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DIRECTORATE-GENERAL
TAXATION AND CUSTOMS UNION
Digital Delivery of Customs and Taxation Policies
Customs Systems

ICS2 Release 2 End-to-End testing Organisation Document for Member States and Economic Operators

ICS2 R2 E2EOD

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¹ Action: I=Insert R=Replace

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1. INTRODUCTION

1.1. DOCUMENT PURPOSE

This document (ICS2-R2-E2EOD) defines the End-to-End (E2E) testing procedure for ICS2 Release 2, that will be used by the Member States (MSs), DG TAXUD and its contractors, and by the Economic Operators within the scope of the ICS2 system for Release 2.

The main purpose of this ICS2-R2-E2EOD is to set up practical arrangements regarding E2E campaign for ICS2 Release 2 – its scope, activities, roles and responsibilities, communication, planning and reporting activities to be performed by MSs and EOs.

1.2. TARGET AUDIENCE

The ICS2-R2-E2EOD is intended to be used by any person in the MSs, the EOs, and DG TAXUD (including their contractors) involved in:

- The planning, organisation and co-ordination of the E2E testing activities for ICS2 system for Release 2;
- Implementing and configuring the ICS2 E2E test environment by the relevant DG TAXUD units, their contractors in conjunction with the respective MSs;
- Executing the ICS2 Release 2 E2E test campaign with MSs, EOs, and relevant DG TAXUD units.

1.3. SCOPE

This E2EOD is used to plan practical arrangements regarding the E2E campaign with MSs and EOs. ICS2 system Release 2 E2E campaign aims to test all core ICS2 components, such as overall compliance of EOs systems with the Harmonised Trader Interface (HTI), and National Entry Systems (NES) with the Common Repository (CR), and the ability to test the scenarios specified in the E2E Release 2 Test Scenarios [RD04] and [RD05] documents. This document is owned and controlled by DG TAXUD. It is a document, presented to the MSs to facilitate collaboration during the E2E campaign for ICS2 Release 2.

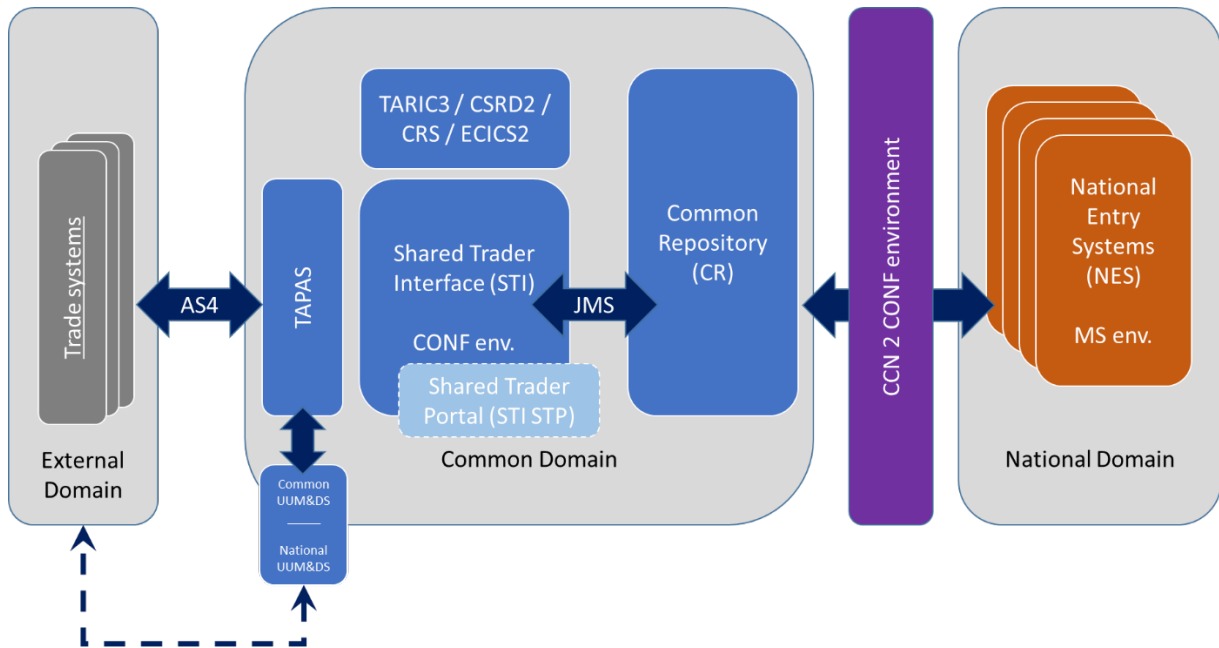


Figure 1: E2E testing

1.4. STRUCTURE OF THIS DOCUMENT

This document is structured as follows:

- [Chapter 1](#): An introduction, presenting the content of the document, the references (glossary of terms, acronyms, reference and applicable documents) and the terminology;
- [Chapter 2](#): The description on how the E2E campaign for ICS2 Release 2 is going to be organised;
- [Chapter 3](#): The description of the infrastructure;
- [Chapter 4](#): A presentation of the E2E for ICS2 Release 2 testing and planning, its roles and responsibilities, an overview of the testing lifecycle, a testing approach and communication;
- [Chapter 5](#): Briefly summarizes the test validation, error and problem handling, as well as technical conformance criteria for closing the E2E campaign for ICS2 Release 2;
- [Chapter 6](#): Risks and risk mitigation;
- [Chapter 7](#): A list of the Dependent Systems;
- [Chapter 8](#): Annexes including templates.

1.5. ABBREVIATIONS AND ACRONYMS

A list of acronyms and abbreviations used in this document follows in the table below.

| Abbreviation or Acronym | Description |
|-------------------------|---------------------------|
| AS4 | Applicability Statement 4 |

| Abbreviation or Acronym | Description |
|-------------------------|--|
| CCN2Ng | Common Communications Network 2 Next Generation |
| CIRCABC | Portal of collaborative workspace for partners of the European Institutions |
| CSD | Central Service Desk |
| CS/RD2 | Central Services/Reference Data 2 |
| CR | Common Repository |
| CRS | Customer Reference Services |
| CT | Conformance Testing |
| DDS2 | Data Dissemination System 2 |
| DG TAXUD | Directorate General of Taxation and Customs Union |
| E2E | End-to-End |
| E2EOD | End-to-End organisation document |
| ECICS | European Customs Inventory of Chemical Substances |
| ENS | Entry Summary Declaration |
| EO | Economic Operator |
| EORI | Economic Operators Registration and Identification number |
| ESS | Employee Self Service (part of SYNERGIA SMT) (https://itsmtaxud.europa.eu/smt/ess.do) |
| HTI | Harmonized Trader Interface |
| ICS2 | Import Control System 2 |
| IMS | Involved Member State |
| IT | Information Technology |
| ITSM | The DG TAXUD contractor responsible for the central operation in ICS2. |
| JMS | Java Message Service |
| MS | Member State |
| NA | National Administration |
| NES | National Entry System |
| NPM | National Project Manager |
| NSD | National Service Desk |
| OMS | Other Member State |
| RMS | Responsible Member State |

| Abbreviation or Acronym | Description |
|-------------------------|--|
| SLA | Service Level Agreement |
| SPOC | Single Point of Contact |
| STI | Shared Trader Interface |
| STP | Shared Trader Portal (STI STP) |
| SYNERGIA SMT | DG TAXUD Service Desk Management Tool |
| TARIC | Tariff Intégré Communautaire |
| UUM&DS | Uniform User Management and Digital Signatures |

Table 1: List of acronyms and abbreviations

1.6. DEFINITIONS

| Term | Description |
|-------------------------------|--|
| AS4 access point | An AS4 access point is an operational IT component that implements the AS4 specifications for the exchange of information with other AS4 access points, be it a STI or an access point used by an EO. |
| Conformance Testing | This testing is done to obtain technical assurance that a NA is ready to enter the trans-European system without risk of disturbing the parties already in operation in the system. |
| SOFTDEV | The DG TAXUD contractor responsible for the specifications and the development of the Central applications. |
| End-to-End | End-to-End is a testing process used to test whether the flow of a system is performing as designed from start to finish. The purpose of carrying out E2E tests is to identify system dependencies and to ensure that the right information is passed between various system components and systems. |
| ITSM | The DG TAXUD contractor responsible for the central operation of trans-European systems. In this current framework it is defined as ITSM3 |
| Member State | All European Union Member states and other countries and territories applying EU customs legislation. |
| Shared Trader Interface (STI) | The STI represents the IT system that will be used by EO to communicate with customs authorities in the context of ICS2. The STI will be developed, hosted and operated by DG TAXUD. |
| Test Scenario | A logical self-standing sequence of message exchanges to test each specification. This is the exact test that needs to be carried out. |

| Term | Description |
|--------|--|
| UUM&DS | User Management and Digital Signature System (UUM&DS) implements identity federation between the Commission and all Member States' identity and access management systems for the purposes of providing secure authorised access to the EU Customs electronic systems for EU Economic operators and persons other than the economic operators. |

Table 2: List of definitions

A complete list with the ICS2 terminology can be found in ICS2 definitions document which is part of [RD03].

1.7. REFERENCE AND APPLICABLE DOCUMENTS

1.7.1. Reference Documents

This section provides a list of references that were used for the creation of this document. Reference documents are those providing non-binding and supplementary information.

| Id | Title | Reference | Version |
|--------|---|---------------------------|---------|
| [RD01] | ICS2 Design Blueprint | CD3-ICS2-Design Blueprint | 2.40 |
| [RD02] | ICS2 Design Document for National Applications | CD3-ICS2-DDNA | 4.00 |
| [RD03] | ICS2 Common Functional System Specifications | ICS2 CFSS | 2.00 |
| [RD04] | ICS2 Release 2 End-to-End Test Scenarios for Member States | ICS2-R2-E2ETS-MS | 1.00 |
| [RD05] | ICS2 Release 2 End-to-End Test Scenarios for Economic Operators | ICS2-R2-E2ETS-EO | 1.00 |
| [RD06] | ICS2 Conformance Test Organisation Document for Member States for Release 2 | TES-CTO-ICS2-MS | 1.60 |

Table 3: Reference Documents

2. E2E TEST CAMPAIGN

2.1. SCOPE OF E2E CAMPAIGN

It must be noted, that MS can choose whether to execute the E2E test campaign or not.. However, the execution of the E2E test campaign is strongly recommended, as this will add confidence and assurance to the MSs and EOs before going live on 1st March 2023.

The scope of E2E campaign is to execute the ICS2 business workflow as close as possible to real business operations by:

- creating groups of testing partners involving multiple EOs submitting ENS filings and other messages (e.g. referrals responses, arrival and presentation notifications, etc.), and MSs with their relevant roles (RMS, IMS, OMS, MS of Presentation, MS of Control, etc.), where the main role is designated to the RMS;
- using business accurate data provided by DG TAXUD and MS [RD04] and [RD05];
- all ICS2 components on MS and EO side being involved in testing process (e.g. risk engine, presentation system);
- verifying whether the results are as per the [RD03].

DG TAXUD ICS2 Team will create test data which should be supplemented to EOs participating in E2E campaign.

2.2. E2E CAMPAIGN OBJECTIVES

The objectives of the E2E campaign can be summarised as follow:

- To ensure that a minimum of business processes are executed as per agreement;
- To ensure that MSs' components that need to interact with ICS2 system are receiving and providing the necessary input and output data (e.g. risk analysis requests and their results, presentation, referrals) and data can actually be received from EO;
- To ensure that EOs' components that need to interact with ICS2 system are providing the necessary output data and are able to receive necessary input data on the receiving end (e.g. ENS filing, notifications, responses to referrals) and data can actually be received by MS;
- To ensure that the business accurate data is exchanged between the stakeholders (components) and the quality of data is acceptable and readable;
- To assess the responsiveness of the MSs and EOs with regards to certain events/messages, e.g. referrals.

2.3. PRE-REQUISITES TO PARTICIPATE IN E2E CAMPAIGN

Each MS willing to participate in E2E:

- is familiar with CT Organisation document for Release 2 [RD06] and procedures and has successfully executed the Conformance Testing;
- has configured CT environment in accordance with the CT Organisation document for Release 2 [RD06];
- is familiar with the E2E Test Scenarios documents [RD04] and [RD05];
- is willing to take up the role of RMS , which needs to organise the campaign(s) in accordance to an agreed approach with participating partner(s);
- can participate as IMS/OMS if EO in the respective MS is not willing to participate in the E2E campaign.

3. INFRASTRUCTURE NEEDS

3.1. Summary of infrastructure and environment

The following sections present the necessary elements of the Conformance Environment infrastructure that should be taken into consideration by the intended audience of the E2E. For a description of the components consisting the ICS2 and generally for the architecture of ICS2 system¹ please refer to ICS2 Design Blueprint document [RD01].

In ICS2 Release 2 the STI provides a Shared Trader Portal (STP) for web-based user connection (see Figure 1). Through STP the EOs will be able to lodge, amend and invalidate ENS filings, as well as follow up further CR notification and necessary interactions. If certain EOs wish to use STI STP during the E2E testing campaign, this should be notified in advance to DG TAXUD². It is important to note that only filings done through STI STP can be managed through STI STP (unlike ones made through STI).

¹The interaction between NTI and CR occur over CCN2, while between STI and CR is used Java Message Service (JMS).

²Use of STI STP will depend on the availability of the systems in the conformance environment during the execution of the End-to-End test campaign for Release 2.

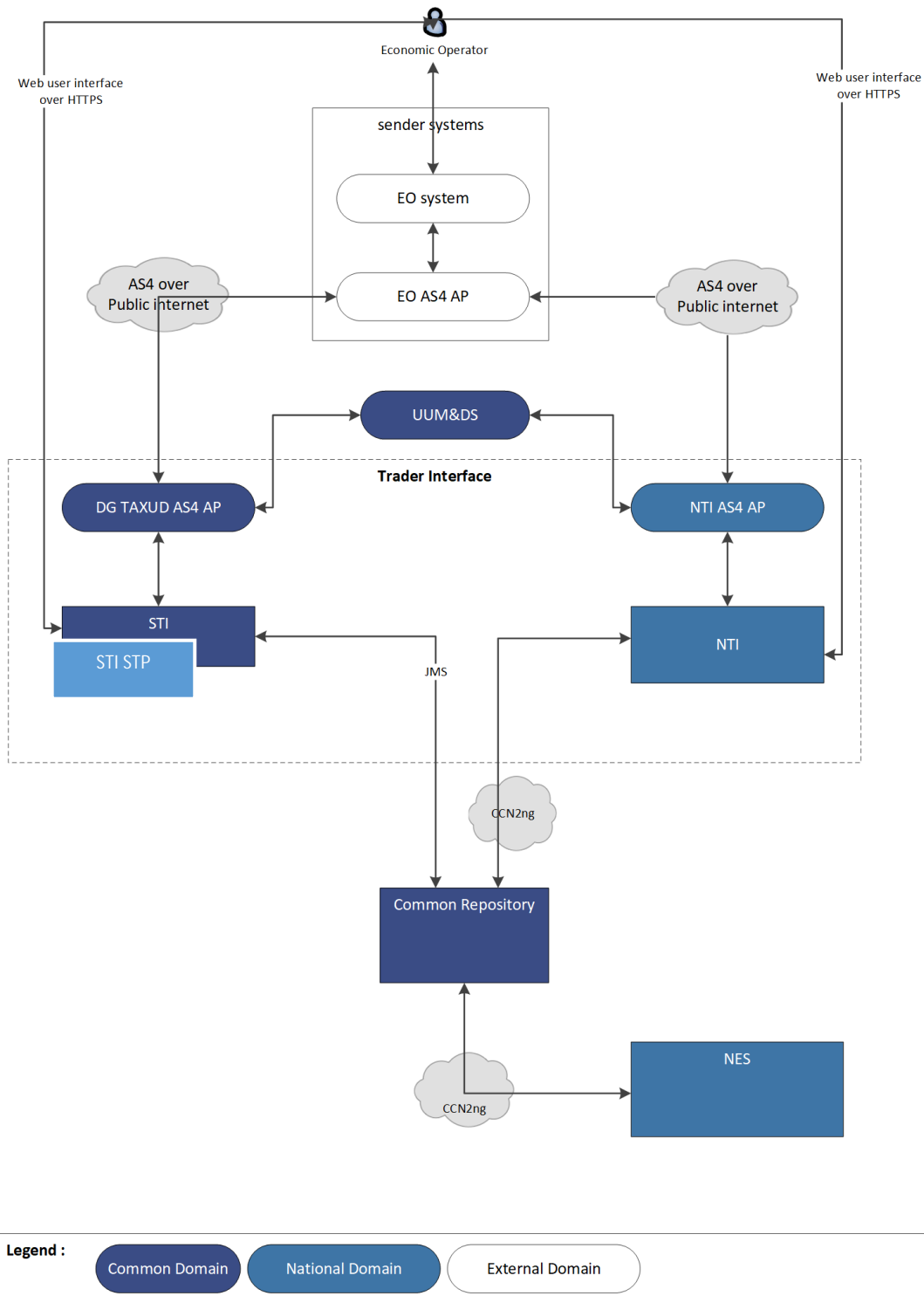


Figure 2: ICS2 System Architecture

3.2. Communications Requirements

The communication requirements describe all communication means that allow the ICS2 components (e.g. CR, NES, etc.) to communicate with their users and other components. CCN2Ng is the trans-European exchanges platform that will be used to expose the service operations between CR and NESs.

Additionally, CCN2Ng will be used to identify and authenticate MS users to access the ICS2 CR Web Interface and ICS2 Monitoring and Business statistics solution.

3.2.1. Communication Protocols

The System-to-System communication between the system components (CR and NES) will be performed over the CCN2Ng platform using the asynchronous “One-Way” connectivity service, which uses SOAP over HTTP requests over the internal network. CCN2Ng network and JMS will also be used for the communication between the web user interface components and user's browser.

3.2.2. Security

The security relies at the CCN2Ng infrastructure. The NTI, CR and NES services that are accessible through CCN2Ng will be protected using CCN2Ng Endpoint authentication and authorisation. Specifically, the security will be handled by a username/password token that will identify a technical user. The interactions between STI and CR occur over JMS.

3.2.3. CCN2Ng Prerequisites

The communication between the system components will be performed over the CCN2Ng platform using the asynchronous “One-Way” connectivity service and a number of web services (WS) implemented in National and Common domain. For more details please see Section 2.3 of CTOD [RD06].

4. E2E TESTING ORGANISATION

4.1. ROLES AND RESPONSIBILITIES

Numerous stakeholders are involved in the E2E testing for Release 2 and all of them have their allocated responsibilities such as for the initiation, progress and successful execution of the E2E. The roles and responsibilities of the people involved are elaborated in this section below.

4.1.1. DG TAXUD Unit B3

DG TAXUD is responsible for the initiation, implementation and collaboration between the relevant parties for the successful execution of the campaigns.

In particular, DG TAXUD Unit B3 is responsible for the following activities:

- provides the central Access Point and STI services for the E2E campaign;
- provides Common Repository for the E2E.

4.1.2. DG TAXUD Unit A3

DG TAXUD Unit A3:

- has overall responsibility over organisation of E2E-related meetings;
- provides position on the incidents opened during the campaign;

- clarifies the business requirements, follows-up with the processes and any functional questions raised by MSs or EOs or DG TAXUD ICS2 E2E Manager, and ITSM TEST CT Coordinator;
- provides a set of test scenarios prepared and developed in close collaboration with the MS as well as the artefacts and the general coordination for E2E Testing;
- provides advice and support on technical, functional or organisational issues during the E2E testing campaign;
- provides relevant eLearning materials for the E2E campaign;
- acts as consultant providing insights and solutions during the campaigns and acts as a facilitator for the smooth transition to production;
- reviews the Final Test Reports at the end of the E2E campaign and assesses the success level for the MSs and EOs to enter operations;
- co-ordinates with RMS/IMS/OMS their participation in E2E campaign;
- defines a DG TAXUD ICS2 E2E Manager, which is person responsible for
 - provides advice during E2E testing;
 - organises, sets-up and coordinates the conference calls: Kick-Off Meeting, Closure Meeting and any eventual ad-hoc meetings organised during the test campaigns (ad-hoc or planned);
 - contributes to the resolution of any issues, especially where gaps or overlaps exist in the collaborating parties' responsibilities;
 - consolidates Test reports from the testing actors (see Annex A: Consolidated E2E Report).

4.1.3. Member States

MS that is participating in the E2E campaign in the role of the RMS, is in charge of:

- Agreeing with the EOs, that will be lodging the ENS filings to MSs, on the participation in the testing campaign;
- Agreeing with other MSs that will be acting as testing partners (e.g. IMSs), on the participation in the testing campaign;
- Not later than two weeks prior to the planned E2E testing window, MSs will confirm their testing partners (MSs and EOs) participation to the E2E;
- Co-ordination of the testing activities with its EOs and involved parties;
- Training the testing officers in the context of the E2E testing campaign;
- Training of the EOs, providing them the necessary instructions;
- Reviewing and approving of the created documents in the context of the campaigns;
- Providing the NES setup;
- During preparation for the campaign, collaborating with TAXUD Unit A3 on the development of the E2E Organisational Document and the test scenarios and provide early feedback on the operational readiness of their systems;
- Execution of the E2E test scenarios;
- Support in the creation of the E2E test data;
- Provision of the Final Test Reports and internal assessment of their performance along for review.

MS that is participating in the testing campaign in the role of the IMS/OMS, is in charge of:

- Training the testing officers in the context of the E2E campaign;
- Reviewing and approving of the created documents in the context of the E2E campaign;
- Providing the NES setup;

- Collaborate with the RMS on the provision of the Final Test Reports and internal assessment of their performance as a IMS/OMS;
- Support in the creation of the E2E test data
- Collaboration with the RMS to provide input on the provision of the Test Reports and internal assessment of their performance along for review.
- Providing the National Service Desk (NSD) responsible for resolution of issues/incidents identified by NPM and/or EO registered during the E2E campaign (including UUMDS support). NSD will escalate further to the Central Service Desk (CSD) if they cannot be resolved internally.

4.1.4. National Project Manager (NPM)

The National Project Manager coordinates the National Project Team (NPT) is the focal point for the campaign from DG TAXUD and ITSM TES perspective. The specific responsibilities of the NPM, related only to E2E testing campaigns, are as follows:

- Is responsible for the Test Team in charge of performing the E2E at the National Site;
- Coordinates the E2E execution and - upon analysis request by ITSM TES CT Coordinator - verifies results and possibly ensures change requests;
- In particular, the NPM is responsible for her/his Team to:
 - Not later than one week prior to the planned E2E Kick-Off meeting, for co-ordination aspects MSs confirm their and EOs participation to the E2E and the chosen test window;
 - Create and send the E2E Final Test Report for review for the relevant MSs (see B) to DG TAXUD ICS2 E2E Manager;
 - Inform the ITSM TES CT Coordinator in case errors are detected or information is needed;
 - Log any issues/incidents found during the E2E campaign that need to be investigated by National Helpdesk or Central Service Desk;
 - Attend the conference calls (Kick-Off Meeting, Closure Meeting and any eventual ad-hoc meeting organised during the E2E campaign);
 - Inform ITSM TES CT Coordinator about any change in the planning.

4.1.5. Central Service Desk (CSD)

The E2E issues that are related to ICS2 central components, will be assigned to DG TAXUD Central Service Desk, who will dispatch to the appropriate central support teams.

4.1.6. Economic Operators (EO)

EO is any person who has been identified by the legal provisions as legally responsible to submit ENS filings to the customs authorities via the Harmonized Trader Interface i.e. in the context of Release 2 to Shared Trader Interface (STI) using its EO system. Specifically, the concrete responsibilities of the EO related to E2E campaign are the following:

- Executes the E2E test scenarios and verifies the results;
- Communication and coordination with the participating MS(s) in the E2E testing campaign;
- Providing the EO system setup;
- Notifying wish to use STI STP³;

³Use of STI STP will depend on the availability of the systems in the conformance environment during the execution of the End-to-End test campaign for Release 2.

- Collaborate with the RMS in providing input on the provision of the Final Test Reports for review and provide their own internal assessment as a EO;
- Participation in the Kick-off Meeting and Closure Meeting activities;
- Provides a Single Point of Contact (EO SPOC) that performs the following activities
 - provides DG TAXUD or ITSM contractor the required technical information about its Access Point;
 - coordinate activities with the National Customs Authority in creation of E2E test messages and/or data;
 - participates in the conference calls (Kick-Off Meeting, Closure Meeting and any eventual ad-hoc meeting organised during the CT);
 - contributes in creation of the E2E Testing Report upon request of RMS;
 - informs National Customs Authority in case errors are detected or information is needed (NPM and NSD).

4.2. TAXUD UNIT A3 PLANNING AND MILESTONES

DG TAXUD will ensure system-to-system integration compatibility and readiness. The conformance environment allows CT and E2E to be executed simultaneously, and with multiple parties in parallel.

TAXUD Unit A3 will follow MSs and EOs planning for CT, and will allow the execution of the E2E starting from the moment the CT was successfully complete until immediately before the launch of ICS2 Release 2 into production (one long testing window).

| Q2 2022 | | | Q3 2022 | | | Q4 2022 | | | Q1 2023 | | |
|---------|-----|------|--------------------------------|--------|-----------|--------------------|----------|----------|---------|----------|-------|
| April | May | June | July | August | September | October | November | December | January | February | March |
| | | | MS Conformance Testing ICS2 R2 | | | | | | | | |
| | | | | | | End-to-End ICS2 R2 | | | | | |

Figure 3: CT and E2E test planning

TAXUD Unit A3 TAXUD Unit A3 will internally create and maintain a consolidated E2E campaign planning and timetable. This plan will reflect the planning agreed between the different participants.

4.3. CONFERENCE CALLS AND MINUTES

Conference calls are organised by the DG TAXUD ICS2 E2E Manager:

- E2E Kick-Off Meeting is set not earlier than 2 weeks prior to the start of a E2E campaign defined testing period;
- E2E Closure Meeting at the end of a E2E campaign;
- Ad-hoc conference call on request by TAXUD Unit A3 or MSs and/or EOs.

Minutes of the meetings are produced and sent for review to EOs, MSs and TAXUD Unit A3 (SfR) three working day after the meeting or Conference Call by e-mail. These participants have one working day to provide their comments. If no comments are received, the version (SfR) becomes accepted.

4.4. E2E LIFECYCLE

This section provides an overview of the E2E campaign. E2E campaign cannot start prior to the successful completion of ICS2 CT. The testing will be coordinated by TAXUD Unit A3 and the DG TAXUD ICS2 E2E Manager.

4.4.1. E2E Testing Trigger Event

The E2E campaign for ICS2 Release 2 is triggered by an email of the MS's National project Team (NPT) to the ICS2 functional mailbox of the DG TAXUD (TAXUD-ICS2-PROJECT-TEAM@ec.europa.eu).

The E2E will be executed in testing groups with multiple participants, mainly focusing on the risk analysis related processes and exchanges. The general pre-requisites that MSs need to fulfil in order to start their actual E2E activities are presented below:

- All the relevant documentation has been provided to MSs and EOs, read and understood;
- The involved MSs and EOs have successfully completed their CT activities;
- Known errors or raised issues during CT do not affect the execution of the E2E campaign;

4.4.2. Test Approach

The E2E campaign concerns the execution of message exchanges as per the sequence depicted in the test scenarios (see chapter 3 of the [RD04] and [RD05]) and recording of each individual test result. The scope of the E2E campaign is to verify the interactions between all ICS2 components involved in E2E campaign for each particular group of testing parties (e.g. exchange of messages from EOS to STI, STI – including STP⁴ – to CR, CR and involved RMS NES and/or IMS NES without issues, proper message exchange between RMS NES and IMS NES via CR etc.) as well as general business processes defined in the scope of ICS2 as close as possible to the actual conditions when the system will be put into production, and especially what relates to usage of national risk engines. The S2S interactions are described in the DDNA document [RD02] and the BPM L4 Process Description [RD03].

Stakeholders, i.e. the MS and the EO can choose specific test scenario and agree on the bilateral communication during the execution of the scenario in the E2E campaign.

E2E campaign aims at ensuring that the right data is exchanged in the right order between the stakeholders, as well as that the quality of the data is acceptable and readable.

E2E campaign is a testing phase of all IT applications composing the trans-European system in execution of the complete business processes. E2E campaign is performed in the conformance environment executing a set of pre-defined test scenarios the EOs and the MSs agreed to perform using either anonymised/randomised data set created by participating EO and/or using pre-defined test data prepared and provided by TAXUD Unit A3, provided in [RD04] and [RD05].

4.5. ADDITIONAL TESTING OUTSIDE E2E LIFECYCLE

Outside the E2E campaign in conformance environment no further testing campaigns are offered to MSs and EOs. Unlike prior to Release 1, the Dry-Run campaign will not be executed for Release 2, as it runs in the production environment.

⁴Use of STI STP will depend on the availability of the systems in the conformance environment during the execution of the End-to-End test campaign for Release 2.

4.6. E2E CAMPAIGN REPORT

At the end of the E2E campaign, a Test Report will be created by the RMSs (EOs will contribute in creation of the report) and delivered to TAXUD Unit A3 for assessment and evaluation. The test report will be communicated to DG TAXUD and DG TAXUD ICS2 E2E Manager after the completion of the E2E campaign of particular MSs and EOs unless specified otherwise. TAXUD Unit A3 and the DG TAXUD ICS2 E2E Manager at the end of the E2E campaign will create a consolidation of the reports received from the participating MSs and EOs as a proof of the execution of the E2E campaign.

4.7. COMMUNICATIONS

The good communication and synchronisation between all the involved parties are essential during the E2E campaign.

The EO SPOC would be responsible for sending their request for E2E Testing to the National ICS2 Project Team. Then, the National ICS2 Project Team would inform TAXUD Unit A3 about the E2E request.

The communication between MS and ITSM3 TES (not related to the activities of DG TAXUD) will be performed with the standard communication means:

- ITSM SYNERGIA ESS (<https://itsmtaxud.europa.eu/smt/ess.do>), where MS may directly register any request or issue (see Annex C: Important information on the efficient use of SYNERGIA ESS for the CT**Fehler! Verweisquelle konnte nicht gefunden werden.**);
- ITSM Service Desk Mailbox (support@itsmtaxud.europa.eu) to raise any request or issue via e-mail. ITSM Service Desk will further register this request in Synergia SMT on behalf of MS;

4.8. CONTACT DETAILS

ITSM3 TES can be contacted at the ICS2 Conformance Functional mailbox (ITSM.TES.ICS2@itsmtaxud.europa.eu).

DG TAXUD can be contacted at the ICS2 Functional mailbox (TAXUD-ICS2-PROJECT-TEAM@ec.europa.eu).

For the contact details of the MS NPMs responsible for ICS2 national project teams, please see D.

5. CONFORMANCE TEST SPECIFICATION

5.1. TEST INCIDENTS/ ERROR/ PROBLEM HANDLING⁵

In case the output of the executed Scenario differs from the expected one, the test is considered as “failed”.

In the scenario of the EO being involved, EO should investigate the reason of the failure and, if the issue is at their side (e.g. incorrect configuration), actions should be taken to resolve the issue. Otherwise, if the issue cannot be solved at the EO side, the National Service Desk (NSD) should be involved. If the issue still cannot be solved, the National Service Desk should inform directly the ITSM contractor for troubleshooting by providing the relevant material (e.g. logs, screenshots, etc.) that will be needed. An expert analysis must be performed by ITSM on the failure to establish a diagnosis. If needed, ITSM can escalate the ticket to National ICS2 Project Team or TAXUD Unit A3 or DG TAXUD Unit B3.

In the scenario of the MS being involved, the MS’s Tester establishes a problem statement and submits it to the NPM. The proper (incident or change management) procedure shall then be initiated at the National level and/or at the Central level, depending on the diagnosis.

In case an unexpected National Application error is encountered, a severity rating is assigned to the error (in collaboration with ITSM TES during the E2E campaign), related to its business impact. Such errors can be critical, major, or minor. Troubleshooting for such errors will take place at the National level. However, the MSs should inform TAXUD Unit A3 (ICS2 E2E Manager).

In case an unexpected Central Application error is encountered, this will also be assigned with a severity rating upon its registration by the MS in Synergia ESS.

| Severity | Functionality | Impact on Business |
|---------------------|---|--|
| 1-Blocking/Critical | A Blocking or Critical incident in the STI, NES or ICS2 platform and or dependent system is considered one that technically prohibits further testing of either STI, NES, ICS2 platform and or dependent systems. STI, NES, ICS2 platform and or dependent systems is unacceptable at this stage. | The business can by no means be performed without fixing this problem. |
| 2-Major | With a major incident, a feature of the STI, NES, ICS2 platform and/or dependent systems cannot be further tested for the failing functionality but work- | Business can be performed using a work-around. |

⁵ The procedure for the National Service Desk can be found in 23Annex C: Important information on the efficient use of SYNERGIA ESS for the CT

| Severity | Functionality | Impact on Business |
|----------|---|--|
| | around permits testing of the rest of STI, NES, ICS2 platform and/or dependent systems functionalities. | |
| 3-Minor | When a minor incident in STI, NES, ICS2 platform and/or dependent systems is encountered, the functionality cannot be verified but this does not have a significant impact on the business. | No significant impact on the business. |

Table 5: Incidents severity Classification

5.2. E2E ACCEPTANCE CRITERIA

The criteria for the MSs and EOs systems to successfully pass the E2E campaign are as follows:

- At least all mandatory defined and agreed E2E test scenarios have been successfully completed within the group of testing parties:
 - Notifications towards the EOs are successfully received by the EOS;
 - Notifications towards the MSs are successfully received by the NES;
 - National ICS2 system components (e.g. risk engine, presentation system) was involved in E2E campaign;
 - Message exchange between EOS, STI, CR and NES without errors;
 - Proper error handling;
- Errors found during the E2E campaign categorized as blocking, critical and major have been fixed and re-tested to a successful outcome. Retesting can be done in CT environment but to do it NPM should issue Service Request as described in Section 3.4.1. of [RD06]. MS should log the errors categorised as minor and assuming a workaround can be placed or a fix may be introduced before the launch / production date, it could then be accepted by DG TAXUD. The E2E campaign can be deemed successful under these conditions;
- For errors that have not been fixed, either a workaround has been accepted or DG TAXUD has agreed to continue with them unresolved but subject to a schedule for resolution. Nonetheless, errors categorised as minor should be recorded and assuming a workaround can be placed, a different schedule for resolution would be planned and agreed with less priority if deemed necessary. Those minor errors will be part of the final E2E test report.
- A plan has been proposed for fixing potential remaining open issues concerning major or blocking/critical severity. This plan should be communicated and acknowledged by the TAXUD Unit A3.

6. RISKS AND MITIGATION PLANNING

While the execution of the campaigns themselves are on a voluntary basis, there are risks associated to them, time and implementation wise.

During the execution of E2E campaign, potential risks related to the planning, the testing environment or the specifications could be identified with the view to be mitigated in due time. For example, indicative risks are presented below:

- Unavailability or failure of the testing environment (e.g. DG TAXUD Access Point) and/or Dependent Systems (e.g. UUM&DS, CCN2Ng, etc.);
- Delay or problem impacting the testing window;
- Lack of dedicated resources to assess and resolve the issues raised by the EOs and MSs;
- Late delivery of test data to EO in case MS will decide to create their own data for E2E campaign and poor data quality for logged ENS filings.

The following mitigation actions should be taken in order to reduce any risk during the E2E campaign:

- Execution of tests regarding the availability and configuration of the testing environment before the E2E campaign;
- Validation of the infrastructure requirements for the testing environment;
- Execution of tests by the EOs and MSs at the beginning of the E2E timeline in order to ensure that there will be sufficient time for any defect identified to be fixed and re-tested;
- The involved systems should be properly setup and tested in order to minimize the occurrence of errors related to configuration during E2E. MSs and EOs need to provision for the correct status of their systems in advance and certainly before the E2E campaign commences. In case of status anomalies, these should be communicated well in advance.
- DG TAXUD managing internal dependencies for ICS2 conformance testing (e.g. UUM&DS, CCN2Ng, etc.);
- Creation of test data before E2E campaign; coordination with EO prior the start of E2E campaign;
- Creation of risk profiles based on test data before E2E campaign; coordination with EO prior to the start of E2E campaign;
- The requirements and the assignments of the resources supposedly involved should be communicated prior to the EOs and/or MSs planned testing activities execution, planned in accordance, and disseminated to the services and parties involved. Escalated if required, as early as possible to DG TAXUD Business Owner so as to take the necessary actions well in advance. Possible actions are
 - Communication to either the MS SPOC, and/or EO SPOC, and/or to the ITSM CT Test Coordinator
 - Suspension and resumption of the E2E testing phase

A certain discipline to qualify the integration requirements in terms of risks is required. It's also a way to prioritize and emphasize the test and verification of the business objectives when there are regulatory dates or when there is a need to choose within the constraints of time and budget.

7. DEPENDENT SYSTEMS

The ICS2 system is a hybrid central system, which consists of multiple interoperating components, either nationally or centrally (EU) managed, and interacts with other systems. In specific, the operation of ICS2 system Release 2 will depend on the following systems:

- CCN2Ng;
- AS4 AP serves as an interface with the Traders' systems, in order to transmit and receive messages
- Reference Data Systems: CS/RD2, TARIC3, CRS, ECICS2. From the mentioned reference data systems, the MSs must retrieve the code lists from CS/RD2, in order to prepare valid messages to be sent from their National Systems to the CR.

8. ANNEXES

8.1. ANNEX A: CONSOLIDATED E2E REPORT AND PLANNING



ICS2-R2-E2EOD-MS
_Annex A_Consolida

8.2. ANNEX B: E2E TEST REPORT



ICS2-R2-E2EOD-MS
_Annex B_E2E Test R

8.3. ANNEX C: IMPORTANT INFORMATION ON THE EFFICIENT USE OF SYNERGIA ESS FOR THE CT

During this Conformance Testing Campaign SYNERGIA ESS (available at <https://itsmtaxud.europa.eu/smt/ess.do>) becomes the main communication channel between ITSM and the NPT. In order to obtain access to SYNERGIA ESS, user shall navigate to ITSM Portal (<https://itsmtaxud.europa.eu/sites/itsm-portal/home.html>) and choose "Not registered yet?" and provide the filled-in and signed by NPM form to ITSM Service Desk (support@itsmtaxud.europa.eu).

Once an Interaction is created and submitted by a member of the NPT, an e-mail is sent by the ITSM OPS Support team (Central Service Desk) to the registered ESS user, in order to confirm the acknowledgment of the Interaction, and to provide two references (the SD reference number (for the Service Desk Interaction) and the IM reference number (for the related Incident)).

The Incident can be assigned to various actors who provide information, and finally propose a solution. As soon as a solution is defined and saved in the SYNERGIA Incident, the ITSM Service Desk closes the Incident and asks the NPT to confirm that the solution is satisfactory (an e-mail is sent to the person who logged the Interaction). If the NPT is not satisfied with the proposed solution, the Incident is re-opened, and a final acceptable solution is searched. The SYNERGIA ESS Interaction becomes the communication channel between the MSA tester(s) and the ITSM TES CT Team for any CT requests by the MSA.

A set of *Request Templates* specific for this campaign is available to submit the most common requests:

- The Diagnostic Request template (CT Diagnostic Request): NA tester requests ITSM to analyse/explain the reason of the failure of a particular test case result. It is of high importance to provide also screenshots or any other information useful for troubleshooting;
- The Test Result Validation template (CT Test Result Verification): NA requests ITSM to confirm the successful outcome of a test case, (also applicable once comparison errors are detected)
- The Specifications Issue template (Specifications Issue): NA requests ITSM to clarify doubts on the specifications
- The Coordination Template: NA requests ITSM to have a Conference Call, or any other type of request related to the coordination of the campaign

The *Templates* created in SYNERGIA ESS and to be used of the NPT during the ICS2 CT campaign will generate *Interactions* that automatically include in the description the specific campaign identification: “ICS2-R2-NA-xx-001” where xx must be replaced by the issuer by the country code.

- ITSM SYNERGIA ESS Interaction/Incident handling and follow-up:
 - In order to manage requests emanating from MSAs:
 - The MSAs should submit an ITSM SYNERGIA Interaction for each request for information or issues detected during the CT Campaign via the SYNERGIA ESS application available at the following URL: <https://itsmtaxud.europa.eu/smt/ess.do>
 - To facilitate and enable the correct tracking and follow-up of the calls in SYNERGIA, the NPT should open the interaction as follows:
 - Click the menu 'Submit a Request';
 - Select 'Low'/'Medium'/'High' for Urgency, depending on whether the reported issue is blocking NA's CT activities;
 - Select 'ICS2 CONF' for Service;
 - Click on 'Apply Template' and select one template available in the list: 'CT Diagnostic request', 'CT Test Result Verification', 'Specifications Issue' or 'CT Coordination';
 - In the title of the Interaction, please first refer to the campaign that you are performing conformance testing and then add brief description of the actual request or issue, i.e. “ICS2-R2-NA-xx: (brief description)” (where 'xx' stands for the country code);
- The CT Coordinator will ensure the traceability of the service requests
- The member of the NPT who issued the interaction will be able to close his/her incident once the Requests for Closure is received (the notification e-mail will be sent by ITSM OPS to the user's mailbox)

IMPORTANT:

In SYNERGIA ESS, an MSA tester can only display his/her own Interactions; Interactions opened by their MSA colleagues are not visible on SYNERGIA ESS. On the other hand, in the ITSM Portal (<https://itsmtaxud.europa.eu/sites/itsm-portal/home.html>), the MSA tester can view all incidents opened by other MSAs, ITSM OPS/TES and DG TAXUD.

8.4. ANNEX D: CONTACT DETAILS OF MS NPMS

A list with the contact details of MS NPMS should be provided by MS to DG TAXUD and then DG TAXUD should provide the list to ITSM.



ICS2-R2-E2EOD-MS
_Annex D_Contact D