# Mobile Proxy Lookup

# User Detailed Functional Specifications

**R2026~~6~~7.~~NOV~~JUN**

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# Introduction

The aim of this document is to provide a detailed description of a Mobile Proxy Lookup (MPL) service.

This document is intended to guide the MPL Actors to a proper understanding of the service and to offer all the information needed for the implementation of software interfaces on their side.

The document is divided into three main chapters:

- The first chapter provides a full description of all the MPL features and the related reference data, along with non-technical details concerning access to the service. The background information provided in Chapter 1 guides the understanding of Chapter 2. Information provided in Chapter 1 is mainly user-oriented, but it also includes some details on the internal MPL processes, when relevant.
- The second chapter provides a formalized description of the dialogue between MPL Actors and MPL. This part aims at providing an exhaustive description of the different (successful and unsuccessful) use cases MPL actors may face. The section guides the reader through the steps of the different scenarios by means of activity diagrams and explanations of the messages used during the different processes.

  The description of each step of a process includes an exhaustive list of all the checks performed by MPL. The detailed description of the business rules governing each of these checks is reported in the list at the end of the document (4.1 Business Rules).
- The third chapter provides a detailed description of all XML messages MPL Actors may use to interact with MPL.

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# Reader's guide

The document is intended as a guide for the readers from both a business oriented and a technically oriented perspective. Therefore different readers may have different needs and priorities and may not need to read the whole document. For instance, business readers, interested mainly in organisational issues, may not wish to enter into the full details of each and every message description, but they might prefer going through a description of the application processes and the information flows between their own business applications and the MPL service. On the other hand, technical readers involved in the specification and development of technical interfaces to MPL may not be interested in the complete description of the application processes that are leading to the sending of a given message. They would probably search the necessary information to design and build the interface of the MPL Actors' business application with MPL service. Every reader can decide their own reading plan and it is not mandatory for every reader to read the entire UDFS book.

The following paragraphs show with a couple of examples how business readers and technical readers may follow different reading patterns, in order to fulfil their needs.

**Business oriented perspective**

The business reader may be interested in the way information is structured in MPL. This user may want to follow the reading plan described below to find information about the operations that are needed in order to process a request in MPL:

- The business reader finds in section "1.3 MPL Actors and Proxy-IBAN Mapping Table" a general description of the main Reference data needed to work on MPL, specifying how they are used for the different types of operations and also is important to understand how the information is managed in MPL.
- From this point, the business reader may move to section "Look-up", Reachability Check and Data Maintenance in order to find a description of the processing of the different features of MPL. Here they can find useful examples in order to understand the main scenarios involving the look-up requests, the reachability check and the maintenance requests.
- For further details on the validations to be performed, they may jump to section "4.1 Business Rules", where the functional checks are described.

**Technical oriented perspective**

For a technical reader, it is more likely that the reading plans would pass through:

- Chapter 2 "Dialogue between MPL and MPL Actors", where a complete overview of the possible A2A dialogue with MPL is required, e.g. when structuring the interface of a MPL Actor towards MPL. Each sub-section of this chapter describes, then, the flows involving the functionalities of MPL. The readers can focus on the functionality they are interested in analysing the process and the main scenarios.

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- Chapter 3 “Catalogue of messages”, where a detailed description of the content of a given XML message is provided, e.g. when specifying the details of the interface of a MPL Actor towards MPL.
- For further details on the checks to be performed and ISO codes used in the message, they may jump to chapter 4 “Appendices”.

All readers, whether business or technical, are invited to read the following UDFS sections, which are providing a background to the understanding of any other UDFS section:

- “1.2 Access to MPL”, and “1.4 MPL Features”, which is a summary providing the basis for the understanding of the main MPL concepts (access to MPL, authentication and authorisation processes, security).

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# 1. General features of MPL

The present chapter, after a short introduction of the Mobile Proxy Lookup, from now on MPL, describes all the features provided by the service.

Section 1.2 introduces the details regarding the access of MPL Actors to MPL.

Section 1.3 describes the reference data model of MPL, including a description of all the relevant entities and their relationships.

Section 1.4 describes the various features of MPL and the underlying processes, including Look-up, Reachability check and Data maintenance.

Section 1.5 describes the interactions between MPL and other Eurosystem Common Components.

Finally, section 1.6 describes operational and support aspects.

## 1.1. Introduction to the MPL component

In the SCT$^{inst}$ scheme it is crucial to be in possession of data to address the beneficiary. However, in most cases the payer is not aware of this data (e.g. IBAN). The MPL look-up functionality allows the user to obtain the IBAN (or other data of the payee) providing as input the mobile phone of the beneficiary as proxy value. MPL enables MPL Actors, which receive requests from their customers to execute instant payments in favour of beneficiaries identified with a proxy digest (i.e. a hash value of a mobile number), to retrieve from the central MPL repository the relevant beneficiary IBAN.

The Look-up process allows MPL Actors to retrieve beneficiary data required to address a payment (i.e. the beneficiary IBAN code) by providing a request containing proxy data. MPL operates on a 24/7/365 basis and it makes use of the following Common Components:

- The Eurosystem Single Market Infrastructure Gateway (ESMIG) which allows users to gain access to all Eurosystem services and components, including MPL, after being authenticated and authorised to access the relevant service or component. The ESMIG, moreover, guarantees sanitisation of messages for security purposes and technical validation of the standard messages sent to the different services.
- The Common Reference Data Management (CRDM), i.e. the centralised, harmonised reference data management component that handles in a single point all data that is shared by more than one Eurosystem service or component. The CRDM allows users to configure, create and keep up-to-date all the reference data needed in the different Eurosystem services or components, including MPL. As an example, the setup of reference data related to a MPL Participant is up to the responsible National Central Bank (NCB) whereas a MPL Participant is responsible for the setup and configuration of its own Users.

## 1.2. Access to MPL

This section describes the basic connectivity to MPL from a non-technical standpoint.

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### 1.2.1. Connectivity (A2A/U2A)

MPL supports access to the service through two different channels: Application-to-Application (A2A) channel and User-to-Application (U2A) channel.

- A2A: software applications can communicate with MPL exchanging single messages. All the exchanges of messages are executed through a realtime transfer service.
- U2A: for specific functionalities[1], the MPL operator can access MPL through a Graphical User Interface. This channel is foreseen for a small subset of functionalities (see Graphical user interface).

### 1.2.2. Authentication and authorisation process

MPL shall use the same authentication and authorisation process as TIPS. Therefore, any MPL actor is identified, as in TIPS, by a Distinguished Name (DN), issued by the respective NSP, which also performs authentication of the sender at network infrastructure level. If the authentication is successful, the connectivity provider forwards the request and the sender's DN to the ESMIG in order to carry out the authorisation check. If these checks are successful, the request and the sender's DN are forwarded to MPL.

MPL then carries out the authorisation of the sender at application level based on the DN's access rights profile. As in TIPS, MPL authorises requests from specific users based on their relevant access rights profile and related Privileges.

### 1.2.3. Access rights

MPL authorises requests from specific users (i.e. individuals or applications identified by means of a DN) based on their relevant access rights profile. Each interaction with MPL is defined as a MPL user function; most of these can be triggered in A2A mode by means of a message (e.g. sending an Look-up request), while there is also a subset of actions that can be performed in U2A mode via GUI screen (e.g. create a new entry in the Proxy-IBAN table). The capability to trigger a specific MPL user function is granted by means of the related Privilege.

All Privileges that are relevant for MPL are defined and stored within the CRDM, which also offers the possibility to group different Privileges into sets known as Roles. Each of these Roles will define a specific business role for MPL Actors to use to interact with MPL. MPL and TIPS users will be assigned one or more roles in the CRDM depending on their requirements, and these roles will define their access rights configuration.

Roles are then granted to users identified by specific DNs. This allows the DN linked to the Role to trigger user functions in MPL by exercising the Privileges contained within the Role.

MPL authorises the sender of a given request only if the DN fulfils both of the following conditions:

1. The DN has the relevant privilege(s) required to submit the request;
2. The DN is enabled to submit the request on the requested business object(s).

[1] The functionalities foreseen refer to contingency changes of any element of the Proxy-IBAN Mapping Table.

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The first condition depends on the DN's access rights profile, which is defined by the role(s) assigned to it in the CRDM. For example, a DN may be enabled to send Look-up Requests but not Data Maintenance Requests.

The second condition is based on the business object itself on which a request is being performed. For instance, in a Data Maintenance Update message, the object is represented by the Proxy-IBAN mapping instance to be updated. MPL applies specific business logic to determine whether a certain DN is authorised to act on a certain object. If a certain DN is authorised to exercise a type of request (related to a specific Privilege) on a specific object, that object is said to be within the DN's data scope for that Privilege.

The entire access rights configuration process is carried out within the CRDM: the CRDM documentation provides additional details on these aspects.

### 1.2.4. Security

This section aims at describing the main processes performed by MPL in terms of principles applied to ensure MPL Actors can securely exchange information with MPL.

It means that the following security conditions are met:

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

#### 1.2.4.1. Confidentiality

The confidentiality of data is ensured by the possibility to grant specific access rights for any given set of data, as detailed in section 1.2.3 "Access rights". In conjunction with mechanisms of authentication and authorisation applied to all requests received by MPL in both A2A and U2A mode, this guarantees that each MPL Actor's data is treated confidentially and is not accessible to non-authorised actors.

Furthermore, in compliance with the General Data Protection Regulation (EU) 2016/679, MPL implements adequate measures to ensure the safety of personal data information, receiving and storing Proxy and Person Identification data in encrypted (hashed) format only.

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#### 1.2.4.2. Integrity

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

#### 1.2.4.3. Availability

The overall availability of the MPL component is ensured by the innovative architectural design, and is pursued through node redundancy and self-recovery capability (built at application level). In the event of unavailability of some local nodes of the application cluster or unavailability of an entire site, MPL adapts its behaviour as far as possible to continue operating.

#### 1.2.4.4. Monitoring

MPL operational monitoring provides tools to the MPL 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.

#### 1.2.4.5. Auditability

For U2A, MPL provides an audit trail with which it is possible to reconstruct user activities. More in detail, MPL collects data regarding maintenance requests, while Look-up Requests, Reachability Check Requests and Personal Data Retrieval Requests shall not be subject to audit trail.

### 1.2.5. Graphical user interface

MPL allows the Operator performing via GUI a contingency change of any element of the Proxy-IBAN Mapping Table, upon request of the responsible MPL Actor (see section Business and operations monitoring) to be channelled through the relevant NCB. MPL allows the following types of change via GUI for the Operator only:

- Creation of a new element;
- Update of the attributes of an existing element;
- Deletion of an existing element.

## 1.3. MPL Actors and Proxy-IBAN Mapping Table

### 1.3.1. Parties and MPL Actors

Entities that interact with MPL are generally known as MPL Actors. The MPL participation model envisions different types of Actors. Each Actor corresponds to a Party defined in the Common Reference Data Management (CRDM) common component; as outlined in section 1.3.1.2. "Concept of party in MPL", in order for a Party to be active within MPL, the same Party must be linked to the TIPS Service.

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Therefore, Parties that are already active in TIPS (i.e. TIPS Participants and Reachable Parties) are also considered as Parties active in MPL; in addition, it is possible for Parties to be defined as MPL Actors only, should they wish to not be active in TIPS.

This section provides a detailed description of all the reference data stored in the Common Reference Data Management (CRDM) common component and used by MPL for all MPL Actors. More in detail, section 1.3.1.1 identifies the reference data related to the setup of MPL Actors for MPL and it provides detailed information as to who is responsible for the setup of these reference data. Section 1.3.1.2 defines the concept of party in the CRDM component and the way this concept relates to the different types of legal entities that can interact with MPL. Section 1.3.1.3 describes the so-called hierarchical party model, i.e. the organisational structure of parties in the CRDM repository. Sections 1.3.1.4 and 1.3.1.5 illustrate in detail the reference data required by MPL for each actor, i.e. the way a party can be identified in MPL and which attributes have to be stored for each Actor.

#### 1.3.1.1. Setup of MPL Actors

The setup of MPL Actors takes place in the Common Reference Data Management component. The MPL Operator is responsible for setting up and maintaining Party reference data for all Central Banks in the MPL. Central Banks are responsible for setting up and maintaining Party reference data for the Parties of their national community.

The following table summarises, for each reference data object related to the setup of MPL Actors, the Actor responsible for its configuration and it specifies which mode the Actor can use for the configuration.

**Table 1 – Setup of Parties for MPL**

| Reference Data Object | Responsible Actor | Mode |
|---|---|---|
| Party (CB) | MPL Operator | U2A |
| Party (MPL Participant) | Central Bank | A2A/U2A |

#### 1.3.1.2. Concept of party in MPL

Any MPL Actor, meaning any legal entity or organisation participating in and interacting with the MPL, is defined as an entity in the Common Reference Data Management (CRDM) repository. Each party belongs to one of the following party types:

- MPL Operator
- Central Bank
- MPL Participant

The **MPL Operator** is the legal and organisational entity that operates MPL. They are responsible for the initial setup and day-to-day operations of MPL and act as single point of contact for Central Banks and MPL Actors; they are also responsible for monitoring the system and carrying out corrective actions in the event of incidents or service unavailability. The MPL Operator is also responsible for setting up and maintaining Central Banks reference data in the Common Reference Data Management repository

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and, if required, they may operate on behalf of any MPL Actor, upon request of the respective Central Bank. They have full access to all archived reference data in MPL.

**Central Banks** are responsible for setting up and maintaining reference data in the Common Reference Data Management repository for all the MPL Actors belonging to their community. If a Central Bank is active within TIPS, the same Central Bank is linked to the MPL Service as Central Bank.

**Participants** represent entities that setup and maintain Proxy-IBAN Mapping Table elements (see section 1.3.2 "Proxy-IBAN Mapping Table") within the MPL service. They are uniquely identified by a BIC11 and they are able to submit:

- Look-up requests toward MPL in order to get the IBAN that corresponds to a given proxy digest;
- Reachability check requests to check whether a given proxy digest has been mapped to an IBAN.

The MPL service is available to all TIPS Participants and Reachable Parties, which are automatically active in MPL as MPL Participants.

#### 1.3.1.3. Hierarchical party model

The party model of MPL is based on a hierarchical three-level structure. The MPL Operator is the only party on the top level of the hierarchy and it is responsible for the setup of each Party on the second level, i.e. each Central Bank in MPL. Similarly, each party belonging to the second level (i.e. Central Banks) is responsible for the setup of all Parties in its community (i.e. MPL Participants), represented by Parties on the third level.

#### 1.3.1.4. Party identification

Each legal entity is identified in the financial market by a BIC (Business Identifier Code), according to the ISO 9362 standard. Each legal entity or organisation may result in the definition of multiple parties in the Common Reference Data Management repository. This implies that the usage of BIC is not enough to ensure uniqueness in the identification of parties, as these parties may be related to the same legal entity and, consequently, they may have been assigned the same BIC. For this reason, the CRDM component requires two BICs to identify each party. More precisely, CRDM identifies each party with the BIC of the party itself and the BIC of the party with which it has established a business relationship. Therefore:

- Each Participant is identified by the 11-character BIC of its Central Bank plus its own 11-character BIC;
- Each Central Bank is identified by the 11-character BIC of the MPL Operator plus its own 11-character BIC.

TIPS imposes a constraint in the assignment of BICs related to its parties, which applies also to MPL Parties. This circumstance implies the need to ensure that any given BIC can only be assigned to one MPL Party and that two different MPL parties must have assigned two different BICs. For this reason, the CRDM component prevents allowing two different Parties to be defined as MPL Parties if they are identified by the same 11-character BIC (this may happen, for example, when one financial institution is defined twice as a Party by two different Central Banks). Therefore, in order to allow a given financial

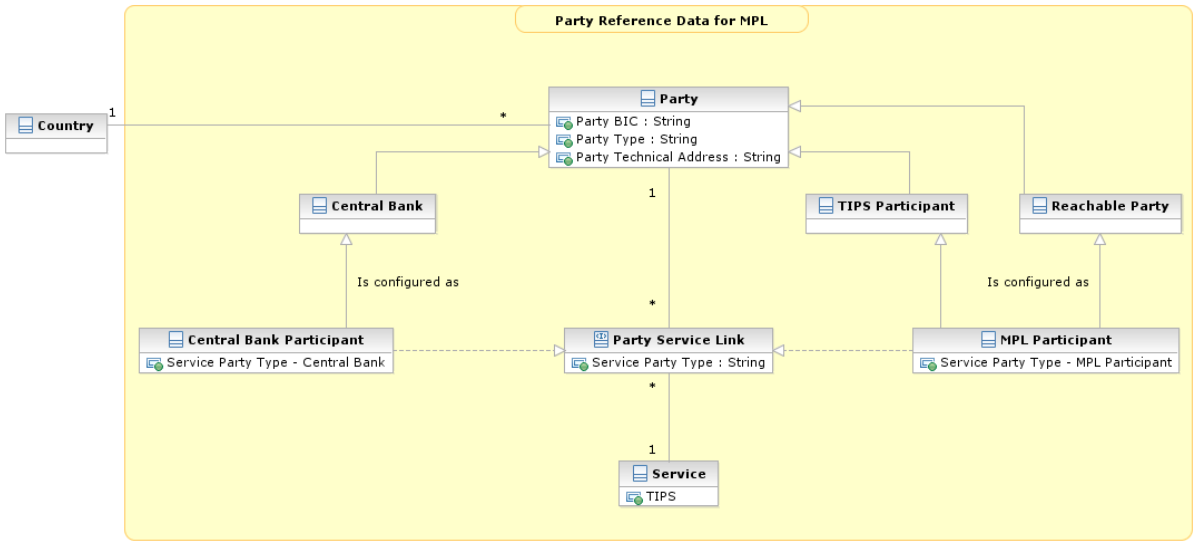
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institution to be defined as two different MPL Parties (by the same Central Bank or by two different Central Banks), the same financial institution must be defined in the CRDM repository as two Parties identified by two different 11-character BICs.

### 1.3.1.5. Reference data for parties in MPL

The following diagram shows the conceptual data model for Party reference data in MPL. All related entities, attributes and relationships between different entities are described in detail in the rest of this section.

**Figure 1 – Party reference data model**




The following table shows the exhaustive list of Party reference data attributes that MPL receives from the Common Reference Data Management component and stores in its Local Reference Data Management (LRDM) repository.

**Table 2 – Party reference data**

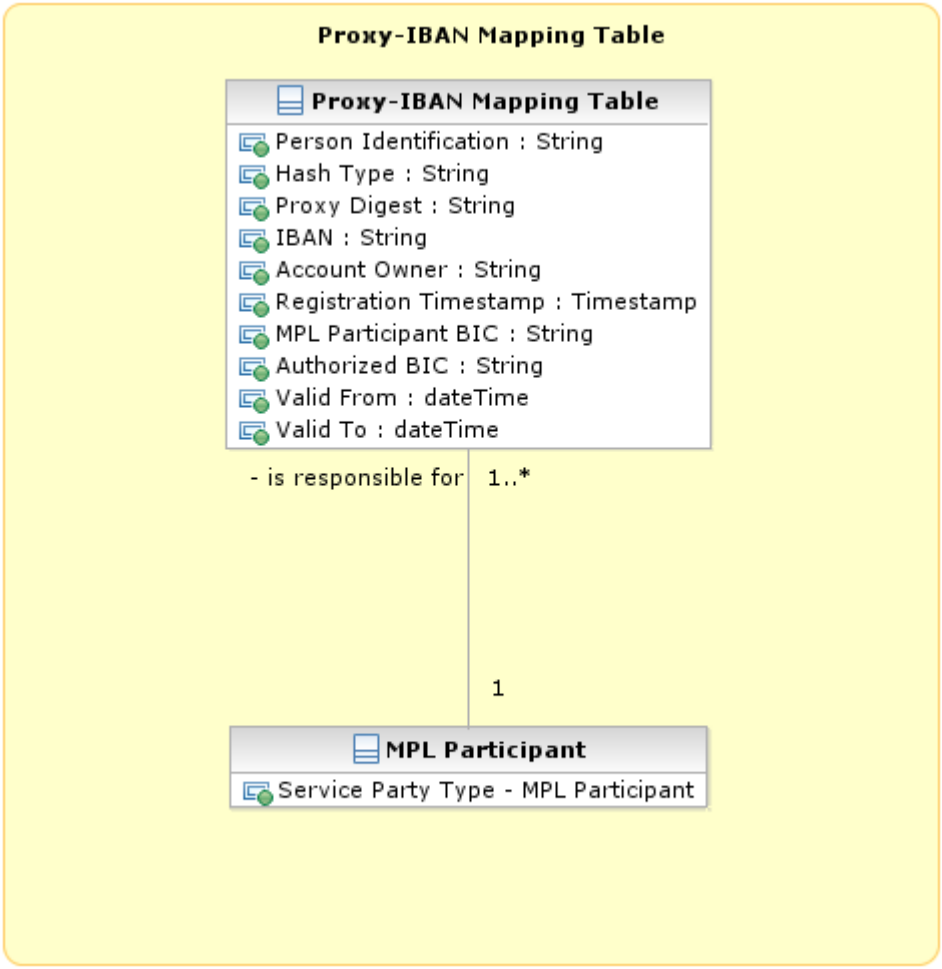
| Attribute | Description |
|---|---|
| Party BIC | 11-character Business Identifier Code (BIC11) to uniquely identify the party in MPL. |
| Party Type | Type of party. The exhaustive list of party types is as follows:<br>• MPL Operator<br>• Central Bank<br>• MPL Participant |
| Country | Country code of the Central Bank the party belongs to. |
| Party Technical Address | Distinguished Name defined for the receipt of messages relevant for the Party as maintainer of the Proxy-IBAN Mapping Table, such as reports. |

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### 1.3.2. Proxy-IBAN Mapping Table

The MPL service enables MPL Actors to setup and maintain Proxy-IBAN Mapping Table elements. The following diagram shows the conceptual data model for Proxy-IBAN Mapping Table element reference data that MPL stores in its Local Reference Data Management (LRDM) repository.

**Figure 2 – Proxy-IBAN Mapping Table**




The following table shows the exhaustive list of Proxy-IBAN Mapping Table element reference data attributes that MPL stores in its Local Reference Data Management repository.

**Table 3 – Proxy-IBAN Mapping Table reference data**

| Attribute | Description |
|---|---|
| Person Identification | Digest of unique identification of the customers. |
| Hash type | Hashing Algorithm (always equal to “SHA-256”). It’s the algorithm used to calculate the Person Identification and the Proxy Digest. |

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| Attribute | Description |
|---|---|
| Proxy Digest | Digest of the proxy type (always 'MSDN') and proxy (phone number) of the Beneficiary. |
| IBAN | Creditor account number. |
| Account owner | Name of the owner of the account. (optional) |
| Registration Timestamp | Date and time by when the element was created or last updated. |
| MPL Participant Identifier | Identifier of the MPL Actor which uploaded the element of the mapping table. |
| Authorized BIC | BIC to be used to instruct TIPS |
| Valid From Date and Time | Date and time from which the element is valid |
| Valid To Date and Time | Date and time until which the element is valid |

In order to ensure consistency, the following guidelines should be followed when configuring Proxy-IBAN data:

- The Proxy Digest should be a digest (obtained using algorithm SHA-256) of the proxy type (always 'MSDN') and the proxy itself;
- The Person Identification should be a digest (obtained using algorithm SHA-256) of a two-character country code followed by a unique national identifier to be agreed at national level.

# 1.4. MPL Features

## 1.4.1. General concepts

MPL processes incoming requests continuously during the day, on a 24/7/365 basis without any scheduled service downtime. In this context, the term "requests" refers not only to Look-up and Reachability check requests but also to data maintenance requests.

For example, MPL may receive a Look-up Request that attempts to retrieve data of a Participant and a concurrent request to delete the same data. If MPL receives the ordered sequence where the Look-up precedes the deletion, the data will be retrieved before the record is deleted. If, conversely, MPL receives the ordered sequence where the data deletion is executed prior to the Look-up Request, the record will be deleted and the proxy will not be found in MPL.

The possible types of requests processed by MPL are listed below:

- Look-up Request to retrieve the IBAN of a beneficiary giving a proxy as input;
- Reachability Check to check whether a given proxy is stored in the MPL repository;
- Reference data maintenance instructions to modify MPL local reference data;

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- Personal Data Retrieval Request to get all elements related to a physical person/proxy digest under the scope of the MPL Actor;

Local reference data maintenance within MPL is limited to the following set of operations that can be performed at any point in time (i.e. 24/7/365) with immediate effect:

- Data Maintenance Create Request;
- Data Maintenance Update Request;
- Data Maintenance Delete Request;

Other reference data setup (e.g. configuration of the MPL Actors) are performed in the CRDM; reference data are then propagated from the CRDM to MPL asynchronously, on a daily basis (see section 1.5.2 Common Reference Data Management).

MPL also offers reporting functionalities.

Data included in reports depends on the access rights profile of the subscribing MPL Actor and is based on the daily activities collected in MPL. MPL offers Participants the possibility to subscribe to a Repository Maintenance Report.

MPL triggers the production of reports at the end of the current calendar day.

### 1.4.2. Look-up Request

The Look-up process allows MPL Actors to retrieve beneficiary data required to address a payment by providing an A2A request containing a digest of the proxy.

A Look-up request is forwarded by an MPL Actor to MPL in order to get the IBAN corresponding to a given proxy.

The involved input message is the LookupRequestMessage, used to start the process of data request to MPL.

In order to send a Look-up Request, the Originator Actor shall be registered as MPL user[2]. Furthermore MPL validates that the requestor/Originator Actor is duly authorised to initiate the Look-up process. Otherwise, if the Actor is not authorised or any validation check fails MPL informs the sender of the Look-up by means a LookupResponseMessage containing the proper error.

Every Look-up Request that successfully passes the validation check receives a Look-up response; the latter is forwarded by MPL to the MPL Actor who previously submitted the request. The Look-up response request can be either negative or positive. The involved message is the LookupResponseMessage.

If the response is negative, because no record referring to the proxy digest was found, a negative answer is immediately forwarded back to the Originator Actor. Furthermore, the response is accompanied by an error code indicating that no matching element was found. Generally, every rejected request shall

[2] This configuration is carried out within the CRDM and it entails linking the DN of the Originator with a specific User belonging to the relevant Party. The User should furthermore be granted the privilege(s) to carry out the relevant activities in MPL.

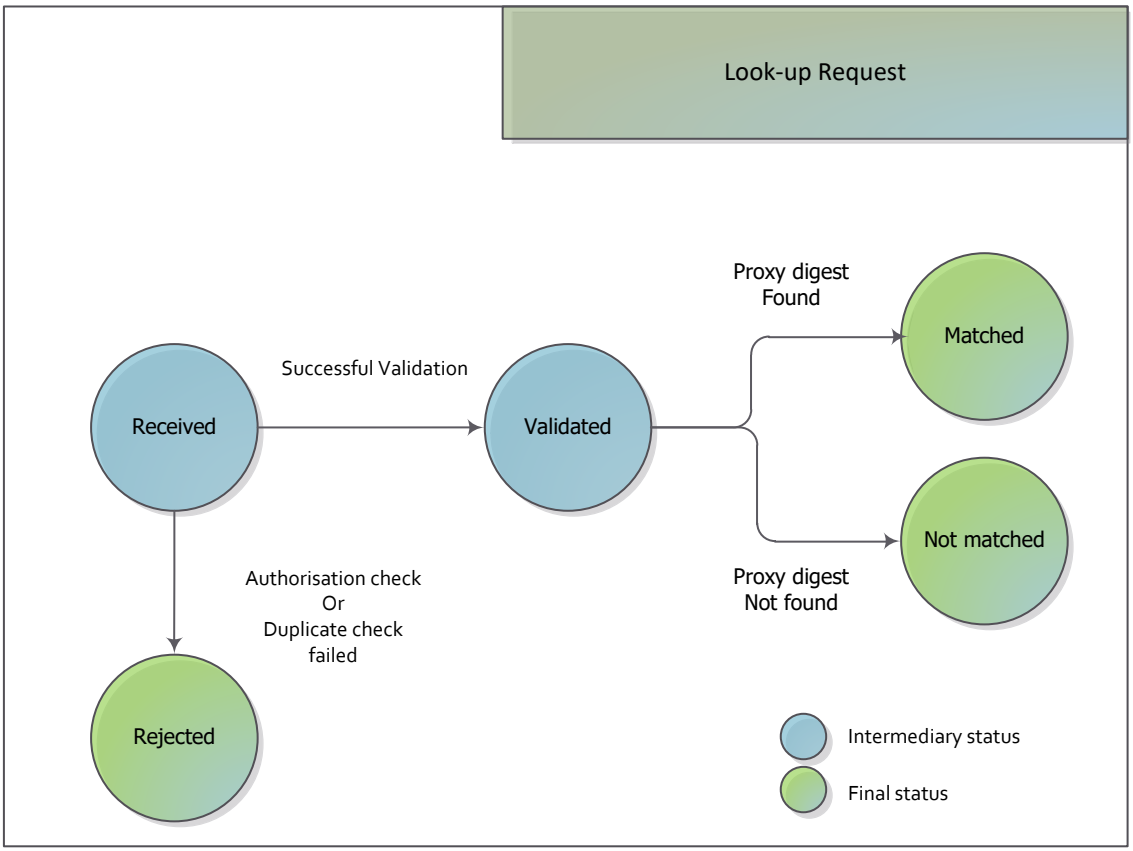
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indicate the specific error code indicating the reason of the rejection (for all the error codes see table in section 4.2).

Conversely, each positive Look-up Response shall include all the data attributes of the retrieved element related to the given proxy digest.

The following figure shows the possible processing paths of a Look-up Request.

**Figure 3 – Look-up Request status diagram**




## 1.4.3. Reachability Check

MPL shall allow any MPL Actor sending a Reachability Check Request in order to check whether a given proxy digest is stored in the MPL repository.

Each Reachability Check Request shall return a Boolean indicator which is set to true if the given proxy digest is stored in the MPL repository (successful request) and to false otherwise (unsuccessful request).

MPL shall answer any Reachability Check Request by a given MPL Actor by returning a Reachability Check Response to the same MPL Actor. Each Reachability Check Response related to a valid Reachability Check Request shall return Boolean indicator specifying whether the given proxy is stored in the MPL repository. A Reachability Check Request failing at least one validation check is rejected. Each Reachability Check Response related to a rejected Reachability Check Request shall include a specific error code indicating the reason for the rejection.

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### 1.4.4. Data Maintenance

Authorised users shall maintain MPL proxy-IBAN mapping table (see section 1.3.2) data by means of A2A requests.

MPL shall answer any Maintenance Request by a given MPL Actor by returning a Maintenance Response to the same MPL Actor. Each Maintenance Request shall return the Boolean indicator "Registered" set to true if the request is successful and to false otherwise (unsuccessful request). Each Maintenance Response related to a rejected Maintenance Request shall include (besides the Boolean indicator set to false) a specific error code indicating the reason for the rejection. The maintenance requests on the Proxy-IBAN table sent by every MPL actor are grouped in a daily Report (see paragraph 1.4.6).

#### 1.4.4.1. Data Maintenance type

MPL allows a duly authorised user to perform the following types of data maintenance operations on the Proxy-IBAN Mapping table:

- Create. It creates a new single element on the table.
- Update. It updates an already existing element of the table.
- Delete. It deletes an already existing element.

All the operations above shall be applied only to a single element of the table per request.

### 1.4.5. Personal Data Retrieval Request

MPL allows authorised users to query entries present in MPL by means of A2A requests. There are two possible request types depending on the unique search criterion used:

- Data retrieval by Proxy digest. Retrieves all the entries with the same proxy digest.
- Data retrieval by Person ID. Retrieves all the entries with the same person ID

This operation is not audited or traced.

### 1.4.6. MPL Repository Maintenance Report

All the operations explained in paragraph 1.4.4.1 are collected by MPL in daily reports. Each MPL Actor may subscribe to receive a daily report including a statement of all the maintenance requests that the same MPL Actor registered in the last calendar day. Every report shall be generated shortly after midnight and sent overnight to the relevant recipients as soon as they are available.

The Data Maintenance Report is an optional service; in order to receive the reports the MPL Actor shall set up a Report Configuration for "MPL Repository Maintenance Report" within CRDM.

## 1.5. Interactions with other Common Components

This section describes all interactions between MPL and other Common Components provided by the Eurosystem.

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### 1.5.1. Eurosystem Single Market Infrastructure Gateway

The Eurosystem Single Market Infrastructure Gateway (ESMIG) component provides access to the Market Infrastructure services, including MPL, in both A2A and U2A channel.

In A2A the ESMIG allows the access from the outside world to MPL establishing the communication channel between TIPS and the Network Service Providers and checks the A2A message has a valid format (XML schema validation). The NSPs are expected to perform the checks of authentication of the sender and the verification of the signature for the messages received by MPL. Thus, a message arriving to MPL must be considered authenticated, properly signed, well-formed after technical validation and sent by a sender recognised as a properly configured one for using the MPL service.

MPL then checks the sender's authorisation. The authorisation tasks consist in checking that the access rights configuration of the sender allows it to submit the given request.

The access to the U2A channel, instead, is granted only to the MPL Operator. In U2A, the ESMIG Identity Access Management component of the ESMIG executes the authentication for U2A users entering the TIPS Graphical User Interface (GUI). Once the user has been successfully authenticated, the GUI retrieves the granted roles and checks that the requested action is allowed for the user.

For further details, please refer to ESMIG documentation.

### 1.5.2. Common Reference Data Management

The Common Reference Data Management (CRDM) component provides features that allow duly authorised users to set up, maintain and query all reference data that are shared by multiple services (e.g. T2S, TIPS) for their processing activities.

The access to CRDM is possible in U2A mode (for all functions) and in A2A mode (for a subset of functions) via ESMIG (see section 1.2).

Other detailed information can be found in the CRDM documentation.

As far as MPL is concerned, as anticipated in 1.4.1 General concepts, all reference data setup – other than the immediate changes in the local reference data management – are performed in the CRDM and reference data are then propagated from the CRDM to MPL asynchronously on a daily basis. The dialogue between CRDM and MPL envisages two types of interactions:

1. **Daily propagation**: this is the main interaction between CRDM and MPL. Every CRDM opening day, an ad hoc event triggers the propagation of all MPL reference data from CRDM to MPL. The event takes place after 17:00 CEST, so as to ensure a smooth and complete reference data propagation. The set of reference data that MPL receives on day T includes all the active data on the mentioned date.

2. **Contingency propagation:** in case of contingency the MPL Operator may trigger an ad hoc Daily propagation from CRDM to MPL. The contingency propagation is a daily propagation triggered intraday if an immediate change of a set of data (not manageable directly in MPL) must be performed. In this case, the following steps happen:

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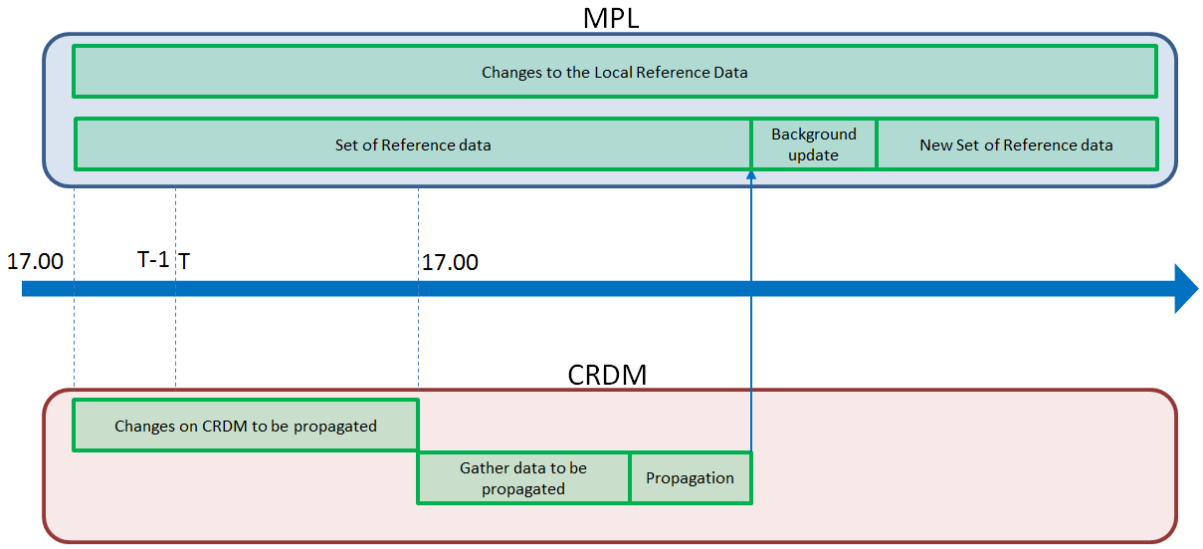
a. All the data eligible for the daily propagation and valid at the moment of the contingency propagation are propagated;

b. The daily propagation is performed as scheduled and includes all the active data on the relevant business date.

In both cases, the newly propagated data is made available for processing in MPL as soon as the propagation is completed.

The following diagram shows a conceptual overview of the interactions between CRDM and MPL.

**Figure 4 - Interaction between CRDM and MPL**




### 1.5.3. Archiving

The Archiving service provides features that allow the archiving of legally relevant data for regulatory purposes. Data Maintenance Request data are archived for a period of exactly ten years whereas audit trail records are archived for a period of three months only. Please refer to 1.6.2 Archiving management for details on how to access archived data.

MPL archives, on a continuous basis, the data from payloads of MPL maintenance request messages to be archived.

## 1.6. Operations and support

### 1.6.1. Business and operations monitoring

The Business and operations monitoring integrates information coming from different sources in order to monitor the business and operational status of MPL, to detect possible problems or to proactively recognise a possible deterioration of performance.

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Business and operations monitoring gives the MPL Operator the possibility to perform a supervision of the platform in terms of:

- Performance;
- Response times;
- Actors activity on the system;
- Hardware and software problems.

The goal is to allow an early detection of possible anomalies through the continuous comparison of reported data with standard patterns.

MPL provides the MPL Operator also with a tool for the detection in real-time of functional or operational problems, called Technical Monitoring. It 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.

Business and operations monitoring interfaces are available in U2A mode only.

The MPL Operator is also provided with a contingency tool in order to inject messages to act on the system in case of need. For example, this tool allows updating an element of the Proxy-IBAN mapping table based on a request by a MPL Actor.

The list of possible messages the MPL Operator can inject is:

- Creation of a new element on the mapping table;
- Update of any element of the mapping table;
- Deletion of an existing element of the mapping table.

In order to search the entries of the Proxy-IBAN mapping table, the MPL Operator can query the mapping table by inserting the hashed value of the proxy as input.

### 1.6.2. Archiving management

MPL archives data from payloads of Data Maintenance Request messages on a regular basis, as described in 1.5.3 “Archiving”.

The Operator is responsible for the retrieval of the archived information upon Central Bank request. The Central Bank can also request the retrieval of archived data on behalf of one of their MPL Actors. The Operator is allowed to retrieve archived Data Maintenance message data together with information about the Proxy before and after the maintenance activity for a period of exactly ten years.

### 1.6.3. Data Protection

In order to ensure logical data integrity, a snapshot of the Proxy-IBAN Mapping Table is taken on a daily basis or upon request of the Operator as of a given timestamp. The snapshot taken on day D includes the full content of the Proxy-Mapping Table as of day D-1.

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Snapshots can be restored to resume the MPL in the event of data corruption. A contingency restore operation results in replacing all the elements of the Proxy-IBAN Mapping Table with the elements contained in the snapshot.

The Snapshot File includes data covering at least the following data attributes:

- Record Identification (identifier of the record)
- Hash type
- Person Identification
- Proxy digest
- IBAN (IBAN)
- Account Owner (name of the owner of the account, optional)
- Registration Timestamp (date and time by when the element was created or last updated)
- MPL Actor BIC (BIC of the MPL Actor which uploaded the element of the mapping table)
- Authorized BIC (BIC of the account to be credited in TIPS)
- Valid From Date and Time
- Valid To Date and Time (optional)

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# 2. Dialogue between MPL and MPL Actors

This section aims at describing the end-to-end processes available in MPL, in order to both describe the process for the Actors and to give the guidelines needed for implementing the software.

Four main procedures are available, and they are described in four different sub-sections of this chapter:

- Look-up
- Reachability Check
- Data Maintenance
- Personal Data Retrieval Request

## 2.1. Message Routing

In A2A mode, MPL Actors and MPL can exchange messages and files by means of two types of transfer services:

- The real-time message, which requires that all the interested actors are available at the same time;
- The store-and-forward file transfer, which enables MPL to transmit messages or files even when the receiver is not available.

The following table shows how the main types MPL data exchanges are mapped against the technical features of the different network services for inbound and outbound communication.

**Table 4 – Network services**

| Data Exchange | Inbound transfer services | Outbound transfer services |
|---|---|---|
| Look-Up Requests | Instant messaging | Instant messaging |
| Reachability Check | Instant messaging | Instant messaging |
| Data Maintenance | Instant messaging | Instant messaging |
| Personal Data Retrieval Request | Instant messaging | Instant messaging |
| Reports | n/a | File-based, store-and-forward |

The File-based store-and-forward network service is used only by MPL and only to send outbound Reports.

MPL allows Participants to use multiple distinguished names (DNs) to communicate with the network services.

Thanks to the functionalities available in the CRDM, an MPL Actor with the suitable permissions is able to set up routing configurations, allowing MPL to accept messages coming from specified DNs and to route a predefined set of outbound communication to a specified DN.

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In the following it will be clarified in what case and under what condition MPL uses these configurations to manage input and output messages and in which other conditions it manages messages without querying them.

Regarding how to route outbound communication, the general behaviour of MPL is as follows:

- When MPL receives an input message *x* from a MPL actor *a*, it stores the DN of the message sender and uses it to send or to forward any kind of communication regarding the request represented by *x*.
- For push-mode communications (i.e. reports), MPL uses the Party Technical Address to find the correct outbound DN.

Based on the transaction types and on the role assumed by the Actors, the following table specifies the type of outbound routing used for the different data exchange scenarios.

**Table 5 – Outbound routing**

| Data Exchange | Party Technical Address | Sender DN |
|---|---|---|
| Look-up | ✗ | ✓ |
| Reachability Check | ✗ | ✓ |
| Data Maintenance Create | ✗ | ✓ |
| Data Maintenance Update | ✗ | ✓ |
| Data Maintenance Delete | ✗ | ✓ |
| Personal Data Retrieval Request | ✗ | ✓ |
| Maintenance Reports | ✓ | ✗ |

Entering in detail on the single message:

- The sender DN is used to answer to an input message in case of:
  - Answers to a Look-up:
    - LookupResponseMessage (Table 17 – LookupResponse business case).
  - Answers to a Reachability Check:
    - LookupResponseMessage (Table 18 – ReachabilityCheckResponse business case).
  - Answers to a Data Maintenance Create/Update/Delete:
    - DataMaintenanceResponseMessage.
  - Answers to a Personal Data Retrieval Request:
    - PersonalDataRetrievalResponse (Table 25 – Personal Data Retrieval Response)
- "Party Technical Address" is used to select the correct DN for a MPL actor in case of:

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- Reports sent to the subscribing TIPS actors.

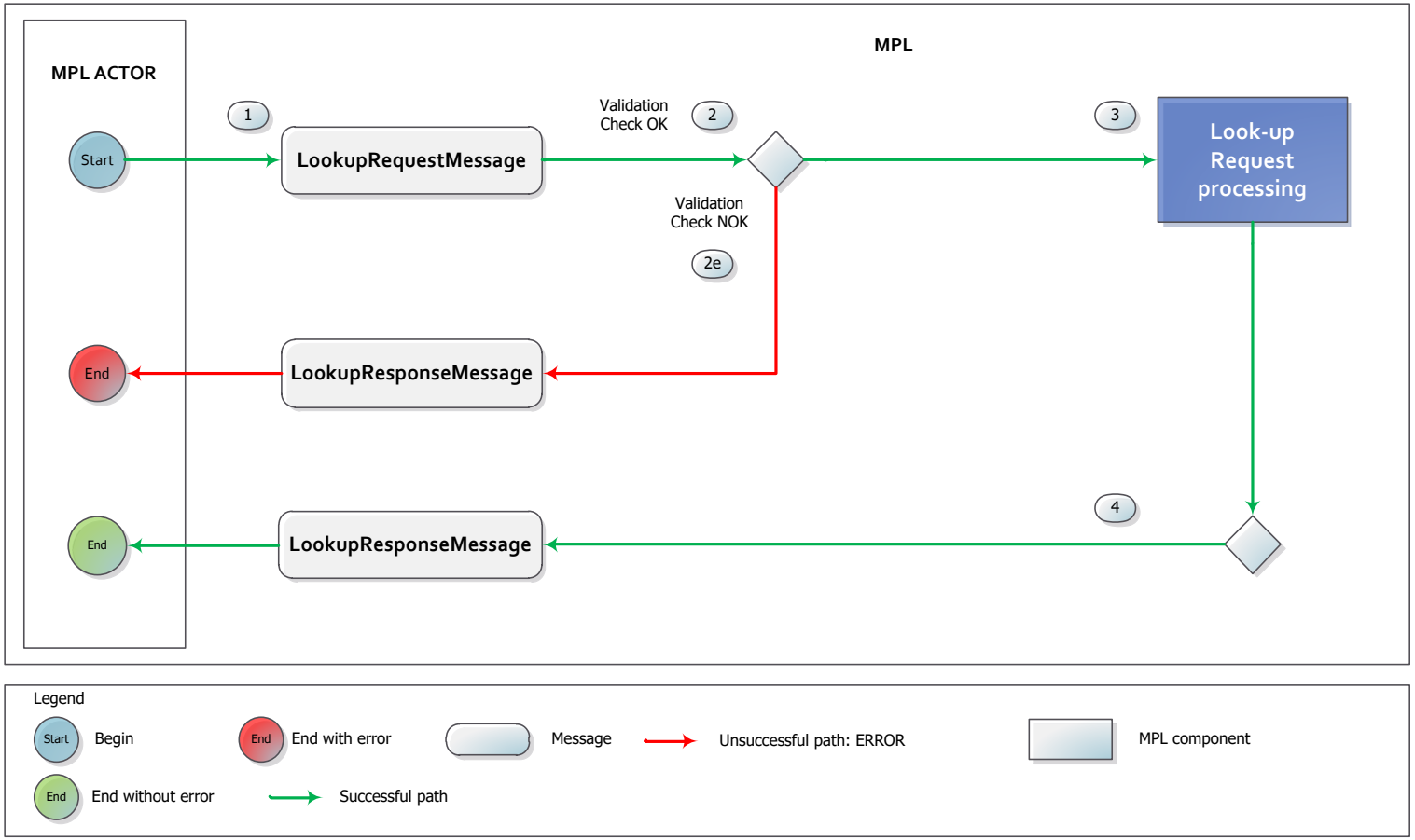
## 2.2. Look-up

This section focuses on the processing of Look-up requests and provides the description of the full scenario and the related steps.

Below is the diagram describing the process and the involved actors. The details of the steps are described in the following Table 6 – Look-up steps.

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**Figure 5 – Look-Up process**




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**Table 6 – Look-up steps**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | LookupRequestMessage | MPL Actor as Sender<br><br>MPL as receiver | MPL receives an incoming Lookup Request from the MPL Actor. |
| 2 | | MPL | Look-up Request validation<br><br>MPL executes the check:<br>- Authorisation check.<br><br>See 4.1- Business Rules for details. |
| 2e | LookupResponseMessage | MPL as sender<br><br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing the proper error. |
| 3 | | MPL | Look-up Request processing<br><br>MPL executes the following check:<br>- Proxy-IBAN lookup.<br><br>See 4.1- Business Rules for details. |
| 4 | LookupResponseMessage | MPL as sender<br><br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing a Boolean indicator set to:<br>- False → if the check foreseen in step 3 returns no Proxy-IBAN entry;<br>- True → if the check foreseen in step 3 successfully returns a Proxy-IBAN entry. |

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### 2.2.1. Examples

This sub-section presents a non-exhaustive list of examples of the possible scenarios related to the Look-up request in A2A mode. The first one depicts the successful scenario where a request is processed and MPL retrieves the record to the user. The second one describes a scenario in which no matching element is found in the Proxy-IBAN mapping table.

#### 2.2.1.1. Successful scenario – Look-up response message with positive result

In this scenario:

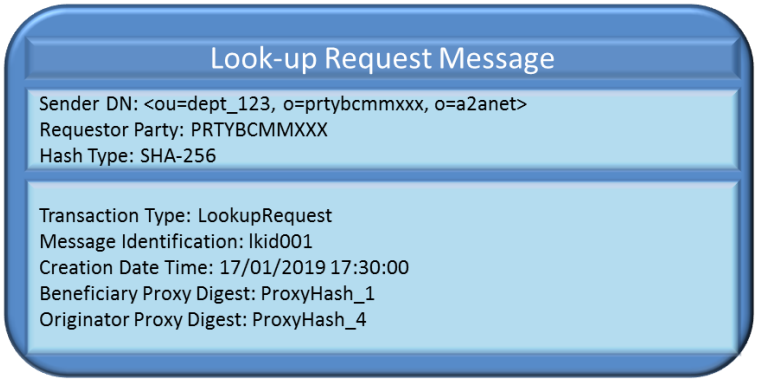
- A MPL Participant (PRTYBCMMXXX) sends a LookupRequestMessage to MPL to obtain the IBAN of the beneficiary of an Instant Payment. The request contains an optional digest of the proxy type and phone number of the originator (ProxyHash_4);
- For the proxy digest inserted by the Originator Actor (ProxyHash_1), there is only one record on the Proxy-IBAN table as reported in Figure 6 – Successful scenario – Proxy-IBAN Mapping Table. The Originator Actor computes the hash value ProxyHash_1 starting from the Proxy Type and Identification (e. g. 'MSDN' and '+391234567890').
- The request is received by MPL on 17/01/2019 at 17:30:00.

**Figure 6 – Successful scenario – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

**Figure 7 – Successful scenario – LookupRequestMessage**




MPL identifies the DN of the sender and performs the expected authorisation checks on the User. After this step, the system sends the LookupResponseMessage to the Originator Actor.

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**Figure 8 – Successful scenario – LookupResponseMessage**

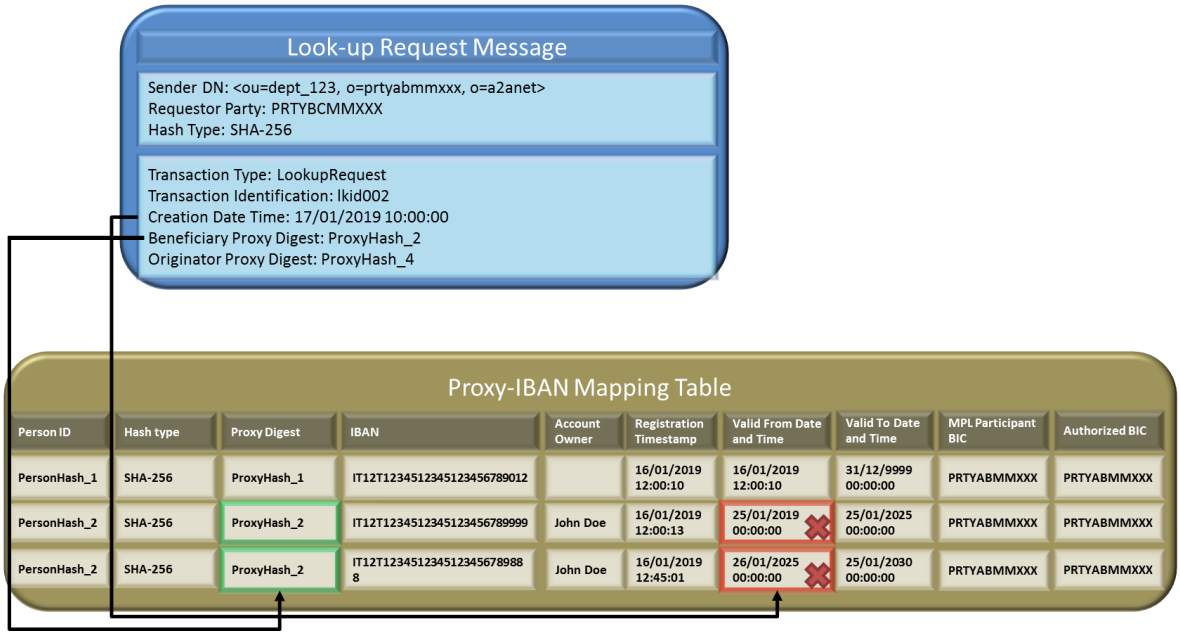



MPL retrieves to the MPL participant the first record, since it's active from 16/01/2019 to 31/12/2021 and the moment of the request (i.e. on 17/01/2019 at 17:30:00) falls within this time interval.

### 2.2.1.2. Unsuccessful scenario – Look-up response message with negative result

In this scenario an MPL Participant (PRTYBCMMXXX) sends a LookupRequestMessage to MPL to obtain the IBAN of the beneficiary of an Instant Payment. The data used for this scenario are the same from the section Successful scenario – Look-up response message with positive result. In this business case, the MPL Participant is looking for the bank coordinates of the user with the Proxy ProxyHash_2 (e.g. digest of the mobile number proxy type 'MSDN' and the mobile number '+391234567899' ). As notable on Figure 9 – Unsuccessful scenario – LookupRequestMessage, for this proxy digest there are two records saved on the Proxy-IBAN table. Differently from the successful scenario, the request is processed in MPL on 17/01/2019 at 10:00:00.

**Figure 9 – Unsuccessful scenario – LookupRequestMessage**

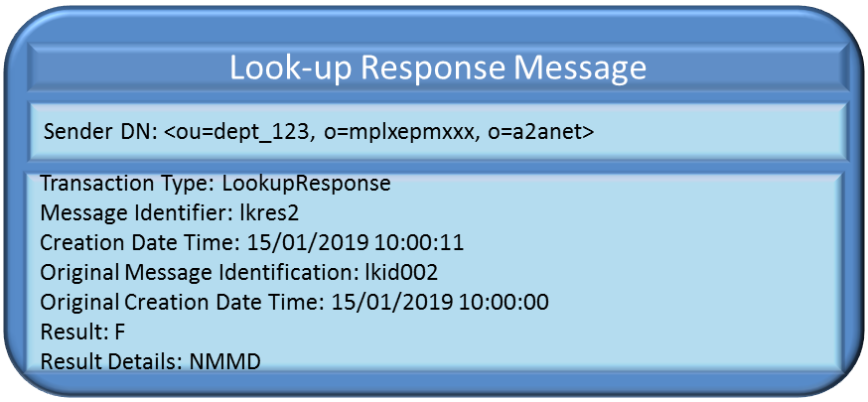



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MPL identifies the DN of the sender and performs the expected authorisation checks on the User. After this step, the system sends the LookupResponseMessage to the Originator Actor.

Since both the records present in the table are not active when the Look-up Request has been sent (i.e. 17/01/2019 at 10:00:00), there are no entries in the Proxy-IBAN table fitting with the request, and therefore the Look-up Response is negative (i.e. field “Result” set to “False”, and “Result Details” set to “No matching element was found”).

**Figure 10 – Unsuccessful scenario – LookupResponseMessage**




## 2.3. Reachability Check

This section focuses on the processing of a Reachability Check Request, with the description of the full scenario and its steps.

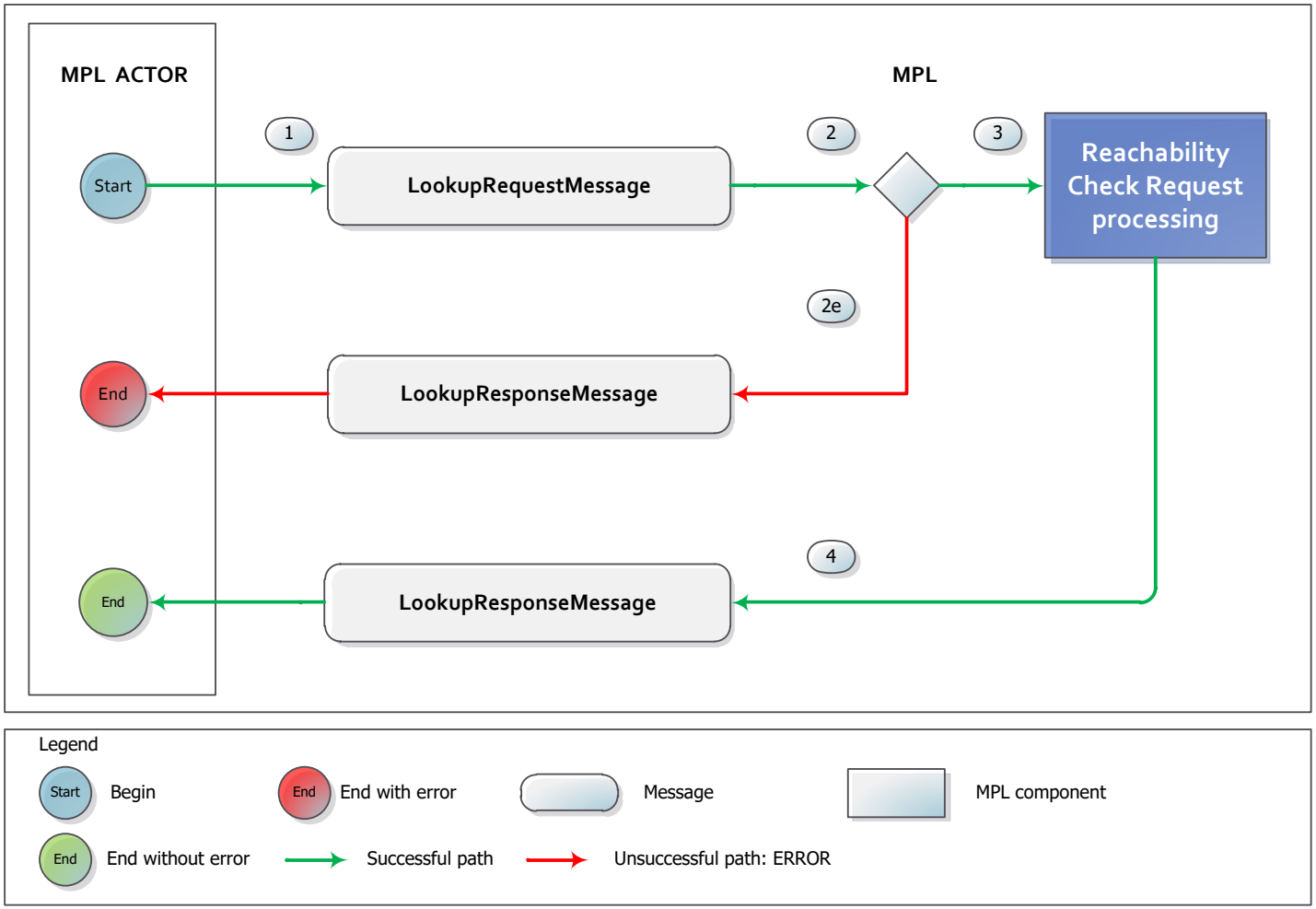
The Reachability Check Request process can be initiated by any MPL Actor using the LookupRequestMessage (Table 16 – ReachabilityCheckRequest business case), in order to check whether a given proxy is stored in the MPL repository.

If the Reachability Check message is correctly received and a correspondence exists between the requested proxy and one IBAN within the Proxy-IBAN Mapping Table, then the Mobile Proxy Lookup sends a LookupResponseMessage (Table 18 – ReachabilityCheckResponse business case) to the MPL Actor containing a positive Boolean value. Otherwise, if the given proxy is not stored in the MPL repository, the Mobile Proxy Lookup sends a LookupResponseMessage (Table 18 – ReachabilityCheckResponse business case) to the MPL Actor containing a negative Boolean value.

This is the diagram describing the process and the involved actors. The details of the steps are described in the following table.

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**Figure 11 – Reachability Check Request process**




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**Table 7 – Reachability Check Request steps**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | LookupRequestMessage | MPL Actor as sender<br>MPL as receiver | MPL receives an incoming Reachability Check request from the MPL Actor. |
| 2 | | MPL | MPL successfully executes the following check:<br>- Authorisation check.<br>See 4.1- Business Rules for details. |
| 2e | LookupResponseMessage | MPL as sender<br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing the proper error. |
| 3 | | MPL | MPL uses the proxy information embedded in the Reachability Check request to check whether it is stored in the MPL repository.<br>MPL performs the following check:<br>- Proxy-IBAN lookup.<br>See 4.1- Business Rules for details. |
| 4 | LookupResponseMessage | MPL as sender<br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing a Boolean indicator set to:<br>- False → if the check foreseen in step 3 fails;<br>- True → if the check foreseen in step 3 is successful. |

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### 2.3.1. Examples

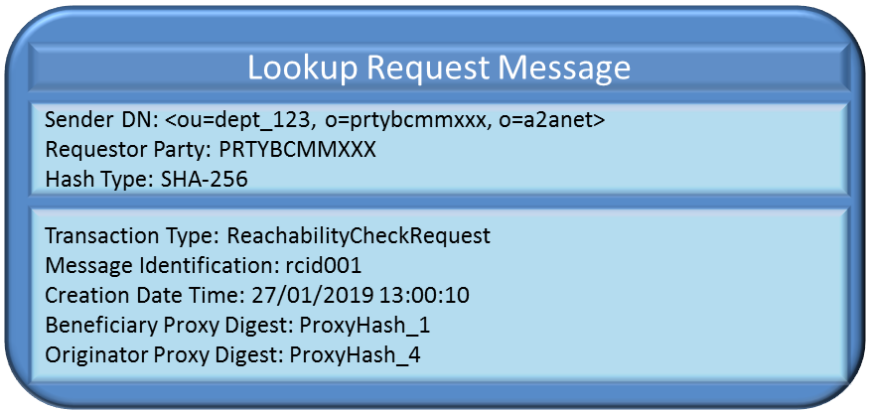
This sub-section presents a non-exhaustive list of examples of the possible scenarios related to the Reachability Check request in A2A mode. The first one depicts the successful scenarios where a request is processed and MPL retrieves the positive response to the user since a record with the desired proxy digest exists in MPL. The second one describes a scenario in which no matching element is found in the Proxy-IBAN mapping table. The data of records of the Proxy-IBAN table in the following examples are the same depicted in Figure 6 – Successful scenario – Proxy-IBAN Mapping Table.

#### 2.3.1.1. Successful scenario – Reachability Check with positive result

These positive scenarios describe the requests of existence of correspondence of two proxies in the Proxy-IBAN Mapping Table.

The MPL Participant (PRTYBCMMXXX) sends two LookupRequestMessage messages in order to verify the presence of two proxy digests into the Proxy-IBAN Table. The first request is provided in Figure 12 – Successful scenario 1 – Reachability Check Request and it is processed in MPL on 27/01/2019 at 13:00:10.

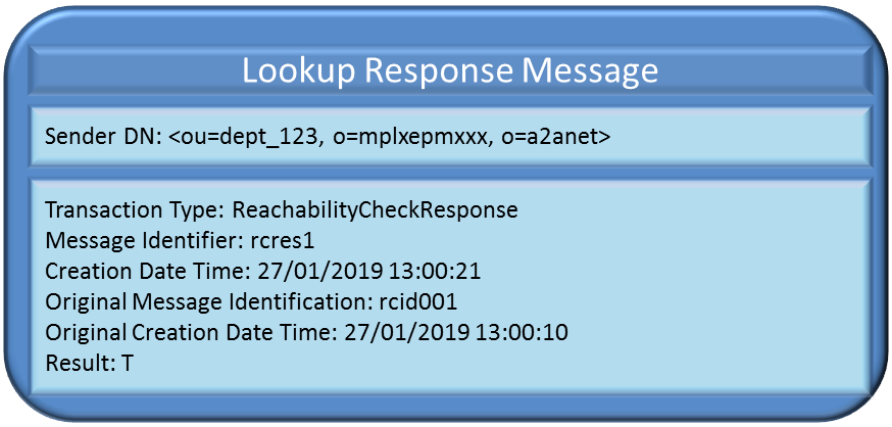
**Figure 12 – Successful scenario 1 – Reachability Check Request**




MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check. After this step, the system sends the following LookupResponseMessage to the Originator Actor.

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**Figure 13 – Successful scenario 1 – Reachability Check Response**




The second Lookup request is processed in MPL on 27/01/2019 at 13:00:13. The complete request and response are detailed in the following figures.

**Figure 14 – Successful scenario 2 – Reachability Check Request**

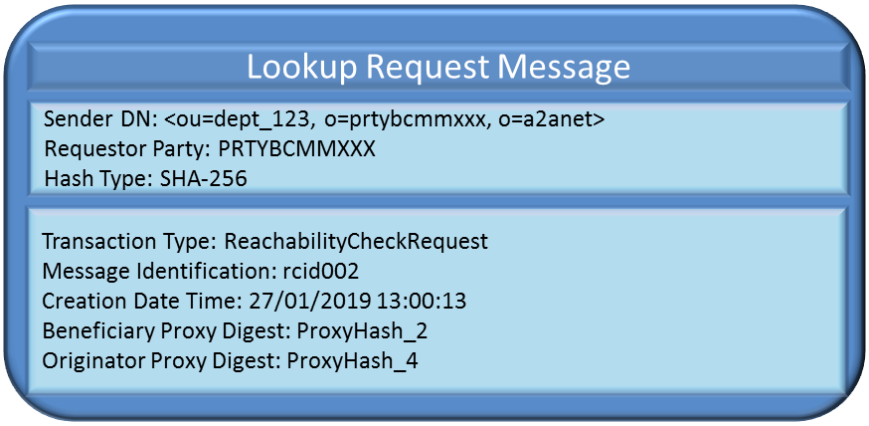
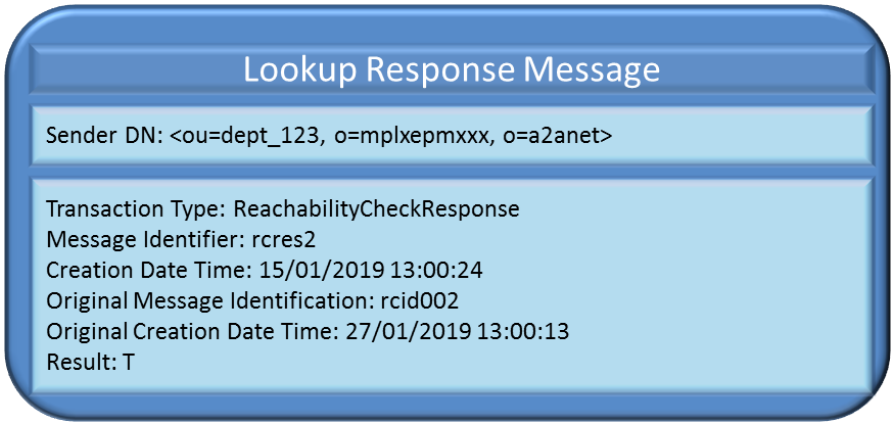



**Figure 15 – Successful scenario 2 – Reachability Check Response**

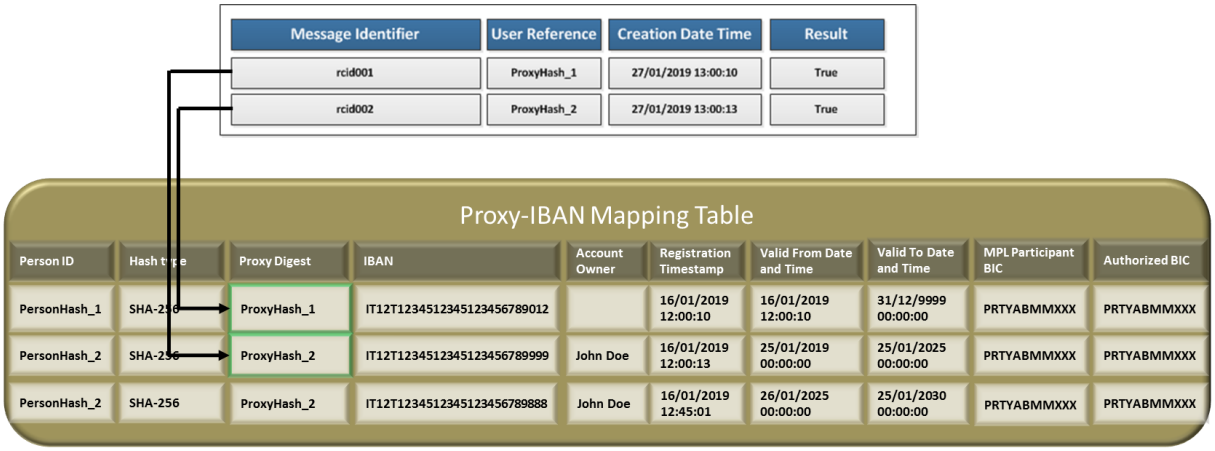



Since in both cases the validation checks are successfully passed and the requested proxies are present in the mapping table, the outcomes of the Reachability check are positive (Field Result set to “True”).

For a summary of the data taken into account in the two operations above see Figure 16 – Successful scenarios summary.

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**Figure 16 – Successful scenarios summary**

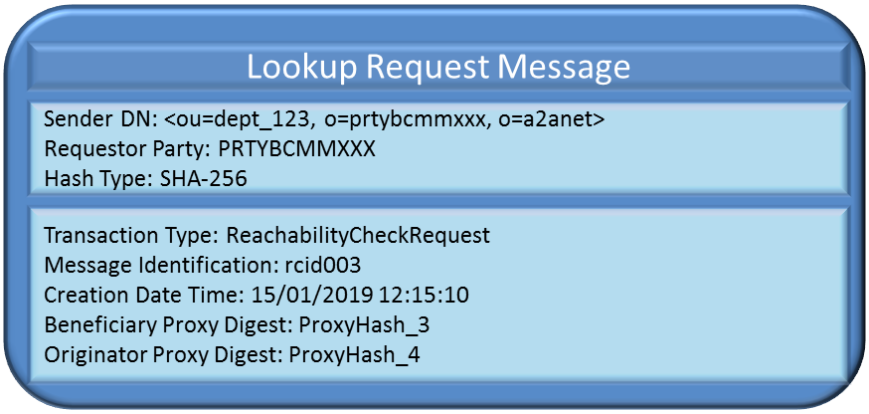



### 2.3.1.2. Unsuccessful scenario – Reachability Check response with negative result

In this scenario the MPL Participant (PRTYBCMMXXX) is looking for the confirmation of the existence of a record in the Proxy-IBAN table for two different mobile numbers. The data used are the same of the previous sections (2.2.1 and 2.3.1.1).

In the first scenario, the MPL participant sends a LookupRequestMessage for the proxy digest ProxyHash_3 (e. g. digest of the proxy type 'MSDN' and the mobile number '+391234567000' ). The request is submitted on date 27/01/2019 at 12:15:10.

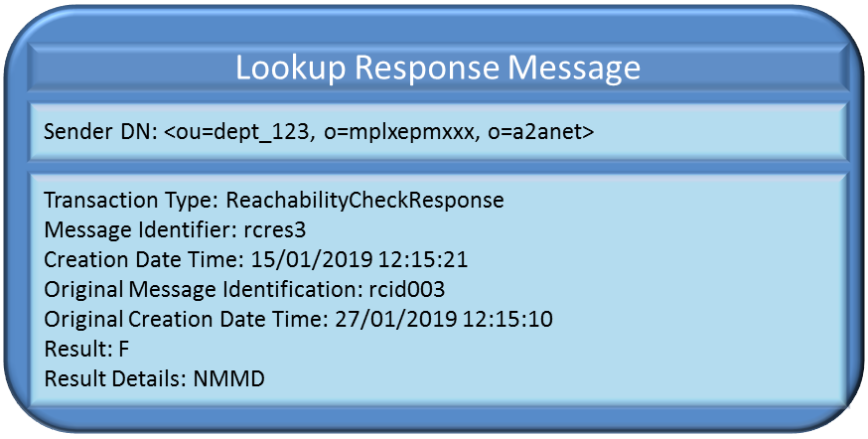
**Figure 17 – Unsuccessful scenario 1 – Reachability Check Request**




MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check. Since the requested mobile number is not present between the saved records in the Proxy-IBAN table, the system sends the following negative LookupResponseMessage to the Originator Actor.

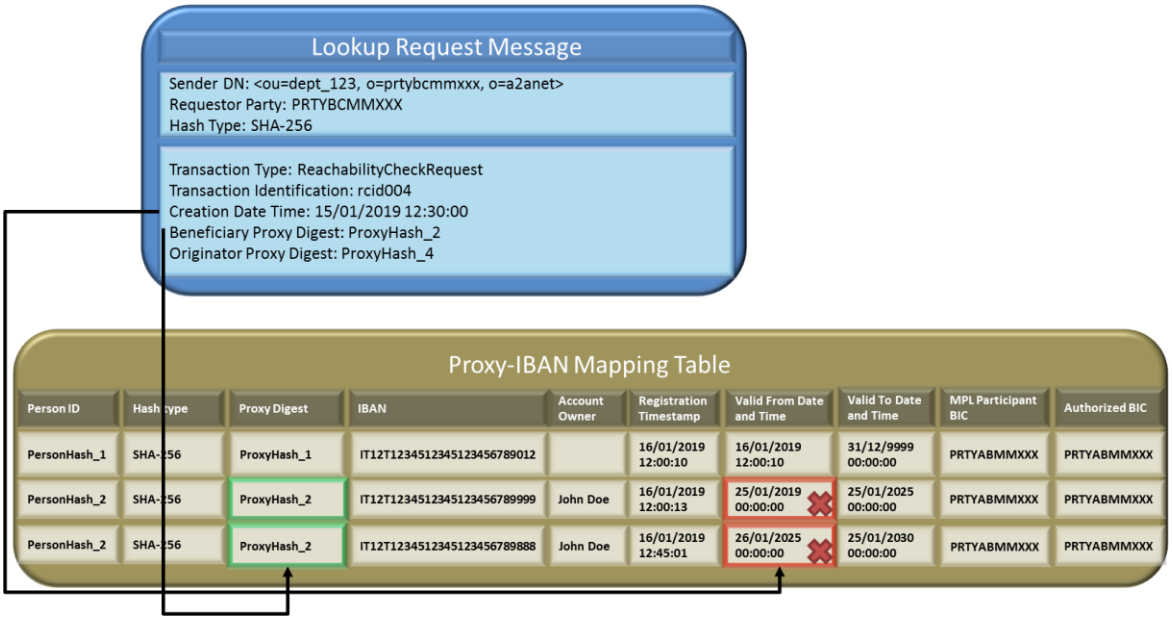
All rights reserved.

**Figure 18 – Unsuccessful scenario 1 – Reachability Check Response**



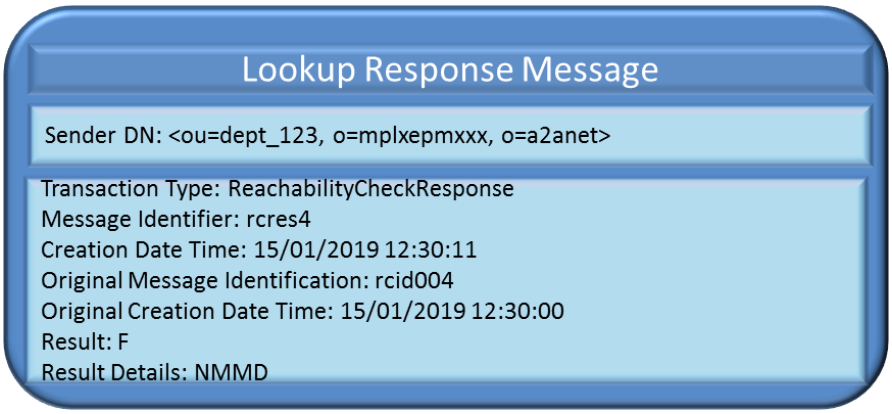

The second scenario is basically the same as in section Unsuccessful scenario - Look-up response message with negative result. The MPL Participant inserts as input proxy the digest ProxyHash_2, for which there are two records saved on the Proxy-IBAN table. The request is processed in MPL on 15/01/2019 at 12:30:00, and both the records present in the table are not active on this date. Therefore there are no entries in the Proxy-IBAN table fitting with the Reachability Check request, and the Response is negative (i.e. field "Result" set to "False", and "Result Details" set to "No matching element was found").

**Figure 19 – Unsuccessful scenario 2 – Reachability Check Request**




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**Figure 20 – Unsuccessful scenario 2 – Reachability Check Request**




## 2.4. Data Maintenance

This section focuses on the processing of Data maintenance requests and provides the description of the full scenario and the related steps. As described above (section 1.4.4.1) there are three possible types of maintenance request (Create, Delete, Update a Proxy-IBAN Mapping Table element).

**Create a Proxy-IBAN Mapping Table element**

A Data Maintenance Create Request on the Proxy-IBAN table can be initiated by any MPL Actor using the DataMaintenanceCreateRequestMessage. By means of this request, the actor inserts a new record into the Proxy-IBAN table. As a first step MPL validates that the requestor is duly authorised to initiate the process, i.e. the requestor DN must be authorised to perform Create operations with the correct privilege on the Party identified by the field “Requestor Party”. If the Actor is duly authorised to send the request messages and the validation checks are correctly passed, MPL sends a DataMaintenanceResponseMessage to the MPL Actor containing a positive Boolean value. Otherwise, if any error occurs after the authorisation or validation checks, the Mobile Proxy Lookup sends a DataMaintenanceResponseMessage to the MPL Actor containing a negative Boolean value and the relevant Reason Code.

**Update a Proxy-IBAN Mapping Table element**

A Data Maintenance Update Request on the Proxy-IBAN table can be initiated by any MPL Actor using the DataMaintenanceUpdateRequestMessage

. By means of this request, the actor modifies an existing record in the Proxy-IBAN table. As a first step MPL validates that the requestor is duly authorised to initiate the process, i.e. the requestor DN must be authorised to perform Update operations with the correct privilege on the Party identified by the MPL Participant Identifier in the Proxy-IBAN Mapping Table row in question. If the Actor is duly authorised to send the request messages and the validation checks are correctly passed, MPL sends a DataMaintenanceResponseMessage to the MPL Actor containing a positive Boolean value. Otherwise, if any error occurs after the authorisation or validation checks, the Mobile Proxy Lookup sends a DataMaintenanceResponseMessage to the MPL Actor containing a negative Boolean value and the relevant Reason Code.

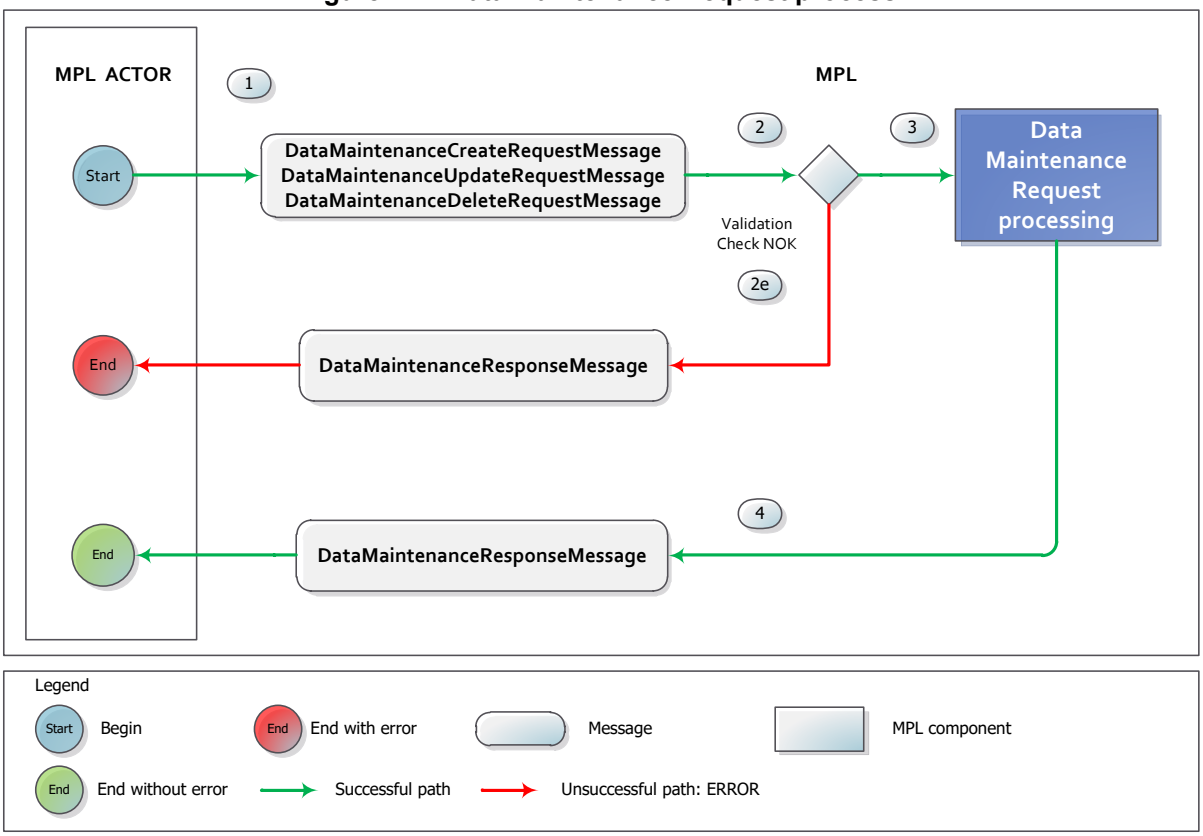
All rights reserved.

### Delete a Proxy-IBAN Mapping Table element

A Data Maintenance Delete Request on the Proxy-IBAN table can be initiated by any MPL Actor using the DataMaintenanceDeleteRequestMessage. By means of this request, the actor deletes an existing record in the Proxy-IBAN table. As a first step MPL validates that the requestor is duly authorised to initiate the process, i.e. the requestor DN must be authorised to perform Delete operations with the correct privilege on the Party identified by the MPL Participant Identifier in the Proxy-IBAN Mapping Table row in question. If the Actor is duly authorised to send the request messages and the validation checks are correctly passed, MPL sends a DataMaintenanceResponseMessage to the MPL Actor containing a positive Boolean value. Otherwise, if any error occurs after the authorisation or validation checks, the Mobile Proxy Lookup sends a DataMaintenanceResponseMessage to the MPL Actor containing a negative Boolean value and the relevant Reason Code.

Below is the diagram describing the process and the involved actors. The details of the steps are described in the following Table 8 – Data Maintenance Create Request steps, Table 9 – Data Maintenance Update Request steps, and Table 10 – Data Maintenance Delete Request steps

**Figure 21 – Data Maintenance Request process**




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**Table 8 – Data Maintenance Create Request steps**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | DataMaintenanceCreateRequestMessage | MPL Actor as sender<br>MPL as receiver | MPL receives an incoming request for the creation of a record on the Proxy-IBAN table. |
| 2 | | MPL | MPL successfully executes the following check:<br>- Authorisation check.<br>See 4.1- Business Rules for details. |
| 2e | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing a Boolean indicator set to False.<br>MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |
| 3 | | MPL | MPL successfully executes the checks:<br>- Requestor party check;<br>- Valid From check;<br>- Valid To check;<br>- Duplication check.<br>See 4.1- Business Rules for details. |
| 4 | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing a Boolean indicator set to:<br>- False → if any check foreseen in step 3 fails;<br>- True → if all checks foreseen in step 3 are successful.<br>If the Boolean indicator is set to "False", MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |

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**Table 9 – Data Maintenance Update Request steps**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | DataMaintenanceUpdateRequestMessage | MPL Actor as sender<br>MPL as receiver | MPL receives an incoming request for the update of a record on the Proxy-IBAN table; |
| 2 | | MPL | MPL successfully executes the following check:<br>- Authorisation check;<br>See 4.1- Business Rules for details. |
| 2e | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing a Boolean indicator set to False<br>MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |
| 3 | | MPL | MPL successfully executes the checks:<br>- Proxy-IBAN party check;<br>- Proxy-IBAN existence Check;<br>- Valid To check;<br>- Duplication check;<br>See 4.1- Business Rules for details. |
| 4 | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing a Boolean indicator set to:<br>- False → if any check foreseen in step 3 fails;<br>- True → if all checks foreseen in step 3 are successful.<br>If the Boolean indicator is set to "False", MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |

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**Table 10 – Data Maintenance Delete Request steps**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | DataMaintenanceDeleteRequestMessage | MPL Actor as sender<br>MPL as receiver | MPL receives an incoming request for the deletion of a record on the Proxy-IBAN table |
| 2 | | MPL | MPL successfully executes the following check:<br>- Authorisation check;<br>See 4.1- Business Rules for details. |
| 2e | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing a Boolean indicator set to False<br>MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |
| 3 | | MPL | MPL successfully executes the checks:<br>- Proxy-IBAN party check;<br>- Expiration check;<br>See 4.1- Business Rules for details. |
| 4 | DataMaintenanceResponseMessage | MPL as sender<br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing a Boolean indicator set to:<br>- False → if any check foreseen in step 3 fails;<br>- True → if all checks foreseen in step 3 are successful.<br>If the Boolean indicator is set to "False", MPL also sends the relevant error code in the field "Reason Code" to the MPL Actor. |

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### 2.4.1. Examples

This sub-section presents a non-exhaustive list of examples of the possible scenarios related to the Data maintenance in A2A mode for each type. The first one depicts successful scenarios where four different Proxy-IBAN Mapping Table elements are created. The second describes a failed attempt to update one of the two elements. The third and the fourth one provide the cases where an element is properly updated and deleted from the Proxy-IBAN Mapping Table.

#### 2.4.1.1. Successful scenario – Creation of a Proxy-IBAN Mapping Table element

These positive scenarios describe the creation of four new elements in the Proxy-IBAN Mapping Table. The current date, in the given example, is 16/01/2019; the first three operations are carried out by the MPL Participant identified by its primary BIC PRTYABMMXXX. The figure below summarises the configuration of the MPL Participant in the Common Reference Data Management (CRDM) common component.

**Figure 22 – MPL User - Reference Data**

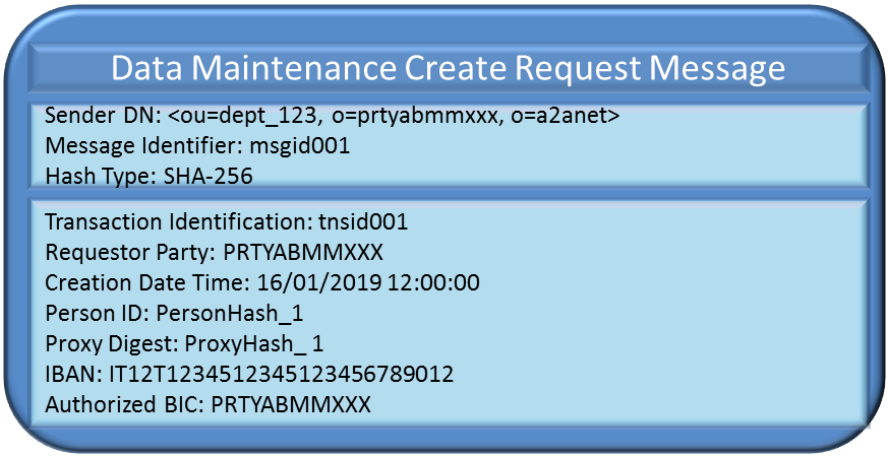
**MPL Participant – Reference Data**

| Distinguished Name | User Reference | Parent BIC | Party BIC |
|---|---|---|---|
| <ou=dept_123, o=prtyabmmxxx, o=a2anet> | PRTYABMMXXX A2A User1 | NCBOEURIXXX | PRTYABMMXXX |
| <ou=dept_234, o=prtyabmmxxx, o=a2anet> | PRTYABMMXXX A2A User2 | NCBOEURIXXX | PRTYABMMXXX |

The fourth operation is executed by the MPL Participant on behalf of an authorized BIC different from the MPL participant BIC (PRTYABMMXXX)

The MPL Participant sends the first three DataMaintenanceCreateRequestMessage in order to set up three new Proxy-IBAN Table elements. The first create request is provided in Figure 23 – Successful scenario 1 – DataMaintenanceCreateRequestMessage and it is processed in MPL on 16/01/2019 at 12:00:10.

**Figure 23 – Successful scenario 1 – DataMaintenanceCreateRequestMessage**




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The system, after having successfully performed the expected checks, sets up the element in the Proxy-IBAN Mapping Table as detailed below.

**Figure 24 – Successful scenario 1 – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The following DataMaintenanceResponseMessage is sent by MPL to the sender DN to confirm the execution of the first create request.

**Figure 25 – Successful scenario 1 – DataMaintenanceResponseMessage**

Data Maintenance Response Message

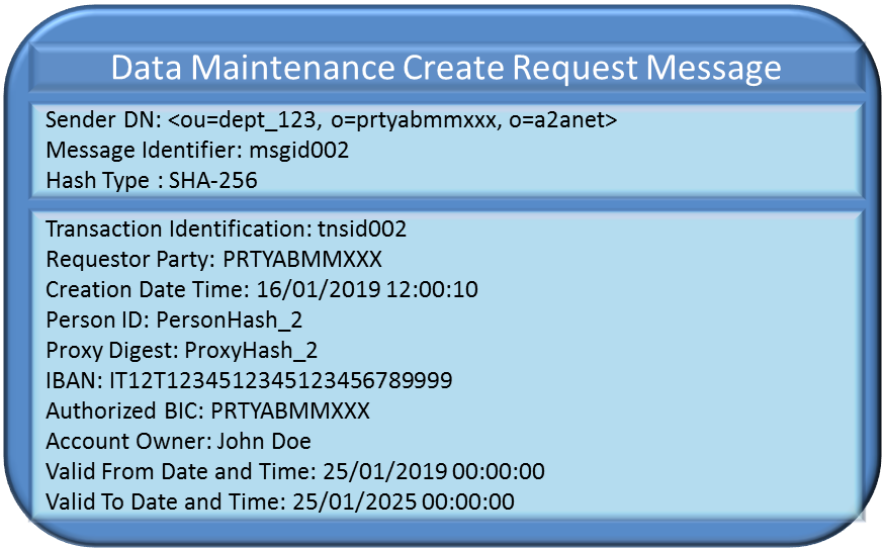
Sender DN: <ou=dept_123, o=mplxepmxxx, o=a2anet>
Message Identifier: msgidres1

Creation Date Time: 16/01/2019 12:00:11
Original Message Identification: msgid001
Original Creation Date Time: 16/01/2019 12:00:00
Original Message Name Identification: tmpl.003.001.01
Result: T
Registration Timestamp: 16/01/2019 12:00:10

The second create request is processed in MPL on 16/01/2019 at 12:00:13. This time the MPL Participant defines both the “Valid From” and the “Valid to” date and time (meaning that the proxy digest is linked to the IBAN only during this predefined validity period) indicating also the account owner.

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**Figure 26 – Successful scenario 2 – DataMaintenanceCreateRequestMessage**




The system, after having successfully performed the expected checks, sets up the element in the Proxy-IBAN Mapping Table as detailed below:

**Figure 27 – Successful scenario 2 – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T123451234512345678901 2 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T123451234512345678999 9 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The following DataMaintenanceResponseMessage is sent by MPL to the sender DN to confirm the execution of the second create request.

**Figure 28 – Successful scenario 2 – DataMaintenanceResponseMessage**




The third create request is processed in MPL on 16/01/2019 at 12:45:01.

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**Figure 29 – Successful scenario 3 – DataMaintenanceCreateRequestMessage**




The system, after having successfully performed the expected checks, sets up the element in the Proxy-IBAN Mapping Table as detailed below. As a result, the same proxy digest (ProxyHash_2) is linked to two different IBAN (IBAN_2 and IBAN_3). The two elements that refer the same proxy digest have non-overlapping validity periods. The Valid From Date and Time determines the valid Proxy-IBAN combination at any given point in time.

**Figure 30 – Successful scenario 3 – Proxy-IBAN Mapping Table**

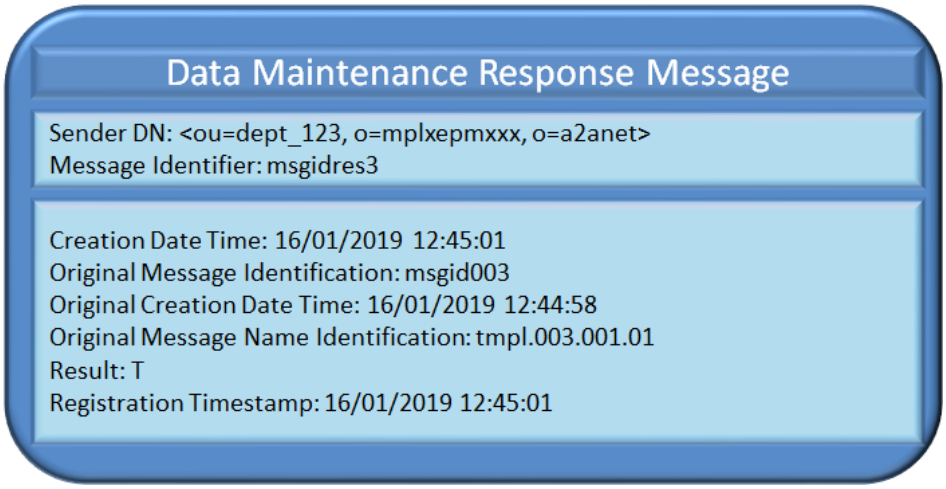
Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The following DataMaintenanceResponseMessage is sent by MPL to the sender DN to confirm the execution of the third create request.

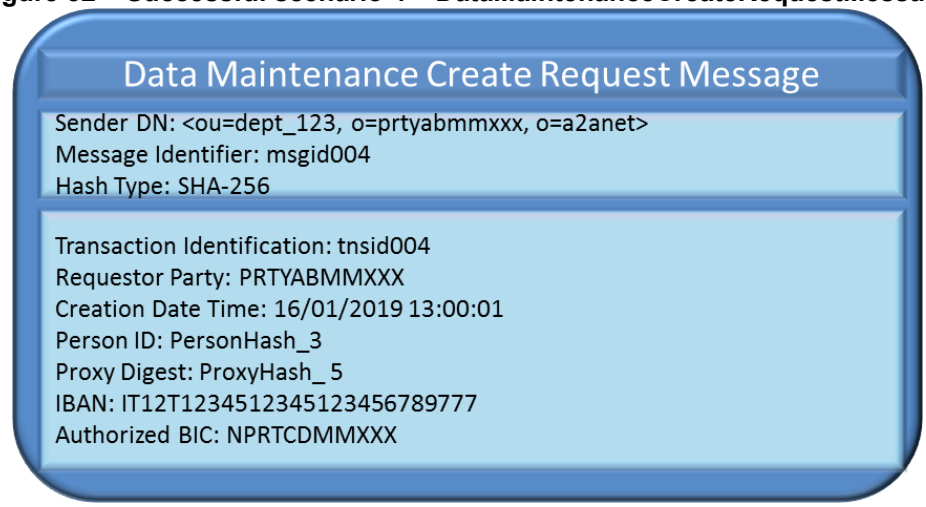
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**Figure 31 – Successful scenario 3 – DataMaintenanceResponseMessage**




The fourth create request is processed in MPL on 16/01/2019 at 13:00:01. This time the authorized BIC (NPRTCDMMXXX) is different from the MPL participant BIC (PRTYABMMXXX), since the MPL participant is inserting the new element on the Proxy-IBAN table on behalf of the bank of the account owner.

**Figure 32 – Successful scenario 4 – DataMaintenanceCreateRequestMessage**




The system, after having successfully performed the expected checks, sets up the element in the Proxy-IBAN Mapping Table as detailed in Figure 33. Then MPL sends DataMaintenanceResponseMessage to the sender DN to confirm the execution of the create request.

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**Figure 33 – Successful scenario 4 – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_3 | SHA-256 | ProxyHash_5 | IT12T1234512345123456789777 | | 16/01/2019 13:00:10 | 16/01/2019 at 13:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | NPRTCDMMXXX |

**Figure 34 – Successful scenario 4 – DataMaintenanceResponseMessage**

Data Maintenance Response Message

Sender DN: <ou=dept_123, o=mplxepmxxx, o=a2anet>
Message Identifier: msgidres4

Creation Date Time: 16/01/2019 13:00:11
Original Message Identification: msgid004
Original Creation Date Time: 16/01/2019 13:00:01
Original Message Name Identification: tmpl.003.001.01
Result: T
Registration Timestamp: 16/01/2019 13:00:10

### 2.4.1.2. Unsuccessful scenario – Update of a Proxy-IBAN Mapping Table element

In this negative scenario the MPL participant (PRTYABMMXXX) sends a message in order to update the Valid To of the element highlighted in red in Figure 35 – Unsuccessful scenario 4 – Proxy-IBAN Mapping Table in the Proxy-IBAN Mapping Table. The Figure 22 – MPL User - Reference Data summarises the configuration of the MPL Participant in the Common Reference Data Management (CRDM) common component. The current calendar date, in the given example, is 16/01/2019.

**Figure 35 – Unsuccessful scenario 4 – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The DataMaintenanceUpdateRequestMessage received by MPL and triggering the scenario looks like the one in Figure 36 – Unsuccessful scenario 4 – DataMaintenanceUpdateRequestMessage.

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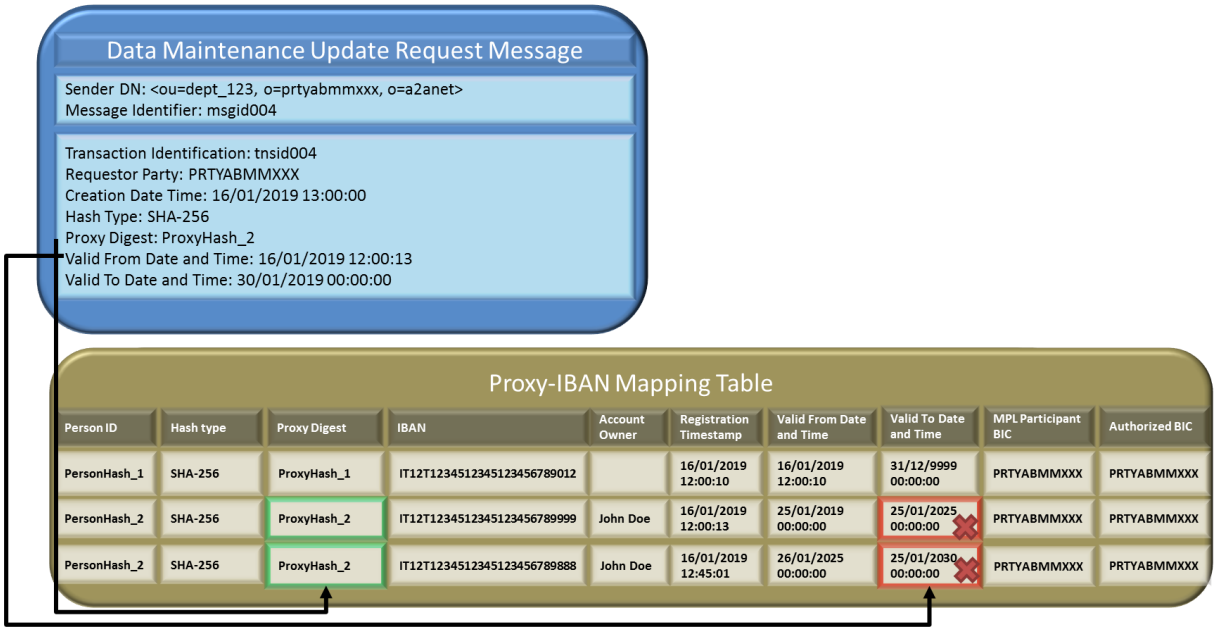
**Figure 36 – Unsuccessful scenario 4 – DataMaintenanceUpdateRequestMessage**




MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check.

The Proxy-IBAN existence Check is unsuccessful since the referenced element does not exist. Indeed, according to the above check, each row of the Proxy-IBAN mapping Table is identified by means of a combination of Proxy and Valid From Date and Time.

**Figure 37 – Unsuccessful scenario 4 – Proxy-IBAN existence Check**




The system rejects the request and sends a DataMaintenanceResponseMessage to the same DN of the sender, containing the proper reason code.

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**Figure 38 – Unsuccessful scenario 4 – DataMaintenanceResponseMessage**




### 2.4.1.3. Successful scenario – Update of a Proxy-IBAN Mapping Table element

In this positive scenario the MPL participant (PRTYABMMXXX) sends a message in order to update the Valid To and the IBAN of the element highlighted in red in Figure 39 – Successful scenario 5 – Proxy-IBAN Mapping Table before the update in the Proxy-IBAN Mapping Table. Figure 22 – MPL User - Reference Data summarises the configuration of the MPL Participant in the Common Reference Data Management (CRDM) common component. The current calendar date, in the given example, is 16/01/2019.

**Figure 39 – Successful scenario 5 – Proxy-IBAN Mapping Table before the update**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The DataMaintenanceUpdateRequestMessage received by MPL and triggering the scenario looks like the one in Figure 40 – Successful scenario 5 – DataMaintenanceUpdateRequestMessage.

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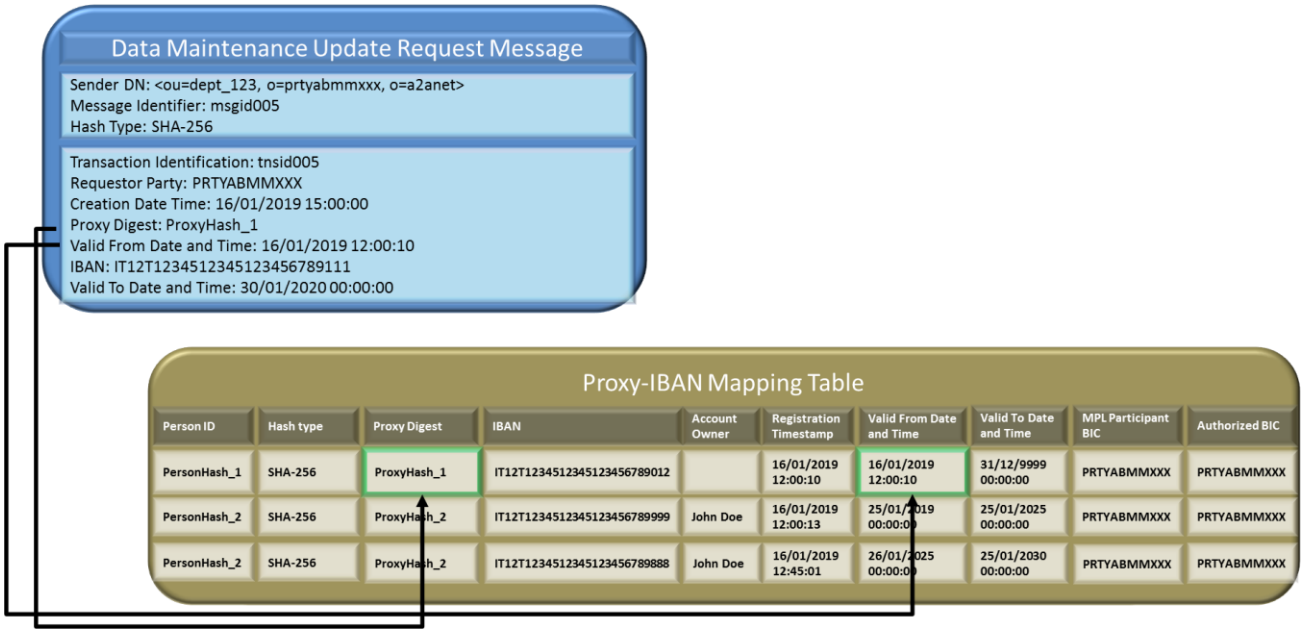
**Figure 40 – Successful scenario 5 – DataMaintenanceUpdateRequestMessage**




MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check.

The Proxy-IBAN existence Check is successful since the referenced element exists in the Proxy-IBAN Mapping Table.

**Figure 41 – Successful scenario 5 – Proxy-IBAN existence Check**




The system, after having successfully performed the expected checks, updates the element in the Proxy-IBAN Mapping Table as detailed below.

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**Figure 42 – Successful scenario 5 – Proxy-IBAN Mapping Table after the update**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T12345123451234567891111 | | 16/01/2019 15:00:01 | 16/01/2019 12:00:10 | 30/01/2020 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T12345123451234567899999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T12345123451234567898888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The following DataMaintenanceResponseMessage is sent by MPL to the sender DN to confirm the execution of the update request.

**Figure 43 – Successful scenario 5 – DataMaintenanceResponseMessage**

Data Maintenance Response Message

Sender DN: <ou=dept_123, o=mplxepmxxx, o=a2anet>
Message Identifier: msgidres5

Creation Date Time: 16/01/2019 15:00:02
Original Message Identification: msgid005
Original Creation Date Time: 16/01/2019 15:00:00
Original Message Name Identification: tmpl.005.001.01
Result: T
Registration Timestamp: 16/01/2019 15:00:01

### 2.4.1.4. Successful scenario – Deletion of a Proxy-IBAN Mapping Table element

In this positive scenario the MPL participant (PRTYABMMXXX) sends a message in order to delete the element highlighted in red in Figure 44 – Successful scenario 6 – Proxy-IBAN Mapping Table in the Proxy-IBAN Mapping Table. The Figure 22 – MPL User - Reference Data summarises the configuration of the MPL Participant in the Common Reference Data Management (CRDM) common component. The current calendar date, in the given example, is 16/01/2019.

**Figure 44 – Successful scenario 6 – Proxy-IBAN Mapping Table**

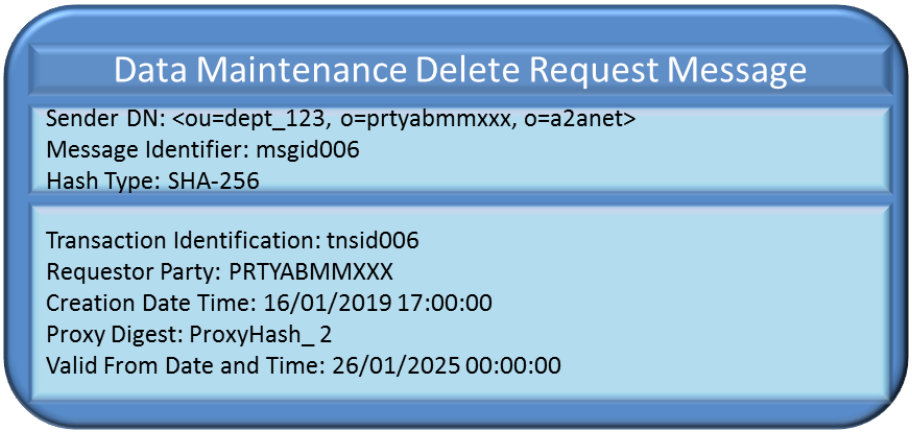
Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T12345123451234567890012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T12345123451234567899999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T12345123451234567898888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |

The DataMaintenanceDeleteRequestMessage received by MPL and triggering the scenario looks like the one in Figure 45 – Successful scenario 6 – DataMaintenanceDeleteRequestMessage.

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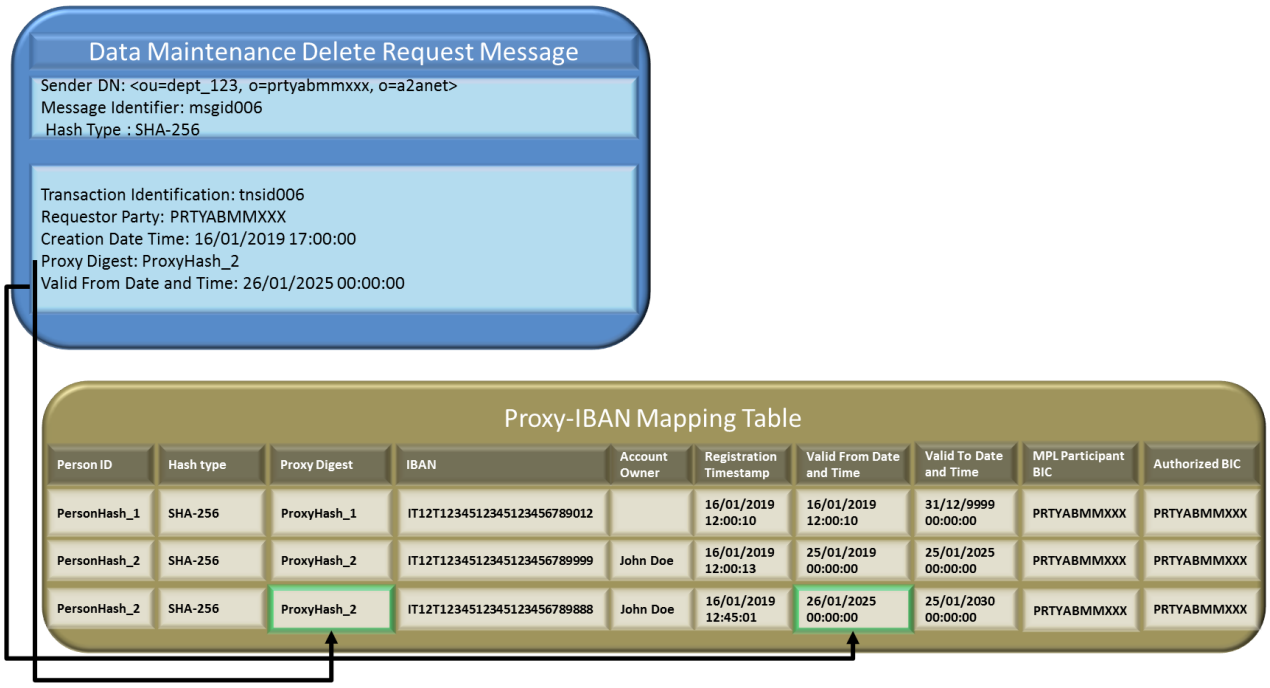
**Figure 45 – Successful scenario 6 – DataMaintenanceDeleteRequestMessage**




MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check.

MPL identifies the referenced element in the Proxy-IBAN Mapping Table by means of the combination of Proxy and Valid From Date and Time.

**Figure 46 – Successful scenario 6 – Proxy-IBAN existence Check**




The element is detected and deleted by MPL. The MPL Participant is notified with a positive message.

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**Figure 47 – Successful scenario 6 – DataMaintenanceResponseMessage**




## 2.5. Personal Data Retrieval Request

A Personal Data Retrieval Request can be initiated by any MPL Actor using the PersonalDataRetrievalRequest. This request retrieves all the elements of the Proxy-IBAN table that fit with the identifier selected as search criterion. There are two possible search criteria:

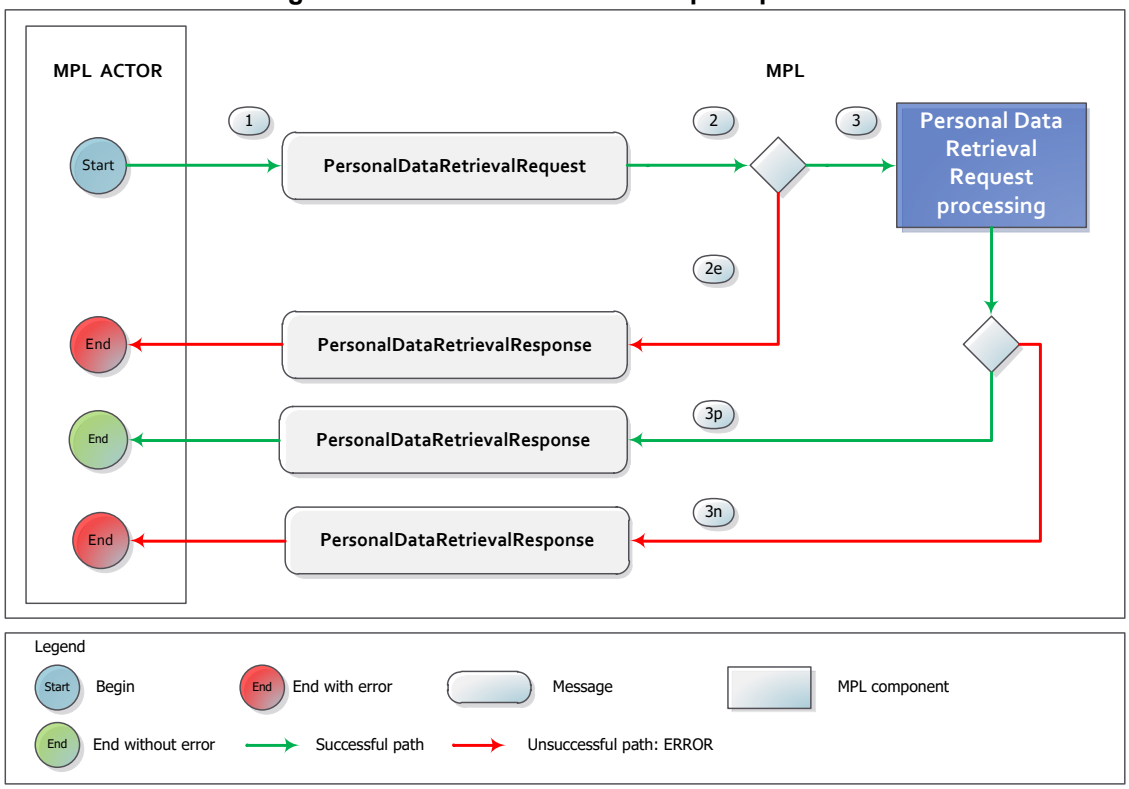
- Data retrieval by Proxy digest;
- Data retrieval by Person ID;

The Person identifier is obtained by a combination of the data of the Account Owner (the relevant country code plus the national identifier of the physical person). The proxy digest is an hash value calculated applying the hashing algorithm to the original proxy.

If the Request is correctly received and a correspondence exists between the search criterion and at least one element of the Proxy-IBAN table, MPL sends a PersonalDataRetrievalResponse to the MPL Actor containing the desired entries. Otherwise, if there is no correspondence in the MPL repository, the Mobile Proxy Lookup sends a PersonalDataRetrievalResponse to the MPL Actor containing the proper error code. In positive scenario, data will be returned to each requesting MPL Actor depending on their access rights; an MPL Participant will receive only the subset of data belonging to them, while a Central Bank will be able to view all the data set up by the MPL Participants belonging to their national community.. Hereunder is the diagram describing the process and the involved actors. The details of the steps of the two types of requests are described in the following tables.

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**Figure 48 – Data Maintenance Request process**




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**Table 11 – Personal Data Retrieval steps - Proxy Search Criterion**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | PersonalDataRetrievalRequest | MPL Actor as Sender<br><br>MPL as receiver | MPL receives an incoming Personal Data Retrieval request from the MPL Actor. |
| 2 | | MPL | Personal Data Retrieval Request validation<br><br>MPL executes the check:<br>- Authorisation check.<br><br>See 4.1- Business Rules for details. |
| 2e | PersonalDataRetrievalResponse | MPL as sender<br><br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing the proper error. |
| 3 | | MPL | Personal Data Retrieval Request processing<br><br>MPL executes the following check:<br>- Proxy digest Retrieval Check.<br><br>See 4.1- Business Rules for details. |
| 3p | PersonalDataRetrievalResponse | MPL as sender<br><br>MPL Actor as receiver | The system sends a message to the Originator Actor – same DN of the sender – containing at least one entry. |
| 3n | Personal Data Retrieval Response – Error Scenario | MPL as sender<br><br>MPL Actor as receiver | MPL unsuccessfully executes the checks listed in step 3.<br>The system sends a message to the Originator Actor – same DN of the sender – containing the proper error code. |

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**Table 12 – Personal Data Retrieval steps - Person Search Criterion**

| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | PersonalDataRetrievalRequest | MPL Actor as Sender<br><br>MPL as receiver | MPL receives an incoming Personal Data Retrieval request from the MPL Actor. |
| 2 | | MPL | Personal Data Retrieval Request validation<br><br>MPL executes the check:<br>- Authorisation check.<br><br>See 4.1- Business Rules for details. |
| 2e | PersonalDataRetrievalResponse | MPL as sender<br><br>MPL Actor as receiver | MPL unsuccessfully executes the checks of step 2.<br>At the first negative check the system stops and sends a message to the MPL Actor – same DN of the sender – containing the proper error. |
| 3 | | MPL | Personal Data Retrieval Request processing<br><br>MPL executes the following check:<br>- Person ID Retrieval Check.<br><br>See 4.1- Business Rules for details. |
| 3p | PersonalDataRetrievalResponse | MPL as sender<br><br>MPL Actor as receiver | MIPS successfully executes the checks listed in step 3-:<br>The system sends a message to the Originator Actor – same DN of the sender – containing at least one entry. |
| 3n | Personal Data Retrieval Response – Error Scenario | MPL as sender<br><br>MPL Actor as receiver | MPL unsuccessfully executes the checks listed in step 3.<br>The system sends a message to the Originator Actor – same DN of the sender – containing the proper error code. |

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### 2.5.1. Examples

This sub-section presents a non-exhaustive list of examples of the possible scenarios related to the Personal Data Retrieval in A2A mode for both the possible selection criteria. The depicted scenarios are divided into positive and negative; in the positive ones the requested digests are present into the Proxy-IBAN Mapping Table and all the entries are retrieved to the sender. On the contrary, in negative scenarios, the requested elements are not found into the mapping table and MPL answers to the Originator Actor with a specific error code.

#### 2.5.1.1. Successful scenario – Personal Data Retrieval response message with positive result - Proxy Search Criterion

In this scenario the MPL participant (PRTYABMMXXX) sends a message in order to obtain all the entries of the Proxy-IBAN table with the requested digest of the proxy (ProxyHash_2). Differently from the Look-up request, the PersonalDataRetrievalResponse retrieves all the entries with the desired proxy digest within the requestor's data scope, without looking at the validity period of the element (see 2.2.1.2).

The situation of the Proxy-IBAN table is represented Figure 49.

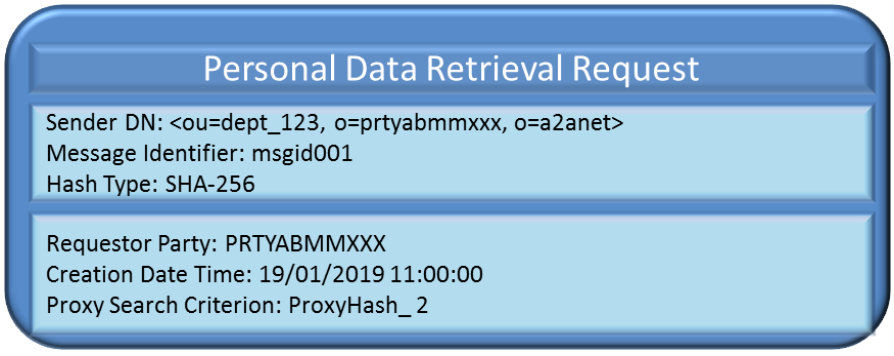
**Figure 49 – Successful scenario 1 – Proxy-IBAN Mapping Table**

Proxy-IBAN Mapping Table

| Person ID | Hash type | Proxy Digest | IBAN | Account Owner | Registration Timestamp | Valid From Date and Time | Valid To Date and Time | MPL Participant BIC | Authorized BIC |
|---|---|---|---|---|---|---|---|---|---|
| PersonHash_1 | SHA-256 | ProxyHash_1 | IT12T1234512345123456789012 | | 16/01/2019 12:00:10 | 16/01/2019 12:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789999 | John Doe | 16/01/2019 12:00:13 | 25/01/2019 00:00:00 | 25/01/2025 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_2 | IT12T1234512345123456789888 | John Doe | 16/01/2019 12:45:01 | 26/01/2025 00:00:00 | 25/01/2030 00:00:00 | PRTYABMMXXX | PRTYABMMXXX |
| PersonHash_3 | SHA-256 | ProxyHash_5 | IT12T1234512345123456789777 | | 16/01/2019 13:00:10 | 16/01/2019 at 13:00:10 | 31/12/9999 00:00:00 | PRTYABMMXXX | NPRTCDMMXXX |
| PersonHash_2 | SHA-256 | ProxyHash_6 | IT12T1234512345123456789666 | John Doe | 17/01/2019 10:40:11 | 17/01/2019 10:40:11 | 25/04/2020 00:00:00 | PRTYBCMMXXX | PRTYBCMMXXX |

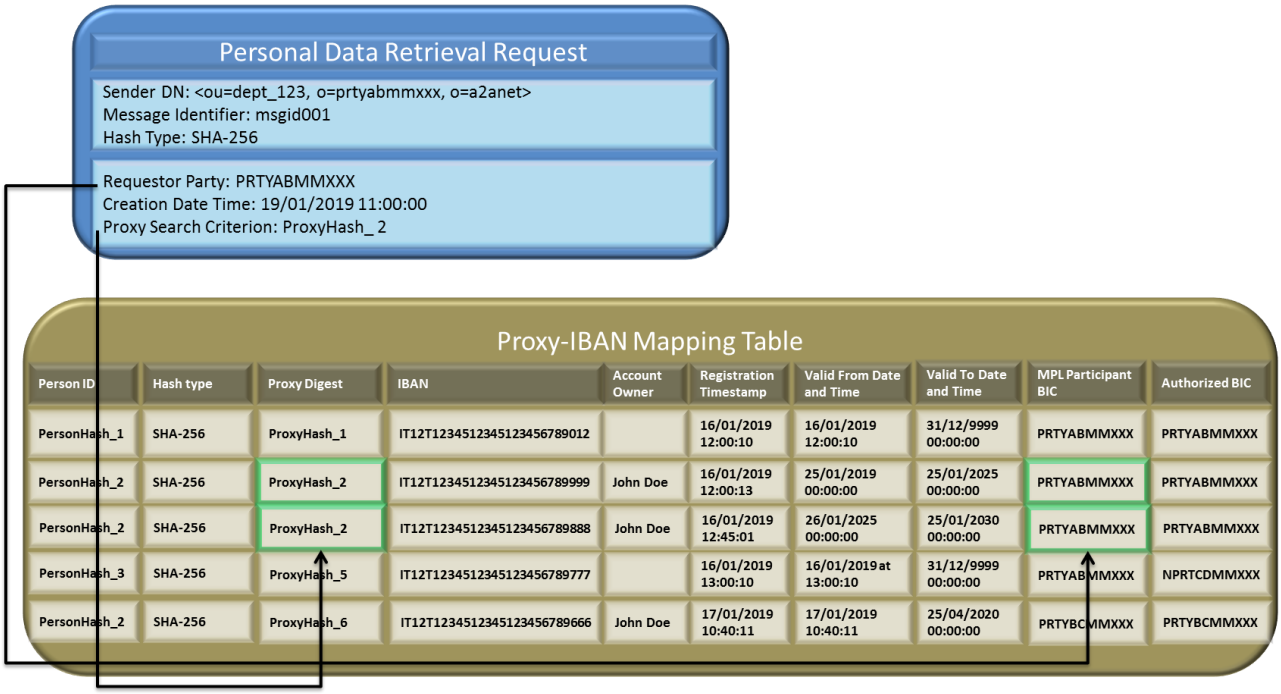
The PersonalDataRetrievalRequest is processed in 19/01/2019 at 11:00. MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check.

**Figure 50 – Successful scenario 1 – PersonalDataRetrievalRequest**




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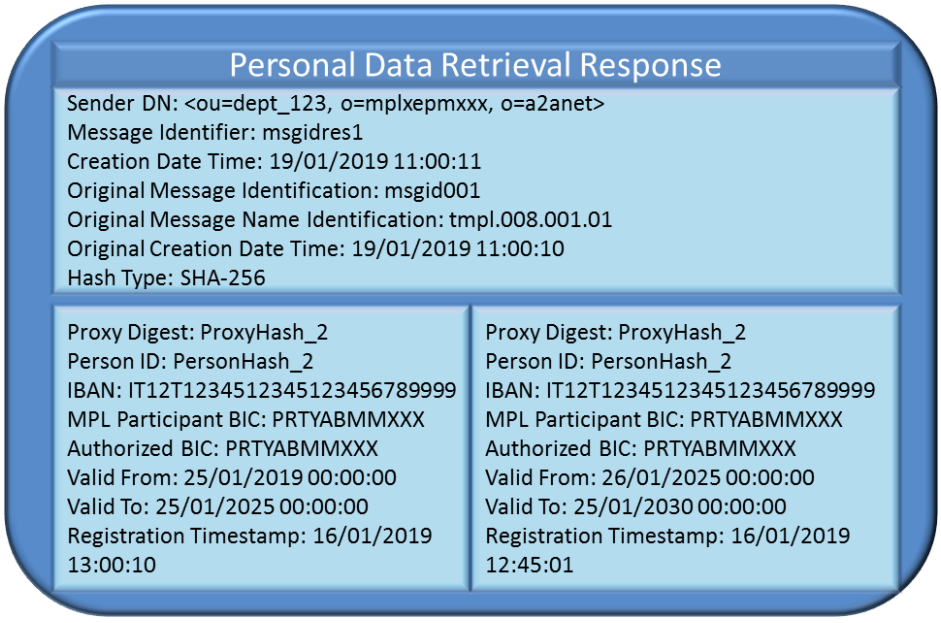
**Figure 51 – Successful scenario 1 – PersonalDataRetrievalRequest**




As notable in Figure 51, in the Proxy-IBAN table there are two entries registered with the searched Proxy digest (ProxyHash_2). Both these elements are returned to the MPL Participant, as they were created by the requestor (PRTYABMMXXX) and therefore are inside his data scope.

Then the system sends to the same DN of sender a PersonalDataRetrievalResponse containing the proper entries.

**Figure 52 – Successful scenario 1 – PersonalDataRetrievalResponse**



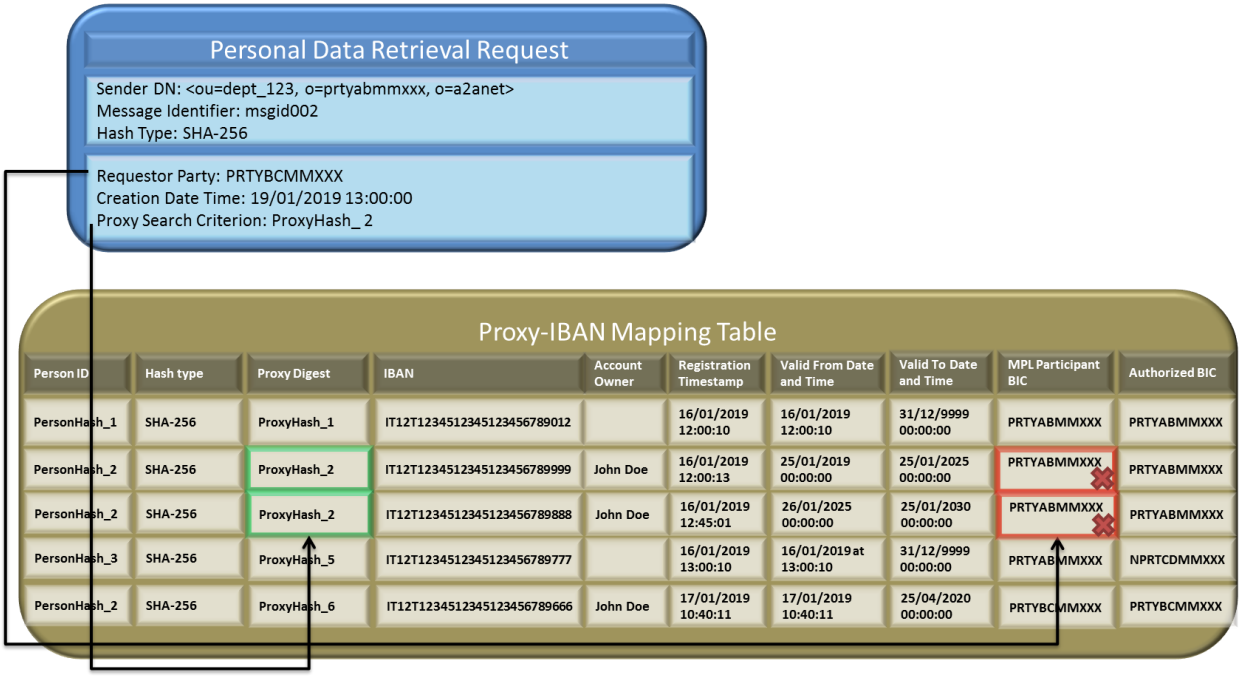

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### 2.5.1.2. Unsuccessful scenario – Personal Data Retrieval response message with negative result – Proxy Search Criterion

In this scenario the MPL participant (PRTYBCMMXXX) sends a message in order to obtain all the entries of the Proxy-IBAN table with the requested digest of the proxy (ProxyHash_2).

The PersonalDataRetrievalRequest is processed in 19/01/2019 at 13:00. MPL identifies the DN of the sender (<ou=dept_123, o=prtybcmmxxx, o=a2anet>) and successfully performs the Authorisation check.

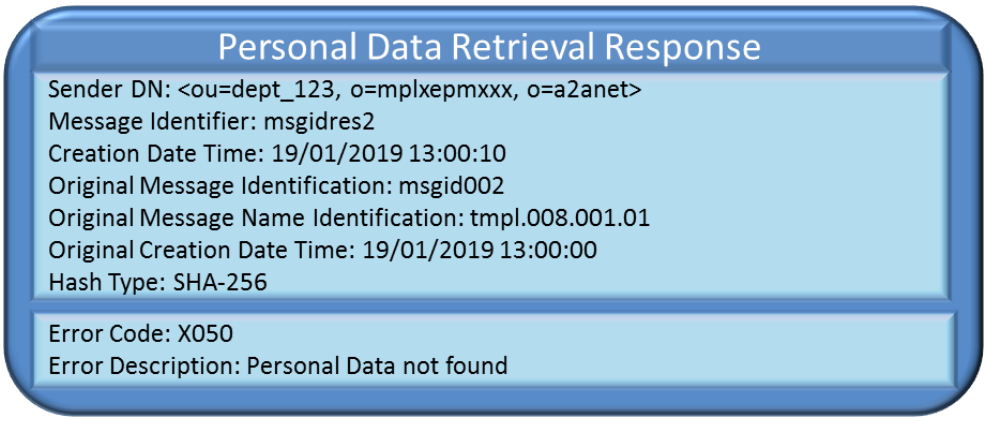
**Figure 53 – Unsuccessful scenario 2 – PersonalDataRetrievalResponse**




As notable in Figure 53, in the Proxy-IBAN table there are two entries registered with the searched Proxy digest (ProxyHash_2). However these entries are not in the data scope of the requestor (PRTYBCMMXXX), since they were created by a different MPL Participant (PRTYABMMXXX). Therefore the system sends to the same DN of sender a Personal Data Retrieval Response – Error Scenario containing the proper error code, indicating that there are no entries for the requested search criterion.

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**Figure 54 – Unsuccessful scenario 2 – PersonalDataRetrievalResponse**

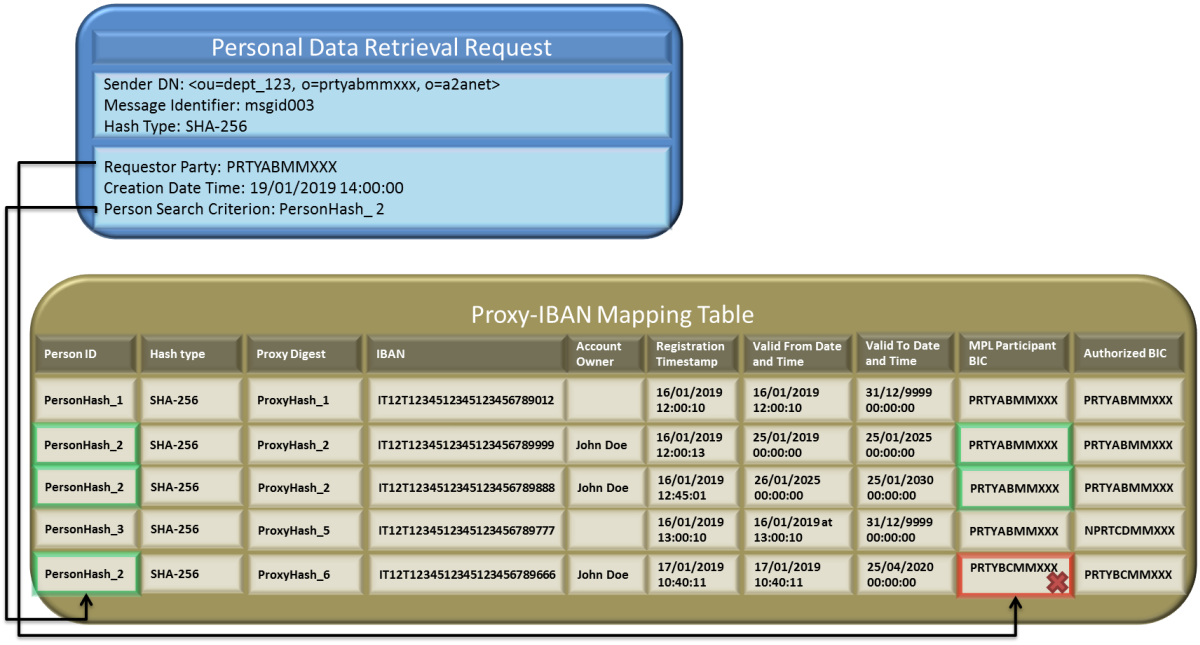



### 2.5.1.3. Successful scenario – Personal Data Retrieval response message with positive result - Person Search Criterion

In this scenario the MPL participant (PRTYABMMXXX) sends a message in order to obtain all the entries of the Proxy-IBAN table with the requested Person Identifier (PersonHash_2). The data of the Proxy-IBAN table are depicted in Figure 49.

The PersonalDataRetrievalRequest is processed in 19/01/2019 at 14:00. MPL identifies the DN of the sender (<ou=dept_123, o=prtyabmmxxx, o=a2anet>) and successfully performs the Authorisation check.

**Figure 55 – Successful scenario 3 – PersonalDataRetrievalRequest**

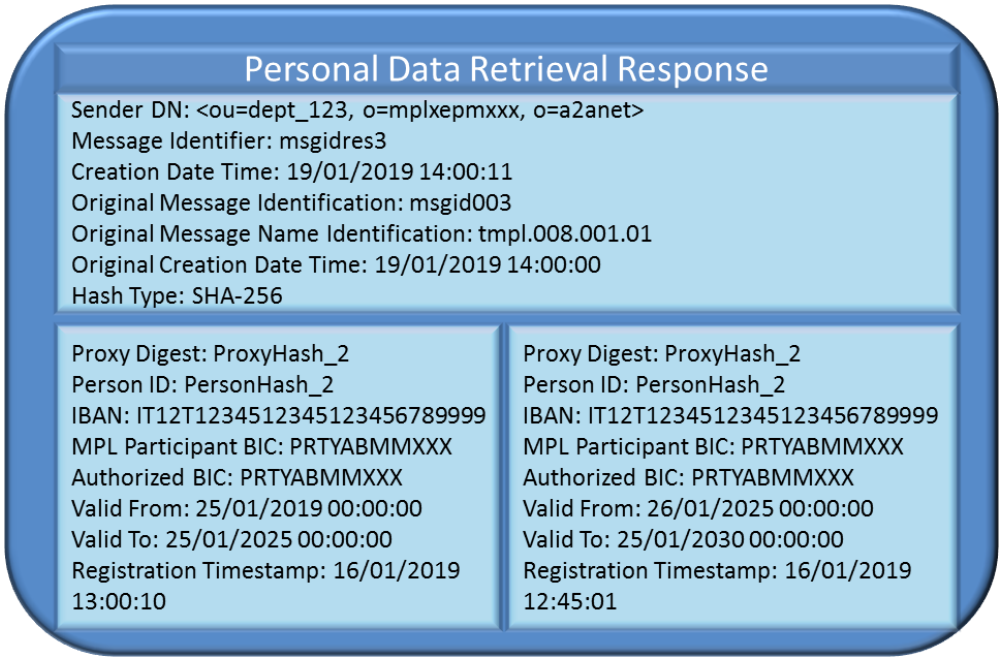



As notable in Figure 55, in the Proxy-IBAN table there are three entries registered with the searched Person Identifier (PersonHash_2). However only two of these elements are returned to the MPL Participant, as the third one was created by a different MPL Participant (PRTYBCMMXXX) and therefore is outside the data scope of the requestor (PRTYABMMXXX).

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Then the system sends to the same DN of the sender a PersonalDataRetrievalResponse containing the proper entries.

**Figure 56 – Successful scenario 3 – PersonalDataRetrievalResponse**



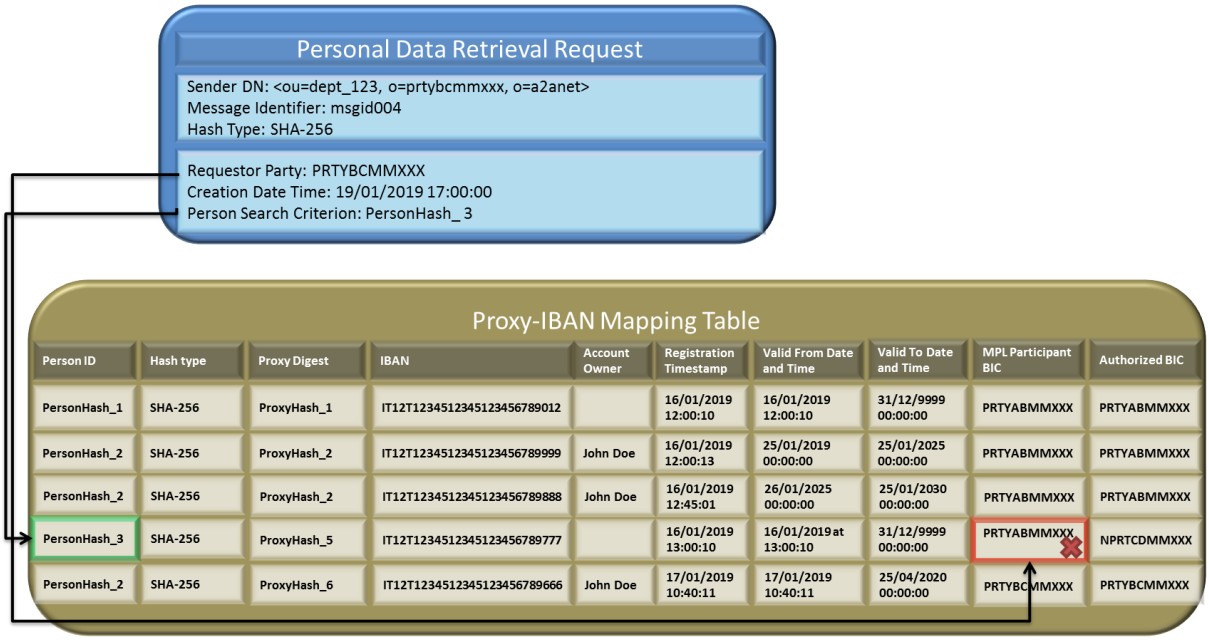

### 2.5.1.4. Unsuccessful scenario – Personal Data Retrieval response message with negative result - Person Search Criterion

In this scenario the MPL participant (PRTYBCMMXXX) sends a message in order to obtain all the entries of the Proxy-IBAN table with the requested Person ID (PersonHash_3).

The PersonalDataRetrievalRequest is processed in 19/01/2019 at 17:00. MPL identifies the DN of the sender (<ou=dept_123, o=prtybcmmxxx, o=a2anet>) and successfully performs the Authorisation check.

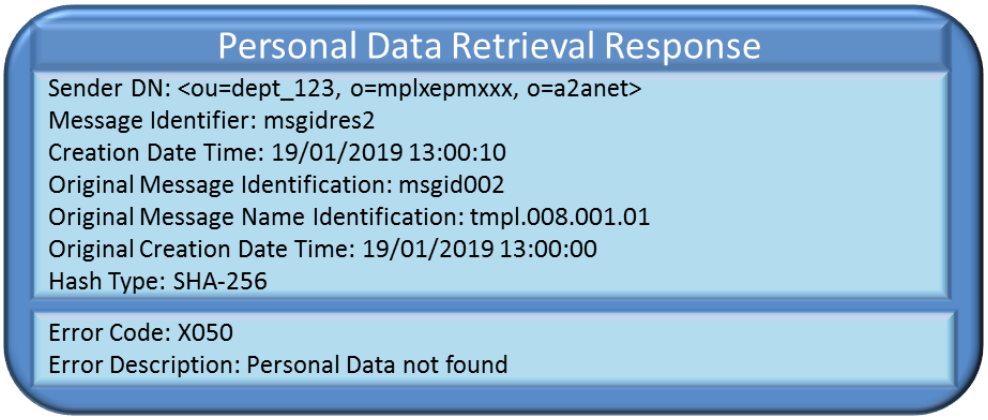
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**Figure 57 – Unsuccessful scenario 4 – PersonaleDataRetrievalResponse**




As notable in Figure 57, in the Proxy-IBAN table there is only one entry registered with the searched Person ID (PersonHash_3). However this entry is not in the data scope of the requestor (PRTYBCMMXXX), since it was created by a different MPL Participant (PRTYABMMXXX). Therefore the system sends to the same DN of sender a Personal Data Retrieval Response – Error Scenario containing the proper error code, indicating that there are no entries for the requested search criterion.

**Figure 58 – Unsuccessful scenario 4 – PersonaleDataRetrievalResponse**




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## 2.6. MPL Repository Maintenance Report

This section describes the processing steps for the creation of the MPL Repository Maintenance Report available in MPL and its sending to the MPL Actors who subscribed to it.

The MPL Repository Maintenance Report is generated using the data available at the end of every calendar day.

The report provides detailed information on the maintenance activities recorded in the data scope of the Recipient actor. The information, for all MPL Actors, is limited to the maintenance requests they triggered during the last calendar day.

The report contains:

- Identifier of the report;
- Timestamp of the report generation;
- The calendar date for which the report is generated.

For all the maintenance requests successfully processed by the system, MPL provides the following details:

- Identification of the related maintenance request;
- Registration Timestamp;
- Hash Type;
- Proxy Digest;
- Proxy Digest Valid From;

For each maintenance request, MPL provides information related to each attribute impacted by the maintenance request:

- The name of the attribute;
- The attribute value before the maintenance request;
- The attribute value after the maintenance request.

MPL provides MPL actors with report on the maintained Proxy-IBAN Mapping Table elements based on the permissions listed in the following table.

**Table 13 – Report permissions and data scope**

| Actor | Data Maintenance Report |
|---|---|
| Central Bank | No |
| MPL Participant | Maintenance requests the MPL Participant successfully entered in MPL in the last calendar day |

MPL provides the Repository Maintenance Report in a complete version only (Full mode), covering all data maintenance requests managed in the time between the start and end of the calendar day.

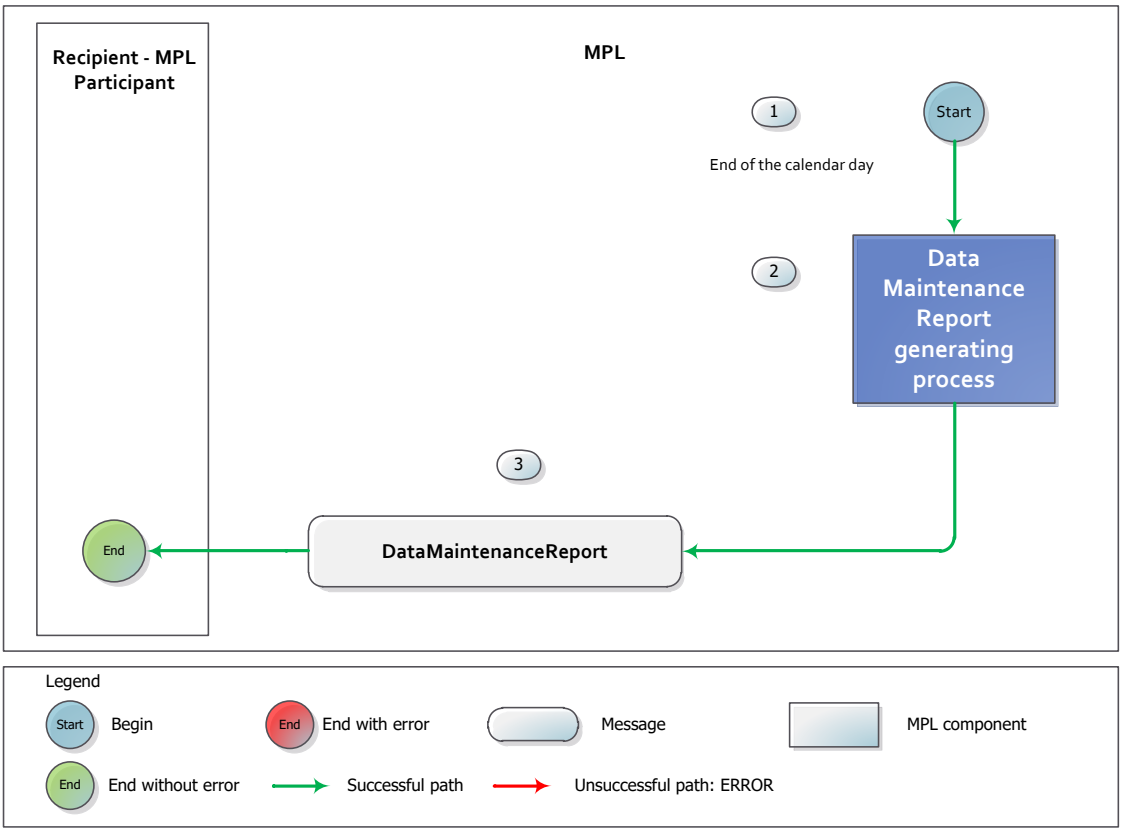
All rights reserved.

The involved actors and messages are:

- Recipient Party: The subscribing Participant who receives the report;
- DataMaintenanceReport message sent from MPL to the Recipient in order to provide the Data Maintenance report.

The following diagram displays the MPL Repository Maintenance Report generation process which is triggered in MPL.

**Figure 59 – MPL Repository Maintenance Report flow**




The details of the steps are described in the following table.

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**Table 14 – MPL Repository Maintenance Report steps**

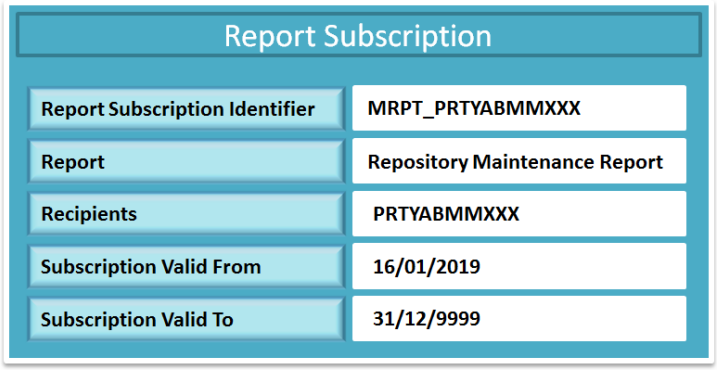
| Step | Involved messages | Involved actors | Description |
|---|---|---|---|
| 1 | | MPL | After the midnight of the calendar day, MPL triggers the Repository Maintenance Report generation process. |
| 2 | | MPL | The whole set of data impacted by the Maintenance Requests of the last day is collected during the day,<br>MPL processes all this data necessary for the report generation and subsequently, the report data is grouped, formatted and then created. |
| 3 | DataMaintenanceReport | MPL as sender<br><br>Recipient/MPL Actor as receiver | MPL sends the Repository Maintenance Report to the previously defined Recipient. |

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### 2.6.1. Examples

This section describes an example of creation of a Repository Maintenance Report on a singular calendar date (i.e. 16/01/2019). The maintenance requests that are considered are taken from examples in sections 2.4.1.1, 2.4.1.3, 2.4.1.4. The operation described in section 2.4.1.2 is obviously not considered inside the Maintenance Report, since it was rejected by MPL due to unsuccessful Proxy-IBAN existence Check. Figure 60 show the report subscription underlying the first and second example respectively.

**Figure 60 – Repository Maintenance Report subscription**




As explained before, for the sake of this example, the maintenance requests drawn from the previous sections, were executed on date 16/01/2019 (the Requests successfully submitted by MPL are depicted in Figure 61 and Figure 62).

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**Figure 61 – List of Maintenance Create Requests**

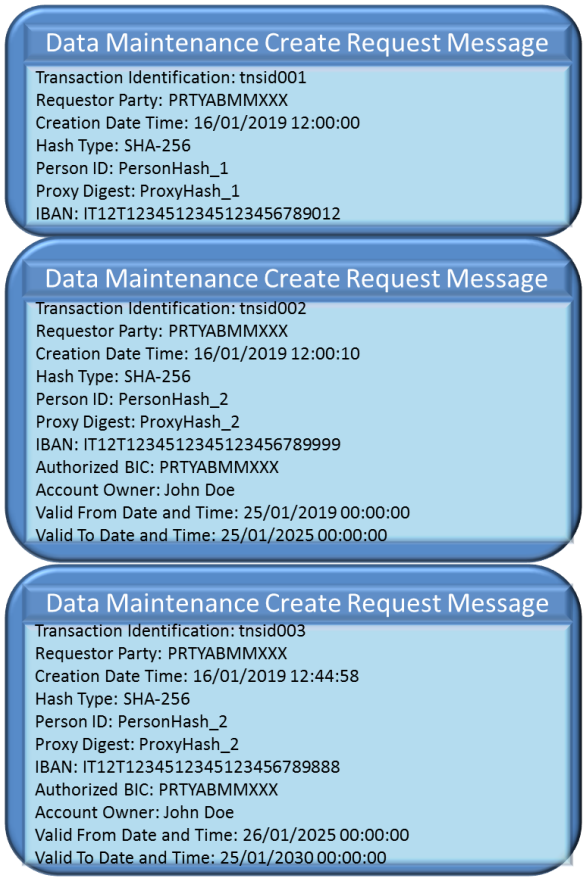
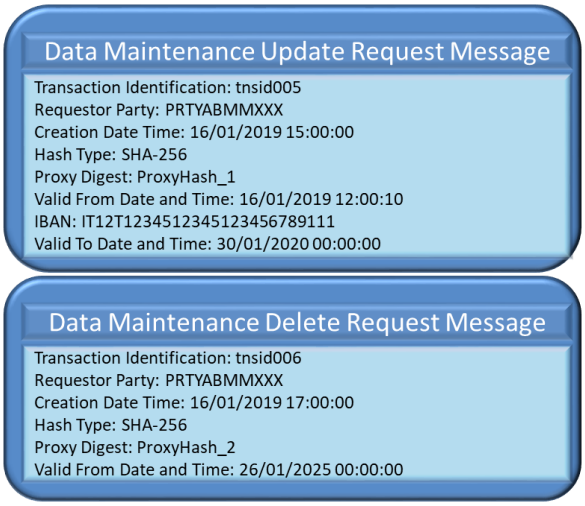


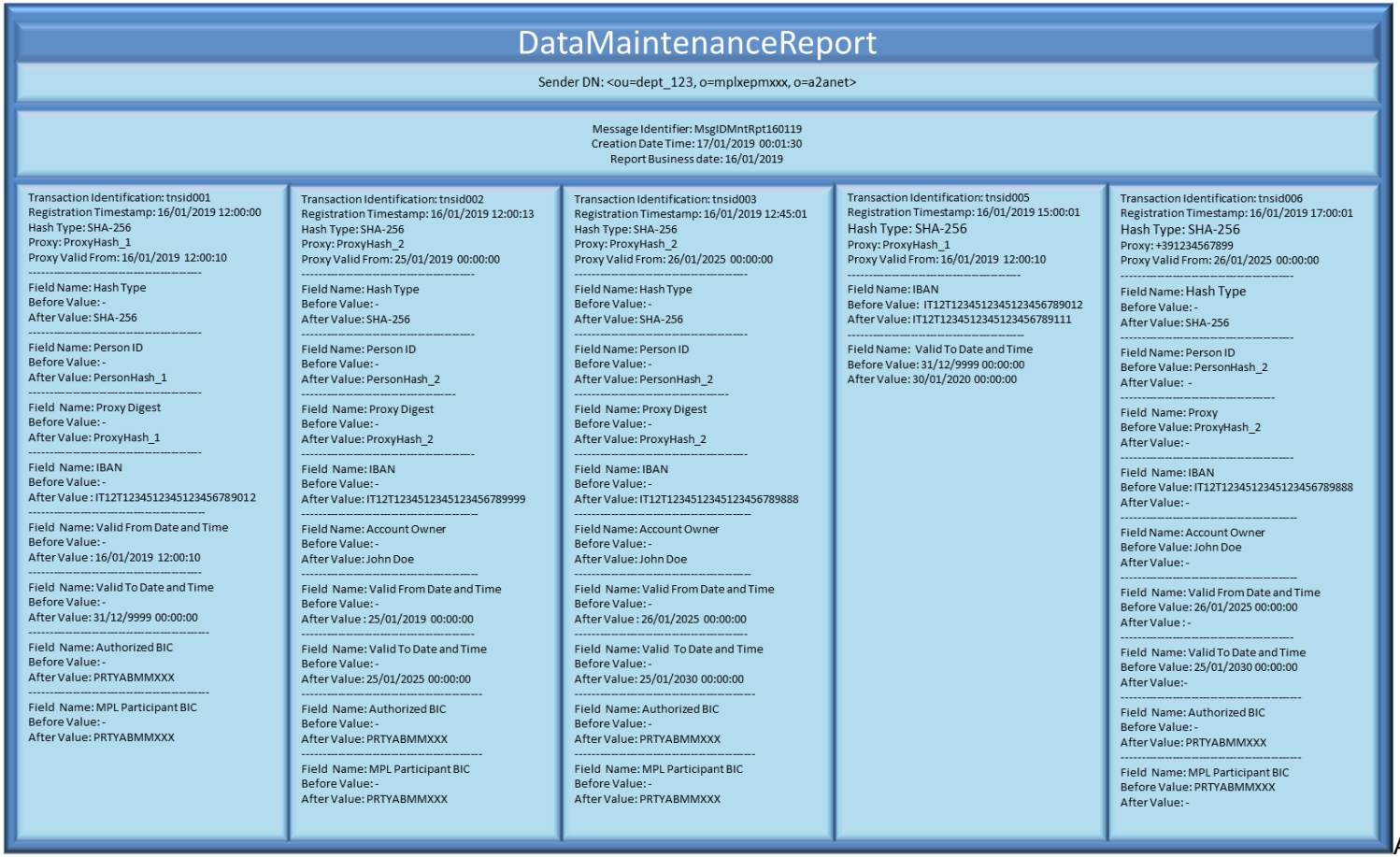

**Figure 62 – List of Maintenance Update and Delete Requests**




The Report is therefore generated at the end of the day. Then MPL identifies the Recipient DN from the "Party Technical Address" (<ou=dept_abc, o=prtyabmmxxx, o=a2anet>) and the Message Router component sends, after midnight of 16/01/2019, the following DataMaintenanceReport message to the Recipient.

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**Figure 63 – Report Example: DataMaintenanceReport**




As notable in Figure 63, the records concerning Create Requests, contain a value only for the “After Values” of each Attribute in request, while the “Before Values” are always blank (i. e. set to ”-“); conversely the Delete Requests contain all the fields of the requests, setting a value only for the “Before Values” and blank (i. e. set to ”-“) for the “After values”.

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# 3. Catalogue of messages

## 3.1. Introduction

## 3.2. General Information

### 3.2.1. Message signing

A2A Interactions with MPL are based on XML ISO 20022 standards as described in the EPC SEPA Inst Scheme and in the *Joint Initiative pan-European Mobile P2P Interoperability of the Berlin Group*.

The processing of the incoming XML messages is performed in different steps described in the following sections, which are not necessarily under MPL responsibility.

### 3.2.2. Technical Validation

Technical validation of incoming MPL messages is performed in two different steps:

1) Schema validation;
2) Additional technical validation.

Both steps are performed within the ESMIG component. The schema validation is performed using standard parser components. Every message is validated against the published XSD subset for MPL. The additional technical validation includes all of the checks which cannot be done in the schema validation with an automated parsing process (e.g. cross-fields validation). They are performed only for messages which have passed the schema validation.

The type and quantity of the checks performed vary depending on the message type and on the SEPA SCT$^{Inst}$ or ISO message constraints.

### 3.2.3. Supported Character Set

MPL fully supports UTF-8 Character Set.

The character set is restricted for references and identifiers to support the Latin characters which are commonly used in international communication.

The complete list is as follows:

a b c d e f g h i j k l m n o p q r s t u v w x y z

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

/ - ? : ( ) . , ' +

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As additional rules, it is required that references, identifications and identifiers must not start or end with '/' or contain '//'.

# 3.3. Message Usage

## 3.3.1. List of Messages

### 3.3.1.1. LookupRequestMessage

**Table 15 – LookupRequest business case**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Type | Always equal to "LookupRequest" | Document/TPSMPLLkpReq/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Message Identification | Unique identifier of the processing transaction | Document/TPSMPLLkpReq/MsgHdr/MsgId | Yes | |
| Creation Date Time | Date and time by when the element was created | Document/TPSMPLLkpReq/MsgHdr/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLLkpReq/MsgHdr/HshngAlgo | Yes | Only allowed value is "HS25". |
| Beneficiary Proxy | The proxy of the beneficiary, i.e. the digest of the mobile number | Document/TPSMPLLkpReq/LkpReq/PrxyBnfcry/PrxyIdr | Yes | |
| Originator Proxy | The proxy of the Originator, i.e. the digest of the mobile number. | Document/TPSMPLLkpReq/LkpReq/PrxyOrgtr/PrxyIdr | No | It is mandatory when the Originator Alias block is included. |
| Originator Scheme Name | For possible future use. | Document/TPSMPLLkpReq/OrgtrSchme/Nm | No | Only schema validation is performed. |
| Originator Scheme Identification | For possible future use. | Document/TPSMPLLkpReq/OrgtrSchme/Id/PrvtId/Othr/Id | No | Only schema validation is performed. |
| Receiver Scheme Name | For possible future use. | Document/TPSMPLLkpReq/RcvrSchme/Nm | No | Only schema validation is performed. |
| Receiver Scheme Identification | For possible future use. | Document/TPSMPLLkpReq/RcvrSchme/Id/PrvtId/Othr/Id | No | Only schema validation is performed. |
| Amount | For possible future use. | Document/TPSMPLLkpReq/TxAmt | No | Only schema validation is performed. |
| Currency | For possible future use | Document/TPSMPLLkpReq/TxAmt/@Ccy | No | Only schema validation is performed. |

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**Table 16 – ReachabilityCheckRequest business case**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Type | Always equal to "ReachabilityCheckRequest" | Document/TPSMPLLkpReq/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Message Identification | Unique identifier of the processing transaction | Document/TPSMPLLkpReq/MsgHdr/MsgId | Yes | |
| Creation Date Time | Date and time by when the element was created | Document/TPSMPLLkpReq/MsgHdr/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLLkpReq/MsgHdr/HshngAlgo | Yes | Only allowed value is "HS25". |
| Beneficiary Proxy | The proxy of the beneficiary, i.e. the mobile number | Document/TPSMPLLkpReq/LkpReq/PrxyBnfcry/PrxyIdr | Yes | |
| Originator Proxy | The proxy of the Originator, i.e. the mobile number. | Document/TPSMPLLkpReq/LkpReq/PrxyOrgtr/PrxyIdr | No | It is mandatory when the Originator Alias block is included. |
| Originator Scheme Name | For possible future use. | Document/TPSMPLLkpReq/OrgtrSchme/Nm | No | Only schema validation is performed. |
| Originator Scheme Identification | For possible future use. | Document/TPSMPLLkpReq/OrgtrSchme/Id/PrvtId/Othr/Id | No | Only schema validation is performed. |
| Receiver Scheme Name | Not required by business case. | Document/TPSMPLLkpReq/RcvrSchme/Nm | No | Schema validation is performed but field is ignored. |
| Receiver Scheme Identification | Not required by business case. | Document/TPSMPLLkpReq/RcvrSchme/Id/PrvtId/Othr/Id | No | Schema validation is performed but field is ignored. |
| Amount | Not required by business case. | Document/TPSMPLLkpReq/TxAmt | No | Schema validation is performed but field is ignored. |
| Currency | Not required by business case. | Document/TPSMPLLkpReq/TxAmt/@Ccy | No | Schema validation is performed but field is ignored. |

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### 3.3.1.2. LookupResponseMessage

**Table 17 – LookupResponse business case**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Type | Always equal to "LookupResponse" | Document/TPSMPLLkpRspn/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Message Identification | Unique identifier of the message | Document/TPSMPLLkpRspn/MsgHdr/MsgId | Yes | |
| Creation Date Time | Date and time by when the element was created | Document/TPSMPLLkpRspn/MsgHdr/CreDtTm | Yes | |
| Original Message Identification | Unique identifier of the processing transaction. Shall be equal to the Message Identification of the relative Look-up request | Document/TPSMPLLkpRspn/MsgHdr/OrgnlBizQry/MsgId | Yes | |
| Original Creation Date Time | Date and time by when the relative Look-up request was created | Document/TPSMPLLkpRspn/MsgHdr/OrgnlBizQry/CreDtTm | Yes | |
| Result | Boolean true/false, indicates whether or not a given proxy could be matched to an IBAN. | Document/TPSMPLLkpRspn/Rspn/Rslt | Yes | |
| Result Details | Not present in positive responses, optional in negative responses. | Document/TPSMPLLkpRspn/Rspn/RsltDtls | No | |
| Originator Scheme Name | For possible future use | Document/TPSMPLLkpRspn/OrgtrSchme/Nm | No | |
| Originator Scheme Identification | For possible future use | Document/TPSMPLLkpRspn/OrgtrSchme/Id/PrvtId/Othr/Id | No | |
| Receiver Scheme Name | For possible future use | Document/TPSMPLLkpRspn/RcvrSchme/Nm | No | |
| Receiver Scheme Identification | For possible future use | Document/TPSMPLLkpRspn/RcvrSchme/Id/PrvtId/Othr/Id | No | |
| Scheme Account | Boolean. For possible future use. | Document/TPSMPLLkpRspn/LkpRcrdDtls/SchmeAcct | No | Not present in negative responses. |
| IBAN | IBAN of the creditor account. | Document/TPSMPLLkpRspn/LkpRcrdDtls/CdtrAcct/Id/IBAN | Yes | Not present in negative responses. |
| Authorized BIC | BIC configured in TIPS as Beneficiary BIC | Document/TPSMPLLkpRspn/LkpRcrdDtls/thrzdBIC/AnyBIC | Yes | Not present in negative responses. |
| Beneficiary Name | Name of the payee | Document/TPSMPLLkpRspn/LkpRcrdDtls/BnfcryNm | No | Not present in negative responses. |
| Payment Notification Path | For possible future use | Document/TPSMPLLkpRspn/LkpRcrdDtls/PmtNtfctnPth | No | Included for compliance with SPL specifications. Not used in MPL. |
| Registration Timestamp | Date and time by when the element was created or last updated. | Document/TPSMPLLkpRspn/LkpRcrdDtls/RegnTmstmp | Yes | Not present in negative responses. |
| Preference Indicator | Timestamp. For possible future use. | Document/TPSMPLLkpRspn/LkpRcrdDtls/PrefInd | No | Not present in negative responses. |

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**Table 18 – ReachabilityCheckResponse business case**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Type | Always equal to "ReachabilityCheckResponse" | Document/TPSMPLLkpRspn/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Message Identification | Unique identifier of the message | Document/TPSMPLLkpRspn/MsgHdr/MsgId | Yes | |
| Creation Date Time | Date and time by when the element was created | Document/TPSMPLLkpRspn/MsgHdr/CreDtTm | Yes | |
| Original Message Identification | Unique identifier of the processing transaction. Shall be equal to the Message Identification of the relative Look-up request | Document/TPSMPLLkpRspn/MsgHdr/OrgnlBizQry/MsgId | Yes | |
| Original Creation Date Time | Date and time by when the relative Look-up request was created | Document/TPSMPLLkpRspn/MsgHdr/OrgnlBizQry/CreDtTm | Yes | |
| Result | Boolean true/false, indicates whether or not a given proxy could be matched to an IBAN. | Document/TPSMPLLkpRspn/Rspn/Rslt | Yes | |
| Result Details | Not present in positive responses, optional in negative responses. | Document/TPSMPLLkpRspn/Rspn/RsltDtls | No | |
| Originator Scheme Name | For possible future use | Document/TPSMPLLkpRspn/OrgtrSchme/Nm | No | |
| Originator Scheme Identification | For possible future use | Document/TPSMPLLkpRspn/OrgtrSchme/Id/PrvtId/Othr/Id | No | |
| Receiver Scheme Name | For possible future use | Document/TPSMPLLkpRspn/RcvrSchme/Nm | No | |
| Receiver Scheme Identification | For possible future use | Document/TPSMPLLkpRspn/RcvrSchme/Id/PrvtId/Othr/Id | No | |

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### 3.3.1.3. DataMaintenanceCreateRequestMessage

**Table 19 – Data Maintenance Create Request Message**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Identification | Unique transaction identifier | Document/TPSMPLPrxyCretReq/MsgHdr/MsgId | Yes | |
| Requestor Party | BIC of the MPL Participant requesting the creation of the Proxy-IBAN mapping | Document/TPSMPLPrxyCretReq/PrxyDtls/RqstrPtyId/AnyBIC | Yes | |
| Creation Date Time | Timestamp of the request | Document/TPSMPLPrxyCretReq/MsgHdr/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyCretReq/MsgHdr/HshngAlgo | Yes | Only allowed value is “HS25”. |
| Proxy | The proxy, i.e. the digest of the mobile number | Document/TPSMPLPrxyCretReq/PrxyId/PrxyIdr | Yes | |
| Person Identification | Person identifier. | Document/TPSMPLPrxyCretReq/PrxyDtls/PrsnId | Yes | |
| IBAN | Unique identification of the account | Document/TPSMPLPrxyCretReq/PrxyDtls/PrxyAcct/Id/IBAN | Yes | |
| Authorized BIC | BIC configured in TIPS as Beneficiary BIC | Document/TPSMPLPrxyCretReq/PrxyDtls/thrzdBIC/AnyBIC | Yes | |
| Account Owner | Name of the owner of the account | Document/TPSMPLPrxyCretReq/PrxyDtls/AcctOwnr | No | |
| Valid From Date and Time | Date and time by when the operation is valid. | Document/TPSMPLPrxyCretReq/PrxyDtls/VldtyPrd/FrDtTm<br><br>Or<br><br>Document/TPSMPLPrxyCretReq/PrxyDtls/VldtyPrd/FrToDtTm/FrDtTm | No, (if not provided, the system defaults to the current date and time) | The block FromToDateTime must be used when both Valid From Date and Time and Valid To Date and Time are included.<br><br>If only the Valid From Date and Time is provided, the message block FromDateTime must be used. |
| Valid To Date and Time | Date and time by when the operation is not valid anymore. Is equal or greater than the current date and time | Document/TPSMPLPrxyCretReq/PrxyDtls/VldtyPrd/ToDtTm<br><br>Or<br><br>Document/TPSMPLPrxyCretReq/PrxyDtls/VldtyPrd/FrToDtTm/ToDtTm | No | The block FromToDateTime must be used when both Valid From Date and Time and Valid To Date and Time are included.<br><br>If only the Valid To Date and Time is provided, the message block ToDateTime must be used. |
| Preference Indicator | Timestamp. For possible future use. | Document/TPSMPLPrxyCretReq/PrxyDtls/PrefInd | No | |

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### 3.3.1.4. DataMaintenanceUpdateRequestMessage

**Table 20 – Data Maintenance Update Request Message**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Identification | Unique transaction identifier | Document/TPSMPLPrxyUpdReq/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the request | Document/TPSMPLPrxyUpdReq/MsgHdr/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyUpdReq/MsgHdr/HshngAlgo | Yes | Only allowed value is “HS25”. |
| Proxy | The proxy, i.e. the digest of the mobile number | Document/TPSMPLPrxyUpdReq/PrxyId/Prxy/PrxyIdr | Yes | |
| Valid From Date and Time | Timestamp identifying the row to be updated along with the Proxy | Document/TPSMPLPrxyUpdReq/PrxyId/VldFrDtTm | Yes | |
| Person Identification | Person identifier. | Document/TPSMPLPrxyUpdReq/PrxyDtls/PrsnId | No | |
| IBAN | Unique identification of the account | Document/TPSMPLPrxyUpdReq/PrxyDtls/PrxyAcct/Id/IBAN | No | |
| Authorized BIC | BIC configured in TIPS as Beneficiary BIC | Document/TPSMPLPrxyCretReq/PrxyDtls/thrzdBIC/AnyBIC | No | |
| Account Owner Reset | Option used to reset the Account Owner optional information. | Document/TPSMPLPrxyUpdReq/PrxyDtls/AcctOwnr/ModCd | No | Only allowed value is “DELE”. |
| Account Owner | Name of the owner of the account | Document/TPSMPLPrxyUpdReq/PrxyDtls/AcctOwnr/AcctOwnr | No | |
| Valid To Date and Time | Date by when the operation is not valid anymore. Is equal or greater than the current date and time | Document/TPSMPLPrxyUpdReq/PrxyDtls/VldTo | No | |
| Preference Indicator Reset | Option used to reset the Preference Indicator optional information. | Document/TPSMPLPrxyUpdReq/PrxyDtls/PrefInd/ModCd | No | Only allowed value is “DELE”. |
| Preference Indicator | Timestamp. For possible future use. | Document/TPSMPLPrxyUpdReq/PrxyDtls/PrefInd/PrefInd | No | |

### 3.3.1.5. DataMaintenanceDeleteRequestMessage

**Table 21 – Data Maintenance Delete Request Message**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Transaction Identification | Unique transaction identifier | Document/TPSMPLPrxyDelReq/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the request | Document/TPSMPLPrxyDelReq/MsgHdr/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyDelReq/MsgHdr/HshngAlgo | Yes | Only allowed value is “HS25”. |
| Proxy | The proxy, i.e. the digest of the mobile number | Document/TPSMPLPrxyDelReq/PrxyId/Prxy/PrxyIdr | Yes | |
| Valid From Date and Time | Timestamp identifying the row to be deleted along with the Proxy | Document/TPSMPLPrxyDelReq/PrxyId/VldFrDtTm | Yes | |

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### 3.3.1.6. DataMaintenanceResponseMessage

**Table 22 – Data Maintenance Response Message**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Message Identification | Unique message identifier | Document/TPSMPLPrxyStsAdvc/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the response | Document/TPSMPLPrxyStsAdvc/MsgHdr/CreDtTm | Yes | |
| Original Message Identification | Unique identifier of the processing transaction. Shall be equal to the Message Identification of the relative Data Maintenance request | Document/TPSMPLPrxyStsAdvc/MsgHdr/OrgnlBizQry/MsgId | Yes | |
| Original Creation Date Time | Creation timestamp of the processing transaction. Shall be equal to the Creation Date Time of the relative Data Maintenance request | Document/TPSMPLPrxyStsAdvc/MsgHdr/OrgnlBizQry/CreDtTm | Yes | |
| Original Message Name Identification | Message name identification of the original request | Document/TPSMPLPrxyStsAdvc/MsgHdr/OrgnlBizQry/MsgNmId | Yes | As the message is used to report execution for Create, Update and Delete requests, this element include the full message name identifier originating the message (e.g. tmpl.004.001.01). |
| Result | Boolean value to specify if original request has been processed successfully. | Document/TPSMPLPrxyStsAdvc/Rspn/Rslt | Yes | True when the original request has been processed, False otherwise |
| Reason Code | The reason code for non-acceptance of the Data Maintenance Request. | Document/TPSMPLPrxyStsAdvc/Rspn/ErrOrTmstmp/RsnCd/Err/Prtry | No | Present only if “Registered” is filled at “False” |
| Registration Timestamp | Date and time by when the element was created or last updated | Document/TPSMPLPrxyStsAdvc/Rspn/ErrOrTmstmp/RegnTmstmp | No | Present only if “Registered” is filled at “True”. |

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### 3.3.1.7. DataMaintenanceReport

**Table 23 – Data Maintenance Report**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Message Identification | Identifier of the report | Document/TPSMPLPrxyActvtyAdvc/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the report generation | Document/TPSMPLPrxyActvtyAdvc/MsgHdr/CreDtTm | Yes | |
| Business Date | Business date for which the report is generated. In this case the business date is equivalent to the calendar date. | Document/TPSMPLPrxyActvtyAdvc/BizDt | Yes | |
| **Maintenance Request (repeating group)** | | | | |
| Transaction Identification | Identifier of the related maintenance request | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/TxId | Yes | Each item (Rqst1, Rqst2…) corresponds to the maintenance Requests that the MPL Actor Registered in the last calendar day |
| Registration Timestamp | Timestamp of the maintenance request registration | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/RegnTmstmp | Yes | |
| Proxy | The proxy, i.e. the digest of the mobile number | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/PrxyId/Prxy/PrxyIdr | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/PrxyId/Hshnglg | Yes | Only allowed value is “HS25”. |
| Proxy Valid From | Timestamp identifying the Proxy instance which has changed. | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/PrxyId/VldFrDtTm | Yes | |
| **Attributes (repeating group)** | | | | |
| Attribute | Name of the attribute | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/Chng/FldNm | Yes | Each item (Atr1, Atr2 …) corresponds to object of the Proxy-IBAN table impacted by the maintenance Request |
| Before Value | Attribute value before the maintenance request | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/Chng/OdFldVal | Yes | It is set to “-” in case of creation of elements |
| After Value | Attribute value after the maintenance request | Document/TPSMPLPrxyActvtyAdvc/PrxyActvty/Chng/NewFldVal | Yes | It is set to “-” in case of deletion of elements |
| **Attributes (end repeating group)** | | | | |
| **Maintenance Request (end repeating group)** | | | | |

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### 3.3.1.8. PersonalDataRetrievalRequest

**Table 24 – Personal Data Retrieval Request**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Message Identification | Unique transaction identifier | Document/TPSMPLPrxyQry/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the request | Document/TPSMPLPrxyQry/MsgHdr/CreDtTm | Yes | |
| Request Type | Always equal to “PersonalDataRetrievalRequest” | Document/TPSMPLPrxyQry/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyQry/MsgHdr/HshngAlgo | Yes | Only allowed value is “HS25”. |
| Requestor Party | BIC of the MPL Participant requesting the query of the personal data. | Document/TPSMPLPrxyQry/QryDtls/RqstrPty/AnyBIC | Yes | |
| Proxy Search Criterion | Used to query with a Proxy digest. | Document/TPSMPLPrxyQry/QryDtls/SchCrit/PrxyId | No | Either Proxy or Person search criteria shall be used. |
| Person Search Criterion | Used to query with a Person Identification digest. | Document/TPSMPLPrxyQry/QryDtls/SchCrit/PrsnId | No | Either Proxy or Person search criteria shall be used. |
| Originator Scheme Name | For possible future use | Document/TPSMPLPrxyQry/QryDtls/OrgtrSchme/Nm | No | |
| Originator Scheme Identification | For possible future use | Document/TPSMPLPrxyQry/QryDtls/OrgtrSchme/Id/PrvtId/Othr/Id | No | |
| Receiver Scheme Name | For possible future use | Document/TPSMPLPrxyQry/QryDtls/RcvrSchme/Nm | No | |
| Receiver Scheme Identification | For possible future use | Document/TPSMPLPrxyQry/QryDtls/RcvrSchme/Id/PrvtId/Othr/Id | No | |

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### 3.3.1.9. PersonalDataRetrievalResponse

**Table 25 – Personal Data Retrieval Response**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Message Identification | Unique transaction identifier | Document/TPSMPLPrxyRspn/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the response. | Document/TPSMPLPrxyRspn/MsgHdr/CreDtTm | Yes | |
| Request Type | Always equal to "PersonalDataRetrievalResponse" | Document/TPSMPLPrxyRspn/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Original Message Identification | Message Identification of the related query. | Document/TPSMPLPrxyRspn/MsgHdr/OrgnlBizQry/MsgId | Yes | |
| Original Creation Date Time | Creation timestamp of the related query. | Document/TPSMPLPrxyRspn/MsgHdr/OrgnlBizQry/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyRspn/MsgHdr/HshngAlgo | Yes | Only allowed value is "HS25". |
| Proxy | The proxy, i.e. the digest of the mobile number | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyId | Yes | |
| Originator Scheme Name | For possible future use | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/OrgtrScheme/Nm | No | |
| Originator Scheme Identification | For possible future use | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/OrgtrScheme/Id/PrvtId/Othr/Id | No | |
| Receiver Scheme Name | For possible future use | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/RcvrScheme/Nm | No | |
| Receiver Scheme Identification | For possible future use | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/RcvrScheme/Id/PrvtId/Othr/Id | No | |
| Requestor Party | BIC of the MPL Actor which uploaded the element of the mapping table. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/RqstrPtyId/AnyBIC | Yes | |
| Person Identification | Person identifier. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/PrsnId | Yes | |
| IBAN | Unique identification of the account | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/PrxyAcct/Id/IBAN | Yes | |
| Authorized BIC | BIC configured in TIPS as Beneficiary BIC | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/thrzdBIC/AnyBIC | Yes | |
| Account Owner | Name of the owner of the account | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/AcctOwnr | No | |
| Valid From/To Date and Time | Validity period for the reported Proxy. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/VldtyPrd/FrToDtTm | Yes | |
| Preference Indicator | Timestamp. For possible future use. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/PrxyRpt/PrxyDtls/PrefInd | No | |

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**Table 26 – Personal Data Retrieval Response – Error Scenario**

| Reference Name | Description | XML path | Mand. | MPL Usage |
|---|---|---|---|---|
| Message Identification | Unique transaction identifier | Document/TPSMPLPrxyRspn/MsgHdr/MsgId | Yes | |
| Creation Date Time | Timestamp of the response. | Document/TPSMPLPrxyRspn/MsgHdr/CreDtTm | Yes | |
| Request Type | Always equal to “PersonalDataRetrievalResponse” | Document/TPSMPLPrxyRspn/MsgHdr/ReqTp/Prtry/Id | Yes | |
| Original Message Identification | Message Identification of the related query. | Document/TPSMPLPrxyRspn/MsgHdr/OrgnlBizQry/MsgId | Yes | |
| Original Creation Date Time | Creation timestamp of the related query. | Document/TPSMPLPrxyRspn/MsgHdr/OrgnlBizQry/CreDtTm | Yes | |
| Hashing Algorithm | Algorithm used for creating digests, | Document/TPSMPLPrxyRspn/MsgHdr/HshngAlgo | Yes | Only allowed value is “HS25”. |
| Error Code | Error code to be reported. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/OprlErr/Err/Prtry | Yes | If no data are retrieved, value is “X050”. |
| Error Description | Description of the error to be reported. | Document/TPSMPLPrxyRspn/PrxyRptOrErr/OprlErr/Desc | No | |

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# 4. Appendices

## 4.1. Business Rules

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| Business process | BR Name | Check ID | Input Fields and parameters | Business check | Error code | Error description |
|---|---|---|---|---|---|---|
| All | Authorisation check | 002 | Sender<br>User Role Entity | The DN of the Message sender is assigned the correct Privilege, through a User-Role relationship, to perform the intended action. | DS14 | The user is unknown on the server |
| Look-up | Proxy-IBAN Lookup | 101 | Alias beneficiary<br>Proxy Digest<br>Valid From | The Proxy-IBAN Mapping table contains exactly one entry with the following attributes:<br>- "Proxy" field equal to the "Alias beneficiary" provided in the Look-up request<br>- "Valid From" equal to or earlier than the current date<br>- "Valid To" equal to or later than the current date | NMMD | No matching element was found. |
| Data Maintenance Create | Requestor Party Check | 301 | DataMaintenanceCreateRequestMessage – Requestor Party | The system checks that the requestor is authorised to create the Proxy-IBAN mapping instance.<br>For Create requests, the requestor DN must be authorised to perform Create operations with the correct privilege on the Party identified by the Requestor Party in the DataMaintenanceCreateRequestMessage.<br>If the requestor DN belongs to a Central Bank Party, the specified Requestor Party BIC must identify a Party that belongs to the same Central Bank. | E301 | Requestor not authorised for the specified Party. |
| Data Maintenance Update and Data Maintenance Delete | Proxy-IBAN Party Check | 302 | Proxy-IBAN Mapping Table – MPL Participant Identifier | The system checks that the requestor is authorised to update or delete the Proxy-IBAN mapping instance.<br>For Update and Delete requests, the requestor DN must be authorised to perform such operations with the correct privilege on the Party identified by the MPL Participant Identifier in the Proxy-IBAN Mapping Table row in question.<br>If the requestor DN belongs to a Central Bank Party, the MPL Participant Identifier must identify a Party that belongs to the same Central Bank. | E302 | Requestor not authorised for the specified Proxy-IBAN Mapping Table entry. |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Data Maintenance Update and Data Maintenance Delete | Proxy-IBAN existence Check | 303 | DataMaintenanceRequest – Proxy<br>DataMaintenanceRequest – Valid From Date and Time<br><br>Proxy-IBAN Mapping Table – Proxy<br>Proxy-IBAN Mapping Table – Valid From Date and Time | The Proxy-IBAN Mapping table contains exactly one entry with the following attributes:<br>- "Proxy" field equal to the "Proxy" provided in the DataMaintenance Request<br>- "Valid From Date and Time" equal to the "Valid From Date and Time" provided in the DataMaintenance Request | E303 | Proxy not existing |
| Data Maintenance Create | Valid From Check | 304 | DataMaintenanceCreateRequestMessage. – Valid From | The Valid From timestamp must be equal to or greater than the current timestamp. | E304 | Valid From invalid |
| Data Maintenance Create and Data Maintenance Update | Valid To Check | 305 | DataMaintenanceRequest – Valid To<br>DataMaintenanceRequest – Valid From<br>Proxy-IBAN Mapping Table – Valid From | The Valid To timestamp must be equal to or greater than the Valid From, whether the latter is specified in the DataMaintenanceCreateRequestMessage or already defined in the Proxy-IBAN Mapping table.<br><br>The Valid To timestamp must furthermore be equal to or greater than the current timestamp. | E305 | Valid To invalid |
| Data Maintenance Delete | Expiration Check | 306 | Proxy-IBAN Mapping Table – Valid From<br>Proxy-IBAN Mapping Table – Valid To | A Proxy-IBAN Mapping Table row can be deleted when its Valid From timestamp is later than the current timestamp or its Valid To timestamp is earlier than the current timestamp. | E306 | Proxy-IBAN Mapping table entry not expired |
| Data Maintenance Create and Data Maintenance Update | Duplication Check | 307 | DataMaintenanceRequest – Proxy<br>DataMaintenanceRequest – Valid From<br>DataMaintenanceRequest – Valid To<br>Proxy-IBAN Mapping Table – Proxy<br>Proxy-IBAN Mapping Table – Valid From<br>Proxy-IBAN Mapping Table – Valid To | The same Proxy cannot be referenced in more than one Proxy-IBAN Mapping Table entry over the same validity period (defined by the respective Valid From and Valid To timestamps). | E307 | Proxy already defined |
| Personal Data Retrieval Request | Proxy digest Retrieval Check | 308 | Proxy Digest | The Proxy-IBAN Mapping table contains at least one entry with the following attributes:<br>- "Proxy Digest" field equal to the "Proxy Search Criterion" Personal Data Retrieval Request | X050 | Personal Data not found. |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Personal Data Retrieval Request | Person ID Retrieval Check | 308 | Person ID | The Proxy-IBAN Mapping table contains at least one entry with the following attributes:<br>- "Person ID" field equal to the "Proxy Search Criterion" Personal Data Retrieval Request | X050 | Personal Data not found. |

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## 4.2. List of error codes

The table below contains the exhaustive list of error codes generated by MPL for errors detected during the validation process.

| Error code | Error description |
|---|---|
| DS14 | The user is unknown on the server |
| NMMD | No matching element was found. |
| E201 | Proxy not reachable. |
| E301 | Requestor not authorised. |
| E302 | Requestor not authorised for the specified Proxy-IBAN Mapping Table entry. |
| E303 | Proxy not existing |
| E304 | Valid From invalid |
| E305 | Valid To invalid |
| E306 | Proxy-IBAN Mapping table entry not expired |
| E307 | Proxy already defined |
| X050 | Personal Data not found |

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## 4.5. List of acronyms

| Item | Description |
|---|---|
| 24/7/365 | 24-hour and seven-day around the year |
| A2A | Application-to-Application |
| BIC | Business Identifier Code |
| CET | Central European Time |
| CRDM | Common Reference Data Management |
| DN | Distinguished Name |
| EPC | European Payments Council |
| ESMIG | Eurosystem Single Market Infrastructure Gateway |
| GUI | Graphical User Interface (see U2A) |
| IBAN | International Bank Account Number |
| NCB | National Central Bank |
| NRO | Non-Repudiation of Origin |
| NSP | Network Service Provider |
| SEPA | Single Euro Payments Area |
| TIPS | TARGET Instant Payment Settlement |
| U2A | User-to-Application |
| UDFS | User Detailed Functional Specifications |
| XML | Extensible Mark-up Language |

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