

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: 4CB	Institute: 4CB	Date raised: 24/05/2017
Request title: Treatment of change of fractional digit for cases of ISIN with settlement type nominal and change of settlement type		Request ref. no: T2S 0663 SYS
Request type: Common	Request Category: Maintenance	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:

Definition and use of Fractional digits (FD)

In T2S, the fractional digits (FD) is defined by the number of decimal digits of the Settlement Unit Multiple (SUM) for securities expressed in units and by the number of decimal digits of the currency in which the ISIN is specified for those expressed in nominal. As an example, for a security of settlement type units, a SUM of 100.25 has 2 digits after the decimal point and therefore an FD = 2 while for a security of settlement type nominal, a currency Euro has 2 digits after the decimal point and therefore also has an FD = 2. The FD of an ISIN is used to determine the number of decimals accepted in the settlement quantity of a settlement instruction or settlement restriction.

For each security, the FD is also used to determine the FD of all the instructions, transactions and positions related to said security and is used internally in T2S to represent quantities of these securities in Securities Instructions (INxs), Securities Transactions (TRxs) and Securities Positions (SPs).

Any change resulting in the modification of the FD within T2S may create inconsistencies on the internal representation of securities position and pending settlement transaction quantities which remain based on the old value. The FD may be subject to change when:

- The SUM is changed for securities denominated in units
- The currency is changed for securities denominated in nominal
- The settlement type is changed from UNITS to FAMT or vice versa

It has been confirmed that modifying the FD of an ISIN could have an impact on the holdings. In such situations, increasing the FD for a given ISIN implies that all positions for that ISIN will be divided by 10^x , whereas decreasing the FD for a given ISIN implies that all positions for that ISIN will be multiplied by 10^x . As an example changing the value of the SUM from 0.1 (one decimal) to 0.11 (two decimal) would decrease the holding by 10 times.

Changes in FD, stemming from changes in the SUM for ISINs denominated in units, have already been addressed with the implementation of CR 538.

Request for long term solution for remaining cases

This new change request intends to address the remaining identified cases of changes in FD that were intentionally excluded from the CR 538.

These remaining identified cases include the following:

- Changes of the denomination currency for securities denominated in FAMT whereby the FD remains unchanged or is increased
- Changes of settlement type (changed from FAMT to UNIT or vice versa) whereby the FD remains unchanged or is increased

This solution will not cover the cases involving **decreases** in FD arising from either:

- A change of the denomination currency for securities denominated in FAMT
- A change of the settlement type (changed from FAMT to UNIT or vice versa)

An LLS procedure will continue to be required for these cases involving FD decreases¹.

The table below outlines all the cases automated by this CR and those that will continue to be addressed through an LLS procedure:

Case	Example	Approach	Action
FAMT Currency change - FD unchanged	USD => EUR FD 2 => 2	Fully automated - Request queued and applied at EOD	By Customer: None By T2S operator: None By T2S backend: CR 663 processing
FAMT Currency change - FD increased	JPY => EUR FD 0 => 2	Fully automated - Request queued and applied at EOD	By Customer: None By T2S operator: None By T2S backend: CR 663 processing
FAMT Currency change - FD decreased	KWD => EUR FD 3 => 2	Not processed – leave with LLS¹	By Customer: Cancel INxs; Reimburse collateral; Empty positions By T2S operator: Trigger LLS By T2S backend: LLS
ST change (UNIT<->FAMT) - FD unchanged	FAMT <=> UNIT FD 2 => 2	Fully automated - Request queued and applied at EOD	By Customer: None By T2S operator: None By T2S backend: CR 663 processing
ST change (UNIT<->FAMT) - FD increased	UNIT <=> FAMT FD 2 => 3	Fully automated - Request queued and applied at EOD	By Customer: None By T2S operator: None By T2S backend: CR 663 processing
ST change (UNIT<->FAMT) - FD decreased	FAMT <=> UNIT FD 4 => 3	Not processed – leave with LLS¹	By Customer: Cancel INxs; Reimburse collateral; Empty positions By T2S operator: Trigger LLS By T2S backend: LLS

¹Unless the detailed assessment identifies a fully automated solution.

Description of requested change:

The change of FD for a given security should not change the holdings in that security or the quantities in settlement instructions, settlement restrictions and transactions.

For securities expressed in nominal with changes in the denomination currency or for securities where a change in the settlement type occurs this will be accomplished through an automatic adjustment of the internal recording of INxs, TRxs and SPs ensuring that their quantities remain unchanged as done currently for securities expressed in units.

The automatic adjustment within T2S for the cases described above will align the FD within the settlement domain with the FD as updated within Static Data Management (SDMG). SDMG will ensure that FD updates for these cases are only applied during the EOD period (when no settlement activity is possible).

The automatic adjustment described is performed by multiplying the internal integer representation of quantities by 10^X , X being the difference between the old and the newly increased FD. This allows for the actual value of the INxs, TRxs and SPs to remain unchanged. These adjustments require the stability of settlement (that is to say no booking / changes in SPs) and are achieved by creating an internal FD (FD-S), associated with a given SP or TRx, which is equal to the FD at that moment.

The adjustment of the instructions and restrictions will be triggered in LCMM as soon as the new value of the FD is applied in static data. The adjustment to TRxs and SPs will occur subsequent to the modifications made to INxs in LCMM and are triggered in SETT during the SOD. The FD-S is then aligned with the new FD.

LLS exceptions

Currently checks occur at the level of SETT verifying if the updated FD is consistent with the internal FD of the impacted securities positions and transaction proposed for settlement. In the case where this check fails no further settlement for this settlement transaction will be possible, an alert is raised to the T2S operator and an LLS is then used.

Such alert and LLS procedure shall be maintained for the cases² of FD decreases arising from:

- Changes of the denomination currency for securities denominated in FAMT
- Changes of settlement type (changed from FAMT to UNIT or vice versa)

²These remaining cases, regarding FD decrease, may be addressed automatically by this CR if a solution is identified during the detailed assessment. In this event an LLS procedure would no longer be required.

Submitted annexes / related documents

4CB presentation on clarification on management of fractional digits in Settlement in the context of INC-164770 (CRG meeting on 9 July 2015)

https://www.ecb.europa.eu/paym/t2s/progress/pdf/tg/crg/crg47/07.inc164770_clarification_fractional_digit_management.pdf

Proposed wording for the UDFS Change request:

The following **UDFS v2.3** sections should be updated:

A) Section 1.6.1.1.5 Revalidation Process (page 316)

Add the new SD update request "Currency" to the list of Static Data changes triggering revalidation independent on the ISD (Table 112):

TABLE 1 - STATIC DATA CHANGES TRIGGERING REVALIDATION INDEPENDENT ON THE ISD

STATIC DATA OBJECT	DESCRIPTION OF THE CHANGE
Securities	Update of its settlement type, <u>currency</u> , minimum settlement unit or settlement unit multiple
	Deletion of a not yet issued security or an already matured/expired security
	Deletion of a Deviating Settlement Unit

B) Section 3.3.6.2.2 SecurityMaintenanceRequest (reda.007) – The T2S-specific schema (page 1292-)

Add new business rules to manage the queuing of static data maintenance requests until the End of Day period.

MESSAGE ITEM	DATA TYPE/CODE	BUSINESS RULES
...
DenominationCurrency	CurrencyCode	DSU1022
Document/SctyMntncReq/UpdTp/UpdTp/Modify/FinIns trmAttrbts/DnmtnCcy		<u>DSU1705</u>

MESSAGE ITEM	DATA TYPE/CODE	BUSINESS RULES
...
Code Document/SctyMntncReq/UpdTp/UpdTp/Modify/FinIns trmAttrbts/SttlmInf/SctiesQtyTp/Cd	SettlementUnitType1Code	DSU1031 DSU1700 <u>DSU1706</u>

C) Section 4.1 Index of Business Rules and Error Codes (page 1578-)

Add new business rules to manage the queuing of static data maintenance requests until the End of Day period.

BR NAME	DESCRIPTION	INBOUND MESSAGE	REPLY MESSAGE	CODE USE	REASON CODE	ERROR TEXT
...
<u>DSU1705</u>	<u>When performing a Security Update request of a Security expressed in face amount, if the request contains updates to the Currency increasing or leaving unchanged the number of decimal positions, and it is submitted outside of the End of Day period, the request is queued and executed at the start of the End of Day period.</u>	<u>reda.007</u>	<u>reda.029</u>		<u>QUED</u>	<u>Securities update has been queued and will be executed during the End of Day period.</u>
<u>DSU1706</u>	<u>When performing a Security Update request of a Security, if the request contains updates to the Settlement Type increasing or leaving unchanged the number of decimal positions, and it is submitted outside of the End of Day period, the request is queued and executed at the start of the End of Day period.</u>	<u>reda.007</u>	<u>reda.029</u>		<u>QUED</u>	<u>Securities update has been queued and will be executed during the End of Day period.</u>

The following **UHB v2.3** sections should be updated:

A) Section 2.5.2.7 Security – New/Edit screen (page 674)

Add new business rules to manage the queuing of static data maintenance requests until the End of Day period.

Security	
...	...
Issue Currency*	Select the currency in which the security was issued from the drop-down menu. References for error messages: <ul style="list-style-type: none"> DSC1022 DSU1022 DSU1705 If you leave this field blank in the <i>edit</i> screen, the existing future value is cancelled.
...	...
Security Settlement Data	
Settlement Type*	Select the type of settlement foreseen for the security from the possible values: <ul style="list-style-type: none"> Face Amount Units References for error messages: <ul style="list-style-type: none"> DSU1706

Buttons

Buttons	
Submit	... <ul style="list-style-type: none"> DSU1704 DSU1705 DSU1706 DSU1800

B) Section 6.4.2.168 Security – New/Edit Screen (references for error messages) (page 2356-)

Add new business rules to manage the queuing of static data maintenance requests until the End of Day period.

Reference for error message	Field or Button	Error Text	Description
...
DSU1705	<ul style="list-style-type: none"> Issue Currency field Submit button 	<u>Securities update has been queued and will be executed during the End of Day period.</u>	<u>When performing a Security Update request of a Security expressed in face amount, if the request contains updates to the Currency increasing or leaving unchanged the number of decimal positions, and it is submitted outside of the End of Day period, the request is queued and executed at the start of the End of Day period.</u>
DSU1706	<ul style="list-style-type: none"> Settlement Type field Submit button 	<u>Securities update has been queued and will be executed during the End of Day period.</u>	<u>When performing a Security Update request of a Security, if the request contains updates to the Settlement Type increasing or leaving unchanged the number of decimal positions, and it is submitted outside of the End of Day period, the request is queued and executed at the start of the End of Day period.</u>

High level description of Impact:

Outcome/Decisions:

* CRG meeting on 7 June 2017: The CRG agreed to make some changes to the Change Request and recommended the updated Change Request for detailed assessment. The CRG asked the 4CB to check the feasibility to deliver it in T2S Release 2.0. The CRG was of the opinion that the Change Request should be classified as 'corrective maintenance'.

* Operational Mangers Group on 19 June 2017: During a written procedure from 9 to 19 June 2017, the Operations Managers Group did not identify any blocking operational impact of the Change Request.

* Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SeCo) on 19 June 2017: Following a written procedure from 09 to 19 June 2017, the AMI-SeCo was in favour of launching the detailed assessment on the Change Request.

* CSD Steering Group on 20 June 2017: Following a written procedure from 09 to 20 June 2016, the CSD Steering Group was in favour of launching the detailed assessment on the Change Request.

* CRG meeting on 28 August 2017: The CRG recommended the approval of the Change Request and its inclusion in the T2S Release 2.0.

* Operational Mangers Group on 5 September 2017: Following a written procedure from 30 August to 5 September 2017, the Operations Managers Group reconfirmed that the Change Request does not have any blocking operational impact and was in favour of adding the Change Request to the T2S Release 2.0.

* PMG on 11 September 2017: During a written procedure from 7 to 11 September 2017, the Project Managers Group was in favour of adding the Change Request to Release 2.0 from a planning perspective based on their endorsement of the Service Transition Plan v.0.7 for Release 2.0.

* Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SeCo) on 14 September 2017: Following a written procedure from 11 - 14 September 2017, the AMI-SeCo was in favour of approving the Change Request and its inclusion in T2S Release 2.0

* CSD Steering Group on 15 September 2017: Following a written procedure from 11 - 15 September 2017, the CSG adopted the resolution to approve the Change Request and its inclusion in T2S Release 2.0.

EUROSYSTEM ANALYSIS – GENERAL INFORMATION

Impact On T2S	Static data management		Interface	
		Party data management		Communication
	X	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	
	X	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	X	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			
Document	Chapter	Change	
Impacted GFS chapter			
Impacted UDFS chapter	Section 3.3.6.2.2 SecurityMaintenanceRequest (reda.007) – The T2S-specific schema Section 4.1 Index of Business Rules and Error Codes	Add new business rules DSU1705 and DSU1706 to manage the queuing of static data maintenance requests until the End of Day period.	
Additional deliveries for Message Specification	reda.007 SecurityMaintenanceRequest	Add new business rules DSU1705 and DSU1706 to manage the queuing of static data maintenance requests until the End of Day period.	
UHB	Section 2.5.2.7 Security – New/Edit screen Section 6.4.2.168 Security – New/Edit Screen (references for error messages)	Add new business rules DSU1705 and DSU1706 to manage the queuing of static data maintenance requests until the End of Day period.	
External training materials			
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

SETT

All cases will be addressed as follows:

- In case the Static Data update request is queued, the change will be processed by SETT at next SoD
- In case the Static Data update request is processed immediately, SETT will first check that all related Securities Positions are empty. If this check is successful the SD update will be applied immediately by SETT, else an alert will be raised to the Operational monitoring as the request cannot be applied.

Additionally, in case a Settlement Instruction or a Settlement Restriction is received from LCMM with a quantity whose FD is inconsistent with the FD of its related Securities Positions, the flow received is set aside and an alert is raised to the Operational Monitoring.

Flows set aside because of a FD discrepancy are automatically reprocessed in case of Static Data update impacting FD.

LCMM

When LCMM receives from Static Data an update request which ends up increasing the decimals of a Security due to a new denomination Currency a quantity adjustment will be immediately performed on the affected pending Settlement Instructions and Settlement Restrictions.

Please be aware that according to LCMM current revalidation process, any update implying a change of the Settlement Type of the Security will automatically cancel all pending Settlement Instructions and Settlement Restrictions on the updated Security due to BRs MVSQ602 and MVSQ603 respectively.

Static Data changes to the Settlement Type and Currency which lead to the decrease of the fractional digit are expected to be processed immediately. The cancellation of all pending Settlement Instructions and Settlement Restrictions affected by the fractional digit decrease will be addressed through a manual LLS procedure envisioned to minimize any possible risk associated with the change.

SDMG

New business rules DSU1705 and DSU1706 will cause certain Security Update requests to be executed only during the End of Day period, and queued during all other periods of the Settlement Day, similarly to what is already in place with DSU1700 and DSU1704.

Security Update requests that contain any of the following changes will be queued and executed during EoD:

- Changes to the Settlement Type that lead to an increase or no change in the fractional digits of a Security;
- Changes to the Currency of a Security denominated in Face Amount that lead to an increase or no change in the fractional digits of a Security.
- Changes to the Settlement Type and Currency that lead to the decrease of fractional digits will not be queued by these new business rules.

Summary of project risk

None

Security analysis

No potentially adverse effect was identified during the security assessment. On the contrary, compliance is enhanced regarding the lower number of LLS interventions after the implementation.