

Technical interface – Submitting data to the Incomes Register

Project to establish the National Incomes Register

Version history

| Version | Date | Description |
|---------|------------|--|
| 1.0 | 12/06/2017 | Document published. |
| 1.01 | 31/08/2017 | Clarified the data returned in the processing feedback in the StatusResponse/ValidItems/Item/ItemVersion element, when the processing feedback is provided for an approved Cancellation of an earnings payment report (105) or an approved Cancellation of an employer's separate report (106). |
| | | The Rejected at reception (4) status has been removed from the table depicting record statuses in the "Record status in processing feedback" section. This status cannot appear in a processing feedback. |
| 1.02 | 14/11/2017 | Clarified the checking of data and the returning of errors in the acknowledgement of receipt (AckFromIR). |
| | | Clarified the checking of data and the returning of errors in the processing feedback (StatusResponseFromIR). |
| 1.03 | 29/01/2018 | Removed the restrictions concerning the size of records submitted to the Incomes Register from sections 3.4 Division of records and 7.2.3 Attachments. The restrictions concerning the size of records are described in the document Technical interface – Application guidelines. |
| 1.04 | 11/06/2018 | Complemented the channels of submitting data of different types presented in Table 1: A record containing earnings payment data, a record containing employer's separate reports and a record containing a record subscription can be cancelled via the upload service. |
| | | Clarified the Data provider section: according to the current specification, the record creator must be the same as the record submitter. |
| | | Added the new functionalities related to reporting benefits payment data and added clarifications related to benefits payment data to the existing functionalities. |
| | | Clarified the term e-service in the Finnish-language document. |
| | | Clarified the query criterion Query all report versions (IncludeAllVersions) to read: This entry controls whether to include only the latest version of the reports submitted to the Incomes Register during the specified query time range for changes, or to include all report versions submitted to the Incomes Register within the specified query time range for changes. This information is only used in record subscriptions for income data. |

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1 FOREWORD

This document describes the way in which data is submitted to the Incomes Register through a technical interface. The document presents the Incomes Register's data reception services and a general description of the data content to be submitted to the register. More detailed descriptions of the data content, the validation rules regarding the data, and the schema formats are provided in separate documents.

2 SUBMITTING DATA TO THE INCOMES REGISTER

2.1 Data submitting channels

Data may be submitted to the Incomes Register via the following channels:

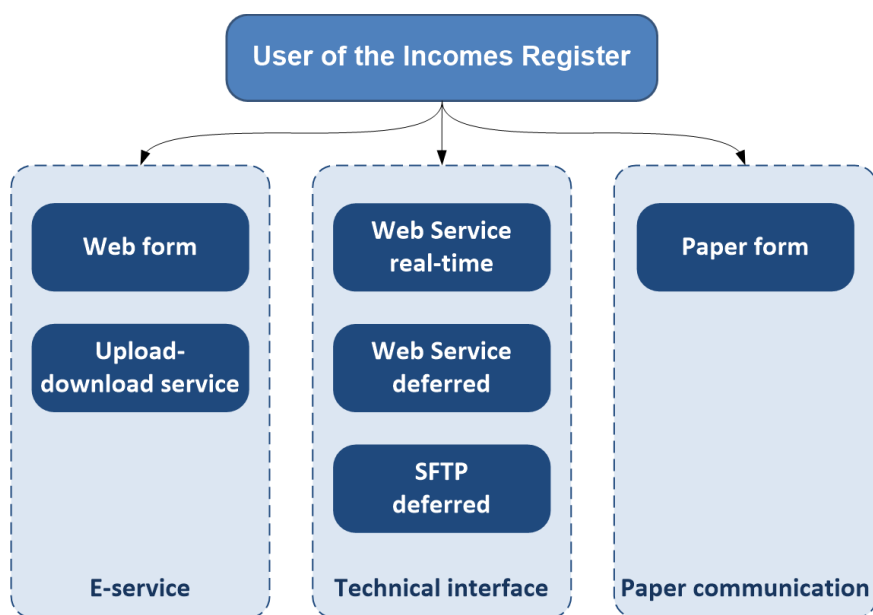


Figure 1. Data submitting channels.

Users can use the e-service web forms and the upload service to submit data to the Incomes Register in accordance with the data access rights of their user profiles. The technical interface options for submitting to the Incomes Register are SFTP, deferred Web Service or real-time Web Service. The Web Service interface is also referred to as the WS interface in this description. The Incomes Register also accepts earnings payment data and record subscriptions submitted on a paper form.

Both payers and data users use the data reception services of the Incomes Register's technical interface. Payer submit earnings payment reports, employer's separate reports and benefits payment reports to the Incomes Register. Both payers and data users can submit messages and record subscriptions to the Incomes Register.

Reports, messages, record subscriptions and cancellation data are submitted to the Incomes Register as **records**. Table 1 presents the data submitting channels for the different types of data.

| Data to be submitted to the Incomes Register | Submitting channels | |
|---|---------------------|---|
| Earnings payment report Employer's separate report Benefits payment report (new, replacement and cancellation report) | E-service | Web form |
| | | Upload service |
| | Technical interface | WS real time, one report at a time |
| | | WS deferred |
| SFTP deferred | | |
| Record containing earnings payment reports Record containing employer's separate reports Record containing benefits payment reports (cancellation of a record) | E-service | Web form |
| | | Upload service |
| | Technical interface | WS real time, one record at a time |
| | | WS deferred, one record at a time |
| SFTP deferred, one record at a time | | |
| Record subscription (new subscription, cancellation of subscription) | E-service | Web form |
| | | Upload service, one record subscription at a time |
| | Technical interface | WS real time, one record subscription at a time |
| | | WS real time, one record subscription at a time |
| SFTP deferred, one record subscription at a time | | |
| Record subscription (subscription maintenance) | E-service | Web form |
| Record containing a record subscription (cancellation of a record) | E-service | Web form |
| | | Upload service |
| | Technical interface | WS real time, one record at a time |
| | | WS deferred, one record at a time |
| SFTP deferred, one record at a time | | |
| Message (new message) | E-service | Web form |
| | | Upload service |
| | Technical interface | WS real time, one message at a time |
| | | WS deferred |
| SFTP deferred | | |
| Basic details of a party (maintenance of basic details) | E-service | Web form |

Table 1. Data submitting channels.

In addition to what was presented in the table, earnings payment reports, employer's separate reports and record subscriptions can also be submitted to the Incomes Register on a paper form.

2.2 Schema structures

The Incomes Register's technical interface accepts records in XML format. Records containing different types of data have their own schema structures.

The schemas for submitting data are presented in Table 2.

| Data to be submitted to the Incomes Register | Schema |
|--|-------------------------|
| Earnings payment report (new, replacement) | WageReportsToIR |
| Earnings payment report (cancellation) | InvalidationsToIR |
| Record containing earnings payment reports (cancellation) | InvalidationsToIR |
| Employer's separate report (new, replacement) | PayerSummaryReportsToIR |
| Employer's separate report (cancellation) | InvalidationsToIR |
| Record containing employer's separate reports (cancellation) | InvalidationsToIR |
| Benefits payment report (new, replacement) | BenefitReportsToIR |
| Benefits payment report (cancellation) | InvalidationsToIR |
| Record containing benefits payment reports (cancellation) | InvalidationsToIR |
| Record subscription (new) | SubscriptionsToIR |
| Record subscription (cancellation) | InvalidationsToIR |

| | |
|--|-------------------|
| Record containing a record subscription (cancellation) | InvalidationsToIR |
| Message (new) | MessagesToIR |

Table 2. Schemas for submitting data.

Changes will probably be made to the schema structures later; e.g. in connection with annual modifications and the deployment of new Incomes Register functionalities. The object is to plan, where possible, the schema changes so that the earlier schema is supplemented by new data that is non-mandatory from the perspective of the schema. This makes it possible to submit and retrieve data with the same schema, regardless of the time period of the data.

Should a schema change, users of the technical interface should update the new schema version in their systems in order to submit data to or retrieve data from the Incomes Register in accordance with the changed schema. If the party concerned uses the synchronous WS interface, the party should invoke the interface service compliant with the new schema.

2.3 Submitting data via the SFTP interface

The principle of submitting data via the SFTP interface is presented in Figure 2.

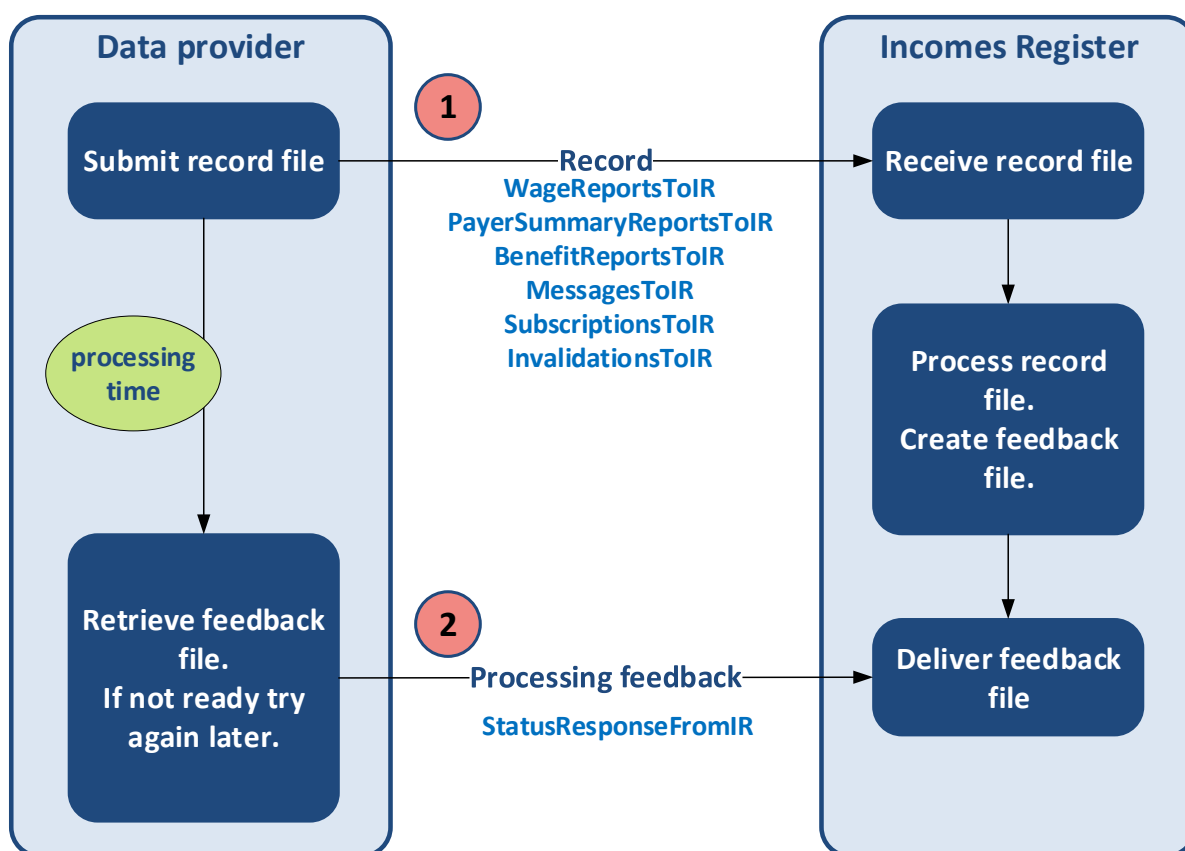


Figure 2. Submitting data via the SFTP interface.

The data provider creates a record file and submits it to the Incomes Register.

The Incomes Register receives the record file and processes the data contained in the file. The Incomes Register creates a processing feedback file (see the section "Processing feedback"). The processing feedback contains information on the correct and incorrect data in the record, as well as an itemised list of any errors detected during processing. The Incomes Register saves the feedback file in the Incomes Register for retrieval by the data provider.

The data provider retrieves the feedback file. The record processing delay in the Incomes Register should be taken into account when deciding the time of retrieval. The data provider should be prepared for the possibility that if the feedback file has not been completed by the retrieval time, retrieval will have to be re-attempted after some time has passed.

2.4 Submitting data via the deferred Web Service interface

The principle of submitting data via the deferred Web Service interface is presented in Figure 3.

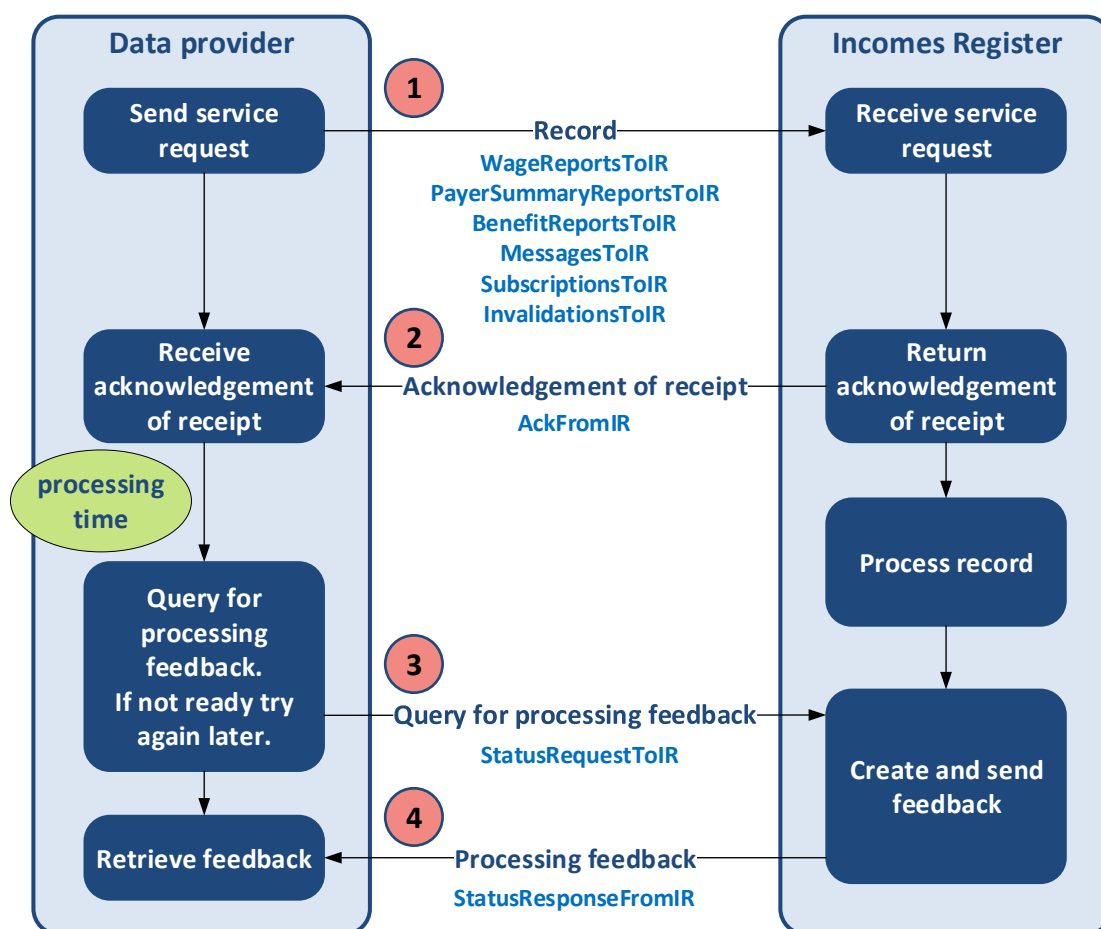


Figure 3. Submitting data via the deferred Web Service interface.

The data provider sends the record to the Incomes Register's technical interface using a WS service request (deferred). The Incomes Register sends a synchronous acknowledgement of receipt as a response to the service request (see the section "Acknowledgement of receipt"). The acknowledgement of receipt contains an itemised list of any errors detected upon receiving the service request.

The Incomes Register processes the record.

The data provider sends a query for the processing feedback to the Incomes Register's technical interface using a WS service request (see the section "Query for the processing feedback"). The Incomes Register generates the processing feedback and sends it synchronously to the data provider (see the section "Processing feedback"). If the Incomes Register has already processed the record, the processing feedback will contain information on the correct and incorrect data in the record, as well as an itemised list of any errors detected during processing. If the Incomes Register has not yet processed the record, the processing feedback will state that the processing of the record is still ongoing. In such a case, the data provider will have to resend the query for processing feedback after some time has passed.

The deferred WS interface can be used as an alternative to the SFTP interface.

2.5 Submitting data via the real-time Web Service interface

The principle for submitting data via the real-time Web Service interface is presented in Figure 4.

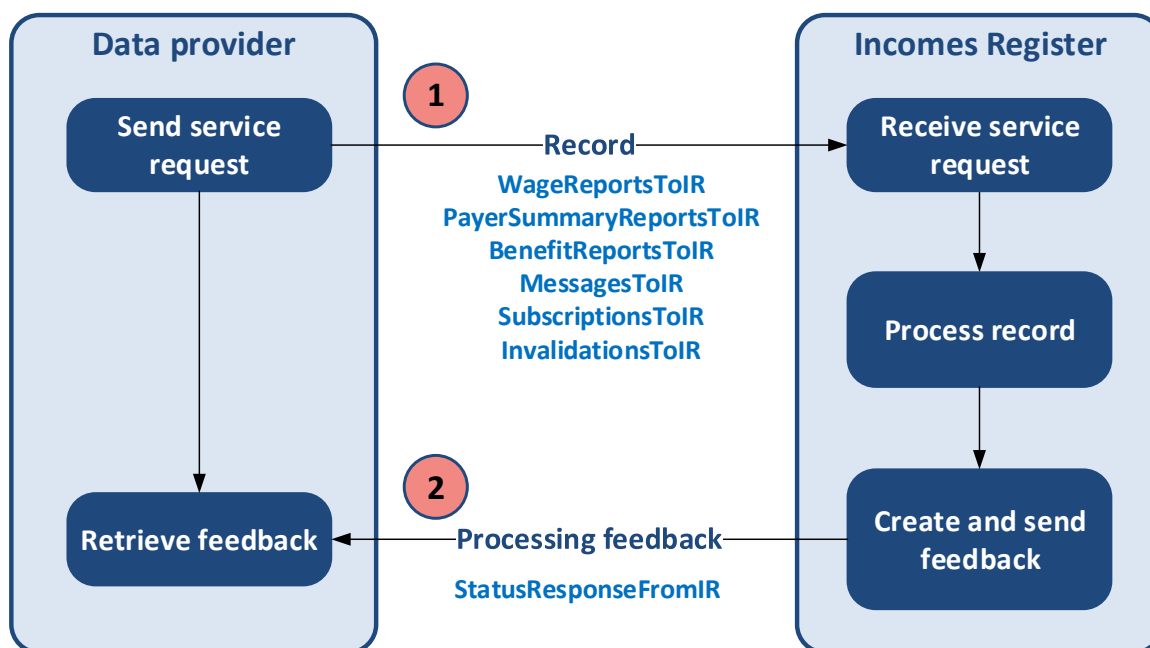


Figure 4. Submitting data via the real-time Web Service interface.

The data provider submits the record to the Incomes Register's technical interface using a WS service request (real-time).

The Incomes Register receives the service request and processes the record. The Incomes Register creates the processing feedback and sends it to the data provider (see the section "Processing feedback"). The processing feedback contains information on the correct and incorrect data in the record, as well as an itemised list of any errors detected during processing. The data provider receives a synchronous response to the service request.

The real-time WS interface is intended for use in situations in which the amount of data to be submitted to the Incomes Register is small and an immediate response to the service request is expected. Real-time services can be used, for example, in the integration of the data provider's own (UI) application with the Incomes Register's services, allowing the user to receive real-time feedback on the data submitted to the Incomes Register. The real-time WS interface is not intended for use in situations in which a large quantity of data is submitted to the Incomes Register. For example, if a large quantity of earnings payment reports is generated when running payroll, the reports must be submitted to the Incomes Register either via the deferred Web Service interface or the SFTP interface.

3 GENERAL INFORMATION ON SUBMITTING DATA

3.1 General record details

Data is submitted to the Incomes Register via the technical interface as **records**. This section presents some general record details included in the schema. See the schema description for the full data contents record type specifically.

Record type (DeliveryDataType)

The record type indicates what data the record contains (new and replacement earnings payment reports, new and replacement employer's separate reports, new and replacement benefits payment reports, messages, a record subscription, various cancellation data).

Record owner's record reference (DeliveryId)

The record owner (DeliveryDataOwner, see section "Data provider") uniquely identifies the records submitted to the Incomes Register using the record owner's record reference. The reference must identify the record owner's records *record type specifically* (DeliveryDataType).

Examples:

The owner of a record containing earnings payment reports (DeliveryDataType=100) is the same as the payer. Two records containing earnings payment reports from the same payer cannot be submitted to the Incomes Register using the same record owner's record reference.

The owner of a record containing employer's separate reports (DeliveryDataType=101) is the same as the payer. Two records containing employer's separate reports from the same payer cannot be submitted to the Incomes Register using the same record owner's record reference.

The owner of a record containing benefits payment reports (DeliveryDataType=102) is the same as the payer. Two records containing benefits payment reports from the same payer cannot be submitted to the Incomes Register using the same record owner's record reference.

The owner of a record containing cancellations of earnings payment reports (DeliveryDataType=105) is the same as the payer. Two records containing cancellations of earnings payment reports from the same payer cannot be submitted to the Incomes Register using the same record owner's record reference.

The owner of a record containing cancellations of benefits payment reports (DeliveryDataType=107) is the same as the payer. Two records containing cancellations of benefits payment reports from the same payer cannot be submitted to the Incomes Register using the same record owner's record reference.

The owner of a record containing messages (DeliveryDataType=104) is the same as the sender. Two records containing messages from the same sender cannot be submitted to the Incomes Register using the same record owner's record reference.

The submitter of the record can use the record owner's record reference to allocate the acknowledgement of receipt and processing feedback from the Incomes Register to the submitted record.

Rule for processing invalid data (FaultyControl)

This rule is used to control the processing of a record in the event that it contains both valid and invalid data (reports or messages). Based on the rule, the record as a whole may be rejected if it contains invalid data or, alternatively, the valid data can be saved in the Incomes Register while only the invalid data is rejected.

If, for example, a record containing earnings payment reports or benefits payment reports requests the saving of valid reports should the record also contain invalid reports, the Incomes Register saves the reports with valid data contents and rejects the reports found to contain invalid data.

Production environment (ProductionEnvironment)

This information states whether the record is intended for the production environment or the test environment. The information is used to prevent the accidental reception of a record in the wrong environment.

3.2 Data provider

The data provider is described in the general record details with three separate data items: record owner, record creator and record submitter.

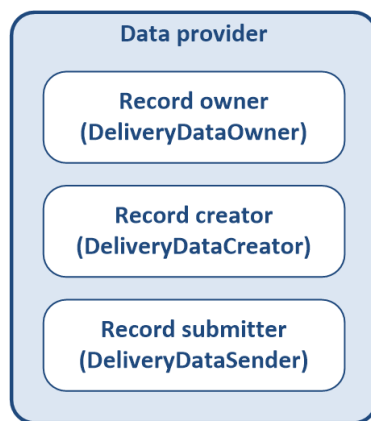


Figure 5. Details of the data provider.

Record owner (DeliveryDataOwner)

The record owner is the organisation that owns the data contained in the record.

The owner of a record containing earnings payment reports, employer's separate reports, benefits payment reports and their cancellations is the same as the payer. If the payer does not have a customer ID, the record creator (DeliveryDataCreator) is entered as the record owner.

The owner of a record containing messages is the organisation that sent the messages.

The owner of a record containing record subscriptions and their cancellations is the organisation that submitted the record subscription. Record subscription queries use the data access rights of the record owner.

Record creator (DeliveryDataCreator)

The record creator is the operator that produced the record file. The record creator can be the payer or the payer's service provider.

The record creator must sign the record electronically using a certificate issued by the Incomes Register authority. If the record creator is a different party than the record owner, the record creator must have the authorisation of the Incomes Register to submit records.

Record submitter (DeliveryDataSender)

The record submitter is the operator that submitted the record file to the Incomes Register. The record submitter can be the payer or the payer's service provider. According to the current specification, the record submitter must be the same as the record creator (the original specification prepared for a need for three actors).

3.3 Processing order of records

The Incomes Register processes the records in their order of arrival. Records submitted via the SFTP interface are processed in the order in which the record files were received. Records submitted via the Web Service interface are processed in the order in which the service requests were received. The time at which the record has been fully transferred to the Incomes Register is considered to be the time of reception of a file or a service request.

If different records have interdependencies from the perspective of data processing, the record submitter must ensure that the next record is not submitted to the Incomes Register before the Incomes Register has acknowledged the receipt of the previous record. If, for example, a record containing new earnings payment reports or benefits payment reports is submitted to the Incomes Register, a second record containing replacements or cancellations of the same reports must not be submitted before an acknowledgement of receipt has been received for the first record.

3.4 Division of records

A record to be submitted to the Incomes Register cannot be divided into parts. If there is a large amount of data, it must be submitted in separate records, each with its own record reference.

3.5 Codesets

The codes linked to the data content of the technical interface messages are described in separate documents.



4 SUBMITTING EARNINGS PAYMENT REPORTS TO THE INCOMES REGISTER

4.1 General

Earnings payment reports are submitted to the Incomes Register as **records** that may contain several reports. When a record is submitted via the real-time Web Service interface, it can only contain one report.

The earnings payment report can be a new report or a replacement report. Both new and replacement reports can be submitted in the same record. However, there can only be one instance of any individual report in the record. A new report and its replacement report cannot be submitted in the same record. Neither can more than one replacement report for the same report be submitted in the same record.

The schema of a record that contains new and replacement earnings payment reports is **WageReportsToIR** in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Earnings payment reports". The same schema is also used when submitting records via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

Reports to be cancelled must be submitted with their own schema (see the section "Submitting cancellation data to the Incomes Register").

4.2 Record data

The structure of a record containing earnings payment reports, to be submitted to the Incomes Register, is presented on a general level in Figure 6.

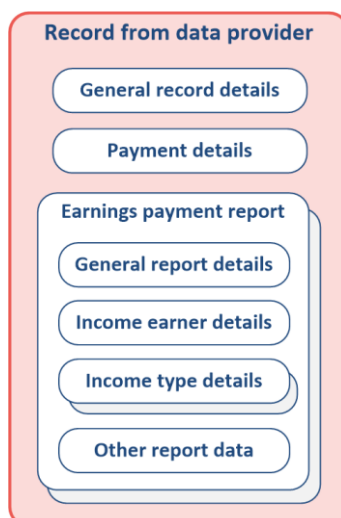


Figure 6. Structure of a record containing earnings payment reports.

4.2.1 General record details

The general record details are included in the record only once, and they apply to all reports submitted in the record. The general record details are presented in the section "General information on submitting data, General record details". The type of a record (DeliveryDataType) containing earnings payment reports is 100.

4.2.2 Payment details

Payment details are included in the record only once, and they apply to all reports submitted in the record. Payment details include, for example, payer details, payment period details, and the details of the contact persons for the record.

4.2.3 General report details

The general report details are provided report-specifically in the record. The general details include the following information.

Action type (ActionCode)

The action type indicates whether the report is a new or replacement report.

Incomes Register report reference (IRReportId)

The Incomes Register assigns a unique Incomes Register report reference to the report. The reference uniquely identifies every report submitted to the Incomes Register. The reference is returned to the submitter with the record processing feedback.

The Incomes Register report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using a payer's report reference.

Payer's report reference (ReportId)

The payer uniquely identifies a new earnings payment report using a payer's report reference. The payer's report references of all earnings payment reports submitted by the payer in question must be unique. If the payer submits more than one earnings payment report using the same reference, the Incomes Register will return an error.

The payer can allocate the Incomes Register's acknowledgement of receipt and processing feedback to the submitted report with the report reference.

The report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using the Incomes Register report reference.

Report version number (ReportVersion)

The Incomes Register assigns version number 1 to a new earnings payment report, while the version number assigned to a replacement report is one higher than the version number of the report that was replaced. The version number is returned to the submitter with the record processing feedback.

The version number can be used when allocating a replacement report to a report previously submitted to the Incomes Register. If a version number is not used when submitting a replacement report, the Incomes Register will always perform the action on the latest version of the report. If the report has changed as a result of some other process or user action, the replacement may overwrite the changes made earlier (in another process).

When using a version number in allocating a replacement, you can ensure that any changes made in a different process are not inadvertently overwritten and the replacement is made on the version intended by the submitter of the action.

4.2.4 Income earner details

The income earner details include information such as the income earner's identifier, name and address details.

4.2.5 Income type details

Income type details include the income type code and other data to be reported income type specifically. One report may contain several income types.

4.2.6 Other report data

Other report data include information on absences and working abroad.

4.3 Replacement report

When a payer submits a new earnings payment report to the Incomes Register, the Incomes Register assigns version number 1 to the report. The status of the new report will be "Valid".

When the payer submits a replacement report to the Incomes Register, either the payer's report reference or the Incomes Register report reference must be included in the report. Both references may also be included. If the payer's

report reference is provided in the report, it will be used to find the report to be replaced in the Incomes Register. Correspondingly, if the Incomes Register report reference is provided in the report, it will be used to find the report to be replaced. If both report references are provided in the replacement report, they will both be used to find the report to be replaced (the AND operator).

If a version number is provided in the replacement report, it will be used to find the report to be replaced, in addition to the report reference data. The Incomes Register will check the version number provided in the replacement report against the latest version of the report in question in the Incomes Register. If an attempt is made to replace an outdated version of a report or a cancelled report, the Incomes Register will return an error.

The Incomes Register will replace the report by saving a new version of the report with the replacement data. The version number of the replacement report will be one higher than the version number of the replaced report. The payer's report reference and the Incomes Register report reference will remain unchanged. The status of the replacement report version will be "Valid". The data in the report version to be replaced will no longer be maintained.

The procedure for replacing an earnings payment report in the Incomes Register is illustrated in Figure 7.

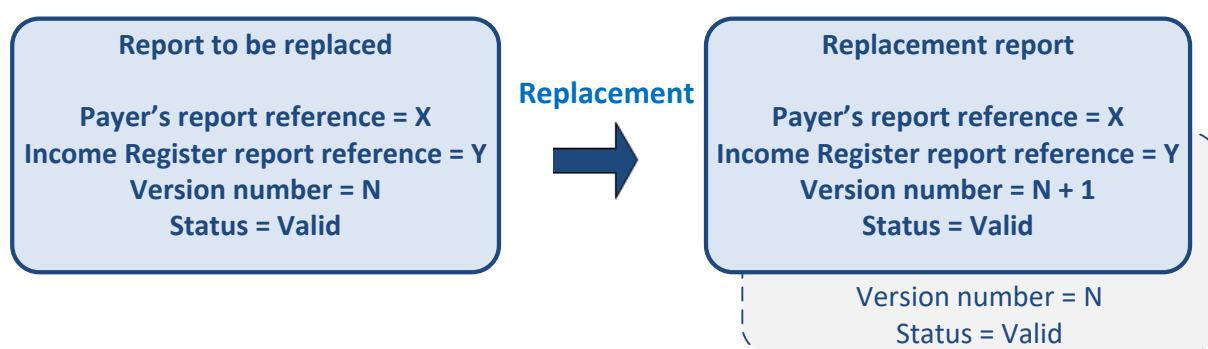


Figure 7. Replacing an earnings payment report in the Incomes Register.

5 SUBMITTING EMPLOYER'S SEPARATE REPORTS TO THE INCOMES REGISTER

5.1 General

Employer's separate reports are submitted to the Incomes Register as **records** that may contain several reports. When a record is submitted via the real-time Web Service interface, it can only contain one report.

The employer's separate report can be a new report or a replacement report. Both new and replacement reports can be submitted in the same record. However, there can only be one instance of any individual report in the record. A new report and its replacement report cannot be submitted in the same record. Neither can more than one replacement report for the same report be submitted in the same record.

The schema of a record that contains new and replacement employer's separate reports is

PayerSummaryReportsToIR in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Employer's separate reports". The same schema is also used when submitting records via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

Reports to be cancelled must be submitted with their own schema (see the section "Submitting cancellation data to the Incomes Register").

5.2 Record data

The structure of a record containing employer's separate reports, to be submitted to the Incomes Register, is presented on a general level in Figure 8.

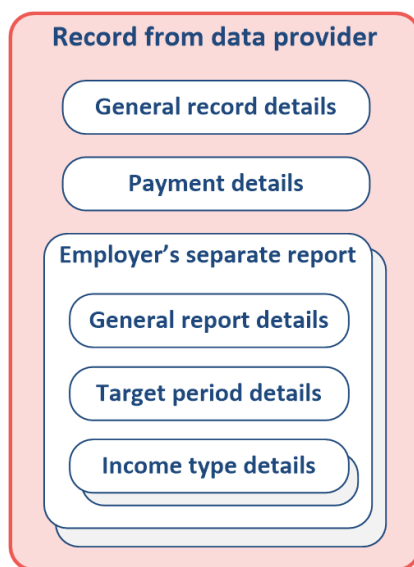


Figure 8. Structure of a record containing employer's separate reports.

5.2.1 General record details

The general record details are included in the record only once, and they apply to all reports submitted in the record. The general record details are presented in the section "General information on submitting data, General record details". The type of a record (DeliveryDataType) containing employer's separate reports is 101.

5.2.2 Payment details

Payment details are included in the record only once, and they apply to all reports submitted in the record. Payment details include, for example, payer details and the details of the contact persons for the record.

5.2.3 General report details

The general report details are provided report-specifically in the record. The general details include the following information.

Action type (ActionCode)

The action type indicates whether the report is a new or replacement report.

Incomes Register report reference (IRReportId)

The Incomes Register assigns a unique Incomes Register report reference to the employer's separate report. The reference uniquely identifies every report submitted to the Incomes Register. The reference is returned to the submitter with the record processing feedback.

The Incomes Register report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using a payer's report reference.

Payer's report reference (ReportId)

The payer uniquely identifies a new employer's separate report using a payer's report reference. The payer's report references of all employer's separate reports submitted by the payer in question must be unique. If the payer submits more than one employer's separate report using the same reference, the Incomes Register will return an error.

The payer can allocate the Incomes Register's acknowledgement of receipt and processing feedback to the submitted report with the report reference.

The report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using the Incomes Register report reference.

Report version number (ReportVersion)

The Incomes Register assigns version number 1 to a new report, while the version number assigned to a replacement report is one higher than that of the replaced report. The version number is returned to the submitter with the record processing feedback.

The version number can be used when allocating a replacement report to a report previously submitted to the Incomes Register in the same manner as with earnings payment reports.

5.2.4 Reporting period details

The reporting year and month of the report are specified in the reporting period details.

5.2.5 Income type details

Income type details include the income type code and other data to be reported income type specifically. One report may contain several income types.

5.3 Replacement report

The report version management, version numbering and report status management of employer's separate reports when submitting new and replacement reports are identical to those of earnings payment reports (see the section, "Submitting earnings payment reports to the Incomes Register, Replacement report").

6 SUBMITTING BENEFITS PAYMENT REPORTS TO THE INCOMES REGISTER

6.1 General

Benefits payment reports are submitted to the Incomes Register as **records** that may contain several reports. When a record is submitted via the real-time Web Service interface, it can only contain one report.

The benefits payment report can be a new report or a replacement report. Both new and replacement reports can be submitted in the same record. However, there can only be one instance of any individual report in the record. A new report and its replacement report cannot be submitted in the same record. Neither can more than one replacement report for the same report be submitted in the same record.

The schema of a record that contains new and replacement benefits payment reports is **BenefitReportsToIR** in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Benefits payment reports". The same schema is also used when submitting records via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

Reports to be cancelled must be submitted with their own schema (see the section "Submitting cancellation data to the Incomes Register").

6.2 Record data

The structure of a record containing benefits payment reports to be submitted to the Incomes Register is presented on a general level in Figure 9.

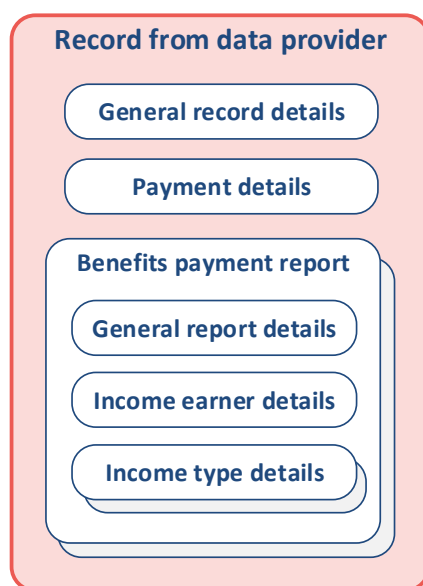


Figure 9. Structure of a record containing benefits payment reports.

6.2.1 General record details

The general record details are included in the record only once, and they apply to all reports submitted in the record. The general record details are presented in the section "General information on submitting data, General record details". The type of a record (DeliveryDataType) containing benefits payment reports is 102.

6.2.2 Payment details

Payment details are included in the record only once, and they apply to all reports submitted in the record. Payment details include, for example, payer details and the details of the contact persons for the record.

6.2.3 General report details

The general report details are provided report-specifically in the record. The general details include the following information.

Action type (ActionCode)

The action type indicates whether the report is a new or replacement report.

Incomes Register report reference (IRReportId)

The Incomes Register assigns a unique Incomes Register report reference to the benefits payment report. The reference uniquely identifies every report submitted to the Incomes Register. The reference is returned to the submitter with the record processing feedback.

The Incomes Register report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using a payer's report reference.

Payer's report reference (ReportId)

The payer uniquely identifies a new benefits payment report using a payer's report reference. The payer's report references of all benefits payment reports submitted by the payer in question must be unique. If the payer submits more than one benefits payment report using the same reference, the Incomes Register will return an error.

The payer can allocate the Incomes Register's acknowledgement of receipt and processing feedback to the submitted report with the report reference.

The report reference can be used to allocate a replacement report to a report previously submitted to the Incomes Register. A replacement report can also be allocated to a previously submitted report using the Incomes Register report reference.

Report version number (ReportVersion)

The Incomes Register assigns version number 1 to a new report, while the version number assigned to a replacement report is one higher than that of the replaced report. The version number is returned to the submitter with the record processing feedback.

The version number can be used when allocating a replacement report to a report previously submitted to the Incomes Register in the same manner as with earnings payment reports.

The Incomes Register's report reference on the original, cancelled report (OrigIRReportId)

Some data cannot be updated using a replacement report; instead, the report must be cancelled and a new report submitted containing the replacement data. It may be necessary to correct the same report by cancelling the report and submitting a new one several times. In the "chain", the Incomes Register's report reference on the original, cancelled report is the Incomes Register's report reference of the first report corrected by cancelling it.

The payer's report reference on the original, cancelled report (OrigIRReportId)

In the "chain", the payer's report reference on the original, cancelled report is the payer's report reference of the first report corrected by cancelling it (cf. The Incomes Register's report reference on the original, cancelled report).

6.2.4 Income earner details

The income earner details include information such as the income earner's identifier, name and address details.

6.2.5 Income type details

Income type details include the income type code and other data to be reported income type specifically. One report may contain several income types.

6.3 Replacement report

When a payer submits a new benefits payment report to the Incomes Register, the Incomes Register assigns version number 1 to the report. The status of the new report will be "Valid".

When the payer submits a replacement report to the Incomes Register, either the payer's report reference or the Incomes Register report reference must be included in the report. Both references may also be included. If the payer's report reference is provided in the report, it will be used to find the report to be replaced in the Incomes Register. Correspondingly, if the Incomes Register report reference is provided in the report, it will be used to find the report to be replaced. If both report references are provided in the replacement report, they will both be used to find the report to be replaced (the AND operator).

If a version number is provided in the replacement report, it will be used to find the report to be replaced, in addition to the report reference data. The Incomes Register will check the version number provided in the replacement report against the latest version of the report in question in the Incomes Register. If an attempt is made to replace an outdated version of a report or a cancelled report, the Incomes Register will return an error.

The Incomes Register will replace the report by saving a new version of the report with the replacement data. The version number of the replacement report will be one higher than the version number of the replaced report. The payer's report reference and the Incomes Register report reference will remain unchanged. The status of the replacement report version will be "Valid". The data in the report version to be replaced will no longer be maintained.

The procedure for replacing a benefits payment report in the Incomes Register is illustrated in Figure 10.

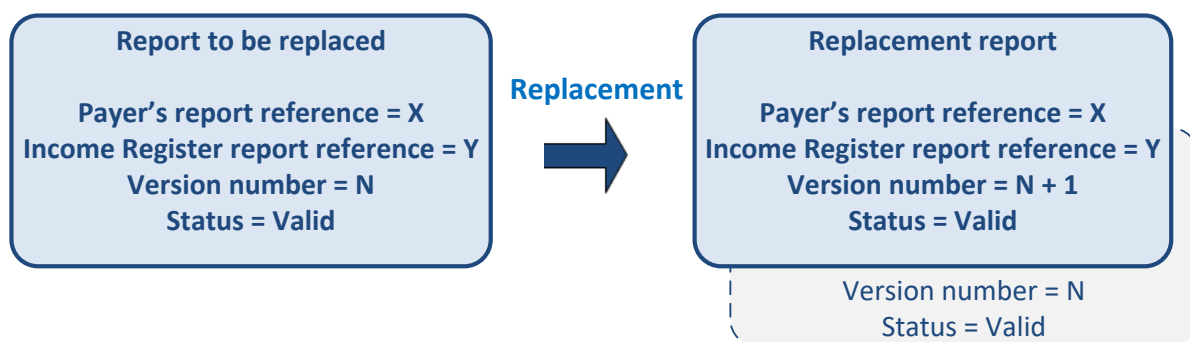


Figure 10. Replacing a benefits payment report in the Incomes Register.

7 SUBMITTING A RECORD SUBSCRIPTION TO THE INCOMES REGISTER

7.1 General

Record subscriptions are submitted to the Incomes Register as **records** that may contain only a single record subscription. The schema of a record that contains a record subscription is **SubscriptionsToIR** in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Record subscriptions". The same schema is also used when submitting a record subscription via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

A record subscription consists of a primary subscription and secondary subscriptions connected to it. A secondary subscription specifies the information on the subscribed record and the record query criteria. All secondary subscriptions connected to the primary subscription have the same validity period and are queried at the same time. During each query, a separate record is generated for each secondary subscription.

A record subscription can be cancelled via the technical interface. The cancellation is done with its own schema (see the section "Submitting cancellation data to the Incomes Register").

A record subscription cannot be maintained via the technical interface. Some details of a record subscription can be maintained in the e-service.

7.2 Record data

The structure of a record containing a record subscription, to be submitted to the Incomes Register, is presented on a general level in Figure 11.

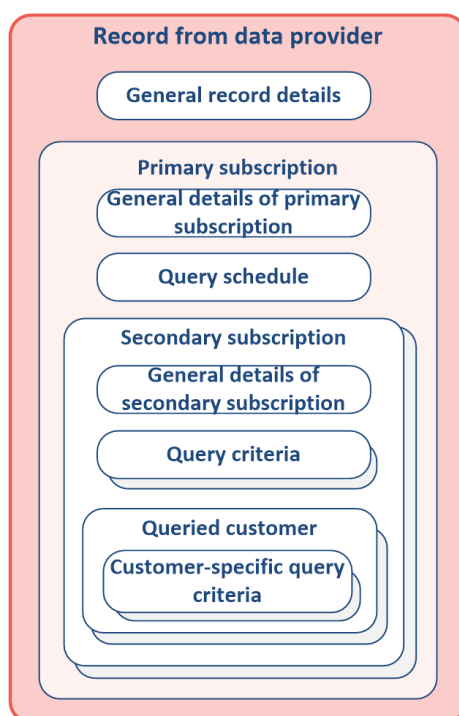


Figure 11. Structure of a record containing a record subscription.

7.2.1 General record details

The general record details are presented in the section "General information on submitting data, General record details". The type of a record (DeliveryDataType) containing a record subscription is 103.

7.2.2 General details of a primary subscription

The general details of a primary subscription include the following information.

Subscriber's primary subscription reference (MainSubscriptionId)

The subscriber uniquely identifies the primary subscription with the subscriber's primary subscription reference. All primary subscriptions submitted by the subscriber in question must have a unique subscriber's primary subscription reference. If the subscriber submits more than one record subscription using the same subscriber's primary subscription reference, the Incomes Register will return an error.

With the reference, the subscriber can allocate the Incomes Register's acknowledgement of receipt and processing feedback to the primary subscription they sent.

Record subscription type (SubscriptionType)

A record subscription is either a one-off or recurrent subscription.

A one-off subscription is queried in accordance with the query schedule specified in the primary subscription only once. All secondary subscriptions connected to the primary subscription are queried simultaneously. A one-off subscription is used if the need for the query of the records subscribed to is 'one time only' or if the subscriber wishes to specify different query criteria for different queries.

In a recurrent subscription, a query is made repeatedly in accordance with the query schedule during the validity period of the primary subscription. All secondary subscriptions connected to the primary subscription are queried simultaneously. The query scheduling alternatives for a recurrent subscription are described in the Query schedule section.

The record queries of a recurrent subscription use the same query criteria in each query, Query criteria involving chronological filtering, which are automatically updated by the system during the query for the next query, form the exception to this.

Distribution channel (DeliveryChannelCode)

The distribution channel to which the queried records are delivered. All records queried based on secondary subscriptions connected to the primary subscription are delivered to the same distribution channel. The distribution channel of records generated based on record subscriptions and distributed via the technical interface is SFTP. Some records – e.g. transcripts in PDF format – can be subscribed to for retrieval from the file upload service.

Validity start date (ValidFrom)

The type of the record subscription is *one-off subscription*: Secondary subscriptions connected to the primary subscription are queried on the start date of validity at the query time specified in the query schedule.

The type of the record subscription is *recurrent subscription*: The first query for the secondary orders connected to the primary subscription is performed at the next scheduled query time following the validity start date. If, for example, the query is scheduled to be performed each Friday at 19:00, and the validity start date 1 January 2019 is a Tuesday, the first query will be performed on the first Friday following 1 January 2019 at 19:00.

Validity end date (ValidUntil)

The type of the record subscription is *one-off subscription*: The information is not relevant.

The type of the record subscription is *recurrent subscription*: If the primary subscription should remain valid until further notice, the validity end date is left blank. The last query for the secondary orders connected to the primary subscription is performed at the last scheduled query time before the validity end date.

The end date of the validity period can be maintained via the e-service.

Start and end of query time range for changes (ModifiedTimespanStart, ModifiedTimespanEnd)

If the record type specified in a secondary subscription connected to the primary subscription requires the entry of a query time range for changes as a query criterion, the record will only include new and changed data submitted to the Incomes Register on or after the date and time specified by the start of the query time range for changes. Correspondingly, the record will only include new and changed data submitted to the Incomes Register before the date and time specified by the end of the query time range for changes (the end time excluded).

The query time range for changes specified in the primary subscription is used in the queries of all secondary subscriptions connected to the primary subscription; this means that all records will include the changes made during the same time range.

One-off-subscription:

- The start and end of the query time range for changes (if the end has been specified) must be before the query time. The query time means the start date of the validity of the primary subscription and the time of day of the query defined in the query schedule.
- If the end of the query time range for changes has been specified in the primary subscription, the record will include new and changed data submitted to the Incomes Register during the time range defined by the start and end of the query time range for changes (excluding the end time).
- If the end of the query time range for changes has not been specified in the primary subscription, the record will include new and changed data submitted to the Incomes Register during the time range between the start of the query time range for changes and the query time (the query time excluded). The query time means the start date of the validity of the primary subscription and the time of day of the query defined in the query schedule.

Recurrent subscription:

- The start of the query time range for changes specified for the primary subscription must be before the first scheduled query time. The end of the query time range for changes cannot be specified in the primary subscription.
- In the first query, the record will include the new and changed data submitted to the Incomes Register during the time range defined by the start of the query time range for changes and the first scheduled query time (the query time excluded).
- In subsequent queries, the record will include the new and changed data submitted to the Incomes Register during the time range defined by the end of the previous query time range for changes (the end time included) and the scheduled query time (the query time excluded).

Example:

The intention is that the record is queried once per day and contains all earnings/benefits payment reports submitted to the Incomes Register since it started operations on 1 January 2019. Submit a primary subscription (recurrent subscription) and a connected secondary subscription with the "Earnings payment reports – all income earners"/"Benefits payment reports – all income earners" record type.

When the record subscription is submitted, the start of the query time range for changes in the primary subscription is specified as 1 January 2019 at 00:00. The query is scheduled at 22:00 every day. The primary subscription will be valid from 1 January 2019 until further notice.

The first query will be initiated in the Incomes Register on 1 January 2019 at 22:00. The record will include the new and changed earnings/benefits payment reports submitted to the Incomes Register in the time range from 00:00 on 1 January 2019 to 22:00 on 1 January 2019 (excluding the end time).

The second query will be initiated in the Incomes Register on 2 January 2019 at 22:00. The record will include the new and changed earnings/benefits payment reports submitted to the Incomes Register in the time range from 22:00 on 1 January 2019 to 22:00 on 2 January 2019 (excluding the end time).

Daily queries will continue as above during the entire validity period of the primary subscription.

7.2.3 Query schedule

The query schedule is described in the section "Query schedule information".

7.2.4 General details of a secondary subscription

The general details of a secondary subscription include the following information.

Subscriber's secondary subscription reference (SubscriptionId)

The subscriber uniquely identifies the secondary subscription with the subscriber's secondary subscription reference. The reference uniquely identifies the secondary subscriptions connected to a single primary subscription. If the subscriber submits more than one secondary subscription connected to the same primary subscription using the same subscriber's secondary subscription reference, the Incomes Register will return an error.

Record type (QueryDataType)

The type of record subscribed to, e.g. "Earnings payment reports – all income earners" or "Benefits payment reports – all income earners".

Data access profile (QueryProfile)

The data access profile determines the data (e.g. in an earnings payment report/employer's separate report/benefits payment report) included by the query in the subscriber's (DeliveryDataOwner) record. Records can only be subscribed to in compliance with the data access profiles defined in the Incomes Register for the party.

Query all report versions (IncludeAllVersions)

This entry controls whether to include only the latest version of the reports submitted to the Incomes Register during the specified query time range for changes, or to include all report versions submitted to the Incomes Register within the specified query time range for changes. This information is only used in record subscriptions for income data.

Record schema version (QueryDataSchemaVersion)

The schema version of the queried record.

7.2.5 Query criteria

The query criteria are record type specific, and they are described in connection with the presentation of the queried records in the document, "Technical interface – Distribution of data from the Incomes Register".

7.2.6 Queried customers

The information on the queried customers is record type specific, and it is described in connection with the presentation of the queried records in the document, "Technical interface – Distribution of data from the Incomes Register".

7.3 Query schedule information

7.3.1 One-off subscription

A one-off subscription is queried in accordance with the scheduled query time only once. All secondary subscriptions connected to the primary subscription are queried simultaneously and from the same query time range for changes. The query time determines the earliest point in time (date and time) at which the query is initiated. The Incomes Register initiates the query as soon as possible after the specified query time.

Query time information in an one-off subscription:

| Data element | Allowed value | Label |
|--|---------------|-------------------|
| MainSubscription/ValidFrom | | Date of the query |
| MainSubscription/Schedule/OnetimeDeliverySchedule/Time | | Time of the query |



7.3.2 Recurrent subscription

A recurrent subscription is queried repeatedly in accordance with the specified query times during the validity period of the primary subscription. All secondary subscriptions connected to the primary subscription are queried simultaneously and from the same query period for modified reports. The query time determines the earliest point in time at which the query is initiated in the Incomes Register. The Incomes Register initiates the query as soon as possible after the specified query time.

The query schedule for a recurrent subscription is one of the following:

- daily schedule
- weekly schedule
- monthly schedule.

According to the **daily schedule**, the query is performed daily at the times specified in the query schedule during the validity period of the primary subscription. There must be at least one time, and there can be several per day. The minimum time between queries is record type specific.

A daily schedule can be used in situations such as the following:

- The intention is to query the records every day at 21:00. One query time is defined for the primary subscription.
- The intention is to query the records every day at 9:00, 15:00 and 21:00. Three query times are defined for the primary subscription.

The data of the query times in accordance with a daily schedule in a recurrent subscription:

| Data element | Allowed value | Label |
|---|---------------|---|
| MainSubscription/ValidFrom | | Start date of the validity of the primary subscription. |
| MainSubscription/ValidUntil | | End date of the validity of the primary subscription. |
| MainSubscription/Schedule/RecurringDeliverySchedule/DailySchedule/queriestartTime | | Query times. Several times can be given. |
| .../Time | | Query time. |

According to the **weekly schedule**, the query is made on weekdays at the times defined in the query schedule during the validity period of the primary subscription. Query times cannot be defined day-specifically; the query is performed at the same time on each day. There must be at least one time, and there can be several per day. The minimum time between queries is record type specific.

A weekly schedule can be used in situations such as the following:

- The intention is to query the records every Friday at 21:00. The query day is specified as Friday and the query time as 21:00.
- The intention is to query the records every day from Monday to Friday at 13:00 and 23:00. Monday, Tuesday, Wednesday, Thursday and Friday are specified as the query days, with two query times.

The data of the query times in accordance with a weekly schedule in a recurrent subscription:

| Data element | Allowed value | Label |
|--|---------------|--|
| MainSubscription/ValidFrom | | Start date of the validity of the primary subscription. |
| MainSubscription/ValidUntil | | End date of the validity of the primary subscription. |
| MainSubscription/Schedule/RecurringDeliverySchedule/WeeklySchedule | | Weekdays on which the records subscribed to are queried. Several days can be given. |
| .../Monday | true, false | Enter the value "true", if you wish to query the records subscribed to on Mondays. |
| .../Tuesday | true, false | Enter the value "true", if you wish to query the records subscribed to on Tuesdays. |
| .../Wednesday | true, false | Enter the value "true", if you wish to query the records subscribed to on Wednesdays. |
| .../Thursday | true, false | Enter the value "true", if you wish to query the records subscribed to on Thursdays. |

| | | |
|--|-------------|--|
| .../Friday | true, false | Enter the value "true", if you wish to query the records subscribed to on Fridays. |
| .../Saturday | true, false | Enter the value "true", if you wish to query the records subscribed to on Saturdays. |
| .../Sunday | true, false | Enter the value "true", if you wish to query the records subscribed to on Sundays. |
| MainSubscription/Schedule/RecurringDeliverySchedule/WeeklySchedule/queriestartTime | | Query times. Several times can be specified. |
| .../Time | | Query time. |

According to the **monthly schedule**, a query is made in accordance with the months, days of the month and times defined in the query schedule during the validity period of the primary subscription. The days of the month of the query cannot be specified month-specifically; the query is performed on the same days of the month each month. Query times cannot be defined day-specifically; the query is performed at the same time on each specified day of the month. There must be at least one time, and there can be several per day. The minimum time between queries is record type specific.

The monthly schedule can be used in situations such as the following:

- The intention is to query the records on the 15th day of each month at 21:00. All months are specified as query months (1, 2, 3, ... 12). The 15th day of the month is specified as the day of the month of the query and the time as 21:00.
- The intention is to query the records on the 15th and the last days of June and December at 22:00. Months 6 and 12 are specified as the query months. The days of month of the query are specified as day 15 and day "32" (the last day of the month), and the query time as 22:00.

The data of the query times in accordance with a monthly schedule in a recurrent subscription:

| Data element | Allowed value | Label |
|---|------------------|--|
| MainSubscription/ValidFrom | | Start date of the validity of the primary subscription. |
| MainSubscription/ValidUntil | | End date of the validity of the primary subscription. |
| MainSubscription/Schedule/RecurringDeliverySchedule/MonthlySchedule/Months | | Months in which the records subscribed to are queried. Several months can be specified. |
| .../Month | 1,2,3, ...12 | Number of the query month. |
| MainSubscription/Schedule/RecurringDeliverySchedule/MonthlySchedule/Days | | Days of the month on which the records subscribed to are queried. Several days of the month can be specified. |
| .../Day | 1,2,3, ...31, 32 | Day of the month of the query. If the intention is to query the records on the last days of the specified months, specify value "32". |
| MainSubscription/Schedule/RecurringDeliverySchedule/MonthlySchedule/queriestartTime | | Query times. Several times can be specified. |
| .../Time | | Query time. |

8 SUBMITTING MESSAGES TO THE INCOMES REGISTER

8.1 General

The messaging feature allows parties to send messages to the Incomes Register authority. Parties cannot send messages to other parties.

Messages are submitted to the Incomes Register as **records** that may contain several messages. When the record is submitted via the real-time Web Service interface, it can only contain one message. The schema of a record that contains messages is **MessagesToIR** in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Messages". The same schema is also used when submitting messages via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

A message submitted to the Incomes Register cannot be maintained or cancelled.

8.2 Record data

The structure of a record containing messages, to be submitted to the Incomes Register, is presented on a general level in Figure 12.

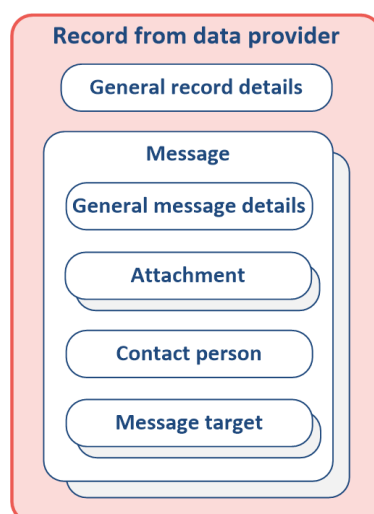


Figure 12. Structure of a record containing messages.

8.2.1 General record details

The general record details are included in the record only once, and they apply to all messages submitted in the record. The general record details are presented in the section "General information on submitting data, General record details". The type of a record (DeliveryDataType) containing messages is 104.

8.2.2 General message details

The general message details include the following information.

Sender's message reference (MessageId)

The sender of the message uniquely identifies the message with a sender's message reference. All messages submitted by the sender in question must have a unique sender's message reference. If the sender submits more than one message with the same sender's message reference, the Incomes Register will return the error.

With the reference, the sender can allocate the Incomes Register's acknowledgement of receipt and processing feedback to the message sent.

Message type (MessageCategory)

The message can be, for example, a control request or a notification.

Message subject (SubjectCode)

The subject of the message indicates the subject area and detailed subject of the message.

Content (Content)

The free-form text-part of the message.

8.2.3 Attachments

Files can be attached to the message, with a maximum of five attachments per message.

8.2.4 Contact person

If the sender of the message wishes, they can give contact information for any communications relating to the content of the message.

8.2.5 Target items for message

Target items for message can be used to specify what items the message contents concern in a pre-defined manner. The available target items for message are income earner, payer, incomes payment report, a record submitted to the Incomes Register, and a record queried from the Incomes Register.

The target item for a message can also be some other message, if the message sender wishes to link the new message to a message previously saved in the Incomes Register.

There can be several target items for a message. If, for example, the message is about the earnings submitted by a specific payer for a specific income earner in two different earnings/benefits payment reports, the target items the message can be the income earner, the payer and the two earnings/benefits payment reports. Target items for message are uniquely identified with the identifying information of the income earner and the payer, the report references, the record references and the message references.

9 SUBMITTING CANCELLATION DATA TO THE INCOMES REGISTER

9.1 General

Cancellation data is submitted to the Incomes Register as **records**. A cancellation record may contain cancellations of earnings payment reports (several in one cancellation record), cancellations of employer's separate reports (several in one cancellation record), cancellations of benefits payment reports (several in one cancellation record), a cancellation of a record subscription (one record subscription at a time), a cancellation of a record containing earnings payment reports/employer's separate reports/benefits payment reports (one record at a time), or a cancellation of a record containing a record subscription (one record at a time).

The schema of a cancellation record to be submitted to the Incomes Register is **InvalidationsToIR** in all submitting channels of the technical interface. The contents of the schema are described in the document, "Data delivery – Schemas – Cancellation data". The same schema structure is used in all cancellations done via the technical interface, regardless of what kind of data (reports, a record subscription, a record) the cancellation concerns. The same schema is also used when submitting cancellation data via the e-service's upload service. This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

A cancellation is irreversible, and a cancelled item can no longer be maintained. If, for example, the cancellation of an earnings payment report or a benefits payment report needs to be undone, a new report must be submitted to the Incomes Register.

9.2 Record data

A description of the structure of a record containing cancellation data, to be delivered to the Incomes Register, is presented in Figure 13.

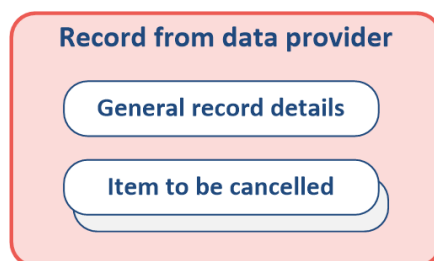


Figure 13. Structure of a record containing cancellation data.

9.2.1 General record details

The general record details are included in the record only once, and they apply to all items to be cancelled submitted in the record. The general record details are presented in the section "General information on submitting data, General record details".

The type of the record (`DeliveryDataType`) indicates what types of items to be cancelled the record contains. The record type is one of the following:

- Cancellation of earnings payment reports (105)
- Cancellation of employer's separate reports (106)
- Cancellation of benefits payment reports (107)
- Cancellation of a record subscription (108)
- Cancellation of a record containing earnings payment reports (109)
- Cancellation of a record containing employer's separate reports (110)
- Cancellation of a record containing benefits payment reports (111)
- Cancellation of a record containing a record subscription (112).

9.2.2 Items to be cancelled

A cancellation record may contain only one type of items to be cancelled. For example, cancellations of both earnings payment reports and employer's separate reports cannot be submitted in the same record.

The item to be cancelled uniquely identifies the data to be cancelled. The items to be cancelled are described in the following section.

9.3 Details of the item to be cancelled

There can be one or several items to be cancelled depending on the record type and the submitting channel of the cancellation record. The allowed number of items to be cancelled is presented, by type of record and channel, in the following table.

| Record type | SFTP | Web Service deferred | Web Service real-time |
|---|---------|----------------------|-----------------------|
| Cancellation of earnings payment reports (105) | several | several | one |
| Cancellation of employer's separate reports (106) | several | several | one |
| Cancellation of benefits payment reports (107) | several | several | one |
| Cancellation of a record subscription (108) | one | one | one |
| Cancellation of a record containing earnings payment reports (109) | one | one | one |
| Cancellation of a record containing employer's separate reports (110) | one | one | one |
| Cancellation of a record containing benefits payment reports (111) | one | one | one |
| Cancellation of a record containing a record subscription (112) | one | one | one |

9.3.1 Cancellation of reports

If the record type is "Cancellation of earnings payment reports" (105), "Cancellation of employer's separate reports" (106) or "Cancellation of benefits payment reports" (107), the details of the item to be cancelled are specified as follows:

| Data element | Label |
|-------------------------------------|-----------------------------------|
| DeliveryData/Items/Item/IRItemid | Incomes Register report reference |
| DeliveryData/Items/Item/Itemid | Payer's report reference |
| DeliveryData/Items/Item/ItemVersion | Report version number |

The payer's report reference or the Incomes Register report reference must be provided when cancelling an earnings payment report/employer's separate report/benefits payment report. Both references may also be included. If the payer's report reference was used as an identifier for the report to be cancelled, it will be used to find the report to be cancelled from the Incomes Register. Correspondingly, if the Incomes Register report reference was specified as the identifier, it will be used to find the report. If both report references were provided as identifiers in the item details, they will both be used to find the report to be cancelled (the AND operator).

If a version number is also provided in the details of the item to be cancelled, it will also be used to find the report to be cancelled, in addition to the report reference data. The Incomes Register will check the version number provided *against the latest version of the report to be cancelled in the Incomes Register*. If an attempt is made to cancel an outdated version, the Incomes Register will return an error.

If the report version number is not provided in the details of the item to be cancelled, the Incomes Register will find the latest report version that matches the provided report reference data for cancellation.

The Incomes Register will check that the report found using the reference data and version number (if any) *is still valid*. If an attempt is made to cancel a report that has already been cancelled, the Incomes Register will return an error.

The Incomes Register cancels the report by saving a new report version with identical data content to the version to be cancelled. The status of the new version is "Cancelled", and its version number is one higher than the previous version's. The previous report versions will not be maintained. The report versioning in the Incomes Register taking place during cancellation is illustrated in Figure 14.

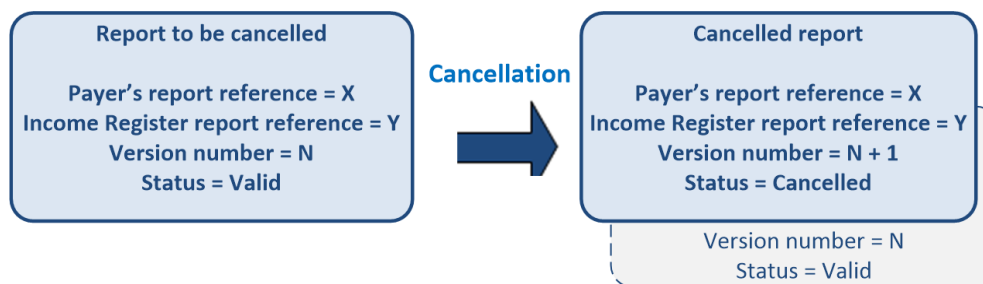


Figure 14. Cancellation of a report in the Incomes Register.

9.3.2 Cancellation of a record subscription

If the record type is "Cancellation of a record subscription" (108), the details of the item to be cancelled are specified as follows:

| Data element | Label |
|----------------------------------|---|
| DeliveryData/Items/Item/IRItemId | Incomes Register primary subscription reference |
| DeliveryData/Items/Item/ItemId | Subscriber's primary subscription reference |

If the subscriber's primary subscription reference was used as the identifier for the primary subscription in the details of the item to be cancelled, it is used to find the primary subscription to be cancelled from the Incomes Register. Correspondingly, if the Incomes Register primary subscription reference was used as the identifier, it will be used to find the primary subscription. If both references were provided as identifiers in the item details, they will both be used to find the primary subscription to be cancelled (the AND operator).

The Incomes Register will check that the primary subscription to be cancelled is still valid. If an attempt is made to cancel a primary subscription that has already been cancelled, the Incomes Register will return an error.

The Incomes Register will check that no record queries have been made on the basis of the primary subscription to be cancelled. If queries have been made on the basis of the primary subscription, the Incomes Register will return an error.

The Incomes Register will cancel the primary subscription by updating its status to "Cancelled". All secondary subscriptions connected to the primary subscription will be cancelled. No queries will be made on the basis of the primary subscription after the cancellation.

9.3.3 Cancellation of a record containing reports

If the record type is "Cancellation of a record containing earnings payment reports" (109), "Cancellation of a record containing employer's separate reports" (110) or "Cancellation of a record containing benefits payment reports" (111), the details of the item to be cancelled are specified as follows:

| Data element | Label |
|----------------------------------|--|
| DeliveryData/Items/Item/IRItemId | Incomes Register record reference |
| DeliveryData/Items/Item/ItemId | Record supplier's (payer's) record reference |

If the payer's record reference was used as the identifier for the record in the details of the item to be cancelled, it is used to find the record to be cancelled from the Incomes Register. Correspondingly, if the Incomes Register record reference was used as the identifier, it will be used to find the record. If both references were provided as identifiers in the details of the item to be cancelled, they will both be used to find the record to be cancelled (the AND operator).

The Incomes Register will check that the record to be cancelled is still valid. If an attempt is made to cancel a record that has already been cancelled, the Incomes Register will return an error.

The Incomes Register will find the latest versions of the reports included in the record to be cancelled. Any report versions found that are still valid will be cancelled. The Incomes Register cancels a report by saving a new report version with data content that is identical to the latest version. The status of the new version is "Cancelled", and its

version number is one higher than the previous version's. The Incomes Register will not make changes to any reports in the record to be cancelled that have already been cancelled.

The Incomes Register updates the status of the record to be cancelled to "Cancelled".

9.3.4 Cancellation of a record containing a record subscription

If the record type is "Cancellation of a record containing a record subscription" (112), the details of the item to be cancelled are specified as follows:

| Data element | Label |
|----------------------------------|---|
| DeliveryData/Items/Item/IRItemId | Incomes Register record reference |
| DeliveryData/Items/Item/ItemId | Record supplier's (subscriber's) record reference |

If the subscriber's record reference was used as the identifier for the record in the details of the item to be cancelled, it is used to find the record to be cancelled from the Incomes Register. Correspondingly, if the Incomes Register record reference was used as the identifier, it will be used to find the record. If both references were provided as identifiers in the details of the item to be cancelled, they will both be used to find the record to be cancelled (the AND operator).

The Incomes Register will check that the record to be cancelled is still valid. If an attempt is made to cancel a record that has already been cancelled, the Incomes Register will return an error.

The Incomes Register finds a primary subscription included in the record to be cancelled. If the primary subscription is still valid, the Incomes Register checks that no queries have been made based on it. If queries have been made on the basis of the primary subscription, the Incomes Register will return an error.

If the primary subscription was still valid, the Incomes Register updates the primary subscription's status to "Cancelled".

The Incomes Register updates the status of the record to be cancelled to "Cancelled".

Note: The difference between the cancellation of a record subscription (DeliveryDataType = 108) and the cancellation of a record containing a record subscription (DeliveryDataType = 112) is that in the cancellation of just a record subscription, the record containing the subscription remains valid. In practice, this does not matter, because a record can contain only a single record subscription that is cancelled in both cases.

10 ACKNOWLEDGEMENT OF RECEIPT

10.1 General

If a record is submitted to the Incomes Register via the *deferred Web Service interface*, the Incomes Register will send an acknowledgement of receipt to the record submitter using the **AckFromIR** schema. The contents of the schema are described in the document, "Data delivery – Schemas – Acknowledgement of receipt". This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

10.2 Details of an acknowledgement of receipt

The structure of an acknowledgement of receipt is presented in Figure 15.

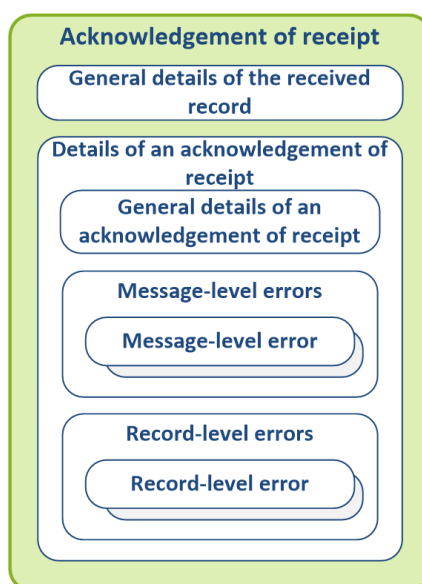


Figure 15. Structure of an acknowledgement of receipt.

10.2.1 Details of the received record (DeliveryData)

The general details of the received record are returned in this data group with content that is identical to that of the received record.

10.2.2 General details of an acknowledgement of receipt

The general details of an acknowledgement of receipt include the following information.

Incomes Register message reference (IRResponseId)

The Incomes Register message reference uniquely identifies all messages sent from the Incomes Register. The message reference can be used, for example, in troubleshooting and the identification of duplicate messages.

Timestamp of the acknowledgement of receipt (IRResponseTimestamp)

The date and time when the acknowledgement of receipt was sent from the Incomes Register.

Record status (DeliveryDataStatus)

The status of the record at the time the acknowledgement of receipt was generated. The statuses are presented in the section, "Record status in the acknowledgement of receipt".

Incomes Register record reference (IRDeliveryId)

The Incomes Register record reference uniquely identifies all records submitted to the Incomes Register. The record submitter can use the Incomes Register record reference to enquire about the status of the processing of the record (see section "Request for processing feedback"). An Incomes Register record reference is sent in the acknowledgement of receipt if the record has been received and accepted for processing in the Incomes Register (DeliveryDataStatus = "Received").

10.2.3 Message-level errors (MessageErrors)

Errors related to the authorisation of a service request and any technical errors related to exceptional circumstances are returned in the Message-level errors section.

10.2.4 Record-level errors (DeliveryErrors)

Content errors related to record-level data are returned in the Record-level errors section.

10.3 Data check and error messages

When a record submitted via the deferred Web Service interface is received, its data is checked, and the errors and record status are returned in an acknowledgement of receipt as follows.

1. Check for message-level errors

Message-level errors include errors related to the authorisation of service use.

If the record contains message-level errors, the record is not accepted for processing in the Incomes Register. The Incomes Register sends an acknowledgement of receipt where the record status is "Rejected at reception".

Message-level errors are returned in the Message-level errors data group of the acknowledgement of receipt. If message-level errors were detected in the record, no record-level errors will be included in the acknowledgement of receipt.

If no message-level errors were detected, the process continues with step 2.

2. Check for record-level errors

Record-level errors in the acknowledgement of receipt mean errors in data elements containing general record details (data group Record data (DeliveryData)). Record-level errors include an invalid record type not found in the codes.

If the record contains record-level errors, the record is not accepted for processing in the Incomes Register. The Incomes Register sends an acknowledgement of receipt where the record status is "Rejected at reception".

Record-level errors are returned in the Record-level errors data group of the acknowledgement of receipt.

If no record-level errors were detected, the Incomes Register sends an acknowledgement of receipt in which the record status is "Processing". The process continues with step 3.

3. Check for item-level errors

The processing of the record continues with a check of the data contents of the items included in the record, and the data contents common to the items (such as the payer details).

The record submitter must enquire the end result of the record processing by sending a request for processing feedback to the Incomes Register (see the section, "Request for processing feedback").

10.4 Record status in the acknowledgement of receipt

The following is a summary of record statuses in the acknowledgement of receipt in different situations.

| Initial situation | Record status returned by the Incomes Register | Label |
|---|--|--|
| The record does not contain message-level or record-level errors. | Processing (2) | The Incomes Register has received the record for processing. |
| The record contains message-level or record- | Rejected at reception (4) | The record and the data it contains have not been accepted for |

| | | |
|---------------|-------------|--|
| level errors. | | processing in the Incomes Register. The acknowledgement of receipt includes the message-level errors and record-level errors. The record submitter must resubmit the record with the correct data. |
| | Unknown (0) | The reception of the record failed. The acknowledgement of receipt contains an itemised list of the errors. The record submitter must resubmit the record with the correct data. |



11 REQUEST FOR PROCESSING FEEDBACK

11.1 General

If a record has been submitted to the Incomes Register via the *deferred Web Service interface*, the record submitter must enquire the status of the record processing by sending a request for processing feedback to the Incomes Register. The feedback request is sent to the Incomes Register via the Web Service interface using the schema **StatusRequestToIR**. The contents of the schema are described in the document, "Data delivery – Schemas – Request for processing feedback". This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

The Incomes Register responds to the request for processing feedback by sending the processing feedback (see the section "Processing feedback").

11.2 Details of the request for processing feedback

The structure of the request for processing feedback is presented in Figure 16.

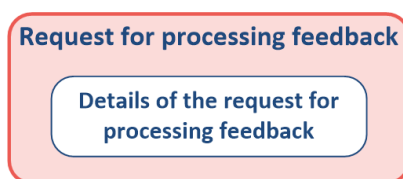


Figure 16. Structure of the request for processing feedback.

The details of the request for processing feedback include the following information.

Record type (DeliveryDataType)

The record type of the record being enquired. The record type is used as a search criterion together with the record references.

Record owner's record reference (DeliveryId)

The request can be targeted at a record submitted to the Incomes Register with the record owner's record reference. If one has been specified, a record that includes the reference is searched for in the Incomes Register. If the Incomes Register record reference has also been specified in the request, both references are used to find the record in the Incomes Register (the AND operator).

Incomes Register record reference (IRDeliveryId)

The request can be targeted at a record submitted to the Incomes Register with the Incomes Register record reference. If one has been specified, a record that includes the reference is searched for in the Incomes Register. If the record owner's record reference has also been specified in the request, both references are used to find the record in the Incomes Register (the AND operator).

12 PROCESSING FEEDBACK

12.1 General

The Incomes Register generates processing feedback in the following situations:

- The record is submitted via the real-time Web Service interface. The Incomes Register outputs the processing feedback once the record has been processed in the Incomes Register.
- The record is submitted via the deferred Web Service interface. The Incomes Register sends the processing feedback as a response to a request for processing feedback made via the Web Service interface (see the section "Request for processing feedback").
- The record is submitted via the SFTP interface. The Incomes Register generates a feedback file containing the processing feedback to be retrieved via the SFTP interface once the record has been processed in the Incomes Register.

In all of the cases described above, the processing feedback complies with the schema **StatusResponseFromIR**. The contents of the schema are described in the document, "Data delivery – Schemas – Processing feedback". This section describes the schema structure on a general level and presents some individual data items included in the schema. The full data contents are presented in the schema description.

12.2 Details of the processing feedback

The structure of the processing feedback is presented in Figure 17.

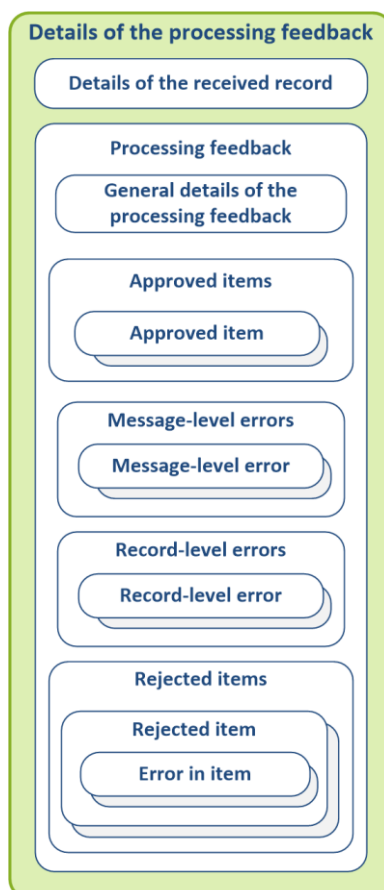


Figure 17. Structure of the processing feedback.

12.2.1 Details of the received record (DeliveryData)

The general details of the received record are returned in this data group with content that is identical to that of the received record.

12.2.2 General details of the processing feedback

The general details of the processing feedback include the following information.

Incomes Register message reference (IRResponseId)

The Incomes Register message reference uniquely identifies all messages sent from the Incomes Register. The message reference can be used, for example, in troubleshooting and the identification of duplicate messages.

Processing feedback timestamp (IRResponseTimestamp)

The date and time when the processing feedback was generated in the Incomes Register.

Record status (DeliveryDataStatus)

The status of the record at the time the processing feedback was generated. The statuses are presented in the section, "Record status in the processing feedback".

Incomes Register record reference (IRDeliveryId)

The record reference assigned to the record by the Incomes Register. The Incomes Register record reference uniquely identifies all records submitted to the Incomes Register.

12.2.3 Approved items (ValidItems)

Information on valid items in the record is returned in the Approved items section, as described below. With the information, the processing feedback can be allocated to the reports, record subscription, messages or cancellation data submitted in the record.

If the record type is "Earnings payment reports" (100), "Employer's separate reports" (101) or "Benefits payment reports" (102), the reports that were successfully added to or replaced in the Incomes Register are returned in the section.

The item is identified as follows:

| Data element | Label |
|--|--|
| StatusResponse/ValidItems/Item/ItemId | Payer's report reference. |
| StatusResponse/ValidItems/Item/IRItemId | Incomes Register report reference. The Incomes Register report reference uniquely identifies all reports saved in the Incomes Register. |
| StatusResponse/ValidItems/Item/ItemVersion | Report version number. In processing feedback for a new report, the version number is 1. In the processing feedback for a replacement report, the version number is the version number of the replaced report + 1 (the version number of the replacement report generated by the Incomes Register). |

If the record type is "Record subscription" (103), the data of the primary subscription is returned in this section if the subscription was successfully added to the Incomes Register.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/ValidItems/Item/ItemId | Subscriber's primary subscription reference. |
| StatusResponse/ValidItems/Item/IRItemId | Incomes Register primary subscription reference. The Incomes Register primary subscription reference uniquely identifies all primary subscriptions saved in the Incomes Register. |

If the record type is "Messages" (104), the messages that were successfully saved in the Incomes Register are returned in this section.

The item is identified as follows:

| Data element | Label |
|---|---|
| StatusResponse/ValidItems/Item/ItemId | Sender's message reference. |
| StatusResponse/ValidItems/Item/IRItemId | Incomes Register message reference. The Incomes Register message reference uniquely identifies all messages saved in the Incomes Register. |

If the record type is "Cancellation of earnings payment reports" (105), "Cancellation of employer's separate reports" (106) or "Cancellation of benefits payment reports" (107), the reports that were successfully cancelled in the Incomes Register are returned in this section.

The item is identified as follows:

| Data element | Label |
|--|--|
| StatusResponse/ValidItems/Item/ItemId | Payer's report reference. |
| StatusResponse/ValidItems/Item/IRItemId | Incomes Register report reference. |
| StatusResponse/ValidItems/Item/ItemVersion | When processing feedback for a cancellation report, the version number is the version number of the cancelled report + 1 (the version number of the cancelled report generated by the Incomes Register). |

If the record type is "Cancellation of a record subscription" (108), the primary subscription data is returned in this section if the cancellation in the Incomes Register was successful.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/ValidItems/Item/ItemId | Subscriber's primary subscription reference. |
| StatusResponse/ValidItems/Item/IRItemId | Incomes Register primary subscription reference. |

If the record type is "Cancellation of a record containing earnings payment reports" (109), "Cancellation of a record containing employer's separate reports" (110) or "Cancellation of a record containing benefits payment reports" (111), the data of the record to be cancelled is returned in this section if the cancellation of the record in the Incomes Register was successful.

The item is identified as follows:

| Data element | Label |
|---|---|
| StatusResponse/ValidItems/Item/ItemId | Payer's record reference for the record to be cancelled. |
| StatusResponse/ValidItems/Item/IRItemId | The Incomes Register record reference for the record to be cancelled. |

If the record type is "Cancellation of a record containing a record subscription" (112), the data of the record to be cancelled is returned in this section if the cancellation in the Incomes Register was successful.

The item is identified as follows:

| Data element | Label |
|---|---|
| StatusResponse/ValidItems/Item/ItemId | Subscriber's record reference for the record to be cancelled. |
| StatusResponse/ValidItems/Item/IRItemId | The Incomes Register record reference for the record to be cancelled. |

12.2.4 Message-level errors

Errors related to the authorisation of a service request and any technical errors related to exceptional circumstances are returned in the message-level errors section. In the processing feedback for a record submitted via the SFTP channel, the Message-level errors section may also include errors related to the schema of the record.

12.2.5 Record-level errors

Content errors related to record-level data are returned in the Record-level errors section.

12.2.6 Rejected items (InvalidItems)

The details of invalid items contained in the record is returned in the Rejected items section. With the information, the processing feedback can be allocated to the reports, record subscription, messages or cancellation data submitted in the record. An itemised list of errors detected during the processing of the record is returned with the item.

If the record type is "Earnings payment reports" (100), "Employer's separate reports" (101) or "Benefits payment reports" (102), the reports that could not be added to or replaced in the Incomes Register are returned in the section.

The item is identified as follows:

| Data element | Label |
|--|--|
| StatusResponse/InvalidItems/Item/ItemId | Payer's report reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/IRItemId | Incomes Register report reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/ItemVersion | Report version number (submitted in the processed record). |

If the record type is "Record subscription" (103), the details of the primary subscription are returned in this section if adding the subscription to the Incomes Register failed.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/InvalidItems/Item/ItemId | Subscriber's primary subscription reference (submitted in the processed record). |

If the record type is "Messages" (104), the messages that could not be saved in the Incomes Register are returned in the section.

The item is identified as follows:

| Data element | Label |
|---|---|
| StatusResponse/InvalidItems/Item/ItemId | Sender's message reference (submitted in the processed record). |

If the record type is "Cancellation of earnings payment reports" (105), "Cancellation of employer's separate reports" (106) or "Cancellation of benefits payment reports" (107), the reports that could not be cancelled in the Incomes Register are returned in this section.

The item is identified as follows:

| Data element | Label |
|--|--|
| StatusResponse/InvalidItems/Item/ItemId | Payer's report reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/IRItemId | Incomes Register report reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/ItemVersion | Report version number (submitted in the processed record). |

If the record type is "Cancellation of a record subscription" (108), the primary subscription data is returned in this section if the cancellation of the record subscription in the Incomes Register failed.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/InvalidItems/Item/ItemId | Subscriber's primary subscription reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/IRItemId | Incomes Register primary subscription reference (submitted in the processed record). |

If the record type is "Cancellation of a record containing earnings payment reports" (109), "Cancellation of a record containing employer's separate reports" (110) or "Cancellation of a record containing benefits payment reports" (111), the data of the record to be cancelled is returned in this section if the cancellation of the record in the Incomes Register failed.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/InvalidItems/Item/ItemId | Payer's record reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/IRItemId | Incomes Register record reference (submitted in the processed record). |

If the record type is "Cancellation of a record containing a record subscription" (112), the data of the record (containing the record subscription) to be cancelled is returned in this section if the cancellation in the Incomes Register failed.

The item is identified as follows:

| Data element | Label |
|---|--|
| StatusResponse/InvalidItems/Item/ItemId | Subscriber's record reference (submitted in the processed record). |
| StatusResponse/InvalidItems/Item/IRItemId | Incomes Register record reference (submitted in the processed record). |

12.3 Data check and error messages

12.3.1 Record submitted via the SFTP interface

A record submitted via the SFTP interface is processed as follows.

1. Check for message-level errors

Message-level errors include errors related to the authorisation of service use.

If the record contains message-level errors, the record is not accepted for processing in the Incomes Register. The Incomes Register generates a processing feedback where the record status is "Rejected at reception". Message-level errors are returned in the Message-level errors data group of the processing feedback. If message-level errors were detected in the record, no other error data groups will be included in the processing feedback.

If no message-level errors were detected, the process continues with step 2.

2. Check for record-level errors

Record-level errors mean errors in data elements containing general record details (data group Record data (DeliveryData)). Record-level errors include an invalid record type not found in the codes.

If the record contains record-level errors, the record is not accepted for processing in the Incomes Register. The Incomes Register generates a processing feedback where the record status is "Rejected at reception". The record and all of the record's items (reports, messages, record subscription, cancellation data) are rejected. Record-level errors are returned in the Record-level errors data group of the processing feedback. Items rejected due to record-level errors are not separately listed in the Rejected items data group.

If no record-level errors were detected, the process continues with step 3.

3. Check for item-level errors

Item-level errors are errors in the reports, record subscription, messages or cancellation data contained in the record.

If no errors were detected in the record, the record and the items it contains are saved in the Incomes Register. The record status reported in the processing feedback is "Valid". Information on the accepted items is delivered in the Approved items data group of the processing feedback.

If the record contains item-level errors and the record submitter has requested the rejection of the record if it contains invalid data (FaultyControl), the status of the record in the processing feedback is "Rejected during processing". The items contained by the record are not saved in the Incomes Register. Information on the invalid items is delivered in the Approved items data group of the processing feedback.

If the record contains item-level errors and the record submitter has requested the saving of valid items if the record contains invalid items (FaultyControl), the status of the record in the processing feedback is "Valid". Valid items are saved in the Incomes Register, and their information is delivered in the Approved items data group of

the processing feedback. Invalid items are not saved in the Incomes Register, and their information is delivered in the Rejected items data group of the processing feedback.

An exception to the processing described in the previous paragraph: If **all items** in the record are invalid and the record submitter has requested the saving of valid items if the record contains invalid items (FaultyControl), the status of the record in the processing feedback is "Rejected during processing". The items contained by the record are not saved in the Incomes Register. Information on the invalid items is delivered in the Approved items data group of the processing feedback.

Example 1:

A record containing earnings/benefits payment reports (five reports) has an invalid payer's identifier type. The data of the reports contains no errors. In the processing feedback, an error message indicating an invalid payer's identifier type is returned in the Record-level errors data group. No invalid items are returned in the Rejected items data group. The record status reported in the processing feedback is "Rejected during processing".

Example 2:

A record containing earnings/benefits payment reports (five reports) has an invalid payer's identifier type. Furthermore, the record contains two reports with an unknown income type. The data of the other three reports contains no errors. In the processing feedback, an error message indicating an invalid payer's identifier type is returned in the Record-level errors data group. The identifying data of the two invalid reports and the itemised errors are returned in the Rejected items data group. The record status reported in the processing feedback is "Rejected during processing".

Example 3:

A record containing earnings/benefits payment reports (five reports) includes two reports with an unknown income type. The data of the other three reports contains no errors. The record submitter has requested the rejection of the record if invalid data is detected in it. The identifying data of the two invalid reports and the itemised errors are returned in the Rejected items data group. The record status reported in the processing feedback is "Rejected during processing".

Example 4:

A record containing earnings/benefits payment reports (five reports) includes two reports with an unknown income type. The data of the other three reports contains no errors. The record submitter has requested the saving of the valid data if invalid data is detected in it. The identifying data of the two invalid reports and the itemised errors are returned in the Rejected items data group. The identifying data of the three reports containing no errors are returned in the Approved items data group. The record and the three valid reports are saved in the Incomes Register. The record status reported in the processing feedback is "Valid".

12.3.2 Record submitted via the real-time Web Service interface

The data is checked and the errors and record status are returned in the processing feedback in the same way as with a record submitted via the SFTP interface. The only difference is that the schema errors for a record submitted via the WS interface are returned in accordance with the SOAP practices, while the schema errors for a record submitted via the SFTP interface are processed in the same way as message-level errors.

12.3.3 Record submitted via the deferred Web Service interface

Message-level and record-level errors have already been detected during reception and returned to the submitter in the acknowledgement of receipt. If message-level or record-level errors were detected in the record during reception, the record was not accepted for processing in the Incomes Register, and a request for processing feedback cannot be made later for the record.

If the record was accepted for processing in the Incomes Register during reception, and a request for processing feedback for the record was made later, the item-level errors and the record status are delivered in the processing feedback in the same way as with a record submitted via the SFTP interface.

12.4 Record status in the processing feedback

The following is a summary of record statuses in the processing feedback in different situations.

| Initial situation | Record status returned by the Incomes Register | Label |
|--|--|--|
| The record has been received. The record contains message-level or record-level errors. | Rejected at reception (4) | The record and all items it contains have been rejected. The processing feedback includes the message-level and record-level errors. The record submitter must resubmit the record with the correct data. |
| The record has been received and accepted for processing. | Processing (2) | The record is being processed in the Incomes Register and the processing is not complete yet. |
| The record has been processed. The record does not contain errors. | Valid (3) | The record and all data it contains has been saved in the Incomes Register. The processing feedback includes the accepted items. The processing feedback does not include errors. |
| The record has been processed. The record contains invalid items. The saving of valid items has been requested in the record in the case it also contains invalid items. | Valid (3) | The record and the valid items it contains have been saved in the Incomes Register. The processing feedback includes the accepted items. The processing feedback includes the items rejected due to item-level errors. The record submitter must resubmit the rejected items with the correct data. |
| The record has been processed. The record contains invalid items. The rejection of the entire record has been requested in the record in the case it contains invalid items. | Rejected during processing (5) | The record and all items it contains have been rejected. The processing feedback includes the items rejected due to item-level errors. The record submitter must resubmit the record with the correct data. |
| The request for processing feedback targets a record cancelled in the Incomes Register. | Cancelled (6) | The record and the data it contains have been previously cancelled in the Incomes Register. |
| | Unknown (0) | The record cannot be found in the Incomes Register or the request for processing feedback has failed due to a technical disruption, for example. The processing feedback contains an itemised list of the errors. |