



EUROPEAN CENTRAL BANK

EUROSYSTEM

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: OMG/4CB	Institute: 4CB	Date raised: 29/10/2020
Request title: NTS cash contingency cases management - new CASHGEN tool		Request ref. no: T2S 0747 SYS
Request type: Common	Classification: Maintenance	Urgency: Fast Track
1. Legal/business importance parameter: High ¹	2. Market implementation efforts parameter: Low ²	
3. Operational/Technical risk parameter: Medium ³	4. Financial impact parameter: No financial impact ⁴	
Requestor Category: 4CB	Status: Implemented	

Reason for change and expected benefits/business motivation:

In the course of the incident occurred during the NTS phase of 25th May 2020, as explained in the Post Mortem Report Incident 200525-T2SO-270812, Settlement did not communicate to LCMM a number of partial settlements, causing that the related instructions were not updated to reflect such partial settlements and, consequently:

- The related outgoing confirmation messages (sese.025) informing about the partial settlement were not generated.
- The T2S GUI showed incorrect information for these instructions i.e. missing the partial settlement.
- In case these instructions had a further settlement (either for the whole remaining part or another partial), the related outgoing confirmation message sent contained incorrect information in some fields such as the PreviouslySettledQuantity and PreviouslySettledAmount. For the same reason explained above, the GUI also showed incorrect information after further settlements on the instructions.

To correct these issues, the Reprocessing Tool could not be used because it was designed to cope specifically with the scenarios of the incidents occurred on 27th Nov 2018 and 17th Apr 2019, both during the RTS phase, and as such it is not applicable in the context of NTS-related notifications.

As a consequence:

For the missing or incorrect outbound messages, the T2S Operator either extracted the data in .xlsx or generated them in .csv (XML format) with the OMEGA tool, and provided it to the requesting CSDs during the following days, allowing for a manual injection of the messages in their systems.

The missing partial settlements were not resent to LCMM to update the instructions, and the missing information could not be manually added to the Instructions database due to the complexity and risk of the update required to reflect a partial settlement, particularly high due to the number of affected instructions and the lack of a dedicated operational tool designed for this purpose. Consequently, the information reported when the affected instructions were queried remained incorrect.

As confirmed in the lessons learned, this situation revealed the need to implement solutions that will help to detect, reduce and, when possible, eliminate the previously mentioned impacts and, hence, improving the recovery capacity from a critical incident or contingency scenario. Accordingly, the aim of this Change Request is to implement further solutions addressing the Action Point #11 of the Post Mortem Report Incident 200525-T2SO-270812.

The Change Requests "Reduction and detection of message inconsistencies and new COLGEN" and "AID tools for

¹ Legal/business importance parameter was set to High because a disturbance in the message flow to the customers can cause major issues from a business point of view. The absence of these tools can lead to major operational issues, impacting CSDs reconciliation process and causing potential delays in the business day.

² Market implementation effort parameter was set to Low because it does not require relevant adaptations from T2S CSDs / NCBs and their participants.

³ Operational/technical risk parameter was set to Medium because the implementation of these tools has an operational impact, and the relevant operational procedures have to be enhanced/ defined.

⁴ Low < 100kEUR < Low-Medium < 200kEUR < Medium < 400kEUR < High < 700kEUR < Very high

the T2S Operator” were raised to cover contingency cases, by implementing a measure to reduce the impact in case of a missing previous partial settlement and a new detection check on LCMM to identify inconsistencies in confirmation messages, as well as new tools (COLGEN and AID tools) in order to complement the existing Reprocessing tool, which allows to reprocess settlement updates on instructions that could not be processed during the RTS (via resending of the standard RTS flow from Settlement to LCMM). The aim of these new tools is to cover contingency cases detected during NTS for instructions (SIs and SRs).

During the detail assessment of the Change Requests “Reduction and detection of message inconsistencies and new COLGEN” and “AID tools for the T2S Operator” the specific case of liquidity transfers discrepancies between SETT and LQMG domains was raised. This functionality is covered in RTS by the Reprocessing tool, but neither COLGEN nor the AID tool can detect the missing messages and settlement (and when applicable the generation) during the NTS of liquidity transfers in LQMG domain and solve them.

Detection of the missing liquidity transfers will be managed by the cross-domain queries tool which should have been already implemented when the current functionality is installed in Production. The Cross domain queries tool will be triggered on a time frequency basis in RTS, at the EOD, between each sequence in NTS, or on demand at any moment of the business day, with the goal of detecting possible inconsistencies between settlement transactions in SETT and corresponding Liquidity Transfers in LQMG.

In case of inconsistencies, an alert is raised towards the T2S Operator in order to make the appropriate decision.

Accordingly, with this Change Request an additional new operational tool, **CASHGEN**, will be implemented to allow Settlement to send the missing LQT information in order to allow LQMG to update its database and send the relevant outbound messages (camt.054, camt.025, camt.050)

It is worth highlighting that the covering of all inconsistency cases between SETT and LQMG, thanks to Cross Domain Queries, and their resolution, thanks to new CASHGEN Tool, will encompass the following two specific cases:

- settled and partially settled liquidity transfers (which addresses Action Point #11 of the Post Mortem Report Incident 200525-T2SO-270812)
- unsettled liquidity transfers (the resolution of which goes beyond Action Point #11, but allows, for operational need, the sending of the unsettled messages which should have been sent)

While impacting the same technical component on SETT side this CR will be implemented in conjunction with the Change Request “Reduction and detection of message inconsistencies and new COLGEN” As a matter of fact, a technical constraint link both CRs through CASHGEN and COLGEN tools. Regarding the Financial impact parameter of this Change Request, it is worth mentioning that it has no financial impact as the implementation and running cost will be borne by the 4CB. Nevertheless, the implementation of this Change Request will consume 4CB capacity for evolution (according to the required implementation cost for the 4CB).

Description of requested change:

New CASHGEN tool:

This tool will be implemented by Settlement in order to solve inconsistencies detected between SETT and LQMG modules regarding the settlement, the partial settlement, the unsuccessful settlement attempt or the generation of liquidity transfers during the NTS (During RTS this function is already covered by the existing Reprocessing tool, except for the unsuccessful settlement attempt).

- The tool will thus run after the end of the NTS period and provide the following intraday functionalities to allow Settlement to send through the standard interface the missing LQT information (that should have been sent during the NTS period) in order to allow LQMG to update its database and send the relevant outbound messages (camt.054, camt.025, camt.050) through regular A2A channels.

Cross-Domain Queries tool will be used for the detection, at key moments of the day (every nn minutes during the RTS period, at the EOD, between each sequence in NTS or on demand at any moment of the business day), of possible inconsistencies between settlement transactions in SETT tables and their corresponding liquidity transfers in LQMG tables. Upon an alert raised towards the T2S Operator in case of inconsistencies detection and after an agreement between both SETT and LQMG teams, CASHGEN tool will be launched.

The check shall be done on some key data, meaning some attributes of a Settlement Transaction or a Liquidity Transfer as stored in SETT and LQMG databases, for which an inconsistency may have a direct impact on the settlement in terms of cash balances or information provided to the Clients.

This new tool will run upon request.

Finally, it is also worth highlighting that as of the next business day, OMEGA remains the only tool available to cover the generation of messages for these contingency situations. The OMEGA templates should be enhanced to cover the additionally templates.

Submitted annexes / related documents:

High level description of Impact:

Outcome/Decisions:

- *CRG on 09 November 2020: The CRG agreed to recommend CR-747 for authorisation by the T2S Steering Level.
- * AMI-SeCo on 18 November 2020: the AMI-SeCo agreed to the recommendation of the CRG to authorise CR-746.
- * CSG on 18 November 2020: the CSG agreed to authorise CR-747.
- * NECSG on 18 November 2020: the NECSG agreed to authorise CR-747.
- * PMG on 19 November 2020: the PMG proposed to allocate the CR to R5.0, and launched its detailed assessment.
- * MIB on 24 November 2020: the MIB agreed to authorise CR-747.
- * CRG on 18 December 2020: the CRG agreed to recommend to the PMG the inclusion of CR-747 in R5.2.
- * OMG on 21 December 2020: the OMG identified an operational impact for CR-747.
- * PMG on 22 December 2020: the PMG recommended the inclusion of CR-747 in STP for R5.2 for approval by the Steering Level.
- * CSG on 7 January 2021: the CSG approved the inclusion of CR-747 in STP for R5.2.
- * NECSG on 7 January 2021: the NECSG approved the inclusion of CR-747 in STP for R5.2.
- * MIB on 27 January 2021: the MIB approved the inclusion of CR-747 in STP for R5.2.

Documentation to be updated:

New CASHGEN tool

- There is no impact in the SDDs because of this change.
- MOP enhancement with new OMEGA templates

Detailed assessment

EUROSYSTEM ANALYSIS – GENERAL INFORMATION

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		
	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)			
	Communication		
	Outbound 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
x	MOP Contingency Templates		
	T2S Operator AID tool		
	REPRO TOOL		
	COLGEN TOOL		
x	CASHGEN TOOL		

Impact on major documentation			
Document	Chapter	Change	
Impacted GFS chapter	No impact		
Impacted UDFS chapter	No impact		
Additional deliveries for Message Specification (UDFS, MyStandards, MOP contingency templates)	No impact		
UHB	No impact		
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			
<p>This tool will be implemented by Settlement in order to solve inconsistencies detected between SETT and LQMG side regarding the settlement, the partial settlement, the unsuccessful settlement attempt or the generation of liquidity transfers during the NTS (as such a functionality is already covered in RTS by the existing Reprocessing tool except for unsuccessful settlement attempts). The tool will run after the end of the NTS period and will allow Settlement to send through the standard interface the missing LQT information (that should have been sent during the NTS period) in order to perform the required updates in LQMG database and send the relevant outbound messages (camt.054, camt.025, camt.050) via the regular A2A channels.</p> <p>The tool will be triggered by the T2S Operator with the goal of applying the required updates in LQMG in order to fix the inconsistencies previously identified by the Cross Domain queries tool and reflect the correct information in LQMG database according to SETT.</p> <p>The updates, requested by the T2S Operator may impact a liquidity transfer, a list of liquidity transfers, or all liquidity transfers and consist of:</p> <ul style="list-style-type: none"> - Updating key data attribute(s) of a Liquidity Transfer in LQMG to reflect the correct status, using the standard communication channel commonly used in RTS and NTS, - Creating the missing Liquidity Transfer in LQMG via the standard communication channel commonly used in RTS and NTS, based on the details of the internally generated settlement transaction provided by Settlement. <p>The updates will trigger the generation of the corresponding confirmation message (camt.054, camt.025, camt.050).</p> <p>The Cross-Domain Queries tool will be used earlier for the detection at key moments of the business day of possible inconsistencies between settlement transactions stored in SETT tables and their corresponding liquidity transfers in LQMG tables. Upon an alert raised towards the T2S Operator in case of inconsistencies detection and after an agreement between both SETT and LQMG teams, CASHGEN tool will be launched.</p> <p>The check shall be done on some key data, meaning some attributes of a Settlement Transaction or a Liquidity Transfer as stored in SETT and LQMG databases, for which an inconsistency may have a direct impact on the settlement in terms of cash balances or information provided to the Clients (e.g. The settlement status, the Remaining amounts, the settled amount, the Debited and Credited cash balances, the Currency Code, the Partial Settlement Indicator,...).</p> <p>More precisely, the tool checks if the settlement transactions (related to LQT) automatically generated in SETT database as well as the ones received from LQMG and settled, partially settled or unsettled by SETT are reflected in LQMG database with the expected status of each key data. For this purpose, a specific view of the liquidity transfers with their needed attributes will be made available by LQMG to allow the comparison with the settlement transactions in SETT. The tool must ensure that the value of each key data is identical in both databases for a</p>			

given settlement transaction.

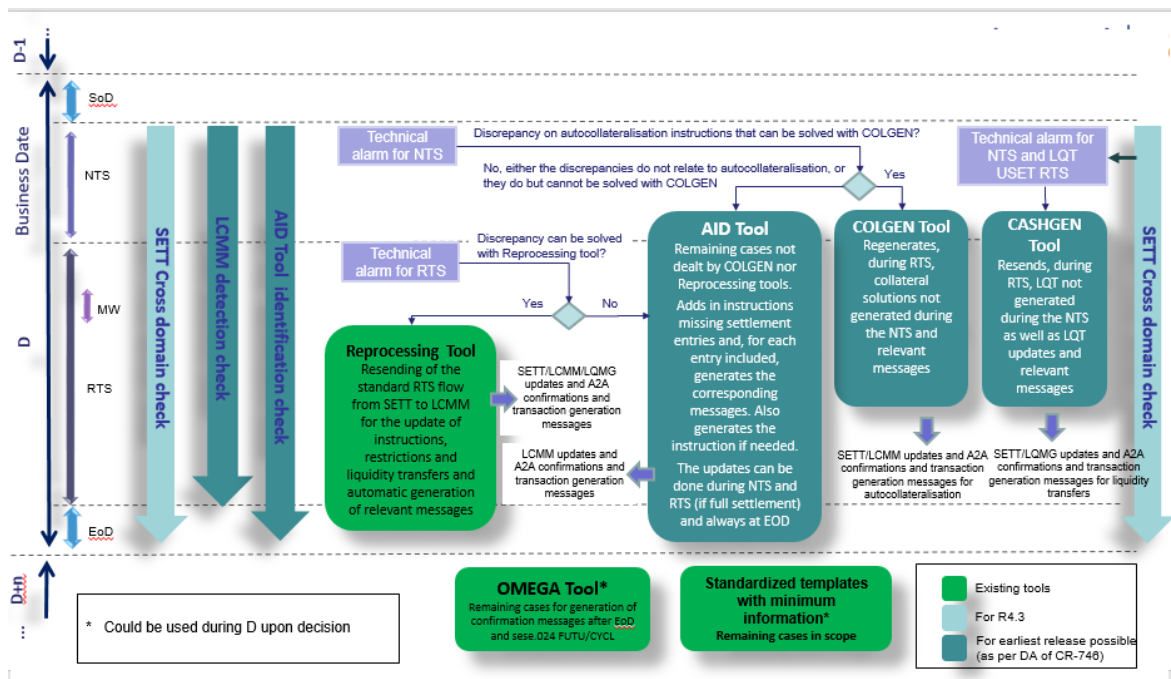
The check will be automatically performed along the day (every xx minutes during the RTS period, at the EOD and between each sequence in NTS) or on demand by the T2S Support Team,

The check may result in the following scenarios:

- No discrepancy found between SETT and LQMG: All data in SETT is consistent with corresponding data in LQMG, hence no action is required.
- Discrepancies are found between data in SETT and data in LQMG:
 - The status of any key data of a settlement transaction is not reflected in the related Liquidity Transfer in LQMG, so updates are required from the CASHGEN tool in order to include the missing settlement status entries into LQMG.
 - A settlement transaction has been internally generated by SETT (CARL or Monetary Policy Rebalancing) and the related Liquidity Transfer has not been created in LQMG. For this case, updates are required from the CASHGEN tool to create the Liquidity Transfer in LQMG.

When any discrepancy is found, an alarm will be triggered and the missing settlement entries identified will be available in the tool for the T2S Operator (Operational team and Last Level Support Teams), who will make the decision of triggering the CASHGEN tool.

Overview of the contingency tool usage



Impact on other TARGET Services and projects

No impact on other systems or projects – ECMS, CSLD, TIPS, Target2.

Summary of project risk

N.a.

Security analysis

No adverse effect has been identified during security assessment.



15 December 2020

Cost assessment on Change Requests

T2S-747-SYS – NTS cash contingency cases management- new CASHGEN tool			
One-off	Assessment costs*		
	- Preliminary	2,000.00	Euro
	- Detailed	10,000.00	Euro
One-off	Development costs	213,430.00	Euro
Annual	Operational costs		
	- Maintenance costs	0.00	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).