

General Information (Origin of Request)		
<input checked="" type="checkbox"/> User Requirements (URD) or Business Functionality Document (BFD) <input checked="" type="checkbox"/> Other User Functional or Technical Documentation (SYS)		
Request raised by: 4CB	Institute: Eurosystem	Date raised: 02/06/2014
Request title: Implementation of non-repudiation for U2A		Request ref. no: T2S 0466 BFD
Request type: Common		Urgency: Fast-track
1. Legal/business importance parameter: High	2. Market implementation efforts parameter: Medium	
3. Operational/Technical risk parameter: Medium	4. Financial impact parameter: No cost impact	
Requestor Category: 4CB	Status: Authorised at Steering level	

Reason for change and expected benefits/business motivation:

Though chapter 18 of the User Requirements Document (URD) expresses the general requirement that “... a very high level of security is requested in terms of confidentiality, authentication, integrity, access control and non-repudiation of the T2S information”, the current design of Target2-Securities does not include the requirement for non-repudiation of changes performed via the T2S Graphical User Interface (GUI).

Main Repudiation Scenarios	Non-repudiation services
<p>Originator denies having sent a U2A instructions</p> <p>or</p> <p>One entity argues on the U2A instruction content</p>	<p>Non-repudiation of origin (NRO) provides the recipient with the evidence NRO which ensures that the originator will not be able to deny having sent the U2A instruction. The evidence of origin is generated by the originator and held by the recipient.</p>

In September 2013 the Eurosystem presented three solutions for the implementation of non-repudiation of origin for instructions initiated in User to Application mode (U2A):

- Option 1: Implementation of NRO for each transaction initiated by a user,
- Option 2: Implementation of NRO for critical transactions only,
- Option 3: NRO achieved by “non-repudiation of emission”, i.e. mechanism for signing digitally U2A messages at network level, and legal amendments.

After analysis of the feasibility and user-friendliness of the proposed solutions, a fourth option using existing security features in T2S and in the networks together with a legal framework similar to the framework known from TARGET2 was discussed.

From the Eurosystem’s point of view, the security mechanisms already implemented at infrastructure and application level (i.e. in the fourth option) bring strong elements in terms of guarantee of the source (origin), integrity of the content and retention of evidence and provide an adequate solution available from the T2S go live. In order to be fully consistent, this technical solution has nevertheless to be complemented by a legal amendment in the Framework Agreement (FA) in order to recognize the evidences provided by the Eurosystem.

After consultation of the various bodies (CRG, ISSG and Legal experts), the first option was rejected, as it is degrading user experience too significantly. The third option was considered when preparing the Network Service Provider (NSP) License Agreement, but was rejected to ensure level-playing field amongst NSP.

The use of a digital signature (i.e. the second option) will improve the ‘quality’ of evidence retained. In that scenario, the user would be asked to introduce a PIN code for signature purpose whenever the instruction is initiated.

The Eurosystem is open to envisage the implementation of such digital signature for a set of sensitive instructions, but only in a future T2S release, i.e. after the go-live.

Due to the fact, that no signature has been implemented so far neither in the application nor on the network level, the CSDs requested in May 2014 the implementation of the second option for NRO for T2S U2A covering only selected user transactions.

In its July 2014 meeting the CSG endorsed the decision to implement option 2 ahead of the migration of Wave 2. Before that, entities migrating in Wave 1 have accepted option 4 as an intermediary solution.

In its September 2014 meeting the CRG increased the number of functions /screens to be digitally signed from 14 / 16 to 50 / 61. In addition, in its September 2014 meeting the PMG requested to make the solution available for user testing before start of community testing for wave 2. The 4CB are analysing by end 2014 whether (i) the significantly increased scope can still be delivered by March 2016; and (ii) a "demo" version of the solution limited to a few screens already can be delivered late 2015.

In this context, the present CR aims at describing the scope and the detailed requirements for the implementation of option 2 for non-repudiation of origin in T2S U2A mode, to be implemented for T2S fast-track release 1.1.

Description of requested change:

Besides the existing implementation for A2A instructions, non-repudiation of origin (NRO) must also apply for the most critical U2A instructions by attaching a digital signature to the instruction via PIN entry by the user. The use of digital signature for non-repudiation of origin is regulated in the *Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures, Article 2, No.2:*

"[...]“advanced electronic signature” means an electronic signature which meets the following requirements:

*(a) it is **uniquely linked** to the signatory;*

*(b) it is capable of **identifying** the signatory;*

*(c) it is created using means that the signatory can maintain under his **sole control**; and*

*(d) it is linked to the data to which it relates in such a manner that **any subsequent change of the data is detectable** [...]"*

The signature solely does not protect the actors against repudiation i.e. the denial by one of the entities involved in a communication of having participated in all or part of the communication. The non-repudiation functionality can be obtained by associating the digital signature technique with a trusted archiving system, i.e. legal archiving, able in case of legal action to provide evidences and to prove that an event actually occurred in the past.

The solution relies on the security services provided by the selected from the T2S Actors Network Service Providers as from the Licence Agreement and more specifically described in the specifications, in particular in Section 4 of the Technical Requirements.¹

Functioning of the digital signature

- In order to perform a digital signature, the user needs a private key associated with a public certificate stored in a portable device (smartcard or USB token) accessible by introducing a PIN code. The same PIN will be used for signing of the selected instructions initiated by a user.
- The signing of the instruction is performed either in two-eyes mode or in four-eyes mode. When the triggering of the instruction requires four-eyes mode, both the user who submits the instruction and the user confirming the instruction have to sign the instruction and respectively the confirmation with a single signature each.
- The certificate to be used for the digital signature will be issued by the NSP and stored on the same device used for storing the certificate for the user authentication.
- The procedures related to the management of the digital keys - issuance, distribution, revocation, locking after failed attempts, credential management, etc. - are individual and specific to each Network Service Provider and the description can be found in the technical documentation attached to the contract signed by each Directly Connected Actor and the selected Network Service Provider. In general, the rules and procedures applicable to the authentication certificates provided by the selected NSP will apply also to the digital signing certificates. However, there will be no interference between both certificates.
- The signing process will rely on time stamps provided by trusted external sources – the NTP service using several trusted sources in Bdl and DCF77 in BBK will be used in order to synchronize the time clock of the mainframe where PROD is running. All the other systems in T2S will be synchronized with that mainframe. T2S should govern the time of the applet in the signing process.

¹ Note that the perimeter of the T2S Security Requirements and Controls does not include the connectivity services provided by the NSP (FA, Schedule 10, § 1.2; see also FA, Schedule 10, Annex 1 – Information Security Policy for T2S, § 6.2.3 about Third Party service providers).

- For each of the proposed U2A functions mentioned in the table below, the user will be asked to enter the PIN for signature purpose whenever the instruction is submitted. Only screens used for performing sensitive U2A functions require entering the PIN. The same rules will apply to all T2S Actors, including the T2S Service Desk².
- After entering of the PIN, the private key of the user is used to sign the instruction. The user has to receive a display of the whole message content before signing. This signed request is posted to the U2A application. On the server side the application must verify the signature in order to process the request. This solution must be integrated within the signature solution of T2S.
- Signatures contained in U2A instructions are created by the originator and verified by the recipient (T2S) at runtime.

Trusted archiving

- The digital signature must be stored in the inbound communication table of the Interface Domain, which is itself stored at the end of the day in the Legal Archiving (LEA).
- Legal Archiving will store the messages as sent by the Interface Domain, including their signature. LEA does not control signatures, and does not check their existence. For the four-eyes mode both messages (instruction and confirmation) including their signature will be kept.
- The operational service that will make use of the stored information/signatures/logs of both Interface Domain and Legal Archiving storing (when data is not accessible anymore in the Interface data stores), perform the verification of the signature as it was performed at runtime (maybe some years ago), will be the same as for A2A.
- The retrieval of archived data aims only at meeting requirements from a legal nature and therefore the answer to an archive request is not to be expected on a "real time" basis (response time up to 3 days {T2S.17.130}).
- No dedicated customer queries and reports on NRO related static and dynamic data will be possible.
- The support procedures related to non-repudiation of origin under the responsibilities of the T2S Service Desk will be described in the MOP.

Other technical requirements

- Requirements to be confirmed for the Java Applet solution include the signing of the applet code and compatibility of the Java Applet with CITRIX and Microsoft recommendations for terminal servers.³

Possible impacts on T2S Actors and T2S Service Desk staff of the applet solution used for the implementation of the second option as defined in Attachment 1 to the NSP "Licence Agreement"

- Provisioning of a desktop system that reflects the particular restrictions of the proposed Java Applet solution³:
 - Operating System (for example: Windows 7 Professional, 32 Bit)
 - Browser (for example: Internet Explorer 10 or/and Firefox 31.0)
 - JRE version (for example: Java 1.7 Update 51)
 - Public-key certification standard (e.g. PKCS#11)
 - Adaptation of the local firewall and security policies in order to enable the applet download, HTTPS file transfer, access to certificate, etc.
 - Bring the updates into action in a big bang approach, etc. (details to be provided later on)

² The T2S Service Desk will use the U2A functions in the table only in contingency mode as foreseen by the MOP ("act on behalf").

³ Note: the requirements are driven by the third party vendor and are out of control of T2S. Updates on regular basis are possible. The compatibility of the Java Applet solution regarding Citrix and Microsoft recommendations for terminal servers, as requested by CSDs, has to be confirmed.

- These specifications must be also in line with the compatibility matrix supported by the NSPs as per the following table⁴:

NSP	SWIFT	SIA-COLT
OS	Windows 7, Windows XP, Windows Vista, Windows server 2008	Windows 7, Windows 8, Windows XP, MAC OSx10.5-10.8, Linux (following the availability of the Gemalto Classic Client software)
Browser	Microsoft Internet Explorer 7/8/9/10, and Mozilla Firefox up to v25.0	Microsoft Internet Explorer 9+, Mozilla Firefox 3.0+, Google Chrome 6.0+ (following availability of the CISCO SSL VPN Gateway software)
JRE Version	JRE 1.6.32 or higher. The SWIFT solution for T2S U2A is however not compatible with 64-bit version of Java	JRE 1.5 to 1.7 (following the availability of the CISCO SSL VPN Gateway software)

⁴ Changes to the data listed in the table are possible. Data is under the responsibility of the Network Service Providers. Updates as well as the settings valid at the time of implementation of the change request in the T2S test and production environments will be provided by the selected NSP.

Proposed list of sensitive U2A functions and corresponding GUI screens

The NRO mechanism must be implemented for the U2A functions and respective GUI screens generating U2A instructions listed in the table below. Related "delete" and "restore" functions mainly accessible through the "List" or "Details" screens were added to the list, where available, in order to have a consistent approach on the non-repudiation solution, i.e. consider all functionalities related to the input screen which may have an impact on the customer's data/balances once triggered.

U2A Functions	UHB chapter/U2A Screen	Button	Category
Settlement Instruction – New	2.2.2.19 Settlement Instruction - New Screen	Submit	Securities
Intra-Position Movement – New	2.2.2.13 Intra-Position Movement - New Screen	Submit	Securities
Amendment Securities Instruction – New	2.2.2.4 Amendment Securities Instruction - New Screen	Submit	Securities
Hold/Release Instruction – New	2.2.2.10 Hold/Release Instruction - New Screen	Submit	Securities
Cancellation Securities Instruction – New	2.2.2.6 Cancellation Securities Instruction - New Screen	Submit	Securities
Intra-Balance Movement – New	2.3.3.7 Intra-Balance Movement - New Screen	Submit	Cash
Amendment Cash Instruction – New	2.3.3.2 Amendment Cash Instruction - New Screen	Submit	Cash
Cancellation Cash Instruction – New	2.3.3.4 Cancellation Cash Instruction - New Screen	Submit	Cash
Immediate Liquidity Transfer – New	2.3.2.5 Immediate Liquidity Transfer Order - New Screen	Submit	Cash
Standing/Predefined Liquidity Transfer Order Link Set – New/Edit	2.5.4.14 Standing/Predefined Liquidity Transfer Order Link Set - New/Edit Screen	Submit	Static Data
Standing/Predefined Liquidity Transfer Order Link Set – Delete/Restore	2.5.4.12 Standing/Predefined Liquidity Transfer Order Link Sets - Search/List Screen 2.5.4.13 Standing/Predefined Liquidity Transfer Order Link Set - Details Screen	Delete/Restore	Static Data
Standing/Predefined Liquidity Transfer Order – New/Edit	2.5.4.11 Standing/Predefined Liquidity Transfer Order - New/Edit Screen	Submit	Static Data
Standing/Predefined Liquidity Transfer Order – Delete/Restore	2.5.4.9 Standing/Predefined Liquidity Transfer Orders - Search/List Screen 2.5.4.10 Standing/Predefined Liquidity Transfer Order - Details Screen	Delete/Restore	Static Data
Data Change – Approve and Revoke ⁵	2.4.1.26 Data Change – Details Screen	Approve/Revoke	Services
Attribute Domain - New/Edit	2.5.10.3 Attribute Domain - New/Edit Screen	Submit	Static Data
Attribute Domain – Delete/Restore	2.5.10.1 Attribute Domains - Search/List Screen 2.5.10.2 Attribute Domain - Details Screen	Delete/Restore	Static Data

⁵ In case of four-eyes mode both the user who submits the instruction and the user confirming the instruction have to sign the instruction and the confirmation with a single signature each.



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Attribute Domain Reference - New/Edit	2.5.10.6 Attribute Domain Reference - New/Edit Screen	Submit	Static Data
Attribute Domain Reference – Delete/Restore	2.5.10.4 Attribute Domain References - List Screen 2.5.10.5 Attribute Domain Reference - Details Screen	Delete/Restore	Static Data
Broadcast - New	2.4.2.3 Broadcast - New Screen	Submit	Services
CoSD Rule - New/Edit	2.5.9.2 CoSD Rule - New/Edit Screen	Submit	Static Data
CoSD Rule – Delete/Restore	2.5.9.1 CoSD Rules - Search/List Screen	Delete/Restore	Static Data
CoSD Rule Set - New/Edit	2.5.9.4 CoSD Rule Set - New/Edit Screen	Submit	Static Data
CoSD Rule Set – Delete/Restore	2.5.9.3 CoSD Rule Sets - Search/List Screen	Delete/Restore	Static Data
CSD Account Link - New/Edit	2.5.3.2 CSD Account Link - New/Edit Screen	Submit	Static Data
CSD Account Link – Delete/Restore	2.5.3.1 CSD Account Links – Search/List Screen	Delete/Restore	Static Data
Eligible Counterpart CSD - New/Edit	2.5.1.3 Eligible Counterpart CSD - New/Edit Screen	Submit	Static Data
Eligible Counterpart CSD – Delete/Restore	2.5.1.1 Eligible Counterpart CSDs – Search/List Screen 2.5.1.2 Eligible Counterpart CSD – Details Screen	Delete/Restore	Static Data
Grant/Revoke Cross-System Entity Object Privilege - New/Edit	2.5.6.5 Grant/Revoke Cross-System Entity Object Privilege - New/Edit Screen	Add and Submit Delete and Submit	Static Data
Grant/Revoke Object Privilege - New/Edit	2.5.6.7 Grant/Revoke Object Privilege - New/Edit Screen	Add and Submit Delete and Submit	Static Data
Grant/Revoke Role - New/Edit	2.5.6.10 Grant/Revoke Role - New/Edit Screen	Grant/Revoke	Static Data
Grant/Revoke System Privilege - New/Edit	2.5.6.12 Grant/Revoke System Privilege - New/Edit Screen	Submit	Static Data
Market-Specific Attribute - New/Edit	2.5.9.7 Market-Specific Attribute - New/Edit Screen	Submit	Static Data
Market-Specific Attribute – Delete/Restore	2.5.9.5 Market-Specific Attributes - Search/List Screen 2.5.9.6 Market-Specific Attribute - Details Screen	Delete/Restore	Static Data
Restriction Type - New/Edit	2.5.9.9 Restriction Type - New/Edit Screen	Submit	Static Data
Restriction Type – Delete/Restore	2.5.9.8 Restriction Types - Search/List Screen	Delete/Restore	
Restriction Type Rule - New/Edit	2.5.9.12 Restriction Type Rule - New/Edit Screen	Submit	Static Data
Restriction Type Rule – Delete/Restore	2.5.9.10 Restriction Type Rule Sets - List Screen 2.5.9.11 Restriction Type Rule - Details Screen	Delete/Restore	Static Data
Role - New/Edit Screen	2.5.6.15 Role - New/Edit Screen	Submit	Static Data
Role – Delete/Restore	2.5.6.14 Roles – Search/List Screen	Delete/Restore	Static Data



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Secured Group - New/Edit	2.5.6.18 Secured Group - New/Edit Screen	Submit	Static Data
Secured Group – Delete/Restore	2.5.6.16 Secured Groups - Search/List Screen 2.5.6.17 Secured Group – Details Screen	Delete/Restore	Static Data
Securities Account - New/Edit	2.5.3.5 Securities Account - New/Edit Screen	Submit	Static Data
Securities Account – Delete/Restore	2.5.3.3 Securities Accounts - Search/List Screen 2.5.3.4 Securities Account - Details Screen	Delete/Restore	Static Data
Securities Account Transfer Management - Edit	2.5.3.6 Securities Account Transfer Management - Edit Screen	Submit	Static Data
Security CSD Link – New/Edit	2.5.2.12 Security CSD Link – New/Edit Screen	Submit	Static Data
Security CSD Link – Delete/Restore	2.5.2.10 Security CSD Links – Search/List Screen 2.5.2.11 Security CSD Link – Details Screen	Delete/Restore	Static Data
User - New/Edit	2.5.6.21 User - New/Edit Screen	Submit	Static Data
User-Delete/Restore	2.5.6.19 Users - Search/List Screen 2.5.6.20 User - Details Screen	Delete/Restore	Static Data
User Certificate Distinguished Name Link - New	2.5.6.23 User Certificate Distinguished Name Link - New Screen	Submit	Static Data
User Certificate Distinguished Name Link – Delete/Restore	2.5.6.22 User Certificate Distinguished Name Links - Search/List Screen	Delete/Restore	Static Data

Instructions and related responses generated by the use of the DMT are out of the scope of this CR because:

1. The user accesses the DMT web application with the same level of protection as the T2S GUI, the website is protected with https and the user login is enforced by checking the user's digital certificate.
2. The user uploads the relevant content (either csv or excel file).
3. The T2S operator can only launch the processing: since they have no option to modify the content, this step is performed in two eyes.

The DMT is always used in the context of the migration activities and, as described in the Migration Storyline document, the CSDs will always perform a reconciliation activity after the settlement of the instructions and they will confirm the results to the Eurosystem.

Proposed wording for the Change request:

UHB 2.0:

UHB Terms and Abbreviations, page 40

<u>N</u>	
<u>NRO: Non repudiation of origin</u>	<u>Non-repudiation of origin (NRO) provides the recipient (T2S) with the evidence NRO which ensures that the originator (T2S actor) will not be able to deny having sent the U2A instruction. The evidence of origin is generated by the originator and held by the recipient.</u>

UHB 1.2.3 Validation, page 67

In T2S, all submission processes undergo various validations, which take place in the front-end and/or in the back-end. Only correct entries, fulfilling all predefined criteria, can be further processed. To indicate the status of the recently performed action, T2S uses two different types of messages to indicate a successful or failed validation as described below.

In addition to the automatic validation carried out by T2S, human validation can be imposed by using the 4-eyes mode.

Furthermore, non-repudiation of origin (NRO) is implemented for a specified number of screens.

UHB 1.2.3 Validation, page 70

As soon as the data changes are positively approved, T2S marks these data as approved and they are forwarded to further processing.

(Marginal Line):
Digital Signature – NRO

(Text area):
In order to ensure non-repudiation of origin (NRO) for critical transactions, the use of a digital signature has been implemented for specified screens. This means that the user will be asked to enter a PIN code for signature purposes whenever an instruction is initiated. With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.

The following (exhaustive) list provides an overview of screens for which the NRO feature is implemented:

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- Amendment cash instruction - new screen
 - Amendment securities instruction - new screen
 - Attribute domains - search/list screen
 - Attribute domain - details screen
 - Attribute domain - new/edit screen

- [Attribute domain references - list screen](#)
- [Attribute domain reference - details screen](#)
- [Attribute domain reference - new/edit screen](#)
- [Broadcast - new screen](#)
- [Cancellation cash instruction - new screen](#)
- [Cancellation securities instruction - new screen](#)
- [CoSD rules - search/list screen](#)
- [CoSD rule - new/edit screen](#)
- [CoSD rule sets - search/list screen](#)
- [CoSD rule set - new/edit screen](#)
- [CSD account links – search/list screen](#)
- [CSD account link - new/edit screen](#)
- [Data change – details screen](#)
- [Eligible counterpart CSDs – search/list screen](#)
- [Eligible counterpart CSD – details screen](#)
- [Eligible counterpart CSD - new/edit screen](#)
- [Grant/revoke cross-system entity object privilege - new/edit screen](#)
- [Grant/revoke object privilege - new/edit screen](#)
- [Grant/revoke Role - new/edit screen](#)
- [Grant/revoke system privilege - new/edit screen](#)
- [Hold/release instruction - new screen](#)
- [Immediate liquidity transfer order - new screen](#)
- [Intra-balance movement - new screen](#)
- [Intra-position movement - new screen](#)
- [Market-specific attributes - search/list screen](#)
- [Market-specific attribute - details screen](#)
- [Market-specific attribute - new/edit screen](#)
- [Restriction types - search/list screen](#)
- [Restriction type - new/edit screen](#)
- [Restriction type rule sets - list screen](#)
- [Restriction type rule - details screen](#)
- [Restriction type rule – new/edit screen](#)
- [Roles – search/list screen](#)
- [Role - new/edit screen](#)
- [Secured groups - search/list screen](#)
- [Secured group – details screen](#)
- [Secured group - new/edit screen](#)
- [Securities accounts - search/list screen](#)
- [Securities account - details screen](#)
- [Securities account - new/edit screen](#)
- [Securities account transfer management - edit screen](#)
- [Security CSD links – search/list screen](#)
- [Security CSD link – details screen](#)
- [Security CSD link – new/edit screen](#)
- [Settlement instruction - new screen](#)
- [Standing/predefined liquidity transfer orders - search/list screen](#)
- [Standing/predefined liquidity transfer order - details screen](#)
- [Standing/predefined liquidity transfer order - new/edit screen](#)
- [Standing/predefined liquidity transfer order link sets - search/list screen](#)
- [Standing/predefined liquidity transfer order link set - details screen](#)
- [Standing/predefined liquidity transfer order link set - new/edit screen](#)
- [Users - search/list screen](#)
- [User - details screen](#)
- [User - new/edit screen](#)

- *User certificate distinguished name links - search/list screen*
- *User certificate distinguished name links - new screen*

(Not text for UHB but a link to the respective screen mentioned above will be integrated)

UHB 2.2.2.4 Amendment Securities Instruction - New Screen, page 110

Submit	This function enables you to create a new amendment securities instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screens:
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UHB 2.2.2.6 Cancellation Securities Instruction – New Screen, page 120

Submit	This function enables you to create a new cancellation securities instruction. Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). <u>With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screens:
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UHB 2.2.2.10 Hold/Release Instruction – New Screen, page 134

Submit	This function enables you to create a new hold/release instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.2.2.13 Intra-Position Movement – New Screen, page 163

Submit	This function enables you to create a new intra-position movement instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.2.2.19 Settlement Instruction – New Screen, page 256

Submit	This function enables you to create a new settlement instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.3.2.5 Immediate Liquidity Transfer Order – New Screen, page 334

Submit	This function enables you to create a new immediate liquidity transfer. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.3.3.2 Amendment Cash Instruction - New Screen, page 359

Submit	This function enables you to create a cash amendment instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.3.3.4 Cancellation Cash Instruction – New Screen, page 366

Submit	This function enables you to create a cancellation cash instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry</u>
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	<p>of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor. Next screen:</p>
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UHB 2.3.3.7 Intra-Balance Movement – New Screen, page 392

Submit	<p>This function enables you to create a new intra-balance movement instruction. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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UHB 2.4.1.26 Data Changes – Details Screen, page 558

Approve	<p>This function enables you to approve the action initiated by the first user. <u>In case non-repudiation of origin is required: Upon clicking on the <i>approve</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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Revoke	<p>This function enables you to revoke an action initiated by the first user. <u>In case non-repudiation of origin is required: Upon clicking on the <i>revoke</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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UHB 2.4.2.3 Broadcast – New Screen, page 580

Submit	<p>This function enables you to create a new broadcast. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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UHB 2.5.1.1. Eligible Counterpart CSDs – Search/List Screen, pages 631, 632

Restore	<p>This function enables you to restore a previously deleted eligible counterpart CSD. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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Delete	<p>This function enables you to delete the selected eligible counterpart CSD, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:</p>
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UHB 2.5.1.2. Eligible Counterpart CSD – Details Screen, pages 636, 637

Restore	<p>This function enables you to restore a previously deleted eligible counterpart CSD. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p>
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	Next screen:
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Delete	<p>This function enables you to delete the selected eligible counterpart CSD, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.1.3 Eligible Counterpart CSD – New/Edit Screen, page 641

Submit	<p>This function enables you to create or edit an eligible counterpart CSD. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.2.10 Security CSD Links – Search/List Screen, pages 738, 739

Restore	<p>This function enables you to restore a previously deleted security CSD link. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected security CSD link, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.2.11 Security CSD Link – Details Screen, page 744

Restore	<p>This function enables you to restore a previously deleted security CSD link. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected security CSD link, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.2.12 Security CSD Link – New/Edit Screen, page 749

Submit	<p>This function enables you to create or edit a security CSD link. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.3.1 CSD Account Links – Search/List Screen, pages 758, 759

Restore	This function enables you to restore a previously deleted CSD account link. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected CSD account link, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.3.2 CSD Account Link – New/Edit Screen, page 765

Submit	This function enables you to create or edit a CSD account link. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.3.3 Securities Accounts – Search/List Screen, pages 774, 775

Restore	This function enables you to restore a previously deleted securities account. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected securities account, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.3.4 Securities Account – Details Screen, pages 780, 782

Restore	This function enables you to restore a previously deleted securities account. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected securities account, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.3.5 Securities Account – New/Edit Screen, page 790

Submit	This function enables you to create or edit a securities account. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.3.6 Securities Account Transfer Management - Edit, page 795

Submit	<p>This function enables you to create or edit a securities account party relationships according to the information entered in the fields. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.4.9 Standing/Predefined Liquidity Transfer Orders – Search/List Screen, page 852

Restore	<p>This function enables you to restore a previously deleted liquidity transfer order. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected liquidity transfer order, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.4.10 Standing/Predefined Liquidity Transfer Order – Details Screen, page 860

Delete	<p>This function enables you to delete the selected liquidity transfer order, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Restore	<p>This function enables the user you to restore a previously deleted item. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p> <ul style="list-style-type: none"> - <i>Standing/predefined liquidity transfer orders – search/list</i> screen. <p>This button is not visible in case of the status of the shown item is 'Active'.</p>
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UHB 2.5.4.11 Standing/Predefined Liquidity Transfer Order – New/Edit Screen, page 865

Submit	<p>This function enables you to create or edit a liquidity transfer order. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.4.12 Standing/Predefined Liquidity Transfer Order Link Sets – Search/List Screen, page 870

Delete	<p>This function enables you to delete the selected liquidity transfer order link set, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p>
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	Next screen:
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Restore	<p>This function enables you to restore a previously deleted liquidity transfer order link set. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.4.13 Standing/Predefined Liquidity Transfer Order Link Set – Details Screen, page 877

Delete	<p>This function enables you to delete the selected liquidity transfer order link set, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Restore	<p>This function enables the user<u>you</u> to restore a previously deleted element. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.4.14 Standing/Predefined Liquidity Transfer Oder Link Set – New/Edit Screen, page 883

Submit	<p>This function enables you to create or edit a liquidity transfer order link set. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.5 Grant/Revoke Cross-System Entity Object Privilege – New/Edit Screen, page 942, 943

Add and Submit	<p>This function enables you to add an item in the ‘Object privilege’ list by granting the inserted object privilege. <u>Upon clicking on the <i>add and submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete and Submit	<p>This function enables you to delete the selected item in the ‘Object privilege’ list and revokes it. <u>Upon clicking on the <i>delete and submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.7 Grant/Revoke Object Privilege – New/Edit Screen, page 954

Add and Submit	<p>This function enables you to add an item in the ‘Object privilege’ list by granting the inserted object privilege. <u>Upon clicking on the <i>add and submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete and Submit	<p>This function enables you to delete the selected item from the 'Object privilege' list and revokes it. <u>Upon clicking on the <i>delete and submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.10 Grant/Revoke Role – New/Edit Screen, page 966

Grant	<p>This function enables you to grant the selected role to the party or the user by moving the selected items from the 'Not Granted' list to the 'Granted' list. <u>Upon clicking on the <i>grant</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Revoke	<p>This function enables you to revoke the selected role from the party or the user by moving the selected items from the 'Granted' list to the 'Not Granted' list. <u>Upon clicking on the <i>revoke</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.12 Grant/Revoke System Privilege – New/Edit Screen, page 974

Submit	<p>This function enables you to move the selected privileges from the 'Not GGranted' list to the 'GGranted' list inserting the additional information to privileges. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.14 Roles – Search/List Screen,

Restore	<p>This function enables you to restore a previously deleted role. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected role, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.15 Role – New/Edit Screen, page 983

Submit	<p>This function enables you to create or edit a role. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.6.16 Secured Groups – Search/List Screen, page 989

Restore	<p>This function enables you to restore a previously deleted role. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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Delete	This function enables you to delete the selected role, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.17 Secured Group – Details Screen, page 993

Restore	This function enables you to restore a previously deleted role. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected role, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.18 Secured Group – New/Edit Screen, page 999

Submit	This function enables you to create or edit a secured group. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.19 Users – Search/List Screen, pages 1004, 1005

Delete	This function enables you to delete the selected user, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Restore	This function enables you to restore a previously deleted user. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.17 User – Details Screen, pages 1008, 1009

Restore	This function enables you to restore a previously deleted role. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected role, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.21 User – New/Edit Screen, page 1012

Submit	This function enables you to create or edit a T2S user according to the information entered in the fields. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the</u>
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	<u>instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.22 User Certificate Distinguished Name Link – Search/List Screen, pages 1017, 1018

Restore	This function enables you to restore a previously deleted user certificate distinguished name link. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected user certificate distinguished name link, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.6.23 User Certificate Distinguished Name Link – New Screen, page 1020

Submit	This function enables you to create a new user certificate distinguished name link. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.1 CoSD Rules – Search/List Screen, page 1099

Restore	This function enables you to restore a previously deleted conditional securities delivery rule. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected conditional securities delivery rule, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.2 CoSD Rule – New/Edit Screen, page 1108

Submit	This function enables you to create or edit a conditional securities delivery rule according to the information entered. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.3 CoSD Rule Sets– Search/List Screen, page 1099

Restore	This function enables you to restore a previously deleted conditional securities delivery rule set. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected conditional securities delivery rule set, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.4 CoSD Rule Set – New/Edit Screen, page 1119

Submit	This function enables you to create or edit a CoSD rule set according to the information filled in the fields. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.5 Market-Specific Attributes – Search/List Screen, pages 1124, 1125

Restore	This function enables you to restore a previously deleted market-specific attribute. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected market-specific attribute, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.6 Market-Specific Attribute – Details Screen, pages 1128, 1129

Restore	This function enables you to restore a previously deleted market-specific attribute. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected market-specific attribute, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.7 Market-Specific Attribute – New/Edit Screen, page 1131

Submit	This function enables you to create or edit a market-specific attribute. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.9.8 Restriction Types – Search/List Screen, pages 1138, 1139

Restore	This function enables you to restore a previously deleted restriction type. <u>Upon clicking on the</u>
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	<p><u>restore</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected restriction type, after confirmation. <u>Upon clicking on the delete</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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UHB 2.5.9.9 Restriction Type – New/Edit, page 1143

Submit	<p>This function enables you to create or edit a restriction type according to the information filled in the fields. <u>Upon clicking on the submit</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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2.5.9.10 Restriction Type Rule Sets –List Screen, pages 1149, 1150

Restore	<p>This function enables you to restore a previously deleted restriction type rule set. <u>Upon clicking on the restore</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected restriction type rule set, after confirmation. <u>Upon clicking on the delete</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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2.5.9.11 Restriction Type Rule – Details Screen, pages 1154, 1155

Restore	<p>This function enables you to restore a previously deleted restriction type rule set. <u>Upon clicking on the restore</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected restriction type rule set, after confirmation. <u>Upon clicking on the delete</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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UHB 2.5.9.12 Restriction Type Rule– New/Edit, page 1165

Submit	<p>This function enables you to create or edit a restriction type rule according to the information entered in the fields. <u>Upon clicking on the submit</u> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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UHB 2.5.10.1 Attribute Domains – Search/List Screen, pages 1171, 1172

Restore	This function enables you to restore a previously deleted attribute domain. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected attribute domain, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.10.2 Attribute Domain – Details Screen, page 1775

Delete	This function enables you to delete the selected attribute domain, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Restore	This function enables you to restore a previously deleted attribute domain. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.10.3 Attribute Domain – New/Edit Screen, page 1179

Submit	This function enables you to create or edit an attribute domain. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.10.4 Attribute Domain References – List Screen, pages 1183, 1184

Restore	This function enables you to restore a previously deleted attribute domain reference. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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Delete	This function enables you to delete the selected attribute domain reference, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u> Next screen:
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UHB 2.5.10.5 Attribute Domain Reference – Details Screen, pages 1187, 1188

Restore	This function enables you to restore a previously deleted attribute domain reference. <u>Upon clicking on the <i>restore</i> button you will be asked to enter your PIN for digital signature purposes</u>
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	<p>(NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</p> <p>Next screen:</p>
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Delete	<p>This function enables you to delete the selected attribute domain reference, after confirmation. <u>Upon clicking on the <i>delete</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 2.5.10.6 Attribute Domain Reference - New/Edit Screen, page 1191

Submit	<p>This function enables you to create or edit an attribute domain reference. <u>Upon clicking on the <i>submit</i> button you will be asked to enter your PIN for digital signature purposes (NRO). With the entry of the PIN, T2S attaches a digital signature to the instruction entered by the T2S actor.</u></p> <p>Next screen:</p>
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UHB 3.2.1.1 Create a New Role, page 1226

4. Click on the *submit* button.
 5. Enter your PIN for digital signature purposes (NRO).
- > The new role has been created.

UHB 3.2.1.2 Grant System and Object Privileges to a Role, page 1229

10. Click on the *add and submit* button.

Repetition

To add more privileges, repeat steps 9 and 10.

-
11. Enter your PIN for digital signature purposes (NRO).

-> The object privilege has been granted to the user.

UHB 3.2.1.3 Assign a Role to a Party, page 1230

7. Click on the *arrow* icon.
 8. Enter your PIN for digital signature purposes (NRO).
- > The role has been granted to the party.

UHB 3.2.1.4 Assign a Role to a User, page 1232

7. Click on the *arrow* icon.
 8. Enter your PIN for digital signature purposes (NRO).
- > The role has been granted to the user.

UHB 3.2.2.1 Grant a Privilege to a Party, page 1237

11. Click on the *add and submit* button.

Repetition

To add more privileges, repeat steps 9 and 10.

-
12. Enter your PIN for digital signature purposes (NRO).

-> The object privilege has been granted to the party.

UHB 3.2.2.2 Grant a Privilege to a User, page 1241

10. Click on the *add and submit* button.

Repetition

To add more privileges, repeat steps 9 and 10.

11. Enter your PIN for digital signature purposes (NRO).

-> The object privilege has been granted to the user.

UHB 3.2.3.1 Create a New Secured Group, page 1243

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> The new secured group has been created.

UHB 3.2.3.2 Assign a Secured Object to a Secured Group, page 1245

10. Click on the *submit* button.

11. Enter your PIN for digital signature purposes (NRO).

-> The secured object has been assigned to the secured group.

UHB 3.2.4.1 Create a New User, page 1247

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> The new user has been created.

UHB 3.2.4.3 Create a New User Certificate Distinguished Name Link, page 1249

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> The new user certificate distinguished name link has been created.

UHB 3.2.5.1 Initiate an Action in 4-Eyes Mode, page 1255

3. Click on the *submit* button.

Note

In case non-repudiation of origin is required, enter your PIN for digital signature purposes.

-> A success message is displayed on the screen indicating that the request was sent in 4-eyes mode and showing the 4-eyes principle ID assigned by T2S.

UHB 3.2.5.2 Approve an Action in 4-Eyes Mode, page 1257

Note

If the data of the action is incorrect, you can inhibit its execution by clicking on the *revoke* button.

In case non-repudiation of origin is required, enter your PIN for digital signature purposes.

Alternative

To cancel the process and return to the previous screen, click on the *cancel* button.

7. Check the data. If everything is correct, click on the *approve* button.

Note

In case non-repudiation of origin is required, enter your PIN for digital signature purposes.

-> The action has been approved and is submitted for execution. The *data changes – search/list* screen is displayed with the updated query result of the previously selected criteria.

UHB 3.3.1.1 Create a New Broadcast, page 1258

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A broadcast has been created.

UHB 3.4.1.1 Create a New CoSD Rule Set, page 1266

15. Click on the *submit* button.

16. Enter your PIN for digital signature purposes (NRO).

-> The new CoSD rule set has been created.

UHB 3.5.1.1 Create a New Immediate Liquidity Transfer Order, page 1271

5. Click on the *submit* button.

6. Enter your PIN for digital signature purposes (NRO).

-> A new immediate liquidity transfer has been created.

UHB 3.5.1.2 Copy an Immediate Liquidity Transfer Order, page 1272

7. Click on the *submit* button.

8. Enter your PIN for digital signature purposes (NRO).

-> A new immediate liquidity transfer order has been created.

UHB 3.5.2.1 Create a New Standing/Predefined Liquidity Transfer Order, page 1274

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A new standing/predefined liquidity transfer order has been created.

UHB 3.5.2.2 Create a New Liquidity Transfer Order Link Set, page 1276

8. Click on the *submit* button.

9. Enter your PIN for digital signature purposes (NRO).

-> The new liquidity transfer order link set has been created.

UHB 3.6.1.1 Create a New Market-Specific Attribute, page 1277

5. Click on the *submit* button.

6. Enter your PIN for digital signature purposes (NRO).

-> A new market-specific attribute has been created.

UHB 3.6.1.2 Create a New Attribute Domain, page 1279

8. Click on the *submit* button.

9. Enter your PIN for digital signature purposes (NRO).

-> A new attribute domain has been created.

UHB 3.6.2.3 Assign a Market-Specific Attribute Value to a Securities Account, page 1285

13. Click on the *submit* button.

14. Enter your PIN for digital signature purposes (NRO).

-> The new market-specific attribute value(s) has (have) been assigned to the selected securities account.

UHB 3.10.1.1 Create a New Restriction Type, page 1315

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A new restriction type has been created.

UHB 3.10.1.2 Configure a Restriction Type Rule Set, page 1318

14. Click on the *submit* button.

15. Enter your PIN for digital signature purposes (NRO).

-> A new restriction type rule set has been created.

UHB 3.10.2.3 Assign a Restriction Type to a Securities Account, page 1323

10. Click on the *submit* button.

11. Enter your PIN for digital signature purposes (NRO).

-> The new restriction type(s) has (have) been assigned to the selected securities account.

UHB 3.12.1.2 Create a New Securities Account, page 1333

6. Click on the *submit* button.

7. Enter your PIN for digital signature purposes (NRO).

-> The new securities account has been created.

UHB 3.12.1.3 Configure Security CSD Links, page 1335

7. Click on the *submit* button.

8. Enter your PIN for digital signature purposes (NRO).

-> The security CSD link has been configured.

UHB 3.12.2.3 Configure CSD Account Links, page 1340

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A new CSD account link has been configured.

UHB 3.12.2.4 Configure Eligible Counterpart CSD, page 1341

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A eligible counterpart CSD has been configured.

UHB 3.13.1.2 Edit an Existing Securities Account, page 1349

19. Click on the submit button.

20. Enter your PIN for digital signature purposes (NRO).

-> The edited securities account static data are stored.

UHB 3.13.1.3 Delete an Existing Securities Account, page 1350

7. Click on the *yes* button if you really want to delete the securities account.

8. Enter your PIN for digital signature purposes (NRO).

--> The securities account has been deleted.

UHB 3.13.3.6 Link a Securities Account to a T2S Dedicated Cash Account for Cash Account for Cash Settlement Purpose, page 1369

4. Click on the *submit* button.

5. Enter your PIN for digital signature purposes (NRO).

-> A new CMB securities account link has been created.

UHB 3.15.1.1 Enter a Settlement Instruction, page 1400

17. Click on the *submit* button.

18. Enter your PIN for digital signature purposes (NRO).

-> A new settlement instruction has been created.

UHB 3.15.1.2 Copy a Settlement Instruction, page 1405

22. Click on the *submit* button.

23. Enter your PIN for digital signature purposes (NRO).

-> The new settlement instruction has been created based on a copied settlement instruction.

UHB 3.15.1.3 Respond to an Allegement Instruction, page 1411

22. Click on the *submit* button.

23. Enter your PIN for digital signature purposes (NRO).

-> A new immediate liquidity transfer order has been created.

UHB 3.15.2.1 Add a Link for a Settlement Instruction, page 1416

13. Click on the *submit* button.

14. Enter your PIN for digital signature purposes (NRO).

-> A amendment instruction to add a link for a settlement instruction has been created.

UHB 3.15.2.2 Amend the Partial Settlement Indicator for a Settlement Instruction, page 1418

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to change the partial settlement indicator has been created.

UHB 3.15.2.3 Amend the Priority for a Settlement Instruction, page 1420

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to change the priority been created.

UHB 3.15.2.4 Remove a Link for a Settlement Instruction, page 1422

11. Click on the *submit* button.

12. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to remove a link for a settlement instruction has been created.

UHB 3.15.3.1 Put a Settlement Instruction on Party Hold, page 1426

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new hold instruction for party hold has been created.

UHB 3.15.3.2 Put a Settlement Instruction on CSD Hold, page 1428

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new hold instruction for CSD hold has been created.

UHB 3.15.3.3 Release a Settlement Instruction from Party Hold, page 1429

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new release instruction for party hold has been created.

UHB 3.15.3.4 Release a Settlement Instruction from CSD Hold, page 1431

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new release instruction for CSD hold has been created.

UHB 3.15.3.5 Release a Settlement Instruction from CoSD Hold, page 1433

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new release instruction for CoSD hold has been created.

UHB 3.15.3.6 Release a Settlement Instruction from CSD Validation Hold, page 1435

10. Click on the *submit* button.

11. Enter your PIN for digital signature purposes (NRO).

-> A new release instruction for CSD validation hold has been created.

UHB 3.15.4.1 Cancel a Settlement Instruction, page 1439

8. Click on the *submit* button.

9. Enter your PIN for digital signature purposes (NRO).

-> A new cancellation instruction for a settlement instruction has been created.

UHB 3.16.1.1 Enter a Settlement Restriction on Securities, page 1446

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new settlement restriction on securities has been created.

UHB 3.16.1.2 Copy a Settlement Restriction on Securities, page 1449

14. Click on the *submit* button.

15. Enter your PIN for digital signature purposes (NRO).

-> A new settlement restriction on securities has been created based on a copied settlement restriction on securities.

UHB 3.16.2.1 Enter a Settlement Restriction on Cash, page 1453

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new settlement restriction on cash has been created.

UHB 3.16.2.2 Copy a Settlement Restriction on Cash, page 1456

14. Click on the *submit* button.

15. Enter your PIN for digital signature purposes (NRO).

-> A new settlement restriction on cash has been created based on a copied settlement restriction on cash.

UHB 3.16.3.1 Add a Link for a Settlement Restriction on Securities, page 1460

13. Click on the *submit* button.

14. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to add a link for a settlement restriction on securities has been created.

UHB 3.16.3.2 Amend Priority for a Settlement Restriction on Securities, page 1462

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to change the priority of a settlement restriction on securities has been created.

UHB 3.16.3.3 Remove a Link for a Settlement Restriction on Securities, page 1464

11. Click on the *submit* button.

12. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to remove a link for a settlement restriction on securities has been created.

UHB 3.16.4.1 Add a Link for a Settlement Restriction on Cash, page 1468

13. Click on the *submit* button.

14. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to add a link for a settlement restriction on cash has been created.

UHB 3.16.4.2 Amend the Priority for a Settlement Restriction on Cash, page 1470

9. Click on the *submit* button.

10. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction for a settlement restriction on cash has been created.

UHB 3.16.4.3 Remove a Link for a Settlement Restriction on Cash, page 1472

11. Click on the *submit* button.

12. Enter your PIN for digital signature purposes (NRO).

-> A new amendment instruction to remove a link for a settlement restriction on cash has been created.

UHB 3.16.5.1 Cancel a Settlement Restriction on Securities, page 1476

8. Click on the *submit* button.

9. Enter your PIN for digital signature purposes (NRO).

-> A new cancellation instruction for a settlement restriction on securities has been created.

UHB 3.16.6.1 Cancel Settlement Restriction on Cash, page 1480

8. Click on the *submit* button.

9. Enter your PIN for digital signature purposes (NRO).

-> A new cancellation instruction for a settlement restriction on cash has been created.

Proposed change for BFD (Business Functionality Document)⁶:

Include an explanation of the NRO functionality in the chapter 1 (Introduction) on page 10 after the description of the 4-Eyes Principle:

- *Digital Signature: Non-repudiation of origin (line 30?)*

In order to meet the general requirement of a very high level of security, a digital signature function for a set of sensitive U2A instructions should be implemented. The user will be asked to enter a PIN code for the purpose of signing whenever an instruction of this set is initiated. With the entry of the PIN, T2S attaches a digital signature to the instruction submitted by the T2S Actor. Non-repudiation of origin (NRO) provides the recipient (T2S) with the evidence for NRO which ensures that the originator (T2S Actor) will not be able to deny having sent the U2A instruction. The evidence of origin is generated by the originator and held by the recipient.

Introduce a new subchapter (9) to the ANNEX B – TECHNICAL ANNEX on page 169 to outline the functionality required to implement NRO in U2A:

9) Digital Signature: Non-repudiation of origin

For a specific set of sensitive U2A functions the T2S GUI will require the digital signing of an instruction performed either in two-eyes or in four-eyes mode. The user needs a public certificate associated with a private key stored on a portable device (SmartCard or USB-token) which will be accessible after entering a PIN code. The certificate, the technical specification of the key storage, the policies regarding the PIN and its maintenance will be issued by the Network Service Provider (NSP) selected by the T2S Actor.

The signing procedure is based on a Java Applet* which has to be supported by the browser versions (Mozilla Firefox and Microsoft Internet Explorer) installed on the user PC connected to the T2S system.

**The list of technical requirements needs to be rechecked with the NSP when Java Applet solution has been chosen.*

High level description of Impact:

Outcome/Decisions:

* CRG meeting of 8 September 2014: The CRG was in favour of the CR but did not conclude on the list of GUI screens that should request a PIN. It was agreed to have a written procedure until 10 September 2014 to seek CRG member's recommendation on GUI screen's ranking. The CRG decided to put the Change Request on hold.

* Written procedure from 8 September to 10 September 2014: The written procedure with the Change Review Group showed the need of considering 21 U2A functions in addition to the 11 U2A functions from the initial 4CB/ECB proposal.

* CRG Telco of 24 September 2014: The CRG recommended approval of the Change Request.

* Advisory Group's advice on 2 October 2014: Following a written procedure, the AG was in favour of the Change Request.

* CSG resolution on 2 October 2014: Following a written procedure, the CSG adopted the resolution to approve the Change Request.

* CSG meeting on 11-12 December 2014: The CSG adopted the resolution to add the Change Request to Release 1.1.

⁶ 4CB draft proposal.

