	Operator, Central Bank
	Party Service Link (<i>new</i>)	Operator, Central Bank
T2S Dedicated Cash Account	TIPS Account	Central Bank
	TIPS Transit Account	Operator
	TIPS Credit Memorandum Balance	Participant
	Limit	Participant
	Authorised Account User (<i>new</i>)	Participant
Access Rights Management	User	Central Bank, Participant
	Role	Operator
	Privilege	Operator
	Certificate DN	Central Bank, Participant
	User Certificate DN Link	Central Bank, Participant
Message Subscription Configuration	Message Subscription Rule	Central Bank, Participant
	Message Subscription Rule Set	Central Bank, Participant

¹ All objects exist already today in T2S, but the ones for which it is explicitly indicated they are new.

² The TIPS Actor types listed refer to the default responsible actors in normal operations. Functionalities for Central Banks to act on behalf of Participants and for the Operator to act on behalf of other actors will remain available as is currently the case in T2S.

Network Configuration	Network Service Technical Address Network Service Link DN BIC Routing (<i>new</i>)	Operator Operator, Central Bank Operator, Central Bank
Report Configuration	Report Type Report Configuration	Operator Central Bank, Participant
Restriction Type Management	Restriction Type (for TIPS blocking)	Operator
Configuration Parameter	Country Currency System Entity TIPS BIC Directory Service (<i>new</i>) Currency Service Link (<i>new</i>)	Operator Operator Operator Operator Operator Operator

As to the propagation of reference data, TIPS will only need a daily propagation of all data that will be valid on the relevant business day (of the RTGS system). Such a daily propagation shall take place early enough to be completed before the business day change (currently, it is foreseen at 5:00 pm).

A functionality for the Operator shall also be available, in order to trigger the daily propagation of reference data upon request, in case of contingency.

The propagation of reference data from T2S (SDMG/CRDM^{TIPS}) to TIPS (and never vice versa) is the only operational link between the two services. This link is not expected to create any issue for both services. In fact:

- From a T2S viewpoint, the propagation process will be fully decoupled from all other processes and events of the T2S Settlement Day. Therefore, any possible issue concerning this process will not cause any stop or delay of T2S operations. Also, even in case of unavailability of TIPS, the propagation process on the T2S side will complete successfully and without any impact on T2S operations.
- From a TIPS viewpoint, the unavailability of T2S (SDMG/CRDM^{TIPS}) would prevent the possibility to propagate reference data to TIPS or may cause a delay in such propagation. In this scenario, there would be an operational impact on TIPS, consisting in the need to continue TIPS operations without new reference data or reference data changes that were supposed to become active in TIPS with the new RTGS business day. Also in this case, critical reference data changes will still be possible in TIPS via its 24x7 interface of its local reference data component.

4. Design and implementation approach

The design and the implementation of CRDM^{TIPS} follows the steps listed hereunder, which are envisaged with the wider CRDM scope in mind and applied, for the purpose of this CR, to the CRDM^{TIPS} case alone:

- high-level functional gap analysis
- technical implementation analysis
- backlog setup
- specifications, development and test

High-level functional gap analysis

For each reference data object/function required by TIPS, the following high-level functional gap analysis was performed:

- Identification of the candidate *as-is* object/function in T2S SDMG.
- Definition of corresponding *to-be* object/function (based on TIPS requirements).
- Assessment of the functional gap between the *as-is* and the *to-be* object/function (in terms of attributes, relationships, business rules, etc.)

Technical implementation analysis

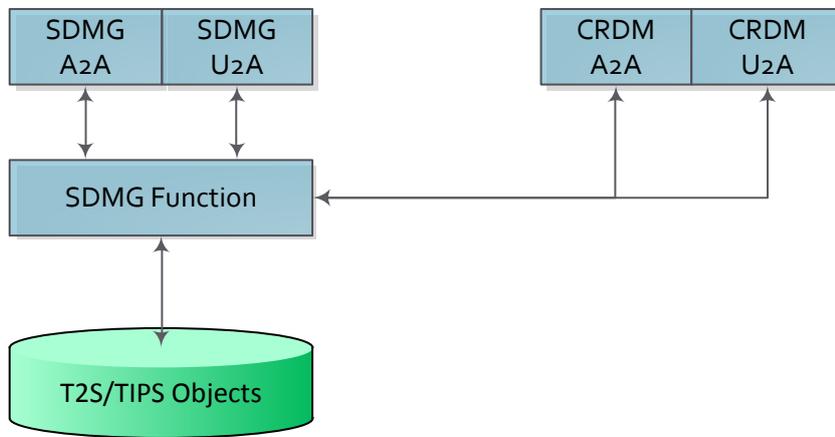
For each reference data object/function undergone through the high-level functional gap analysis, a technical implementation analysis classified the object/function into one of the following implementation approaches:

- Reuse: the *as-is* object/function can be fully reused to get to the *to-be* object/function (no software change is needed).
- Integration: the *as-is* object/function has to be enhanced to get to the *to-be* object/function. Furthermore, the analysis also ascertained whether the *to-be* object/function has to be implemented by means of a **direct change** of T2S SDMG software item or by **modifying a clone** of the same item.
- New development: the *to-be* object/function has to be developed from scratch.

More into detail:

Reuse

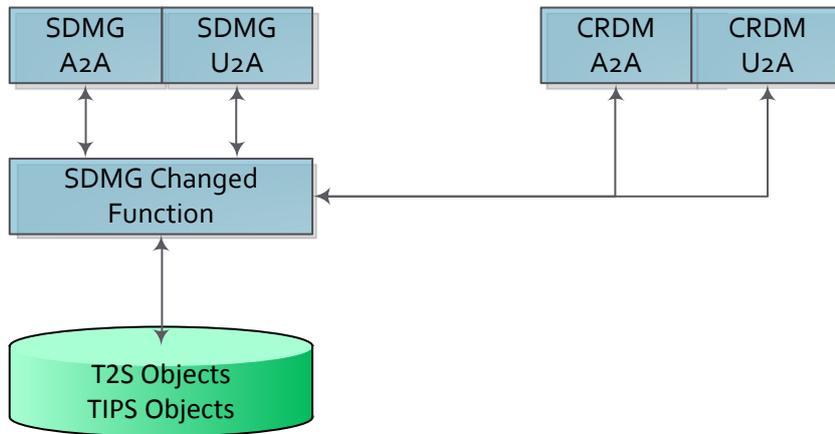
The *as-is* object/function can be fully reused to get to the *to-be* object/function (no software change is needed). This means the original T2S SDMG software does not need to be changed and only the relevant party of the CRDM Business Interface has to be developed.



Reuse

Integration with direct change

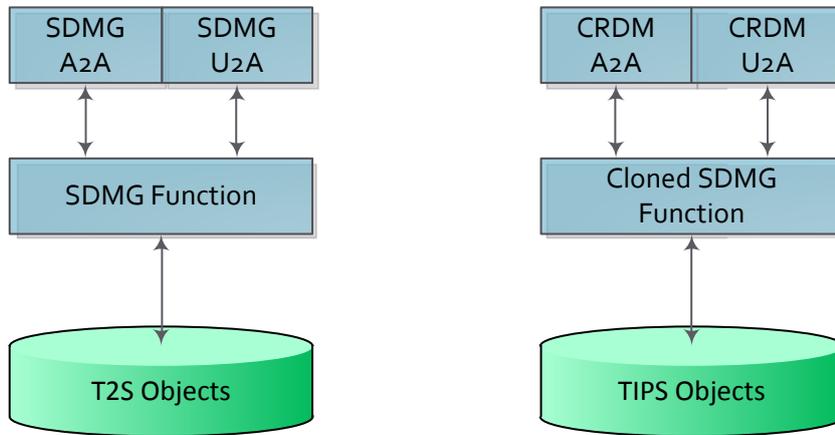
The *as-is* object/function has to be enhanced to get to the *to-be* object/function, by means of a direct change of a T2S SDMG software item. This means the original T2S SDMG software needs to be changed, plus the relevant part of CRDM Business Interface has to be developed.



Integration (Direct Change)

Integration with cloning

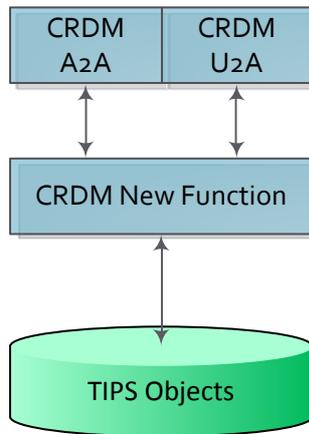
The *as-is* object/function has to be enhanced to get to the *to-be* object/function, by modifying a clone of a T2S SDMG software item. This means the original T2S SDMG software is not impacted, while its clone needs to be modified, plus the relevant part of CRDM Business Interface has to be developed.



Integration (Clone)

New development

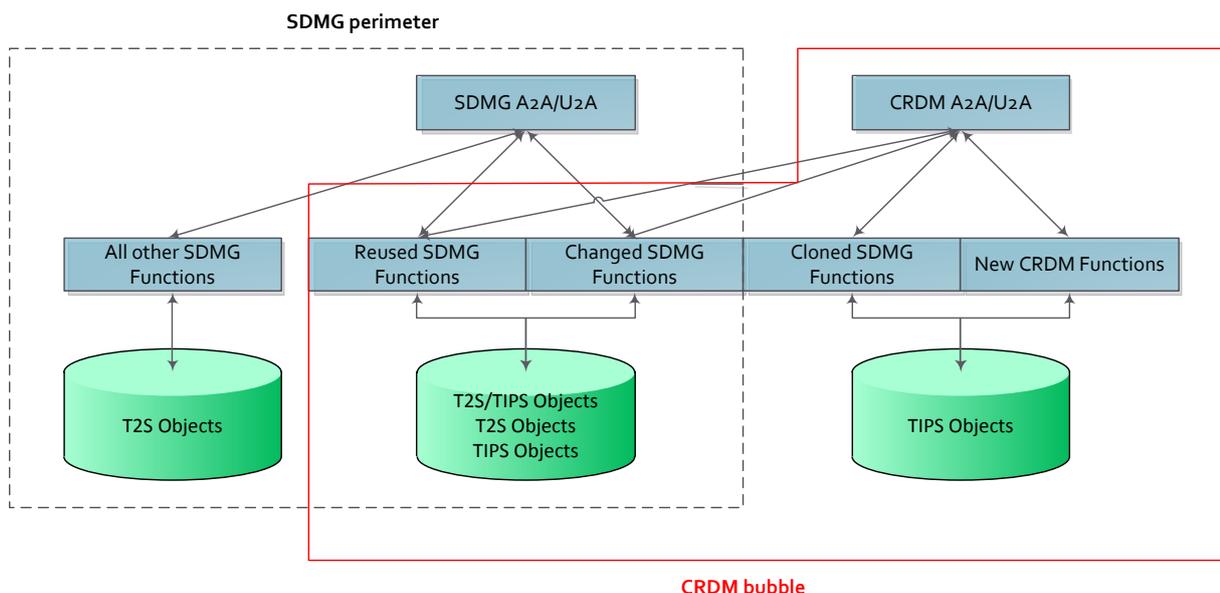
The *to-be* object/function has to be developed from scratch. This means the original T2S SDMG software is not impacted, while a new CRDM function plus the relevant part of CRDM Business Interface has to be developed.



New Development

Overall scenario

CRDM^{TIPS} is built as a “bubble” in T2S, partially overlapping with the current SDMG application perimeter, while ensuring full transparency to other T2S modules and T2S users. In other words, certain functions will be developed from scratch specifically for CRDM^{TIPS} while others will result from adaptations to the existing T2S software. From a database perspective, CRDM^{TIPS} and T2S data will coexist in the same environments, while steps will be taken to ensure that T2S users do not suffer any impact from this.



Backlog setup

The set of objects/functions to be integrated or newly developed identified out of the high-level functional gap analysis and technical implementation analysis was ranked according to their priority into a backlog. The priority of each element in the backlog is based on the importance/criticality of the object/function for TIPS. It may change throughout the project lifecycle, if need be. Each element of the backlog is assigned a weight, related to the effort required to develop and test it.

Specification, development and test

The elements of the backlog are specified, developed and tested, according to their priorities.

Description of requested change:

As documented in section 1.6.3.3.1 – **Static data objects** of the UDFS, the functional scope of SDMGM can be conceptually partitioned into the following areas:

- Party
- Securities
- Securities Account
- T2S Dedicated Cash Account
- Access Rights Management
- Message Subscription Configuration
- Network Configuration
- Report Configuration
- Attribute Domain Management
- Scheduling Configuration
- Market-Specific Attribute Configuration
- Restriction Type Management
- Conditional Securities Delivery Configuration
- Billing Configuration
- Configuration Parameters

According to the above described high-level functional gap analysis and technical implementation analysis, CRDM^{TIPS} relates to the following subset of SDMGM areas:

- Party
- T2S Dedicated Cash Account
- Access Rights Management
- Message Subscription Configuration
- Network Configuration
- Report Configuration
- Restriction Type Management
- Configuration Parameters

Focusing on this limited subset of SDMG areas and with specific reference to the static data objects falling in the scope of CRDM^{TIPS}, the following table (see also **table 142** in section **1.6.3.3.1 – Static data objects** of the UDFS) provides the exhaustive list of relevant static data objects and the type of impact each of them will undergo:

Area	Object	Type of Impact
Party	Party	Integration (Direct Change)
	Party Service Link (<i>new</i>)	New
T2S Dedicated Cash Account	T2S Dedicated Cash Account	Integration (Direct Change)
	Limit	Integration (Direct Change)
	Authorised Account User (<i>new</i>)	New
Access Rights Management	User	Reuse
	Role	Reuse
	Privilege	Integration (Direct Change)
	Certificate DN	Reuse
	User Certificate DN Link	Integration (Direct Change)
Message Subscription Configuration	Message Subscription Rule	Integration (Direct Change)
	Message Subscription Rule Set	Reuse
Network Configuration	Network Service	Direct change
	Technical Address Network Service Link	Integration (Direct Change)
	DN BIC Routing (<i>new</i>)	New
Report Configuration	Report Type	Reuse
	Report Configuration	Integration (Direct Change)
Restriction Type Management	Restriction Type	Direct change
Configuration Parameter	Country	Reuse
	Currency	Reuse
	System Entity	Reuse
	T2S BIC Directory	Reuse
	Service (<i>new</i>)	New
	Currency Service Link (<i>new</i>)	New

All the above listed impacts are expected to be fully transparent for CSDs, CSD Participants and External CSDs. Besides the approach taken to make the changes as transparent as possible for all T2S users, CSDs, CSD Participants and External CSDs will also not be affected by the new data created for Central Banks (e.g. Accounts and Limits) since the existing data segregation rules based on System Entities will continue to apply. Therefore, from the point of view of CSDs and their communities, none of the changes impacting the currently available T2S functions will be discernible in any way.

The following sections describe into detail the type of impact and any potential implication on the concerned T2S Actors (Central Banks and Payment Banks).

Party reference data

The hierarchical party model existing today in SDMG (see UDFS section 1.2.1.3) will not be changed in any way. However, in order to allow Central Banks defining their Parties only once in the CRDM and then selecting the set of Eurosystem Market Infrastructure services they are allowed to use, a new concept of Service will be introduced.

In a nutshell, each Central Bank shall be able to link any of their Parties (defined as Payment Bank) to one or multiple Services (e.g. TIPS). In order to avoid unnecessary impacts on T2S, by default a Payment Bank defined in the CRDM does not need to be linked to the "T2S" Service in order to operate in T2S.

The detailed list of impacts related to the reference data objects of the Party area is reported hereunder.

PARTY

Type of Impact	<i>Integration (Direct Change)</i>
Impact on the software	A new business rule shall ensure that no more than one Party (with type Payment Bank and identified by the same Party Code, i.e. the single BIC that identifies the Party within its System Entity) can be linked to the TIPS Service (see Party Service Link table below). This business rule shall apply when updating the Party Code of an already existing party. Furthermore, a new business rule shall ensure that no more than two Main Users (see User Certificate DN Link below) can be linked to the same Certificate DN for the same Party Code.
Impact on the data	Parties already existing in T2S are not impacted. New Parties (i.e. Payment Banks) may be created in case a financial institution participating in TIPS (either as a TIPS Participant or as a Reachable Party) does not exist today as a Payment Bank in T2S.
Concerned T2S Actors	<i>Central Bank, Payment Bank</i>
Implications for T2S Actors	Already today SDMG imposes that, within the same system entity, there cannot exist two parties identified by the same Party Code (BIC). The first new business rule will restrict further this constraint, only for Payment Banks linked to the TIPS service. This will imply that a given Payment Bank operating in TIPS will not be allowed to use the same BIC with two different CBs. As of today, in SDMG there are no couples of Payment Banks that are defined with the same BIC within two different CBs; therefore the above mentioned additional constraint is not expected to imply any side effect on the Payment Banks currently existing in T2S. The second new business rule will not imply any side effect in T2S, as it relates to a new attribute (Main User) which is not used in T2S.

PARTY SERVICE LINK

Type of Impact	<i>New</i>
Impact on the software	Party Service Link is a new object that allows Central Banks in TIPS linking any of their Payment Banks to the "TIPS" Service, so to allow them operating in TIPS.
Impact on the data	The Party Service Link object shall include one instance for each Central Bank and Payment Bank (either as a TIPS Participant or as a Reachable Party) participating in TIPS.
Concerned T2S Actors	<i>None</i>
Implications for T2S Actors	The Party Service Link object will not be visible in T2S.

T2S Dedicated Cash Account reference data

The cash account structure and organization existing today in SDMG (see UDFS section 1.2.6) will not be changed in any way. However, TIPS requires the possibility to define three new types of objects (TIPS Account, TIPS CMB, TIPS Transit Account), which can be implemented as three new types of cash accounts.

TIPS will also require the possibility to define limits on TIPS CMBs and to configure, for any given TIPS Account and TIPS CMB, the authorization to settle to the relevant TIPS Participants and Reachable Parties.

The detailed list of impacts related to the reference data objects of the T2S Dedicated Cash Account area is reported hereunder.

T2S DEDICATED CASH ACCOUNT

Type of Impact	<i>Integration (Direct Change)</i>
Impact on the software	Three new account types shall be introduced: TIPS Account, TIPS CMB and TIPS Transit Account. Furthermore, new business rules shall provide, for TIPS CMBs (i) the possibility to reuse the External RTGS Account attribute so to allow linking each TIPS CMB to the relevant TIPS Account and (ii) the check of the equivalence between the Currency attribute of the TIPS CMB and of the relevant TIPS Account. New business rules shall allow Payment Banks to create new accounts with type TIPS CMB.
Impact on the data	T2S Dedicated Cash Accounts already existing in T2S are not impacted. New accounts (i.e. TIPS Accounts, TIPS CMBs and the Transit Account for euro) will be created.
Concerned T2S Actors	None
Implications for T2S Actors	The new account types will not be visible in T2S, therefore the new business rules will never be triggered in T2S.

LIMIT

Type of Impact	<i>Integration (Direct Change)</i>
Impact on the software	A new limit type shall be introduced: TIPS CMB Limit. Furthermore, new business rules shall ensure that a TIPS CMB Limit can only be defined for a TIPS CMB and that the limit types already existing in T2S cannot be defined for a TIPS CMB.
Impact on the data	Limits already existing in T2S are not impacted. New limits (TIPS CMB Limits) will be created.
Concerned T2S Actors	None
Implications for T2S Actors	The new Limits will not be visible in T2S, therefore the new business rules will never be triggered in T2S.

AUTHORISED ACCOUNT USER

Type of Impact	<i>New</i>
Impact on the software	Authorised Account User is a new object that allows Central Banks in TIPS and TIPS Participants authorizing TIPS Participants and Reachable Parties settling on a given TIPS Account or TIPS CMB.
Impact on the data	This Authorised Account User object shall include all authorisations to settle on any given TIPS Account and TIPS CMB.
Concerned T2S Actors	None
Implications for	The Authorised Account User object will not be visible in T2S.

T2S Actors	
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Access Rights Management

The access rights model existing today in SDMG (see UDFS section 1.3.3) will not be changed in any way. To ensure a smooth integration within this framework, the access rights model of TIPS has been designed as a subset of the T2S access rights model. More into detail, it envisages the following three limitations (when compared to the fully-fledged T2S model):

- It does not allow granting privileges directly to users or parties (privileges shall be granted to roles only and users and parties shall be granted with roles only).
- It does not allow altering the data scope of any given user or party with respect to any given function.
- Roles are pre-defined and set up by the TIPS Operator.

From a user authentication viewpoint, Central Banks and Payment Banks may opt for reusing the same Certificate DNs they already use today in T2S, or may decide to create new ones specific for TIPS.

New Privileges will be set up to control access to TIPS and CRDM^{TIPS} functions. Existing T2S functionalities that are adapted for use in CRDM^{TIPS} will continue using the privileges that already exist in T2S; in other words, the same privilege will allow access to the same function in both T2S and CRDM^{TIPS}. New functions specific to TIPS and CRDM^{TIPS}, on the other hand, will require new privileges to access.

Assuming the user in question has been granted these new Privileges according to the existing Access Rights Management principles, they will be visible from both T2S and CRDM^{TIPS} (although they will have no effect on T2S functions). The same applies to the related Roles.

The detailed list of impacts related to the reference data objects of the Access Rights Management area is reported hereunder.

USER

Type of Impact	Reuse
Impact on the software	No changes in the software. The same function already existing today in SDMG shall be used to setup and maintain Users related to TIPS.
Impact on the data	The following two scenarios may be put in place: <ul style="list-style-type: none"> • A Central Bank or a Payment Bank already existing in SDMG and operating in T2S may reuse the same Users already existing and grant them with the additional Roles that will be defined for TIPS (see Role table below). In this way, the same User (i.e. the same application or physical person) may trigger functions belonging both to T2S and to TIPS. • A Central Bank or a Payment Bank, even if already existing in SDMG and operating in T2S, may setup dedicated Users and grant them only with the Roles that will be defined for TIPS. In this way, the Central Bank or the Payment Bank would segregate their Users so they can either trigger functions belonging to T2S or to TIPS.
Concerned T2S Actors	Central Bank, Payment Bank.
Implications for T2S Actors	In the second scenario described above, party administrators of Central Banks and Payment Banks would also see in T2S Users that may only operate in TIPS.

ROLE

Type of Impact	Reuse
Impact on the software	No changes in the software.
Impact on the data	Roles already existing in T2S are not impacted. New pre-defined Roles for TIPS will be created.

Concerned T2S Actors	Central Bank
Implications for T2S Actors	Party administrators of Central Banks and Payment Banks will also see pre-defined Roles for TIPS.

PRIVILEGE

Type of Impact	Integration (Direct Change)
Impact on the software	A new business rule shall prevent assigning Privileges related to different Services to the same Role. Furthermore, a new business rule shall prevent granting privileges related to TIPS directly to users or parties (because in TIPS Privileges shall be granted to Roles only and, in turn, Users and Parties shall be granted with Roles only).
Impact on the data	Privileges shall be partitioned according to the Service they belong to. Privileges already existing in T2S are not impacted. New Privileges (related to TIPS) will be created.
Concerned T2S Actors	Central Bank, Payment Bank
Implications for T2S Actors	Party administrators of Central Banks and Payment Banks will also see TIPS Privileges.

CERTIFICATE DN

Type of Impact	Reuse
Impact on the software	No changes in the software.
Impact on the data	Certificate DNs already existing in T2S are not impacted. New Certificate DNs may be created in case a Central Bank or a Payment Bank uses dedicated Certificate DNs to connect to TIPS.
Concerned T2S Actors	None
Implications for T2S Actors	n/a

USER CERTIFICATE DN LINK

Type of Impact	Integration (Direct Change)
Impact on the software	A new business rule shall ensure that, for any given BIC, one User only (called Main User), amongst the ones possibly linked to a given Certificate DN and belonging to a Party having the same BIC as Party Code, can be selected as a User for TIPS.
Impact on the data	A new Boolean attribute (Main User) shall specify whether the given User is the so-called Main User for a given BIC and Certificate DN. Depending on the approach selected for Users and Certificate DNs (see User table and Certificate DN table above), the following two scenarios may be put in place: <ul style="list-style-type: none"> If new Users or new Certificate DNs have been created, then the User Certificate DN Links already existing in T2S are not impacted. New User Certificate DN Links will be created with an appropriate configuration of the Main User attribute. If Users and Certificate DNs already existing in T2S needs to be used for operating in TIPS as well, then the relevant User Certificate DN Links need to be updated in order to setup an appropriate configuration of the Main User attribute.
Concerned T2S Actors	Central Bank, Payment Bank

Implications for T2S Actors	The setup of the new Main Attribute will not be visible in T2S. The new business rule will not impose any additional constraint in T2S.
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Message Subscription Configuration

The message subscription model existing today in SDMG (see UDFS section 1.3.4) will not be changed in any way. TIPS requires the usage of this model for the configuration of the credit notification subscription related to liquidity transfers settled on TIPS Accounts.

The detailed list of impacts related to the reference data objects of the Message Subscription Configuration area is reported hereunder.

MESSAGE SUBSCRIPTION RULE

Type of Impact	<i>Integration (Direct Change)</i>
Impact on the software	A new business rule shall ensure each TIPS Actor can configure a subscription for credit notifications only on the TIPS Accounts that fall in the scope of the same TIPS Actor. In other terms, a Payment Bank (as a TIPS Participant) may only configure subscriptions on its own TIPS Accounts, whereas a Central Bank can configure subscriptions on the TIPS Accounts of all its TIPS Participants.
Impact on the data	Message Subscription Rule already existing in T2S are not impacted. New Message Subscription Rules for TIPS will be created, in order to subscribe for credit notifications related to liquidity transfers settled on TIPS Accounts.
Concerned T2S Actors	<i>Central Bank, Payment Bank</i>
Implications for T2S Actors	Message Subscription Rules related to TIPS will not be visible in T2S.

MESSAGE SUBSCRIPTION RULE SET

Type of Impact	<i>Reuse</i>
Impact on the software	No changes in the software.
Impact on the data	Message Subscription Rule Set already existing in T2S are not impacted. New Message Subscription Rule Sets for TIPS will be created, in order to subscribe for credit notifications related to liquidity transfers settled on TIPS Accounts.
Concerned T2S Actors	<i>Central Bank, Payment Bank</i>
Implications for T2S Actors	Message Subscription Rule Sets related to TIPS will not be visible in T2S.

Network Configuration

The network configuration model existing today in SDMG (see UDFS section 1.3.1.5) will be enhanced by introducing a new functionality that will allow setting up inbound and outbound routing configurations for TIPS.

The detailed list of impacts related to the reference data objects of the Network Configuration area is reported hereunder.

NETWORK SERVICE

Type of Impact	<i>Direct change</i>
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Impact on the software	The software will have to be modified to accommodate the new attribute (see below). As the related maintenance functions are only used by the T2S Operator, and the new attribute will not be displayed in T2S, this will have no relevance for other users.
Impact on the data	A new attribute (Service) shall partition Network Services according to the Service they belong to. Network Services already existing in T2S are not impacted. New Network Services (related to TIPS) will be created.
Concerned T2S Actors	None
Implications for T2S Actors	The new Network Services (related to TIPS) will not be visible in T2S.

TECHNICAL ADDRESS NETWORK SERVICE LINK

Type of Impact	Integration (Direct Change)
Impact on the software	A new business rule shall ensure that, for any given Party (with type Payment Bank) no more than one Party Technical Address can be linked to a Network Service related to TIPS. The configured Party Technical Address shall be used by TIPS to identify the recipient of the floor/ceiling notifications and of the credit notifications.
Impact on the data	Technical Address Network Service Links already existing in T2S are not impacted. New Technical Address Network Services Links (related to TIPS) will be created.
Concerned T2S Actors	None
Implications for T2S Actors	The new Technical Address Network Service Links will not be visible in T2S.

DN BIC ROUTING

Type of Impact	New
Impact on the software	DN BIC Routing is a new object that allows setting up inbound and outbound routing configurations for TIPS.
Impact on the data	This object shall include all inbound and outbound routing configurations for TIPS.
Concerned T2S Actors	None
Implications for T2S Actors	The DN BIC Routing object will not be visible in T2S.

Report Configuration

The report configuration model existing today in SDMG (see UDFS section 1.6.4.2) will be enhanced by introducing, only for TIPS, the following features:

- possibility to specify whether a given Report Type is available in Delta Mode;
- possibility to schedule a given delta Report based on Time Slots.

The detailed list of impacts related to the reference data objects of the Report Configuration area is reported hereunder.

REPORT TYPE

Type of Impact	Reuse
Impact on the software	No changes in the software.
Impact on the data	The attribute domain currently storing T2S Report Types will be enhanced with two new attributes (Service and Delta Mode) in order to specify, for each Report Type, the Service it belongs to and its availability mode (full or delta).
Concerned T2S Actors	None
Implications for T2S Actors	Report Types related to TIPS will not be visible in T2S.

REPORT CONFIGURATION

Type of Impact	Integration (Direct Change)
Impact on the software	New business rules shall allow, only for Report Types related to TIPS and available in Delta Mode, to schedule a Report based on Time Slots (e.g. each three hours) and, at the same time, preventing the configuration of the Event Type attribute, the Currency attribute and the Execution Time attribute (as they are not relevant for TIPS).
Impact on the data	The Report Configuration object will be enhanced with a new attribute (Scheduled Time Slot) in order to specify the time interval according to which the different delta versions of a given Report shall be produced. Report Configurations already existing in T2S are not impacted. New Report Configurations (related to TIPS) will be created.
Concerned T2S Actors	Payment Bank
Implications for T2S Actors	Report Configurations related to TIPS will not be visible in T2S.

Restriction Type Management

The restriction type model existing today in SDMG (see UDFS section 1.2.1.8) will not be changed in any way. TIPS requires the definition of blocking restriction types for TIPS Parties, TIPS Accounts and CMBs.

More into detail, for each of these objects, TIPS shall allow:

- blocking for credit,
- blocking for debit,
- blocking for credit and debit.

The detailed list of impacts related to the reference data objects of the Restriction Type Management area is reported hereunder.

RESTRICTION TYPE

Type of Impact	Integration (Direct Change)
Impact on the software	The maintenance functions will be updated in order to accommodate a new attribute (see below). This attribute will not be handled on T2S side, and the T2S functionality will continue functioning as before.
Impact on the data	A new attribute (Service) shall partition Restriction Types according to the Service they are defined for. Restriction Types already existing in T2S are not impacted and will not require any kind of

	<p>migration operation (the new attribute will simply not be used in T2S for the time being). New Restriction Types (related to TIPS) will be created in order to allow blocking TIPS Parties, TIPS Accounts and TIPS CMBs for</p> <ul style="list-style-type: none"> • credit • debit • credit and debit
Concerned T2S Actors	Central Bank, Payment Bank
Implications for T2S Actors	The new Restriction Types (related to TIPS) will not be visible in T2S.

Configuration Parameters

As the Common Reference Data Management shall support the setup and maintenance of reference data related to multiple multi-currency settlement services, the current configuration parameters of SDMG need to be enriched by:

- defining a new Service object and
- allowing the possibility to link any Currency to the list of Services that allow settlement in that Currency.

The detailed list of impacts related to the reference data objects of the Configuration Parameters area is reported hereunder.

SERVICE

Type of Impact	New
Impact on the software	This is a new object which shall include the list of services that make use of the CRDM.
Impact on the data	The Service object shall include one instance only, related to TIPS.
Concerned T2S Actors	None
Implications for T2S Actors	The Service object will not be visible in T2S.

CURRENCY SERVICE LINK

Type of Impact	New
Impact on the software	<p>Currency Service Link is a new object that allows linking any Currency to the Service (or Services) for which it is a settlement currency.</p> <p>In order to avoid unnecessary impacts on T2S, T2S settlement currencies do not need to be linked to the "T2S" Service.</p>
Impact on the data	The Currency Service Link object shall include one instance for each TIPS settlement currency).
Concerned T2S Actors	None
Implications for T2S Actors	The Service object will be completely transparent for T2S.

The following objects are fully reused, both from a software viewpoint and in terms of data:

- Country
- Currency
- System Entity
- T2S BIC Directory

Therefore, there will be no implications for any T2S Actors for the above listed objects.

Error messages

As of today, many SDMG error messages are explicitly referring to T2S in the text:

BR Id	Error Text
DCC1103	T2S Dedicated Cash Account Number already assigned.
DCC1300	T2S Dedicated Cash Account Restriction overlaps with existing instance
DCD1003	Unknown T2S Dedicated Cash Account. The account must be closed or have Opening Date greater than the current date.
DCD1012	T2S Dedicated Cash Account cannot be restored
DCD1014	Deletion not allowed due to open T2S Dedicated Cash Accounts related to this Transit Account.
DCU1300	T2S Dedicated Cash Account Restriction overlaps with existing instance
DCU1313	Closing Date not allowed due to open T2S Dedicated Cash Accounts related to this Transit Account.
DRC9052	Unknown T2S Dedicated Cash Account Identifier
DRC9053	Unknown T2S BIC
DRC9057	Invalid BIC: it cannot use the specified T2S Dedicated Cash Account

In order to make these error message more general (and therefore meaningful for all services), all error messages possibly returned by SDMG on any of the functions related to the objects that are relevant for TIPS shall be amended in order to remove any specific reference to T2S.

This editorial change is not expected to have any impact on the applications of T2S Actors or to reduce the intelligibility of the error messages.

Submitted annexes / related documents:

Proposed wording for the Change request:

All the above listed changes will be documented in the T2S UDFS and the T2S UHB, in order to describe the impact on the concerned T2S Actors, as follows:

1. By including in the UDFS all the new business rules that may be triggered in A2A mode.
2. By including in the UHB all the new business rules that may be triggered in U2A mode.
3. By amending in the UDFS and the UHB all SDMG error messages explicitly referring to T2S.

The full list of impacted business rules and error texts, including the type of change and the impacted channel (A2A/U2A) is listed below. This table also covers the list of error texts which are being updated to remove explicit references to T2S, as listed in the section above. These changes will be logged accordingly in the UDFS and/or UHB.

BUSINESS RULE IDENTIFIER	TYPE OF CHANGE	BUSINESS RULE DESCRIPTION	A2A/U2A	ERROR TEXT
DCC1103	Business rule and error text update	When performing a T2S Dedicated Cash Account create request, the T2S Dedicated Cash Account Number must be compliant with ISO 20022 standards and must not be already assigned to any other T2S Dedicated Cash Account in T2SCRDM .	A2A/U2A	T2S Dedicated Cash Account Number already assigned-
DCC1300	Error text update	When performing a T2S Dedicated Cash Account Create request, in case of request for creation of a T2S Dedicated Cash Account Restriction, the created restriction must not overlap with any other T2S Dedicated Cash Account Restriction in input having the same Restriction Type.	A2A/U2A	T2S Dedicated Cash Account Restriction overlaps with existing instance
DCD1003	Error text update	The delete requests of T2S Dedicated Cash Account must refer to an existing and active instance. The account to be deleted must be already closed or must have Opening Date greater than the current date	A2A/U2A	Unknown T2S Dedicated Cash Account. The account must be closed or have Opening Date greater than the current date.
DCD1012	Error text update	When performing a T2S Dedicated Cash Account restore request it must refer to an existing and deleted T2S Dedicated Cash Account. The account to be restored must have Closing date less than current date or Opening date greater than the Current Business date; in addition, the Opening date must be equal to or greater than the Account Holder Opening Date and the account Closing Date must be equal to or less than the Account Holder Closing Date	A2A/U2A	T2S Dedicated Cash Account cannot be restored
DCD1014	Error text update	When performing a T2S Dedicated Cash Account delete request, in case of deletion of a future RTGS Dedicated Transit Account, no active T2S Dedicated Cash Account with the same currency must exist in T2S.	A2A/U2A	Deletion not allowed due to open T2S Dedicated Cash Accounts related to this Transit Account-
DCD1082	Business rule update	When performing a T2S Dedicated Cash Account restore request the currency code of the T2S Dedicated Cash Account to be restored must refer to an existing currency code in T2S <u>with Settlement Currency set to True</u> .	A2A/U2A	Unknown currency code
DCD1532	New business rule	<u>When performing a Cash Account restore request, the validity period of a TIPS Account, T2S Dedicated Cash Account or T2S Central Bank Account must be consistent with the validity period of the relevant Transit Account.</u>	A2A/U2A	Transit Account not found or not valid
DCU1300	Error text update	When performing a T2S Dedicated Cash Account Update request, in case of request for creation/update of T2S Dedicated Cash Account Restriction, the new or updated restriction must not overlap with any other T2S Dedicated Cash Account Restriction having the same Restriction Type on the same T2S Dedicated Cash Account.	A2A/U2A	T2S Dedicated Cash Account Restriction overlaps with existing instance
DCU1313	Error text update	When performing a T2S Dedicated Cash Account update request, in case of update of the Closing Date of an RTGS Dedicated Transit Account, the Closing Date of any active T2S Dedicated Cash Account with the same currency must be equal to or less than the RTGS Dedicated Transit Account Closing Date.	A2A/U2A	Closing Date not allowed due to open T2S Dedicated Open Cash Accounts exist related to this Transit Account-
DCU1532	New business rule	<u>When performing a T2S Dedicated Cash Account Update request, the validity period of the T2S Dedicated Cash Account or T2S Central Bank Account must be contained within the validity period of the relevant Transit Account.</u>	A2A/U2A	No valid Transit Account found for the specified validity period
DPU1350	New business rule	<u>When performing a Party Update request to change the Party BIC, there cannot be more than one Party, besides the Central Bank, with the same BIC linked to the TIPS service.</u>	A2A/U2A	Party BIC already linked to the TIPS service
DPU1351	New business rule	<u>When performing a Party Update request to change the Party BIC, there cannot be more than one User flagged as Main User for the same Certificate DN and the same Party BIC.</u>	A2A/U2A	Main User already exists for this Party BIC
DRC9052	Error text update	When performing a Limit create request, the T2S Dedicated Cash Account specified must refer to an existing and active instance in T2S.	U2A	Unknown T2S Dedicated Cash Cash Account Identifier
DRC9053	Error text update	When performing a Limit create request, the BIC+ BIC Branch Code specified must refer to an existing and active BIC+ BIC Branch Code in T2S BIC Directory.	U2A	Unknown T2S BIC

DRC9057	Error text update	When performing a Limit create request, the BIC+BIC Branch Code specified must be authorised to use the T2S Dedicated Cash Account provided in input.	U2A	Invalid BIC: it cannot use the specified T2S Dedicated Cash Account
DRGP010	Error text update	When performing a Grant Privilege request, the static data object to be secured may be a Party, a Securities, a Securities Account or a Cash Account and must refer to an existing one in T2S in the data scope of the requestor.	U2A	Invalid static reference data object to be secured
DRGP019	New business rule	<u>When performing a Grant Privilege request, Privileges linked to a certain Service cannot be granted to a Role if the Role already contains Privileges linked to a different Service.</u>	U2A	<u>A Role cannot contain privileges related to multiple Services</u>
DRGP020	New business rule	<u>When performing a Grant Privilege request, privileges for the TIPS service can only be granted to Roles.</u>	U2A	<u>TIPS privileges can only be granted to Roles</u>

As the above table shows, most of the changes are of editorial nature (e.g. removal of the references to T2S and SDMG in the business rules and error texts).

Others should theoretically never be experienced by the users as they refer to limit scenarios that could only occur with an incorrect system configuration deployed by the T2S Operator (these include DCD1082, which would occur when attempting to restore an account after the T2S Operator has removed the relevant settlement currency, and DCD1532 and DCU1532, which would only occur when the T2S Operator closes or removes the Transit Account for a settlement currency without replacing it).

In light of this, the list of business rules expected to actually impact users' regular operations can be further reduced to just the following:

- DPU1350
- DPU1351
- DRGP019
- DRGP020

The first two rules stem from the need to maintain consistency in TIPS data set up in the more complex CRDM hierarchical party model. CRDM, like T2S, foresees a double-BIC identification structure for parties, while in TIPS each BIC will uniquely identify a single TIPS Participant or Reachable Party. This means that the same Party BIC should not be used by multiple Payment Banks linked to the TIPS Service in different CRDM System Entities. Based on checks performed on the current Production data, this scenario already does not occur at all in T2S: no two Payment Banks exist with the same BIC under different System Entities. Similarly, each DN should have a unique Main User for each BIC.

The last two business rules refer to the new aspects introduced in the Access Rights Management process, and aim to prevent the incorrect assignment of TIPS Privileges and the segregation between TIPS and T2S Roles while bearing no impact on the current Access Rights Management process for T2S.

The specific wording proposals for UDFS and UHB documentation will only contain the aforementioned business rules in the correct sections. The complete wording proposal including the UDFS and UHB sections will be provided at a later stage, in time for the implementation phase of the CR.

High level description of Impact:

Outcome/Decisions:

- * On 25 January 2018 the CRG members concluded that they did not have any objection on the functional description of the CR674 as it was clear and complete. The CRG took note that the RMSG would discuss the release planning and risk elements during its meeting on 30 January 2018 and the OMG would discuss the operational risks on 31 January 2018.
- * On 30 January 2018 the RMSG was in favour of adding the CR to T2S release R2.0 from a planning perspective
- * On 31 January 2018 the OMG did not identify any blocking operational impact of the CR or object to its inclusion in R2.0
- * On 9 February 2018 the CSG adopted a resolution to approve the change request and its inclusion in T2S release 2.0
- * Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SeCo) on 15 February 2018: Following a written procedure from 9 to 15 February 2018, the AMI-SeCo was in favour of approving the Change Request and its inclusion in T2S Release 2.0.

EUROSYSTEM ANALYSIS – GENERAL INFORMATION

Impact On T2S	Static data management		Interface		
	X	Party data management		Communication	
		Securities data management		Outbound processing	
	X	T2S Dedicated Cash account data management		Inbound processing	
		Securities account data management			
	X	Rules and parameters data management			
		Settlement		Liquidity management	
		Standardisation and preparation to settlement		Outbound Information Management	
		Night-time Settlement		NCB Business Procedures	
		Daytime Recycling and optimisation		Liquidity Operations	
		Daytime Validation, provisioning & booking		LCMM	
		Auto-collateralisation		Instructions validation	
				Status management	
		Operational services		Instruction matching	
		Data Migration		Instructions maintenance	
		Scheduling		Statistics, queries reports and archive	
		Billing		Report management	
		Operational monitoring		Query management	
				Statistical information	
				Legal archiving	
		All modules (Infrastructure request)			
		No modules (infrastructure request)			
		Business operational activities			
		Technical operational activities			

Impact on major documentation		
Document	Chapter	Change
Impacted GFS chapter		
Impacted UDFS chapter	UDFS ch.3	Business rules and error codes listed in the UDFS will be amended in order to reflect the new errors that users may encounter in CRDM. The exhaustive list of changes will be provided at

		a later stage.
Additional deliveries for Message Specification		
UHB	UHB ch.6.4	Business rules and error codes listed in the UHB will be amended in order to reflect the new errors that users may encounter in CRDM. The exhaustive list of changes will be provided at a later stage.
External training materials		
Other documentations		
Links with other requests		
Links	Reference	Title
OVERVIEW OF THE IMPACT OF THE REQUEST ON THE T2S SYSTEM AND ON THE PROJECT		
Summary of functional, development, infrastructure and migration impacts		
<p>Existing SDMG functions will be adapted and new ones will be developed in order to maintain the reference data objects foreseen for CRDM-TIPS, as described above.</p> <p>For certain reference objects, T2S users may be able to view instances that are not relevant for T2S business, without any adverse impact.</p> <p>The data (format, content, value range of attributes) of all interfaces provided by T2S SDMG to T2S modules remains also after the implementation of the TIPS features in T2S SDMG exactly the same as before.</p> <p>No impact is foreseen on T2S operations, as the only operational link between the two services consists in the daily reference data propagation process from T2S to TIPS and such process will be fully decoupled from all other T2S processes and events.</p> <p>4CB internal regression test campaign will be executed to ensure that there is no impact on existing functionalities.</p>		
Summary of project risk		
Security analysis		
No potentially adverse effect was identified during the security assessment.		