

# **CESOP VM - User Manual (UMN)**

TIS Central Electronic System Of Payment

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# 1 Document control information

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The document author and any reviewers are authorized to make the following types of changes to the document and related JIRA issues without requiring that the artifact be re-approved:

- Editorial, formatting, and spelling;
- Clarifications.

To request a change to this document, contact the document author or project owner.

Changes to this document are summarized in the table in reverse chronological order (the latest version first).

| Version                                  | Date   | Description  | Sections  |  |         |                            |  |                            |  |
|--|--|--|---|--|---------|----------------------------|--|----------------------------|--|
| 4.02                                     | 07 Mar 2025  | User Manual for CESOP VM v1.6.2, including the following RfC(s):   | 7.1, VM UMN - Mapping business rules & XSD version    |  |         |                            |  |                            |  |
|  |  | <table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-2771</a></td><td><a href="#">Increase allowed precision of fractional seconds in timestamps</a></td></tr><tr><td><a href="#">CESOP-2680</a></td><td><a href="#">Early implementation of CESOP-1997</a></td></tr></table> |   | Key  | Summary | <a href="#">CESOP-2771</a> | <a href="#">Increase allowed precision of fractional seconds in timestamps</a> | <a href="#">CESOP-2680</a> | <a href="#">Early implementation of CESOP-1997</a> |
|  |  | Key  |   | Summary  |         |                            |  |                            |  |
|  |  | <a href="#">CESOP-2771</a>   |   | <a href="#">Increase allowed precision of fractional seconds in timestamps</a> |         |                            |  |                            |  |
| <a href="#">CESOP-2680</a>               | <a href="#">Early implementation of CESOP-1997</a> |  |   |  |         |                            |  |                            |  |
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|  |  | <table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-2749</a></td><td><a href="#">Limit VLD timestamps to 3 decimal points of fractional seconds</a></td></tr></table>  |   | Key  | Summary | <a href="#">CESOP-2749</a> | <a href="#">Limit VLD timestamps to 3 decimal points of fractional seconds</a> |                            |  |
|  |  | Key  |   | Summary  |         |                            |  |                            |  |
|  |  | <a href="#">CESOP-2749</a>   |   | <a href="#">Limit VLD timestamps to 3 decimal points of fractional seconds</a> |         |                            |  |                            |  |
| <a href="#">1 issue</a>                  |  |  |   |  |         |                            |  |                            |  |
| Version Submitted for Information (SfI). |  |  |   |  |         |                            |  |                            |  |

| Version                    | Date  | Description  | Sections  |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
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| 3.10                       | 21 Aug 2024   | <div>Implementation of the following RfCs in the scope of CESOP v1.6.0.</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1724</a></td><td><a href="#">Add BRs to ensure proper use of optional description element for "OTHER" in enumerations</a></td></tr><tr><td><a href="#">CESOP-1693</a></td><td><a href="#">CESOP VM: CLI batch validation</a></td></tr><tr><td><a href="#">CESOP-1598</a></td><td><a href="#">Documenting the supported XSD versions for CESOP releases</a></td></tr><tr><td><a href="#">CESOP-1589</a></td><td><a href="#">Remove error codes enumeration from the XSD</a></td></tr><tr><td><a href="#">CESOP-1222</a></td><td><a href="#">New BR to validate if transactions are included in the PMT message in case of deletion request</a></td></tr><tr><td><a href="#">CESOP-1103</a></td><td><a href="#">Support all ISO-3166 for BICs</a></td></tr><tr><td><a href="#">CESOP-985</a></td><td><a href="#">Remove Business Rule MH-BR-0020 (error code 10020)</a></td></tr></table> <div><a href="#">7 issues</a></div> <div>Version Submitted for Review (SfR) in the scope of the RfA SC15-566</div> | Key   | Summary | <a href="#">CESOP-1724</a> | <a href="#">Add BRs to ensure proper use of optional description element for "OTHER" in enumerations</a> | <a href="#">CESOP-1693</a> | <a href="#">CESOP VM: CLI batch validation</a>      | <a href="#">CESOP-1598</a> | <a href="#">Documenting the supported XSD versions for CESOP releases</a>   | <a href="#">CESOP-1589</a> | <a href="#">Remove error codes enumeration from the XSD</a>        | <a href="#">CESOP-1222</a> | <a href="#">New BR to validate if transactions are included in the PMT message in case of deletion request</a> | <a href="#">CESOP-1103</a> | <a href="#">Support all ISO-3166 for BICs</a> | <a href="#">CESOP-985</a> | <a href="#">Remove Business Rule MH-BR-0020 (error code 10020)</a> | 6.2<br><br>Mapping business rules & XSD version (CESOP v1.6.0) |
| Key                        | Summary   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1724</a> | <a href="#">Add BRs to ensure proper use of optional description element for "OTHER" in enumerations</a>                        |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1693</a> | <a href="#">CESOP VM: CLI batch validation</a>  |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1598</a> | <a href="#">Documenting the supported XSD versions for CESOP releases</a>   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1589</a> | <a href="#">Remove error codes enumeration from the XSD</a>   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1222</a> | <a href="#">New BR to validate if transactions are included in the PMT message in case of deletion request</a>                  |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1103</a> | <a href="#">Support all ISO-3166 for BICs</a>   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-985</a>  | <a href="#">Remove Business Rule MH-BR-0020 (error code 10020)</a>  |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| 3.03                       | 18 Jun 2024   | <div>User Manual for CESOP VM v1.5.0, including the following RfC(s):</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1743</a></td><td><a href="#">Update links in VM UMN</a></td></tr><tr><td><a href="#">CESOP-1028</a></td><td><a href="#">CESOP VM: Update the validation API</a></td></tr><tr><td><a href="#">CESOP-970</a></td><td><a href="#">Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date</a></td></tr><tr><td><a href="#">CESOP-916</a></td><td><a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a></td></tr></table>   | Key   | Summary | <a href="#">CESOP-1743</a> | <a href="#">Update links in VM UMN</a>   | <a href="#">CESOP-1028</a> | <a href="#">CESOP VM: Update the validation API</a> | <a href="#">CESOP-970</a>  | <a href="#">Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date</a> | <a href="#">CESOP-916</a>  | <a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a> | Document history           |  |                            |   |                           |  |  |
| Key                        | Summary   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1743</a> | <a href="#">Update links in VM UMN</a>  |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-1028</a> | <a href="#">CESOP VM: Update the validation API</a>   |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-970</a>  | <a href="#">Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date</a> |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |
| <a href="#">CESOP-916</a>  | <a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a>  |  |   |         |                            |  |                            |   |                            |   |                            |  |                            |  |                            |   |                           |  |  |

| Version                    | Date   | Description   | Sections          |         |                            |  |   |
|----------------------------|--|---|-------------------|---------|----------------------------|--|---|
|                            |  | <a href="#">4 issues</a><br><br>Version Submitted for Information (SfI).  |                   |         |                            |  |   |
| 3.02                       | 26 Apr 2024  | Small correction on the list of RfCs in the scope of CESOP v1.4.5.<br>Following RfC(s) are in the scope of CESOP v1.4.5:<br><table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1888</a></td><td><a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a></td></tr></table> <a href="#">1 issue</a><br><br>Version Submitted for Information (SfI). | Key               | Summary | <a href="#">CESOP-1888</a> | <a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a> | Document history  |
| Key                        | Summary  |   |                   |         |                            |  |   |
| <a href="#">CESOP-1888</a> | <a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a> |   |                   |         |                            |  |   |
| 3.01                       | 22 Apr 2024  | Implementation of the following RfC(s), in the scope of CESOP v1.4.5:<br><table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1888</a></td><td><a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a></td></tr></table> <a href="#">1 issue</a><br><br>Version Submitted for Information (SfI) in the scope of RfA SC08-707.                       | Key               | Summary | <a href="#">CESOP-1888</a> | <a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a> | Mapping business rules & XSD version (CESOP v1.5.0)                         |
| Key                        | Summary  |   |                   |         |                            |  |   |
| <a href="#">CESOP-1888</a> | <a href="#">Trigger 99999 in case same reported payee is reported at least twice in the same message</a> |   |                   |         |                            |  |   |
| 3.00                       | 27 Mar 2024  | Implementation of the review comments and of the following RfC(s), in the scope of CESOP v1.5.0:<br><table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-916</a></td><td><a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a></td></tr></table> <a href="#">1 issue</a><br><br>Version Submitted for Acceptance (SfA) in the scope of RfA SC10-491.                                    | Key               | Summary | <a href="#">CESOP-916</a>  | <a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a>                                       | 4.3, 5.1, 8.1.1, 8.1.2, Mapping business rules & XSD version (CESOP v1.5.0) |
| Key                        | Summary  |   |                   |         |                            |  |   |
| <a href="#">CESOP-916</a>  | <a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a>                                       |   |                   |         |                            |  |   |
| 2.10                       | 14 Mar 2024  | Implementation of the following RfC(s), in the scope of CESOP v1.5.0:   | 7.2.2, 7.2.3, 8.1 |         |                            |  |   |

| Version                    | Date   | Description  | Sections               |         |                            |  |                            |  |  |
|----------------------------|--|--|------------------------|---------|----------------------------|--|----------------------------|--|--|
|                            |  | <table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1028</a></td><td><a href="#">CESOP VM: Update the validation API</a></td></tr><tr><td><a href="#">CESOP-1743</a></td><td><a href="#">Update links in VM UMN</a></td></tr></table> <a href="#">2 issues</a><br><br>Version Submitted for Review (SfR) in the scope of the RfA SC10-491.   | Key                    | Summary | <a href="#">CESOP-1028</a> | <a href="#">CESOP VM: Update the validation API</a>                    | <a href="#">CESOP-1743</a> | <a href="#">Update links in VM UMN</a> |  |
| Key                        | Summary  |  |                        |         |                            |  |                            |  |  |
| <a href="#">CESOP-1028</a> | <a href="#">CESOP VM: Update the validation API</a>                    |  |                        |         |                            |  |                            |  |  |
| <a href="#">CESOP-1743</a> | <a href="#">Update links in VM UMN</a>                                 |  |                        |         |                            |  |                            |  |  |
| 2.01                       | 17 Nov 2023  | Update of the confidentiality level of the present document, to "Publicly Available (PA)".<br>Version Submitted for Information (SfI).   | 1                      |         |                            |  |                            |  |  |
| 2.00                       | 11 Sep 2023  | Implementation of review comments.<br>Version Submitted for Acceptance (SfA) in the scope of RfA SC08-279.   | 6.1, 8.1.1, 8.1.2, 8.2 |         |                            |  |                            |  |  |
| 1.30                       | 29 Aug 2023  | Changelog added, highlighting the changes between 1.2 and 1.3<br><br>Elaborate on shaded and regular jars. Provide more examples of API usage through the implementation of the following RfC:<br><br><table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-1099</a></td><td><a href="#">CESOP-VM - remove internal identifiers from public API</a></td></tr></table> <a href="#">1 issue</a><br><br>Version Submitted for Review (SfR) in the scope of the RfA SC08-279 | Key                    | Summary | <a href="#">CESOP-1099</a> | <a href="#">CESOP-VM - remove internal identifiers from public API</a> | 8, 9, 10                   |  |  |
| Key                        | Summary  |  |                        |         |                            |  |                            |  |  |
| <a href="#">CESOP-1099</a> | <a href="#">CESOP-VM - remove internal identifiers from public API</a> |  |                        |         |                            |  |                            |  |  |
| 1.20                       | 23 May 2023  | Implementation of the following RfC:<br><br><table><tr><th>Key</th><th>Summary</th></tr><tr><td><a href="#">CESOP-898</a></td><td><a href="#">Update VM UMN following comments of v1.10</a></td></tr></table> <a href="#">1 issue</a><br><br>Version Submitted for Information (SfI) in the scope of SC07-415  | Key                    | Summary | <a href="#">CESOP-898</a>  | <a href="#">Update VM UMN following comments of v1.10</a>              | 5.1,7,8                    |  |  |
| Key                        | Summary  |  |                        |         |                            |  |                            |  |  |
| <a href="#">CESOP-898</a>  | <a href="#">Update VM UMN following comments of v1.10</a>              |  |                        |         |                            |  |                            |  |  |
| 1.10                       | 26 Apr 2023  | Implementation of comments received from the member states.<br>Version Submitted for Information (SfI) in the scope of SC07-384  | 5, 6,7,8,9             |         |                            |  |                            |  |  |



| Version | Date              | Description  | Sections                                     |
|---------|-------------------|--|--|
| 1.00    | 31<br>Jan<br>2023 | Implementation of review comments.<br>Version Submitted for Acceptance (SfA) in the scope of RfA SC08-047. | 5.2, 5.4, 5.7, 6.1, 7.2, 7.3, 7.4, 8 and 8.1 |
| 0.10    | 16<br>Jan<br>2023 | Initial version of the document in the scope of RfA SC08-047.<br>Version Submitted for Review (SfR).       | All sections                                 |

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## 4 Introduction

### 4.1 Document purpose

The purpose of this document is to provide a user manual to the intended audience that explains how to operate the CESOP Validation Module using the command-line or programmatic interface.

Since access to Jira and Nexus is restricted, please check the DG TAXUD file-sharing system CIRCABC (in the [folder for MS](#) or [public folder](#)) or the [EU Website](#) for the required resources.

### 4.2 Target audience

The target audience for this document includes:

- DG TAXUD, in particular, B4 as System Supplier and C4 as System Owner;
- The Payment Service Providers (PSPs);
- The Member State TAX Administrations (MSs);
- The Quality Assurance (QA5);
- The DG TAXUD contractors.

### 4.3 Scope

This document describes how the CESOP Validation Module is working, which rules are covered by which supported XSD version and provides detailed instructions on the use cases that validate the CESOP payment messages.

### 4.4 Reference documents

The table below lists the documents that are referred to in the current document.

| Reference | Title                  | Originator | Version | Date        |
|-----------|------------------------|------------|---------|-------------|
| R01       | CESOP – XSD User Guide | SOFT-DEV   | 5.00    | 05 Apr 2024 |

### 4.5 Applicable documents

The table below lists the documents to which the current document must be compliant.

| Reference | Title                       | Originator        | Version | Date        |
|-----------|-----------------------------|-------------------|---------|-------------|
| A01       | SOFT-DEV Framework Contract | TAXUD/2021/CC/162 | N/A     | 24 Jun 2021 |
| A02       | Specific Contract n°20      | TAXUD/2024/DE/122 | N/A     | 23 Apr 2024 |

## 4.6 Abbreviations and acronyms

For a better understanding of the present document, the following table provides a list of the principal abbreviations and acronyms used.

See also the 'list of acronyms' on TEMPO.

| Abbreviation/Acronym | Definition   |
|----------------------|--|
| API                  | Application Programming Interface                      |
| CESOP                | <a href="#">Central Electronic System Of Payments</a>  |
| CLI                  | Command Line Interface                                 |
| IPM                  | Installation Procedure Manual                          |
| JAR                  | Java Archive   |
| Javadoc              | API documentation in HTML format from Java source code |
| JVM                  | Java Virtual Machine                                   |
| MS                   | Member State   |
| N/A                  | Not Applicable   |
| NA                   | National Administration                                |
| PMT                  | Paiement Data (as Message Type)                        |
| VLD                  | Validation Result (as Message Type)                    |
| XML                  | eXtensible Markup Language                             |
| XSD                  | XML Schema Definition                                  |
| OS                   | Operating System                                       |
| RHEL                 | Red Hat Enterprise Linux                               |
| SPI                  | Java Service Provider Interface                        |

## 4.7 Definitions

See the 'glossary' on [TEMPO](#) and the definitions from the XSD User Guide [[R01](#)].

## 5 General Information

### 5.1 System Overview

The CESOP Validation Module v1.6.0 (as any subsequent minor version) provides two interfaces:

1. The Command Line Interface (CLI) (see [Command Line Interface](#)) provides access to the functionalities from the command line.
2. The Application Programming Interface (API) (see [Programmatic Interface](#)) provides programmatic access to the functionalities.

In both cases, the CESOP Validation Module has:

- as **input**: the CESOP XML file to be validated. This file must be a Payment data message (with “PMT” as MessageType);
- as **output**: the resulting ValidationResult, which is a CESOP XML file with “VLD” as MessageType.

For details on the Validation Result structure, please refer to the XSD User Guide [\[R01\]](#).

The CESOP validation module v1.6.0 (as any subsequent minor version) is compatible with versions **4.00, 4.01, 4.02, and 4.03 of the XSD**. The implementation works as follows:

- If a file is sent for validation with a supported version, the VM will always validate this file according to that version (e.g. if a file from v4.00 is sent for validation, the validation result will be generated based on the v4.00 of the XSD);
- If a file is sent for validation where the version of the XSD is not defined or is defined but not supported, the file will be considered invalid and will thus be fully rejected (with a related error message stating that the submitted file is not compliant with the supported versions of the XSD, and listing those supported versions);
- If the file header cannot be parsed, the response will be rendered for the default (latest) version which may not be the same as in the request.

### 5.2 Hardware requirements

The CESOP Validation Module requires this minimum hardware setup :

|                             |  |
|-----------------------------|--|
| <b>Processor</b>            | Running any Java-compatible instruction set, docked at 1 GHz |
| <b>RAM</b>                  | 256 MB   |
| <b>Free hard disk space</b> | 90 MB  |

### 5.3 System requirements

The target system must meet the following requirements to execute the CESOP Validation Module:

|                              |   |
|------------------------------|---|
| <b>Java</b>                  | Version 8 or higher                     |
| <b>Operating System (OS)</b> | Any OS able to run Java SE <sup>1</sup> |

## **5.4 Authorized Use Permission**

No restriction on the application usage.

## **5.5 User Support**

In case of issue, the ITSM Service Desk must be contacted via [Support@itsmtaxud.europa.eu](mailto:Support@itsmtaxud.europa.eu).

## 6 Command Line Interface

### 6.1 Installation of the application

Download the VM jar file (please consult [appendix 9.1](#)) and check the parameters (specified in [chapter 7.3](#)) that can be used for its execution.

### 6.2 CLI usage

The CESOP Validation Module is available as a Java jar file that can be executed using a JVM.

The command to validate a CESOP XML file using the standard console output has the following syntax:

```
java -jar cesop-vm-application-<VM version>.jar <path-to-message>
```

where

- **<path-to-message>** is the path to the CESOP XML file to validate.

Only XML output is written to standard output(stdout). If any execution error occurs, it's written to standard error(stderr) and the program exists with non-0 code. The command to validate a CESOP XML file using an output file has the following syntax:

```
java -jar cesop-vm-application-<VM version>.jar input.xml > output.xml
```

It is also possible to validate multiple XML files at once if they are part of the same folder:

```
java -jar cesop-vm-application-<VM version>.jar <path-to-folder>
```

This will create a CSV file with the following information for each XML file validated:

- **File Path** (relatively to provided folder);
- **File Size** (in bytes);
- **MessageRefId** (if readable);
- **Validation Result** (VALIDATED, PARTIALLY\_REJECTED, FULLY\_REJECTED).

When validating multiple files at once, in addition to the CSV results, it is possible to generate all related VLD files using the optional flag "true" at the end of the command.

```
java -jar cesop-vm-application-<VM version>.jar <path-to-folder> true
```

For more details on the CESOP XML file structure, please refer to the XSD User Guide [\[R01\]](#).

### 6.3 Configuration of the application

The CESOP Validation Module uses the following parameters:

| Parameter name      | Description  | Format       | Default value |
|---------------------|--|--------------|---------------|
| psp.xsd.max.size    | indicates the maximum file size allowed as input (in bytes)  | int          | 1073741824    |
| business.min.period | indicates the CESOP starting period (to allow testing in the future)   | date (YYYYQ) | 20241*        |
| business.max.errors | indicates the maximum number of errors allowed in the ValidationResult output (to avoid too big output file) | int          | 5000          |

**Example:**

```
java -Dbusiness.min.period=20241 -Dbusiness.max.errors=10 -jar cesop-vm-
application-1.6.0.jar input.xml
```

\* The business.min.period setting can freely be updated as long as it refers to a past or ongoing period, otherwise, the VM will reject everything.



## 7 Programmatic Interface

### 7.1 Installation of the library

Add a dependency on cesop-validation to your project. It is available as a regular jar and a shaded jar.

```
<dependencies>
  <dependency>
    <groupId>eu.europa.ec.taxud.cesop</groupId>
    <artifactId>cesop-validation</artifactId>
    <version>1.6.2</version>
    <classifier>shaded</classifier>
  </dependency>
</dependencies>
```

#### 7.1.1 Shaded jar

With `shaded` classifier, this jar encapsulates 3rd-party dependencies, meaning it's an all-in-one archive.

It also does not include META-INF/services folder from woodstox-core, effectively disabling the Java SPI for that module. This is helpful when the library is used in projects with other XML libraries that also provide their implementations via SPI.

This is the recommended variant of the library because it is easier and safer to use.

#### 7.1.2 Regular jar

This is a regular maven-built thin jar. It has transitive dependencies on stax2-api and woodstox-core. Since this jar is distributed as a regular file and not via maven repository, you may need to add the transitive dependencies explicitly:

```
<dependencies>
  <dependency>
    <groupId>org.codehaus.woodstox</groupId>
    <artifactId>stax2-api</artifactId>
    <version>4.2.1</version>
  </dependency>
  <dependency>
    <groupId>com.fasterxml.woodstox</groupId>
    <artifactId>woodstox-core</artifactId>
    <version>6.5.0</version>
  </dependency>
</dependencies>
```

This variant may be used instead of the shaded jar when the project already depends on stax2-api and woodstox. In this case, using the shaded jar will add a lot of duplicate classes into the final project distributive.

### 7.2 API usage

CESOP VM Javadoc is included into CESOP FSR DOC archive (please consult [appendix 9.1](#)). It contains the documentation for the public and protected API of the Validation Module. It does not include private or package-private API documentation.

### 7.2.1 Basic file validation

The entry point for the programmatic access is the `PspFileValidator` class, managing the validation of the message and the generation of the `ValidationResult`.

```
import eu.europa.ec.taxud.cesop.validation.PspFileValidator;
import eu.europa.ec.taxud.cesop.validation.PspValidationResult;

PspValidationResult result = PspFileValidator.createDefault().validate(new
File("/test.xml"));
System.out.printf("File validated with %s errors%n",
result.getErrors().size());
```

### 7.2.2 Evaluate validation result

Evaluate the overall type of validation result - valid, full or partial rejection.

```
import eu.europa.ec.taxud.cesop.domain.ValidationResultTypeEnum;
import eu.europa.ec.taxud.cesop.validation.PspValidationResult;

PspValidationResult result = PspFileValidator.createDefault().validate(new
File("/test.xml"));
ValidationResultTypeEnum validationType = result.getResultType();
```

### 7.2.3 Render XML reply

Render an XML string with VLD reply message. The same as produced by CLI or CESOP core.

```
import java.io.ByteArrayOutputStream;
import eu.europa.ec.taxud.cesop.validation.PspValidationResult;
import eu.europa.ec.taxud.cesop.writers.ValidationMessageXmlWriter;

PspValidationResult result = PspFileValidator.createDefault().validate(new
File("/test.xml"));
String resultXML = result.getResultXml();
```

### 7.2.4 Configuration

In order to override the default settings (See [Configuration of the application](#)), the validator can be created via constructor. Normally, it should be used with default settings, but overriding them may be helpful in testing.

```
int transactionsPerPart = 10;
int minBusinessPeriod = 20211;
int maxInputBytes = 1024 * 1024;
int maxErrors = 50;
ValidationSettings settings = new ValidationSettings(minBusinessPeriod,
maxInputBytes, maxErrors);
PspFileValidator validator = new PspFileValidator(transactionsPerPart,
settings);
```

## 8 Appendix

### 8.1 Links

#### 8.1.1 Nexus

[CESOP FSR folder on Nexus](#) contains three FSR archives per release:

- SRC with source code for CESOP VM API;
- DOC with javadoc for CESOP VM API;
- BIN with jar files for CESOP VM CLI and API.

Starting with CESOP v1.4.0, a dedicated VM package is also available and it contains all VM-related artifacts.

As MS or PSP, this link is not accessible - refer to the [below section](#) to find the CESOP VM package.

#### 8.1.2 EU CESOP page

The latest version of the CESOP VM is publicly available at the following link:

[https://taxation-customs.ec.europa.eu/taxation-1/central-electronic-system-payment-information-cesop\\_en](https://taxation-customs.ec.europa.eu/taxation-1/central-electronic-system-payment-information-cesop_en)

##### 8.1.2.1 Historical versions

Historical versions of the CESOP VM can be found at the following link:

<https://circabc.europa.eu/ui/group/b79af4a6-a4e4-4e26-8cd9-02f9577a6f93>

- 
1. Note that the CESOP Validation Module has been tested only on Windows and RHEL OS \_\_\_\_

## 9 VM UMN - Mapping business rules & XSD version

### 9.1 Mapping between XSD, XSD User Guide and CESOP release versions

The following table shows how the XML schema versions are correlated with the XSD User Guide and CESOP release versions (see also the below section [List of RfCs impacting the XSD \(User Guide\) per CESOP release](#)):

| XML schema version | XSD User Guide version | CESOP release version |
|--------------------|------------------------|-----------------------|
| 4.03               | 5.00                   | 1.6.0                 |
| 4.02               | 4.80                   | 1.5.0                 |
| 4.02               | 4.61                   | 1.3.0, 1.4.0          |
| 4.02               | 4.60                   |                       |
| 4.02               | 4.40                   |                       |
| 4.01               | 4.20                   |                       |
| 4.00               | 4.00                   | 1.2.0                 |

Note that:

- The above mapping only considers the final document versions delivered in the scope of a release (i.e. intermediate versions, including versions sent for review, are not listed);
- It might happen that a CESOP release does not foresee a change in the XML schema nor in the XSD User Guide. In this latter scenario, the XSD and XSD user guide versions mapped with the previous CESOP release version listed are to be considered.

### 9.2 Mapping between business rules and XSD version

The below table specifies the business rules that are (or were) triggered by the CESOP VM. Note that:

- "Covered by VM" allows to know whether the rule is checked by the CESOP Validation Module or not (i.e. if the rule is stateless or stateful);
- If filled with "x", it means that the rule will breach for the related XSD version(s);
- If filled with "-", it means that the rule is removed for the related XSD version(s);
- This table only applies to version 1.6.0 of CESOP and thus to the v1.6.0 validation module (as any subsequent minor version);
- Starting from the XSD v4.03, a new type of message "PNG" will be introduced. Those ping messages allow National Tax Administrations to perform some connectivity testing without altering the Production data. Those messages, once successfully parsed, are thus **not** validated against the business rules.

## 9.2.1 Business rules

| <ul style="list-style-type: none"> <li><b>CESOP v1.6.0</b></li> <li><b>VM v1.6.0</b></li> </ul> |            |               | XSD version |       |       |       |  |
|---|------------|---------------|-------------|-------|-------|-------|--|
| Business rule ID  | Error code | Covered by VM | v4.00       | v4.01 | v4.02 | v4.03 | Comment  |
| MH-BR-0010  | 10010      | ✗             | x           | x     | x     | x     |  |
| MH-BR-0020  | 10020      | -             | -           | -     | -     | -     | Removed in release v1.6.0 & for all XSD versions: <a href="#">CESOP-985</a><br>- <b>COMPLETED</b>  |
| MH-BR-0030  | 10030      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0040  | 10040      | ✗             | x           | x     | x     | x     |  |
| MH-BR-0050  | 10050      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0060  | 10060      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0070  | 10070      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0080  | 10080      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0090  | 10090      | ✓             | x           | x     | x     | x     | Updated in release v1.3.0 & for all XSD versions: <a href="#">CESOP-818</a><br>- <b>COMPLETED</b>  |
| MH-BR-0100  | 10100      | ✗             | x           | x     | x     | x     |  |
| MH-BR-0110  | 10110      | ✓             | x           | x     | x     | x     |  |
| MH-BR-0120  | 10120      | ✗             | x           | x     | x     | x     | Added in release v1.3.0 & for all XSD versions (triggering error code 99999 with v4.00): <a href="#">CESOP-567</a><br>- <b>COMPLETED</b> |
| CM-BR-0010  | 20010      | ✓             | x           | x     | x     | x     |  |
| CM-BR-0020  | 20020      | ✗             | x           | x     | x     | x     |  |
| CM-BR-0030  | 20030      | ✓             | x           | x     | x     | x     |  |
| CM-BR-0040  | 20040      | ✗             | x           | x     | x     | x     |  |
| CM-BR-0050  | 20050      | ✓             | x           | x     | x     | x     |  |
| CM-BR-0060  | 20060      | ✓             | x           | x     | x     | x     |  |
| CM-BR-0070  | 20070      | ✗             | x           | x     | x     | x     |  |
| CM-BR-0100  | 20100      | ✓             | x           | x     | x     | x     | Updated in release v1.6.0 and for all XSD versions: <a href="#">CESOP-1103</a><br>- <b>COMPLETED</b>                                     |
| CM-BR-0110  | 20110      | ✓             | x           | x     | x     | x     |  |

| • CESOP<br>v1.6.0<br><br>• VM<br>v1.6.0 |       |   | XSD version |   |   |   |   |
|---|-------|---|-------------|---|---|---|---|
|   |       |   |             |   |   |   |   |
| CM-BR-0120                              | 20120 | ✗ | -           | - | - | x | Added in release v1.6.0 & applicable from XSD v4.03 on: <a href="#">↗</a> <a href="#">CESOP-908</a> - <b>COMPLETED</b>  |
| CM-BR-0130                              | 20130 | ✓ | -           | - | - | x | Added in release v1.6.0 & applicable from XSD v4.03 on: <a href="#">↗</a> <a href="#">CESOP-1724</a> - <b>COMPLETED</b>   |
| CM-BR-0140                              | 20140 | ✓ | -           | - | - | x | Added in release v1.6.0 & applicable from XSD v4.03 on: <a href="#">↗</a> <a href="#">CESOP-1724</a> - <b>COMPLETED</b>   |
| CM-BR-0150                              | 20150 | ✓ | x           | x | x | x | Added in release v1.6.2 & applicable for all XSD versions (triggering error code 99999 with v4.00, v4.01 and v4.02): <a href="#">↗</a> <a href="#">CESOP-2680</a> - Early implementation of CESOP-1997 <b>FAT COMPLETED</b> & <a href="#">↗</a> <a href="#">CESOP-1997</a> - Create a dedicated error code for the case of same payee reported under different ReportedPayee elements <b>APPROVED</b> |
| PS-BR-0010 <sup>1</sup>                 | 30010 | - | -           | - | - | - | Removed in release v1.5.0 & for all XSD versions: <a href="#">↗</a> <a href="#">CESOP-916</a> - <b>COMPLETED</b>  |
| RP-BR-0010                              | 40010 | ✓ | x           | x | x | x |   |
| RP-BR-0020                              | 40020 | ✓ | x           | x | x | x |   |
| RP-BR-0030                              | 40030 | ✓ | x           | x | x | x |   |
| RP-BR-0040                              | 40040 | ✓ | x           | x | x | x |   |
| RP-BR-0050                              | 40050 | ✓ | x           | x | x | x |   |
| RP-BR-0060                              | 40060 | ✓ | x           | x | x | x |   |
| RP-BR-0070                              | 40070 | ✓ | x           | x | x | x | Updated in release v1.6.0 and for all XSD versions: <a href="#">↗</a> <a href="#">CESOP-1103</a> - <b>COMPLETED</b>   |
| RP-BR-0080                              | 40080 | ✓ | x           | x | x | x |   |
| RP-BR-0090                              | 40090 | ✓ | -           | - | - | x | Added in release v1.6.0 & applicable from XSD v4.03 on: <a href="#">↗</a> <a href="#">CESOP-1222</a> - <b>COMPLETED</b>   |
| RT-BR-0010                              | 45010 | ✓ | x           | x | x | x |   |
| RT-BR-0020                              | 45020 | - | -           | - | - | - | Removed in release v1.3.0 & for all XSD versions (obsolete rule): <a href="#">↗</a> <a href="#">CESOP-930</a> - <b>COMPLETED</b>  |

| • CESOP v1.6.0<br>• VM v1.6.0 |       |   | XSD version |   |   |   |  |
|-------------------------------|-------|---|-------------|---|---|---|--|
| RT-BR-0030 <sup>2</sup>       | 45030 | ✓ | x           | x | x | x | Updated in release v1.5.0 and for all XSD versions: <a href="#">CESOP-970</a><br>- <b>COMPLETED</b>                                      |
| RT-BR-0040                    | 45040 | ✓ | x           | x | x | x | As from release v1.6.0, the refund identifier can be equal to the original transaction: <a href="#">CESOP-1494</a><br>- <b>COMPLETED</b> |
| RT-BR-0050                    | 45050 | ✗ | x           | x | x | x | As from release v1.6.0, the refund identifier can be equal to the original transaction: <a href="#">CESOP-1494</a><br>- <b>COMPLETED</b> |
| RT-BR-0060                    | 45060 | ✓ | x           | x | x | x |  |
| RT-BR-0080                    | 45080 | ✓ | x           | x | x | x |  |

## 9.2.2 Technical rules





| • CESOP v1.6.0<br>• VM v1.6.0 |            |               | XSD version |       |       |       |  |
|-------------------------------|------------|---------------|-------------|-------|-------|-------|--|
| Technical rule ID             | Error code | Covered by VM | v4.00       | v4.01 | v4.02 | v4.03 | Comment  |
| CM-TR-0010                    | 50010      | ✓             | x           | x     | x     | x     |  |
| CM-TR-0020                    | 50020      | ✗             | x           | x     | x     | x     |  |
| CM-TR-0030                    | 50030      | ✗             | x           | x     | x     | x     |  |
| CM-TR-0040                    | 50040      | ✗             | x           | x     | x     | x     |  |
| CM-TR-0050                    | 50050      | ✗             | x           | x     | x     | x     |  |
| CM-TR-0060                    | 50060      | ✗             | x           | x     | x     | x     |  |
| CM-TR-0070                    | 50070      | ✓             | x           | x     | x     | x     |  |
| CM-TR-0080                    | 50080      | ✓             | x           | x     | x     | x     |  |
| CM-TR-9000                    | 99999      | ✓             | x           | x     | x     | x     | Covers the following case(s): <ul style="list-style-type: none"> <li>When a message includes at least two same payees reported under different ReportedPayee elements - Added in release v1.4.5 &amp; for all XSD versions: <a href="#">CESOP-1888</a><br/>- <b>COMPLETED</b></li> </ul> |

## 9.3 List of RfCs impacting the XSD (User Guide) per CESOP release

### 9.3.1 CESOP v1.3.0

| Key                       | Summary   | T   | Component/s                                   | Labels   |
|---------------------------|---|---|---|--|
| <a href="#">CESOP-567</a> | <a href="#">Validate if transmitting country equals the partner id country</a>            |    | FSR, TDS, XSD, XSD User Guide                 | XSD_UserGuide_v4.20<br>XSD_v4.01                     |
| <a href="#">CESOP-568</a> | <a href="#">Validate if transmitting country equals the country of the uploader</a>       |    | FSR, TDS, XSD, XSD User Guide                 | XSD_UserGuide_v4.20<br>XSD_v4.01                     |
| <a href="#">CESOP-811</a> | <a href="#">Migration of CFSS into XSD User Guide</a>                                     |    | XSD User Guide                                | XSD_UserGuide_v4.20                                  |
| <a href="#">CESOP-818</a> | <a href="#">XSD - Update MH-BR-0090 to reject VLD messages (in both VM and CESOP app)</a> |    | FSR, TDS, VM-FSR, VM-TDS, XSD, XSD User Guide | AMD XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02 |
| <a href="#">CESOP-819</a> | <a href="#">CESOP - TransactionIdentifier Uniqueness in the System</a>                    |  | XSD, XSD User Guide                           | XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02     |
| <a href="#">CESOP-821</a> | <a href="#">XSD (User Guide) - Update of representative definitions</a>                   |  | XSD, XSD User Guide                           | XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02     |
| <a href="#">CESOP-863</a> | <a href="#">XSD User Guide - Update footnote related to files compression</a>             |  | XSD User Guide                                | XSD-Addendum<br>XSD_UserGuide_v4.40                  |
| <a href="#">CESOP-864</a> | <a href="#">XSD - Update regex of TAXIdentification_Type</a>                              |  | XSD, XSD User Guide                           | XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02     |
| <a href="#">CESOP-870</a> | <a href="#">XSD User guide - Removal of DAC2 references</a>                               |  | XSD User Guide                                | XSD-Addendum<br>XSD_UserGuide_v4.40                  |
| <a href="#">CESOP-878</a> | <a href="#">XSD - Update of the Timestamp validation regex</a>                            |  | XSD, XSD User Guide                           | XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02     |
| <a href="#">CESOP-903</a> | <a href="#">XSD material update the comment for StringMin1Max40_Type</a>                  |  | XSD   | XSD_UserGuide_v4.20<br>XSD_v4.01                     |
| <a href="#">CESOP-918</a> | <a href="#">Clarification RP-BR-0040 in XSD user guide</a>                                |  | XSD User Guide                                | XSD-Addendum<br>XSD_UserGuide_v4.40                  |
| <a href="#">CESOP-930</a> | <a href="#">Remove obsolete business rule RT-BR-0020 (error code 45020)</a>               |  | XSD, XSD User Guide                           | XSD-Addendum<br>XSD_UserGuide_v4.40<br>XSD_v4.02     |



| Key                        | Summary   | T   | Component/s         | Labels                                  |
|----------------------------|---|---|---------------------|---|
| <a href="#">CESOP-967</a>  | <a href="#">Partial Rejection of a Spontaneous Correction Data Message</a>                            |  | XSD User Guide      | AMD XSD-Addendum<br>XSD_UserGuide_v4.40 |
| <a href="#">CESOP-1032</a> | <a href="#">[XSD User Guide] Correlation between two Payment Data messages</a>                        |  | XSD User Guide      | XSD_UserGuide_v4.60                     |
| <a href="#">CESOP-1113</a> | <a href="#">XSD - Update regex of TAXIdentification_Type to consider minus "-"</a>                    |  | XSD, XSD User Guide | XSD_UserGuide_v4.60<br>XSD_v4.02        |
| <a href="#">CESOP-1194</a> | <a href="#">CESOP XSD User Guide - Clarification regarding message where all payees are erroneous</a> |  | XSD User Guide      | XSD_UserGuide_v4.60                     |






[17 issues](#)

### 9.3.2 CESOP v1.4.0

| Key | Summary | T | Component/s | Labels |
|-----|---------|---|-------------|--------|
|-----|---------|---|-------------|--------|

[No issues found](#)






### 9.3.3 CESOP v1.5.0

| Key                        | Summary   | T   | Component/s                                      | Labels                           |
|----------------------------|---|---|--|----------------------------------|
| <a href="#">CESOP-916</a>  | <a href="#">Remove Business Rule PS-BR-0010 (error code 30010)</a>  |  | FSR, TDS, VM-FSR, VM-TDS, VM-UMN, XSD User Guide | XSD_UserGuide_v5.00              |
| <a href="#">CESOP-970</a>  | <a href="#">Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date</a> |  | FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide      | XSD_UserGuide_v5.00              |
| <a href="#">CESOP-1493</a> | <a href="#">Adding clarifications for the correlation mechanism in the XSD User Guide</a>                                       |  | TS, XSD User Guide                               | XSD_UserGuide_v4.80              |
| <a href="#">CESOP-1715</a> | <a href="#">Handle "1" as "true" for xs:boolean fields</a>  |  | FSR, TDS, VM-FSR, XSD, XSD User Guide            | XSD_UserGuide_v4.80<br>XSD_v4.02 |
| <a href="#">CESOP-1782</a> | <a href="#">CESOP non EU PSP BIC - Update the XSD User Guide to propose using the 'Other'</a>                                   |  | XSD User Guide                                   | XSD_UserGuide_v4.80              |


[5 issues](#)

### 9.3.4 CESOP v1.6.0

| Key                        | Summary  | T   | Component/s  | Labels  |
|----------------------------|--|---|--|---|
| <a href="#">CESOP-908</a>  | <a href="#">Correction of reported payees initially reported in different payment data messages - new BR</a>   |    | FSR, TDS, XSD User Guide                                   | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-985</a>  | <a href="#">Remove Business Rule MH-BR-0020 (error code 10020)</a>   |    | FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide                | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1103</a> | <a href="#">Support all ISO-3166 for BICs</a>  |    | FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide                | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1222</a> | <a href="#">New BR to validate if transactions are included in the PMT message in case of deletion request</a> |    | FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide                | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1226</a> | <a href="#">Add a new scenario for the case where all payees are partially rejected</a>                        |    | XSD User Guide   | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1336</a> | <a href="#">Extend length of transactionidentifier</a>   |  | FS, FSR, TS, VM-FSR, VM-TDS, XSD, XSD User Guide           | TESTAX:High<br>XSD_UserGuide_v5.00<br>XSD_v4.03                   |
| <a href="#">CESOP-1338</a> | <a href="#">Add information regarding the implementation of error code 20010</a>                               |  | XSD User Guide   | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1360</a> | <a href="#">Settlement date as new value in TransactionDateType_Type enumeration</a>                           |  | FS, FSR, TDS, TS, VM-FSR, VM-TDS, XSD, XSD User Guide      | XSD_UserGuide_v5.00<br>XSD_v4.03                                  |
| <a href="#">CESOP-1480</a> | <a href="#">Reporting of both BIC AND Account Number must be allowed by XSD</a>                                |  | FS, FSR, TDS, TS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide | PayeeCatalogue<br>TESTAX:High<br>XSD_UserGuide_v5.00<br>XSD_v4.03 |
| <a href="#">CESOP-1494</a> | <a href="#">Override transaction IDs in case the refund ID the same</a>  |  | FSR, TDS, TS, XSD User Guide                               | XSD_UserGuide_v5.00   |
| <a href="#">CESOP-1541</a> | <a href="#">Add support for VOES identifiers in PMT messages</a>   |  | FS, FSR, TDS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide     | PayeeCatalogue<br>TESTAX:High<br>XSD_UserGuide_v5.00<br>XSD_v4.03 |
| <a href="#">CESOP-1589</a> | <a href="#">Remove error codes enumeration from the XSD</a>  |  | FS, FSR, TDS, VM-FSR, VM-TDS, VM-UMN, XSD, XSD User Guide  | TESTAX:High<br>XSD_UserGuide_v5.00<br>XSD_v4.03                   |

| Key                        | Summary  | T   | Component/s  | Labels                           |
|----------------------------|--|---|--|----------------------------------|
| <a href="#">CESOP-1598</a> | <a href="#">Documenting the supported XSD versions for CESOP releases</a>                                |  | FSR, VM-UMN, XSD User Guide                            | XSD_UserGuide_v5.00              |
| <a href="#">CESOP-1681</a> | <a href="#">XSD - Add optional description element for "OTHER" in enumerations</a>                       |  | FS, FSR, TDS, TS, XSD, XSD User Guide                  | XSD_UserGuide_v5.00<br>XSD_v4.03 |
| <a href="#">CESOP-1694</a> | <a href="#">CESOP PING message type</a>  |  | FS, FSR, TDS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide | XSD_UserGuide_v5.00<br>XSD_v4.03 |
| <a href="#">CESOP-1706</a> | <a href="#">XSD - Currency Code Sierra Leone from SLL to SLE</a>   |  | FSR, TDS, XSD  | XSD_UserGuide_v5.00<br>XSD_v4.03 |
| <a href="#">CESOP-1724</a> | <a href="#">Add BRs to ensure proper use of optional description element for "OTHER" in enumerations</a> |  | FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide            | XSD_UserGuide_v5.00              |

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The new business rule CM-BR-0150 with the error code 20150 (with XSD v4.03) or 99999 (with XSD v4.00, v4.01 or v4.02), published in the XSD User Guide v6.00, has been implemented via  [CESOP-2680](#) - Early implementation of CESOP-1997 **FAT COMPLETED** in CESOP v1.6.2.

1. Note that this rule has been removed from CESOP v1.5.0 on, even if the XSD User Guide v4.80 (associated with CESOP v1.5.0) includes this rule. \_\_\_\_
2. Note that this rule has been updated from CESOP v1.5.0 on, even if it was updated in the XSD User Guide v5.00 (associated with CESOP v1.6.0). \_\_\_\_

## 10 VM UMN - VM scenarios

### 10.1 Abbreviations used

| Abbreviation | Definition                                       |
|--------------|--|
| VM           | Validation Module                                |
| CESOP        | Central Electronic System of Payment Information |
| PSP          | Payment Service Provider                         |
| XML          | Extensible Markup Language                       |
| XSD          | XML Schema Definition                            |
| N.B.         | Nota Bene  |

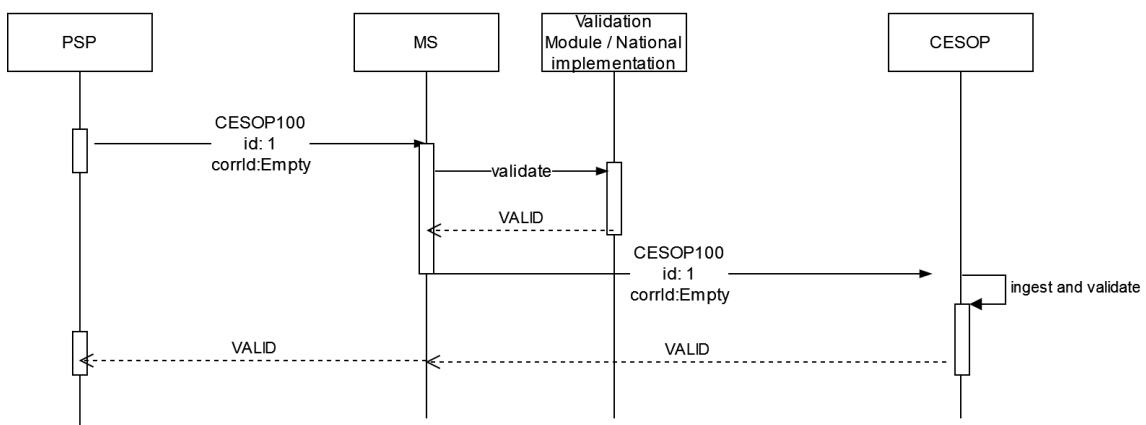
### 10.2 General Information

- The use of the VM is optional;
- VM validates only the stateless business rules;
- The PARTIAL\_REJECTION response is introduced with the v1.2.0 of the VM.

### 10.3 Scenarios that describe how the VM should be used and how it should NOT be used.

#### 10.3.1 Valid scenario

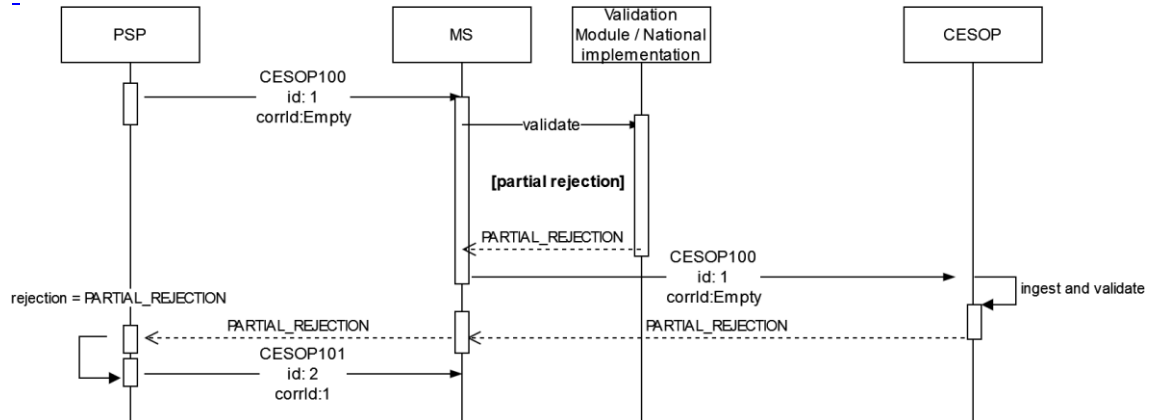
10.3.1.1 Description: The VM and CESOP confirm the XML sent by the PSP is valid and the response it is sent back to the PSP by CESOP via the MS



## 10.3.2 Partial Rejection scenario

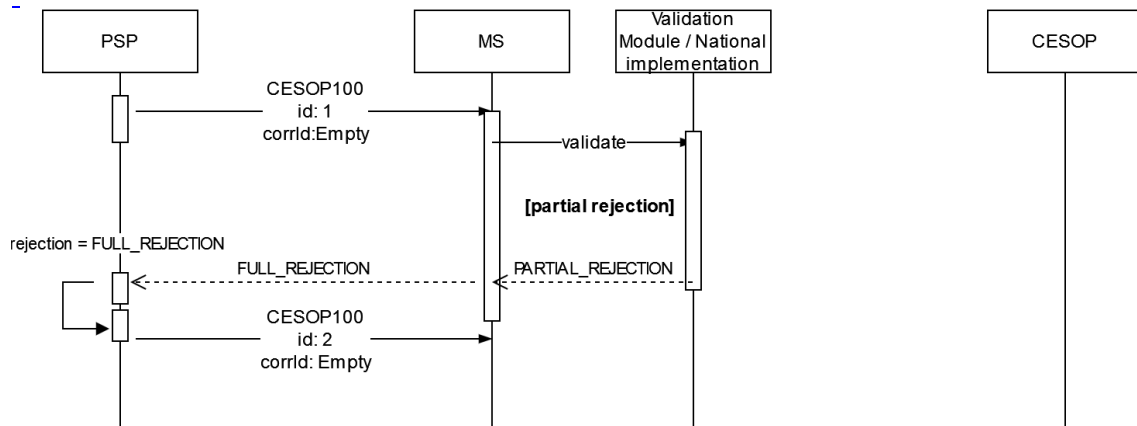
### 10.3.2.1 Forward partial rejection

10.3.2.1.1 Description: The PSP sends an XML file that is partially rejected at MS level (either by the VM or by a national implementation based on the XSD User Guide). The MS chooses to continue the process and sends the XML file to CESOP. The MS must wait the validation result from CESOP and only after inform the PSP. More details on the scenario 3.6



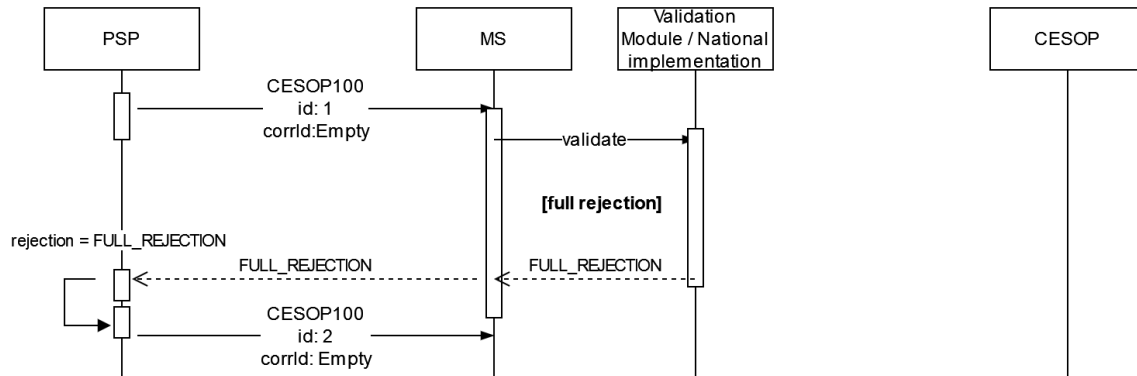
### 10.3.2.2 Downgrade partial rejection to full rejection

10.3.2.2.1 Description: The PSP sends an XML file that is partially rejected at MS level (either by the VM or by a national implementation based on the XSD User Guide). The MS chooses to stop the process and inform the PSP on the validation result. In this case, the MS has to downgrade the response for PSP to FULL REJECTION.



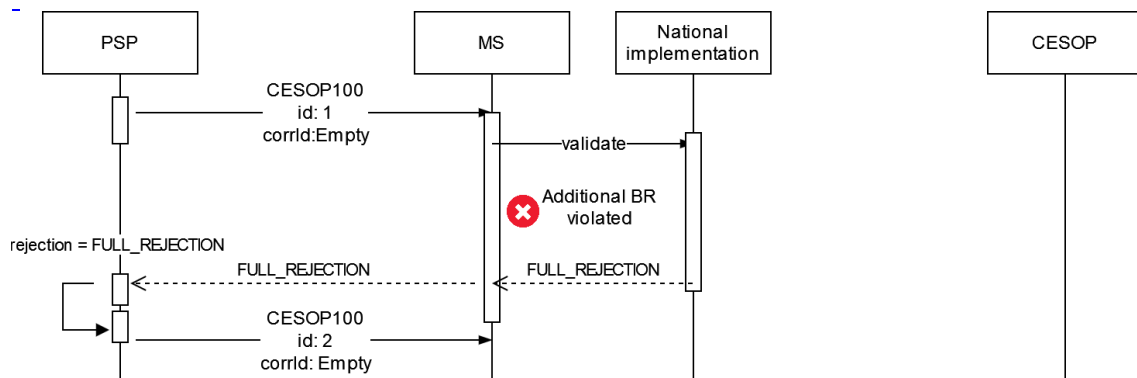
### 10.3.3 Full Rejection scenario

10.3.3.1 Description: The PSP sends an XML file that is fully rejected at the MS level. In this case, the recommended option for the MS is to send the XML file back to PSP in order to save network bandwidth



### 10.3.4 National implementation with additional business rules (to the XSD User Guide) scenario

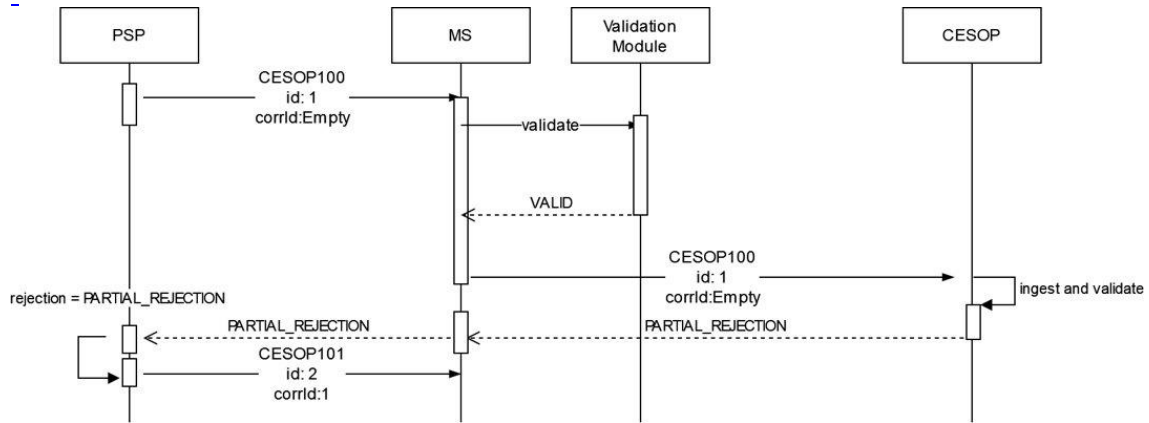
10.3.4.1 Description: When the national implementation contains additional business rules that are not listed in the XSD User Guide and ONLY these rules are violated, then the recommendation is to FULLY REJECT the XML file back to PSP. Otherwise, CESOP could process it as a VALID message.



### 10.3.5 Valid for VM/Invalid for CESOP

10.3.5.1 Description: Because the VM validates only the stateless rules, an XML file initially considered valid by the VM could be later on PARTIALLY REJECTED by CESOP (CESOP has additional rules).

10.3.5.1.1 N.B. : A stateless rule is a rule that can be checked in isolation, without prior knowledge or reference to past transactions. Each evaluation is made from scratch.



### 10.3.6 Why MS must NOT partially reject a message directly to the PSP!!

10.3.6.1 Description: In case of partial rejection, ONLY the two scenarios presented in section 3.2 are allowed. Otherwise, when the PSP will send the correction, CESOP will REJECT the message since it does not have record of the initial message. This will create confusion and lack of consistency for the PSPs

