

# dentsu TRACKING

## **Dentsu Aegis Network**

### LIST OF SPECIFICATIONS v1.4 FOR ECONOMIC OPERATORS

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This document details the list of specifications of the EU Secondary Repository and Router.

## Summary of changes

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# Table of Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>INTRODUCTION .....</b>  | <b>8</b>  |
| 1.1      | TRACEABILITY SYSTEM OVERVIEW .....   | 8         |
| 1.2      | SCOPE AND OBJECTIVES .....   | 8         |
| 1.3      | CONVENTIONS .....  | 9         |
| 1.3.1    | <i>Message naming convention .....</i>   | <i>9</i>  |
| 1.3.2    | <i>Message and codes sample.....</i>   | <i>9</i>  |
| <b>2</b> | <b>DEFINITIONS .....</b>   | <b>10</b> |
| <b>3</b> | <b>REPOSITORIES SYSTEM OVERVIEW .....</b>  | <b>12</b> |
| 3.1      | KEY DESIGN PRINCIPLES .....  | 12        |
| 3.2      | ROLES OF THE REPOSITORIES SYSTEM COMPONENTS .....  | 12        |
| 3.2.1    | <i>The Primary repositories .....</i>  | <i>13</i> |
| 3.2.2    | <i>The Router .....</i>  | <i>13</i> |
| 3.2.3    | <i>The Secondary repository.....</i>   | <i>13</i> |
| 3.3      | OVERVIEW OF DATA DICTIONARY PROCESSES .....  | 14        |
| 3.3.1    | <i>Identifier codes for Economic operators, Facilities and Machines.....</i>                             | <i>14</i> |
| 3.3.2    | <i>Unique identifiers (UIs) for Unit packets and Aggregated packaging of tobacco products .....</i>      | <i>16</i> |
| 3.3.3    | <i>Report on Product movements .....</i>   | <i>17</i> |
| 3.3.4    | <i>Report on Transactional events .....</i>  | <i>18</i> |
| 3.3.5    | <i>Recalls.....</i>  | <i>18</i> |
| 3.4      | SYSTEM ARCHITECTURE.....   | 20        |
| 3.5      | OPTIONAL II2MN II2DW INTERFACES .....  | 21        |
| <b>4</b> | <b>PROCESSES DESCRIPTION.....</b>  | <b>23</b> |
| 4.1      | ISSUING IDENTIFIER CODES .....   | 23        |
| 4.1.1    | <i>Issuing of an Economic operator Identifier code .....</i>   | <i>23</i> |
| 4.1.2    | <i>Correction of information concerning an Economic operator.....</i>                                    | <i>24</i> |
| 4.1.3    | <i>De-registration of Economic operator Identifier code .....</i>  | <i>27</i> |
| 4.1.4    | <i>Issuing of a Facility Identifier code.....</i>  | <i>28</i> |
| 4.1.5    | <i>Correction of information concerning a Facility Identifier code.....</i>                              | <i>30</i> |
| 4.1.6    | <i>De-registration of a Facility Identifier code .....</i>   | <i>32</i> |
| 4.2      | ISSUING UNIQUE IDENTIFIERS (UIs) .....   | 33        |
| 4.2.1    | <i>Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging by ID issuers.....</i> | <i>33</i> |
| 4.2.2    | <i>Deactivation of unit level Unique identifiers (upUIs) .....</i>                                       | <i>35</i> |
| 4.2.3    | <i>Deactivation of aggregated level Unique identifiers (aUIs).....</i>                                   | <i>37</i> |
| 4.2.4    | <i>Automatic deactivation of Unique Identifiers .....</i>  | <i>38</i> |
| 4.3      | REPORTING OPERATIONAL EVENTS (PRODUCT MOVEMENT INFORMATION) .....  | 38        |
| 4.3.1    | <i>Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging .....</i>           | <i>39</i> |
| 4.3.2    | <i>Dispatch of tobacco products from a Facility .....</i>  | <i>41</i> |
| 4.3.3    | <i>Arrival of tobacco products at a Facility.....</i>  | <i>42</i> |
| 4.3.4    | <i>Trans-loading .....</i>   | <i>44</i> |
| 4.3.5    | <i>Disaggregation of aggregated level Unique identifier (UI).....</i>                                    | <i>45</i> |
| 4.3.6    | <i>Delivery carried out with a vending van to multiple retail outlets .....</i>                          | <i>47</i> |
| 4.4      | REPORTING TRANSACTIONAL EVENTS (TRADE INFORMATION) .....   | 49        |
| 4.4.1    | <i>Issuing of the invoice .....</i>  | <i>49</i> |
| 4.4.2    | <i>Issuing of the order number .....</i>   | <i>51</i> |
| 4.4.3    | <i>Receipt of the payment.....</i>   | <i>53</i> |
| 4.5      | RECALLS OF REQUESTS, OPERATIONAL AND TRANSACTIONAL MESSAGES .....  | 54        |
| 4.5.1    | <i>Recalls of operational and transactional messages .....</i>   | <i>54</i> |
| <b>5</b> | <b>INTERFACES.....</b>   | <b>57</b> |

|          |  |           |
|----------|--|-----------|
| 5.1      | OVERVIEW .....   | 57        |
| 5.2      | SECONDARY REPOSITORY AND ROUTER INTERFACE.....   | 57        |
| 5.2.1    | <i>Secondary repository and Router application programmable interface ...</i>                                      | 57        |
| 5.2.2    | <i>Methods of interaction. ....</i>  | 58        |
| 5.2.3    | <i>Encoding .....</i>  | 58        |
| 5.2.4    | <i>Secured communication .....</i>   | 58        |
| 5.2.5    | <i>Version and backward compatibility .....</i>  | 59        |
| 5.2.6    | <i>Message identification and RecallCode .....</i>   | 59        |
| 5.2.7    | <i>Message response.....</i>   | 61        |
| 5.2.8    | <i>Forward Rejected Messages. ....</i>   | 62        |
| 5.2.9    | <i>Message integrity and hash .....</i>  | 63        |
| 5.2.10   | <i>Message size.....</i>   | 64        |
| 5.2.11   | <i>Number of simultaneous connections.....</i>   | 64        |
| 5.2.12   | <i>Message Sequence.....</i>   | 64        |
| 5.2.13   | <i>Buffering and Burst transmissions.....</i>  | 65        |
| 5.2.14   | <i>Message Retransmission limitation.....</i>  | 65        |
| 5.2.15   | <i>Connectivity Test Message.....</i>  | 65        |
| 5.2.16   | <i>Duplicate message validation.....</i>   | 65        |
| 5.3      | EPCIS AND EDI SUPPORT .....  | 66        |
| 5.3.1    | <i>Overview.....</i>   | 66        |
| 5.3.2    | <i>PRODUCT MOVEMENT EVENTS .....</i>   | 66        |
| 5.3.3    | <i>TRANSACTIONAL EVENTS.....</i>   | 66        |
| 5.3.4    | <i>ERROR HANDLING MESSAGE .....</i>  | 66        |
| 5.3.5    | <i>EPCIS Recall Management.....</i>  | 67        |
| 5.4      | PRIMARY REPOSITORY ENDPOINT.....   | 68        |
| 5.4.1    | <i>Overview.....</i>   | 68        |
| 5.4.2    | <i>Methods of interaction. ....</i>  | 68        |
| 5.4.3    | <i>Message format.....</i>   | 68        |
| 5.4.4    | <i>Message response.....</i>   | 68        |
| 5.4.5    | <i>Endpoint .....</i>  | 68        |
| 5.4.6    | <i>Secured communication .....</i>   | 68        |
| 5.4.7    | <i>RecallCode management.....</i>  | 68        |
| 5.4.8    | <i>Message integrity and hash .....</i>  | 68        |
| 5.5      | II2MN II2DW INTERFACES.....  | 68        |
| 5.5.1    | <i>Overview.....</i>   | 68        |
| 5.5.2    | <i>Interface .....</i>   | 68        |
| 5.5.3    | <i>Synchronous and asynchronous support .....</i>  | 69        |
| 5.5.4    | <i>Extensibility.....</i>  | 69        |
| <b>6</b> | <b>UNIQUE IDENTIFIER.....</b>  | <b>69</b> |
| 6.1      | CLARIFICATION ON STRUCTURE OF UNIT-LEVEL UNIQUE IDENTIFIERS .....  | 69        |
| 6.1.1    | <i>Clarification on Structure of unit-level unique identifiers (after encoding into a data carrier).....</i>       | 69        |
| 6.1.2    | <i>Clarification on Structure of aggregated-level unique identifiers (after encoding into a data carrier).....</i> | 71        |
| 6.2      | DECODING UI .....  | 73        |
| 6.2.1    | <i>Algorithm .....</i>   | 73        |
| 6.2.2    | <i>Decoding Activities.....</i>  | 73        |
| <b>7</b> | <b>ROUTER.....</b>   | <b>74</b> |
| 7.1      | OVERVIEW .....   | 74        |
| 7.2      | ROUTING RULES .....  | 74        |
| 7.2.1    | <i>Routing of UI .....</i>   | 74        |
| 7.2.2    | <i>Routing of Transactional data.....</i>  | 75        |
| 7.3      | RECALL MANAGEMENT .....  | 75        |

|           |   |           |
|-----------|---|-----------|
| <b>8</b>  | <b>MESSAGE VALIDATION .....</b>                           | <b>76</b> |
| 8.1       | OVERVIEW .....  | 76        |
| 8.1.1     | <i>Principle: No duplication of validation .....</i>      | 76        |
| 8.1.2     | <i>Validation response .....</i>                          | 76        |
| 8.1.3     | <i>Technical and business validation .....</i>            | 77        |
| 8.1.4     | <i>Message transmission overview .....</i>                | 77        |
| 8.2       | TYPE OF VALIDATION .....                                  | 78        |
| 8.2.1     | <i>Security validation .....</i>                          | 78        |
| 8.2.2     | <i>Message Structure validation .....</i>                 | 78        |
| 8.2.3     | <i>. Message Transmission validation .....</i>            | 79        |
| 8.2.4     | <i>Unique Identifiers validation .....</i>                | 79        |
| 8.2.5     | <i>UI level Message sequence validation .....</i>         | 81        |
| 8.2.6     | <i>Message Event Time Validation .....</i>                | 85        |
| 8.2.7     | <i>Identification Code validation .....</i>               | 86        |
| 8.2.8     | <i>Recall Validation .....</i>                            | 86        |
| 8.3       | VALIDATION SCOPE .....                                    | 88        |
| 8.4       | VALIDATION RESPONSIBILITY .....                           | 89        |
| 8.5       | VALIDATION AND ERROR CODE .....                           | 90        |
| 8.6       | TRANSITION PERIOD VALIDATION .....                        | 92        |
| 8.6.1     | <i>overview .....</i>                                     | 92        |
| 8.6.2     | <i>Related controls .....</i>                             | 92        |
| 8.6.3     | <i>Primary and Router processing .....</i>                | 93        |
| 8.6.4     | <i>Empty Event .....</i>                                  | 93        |
| 8.7       | SEQUENCE VALIDATION GRACE PERIOD .....                    | 93        |
| 8.7.1     | <i>Overview .....</i>                                     | 93        |
| 8.7.2     | <i>UI Processing .....</i>                                | 93        |
| 8.7.3     | <i>End of grace period .....</i>                          | 94        |
| 8.7.4     | <i>Related controls .....</i>                             | 94        |
| 8.7.5     | <i>Primary and Router processing .....</i>                | 94        |
| <b>9</b>  | <b>SIGN UP PROCESS.....</b>                               | <b>95</b> |
| 9.1       | OVERVIEW .....  | 95        |
| 9.2       | OVERALL FLOW .....  | 95        |
| 9.2.1     | <i>ID Issuer and Primary repositories providers .....</i> | 95        |
| 9.2.2     | <i>Technical Solution Provider .....</i>                  | 95        |
| 9.2.3     | <i>Economic Operator Validation .....</i>                 | 95        |
| <b>10</b> | <b>ENDPOINTS .....</b>                                    | <b>96</b> |
| <b>11</b> | <b>LIST OF STANDARDS .....</b>                            | <b>97</b> |
| <b>12</b> | <b>REFERENCES .....</b>                                   | <b>98</b> |

## Table of figures

|  |    |
|--|----|
| Figure 1 Overall system interconnection .....  | 13 |
| Figure 2 EU Wide Register .....  | 14 |
| Figure 3 Identifier codes general data flow .....  | 15 |
| Figure 4 Unique identifier (UI) general data flow .....  | 16 |
| Figure 5 Product movement data flow .....  | 17 |
| Figure 6 Transaction general data flow .....   | 18 |
| Figure 7 Recalls general data flow .....   | 19 |
| Figure 8 System Interfaces and Connections .....   | 20 |
| Figure 9 Data Flow Diagram – Issuing of an Economic operator Identifier code .....   | 23 |
| Figure 10 Correction of Information concerning an Economic operator .....  | 26 |
| Figure 11 De-registration of an Economic operator .....  | 27 |
| Figure 12 Issuing of a Facility Identifier code .....  | 29 |
| Figure 13 Correction of Information concerning a Facility .....  | 31 |
| Figure 14 Data Flow Diagram – De-registration of a Facility .....  | 32 |
| Figure 20 Data Flow Diagram – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers ..... | 34 |
| Figure 22 Data Flow Diagram – Deactivation of unit level Unique identifiers (upUIs) – Request from Distributors and Wholesalers .....                          | 36 |
| Figure 24 Data Flow Diagram – Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers .....                     | 38 |
| Figure 27 Data Flow Diagram – Application of aggregated level UIs on Aggregated packaging by Distributors and Wholesalers .....                                | 40 |
| Figure 29 Data Flow Diagram – Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers .....                                    | 41 |
| Figure 31 Data Flow Diagram – Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers .....                                       | 43 |
| Figure 33 Data Flow Diagram – Trans-loading of tobacco products – Report from Distributors and Wholesalers .....   | 44 |
| Figure 35 Data Flow Diagram – Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers .....  | 47 |
| Figure 37 Data Flow Diagram – Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers .....              | 48 |
| Figure 39 Data Flow Diagram – Issuing of invoice – Report from Distributors and Wholesalers .....  | 50 |
| Figure 41 Data Flow Diagram – Issuing of order number – Report from Distributors and Wholesalers .....   | 52 |
| Figure 43 Data Flow Diagram – Receipt of payment – Report from Distributors and Wholesaler .....   | 53 |
| Figure 48 Data Flow Diagram – Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers .....                              | 55 |
| Figure 49 System interfaces and endpoints .....  | 57 |
| Figure 55 Router Data Flow .....   | 74 |
| Figure 56 Validation Overview .....  | 76 |

# 1 Introduction

## 1.1 Traceability system overview

On 3<sup>rd</sup> April 2014, the European Parliament and the Council adopted the Tobacco Products Directive 2014/40/EU (TPD). Article 15 of the TPD aims to address illicit trade in tobacco products by introducing a system of traceability in the Union.

Under this Traceability system, all Unit packets of tobacco products produced in, destined for, or placed on the EU market need to display a Unique Identifier (UI). The operational and transactional movements of the tobacco products must be recorded throughout the supply chain, from the Manufacturer to the last level before the first retail outlet. Information recorded is stored by independent data storage providers (Primary and Secondary Repositories), and the data is made available for regulatory purposes to the competent authorities of the Member States and to the Commission.

This Traceability system will contribute to reducing the circulation of tobacco products not compliant with the TPD and other tobacco control legislation. It will also reduce artificially cheap supplies of illegal tobacco products that affect the uptake and general prevalence of smoking. In this regard, it addresses the obligations of the European Union (EU) under the Framework Convention for Tobacco Control (FCTC). In the end, the Traceability system will play an important role in protecting public health, state budgets and Economic operators.

## 1.2 Scope and objectives

The production and publication of a List of specifications and a Common Data Dictionary is required as an obligatory task for the providers of the Secondary repository in Article 28 of the Implementing Regulation (EU) 2018/574.

The objective of this document is to communicate to the Traceability system stakeholders the list of specifications required to allow the data exchanges with the Secondary repository. The technical descriptions of data entities

The document is structured as follows:

- **Section 2 – Definitions.** The description of the key concepts as defined in the EU Regulation.
- **Section 3 – Repositories system overview.** A general description of the Repositories system including key design principles, role of the components, overview of the main processes and data flows, and overview of the system architecture.
- **Section 4 – Processes description.** A detailed description of each of the process and its related data flows and messages, including requests of codes, report on operational events, reports on transactional events and recalls.
- **Section 5 – Interfaces.** Description of the Traceability System interfaces between its various components.



- **Section 6 – Unique Identifiers.** Description of the decoding requirements to allow authorized third parties to decode the codes.
- **Section 7 – Router.** Brief summary of the component in charge of routing information from ID Issuers and Supply Chain to related Manufacturer's Primary Systems.
- **Section 8 – Messages validation.** Brief description of the validation mechanisms that the overall system should ensure to meet Regulation purposes.

**Note:** for the detailed and technical description of the data base entities and flows, operational and transactional method, security edge case, router definition, error messages, registration process and overall connection diagram, see the Data Dictionary document.

## 1.3 Conventions

### 1.3.1 Message naming convention

The messages are described by a 3 or 4 alphanumeric characters code. In parenthesis, the message type reference of the Annex II of the Commission Implementing Regulation (EU) 2018/574 will be indicated.

Example: REO (1.1)

### 1.3.2 Message and codes sample

```
{  
  "Errors": null  
}
```

## 2 Definitions

The following definitions are described in Article 2 of the Tobacco Products Directive 2014/40/EU and in Article 2 and 3 of the Commission Implementing Regulation (EU) 2018/574. They are classified in alphabetical order.

**Aggregated packaging** is any packaging containing more than one Unit packet of tobacco products.

**Data carrier** is a means of representing data in machine readable form.

**Economic operators** are any natural or legal person who is involved in the trade of tobacco products, including for export, from the manufacturer to the last economic operator before the first retail outlet. This includes, but is not limited to, manufacturers, importers, wholesalers and distributors, as well as transport companies or providers of courier services.

**Facility** is any location, building or vending machine where tobacco products are manufactured, stored, or placed on the market.

**First retail outlet** is the Facility where tobacco products are placed on the market for the first time, including vending machines used for the sale of tobacco products.

**ID Issuer** is an entity appointed by each Member State, responsible for generating and issuing Unique identifier (UI) for Unit packet and Aggregated packaging of tobacco products.

**Importer** of tobacco or related products is the owner of, or a person having the right of disposal over, tobacco or related products that have been brought into the territory of the Union.

**Machine** is the equipment used for the manufacture of tobacco products which is integral to the manufacturing process.

**Manufacturer** is any natural or legal person who manufactures a product or has a product designed or manufactured, and markets that product under their name or trademark.

**Offline flat-files** are the electronic files established and maintained by each ID Issuer that contains data in a plain text format allowing for the extraction of the information encoded in the Unique identifier (UI) (excluding the time stamp) used at the Unit packet and Aggregated packaging levels without accessing the Repositories sprefix system.

**Primary repository** is a repository storing traceability data relating exclusively to the products of a given Manufacturer or Importer.

**Registry** means the record established and maintained by each ID Issuer of all the Identifier codes generated for Economic operators, Operators of first retail outlets, Facilities and Machines, along with the corresponding information.

**Repositories system** is the system consisting of the Primary repositories, the Secondary repository and the Router.

**Retail outlet** is any outlet where tobacco products are placed on the market, including by a natural person.

**Router** is a device established within the Secondary repository that transfers data between different components of the Repositories system.

**Secondary repository** is a repository containing a copy of all traceability data stored in the Primary repositories.

**Trans-loading** is any transfer of tobacco products from one vehicle to another during which tobacco products do not enter and exit a Facility.

**Unique identifier (UI)** is the alphanumeric code enabling the identification of a Unit packet or an Aggregated packaging of tobacco product.

**Unit packet** is the smallest individual packaging of a tobacco or related product that is placed in the market.

**Vending van** is a vehicle used for the delivery of tobacco products to multiple retail outlets in quantities that have not been predetermined in advance of the delivery.

## 3 Repositories system overview

### 3.1 Key design principles

The Repositories system is composed of the following sub-systems: Primary repositories, Secondary repository, Router. The sub-systems shall be fully interoperable with one another, irrespective of the service provider.

The European Commission Implementing Regulation (EU) 2018/574 provided the following key design principles:

- Whenever data are received by the Primary repositories on the basis of a reporting activity, or for any other permitted reason, it shall be forwarded to the Secondary repository instantaneously.
- Economic operators other than Manufacturers and Importers shall send the information recorded to the Router, which shall transfer it to the Primary repository serving the Manufacturer or Importer whose tobacco products are concerned. A copy of those data shall be transferred instantaneously to the Secondary repository.
- ID issuers shall ensure that an up-to-date copy of all offline flat-files, registries and related explanatory notes are electronically provided via the Router to the Secondary repository.

### 3.2 Roles of the Repositories system components

The following diagram represents the overall system interconnection.

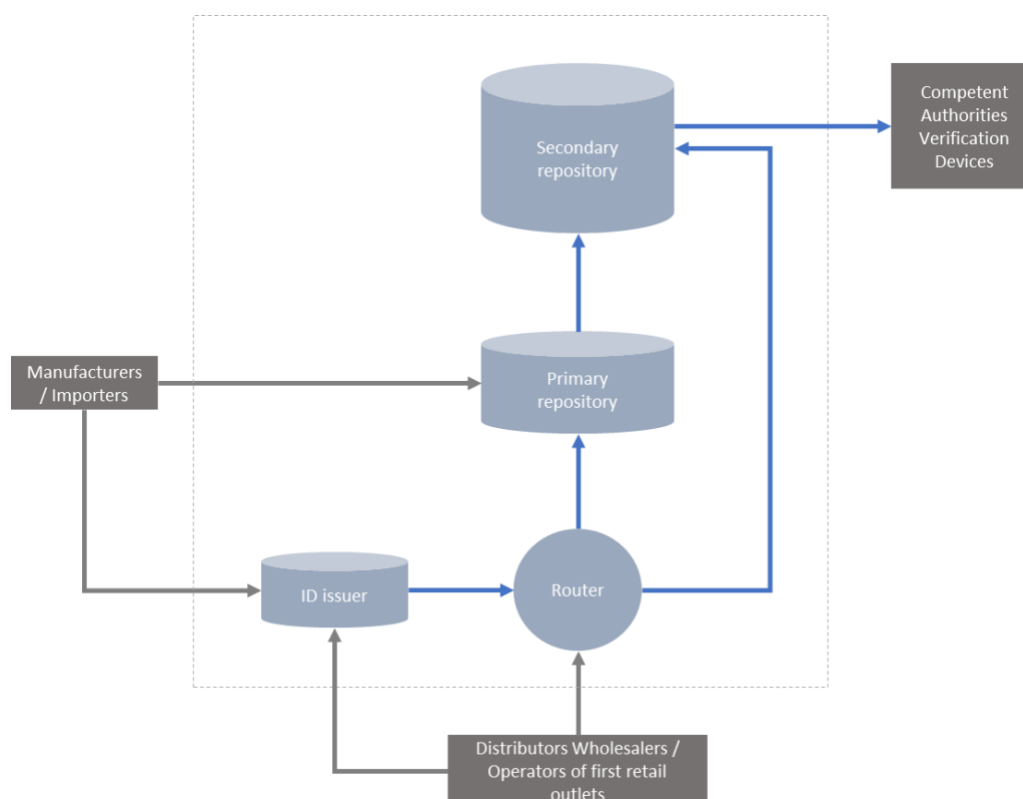


Figure 1 Overall system interconnection

### 3.2.1 The Primary repositories

The Primary repositories are repositories contracted by each Manufacturer and Importer. The Primary repositories store product movements and transactional data related to the tobacco products Unit packets and Aggregated packaging of its corresponding Manufacturers and Importers. When the reports come from Distributors and Wholesalers, the data is sent via the Router.

### 3.2.2 The Router

The Router dispatches the traceability data from the Wholesalers, Distributors, Transport companies or Providers of courier services to the Primary repository related to the Manufacturer or Importer of the dispatched tobacco products. The Router also transmits the Unique Identifiers generated by the ID Issuers to the relevant Primary repository or to the Secondary Repository if the UIs were requested by an Economic operator other than a Manufacturer or Importer. Finally, the Router transmits the offline flat-files and registries from the ID issuers to the Secondary repository.

### 3.2.3 The Secondary repository

The Secondary repository is the “copy” of the Primary repositories for all traceability data. All data will first be centralized in the Primary repositories and then sent to the Secondary repository, with the exception of:

- the requests for aggregated level UIs by Distributors and Wholesalers;
- the reports on application of aggregated level UIs by Distributors and Wholesalers;

- the transfer by ID issuers of offline flat-files, registries and algorithms to the Secondary repository.

Those are directly transmitted via the Router to the Secondary repository.

The Secondary repository holds the EU Wide register

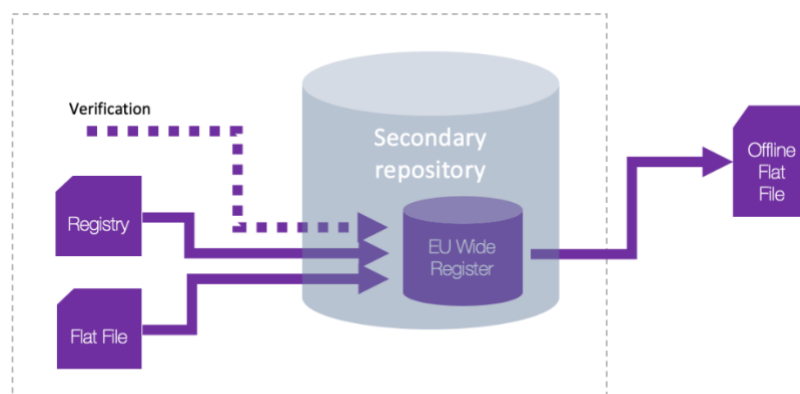


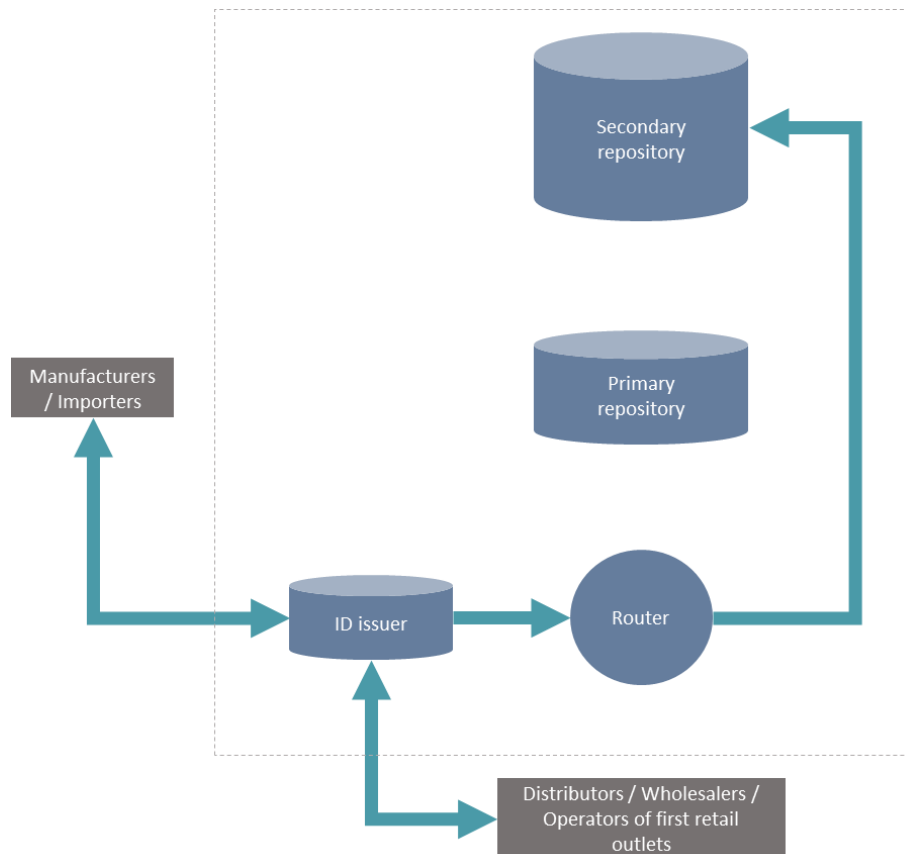
Figure 2 EU Wide Register

### 3.3 Overview of Data Dictionary processes

The following diagrams describe the different key processes and corresponding data flows that are implemented in the Traceability system. These processes and data flows are described in detail in section 4.

#### 3.3.1 Identifier codes for Economic operators, Facilities and Machines

The following diagram describes the key data flows whereby Economic operators such as Manufacturers, Importers, Distributors, Wholesalers and Operators of first retail outlets request to an ID Issuer the generation of Identifier codes, the correction of information or a de-registration. Those Identifier codes can identify either the Economic operator, a Facility or a Machine.



*Figure 3 Identifier codes general data flow*

The Economic operators exchange the necessary information with the ID issuer. The ID issuer issues the Identifier codes to the requesting Economic operators, and transfers offline flat-files and registries directly to the Secondary repository through the Router.

### 3.3.2 Unique identifiers (UIs) for Unit packets and Aggregated packaging of tobacco products

The following diagram describes the key data flows whereby Economic operators such as Manufacturers, Importers, Distributors, and Wholesalers request the issuing or deactivation of Unique identifiers (UIs) either for Unit packets or for Aggregated packaging of tobacco products.

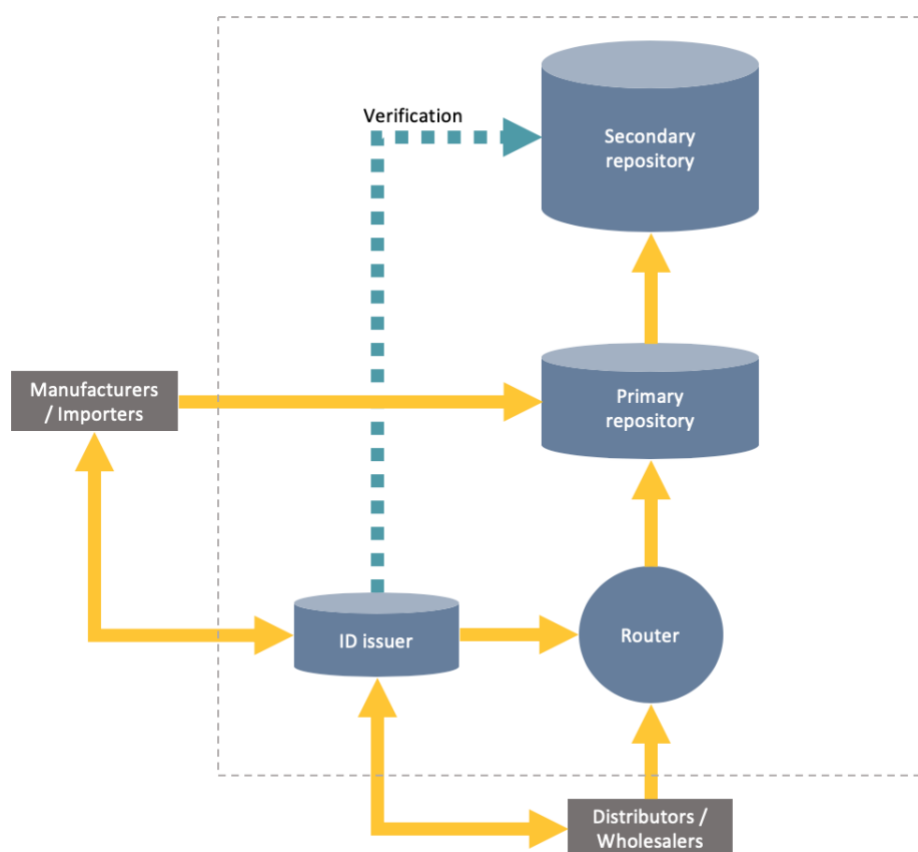


Figure 4 Unique identifier (UI) general data flow

The Economic operators exchange the necessary information with the ID issuer. The ID issuer generates the codes and transmits the data to the corresponding Primary repositories or to the Secondary repository via the Router, before issuing the Unique identifiers (UIs) to the requesting Economic operators. The Primary repositories instantaneously forward the data to the Secondary repository.

The Secondary repository exposes a verification service allowing the ID issuer to check the validity of Identifier codes.



### 3.3.3 Report on Product movements

The following diagram describes the key data flows whereby Economic operators such as Manufacturers, Importers, Distributors, Wholesalers, Transport Companies or Providers of courier services report on tobacco products movements (application of UIs, dispatch, arrival, trans-loading, disaggregation, delivery carried out with a vending van to multiple retail outlets).

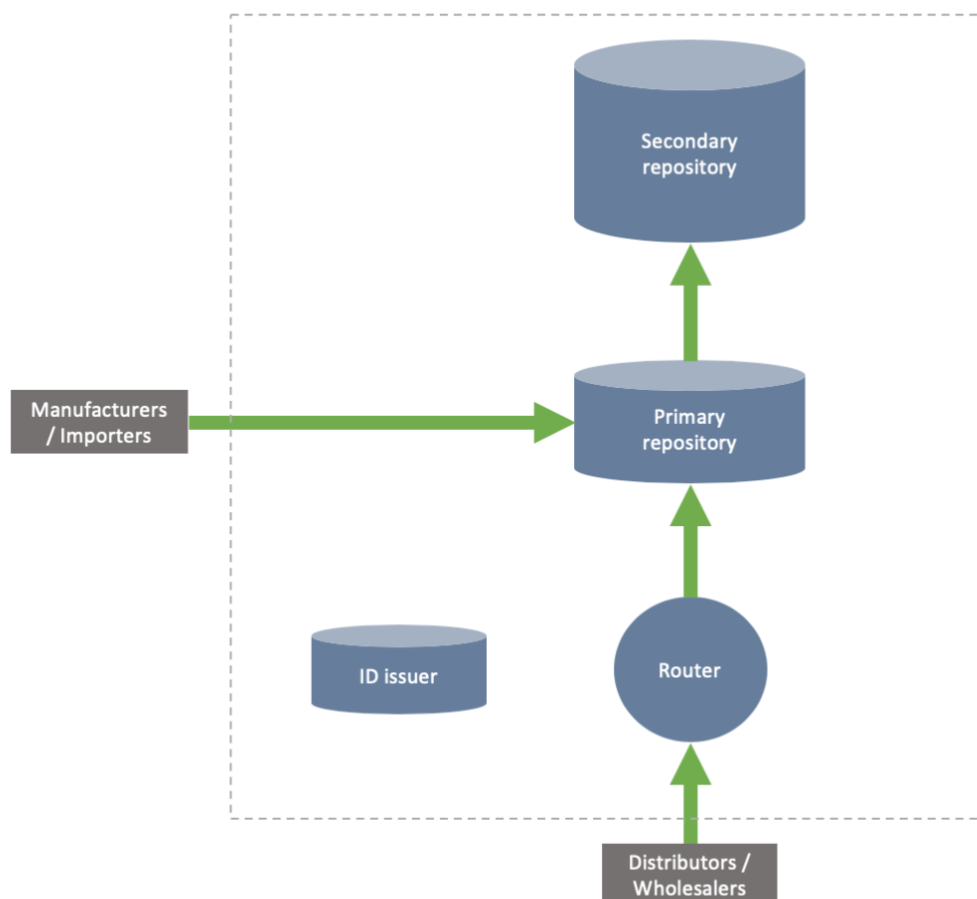


Figure 5 Product movement data flow

The Manufacturers and Importers store the data directly into their Primary repositories. The Distributors and Wholesalers send reports to the corresponding Primary repositories via the Router. The Primary repositories instantaneously forward the data to the Secondary repository.

### 3.3.4 Report on Transactional events

The following diagram describes the key data flows whereby Economic operators such as Manufacturers, Importers, Distributors, and Wholesalers report on tobacco products transactional events (issuing of the order number, issuing of the invoice, and receipt of the payment).

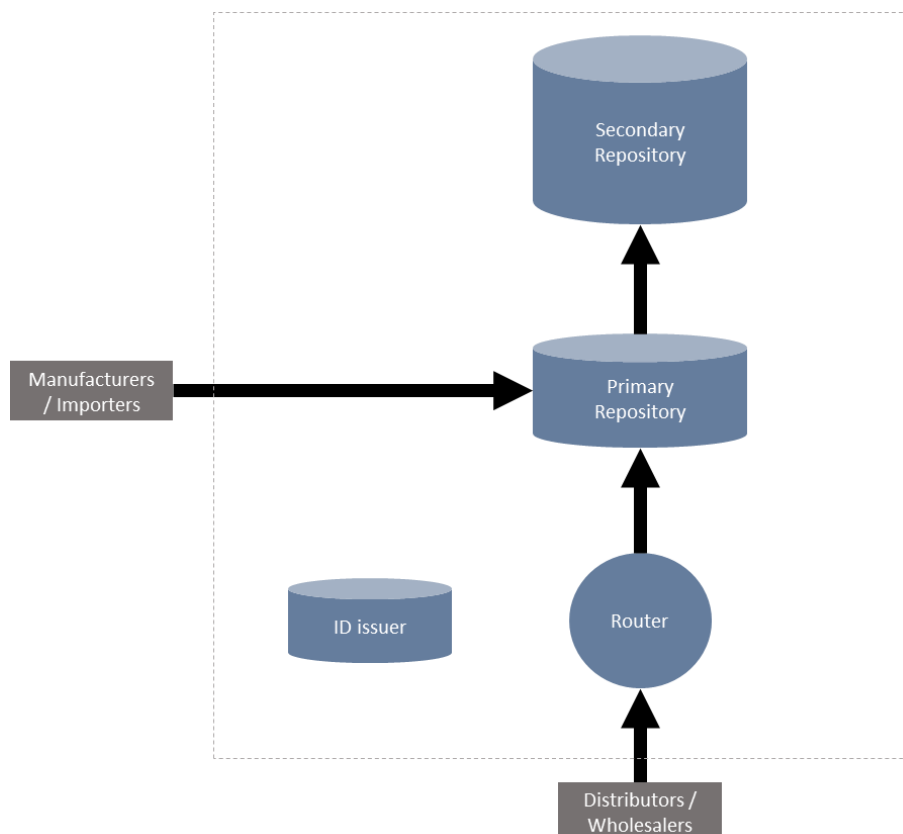


Figure 6 Transaction general data flow

The Manufacturers and Importers store the data directly into their Primary repositories. The Distributors and Wholesalers send reports to the corresponding Primary repositories via the Router. The Primary repositories instantaneously forward the data to the Secondary repository.

### 3.3.5 Recalls

Recalls are to be delivered in the following flow. The system containing the Primary repositories, the Secondary repository and the Router is to be regarded as one system.

This system needs to have an efficient method of recalling an event over the whole group of repositories. To facilitate it, it is the point of entry of the system that must generate the recall code.

#### Use case 1. Router entry in the supply chain:

- (i) The Economic operator calls the Router; (ii) the Router generates a UUID;
- (iii) the Router passes it to the relevant Primary repository; (iv) the Primary repository forwards it to the Secondary repository.

Should a recall be required, this can only be initiated from the Router, by the Distributor or Wholesaler Economic operator. The Router does the RCL call to the Router, the Router forwards this to the correct Primary repository, the Primary repository forwards this to the Secondary repository.

**Use case 2. Primary repository entry from the Manufacturer system.**

(i) The Economic operator calls the Primary repository; (ii) the Primary repository generates a UUID; (iii) the Primary repository passes this to the Secondary repository.

Should a recall be required, this can only be initiated from the Primary repository, by the Manufacturer or Importer Economic operator. The Primary repository does the RCL call to the Secondary repository.

**Technical details:**

The method the entry system must use to send the generated recall id is via the "code" property in the json payload.

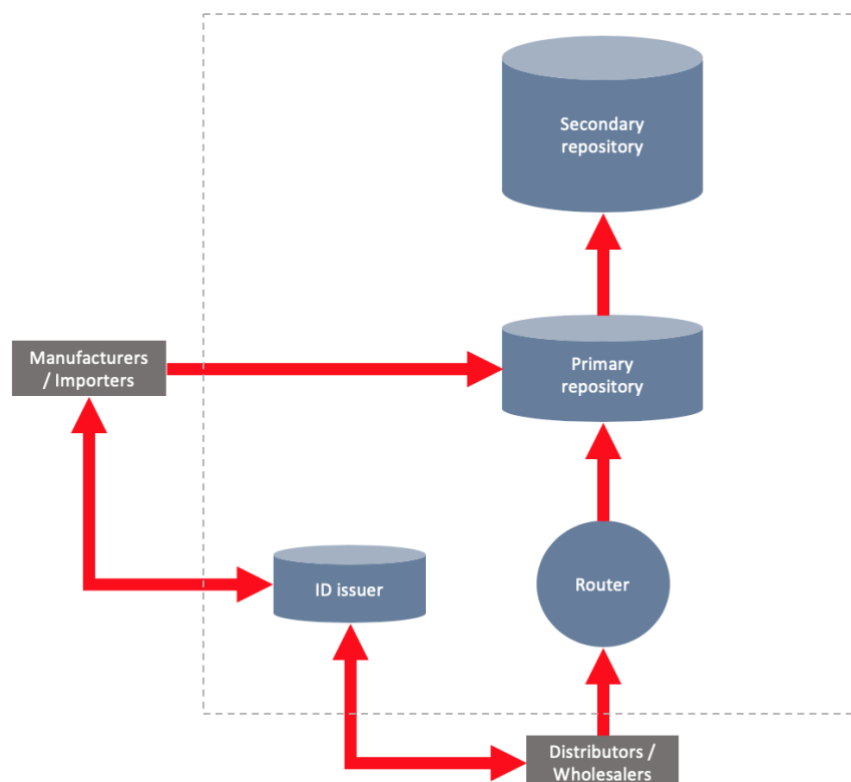


Figure 7 Recalls general data flow



The interfaces of the Traceability System are as follows:

| <b>Interface acronym</b> | <b>Hosting system</b> | <b>Description</b>  |
|--------------------------|-----------------------|---|
| II2MN                    | ID issuer System      | Secure interface published to Manufacturers and Importers   |
| II2DW                    | ID issuer System      | Secure interface published to Distributors and Wholesalers  |
| PR2MN                    | Primary repository    | Secure interface published by Primary repository providers for the internal Manufacturer system to push messages and recall those. No query nor data access for Manufacturer are allowed. |
| PR2AU                    | Primary repository    | Secure interface published by Primary repository providers for competent Authorities  |
| PR2RT                    | Primary repository    | Secure interface published by Primary repository providers for Router communication   |
| RT2II                    | Router                | Secure interface published by the Router for the ID issuers.  |
| RT2IIF                   | Router                | File based Secure interface published by the Router for the ID issuers.   |
| RT2EO                    | Router                | Secure interface published by the Router for Manufacturers and Importers  |
| RT2AU                    | Router                | Secure interface published by the Router for Competent Authorities  |
| SU2PR                    | Secondary repository  | Secure interface published by the Secondary repository for the Primary repositories' providers  |
| SU2CA                    | Secondary repository  | Secure interface published by the Secondary repository for Competent Authorities  |
| SU2AU                    | Secondary repository  | Secure interface published by the Secondary repository for auditing purposes  |
| SU2RT                    | Secondary repository  | Secure interface published by the Secondary repository for Router   |
| SU2RTF                   | Secondary repository  | File based Secure interface published by the Secondary repository for Router  |
| SU2II                    | Secondary repository  | Secure interface published by the Secondary repository for Identifier Code verification purposes  |

### 3.5 Optional II2MN II2DW interfaces

The ID Issuer defines the communication between the EO and the ID issuer corresponding to interfaces II2MN and II2DW.

The proposed messages presented in this List Of Specification are sample messages to illustrate the overall flow of data from the EO to the Secondary repository. These messages should be considered as a Guideline with no obligation of implementation.

All messages part of the II2MN and II2DW interfaces are marked as optional in this document.

| <b>Interface acronym</b> | <b>Hosting system</b> | <b>Description</b>   |
|--------------------------|-----------------------|--|
| II2MN                    | ID issuer System      | Secure interface published to Manufacturers and Importers  |
| II2DW                    | ID issuer System      | Secure interface published to Distributors and Wholesalers |

## 4 Processes description

The following section describes in details the different processes, the data flows related to them and the list of corresponding messages and interfaces which are described further in the document as well as in the Data Dictionary.

### 4.1 Issuing Identifier codes

#### 4.1.1 Issuing of an Economic operator Identifier code

##### 4.1.1.1 Description – Issuing of an Economic operator Identifier code

Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies or Providers of courier services) and Operators of first retail outlets shall request Economic operator Identifier codes to the competent ID Issuers. The ID Issuers shall transmit the Identifier codes to the requesting Economic operators within two working days.

**Note:** The ID issuers are responsible of establishing registries relating to the Identifier codes and corresponding information submitted in the application form, along with explanatory notes on the structures thereof. The ID issuers shall ensure that an up-to-date copy of all registries and explanatory notes are electronically provided via the Router to the Secondary repository.

##### 4.1.1.2 Data Flow Diagram – Issuing of an Economic operator Identifier code

The diagram below depicts the data flows related to the process whereby an ID Issuer issues an Economic operator Identifier code.

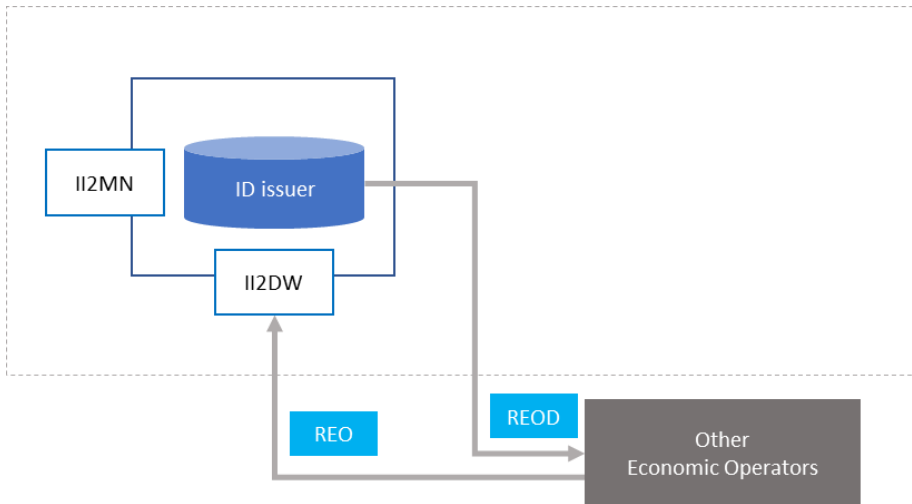


Figure 9 Data Flow Diagram – Issuing of an Economic operator Identifier code

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

|  |  | From | To |
|--|--|------|----|
|--|--|------|----|

| Message code | Message description                              | Entity  | System | Entity   | System |
|--------------|--|---|--------|--|--------|
| REO (1.1)    | Request for an Economic operator Identifier code | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services), Operators of first retail outlets |        | ID issuer  |        |
| REOD         | Issuing the Economic operator Identifier code    | ID issuer   |        | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services) Operators of first retail outlets |        |

#### 4.1.1.3 Messages – Issuing of an Economic operator Identifier code

The table below summarizes the messages and interfaces related to the process whereby the ID Issuer issues an Economic operator and issues an Economic operator Identifier code.

| Process                              | Message code | Interface      |
|--------------------------------------|--------------|----------------|
| Registration of an Economic operator | REO (1.1)    | II2MN<br>II2DW |
|                                      | REOD         | II2MN<br>II2DW |

#### 4.1.2 Correction of information concerning an Economic operator



#### *4.1.2.1 Description – Correction of Information concerning an Economic operator*

Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services), and Operators of first retail outlets can request to the competent ID Issuers the correction of the information submitted in the initial application form for Economic operator Identifier codes.

**Note:** The ID issuers are responsible of establishing registries relating to the Identifier codes and corresponding information submitted in the application form, along with explanatory notes on the structures thereof. The ID issuers shall ensure that an up-to-date copy of all registries and explanatory notes are electronically provided via the Router to the Secondary repository.

#### 4.1.2.2 Data Flow Diagram – Correction of Information concerning an Economic operator

The diagram below depicts the data flows related to the process whereby an Economic operator or Operator of first retail outlets requests the correction of information submitted in the initial application form for Economic operator Identifier codes.

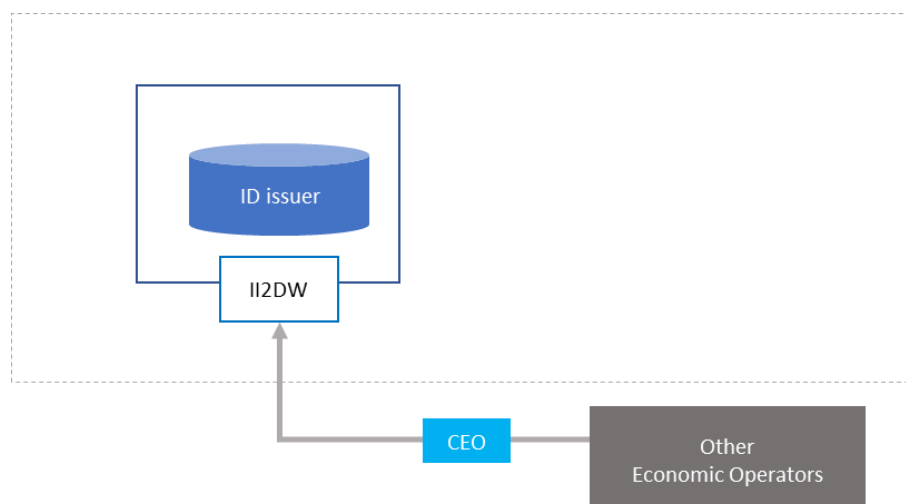


Figure 10 Correction of Information concerning an Economic operator

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From  |        | To        |        |
|--------------|---|---|--------|-----------|--------|
|              |   | Entity  | System | Entity    | System |
| CEO (1.2)    | Request for the correction of information concerning an Economic operator | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services), Operators of first retail outlets |        | ID issuer |        |

#### 4.1.2.3 Messages – Correction of Information concerning an Economic operator

The table below summarizes the messages and interfaces related to the process whereby the ID issuer corrects information concerning an Economic operator or an Operator of first retail outlet.

| Process  | Message code | Interface      |
|--|--------------|----------------|
| Correction of information concerning an Economic operator or an Operator of first retail outlet. | CEO (1.2)    | II2MN<br>II2DW |

### 4.1.3 De-registration of Economic operator Identifier code

#### 4.1.3.1 Description – De-registration of Economic operator Identifier code

Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services), and Operators of first retail outlets can request to the competent ID issuers their de-registration.

Competent Authorities of Member States may also, in accordance with their national laws, require the ID issuer to deactivate an Economic operator Identifier code. In this case, this shall lead to the automatic deactivation of related Facility Identifier codes and Machine Identifier codes.

#### 4.1.3.2 Data Flow Diagram – De-registration of Economic operator Identifier code

The diagram below depicts the data flows related to the process whereby an ID Issuer de-registers an Economic operator or an Operator of a first retail outlet.

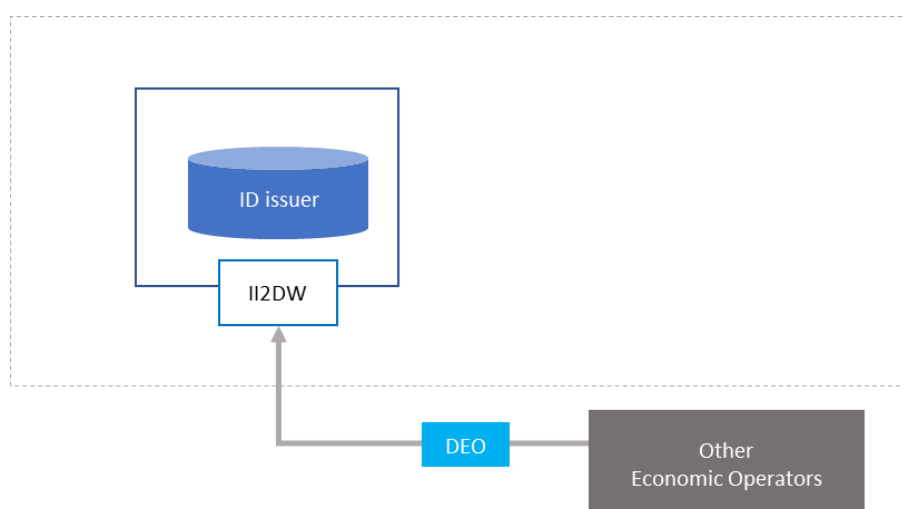


Figure 11 De-registration of an Economic operator

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                   | From  |        | To        |        |
|--------------|---------------------------------------|---|--------|-----------|--------|
|              |                                       | Entity  | System | Entity    | System |
| DEO (1.3)    | Request for the de-registration of an | Economic operators (Manufacturers, Importers, |        | ID issuer |        |

|  |                   |   |  |  |  |
|--|-------------------|---|--|--|--|
|  | Economic operator | Distributors, Wholesalers, Transport Companies, Providers of courier services), Operators of first retail outlets<br><br>Competent Authorities of Member States |  |  |  |
|--|-------------------|---|--|--|--|

#### 4.1.3.3 Messages – De-registration of Economic operator Identifier code

The table below summarizes the messages and interfaces related to the process whereby the ID Issuer de-registers an Economic operator or an Operator of a first retail outlet.

| Process  | Message code | Interface      |
|--|--------------|----------------|
| De-registration of an Economic operator or an Operator of first retail outlet. | DEO (1.3)    | II2MN<br>II2DW |
| De-registration of related Facilities  | DFA (1.6)    | II2MN<br>II2DW |
| De-registration of related Machines  | DMA (1.9)    | II2MN          |

#### 4.1.4 Issuing of a Facility Identifier code

##### 4.1.4.1 Description – Issuing of a Facility Identifier code

All facilities from manufacturing to the first retail outlet shall be identified by a Facility Identifier code generated by the ID Issuer competent for the territory in which the Facility is located. Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services) and Operators of first retail outlets shall request Facility Identifier codes to the competent ID Issuer. The ID issuers shall transmit the Identifier codes to the requesting Economic operators within two working days.

In the case of a first retail outlet, the Facility Identifier code may be requested by another registered Economic operator, subject to the consent of the operator of the first retail outlet.

In the case of manufacturing facilities located outside the Union, it is the responsibility of the Importer established inside the Union to request the related Facility Identifier code to any ID Issuer appointed by a Member State on whose market they place their products.

#### 4.1.4.2 Data Flow Diagram – Issuing of a Facility Identifier code

The diagram below depicts the data flows related to the process whereby an ID Issuer issues a Facility Identifier code.

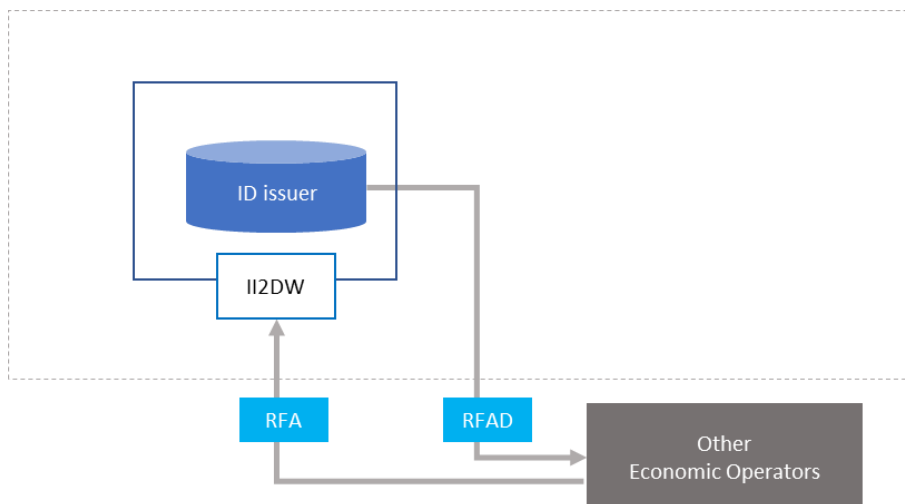


Figure 12 Issuing of a Facility Identifier code

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                   | From   |        | To                             |        |
|--------------|---------------------------------------|--|--------|--------------------------------|--------|
|              |                                       | Entity   | System | Entity                         | System |
| RFA (1.4)    | Request of a Facility Identifier code | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services) Operators of first retail outlets |        | ID issuer                      |        |
| RFAD         | Response issuing the Facility         | ID issuer  |        | Economic operators (Manufactur |        |

|  |                 |  |  |  |  |
|--|-----------------|--|--|--|--|
|  | Identifier code |  |  | ers,<br>Importers,<br>Distributors,<br>Wholesalers<br>, Transport<br>Companies,<br>Providers of<br>courier<br>services)<br>Operators<br>of first retail<br>outlets |  |
|--|-----------------|--|--|--|--|

#### 4.1.4.3 Messages – Issuing of a Facility Identifier code

The table below summarizes the messages and interfaces related to the process whereby the ID issuer issues a Facility Identifier code.

| Process                    | Message code | Interface      |
|----------------------------|--------------|----------------|
| Registration of a Facility | RFA (1.4)    | II2MN<br>II2DW |
|                            | RFAD         |                |

#### 4.1.5 Correction of information concerning a Facility Identifier code

##### 4.1.5.1 Description – Correction of Information concerning a Facility Identifier code

Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services) and Operators of first retail outlets can request to the competent ID issuers the correction of the information submitted in the initial application for Facility Identifier codes.

#### 4.1.5.2 Data Flow Diagram – Correction of Information concerning a Facility Identifier code

The diagram below depicts the data flows related to the process whereby an Economic operator or operator of first retail outlets requests the correction of information submitted in the initial application form for Facility Identifier codes.

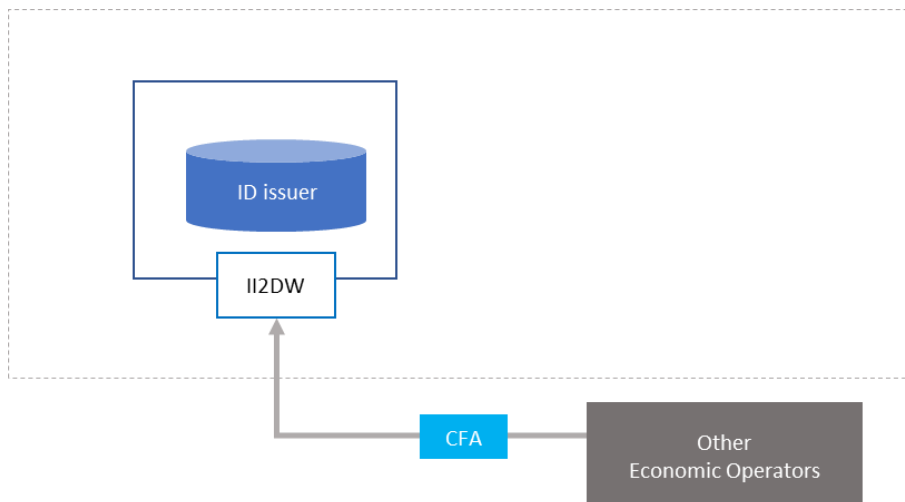


Figure 13 Correction of Information concerning a Facility

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From   |        | To        |        |
|--------------|---|--|--------|-----------|--------|
|              |   | Entity   | System | Entity    | System |
| CFA (1.5)    | Request for the correction of information concerning a Facility | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services)<br>First retail outlets |        | ID issuer |        |

#### 4.1.5.3 Messages – Correction of Information concerning a Facility Identifier Code

The table below summarizes the messages and interfaces related to the process whereby the ID issuer corrects information concerning a Facility.

| Process   | Message code | Interface     |
|---|--------------|---------------|
| Correction of information concerning a Facility | CFA (1.5)    | II2MN<br>I2DW |

#### 4.1.6 De-registration of a Facility Identifier code

##### 4.1.6.1 Description – De-registration of a Facility Identifier code

Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services) and Operators of first retail outlets can request to the competent ID issuers the de-registration of a Facility.

Competent Authorities of Member States may also, in accordance with their national laws, require the ID issuer to deactivate a Facility Identifier code. In this case, this shall lead to the automatic deactivation of related Machine Identifier codes.

##### 4.1.6.2 Data Flow Diagram – De-registration of a Facility Identifier code

The diagram below depicts the data flows related to the process whereby the ID issuer de-registers a Facility.

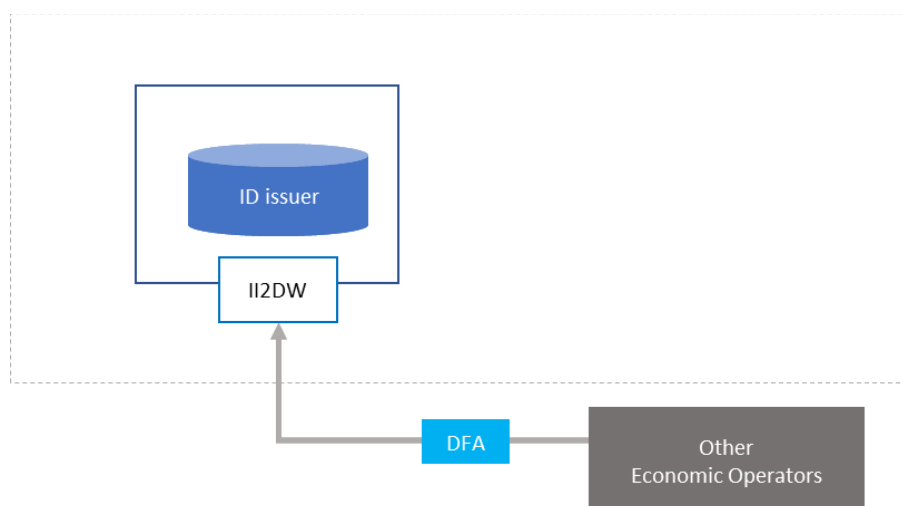


Figure 14 Data Flow Diagram – De-registration of a Facility

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description | From   |        | To     |        |
|--------------|---------------------|--------|--------|--------|--------|
|              |                     | Entity | System | Entity | System |



|           |   |  |  |           |  |
|-----------|---|--|--|-----------|--|
| DFA (1.6) | Request for the de-registration of a Facility | Economic operators (Manufacturers, Importers, Distributors, Wholesalers, Transport Companies, Providers of courier services)<br>First retail outlets |  | ID issuer |  |
|-----------|---|--|--|-----------|--|

#### 4.1.6.3 Messages – De-registration of a Facility Identifier code

The table below summarizes the messages and interfaces related to the process whereby the ID issuer de-registers a Facility.

| Process                       | Message code | Interface      |
|-------------------------------|--------------|----------------|
| De-registration of a Facility | DFA (1.6)    | II2MN<br>II2DW |

## 4.2 Issuing Unique identifiers (UIs)

### 4.2.1 Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging by ID issuers

**Note:** There are two methods for an Economic Operator to assign or generate aUIs, either by requesting from the competent ID Issuer, or by generating it themselves based on the regulation. GS1 aggregate packaging identifiers are referenced in Annex II, such as SSCC in accordance with ISO15459-1. The following section describes the process whereby the Economic Operator requests aggregated level UIs to the competent ID issuer.

#### 4.2.1.1 Issuing of aggregated level Unique Identifiers (aUIs) for Aggregated packaging by ID issuers – Request from Manufacturers and Importers

##### 4.2.1.1.1 Description – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Manufacturers and Importers

Each Aggregated packaging of tobacco product shall be marked with an aggregated level Unique identifier (UI). Manufacturers and Importers shall introduce an electronic request to the competent ID Issuer for aggregated level Unique identifiers (aUIs), supplying all the necessary information. Within two working days from the receipt of the request, the ID issuer shall in the order indicated (i) generate the codes, (ii) transmit the codes and the related information via the Router to the corresponding Primary repository and (iii) electronically transmit the codes to the requesting Economic operator. A copy of

those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

**Note:** Alternatively Economic operators can directly generate aggregated level Unique identifiers (aUIs), independently from any ID issuer and report it using message "Application of aggregated level UIs on aggregated packaging".

#### 4.2.1.2 Issuing of aggregated level Unique Identifiers (aUIs) for Aggregated packaging by ID issuers – Request from Distributors and Wholesalers

##### 4.2.1.2.1 Description – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers

Each Aggregated packaging of tobacco product shall be marked with an aggregated level Unique identifier (aUI). Distributors and Wholesalers shall introduce an electronic request to the competent ID issuer for aggregated level Unique identifiers (aUIs), supplying all the necessary information. Within two working days from the receipt of the request, the ID issuer shall, in the order indicated, (i) generate the codes, (ii) transmit the codes and the related information via the Router to the Secondary repository and (iii) electronically transmit the codes to the requesting Economic operator.

**Note:** Alternatively Economic operators can directly generate aggregated level Unique identifiers (aUIs), independently from any ID issuer and report it using the "Application of aggregated level UIs on aggregated packaging".

##### 4.2.1.2.2 Data Flow Diagram – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers

The diagram below depicts the data flow interaction when Distributors and Wholesalers requests an ID issuer to generate aggregated level Unique identifiers (aUIs) for Aggregated packaging.

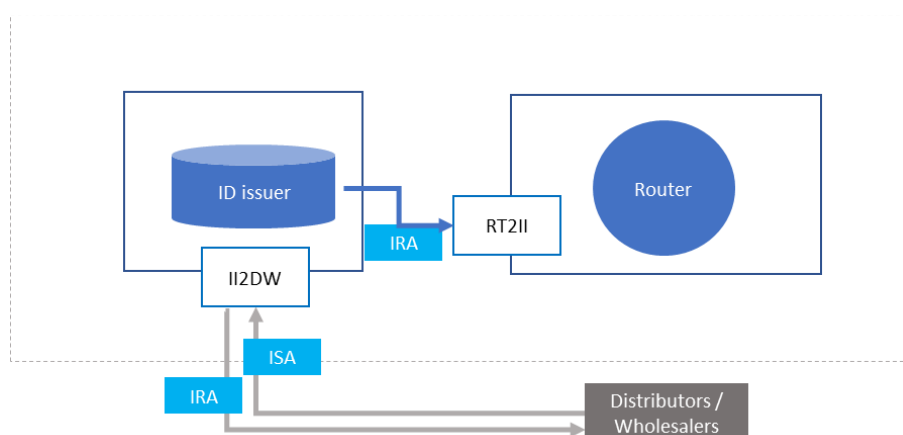


Figure 15 Data Flow Diagram – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description  | From  |        | To  |        |
|--------------|--|---|--------|---|--------|
|              |  | Entity  | System | Entity  | System |
| ISA (2.2)    | Request for aggregated level UIs                                   | Economic operators: Distributors<br>, Wholesalers |        | ID issuer   |        |
| IRA          | Reporting of aggregated level UIs generated                        | ID issuer   |        |   | Router |
| IRA          | Issuing of aggregated level UIs if message validated by the Router | ID issuer   |        | Economic operators: Distributors<br>, Wholesalers |        |

#### 4.2.1.2.3 Messages – Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby the ID issuer issues aggregated level UIs for Aggregated packaging, after a request is made by Distributors or Wholesalers.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Issuing of aggregated level Unique identifiers (aUIs) for Aggregated packaging – Request from Distributors and Wholesalers | ISA (2.2)    | II2DW     |
|  |              |           |
|  | IRA          |           |
|  | IRA          | RT2II     |
|  |              |           |

### 4.2.2 Deactivation of unit level Unique identifiers (upUIs)

#### 4.2.2.1 Deactivation of unit level Unique identifiers (upUIs) – Request from Distributors and Wholesalers

##### 4.2.2.1.1 Description – Deactivation of unit level Unique identifiers (upUIs) – Request from Distributors and Wholesalers

Following the application of unit level Unique identifiers (upUIs), Distributors and Wholesalers may obtain their deactivation by electronically transmitting the deactivation request to the Router that will route the request to the corresponding

Primary repository. The deactivation shall not interfere with the integrity of the information already stored related to the Unique identifier.

**Note:** This process differs from the process of automatic deactivation of the UIs when the UIs have not been used after the six-month period of validity. It also differs from the process of recall, whereby Distributors and Wholesalers can cancel a request sent within one working day.

#### 4.2.2.1.2 Data Flow Diagram – Deactivation of unit level Unique identifiers (upUIs) – Request from Distributors and Wholesalers

The diagram below depicts the data flow interaction when Distributors and Wholesalers request a Primary repository via the Router to deactivate unit level Unique identifiers (upUIs).

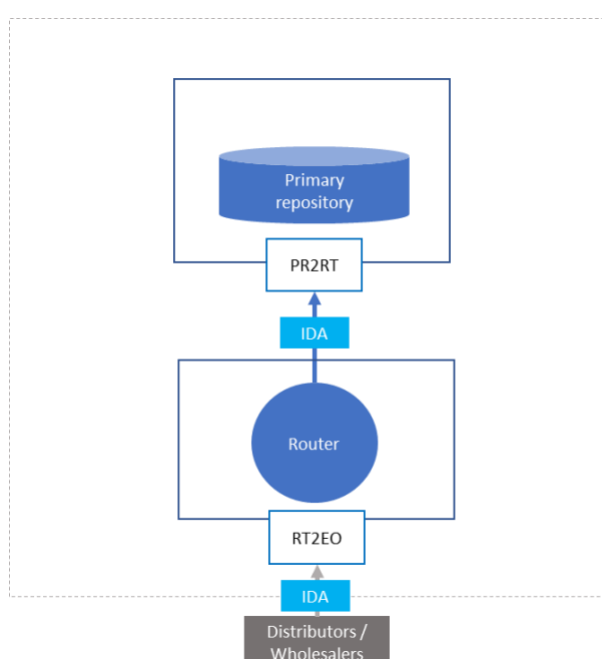


Figure 16 Data Flow Diagram – Deactivation of unit level Unique identifiers (upUIs) – Request from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                    | From  |        | To     |        |
|--------------|--|---|--------|--------|--------|
|              |  | Entity  | System | Entity | System |
| IDA (2.3)    | Request deactivation of unit level UIs | Economic operators: Distributors, Wholesalers |        |        | Router |

|           |  |  |        |  |                    |
|-----------|--|--|--------|--|--------------------|
| IDA (2.3) | Routing request deactivation of unit level UIs |  | Router |  | Primary repository |
|-----------|--|--|--------|--|--------------------|

#### 4.2.2.1.3 Messages – Deactivation of an aggregated Unique identifiers (aUIs) – Request from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers deactivate aggregated level Unique identifiers (aUIs) in the corresponding Primary repository via the Router.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Deactivation of unit level Unique identifiers (uUIs) – Request from Distributors and Wholesalers | IDA (2.3)    | RT2EO     |
|  | IDA (2.3)    | PR2RT     |
|  |              |           |

### 4.2.3 Deactivation of aggregated level Unique identifiers (aUIs)

#### 4.2.3.1 Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers

##### 4.2.3.1.1 Description – Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers

Following the application of aggregated level Unique identifiers (aUIs), Distributors and Wholesalers may obtain their deactivation by electronically transmitting the deactivation request to the Router that will route the request to the Secondary repository. The deactivation shall not interfere with the integrity of the information already stored related to the Unique identifier.

**Note:** This process differs from the process of automatic deactivation of the UIs when the UIs have not been used after the six-month period of validity. It also differs from the process of recall, whereby Distributors and Wholesalers can cancel a request sent within one working day.

##### 4.2.3.1.2 Data Flow Diagram – Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers

The diagram below depicts the data flow interaction when Distributors and Wholesalers request the Router to deactivate aggregated level Unique identifiers (aUIs).

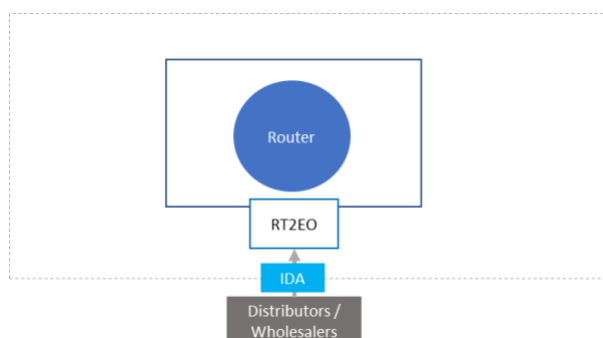


Figure 17 Data Flow Diagram – Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                          | From  |        | To     |        |
|--------------|--|---|--------|--------|--------|
|              |  | Entity  | System | Entity | System |
| IDA (2.3)    | Request deactivation of aggregated level UIs | Economic operators: Distributors, Wholesalers |        |        | Router |

#### 4.2.3.1.3 Messages – Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers deactivate aggregated level Unique identifiers (aUIs) via the Router.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Deactivation of aggregated level Unique identifiers (aUIs) – Request from Distributors and Wholesalers | IDA (2.3)    | RT2EO     |
|  | IDA (2.3)    | PR2RT     |
|  | IDA (2.3)    | SU2PR     |

#### 4.2.4 Automatic deactivation of Unique Identifiers

The automatic deactivation of Unique Identifiers is performed on the Primary repository or the Distributors and Wholesalers. The deactivation messages will be sent to the Secondary repository or the Router.

### 4.3 Reporting operational events (product movement information)

#### 4.3.1 Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging

##### *4.3.1.1 Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging – Report from Distributors and Wholesalers*

###### *4.3.1.1.1 Description – Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging – Report from Distributors and Wholesalers*

Where Distributors or Wholesalers choose to comply with the recording obligations by means of the recording of aggregated packaging, each Aggregated packaging of tobacco product shall be marked with an aggregated level Unique identifier (UI). Distributors and Wholesalers can request aggregated level Unique identifiers (aUIs) to the competent ID issuer. Once they collect the aggregated level codes from the ID issuer, Distributors and Wholesalers incorporate the aggregated level Unique identifiers (aUIs) into the Data Carriers. Once the Data Carriers are applied onto the Aggregated packaging, they are read and verified with scanners. When the Data Carriers are unreadable, Distributors and Wholesalers shall deactivate the corresponding aggregated level UIs. When the Data Carriers are readable, Distributors and Wholesalers shall validate them and report the aggregated level UIs to the Secondary repository via the Router, as described below. The report shall contain the list of all Unique identifiers (UIs) that are subject to aggregation, both at Unit packet and Aggregated packaging levels.

#### 4.3.1.1.2 Data Flow Diagram – Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report aggregated level Unique identifiers (aUIs) to the Secondary repository via the Router.

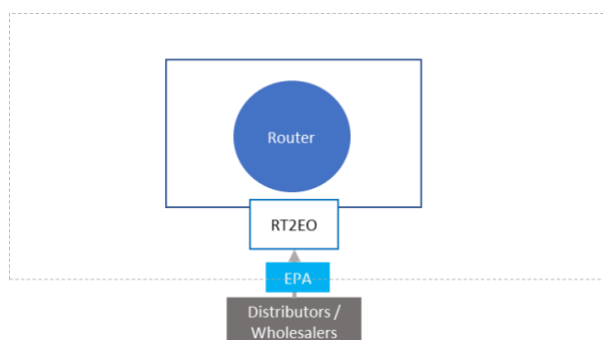


Figure 18 Data Flow Diagram – Application of aggregated level UIs on Aggregated packaging by Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description  | From   |        | To     |        |
|--------------|--|--|--------|--------|--------|
|              |  | Entity   | System | Entity | System |
| EPA (3.2)    | Report the application of aggregated level UIs on Aggregated packaging | Economic operators: Distributors , Wholesalers |        |        | Router |

#### 4.3.1.1.3 Messages – Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging by Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesaler report the application of aggregated level Unique identifiers (aUIs) on Aggregated packaging.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Application of aggregated level Unique identifiers (aUIs) on Aggregated packaging – Report from Distributors and Wholesalers | EPA (3.2)    | RT2EO     |
|  |              |           |
|  |              |           |



### 4.3.2 Dispatch of tobacco products from a Facility

#### 4.3.2.1 Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers

##### 4.3.2.1.1 Description – Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers

Distributors and Wholesalers shall report to the corresponding Primary repository via the Router the dispatch of tobacco products from a Facility within 24 hours prior to the occurrence of the event. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

##### 4.3.2.1.2 Data Flow Diagram – Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report to the corresponding Primary repository via the Router the dispatch of tobacco products from a Facility.

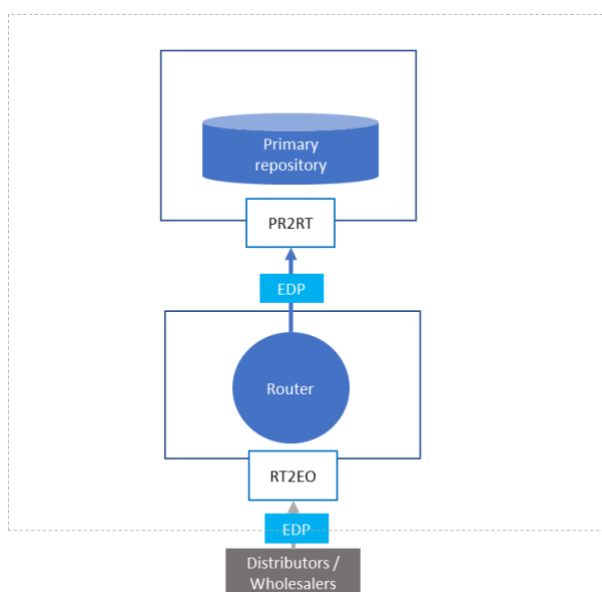


Figure 19 Data Flow Diagram – Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description            | From                             |        | To     |        |
|--------------|--------------------------------|----------------------------------|--------|--------|--------|
|              |                                | Entity                           | System | Entity | System |
| EDP (3.3)    | Report the dispatch of tobacco | Economic operators: Distributors |        |        | Router |

|           |   |               |        |  |                    |
|-----------|---|---------------|--------|--|--------------------|
|           | products form a Facility  | , Wholesalers |        |  |                    |
| EDP (3.3) | Route the information on the dispatch of tobacco products form a Facility, if message validated by the Router |               | Router |  | Primary repository |

#### 4.3.2.1.3 Messages – Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the dispatch of tobacco products from a Facility.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Dispatch of tobacco products from a Facility – Report from Distributors and Wholesalers | EDP (3.3)    | RT2EO     |
|   | EDP (3.3)    | PR2RT     |
|   |              |           |

### 4.3.3 Arrival of tobacco products at a Facility

#### 4.3.3.1 Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers

##### 4.3.3.1.1 Description – Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers

Distributors and Wholesalers shall report the arrival of tobacco products at a Facility to the corresponding Primary repository via the Router. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

##### 4.3.3.1.2 Data Flow Diagram – Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report to the corresponding Primary repository via the Router the arrival of tobacco products at a Facility.

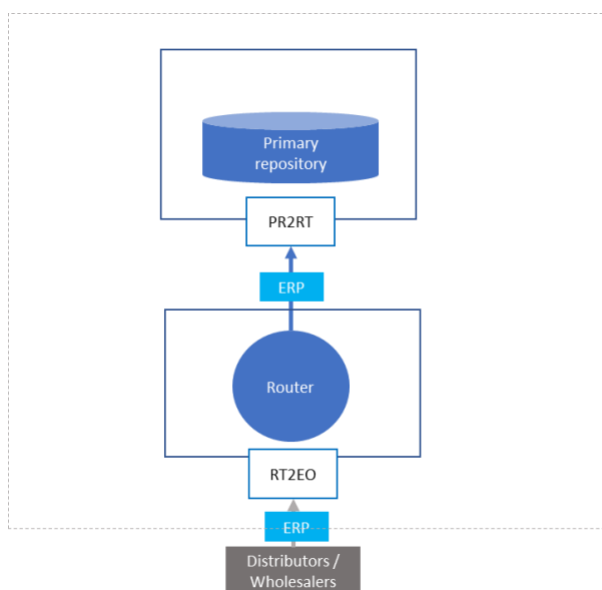


Figure 20 Data Flow Diagram – Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From   |        | To     |                    |
|--------------|---|--|--------|--------|--------------------|
|              |   | Entity   | System | Entity | System             |
| ERP (3.4)    | Report the dispatch of tobacco products form a Facility   | Economic operators: Distributors , Wholesalers |        |        | Router             |
| ERP (3.4)    | Route the information on the dispatch of tobacco products form a Facility, if message validated by the Router |  | Router |        | Primary repository |

#### 4.3.3.1.3 Messages – Arrival of tobacco products at a Facility – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the arrival of tobacco products at a Facility.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Dispatch of tobacco products from a Facility<br>– Report from Distributors and Wholesalers | ERP (3.4)    | RT2EO     |
|  | ERP (3.4)    | PR2RT     |
|  |              |           |

#### 4.3.4 Trans-loading

##### 4.3.4.1 Trans-loading – Report from Distributors and Wholesalers

###### 4.3.4.1.1 Description – Trans-loading – Report from Distributors and Wholesalers

Trans-loading is any transfer of tobacco products from one vehicle to another during which tobacco products do not enter and exit a Facility. Distributors and Wholesalers shall report trans-loading events to the corresponding Primary repository via the Router, within 24 hours prior to the occurrence of the event. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

###### 4.3.4.1.2 Data Flow Diagram – Trans-loading – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report to the corresponding Primary repository via the Router the trans-loading of tobacco products.

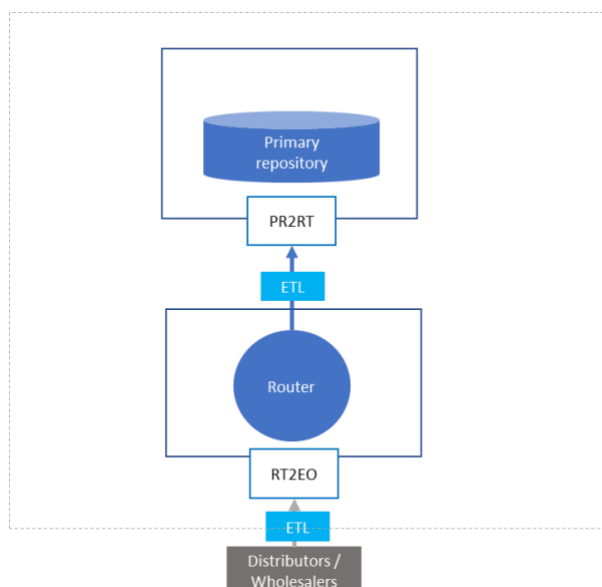


Figure 21 Data Flow Diagram – Trans-loading of tobacco products – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description  | From   |        | To     |                    |
|--------------|--|--|--------|--------|--------------------|
|              |  | Entity   | System | Entity | System             |
| ETL (3.5)    | Report the trans-loading of tobacco products   | Economic operators: Distributors , Wholesalers |        |        | Router             |
| ETL (3.5)    | Route the information on the trans-loading of tobacco products, if message validated by the Router |  | Router |        | Primary repository |

#### 4.3.4.1.3 Messages– Trans-loading – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the trans-loading of tobacco products.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Trans-loading of tobacco products – Report from Distributors and Wholesalers | ETL (3.5)    | RT2EO     |
|  | ETL (3.5)    | PR2RT     |
|  |              |           |

#### 4.3.5 Disaggregation of aggregated level Unique identifier (UI)

##### 4.3.5.1 Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers

##### 4.3.5.1.1 Description – Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers

In the case of a disaggregation event whereby an aggregated level Unique identifier (aUI) was initially generated by an Economic operator and the Economic operator wants to reuse it in future operations, Distributors and Wholesalers shall report the disaggregation of aggregated level UIs to the Secondary repository via the Router.

**Note:** The disaggregation report is only mandatory when the aggregated UI has been generated by the Economic Operator and will be re-used in future operations. The disaggregation of an aggregated packaging and its corresponding aggregated level UI does not lead to the deactivation of the unit level or aggregated level UIs that were contained in it.

#### 4.3.5.1.2 Data Flow Diagram – Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report to the Secondary repository via the Router the disaggregation of aggregated level UIs.

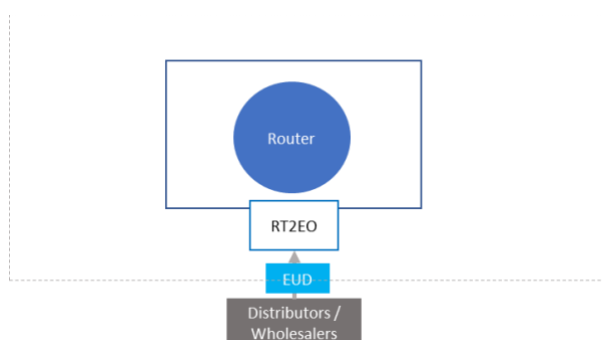


Figure 22 Data Flow Diagram – Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                               | From   |        | To     |        |
|--------------|---|--|--------|--------|--------|
|              |   | Entity   | System | Entity | System |
| EUD (3.6)    | Report the disaggregation of aggregated level UIs | Economic operators: Distributors , Wholesalers |        |        | Router |

#### 4.3.5.1.3 Messages – Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the disaggregation of aggregated level UIs.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Disaggregation of aggregated level UIs – Report from Distributors and Wholesalers | EUD (3.6)    | RT2EO     |

### 4.3.6 Delivery carried out with a vending van to multiple retail outlets

#### 4.3.6.1 Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers

#### 4.3.6.1.1 Description – Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers

Vending van is a vehicle used for the delivery of tobacco products to multiple retail outlets in quantities that have not been predetermined in advance of the delivery. Distributors and Wholesalers shall report these events to the corresponding Primary repository via the Router. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

#### 4.3.6.1.2 Data Flow Diagram – Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report to the corresponding Primary repository via the Router the trans-loading of tobacco products.

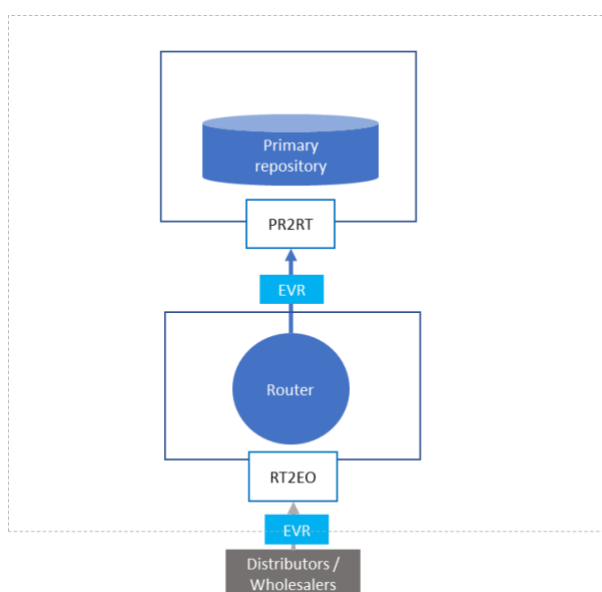


Figure 23 Data Flow Diagram – Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From   |        | To     |        |
|--------------|---|--|--------|--------|--------|
|              |   | Entity   | System | Entity | System |
| EVR (3.7)    | Report a delivery carried out with a vending van to multiple retail outlets | Economic operators: Distributors , Wholesalers |        |        | Router |



|           |   |  |        |  |                    |
|-----------|---|--|--------|--|--------------------|
| EVR (3.7) | Route the information on delivery carried out with a vending van to multiple retail outlets, if message validated by the Router |  | Router |  | Primary repository |
|-----------|---|--|--------|--|--------------------|

#### 4.3.6.1.3 Messages – Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report a delivery carried out with a vending van to multiple retail outlets.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Delivery carried out with a vending van to multiple retail outlets – Report from Distributors and Wholesalers | EVR (3.7)    | RT2EO     |
|   | EVR (3.7)    | PR2RT     |
|   |              |           |

## 4.4 Reporting transactional events (trade information)

### 4.4.1 Issuing of the invoice

#### 4.4.1.1 Issuing of invoice – Report from Distributors and Wholesalers

##### 4.4.1.1.1 Description – Issuing of invoice – Report from Distributors and Wholesalers

When in the position of vendors, Distributors and Wholesalers shall report the issuing of invoice to the corresponding Primary repository via the Router. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

#### 4.4.1.1.2 Data Flow Diagram – Issuing of invoice – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report the issuing of invoice to the corresponding Primary repository via the Router.

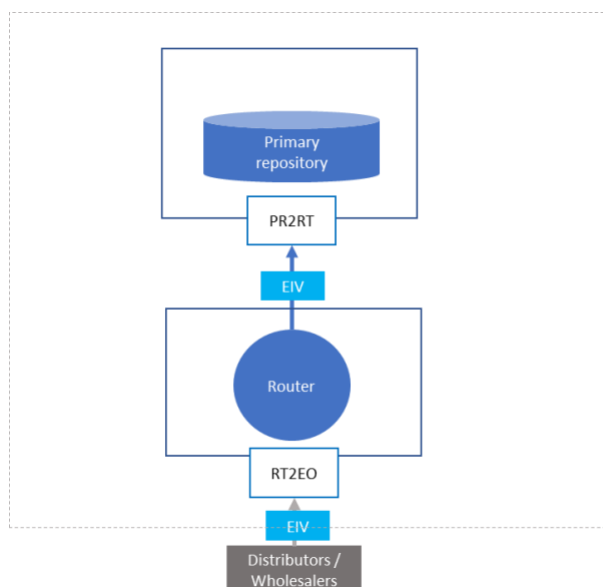


Figure 24 Data Flow Diagram – Issuing of invoice – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From  |        | To     |                    |
|--------------|---|---|--------|--------|--------------------|
|              |   | Entity  | System | Entity | System             |
| EIV (4.1)    | Report the issuing of invoice   | Economic operators: Distributors<br>, Wholesalers |        |        | Router             |
| EIV (4.1)    | Route the information on the issuing of invoice, if message validated by the Router |   | Router |        | Primary repository |

#### 4.4.1.1.3 Messages – Issuing of invoice – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the issuing of invoice to the corresponding Primary repository.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Issuing of invoice – Report from Distributors and Wholesalers | EIV (4.1)    | RT2EO     |
|   | EIV (4.1)    | PR2RT     |
|   |              |           |

#### 4.4.2 Issuing of the order number

##### 4.4.2.1 Issuing of order number – Report from Distributors and Wholesalers

##### 4.4.2.1.1 Description – Issuing of order number – Report from Distributors and Wholesalers

When in the position of vendors, Distributors and Wholesalers shall report the issuing of order number to the corresponding Primary repository via the Router. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

#### 4.4.2.1.2 Data Flow Diagram – Issuing of order number – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report the issuing of order number to the corresponding Primary repository via the Router.

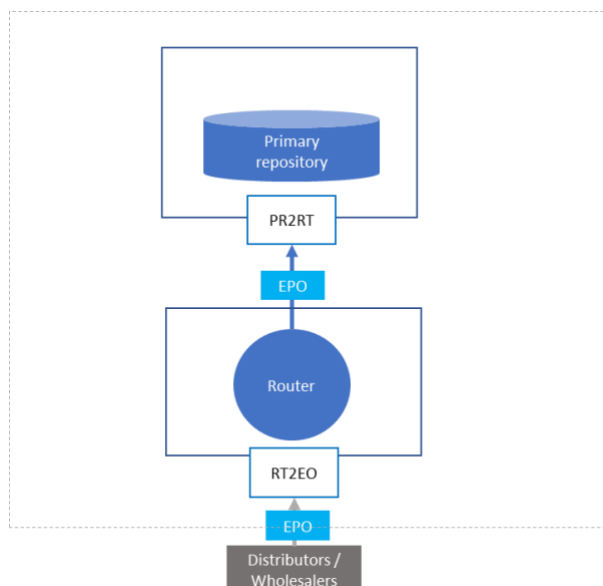


Figure 25 Data Flow Diagram – Issuing of order number – Report from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description  | From   |        | To     |                    |
|--------------|--|--|--------|--------|--------------------|
|              |  | Entity   | System | Entity | System             |
| EPO (4.2)    | Report the issuing of order number   | Economic operators: Distributors , Wholesalers |        |        | Router             |
| EPO (4.2)    | Route the information on the issuing of order number, if message validated by the Router |  | Router |        | Primary repository |

#### 4.4.2.1.3 Messages – Issuing of order number – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the issuing of order number to the corresponding Primary repository.

| Process  | Message code | Interface |
|--|--------------|-----------|
| Issuing of order number – Report from Distributors and Wholesalers | EPO (4.2)    | RT2EO     |
|  | EPO (4.2)    | PR2RT     |
|  |              |           |

#### 4.4.3 Receipt of the payment

##### 4.4.3.1 Receipt of payment – Report from Distributors and Wholesalers

##### 4.4.3.1.1 Description – Receipt of the payment – Report from Distributors and Wholesalers

When in the position of vendors, Distributors and Wholesalers shall report the receipt of payment to the corresponding Primary repository via the Router. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository.

##### 4.4.3.1.2 Data Flow Diagram – Receipt of the payment – Report from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers report the receipt of payment to the corresponding Primary repository via the Router.

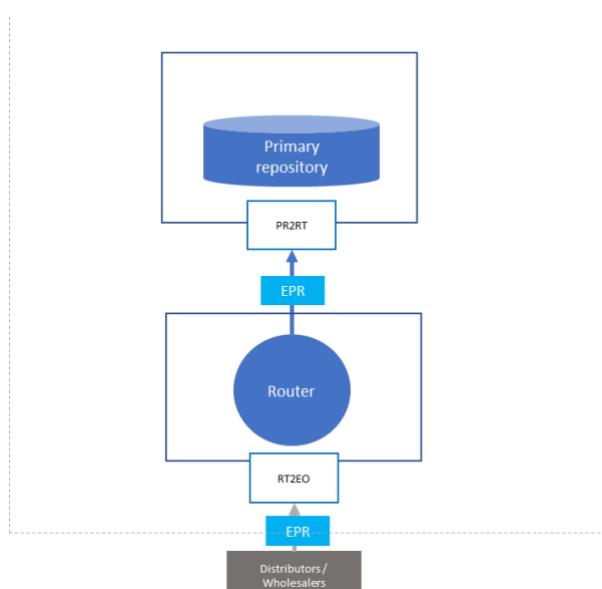


Figure 26 Data Flow Diagram – Receipt of payment – Report from Distributors and Wholesaler

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description   | From  |        | To     |                    |
|--------------|---|---|--------|--------|--------------------|
|              |   | Entity  | System | Entity | System             |
| EPR (4.3)    | Report the receipt of payment   | Economic operators: Distributors<br>, Wholesalers |        |        | Router             |
| EPR (4.3)    | Route the information on the receipt of payment, if message validated by the Router |   | Router |        | Primary repository |

#### 4.4.3.1.3 Messages – Receipt of the payment – Report from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers report the receipt of payment to the corresponding Primary repository.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Receipt of payment – Report from Distributors and Wholesalers | EPR (4.3)    | RT2EO     |
|   | EPR (4.3)    | PR2RT     |
|   |              |           |

## 4.5 Recalls of requests, operational and transactional messages

### 4.5.1 Recalls of operational and transactional messages

#### 4.5.1.1 Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers

##### 4.5.1.1.1 Description – Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers

In order to recall reports concerning operational or transactional events, Distributors and Wholesalers shall send a recall message to the Router, including the Message Recall Code previously transmitted by the Router. The Router shall report the recall to the corresponding Primary repository. A copy of those data shall be transferred instantaneously from the Primary repository to the Secondary repository. Reasons for Recalls are either that the reported event did not materialize (for Dispatch and Trans-loading events, since they must be

reported prior to the occurrence of the event), the original message contained erroneous information, or other reason. A recall with respect to operational events results in flagging the recalled message as cancelled but does not lead to the deletion of the existing database record.

#### 4.5.1.1.2 Data Flow Diagram – Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers

The diagram below depicts the data flow interaction related to the process whereby Distributors and Wholesalers recall an operational or transactional message to the Router.

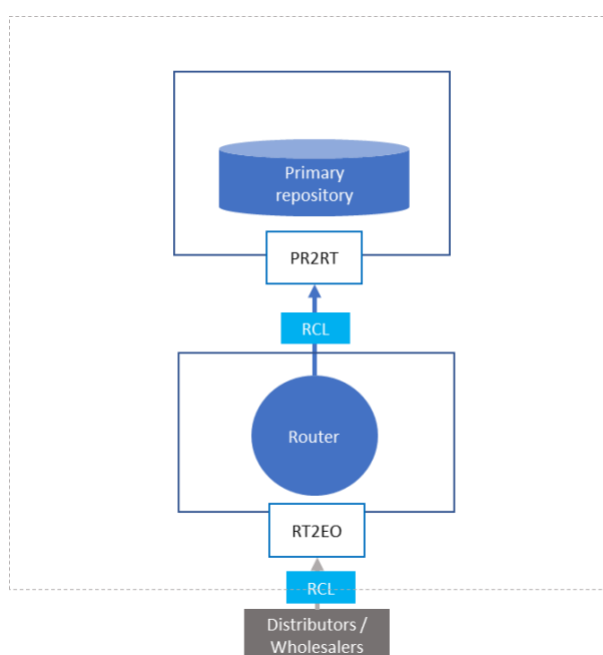


Figure 27 Data Flow Diagram – Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers

The following table summarizes the messages, entities and systems displayed in the data flow diagram above.

| Message code | Message description                                     | From   |        | To     |                    |
|--------------|---|--|--------|--------|--------------------|
|              |   | Entity   | System | Entity | System             |
| RCL (5)      | Recall of operational and transactional event message   | Economic operators: Distributors and Wholesalers |        |        | Router             |
| RCL (5)      | Route the Recall of operational and transactional event |  | Router |        | Primary repository |

|  |   |  |  |  |  |
|--|---|--|--|--|--|
|  | message, if message validated by the Router |  |  |  |  |
|--|---|--|--|--|--|

#### 4.5.1.1.3 Messages – Recalls of operational and transactional messages – Recalls from Distributors and Wholesalers

The table below summarizes the messages and interfaces related to the process whereby Distributors and Wholesalers recall an operational or transactional message to the Router.

| Process   | Message code | Interface |
|---|--------------|-----------|
| Recall of operational and transactional event message – Recalls from Distributors and Wholesalers | RCL (5)      | RT2EO     |
|   | RCL (5)      | PR2RT     |
|   |              |           |



## 5 Interfaces

### 5.1 Overview

The interfaces of the Traceability System are as follows:

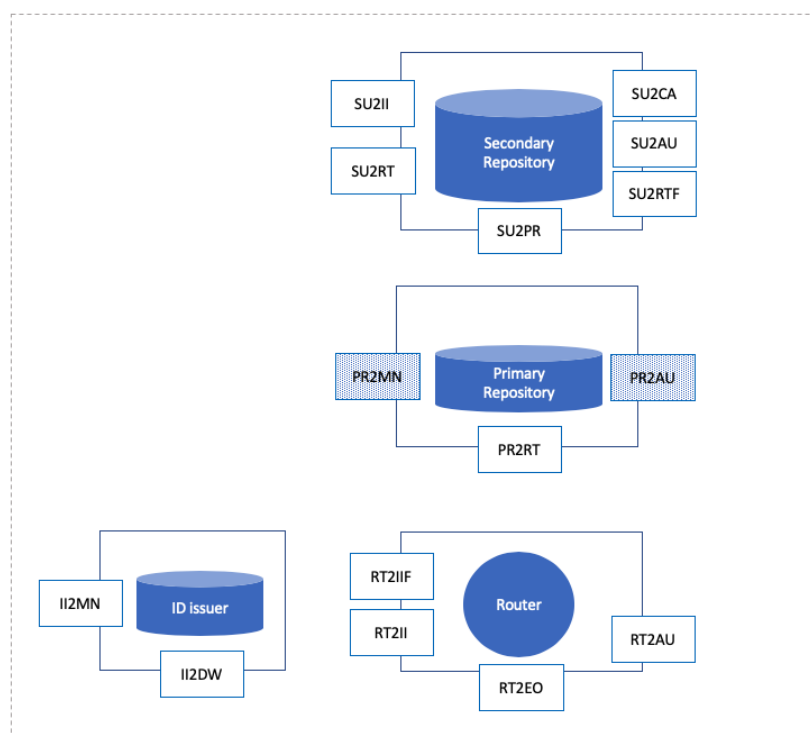


Figure 28 System interfaces and endpoints

### 5.2 Secondary repository and Router interface

The Secondary repository offers two methods of interaction:

- An application programmable interface (API)

This is the main entry point for data ingress from the ID issuer, the Primary repositories and the Router.

- A graphical user interface (GUI)

The GUI is used for reporting purposes and some entity sign up processes.

All of the GUIs offered rely on browser-based html/JavaScript technics and support current browsers from major browser suppliers (e.g. Google Chrome, Internet Explorer, Firefox, Opera)

#### 5.2.1 Secondary repository and Router application programmable interface

| Interface acronym | Hosting system | Description |
|-------------------|----------------|-------------|
|-------------------|----------------|-------------|

|        |                      |   |
|--------|----------------------|---|
| RT2II  | Router               | Secure interface published by the Router for the ID issuers.                                  |
| RT2IIF | Router               | Secure File interface published by the Router for the ID issuers.                             |
| RT2EO  | Router               | Secure interface published by the Router for Manufacturers and Importers                      |
| RT2AU  | Router               | Secure interface published by the Router for Competent Authorities                            |
| SU2PR  | Secondary repository | Secure interface published by the Secondary repository for the primary repository's providers |
| SU2CA  | Secondary repository | Secure interface published by the Secondary repository for competent authorities              |
| SU2AU  | Secondary repository | Secure interface published by the Secondary repository for auditing purposes                  |
| SU2RT  | Secondary repository | Secure interface published by the Secondary repository for Router                             |
| SU2RTF | Secondary repository | File based Secure interface published by the Secondary repository for Router                  |
| SU2II  | Secondary Repository | Secure interface published by the Secondary repository for Verification purposes              |

### 5.2.2 Methods of interaction.

#### 5.2.2.1 JSON interface

The API is offered with an http based RestAPI with JSON parameters. Details of the interfaces offered, and supported messages are defined in this document. HTTP POST method is used for all calls (except the second asynchronous file upload HTTP PUT).

#### 5.2.2.2 WSDL/SOAP interface

The Eu Secondary and router, in addition of the supporting JSON interfaces, supports GS1 EPCIS version 1.2 XML data binding and a WSDL/SOAP web services binding for a number of messages.

### 5.2.3 Encoding

All messages are encoded in UTF-8

### 5.2.4 Secured communication

Communication between the Secondary repository and interacting participants of the tobacco industry is secured by TLS 1.2 encryption AES256 cypher. Cypher suites that are less secure are not supported. If the TLS version or cypher used proves to be corroded or vulnerable, Dentsu Aegis reserves the right to replace the affected item with a state-of-the-art item after prior announcement.

The repository system uses OAuth 2.0 to authorize access to the web service methods. OAuth 2.0 is the industry-standard protocol for authorization. OAuth 2.0 supersedes the work done on the original OAuth protocol created in 2006. OAuth 2.0 focuses on client developer simplicity while providing specific authorization flows for web applications, desktop applications and server to server communication.

The system uses the OAuth client credential flow. The client credentials flow is used as an authorization grant as the authorization scope is limited to the protected resources previously arranged with the authorization server (the server being the Secondary repository).

Access tokens are issued as credentials used to access protected resources. An access token is a string representing an authorization issued to the client. The string is opaque to the client and passed in the authentication header. Tokens represent specific scopes and durations of access, granted by the resource owner, and enforced by the resource server and authorization server. Tokens have an expiry of 3600 seconds (1 hour).

#### 5.2.5 Version and backward compatibility

Dentsu Aegis provides an API versioning approach using a version identifier in the URL.

Example URL: <https://{seconardayUrl}/v1>

We currently see no reason to make a breaking change or enhancement that would require a V2 to be added. This convention is in place to facilitate all eventualities in the future.

Our goal would be to make releases to the API that are non-breaking by being backward compatible, for example adding additional return properties, not removing old ones.

#### 5.2.6 Message identification and RecallCode

##### *5.2.6.1 Overview*

The traceability system and more precisely the entry point systems (Primary repository and Router) assigns a unique identifier to each message. This unique identifier is the RecallCode.

When the message is routed and transmitted to the Secondary repository via the primary repositories, the RecallCode issued by the Router is forwarded to the primary repository.

##### *5.2.6.2 EPCIS eventID and RecallCode*

In the case of the EPCIS interface, the EPCIS 1.2 protocol doesn't allow the transmission of the identification information back to the sender. The eventID field provided by the sender will be used as RecallCode.

##### *5.2.6.3 Message Recall*

Economic operators have the possibility to recall requests, operational and transactional messages transmitted to the Secondary repository.

The reasons for recalling the original message may be:

1. Reported event did not materialise (only for messages related to dispatch events and trans-loading)
2. Message contained erroneous information
3. Other

#### 5.2.6.4 RecallCode structure

UUID version 5

#### 5.2.6.5 Messages

The following table describes the messages that are subject to Recall.

|     | <b>Annex II Reference</b> |   |
|-----|---------------------------|---|
| ISU | (2.1)                     | <i>Request for unit level UIs</i>   |
| IRU |                           | <i>Data Request for unit level UIs</i>  |
| ISA | (2.2)                     | Request for reporting the issuance of Unique Identifiers at aggregated level      |
| IRA |                           | Data Request for reporting the issuance of Unique Identifiers at aggregated level |
| EUA | (3.1)                     | <i>Application of unit level UIs on unit packets</i>                              |
| EPA | (3.2)                     | <i>Application of aggregated level UIs on aggregated packaging</i>                |
| EDP | (3.3)                     | <i>Dispatch of tobacco products from a facility</i>                               |
| ERP | (3.4)                     | <i>Arrival of tobacco products at a facility</i>                                  |
| ETL | (3.5)                     | <i>Trans-loading</i>  |
| EUD | (3.6)                     | <i>Disaggregation of aggregated level UIs</i>                                     |
| EVR | (3.7)                     | <i>Report of delivery carried out with a vending van to retail outlet</i>         |
| EIV | (4.1)                     | <i>Issuing of the invoice</i>   |
| EPO | (4.2)                     | <i>Issuing of the order number</i>  |
| EPR | (4.3)                     | <i>Receipt of the payment</i>   |

#### 5.2.6.6 Recall Process

The recall must include the message recall code provided to the message sender in the acknowledgement of the original message to be recalled and must also contain the following information:

- Reason for recalling the original message
- Description of the reason for recalling the original message
- Any additional explanations on the reason for recalling the original message

A recall with respect to operational and logistic events results in flagging the recalled message as cancelled but does not lead to the deletion of the existing database record.

#### 5.2.6.7 RecallCode Field

Technically the recall code is gained from the original message's "code" property:

**Example response:**

```
{
  "Code": "6854f9a6-a2b2-4c08-8000-0173f3c35567",
  "Message_Type": "EPA",
  "Error": false,
  "Errors": null
}
```

Where the "Code" is the recall id.

**5.2.7 Message response***5.2.7.1 Successful response sample*

HTTP Status 202

```
{
  "Code": " 6854f9a6-a2b2-4c08-8000-0173f3c35567",
  "Message_Type": "EPA",
  "Error": false,
  "Errors": null,
  "Checksum": "G6HF5H"
}
```

*5.2.7.2 Error response sample*

The system should provide the sufficient details to allow external systems, administrators to identify precisely the issue in order to act accordingly.

The response message can contain a list of error

```
"Errors": [
  { << Error >> },
  { << Error >> },
  { << Error >> },
],
```

Each error contains the following information.

- **Error\_InternalID** is the unique identification of the message processing and validation activity.
- **Error\_Code** is the identifier of the type within the systems.
- **Error\_Descr** is the description in human readable format containing specific error information
- **Error\_Data** is the data for which the error is talking about. This can be used for EO\_IDs, F\_IDs, M\_IDs and UIs.
  - Note: use # as separator for the UI in case a list of UI is provided in the error data field.

**Example of List of errors**

```
{
  "Error_InternalID": "yndkFz7TBEO706frD38hzA",
  "Error_Code": "INVALID_REQUEST_FORMAT",
  "Error_Descr": "The EconomicOperatorIdentifier field is unknown.",
  "Error_Data": "123456789123456#123456789123455#123456789123444"
}
```

}

## Security errors

| HTTP status | Error Code |                        |
|-------------|------------|------------------------|
| 401         |            | Invalid security token |
| 401         |            | Expired security token |

## Processing errors

| HTTP status | Error Code             |   |
|-------------|------------------------|---|
| 400         | INVALID_REQUEST_FORMAT | This error is returned when at least one of the mandatory fields are missing. |
| 400         | INVALID_MESSAGE_TYPE   | When the field "Message_Type" is out of the defined list.                     |
| 400         | INVALID_INPUT_FORMAT   | When the body of the message doesn't contain a valid JSON.                    |
| 500         | SYSTEM_ERROR           | Internal system error.  |

## Error body sample

```
{
  "Code": null,
  "Message_Type": null,
  "Error": true,
  "Errors": [
    {
      "Error_InternalID": "yndkFz7TBEO706frD38hzA",
      "Error_Code": "INVALID_REQUEST_FORMAT",
      "Error_Descr": "The EconomicOperatorIdentifier field is required.",
      "Error_Data": "54G7J"
    }
  ],
  "Checksum": "G6HF5H"
}
```

## 5.2.8 Forward Rejected Messages.

It is a requirement that the Secondary repository must store validation failures, this including failures that occur on the Primary repositories and the Router.

A rejected message is defined as a message that fails due to a business validation reason. The validation messages are described in the following sections:

- section Unique Identifier validation
- section Identification Code validation
- section Message Event Time Validation
- section Recall Validation

It is not expected that the Secondary repository is sent failed authentication attempts, badly formed messages or anything other than the validations listed in the above sections.

### 5.2.8.1 Message Rejection processing

In case the message fails the validation, the system should

- log the rejected message
- log the response information
- send an error message to the requesting system with the details

### 5.2.8.2 The message should contain

- The original request
- The optional base request sections

```
{
  "EO_ID": "Z25Q1H44IB3002078572YSHR",
  "F_ID": "OVERSEEING9220693452TACTL",
  "Event_Time": "19032014",
  "aUI": "testparent_sdgdg",
  "Aggregation_Type": 1,
  "Aggregated_UIs1": [
    "123456789123456789"
  ],
  "Aggregated_UIs2": null,
  "aUI_comment": "Comments",
  "Message_Type": "EPA",
  "Code": null,
  "RejectionData": {
    "Errors": [
      {
        "Error_Code": "INVALID_REQUEST_FORMAT",
        "Error_Descr": "The EconomicOperatorIdentifier does not exist.",
        "ErrorData": "123456789123456789"
      }
    ]
  }
}
```

### 5.2.9 Message integrity and hash

The Repository system will verify the message checksum to ensure that the data was not tampered with between parts of the whole Repository system. Messages where the hash is not valid shall not be accepted.

This integrity check ensures that the messages making up traffic cannot be altered in transit or within the parts of the Repository system, neither can messages be added or removed from the sequence, without detection.

The client adds a MD5 hash to the X-OriginalHash HTTP header.  
This structure is then added to the message

#### Message Header

| X-OriginalHash | 1234567890abcdefghijklmnopqrstuvwxyz |
|----------------|--------------------------------------|
| Content-Type   | application/json                     |
| Authorization  | <Token>                              |

| HTTP status | Error Code        |  |
|-------------|-------------------|--|
| 401         | INVALID_SIGNATURE | "The message signature does not match" |

## 5.2.10 Message size

### 5.2.10.1 Message size

The maximum message size is 6MB.

The limit on the HTTP header size is 10'240 bytes.

### 5.2.10.2 Maximum number of UI

The online sequence validation controls require the limitation of the number of UI (sum of the unit level UI and the aggregated level UI) per message for the following events

| Message Type | Annex II Reference | Message description   | Number of UI (upUI + aUI) |
|--------------|--------------------|---|---------------------------|
| IDA          | (2.3)              | Request for deactivation of UIs                                     | 50 000                    |
| EUA          | (3.1)              | Application of unit level UIs on unit packets                       | 50 000                    |
| EPA          | (3.2)              | Application of aggregated level UIs on aggregated packaging         | 50 000                    |
| EDP          | (3.3)              | Dispatch Event  | 50 000                    |
| ERP          | (3.4)              | Reception event   | 50 000                    |
| ETL          | (3.5)              | Trans-loading event   | 50 000                    |
| EUD          | (3.6)              | Message to report an UID disaggregation                             | 50 000                    |
| EVR          | (3.7)              | Report the delivery carried out with a vending van to retail outlet | 50 000                    |
| EIV          | (4.1)              | Message to report an invoice  | 50 000                    |
| EPO          | (4.2)              | Purchase order  | 50 000                    |
| EPR          | (4.3)              | Payment record  | 50 000                    |

## 5.2.11 Number of simultaneous connections

No limit defined on simultaneous connections for the Router and the Secondary Repository.

## 5.2.12 Message Sequence

Message sequence must be respected as per regulation.



### 5.2.13 Buffering and Burst transmissions

Messages should be transmitted continuously by the different systems without buffering.

In case of technical buffering caused by technical maintenance activities, the transmitting system should implement mechanism to ensure the correct sequencing of the events.

### 5.2.14 Message Retransmission limitation

A message that was positively acknowledged shall not be retransmitted a second time.

### 5.2.15 Connectivity Test Message

A Connectivity Test Message (CTM) is implemented on the interface PR2RT. This message is sent by the Router to check the availability and the security configuration of the endpoint.

| Interface acronym | Hosting system     | Description   |
|-------------------|--------------------|---|
| PR2RT             | Primary repository | Secure interface published by Primary repository providers for Router communication |

### 5.2.16 Duplicate message validation

Retransmission of successful messages introduce an unnecessary load and negatively impact the data visualization and reporting.

A validation of duplicate successful message is included in order to eliminate such duplicate retransmission of successful messages.

#### 5.2.16.1 *New Message validation*

Upon reception of a message, the first entry point (the EU Router or the Primary Repository) validates the messages and assign a unique RecallCode.

If the message passes the validation and is accepted (returning a success response Status 200 or 202) the message is processed by the system and is not expected to be received again.

In case the successful message is retransmitted (identical payload) to the system, the system will return a duplicate message validation error (adding the recallcode corresponding to the original successful message) (Status 400).

Note: in case the message validation fails, the transmitting system is able to send the same message.

#### 5.2.16.2 *Routed or forwarded message validation*

When the message is routed or forwarded, the message contains a RecallCode. The system will maintain the list of all successful RecallCode corresponding to the successful messages.

In case the incoming message RecallCode indicate that the message has been processed successfully, the system returns a validation error.

## 5.3 EPCIS and EDI Support

### 5.3.1 Overview

GS1 EPCIS and EDI provide optional message formats, which deliver equivalent data when used with GS1 aggregate level or aggregate and unit level identifiers. This permits one message to support traditional retail supply chain business or end-to-end traceability requirements and to support EU 2018/574 reporting.

At

[https://www.gs1.org/docs/epc/FightingIllicitTradeEPCIS\\_Application\\_Standard.pdf](https://www.gs1.org/docs/epc/FightingIllicitTradeEPCIS_Application_Standard.pdf), GS1 has published a GS1 EPCIS Application Standard for Fighting Illicit Trade, particularly in the context of EU 2018/574.

### 5.3.2 PRODUCT MOVEMENT EVENTS

| Ref | Ref   | Description   | EPCIS   |
|-----|-------|---|---|
| EUA | (3.1) | Application of unit level UIs on unit packets                       | EPCIS Object Event (business step "Commissioning")  |
| EPA | (3.2) | Application of aggregated level UIs on aggregated packaging         | EPCIS Aggregation Event (business step "Packing")   |
| EDP | (3.3) | Dispatch Event  | EPCIS Object Event (business step "Shipping")       |
| ERP | (3.4) | Reception event   | EPCIS Object Event (business step "Arriving")       |
| ETL | (3.5) | Trans-loading event   | EPCIS Object Event (business step "transloading")   |
| EUD | (3.6) | Message to report an UID disaggregation                             | EPCIS Aggregation Event (business step "Unpacking") |
| EVR | (3.7) | Report the delivery carried out with a vending van to retail outlet | EPCIS Object Event (business step "Arriving")       |

### 5.3.3 TRANSACTIONAL EVENTS

| Ref | Ref   | Description                  | EDI             |
|-----|-------|------------------------------|-----------------|
| EIV | (4.1) | Message to report an invoice | EDI: Invoice    |
| EPO | (4.2) | Purchase order               | EDI: Order      |
| EPR | (4.3) | Payment record               | EDI: Settlement |

### 5.3.4 ERROR HANDLING MESSAGE

| Ref | Ref   | Description     | EPCIS |
|-----|-------|-----------------|-------|
| RCL | (5.0) | Recall messages |       |

### 5.3.5 EPCIS Recall Management

EPCIS negation of a previous event by means of a subsequent, identical event that contains an ErrorDeclaration, and whose eventID is equal to the eventID of the prior (erroneous/recalled) event.

## 5.4 Primary repository endpoint

### 5.4.1 Overview

The Primary repository should expose an endpoint that will be used by the Router to transmit the described messages. All messages including acknowledgements must follow the specifications in the list of specifications and data dictionary.

### 5.4.2 Methods of interaction.

The Primary repository will present an http based RestAPI with JSON parameters.  
HTTP POST method is used for all calls.

### 5.4.3 Message format.

The message format and sample are described in the Data Dictionary.

### 5.4.4 Message response

All messages response should follow the format described in the Secondary repository and Router interface.

### 5.4.5 Endpoint

A single endpoint is expected.  
All messages will be transmitted to that single endpoint.

### 5.4.6 Secured communication

The Primary repository system uses Basic authentication or OAuth 2.0 to authorize access to the web service methods.

### 5.4.7 RecallCode management

The recall code as described in the interface section should be supported.

### 5.4.8 Message integrity and hash

The Repository system will verify the message checksum to ensure that the data was not tampered with between parts of the whole Repository system as described in the Secondary repository and Router interface.

## 5.5 II2MN II2DW interfaces

### 5.5.1 Overview

The ID Issuer defines the communication between the EO and the ID issuer corresponding to interfaces II2MN and II2DW.

### 5.5.2 Interface

| Interface acronym | Hosting system | Description |
|-------------------|----------------|-------------|
|-------------------|----------------|-------------|

|       |                  |  |
|-------|------------------|--|
| II2MN | ID issuer System | Secure interface published to Manufacturers and Importers  |
| II2DW | ID issuer System | Secure interface published to Distributors and Wholesalers |

### 5.5.3 Synchronous and asynchronous support

The interface presented allows the implementation a synchronous version, where the ID Issuer system will return the result within the same call. This approach is recommended when the business process and internal validation are fully automated.

The interfaces present the option of an asynchronous implementation where the initial call will trigger a request. The ID Issuer system will return a request code for each of these requests and a subsequent message will be initiated by the ID Issuer to transmit the response on the original request. This message will contain the reference to the initial request.

### 5.5.4 Extensibility

The interface presents an extensibility field in all messages corresponding to the interfaces II2MN and II2DW.

## 6 Unique Identifier

### 6.1 Clarification on Structure of unit-level unique identifiers

#### 6.1.1 Clarification on Structure of unit-level unique identifiers (after encoding into a data carrier)

Clarification on the use of data qualifiers as part of the UI, taking into account Implementing Regulation 2018/574 and the applicable international ISO norms. To facilitate this explanation, please see attached a table illustrating the structure of the UI (after encoding it into a data carrier), and the roles of ID issuers and economic operators in generating / applying the different data elements and, where applicable, data qualifiers.

|                                       | (1)   | (2)   | (3)                           | (4)   | (5)                   | (6)   | (7)                   | (8)                                    | (9)                       |
|---------------------------------------|---|---|-------------------------------|---|-----------------------|---|-----------------------|--|---------------------------|
| Unique Identifier                     | Symbology Identifier                        | Mandatory Data Qualifier                          | ID Issuer Identification Code | Optional Data Qualifier                     | Serial Number         | Optional Data Qualifier                     | Product Code          | Optional Data Qualifier                | Timestamp                 |
| Type                                  | Qualifier                                   | Qualifier   | String (data Element)         |   | String (data Element) |   | String (data Element) |  | String (data Element)     |
| Position within the unique identifier | Fixed                                       | Fixed   | Fixed                         | Free  | Free                  | Free  | Free                  | Fixed                                  | Fixed                     |
| Regulated by                          | Art. 21(1) and ID issuer's coding structure | Art.3(4), Art.8(1)(a), Art. 21(1) and ID issuer's | Art.3(4) and Art.8(1)(a)      | Art. 21(1) and ID issuer's coding structure | Art.8(1)(b)           | Art. 21(1) and ID issuer's coding structure | Art.8(1)(c)           | Art. 21(1), Art. 21(4) and ID issuer's | Art.8(1)(d) and Art.21(4) |

|                                      |   |                                       |                                       |               |                        |               |                        |                  |               |
|--------------------------------------|---|---------------------------------------|---------------------------------------|---------------|------------------------|---------------|------------------------|------------------|---------------|
|                                      |   | coding structure                      |                                       |               |                        |               |                        | coding structure |               |
| Applicable international standards   | ISO/IEC 16022:2006, or ISO/IEC 18004:2015, or ISS DotCode Symbology Spec. | ISO 15459-2:2015 and ISO 15459-3:2014 | ISO 15459-2:2015 and ISO 15459-3:2014 |               |                        |               |                        |                  |               |
| Process                              | Applied bv EO   | Applied bv EO                         | Generated by ID issuer                | Applied bv EO | Generated by ID issuer | Applied bv EO | Generated by ID issuer | Applied bv EO    | Applied bv EO |
| Transmission to repositories systems | No  | No                                    | Yes                                   | No            | Yes                    | No            | Yes                    | No               | Yes           |

1) Pursuant to Article 8(1)(a)-(c) of Implementing Regulation 2018/574, the following data elements (strings) should form part of the UI, as generated by the competent ID issuer:

- ID issuer identification code (subject to ISO 15459-2 and 3);
- Serial number;
- Product code.

2) Pursuant to Articles 8(1)(d) and 21(4) of Implementing Regulation 2018/574, manufacturers and importers shall add the time stamp in the last position to the code generated by the ID issuer. The time stamp can be either encoded into the data carrier or be added separately from the data carrier as a human readable format. The time stamp format must correspond to YYMMDDhh. Regardless of its format, the time stamp remains a part of the UI in the sense of Article 8 of Implementing Regulation.

3) Article 3(4) of Implementing Regulation 2018/574 requires that the ID issuer identification code should be assigned in line with ISO/IEC 15459-2 and the latter should be read in conjunction with ISO/IEC 15459-3 laying down common rules on unique identification and data capture techniques. Accordingly, the ID issuer identification code always must be preceded by a data qualifier, which shall consist of digits and upper cases only. That data qualifier shall be applied, as part of the encoding process, by the economic operator in accordance with the applicable coding structure published by the ID issuer in cooperation with its Issuing Agency.

4) Economic operators may be asked to apply additional ISO/IEC 15459-3 data qualifiers to the code generated by the ID issuer as part of the encoding process into the permitted types of data carriers. The use of these optional data qualifiers should be in line with the applicable coding structure published by the ID issuer in cooperation with its Issuing Agency. To that end, it is important to take into account that the use of data qualifiers may depend on the symbology identifier that is applied in accordance with Article 21(1) of Implementing Regulation 2018/574 (and the ISO norms referred therein). The coding structure

of the ID issuer should address this possible interdependency and provide for adequate guidance to economic operators.

5) The potential use of a data qualifier preceding the time stamp will also depend on whether an economic operator decides to rely on Article 21(4) of Implementing Regulation 2018/574. The application of such data qualifier should take place in accordance with the applicable coding structure published by the ID issuer in cooperation with its Issuing Agency.

6) To ensure positive validation by the repositories system, only the following data elements (strings), excluding the symbology identifier and any data qualifiers, should be transmitted by economic operators as part of their recording activity to the repositories system:

- ID issuer identification code (without mandatory data qualifier);
- Serial number;
- Product code;
- Time stamp.

7) For the purpose of the explanation above, group separators (/FNC1) are considered in the same manner as optional data qualifiers. Their use depends on the coding structure published by the ID issuer.

#### 6.1.2 Clarification on Structure of aggregated-level unique identifiers (after encoding into a data carrier)

##### 6.1.2.1 Aggregated UIs generated and issued by competent ID issuers

For aggregated UIs generated and issued by competent ID issuers, the rules on the use of data qualifiers explained in point 1.1 above apply by analogy.

##### 6.1.2.2 Self-generated aggregated UIs

Self-generated UIs must only provide for unique identification of the traceable item and as such, any additional information added to the aggregated level UI, as provided for in Article 11(4) of Implementing Regulation 2018/574, must not be transmitted by economic operators as part of their recording activity to the repositories system.

Example 1: GS1 DataMatrix encoding Global Trade Item Number with Serial Number (SGTIN)

Aggregate Unique Identifier for standard trade item grouping using GS1 Application Identifiers (01) for GTIN and (21) for Serial Number

|                                       | (1)                                     | (2)  | (3)          | (4)            | (5)           |
|---------------------------------------|---|--|--------------|----------------|---------------|
| Unique Identifier                     | Symbology Identifier                    | Data Qualifier   | GTIN         | Data Qualifier | Serial Number |
| Position within the unique identifier | <b>Fixed</b>                            | <b>Fixed</b>   | <b>Fixed</b> | <b>Fixed</b>   | <b>Fixed</b>  |
| Applicable international standards:   | ISO/IEC 16022:2006, ISO/IEC 18004:2015, | ISO 15459-2:2015, ISO 15459-3:2014, ISO/IEC 15459-4: 2014 Section 4.1.2 (normative), ISO/IEC 15459-6:2014 Section 5 (normative) and Annex B (informative), and the GS1 General Specifications V.19 (or latest equivalents) |              |                |               |

|                                      |   |    |                |    |           |
|--------------------------------------|---|----|----------------|----|-----------|
|                                      | or ISO/IEC 15417:2007   |    |                |    |           |
| Values                               | jd2   | 01 | 01234567891231 | 21 | 456FGRD66 |
| Process                              | <input type="checkbox"/> Applied by EO <input type="checkbox"/><br>Symbology Identifiers are transmitted by scanners based on 'start character patterns' that must be followed when printing the barcode. See barcode specifications for specific patterns required to signal GS1 formatted data. |    |                |    |           |
| Transmission to repositories systems | No  | No | Yes            | No | Yes       |
| aUI                                  |   |    | 01234567891231 |    | 456FGRD66 |

Example 2: GS1 DataMatrix encoding SGTIN (required for aUI) with additional information permitted, but not required  
Aggregate level Unique Identifier for standard trade item grouping adding GS1 Application Identifier (240) Additional Product ID assigned by the manufacturer to Example 1

|                                       | (1)   | (2)  | (3)            | (4)            | (5)           | (6)  | (7)   | (8)  |
|---------------------------------------|---|--|----------------|----------------|---------------|--|---|--|
| Unique Identifier                     | Symbology Identifier  | Data Qualifier   | GTIN           | Data Qualifier | Serial Number | Character required by GS1 after variable length fields               | Data Qualifier for optional attribute added by the manufacturer | Additional product identification assigned by the manufacturer |
| Position within the unique identifier | Fixed   | Fixed  | Fixed          | Fixed          | Fixed         | Per rules within GS1 General Specifications V19 or latest equivalent |   |  |
| Applicable international standards :  | ISO/IEC 16022:2006, 18004:2015, or 15417:2007                   | ISO 15459-2:2015, ISO 15459-3:2014, ISO/IEC 15459-4: 2014 Section 4.1.2 (normative), ISO/IEC 15459-6:2014 Section 5 (normative) and Annex B (informative), and the GS1 General Specifications V.19 (or latest equivalents) |                |                |               |  |   |  |
| Values                                | jd2   | 01   | 01234567891231 | 21             | 456FGRD66     | FNC1 or <GS>   | 240   | ED1234   |
| Process                               | <input type="checkbox"/> Applied by EO <input type="checkbox"/> |  |                |                |               |  |   |  |
| Transmission to repositories systems  | No  | No   | Yes            | No             | Yes           | No   | No  | No   |
| aUI                                   |   |  | 01234567891231 |                | 456FGRD66     |  |   |  |

Example 3: GS1-128 encoding Serial Shipping Container Code (SSCC)  
Aggregate level Unique Identifier for transport (logistic) units using GS1 Application Identifier (00) SSCC

|                                       | (1)                  | (2)            | (3)   |
|---------------------------------------|----------------------|----------------|-------|
| Unique Identifier                     | Symbology Identifier | Data Qualifier | SSCC  |
| Position within the unique identifier | Fixed                | Fixed          | Fixed |



|                                      |   |   |                    |
|--------------------------------------|---|---|--------------------|
| Applicable international standards:  | ISO/IEC 16022:2006, ISO/IEC 18004:2015, or ISO/IEC 15417:2007   | ISO 15459-2:2015, ISO 15459-3:2014, ISO/IEC 15459-1:2014 Section 4 (normative) and Annexes A and B (informative), and the GS1 General Specifications V.19 (or latest equivalents) |                    |
| Values                               | ]C1   | 00  | 123456789123456789 |
| Process                              | <input type="checkbox"/> Applied by EO <input type="checkbox"/> |   |                    |
| Transmission to repositories systems | No  | No  | Yes                |
| aUI                                  |   |   | 123456789123456789 |

Example 4: Code 128 bar code symbol with the qualifier of ASC MH10 Data Identifier "J"

As defined in ISO/IEC 15459-1:2014 Annex A (informative) Unique identification for transport units section A.3 ASC MH10 unique identification for transport units

|                                      | (1)                  | (2)                        | (3)            |
|--------------------------------------|----------------------|----------------------------|----------------|
| Unique Identifier                    | Symbology Identifier | ASC MH 10 Data Identifiers |                |
| Values                               | ]C0                  | J                          | JNLY1234567890 |
| Process                              | Applied by EO        | Applied by EO              | Applied by EO  |
| Transmission to repositories systems | No                   | No                         | Yes            |
| aUI                                  |                      |                            | JNLY1234567890 |

## 6.2 Decoding UI

In order to decode the content of the UI, the Secondary repository requires the implementation of the different ID issuers decoding algorithm. These algorithms combined with the EU Wide Register will allow the decoding.

### 6.2.1 Algorithm

The ID issuer must provide the algorithm to the Secondary repository.

### 6.2.2 Decoding Activities

#### 6.2.2.1 Off line validation

Specific offline validation could be performed on the UI.

#### 6.2.2.2 Routing

The decoding of the UI could be required during the routing and splitting of the messages.

## 7 Router

### 7.1 Overview

The Router is responsible for:

- Validating data that is sent from the ID Issuer and the Economic operators.
- Sending data that it is sent from the Economic operators as web call and Flat files, to the Secondary repository checking that the message received is valid.
- Splitting and distributing operational and transactional messages coming in from the distribution chain to the relevant Primary repository.

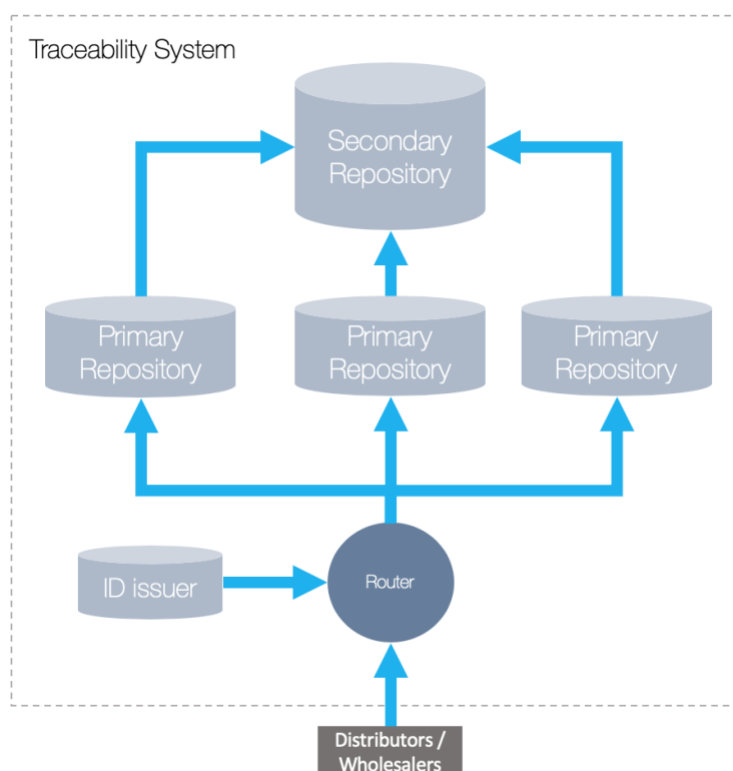


Figure 29 Router Data Flow

### 7.2 Routing rules

The Router dispatches the traceability data from the Wholesalers, Distributors, Transport companies or Providers of courier services to the Primary repository related to the Manufacturer or Importer of the dispatched tobacco products.

The Message shall be split when it contains information related to products from various Manufacturers.

#### 7.2.1 Routing of UI

**Case 1:** When all UIs are related to the same Manufacturer or Importer, the message is forwarded as-is to the relevant Primary repository.

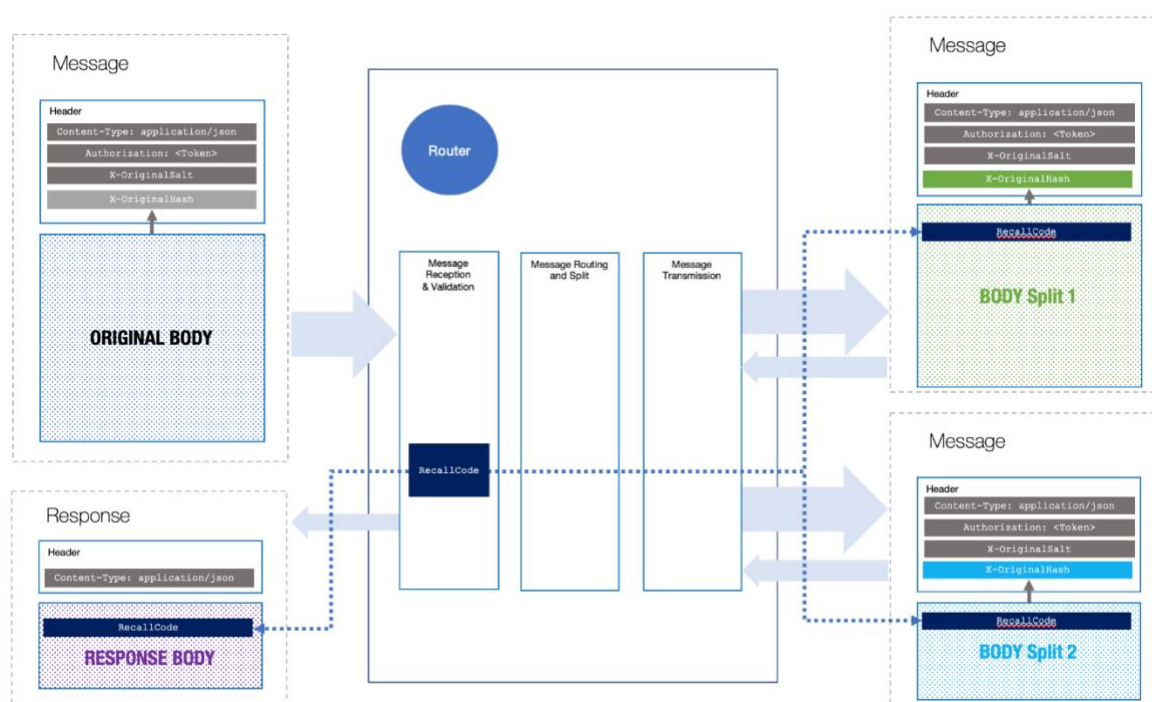
**Case 2:** When UIs are related to various Manufacturers or Importers, the message will be split by Manufacturer and/or Importer together with the related UIs and resulting messages forwarded to the relevant Primary repository.

### 7.2.2 Routing of Transactional data

Transactional Information associated to products from various Manufacturer or Importer should be fully sent to all relevant Primary repositories with no split. UIs will be split by relevant Primary repository.

## 7.3 Recall Management

The router will propagate the recall messages following the initial routing and splitting.



## 8 Message Validation

### 8.1 Overview

Validation is the process to accept or reject an incoming message.

#### 8.1.1 Principle: No duplication of validation

The complete traceability system should be considered as one system and the validation is performed at the first component of the system.

- Messages processed by the Router and transmitted to the Primary repository, should not be validated at the Primary repository level.
- Messages processed by the Primary repository and transmitted to the Secondary repository, should not be validated at the Secondary repository level.

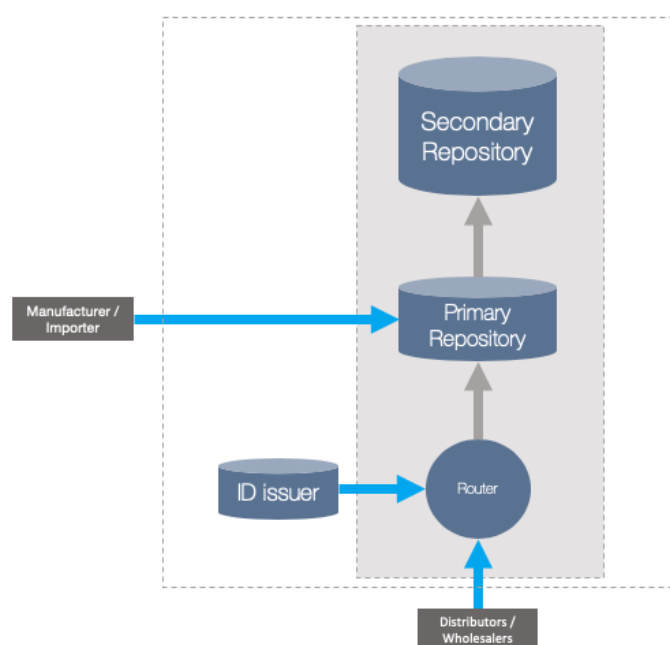


Figure 30 Validation Overview

#### 8.1.2 Validation response

The Https status of the response provide information on the way the receiving system is handling the data.

- Http status **200 – 202**: the message is processed successfully
- Http status **299**: the message contains one or more errors (validation failure), the message is processed even with the errors. (some processing might be limited). The response contains the list of failed validations.
- Http status **400**: the message contains one or more validation errors. The message will NOT be processed. An audit of the message and its corresponding response will be stored on the EU Secondary. The response contains the list of failed validations.

http status 299 is used in multiple circumstances. This warning status is used to inform the sending system of an unrecognized UI during the "Transition Period" as well as out of sequence event during the grace period. This status is also used in case a message is reported outside the 24hour (defined on the validation VAL\_EVT\_24H). The response message contains the list of validation failures that caused the warning.

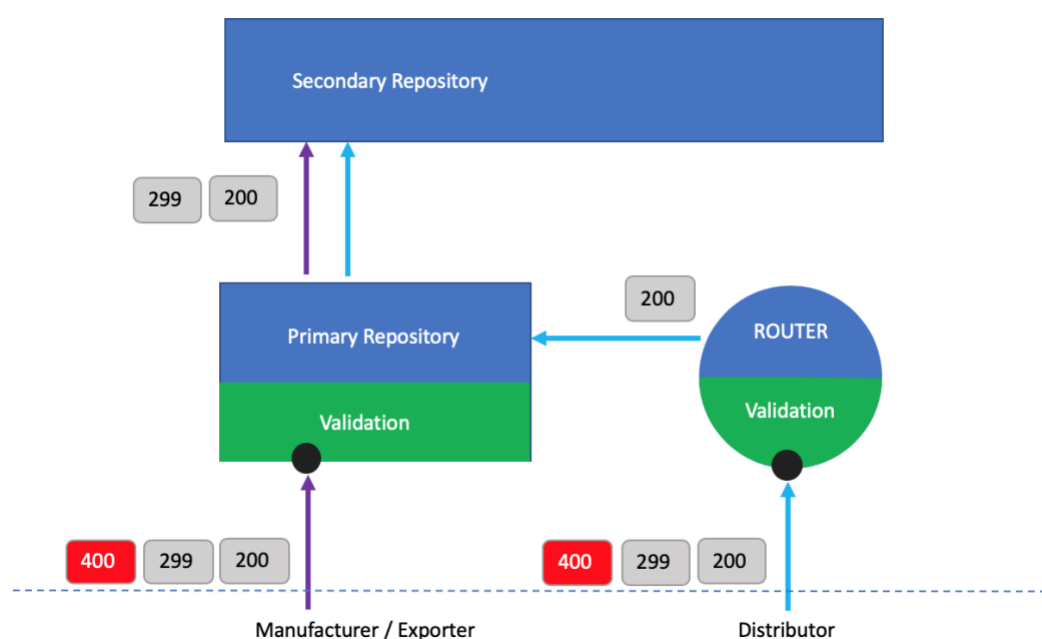
### 8.1.3 Technical and business validation

The validation process is composed by a technical aspect and business validation. The technical validation ensures that the message follows the general format and messages structure including field availability and predefined values. This validation is performed on all components.

The business validation is performed after the technical validation and focuses on the state of business data.

### 8.1.4 Message transmission overview

The following diagram describes the different message transmission and response options.



Note that the technical validation is not represented in the following diagram. Only the business validation. It is clear that messages that fail the technical validation (wrong format, not authorized) will be rejected by all systems with an http status 400.

#### 8.1.4.1 Secondary to Primary Feedback

The Secondary repository accepts all messages from the different primary repositories as described in the list of Specification. The primary repository is responsible to perform the validation.

The information provided by the primary repository is used to update the internal state of the different UI. The states are then used during the validation enforcement on the router.

The Secondary repository is running all the validation in order to confirm the coherence of the state changes. In case the secondary information and checks lead to identify a discrepancy in the reported events by the primary repository, the secondary will perform the following operations

- mark the event and UI that are presenting such discrepancies.
- communicate to the primary repository the information regarding the discrepancy. The use of http status 299 in the message response to the primary repositories.

#### 8.1.4.2 Router to Primary

The router performs the validation of the messages received. Depending on the type of messages, the message is then forwarded to the primary repository. The primary repository will accept the messages and always (messages that are passing or failing the business validations) return a http 200 or 202 to the router.

#### 8.1.4.3 Router and Primary to EO

The messages from the Economic operators are validated at the first point of entry. For the manufacturer and importer, the messages are transmitted to the primary repositories.

The messages from the distributors are validated by the router based on the information processed on the secondary repository.

Depending on the content of the message, the EO might receive a successful response (http 200 or 202) a warning (http 299) or a rejection data (http 400).

## 8.2 Type of validation

### 8.2.1 Security validation

The security validation is the first part of the technical validation ensuring that connecting systems are authenticated and authorized to transmit data to the traceability system.

| Control       | Description                     | Scope        |
|---------------|---------------------------------|--------------|
| VAL_SEC_HASH  | Integrity check of the checksum | All messages |
| VAL_SEC_TOKEN | Oauth Security Token validation | All messages |

### 8.2.2 Message Structure validation

The technical validation ensures that the messages are following the technical guidelines and allows the system to successfully access the message data accurately.

| Control | Description | Scope |
|---------|-------------|-------|
|---------|-------------|-------|

|                |  |                       |
|----------------|--|-----------------------|
| VAL_MSG_JSON   | JSON structure validation  | All JSON messages     |
| VAL_MSG_XML    | XML structure validation   | All EPCS EDI messages |
| VAL_MSG_TYPE   | Message type validation  | All messages          |
| VAL_FIE_MAN    | Mandatory Field validation (per message type)                                  | All messages          |
| VAL_FIE_FORMAT | Field format validation  | All messages          |
| VAL_FIE_REF    | Existence of correctly reference enumerations. (As defined in data dictionary) | All messages          |

### 8.2.3 . Message Transmission validation

The transmission controls are established in order to prevent technical duplication and processing of messages.

| Control                | Description   | Scope  |
|------------------------|---|--|
| VAL_MSG_DUPLICATE      | Message payload already processed successfully by the Router or Primary should be rejected.         | IRU - IDA - EUA<br>- EPA - EDP -<br>ERP- ETL- EUD-<br>EVR - EIV - EPO<br>- EPR |
| VAL_MSG_CODE_DUPLICATE | Message identified by a Recallcode that has already been processed successfully should be rejected. | All messages   |

### 8.2.4 Unique Identifiers validation

The following validations are performed on each UI that is present in a message.

#### 8.2.4.1 Message level validation

The UI present in a message should be present only once. If the UI is present multiple times, the message will be rejected as non-compliant.

| Control         | Description   | Scope  |
|-----------------|---|--|
| VAL_UI_MULT_MSG | Multiple duplicate UI present in the messages.<br>For EPA (message 3.2), the validation on the parent UI should also be performed in order to avoid first level cyclical reference. | IRU - IDA - EUA<br>- EPA - EDP -<br>ERP- ETL- EUD-<br>EVR - EIV - EPO<br>- EPR |

#### 8.2.4.2 Application Validation

Validation that the upUI(s) is only applied once to a upUI(L)

| Control          | Description  | Scope     |
|------------------|--|-----------|
| VAL_UI_EXIST_APP | upUIs has been received as part of an IRU message. | EUA - IDA |

|                      |  |     |
|----------------------|--|-----|
|                      | This validation fails if the upUIs is not found and has not been reported. |     |
| VAL_UI_DUPLICATE_APP | UI validity<br>Check if the upUIs has already been applied to a upUI(L)    | EUA |
| VAL_UI_FID_APP       | Validation of the FID defined in the IRU message (2.1).                    | EUA |

#### 8.2.4.3 Existence

The following control ensures that the UI (upUI and aUI) comply with the regulation and could participate in product movement or transaction event reporting.

| Control               | Description   | Scope   |
|-----------------------|---|---|
| VAL_UI_EXIST_UPUI     | UI existence<br>upUI exists and has been successfully applied   | EPA (Children) – EDP – ERP- ETL- EVR – EIV – EPO – EPR      |
| VAL_UI_EXIST_AUI      | aUI existence<br>aUI has been aggregated (part of an EPA)   | IDA –EPA (Children) – EDP – ERP- ETL- EVR – EIV – EPO – EPR |
| VAL_UI_EXIST_UPUI_SEQ | UI validity <ul style="list-style-type: none"> <li>upUI exists and has been successfully applied</li> <li>upUI has not been part of any deactivation message.</li> </ul>                                      | EPA (Children) – EDP – ERP- ETL- EVR                        |
| VAL_UI_EXIST_AUI_SEQ  | aUI validity <ul style="list-style-type: none"> <li>aUI has been aggregated (part of an EPA)</li> <li>and has not been disaggregated (including implicit disaggregation)</li> <li>nor deactivated.</li> </ul> | IDA –EPA (Children) – EDP – ERP- ETL- EVR                   |

#### 8.2.4.4 upUI Expiration

As per the regulation, the upUI(s) that are issued by the ID Issuer and reported in the IRU messages have a limited application period.

| Control       | Description   | Scope    |
|---------------|---|----------|
| VAL_UI_EXPIRY | Validation that the application or the aggregation date | EUA, EPA |



|  |  |  |
|--|--|--|
|  | doesn't exceed the 6 months period after the code has been issued. |  |
|--|--|--|

## 8.2.5 UI level Message sequence validation

### 8.2.5.1 Application and deactivation sequence validation

| Control                 | Description   | Scope                                |
|-------------------------|---|--------------------------------------|
| VAL_UI_ORD_REACTIVATION | upUI(s) that has been deactivated should not allow any application event (EUA). | EUA                                  |
| VAL_UI_ORD_DEACTIVATED  | UI – presence of UI in a message after being deactivated.                       | EPA – EDP – ERP- ETL- EUD- EVR - IDA |

#### 8.2.5.1.1 Deactivation reason

Depending on the deactivation reason for the parent UI.

- If the deactivation reason was Deact\_Reason1 = 1 (Product destroyed) or 2 (Product stolen) then the full hierarchy is deactivated and therefore nothing needs to be done
- If the deactivation reason was Deact\_Reason1 = 3 (UI Destroyed), 4 (UI Stolen) , 5 (UI Unused) or 6 (Other), then only the explicitly mentioned UIs are deactivated and therefore the stolen parents would be still existing in the Secondary as active. It is the responsibility of the Economic Operator to report the stolen UIs as stolen when they are aware of it (send a deactivation message for the stolen UIs)

Note that the Deactivation also can trigger an implicit disaggregation.

### 8.2.5.2 Aggregation and Disaggregation Principles

**Principle 1:** All aggregation events are full aggregation. Once the aUI is aggregated, a subsequent aggregation event on the same parent aUI should be rejected.

**Principle 2:** All disaggregation events are full disaggregation. Once the aUI is disaggregated, no movement should be reported on that aUI (until the next disaggregation and aggregation event are reported.).

**Principle 3:** Implicit disaggregation. Disaggregation event reporting is mandatory only when the aUI is reused in a subsequent aggregation event (as a parent aUI). The implicit disaggregation is detected when at least one child UI is reported in an aggregation or product movement. The parent aUI of this child UI will be considered as disaggregated. In the case that the child UI is part of an aggregation hierarchy, all parent aUIs will be disaggregated.

As a consequence, once the implicit disaggregation is detected, no movement should be reported on that parent aUI (until the next aggregation event is reported).

**Principle 4:** All disaggregation must be performed at a location. No Disaggregation are allowed during the transport.

### 8.2.5.3 Implicit disaggregation

Since disaggregation events are only mandatory when the parent aUI is reused, Implicit disaggregation event will happen.

#### 8.2.5.3.1 Triggers

These events will be detected / triggered when a child UI is identified on one of the following messages: IDA (2.3), EPA (3.2), EDP (3.3), ERP (3.4) of type Return, EUD (3.6) and EVR (3.7).

Note that transactional events are not triggering any implicit disaggregation.

#### 8.2.5.3.2 Disaggregated state

Once the UI is implicitly disaggregated, the UI should be considered disaggregated and should not be part of any subsequent product movement (3.x). The definition of implicit disaggregation is that the affected parent aUI is considered completely unlinked from all the children it had at the moment of the implicit disaggregation trigger ("Open"). If a reported UI has more than one linked parent at the moment of the reporting, all parents should be implicitly disaggregated, this includes grand-parents and recursively upwards linked UIs.

#### 8.2.5.3.3 Recall

It is important to note that implicit disaggregation should be rolled back in case the event that triggered them is Recalled.

#### 8.2.5.3.4 Explicit disaggregation after implicit disaggregation

The scope of the VAL\_UI\_ORD\_IMPLDISAGG and VAL\_UI\_ORD\_DISAGG have been removed from EUD (3.6). This means that it is possible to disaggregate an aUI after being part of an implicit disaggregation (as a parent).

### 8.2.5.4 Aggregation and Disaggregation Validation

| Control             | Description  | Scope                 |
|---------------------|--|-----------------------|
| VAL_UI_ORD_AGG_MULT | Validation that a parent UI has not been part of any prior aggregation event (as parent) without being part of a disaggregation event. This control prevents the reuse of an aUI without prior disaggregation. | EPA                   |
| VAL_UI_ORD_DISAGG   | Validation that an aUI has been disaggregated cannot be part on any product movement prior of being aggregated.  | EDP - ERP - ETL - EVR |

|                       |  |   |
|-----------------------|--|---|
| VAL_UI_ORD_IMPLDISAGG | Validation that an aUI has been implicitly disaggregated cannot be part on any product movement prior of being part of an EUD message and then aggregated. | EDP – ERP – ETL – EVR- EPA (Children) - EUD |
|-----------------------|--|---|

### 8.2.5.5 Location based Validation

#### 8.2.5.5.1 UI Location update

The sequence validation also considers the implementation of location-based controls.

FID of the UI is updated upon processing of the following events.

- ERP (3.4)
- EUA (3.1) update of the location of the UI. The location of the UI should match the location defined in the IRU message.
- EPA (3.2) update of the newly created parent id
- EVR (3.7)
- RCL (5.0) rolls back to the previous state

#### 8.2.5.5.2 Location based controls

| Control            | Description  | Scope     |
|--------------------|--|-----------|
| VAL_UI_ORD_AGG_FID | Validation that the aggregation and the disaggregation events must happen at the same facility (FID) where the products have been either created or arrived. | EPA - EUD |

### 8.2.5.6 Dispatch and arrival Validation

**Principle 5:** The reporting on the Arrival should be done on the same UI that have been reported during the Dispatch/Transloading process. This is a consequence of principle 4. This means that an Arrival Event that contains child UI of UI reported during the Dispatch/Transloading Event will be rejected. The same UI must be reported.

Exception VAL\_UI\_ORD\_ARRIVAL\_RETURN: arrival of type return only affects the principle 5 but still enforce the event sequence validation.

| Control            | Description  | Scope                       |
|--------------------|--|-----------------------------|
| VAL_UI_ORD_ARRIVAL | Validation that a UI is part of a prior reported dispatch or transloading event (EDP | ERP<br>(Product_Return = 0) |

|                           |  |                             |
|---------------------------|--|-----------------------------|
|                           | 3.3, ETL 3.5) for the specified destination. This validation concerns the sequence of events.<br><br><i>Exception:</i> Imported products   |                             |
| VAL_UI_ORD_ARRIVAL_RETURN | Validation that a UI is part of a prior reported dispatch or transloading event (EDP 3.3, ETL 3.5, EVR 3.7) for the specified destination. This validation concerns the sequence of events.<br><br>In this validation principle 5 doesn't apply. | ERP<br>(Product_Return = 1) |

#### 8.2.5.6.1 imported goods Exception

The IRU (message 2.1) contains the import flag information. This flag will be used to assess if the exception should be implemented.

- a) Unit packs that contain the import flag information and that have been applied and eventually aggregated with EUA (message 3.1) and EPA (message 3.2) in a facility whose country is **outside** the EU must be reported in an arrival message with a facility whose country is inside the EU (the physical importation of the goods) before being part of any aggregation or logistic movement inside the EU.
- b) Unit packs that contain the import flag information and that have been applied and eventually aggregated with EUA (message 3.1) and EPA (message 3.2) in a facility whose country is **inside** the EU, must not report an arrival message. In this case, it is understood that the physical importation should have taken place between the IRU (message 2.1) and the application/activation of the UI EUA (message 3.1) and EPA (message 3.2).

#### 8.2.5.6.2 Arrival of type return

The reporting of the arrival of type return can be performed on child UI. This operation is allowed and will trigger an implicit disaggregation.

#### 8.2.5.6.3 Arrival and Return

Flows from the retail outlets, even in the context of message 3.7, are considered to constitute "product returns".

The flows constitute "product returns" even if the product is returned to the same facility as it was originally dispatched from or to another one.

## 8.2.5.6.4 Dispatch validation

| Control             | Description   | Scope |
|---------------------|---|-------|
| VAL_UI_ORD_DISPATCH | <p>Validation that a UI last location (FID) matches the source location (FID) of the dispatch event.</p> <p>The UI must have been:</p> <ul style="list-style-type: none"> <li>- Applied or aggregated on that specific location (FID)</li> <li>- Arrived on that location.</li> </ul> | EDP   |

## 8.2.6 Message Event Time Validation

The following messages validation compares the event time (Event Time) to the actual reception time of the event by the first point of entry.

| Control      | Description   | Scope                             |
|--------------|---|-----------------------------------|
| VAL_EVT_24H  | <p>Validation that the Events are reported within 24 hours from the occurrence of the event.</p> <p>This validation is performed on the Event Time compared to the Record Time of the Primary repository or the Router.</p> <p>NOTE: this validation will be reduced to 3 hours after 20 May 2028</p> <p><b>This validation should not be blocking but rather generating a warning to the sender system</b></p> | EUA – EPA – EVR – EIV – EPO – EPR |
| VAL_EVT_TIME | <p>"Within 24 hours prior to the occurrence of the event" rule for dispatch and trans-loading event messages is a rule and the system shall reject non-compliant messages. Control is based on the "actual date – Event Time" time difference.</p>  | EDP – ETL                         |

|  |  |  |
|--|--|--|
|  | <b>This validation should not be blocking but rather generating a warning to the sender system</b> |  |
|--|--|--|

### 8.2.7 Identification Code validation

Identification codes are used in a number of messages. The validation of the existence and fact that the identification code is active is part of the business validation as described in the table below.

| Control              | Description   | Scope   |
|----------------------|---|---|
| VAL_ENT_EXIST_EOID   | Check if the EOID exists in the EU wide registry              | ISU – ISA – IRU – IRA – IDA – EUA – EPA – EDP – ERP – ETL – EUD- EVR  |
| VAL_ENT_EXIST_FID    | Check if FID, exists in the EU wide registry                  | ISU – IRU – ISA – IRA – IRU – EUA – EPA – EDP – ERP – ETP – EUD – EVR |
| VAL_ENT_EXIST_MID    | Check if MID, exists in the EU wide registry                  | ISU – IRU   |
| VAL_ENT_ACTIVE_EOID  | Check if EOID is marked as active in the repository           | IRU – IRA – IDA – EUA – EPA – EDP – ERP – ETL – EUD- EVR              |
| VAL_ENT_ACTIVE_FID   | Check if FID is marked as active in the repository            | ISU – ISA – IRU – IRA – EUA – EPA                                     |
| VAL_ENT_ACTIVE_MID   | Check if MID is marked as active in the repository            | ISU – IRU   |
| VAL_ENT_REL_EOID_FID | Check if EOID FID relation is defined in the EU wide registry | IRU – IRA   |
| VAL_ENT_REL_FID_MID  | Check if FID MID relation is defined in the EU wide registry  | IRU – IRA   |

### 8.2.8 Recall Validation

#### 8.2.8.1 General recall rules

The sequence validation on the product movement introduce additional controls on the recall process. In order to maintain the consistency of the history of the UI, only the recall of the last event for each UI will be authorized.

If a message to be recalled, contains a UI (any in the reported list) that has a subsequent event, the subsequent event must be recalled first.

For the sake of clarity, the following scenarios describe the process of recall. An EO report two product movements on a UI. (Event 1 and Event 2). If the EO wishes to recall Event 1, the EO has first to recall Event 2 and only after recall Event 1. Moreover, Event2 must be the last event occurred on all UIs contained in Event2 for Event2 could be recalled.

#### 8.2.8.2 Transaction events

Transaction events (4.x) are not subject to this rule as they are not impacted by the sequence validation control and therefore, transaction events (4.x) can be recalled at any time.

#### 8.2.8.3 Recall Validation Controls

| Control          | Description  | Scope |
|------------------|--|-------|
| VAL_RECALL_EXIST | Check if RecallCode exists   | RCL   |
| VAL_RECALL_LAST  | Check if for all UIs related to the event identified by RecallCode is the very last unrecalled event occurred on all such UI including related implicitly disaggregated parents. | RCL   |

### 8.3 Validation Scope

|                                 | IRU (2.1) | IRA (2.2) | IDA (2.3) | EUA (3.1) | EPA (3.2) | EDP (3.3) | ERP (3.4) | ETL (3.5) | EUD (3.6) | EVR (3.7) | EIV (4.1) | EPO (4.2) | EPR (4.3) | RCL (5) |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| <b>Technical validation</b>     |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_SEC_HASH                    | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_SEC_TOKEN                   | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_MSG_JSON                    | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_MSG_XML                     |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_MSG_TYPE                    | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_FIE_MAN                     | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_FIE_FORMAT                  | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_FIE_REF                     | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_MSG_DUPLICATE               | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_MSG_CODE_DUPLICATE          | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X       |
| VAL_UI_MULT_MSG                 | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         |         |
| <b>Business rule validation</b> |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| <b>UI creation</b>              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_EXIST_APP                |           |           | X         | X         |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_DUPLICATE_APP            |           |           |           | X         |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_EXIST_UPUI               |           |           |           |           | X         | X         | X         | X         | X         | X         | X         | X         | X         |         |
| VAL_UI_EXIST_AUI                |           |           |           |           | X         | X         | X         | X         | X         | X         | X         | X         | X         |         |
| VAL_UI_EXIST_UPUI_SEQ           |           |           | X         |           | X         | X         | X         | X         |           | X         |           |           |           |         |
| VAL_UI_EXIST_AUI_SEQ            |           |           | X         |           | X         | X         | X         | X         | X         | X         |           |           |           |         |
| VAL_UI_EXPIRY                   |           |           |           | X         | X         |           |           |           |           |           |           |           |           |         |
| <b>Entity Validation</b>        |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_ENT_EXIST_EOID              | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         |         |
| VAL_ENT_EXIST_FID               | X         | X         |           | X         | X         | X         | X         | X         | X         | X         |           |           |           |         |
| VAL_ENT_EXIST_MID               | X         |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_ENT_ACTIVE_EOID             | X         | X         | X         | X         | X         | X         | X         | X         | X         | X         |           |           |           |         |
| VAL_ENT_ACTIVE_FID              | X         | X         |           | X         |           |           |           |           |           |           |           |           |           |         |
| VAL_ENT_ACTIVE_MID              | X         |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_ENT_REL_EOID_FID            | X         | X         |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_ENT_REL_FID_MID             | X         | X         |           |           |           |           |           |           |           |           |           |           |           |         |
| <b>Sequence Validation</b>      |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_FID_APP                  |           |           |           | X         |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_ORD_REACTIVATION         |           |           |           | X         |           |           |           |           |           |           |           |           |           |         |
| VAL_UI_ORD_DEACTIVATED          |           |           | X         |           | X         | X         | X         | X         | X         | X         |           |           |           |         |
| VAL_UI_ORD_AGG_MULT             |           |           |           |           | X         |           |           |           |           |           |           |           |           |         |
| VAL_UI_ORD_DISAGG               |           |           |           |           |           | X         | X         | X         |           | X         |           |           |           |         |
| VAL_UI_ORD_IMPLDISAGG           |           |           |           |           | X         | X         | X         | X         |           | X         |           |           |           |         |
| VAL_UI_ORD_AGG_FID              |           |           |           |           | X         |           |           |           | X         |           |           |           |           |         |
| VAL_UI_ORD_ARRIVAL              |           |           |           |           |           |           | X         |           |           |           |           |           |           |         |
| VAL_UI_ORD_ARRIVAL_RETURN       |           |           |           |           |           |           | X         |           |           |           |           |           |           |         |
| VAL_UI_ORD_DISPATCH             |           |           |           |           |           | X         |           |           |           |           |           |           |           |         |
| <b>Message Timing</b>           |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_EVT_24H                     |           |           |           | X         | X         |           |           |           |           | X         | X         | X         | X         |         |
| VAL_EVT_TIME                    |           |           |           |           |           | X         |           | X         |           |           |           |           |           |         |
| <b>Recall</b>                   |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| VAL_RECALL_EXIST                |           |           |           |           |           |           |           |           |           |           |           |           |           | X       |
| VAL_RECALL_LAST                 |           |           |           |           |           |           |           |           |           |           |           |           |           | X       |



## 8.4 Validation Responsibility

|                           | Primary repository | Router | Secondary repository |
|---------------------------|--------------------|--------|----------------------|
| Technical validation      |                    |        |                      |
| VAL_SEC_HASH              | X                  | X      | X                    |
| VAL_SEC_TOKEN             | X                  | X      | X                    |
| VAL_MSG_JSON              | X                  | X      | X                    |
| VAL_MSG_XML               | X                  | X      | X                    |
| VAL_MSG_TYPE              | X                  | X      | X                    |
| VAL_FIE_MAN               | X                  | X      | X                    |
| VAL_FIE_FORMAT            | X                  | X      | X                    |
| VAL_FIE_REF               | X                  | X      | X                    |
| VAL_MSG_DUPLICATE         | X                  | X      | X                    |
| VAL_MSG_CODE_DUPLICATE    | X                  |        | X                    |
| Business rule validation  |                    |        |                      |
| VAL_UI_MULT_MSG           | X                  | X      |                      |
| VAL_UI_EXIST_APP          | X                  |        |                      |
| VAL_UI_DUPLICATE_APP      | X                  |        |                      |
| VAL_UI_FID_APP            | X                  |        |                      |
| VAL_UI_EXIST_UPUI         | X                  | X      |                      |
| VAL_UI_EXIST_AUI          | X                  | X      |                      |
| VAL_UI_EXIST_UPUI_SEQ     | X                  | X      |                      |
| VAL_UI_EXIST_AUI_SEQ      | X                  | X      |                      |
| VAL_UI_EXPIRY             | X                  |        |                      |
| VAL_UI_ORD_REACTIVATION   | X                  | X      |                      |
| VAL_UI_ORD_DEACTIVATED    | X                  | X      |                      |
| VAL_UI_ORD_AGG_MULT       | X                  | X      |                      |
| VAL_UI_ORD_DISAGG         | X                  | X      |                      |
| VAL_UI_ORD_IMPLDISAGG     | X                  | X      |                      |
| VAL_UI_ORD_AGG_FID        | X                  | X      |                      |
| VAL_UI_ORD_ARRIVAL        | X                  | X      |                      |
| VAL_UI_ORD_ARRIVAL_RETURN | X                  | X      |                      |
| VAL_UI_ORD_DISPATCH       | X                  | X      |                      |
| VAL_EVT_24H               | X                  | X      |                      |
| VAL_EVT_TIME              | X                  | X      |                      |
| VAL_ENT_EXIST_EOID        |                    | X      |                      |
| VAL_ENT_EXIST_FID         |                    | X      |                      |
| VAL_ENT_EXIST_MID         |                    | X      |                      |
| VAL_ENT_ACTIVE_EOID       |                    | X      |                      |
| VAL_ENT_ACTIVE_FID        |                    | X      |                      |
| VAL_ENT_ACTIVE_MID        |                    | X      |                      |
| VAL_ENT_REL_EOID_FID      |                    | X      |                      |
| VAL_ENT_REL_FID_MID       |                    | X      |                      |
| VAL_RECALL_EXIST          | X                  | X      |                      |
| VAL_RECALL_LAST           | X                  | X      |                      |

## 8.5 Validation and Error Code

|                                 | Error Code  | http Status |
|---------------------------------|---|-------------|
| <b>Technical validation</b>     |   |             |
| VAL_SEC_HASH                    | INVALID_SIGNATURE   | 400         |
| VAL_SEC_TOKEN                   | INVALID_OR_EXPIRED_TOKEN  | 401         |
| VAL_MSG_JSON                    | INVALID_INPUT_FORMAT<br>REQUIRED_FIELD_FAILED_VALIDATION<br>MAX_LENGTH_FAILED_VALIDATION<br>MIN_LENGTH_FAILED_VALIDATION<br>ENTRY_LENGTH_FAILED_VALIDATION<br>EXCISE_NUMBER_NOT_VALID<br>NON_COMPATIBLE_UIS<br>NOT_THE_SAME_NUMBER_OF_ITEMS | 400         |
| VAL_MSG_XML                     | FAILED_VALIDATION   | 400         |
| VAL_MSG_TYPE                    | FAILED_VALIDATION   | 400         |
| VAL_FIE_MAN                     | FAILED_VALIDATION   | 400         |
| VAL_FIE_FORMAT                  | INVALID_INPUT_FORMAT  | 400         |
| VAL_FIE_REF                     | FAILED_VALIDATION   | 400         |
| VAL_MSG_DUPLICATE               | PAYLOAD_NOT_UNIQUE  | 400         |
| VAL_MSG_CODE_DUPLICATE          | FAILED_VALIDATION   | 400         |
| VAL_UI_MULT_MSG                 | MULTIPLE_UID<br>UI_NOT_VALID<br>UIS_NOT_VALID   | 400         |
| <b>Business rule validation</b> |   |             |
| UI creation                     |   |             |
| VAL_UI_EXIST_APP                | UIS_APPLICATION_ERROR   | 400         |
| VAL_UI_DUPLICATE_APP            | UIS_APPLICATION_ERROR   | 400         |
| VAL_UI_EXIST_UPUI               | UI_NOT_EXIST<br>UI_NOT_VALID  | 400         |
| VAL_UI_EXIST_AUI                | UI_NOT_EXIST  | 400         |
| VAL_UI_EXIST_UPUI_SEQ           | UI_NOT_EXIST<br>UI_NOT_VALID  | 400         |
| VAL_UI_EXIST_AUI_SEQ            | UI_NOT_EXIST  | 400         |
| VAL_UI_EXPIRY                   | UI_EXPIRED  | 400         |
| Entity Validation               |   |             |
| VAL_ENT_EXIST_EOID              | EOID_NOT_EXIST_OR_ACTIVE  | 400         |
| VAL_ENT_EXIST_FID               | FID_NOT_EXIST_OR_ACTIVE   | 400         |
| VAL_ENT_EXIST_MID               | MID_NOT_EXIST_OR_ACTIVE   | 400         |
| VAL_ENT_ACTIVE_EOID             | EOID_NOT_EXIST_OR_ACTIVE  | 400         |
| VAL_ENT_ACTIVE_FID              | FID_NOT_EXIST_OR_ACTIVE   | 400         |
| VAL_ENT_ACTIVE_MID              | MID_NOT_EXIST_OR_ACTIVE   | 400         |
| VAL_ENT_REL_EOID_FID            | FID_NOT_RELATED_TO_EOID   | 400         |
| VAL_ENT_REL_FID_MID             | MID_NOT_RELATED_TO_FID  | 400         |
| Sequence Validation             |   |             |
| VAL_UI_FID_APP                  | UIS_APPLICATION_ERROR<br>FID_MISMATCH   | 400         |
| VAL_UI_ORD_REACTIVATION         | UI_DEACTIVATED  | 400         |
| VAL_UI_ORD_DEACTIVATED          | UI_DEACTIVATED  | 400         |
| VAL_UI_ORD_AGG_MULT             | MULTIPLE_AGGREGATION  | 400         |
| VAL_UI_ORD_DISAGG               | UI_ALREADY_DISAGGREGATED  | 400         |
| VAL_UI_ORD_IMPLDISAGG           | UI_ALREADY_DISAGGREGATED  | 400         |

|                           |                                   |     |
|---------------------------|-----------------------------------|-----|
| VAL_UI_ORD_AGG_FID        | LOCATION_MISMATCH                 | 400 |
| VAL_UI_ORD_ARRIVAL        | ARRIVAL_NOTALLOWED                | 400 |
| VAL_UI_ORD_ARRIVAL_RETURN | ARRIVAL_NOTALLOWED                | 400 |
| VAL_UI_ORD_DISPATCH       | LOCATION_MISMATCH                 | 400 |
| Message Timing            |                                   |     |
| VAL_EVT_24H               | OPERATION_WITHIN_24_HOURS         | 299 |
| VAL_EVT_TIME              | SHIPMENT_WITHIN_24_HOURS          | 299 |
| Recall                    |                                   |     |
| VAL_RECALL_EXIST          | CODE_NOT_EXIST<br>CODE_NOT_UNIQUE | 400 |
| VAL_RECALL_LAST           | RECALL_NOT_LAST_EVENT             | 400 |

## 8.6 Transition Period Validation

### 8.6.1 overview

It has been recognized that during the transition period (20 May 2019 – 19 May 2020), as provided for under Article 37(1) of Implementing Regulation (EU) 2018/574, a number of UI, which were generated before the 20th of May 2019 and therefore not-registered in the system, might be present in the supply chain and could be accidentally scanned and included in product movement messages. In an effort to avoid full rejection of messages that may also contain valid UIs and non-valid legacy UIs, the following validation rule will be applied.

1. The receiving system (Primary repository, Router) identifies valid and non-registered UIs as per "VAL\_UI\_EXIST\_UPUI" or "VAL\_UI\_EXIST\_AUI" validation in the original message.
2. In case non-valid legacy UIs are identified, the system (Primary repository, Router) ONLY processes the valid UIs.
3. An error message is sent to the requesting system containing the list of non-valid legacy UIs. The error code ("UI\_NOT\_EXIST\_TRANSITION\_WARNING") indicates that message in question contains non-valid legacy UIs, which will not be processed by the system. Only valid UIs will be processed.
4. The requesting system, by receiving the validation result with the list of non-valid legacy UIs, have the possibility to recall the message.

### 8.6.2 Related controls

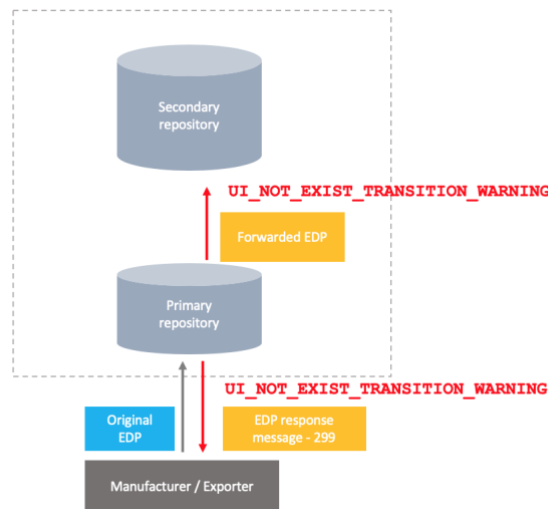
The following validation will not apply during the transition period

- VAL\_UI\_EXIST\_AUI
- VAL\_UI\_EXIST\_UPUI

Scope of messages subject to the transition period

- IDA (2.3) Request for deactivation of UIs
- EPA (3.2) Application of aggregated level UIs on aggregated packaging
- EDP (3.3) Dispatch Event
- ERP (3.4) Reception event
- ETL (3.5) Trans-loading event
- EUD (3.6) Message to report an UID disaggregation
- EVR (3.7) Report the delivery carried out with a vending van to retail outlet
- EIV (4.1) Message to report an invoice
- EPO (4.2) Purchase order

### 8.6.3 Primary and Router processing



The primary and Router implementing the transition period receives the incoming event and apply the different validation controls. In case a UI doesn't match the control, the UI will be removed from the forwarded list and placed into the rejection data section of the message.

The primary repository must route events forwarded by the router with the Rejection Data information to the secondary repository.

### 8.6.4 Empty Event

In case all UI in an event are non valid UIs, the Primary or Router will remove all the UI from the main UI list and forward the "empty" message to the Secondary Repository as an error message (http 400) for audit purpose.

## 8.7 Sequence Validation Grace Period

### 8.7.1 Overview

For the Economic Operators (Manufacturers, Importers, distributors), the implementation of the sequence validation is an important technical upgrade. In order to allow Economic operators to finetune their systems, a sequence validation grace period is defined.

During the sequence validation grace period, the Router and Primary repository will only provide WARNING (http status 299) instead of an ERROR (http status 400) in case of non-compliance and still accept the messages. These warning should be used by the EO to understand the errors and adapt their systems in order to comply with the new technical validation.

It is important to note that the "**sequence validation grace period**" is different from the "**transitions period**". Both periods can overlap.

### 8.7.2 UI Processing

During the sequence validation grace period, If the UI doesn't pass the sequence validation, it will still be accepted, and the message processed. Because the sequence validation is not respected, the processing system (Primary repository

or Router) will not be able to maintain an accurate state for that specific UI. The UI will be identified, and further events related to this UI will be accepted.

#### 8.7.3 End of grace period

For UIs that have been issued and operated prior to the end of the Sequence Validation Grace Period, those might contain non-conform information. This means that the information used to implement the sequence validation, for these specific UI might not be sufficient to enforce the validation.

If the information available for these UIs, is not sufficient to assess the location and the state, the system should allow the product movement and bypass the validations.

#### 8.7.4 Related controls

The following validation controls will be impacted by this sequence validation Grace Period

- VAL\_UI\_FID\_APP
- VAL\_UI\_ORD\_REACTIVATION
- VAL\_UI\_ORD\_DEACTIVATED
- VAL\_UI\_ORD\_AGG\_MULT
- VAL\_UI\_ORD\_DISAGG
- VAL\_UI\_ORD\_IMPLDISAGG
- VAL\_UI\_ORD\_AGG\_FID
- VAL\_UI\_ORD\_ARRIVAL
- VAL\_UI\_ORD\_DISPATCH

#### 8.7.5 Primary and Router processing

The primary and Router implementing the transition period receives the incoming event and apply the different sequence validation controls. In case a UI doesn't match the control, a warning response will be sent back to the sender system. The original message will be forwarded without any additional rejection data section linked to the sequence validation.

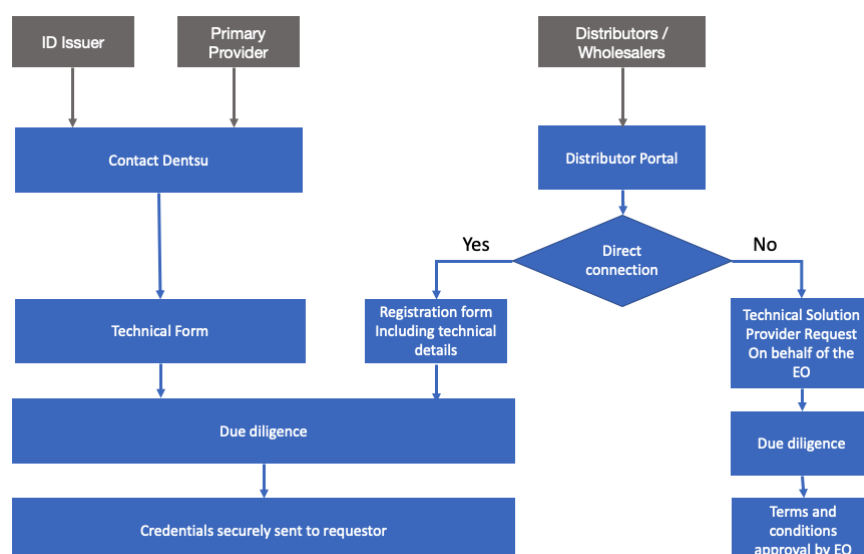
## 9 Sign up Process

### 9.1 Overview

The objective of the signup process is to connect ID Issuer, Economic operator and Primary repository to the Secondary repository.

All parties must have valid credentials to call the Router or the Secondary repository. The flow diagram below gives an overview of how these credentials are gained.

### 9.2 Overall flow



#### 9.2.1 ID Issuer and Primary repositories providers

The ID Issuers and Primary repositories providers will contact Secondary repository provider and provide the technical details.

After the due diligence process, the credentials will be securely sent to the requestor.

#### 9.2.2 Technical Solution Provider

Distributors / Wholesalers can use a Technical Solution Provider to connect to the Router or connect directly.

When connecting through the Technical Solution Provider the Distributors / Wholesalers will have to sign terms and conditions prior to be enabled.

#### 9.2.3 Economic Operator Validation

The Economic Operator must be defined in the EU Wide Register.

## 10Endpoints

< BASE\_URL > : base url = .eu.tobaccotracing.com

< BASE\_XML\_URL > : base xml url = .xml.tobaccotracing.com

example:

< ENV > : environment name

|               |                                 | URL                                     |
|---------------|---------------------------------|---|
| <b>Router</b> |                                 |   |
| Router        | The authentication endpoint     | https://< ENV >.auth.< BASE_URL >       |
| Router        | The resource endpoint           | https://< ENV >.router.< BASE_URL >     |
| EPCIS/EDI     | The EPCIS/EDI resource endpoint | https://< ENV >.router.< BASE_XML_URL > |



## 11 List of standards

| 1 | OAuth 2   | <a href="https://www.oauth.com/oauth2-servers/access-tokens/client-credentials/">https://www.oauth.com/oauth2-servers/access-tokens/client-credentials/</a> |
|---|---|---|
| 2 | ISO/IEC 9834-8:2014<br>Information technology --<br>Procedures for the operation of<br>object identifier registration<br>authorities -- Part 8: Generation of<br>universally Unique identifier (UI)<br>(UUIDs) and their use in object<br>identifiers | <a href="https://www.iso.org/standard/62795.html">https://www.iso.org/standard/62795.html</a>   |
| 3 | The JavaScript Object Notation<br>(JSON) Data Interchange Format<br>Internet Engineering Task Force<br>(IETF)<br>Request for Comments: 8259   | <a href="https://tools.ietf.org/html/rfc8259">https://tools.ietf.org/html/rfc8259</a>   |
| 4 | GS1 EPC Information Services<br>(EPCIS) standard  | <a href="https://www.gs1.org/standards/fighting-illicit-trade">https://www.gs1.org/standards/fighting-illicit-trade</a>                                     |

## 12References

|   |  |
|---|--|
| 1 | COMMISSION IMPLEMENTING REGULATION (EU) 2018/574 of 15 December 2017 on technical standards for the establishment and operation of a traceability system for tobacco products<br><a href="https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018R0574&amp;from=GA">https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018R0574&amp;from=GA</a> |
| 2 | DIRECTIVE 2014/40/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 3 April 2014<br><a href="https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014L0040&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014L0040&amp;from=EN</a>  |