

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: Euroclear, Clearstream	Institute: CSD	Date raised: 31/07/2012
Request title: Pagination for messages exceeding the maximum volume of 32 MB		Request ref. no: T2S 0356 SYS
Request type: Common	Urgency: Fast Track	
1. Legal/business importance parameter: Critical	2. Market implementation efforts parameter: Low	
3. Operational/Technical risk parameter: High	4. Financial impact parameter: Low	
Requestor Category: CSD	Status: Authorised at Steering Level	

Reason for change and expected benefits/business motivation:

With the migration of settlement to T2S, securities static data as set up in T2S will define the settlement-relevant features of a security and of a securities account. This creates the requirement for all T2S Actors to regularly realign internal reference data to T2S, to identify any potential misalignment, and to avoid the impacts of inconsistent reference data. Such realignment activities are supported in two ways by T2S:

- For a daily delta realignment, T2S provides the option for actors to subscribe to the T2S Report reda.009 Securities Activity Advice which lists all changes of securities static data that occurred within a particular business day. (Same case for reda.035 on securities account static data)
- For a full realignment, T2S Actors can query all relevant ISINs and CSD Links via a query request reda.010, and T2S will submit the query results via reda.012 Securities Report message. (Same case for securities account information by using the query reda.019 and the resulting T2S report reda.021). Also if a T2S actor wants to retrieve the Securities of a Particular CSD, the size will be breached.
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For all these four messages (reda.009 and reda.012 as well as reda.021 and reda.035) the 32 MB limitation and the absence of pagination prevents the meaningful usage of these messages for reconciliation:

- In case of reda.012, each full reconciliation will generate data volumes which are well beyond the anticipated limit of 100.000¹ securities that can be covered within the 32 MB maximum volume.
- In case of reda.009, the 32 MB limit will be exceeded at least in case of peak days for securities maintenance where current domestic peak numbers already exceed the anticipated figure of up to 30.000² changes that can be covered within the 32 MB maximum volume.
- In case of reda.021, e.g. for Euroclear each full reconciliation will generate data volumes estimated at least to 30.000 securities accounts.
- In case of reda.035, the 32 MB limit will be exceeded at least in case of peak days for securities account maintenance.

In all these four cases, pagination is required to make sure that larger files are split into smaller files below the size limit, so that the reconciliation of securities and securities account static data can be performed.

Due to the relevance of the static data reconciliation process for the seamless interaction with T2S, any process that fails to support the reconciliation requirements has to be considered as highly critical for the T2S users, and could become a showstopper for the migration if not implemented.

Description of requested change:

¹ The number will decrease if MSA are defined

² The number will decrease if MSA are defined

In the file channel, T2S can send files up to a size of 32 MB. In case a file would exceed this size, T2S will split the files and apply pagination in a few selected cases (semt.017 Statement of Transactions, semt.018 Statement of Pending Instructions, semt.002 Statement of Holdings, camt.053 Statement of Accounts – please refer to CR329).

In other cases, T2S will not send the report or query result but just discard the report / query result.

Already when CR329 was decided in the i-CRG meeting on 23/24 February 2012, the need to extend this list was identified, see i-CRG summary: "...the needs of the CSDs have to be reflected and a new CR would need to be raised."

This CR requests to extend the list of message types which are subject to file splitting and pagination by four additional message types:

- reda.012 Securities Report,
- reda.009 Securities Activity Advice,
- reda.021 Securities Account Report and,
- reda.035 Securities Account Activity Advice

This will ensure that these message types are sent out by T2S even in cases where the 32 MB limit is exceeded.

This change must be implemented latest for the start of the bilateral testing phase.

Submitted annexes / related documents:

Proposed wording for the SYS Change request (Provided by Clearstream and updated by Eurosytem):

The following messages from T2S will also be subject to splitting and pagination in case their size would exceed the 32 MB limit:

- Reda.009 (Security Activity Advice)
- Reda.012 (Security Report)
- Reda.021 (Securities Account Report)
- Reda.035 (Securities Account Activity Advice)

UDFS section <1.6.4.2.3. Report generation process>

Information will be provided that the following reports may be subject to splitting at business level:

- semt.017 (Statement of Transactions)
- semt.018 (Statement of Pending Instructions)
- semt.002 (Statement of Holdings)
- camt.053 (Statement of Accounts)
- reda.009 (Statement of Static Data for Securities)
- reda.035 (Statement of Static Data for Securities Accounts)

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

The channel for query responses and the communication mode depends on the size of the response and the channel that was used for the query request.

TABLE 1 – QUERY RESPONSES AND THE COMMUNICATION MODE DEPENDING ON THE SIZE OF THE RESPONSE

REQUEST	RESPONSE SIZE < 32 KB	RESPONSE 32 MB > SIZE > 32 KB	RESPONSE SIZE > 32 MB
Message channel Real-time	Message channel Real-time	File channel Store and forward	No transmission
File channel Real-time	File channel Real-time	File channel Real-time	No transmission

When the size of the response is suitable the same channel that was used for the query request is used.

- The query response is sent in real-time mode.

When the request is sent via the message channel and the size of the response is too large for a transfer via the message channel the file Store and forward channel is used.

- T2S sends an "Oversize and timeout" ReceiptAcknowledgement in real-time mode to the T2S actor (sender) indicating the change of the transfer mode. The related reference indicates the Business Message Identifier of the request.
- The query response is sent in store and forward mode according to the default routing rule for the file Store and forward channel.

In general, when if 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.~~

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.

UDFS section < 2.18.3 Send Query - Inbound and outbound messages>

~~A clarification that it will not be allowed to split messages sent out as responses to queries will be added.~~

It has to be mentioned that the interactions between T2S Actors and T2S may differ from the described behavior in case of queries which use reda.012 or reda.021 as query response messages.

UDFS section < 3.2.2.3 Outbound traffic exceeding given size limitations>

The chapter will be updated in order to clarify for which outbound traffic a splitting of messages at business level may occur in order to avoid exceeding the size limitation of 32 MB.

The principles for splitting messages will be added:

- Splitting of messages will be allowed for outgoing messages only; i. e. messages sent by T2S to T2S Users.
- Splitting of messages will only be allowed for messages sent out as reports and for selected query responses messages. ~~It will not be allowed for messages that are sent out as responses to queries.~~
- Splitting of messages will be limited to a pre-defined number of messages. The exhaustive list of messages considered for splitting covers:
 - o semt.017 (Statement of Transactions)
 - o semt.018 (Statement of Pending Instructions)
 - o semt.002 (Statement of Holdings)
 - o camt.053 (Statement of Accounts)
 - o reda.009 (Statement of Static Data for Securities)
 - o reda.012 (Security Report)
 - o reda.021 (Securities Account Report)
 - o reda.035 (Statement of Static Data for Securities Accounts)

Furthermore, the envisaged solution for the two Query Responses (reda.012 & reda.021) will be described in detail in line with the final technical implementation.

UDFS sections <3.3.6.4 SecurityActivityAdviceV01 (reda.009.001.01) > and <3.3.6.6 SecuritiesReportV01 (reda.012.001.01) >, <3.3.6.15 SecuritiesAccountReportV01 (reda.021.001.01)> & <3.3.6.29 SecuritiesAccountActivityAdviceV01 (reda.035.001.01)>

~~Both~~ These chapters have to be updated to clarify that a splitting of messages at business level may occur in order to avoid exceeding the size limitation of 32 MB. ~~In addition, it shall be clarified that the T2S User is informed about the fact~~

~~that the report / query result is split by using the message elements to indicate pagination.~~

The pagination block for message has to be added in the outline of the respective message.

UDFS section <4.1 Index of Business Rules and Error Codes>

Additional business rule for high data volume will be added.

High level description of Impact:

Outcome/Decisions:

- CRG meeting of 1-2 October 2012: The CRG decided to request the detailed assessment of the change request.
- CRG meeting of 3 December 2012: The CRG proposed that the CR should be submitted to the Steering level for approval.
- CSG meeting of 13 December 2012: The CSG adopted the resolution to approve the Change Request.
- Advisory Group's advice on 20 December 2012: Following a written procedure, the AG was in favour of the Change Request.