| General Information (Origin of Request) | | |
|---|---|---|
| ☒ User Requirements Document (URD)<br>☐ User Detailed Functional Specification (UDFS)<br>☐ User Handbook (UHB)<br>☐ Other User Functional or Technical Documentation (SYS) | | |
| **Request raised by:** T2-WG | **Institute:** T2-WG | **Date raised:** October 2023 |
| **Request title:** CRDM admin users access rights scope limitation | | **Request ref. no:** T2-0129-URD |
| **Request type:** Common | **Classification:** Scope enhancement | **Urgency:** Normal |
| **1. Legal/business importance parameter:** | | **2. Market implementation efforts parameter – Stakeholder impact:** |
| **3. Operational impact:** | | **4. Financial impact parameter:** |
| **5. Functional/ Technical impact:** | | **6. Interoperability impact:** |
| **Requestor Category:** Central Banks | | **Status:** 4CB Detailed Assessment |

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

**Description of requested change:**

The change introduces Certificate DN restrictions in following 2 areas:

1. Visibility restriction of Certificate DNs: the change is:

   - **restricting the full visibility** of Certificate DNs to the data scope i.e., users should only see DNs associated to a party within their data scope e.g., CSD/CBs users (with the right privileges) should be able to view Certificate DNs of their own users and the ones of their respective participants. Participants should be able to view on Certificate DNs associated to their own parties. A Certificate is associated to a party if it has been created by that party or if it is linked to a user of that party with a user-certificate DN link.

   - **Introducing re-key (re-type) functionality**: If a DN needs to be linked to a user of a different party, the user with the right privileges (e.g. admin user) linking the DN with that user needs to re-type the full DN. If the DN was already created, it will appear on screen and the admin user can link it to a user. This means a DN can be queried in the Certificate DN Search/List screens. If the query includes the full string, it will appear in the results (as unique result). If the query does not contain the full string or uses wildcards, it will not appear in the results and therefore cannot be linked to a user.

     The possibility to link the DN should remain across system entities i.e. across the whole system.

2. Creation/Deletion/Update restriction of Certificate DNs: the change is:

   - **Restricting the Creation/Deletion/Update of Certificate DN to own's scope**: a user with the right privilege (e,g, admin user) can create/update/delete only their own DNs or DNs associated to a party within their data scope. For CSDs/CBs, this would mean all DNs associated to their own parties and to the ones of the respective participants. For participants, this would imply the DNs associated to their own parties. Associate to a party means that either it was created for that party or it is linked to a user of that party.

The above restrictions participants level. The operator keeps full access rights across the whole system. i.e. The operator will keep the ability to view, update or delete any Certificate DN if it is not linked to a user and

**User/Certificate DN links:**

For User/Certificate DN links, the implementation will remain as today. The visibility/creation/deletion/update will continue to be limited to own's data scope.. Participants will be able to view/create/delete/update user/DN link for users belonging to their own data scope (party).

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**Submitted annexes / related documents:**

Annex 1: Overview impact on privileges

Annex 2: Practical example of the future implementation

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**Proposed wording for the Change request:**

## UDFS

1.2.2.1.2 Privilege

[…]

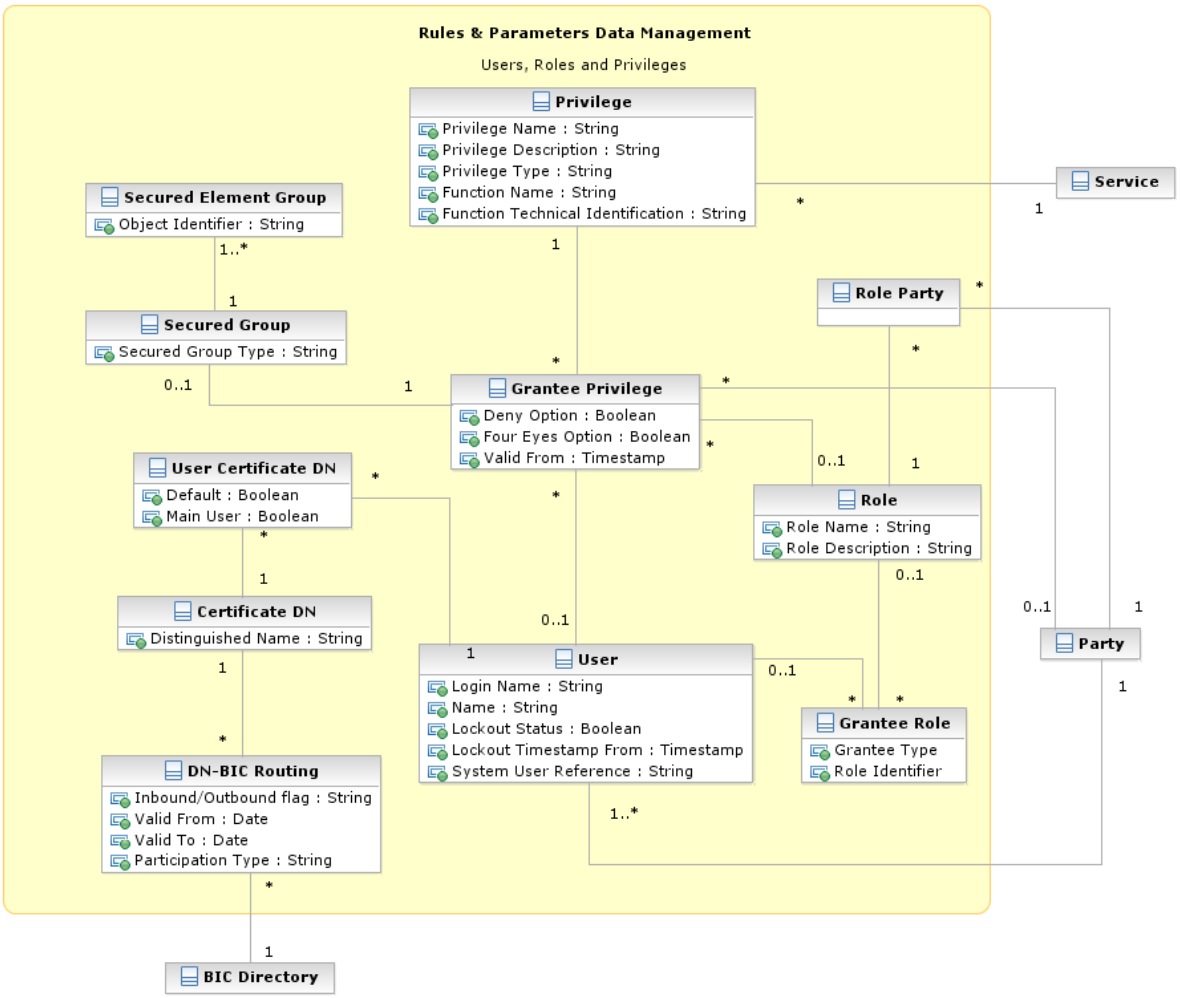
***TABLE 1 – ACCESS RIGHTS MANAGEMENT***

These privileges are related to user functions within CRDM. As such, it is possible to use the same privilege(s) to maintain data related to multiple Services/components. For example, the same privileges can be used to configure a User to access different Services.

| PRIVILEGE | USER FUNCTION | PRIVILEGE TYPE | OBJECT TYPE | DEFAULT DATA SCOPE |
|---|---|---|---|---|
| […] | | | | |
| Update Certificate Distinguished Name | Certificate DN – Edit | System | n/a | Certificate DN within own System Entity (for CSDs and Central Banks) or own Party (for CSD Participants/External CSDs/Payment Banks/Ancillary Systems). |
| Delete Certificate Distinguish Name | Certificate DN – Delete/Restore | System | n/a | Certificate DN within own System Entity (for CSDs and Central Banks) or own Party (for CSD Participants/External CSDs/Payment Banks/Ancillary Systems). |
| […] | | | | |

### 1.3.6 Access rights management

The following diagram shows the conceptual data model for *Users*, *Roles* and *Privileges* management.




[…]

## 2. Certificate DN

This entity includes all reference data for *Certificate DN*.

| ATTRIBUTE | DESCRIPTION |
|---|---|
| Distinguished Name | It specifies the distinguished name. |

~~Each~~ *Certificate DN* are linked to the *Party* they belong to and can be linked to one or many *Users*.

4.5.3.29 Certificate Distinguished Name

- Record Type: “Certificate DN”

The record is used to create a certificate distinguished name.

| Flat file | Excel Column | Column Name | Format | Description | Rules | Occurs per Record | Occurs per Group |
|---|---|---|---|---|---|---|---|
| 2 | B | Record Id | NUMERIC (10) | Unique identifier of the record. | | 1..1 | |
| Group “Certificate Distinguished Name” | | | | | | 1..1 | |
| 3 | C | Certificate Distinguished Name | VARCHAR (256) | | EPC SCT Inst and ISO15022 interoperability character set restrictions do not apply | 1..1 | |
| Group “Party” | | | | | 1..1 | | |
| 4 | I | Parent BIC | CHAR (11) | Party parent BIC. | | | |
| 5 | J | BIC | CHAR (11) | Party BIC. | | | 1..1 |

**UHB**

### 2.3.3.4 Certificate Distinguished Names – Search/List Screen

**Context of Usage**

This screen enables the user to display a list of Certificate Distinguished Names matching the entered criteria.

This screen gives also the possibility to update, delete and restore a selected Certificate Distinguished Name (only active items can be deleted or updated, only deleted items can be restored) and to show Revisions and Audit trail of a selected one.

Finally, it is possible to create a new Certificate Distinguished Name.

Duly authorised users can:

- see and manage Certificate Distinguished Names under their data scope,
- See Certificate Distinguished Names outside their data scope if the same are linked to users under the data scope of the requestor
- See Certificate Distinguished Name outside the data scope of the requestor when searching for the complete name without wildcard.

~~The Certificate Distinguished Names are visible to all the users with no datascope restriction.~~

[…]

**Screenshot**

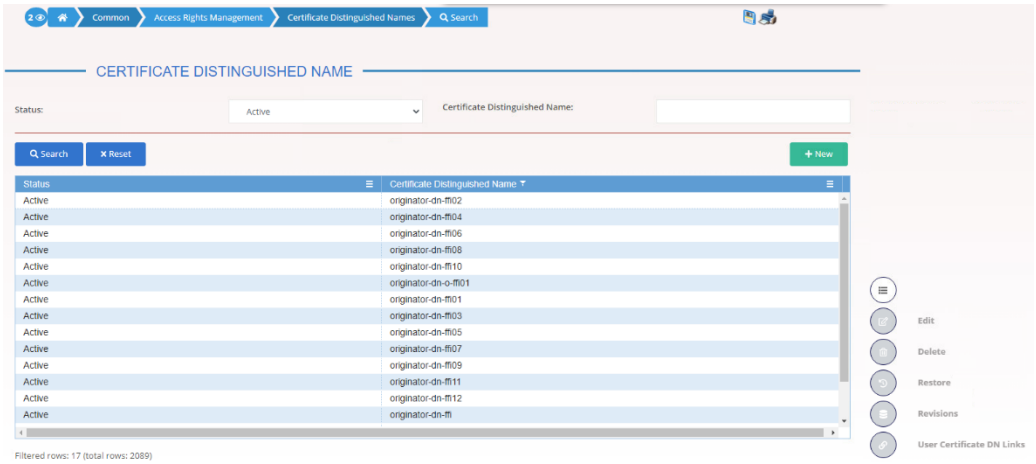



*Illustration 1: Certificate Distinguished Names – search/list* screen

**Fields Description**

| Certificate Distinguished Names - Search Criteria | |
|---|---|
| Status | Select the status of the Certificate Distinguished Names from the possible values:<br>▌All<br>▌Active (default value)<br>▌Deleted<br><br>Reference for error message [▸]:<br>▌DRDA003<br>▌DRDA004<br>This field is mandatory. |
| Certificate Distinguished Name | Enter the Distinguished Name of the Certificate you want to search.<br><br>Reference for error message [▸]:<br>▌DRDA002<br>Required format is: max 256x characters (UTF-8 except '>', '<', '&'). |
| Parent BIC | Enter or select the parent BIC of the party related to the Certificate Distinguished Name.<br><br>Reference for error message [▸]:<br>▌DRDA007<br>Required format is: max. 11x characters. |
| Party BIC | Enter or select the BIC of the party related to the Certificate Distinguished Name.<br><br>Reference for error message [▸]:<br>▌DRDA007<br>Required format is: max. 11x characters. |

| Certificate Distinguished Names - List | |
|---|---|
| Status | Shows the status of the Certificate Distinguished.<br><br>Reference for error message [ ]:<br>▪ DRDA003<br>▪ DRDA004 |
| Certificate Distinguished Name | Shows the Distinguished Name of the Certificate.<br><br>Reference for error message [ ]:<br>▪ DRDA002 |
| Parent BIC | Shows the parent BIC of the party related to the Certificate Distinguished Name.<br><br>Reference for error message [ ]:<br>▪ DRDA001 |
| Party BIC | Shows the BIC of the party related to the Certificate Distinguished Name.<br><br>Reference for error message [ ]:<br>▪ DRDA001 |
| Party Short Name | Shows the short name of the party related to the Certificate Distinguished Name. |

### 2.3.3.5 Certificate Distinguished Names – New/Edit Screen

**Context of Usage**

The screen "Certificate Distinguished Name – New/Edit" enables the user to create a new Certificate Distinguished Name or to update an existing active one. As far as the update is concerned, the users can only update the case of the letters of the existing DN: the existing DN cannot be amended in the content (changing the existing values, space included) but only changing lowercase letters in uppercase ones or the other way around.

Duly authorised users can manage Certificate Distinguished Names under their data scope.

**Screen Access**

▪ *Common >> Access Rights Management >> Certificate Distinguished Names >> Certificate distinguished names – search/list screen >>* Click on *the new button*

▪ *Common >> Access Rights Management >> Certificate Distinguished Names >> New*

❙ *Common >> Access Rights Management >> Certificate Distinguished Names >> Certificate distinguished names – search/list screen >>* Click on *the edit button*

**Privileges**

To use this screen, the following Privileges are needed [▸]:

❙ Create Certificate Distinguished Name

❙ Update Certificate Distinguished Name

**Screenshot**

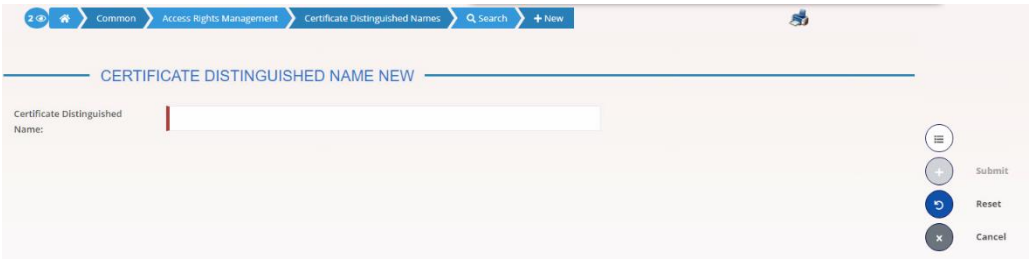



*Illustration 2: Certificate Distinguished Names – new/edit* screen

**Fields Description**

| Certificate Distinguished Names | |
|---|---|
| Certificate Distinguished Name | Enter the distinguished name of the certificate you want to create.<br><br>Reference for error message [▸]:<br>❙ DRCA002<br>❙ DRUA002<br>❙ DRUA003<br>The field is mandatory.<br>Required format is: max 256x characters (UTF-8 except '>', '<', '&'). |
| Parent BIC | Enter or select the parent BIC of the party related to the Certificate Distinguished Name.<br><br>Reference for error message [▸]:<br>❙ DRCA003<br>This field is mandatory in create mode.<br>This field is read-only in edit mode.<br>Required format is: 11x characters. |
| Party BIC | Enter or select the BIC of the party related to the Certificate Distinguished Name. |

| | |
|---|---|
| | Reference for error message [▶]:<br>▌DRCA003<br>This field is mandatory in create mode.<br>This field is read-only in edit mode.<br>Required format is: 11x characters. |

**Buttons**

| | |
|---|---|
| Submit | This function enables the user to create a new certificate distinguished name or to update an existing active one according to the information entered in the fields.<br><br>Reference for error message [▶]:<br>▌DRCA001<br>▌DRCA002<br>▌DRUA001<br>▌DRUA002<br>▌DRUA003 |
| Cancel | This function enables the user to cancel the process and return to the previous screen. |
| Reset | This function enables the user to set all fields to default value and blanks out all optional fields. |

#### 4.3.2.26 Certificate Distinguished Names – Search/List

| Reference for error message | Field or Button | Error Text | Description |
|---|---|---|---|
| DRDA001 | ▌Restore button<br>▌Delete button | Requestor not allowed | A Certificate DN can be deleted or restored only by users with the correct privilege and if falls under the requestor's responsibility according to the Hierarchical Party Model.. |
| DRDA002 | ▌Certificate Distinguished Name field<br>▌Restore button | Distinguished Name already used | When performing a Certificate DN Restore request, the Distinguished Name must not be already used within active instances in CRDM. |
| DRDA003 | ▌Status field<br>▌Delete button | Unknown or not active Certificate DN | When performing a Certificate DN Delete request, it must refer to an existing and active Certificate DN. |
| DRDA004 | ▌Status field<br>▌Restore button | Unknown or not deleted Certificate DN | When performing a Certificate DN Restore request, it must refer to an existing and deleted Certificate DN. |

| | | | |
|---|---|---|---|
| DRDA007 | ▌Parent BIC field<br>▌Party BIC field<br>▌Restore button | Unknown Party Identifier | When performing a Certificate DN Restore request, the specified Party Technical Identifier must refer to an existing, active and open or future Party in CRDM in the data scope of the requestor. |
| DRDA010 | ▌Delete button | Certificate DN is linked to a User | When performing a Certificate DN Delete request, it must refer to a Certificate DN not actively linked to any User. |

**4.3.2.27 Certificate Distinguished Names – New/Edit Screen**

| Reference for error message | Field or Button | Error Text | Description |
|---|---|---|---|
| DRCA001 | ▌Submit button | Requestor not allowed | A Certificate DN can be created only by users with the correct privilege. |
| DRCA002 | ▌Certificate Distinguished Name field<br>▌Submit button | Distinguished Name already used | When performing a Certificate DN Create request, the Distinguished Name must not be already used within active instances in CRDM. |
| DRCA003 | ▌Parent BIC field<br>▌Party BIC field<br>▌Submit button | Unknown Party Technical Identifier | When performing a Certificate DN Create request, the specified Party Technical Identifier must refer to an existing, active and open or future Party in CRDM in the data scope of the requestor. |
| DRUA001 | ▌Submit button | Requestor not allowed | A Certificate DN can be updated only by users with the correct privilege ~~that belong to the same System Entity as the Certificate DN~~ and if falls under the requestor's responsibility according to the Hierarchical Party Model. |
| DRUA002 | ▌Submit button | Certificate DN not found | When performing a Certificate DN Update request, it must refer to an existing and active Certificate DN. |
| DRUA003 | ▌Certificate Distinguished Name field<br>▌Submit button | Only uppercase/lowercase changes allowed | When performing a Certificate DN Update request, the Distinguished Name string can only be modified by changing uppercase characters into the corresponding lowercase ones and vice versa. |

**High level description of Impact:**

**Impacts on other projects and products:**

**Outcome/Decisions:**

Annex 1: Impact overview on privileges

L2 has identified the following impact of the proposed implementation on privileges related to the visibility, update, and deletion of Certificate DNs and on the creation and deletion of User/DN links.

1. Operator:

| | | Visibility DNs | Create/Delete/Update DNs | | |
|---|---|---|---|---|---|
| Parties | Roles | CRDM Privileges | | | |
| | | Certificate Query | Create Certificate DN | Delete Certificate DN | Update Certificate DN |
| Operator | N/A | X | X | X | X |

- No change
- The operator has all access across the system

2. CBs/CSDs:

| | | Visibility | Create/Delete/Update DNs | | |
|---|---|---|---|---|---|
| Parties | Roles | CRDM Privileges | | | |
| | | Certificate Query | Create Certificate DN | Delete Certificate DN | Update Certificate DN |
| CBs/CSDs | **Admin** (CB Access rights admin 2/4E) | X | X | X | X |
| | **Normal user** (CB Reader 2E) | X | | | |

- **Certificate Query will allow CBs/CSDs to:**
  - Within their data scope (system entity):
    - i.e. see all DNs (their own and those of their participants)
  - Beyond their data scope (system entity):
    - i.e. see all DNs after a re-key (i.e. re-type). This means that an "open" query without any specific parameters would return all DNs within the normal data scope of the requestor. In order to display a DN belonging for example to another system entity, the requestor would have to re-key it in full. In this case the query result would be limited to that one single DN.

- **Create/Delete/Update Certificate DN will allow CBs/CSDs to:**
  - Create/Delete/Update DN associated to their own system entity (to own party and to their participants)

Note: Like today, the deletion/update will be possible only if the DN is not linked to a user.

3. Participants:

| | | Visibility | Create/Delete/Update DNs | | |
|---|---|---|---|---|---|
| Parties | Roles | CRDM Privileges | | | |
| | | Certificate Query | Create Certificate DN | Delete Certificate DN | Update Certificate DN |
| Participants | **Admin (AH Access Rights Admin 2E/4E)** | X | X | X | X |

- **Certificate Query_AH will allow participants to:**
  - Within their data scope (party): see all DNs
  - Beyond their data scope (party) across the system: see all DNs after a re-key (i.e. re-type)

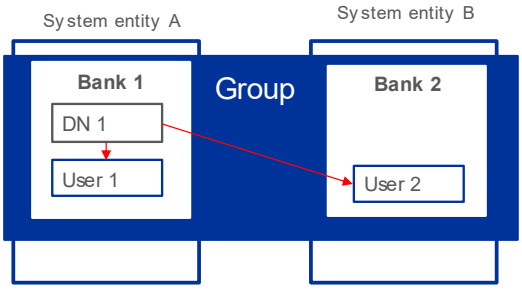
- **Create/Delete/Update Certificate DN_AH will allow participants to:**
  - Create/Delete/Update DN associated to their own data scope (party)

Annex 2: Practical example of the future implementation

# Future implementation (TO -BE) – Practical example

- Bank 1 is part of a group which operates across different system entities
- The group intends to use a DN created by one bank with different users , across different system entities
- This setup will remain possible with the future implementation

## Diagram




## Process

- Bank 1: Admin creates DN1 and links it with User 1
- Bank 2: Admin rekeys the DN1 and links it with User 2



Although based on participants, this example is also applicable to system entities e.g CSD or CB user can be linked to a Certificate DN associated to a different CSD or CB.

| | | | Process | User Interaction | Business Data Definition | Non-functional Requirements |
|---|---|---|---|---|---|---|
| CENTRAL LIQIDITY MANAGEMENT (CLM) | GENERAL | CLM Payment Order | | | | |
| | | CLM Liquidity Transfer Order | | | | |
| | | CLM Liquidity Reservation | | | | |
| | CENTRAL BANK SERVICES | Modify Credit Line | | | | |
| | | Connected Payments | | | | |
| | | Overnight Deposit | | | | |
| | | Marginal Lending | | | | |
| | | Minimum Reserve Management | | | | |
| | | EoD General Ledger Files | | | | |
| REAL-TIME GROSS SETTLEMENT (RTGS) | GENERAL | RTGS Payment Order | | | | |
| | | Queue Management | | | | |
| | | RTGS Liquidity Transfer Order | | | | |
| | | RTGS Liquidity Reservation | | | | |
| | | RTGS Services for Ancillary Systems (AS) | | | | |
| | CB SER-VICES | | | | | |
| COMMON | GENRAL | ESMIG | | | | |
| | | CRDM | | x | | |
| | | Business Day | | | | |
| | | User Roles and Access | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Information and Reporting | | | | |
| | | Data Warehouse Services | | | | |
| | CENTRAL BANK SERVICES | Billing | | | | |
| | | Legal Archiving | | | | |
| | | Contingency Settlement | | | | |

| **Impact on major documentation** | | |
|---|---|---|
| **Document** | **Chapter** | **Change** |
| Impacted UDFS chapter | 1.2.2.1.2 Privilege<br><br>1.3.6 Access rights management<br><br>4.5.3.29 Certificate Distinguished Name | Change of default data scope for Update/Delete Certificate Distinguish Name privilege<br>Amendment of data model in order to include the link between the Certificate DN and Party<br><br>Introduction of fields 'Parent BIC' and 'Party BIC' for Data Migration Tool when creating a certificate DN. |
| Additional deliveries for Message Specification (UDFS, MyStandards, MOP contingency templates) | | |
| UHB | 2.3.3.4 Certificate Distinguished Names – Search/List Screen<br>2.3.3.5 Certificate Distinguished Names – New/Edit Screen | Introduction of fields Parent BIC and Party BIC as search criterion and Parent BIC, Part BIC and Party Short Name as fields in the list.<br>Introduction of fields Parent BIC and Party BIC in New/Edit mode. |
| External training materials | | |
| Other impacted documentation | Data Model | Amendment of data model in order to include the link between the Certificate DN and Party |
| Impacted GDPR message/ screen fields | | |

| Links with other requests | | | | |
|---|---|---|---|---|
| Links | Reference | | Title | |

**OVERVIEW OF THE IMPACT OF THE REQUEST ON THE T2SYSTEM AND ON THE PROJECT**

**Summary of functional, development, infrastructure and migration impacts**

CRDM

Introduction of the following fields in CRDM **Certificate Distinguished Names** GUI screen:

- Search/List: Parent BIC and Party BIC as search criterion and Parent BIC, Part BIC and Party Short Name as fields in the list
- New/Edit: Parent BIC and Party BIC (read only in edit mode)

Introduction of the following fields in CRDM **Certificate Distinguished Names** DMT:

- New: Parent BIC and Party BIC

Introduction of the following new business rules:

- DRDA007: When performing a Certificate DN Restore request, the specified Party Technical Identifier must refer to an existing, active and open or future Party in CRDM.
- DRCA003: When performing a Certificate DN Create request, the specified Party Technical Identifier must refer to an existing, active and open or future Party in CRDM.

Amendment of the following business rule:

- DRUA001 allowing the update of a Certificate Distinguished Name only when belonging to the data scope of the requestor.
- DRDA001 allowing the deletion of a Certificate Distinguished Name only when belonging to the data scope of the requestor.

The visibility of Certificate Distinguished Names must be amended as follows:

- Certificate distinguished Names retrieved by the query for CSDs and Central Banks must show only objects under the proper System Entity
- Certificate distinguished Names retrieved by the query for Party CSD Participants/External CSDs/Payment Banks/Ancillary System must show only objects owned by the requestor Party
- Additional visibility criterion: If the query includes the full Certificate distinguished Name without wildcard, it will appear in the list, even if the object is not under the data scope of the requestor party.
- Additional visibility criterion: The query retrieves also Certificate Distinguished Names outside the datascope of the requestor if there exists in CRDM an User-DN Link between this DN and a user in the data scope of the requestor.

Change in suggested values for field Certificate Distinguished Name in CRDM **User-Certificate Distinguished Names Link** screen:

- The fields becomes an auto-complete select box with the possibility to enter Certificate Distinguished Names outside of the data scope of the requestor even if not suggested.

| Impact on other TARGET Services and projects |
|---|
| T2S: Impact on T2S. Since the Certificate Distinguished Name screen on CRDM is also relevant on T2S side, a T2S-ICN explaining the impact to the users will be drafted. |
| TIPS: No impact on TIPS. Nevertheless, a TIPS-ICN will be drafted to inform TIPS users on the restrictions introduced in CRDM on the relevant common object (i.e. Certificate DN). |
| ECMS: No impact on ECMS. |
| Summary of project risk |
| None |
| Security analysis |
| No adverse effect has been identified during security assessment. |