

## **Data distribution – Schemas – Service request**

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### **Project to establish the National Incomes Register**

## Version history

Version	Date	Description
1.0	12.6.2017	Document published.
1.01	31.8.2017	The Timestamps section in the General segment has been renamed as Dates and times. The processing of dates and times is clarified in the paragraph.
1.02	14.11.2017	Added an electronic signature: data group Signature (Signature) at the main level of a record. The xs:boolean data type was changed to the irtc:trueOrFalse (IRCommonTypes.xsd) data type. Changed the data type of the Start date of time range (StartDate) and End date of time range (EndDate) elements of the Time range (TimespanParameter) data group in the Query criteria (DataRequestParameters) data group to xs:dateTime. The processing rules of these elements were also updated. Clarified the interpretation rules of upper and lowercase characters in the General/Character set section. Added the namespace of the XML signature schema in the General/Schema section.
1.03	29.1.2018	Clarified the processing rules relating to the data items Record type and Data access profile: The specified combination (Record type, Data access profile) must be valid for the subscriber (DeliveryDataOwner) at the time when the service request is processed. Clarified the processing rules related to data groups: Record owner (DeliveryDataOwner) Record creator (DeliveryDataCreator) Record submitter (DeliveryDataSender) Signature (Signature) Added the Time range element (TimespanTimeParameter) to the "Query parameters" (DataRequestParameters) data group. The Time range element's Start and End date include the time. In the Time range (TimespanParameter) element, changed the start and end date data types from xs:dateTime => xs:date.
1.04	11/06/2018	Clarified the allowed character encoding for reference data under Character set
1.05	26/09/2018	Specified in the section Dates and times that the example in the Finnish time zone concerns standard time: Example in the Finnish time zone (standard time, UTC+2)
1.06	07/01/2019	Added the following processing rule for the End date of time range (EndDate) data item in the Time range (TimespanTimeParameter) data group: If the Query criterion type is Query time range for changes, the time included in the End date of time range can be no more than 5 minutes before the current time.

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## 1 OVERVIEW

### 1.1 Schema

Service requests are sent to the Incomes Register using the **DataRequestToIR** schema.

The namespaces of the schema are as follows:

File name	Prefix	Namespace
	xmlns:xs	http://www.w3.org/2001/XMLSchema
DataRequestToIR.xsd	xmlns:drtir	http://www.tulorekisteri.fi/2017/1/DataRequestToIR
MainSubscriptionTypes.xsd	xmlns:mst	http://www.tulorekisteri.fi/2017/1/MainSubscriptionTypes
IRCommonTypes.xsd	xmlns:irct	http://www.tulorekisteri.fi/2017/1/IRCommonTypes
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	&amp; conversion is mandatory
<	less than	&lt; conversion is mandatory
>	greater than	&gt; conversion is not mandatory, but conforms with best practices
'	apostrophe	&apos; conversion is not mandatory, but conforms with best practices
"	quotation mark	&quot; 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 to "De").
- Customer IDs in all data groups (for example, "150172-999H" is interpreted to be a different ID to "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.

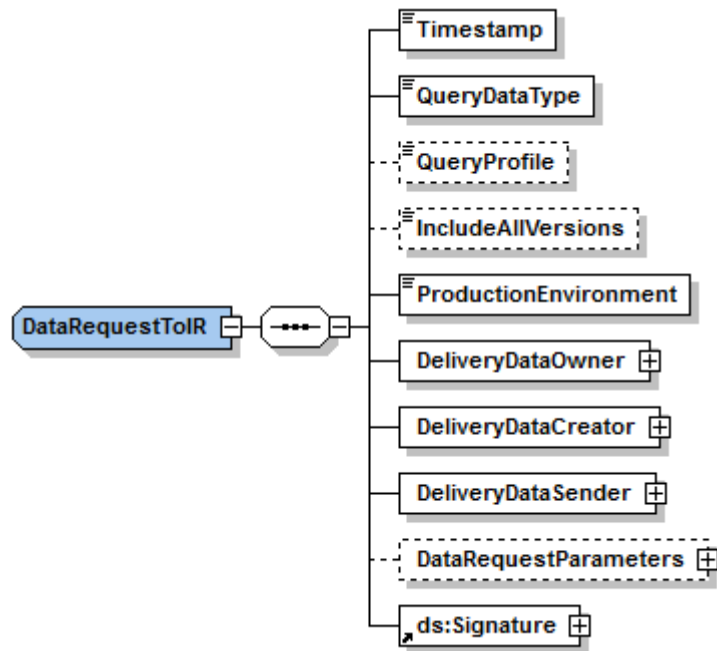
In the document tables, the mandatory or voluntary nature of the elements is depicted with the following markings:

V/M	Description
V	The element is always voluntary.
M	The element is mandatory if its "parent element" is included.
V/M	The element is conditionally mandatory. The data processing rules describe the situations in which the element is mandatory.

In some elements, messages use a limited range of values, i.e. codes. The possible values of these codes are described in the "Codes" document. This document refers to the values presented in the codesets using the term "codes".



## 2 SERVICE REQUEST (DATAREQUESTTOIR)



### Data group details:

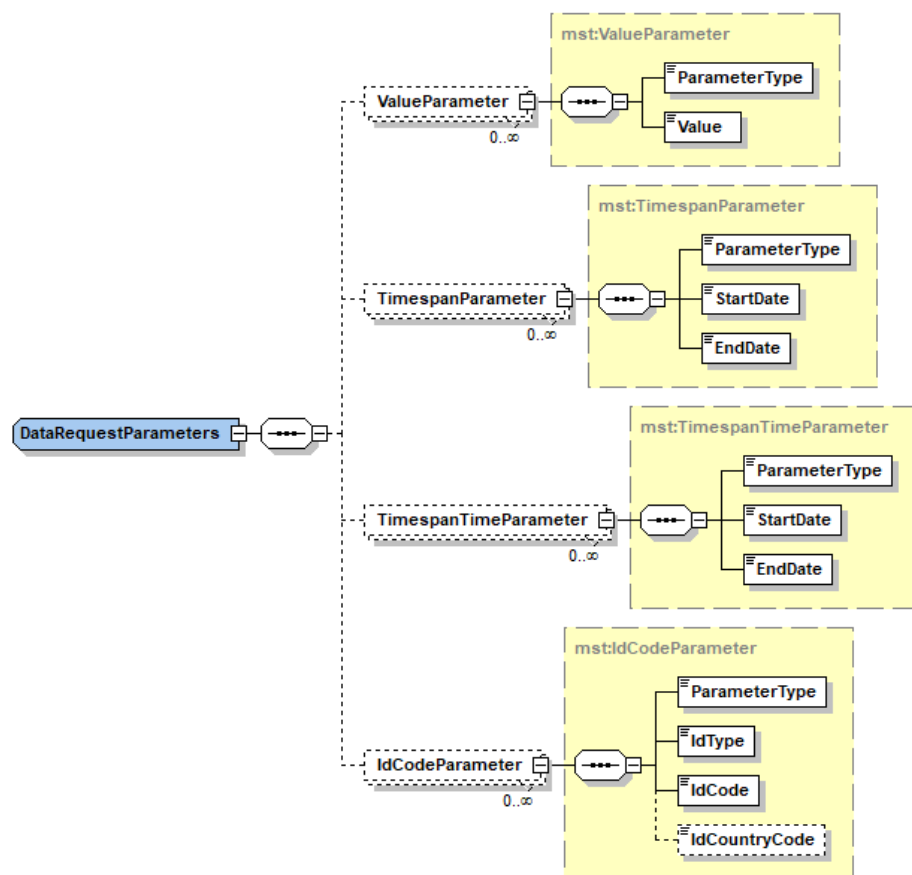
Data designation	Type	Allowed values	V/ M	Processing rule
Time at which the service request was sent (Timestamp)	xs:dateTime		M	The date and time at which the service request was sent from the sender's system.
Record type (QueryDataType)	xs:int	Codes: QueryDataType and values 400–499 from it	M	If an agreement is required for subscribing to a record type, the record subscriber (DeliveryDataOwner) must have an agreement that entitles them to subscribe to the record type and is valid at the time when the service request is processed.
Data access profile (QueryProfile)	irct:String40		V/M	Mandatory data, if it is required for the record type of the service request. The mandatory and voluntary data specified in the service request are described by record type in the document, "Technical interface – Data distribution from the

				<p>Incomes Register".</p> <p>The specified combination (Record type, Data access profile) must be valid for the subscriber (DeliveryDataOwner) at the time when the service request is processed.</p>
Query all report versions (IncludeAllVersions)	irct:trueOrFalse	Codes: IncludeAllVersions	V/M	Mandatory data, if it is required for the record type of the service request. The mandatory and voluntary data specified in the service request are described by record type in the document, "Technical interface – Data distribution from the Incomes Register".
Production environment (ProductionEnvironment)	irct:trueOrFalse	Codes: ProductionEnvironment	M	
Record owner (DeliveryDataOwner)	mst:Id		M	<p>Processing rules related to data items Record owner, Record creator and Record submitter:</p> <p><b>The record owner submits the service request:</b>  The record subscriber, i.e., the organisation whose data access rights are used in the record query, must be specified as the <i>Record owner</i>. The organisation must have a customer ID. If the record subscriber has a business ID, it must be specified as the Record owner.  The Record owner (= subscriber) must be specified as the <i>Record creator</i>.  The Record owner (= subscriber) must be specified as the <i>Record submitter</i>.</p> <p><b>A service provider submits the service request on behalf of the subscriber:</b>  The record subscriber, i.e., the organisation whose data access rights are used in the record query, must be specified as the <i>Record owner</i>. The organisation must have a customer ID. If the record subscriber has a business ID, it must be specified as the Record owner.  The identifier of the service provider must be specified as the <i>Record creator</i>. If the service provider has a business ID, it must be specified. It must be specified in the Incomes Register that the service provider has the right to act on behalf of others.  The Record creator (= service provider) must be specified as the <i>Record submitter</i>.</p>
Identifier type (Type)	xs:int	Codes: IdType	M	
Identifier (Code)	irct:String30		M	<p>If the "Identifier type" is "Business ID", the identifier must exist (according to information from the Business Information System (YTJ)).</p> <p>If the "Identifier type" is "Finnish Personal Identification Number", the identifier must exist (according to information from the Population Information System (VTJ)).</p>
Country code (CountryCode)	irct:String2	A two-character code in	V/M	Mandatory data if "Identifier type" is other than "Business ID" or "Finnish



		accordance with the ISO 3166 country codes. If the country is unknown, the value "99" is entered.		Personal Identification Number".
Country name (CountryName)	irct:String70		V/M	Mandatory data if "Country code" is "99".
Record creator (DeliveryDataCreator)	mst:Id		M	The processing rules for Identifier type, Identifier, Country code and Country name are the same as in the Record owner (DeliveryDataOwner) data group.
Record submitter (DeliveryDataSender)	mst:Id		M	The processing rules for Identifier type, Identifier, Country code and Country name are the same as in the Record owner (DeliveryDataOwner) data group.
Query criteria (DataRequestParameters)	mst:DataRequestParameters		V/M	The query criteria are record type specific. The mandatory and voluntary query criteria specified in the service request are described by record type in the document, "Technical interface – Data distribution from the Incomes Register".
Signature (Signature)	xsig:SignatureType		M	The electronic signature of the record is delivered in this data group. The record must be signed using the certificate of the party specified as the Record creator.

## 2.1 Query criteria (DataRequestParameters)



### Data group details:

Data designation	Type	Allowed values	V/ M	Processing rule
Query criteria (DataRequestParameters)	mst:DataRequestParameters		V/M	The query criteria are record type specific. The mandatory and voluntary (if any) query criteria are described by record

				type in the document, "Technical interface – Data distribution from the Incomes Register".
Value (ValueParameter)	mst: ValueParameter		V/M	
Query criterion type (ParameterType)	xs:int	Codes: ParameterType	M	
Value (Value)	irct:String100		M	
Time range (TimespanParameter)	mst: TimespanParameter		V/M	A time range parameter whose Start and End date do not include the time.
Query criterion type (ParameterType)	xs:int	Codes: ParameterType	M	
Start date of time range (StartDate)	xs:date		M	If the Query criterion type is Time range of reporting period, only the year and month are taken into consideration.
End date of time range (EndDate)	xs:date		M	If the Query criterion type is Time range of reporting period, only the year and month are taken into consideration.  The end date of the time range may not be earlier than its start date.
Time range (TimespanTimeParameter)	mst: TimespanTimeParameter		V/M	A time range parameter whose Start and End date include the time.
Query criterion type (ParameterType)	xs:int	Codes: ParameterType	M	
Start date of time range (StartDate)	xs:dateTime		M	
End date of time range (EndDate)	xs:dateTime		M	The end date of the time range may not be earlier than its start date.  If the Query criterion type is Query time range for changes, the time included in the End date of time range can be no more than 5 minutes before the current time.
Customer (IdCodeParameter)	mst: IdCodeParameter		V/M	
Customer type (ParameterType)	xs:int	Codes: ParameterType	M	
Customer identifier type (IdType)	xs:int	Codes: IdType	M	
Customer identifier (IdCode)	irct:String30		M	If the "Identifier type" is "Business ID", the identifier must exist (according to information from the Business Information System (YTJ)). If the "Identifier type" is "Finnish Personal Identification Number", the identifier must exist (according to information from the Population Information System (VTJ)).
Country code of the identifier (IdCountryCode)	irct:String2	A two-character country code (ISO 3166)	V/M	Mandatory data if "Identifier type" is other than "Business ID" or "Finnish Personal Identification Number".