



EUROPEAN CENTRAL BANK

EUROSYSTEM

**Market Infrastructure Development**  
DG-MIP

# **T2S Change Requests related to the T2-T2S Consolidation project**

## **Overview**

Joint AMI-Pay and AMI-SeCo meeting  
14 May 2019

## Overview

### 1 Introduction

### 2 Streamlined architecture: common components for TARGET services

Connectivity (ESMIG)

Reference data (CRDM)

Billing (BILL)

Business day management (BDM)

Data warehouse (DWH)

Legal archiving (LEA)

### 3 TARGET2 becomes T2: aspects relevant for T2S

Communication between T2 and T2S

Liquidity management and maintenance window

## Introduction

- CRs related to T2-T2S Consolidation fall into two broad categories
  - Streamlining the underlying software architecture to deliver TARGET Services with the introduction of Common Components
  - Adapting to changes from TARGET2 to T2, to the extent they affect or open new possibilities for T2S users
- As of 14 May 2019, these changes are contained in 15 Change Requests
  - CR-696 to CR-710
  - Latest published version:  
<https://www.ecb.europa.eu/paym/target/t2s/governance/html/changerequests.en.html>
- All T2S CRs follow the standard T2S Change and Release Management process
  - Current status: CRs under preliminary assessment, as requested by the T2S CRG
  - Next step: authorisation of the CRs by the T2S Steering Level upon a CRG recommendation
- Objectives: provide an overview of the CRs and highlight their main features

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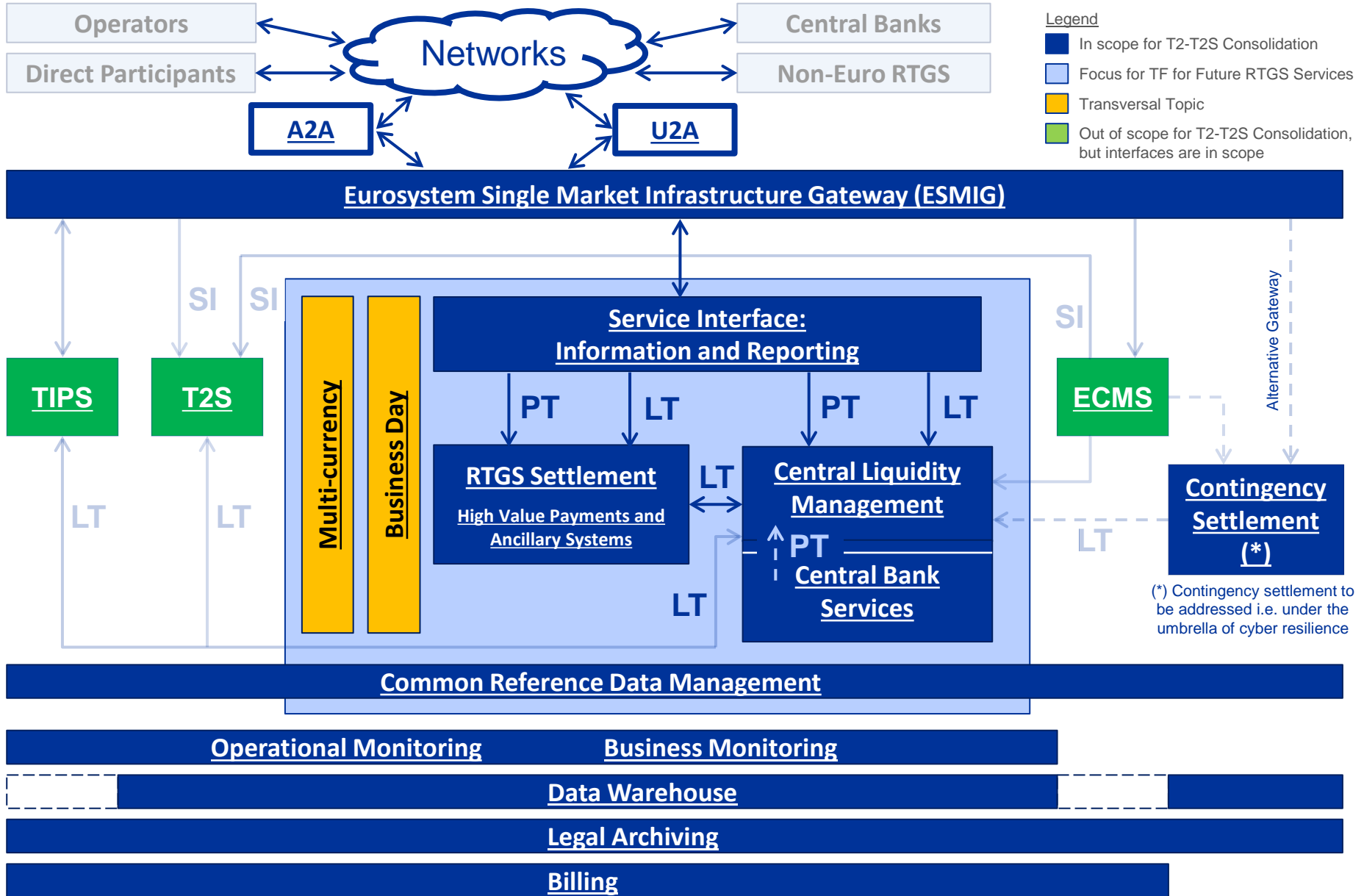
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(\*) Contingency settlement to be addressed i.e. under the umbrella of cyber resilience

Main Business Flows: PT – Payment Transaction; LT – Liquidity Transfer; SI – Settlement Instruction (Not exhaustive)

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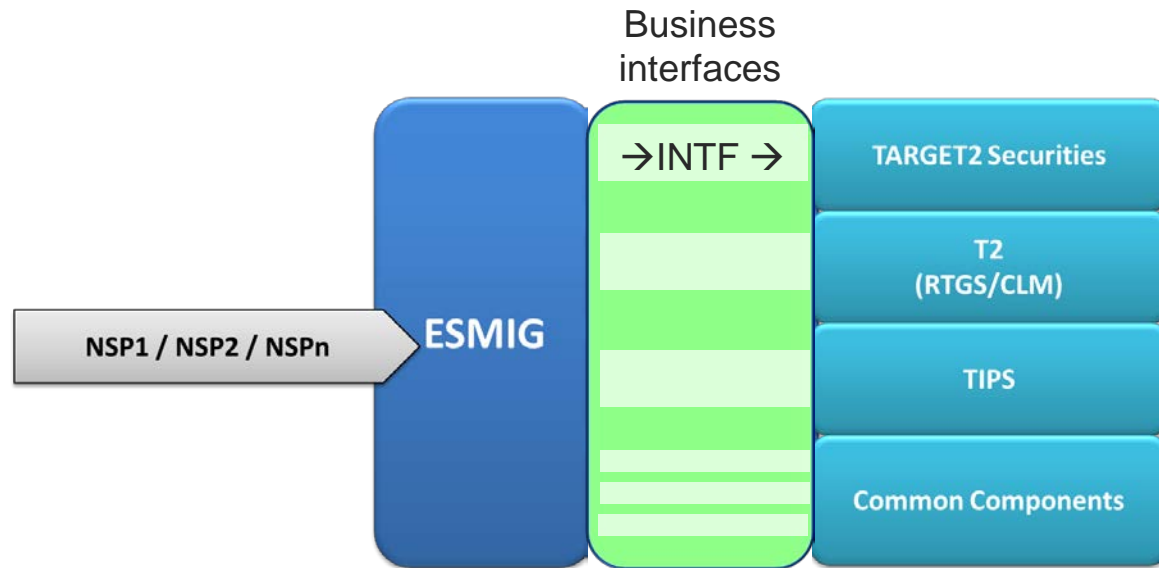
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## ESMIG (Connectivity to TARGET Services & ECMS)

- Relevant CR: CR-701 (ESMIG impact on T2S)
- ESMIG will be the interface between all TARGET Services and the outside world, replacing some of the features performed currently by T2S Middleware and T2S INTF.
- Changes:
  - The addressed service and component name will be added as routing criteria for ESMIG to direct messages correctly
  - Common non-repudiation (NRO) functionality across services
- To make authentication/NRO without a USB token possible, ESMIG NSPs are expected to provide a Hardware Security Module based solution

## ESMIG – Deployment aspects



- The deployment of CR-701 is related to the expiry of existing T2S NSP licensing agreements (i.e. R6.0 in June 2022)
- In general, common components will be in use from the CSLD go-live from T2 side (Nov 2021); but T2S users access them through the new BI only from June 2022 onwards, because the BIs are to be reached via ESMIG.



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**1** Introduction

**2** Streamlined architecture: common components for TARGET services

Connectivity (ESMIG)

**Reference data (CRDM)**

Billing (BILL)

Business day management (BDM)

Data warehouse (DWH)

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Communication between T2 and T2S

Liquidity management and maintenance window

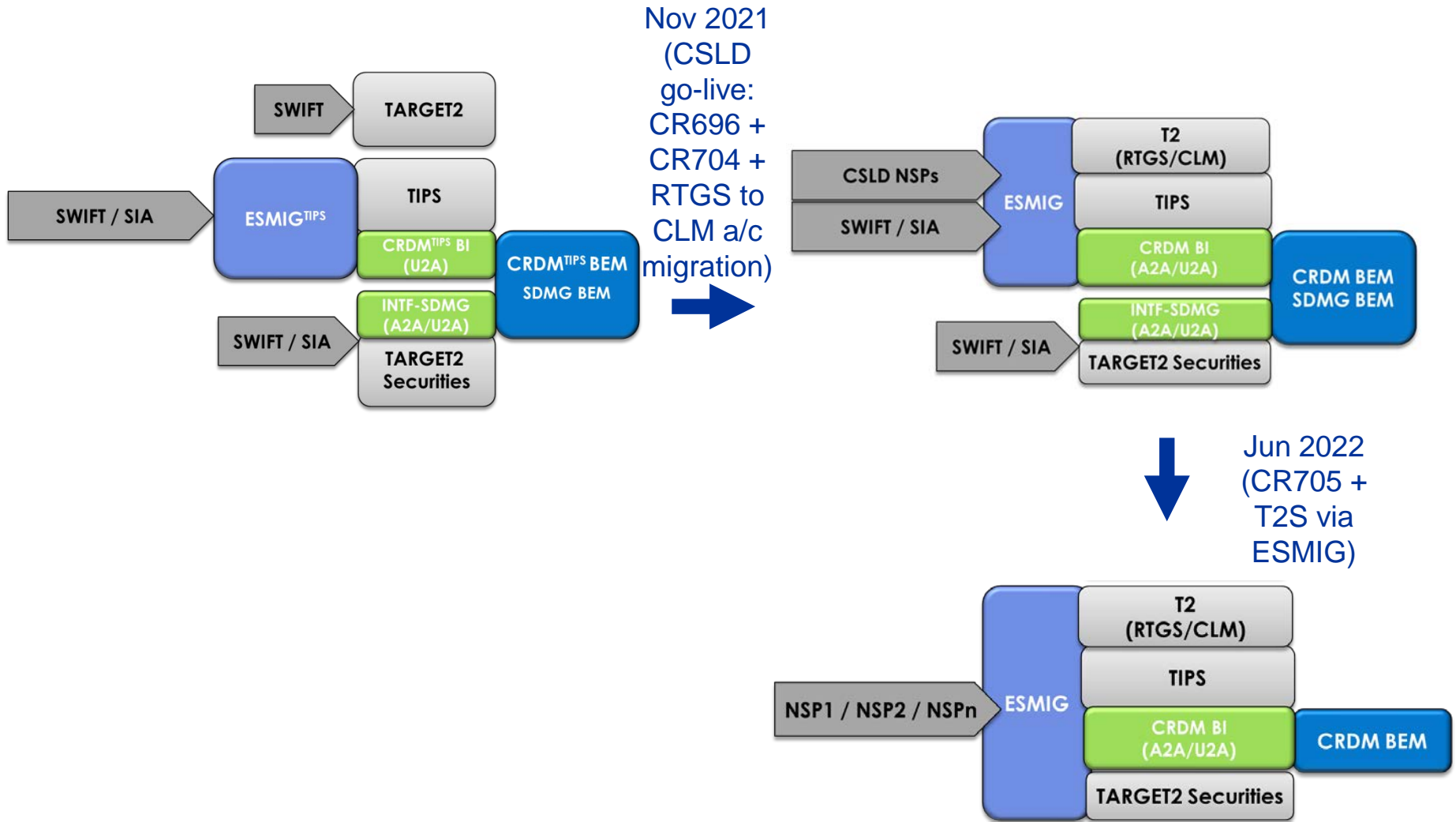
## CRDM (Reference data)

- Relevant CRs:
  - CR-696 (Common Reference Data Management for T2-T2S Consolidation)
  - CR-704 (CRDM Business Interface development)
  - CR-705 (CRDM Business Interface Impact on T2S)
- CRDM already exists, as a common component used by TIPS as introduced by CR-0674
- These CRs complete the enhancement of the Static Data Management domain (SDMG) into CRDM
- Respective scope of the CRs
  - CR-696: changes to CRDM to cater for CSLD requirements → June 2021 (R5.0)
  - CR-704: initial scope of the business interface to CRDM, for those actors which would reach it via ESMIG → June 2021 (R5.0).
  - CR-705: completion of CRDM BI with T2S-only features (e.g. CR-0613 functionality), decommissioning of static data management features from T2S INTF → June 2022 (R6.0).

## Main changes to reference data management

- CR-696 (R5.0)
  - New objects are created in CRDM for T2, BILL and BDM, some existing ones are modified
  - Some object names, error messages are made generic (“Cash account” i.o. T2S DCA)
  - No new data propagation is foreseen from CRDM to T2S modules: T2S back-end modules will receive and access CRDM data in the same way as they used SDMG
  - For CLM currencies, existing links between T2S DCAs and RTGS accounts to be replaced by links between T2S DCAs and CLM accounts → No functional impact but migration activity to be planned for CSLD go-live (Nov 2021, R5.2)
- CR-704 (R5.0)
  - CRDM business interface to handle messages/screens covering objects that are also relevant to T2 participants
  - Validations applied currently by T2S Interface in respect of static data are to be covered by CRDM BI
- CR-705 (R6.0)
  - CRDM BI to handle remaining reference data messages/screens, relevant to T2S participants only
  - Static data functionalities decommissioned from T2S Interface
  - Message bundling functionality following the same principles as CR-613 (separate files for settlement messages and for CRDM messages)

## Transition to CRDM final state



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**1** Introduction

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Data warehouse (DWH)

Legal archiving (LEA)

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## BILL (Billing)

- Relevant CRs:
  - CR-697 (Billing common component development)
  - CR-706 (Billing common component – T2S Migration)
- BILL to provide the same functionality (aggregate billing data, produce monthly invoices) as the T2S Billing module
- Additional BILL features include (see CR for full list):
  - NCBs/CSDs can search / display their own invoices and receive them in XML format
  - T2 NCBs can edit invoices to their participants and set up direct debits
- Due to BILL becoming a common component
  - Relevant CRDM objects to be updated (CR-697)
  - camt.076 and camt.077 specifications to be reviewed (CR-706)
- Planning aspects:
  - CR-697 → June 2021 (R5.0)
  - As of CSLD go-live BILL will *not* collect T2S billing data
  - CR-706 → After T2S connected to ESMIG, i.e. June 2022 (R6.0)
- Note: Historical billing data won't be migrated from T2S Billing to BILL
  - The resulting discontinuity of 3-months history would be handled by *ad hoc* means

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**1** Introduction

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Reference data (CRDM)

Billing (BILL)

**Business day management (BDM)**

Data warehouse (DWH)

Legal archiving (LEA)

**3** TARGET2 becomes T2: aspects relevant for T2S

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## BDM (Business Day Management / Scheduling)

- Relevant CRs:
  - CR-698 (T2-T2S Consolidation Business Day Management Development)
  - CR-707 (T2-T2S Consolidation Business Day Management – T2S Migration)
- Similar approach to the development of CRDM
  - T2S Scheduling module is the basis for BDM, with enhancements to cater for the CSLD requirements
  - Each TARGET Service has its own business day, made of an arrangement of events relevant for that Service
- CR-698 (June 2021, R5.0) makes the necessary enhancements to dynamic data used by BDM
  - All objects have an additional “Service” attribute
  - Links between Events will be enriched with a “Delay” attribute for flexibility
- CR-707 (June 2022, R6.0) foresees the decommissioning of the T2S interfaces used, before ESMIG, to query BDM



## Overview

**1** Introduction

**2** Streamlined architecture: common components for TARGET services

Connectivity (ESMIG)

Reference data (CRDM)

Billing (BILL)

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## DWH (Data warehouse / Long-term statistical information, reports and queries)

- Relevant CR: CR-699 (Decommissioning LTSI, scope and definition of queries and reports and access specifications to DWH functionalities)
- Functionalities of DWH vs current LTSI
  - List of queries and reports to be migrated agreed by the CRG in May 2018
  - Payment banks will be able to execute such predefined queries and reports
  - Advanced users would be able to define customised reports
  - U2A mode only
- To be confirmed
  - Availability of T2S data in DWH only after 3 months (current timing), or on the next business day. To be verified during PA. Either way, STSI is not to be affected.
- Planning:
  - R5.0 (June 2021) for the delivery of DWH
  - Decommissioning of LTSI only once the consolidated data warehouse is able to provide all historical data from the T2 Services and T2S (dedicated CR could be needed if not simultaneous with the go-live of DWH)

## Overview

**1** Introduction

**2** Streamlined architecture: common components for TARGET services

Connectivity (ESMIG)

Reference data (CRDM)

Billing (BILL)

Business day management (BDM)

Data warehouse (DWH)

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## LEA (Legal archiving)

- Relevant CR: CR-700 (Legal Archiving common component for T2S)
- New common component with the same functionality as current legal archiving:
  - Legally archived messages will be retained for a predefined period of 10 years, including the data generated before the CSLD go-live
  - Only the Service Desk of the Operator will have read access to data in the legal archive
- Planning: R6.0 (June 2022)

## Common components for TARGET services: governance aspects

- The emergence of common components requires enhancing existing governance frameworks to cater for changes to these components.
- T2S, TIPS and T2 have their own governance structures and processes to manage change and release management. An ongoing workstream of the T2S PMG aims at designing effective and efficient ways to organise the interaction between governance structures.
- Key aspects to be addressed:
  - Assessment of the impact that a change requested by a TARGET service may have on another service, if a common component is modified
  - Coordination of release management across services and the related organisation of testing
- Completion of the discussion at T2S technical level is expected by Q3 2019

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Reference data (CRDM)

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Business day management (BDM)

Data warehouse (DWH)

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Liquidity management and maintenance window

## Communication between T2 and T2S

- Relevant CRs:
  - CR-702 (T2-T2S Consolidation will require an internal communication layer within the consolidated platform)
  - CR-703 (camt.050 exchanged between T2S and CLM)
- CR-702
  - Since ESMIG caters only for external communication, the internal communication layer handles communication between TARGET Services (T2S  $\leftrightarrow$  CLM, later also T2S  $\leftrightarrow$  ECMS) using ISO20022 messages
  - Signature will not be used for internal communication
  - Communication between T2S and common components is out of scope
  - Planning: R4.2 (November 2020)
- CR-703
  - camt.050 requires adjustments to ensure it can be processed consistently when exchanged between T2S and CLM: compared to the T2S versions, some mandatory fields become optional, while some fields are unpruned
  - If necessary, new Business Rules (BRs) could be implemented to achieve a usage equivalent to pre-CSLD camt.050 specifications
  - Planning: R4.2 (November 2020)

## Overview

**1** Introduction

**2** Streamlined architecture: common components for TARGET services

**3** Future T2: differences from TARGET2 and consequences for T2S

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**Liquidity management and maintenance window**

Outbound liquidity transfers besides CLM

Make the mandatory automated cash sweep at 17:45 to be made optional

Daily maintenance window only for urgent changes & shift of the scheduled time



## Outbound liquidity transfers besides CLM

- CR-708 (Allow Liquidity Transfers from a T2S DCA to a RTGS or TIPS DCA)
- Features
  - Liquidity transfer orders in T2S could be enhanced to permit specifying a DCA opened in RTGS or TIPS as a credited account, in addition to an MCA one
  - Technically, such transfers would be implemented via CLM (but not booked on an MCA)
  - Benefit for T2S users: Liquidity managers can manage their cash balances across all TARGET Services in a harmonised way, without specific restrictions applicable to liquidity transfers initiated in T2S. This should enhance liquidity management and pooling also for securities settlement.
- Planning
  - R5.0 (June 2021), at the latest R5.2 (November 2021) to avoid costs related to an interim period after CSLD go-live

# Mandatory automated cash sweep at 17:45 to be made optional

- CR-709 (Make the mandatory automated cash sweep at 17:45 optional)
- Features and benefits
  - This CR allows more flexibility in the allocation of liquidity between TARGET Services
  - For EUR, any cash balance remaining on a T2S DCA at the end of day will count towards minimum reserve calculation
  - The currently mandatory T2S cash sweep at 17:45, once becoming optional, would consist in configuring a relevant standing order, triggered by a dedicated event (similar to the existing optional cash sweep at 16:30)
  - CR assessment to include an analysis of the extent to which the Liquidity Transfer cut-off could be moved closer to EoD (reducing the difference vs other Services).
  - As cash balances could remain in T2S, T2S shall generate a General Ledger file sent to CLM
  - Non-CLM currencies such as DKK may keep the existing (mandatory) cash sweep
- Planning
  - R5.0 (June 2021), at the latest R5.2 (November 2021) to avoid costs related to an interim period after CSLD go-live

## Daily maintenance window only for urgent changes & aligned across services

- CR-710 (Daily maintenance window only for urgent changes and shift of the schedule time from 03:00-05:00 to 00:30-02:30)
- Features and benefits
  - To simplify the operational day in T2S, the daily maintenance window will be technically enforced (i.e. there is a concrete suspension of the RTS) only in case the operator needs to apply an urgent change to one of the TARGET Services
  - This will maximise the availability of TARGET Services (at a time where e.g. Asian markets are open) and optimise the mobilisation of resources
  - On a day where the MW is needed, it would take place from 00:30 to 02:30
  - The maintenance window scheduled across week-ends will normally be from 00:30 am on Saturday until 02:30 am on Monday (no *ad hoc* decision)
- Planning
  - R5.0 (June 2021)



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# Appendices

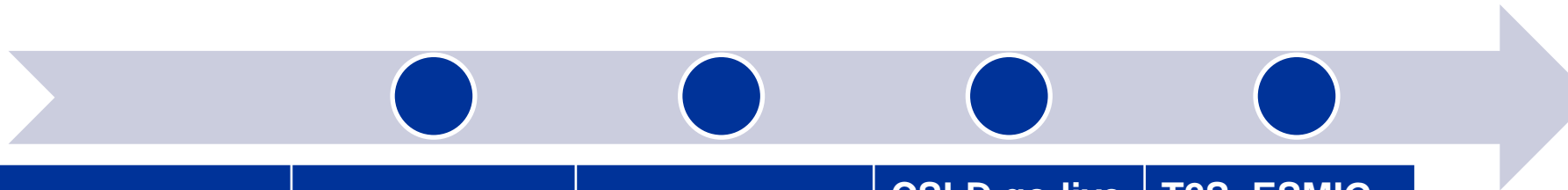
## Planned timeline for the implementation in T2S of CRs related to T2-T2S Consolidation (as of 20/3/19)

R4.2  
Nov 2020

R5.0  
Jun 2021

R5.2  
Nov 2021

R6.0  
Jun 2022



			CSLD go-live	T2S>ESMIG
ESMIG				CR701
CRDM		CR696,704	Migration RTGS a/c → CLM a/c	CR705
BILL		CR697		CR706
BDM		CR698		CR707
DWH		CR699		
LEA				CR700
T2-T2S communication	CR702 (ICL) CR703 (camt.050)			
Optional CRs		CR708 (Outbound LT) CR709 (Cash sweep) CR710 (Maintenance	)	

## Planning of Preliminary Assessment for CSLD CRs

- For the preliminary assessment of 12 necessary and 3 optional T2S CRs resulting from CSLD project, 4CB propose two batches:

Batch #1: 25.03.2019 until 17.05.2019

Batch #2: 27.05.2019 until 18.07.2019

# List of requested changes

#	Title*	necess./optional	targeted T2S Release	PA Batch
T2S-0696-SYS	Common Reference Data Management for T2-T2S Consolidation	necessary	5.0	#1
T2S-0697-SYS	Billing common component for T2S	necessary	5.0	#2
T2S-0698-SYS	T2-T2S Consolidation Business Day Management	necessary	5.0	#2
T2S-0699-SYS	Decommissioning LTSI, scope and definition of queries and reports and access specifications to Data Warehouse functionalities	necessary	5.0	#1
T2S-0700-SYS	Legal Archiving common component for T2S	necessary	6.0	#1
T2S-0701-SYS	ESMIG impact on T2S	necessary	6.0	#2
T2S-0702-SYS	T2-T2S Consolidation will require an internal communication within the consolidated platform	necessary	4.2	#1
T2S-0703-SYS	Camt.050 exchanged by TARGET services and common components	necessary	4.2	#1
T2S-0704-SYS	CRDM Business Interface development	necessary	5.0	#2
T2S-0705-SYS	CRDM Business Interface Impact on T2S	necessary	6.0	#2
T2S-0706-SYS	BILL Business Interface Impact on T2S	necessary	6.0	#2
T2S-0707-SYS	BDM Business Interface Impact on T2S	necessary	6.0	#2
T2S-708-URD	Allow Liquidity Transfers from a T2S DCA to a RTGS or TIPS DCA	optional	5.0	#1
T2S-709-URD	Make the mandatory automated cash sweep at 17:45 optional	optional	5.0	#1
T2S-710-SYS	Maintenance Window	optional	5.0	#1
	* might be subject to changes			



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Thank you for your attention

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