Functional Specifications of Latvijas Banka's Proxy Registry "Instant Links"

Published on: April 27, 2021

Changes implemented on: June 1, 2021

Riga

Contents

The terms used in the Functional Specifications of Latvijas Banka's Proxy Registry "Instant Links" are consistent with the terms used in Appendix 1 "Rules for the Use of the Proxy Registry "Instant Links"" to Procedure No. 279/3 "Latvijas Banka's Procedure for the Use of the Proxy Registry "Instant Links"" of the Council of Latvijas Banka of 20 September 2018 (hereinafter - Rules for the Use of the Proxy Registry "Instant Links") and their explanations.

1. Linking IBANs to identifiers[1]

Services of the Registry are provided to all participants of the electronic clearing system of Latvijas Banka (hereinafter, the EKS), as well as to entities which have applied for using the Registry and have received consent of Latvijas Banka in compliance with the procedure established by the Rules for the Use of the Proxy Registry "Instant Links". The purpose of the Registry is to ensure a possibility of look-up of the IBAN and BIC corresponding to the mobile phone number or another identifier (hereinafter jointly, identifier) in order to make the initiation and making of instant payments, other SEPA credit transfers or other payments easier. The Registry contains information about the identifiers, IBANs and the related information of the customers of the Registry users and other institutions that meet the conditions for inclusion the information in the Registry established by the Rules for the Use of the Proxy Registry "Instant Links".

The operation of the Registry is based on an exchange of XML messages between the Registry and the Registry users.

The following XML messages shall be used:
1. Information request message;
2. Reply message to information request message;
3. Information request rejection message;
4. New information submission message;
5. Confirmation message of information entry;
6. Request message for information removal from the Registry;
7. Confirmation message of information removal from the Registry;
8. Notification message on information removal from the Registry due to a new information entry;
9. Notification message on new information entry in the Registry;
10. Notification message on information deletion from the Registry;
11. Reply message to an incoming message not compliant with the scheme.

Each message shall be sent separately. Part of the messages shall be sent as electronically signed messages (see Section 6.). Message exchange between the Registry user and the Registry shall be separated for each individual registered BIC.
Messages between the Registry user and the Registry shall be exchanged using the web service via the *Advanced Message Queuing Protocol* (AMQP).

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[1] Currently, only mobile phone numbers are used as identifiers in the Registry. Prior to starting to use any other identifiers, a Registry user and Latvijas Banka shall agree on the format of the new identifier and supplement these specifications accordingly.

2. Message processing procedures

Message flows and their descriptions have been included in this section for reference only.

2.1. Successful information request to the Registry and initiation of a payment
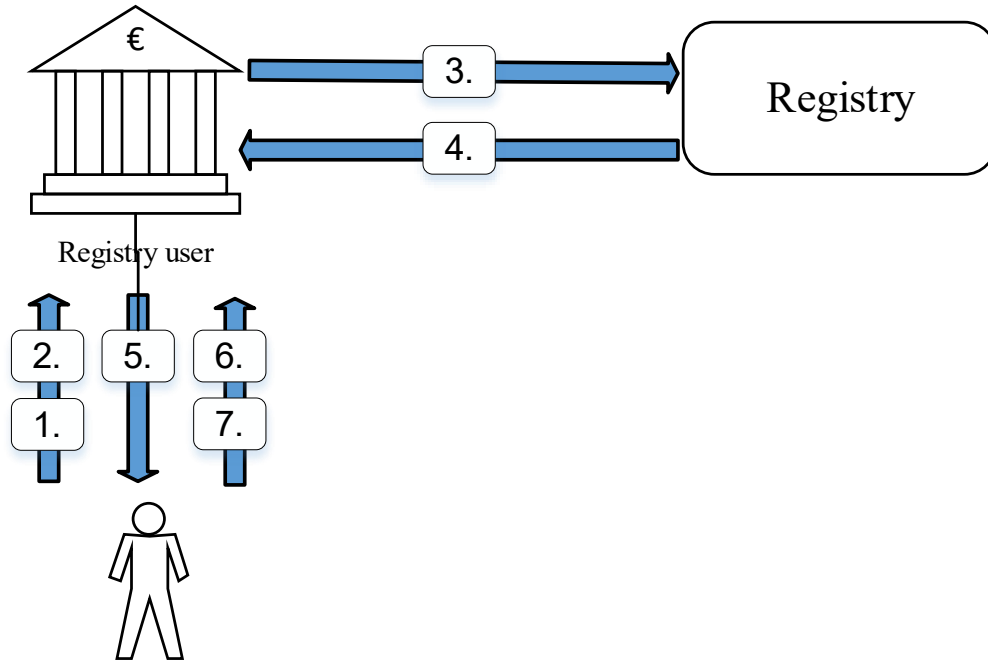
Registry user

Registry user's customer

1. A Registry user's customer fills in information about the beneficiary in the payment application, indicating the identifier of the beneficiary.
2. A request for the IBAN corresponding to the specified identifier is sent to the Registry user (Latvijas Banka does not set any format requirements).
3. A Registry user sends an information request message to the Registry.
4. The Registry sends a reply to the information request message containing the requested information to the Registry user.
5. The Registry user forwards the information on the IBAN corresponding to the identifier received from the Registry to the submitter of the request.
6. In the payment application, the respective payment elements are filled with the beneficiary's data.
7. The Registry user's customer initiates a payment in the payment application.

2.2. The requested information not found in the Registry
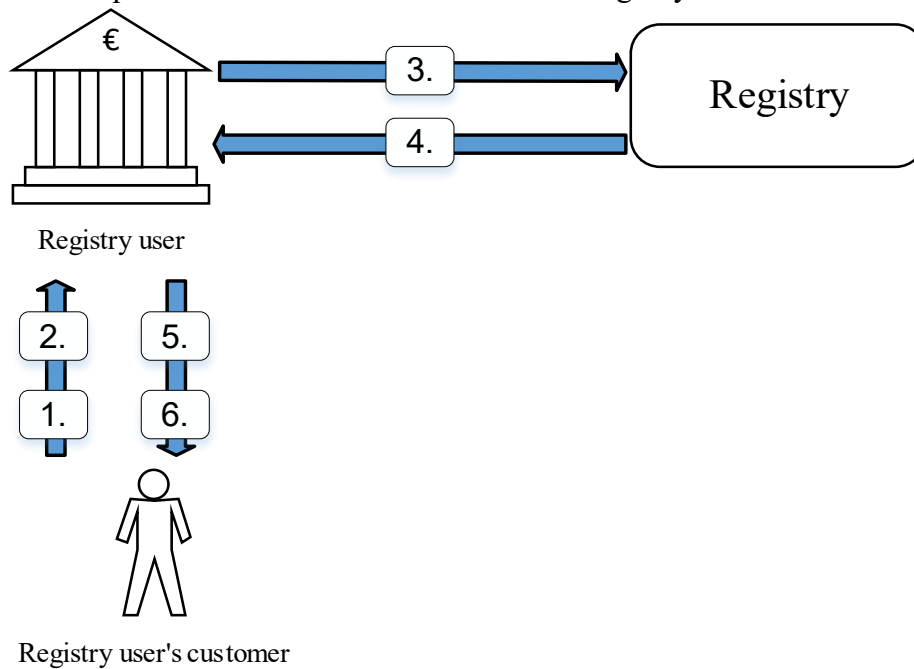
Registry user

Registry user's customer

1. A Registry user's customer fills in information about the beneficiary in the payment application, indicating the identifier of the beneficiary.
2. A request for the IBAN corresponding to the specified identifier is sent to the Registry user (Latvijas Banka does not set any format requirements).
3. A Registry user sends an information request message to the Registry.
4. The Registry sends an information request rejection message to the Registry user indicating that the requested information has not been found.
5. The Registry user forwards the information received from the Registry to the submitter of the request.
6. The Registry user's customer can see in the payment application that no corresponding information has been found for the indicated identifier and another identifier can be specified or the beneficiary's IBAN can be indicated.

3. General instructions for generating messages

3.1. Character encoding

UTF-8 encoding is used for character encoding with a respective reference in the XML file header.

Example:
```
<?xml version="1.0" encoding="UTF-8">
```

The Registry processes all UTF-8 characters without verifying what character sets are supported by each Registry user.

3.2. Indication of a mobile phone number

In all messages where the mobile phone number is required, the mobile phone number shall be stated in a separate element <PhoneNum> and the country code of the mobile phone number shall be stated in a separate element <CountryCode>.

4. Messages

4.1. Information request message

To receive the IBAN corresponding to the specified mobile phone number, the Registry user shall send an information request message.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ <IBANRqst>		IBAN request
2.	[1..1]	├─ <MsgId>	X	Message identifier
3.	[1..1]	├─ <SndgInst>	X	Sending institution's BIC
4.	[1..1]	├─ <ClientId>	X	Unique identifier of the Registry user's customer.
5.	[1..1]	├─ <MsgType>	Code "GET"	Message type specification; only code "GET" is allowed
6.	[1..1]	└┬ <IBANItem>		
7.	[0..1]	├─ <CountryCode>	X	Country code of the mobile phone number
8.	{Or	├─ <PhoneNum>	X	Mobile phone number
9.	Or}	└─ <IBAN>	X	IBAN

4.2. Reply message to information request message

Upon receiving the information request message referred to in Paragraph 4.1. herein, the Registry shall process it and send a reply message containing information about the IBAN corresponding to the specified phone number.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ <IBANInfo>		
2.	[1..1]	├─ <MsgId>	X	Message indentifier
3.	[1..1]	├─ <RelMsgId>	X	Identifier of the information request message which the current message replies to
4.	[1..1]	├─ <MsgType>	Code "GET"	Message type specification; only code "GET" is allowed
5.	[1..1]	├─ <MsgStatus>	Code "ACCP"	Message status code – the message has been accepted and processed
6.	[1..1]	├─ <MsgCode>	Code "ACCP"	If accepted, the value shall always be "ACCP"
7.	[1..1]	└┬ <IBANItems>		
8.	[1..1]	└┬ <IBANItem>		
9.	[1..1]	├─ <BIC>	X	BIC of the institution servicing the account
10.	[1..1]	├─ <IBAN>	X	IBAN
11.	[1..1]	├─ <CountryCode>	X	Country code of the mobile phone number
12.	[1..1]	├─ <PhoneNum>	X	Mobile phone number
13.	[1..1]	├─ <Name>	X	Name of the legal person or name and surname of the natural person
14.	[1..1]	└─ <AccDtTm>	X	Date when the entry takes effect

4.3. Information request rejection message

When it is impossible to provide the Registry user with the information requested in an information request message, the Registry shall send the information requester an information request rejection message.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ `<IBANInfo>`		
2.	[1..1]	├─ `<MsgId>`	X	Message indentifier
3.	[1..1]	├─ `<RelMsgId>`	X	Identifier of the information request message which the current message replies to
4.	[1..1]	├─ `<MsgType>`	Code "GET"	Message type specification; only code "GET" is allowed
5.	[1..1]	├─ `<MsgStatus>`	Code "RJCT"	Message status code – the message has been rejected
6.	[1..1]	└─ `<MsgCode>`	Code	Code of the reason for rejection (Paragraph 8. 5)

4.4. New information submission message

To submit a new link of a mobile phone number and the IBAN, a Registry user shall send a new information submission message.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ `<IBANRqst>`		
2.	[1..1]	├─ `<MsgId>`	X	Message indentifier
3.	[1..1]	├─ `<SndgInst>`	X	Sending institution's BIC
4.	[1..1]	├─ `<MsgType>`	Code "PUT"	Message type specification; only code "PUT" is allowed
5.	[1..1]	└┬ `<IBANItem>`		
6.	[1..1]	├─ `<BIC>`	X	BIC of the institution servicing the account
7.	[1..1]	├─ `<IBAN>`	X	IBAN
8.	[1..1]	├─ `<CountryCode>`	X	Country code of the mobile phone number
9.	[1..1]	├─ `<PhoneNum>`	X	Mobile phone number
10.	[1..1]	└─ `<Name>`	X	Name of the legal person or name and surname of the natural person

To modify the information entered in the Registry, a Registry user shall submit a new information submission message.

4.5. Confirmation message of information entry

The Registry shall send confirmation message of information entry to confirm the inclusion of the new link of a mobile phone number and the IBAN to the Registry according to the new information submission message.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ `<IBANInfo>`		
2.	[1..1]	├─ `<MsgId>`	X	Message indentifier

No.	Usage	Element			Format	Description
3.	[1..1]		├── `<RelMsgId>`		X	Identifier of the new information submission message which the current message replies to
4.	[1..1]		├── `<MsgType>`		Code "PUT"	Message type specification; only code "PUT" is allowed
5.	[1..1]		├── `<MsgStatus>`		Code "ACCP"	Message status code – the message task has been implemented
6.	[1..1]		├── `<MsgCode>`		Code "ACCP"	If accepted, the value shall always be "ACCP"
7.	[1..1]	├┬ `<IBANItems>`				
8.	[1..1]		└┬ `<IBANItem>`			
9.	[1..1]			├── `<BIC>`	X	BIC of the institution servicing the account
10.	[1..1]			├── `<IBAN>`	X	IBAN
11.	[1..1]			├── `<PhoneNum>`	X	Mobile phone number
12.	[1..1]			├── `<CountryCode>`	X	Country code of the mobile phone number
13.	[1..1]			├── `<Name>`	X	Name of the legal person or name and surname of the natural person
14.	[1..1]			└── `<AccDtTm>`	X	Date when the entry takes effect

4.6. Request message for information removal from the Registry

To request that the relevant link of a mobile phone number and the IBAN is not available to the Registry users anymore, the Registry user shall send a request message for information removal from the Registry.

No.	Usage	Element		Format	Description
1.	[1..1]	└┬ `<IBANRqst>`			
2.	[1..1]		├── `<MsgId>`	X	Message indentifier
3.	[1..1]		├── `<SndgInst>`	X	Sending institution's BIC
4.	[1..1]		├── `<MsgType>`	Code "DELETE"	Message type specification; only code "DELETE" is allowed
5.	[1..1]		└┬ `<IBANItem>`		
6.	[1..1]			├── `<CountryCode>`	X	Country code of the mobile phone number
7.	[1..1]			└── `<PhoneNum>`	X	Mobile phone number

4.7. Confirmation message on information removal from the Registry

The Registry shall send a confirmation message on information removal from the Registry to confirm that the relevant link of a mobile phone number and the IBAN is removed from the Registry according to the request message for information removal from the Registry and is not available to the Registry users anymore.

No.	Usage	Element		Format	Description
1.	[1..1]	└┬ `<IBANInfo>`			
2.	[1..1]		├── `<MsgId>`	X	Message indentifier
3.	[1..1]		├── `<RelMsgId>`	X	Identifier of the request message for information removal from the Registry which the current message replies to.

No.	Usage	Element	Format	Description
4.	[1..1]	├─ <MsgType>	Code "DELETE"	Message type specification; only code "DELETE" is allowed
5.	[1..1]	├─ <MsgStatus>	Code "ACCP"	Message status code – the message task has been implemented
6.	[1..1]	├─ <MsgCode>	Code "ACCP"	If accepted, the value shall always be "ACCP"
7.	[1..1]	└┬ <IBANItems>		
8.	[1..1]	└┬ <IBANItem>		
9.	[1..1]	├─ <BIC>	X	BIC of the institution servicing the account
10.	[1..1]	├─ <IBAN>	X	IBAN
11.	[1..1]	├─ <PhoneNum>	X	Mobile phone number
12.	[1..1]	├─ <CountryCode>	X	Country code of the mobile phone number
13.	[1..1]	├─ <Name>	X	Name of the legal person or name and surname of the natural person
14.	[1..1]	└─ <AccDtTm>	X	Date when the entry takes effect

4.8. Notification message on information removal from the Registry due to a new information entry

If a new information submission message has been submitted to the Registry and the mobile phone number specified in the message has already been entered in the Registry, a notification message on information removal from the Registry due to a new information entry shall be sent to the Registry user who had previously submitted that information.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ <IBANOwn>		
2.	[1..1]	├─ <MsgId>	X	Message indentifier
3.	[1..1]	├─ <MsgType>	Code "OWN"	Message type specification; only code "OWN" is allowed
4.	[1..1]	└┬ <IBANItems>		
5.	[1..1]	└┬ <IBANItem>		
6.	[1..1]	├─ <CountryCode>	X	Country code of the mobile phone number
7.	[1..1]	├─ <PhoneNum>	X	Mobile phone number
8.	[1..1]	└─ <AccDtTm>		Date and time when the changes take effect

4.9. Notification message on new information entry in the Registry

If a new information submission message has been submitted to the Registry, a notification message on new information entry in the Registry shall be sent to the Registry user who has marked the option of receiving such a message in the Application Form for the Use of the Registry.

No.	Usage	Element	Format	Description
1.	[1..1]	└┬ <IBANOwn>		
2.	[1..1]	├─ <MsgId>	X	Message indentifier

No.	Usage	Element			Format	Description
3.	[1..1]		└─	`<MsgType>`	Code "NEW"	Message type specification; only code "NEW" is allowed
4.	[1..1]	└┬	`<IBANItems>`			
5.	[1..1]	└┬	`<IBANItem>`			
6.	[1..1]		├─	`<CountryCode>`	X	Country code of the mobile phone number
7.	[1..1]		├─	`<PhoneNum>`	X	Mobile phone number
8	[1..1]		└─	`<AccDtTm>`	X	Date and time when the changes take effect

4.10. Notification message on information deletion from the Registry

If a request message on information removal from the Registry has been submitted to the Registry, a notification message on information deletion from the Registry shall be sent to the Registry user who has marked the option of receiving such a message in the Application Form for the Use of the Registry.

No.	Usage	Element			Format	Description
1.	[1..1]	└┬	`<IBANOwn>`			
2.	[1..1]		├─	`<MsgId>`	X	Message indentifier
3.	[1..1]		├─	`<MsgType>`	Code "DEL"	Message type specification; only code "DEL" is allowed
4.	[1..1]	└┬	`<IBANItems>`			
5.	[1..1]	└┬	`<IBANItem>`			
6.	[1..1]		├─	`<CountryCode>`	X	Country code of the mobile phone number
7.	[1..1]		├─	`<PhoneNum>`	X	Mobile phone number
8.	[1..1]		└─	`<AccDtTm>`	X	Date and time when the changes take effect

4.11. Reply message to an incoming message not compliant with the scheme

Where a message that is not compliant with the message scheme has been received from a Registry user, a rejection message is sent in reply to this erroneous message informing that the message cannot be processed.

No.	Usage	Element		Format	Description
1.	[1..1]	└┬	`<FastCrptMsg>`		
2.	[1..1]	├─	`<MsgId>`	X	Message identifier.
3.	[1..1]	├─	`<RelMsgId>`	X	Identifier of the incoming message which the current message replies to.
4.	[1..1]	├─	`<CreDtTm>`	X	Date and time of message creation.
5.	[1..1]	└─	`<MsgErrCode>`	X	Always the value "INVSCHEMA".

5. Message uniqueness validation rules

When receiving messages on modifications in the Registry, the Registry shall make duplicate message detection checks. If in the newly submitted message all data used in the duplication checks are identical to those in a previously received message, the newly submitted message shall be rejected.

No.	Description
1.	Date of receiving the message in the Registry
2.	Sending institution's BIC
3.	Message indentifier
4.	Message type

6. Electronically signed messages

The following messages shall be signed electronically by a Registry user:
– new information submission message;
– request message for information removal from the Registry.

The Registry shall sign electronically a reply message to an information request message.

For signing messages, the Registry user shall use the signing keys of the advanced security system user provided by Latvijas Banka. To verify the signature, the public part of the certificate shall be included in the signature attributes. An XML document signing scheme, recommended by World Wide Web Consortium (W3C), shall be used for signing. The entire message shall be signed, incorporating the signature in the message content. When verifying the signature, the signature part shall not be included in the message checksum calculation.

Message signature contents:

```
<Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
  <SignedInfo>
    <CanonicalizationMethod
        Algorithm="http://www.w3.org/TR/2001/REC-xml-c14n-20010315"/>
    <SignatureMethod
        Algorithm="http://www.w3.org/2001/04/xmldsig-more#ecdsa-
sha256"/>
    <Reference URI=">
    <Transforms>
<Transform Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-
signature" />   </Transforms>
    <DigestMethod Algorithm=" http://www.w3.org/2001/04/xmlenc#sha256"/>
    <DigestValue></DigestValue>
  </Reference>
</SignedInfo>
<SignatureValue></SignatureValue>
<KeyInfo>
<X509Data>
    <X509Certificate></X509Certificate>
</X509Data>
</KeyInfo>
</Signature>
```

Description of mandatory elements of the signature

Element	Attributes	Description
CanonicalizationMethod	Algorithm="http://www.w3.org/TR/2001/REC-xml-c14n-20010315"	The following shall be indicated: http://www.w3.org/TR/2001/REC-xml-c14n-20010315.
SignatureMethod	Algorithm="http://www.w3.org/2001/04/xmldsig-more#ecdsa-sha256"	Indicates the signature algorithm. Jānorāda: http://www.w3.org/2001/04/xmldsig-more#ecdsa-sha256.

Reference	URI="	Defines the reference to the message section to be signed; as the entire message will be signed and the signature will be added after signing, URI=" shall be indicated.
Transform	Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"	Jānorāda pārskata pievienošanas metode: http://www.w3.org/2000/09/xmldsig#enveloped-signature.
DigestMethod	Algorithm=" http://www.w3.org/2001/04/xmlenc#sha256"	Indicates the checksum calculation algorithm. http://www.w3.org/2001/04/xmlenc#sha256 shall be indicated.
DigestValue		Indicates the message checksum. The value shall be indicated in base64 encoding.
SignatureValue		Indicates the digital signature of the message. The value shall be indicated in base64 encoding.
X509Certificate		Indicates the certificate used for signing the message. The value shall be indicated in base64 encoding.

7. List of all mobile phone numbers included in the Registry

The Registry offers any Registry user a possibility to receive the list of all mobile phone numbers entered in the Registry. Every day at 8.00 a.m., the Registry shall send the list of all mobile phone numbers registered in the Registry to the Registry user, who has marked the option of receiving such a list in the Application Form for the Use of the Registry, using the method marked in the Application Form for the Use of the Registry.

7.1. File names

The list of all mobile phone numbers registered in the Registry shall be sent as a compressed ZIP file to the Registry user, who in the Application Form for the Use of the Registry has marked the option of receiving the list in file format via the file exchange service.
A unique name shall be assigned to this file in the format ccdddnnnn.ext, where:
cc – file type "SP";
ddd – the date expressed as a number of days from the beginning of the current year (e.g. 1 January shall be "001", 25 February shall be "056");
nnnn – file sequence number on the respective value date;
ext – extension of a compressed file (".zip");

7.2. Web service message format

The list of all mobile phone numbers registered in the Registry shall be sent as a compressed ZLIB message to the Registry user, who has marked the option of receiving the list via the web service in the Application Form for the Use of the Registry. The message shall be structured according to the table referred to in this Paragraph, the message of the list of all mobile phone numbers shall be ZLIB compressed and placed in the <Body> element; after that the entire message shall be signed electronically.

No.	Usage	Element	Format	Description
1.	[1..1]	└─ <LBData>		
2.	[1..1]	└─ <Header>		
3.	[1..1]	── <SenderReference>	X	Message indentifier
4.	[1..1]	── <MessageIdentifier>	X	Message type; "SP" shall be indicated.
5.	[1..1]	── <Format>	X	Message format; "XML" shall be indicated.
6.	[1..1]	── <Timestamp>	X	Date and time when the message was created.
7.	[1..1]	── <Sender>	X	BIC of Latvijas Banka (LACBLV2X)
8.	[1..1]	── <Receiver>	X	BIC of the receiving institution.
9.	[1..1]	── <Service>	X	System code indicator; "FEKS" shall be indicated.
10.	[1..1]	└─ <Body>	X	ZLIB compressed message listing all mobile phone numbers in base64 encoding.

7.3. The list of mobile phone numbers

The list of mobile phone numbers shall be structured as follows:

No.	Usage	Element	Format	Description
1.	[1..1]	└─ <FastIBANPhoneList>		
2.	[1..1]	── <CreDtTm>	X	Date and time when the message was created.
3.	[1..1]	└─ <PhoneItems>		
4.	[1..n]	└─ <PhoneItem>		
5.	[1..1]	── <CountryCode>	X	Country code of the mobile phone number.
6.	[1..1]	└─ <PhoneNum>	X	Mobile phone number

8. Data formats

8.1. MessageIdentification <MsgId>

Data type	Max36Text
Format	maxLength: 36 minLength: 1 Space is not allowed.

8.2. RelatedMessageIdentification <RelMsgId>

Data type	Max36Text
Format	maxLength: 36 minLength: 1 Space is not allowed.

8.3. BIC <BIC>

Data type	BICIdentifier
Format	[A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1}

8.4. IBAN \<IBAN\>

Data type	IBANIdentifier
Format	[A-Z]{2,2}[0-9]{2,2}[a-zA-Z0-9]{1,30}

8.5. PhoneNum \<PhoneNum\>

Data type	phoneType
Format	[^\+[0-9]{11}

8.6. CountryCode \<CountryCode\>

Data type	CountryCode
Format	[0-9]{1,4}

8.7. Name \<Name\>

Data type	Max140Text
Format	maxLength: 140 minLength: 1

8.8. MessageType \<MsgType\>

Data type	Code
Notes	Only the codes permitted in the respective message are allowed ("GET", "DEL", "DELETE", "NEW", "OWN", "PUT").

8.9. MessageStatus \<MsgStatus\>

Data type	Code
Notes	Only the codes permitted in the respective message are allowed ("ACCP", "RJCT").

8.10. MessageCode \<MsgCode\>

Data type	Code
Notes	Only the listed codes are allowed (see Paragraph 8.5).

8.11. SendingInstitution \<SndgInst\>

Data type	BICIdentifier
Format	[A-Z]{6,6}[A-Z2-9][A-NP-Z0-9]([A-Z0-9]{3,3}){0,1}

8.12. ClientId \<ClientId\>

Data type	Max60Text
Format	maxLength: 60 minLength: 1

8.13. AccDtTm \<AccDtTm\>

Data type	ISODateTime