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e-CODEX PLUS

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Test Guideline

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List of Abbreviations

| Acronym | Explanation |
|----------|---|
| CON | Connector |
| CTP | Central Testing Platform |
| DOMIBUS | Domain Interoperability BUS |
| e-CODEX | e-Justice Communication via Online Data Exchange |
| EPO | European Payment Order |
| ESC | European Small Claims |
| GW | Gateway |
| Me-CODEX | Maintenance of e-Justice Communication via Online Data Exchange |
| MS | Member State |
| P-Mode | Processing Mode |

Table 1. Abbreviations

1. Introduction

This document describes tests to be carried out within the e-CODEX PLUS project by the piloting countries. It provides a necessary guideline for technical and business tests for the project partners, especially newcomers, who have not participated in the e-CODEX project. The document specifies test scenarios and provides reporting templates.

The goal of this document is to ensure proper testing of e-CODEX components and detail the reporting of the test results. It is based on the e-CODEX experience and templates successfully used within the project.

2. Conducting Tests

2.1. Overview

There are two different levels of tests:

1. National tests
2. e-CODEX PLUS tests

Within these two levels, there are also different types of tests that are presented below.

| | |
|--------------------|---|
| National tests | Internal tests conducted by developers. |
| | Integration tests of components (Gateway and Connector). |
| | Business tests of the national service provider (producing a document and sending it to the national Gateway). Mapping tests will be required if backend application uses other data structures or XML schemas than the e-CODEX ones. |
| e-CODEX PLUS tests | Tests using the Central Testing Platform |
| | Basic connectivity tests with the piloting partners. |
| | End-to-end tests/business tests with the piloting partners. |
| | Tests with the e-Justice Portal. |

Table 2. Types of tests

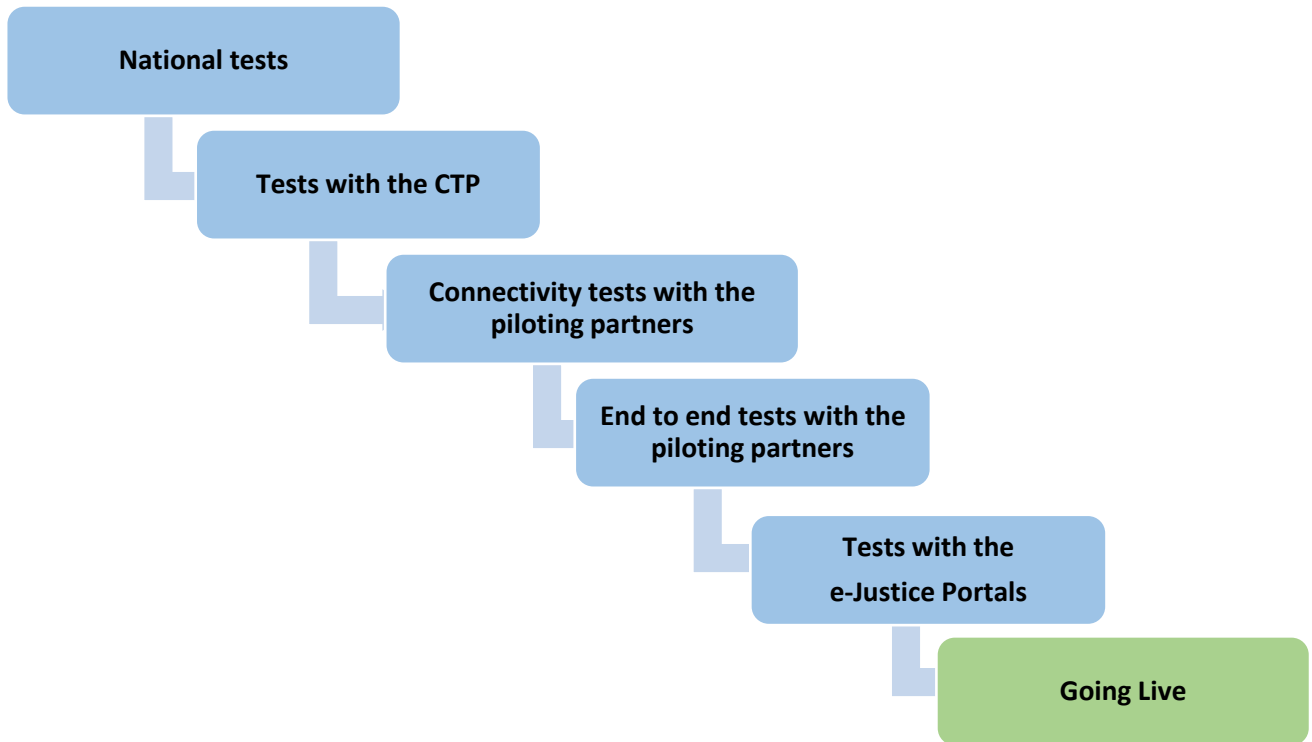


Figure 1. Stages for testing

The particular stages of testing phase were indicated in Figure 1.

The MS should start with the national tests. Once the national tests are completed, it is recommended to start testing with the Central Testing Platform (CTP) that provides a full e-CODEX test environment for sending and receiving test messages for EPO and ESC.

After successfully completing tests with the CTP, partners should indicate their readiness to start basic connectivity tests with other MS. Once the connectivity tests are completed, partners are ready to start the end-to-end tests.

As soon as the end-to-end tests are finalised with at least one piloting partner, testing partners can start tests with the e-Justice Portal. These tests are conducted on the same basis as tests with the piloting countries.

In e-CODEX PLUS, tests will be coordinated by the Leader of Activity 5 – Institute of Logistics and Warehousing (ILIM), but the organisation of the tests will be mostly informal. Due to a different level of MS readiness to join the e-CODEX system, all MS will not be in a position to test together at the same time. The partners will be paired according to their readiness to start the testing.

Tests conducted at the e-CODEX PLUS level will be documented by the test plans, provided by ILIM.

2.2.e-CODEX PLUS tests

2.2.1. Preparations for e-CODEX PLUS tests

It is recommended that e-CODEX PLUS tests should start only after the national tests are accomplished. Within the national tests, developers should conduct both internal tests and integration tests of components (Gateway and Connector). Business tests of national backend applications should verify producing a document and sending it to the national Gateway. Mapping tests will be required if the backend application uses other data structures or xml schemas than the e-CODEX ones.

Before starting tests with partners, each piloting country should complete the following tasks:

- get a DNS entry for your Gateway
- get official certificates for SSL handshake and message and attachment signing on connector and gateway level and forward it to the Coordinator for Configuration (CfC),
- open the firewall for the piloting Partner in order to allow connectivity,
- install the database and execute the initial DB scripts,
- install the Domibus Gateway,
- install the P-Modes and keystores with all the partner certificates,
- implement the national parts of the Connector (Mapper, Backend Web Service),
- implement and/or adapt the national backend application (can be done at any time, but must be finished before starting the end-to-end tests).

Although the e-CODEX PLUS tests should start, once the national tests are completed, it is possible to start the connectivity tests, before the national backend application is completely finished and tested.

2.2.2. Tests with the Central Testing Platform

Once the national tests end successfully, it is recommended to start using the Central Testing Platform (CTP). The CTP can be used to perform both the connectivity tests and use-case testing. The CTP provides an efficient tool for the countries to conduct preliminary tests of their national backend application, before starting testing with another country.

The CTP is an automated web tool for sending and receiving messages in e-CODEX. Its main objective is to allow Member States to send and receive customisable e-CODEX messages without the need to involve another “testing partner”. The CTP is a good “checkpoint” before performing proper end-to-end tests between the piloting partners.

It also includes an overview of installed e-CODEX infrastructure and use case schemas per partner, as well as a repository of helpful material related to testing.

The CTP is available only for registered users under this link: <https://ecodextest.ee.auth.gr>

Important: Each Gateway has its own account on the CTP.

In order to register on the CTP the Member States should send an e-mail at ecodex-ctp@auth.gr providing the following information:

- **e-CODEX GATEWAY Identification:** This will define the recipient (test gateway) of the e CODEX CTP Messages. This is hardcoded into the user account to limit the “reach” of the e CODEX CTP to the user’s gateway only, in order to avoid testing scenarios of one user affecting the other.

- **Final Recipient and Original Sender:** These are the default values that will appear in the respective fields of the file message.properties that is created during the process of sending a message. The user is able to change these later to the new default values or for each message, individually.
- **Contact Person:** The name and e-mail of the person responsible for the account.

Detailed information on how to use the CTP is available in this manual: <https://ecodextest.ee.auth.gr/protected/help> (available upon registration).

2.2.3. Basic connectivity tests with the piloting partners

After completing preliminary tests with the CTP successfully, the connectivity tests with piloting partners can start.

Connectivity tests encompass two levels of tests:

- Gateway to Gateway tests,
- Connector to Connector tests.

It is possible to start Gateway to Gateway tests, even without a functioning national back-end application or Connector.

The objective of a Gateway to Gateway test is to:

- validate the correct installation of the Domibus Gateway,
- verify that the configurations are exact and that neither firewalls nor other blocking points prevent connection between the Gateways.
- verify that the pModes and keystores were installed correctly

Test scenarios include two cases:

- Sending of the message by Country A / Reception of message by country B,
- Sending of the message by Country B / Reception of message by country A.

The test plan for Gateway to Gateway tests is available in Appendix 1.

The particular steps and expected results of GW to GW tests are presented in Table 3.

All four test steps are obligatory only if both testing partners will send and receive messages. If one of the testing partners will only send and the other one will only receive, only Step 1 and Step 2 should be conducted respectively.

| Test steps | Description test | Expected result and checks |
|---------------|--|--|
| Step 1 | Gateway in Country A sends a message to Gateway in Country B | <ul style="list-style-type: none"> • The message files are out the corresponding in directories of the backend interface A • DB entries for the sent messages in the DB • Corresponding log entries in the DB |

| | | |
|---------------|--|---|
| Step 2 | Gateway in Country B receives a message | <ul style="list-style-type: none"> • The message files are in the corresponding in directories of the backend interface B • DB entries for the received messages in the DB • Corresponding log entries in the DB |
| Step 3 | Gateway in Country B sends a message to Gateway in Country A | <ul style="list-style-type: none"> • The message files are in the corresponding out directories of the backend interface B • DB entries for the sent messages in the DB • Corresponding log entries in the DB |
| Step 4 | Gateway in Country A receives a message | <ul style="list-style-type: none"> • The message files are in the corresponding in directories of the backend interface A • DB entries for the received messages in the DB • Corresponding log entries in the DB |

Table 3. Gateway to Gateway tests

Since the Domibus Gateway has no ping functionality implemented, the Domibus Connector can be used to generate a test message without the involvement of any national backend application. This can be used to test the connectivity between two participant’s Gateway installations in a very easy and fast way.

More information on how to configure the Domibus Connector to send a test message is available in D3.6 “WP3 Update generic test plans for Gateway2Gateway connectivity tests”¹ prepared within the Me-CODEX project.

The aims of Connector to Connector tests are the following:

- validation of the signature resulting in the creation of the Trust-OK Token with the expected trust level;
- generation of the ASiC-S container, which should include the Trust-OK Token;
- creation of the right evidence.
- verification of all necessary actions being available in the connector (see pModes)

The test plan contains only one test case divided into several steps. Each of them focuses on the functionality of the overall process from a signed PDF file from the sending connector to a reception in the connector at the receiving side.

The test plan for CON to CON tests can be found in Appendix 2.

The detailed steps of CON to CON tests are indicated in Table 4.

| Test steps | Description test | Expected result and checks |
|------------|------------------|----------------------------|
| | | |

¹ https://www.jol.nrw.de/bscw/bscw.cgi/9197266?op=preview&back_url=3667391

| | | |
|---------------|--|---|
| Step 1 | Sending a test document with national application A to connector A | <ul style="list-style-type: none"> • The message stored in Connector DB • Hash stored • LogEntry available • No Exceptions |
| Step 2 | Validation of signature | Trust-OK Token xml and PDF are created accordingly and containing the correct information |
| Step 3 | Generation of ASiC-S Container | ASiC-S Container is available and includes expected documents (Form PDF and Token PDF) |
| Step 4 | Forwarding Message to the GW A | <ul style="list-style-type: none"> • Periodic Timer Jobs are running • Log Entry in GW A available • No Exception occurs on Backend Interface and GW |
| Step 5 | Sending Message to the GW B | <ul style="list-style-type: none"> • The message files are in the corresponding in directories of the backend interface B • DB entries for the received messages in the GW DB • Corresponding log entries in the GW DB |
| Step 6 | Forwarding Message to Connector B | <ul style="list-style-type: none"> • Evidence <ul style="list-style-type: none"> ○ created with national Message Id ○ Hash and Signed ○ Delivery Evidence created and sent back to Connector A with correct message ID |

Table 4. Connector to Connector tests

2.2.4. Business tests with the piloting partners

Business tests are intended to verify cases from an end user perspective and validate the go-live. The business tests are divided into test cases within each procedure (ESC and EPO) representing various business processes. The test cases are exemplary and do not reflect all scenarios possible within the procedures. However, selected scenarios allow the testing of all the forms.

Within each test case, several steps to be taken by users have been identified. Majority of steps relate to particular forms used in the procedure.

The tables below present countries available for business testing. Those tables indicate sending and receiving countries and provide further information on the courts involved in each testing case. In this table, a sending country means that the EPO/SC procedure can be initiated in this country. In practice, it means that the application for submitting EPO/SC claims has been implemented. This information will allow finding a pilot partner and execution of the end-to-end tests. Testing within e-CODEX countries is the first stage, which will be followed by testing with the e-Justice portal.

| Country | European Payment Order | | Small Claims | |
|-----------|--|--|--|--|
| | Sending | Receiving | Sending | Receiving |
| AT | Sending solution for lawyers available | The central court for EPO in Austria: Bezirksgericht für Handelssachen Wien | No | Piloting court: Bezirksgericht für Handelssachen |
| DE | Can send all forms except form A and the decision | The central court for EPO in Germany: Amtsgericht Wedding in Berlin | No | Planning in e-CODEX PLUS, The court will only receive form A |
| GR | No | Piloting court: Athens court of the first instance | No | Planning in e-CODEX PLUS |
| NL | No | No | No | No |
| PL | Sending solution for Polish citizens and legal professionals available | Planning in e-CODEX PLUS | Sending solution for Polish citizens and legal professionals available | Planning in e-CODEX PLUS |
| PT | No | Planning in e-CODEX PLUS | No | Planning in e-CODEX PLUS |

Table 5. Sending and receiving countries in e-CODEX PLUS

| | European Payment Order | Small Claims |
|--|------------------------|--------------|
|--|------------------------|--------------|

| | AT | DE | GR | NL | PL | PT | AT | DE | GR | NL | PL | PT |
|--------------------------|----|----|----|----|-------------|-------------|----|-------------|-------------|----|-------------|-------------|
| Sending country | X | | | | X | | | | | | X | |
| Receiving country | X | X | X | | X (plan) | X (plan) | X | X (plan) | X (plan) | | X (plan) | X (plan) |
| | | | | | | | | | | | | |

Table 6. Sending and receiving countries in e-CODEX PLUS - summary

The business test plans for EPO and ESC can be found in Appendix 3 and 4 respectively. The test plan should be filled by the initiator (Sending country), i.e. the country having a national solution allowing citizens and/or lawyers to submit a claim and the court side (Receiving country) responding to a submitted claim, i.e. countries having a national backend application for the court. The organisation of the tests is mostly informal and coordination is conducted over the regular calls and through emails.

- **Business tests – The European order for payment**

Forms exchanged between countries:

Form A - Application for a European order for payment

Form B - Request to the claimant to complete and/or rectify an application for a European order for payment

Form C - Proposal to the claimant to modify an application for a European order for payment

Form D - Decision to reject the application for a European order for payment

Form E - European order for payment

Form F - Opposition to a European order for payment

Form G - Declaration of enforceability

Free form:

- notification about the statement of opposition lodged by the defendant
- notifying the claimant that the EPO is void after expiry (court)
- inviting the parties to a hearing (court)
- asking for a review of the decision under exceptional circumstances (defendant)
- informing the parties the procedure has stopped for an unforeseen reason (court)
- convey any information that is not included in the forms

The test scenarios are presented below:

| Steps | Action | Form |
|-------|--|--------|
| 1 | The claimant submits a claim to the competent court. | Form A |
| 2 | The court examines the application and asks the claimant the opportunity to complete or rectify the application. | Form B |
| 3 | The claimant sends back to the court the completed | Form A |

| | | |
|---|--|-----------------------------------|
| | application. | |
| 4 | The court issues the EPO, which is served to the defendant in accordance with the national laws of the Member State of origin. | Form E - Out of the project scope |
| 5 | As no statement of opposition is lodged within the 30-day period, the court declares that the EPO is enforceable. | Form G |

Table 7. EPO - Test case 1

| Steps | Action | Form |
|-------|--|-----------------------------------|
| 1 | The claimant submits a claim to the competent court. | Form A |
| 2 | The claimant is invited to accept or refuse a proposal for an EPO for the amount specified by the court. | Form C1 |
| 3 | The claimant sends his reply. | Form C2 |
| | The court issues the EPO, which is served to the defendant in accordance with the national laws of the Member State of origin. | Form E - Out of the project scope |
| 4 | The court declares that the EPO is enforceable. | Form G |

Table 8. EPO - Test case 2

| Steps | Action | Form |
|-------|--|---------|
| 1 | The claimant submits a claim to the competent court. | Form A |
| 2 | The claimant is invited to accept or refuse a proposal for an EPO for the amount specified by the court. | Form C1 |
| 3 | The claimant sends his reply (refusal of the proposal). | Form C2 |
| 4 | The court rejects the application. | Form D |

Table 9. EPO - Test case 3

| Steps | Action | Form |
|-------|--|-----------------------------------|
| 1 | The claimant submits a claim to the competent court. | Form A |
| 2 | The court issues the EPO, which is served to the defendant in accordance with the national laws of the Member State of origin. | Form E - Out of the project scope |

| | | |
|---|---|-----------------------------------|
| | | |
| 3 | The defendant lodges the statement of opposition. | Form F - Out of the project scope |
| 4 | The court notifies about the statement of opposition lodged by the defendant. | Free form |

Table 10. EPO - Test case 4

- **Business tests - European Small Claims**

Forms exchanged between countries:

FORM A – Claim form/ Counterclaim form

FORM B – Request by the court or tribunal to complete and/or rectify the claim form

Form C part 1 – Form sent to the defendant

Form C part 2 – Answer form from defendant

Form D – Certificate concerning a judgement in the European claims procedure

Free forms can be used in the following cases:

- the court informs the claimant if the claim is outside the scope of the ESCP (court)
- the court informs the value exceeds the limit of the Regulation (court)
- withdrawal of the claim by the claimant (claimant)
- request for certificate/ Form D (if such a request was not made at the outset of the procedure, for which there is space provided in paragraph 9 of the Claim Form, Form A) (claimant)
- the claim appears to be clearly unfounded or the application inadmissible or where the claimant fails to complete or rectify the claim form within the time specified (court)
- the court requests further information from the parties (court)
- claimant response to the counter claim (court)
- in case a counterclaim appears out of scope (court)
- inviting the parties to a hearing (court)
- informing the parties the procedure has stopped for an unforeseen reason (court)
- issuing a judgement/decision (court)
- other cases

Test scenarios are presented below:

| Step | Action | Form |
|------|--|----------------------------|
| 1 | The claimant lodges form A with the court. | Form A |
| 2 | The court requests the claimant to rectify the claim as the claim has not been completed properly in accordance with the requirements of the Regulation. | Form B |
| 3 | The claimant sends back to the court the completed claim. | Form A |
| 4 | The court notifies the defendant about the claim. | Form C part 1 - out of the |

| | | |
|---|--|-----------------------------------|
| | | project scope |
| 5 | The defendant has the choice of either responding to the claim or doing nothing. The defendant may respond to the claim. For this test case, we assume the defendant does not provide the reply. | no form |
| 6 | The court considers the merits of the case and the evidence and gives a judgment. | Free form - Judgement/Decision |
| 7 | The claimant requests the certificate (assuming such request was not made at the outset of the procedure, for which there is space provided in paragraph 9 of the Claim Form, Form A). | Free form |
| 8 | The court issues a certificate. | Form D |

Table 11. ESC - Test case 1

| Step | Action | Form |
|------|--|--|
| 1 | The claimant lodges Form A with the court. | Form A |
| 2 | The court notifies the defendant about the claim. | Form C part 1 - out of the project scope |
| 3 | The defendant responds to the claim by completing Part II of Answer Form C and returning it to the court with relevant supporting documents. | Form C part 2 - out of the project scope |
| 4 | The court serves the reply and supporting documents on the claimant. | Copy of Form C |
| 5 | The court considers the merits of the case and the evidence and gives a judgment. The court sends the certificate (assuming such a request was made at the outset of the procedure, for which there is space provided in paragraph 9 of the Claim Form, Form A). | Form D |

Table 12. ESC - Test case 2

| Step | Action | Form |
|------|---|--|
| 1 | The claimant lodges Form A with the court. | Form A |
| 2 | The court notifies the defendant about the claim. | Form C part 1 - out of the project scope |
| 3 | The defendant sends the counterclaim. | Form A - out of the project scope |
| 4 | The court notifies the claimant about the counterclaim. | Form C part 1 |

| | | |
|---|---|---------------|
| 5 | The claimant responds to the claim by completing Part II of Answer Form C. | Form C part 2 |
| 6 | The court asks for further details. | Free form |
| 7 | The claimant submits a response. | Free form |
| 8 | The court considers the merits of the case, the evidence and gives a judgment. The court sends the certificate (assuming such a request was made at the outset of the procedure, for which there is space provided in paragraph 9 of the Claim Form, Form A). | Form D |

Table 13. ESC - Test case 3

3. Documenting Tests

3.1. Test Plan

Test results should be carefully documented by all testing countries. Each test step shall be validated and success or failure should be reported according to the templates provided. The completed test report will be valuable for the evaluation of the test phase and make a decision about going live.

To document the test in a clear and coherent way, the templates for test reports have been developed (Appendixes 1-4). These should be filled for all tests performed within e-CODEX PLUS, both technical and end-to-end tests.

3.2. Summary of tests

In addition to reporting the test results, a brief summary of conducted tests should be presented. The aim of the summary is to shortly describe the tests, which two countries have conducted together within a given pilot. This should cover the following points:

- the scope of the tests conducted,
- the time used to conduct the tests,
- description of any specific methodology (if used),
- difficulties encountered and solutions adopted,
- lessons learned and recommendations to other countries / for future tests.

Summary

The objective of the testing phase is to ensure thorough technical and business validation of the implemented solution before the start of piloting with real-life use cases. This validation is achieved due to extended technical and business tests between piloting partners. This guideline provides detailed instructions on how to conduct and document these tests.

This document was prepared based on the test methodology developed within the e-CODEX project. It is one of the crucial factors of successful testing activity. However, e-CODEX experience shows, that piloting countries should have space for the flexible application of this methodology.

I. References

D. Brix Hvillum, L. Ferrand, J. M. Pellet, e-CODEX D3.6 System Manuals (Implementation, Operations and Maintenance) and D3.9 Definition of Operations and Maintenance processes and requirements, 2016,

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II. Appendix I - Test Plan – Gateway to Gateway tests



Test Plan GW to
GW.xls

III. Appendix II - Test Plan – Connector to Connector tests



Test Plan CON to
CON.xls



IV. Appendix III - Test Plan – EPO Business tests



Business Test Plan -
EPO.xls



V. Appendix IV - Test Plan – ESC Business tests



Business Test Plan -
SC.xls