Instructions for the Incomes Register's stakeholder testing

Incomes Register Unit

TULOREKISTERI

VERSION HISTORY

Version	Date	Description
1.0	19/02/2021	Document published.
1.01	21/03/2023	Corrected link on section 5.

KEY TERMS AND THEIR DEFINITIONS

Term	Definition
Anonymisation	Anonymisation aims to convert the data into such a format that it cannot be linked to a specific, natural person under any circumstances (even with the use of other available data). For example, the processing of personal data for irreversible conversion into a form that prevents any party from using it to identify the person either directly or indirectly.
E-service	The e-service of the Incomes Register is a browser-based service providing the functions intended for the parties to the Incomes Register. The Incomes Register offers an e-service for data providers, data users and income earners.
Interface	A standard-compliant practice or connection point enabling data transfer between devices, software or the user.
Stakeholders	The stakeholders of the Incomes Register comprise all users of the register: payers of wages, pension and benefits and, authorised by them, accounting firms and other outsourcing partners of the payroll administration, and the parties using the Incomes Register data. The system suppliers in addition to these are also stakeholders.
Testing start notification	A form that a stakeholder can use to report to the Incomes Register the data required for starting testing and services to be tested, as well as to approve the terms and conditions of the testing environment.
Testing environment	A stakeholder testing environment and interfaces offered by the Incomes Register Unit for testing the Incomes Register.
Access right to the testing environment	A tester's access right to the stakeholder testing environment is activated once the tester has approved the terms and conditions of the testing environment, and the Incomes Register has approved the tester as a testing environment user and has sent the required test IDs to the tester. Access rights to the testing environment remain in effect until further notice.

Data users	Actors who have a statutory right to obtain income or other data from the Incomes Register for the purpose of performing their duties. Data users may only use the data obtained from the Incomes Register for their statutory duties. Data users include the Social Insurance Institution (Kela), the Finnish Tax Administration, insurance companies and unemployment funds.
Data providers	Actors with a statutory obligation to report data to the Incomes Register. Data providers include employers, benefit payers and substitute payers.
Data content change	System change in the Incomes Register that affects the data content of the Incomes Register or automatic validation performed in the system, for example. The change may originate in a legal amendment or a change request made by a stakeholder, for example. Data content changes apply to the data content of the Incomes Register, validation rules, reported income types, the interface implementation or codes maintained by the Incomes Register.
Production data	The data used by the system, including actual personal and income data, in a production environment.
Certificate	An electronic certificate confirming that its possessor is a specific person, organisation or system. Certificates can be used to verify the genuineness of data transfer, the other party or a file and, if necessary, establish an encrypted and trustworthy connection with the other party.

CONTENTS

1 Purpose of stakeholder testing 4
2 Limitations 4
3 Documentation 5
4 Testing of data content changes 5
5 Testing progress 5
6 Testing subjects 7
6.1 Technical interface 7
6.1.1 Access rights: certificate 7
6.2 E-service 8
6.2.1 Access rights: roles and authorisations 8
7 Testing environments and release versions 8
7.1 Transferring to a single stakeholder testing environment 8
7.2 Testing environment from 24 August 2021 onwards 9
7.3 Operating hours of the testing environment 9
7.4 Configurations of the testing environment 9
8 Test records 10
8.1 Test customers 10
8.2 Earnings and benefits payment reports used in testing 10
9 Observations during testing 10
9.1 Observation management process 10
9.2 Error categorisation 10
9.3 Corrections and delivery reports 11
9.4 Change request 12
10 Performance testing 12
11 Ending the testing 12
12 Communications 12
12.1 Contact details for stakeholder testing 12
12.2 Communication on stakeholder testing 12
12.3 Communication on disturbances 13
12.4 Maintenance breaks 13
13 Appendices 13

1 Purpose of stakeholder testing

These instructions for stakeholder testing describe how the stakeholder testing of the Incomes Register system is organised and implemented.

The objective of the stakeholder testing is to test the functionality of the Incomes Register system from the perspectives of data providers and data users. The systems that are tested are the technical interfaces, the e-service and the upload service. The income earner functions of the e-service are not tested during the stakeholder testing.

The data provider testing ensures that, for example, the payroll software and benefits payment data systems generate messages for the Incomes Register that meet the requirements set for them. Testing by data users focuses on the subscribed anonymised earnings or benefits payment records. All customer data used in testing must be anonymised.

The purpose of testing is also to provide stakeholders with an environment where they can try out the services. Stakeholders can use the testing environment for training, for example.

Software houses developing benefits and earnings payment data systems can test the data delivery services of the technical interface. Individual benefits and earnings payment data providers can also participate in the testing. Data use can be tested by data users laid down in the Incomes Register act or system vendors appointed by them. Testing requires acceptance of the terms and conditions of use.

2 Limitations

These instructions for stakeholder testing describe the main principles of stakeholder testing with the following limitations:

- These instructions do not describe the internal testing phases of the Incomes Register or the results of tests.
- These instructions do not specify the implementation of each stakeholder group's own testing. Stakeholders are responsible for planning and completing their own shares.
- These instructions do not specify when the testing of each stakeholder is completed. Stakeholders themselves decide on the approval of the testing.
- The Incomes Register does not co-ordinate testing between data providers and data users as a whole. If necessary, the Incomes Register can assist in finding a suitable testing partner for end-to-end testing, but the actual coordination of testing must be handled between stakeholders.
- These instructions do not describe the tracking and co-ordination of errors detected in the software suites of stakeholders. The software supplier and their customer must resolve and co-ordinate the error situations in the stakeholders' software suites.
- These instructions do not describe the business testing of data providers and data users. Stakeholders themselves are responsible for the functionalities of their own systems and the data to be transferred.

3 Documentation

Stakeholder testing involves testing the Incomes Register version specified in the delivery report. The Incomes Register's technical documentation has been published on the incomesregister.fi website under Documentation. Instructions for using the e-service for data providers are provided on the incomesregister.fi website at Instructions for using the e-service. Instructions for using the e-service for data users will be provided at the start of testing. Information on updates to these instructions is provided in the testing bulletin.

The stakeholder testing delivery report describes the system release version's known deficiencies, new functionalities and includes general notes.

These instructions for stakeholder testing and Appendices 3, 4, 7 and 5 are intended for both the data providers and data users. Appendix 2 (E-service testing instructions for data providers), published on the incomesregister.fi website, is only intended for providers.

4 Testing of data content changes

Data content changes are system changes in the Incomes Register that affect the data content of the Incomes Register or automatic validation performed in the system, for example. The change may originate in a legal amendment or a change request made by a stakeholder, for example. Data content changes apply to the data content of the Incomes Register, validation rules, reported income types, the interface implementation or codes maintained by the Incomes Register.

Data content changes can be tested in the same way as any other Incomes Register functions. The same test IDs and testing support services are available.

If the data content changes affect the implementation of the interface, we will seek to publish the updated interface documentation on the incomesregister.fi website six (6) months before the changes are released into production. This deadline may not apply if the change ensures the uninterrupted and statutory functioning of the Incomes Register, or if the change must be implemented sooner due to a law or other provision.

Data users' testing contact persons will be separately notified when the data content changes have been updated in the profiles, roles and services of the artificial organisation used in stakeholder testing.

5 Testing progress

See below for a list of the stages of stakeholder testing and a reference to a numbered Appendix in which more information is provided on the subject.

- Once the stakeholder is ready for stakeholder testing, the stakeholder signs up as a tester and accepts the terms and conditions of using the testing environment by filling in a testing start notification. Data providers must send the start notification to the Incomes Register no later than two weeks prior to the planned start of testing. Data users must send a testing start notification three

weeks prior to the planned start of testing. The testing start notification form can be found on the incomesregister.fi website.

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- The stakeholder should read the instructions for testing on the Incomes Register's website.
  - **Appendix 1: Testing instructions for the technical interfaces**
  - **Appendix 2: E-service testing instructions for data providers**
  - Appendix 3: Separate testing plan for extensive records
  - Appendix 4: Configurations of the stakeholder testing environment
  - Appendix 5: Instructions for the anonymisation of test data

- Once the stakeholder has submitted the testing start notification and accepted the terms and conditions for testing, the Incomes Register will send the instructions for starting testing and the test IDs to the testing contact person and the certificate to the technical contact person.

- If a stakeholder is testing the interface, it must retrieve a testing certificate in accordance with the instructions. Details on how to retrieve the certificate are provided in Appendix 1 Testing instructions for the technical interfaces.
  - The stakeholder will use the testing certificate to open a connection to the testing environment.
  - After a connection test, the stakeholder can begin its own interface testing.

- If the stakeholder is testing the e-service, both the data providers and data users may need authorisation.
  - If the stakeholder is testing as a data provider, he logs in to the service's Suomi.fi e-Authorisations testing environment using the received test ID, which provides the right to sign for the artificial test organisation. The stakeholder grants the required authorisation to the test IDs of its choice. Detailed instructions are provided in Appendix 2.
  - If the stakeholder is testing as a data user, he logs in to the Incomes Register's e-service using the received test ID, which provides Master User rights for the artificial test organisation. The stakeholder authorises test IDs for the desired data user roles in the Incomes Register's e-service. More detailed instructions for granting authorisations for different data user roles can be found in the instructions for using the e-service for data users.

- Before testing, it is advisable to read the delivery reports of releases put into production. The delivery reports are published in Finnish on the page News on stakeholder testing.

- The payers and income earners used in testing are primarily the anonymised test customers generated by the Income's Register. Section **8 Test records** describes the principles related to the test records.

- The stakeholder delivers any errors detected and other observations made during testing to the Incomes Register. Observation management is described in Section **9 Observations during testing**.

- The Incomes Register will notify the stakeholders of any errors and error corrections. The error correction process is described in Section **9 Observations during testing.**

- The stakeholder notifies the Incomes Register once it has completed the testing (Section **11 Ending the testing**).

6 Testing subjects

The subjects of stakeholder testing are:

- The services of the technical interface related to the delivery and distribution of earnings and benefits payment data (the production version and the next development version)
- The e-service and upload service functions related to the delivery and distribution of earnings and benefits payment data (the production version and the next development version).

6.1 Technical interface

For more detailed descriptions of the services to be tested, see the documentation on the incomesregister.fi website: **Technical interface descriptions > General descriptions**

1. Technical interface – Submitting data to the Incomes Register.
2. Technical interface – Distribution of data from the Incomes Register.

The Incomes Register's technical documentation has been published as annual versions. The types of records submitted to and distributed from the Incomes Register are listed in the document Codes. Records for earnings and benefits payment data have different record types.

6.1.1 Access rights: certificate

Data providers and users can test the retrieval of a new certificate and the renewal of an existing certificate in the Incomes Register's certificate service. The testing certificate is valid for two years, after which it must be renewed.

Testing the interface requires a testing certificate issued by the Tax Administration. Each stakeholder testing the technical interface must have a unique testing certificate for its own testing. The stakeholder testing certificate is used during stakeholder testing in the stakeholder testing environment.

The certificate is used to identify the tester and to guarantee the data security of data communications during testing. Signing up as a tester, accepting the testing

environment's terms and conditions of use and retrieving a certificate are described in Appendix 1 (Testing instructions for the technical interfaces).

6.2 E-service

The functions of the e-service are described in the Instructions for using the e-service. Instructions for using the e-service for data users will be provided at the start of testing.

We recommend that you use the e-service with the Google Chrome or Microsoft Edge browser (version 87 or newer). We do not recommend the use of other browsers.

6.2.1 Access rights: roles and authorisations

The roles and authorisations of the e-service will be tested as part of the testing of the e-service. The testing of data providers' authorisations is described in Appendix 2 (E-service testing instructions for data providers). Data user roles and authorisations are described in the instructions for using the e-service for data users.

7 Testing environments and release versions

7.1 Transferring to a single stakeholder testing environment

The Incomes Register is decommissioning the EXT1 testing environment and will only maintain the EXT2 testing environment in the future. In the EXT2 testing environment, stakeholders can test the upcoming versions for wages and benefits as well as current production versions of services.

Decommissioning schedule:

- The same version will be maintained in both testing environments until the end of spring 2021.
- On 26 May 2021, the latest version will be released for both environments.
- This version will be supported until 9 June 2021 in both environments, and observations can be submitted in both environments until 9 June 2021.
- From 10 June 2021 onwards, the EXT1 testing environment can still be used, but support and version updates will no longer be provided for it.
- On 23 June 2021, the latest version will be released only for the EXT2 testing environment.
- On 24 August 2021, the EXT1 testing environment will be decommissioned.

Measures for stakeholders performing testing

The Incomes Register recommends that stakeholders performing testing start using only the EXT2 testing environment as soon as possible. Testers should prepare the necessary test records for the EXT2 testing environment in the spring of 2021, since the EXT1 testing environment will be decommissioned on 24 August 2021. The Incomes Register will not migrate test records from the EXT1 testing environment to the EXT2 testing environment on behalf of testers.
Data providers are responsible for compiling the test records for the EXT2 testing environment. For data users, the Incomes Register can produce the test records required for testing in the EXT2 testing environment.

The test IDs provided by testers and imported into the EXT1 testing environment by the Incomes Register can be used in the EXT2 testing environment as well. If the test IDs have been granted a data provider authorisation in the Suomi.fi authorisations testing environment, the authorisations will also work in the EXT2 testing environment.

7.2 Testing environment from 24 August 2021 onwards

Stakeholders can test the Incomes Register in the EXT2 testing environment.

In the EXT2 testing environment, the development version to be released next and the current production version can be tested.

The Incomes Register will release new development versions and patches for the stakeholder testing environment.

The Incomes Register will publish a delivery report when a new version is released. The delivery report lists the new functionalities, corrections made and known deficiencies of the release. The delivery report will be published in Finnish on the incomesregister.fi website on the News on stakeholder testing page and information on it is included in the testing bulletin.

7.3 Operating hours of the testing environment

Malfunctions in the stakeholder testing environment will be responded to during office hours. Testing is also allowed during other hours, but the functionality of the environment cannot be guaranteed at such times.

7.4 Configurations of the testing environment

The testing environment uses some configurations and processing rules that deviate from the production version; see the guide Configurations of the stakeholder testing environment (Appendix 4) for details. Records submitted to the stakeholder testing environment can include dates from a longer time range than the records submitted to the production environment. This is taken into consideration in the testing environment by allowing dates to be set far into the past and the future. An example of this is the payment date, which, according to the processing rules, can be no earlier than 1 January 2019 for earnings payment reports and 1 January 2021 for benefits payment reports in the production environment. In the testing environment, these dates can be replaced with dates appropriate for testing.

8 Test records

8.1 Test customers

Stakeholders use test customers generated by the Incomes Register for testing. Production data is not used as the basis of the test customers; instead, the records have been compiled from generated, fictitious customer data. Test customers are generated to be as similar as possible to production data, and records contain both personal identity codes and Business IDs.

In addition to test customers pre-generated by the Incomes Register, the Incomes Register can export the stakeholder's own anonymised test customers to the stakeholder testing environment if necessary. The test customer data in the testing environment must not include production data. This is based on the EU's General Data Protection Regulation (articles 25 and 32). If a test record has been generated by utilising production data, the data must be anonymised in such a manner that the customer data cannot be linked or restored to the production customer data. See Appendix 5 (Instructions for the anonymisation of test data) for details.

The test customers used for testing the interface and e-service are described in more detail in Appendices 1 and 2.

8.2 Earnings and benefits payment reports used in testing

As a rule, stakeholders generate their own reports for testing in accordance with their own testing needs. Because the data in the stakeholder testing environment is artificial, the quality of the data does not fully correspond to production data.

Stakeholders can also request the Incomes Register to generate a reasonable number of reports for testing. Instructions for this are provided in Appendices 1 and 2.

9 Observations during testing

9.1 Observation management process

All observations made during testing concerning the Incomes Register's functions must be delivered to the Incomes Register on a stakeholder testing observation form. A link to the form will be delivered to the testing party after the testing start notification has been processed. Any further clarifications concerning the observation will be asked via email. All observations are reviewed and errors in the system are routed for correction.

9.2 Error categorisation

Errors are categorised according to the table below (Table 1). The tester assigns an error category to the error deemed suitable when entering the observation. If necessary, the error category can be changed, and the final categorisation is done by the Incomes Register's experts.

Error category	Description
1 Critical	The error is corrected as soon as possible. An error that prevents the continuation of testing. Furthermore, there is no acceptable method of circumventing the problem.
2 High	An error that prevents the operation of one or more system components. However, there is an acceptable method of circumventing the problem.
3 Medium	An error that causes the system to provide an incorrect, incomplete or inconsistent result.
4 Low	A minor or cosmetic defect for which there are acceptable methods of circumventing it in order to achieve the desired end result.

Table 1: Error categories.

The maker of the observation will be notified of receipt of the observation in 1–2 business days. If an error is recorded based on the observation, the email will also include the error identifier (ID). After this, the maker of the observation must send any further comments related to the observation by email, including the error ID in the subject field.

Sample critical error (error category 1):

- Earnings payment reports cannot be sent through the Web Service interface.
- Justifications: the error is critical, because it completely prevents the submitting of earnings payment reports through one channel. It completely prevents testing by those earnings payment data providers that use the Web Service interface.

Sample non-critical error (error categories 2–4):

- Earnings payment report: An earnings payment report cannot be cancelled with the payer's report reference, but can be cancelled using the Incomes Register's report reference.
- Justifications: the error is not critical, because it does not prevent proceeding with testing. The cancellation can be performed with the Incomes Register's report reference, and testing can continue.

9.3 Corrections and delivery reports

Errors are corrected in order of priority, according to the error category defined by the Incomes Register. Corrections are made live in the system in accordance with the maintenance break schedule.

During each release, the Incomes Register will prepare stakeholder testing delivery reports including the changes and corrections made to the testing environment. The delivery report will be published on the incomesregister.fi website and communicated in the testing bulletin.

Errors categorised in error category 1 (Critical) will be corrected as soon as possible, and the corrections may be delivered to the stakeholder testing environment outside the predefined release schedule, if necessary.

9.4 Change request

If a stakeholder identifies a need for a change, such as the need for a new functionality, the stakeholder submits a change request. The change request must be submitted according to the applicable process via the branch's network. More information can be requested from the Incomes Register customer service.

10 Performance testing

In addition to the Incomes Register's own performance test, stakeholders will be able to test the interfaces with large volumes of data. These stress tests will be separately agreed with each stakeholder. Stakeholders' separate testing for extensive records is described in Appendix 3 (Separate testing plan for extensive records). However, it should be taken into account that the performance of the testing environment is not equivalent to the Incomes Register's production capacity.

11 Ending the testing

When a stakeholder ends its testing, it must notify the Incomes Register by submitting the testing contact form.

12 Communications

12.1 Contact details for stakeholder testing

From 1 March 2021 onwards, general help on testing for stakeholders is provided by the Incomes Register customer service.

12.2 Communication on stakeholder testing

Stakeholders will be informed of matters related to stakeholder testing and the stakeholder testing environment via the testing bulletin and on the incomesregister.fi website. The Incomes Register will notify stakeholders of the following subjects:

- disruptions in the testing environment
- new versions of the testing environment
- delivery reports
- additional corrections installed in the testing environment outside scheduled version releases
- any downtimes of the testing environment

- other issues to be communicated.

The incomesregister.fi website has a separate section for instructions on stakeholder testing, news and documents.

The Incomes Register will share information on stakeholder testing in the testing bulletin. Joint events concentrating on testing will be arranged for the stakeholders when necessary, and these will be separately announced in the testing bulletin.

12.3 Communication on disturbances

Any disturbances and maintenance breaks in the stakeholder testing environment will be communicated in a banner on the e-service testing environment login page and by email in the testing bulletin.

12.4 Maintenance breaks

Information on maintenance breaks in the stakeholder testing environment can be found on the maintenance breaks page.

13 Appendices

All appendices have been published on the incomesregister.fi website.

No.	Name
1	Testing instructions for the technical interfaces
2	E-service testing instructions for data providers
3	Separate testing plan for extensive records
4	Configurations of the stakeholder testing environment
5	Instructions for the anonymisation of test data