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SUBJECT:

TARIC3 - Interface Data Specification

Conformance Test Scenarios

DOCUMENT HISTORY

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(*) ACTION: I=INSERT U=UPDATE D=DELETE

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1. INTRODUCTION

1.1. OBJECTIVE OF THIS DOCUMENT

The Output Bridge satellite system allows information to be exported towards the Member States by extracting TARIC3 data into extraction files. The MS applications may receive and process this extraction of data from the CDCO application. They can receive extractions through the full extraction output bridge facility and via the incremental extraction output bridge facility.

The incremental extraction output bridge is designed to maintain the local databases up to date. The full extraction output bridge is designed for systems using TARIC3 as a front-system in order to initialize their database at start time.

The objective of this document is to specify the tests that can be executed on a MS system to prove it can process these central system extractions. Note that it does not necessarily list all the tests that can be performed.

This document provides a 'high-level' description of the tests, in the sense that it does not express exact values of data elements to use, nor the environment to use for testing. In that sense, it is a reference for the creation of a conformance test plan.

1.2. INTENDED AUDIENCE

The intended audience are people responsible for writing the conformance test plan at the Commission and in the MS as well as the ones involved in its execution.

1.3. STRUCTURE OF THIS DOCUMENT

Before listing test scenarios, this document proposes, in chapter 2, a global test strategy. Chapter 3 covers the test scenarios. Finally, chapter 4 gives the conformance matrix.

1.4. ABBREVIATIONS AND ACRONYMS

CCN	Common Communication Network
CDCO	Centrally Developed, Centrally Operated
DG TAXUD	Directorate General Taxation and Customs Union
IDS	Interface Data Specification
MS	Member State
TARIC	TARif Intégré Communautaire

1.5. REFERENCE DOCUMENTS

TAR3-TMES TARIC3 Technical Message Exchange Specification –

	v4.02-EN
TARIC3-IDS	TARIC3 - Interface Data Specification 2.Elements - v0.47-EN
	TARIC3 - Interface Data Specification 3.Records - v0.47-EN
	TARIC3 - Interface Data Specification 4.Processing Rules - v0.47-EN
TARIC3-OUB-FS	TARIC3-Extraction output bridges - Functional Specifications – v2.00-EN
TARIC3-OUB-PM	TARIC3 Output Bridge Process Model – v1.01-EN

1.6. APPLICABLE DOCUMENTS

No applicable documents.

2. TESTING STRATEGY

The conformance tests are classified into two groups based upon the two possible output bridge facilities:

1. The full extraction output bridge: it contains the tests validating that the MS system correctly processes the full extractions from the central system and covers also the tests regarding the connection to the data medium;

2. The incremental extraction output bridge: it contains the tests validating that the MS system correctly processes the differential extractions from the central system and covers also the connection tests to the queues.

The tests must be defined so that their execution is easily reproducible. A test scenario starts from a known (specified) initial situation and it encompasses all data manipulations needed for its correct execution. Moreover, the test scenarios should be based on a limited set of test data, and ideally the same set of data should be used for all test scenarios.

3. CONFORMANCE TEST SCENARIOS

3.1. FULL EXTRACTION OUTPUT BRIDGE

3.1.1. Connect to the data medium

Assume the delivery of the full extraction messages from the Output Bridge satellite system on the data medium.

Scenario CONNECT_MED

(1) The MS system has to connect to the full extraction message which was delivered on the data medium.

(2) Verify that the MS system can get the message and that the message is the one delivered on the data medium by the Output Bridge satellite system.

3.1.2. Process the full extraction

The following test scenarios assume that the MS system has access to the full extraction messages delivered on the data medium so that this data initially will become available in the MS system. The MS system is ready to process the full extraction messages.

3.1.2.1. Initial load

Scenario FULLEXTRACT_INI_OK

(1) Load the full extraction messages containing the insert of the TARIC3 data to fill the database for the first time.

(2) Verify that the MS system has stored all the TARIC3 data from the full extraction messages.

Scenario FULLEXTRACT_INI_NOK

(1) Load the full extraction messages containing the insertion of the TARIC3 data to fill the database for the first time.

(2) Verify that the MS system has not stored the TARIC3 data from the unsuccessful and successful validated full extraction messages used during this full extract process.

Scenario FULLEXTRACT_EMPTY_NOK

(1) Load the full extraction files, including those that do not contain any data, in an attempt to fill the database for the first time.

(2) Verify that the MS system detected the empty files and stopped the extraction process as a consequence of this.

Scenario FULLEXTRACT_UNKNOWN

(1) Load the unknown full extraction message.

(2) Verify that the application becomes aware of the unknown extraction message and that the content is not processed.

Scenario FULLEXTRACT_SYNTAX

(1) Load the full extraction files, including the one with the syntax-error, in an attempt to fill the database for the first time.

(2) Verify that the MS system detected the syntax-error and has not processed the error-file.

Scenario FULLEXTRACT_REC_SEQ

(1) Load the full extraction files, including the one with the incorrect record sequence, in an attempt to fill the database for the first time.

(2) Verify that the MS system detected the sequence-error and has not processed the error-file.

Scenario FULLEXTRACT_FILE_SEQ

(1) Follow an incorrect sequence order to upload the full extraction files, in an attempt to fill the database for the first time.

(2) Verify that the MS system detected the sequence-error and has not processed the error-file.

3.1.2.2. Load for multiple languages

Several messages, produced by the Output Bridge satellite system, are language dependent. The MS system should be able to process these language dependent files for all the languages which are configured in the Output Bridge satellite system for the specific MS.

Scenario FULLEXTRACT_ALL_LNG

A MS who uses more than one language in the Output Bridge satellite system is a prerequisite for this scenario.

(1) Load the full extraction messages, including the language dependent files for all the languages configured for the MS in the Output Bridge satellite system.

(2) The MS system has processed all the extraction messages, including those for all the different languages configured in the MS Output Bridge satellite system.

Scenario FULLEXTRACT_1_MORE_LNG

A MS who uses more than one language in the Output Bridge satellite system is a prerequisite for this scenario.

(1) Load the full extraction messages, including the language dependent files for only one of the languages configured for the MS in the Output Bridge satellite system.

(2) The MS system has processed all the extraction messages, including the language dependent file.

(3) The MS system did not complain that it did not receive a language dependent file for every of the configured languages of the MS.

Scenario FULLEXTRACT_1_LNG

A MS who uses exactly one language in the Output Bridge satellite system is a prerequisite for this scenario.

(1) Load the full extraction messages, including the language dependent files for the MS in the Output Bridge satellite system.

(2) The MS system has processed all the extraction messages, including the language dependent file.

Scenario FULLEXTRACT_UNKNOWN_LNG

In the Output Bridge satellite system an unknown language is configured for the MS. Therefore the MS received the language dependent extraction files for this unknown language.

(1) Load the full extraction messages, including the language dependent files with the unknown language.

(2) The MS system did not process the language dependent full extraction files.

3.2. INCREMENTAL EXTRACTION OUTPUT BRIDGE

The following test scenarios assume that the MS system has already received and processed a full extraction so that data is initially available in the system.

3.2.1. Connection to queue

Assume the Output Bridge satellite system puts an incremental extraction message on the CCN queue of the MS system.

Scenario CONNECT_CCN

(1) The MS system has to connect to its CCN queue and gets the CCN message.

(2) Verify that the MS system can get the message and that this message is the one put on the CCN queue by the Output Bridge satellite system.

(3) The message is removed from the queue.

3.2.2. Filename validation

The filename of a differential extraction message follows a specific format and sequence. The scenarios below are written to verify these naming conventions.

Actually, the MS system is not forced to report such violations. However, it should cross-check these conventions to avoid corruption of system data.

The MS system should be able to accept the maximum number of extraction sequences during the same year and to allow the reset of the sequence for the next year. In addition, the MS system should detect and verify the sequence order, whether the message is out-of-sequence or not. In the preceding scenarios, the MS system is supposed to be ready to process the incremental extraction messages.

This category of conformance test scenarios will prove that the MS system stands up and reacts correctly in case of exceptional situations regarding the file name.

3.2.2.1. Out-of sequence

Scenario DIFFEXTRACT_OUT_NR

(1) Load the incremental extraction message with sequence number [x] for this current year.

(2) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

(3) Load the incremental extraction message with sequence number [x+2] for this current year.

(4) Verify that the MS system detects the out-of-sequence (the differential extraction sequence number has not been updated).

Scenario DIFFEXTRACT_OUT_YR

(1) Load the incremental extraction message with sequence number [x] for this current year.

(2) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

(3) Load the incremental extraction message with sequence number [min]=001 for the [current year + 1].

(4) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

(5) Load the incremental extraction message with sequence number [x+1] for the [current year].

(6) Verify that the MS system detects the out-of-sequence (the differential extraction sequence number has not been updated).

Scenario DIFFEXTRACT_UNIQUE_NR

(1) Load the incremental extraction message with the next succeeding sequence number [x] for this current year.

(2) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

(3) Load the incremental extraction message with sequence number ≤ [x].

(4) Verify that the MS system detects the out-of-sequence (it is not matched as a resend and the differential extraction sequence number has not been updated).

Scenario DIFFEXTRACT_UNIQUE_YR

(1) Load the incremental extraction message with sequence number [x] for this current year.

(2) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

(3) Load the incremental extraction message with sequence number [min] for a year ≤ [current year].

(4) Verify that the MS system detects the out-of-sequence (it is not matched as a resend and the differential extraction sequence number has not been updated).

3.2.2.2. Unknown file name

Scenario DIFFEXTRACT_UNKNOWN

(1) Load the unknown incremental extraction message.

(2) Verify that the application becomes aware of the unknown extraction message and that the content is not processed (the differential extraction sequence number has not been updated).

3.2.3. Content validation

The content of a differential extraction message depends on the situation. The message for instance can insert, update or delete all the different data-elements while several rules, restrictions and sequences have to be taken into account. Hence a scenario will be provided to cover a positive and a negative test for an insert, update and delete action on the data element level. In addition, some scenarios will be

added to verify the syntax of the message. In the next scenarios, the MS system is supposed to be ready to process the incremental extraction messages.

Actually, the MS system is not forced to report violations such as like e.g. format violations, conditions violations and so on. However, it should cross-check the rules implemented in the data transmitted from the central system to ensure a proper quality control and avoid corruption of system data if errors occurred in the extraction process.

This category of conformance test scenarios will prove that the MS system stands up and reacts correctly in case of exceptional situations.

3.2.3.1. Insert a data element

The following scenarios describe the insert of a new data element. The first scenario illustrates a successful insert, while the second scenario rejects the insert. The data elements and the rejection reasons will be defined in the conformance test plan.

Scenario DIFFEXTRACT_INS_OK

(1) Load a differential extraction containing the insertion of the data element.

(2) Verify that the MS system has inserted the occurrence of the data element according to the received information.

(3) Verify that the differential extraction sequence number has been updated.

Scenario DIFFEXTRACT_INS_NOK

(1) Load a differential extraction which will be rejected and contains the insertion of the data element.

(2) Verify that a significant rejection reason or message is shown to inform the users.

(3) Verify that the MS system has not inserted the occurrence of the data element.

(4) Verify that the differential extraction sequence number has not been updated.

3.2.3.2. Update a data element

The following scenarios describe the modification of an existing data element. The first scenario illustrates a successful update to one and the same data element, the second scenario uses extraction files containing multiple updates to one and the same data element, the third scenario rejects the amendments. The data elements and the rejection reasons will be defined in the conformance test plan.

Scenario DIFFEXTRACT_UPD_SINGLE

(1) Load a differential extraction message containing one modification onto the data element.

(2) Verify that the MS system has updated the occurrence of the data element with the correct amendment according to the received information.

(3) Verify that the differential extraction sequence number has been updated.

Scenario DIFFEXTRACT_UPD_MULTI

(1) Load a differential extraction message containing multiple modifications onto the same data element.

(2) Verify that the MS system has altered the occurrence of the data element with the correct amendments according to the received information.

(3) Verify that the differential extraction sequence number has been updated.

Scenario DIFFEXTRACT_UPD_NOK

(1) Load a differential extraction message which will be rejected due to incorrect updates to the data element.

(2) Verify that a significant rejection reason or message is shown to inform the users.

(3) Verify that the MS system has not updated the occurrence of the data element.

(4) Verify that the differential extraction sequence number has not been updated.

3.2.3.3. Delete a data element

The following scenarios describe the removal of a data element. The first scenario illustrates a successful delete, while the second scenario rejects the removal. The data elements and the rejection reasons will be defined in the conformance test plan.

Scenario DIFFEXTRACT_DEL_OK

(1) Load a differential extraction message containing the deletion of the data element.

(2) Verify that the MS system has deleted the occurrence of the data element.

(3) Verify that the differential extraction sequence number has been updated.

Scenario DIFFEXTRACT_DEL_NOK

(1) Load a differential extraction message which will be rejected and contains the delete of the data element.

(2) Verify that a significant rejection reason or message is shown to inform the users.

(3) Verify that the MS system has not deleted the occurrence of the data element.

(4) Verify that the differential extraction sequence number has not been updated.

3.2.3.4. Manage the data elements

Some data elements need to be added, other to be modified while some others need be deleted. An incremental extraction message can contain all these actions in order to manage the data elements. These scenarios will load an incremental extraction message containing a set of data elements for which create, update and delete actions are specified in one and the same message.

Scenario DIFFEXTRACT_MAN_OK

(1) Load the incremental extraction message which contains different management actions on a set of data elements.

(2) The MS system has processed all actions from the extraction message.

(3) Verify that the differential extraction sequence number has been updated.

3.2.3.5. Syntax and semantic errors

Each incremental extraction message has to be semantically and syntactically valid. Syntax and semantic errors have to be detected. The Output Bridge satellite system messages have to comply with building rules that specify the structure and format of the messages. In case of violation of these building rules, the MS system should be able to detect these errors and should react in an adequate manner.

The data elements and the rejection reasons will be defined in the conformance test plan.

Scenario DIFFEXTRACT_SYNTAX

(1) Load the incremental extraction message that includes the syntax error.

(2) Verify that the MS system detects the syntax error.

(3) Verify that the MS system has not applied the management actions defined in the message.

(4) Verify that the differential extraction sequence number has not been updated.

Scenario DIFFEXTRACT_SEMANTIC

(1) Load the incremental extraction message that includes the semantic error.

(2) Verify that the MS system detects the semantic error.

(3) Verify that the MS system has not applied the management actions defined in the message.

(4) Verify that the differential extraction sequence number has not been updated.

3.2.3.6. Applied filters

Before sending a differential extraction message to the MS, the TARIC3 system applies some destination filters to remove information not necessary for this MS. Although these messages are filtered by the TARIC3 system, this should not have any impact on the handling of the messages by the MS system.

Scenario DIFFEXTRACT_FILTER

(1) Load the filtered incremental extraction message.

(2) The MS system has processed the filtered extraction messages.

(3) Verify that the differential extraction sequence number has been updated.

3.2.3.7. Process empty files

The sequence's increment should be taken into account in order to avoid that messages with lower sequence will overwrite the messages from a higher sequence. In case of violation of these sequence rules, the MS system should be able to detect these errors and should react in an adequate manner. This also implies that empty files should be increased with the specific increment.

Scenario DIFFEXTRACT_EMPTY

(1) Load the differential extraction file that does not contain any data.

(2) Verify that the MS system has processed the extraction (the differential extraction sequence number has been updated).

3.2.3.8. Sequence

The MS system must not take any assumption on the sequence of the Transaction Identifier.

Scenario DIFFEXTRACT_REQ_SEQ

(1) Load the differential extraction file that does contain Transaction Identifiers.

(2) Verify that the MS system has processed the extraction.

4. CONFORMANCE MATRIX

The conformance matrix shows which test scenarios must be executed during the execution of the conformance testing by a MS.

Four criteria are defined:

- M: Mandatory
- O: Optional
- C: Conditional
- -: Not applicable

Facility	Test Scenarios	Execu-tion
FULL EXTRACTION OUTPUT BRIDGE	CONNECT_MED	M
	FULLEXTRACT_INI_OK	M
	FULLEXTRACT_INI_NOK	M
	FULLEXTRACT_EMPTY_NOK	O
	FULLEXTRACT_UNKNOWN	O
	FULLEXTRACT_SYNTAX	M
	FULLEXTRACT_REC_SEQ	M
	FULLEXTRACT_FILE_SEQ	M
	FULLEXTRACT_ALL_LNG	M
	FULLEXTRACT_1_MORE_LNG	O
	FULLEXTRACT_1_LNG	M
	FULLEXTRACT_UNKNOWN_LNG	O
INCREMENTAL EXTRACTION OUTPUT BRIDGE	CONNECT_CCN	M
	DIFFEXTRACT_OUT_NR	M
	DIFFEXTRACT_OUT_YR	O

Facility	Test Scenarios	Execu-tion
	DIFFEXTRACT_UNIQUE_NR	M
	DIFFEXTRACT_UNIQUE_YR	M
	DIFFEXTRACT_UNKNOWN	O
	DIFFEXTRACT_INS_OK	M
	DIFFEXTRACT_INS_NOK	M
	DIFFEXTRACT_UPD_SINGLE	M
	DIFFEXTRACT_UPD_MULTI	M
	DIFFEXTRACT_UPD_NOK	M
	DIFFEXTRACT_DEL_OK	M
	DIFFEXTRACT_DEL_NOK	M
	DIFFEXTRACT_MAN_OK	M
	DIFFEXTRACT_SYNTAX	M
	DIFFEXTRACT_SEMANTIC	M
	DIFFEXTRACT_FILTER	M
	DIFFEXTRACT_EMPTY	O

Facility	Test Scenarios	Execu-tion
	DIFFEXTRACT_REC_SEQ	M