

T2S CHANGE REQUEST FORM		
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: 07/05/2025
Request title: Changes to the Billing process for the management of Direct Holding Markets		Request No.: T2S 0851 SYS
Request type: Common	Classification: Scope enhancement	Urgency: Fast-track ¹
1. <u>Legal/business importance parameter</u> ² : High		2. <u>Market implementation efforts parameter</u> ³ : Low
3. <u>Operational/Technical risk parameter</u> ⁴ : Low		4. <u>Financial impact parameter</u> ⁵ : (provided by 4CB)
Requestor Category: Eurosystem		Status: Authorised by T2S Steering Level

Reason for change and expected benefits/business motivation:

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. Indeed, taking into account the current Securities Account volume (an average 2.8 million) the expected increase during the migration phase (4 million), and the projected volumes for 2030 (10 million), it is not possible to adopt the same approach used for Euroclear Finland's onboarding. That approach focused on optimizing processes, which, in some cases, were already too slow and had been adjusted to accommodate the increase (2.5 million) in accounts.

For Euronext Copenhagen's onboarding a partial redesign of the entire T2S billing chain is required in order to ensure an efficient management of increasing volumes and a regularity at performance level, by designing a process scalable both at the application and infrastructure levels, enabling an incremental management of future increases.

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

Description of requested change:

In light of aforementioned considerations, we have identified impacts on following components:

- **T2S Modules**

At the Start of Day all T2S modules, but CRDM, extract RAW data related to consumptions performed by T2S actors during the previous Business Date. Basing on a detailed estimation of the possible daily volume increase by T2S INTF, LCMM, SETT and ESMIG modules, a change on the T2S modules extraction approach and on the daily STSI loading process may be needed.

As for CRDM, amendments should be put in place in order to shift from the current *from-scratch extraction approach* (in which the complete set of CRDM configurations are extracted every day) to an *incremental extraction approach* for RAW data extraction and sending to STSI, allowing to extract and send only the

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" since with this change guarantees the direct holding markets on-boarding in T2S, mitigating the risk of adverse effects on the performance.

³ Market implementation effort parameter was set to "LOW" since this change is not expected to require 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

configuration just performed during the related business date.

This would allow the loading of the total volume of Securities Accounts (and related restrictions) in the same way, with the same approach and within the same timeframes used for the migration.

- **Short term Statistical Information (STSI) Module**

In the STSI context, which is responsible for aggregations stemming from the RAW data sent by the T2S sending Modules (T2S INTF, LCMM, SETT, ESMIG and CoCo BI), changes should be put in place in order to:

- Migrate from the current RAW data loading process into an *incremental loading approach*, for the T2S modules which adopted the incremental approach ad extraction level (as for the previous section);
- Improve the calculation process for the T2S Service Items under the Service Categories:
 - Account Management Services⁶;
 - Settlement Services;
 - Information Services⁷.

The process will need to be made application-wise scalable by identifying micro-functionalities and logical groupings (whether linked or not to business concepts), meaning that the results of the aforementioned calculations (from 3 to n files) will potentially be ready and made available to the next step (BILLCoCo) not all at once (as is currently the case, with three files that must be received at the same time), but at different times. The whole generation process has to be over within the next business date (except the last day of a specific billing period when all information has to be sent over to BILLCoCo in time to not breach the agreed camt.077 sending timeline).

This is to ensure both the maintenance of current functionalities (in terms of timing and content) for current T2S participants and the ability to manage new configurations that will come into play with the onboarding of Euronext Copenhagen.

- **BILLCoCo (Back EndComponent, A2A GUI Components)**

Regarding the BILLCoCo Back End component (BE), the same approach used for STSI one should be adopted. Therefore, a series of processes need to be appropriately and partially redesigned in order to make them scalable at the application level, thereby also ensuring their scalability at the hardware level.

The processes identified as requiring partial refactoring are:

- Upload T2S Daily Consumption Data⁸;
- Generate Consumption Data Function;
- Generate Invoice Data/Data Set Function⁹;
- Send (prepare) Itemised data Function for A2A and U2A querying.

As for the two components, **Billing A2A** and **Billing GUI**, they will need to be adapted to accommodate the changes made to the corresponding BE component, in particular:

- **Billing A2A** – Queries and related answers for TARGET Services are currently managed via real time message based network service. In case the current limitation of 32Kb of message size is exceeded, the BR ICAA002 is triggered by ESMIG and the file store and forward network service is used to convey the answer, with the limitation of 32MB of maximum size. After this second threshold, the BR ICAA003 is triggered by ESMIG and the transmission is aborted, due to the current limitation at the NSP level. In this context, a technical solution should be put in place in order to identify in advance itemised A2A and U2A query results which could potentially exceed this limit, avoiding the complete query execution and the useless consumption of significant computational resources for non-transmittable and non-manageable results. This approach would avoid significant performance degradation to all environment users.
- **Billing GUI** – The screens:
 - Invoice Data and Invoice Data Details screens¹⁰;
 - Itemised Invoice Data screen¹¹,

⁶ For Euroclear Finland's onboarding refer to PBI000000227641

⁷ For Euroclear Finland's onboarding refer to PBI000000226342

⁸ For Euroclear Finland's onboarding refer to PBI000000228074

⁹ For Euroclear Finland's onboarding refer to PBI000000228595

¹⁰ For Euroclear Finland's onboarding refer to PBI000000228547

¹¹ For Euroclear Finland's onboarding refer to PBI000000228644

may experience a significant performance degradation due to the SAC increase. Therefore, changes in the structure of the screen or restriction of search criteria or in the related processing will have to be envisaged.

The communication between the aforementioned Sending Module and STSI Module, as well as between STSI and BILL CoCo, is managed through files exchange, for which an increase in volume is expected (an assessment of the percentage increase was also mentioned above as necessary). Therefore, taking this into account, as well as the files' retention period, it has to be assessed and verified whether modifications to the current size of the system hosting the various software components are necessary.¹²

Submitted annexes / related documents:

Outcome/Decisions:

*CRG on 18 June 2025: the CRG agreed to recommend CR-0851 for authorisation by the T2S Steering Level, following a fast-track approach.

*CSG on 27 June 2025: the CSG agreed to authorise CR-0851.

*NECSG on 27 June 2025: the NECSG agreed to authorise CR-0851.

*MIB on 4 June 2025: the MIB agreed to authorise CR-0851.

Documentation to be updated:

Preliminary assessment:

Detailed assessment:

¹² For Euroclear Finland's onboarding refer to INC000000383006

