EUROPEAN CENTRAL BANK

EUROSYSTEM

T2S CHANGE REQUEST FORM			
General Information (Origin of Request) ☐ User Requirements (URD) or GUI Business Functionality Document (BFD) ☒ Other User Functional or Technical Documentation (SYS)			
Request raised by: 4CB	**Institute:** 4CB		**Date raised:** 07/04/2025
Request title: Operational and Technical upgrade of the DMT tool to support increase in the number of Securities Accounts			**Request No.:** T2S 0850 SYS
Request type: Common	**Classification:** Scope enhancement		**Urgency:** Fast-track[1]
1. Legal/business importance parameter[2]: High		**2. Market implementation efforts parameter[3]:** Low	
3. Operational/Technical risk parameter[4]: Low		**4. Financial impact parameter[5]:** Medium	
Requestor Category: Eurosystem		**Status:** Allocated to a Release	

Reason for change and expected benefits/business motivation:

On 11 September 2023 five new CSDs successfully migrated to T2S: the Bulgarian National Bank Government Securities Settlement System (BNBGSSS) and Central Depository AD (CDAD) in Bulgaria, Središnje klirinško depozitarno društvo d.d. (SKDD) in Croatia, Euroclear Finland and Euroclear Bank. The number of CSDs connected to T2S therefore increased to 24, and the number of European countries with CSDs relying on T2S increased from 20 to 23.

Euroclear Finland brought all its 2.3 million end-investor accounts to T2S as part of its migration. This approach contrasts with the "layered model" and less securities accounts used by some other markets already active in T2S. The direct holding model is a model where securities accounts are segregated at the level of end-investor in T2S. This results in a very high number of accounts that have to be accessed when processing and settling settlement instructions.

While the migration was successful, the pre-migration activities detected some performance issues during the EOD reporting which were caused by the very high number of securities accounts that T2S needed to handle. The DMT usage for pre-migration activities requires high resource consumption and could cause adverse effects on the performance of CRDM back-end, and vice versa, because DMT and CRDM run in the same infrastructure.

These issues where promptly handled before the migration weekend but highlighted the need to implement long term enhancements with the aim to prepare T2S for potential onboarding of new markets with an end-investor business model.

Deeper investigations have shown that increasing the number of accounts could create adverse effects on system performance. To mitigate the risk of adverse effects on performance, some short-term measures have already been put in place. These are:

- ad hoc fast track queries for selected criteria and search on small number of accounts.
- prevention of ARM scan of securities accounts outside the system entity of the requestor.

These measures have effectively improved response time, but given the growing number of securities accounts in T2S and potential onboarding of other direct holding markets to T2S, long term solutions must be put in place.

[1] Fast-track justification: A fast-track approach is requested due to the urgent need to implement this change, considering the onboarding of additional end-investor markets to T2S, and to mitigate the risk of adverse effects on the overall T2S performance.
[2] Legal/business importance parameter was set to "High" because the change is strongly advisable to mitigate the risk of adverse effects on the overall performance from usage of the Data Migration Tool (DMT) for pre-migration and migration activities for the onboarding of new Direct holding markets to T2S.
[3] Market implementation effort parameter was set to "Low" because the change does not imply significant changes to T2S Actors.
[4] Operational/technical risk parameter was set to "Low" because it is not expected that this change will have an operational impact on the T2S Actors.
[5] Low < 100kEUR < Low-Medium < 200 kEUR < Medium < 400kEUR < High < 700kEUR < Very high

The objective of this change is to achieve the best performance for Direct Holding markets, during the pre-migration phase and the migration phase, both in principle based on usage of the Data Migration Tool (DMT), without any negative effect on the markets relying on different account structures.

Description of requested change:

Several options have been assessed to mitigate the risk of adverse effects on performance. Currently, during the pre-migration phase (and/or the migration phase, depending on how the overall onboarding is agreed with the customer migrating to T2S), there is a concurrent[6] workload on mainframe sub-systems (CRDM BE and DMT for securities accounts and SAC-CMB links), because all sub-systems will be running on mainframe at the same time, including their DB2 databases.

Considering the current Securities Account volume (2,8 millions) and the expected increase during the pre-migration phase for Euronext Copenhagen (4 millions), combined with the expected increase of CMB links volumetrics (up to 8 million additional SAC-CMB links, 2 per SAC EUR/DKK) and taking into account also the foreseen volumetric related to positions (3,7 millions) during the migration phase, it is strongly advisable to update the DMT tool, with the aim to reduce concurrent workload on mainframe subsystems (DB2 and WAS), with the following changes:

1) currently DMT uses a GUI for files upload; this GUI is running on WAS (Websphere Application Server) allocated on mainframe; the change is for a GUI running on Jboss/Angular allocated outside mainframe;
2) currently DMT uses a database for file handling, file unpackage, file enrichment and file (re)package; this database is running on DB2 allocated on mainframe; the change is for a database (Oracle) allocated outside mainframe;
3) introduce into the DMT GUI the information related to the number of records for each file uploaded, with the aim to facilitate Operational Team decision for release phase.

The proposed changes will allow the logical and physical segregation of the Data Migration Tool (DMT) resources consumption outside the mainframe system, so reducing the workload on mainframe sub-systems and then mitigating the risk of adverse effects on the overall performance.

This solution implies an accurate testing phase and evaluation of resources consumption (Jboss/Oracle), with the aim to support foreseen volumes flows into and from CRDM BE.

The changes described in CR-850 apply to the whole DMT functionality.

Submitted annexes / related documents:

Outcome/Decisions:

*CRG on 18 June 2025: the CRG agreed to recommend CR-0850 for authorisation by the Steering Level, following a fast-track approach.
*CSG on 27 June 2025: the CSG agreed to authorise CR-0850.
*NECSG on 27 June 2025: the NECSG agreed to authorise CR-0850.
*MIB on 4 July 2025: the MIB agreed to authorise CR-0850.
*PMG on 3 July 2025 requested the DA in view of R2027.FEB.
*MIB on 4 July 2025: the MIB agreed to authorise CR-0850.
*PMG on 11 September 2025: the PMG agreed to recommend the inclusion of CR-0850 in the scope of R2026.NOV, subject to a positive CRG recommendation.*CRG on 18 September 2025: the CRG agreed to recommend to the PMG the inclusion of CR-0850 in the scope of R2026.NOV.
*OMG on 18 September 2025: the OMG identified no operational impact from the implementation of CR-0850 with R2026.NOV.
*CSG on 02 October 2025: the CSG approved the inclusion of CR-0850 in the scope of R2026.NOV.
*NECSG on 02 October 2025: the NECSG approved the inclusion of CR-0850 in the scope of R2026.NOV.
*MIB on 03 October 2025: the MIB approved the inclusion of CR-0850 in the scope of R2026.NOV.

[6] The meaning of concurrent workload is manyfold. The pre-migration phase for Euronext Copenhagen in PROD is foreseen to be done during normal business hours. During this timing CRDM BE (DB2) and ESMIG A2A for T2S (WAS, DB2) are running on mainframe sub-systems. DMT usage for the pre-migration phase encompass files upload (WAS, DB2), files unpackage (WAS, DB2), CRDM BE invocations (WAS, DB2, MQ), files enrichment and file (re)package (WAS, DB2). So high resource consumption for DMT (WAS and/or DB2) could cause adverse effects on the performance for ESMIG A2A (T2S) and vice versa. The same, high resource consumption for DMT could cause adverse effects on the performance for CRDM BE and vice versa.

Documentation to be updated:

n.a.

Preliminary assessment:

n.a.

Detailed assessment:

T2S Specific Components		Common Components	
LCMM		**Common Reference Data Management**	
	Instructions validation		Party data management
	Status management		Securities data management
	Instruction matching		Cash account data management
	Instructions maintenance		Securities account data management
	Penalty Mechanism		Rules and parameters data management
			Access rights management
Settlement		**CRDM business interface**	
	Standardisation and preparation to settlement		Report management
	Night-time Settlement		Query management
	Daytime Recycling and optimisation		Communication
	Daytime Validation, provisioning & booking		Outbound Processing
	Auto-collateralisation		Inbound Processing
Liquidity Management			
	Outbound Information Management		
	NCB Business Procedures		
	Liquidity Operations		
Statistics and archive			
	Short term statistical information		Legal archiving
			Data Warehouse
T2S Interface		**Eurosystem Single Market Infrastructure Gateway**	
	Communication		Communication
	Outbound Processing		Outbound Processing
	Inbound Processing		Inbound Processing
T2S information management			
	Report management		
	Query management		
Operational Services			
X	Data Migration (T2S DMT)	X	Data Migration (CRDM DMT)
	MOP Contingency Templates		Business Day Management
			Business Day Management business interface
			Billing
			Billing business interface
			Operational and Business Monitoring

Impact on major documentation		
Document	**Chapter**	**Change**
Impacted GFS chapter	--	n.a.
Impacted UDFS chapter	--	n.a.
Impacted URD chapter	--	n.a.

Additional deliveries for Message Specification (UDFS, MyStandards, MOP contingency templates)	--	n.a.
UHB	--	n.a.
External training materials	--	n.a.
Other impacted documentation (FA Sch. 05, FA Sch. 07)	--	n.a.
Impacted GDPR message/ screen fields	--	n.a.
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
CRDM: • Introduction of new column in Data Migration Tool Graphical User Interface. • The format of the static data structured files of the DMT will remain unchanged LCMM: • The format of the Dynamic Data structured files of the DMT will remain unchanged. • Non-regression testing will be conducted for the correct processing of the Dynamic Data files.
Main Cost Drivers

• Implementation costs
  ○ Update of internal specifications for the DMT (7%)
  ○ a new GUI[7] running on Jboss/Angular allocated outside mainframe with 2 new screens (36%)
  ○ a new Oracle database allocated outside mainframe with 3 new Oracle tables (44%)
  ○ Testing of the amended functionalities (11%)
• Running costs:
  ○ a new Oracle database allocated outside mainframe with 3 new Oracle tables (90%)
  ○ maintenance costs (10%)

Impact on other TARGET Services and projects
4CB invites the governances of T2 and TIPS to discuss the need of a dedicated non-regression test campaign DMT being relevant for T2 and TIPS.
Summary of project risk
No risks identified during detailed assessment.
Security analysis
No adverse effect has been identified during security analysis.
Other impacts (yes/no)
No

[7] New GUI will replace old GUI in ESMIG. The link to the new GUI will be different from the link to the old GUI. However, no modification of the access rights are envisaged.

DG - MARKET INFRASTRUCTURE & PAYMENTS

ECB-PUBLIC

22 August 2025

Cost assessment on Change Requests

T2S-850-SYS – Operational and Technical upgrade of the DMT tool to support increase in the number of Securities Accounts			
One-off	Assessment costs* - Preliminary - Detailed	 not charged 10,000.00	 Euro Euro
One-off	Development costs	299,787.52	Euro
Annual	Operational costs - Maintenance costs - Running costs	 13,402.59 171,106.57	 Euro Euro

*The relevant assessment costs will be charged regardless of whether the CR is implemented (Cf. T2S Framework Agreement, Schedule 7, par. 5.2.3).