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:** 31/07/2024
Request title: New Mechanism for handling queries and access rights management for Direct Holding Markets		**Request No.:** T2S 0837 URD
Request type: Common	**Classification:** Scope Enhancement	**Urgency:** Fast-track[1]
1. Legal/business importance parameter: High[2]		**2. Market implementation efforts parameter:** Low[3]
3. Operational/Technical risk parameter: Low[4]		**4. Financial impact parameter:**[5] **Very High**
Requestor Category: 4CB		**Status:** Proposed for 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 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 premigration activities detected some performance issues during the EOD reporting which were caused by the very high number of securities that T2S needed to handle. 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. A contention area identified relates to the access right management (ARM) checks and U2A or A2A queries.

To mitigate the risk of adverse effects on the 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[6] of securities accounts outside the system entity of the requestor.

These measures have been effectively improving response time but, given the growing number of securities

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[1] Fast-track justification: A fast-track approach is requested in order to implement the enhancements needed to onboard in T2S new CSDs with an end-investor business model.
[2] Legal/business importance parameter was set to "HIGH" since with this change implemented new direct holding markets could be on-boarding in T2S, fostering financial integration.
[3] Market implementation effort parameter was set to "LOW" since this change is not expected to require a long implementation time and significant resources on the side of Participating CSDs, CBs and their communities in order for them to be able to take full benefit of the change.
[4] Operational/technical risk parameter was set to "LOW" since this change is expected not to threaten the Service Level for Participating CSDs or CBs or to have no or insignificant operational impact on the Participating CSDs, CBs or 4CB.
[5] Low < 100kEUR < Low-Medium < 200 kEUR < Medium < 400kEUR < High < 700kEUR < Very high
[6] Data scanning is a method used in database management to examine and analyse data within a database. It involves traversing through records in a database or specific tables, scrutinizing each column's schema and data to understand its type, sample data, and characteristics.

accounts in T2S and potential onboarding of other direct holding markets to T2S, long term solutions must be put in place.

The objective of this change is to achieve the best performance for Direct Holding markets without any negative effect on the markets relying on different account structures.

Description of requested change:

Several options have been assessed to address the required optimization related to ARM process and inquiry of Securities Account related to Direct Holding Markets. The proposed solution will not impact the structure of the standard Securities Accounts and will allow the logical segregation of specific Securities Account entities, in order to differentiate between Direct Holding Market securities accounts and others:

- New Securities Account Type for direct holding markets

In order to identify accounts belonging to a direct holding market and owned by end investors, a new Securities Account type, e.g. "End Investor Account", should be added to the Securities Account object.

The inclusion of this new type is expected to have a low to medium impact on CRDM entities connected to the Securities Account business domain, such as T2S CMB Securities Account Link, rule based models such as Message Subscription and Conditional Securities Delivery and so on.

Moreover, it will achieve the goal of having a clear separation by account type for End Investor Securities Accounts.

All T2S modules and Common Components accessing processes related to Securities Accounts have to be adapted to correctly filter out securities accounts according to the specific needs of the module in order to optimize searches and access rights management (ARM).

With a new Securities Account type for end investor accounts, it will be possible to exploit database-specific features in terms of information organisation in order to guarantee the necessary segregation of such accounts, thus reducing to the maximum extent the risk of impact on processing related to CSDs that use a different business model.

Since End Investor Securities Accounts are owned by individuals having a contractual agreement with a CSD participant, it will not be possible to switch the ownership of an account through the Securities Account Party Relationship entity.

As a prerequisite, only standard visibility rules will be applied to End Investor Securities Accounts, ruling out extensions or reductions of access privileges. This will result in an even smoother processing of ARM requests and Securities Account searches. With the envisioned degree of separation from existing Securities Account types, End Investor Securities Accounts will not be accessed for processing by CSDs that use a different business model, thus allowing optimized access paths also for the authorization checks.

The solution will be implemented by using specific database objects which simplify the access path, with a limited impact on intra-module interfaces. If necessary, new technical attributes could be defined without affecting external interfaces.

This solution implies an accurate performance testing phase that will consist in selecting which type of segregation has to be used (e.g. table partitioning of actual account table or use of a different object for this new account type).

Moreover, the detailed assessment phase will evaluate the accesses performed by T2S modules that have typically suffered from performance issues due to the introduction of these new accounts, in order to optimize them. Additionally, during the detailed assessment phase will evaluate the need for other functional constraints which have to be put in place for efficient and stable access to End Investor Securities Accounts.

Submitted annexes / related documents:

Outcome/Decisions:

*CRG on 16 October 2024: the CRG agreed to recommend CR-0837 for authorisation by the T2S Steering Level.
*CSG on 31 October 2024: the CSG agreed to authorise CR-0837.
*NECSG on 31 October 2024: the NECSG agreed to authorise CR-0837.
*MIB on 4 November 2024: the MIB agreed to authorise CR-0837.

*PMG on 16 October 2024: the PMG agreed to launch the detailed assessment of CR-0837 with a view of scoping in R2026.NOV.

Documentation to be updated:

Preliminary assessment:

- • **Financial Impact:** Very High
- • **Impacted modules:** CRDM, DMT, DWH, INTF A2A/U2A, LCMM, LQMG, SETT, QUM
- • **Impact on other Eurosystem Services or Projects:** To be evaluated during DA.
- • **Risk analysis:** No risks have been identified during PA, but potential performance impacts (positive as well negative) will be evaluated during DA.

<u>**Findings:**</u>
- • The 4CB identified as most suitable solution the proposed Option - <u>**New Securities Account Type**</u> for direct holding markets;
- • Introduction of new Securities Account type "End Investor Account";
- • The inclusion of this new type is expected to have a low to medium impact on CRDM entities connected to the Securities Account business domain, such as T2S CMB Securities Account Link, rule based models such as Message Subscription and Conditional Securities Delivery and so on.
- • It will achieve the goal of having a clear separation by account Party type for End Investor Securities Accounts.
- • All T2S modules and Common Components accessing processes related to Securities Accounts have to be adapted to correctly filter out securities accounts according to the specific needs of the module in order to optimize searches and access rights management (ARM).
- • With a new Securities Account type for end investor accounts, it will be possible to exploit database-specific features in terms of information organisation in order to guarantee the necessary segregation of such accounts, thus reducing to the maximum extent the risk of impact on processing related to CSDs that use a different business model.
- • Since End Investor Securities Accounts are owned by individuals having a contractual agreement with a CSD participant, it will not be possible to switch the ownership of an account through the Securities Account Party Relationship entity.
- • As a prerequisite, only standard visibility rules will be applied to End Investor Securities Accounts, ruling out extensions or reductions of access privileges.
- • During the DA phase 4CB will evaluate the accesses performed by T2S modules that have typically suffered from performance issues due to the introduction of these new accounts, in order to optimize them. Additionally, the need for other functional constraints which have to be put in place for efficient and stable access to End Investor Securities Accounts will be evaluated.

Detailed assessment: