

v5.00 - CESOP VM - User Manual (UMN)

TIS Central Electronic System Of Payment

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1 Document control information

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3 Document history

The document author is authorised 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 summarised in the table in reverse chronological order (the latest version first).

Version	Date	Description	Sections																						
5.00	28 May 2025	Implementation of review comments (QC56702). Version Submitted for Acceptance (SfA) in the scope of RfA SC20-599.	<ul style="list-style-type: none">Contract informationDocument historyTable of ContentsInstallation of the applicationBusiness rules																						
4.10	15 May 2025	Implementation of the following RfCs in the scope of CESOP v1.7.0. <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-2287</td><td>New BR RP-BR-0110 to ensure that the AccountIdentifier type "Other" is not set to IBAN / BIC / OBAN</td></tr><tr><td>CESOP-2286</td><td>Stop support of XSD schema v4.00 and 4.01</td></tr><tr><td>CESOP-2232</td><td>New business rule RP-BR-0100 for the use of several account identifiers</td></tr><tr><td>CESOP-2126</td><td>Update RP-BR-0030 to change the IBAN length for Nicaragua to 28 characters</td></tr><tr><td>CESOP-2117</td><td>Update the full description of RP-BR-0080</td></tr><tr><td>CESOP-2116</td><td>Update the full description of CM-BR-0060</td></tr><tr><td>CESOP-2115</td><td>Update the full description of CM-BR-0050</td></tr><tr><td>CESOP-2114</td><td>Update the full description of MH-BR-0120</td></tr><tr><td>CESOP-2113</td><td>Update the full description of MH-BR-0010</td></tr><tr><td>CESOP-1997</td><td>Create a dedicated error code (via CM-BR-0150) for the case of same payee</td></tr></table>	Key	Summary	CESOP-2287	New BR RP-BR-0110 to ensure that the AccountIdentifier type "Other" is not set to IBAN / BIC / OBAN	CESOP-2286	Stop support of XSD schema v4.00 and 4.01	CESOP-2232	New business rule RP-BR-0100 for the use of several account identifiers	CESOP-2126	Update RP-BR-0030 to change the IBAN length for Nicaragua to 28 characters	CESOP-2117	Update the full description of RP-BR-0080	CESOP-2116	Update the full description of CM-BR-0060	CESOP-2115	Update the full description of CM-BR-0050	CESOP-2114	Update the full description of MH-BR-0120	CESOP-2113	Update the full description of MH-BR-0010	CESOP-1997	Create a dedicated error code (via CM-BR-0150) for the case of same payee	5.1, 6.3, 7.1, VM UMN - Mapping business rules & XSD version
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Version	Date	Description	Sections
		reported under different ReportedPayee elements CESOP-1945 Add a new BR RT-BR-0090 for the proper use of the CorrTransactionIdentifier CESOP-1913 Update RP-BR-0030 (error code 40030) to validate the IBAN length against the country code within the IBAN CESOP-1820 Attach parent POM xml to VM package 13 issues Version Submitted for Review (SfR) in the scope of the RfA SC20-599.	

Click here to view the document history of older versions...

Version	Date	Description	Sections						
4.03	08 May 2025	User Manual for CESOP VM v1.6.3, including the following RfC(s):	7.1, Document history						
		<table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-2911</td><td>Prevent transaction IDs being truncated by enabling COALESCING in CESOP VM XML parser</td></tr></table>		Key	Summary	CESOP-2911	Prevent transaction IDs being truncated by enabling COALESCING in CESOP VM XML parser		
		Key		Summary					
		CESOP-2911		Prevent transaction IDs being truncated by enabling COALESCING in CESOP VM XML parser					
1 issue									
Version Submitted for Information (SfI).									
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>CESOP-2771</td><td>Increase allowed precision of fractional seconds in timestamps</td></tr><tr><td>CESOP-2680</td><td>Early implementation of CESOP-1997</td></tr></table>		Key	Summary	CESOP-2771	Increase allowed precision of fractional seconds in timestamps	CESOP-2680	Early implementation of CESOP-1997
		Key		Summary					
		CESOP-2771		Increase allowed precision of fractional seconds in timestamps					
CESOP-2680	Early implementation of CESOP-1997								
2 issues									
Version Submitted for Information (SfI).									

Version	Date	Description	Sections																
		<div>The purpose of CESOP-2680 - Early implementation of CESOP-1997 COMPLETED is to introduce a new business rule (CM-BR-0150) with a specific error code (20150 with XSD v4.03 or 99999 with XSD v4.00, v4.01 or v4.02) for the case where the same payee is reported under different ReportedPayee elements.</div>																	
4.01	11 Feb 2025	<div>User Manual for CESOP VM v1.6.1-HF1, including the following RfC(s):</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-2749</td><td>Limit VLD timestamps to 3 decimal points of fractional seconds</td></tr></table> <div>1 issue</div> <div>Version Submitted for Information (SfI).</div>	Key	Summary	CESOP-2749	Limit VLD timestamps to 3 decimal points of fractional seconds	5.1, 6.2, 7.1 Mapping business rules & XSD version												
Key	Summary																		
CESOP-2749	Limit VLD timestamps to 3 decimal points of fractional seconds																		
4.00	03 Sep 2024	<div>Implementation of review comments.</div> <div>Version Submitted for Acceptance (SfA) in the scope of RfA SC15-566.</div>	Document history, 6.2, 6.3, 8.1.1, 8.1.2, Mapping business rules & XSD version (CESOP v1.6.0)																
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>CESOP-1724</td><td>Add BRs to ensure proper use of optional description element for "OTHER" in enumerations</td></tr><tr><td>CESOP-1693</td><td>CESOP VM: CLI batch validation</td></tr><tr><td>CESOP-1598</td><td>Documenting the supported XSD versions for CESOP releases</td></tr><tr><td>CESOP-1589</td><td>Remove error codes enumeration from the XSD</td></tr><tr><td>CESOP-1222</td><td>New BR to validate if transactions are included in the PMT message in case of deletion request</td></tr><tr><td>CESOP-1103</td><td>Support all ISO-3166 for BICs</td></tr><tr><td>CESOP-985</td><td>Remove Business Rule MH-BR-0020 (error code 10020)</td></tr></table> <div>7 issues</div>	Key	Summary	CESOP-1724	Add BRs to ensure proper use of optional description element for "OTHER" in enumerations	CESOP-1693	CESOP VM: CLI batch validation	CESOP-1598	Documenting the supported XSD versions for CESOP releases	CESOP-1589	Remove error codes enumeration from the XSD	CESOP-1222	New BR to validate if transactions are included in the PMT message in case of deletion request	CESOP-1103	Support all ISO-3166 for BICs	CESOP-985	Remove Business Rule MH-BR-0020 (error code 10020)	6.2 Mapping business rules & XSD version (CESOP v1.6.0)
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Version	Date	Description	Sections										
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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>CESOP-1743</td><td>Update links in VM UMN</td></tr><tr><td>CESOP-1028</td><td>CESOP VM: Update the validation API</td></tr><tr><td>CESOP-970</td><td>Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date</td></tr><tr><td>CESOP-916</td><td>Remove Business Rule PS-BR-0010 (error code 30010)</td></tr></table> <div>4 issues</div> <div>Version Submitted for Information (SfI).</div>	Key	Summary	CESOP-1743	Update links in VM UMN	CESOP-1028	CESOP VM: Update the validation API	CESOP-970	Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date	CESOP-916	Remove Business Rule PS-BR-0010 (error code 30010)	Document history
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CESOP-1743	Update links in VM UMN												
CESOP-1028	CESOP VM: Update the validation API												
CESOP-970	Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date												
CESOP-916	Remove Business Rule PS-BR-0010 (error code 30010)												
3.02	26 Apr 2024	<div>Small correction on the list of RfCs in the scope of CESOP v1.4.5.</div> <div>Following RfC(s) are in the scope of CESOP v1.4.5:</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-1888</td><td>Trigger 99999 in case same reported payee is reported at least twice in the same message</td></tr></table> <div>1 issue</div> <div>Version Submitted for Information (SfI).</div>	Key	Summary	CESOP-1888	Trigger 99999 in case same reported payee is reported at least twice in the same message	Document history						
Key	Summary												
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3.01	22 Apr 2024	<div>Implementation of the following RfC(s), in the scope of CESOP v1.4.5:</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-1888</td><td>Trigger 99999 in case same reported payee is reported at least twice in the same message</td></tr></table> <div>1 issue</div>	Key	Summary	CESOP-1888	Trigger 99999 in case same reported payee is reported at least twice in the same message	Mapping business rules & XSD version (CESOP v1.5.0)						
Key	Summary												
CESOP-1888	Trigger 99999 in case same reported payee is reported at least twice in the same message												

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		Version Submitted for Information (SfI) in the scope of RfA SC08-707.							
3.00	27 Mar 2024	<div>Implementation of the review comments and of the following RfC(s), in the scope of CESOP v1.5.0:</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-916</td><td>Remove Business Rule PS-BR-0010 (error code 30010)</td></tr></table> <div>1 issue</div> <div>Version Submitted for Acceptance (SfA) in the scope of RfA SC10-491.</div>	Key	Summary	CESOP-916	Remove Business Rule PS-BR-0010 (error code 30010)	4.3, 5.1, 8.1.1, 8.1.2, Mapping business rules & XSD version (CESOP v1.5.0)		
Key	Summary								
CESOP-916	Remove Business Rule PS-BR-0010 (error code 30010)								
2.10	14 Mar 2024	<div>Implementation of the following RfC(s), in the scope of CESOP v1.5.0:</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-1028</td><td>CESOP VM: Update the validation API</td></tr><tr><td>CESOP-1743</td><td>Update links in VM UMN</td></tr></table> <div>2 issues</div> <div>Version Submitted for Review (SfR) in the scope of the RfA SC10-491.</div>	Key	Summary	CESOP-1028	CESOP VM: Update the validation API	CESOP-1743	Update links in VM UMN	7.2.2, 7.2.3, 8.1
Key	Summary								
CESOP-1028	CESOP VM: Update the validation API								
CESOP-1743	Update links in VM UMN								
2.01	17 Nov 2023	<div>Update of the confidentiality level of the present document, to "Publicly Available (PA)".</div> <div>Version Submitted for Information (SfI).</div>	1						
2.00	11 Sep 2023	<div>Implementation of review comments.</div> <div>Version Submitted for Acceptance (SfA) in the scope of RfA SC08-279.</div>	6.1, 8.1.1, 8.1.2, 8.2						
1.30	29 Aug 2023	<div>Changelog added, highlighting the changes between 1.2 and 1.3</div> <div>Elaborate on shaded and regular jars. Provide more examples of API usage through the implementation of the following RfC:</div> <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-1099</td><td>CESOP-VM - remove internal identifiers from public API</td></tr></table> <div>1 issue</div>	Key	Summary	CESOP-1099	CESOP-VM - remove internal identifiers from public API	8, 9, 10		
Key	Summary								
CESOP-1099	CESOP-VM - remove internal identifiers from public API								

Version	Date	Description	Sections						
		Version Submitted for Review (SfR) in the scope of the RfA SC08-279.							
1.20	23 May 2023	Implementation of the following RfC: <table><tr><th>Key</th><th>Summary</th></tr><tr><td>CESOP-898</td><td>Update VM UMN following comments of v1.10</td></tr><tr><td colspan="2">1 issue</td></tr></table> Version Submitted for Information (SfI) in the scope of SC07-415.	Key	Summary	CESOP-898	Update VM UMN following comments of v1.10	1 issue		5.1,7,8
Key	Summary								
CESOP-898	Update VM UMN following comments of v1.10								
1 issue									
1.10	26 Apr 2023	Implementation of comments received from the member states. Version Submitted for Information (SfI) in the scope of SC07-384.	5, 6,7,8,9						
1.00	31 Jan 2023	Implementation of review comments. 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 Jan 2023	Initial version of the document in the scope of RfA SC08-047. Version Submitted for Review (SfR).	All sections						

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5 Introduction

5.1 Document purpose

The purpose of this document is to provide a user manual explaining how to operate the CESOP Validation Module (VM) 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.

5.2 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.

5.3 Scope

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

5.4 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	6.00	08 Nov 2024

5.5 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

5.6 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	Central Electronic System of Payment
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.B.	Nota Bene
N/A	Not Applicable
NA	National Administration
OS	Operating System
PMT	Paielement Data (as Message Type)
PSP	Payment Service Provider
RHEL	Red Hat Enterprise Linux
SPI	Java Service Provider Interface
VLD	Validation Result (as Message Type)
VM	Validation Module
XML	eXtensible Markup Language
XSD	XML Schema Definition

5.7 Definitions

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

6 General Information

6.1 System Overview

The CESOP Validation Module v1.7.0 (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.

Please refer to the XSD User Guide [\[R01\]](#) for details on the Validation Result structure.

The CESOP validation module v1.7.0 (as any subsequent minor version) only supports **the XSD versions v4.02 and v4.03** (*the XSD versions v4.00 and v4.01 are not supported anymore since the CESOP VM v1.7.0*). 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 v4.02 is sent for validation, the validation result will be generated based on the v4.02 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.

6.2 Hardware requirements

The CESOP Validation Module requires this minimum hardware setup:

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

6.3 System requirements

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

Java	Version 8 or higher
Operating System (OS)	Any OS able to run Java SE ¹

6.4 Authorized Use Permission

No restriction on the application usage.

6.5 User Support

In case of an issue, the ITSM Service Desk must be contacted via Support@itsmtaxud.europa.eu.

7 Command Line Interface

7.1 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.

7.2 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 [\[R01\]](#).

7.3 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-1.7.0.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.

8 Programmatic Interface

8.1 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>1.7.0</version>
    <classifier>shaded</classifier>
  </dependency>
</dependencies>
```

8.1.1 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.

8.1.2 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.

8.2 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.

8.2.1 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());
```

8.2.2 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();
```

8.2.3 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();
```

8.2.4 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);
```

9 Appendix

9.1 Links

9.1.1 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 described below (x.y.z represents the application version):

- cesop pom, parent pom: pom files describing the dependencies used by CESOP and the validation module. Useful in case the CESOP VM is imported in an external java application;
- cesop-validation-x.y.z-javadoc.jar: the javadoc of the CESOP validation module;
- cesop-validation-x.y.z-shaded.jar: standalone jar file. To be used in case the CESOP VM is imported in a non-maven java application;
- cesop-validation-x.y.z-sources.jar: source file of the CESOP validation module;
- cesop-validation-x.y.z.jar: CESOP VM jar file. To be used in case the CESOP VM is imported in a maven java application;
- cesop-validation-x.y.z.pom: pom file of the CESOP VM;
- cesop-vm-application-x.y.z.jar: standalone executable jar file. Allows to use the CESOP VM in a CLI.

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

9.1.2 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

9.1.2.1 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 ____

10 VM UMN - Mapping business rules & XSD version

10.1 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	Supported XSD versions
4.03	6.00	1.7.0	4.02, 4.03
4.03	5.00	1.6.0	4.00, 4.01, 4.02, 4.03
4.02	4.80	1.5.0	4.00, 4.01, 4.02
4.02	4.61	1.3.0, 1.4.0	4.00, 4.01, 4.02
4.02	4.60		
4.02	4.40		
4.01	4.20		
4.00	4.00	1.2.0	4.00

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;
- Intermediate releases support the same XSD version(s) as the related major one (e.g. CESOP v1.5.1 supported the same XSD versions as CESOP 1.5.0).

10.2 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);
- Starting from the XSD v4.03, a new type of message "PNG" has been 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.

The XSD versions v4.00 and v4.01 are **not** supported anymore since the CESOP VM v1.7.0.

10.2.1 Business rules

This table only applies to version **1.7.0** of CESOP and thus to the v1.7.0 validation module (as any subsequent minor version).

Business rule ID	Error code	Covered by VM	XSD version		Comment
			v4.02	v4.03	
Message header					
MH-BR-0010	10010	✗	x	x	Updated (full description only) in release v1.7.0 & for all XSD versions: CESOP-2113 - Update the full description of MH-BR-0010 SAT COMPLETED
MH-BR-0020	10020	-	-	-	Removed in release v1.6.0 & for all XSD versions: CESOP-985 - Remove Business Rule MH-BR-0020 (error code 10020) COMPLETED
MH-BR-0030	10030	✓	x	x	
MH-BR-0040	10040	✗	x	x	
MH-BR-0050	10050	✓	x	x	
MH-BR-0060	10060	✓	x	x	
MH-BR-0070	10070	✓	x	x	
MH-BR-0080	10080	✓	x	x	
MH-BR-0090	10090	✓	x	x	Updated in release v1.3.0 & for all XSD versions: CESOP-818 - XSD - Update MH-BR-0090 to reject VLD messages (in both VM and CESOP app) COMPLETED
MH-BR-0100	10100	✗	x	x	
MH-BR-0110	10110	✓	x	x	
MH-BR-0120	10120	✗	x	x	Added in release v1.3.0 & for all XSD versions: CESOP-567 - Validate if transmitting country equals the partner id country COMPLETED

			XSD version		
					Updated (full description only) in release v1.7.0 & for all XSD versions: ↗ CESOP-2114 - Update the full description of MH-BR-0120 SAT COMPLETED
Common					
CM-BR-0010	20010	✓	x	x	
CM-BR-0020	20020	✗	x	x	
CM-BR-0030	20030	✓	x	x	
CM-BR-0040	20040	✗	x	x	
CM-BR-0050	20050	✓	x	x	Updated (full description only) in release v1.7.0 & for all XSD versions: ↗ CESOP-2115 - Update the full description of CM-BR-0050 SAT COMPLETED
CM-BR-0060	20060	✓	x	x	Updated (full description only) in release v1.7.0 & for all XSD versions: ↗ CESOP-2116 - Update the full description of CM-BR-0060 SAT COMPLETED
CM-BR-0070	20070	✗	x	x	
CM-BR-0100	20100	✓	x	x	Updated in release v1.6.0 & for all XSD versions: ↗ CESOP-1103 - Support all ISO-3166 for BICs COMPLETED
CM-BR-0110	20110	✓	x	x	
CM-BR-0120	20120	✗	-	x	Added in release v1.6.0 & applicable from XSD v4.03 on: ↗ CESOP-908 - Correction of reported payees initially reported in different payment data messages - new BR COMPLETED
CM-BR-0130	20130	✓	-	x	Added in release v1.6.0 & applicable from XSD v4.03 on: ↗ CESOP-1724 - Add BRs to ensure proper use of optional description element for "OTHER" in enumerations COMPLETED
CM-BR-0140	20140	✓	-	x	Added in release v1.6.0 & applicable from XSD v4.03 on: ↗ CESOP-1724 - Add BRs to ensure proper use of optional description element for "OTHER" in enumerations COMPLETED
CM-BR-0150	20150	✓	x	x	Added in release v1.6.2 & applicable for all XSD versions (triggering error code 99999 with XSD v4.02): ↗ CESOP-2680 - Early implementation of CESOP-1997 COMPLETED & ↗ CESOP-1997 - Create a dedicated error code (via CM-BR-0150) for the case of same payee reported under different ReportedPayee elements SAT COMPLETED

			XSD version		
PSP					
PS-BR-0010 ¹	30010	-	-	-	Removed in release v1.5.0 & for all XSD versions: CESOP-916 - Remove Business Rule PS-BR-0010 (error code 30010) COMPLETED
Reported payee					
RP-BR-0010	40010	✓	x	x	
RP-BR-0020	40020	✓	x	x	
RP-BR-0030	40030	✓	x	x	Updated (IBAN length for Nicaragua) in release v1.7.0 & for all XSD versions: CESOP-2126 - Update RP-BR-0030 to change the IBAN length for Nicaragua to 28 characters SAT COMPLETED Updated (country used for the validation) in release v1.7.0 & for all XSD versions: CESOP-1913 - Update RP-BR-0030 (error code 40030) to validate the IBAN length against the country code within the IBAN SAT COMPLETED
RP-BR-0040	40040	✓	x	x	
RP-BR-0050	40050	✓	x	x	
RP-BR-0060	40060	✓	x	x	
RP-BR-0070	40070	✓	x	x	Updated in release v1.6.0 and for all XSD versions: CESOP-1103 - Support all ISO-3166 for BICs COMPLETED
RP-BR-0080	40080	✓	x	x	Updated (full description only) in release v1.7.0 & for all XSD versions: CESOP-2117 - Update the full description of RP-BR-0080 SAT COMPLETED
RP-BR-0090	40090	✓	-	x	Added in release v1.6.0 & applicable from XSD v4.03 on: CESOP-1222 - New BR to validate if transactions are included in the PMT message in case of deletion request COMPLETED
RP-BR-0100	40100	✓	-	x	Added in release v1.7.0 & applicable from XSD v4.03 on: CESOP-2232 - New business rule RP-BR-0100 for the use of several account identifiers SAT COMPLETED
RP-BR-0110	40110	✓	-	x	Added in release v1.7.0 & applicable from XSD v4.03 on: CESOP-2287 - New BR RP-BR-0110 to ensure that the AccountIdentifier type "Other" is not set to IBAN / BIC / OBAN SAT COMPLETED

			XSD version		
Reported transactions					
RT-BR-0010	45010	✓	x	x	
RT-BR-0020	45020	-	-	-	Removed in release v1.3.0 & for all XSD versions (obsolete rule): CESOP-930 - Remove obsolete business rule RT-BR-0020 (error code 45020) COMPLETED
RT-BR-0030 ²	45030	✓	x	x	Updated in release v1.5.0 & for all XSD versions: CESOP-970 - Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date COMPLETED
RT-BR-0040	45040	✓	x	x	As from release v1.6.0, the refund identifier can be equal to the original transaction: CESOP-1494 - Override transaction IDs in case the refund ID the same COMPLETED
RT-BR-0050	45050	✗	x	x	As from release v1.6.0, the refund identifier can be equal to the original transaction: CESOP-1494 - Override transaction IDs in case the refund ID the same COMPLETED
RT-BR-0060	45060	✓	x	x	
RT-BR-0080	45080	✓	x	x	
RT-BR-0090	45090	✓	x	x	Added in release v1.7.0 and for all XSD versions (triggering error code 99999 with XSD v4.02): CESOP-1945 - Add a new BR RT-BR-0090 for the proper use of the CorrTransactionIdentifier SAT COMPLETED

10.2.2 Technical rules








This table only applies to version **1.7.0** of CESOP and thus to the v1.7.0 validation module (as any subsequent minor version).

			XSD version		
Technical rule ID	Error code	Covered by VM	v4.02	v4.03	Comment
CM-TR-0010	50010	✓	x	x	
CM-TR-0020	50020	✗	x	x	
CM-TR-0030	50030	✗	x	x	

			XSD version		
CM-TR-0040	50040	✗	x	x	
CM-TR-0050	50050	✗	x	x	
CM-TR-0060	50060	✗	x	x	
CM-TR-0070	50070	✓	x	x	
CM-TR-0080	50080	✓	x	x	
CM-TR-9000	99999	✓	x	x	See also the list of business rules, where the code "99999" is mentioned in the comment column.

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

10.3.1 CESOP v1.3.0

Key	Summary	T	Component/s	Labels
CESOP-567	Validate if transmitting country equals the partner id country		FSR, TDS, XSD, XSD User Guide	XSD_UserGuide_v4.20 XSD_v4.01
CESOP-568	Validate if transmitting country equals the country of the uploader		FSR, TDS, XSD, XSD User Guide	XSD_UserGuide_v4.20 XSD_v4.01
CESOP-811	Migration of CFSS into XSD User Guide		XSD User Guide	XSD_UserGuide_v4.20
CESOP-818	XSD - Update MH-BR-0090 to reject VLD messages (in both VM and CESOP app)		FSR, TDS, VM-FSR, VM-TDS, XSD, XSD User Guide	AMD XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-819	CESOP - TransactionIdentifier Uniqueness in the System		XSD, XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-821	XSD (User Guide) - Update of representative definitions		XSD, XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-863	XSD User Guide - Update footnote related to files compression		XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40

Key	Summary	T	Component/s	Labels
CESOP-864	XSD - Update regex of TAXIdentification_Type		XSD, XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-870	XSD User guide - Removal of DAC2 references		XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40
CESOP-878	XSD - Update of the Timestamp validation regex		XSD, XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-903	XSD material update the comment for StringMin1Max40_Type		XSD	XSD_UserGuide_v4.20 XSD_v4.01
CESOP-918	Clarification RP-BR-0040 in XSD user guide		XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40
CESOP-930	Remove obsolete business rule RT-BR-0020 (error code 45020)		XSD, XSD User Guide	XSD-Addendum XSD_UserGuide_v4.40 XSD_v4.02
CESOP-967	Partial Rejection of a Spontaneous Correction Data Message		XSD User Guide	AMD XSD-Addendum XSD_UserGuide_v4.40
CESOP-1032	[XSD User Guide] Correlation between two Payment Data messages		XSD User Guide	XSD_UserGuide_v4.60
CESOP-1113	XSD - Update regex of TAXIdentification_Type to consider minus "-"		XSD, XSD User Guide	XSD_UserGuide_v4.60 XSD_v4.02
CESOP-1194	CESOP XSD User Guide - Clarification regarding message where all payees are erroneous		XSD User Guide	XSD_UserGuide_v4.60


[17 issues](#)





10.3.2 CESOP v1.4.0

Key	Summary	T	Component/s	Labels
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[No issues found](#)








10.3.3 CESOP v1.5.0










Key	Summary	T	Component/s	Labels
CESOP-916	Remove Business Rule PS-BR-0010 (error code 30010)		FSR, TDS, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00

Key	Summary	T	Component/s	Labels
CESOP-970	Modify BR RT-BR-0030 to have at least one date in reporting period and to take into account the settlement date		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1493	Adding clarifications for the correlation mechanism in the XSD User Guide		TS, XSD User Guide	XSD_UserGuide_v4.80
CESOP-1715	Handle "1" as "true" for xs:boolean fields		FSR, TDS, VM-FSR, XSD, XSD User Guide	XSD_UserGuide_v4.80 XSD_v4.02
CESOP-1782	CESOP non EU PSP BIC - Update the XSD User Guide to propose using the 'Other'		XSD User Guide	XSD_UserGuide_v4.80


[5 issues](#)

10.3.4 CESOP v1.6.0

Key	Summary	T	Component/s	Labels
CESOP-908	Correction of reported payees initially reported in different payment data messages - new BR		FSR, TDS, XSD User Guide	XSD_UserGuide_v5.00
CESOP-985	Remove Business Rule MH-BR-0020 (error code 10020)		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1103	Support all ISO-3166 for BICs		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1222	New BR to validate if transactions are included in the PMT message in case of deletion request		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1226	Add a new scenario for the case where all payees are partially rejected		XSD User Guide	XSD_UserGuide_v5.00
CESOP-1336	Extend length of transactionidentifier		FS, FSR, TS, VM-FSR, VM-TDS, XSD, XSD User Guide	TESTAX:High XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1338	Add information regarding the implementation of error code 20010		XSD User Guide	XSD_UserGuide_v5.00




Key	Summary	T	Component/s	Labels
CESOP-1360	Settlement date as new value in TransactionDateType_Type enumeration		FS, FSR, TDS, TS, VM-FSR, VM-TDS, XSD, XSD User Guide	XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1480	Reporting of both BIC AND Account Number must be allowed by XSD		FS, FSR, TDS, TS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide	PayeeCatalogue TESTAX:High XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1494	Override transaction IDs in case the refund ID the same		FSR, TDS, TS, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1541	Add support for VOES identifiers in PMT messages		FS, FSR, TDS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide	PayeeCatalogue TESTAX:High XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1589	Remove error codes enumeration from the XSD		FS, FSR, TDS, VM-FSR, VM-TDS, VM-UMN, XSD, XSD User Guide	TESTAX:High XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1598	Documenting the supported XSD versions for CESOP releases		FSR, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00
CESOP-1681	XSD - Add optional description element for "OTHER" in enumerations		FS, FSR, TDS, TS, XSD, XSD User Guide	XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1694	CESOP PING message type		FS, FSR, TDS, UMN, VM-FSR, VM-TDS, XSD, XSD User Guide	XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1706	XSD - Currency Code Sierra Leone from SLL to SLE		FSR, TDS, XSD	XSD_UserGuide_v5.00 XSD_v4.03
CESOP-1724	Add BRs to ensure proper use of optional description element for "OTHER" in enumerations		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v5.00

[17 issues](#)

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

10.3.5 CESOP v1.7.0

Key	Summary	T	Component/s	Labels
CESOP-1811	Enhance explanation for naming convention in XSD User Guide		XSD User Guide	XSD_UserGuide_v6.00
CESOP-1913	Update RP-BR-0030 (error code 40030) to validate the IBAN length against the country code within the IBAN		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-1945	Add a new BR RT-BR-0090 for the proper use of the CorrTransactionIdentifier		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-1970	Further describe the case of correction, that should contain all transactions		XSD User Guide	XSD_UserGuide_v6.00
CESOP-1997	Create a dedicated error code (via CM-BR-0150) for the case of same payee reported under different ReportedPayee elements		FSR, TDS, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2113	Update the full description of MH-BR-0010		FSR, TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2114	Update the full description of MH-BR-0120		FSR, TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2115	Update the full description of CM-BR-0050		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2116	Update the full description of CM-BR-0060		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2117	Update the full description of RP-BR-0080		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2118	Add a footnote regarding the refunds next to the description of RT-BR-0050		XSD User Guide	XSD_UserGuide_v6.00
CESOP-2119	Add a footnote next to the description of CM-TR-0080 to explain that the other errors list is provided		XSD User Guide	XSD_UserGuide_v6.00
CESOP-2169	Update the correlation error description of error code 20070		XSD User Guide	XSD_UserGuide_v6.00
CESOP-2232	New business rule RP-BR-0100 for the use of several account identifiers		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	TESTAX:High XSD_UserGuide_v6.00
CESOP-2238	[Documentation] Update the description of CM-BR-0130 & CM-BR-0140		XSD User Guide	XSD_UserGuide_v6.00

Key	Summary	T	Component/s	Labels
CESOP-2273	Set transmitting country based on TAPAS party ID in case of unreadable message		FS, FSR, TDS, XSD User Guide	TESTAX:High XSD_UserGuide_v6.00
CESOP-2286	Stop support of XSD schema v4.00 and 4.01		FS, FSR, TDS, TS, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	XSD_UserGuide_v6.00
CESOP-2287	New BR RP-BR-0110 to ensure that the AccountIdentifier type "Other" is not set to IBAN / BIC / OBAN		FSR, VM-FSR, VM-TDS, VM-UMN, XSD User Guide	TESTAX:High XSD_UserGuide_v6.00

[18 issues](#)

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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). [___](#)

11 VM UMN - VM scenarios

11.1 General Information

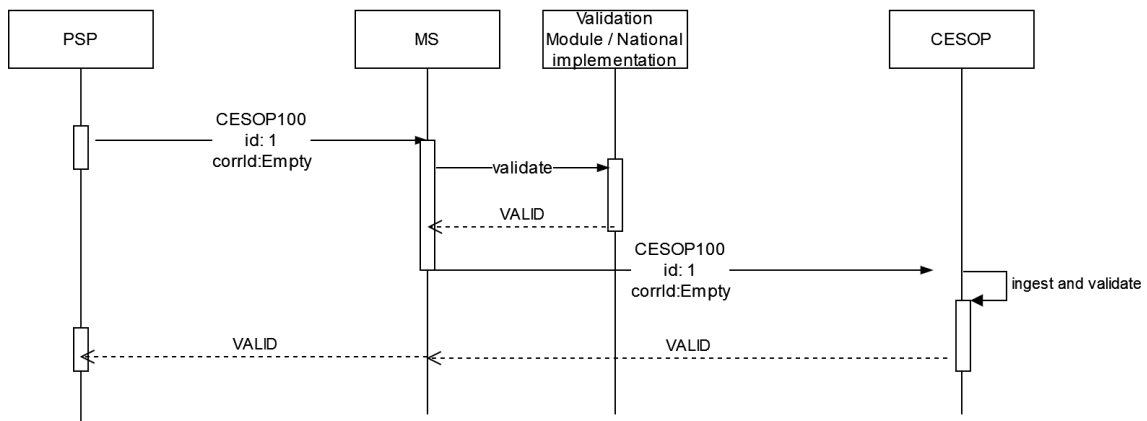
- The use of the VM is optional;
- The VM validates only the **stateless** business rules, i.e. rules that can be checked in isolation, without prior knowledge or reference to past transactions. Each evaluation is thus made from scratch;
- The PARTIAL_REJECTION response has been introduced with the CESOP (VM) v1.2.0.

11.2 Scenarios of VM proper and wrong usages

- [Valid scenario](#)
- [Partial Rejection scenarios](#)
 - [Forward partial rejection](#)
 - [Downgrade partial rejection to full rejection](#)
- [Full Rejection scenario](#)
- [National implementation with additional business rules \(to the XSD User Guide\) scenario](#)
- [Valid for VM but invalid for CESOP](#)
- [Why MS must NOT partially reject a message directly to the PSP!!](#)

11.2.1 Valid scenario

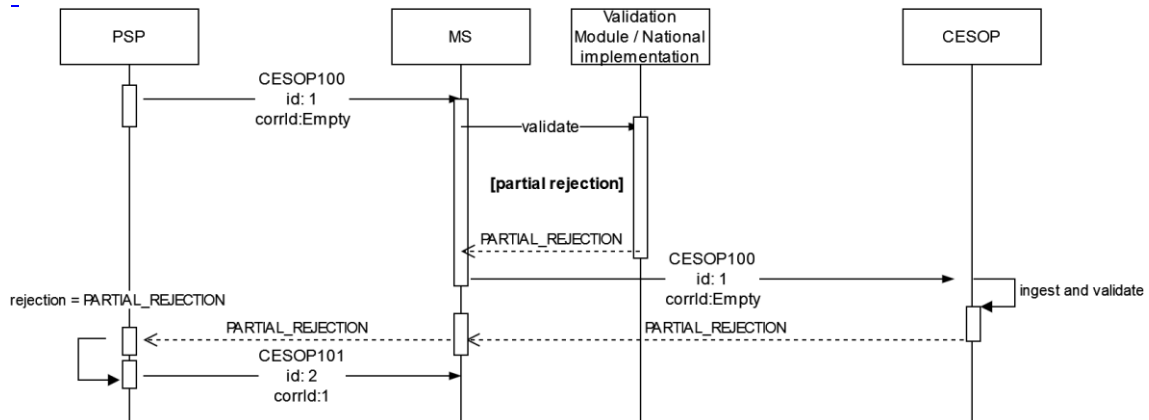
The VM and CESOP confirm that the XML sent by the PSP is valid. This response is sent back to the PSP by CESOP, via the MS.



11.2.2 Partial Rejection scenarios

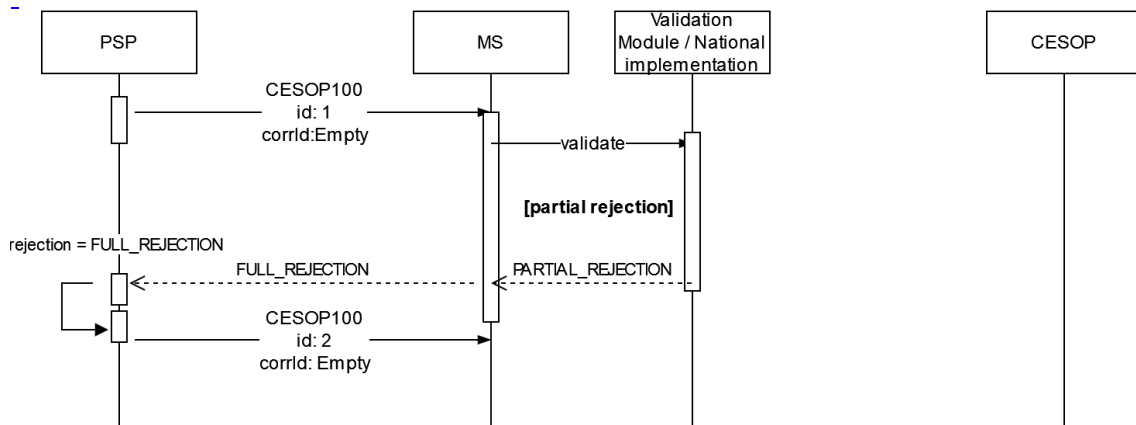
11.2.2.1 Forward partial rejection

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 for the validation result from CESOP and only after inform the PSP (for cases of partial rejection, see also more details in the related [scenario below](#)).



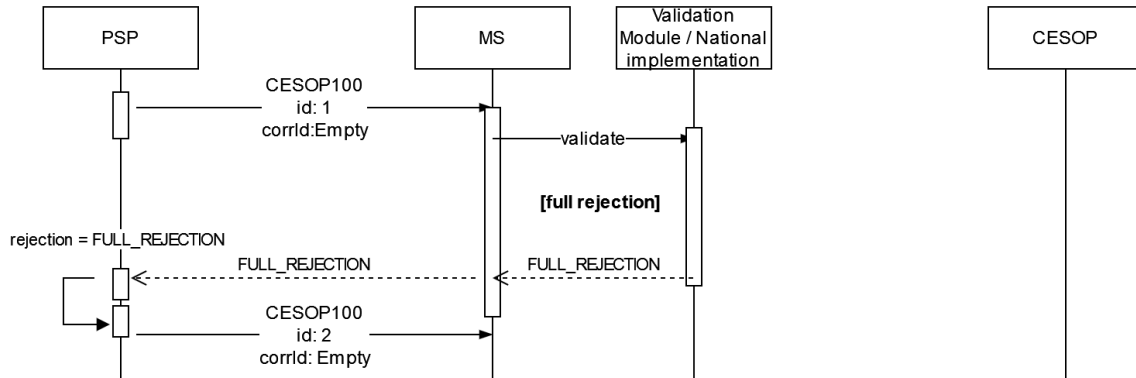
11.2.2.2 Downgrade partial rejection to full rejection

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 of the validation result. In this case, the MS has to downgrade the response for PSP to FULL REJECTION.



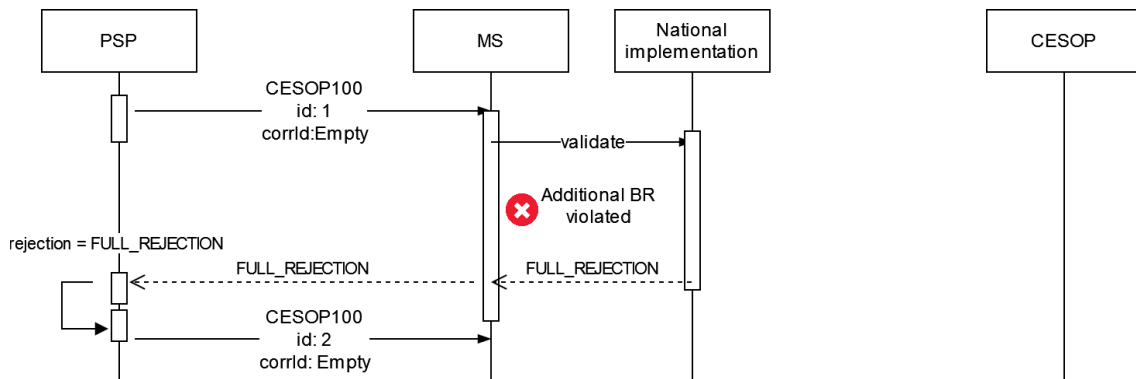
11.2.3 Full Rejection scenario

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.



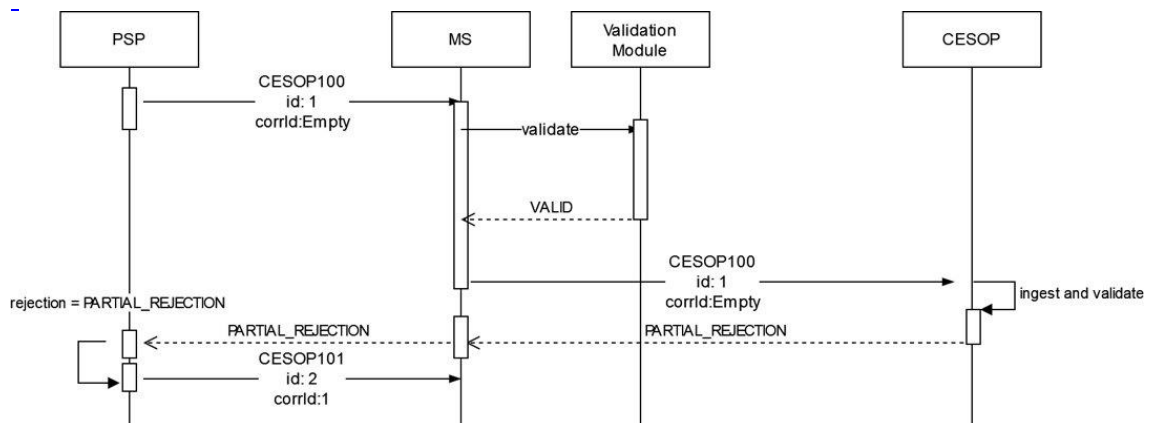
11.2.4 National implementation with additional business rules (to the XSD User Guide) scenario

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 and send it back to PSP. Otherwise, CESOP could process it as a VALID message.



11.2.5 Valid for VM but invalid for CESOP

Because the VM validates only the **stateless** rules, an XML file initially considered valid by the VM could be PARTIALLY REJECTED by CESOP (as CESOP implements additional stateful rules).



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

In case of partial rejection, **ONLY** the two scenarios presented in the [section "Partial Rejection scenarios"](#) are allowed. Otherwise, if the PSP sends a correction, CESOP will **REJECT** the message since it does not have a record of the initial message. This will create confusion and a lack of consistency for the PSPs.

