

Data distribution – Schemas – Messages 2020

Incomes Register Unit

Version history

Version	Date	Description
1.0	6/11/2019	Document for 2020 published. Contents of the document correspond to the document for 2019.



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1 GENERAL

1.1 Schema

Messages are distributed from the Incomes Register using the **MessagesFromIR** schema.

The namespaces of the schema are as follows:

File name	Prefix	Namespace
	xmlns:xs	http://www.w3.org/2001/XMLSchema
MessagesFromIR.xsd	xmlns:mfir	http://www.tulorekisteri.fi/2017/1/MessagesFromIR
MessagesFromIRTypes.xsd	xmlns:msfirt	http://www.tulorekisteri.fi/2017/1/MessagesFromIRTypes
IRCommonTypes.xsd	xmlns:irct	http://www.tulorekisteri.fi/2017/1/IRCommonTypes
StatusMessageTypes.xsd	xmlns:smt	http://www.tulorekisteri.fi/2017/1/StatusMessageTypes
xmldsig-core-schema.xsd	xmlns:ds	http://www.w3.org/2000/09/xmldsig#

Empty elements are not allowed in the messages. If an element receives no value, the element is left out of the message entirely. Empty character strings are also not allowed, i.e., the minimum length of all values is 1.

1.2 Character set

The schemas of the Incomes Register use UTF-8, which is the default character set of XML. The file must not contain the Byte Order Mark (BOM) character.

The following table presents the requirements for the conversion of special characters appearing in messages.

Character	Description	Presentation format as an entity
&	ampersand	& conversion is mandatory
<	less than	< conversion is mandatory
>	greater than	> conversion is not mandatory, but conforms with best practices
'	apostrophe	' conversion is not mandatory, but conforms with best practices
"	quotation mark	" conversion is not mandatory, but conforms with best practices
--	double hyphen	This character must not appear in an XML file
/*	slash asterisk	This character must not appear in an XML file
&#	ampersand hash	This character must not appear in an XML file

A limited character set is allowed for **reference data**. The allowed characters for the reference data listed below are the numbers 0-9, the letters a-z and A-Z and the symbols " _ " and "-".

- Record owner's record reference (DeliveryId)
- Payer's report reference (ReportId)
- Subscriber's primary subscription reference (MainSubscriptionId)
- Subscriber's secondary subscription reference (SubscriptionId)
- Sender's message reference (MessageId)

In the following data items, upper and lowercase characters are significant:

- Country codes in all data groups (for example, "DE" is interpreted to be a different code than "De").
- Customer IDs in all data groups (for example, "150172-999H" is interpreted to be a different ID than "150172-999h").

1.3 Dates and times

Dates (data type xs:date) must not include time zone information. Example of a date:

```
<StartDate>2017-05-11</StartDate>
```

Data elements containing times of day (data types xs:dateTime and xs:time) must include the time zone.

Example in the Finnish time zone (standard time, UTC+2):

```
<Timestamp>2017-05-11T08:00:00+02:00</Timestamp>
<Time>08:00:00+02:00</Time>
```

Example in UTC time (UTC+0):

```
<Timestamp>2017-05-11T6:00:00Z</Timestamp>
<Time>06:00:00Z</Time>
```

1.4 Document reading instructions

In the document diagrams, the 0 .. ∞ marking in the bottom right-hand corner of an element means that the element may appear several times, or not at all. The 1 .. ∞ marking means that the element may appear several times, but it must always appear at least once. The mandatory elements are highlighted with a solid border line and voluntary elements with a dashed border line.

In the document tables, the mandatory or voluntary nature of the elements is depicted with the following markings:

V/M	Description
V	The element is always voluntary.

	Data groups and data items marked as voluntary are included in the queried record if they contain data (data has been submitted in a message or it is data generated by the Incomes Register).
M	The element is always included if its "parent element" is included.

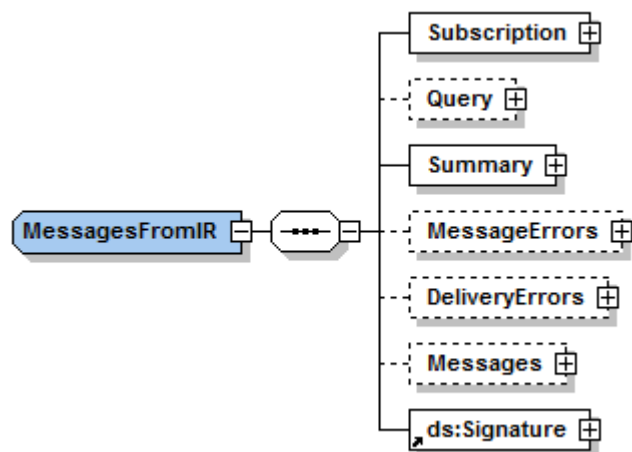
In some elements, messages use a limited range of values, i.e. codes. The value space of the codes, i.e., their possible values, are described in the "Codes" documents. This document uses the term "codes" to refer to the values presented in the codesets.



2 MESSAGES (MESSAGESFROMIR)

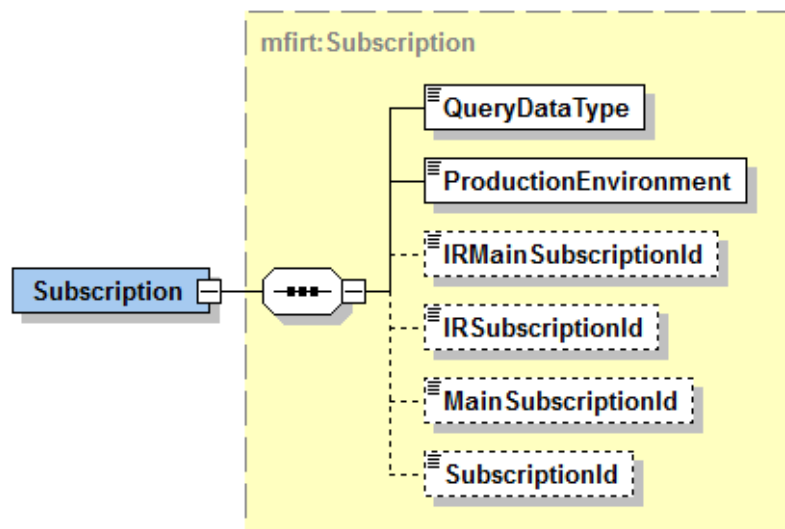
The general structure of a record containing messages distributed from the Incomes Register is as follows:

Data group name	Type	V/M
Record subscription details (Subscription)	mfirt:Subscription	M
Query details (Query)	mfirt:Query	V
Query summary data (Summary)	mfirt:Summary	M
Message-level errors (MessageErrors)	smt:MessageErrors	V
Record-level errors (DeliveryErrors)	smt:DeliveryErrors	V
Messages (Messages)	mfirt:Messages	V
Message (Message)	mfirt:Message	M
Attachments (Attachments)	mfirt:Attachments	V
Attachment (Attachment)	mfirt:Attachment	M
Target items for message (TargetItems)	mfirt:TargetItems	V
Target item for message (TargetItem)	mfirt:TargetItem	M
Allekirjoitus (Signature)	xsig:SignatureType	M

**Data group details:**

Data designation	Type	Allowed values	V/ M	Processing rule
Record subscription details (Subscription)	mfirt:Subscription		M	This data group is used to distribute information related to a record subscription or a service request.
Query details (Query)	mfirt:Query		V	This data group is used to distribute information related to a query. The data group will not appear in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema, if a message-level or record-level error was detected during the processing of the service invocation.
Query summary data (Summary)	mfirt:Summary		M	This data group is used to distribute summary information related to a query.
Message-level errors (MessageErrors)	smt:MessageErrors		V	This data group can only appear in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Record-level errors (DeliveryErrors)	smt:DeliveryErrors		V	This data group can only appear in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Messages (Messages)	mfirt:Reports		V	Messages
Signature (Signature)	xsig:SignatureType		M	The electronic signature of the record is delivered in this data group.

2.1 Record subscription details (Subscription)



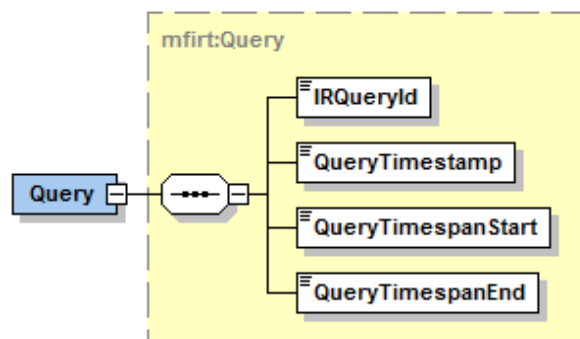
Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Record subscription details (Subscription)	mfirm:Subscription		M	This data group is used to distribute information related to a record subscription or a service request.
Record type (QueryDataType)	xs:int	Codes: QueryDataType and value 309 from it.	M	
Production environment (ProductionEnvironment)	irct:trueOrFalse	Codes: ProductionEnvironment	M	Data submitted in a record subscription or service request.
Incomes Register primary subscription reference (IRMainSubscriptionId)	irct:Guid		V	The Incomes Register primary subscription reference for the primary subscription based on which the record was queried. The data is not included in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Incomes Register secondary subscription reference (IRSubscriptionId)	irct:Guid		V	The Incomes Register secondary subscription reference for the secondary subscription based on which the record was queried. The data is not included in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.

Subscriber's primary subscription reference (MainSubscriptionId)	irct:String40		V	The subscriber's primary subscription reference for the primary subscription based on which the record was queried. The data is not included in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Subscriber's secondary subscription reference (SubscriptionId)	irct:String40		V	The subscriber's secondary subscription reference for the secondary subscription based on which the record was queried. The data is not included in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.



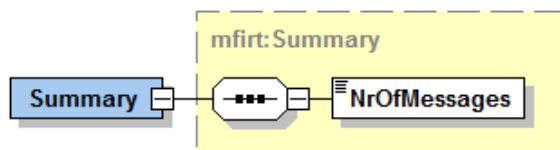
2.2 Query details (Query)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Query details (Query)	mfirm:Query		V	This data group is used to distribute information related to a query.
Incomes Register query reference (IRQueryId)	irct:Guid		M	The reference assigned by the Incomes Register to the queried record. The reference uniquely identifies every record queried from the Incomes Register.
Query time (QueryTimestamp)	xs:dateTime		M	The date and time when the record was queried.
Start of the query time range for changes (QueryTimespanStart)	xs:dateTime		M	The record includes data changed since this date and time.
End of the query time range for changes (QueryTimespanEnd)	xs:dateTime		M	The record includes data changed up to this date and time.

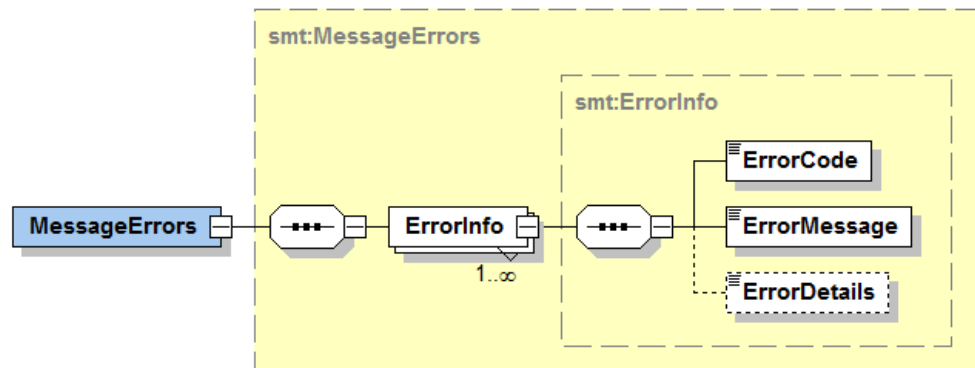
2.3 Query summary data (Summary)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Query summary data (Summary)	mfirt:Summary		M	This data group is used to distribute summary information related to a query.
The number of queried items (NrOfReports)	xs:int		M	The number of queried messages.

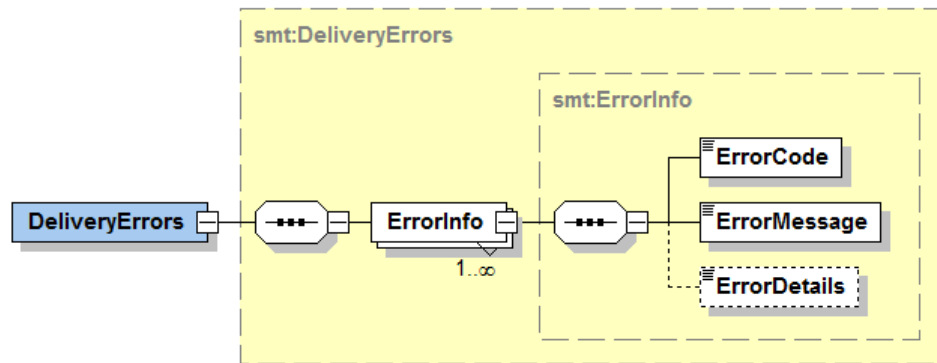
2.4 Message-level errors (MessageErrors)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Message-level errors (MessageErrors)	smt:MessageErrors		V	This data group is used to return technical and authorisation errors. This data group can only appear in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Error information (ErrorInfo)	smt>ErrorInfo		M	There may be several errors.
Error code (ErrorCode)	irct:String20		M	The error code is returned in this element.
Error code description (ErrorMessage)	irct:String500		M	A description of the error code is returned in this element.
Error details (ErrorDetails)	irct:String500		V	Allocation and identifying information for the error is returned in this element.

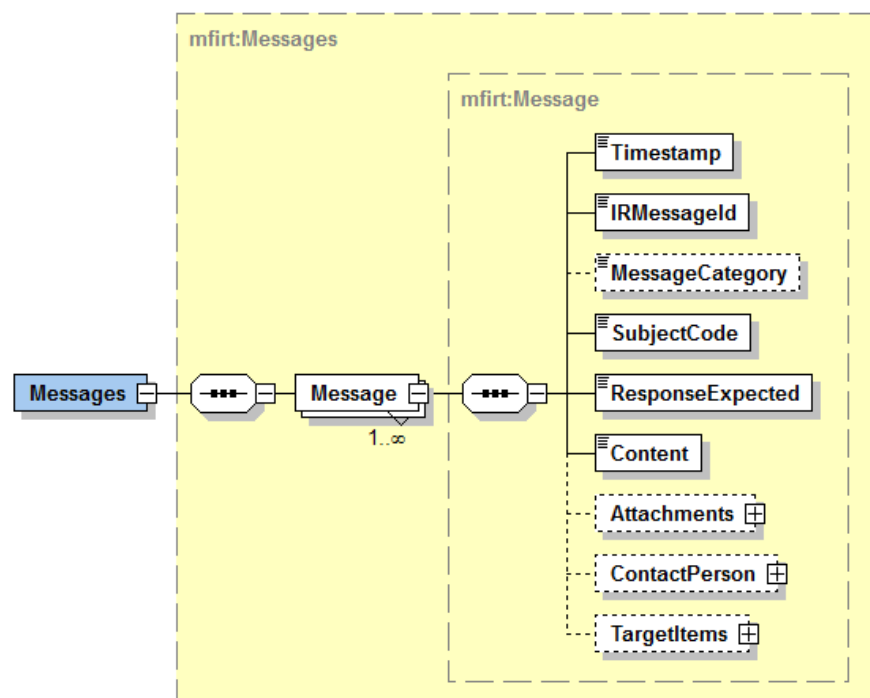
2.5 Record-level errors (DeliveryErrors)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Record-level errors (DeliveryErrors)	smt:DeliveryErrors		V	This data group is used to return errors related to the contents of record-level data. This data group can only appear in the response message to a real-time WS service invocation compliant with the DataRequestToIR schema.
Error information (ErrorInfo)	smt:ErrorInfo		M	There may be several errors.
Error code (ErrorCode)	irct:String20		M	The error code is returned in this element.
Error code description (ErrorMessage)	irct:String500		M	A description of the error code is returned in this element.
Error details (ErrorDetails)	irct:String500		V	Allocation and identifying information for the error is returned in this element.

2.6 Messages (Messages)



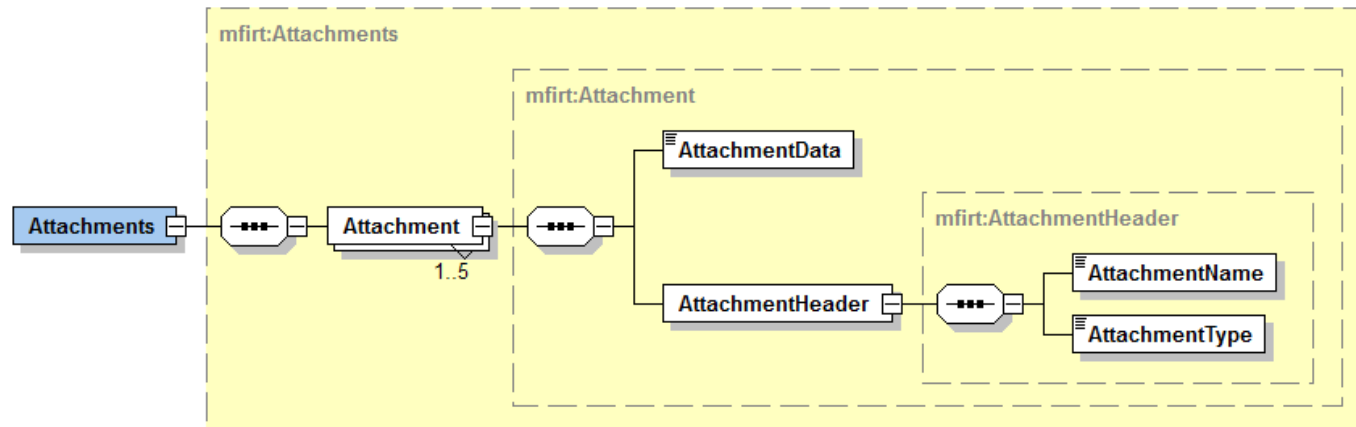
Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Messages (Messages)	mfirt:Messages		V	
Message (Message)	mfirt:Message		M	There may be several messages.
Time the message was sent (Timestamp)	xs:dateTime		M	The date and time when the message was saved in the Incomes Register.
Incomes Register message reference (IRMessageld)	irct:Guid		M	A reference assigned by the Incomes Register to a message. The reference uniquely identifies every message saved in the Incomes Register.
Message type (MessageCategory)	xs:int	Codes: MessageCategory	V	
Message subject (SubjectCode)	xs:int	Codes: MessageSubjectCode	M	

Response expected (ResponseExpected)	irct:trueOrFalse		M	
Content (Content)	irct:String4000		M	
Attachments (Attachments)	mfirt:Attachment		V	
Contact person (ContactPerson)	mfirt:ContactPerson		V	
Target items for message (TargetItems)	mfirt:TargetItems		V	



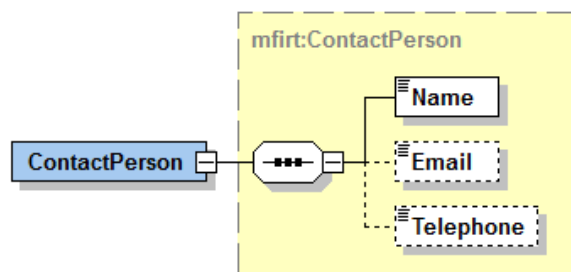
2.7 Attachments (Attachments)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Attachments (Attachments)	mfirm:Attachments		V	
Attachment (Attachment)	mfirm:Attachment		M	There may be several attachments.
File attachment (AttachmentData)	xs:base64Binary		M	File attachment in base64Binary format.
Attachment details (AttachmentHeader)	mfirm:AttachmentHeader		M	
Attachment name (AttachmentName)	irct:String200		M	
Attachment type (AttachmentType)	xs:int	Codes: AttachmentType	M	

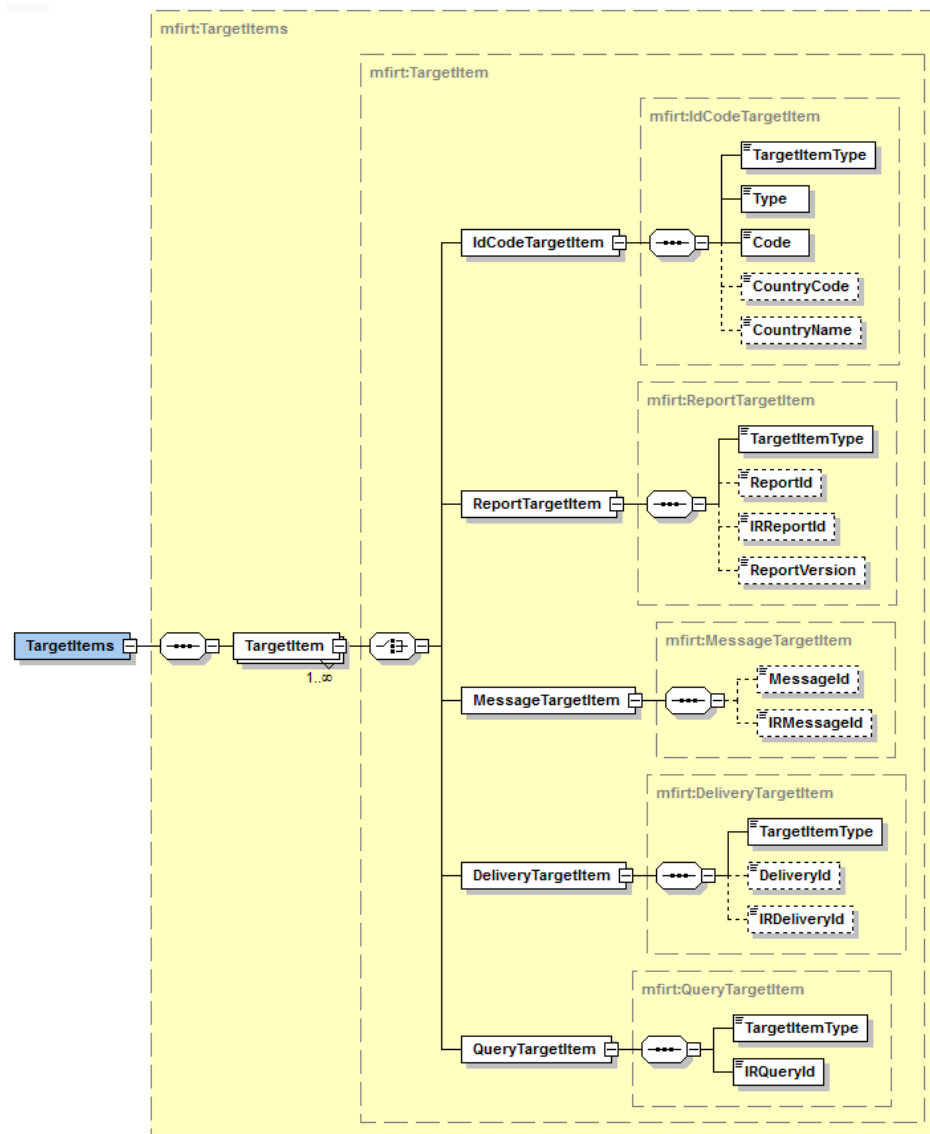
2.8 Contact person (ContactPerson)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Contact person (ContactPerson)	mfirt:ContactPerson		V	
Name (Name)	irct:String200		M	
E-mail (Email)	irct:String70		V	
Telephone number (Telephone)	irct:String40		V	

2.9 Target items for message (TargetItems)



Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Target items for message (TargetItems)	mfirt:TargetItems		V	
Target item for message (TargetItem)	mfirt:TargetItem		M	There can be several target items for a message. The available types of target item for message are customer, incomes payment report, message, a record submitted to the Incomes Register or a record distributed from the Incomes Register.
Customer (IdCodeTargetItem)	mfirt:IdCodeTargetItem		V	
Customer type (TargetItemType)	xs:int	Codes: MessageIdTargetItemType	M	
Customer identifier type (Type)	xs:int	Codes: IdType	M	
Customer identifier (Code)	irct:String30		M	
Country code of the identifier (CountryCode)	irct:String2	A two-character code in accordance with the ISO 3166 country codes. If the country is unknown, the value is "99".	V	
Country name (CountryName)	irct:String70		V	
Incomes payment report (ReportTargetItem)	mfirt:ReportTargetItem		V	
Type of incomes payment report (ReportType)	xs:int	Codes: ReportType	M	
Payer's report reference (ReportId)	irct:String40		V	
Incomes Register report reference (IRReportId)	irct:Guid		V	
Report version number (ReportVersion)	xs:int		V	
Message (MessageTargetItem)	mfirt:MessageTargetItem		V	
Sender message reference (MessageId)	irct:String40		V	
Incomes Register message reference (IRMessageId)	irct:Guid		V	

Record submitted to the Incomes Register (DeliveryTargetItem)	mfirt:DeliveryTargetItem		V	
Record type (TargetItemType)	xs:int	100, 101	M	
Record owner's record reference (DeliveryId)	irct:String40		V	
Incomes Register record reference (IRDeliveryId)	irct:Guid		V	
Record queried from the Incomes Register (QueryTargetItem)	mfirt:QueryTargetItem		V	
Record type (TargetItemType)	xs:int	Codes: QueryDataType	M	
Incomes Register query reference (IRQueryId)	irct:Guid		M	