



EUROPEAN CENTRAL BANK

EUROSYSTEM

withT2S 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: 30/11/2021
Request title: Optimise processing of CORP transactions during Real Time Settlement: grouping in collections and modified sorting method		Request ref. no: T2S-0779-SYS
Request type: Common	Classification: Scope enhancement	Urgency: Fast-track
1. Legal/business importance parameter¹: High	2. Market implementation efforts parameter²: Medium	
3. Operational/Technical risk parameter³: Medium	4. Financial impact parameter: Medium	
Requestor Category: Eurosystem	Status: Implemented	

Reason for change and expected benefits/business motivation:

T2S is designed to support settlement of high volumes of transactions [e.g. Corporate Actions (CA)] during the NTS period which is tailored for the sequencing and the processing of those high volumes using specific mechanisms (NTS algorithms, batch settlement under NTS cycles and sequences)].

T2S also settles continuous flows of transactions during RTS in compliance with the ceilings and KPI defined in the SLA⁴, relying on a settlement processing capacity of 8000 transactions per minute without concentration of resources, and 1200 transactions per minute otherwise⁵.

An analysis conducted by the ECB/4CB in the context of the upcoming migration of Euroclear Finland (EFi) to T2S, as end-investor market, has identified the possibility of infrequent massive volumes of transactions that would be submitted instantaneously to a settlement attempt, e.g.:

- For CA processing related transactions: (i) concentrated on the same security or cash resource(ii) put under Intraday restriction and (iii) then released massively recycled upon receipt of new resources (up to circa 350 000 CA related transactions in the EFi scenario).
- Under extreme contingency cases where peak volumes of transactions (up to circa 850 000 for EFi CA scenario) remain unsettled at the end of NTS period. In this situation, this massive volume of unsettled transactions are submitted to the RTS processes for settlement.

Under these conditions, massive volumes of Corporate Actions would be submitted to a settlement attempt *concurrently*⁶, in addition to the regular flow of injected settlement instructions.

Such scenario could cause strong side-effects on settlement in RTS, and change requests are required to support the following objectives:

- Objective 1: Enhance the RTS settlement processing in order to keep the Real-time settlement time compliant with the SLA despite any possible massive volume of Corporate Actions submitted concurrently to a settlement attempt. These enhancements aim to handle such exceptional massive concurrent settlement attempts for one CSD without impact on the other CSDs.

¹ Legal/business importance: High because it will improve the stability of T2S in case of peaks in settlement volume

² Market implementation efforts: Medium as it would require implementation efforts only for a minority of T2S actors

³ Operational/technical risk: Medium because even if the changes are made on the T2S settlement module, they apply only in very specific scenarios (exceptionally high volumes of settlement instructions).

⁴ See FA Shedule 6 KPI for Real-time settlement time

⁵ Currently the maximum throughput in Settlement booking does not exceed 1 200 collections updates/minute in case the collection involves the same debited cash or securities account or the same credited securities account. This limit is due to a technical constraint (database simultaneously update limit).

⁶ **Concurrently** means at the same time, in addition to instructions that are injected and submitted to a settlement attempt for which the Real-time settlement time KPI applies

- Objective 2: Enhance the processing capacity of 1200 transactions per minute in case of concentration of resources in order to reach an improved timeframe for the recycling and settlement of up to circa 350.000 transactions during RTS.

Description of requested change:

This change request is fully dedicated to the first objective⁷ with two new enhancements. These two enhancements - (1) creations of sub-sets and (2) modified sorting method - will be implemented in the Settlement domain (SETT), in order to enhance the Corporate Actions settlement capacity processing and to address the potential side-effects of massive settlement attempts on the following processes during RTS:

- Standardization and Preparation to Settlement (SPS) for cases of Intraday restriction removal.
- Regular Recycling (only creation of sub-sets).
- Start of RTS⁸

The two enhancements shall focus on Corporate Actions and is implemented in a way to tackle only those specific scenarios, being neutral for non-Corporate Action-related transactions for all CSDs.

As a basis, in order to always meet the SLA for the Real-time settlement time KPI, the Corporate Action transactions that are submitted to a settlement attempt directly following the injection of the associated settlement instructions during RTS are not subject to this new mechanism for their first settlement attempt.

The two enhancements are described below.

Firstly, for Corporate Action transactions that are submitted to a settlement attempt by one of the three RTS processes mentioned above, sub-sets of the whole set of Corporate Action collections sent are created before sending them to the provisioning/booking. This will improve performance during the booking process.

As a result, the Real-time settlement KPI will remain fully compliant to the SLA for all CSDs.

Secondly, the transaction sorting method for Corporate Actions that would be submitted to RTS settlement processes mentioned will be changed in order to prevent at any time of the RTS period the Settlement processes mentioned above from overflow and high CPU consumption. This new Corporate Action sorting method aims at avoiding any unsettled report thanks to a global analysis of the Corporate Action transactions, thus reducing the number of potentially unsettled Corporate Action transactions processed by the Recycling and Optimization processes. Thus, the mechanism will avoid:

- a massive submission of these transactions to the Recycling process with the possible consequence of flooding the process
- the generation of massive unsettled (USET) reports, by examining all transactions belonging to the same Corporate Actions event.

By design, this second mechanism only applies to Corporate Action related transactions and will prevent overflow due to Corporate Action transactions processing.

Submitted annexes / related documents:

Outcome/Decisions:

*CRG on 17 January 2022: the CRG agreed to recommend CR-779 for authorisation by the T2S Steering Level, following a fast-track approach

*AMI-SeCo on 26 January 2022: the AMI-SeCo agreed with the CRG recommendation of CR-779 for T2S Steering Level Authorisation

*CSG on 27 January 2022: the CSG agreed to authorise CR-779

*NECSG on 27 January 2022: the NECSG agreed to authorise CR-779

⁷ Change request CR-761 is addressing the second objective above together with a limited improvement of the Optimization process in relation to the first objective.

⁸ This concerns the transactions that have entered T2S post the end of C2SX and prior to the start of RTS having not yet been subject to a settlement attempt

*MIB on 03 February 2022: the MIB agreed to authorise CR-779.

*PMG on 16 February 2022: the PMG agreed to launch the detailed assessment of CR-779 with a view of scoping in Release R2023.JUN

*CRG on 7 June 2022: the CRG agreed to recommend to the PMG the inclusion of CR-779 in the scope of R2023.JUN

*OMG on 14 June 2022: the OMG did not identified an operational impact due to the inclusion of CR-779 in the scope of R2023.JUN

*PMG on 17 June 2022: the PMG agreed to recommend the inclusion of CR-779 in the scope of R2023.JUN.

*CSG on 23 June 2022: the CSG approved the inclusion of CR-779 in the scope of R2023.JUN

*NECSG on 23 June 2022: the NECSG approved the inclusion of CR-779 in the scope of R2023.JUN

*MIB on 30 June 2022: the MIB approved the inclusion of CR-779 in the scope of R2023.JUN

Documentation to be updated:

Proposed wording for the Change request:

UDFS

Section: 1.6.1.9.2 Prioritisation

Use of the prioritisation in the settlement process in T2S

During the real-time settlement period, T2S takes into account the applicable level of priority only for pending Settlement Instructions during the recycling and optimisation process*.

T2S does not take into account the level of priority at the first settlement attempt of Settlement Instructions and Settlement Restrictions

* Add the following footnote:

The level of priority is also taken into account in the following SETT processes: Intraday restriction removal and start RTS process

When the priority is taken into account, T2S gives the preference, among Settlement Instruction or Settlement Restriction in competition to use the same securities position and/or cash balances, to the ones with the highest applicable level of priority**.

** Add the following footnote:

T2S gives the precedence for corporate action (CA) transactions over other transactions, and among CA transactions, precedence is given first to the ones carrying cash only or debiting a securities position allowed to be negative, second to the ones crediting a securities account debited by another transaction of the CA event, third to all other transactions, which are themselves sorted following highest priority and lowest remaining quantity.

Detailed assessment:

T2S Specific Components		Common Components
LCMM		
	Instructions validation	
	Status management	
	Instruction matching	
	Instructions maintenance	
	Penalty Mechanism	
Settlement		
X	Standardisation and preparation to settlement	
	Night-time Settlement	
X	Daytime Recycling and optimisation	
	Daytime Validation, provisioning & booking	
	Auto-collateralisation	
Liquidity Management		

	Outbound Information Management		
	NCB Business Procedures		
	Liquidity Operations		
T2S Interface (as of June 2022 without Static Data Management, Communication for SDMG, Scheduler, Billing)		Eurosystem Single Market Infrastructure Gateway (from R6.0 June 2022)	
	Communication		Communication
	Outbound Processing		Outbound Processing
	Inbound Processing		Inbound Processing
Static Data Management (until June 2022)		Common Reference Data Management (from R6.0 June 2022)	
	Party data management		Party data management
	Securities data management		Securities data management
	Cash account data management		Cash account data management
	Securities account data management		Securities account data management
	Rules and parameters data management		Rules and parameters data management
Statistics and archive		Statistics and archive	
	Statistical information (until June 2022)		Short term statistical information
	Legal archiving (until June 2022)		Legal archiving (from R6.0)
			Data Warehouse (from R6.0)
Information (until June 2022 containing reference data)		CRDM business interface (from R6.0 June 2022)	
	Report management		Report management
	Query management		Query management
			Communication
			Outbound Processing
			Inbound Processing
Operational Services			
	Data Migration (T2S DMT)		Data Migration (CRDM DMT, from R6.0)
	Scheduling (until June 2022)		Business Day Management (from R6.0)
			Business Day Management business interface (from R6.0)
	Billing (until June 2022)		Billing (from R6.0)
			Billing business interface (from R6.0)
	Operational Monitoring		Operational and Business Monitoring
	MOP Contingency Templates		

Impact on major documentation		
Document	Chapter	Change
Impacted GFS chapter		
Impacted UDFS chapter	1.6.1.9.2 Prioritisation <u>Use of the prioritisation in the settlement process in T2S</u>	Adding footnotes as to massive SETT processes subject to prioritisation (IR removal and Start RTS) and new precedence in RTS of CA transactions over the other ones
Additional deliveries for Message Specification (UDFS, MyStandards,		

MOP contingency templates)			
UHB			
Impacted GDPR message/ screen fields		No impact	
External training materials			
Other impacted documentation (FA Sch. 05, FA Sch. 07)			
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			
The following impact has been identified:			
<ul style="list-style-type: none"> • New process of analysing corporate actions transactions belonging to the same corporate actions (CA) event. • Sorting of all transactions belonging to the same CA event. The sorting will determine in which order transactions will be sent to settlement in order to optimise settlement. The sorting will be initiated on a regular basis, as well as when a new transaction belonging to the same CA event arrives. • Dividing transactions belonging to the same CA event into sub-sets, where all transactions in a sub-set will be sent to settlement at the same time in order to optimise the intraday restrictions removal 			
Main Cost Drivers:			
<ul style="list-style-type: none"> - New process of analysing corporate actions transactions belonging to the same corporate actions (CA) event. - Addition of new features such as (i) the division of the whole set into sub-sets to be sent in a sequential way according to the sorting category, (ii) the sorting of transactions inside each sub-set and (iii) control of the injection speed - Whole set of recycled CA transactions split into sub-sets to be sent sequentially 			
Impact on other TARGET Services and projects			
No impact on other TARGET Services or projects has been identified.			
Summary of project risk			
n.a.			
Security analysis			
No adverse effect has been identified during the detailed assessment.			



24 May 2022

Cost assessment on Change Requests

T2S-779-SYS – Optimise processing of CORP transactions during Real Time Settlement: grouping in collections and modified sorting method			
One-off	Assessment costs*		
	- Preliminary	2,000.00	Euro
	- Detailed	10,000.00	Euro
One-off	Development costs	370,649.97	Euro
Annual	Operational costs		
	- Maintenance costs	34,798.76	Euro
	- Running costs	0.00	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).