



# Common Reference Data Management for TIPS

## User Detailed Functional Specifications

V0.1.0

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## Introduction

[...]

## Reader's guide

[...]

# 1. General features of CRDM

[...]

## 1.1. Introduction to the CRDM Service

[...]

## 1.2. Access to CRDM

[...]

### 1.2.1. Connectivity

[...]

### 1.2.2. Authentication and authorisation

[...]

### 1.2.3. Access rights

[...]

### 1.2.4. Message subscription

[...]

### 1.2.5. Graphical user interface

Users of CRDM Actors granted with the appropriate privileges can communicate with the CRDM in U2A mode via a web-based graphical user interface (GUI).

The following CRDM functionalities are available in U2A mode :

**Table 1 – CRDM U2A Functions**

Function	Actor
Create Party	CRDM Operator, Central Bank
Update Party	CRDM Operator, Central Bank
Delete/Restore Party	CRDM Operator, Central Bank
Query Party List	CRDM Operator, Central Bank, Payment Bank
Query Party Details	CRDM Operator, Central Bank, Payment Bank

Function	Actor
Create Party Service Link	CRDM Operator, Central Bank
Update Party Service Link	CRDM Operator, Central Bank
Delete/Restore Party Service Link	CRDM Operator, Central Bank
Query Party Service Link List	CRDM Operator, Central Bank, Payment Bank
Create Cash Account	CRDM Operator, Central Bank, Payment Bank
Update Cash Account	CRDM Operator, Central Bank, Payment Bank
Delete/Restore Cash Account	CRDM Operator, Central Bank, Payment Bank
Query Cash Account List	CRDM Operator, Central Bank, Payment Bank
Query Cash Account Details	CRDM Operator, Central Bank, Payment Bank
Create Limit	Payment Bank
Update Limit	Payment Bank
Delete/Restore Limit	Payment Bank
Query Limit List	Payment Bank
Query Limit Details	Payment Bank
Create Authorized Account User	Payment Bank
Update Authorized Account User	Payment Bank
Delete/Restore Authorized Account User	Payment Bank
Query Authorized Account User List	Payment Bank
Create User	CRDM Operator, Central Bank, Payment Bank
Update User	CRDM Operator, Central Bank, Payment Bank
Delete/Restore User	CRDM Operator, Central Bank, Payment Bank
Query Cash User List	CRDM Operator, Central Bank, Payment Bank
Query Cash User Details	CRDM Operator, Central Bank, Payment Bank
Create Role	CRDM Operator, Central Bank
Update Role	CRDM Operator, Central Bank
Delete/Restore Role	CRDM Operator, Central Bank
Query Cash Role List	CRDM Operator, Central Bank

Function	Actor
Create Certificate DN	CRDM Operator, Central Bank, Payment Bank
Delete/Restore Certificate DN	CRDM Operator, Central Bank, Payment Bank
Query Certificate DN List	CRDM Operator, Central Bank, Payment Bank
Create User Certificate DN Link	CRDM Operator, Central Bank, Payment Bank
Delete/Restore User Certificate DN Link	CRDM Operator, Central Bank, Payment Bank
Query User Certificate DN Link List	CRDM Operator, Central Bank, Payment Bank
Grant Privilege	CRDM Operator, Central Bank, Payment Bank
Revoke Privilege	CRDM Operator, Central Bank, Payment Bank
Query Granted Privilege List	CRDM Operator, Central Bank, Payment Bank
Query Granted Privilege Details	CRDM Operator, Central Bank, Payment Bank
Grant Role	CRDM Operator, Central Bank, Payment Bank
Revoke Role	CRDM Operator, Central Bank, Payment Bank
Query Granted Role List	CRDM Operator, Central Bank, Payment Bank
Query Granted Role Details	CRDM Operator, Central Bank, Payment Bank
Create Message Subscription Rule	Central Bank, Payment Bank
Update Message Subscription Rule	Central Bank, Payment Bank
Delete/Restore Message Subscription Rule	Central Bank, Payment Bank
Query Message Subscription Rule List	Central Bank, Payment Bank
Query Message Subscription Rule Details	Central Bank, Payment Bank
Create Message Subscription Rule Set	Central Bank, Payment Bank
Update Message Subscription Rule Set	Central Bank, Payment Bank
Delete/Restore Message Subscription Rule Set	Central Bank, Payment Bank
Query Message Subscription Rule Set List	Central Bank, Payment Bank
Query Message Subscription Rule Set Details	Central Bank, Payment Bank
Create Technical Address Network Service Link	CRDM Operator, Central Bank, Payment Bank
Delete/Restore Technical Address Network Service Link	CRDM Operator, Central Bank, Payment Bank
Query Technical Address Network Service Link List	CRDM Operator, Central Bank, Payment Bank

Function	Actor
Create DN BIC Routing	Central Bank
Update DN BIC Routing	Central Bank
Delete/Restore DN BIC Routing	Central Bank
Query DN BIC Routing List	Central Bank
Create Report Configuration	Payment Bank
Update Report Configuration	Payment Bank
Delete/Restore Report Configuration	Payment Bank
Query Report Configuration List	Payment Bank
Query Report Configuration Details	Payment Bank

Via U2A mode, CRDM offers to CRDM Actors a dual authorisation concept, the Four-Eyes-Principle (See section 1.2.6).

Detailed description of the CRDM graphical user interface is provided into the CRDM User Handbook.

### 1.2.6. Security

This section aims at describing the main processes performed by CRDM in terms of security principles applied to ensure to CRDM users that they can securely exchange information with CRDM.

Secure means that the following security conditions are met:

- | Confidentiality: Ensuring that information is accessible only to authenticated and authorised CRDM Actors;
- | Integrity: Safeguarding the accuracy and completeness of information;
- | Monitoring: Detecting operational and technical problems and recording appropriate information for crisis management scenarios and future investigations;
- | Availability: Ensuring that authorised users have access to information and associated assets when required;
- | Auditability: Ensuring the possibility to establish whether a system is functioning properly and that it has worked properly.

Additional information on common security issues and client authentication is to be provided later on with the final status of the network tender documentation.



### 1.2.6.1. Confidentiality

The confidentiality of data in CRDM is ensured by the possibility to grant specific access rights for any given set of data, as detailed in section 1.2.3. In conjunction with mechanisms of authentication<sup>1</sup> and authorisation applying to all requests received by CRDM in both A2A and U2A mode, this guarantees that each CRDM Actor's data is treated confidentially and is not accessible to non-authorized CRDM Actors.

In addition to these standard mechanisms, the principle of data segregation is applied on the reference and transactional data belonging to CBs in order to ensure a strict separation of their respective data in CRDM.

### 1.2.6.2. Integrity

Within CRDM, various business validations ensure the integrity of information. If a business validation fails, CRDM has a concept of Error handling in place. The requested action is not processed and CRDM provides the user with detailed information regarding the nature of the error via A2A or U2A.

In U2A mode, CRDM offers users in addition the possibility to further ensure the integrity of data, data requests and communications via usage of a dual authorisation concept, the Four-Eyes-Principle. In case this option is chosen for a specified set of CRDM operations, a second independent verification and confirmation is required before an operation becomes active in CRDM. If, for example, a critical set of Reference Data should be modified and the person requesting the change is only allowed to do so under the Four-Eyes-Principle, then a second person of the same Party has to confirm the correctness of the request. Otherwise, the requested change of Reference Data is not implemented.

### 1.2.6.3. Monitoring

CRDM operational monitoring provides tools to the CRDM Operator for the detection in real-time of functional or operational problems.

Technical monitoring allows for the detection of hardware and software problems via real-time monitoring of the technical components involved in the processing, including the network connections.

In addition, the monitoring provides the CRDM Operator with an overview of the message flows in CRDM.

### 1.2.6.4. Availability

The overall availability of the CRDM services is ensured by the infrastructure design. The technical environment for the CRDM core system follows a "two regions/four sites" approach to ensure availability throughout the widest possible range of system failures.

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<sup>1</sup> Authentication means determining whether someone or something (function, component...) is who or what it is declared to be

#### 1.2.6.5. Auditability

CRDM provides an audit trail with which it is possible e.g. to reconstruct who updated which data when. All this data is available to authorised users via queries.

In order to ensure sustainability, CRDM archives all data by storing for a harmonised period of ten years all inbound and outbound messages (except queries) in their original format.

### 1.3. Reference data model

[...]

#### 1.3.1. Common information

[...]

#### 1.3.2. Party data management

[...]

#### 1.3.3. Cash account data management

[...]

#### 1.3.4. Access rights management

[...]

#### 1.3.5. Message subscription configuration

[...]

#### 1.3.6. Network configuration

[...]

#### 1.3.7. Report configuration

[...]

#### 1.3.8. Restriction type management

[...]

#### 1.3.9. Configuration parameters

[...]

## 1.4. CRDM Features

### 1.4.1. Concept

The Common Reference Data Management service allows duly authorised users to create and maintain reference data objects used by TIPS. Common Reference Data Management objects specify reference data for the configuration of parties, cash accounts and TIPS rules and parameters.

### 1.4.2. Overview

The Common Reference Data Management service is in charge of executing reference data maintenance instructions for the creation or the maintenance of reference data objects.

Duly authorised users belonging to CBs, payment banks and to the CRDM Operator can trigger the Common Reference Data Management service according to their own specific access rights, i.e. using the functions and maintaining the common reference data objects they have been granted.

Duly authorised users of the CRDM Operator are responsible for system configuration tasks and for the management of common reference data for CBs. These users can also act on behalf of other CRDM Actors in order to perform some specific actions or within some pre-defined contingency scenarios.

The Common Reference Data Management service executes immediately all reference data maintenance instructions. However, the related reference data changes become effective in TIPS in a deferred way, by means of a daily reference data propagation process.

All common reference data objects can be created and maintained in U2A mode, whereas only a subset of them can be maintained in A2A mode (See section 1.4.3.2). All reference data changes performed in U2A mode can be executed either in Two-Eyes or in Four-Eyes mode. Duly authorised users can specify the applicable mode for the functions and the common reference data objects they manage (See section 1.2.3).

Versioning facilities and validity periods allow the implementation of data revision and data history features, in order to keep track of all past data changes, to enter changes meant to become effective as of a future date and to define common reference data objects with limited or unlimited validity.

### 1.4.3. Common reference data maintenance process

#### 1.4.3.1. Common reference data objects

Duly authorised users manage common reference data by creating and maintaining common reference data objects. A common reference data object is a set of logically related, self-consistent information. Parties and cash accounts are examples of common reference data objects. The following table provides the exhaustive list of common reference data objects defined in the Common Reference Data Management service and the CRDM Actors that are responsible for their management, i.e. for creating and maintaining them:

**TABLE 1 - COMMON REFERENCE DATA OBJECTS**

AREA	OBJECT	RESPONSIBLE CRDM ACTORS <sup>2</sup>
Party	Party	CRDM Operator, CB
	Party Service Link	CRDM Operator, CB
Cash account	Cash account	CB, Payment Bank
	Limit	Payment Bank
	Authorized Account User	Payment Bank
Access rights management	User	All
	Role	CRDM Operator, CB
	Privilege	CRDM Operator
	Certificate DN	All
	User-Certificate DN Link	All
	Role User Link	All
	Role Party Link	CRDM Operator, CB
Message subscription configuration	Message subscription rule	CB, Payment Bank
	Message subscription rule set	CB, Payment Bank
Network configuration	DN BIC Routing	CB
	Network service	CRDM Operator
	Technical address Network service link	CB, Payment Bank
Report configuration	Report configuration	Payment Bank
Restriction type management	Restriction type	CRDM Operator
Configuration parameters	Country	CRDM Operator
	Currency	CRDM Operator
	Currency Service Link	CRDM Operator
	System entity	CRDM Operator
	BIC directory	CRDM Operator
	Service	CRDM Operator

<sup>2</sup> "All" indicates that all types of CRDM Actors (CRDM Operator, CBs, Payment Banks) have the ability to manage the object type.

A common reference data object consists of one or more classes of information. For example, a party is a common reference data object, consisting of the following classes of information:

- | Party;
- | Party code;
- | Party name;
- | Party address;
- | Party technical address.

Each class of information includes a defined set of attributes. For example, the class of information party name of the common reference data object party includes the following attributes:

- | The long name of the party;
- | The short name of the party;
- | The starting validity date of the party name.

The Common Reference Data Management service provides functions to maintain all common reference data objects (See section 1.4.3.2). Each maintenance operation on a common reference data object results in a new version of the same object. Each version of a common reference data object is called a revision of the object. Consequently, at any point in time, the Common Reference Data Management service stores one or many revisions of each common reference data object, more precisely only one revision for newly created objects that were never maintained after their creation and N revisions for objects that were maintained N-1 times after they were created. The first revision of each common reference data object includes all the attribute values provided at creation time. After that, each maintenance request successfully processed creates a new revision for the object. This means that each revision may entail changes of many attributes of the same common reference data object at the same time. A new revision is also created when deleting and restoring a common reference data object.

Some classes of information are subject to data history, i.e. classes of information having multiple occurrences with continuous and non overlapping validity periods. For example, the classes of information party name and party code of the common reference data object party can be subject to data history. In fact, they include a Valid From attribute which determines the valid value of these classes of information at any given point in time.

#### 1.4.3.2. Reference data maintenance types

The Common Reference Data Management service allows a duly authorised user to perform the following types of reference data maintenance operations on common reference data objects:

- | Create. It creates a new common reference data object.
- | Update. It updates an already existing common reference data object. It is possible, with a single update, to create, update or delete one or many classes of information of a common reference data object at the same time.

- | Delete. It deletes an already existing common reference data object. Deletion is always logical and not physical. Physical deletion is performed automatically by the Common Reference Data Management service when performing the purge process following the archiving process (See section 1.4.3.4).
- | Restore <sup>3</sup>. It reactivates a previously deleted common reference data object, i.e. it updates the approval status of this object from deleted to active.

Besides these operations, the Common Reference Data Management service provides some specific types of reference data maintenance operations for the configuration of access rights (See section 1.2.3 for a detailed description of these operations).

### 1.4.3.3. Validity of common reference data objects

Some common reference data objects include attributes limiting the validity period of these objects. For example, each Party service link, which defines the participation of a given payment bank in TIPS, includes two attributes specifying the date from which and the date to which the link is valid, i.e. the period in which said payment bank can operate in TIPS. Between the creation date and the deletion date of the link, but outside the validity period just defined, the payment bank is not allowed to operate in TIPS, even though it is active in the Common Reference Data Management repository and it can be queried and maintained by a duly authorised user.

The Common Reference Data Management service makes a distinction between the following two categories of common reference data objects:

- | Common reference data objects with unlimited validity period,
- | Common reference data objects with limited validity period.

The following table shows the exhaustive list of all the common reference data objects with unlimited validity period:

**TABLE 2 - COMMON REFERENCE DATA OBJECTS WITH UNLIMITED VALIDITY PERIOD**

AREA	OBJECT
Cash account	Authorized Account User
Access rights management	User
	Role
	Privilege
	Certificate DN
	User-Certificate DN Link

<sup>3</sup> This function is available in U2A mode only and it is granted with a single system privilege, which allows the grantee user to restore all the logically deleted common reference data objects within the data scope of the same user.

AREA	OBJECT
	<ul style="list-style-type: none"> <li>Role User Link</li> <li>Role Party Link</li> <li>Privilege Role Link</li> </ul>
Network configuration	<ul style="list-style-type: none"> <li>DN BIC Routing</li> <li>Network service</li> <li>Technical Address Network Service Link</li> </ul>
Configuration parameters	<ul style="list-style-type: none"> <li>Country</li> <li>Currency</li> <li>System entity</li> </ul>

This type of common reference data object starts being valid immediately after it has been created. Similarly, a common reference data object with unlimited validity period may be immediately updated or deleted by a duly authorised user. However, in both cases the reference data change, i.e. the creation of a new object or the update or deletion of an already existing object is made effective in TIPS only by means of the daily propagation process.

Regardless of the way common reference data object with limited validity period are propagated to TIPS, between the creation date and the deletion date of this object, it is active in the Common Reference Data Management service and it can be queried and maintained by a duly authorised user. Common reference data objects with limited validity period can be updated either intraday, i.e. while they are in their validity period or as of a future date, i.e. before they become valid.

The following table shows the exhaustive list of all the common reference data objects with limited validity period, with the columns on the right specifying the possible maintenance operations depending on the validity period:

**TABLE 3 - COMMON REFERENCE DATA OBJECTS WITH LIMITED VALIDITY PERIOD <sup>4</sup>**

AREA	OBJECT	CREATION	UPDATE	DELETION
Party	Party	Validity date may take the value of the current date.	May take effect on the current date <sup>5</sup> .	May be performed only on objects that are not valid on the current date.
	Party Service Link	Validity date may take the value of the current date.	May take effect on the current date.	May be performed only on objects that are not valid on the current date.
Cash account	Cash account	Validity date may take the value of the current date.	May take effect on the current date.	May be performed only on objects that are not valid on the current date.
	Limit	Validity date may take the value of the current date.	May take effect on the current date.	May be performed only on objects that are not valid on the current date.
Message subscription	Message subscription rule set	Validity date may take value of the next business day at the earliest.	May take effect only as of a future date.	May be performed only on objects that are not valid on the current date.
	Message subscription rule	Validity date may take value of the next business day at the earliest.	May take effect only as of a future date.	May be performed only on objects that are not valid on

<sup>4</sup> In the following table, the columns 'Creation/Update/Deletion' clarify whether it is possible to perform a given maintenance operation on each object with immediate effect. For example, if a user updates an object on which updates "may take effect on the current date", they are able, should they wish to do so, to perform changes that become immediately valid. On the contrary, if the update "may take effect only as of a future date" then it is not possible to perform intraday changes on the object. The possibilities described in the table represent the level of flexibility offered to the user. Within these limitations, the user decides exactly when a specific modification should take effect.

<sup>5</sup> This is not applicable to the Party Code, which cannot be updated if it is currently active.



AREA	OBJECT	CREATION	UPDATE	DELETION
				the current date.
Report configuration	Report configuration	Validity date may take value of the next business day at the earliest.	May take effect only as of a future date.	May be performed only on objects that are not valid on the current date.
Restriction type management	Restriction type	Validity date may take value of the next business day at the earliest.	May take effect only as of a future date.	May be performed only on objects that are not valid on the current date.
Configuration parameters	BIC Directory	Validity date may take the value of the current date.	May take effect on the current date.	May be performed only on objects that are not valid on the current date.

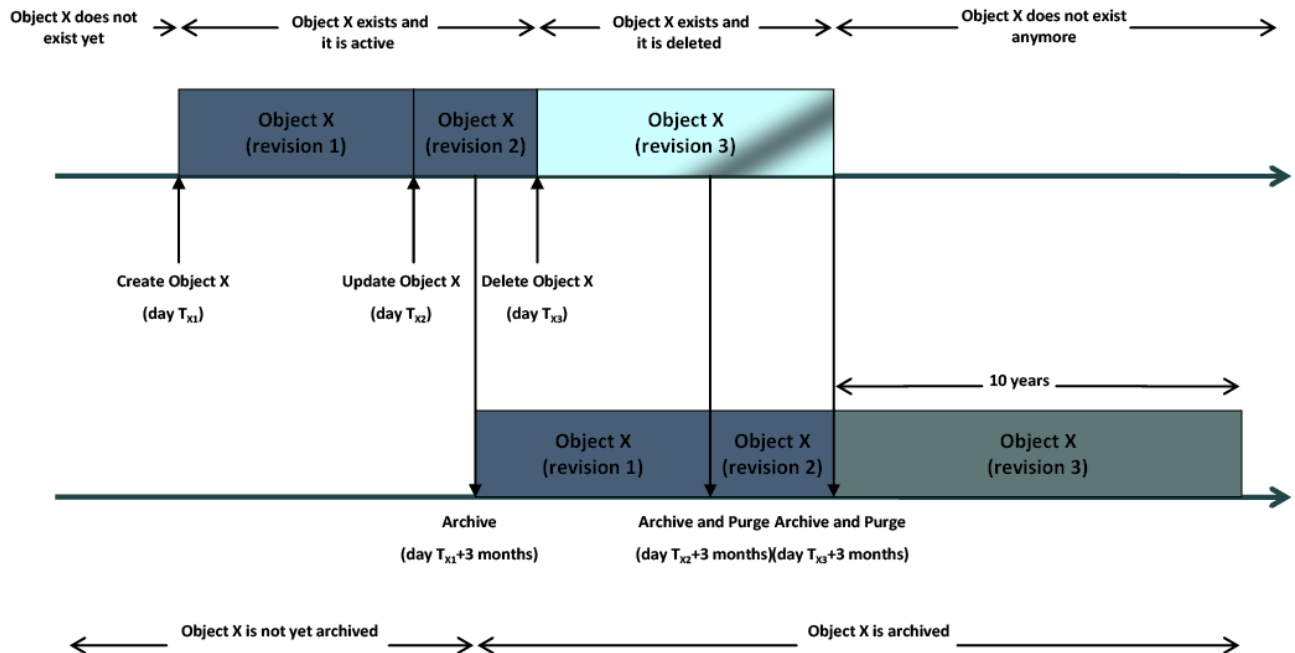
For parties and cash accounts the validity period is defined by an Opening Date and a Closing Date attribute. Between these two dates the common reference data object, i.e. the party or the cash account, is valid, meaning that TIPS can use it for processing (e.g. for settlement purpose). Outside this period, the common reference data object can only be queried or maintained in the Common Reference Data Management service by a duly authorised user.

#### 1.4.3.4. Common reference data archiving and purging

The Common Reference Data Management service archives new reference data and their changes three calendar months after they were created or changed. The Common Reference Data Management service purges, i.e. physically deletes reference data from the production data base three calendar months after they were deleted. For example, a party has to be deleted before the Common Reference Data Management service can purge it. This implies that a party is never purged, unless a duly authorised user makes the decision to delete it.

The following example illustrates how the Common Reference Data Management service archives and purges the different revisions of a generic common reference data object.

**EXAMPLE 1 - ARCHIVING AND PURGING AFTER DELETION OF A COMMON REFERENCE DATA OBJECT**



In this example, a duly authorised user creates intra-day, on business day  $T_{x1}$ , a common reference data object X. This results in the creation of the first revision of the object X.

During business day  $T_{x2}$  (with  $T_{x2} < T_{x1} +$  three calendar months ) a duly authorised user updates the common reference data object X changing one (or many) of its attribute(s). This results in the creation of a new revision (2) for X.

On business day  $T_{x1} +$  three calendar months, the archiving process copies the first revision of the common reference data object X into the archiving data base. It is worth mentioning that:

- | The Common Reference Data Management service does not purge the archived revision, as it still refers to a period of time that expired on  $T_{x2}$ , i.e. since less than three calendar months;
- | The Common Reference Data Management service does not archive the second revision of the common reference data object X, as it was created on  $T_{x2}$ , i.e. since less than the duration of the retention period.

During business day  $T_{x3}$  (with  $T_{x3} < T_{x2} +$  three calendar months), a duly authorised user deletes the common reference data object X. This results in the creation of a new revision (3) for the same object.

On business day  $T_{x2} +$  three calendar months, the archiving process copies the second revision of the common reference data object X into the archiving data base. In this case:

- | The Common Reference Data Management service does not purge this second revision, as it still refers to a period of time that expired on  $T_{x3}$ , i.e. since less than three calendar months ;
- | The Common Reference Data Management service does not archive the third revision of the common reference data object X, as it was created on  $T_{x3}$ , i.e. since less than three calendar months ;

- I The Common Reference Data Management service purges the first revision of the common reference data object X, as it refers to a period of time that expired exactly since three calendar months.

Finally, on business day  $T_{X3} +$  three calendar months, the archiving process copies the third and final revision of the common reference data object X into the archiving data base. On the same day, just after the archiving process has been successfully performed, the Common Reference Data Management service purges the common reference data object X, by physically deleting the last two revisions of the object X that are still present in the production data base.

From this moment on, all revisions of the common reference data object X are available only in the archiving data base, where the Archiving service keeps them for a period of ten years.

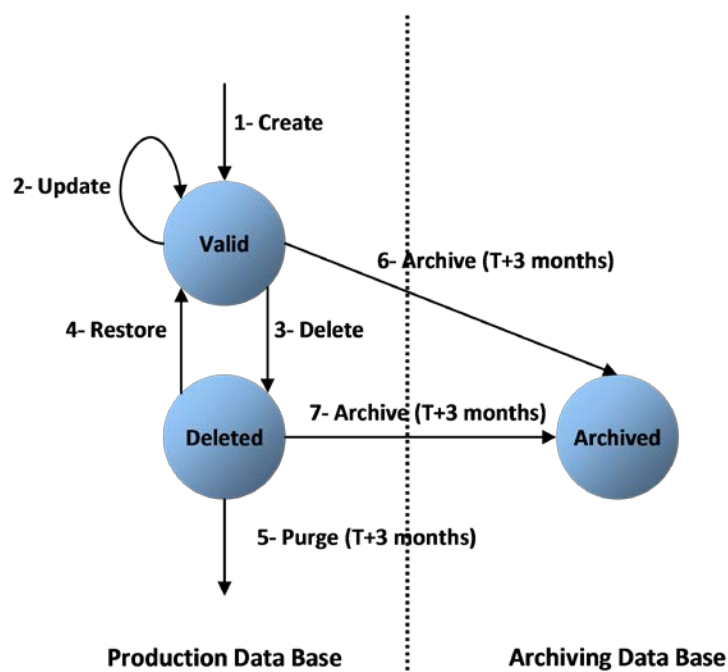
#### 1.4.3.5. Lifecycle of common reference data objects

This section puts together all the concepts described so far and provides a general description of the lifecycle of common reference data objects.

##### Lifecycle of common reference data objects with unlimited validity period

The following diagram illustrates the lifecycle of a common reference data object with unlimited validity period both in the production data base and in the archiving data base:

**DIAGRAM 1 - LIFECYCLE OF COMMON REFERENCE DATA OBJECTS WITH UNLIMITED VALIDITY PERIOD**



When a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to create a common reference data object with unlimited validity period, the Common Reference Data Management service processes it and, in case of successful processing, it creates the relevant object. This object is valid and it exists in the production data base only (transition 1).

From this moment on, a duly authorised user may submit to the Common Reference Data Management service one or many reference data maintenance instructions to update the common reference data object. Regardless of the result of the Common Reference Data Management service processing, i.e. whether the reference data maintenance instruction is successfully or unsuccessfully processed, the common reference data object remains valid (transition 2).

When a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to delete a common reference data object, the Common Reference Data Management service processes it and, in case of successful processing, it deletes the relevant object. This object is logically deleted (transition 3), even if it is still physically present in the production data base.

From this moment on and within a period of three calendar months, if a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to restore a previously deleted common reference data object, the Common Reference Data Management service processes it and, in case of successful processing, it restores the relevant object. As a result, the object becomes valid again (transition 4).

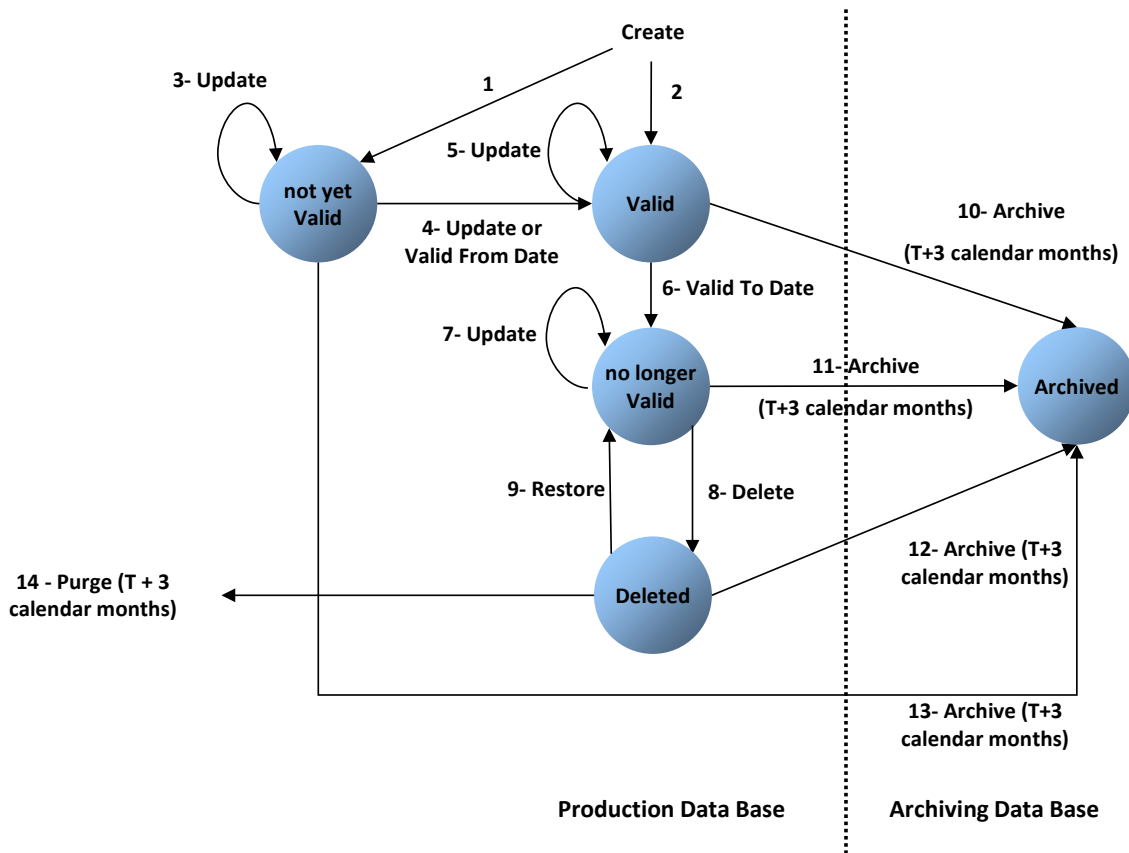
Three calendar months after a common reference data object has been deleted, the Common Reference Data Management service physically deletes it from the production data base. This results in the object being purged by the production data base (transition 5), i.e. it exists only in the archiving data base.

Three calendar months after a common reference data object has been either created, updated or deleted, the Common Reference Data Management service copies the revision of the common reference data object resulting from this reference data maintenance instruction from the production data base to the archiving data base. As a result the common reference data object is both in the production data base, either as a valid or deleted object, and archived in the archiving data base (transitions 6 and 7).

#### Lifecycle of common reference data objects with limited validity period

The following diagram illustrates the lifecycle of a common reference data object with limited validity period both in the production data base and in the archiving data base:

**DIAGRAM 2 - LIFECYCLE OF COMMON REFERENCE DATA OBJECTS WITH LIMITED VALIDITY PERIOD**



When a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to create a common reference data object with limited validity period, the Common Reference Data Management service processes it and, in case of successful processing, it creates the relevant object. This object is either valid or not yet valid, depending on the starting date of its validity period, and it exists in the production data base only (transitions 1 and 2).

From this moment on, a duly authorised user may submit to the Common Reference Data Management one or many reference data maintenance instructions to update the common reference data object. If the object is valid, then it remains valid, regardless of the result of the Common Reference Data Management service processing, i.e. whether the reference data maintenance instruction is successfully or unsuccessfully processed (transition 5). If the object is not yet valid, two sub-cases are possible:

- | If the reference data maintenance instruction also updates the starting date of the validity period to the current business date and it is successfully processed, then the common reference data object becomes valid (transitions 4).
- | In all other cases, whether the reference data maintenance instruction is successfully or unsuccessfully processed, the common reference data object remains not yet valid (transition 3).

A common reference data object becomes valid from the starting business date of the validity period (transition 4).

A common reference data object is valid until the end of day of the final date of the validity period (transition 6).

When a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to delete a common reference data object, the Common Reference Data Management service processes it and, in case of successful processing, it deletes the relevant object. This object is logically deleted (transition 8), even if it is still physically present in the production data base.

From this moment on and within a period of three calendar months, if a duly authorised user submits to the Common Reference Data Management service a reference data maintenance instruction to restore a previously deleted common reference data object, the Common Reference Data Management service processes it and, in case of successful processing, it restores the relevant object. As a result, the object becomes no longer valid again (transition 9).

Three calendar months after a common reference data object has been deleted, the Common Reference Data Management service physically deletes it from the production data base. This results in the object being purged by the production data base (transition 14), i.e. it exists only in the archiving data base.

Three calendar months after a common reference data object has been either created, updated or deleted, the Common Reference Data Management copies the revision of the common reference data object resulting from this reference data maintenance instruction from the production data base to the archiving data base. As a result the object is both in the production data base (as a not yet valid, valid, no longer valid or deleted object) and archived in the archiving data base (transitions 10, 11, 12 and 13).

## 1.5. Interactions with other services

[...]

### 1.5.1. TARGET2-Securities

[...]

### 1.5.2. TARGET2

[...]

### 1.5.3. TARGET Instant Payment Service

[...]

## 1.6. Operations and support

### 1.6.1. Service configuration

[...]

### 1.6.2. Business and operations monitoring

[...]

### 1.6.3. Archiving management

[...]

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## 2. Dialogue between CRDM and CRDM Actors

[...]



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## 3. Catalogue of messages

[...]

### 3.1. Introduction

[...]

### 3.2. General information

[...]

#### 3.2.1. Message signing

[...]

#### 3.2.2. Technical validation

[...]

#### 3.2.3. Supported Character Set

[...]

### 3.3. Messages usage

#### 3.3.1. List of messages

[...]

#### 3.3.2. Messages description

[...]

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## 4. Appendices

### 4.1. Business Rules

[...]

## 4.2. List of ISO Error codes

[...]

## 4.3. Index of figures

[...]

## 4.4. Index of tables

[...]

## 4.5. List of acronyms

[...]

## 4.6. List of referenced documents

[...]