General Information (Origin of Request)		
☒ User Requirements (URD) or GUI Business Functionality Document (BFD)		
☒ Other User Functional or Technical Documentation (SYS)		

Request raised by: Eurosystem	Institute: NCBs	Date raised: 04/03/2019
Request title: Daily maintenance window only for urgent changes		**Request ref. no:** T2S-0710-URD
Request type: Common	**Classification:** Scope Enhancement	**Urgency:** Normal
1. Legal/business importance parameter: Medium		**2. Market implementation efforts parameter:** Medium
3. Operational/Technical risk parameter: Low		**4. Financial impact parameter:** No cost impact
Requestor Category: Central Bank		**Status:** Implemented

This Change Request is one of the T2S Change Requests related to the T2-T2S Consolidation Project. The tentative distribution of these Change Requests per functional area and T2S release is summarised in the table below (as of 2 November 2020):

	R4.0 (Jun 2020)	R4.2 (Nov 2020)	R5.0 (Jun 2021)	R5.2 (Nov 2021)	R6.0 (Jun 2022)	R6.2 (Nov 2022)
					T2S>ESMIG	
ESMIG (Connectivity)					CR-701	
CRDM (Reference data)	CR-719	CR-721	CR-704 CR-696		CR-705	
BILL (Billing)				CR-697	CR-706	
BDM (Business day)		CR-698			CR-707	
DWH (Historical data)					CR-699	
LEA (Legal archiving)					CR-700	
T2–T2S communication		CR-702 (ICL) CR-703 (camt.050)	CR-729			CR-734
Liquidity management			CR-708 (Outbound LT) CR-709 (Cash sweep)			
Maintenance window			CR-710			

Reason for change and expected benefits/business motivation:

The T2-T2S Consolidation project is an opportunity for the Eurosystem to develop a vision for evolving its market infrastructure services and ensure a more cost-efficient and resilient infrastructure. For these purposes, several areas of improvement have been identified (e.g. synergies in the area of security, functionalities, etc.) but also technical synergies (i.e. hosting all production services in one region, single connectivity infrastructure, unique storage system, common components for different services). In this sense, various possibilities for a technical consolidation of all services could be realised, which would result in a reduction both in terms of running cost and operational risk.

One of the consequences of such synergies is the alignment of the maintenance windows across all TARGET services and common components, with the exception of TIPS, which operates 24/7/365 and thus has no maintenance window.

In order to limit the impact on the CSD/DCP side of the change and to simplify the operational day in T2S, the daily maintenance window will be technically enforced (i.e. there is a concrete suspension of the RTS) only in case the operator needs to apply an urgent change to one of the TARGET services. Differently, RTS would run seamlessly from the end of NTS until IFOP cut-off.

When special activities are foreseen to be executed over the week-end like, as a non-exhaustive list, software releases (major or minor), infrastructural changes of key components (DB2, IMS …), business continuity tests, different start and end times could be needed. In such cases the 4CB would submit the relevant request to the OMG in due time and according to the procedures described in the T2S MOP.

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Description of requested change:

The maintenance window in T2S and in other TARGET services should be aligned. Without prejudice of the provisions of the Framework Agreement or CPA in terms of KPIs and support hours, the maintenance window will be technically enforced only in case an urgent change has to be deployed by the T2S Operator. When enforced, the maintenance window will apply to all TARGET services. The relevant operational procedures will be detailed in the MOP.

The night-time settlement processes in the T2S settlement day will continue the same as they are now covering both settlement cycles (first night-time settlement cycle and last night-time settlement cycle). After the completion of the night-time settlement period and start of the real-time settlement period[1], T2S would enter the T2S maintenance window from 03:00 am until 05:00 am CET/CEST only in case an urgent change has to be deployed. Also if the maintenance window is not activated, T2S should send a camt.019 at 03:00 and 05:00 – as required by some participants for the synchronisation of their own activities. These camt.019 messages should contain a specific code to avoid any confusion with other camt.019 messages currently sent by T2S throughout the business day.

Taking into account that the possibility that urgent changes can be deployed is always in place, the CSD/DCP must refrain from scheduling any activity during this period or, subordinately, they must be ready to cancel them on a short notice.

There will be no change to the list of processes performed during the maintenance window when activated:
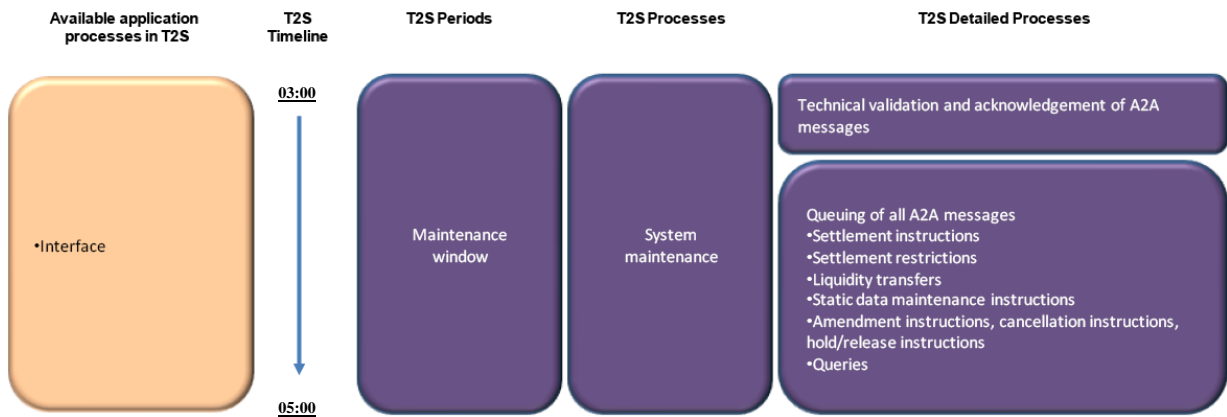
In addition, the timing of the week-end maintenance window should be adjusted to be from Saturday 02:30 to Monday 02:30[2]. Unlike the daily maintenance window, the week-end maintenance window is always enforced.

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Submitted annexes / related documents:

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Proposed wording for the Change request:

URD

The "Figure 3-1 – High-level settlement processing timetable"

………

………
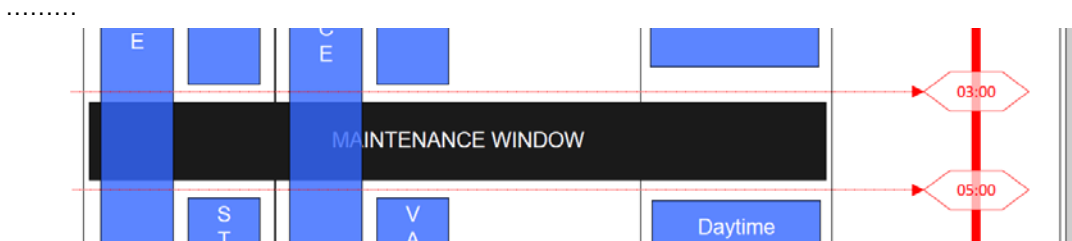
shall be updated to show that the scheduled maintenance window will be activated only in case there is a need of having an urgent maintenance activity on a particular day.

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[2] The proposed timing is subject to confirmation during the forthcoming yearly SLA review process (in 2019)..

Reference ID	T2S.03.150

T2S shall undertake system maintenance, ~~during the period in which the lowest volumes and least critical settlement activity are expected. This period shall be between 03:00 and 05:00, based on today's business activity.~~ when communicated by the T2S operator for urgent maintenance activities, during the period between 03:00 and 05:00.

Since T2S and ~~TARGET2~~ the T2 service (including CLM and RTGS components) will run on the same technical infrastructure, the T2S/~~TARGET2~~ T2 operator shall ~~consider the possibility of aligning the TARGET2 maintenance window with the T2S maintenance window in order to reduce the cost of these procedures.~~ align the T2 maintenance window with the T2S maintenance window.

T2S calendar – Weekends

Reference ID	T2S.03.340

During weekends, T2S shall move to the settlement date of Monday after the end of the Friday settlement day (at 18:45 on Friday) and perform the related schedule until the end of night-time settlement period. Real-time-settlement for Monday may already start, if the NTS ends before ~~3.00~~ 02:30 am on Saturday. On Monday, T2S shall start performing the schedule at ~~05:00~~ 02:30 with the preparation of daytime settlement as the continuation of the same settlement day or continue the RTS if started already before ~~3.00~~ 02:30 am on Saturday[3].

T2S calendar – Standard service availability

Reference ID	T2S.03.350

T2S interfaces and processes shall not be available on regular basis during weekends. T2S shall not be available from ~~03:00~~ 02:30 on Saturday to ~~05:00~~ 02:30 on Monday.

Reference ID	T2S.20.030

T2S is allowed a maintenance window downtime of a maximum of 2 hours per 24 hours at night (03:00 to 05:00 CET). If so, files received during this time frame ~~maintenance downtime~~ will be queued (see T2S.03.230).

UDFS

1.4.3.1 Settlement day high level schedule

The schedule of a settlement day in T2S constitutes the major periods as listed below:

l Start of day;

l Night-time settlement;

l Maintenance window (Daily, Week-end)

l Real-time settlement;

l End of day.

The different times shown in the high-level diagram below and text for the start and end of a period are only indicative. T2S controls the execution of the periods that the start of a subsequent period starts, at the completion of the current period and/or the occurrence of a cut-off or event. All currency dependent cut-offs and events must be configured for each T2S settlement currency

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[3] The proposed timing is subject to confirmation during the forthcoming yearly SLA review process (in 2019).

Diagram 1 - High level schedule of a settlement day

[…]
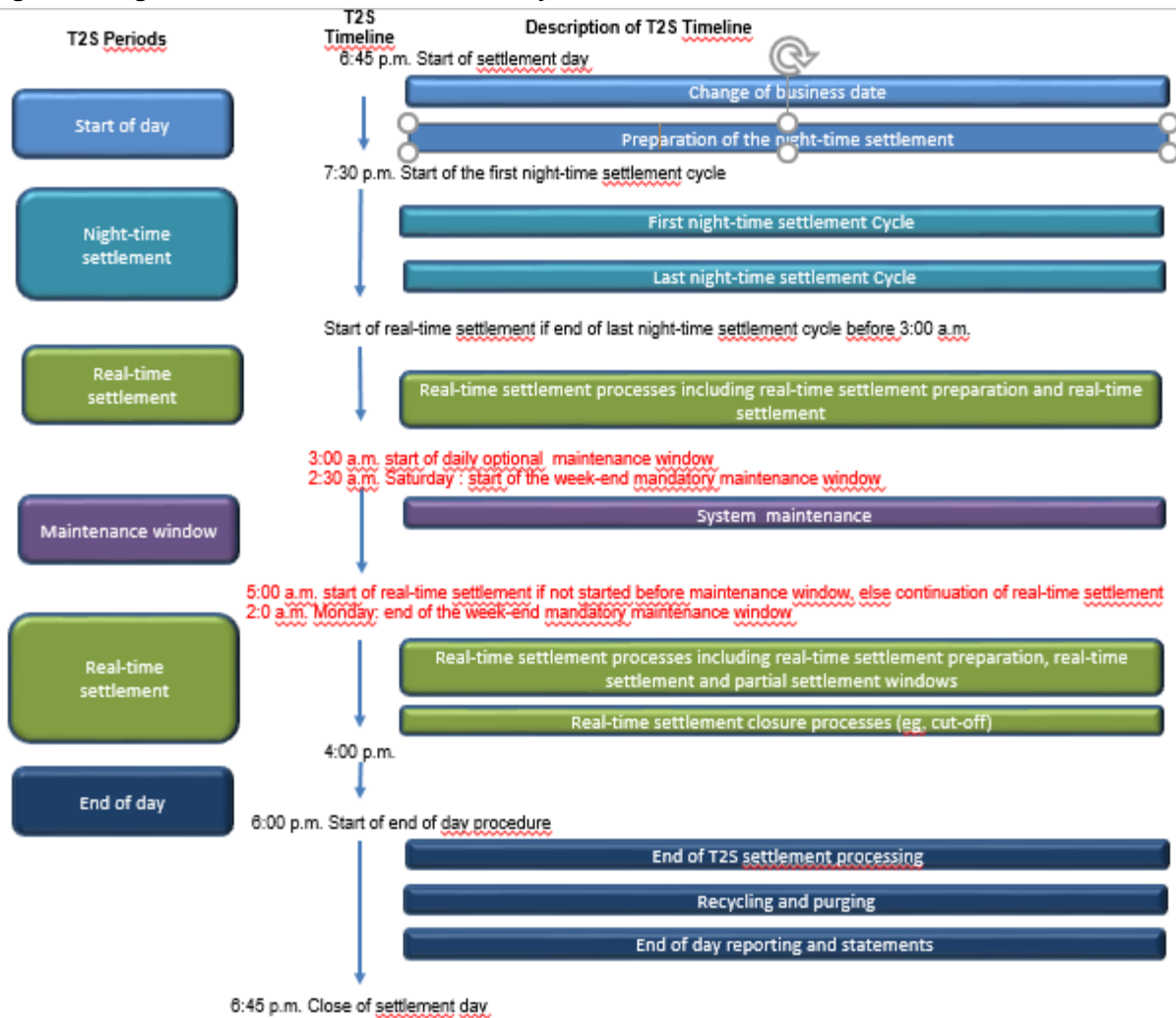
1.4.3.2 Settlement day high level processes[4]

[…]

T2S Timeline	T2S Periods	High Level Description
3:00 a.m. – 5:00 a.m.	Maintenance window (MWI)	The maintenance optional daily window.
2:30 a.m. Saturday – 2:30 a.m. Monday	Maintenance window (MWI)	The mandatory weekend maintenance window.

[…]

1.4.4.3   Maintenance window (MWI)

This section presents the maintenance window processes in the T2S settlement day. The optional daily maintenance window only occurs when urgent maintenance activities are required. The T2S operator must communicate such cases at least one business day in advance. This optional daily maintenance window This maintenance window takes place from 3.00 a.m. until 5.00 a.m., after the completion of the night-time settlement period. The weekend maintenance window takes place from 2:30 a.m. on Saturday to 2:30 a.m. on Monday and is not optional.

In case the NTS completes before 3.00 a.m. from Mondays to Fridays and before 2.30 a.m. on Saturdays , the real-time settlement period commences until the start of the maintenance window. at 3.00 a.m.

1.4.4.3.2   Maintenance window schedule

The diagram below shows the different processes occurring during the maintenance window along with the list of available services.
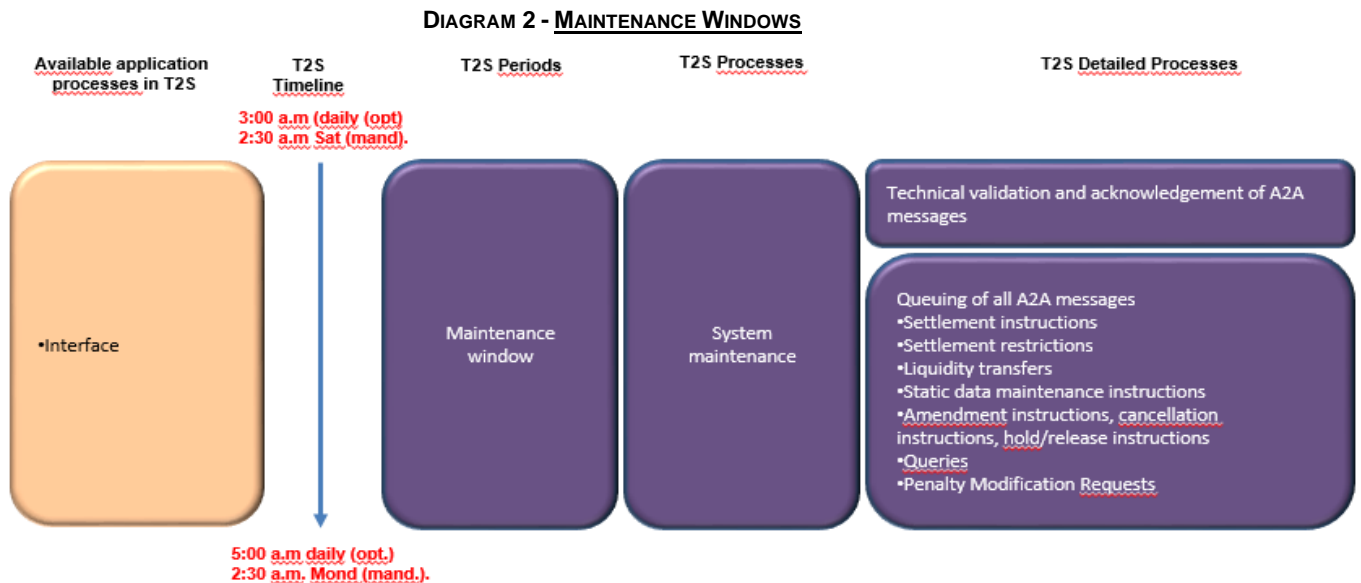
DIAGRAM 2 - MAINTENANCE WINDOWS

The weekend maintenance window takes place from 2:30 a.m. on Saturday to 2:30 a.m. on Monday and is not optional.

1.4.4.4.   Real-time settlement (RTS)

This section presents the real-time settlement processes in the T2S settlement day. The real-time settlement

period starts after the end of the night-time settlement and is followed by the end of day period.

In case the NTS completes before 3.00 a.m**. from Mondays to Fridays and before 2.30 a.m. on Saturdays (CR 710)**, the real-time settlement period commences until the start of the maintenance window. ~~**at 3.00 a.m.**~~

[…]

4.2.2. T2S proprietary codes

Exact4AlphaNumericText_STAT_T2S

Name	Code	Definition
EODP	End of Day period	EODP
FNTC	First night-time cycle	FNTC
…	…	…
<u>NOMW</u>	<u>No maintenance window</u>	<u>NOMW</u>

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High level description of Impact:

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Outcome/Decisions:

* CRG on the 20 March 2019: The CRG agreed to launch the preliminary assessment of CR-710.

* CRG on the 20 August 2019: The CRG agreed to recommend CR-710 for authorisation by the T2S Steering Level.

* PMG on the 15 October 2019: The PMG proposed the allocation of the CR for R5.0.

* AMI-SeCo on 16 October 2019: The AMI-SeCo agreed with the recommendation of the CRG.

* CSG on 25 October 2019: The CSG authorised the CR for allocation to a T2S release.

* NECSG on 28 October 2019: The NECSG authorised the CR for allocation to a T2S release.

* MIB on 8 November 2019: The MIB authorised the CR.

* CRG on 22 January 2020: The CRG took note of the detailed assessment results and agreed to recommend to the PMG the implementation of CR-710 in R5.0.

* PMG on 23 January 2020: The PMG recommended the CR for approval by the T2S Steering Level and on its inclusion in R5.0.

* OMG on 30 January 2020: The OMG completed the operational assessment of the CR.

* OMG on 31 January 2020: The OMG identified an operational impact.

* CSG on 5 February 2020: The CSG approved the inclusion of CR-710 in R5.0.

* NECSG on 10 February 2020: The NECSG approved the inclusion of CR-710 in T2S R5.0.

* MIB on 13 February 2020: The MIB approved the inclusion of CR-710 in the scope of R5.0 without discussion.

* CRG on 26 May 2020: The CRG agreed to the proposed SDD updates and confirmed its earlier recommendation to the PMG to implement CR-710 in T2S R5.0.

Preliminary assessment:

- **Impacted modules: SETT (NTS), SCHED (BDM from June 2022)**

- **Findings:**

The generation of camt.019 with message usage "Status of the T2S Settlement Day Notification" is triggered by events. Therefore the customer will be informed about the start and end of maintenance window via camt.19 the same way as today. If no maintenance window is running the customer will not get any camt.019 regarding maintenance window phases.

Regarding the statement "*...the maintenance window will be technically enforced only in case an urgent change has to be deployed by the T2S Operator*":
- The assumption of the 4CB is that urgent changes have to be announced well in advance, i.e. at least the business day before the change has to be applied.
- A change of the operational day (meaning Introduction of a maintenance window) during the current business day is not feasible.

Implementation effort in T2 and T2S (i.e. effort of the CR) should, subject to the outcome of the CR detailed assessment, be similar for the two timings assessed (0.30 – 2.30 hrs am CET and 3 – 5 hrs am CET).

- **Release Allocation:**
   Targeted T2S R5.0 has been confirmed, might be subject to change with result of CR Detailed Assessment

- **Open issues/ questions to be clarified by the originator:**

No open questions

T2S Specific Components		Common Components	
LCMM			
	Instructions validation		
	Status management		
	Instruction matching		
	Instructions maintenance		
	Penalty Mechanism		
Settlement			
	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 Nov 2021)*		**Common Reference Data Management** *(from PROD R5.2 Nov 2021)*	
	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 Nov 2021)		Short term statistical information
	Legal archiving (until Nov 2021)		Legal archiving (from PROD R5.2)
			Data Warehouse (from PROD R5.2)
Information *(until June 2022 containing reference data)*		**CRDM business interface** *(from PROD 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 PROD R5.2)
X	Scheduling (until Nov 2021)	X	Business Day Management (from PROD R5.2)
		X	Business Day Management business interface (from PROD R6.0)
	Billing (until June 2022)		Billing (from PROD R5.2)
			Billing business interface (from PROD R6.0)
	Operational Monitoring		Operational and Business Monitoring

Impact on major documentation

Document	Chapter	Change
Impacted GFS chapter		
Impacted UDFS chapter	1.4 Settlement Day 1.4.3.1 1.4.3.2 1.4.4.3 1.4.4.3.2 1.4.4.4	Update for optionality on week days and mandatory in the week-end
	4.2.2. T2S proprietary codes Exact4AlphaNumericText_STAT_T2S	Inclusion of new code NOMW
Additional deliveries for Message Specification	camt.019 ReturnBusinessDayInformation	Introduction of an additional status value for usages "Status of the T2S Settlement Day Response" and "Status of the T2S Settlement Day Notification" to be sent out at 3:00 and 5:00 on weekdays when no Maintenance Window is running The change is to be carried out on the message specifications for both T2S and CSLD. - Maintenance Window made optional on week days - Add new event MTWS, when maintenance windows not activated, to generate camt.019 for clients' activities synchronisation - New maintenance window schedule on the week-end (from 02.30 Saturday to 02.30 Monday)
UHB		
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 change requires maintenance of separate Operating Day Type configurations that needs to be established. Additional status code in camt.019 for weekdays with no maintenance window. This change is to be carried out on the message specifications for T2S (for usage cases "Status of the T2S Settlement Day Notification" and "Status of the T2S Settlement Day Response") and T2-T2S Consolidation (for usage cases "Status of the T2S Settlement Day Response").
Summary of project risk
Security analysis
No adverse effect has been identified during security assessment.