| General Information (Origin of Request) | | |
|---|---|---|
| ☐ User Requirements (URD) | | |
| ☒ Other User Functional or Technical Documentation (SYS) | | |

| Request raised by: 4CB | Institute: 4CB | Date raised: 22/04/2013 |
|---|---|---|
| Request title: Removal of the second timeout for real-time queries | | Request ref. no: T2S 0394 SYS |

| Request type:  Common | Urgency: Normal |
|---|---|
| 1. Legal/business importance parameter: Medium | 2. Market implementation efforts parameter: Low |
| 3. Operational/Technical risk parameter: Low | 4. Financial impact parameter: No cost impact |
| Requestor Category: 4CB | Status: Authorised at Steering Level |

**Reason for change and expected benefits/business motivation:**

The current version of the UDFS foresees two timeouts in case T2S cannot respond to the real-time query request within certain time limits:

- A first timeout which enters into action as soon as the preparation of the answer takes more time than a normal on-line transaction (for example 1 minute).  In that case a message is sent to the user to inform that the answer to the query will be sent later in Store-and-Forward mode.
- A second timeout which enters into action much later (for example after 10 minutes) to cancel transactions taking an abnormal amount of time.  The second timeout would send a message to the User to inform them.

Testing revealed that the second timeout added little value and potentially could cause problematic side effects.  For example, it could happen that the sending of a Query Result already prepared and billed could be cancelled.

Two options have been analysed by the development and infrastructure teams:
- Perform changes to the second timeout
- De-activate the second timeout

We recommend the second option for the following reasons:
- This second timeout is supposed to enter into action only in really exceptional cases
- The problem encountered will any way be handled by the normal Error Handling process

If we accept this change, the consequence is that no message will be automatically generated by T2S in the very exceptional case where this timeout would have been activated.

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**Description of requested change:**

De-activate the second timeout for real-time queries requests.

Note: By the de-activation of the second timeout the provisioning of reports/query responses subject to pagination will not be impacted; e.g. the response will be sent, even though it takes more time than usual to retrieve the information unless T2S will run into an error situation.

A query response which cannot be provided by the T2S application will not be billed.

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**Submitted annexes / related documents:**


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**Proposed wording for the SYS Change request:**
**UDFS section < 1.7.1 Timeout Management>**

Due to a timeout limit of the connectivity services provider the execution time of a query request is limited. If the

execution is not finished within a certain period of time, the network communication is interrupted.

In order to heal the timeout limit of the connectivity services provider, T2S applies an effective protocol. T2S defines a timeout limit that anticipates the timeout limit of the connectivity services provider. If the processing takes longer than the T2S timeout limit the transfer mode of the response changes from real-time to store and forward. The store and forward mode delivers all requested data properly.

The T2S timeout limit is considerably lower than the timeout limit of the connectivity services provider.

The following sequence illustrates the timeout management protocol:

- The customer client sends a query request in real-time mode to T2S. The timer is up with the reception of the message in T2S.

- T2S processes the query request but the processing time exceeds the T2S timeout limit.

- If T2S cannot respond to the query request within the timeout limit, an "Oversize and timeout" ReceiptAcknowledgement is sent as query response to the T2S actor (sender) indicating that a T2S timeout occurred. The related reference indicates "NONREF". The correlation to the query has to be identified on network layer.

- T2S continues to prepare the response. When the data is available, the data is sent in store and forward mode to the T2S actor (sender) according to the default routing rule for the message channel. If in addition the response is oversized it is sent according to the default routing rule for the file channel (see below).

- ~~If T2S cannot respond to the query request within a longer timeout limit (e.g 10 minutes), an "Oversize and timeout" ReceiptAcknowledgement is sent via File store and forward channel to the T2S actor (sender) indicating that the response cannot be produced. The related reference indicates "NONREF". The correlation to the query has to be identified on network layer.~~

The timeout value on network layer is fixed by the specification of the connectivity services provider. The T2S timeout value is variable and is tuned to the maximum.

**UDFS section < 1.7.5 Real-Time Communication (Query Responses) >**

[The first sections of the chapter remain unchanged].

<u>In general, if</u> ~~When~~ the size of the response is too large for a transfer via the file channel the transmission is aborted.

- T2S sends an "Oversize and timeout" ReceiptAcknowledgement in real-time mode to the T2S actor (sender) indicating the abortion. The related reference indicates the Business Message Identifier of the request. ~~If a timeout has occurred beforehand T2S sends the "Oversize and timeout" ReceiptAcknowledgement in store and forward mode. The related reference indicates "NONREF". The correlation to the request has to be identified on network layer.~~

- The query response is not sent.

- ~~It depends on the settings in Static Data and the global compression limit whether the response is compressed or not.~~

<u>In case a certain response exceeds the maximum size of 32 MB for a transfer via the file channel, this T2S outbound message may be split into several parts. For the list of the relevant messages and further details please see section 3.2.2.3. "Outbound traffic exceeding given size limitations". It depends on the settings in Static Data and the global compression limit whether the response is compressed or not.</u>

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**High level description of Impact:**

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**Outcome/Decisions:**

* CRG meeting of 15 May 2013: The CRG members agreed to make some changes to the CR text for clarification purposes. The CRG recommended the approval of the Change Request.

* CRG Telco of 29 May 2013: The CRG recommended the approval of the Change Request.

* Advisory Group's advice on 10 June 2013: Following a written procedure, the AG was in favour of the Change Request.

* CSG resolution on 10 June 2013: Following a written procedure, the CSG adopted the resolution to approve the Change Request.

| EUROSYSTEM ANALYSIS – GENERAL INFORMATION | | |
|---|---|---|

| | Static data management | | | Interface | |
|---|---|---|---|---|---|
| **Impact On T2S** | Party data management | | X | Communication | |
| | Securities data management | | | Outbound processing | |
| | T2S Dedicated Cash account data management | | | Inbound processing | |
| | Securities account data management | | | | |
| | Rules and parameters data management | | | | |
| | | | | | |
| | **Settlement** | | | **Liquidity management** | |
| | Standardisation and preparation to settlement | | | Outbound Information Management | |
| | Night-time Settlement | | | NCB Business Procedures | |
| | Daytime Recycling and optimisation | | | Liquidity Operations | |
| | Daytime Validation, provisioning & booking | | | **LCMM** | |
| | Auto-collateralisation | | | Instructions validation | |
| | | | | Status management | |
| | **Operational services** | | | Instruction matching | |
| | Data Migration | | | Instructions maintenance | |
| | Scheduling | | | **Statistics, queries reports and archive** | |
| | Billing | | | Report management | |
| | Operational monitoring | | | Query management | |
| | | | | Statistical information | |
| | | | | Legal archiving | |
| | All modules (Infrastructure request) | | | | |
| | No modules (infrastructure request) | | | | |
| | Business operational activities | | | | |
| | Technical operational activities | | | | |

| **Impact on major documentation** | |
|---|---|
| Impacted GFS chapter | n/a |
| Impacted UDFS chapter | 1.7.1 Timeout Management 1.7.5 Real-Time Communication (Query Responses) |
| Impacted IDFS chapter | n/a |
| IDFS Screens | n/a |
| Additional deliveries for Message Specification | n/a |
| UHB | n/a |
| Impacted DTS chapter | n/a |
| Other documentations | n/a |

| **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 | | | |
| It is foreseen to drop the second timeout information. | | | |
| Summary of project risk | | | |
| | | | |
| Security analysis | | | |
| | | | |
| Cost assessment | **Project phase costs** | | **in Euro** |
| | HR costs (including overhead) | | |
| | Investments costs | | |
| | HW | | |
| | SW | | |
| | Telecommunications | | |
| | **Maintenance and running costs[1]** | | **in Euro** |
| | HR costs (including overhead) | | |
| | Investments costs | | |
| | HW | | |
| | SW | | |
| | Telecommunications | | |

[1] Annual costs