



EUROPEAN CENTRAL BANK
EUROSYSTEM

General Information (Origin of Request)		
<input type="checkbox"/> User Requirements (URD) <input checked="" type="checkbox"/> Other User Functional or Technical Documentation (SYS)		
Request raised by: Eurosystem	Institute: 4CB	Date raised: 28/02/2019
Request title: Billing common component development		Request ref. no: T2S 697 SYS
Request type: Common	Classification: Maintenance	Urgency: Normal
1. Legal/business importance parameter: Medium		2. Market implementation efforts parameter: Low
3. Operational/Technical risk parameter: Medium		4. Financial impact parameter: No financial impact
Requestor Category: Eurosystem		Status: Allocated to a release

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 envisions that a Billing (BILL) common component shall provide features to gather and aggregate billable items from all the Eurosystem Market Infrastructure services and Eurosystem collateral management application (ECMS) and to manage these pieces of information for the creation of the invoices in a centralised way.

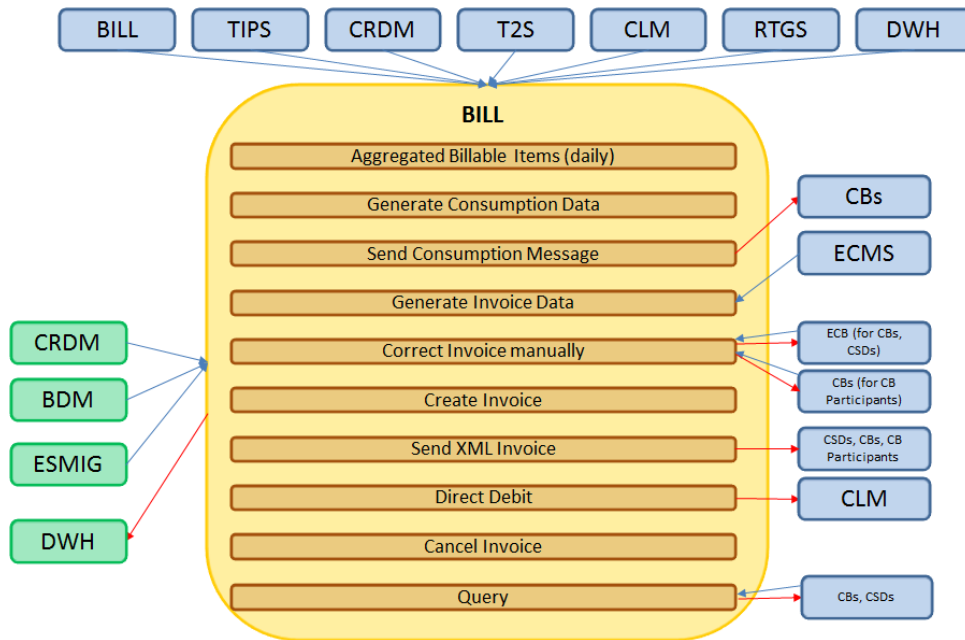
At functional level, BILL shall offer the functionalities for calculating the invoices and managing the invoices' lifecycles as required by the future T2 (RTGS, CLM), TIPS and ECMS. Moreover, BILL shall cover the current T2S Invoice Management functionalities minimising the impact for the T2S application and the T2S users.

The access to BILL shall be possible in U2A mode (for all functions) and in A2A mode (for a subset of functions).

The authentication process and the service authorization process (i.e. the authorization to submit a request to BILL) shall take place at centralised level (in the Eurosystem Single Market Infrastructure Gateway, ESMIG), whereas the function-specific authorisation process shall take place on the basis of the privileges granted in the Common Reference Data Management (CRDM).

The following diagram shows a conceptual overview of BILL and its interactions with the other Eurosystem Market Infrastructure services.

On top (blue items) the services/components providing billable items are depicted. On the left (green items) the diagram shows the common components providing to/receiving from BILL data for informational purposes. On the right, the stakeholders interacting with BILL, plus CLM receiving direct debit messages are shown. On the right side is present Eurosystem collateral management application (ECMS) that provides the invoice data on a monthly basis to BILL for the creation of the invoice – amounts are already calculated on ECMS side.



BILL shall offer invoicing functionalities for all the Eurosystem Market Infrastructure services - T2S, T2 (CLM, RTGS), TIPS -and Eurosystem collateral management application (ECMS).

The current T2S billing modules will be decommissioned. This aspect is described in the separate CR 706 “Billing common component for T2S – Migration”.

As far as T2S is concerned, BILL is expected to start gathering billing data from the decommissioning of the T2S billing onwards. The Billing common component is not meant to manage the T2S billing data or the T2S invoices created before the T2S Billing module decommissioning.

BILL will rely on CRDM data for configuration purposes while it will maintain in its local database the dynamic data.

BILL is expected to cover all the functionalities existing in the current T2S Invoice Management process (invoice generation, invoice confirmation, invoice cancellation, invoice sending and querying) and it will calculate the invoices in accordance to the agreed pricing scheme.

The Invoice Management process will be preserved at the maximum extent possible for the CSDs. As far as CBs functionalities are concerned the process will be amended, due to Central Banks participating in other services than T2S. Nevertheless, until the implementation of CR 706, there is no impact expected under a T2S view point for CSDs and CBs. This Change Request describes the features developed for BILL prior to the related T2S migration.

New Billing common component features

The process design foresees that all the services/service components/common components export their billable items at the end of the business day to BILL that organises the received data into consumption data, grouped by Service Item and relevant Parties (i.e. parties to be charged and their responsible CSD or CB). Moreover, the Eurosystem collateral management application (ECMS) provides once a month the already calculated invoice data. BILL at the beginning of the month N, calculates the due amounts and creates the invoices for the month N-1.

BILL takes care of a possible cancellation of an invoice by sending to the involved CSD or CB the related XML message and giving the possibility to create a new invoice for the relevant month.

As far as T2S is concerned, until the implementation of CR-0706, BILL will not impact the management of T2S invoices for CSDs and CBs. After the CR 706 go-live, the future Billing process design foresees also the gathering of all the billable items of the T2S modules and the management of T2S invoices.

In details, the new common component foresees that:

- the T2S modules and the relevant common components (e.g. CRDM and ESMIG) export their data at the end of the business day making them available for BILL;
- BILL organises daily the received data into the consumption data;
- BILL, at the beginning of the month N, calculates amounts and aggregates them for the activities falling in the month N-1, aggregating the Invoice Data. In case a CB has opted for it, BILL sends them the consumptions message. The consumption messages are not foreseen for CSDs;
- CBs users are allowed to insert additional positive or negative items (manual corrections) to the invoice data for their community. ECB users are allowed to insert additional positive or negative items (manual corrections) to invoice data of CSDs and CBs; BILL, after specific trigger, calculates the invoices from invoice data and manual corrections and prepares the related PDF files. It properly informs CSDs and CBs sending them the related XML file – if they have subscribed to it;
- BILL offers to CBs that opted for it the direct debiting of the due amounts to their Participants. This feature is not possible for CSD Participants;;
- BILL offers to CSDs, CBs and CBs Participants the possibility to search and download their invoices. ECB is allowed to access CSDs and CBs invoices;
- In case a cancellation of the invoice is needed, BILL informs the CB or CSD accordingly. It gives, then, the possibility to create a new invoice for the relevant month.

Description of requested change:

The new BILL common component as described above will be first used by TIPS, then by T2S from R6.0, and by T2 with the go-live of T2-T2S Consolidation.

As far as T2S is concerned, it is important to stress that, until the implementation of the related CR706, the T2S Billing module will not be changed. In the scope of the current CR, BILL and T2S will be connected since BILL will use CRDM (evolution of T2S SDMG) reference data (see Table 1 below for additional details). Anyway, specific amendments to T2S internal views will be implemented in order to ensure that non-T2S data is not used by T2S modules and that the T2S screens related to the impacted reference data will not suffer any deviation in their behaviour.

The delivery of BILL is divided into three phases, one for the delivery of the component (T2S CR-0697), the second with the CR-0706 and the third with the CSLD go-live in November 2022.

No specific impact is expected within T2S scope.

Reference and dynamic data

The BILL common component will rely on CRDM objects as far as configuration data is concerned.

BILL will rely on/manage the following objects/functions:

TABLE 1 – BILL REFERENCE DATA OBJECTS

Area	Object	Responsible Actor	Description
Routing message	Message Subscriptions	CB	Already existing in SDMG, will be part of the CRDM. Possibility to configure the reception of the camt.077 to be added.
Service items configuration	Service item Fee Schedule	Service Operator	Already existing in SDMG, will be part of the CRDM. The objects will be integrated with new attributes, i.e. "Service". The possibility of configuring Bands will be added. The T2S customers will be able to see the Service Items per Service.
Service items configuration	Bands	Service Operator	Not present in SDMG, will be part of the CRDM. The possibility of configuring Bands for the Service Items will be created for CRDM. New development.
Billing configuration	Billing service parameters Tariffs	Service Operator	Not present in SDMG, will be part of the CRDM. New development.
Invoice configuration	Billing Configuration Billing template Invoice address	CB	Not present in SDMG, will be part of the CRDM. New development.
Invoice configuration	VAT	CB	Not present in SDMG, will be part of the CRDM. New development.
Direct Debit Configuration	Direct Debit	CB	Not present in SDMG, will be part of the CRDM. New development.

BILL will maintain its own dynamic data.

TABLE 2 – BILL DYNAMIC DATA OBJECTS

Area	Object	Responsible Actor	Description
Billing Data	Billable items Consumption data	BILL	New development. BILL will replace the current Billing module.
Billing Data	Invoice Data	BILL	New development. BILL will replace the current Billing module.
Billing Data	Manual Correction	ECB, CB	New development. BILL will replace the current Billing module.
Billing Data	Invoice	BILL	New development. BILL will replace the current Billing module. All CSDs and CBs will be allowed to see the Invoices under their responsibility.
Billing Data	Direct Debit	BILL	New development. BILL will take over the current Billing module.

A2A messages

The messages camt.076 and camt.077 for BILL will be reviewed in order to report the different information agreed for the other services purposes for BILL. The T2S version of camt.076 and camt.077 provided to CBs and CSDs will not be changed until the implementation of the CR706, which will align the T2S message version to the BILL one.

The messages pacs.002 and pacs.010 will be used (sent by BILL to CLM or vice versa) for the direct debiting.

U2A functionalities

BILL U2A will be additional screens to the T2S Billing module. Thus, the T2S Billing module, until the implementation of the CR706, will not be changed.

BILL is expected to offer the customers the possibility to search and display their own invoices.

For CB users, the additional feature of managing invoices for their participants is provided.

The List of Service Items will be shown in the CRDM screens accessible via the T2S GUI.

The following GUI screens will be developed as part of the new Billing common component:

- VAT – Search/List
- VAT – New/Edit
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- Itemised Invoice Data – Search/List
- Itemised Invoice Data – Details
- Invoice data – Search/List
- Invoice data – Details
- Manual corrections – Search/List
- Manual corrections – New/Edit
- PDF Invoice – Search/list
- PDF Invoice – Details
- Invoice configuration – Search/List
- Invoice configuration – Details
- Invoice configuration – New/Edit

Submitted annexes / related documents:

Proposed wording for the Change request:

*See section Impact on major documentation below.

High level description of Impact:

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Outcome/Decisions:

- * CRG on the 20 March 2019: The CRG has agreed to launch the preliminary assessment of CR-697.
 - * CRG on the 3 September 2019: The CRG agreed to recommend the CR 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 of CR-697 and agreed to recommend the implementation of CR-697 in R5.0 to the PMG.
 - * 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 31 January 2020: The OMG identified an operational impact in their operational assessment.
 - * CSG on 5 February 2020: The CSG approved the inclusion of CR-697 in R5.0.
 - * NECSG on 10 February 2020: The NECSG approved the inclusion of CR-697 in T2S R5.0.
 - * MIB on 13 February 2020: The MIB approved the inclusion of CR-697 in the scope of R5.0 without discussion.
 - * PMG on 14 September 2020: The PMG recommended the inclusion of the CR in R5.2.
 - * CSG on 15 October 2020: the CSG agreed on the de-scoping of CR-697 from R5.0.
 - * NECSG on 16 October 2020: the NECSG agreed on the de-scoping of CR-697 from R5.0.
 - * MIB on 03 November 2020: the MIB agreed on the de-scoping of CR-697 from R5.0
 - * CRG on 10 November 2020: the CRG agreed to recommend the inclusion of CR-697 in R5.2.
 - * OMG on 11 November 2020: the OMG identified an operational impact of CR-697 in R5.2.
 - * PMG on 12 November 2020: the PMG agreed to the inclusion of CR-697 in the scope of R5.2.
 - * CSG on 27 November 2020: the CSG approved the inclusion of CR-697 in R5.2.
 - * NECSG on 27 November 2020: the NECSG approved the inclusion of CR-697 in R5.2.
 - * MIB on 21 December 2020: the MIB approved the inclusion of CR-697 in the scope of R5.2.
 - * OMG on 7 April 2021: the OMG confirmed the operational assessment of CR-697.
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Preliminary assessment (outdated):

- **Impacted modules:**
- **Release: 5.0**
- **Findings:**

The CR-0697 has been slightly amended in order to cover the deviations on Billing common component introduced with the CSLD CR-0016.

The CR-0697 description now covers the complete design of BILL based on the CSLD CR-0016; possible changes to the CR-0016 scope will be reflected into CR-0697.

The planning of CR-0697 depends on the CSLD CR-0016.

Planning: Interim period between CSLD go-live and CR-0706 go-live:

This CR shows how the final design of the Billing common component will look like.

Nevertheless, the delivery of BILL is divided into two phases, one with the CSLD go-live (T2S CR-0697) and the second with the CR-0706.

With the go-live of CSLD, CRSS will be decommissioned. Currently the CRSS offers to CBs the management of T2S-CB Participant invoices data generation and direct debit features.

During the interim period between CSLD go-live and CR-0706 go-live, BILL should cover the CRSS features.

The suggested solution (tbc during the DA of CR-0697) is to anticipate in BILL the whole Cash side invoicing management, comprising the T2S one, already at CSLD go-live time.

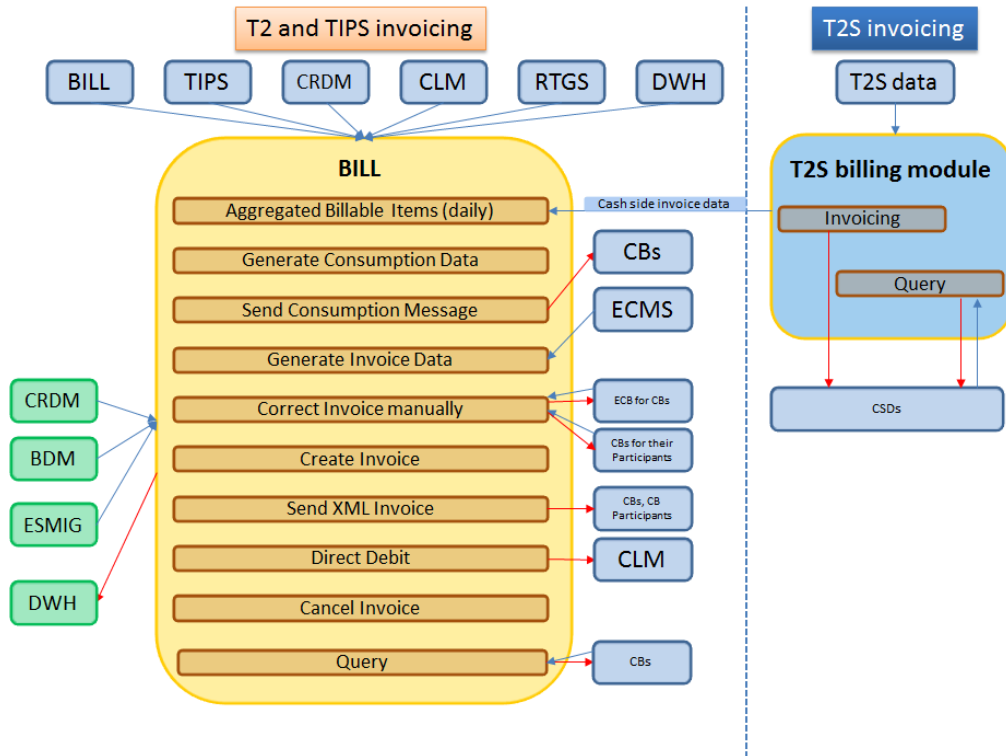
During this period, then, BILL will cover the T2, TIPS and T2S invoicing for CBs and CB Participants, while T2S invoicing will remain untouched for CSDs. ECMS invoices will be managed in BILL after the ECMS go-live.

Potential impact during the interim period:

- CSDs will suffer no impact;
- CBs will receive T2 (CLM and RTGS), T2S and TIPS invoices through BILL and will manage in BILL the invoices for their CB Participants.

Details of this solution must be investigated further during the detailed assessment.

The design of the interim period solution is depicted in the following chart:



• **Open issues/ questions to be clarified:**

The feasibility to anticipate the T2S invoices management for CBs and CB-Participants already with CSLD go-live has to be confirmed during the detailed assessment.

EUROSYSTEM ANALYSIS – GENERAL INFORMATION			
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 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
X	Rules and parameters data management	X	Rules and parameters data management
Statistics and archive		Statistics and archive	
	Statistical information (until June 2022)	X	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 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 R6.0)
	Scheduling (until Jun 2022)		Business Day Management (from R6.0)
			Business Day Management business interface (from PROD R6.0)
	Billing (until June 2022)		Billing (from R6.0)
			Billing business interface (from PROD R6.0)
	Operational Monitoring		Operational and Business Monitoring
Impact on major documentation			

Document	Chapter	Change
Impacted GFS chapter		T2S Billing will maintain its design, so no changes from a T2S view point are expected.
Impacted UDFS chapter		T2S Billing will maintain its design, so no changes from a T2S view point are expected.
Impacted UHB chapter		From a pure T2S view point, the customers will not suffer any impact. Even if the Service Items entities will be amended, the impact on T2S will be made transparent.
Additional deliveries for Message Specification		
UHB		
Other documentations		
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		
No particular impact on T2S.		
<p>LTSI</p> <p>LTSI will be decommissioned in June 2022 after the last business day on 10.06.2022 before the deployment of T2S R6.0. When decommissioning will happen, LTSI historical static and dynamic data must be copied in DWH prior to the R6.0 deployment. In order to allow a proper copy of data, LTSI must have, in the day of decommissioning, all statistical data in its tables, i.e. the retention period for all the modules SETT, LCMM, INTF, SDMG, RPDM, LIQ, BILL has to be removed in LTSI. The current process foresees that LTSI receives the data from modules with a delay of 3 months (or 60 business days) and this would prevent a proper copy in DWH of these data. Without change of the retention period in February 2022, LTSI would miss three months data and for DWH would not be possible to receive them and fulfil the Billing reporting needs. BILL would take over the billing calculation for the CSDs as of T2S R6.0.</p> <p>In order to solve this issue, a proper procedure must be put in place in order to provide the data to LTSI avoiding data gaps. The process must foresee that, from 25 August 2021 until 19 November 2021 LTSI will receive and load multiple files to close the data gap. From 22 November 2021 (R5.2 go-live) until its decommissioning in June 2022, LTSI will provide to T2S users a complete set of data for D-1 and earlier.</p> <p>o</p>		
Summary of project risk		
Security analysis		
No adverse effect has been identified during security assessment.		