

# Peppol

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## Policy on BIS Billing Country specific validation rules

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## 1 Introduction

The Peppol BIS Billing v3 allows for validation rules which are triggered based on at least the country code of the supplier. This Policy describes what methodology **MUST** be used when creating these country specific validation rules.

## 2 Country specific validation rules

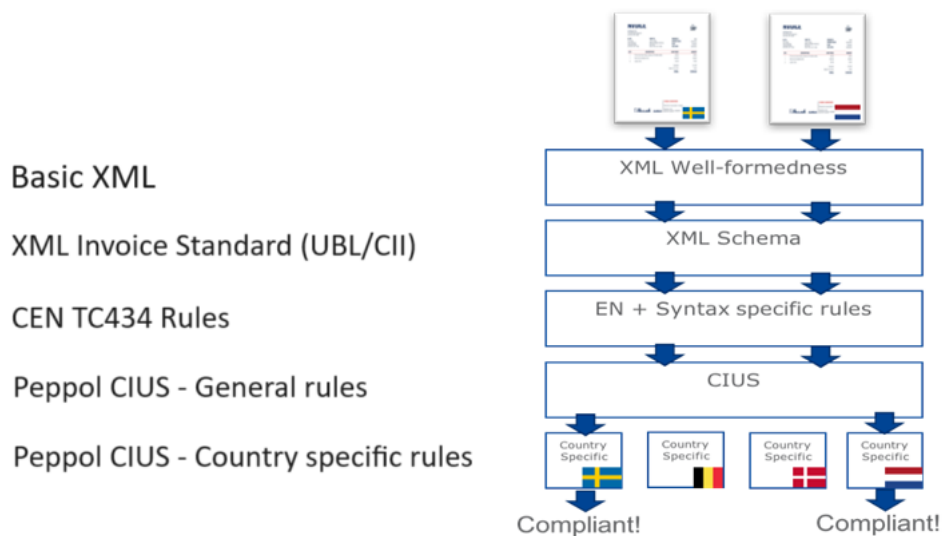
### 2.1 Triggers

The "country code of the supplier" to be used to trigger the rules is:

- Either the country code prefixing the Seller VAT identifier (BT-31) OR
- The country code prefixing the Sellers Tax Representative VAT identifier (BT-63) OR
- The seller country code (BT-40)

Country specific rule sets **MAY** be added to the Peppol BIS on request from the Peppol Authority of the specific country. The Peppol Authority is responsible for the development, testing and maintenance of the rules. The country specific rules make it possible to use the Peppol BIS without the need of creating a country specific CIUS. The same specification and validation rules can be used by all Peppol users without the need to specifically identify the customization neither in the XML message nor in the SMP-registration.

The below diagram shows a simplified view of the validation steps. An invoice issued by a Swedish supplier goes through all validation steps but only invokes the country specific rule sets which is intended for Swedish suppliers.



Specifically, a “domestic validation rule” MAY be created using the “country code of the buyer” as an additional trigger. The “country code of the buyer” can be used from:

- Either the country code prefixing the Buyer VAT identifier (BT-48) OR
- The buyer country code (BT-55)

Any document triggering such a “domestic validation rule” therefore represents a “domestic transaction”.

## 2.2 Rules

The Peppol Authority SHALL consider the following conditions.

1. What BT (Business Term) to use for each rule. E.g., BT-31 for VAT related rules while BT-40 for address related rules.
2. Special care shall be taken if the country codes of BT-31, BT-63 and BT-40 are not identical. E.g., a Swedish supplier with a Dutch VAT number.
3. The same as above applies if tests based on the country code of the buyer are added.
4. New or changed rules shall be implemented with severity “Warning”. The severity MUST be upgraded to “Fatal” in a future release.

## 3 Development procedure

The Peppol Authority who wishes to include country specific rules submits an RFC to OpenPeppol. The RFC will be processed by the PoAC CMB according to the Change and release management policy as stated in the Internal Regulations.

1. The Peppol Authority SHALL make all required artefacts available to the PoAC CMB and the Operating Office.
2. The Peppol Authority SHALL consider the deadlines of the release plan that is created by the Operating Office and approved by the PoAC CMB.
3. The Peppol Authority SHALL ensure to only add rules that are valid for ALL invoices and credit notes in the specific country and for all scenarios B2G, G2G, G2B and B2B.
4. The Peppol Authority SHALL ensure that the suggested national rules do not affect other countries.
5. The Peppol Authority SHALL create sets of test files which triggers each rule with positive and negative outcome. See also chapter 5 Test files.
6. The Peppol Authority SHALL document and test the country specific rule set prior to filing the RFC.
7. The Peppol Authority SHALL provide the Schematron rules containing the Country specific rules.
8. The Peppol Authority SHALL have resources available to adjust the rules if issues are found during the review and test process conducted under supervision of the PoAC CMB.

## 4 Issues

Any rule that in production is unnecessarily triggered SHALL after investigation be removed and a hotfix will be deployed to guarantee the smooth functioning of the network. This all in accordance with the special provisions for urgent action as stated in the Change Management Policy in the Internal Regulations.

## 5 Documentation of rules

The following artefacts are needed for the PoAC CMB to approve country specific rules:

- A list with the following information about the rule(s):

<b>Rule-ID</b>	Unique number for each rule.  Format shall be Country code-R-Sequential number such as SE-R-001
<b>Type</b>	The type defined in the EN16931. See table in chapter 7.3.2 of EN16931-1:2017+A1:2019/AC:2020.
<b>Applicable for supplier Country Code</b>	The country code of the supplier which is used as part of the context for when the rule is triggered.
<b>Rule statement</b>	The assertion/rule in understandable English.
<b>Severity</b>	Level of severity to flag when the rule is violated. Fatal or Warning.
<b>Comment</b>	Any additional explanatory text in understandable English.

- Schematron file(s) (See Chapter 6. Schematron implementation considerations)
- Test files (See Chapter 7. Test files)

## 6 Schematron implementation considerations

### 6.1 General Rules

- The Peppol Authority **SHALL** make the solution be supported by XPath 2.0 and XSLT 2.0 to ensure compatibility with modern XML processors and to take advantage of their more advanced features.
- The Peppol Authority **SHALL** use Schematron variables (let) if expressions are evaluated more than once. This improves the efficiency of the validation by avoiding redundant calculations.
- The Peppol Authority **SHALL** use assertion failure messages in English for clarity and uniformity. Additional translations **MAY** be provided based on localization requirements.
- The Peppol Authority **SHALL** use forward (child) references over backward (parent) references for better performance and readability, as child traversal is generally faster and easier to maintain.

### 6.2 Context Rules

- The Peppol Authority **SHALL** use rule contexts that contain the supplier country code to ensure the correct localization and regional business rules are applied.
- The Peppol Authority **MUST NOT** use "/" in the rule contexts, as it can cause performance issues by searching through the entire document tree. Instead, specify direct paths for better optimization.
- The Peppol Authority **SHALL** make the rule contexts as narrow as possible to ensure they only apply to the relevant portions of the document. This will also reduce the risk of false positives.
- The Peppol Authority **SHALL** use rule context that are unique within the pattern. If there are multiple rules for a given context, they **MUST** be added to the existing context declaration to avoid redundancy and to keep the schema clean and maintainable.
- The Peppol Authority **SHALL** use rule contexts that only refer to elements and not to attributes. While technically attribute contexts are allowed by the specification, some implementations may not support this fully, and it is best practice to avoid potential compatibility issues.

## 6.3 Tips and Best Practices

- **Optimize XPath expressions:** The Peppol Authority **SHOULD** make sure that XPath expressions are as efficient as possible by minimizing the number of nodes traversed. Avoid unnecessary complexity in XPath expressions, as this can lead to performance issues, especially with large XML documents.
- **Modularize rules:** The Peppol Authority **SHOULD** group related rules into separate patterns or phases to make the Schematron file more readable and easier to maintain. This also allows for the selective application of rules based on the validation context.
- **Provide clear, actionable messages:** The Peppol Authority **SHOULD** make sure that assertion failure messages are clear, concise, and guide the user toward resolving the issue. For example, "The invoice number is missing" is better than "Assertion failed on invoice number."
- **Document each rule:** The Peppol Authority **SHOULD** add comments or documentation in the Schematron file explaining the purpose of each rule or pattern. This will make it easier for other developers or validators to understand the logic behind the rules.
- **Test thoroughly:** The Peppol Authority **SHOULD** ensure the Schematron rules are thoroughly tested with multiple test cases that cover both valid and invalid scenarios. Include edge cases, such as empty elements or optional fields.
- **Plan for extensibility:** The Peppol Authority **SHOULD** design the Schematron rules in a way that they can be easily extended or modified to accommodate future changes in the XML structure or validation requirements.

## 6.4 Schematron examples

```
<rule context="/*[$supplierCountry =  
'NL']/cac:AccountingSupplierParty/cac:Party/cac:PostalAddress">  
<assert id="NL-R-002" test="cbc:StreetName and cbc:CityName and cbc:PostalZone"  
flag="fatal">[NL-R-002] For suppliers in the Netherlands the supplier's address  
(cac:AccountingSupplierParty/cac:Party/cac:PostalAddress) MUST contain street name  
(cbc:StreetName), city (cbc:CityName) and post code (cbc:PostalZone)</assert>  
</rule>
```

```
<rule context="/ubl-invoice:Invoice[supplierCountry = 'DK' and $customerCountry =  
'DK']/cac:PaymentMeans">  
<assert id="DK-R-005" test="contains(' 1 10 31 42 48 49 50 58 59 93 97 ', concat('  
' , cbc:PaymentMeansCode, ' '))" flag="fatal">For Danish suppliers the following
```



Payment means codes are allowed: 1, 10, 31, 42, 48, 49, 50, 58, 59, 93 and 97</assert>  
</rule>

```
<rule context="/*[$supplierCountry =
'IT']/cac:AccountingSupplierParty/cac:Party/cac:PartyTaxScheme[normalize-
space(cac:TaxScheme/cbc:ID) != 'VAT']">
<assert id="IT-R-001" test="matches(normalize-space(cbc:CompanyID),'^[A-Z0-
9]{11,16}$')" flag="fatal">[IT-R-001] BT-32 (Seller tax registration identifier) -
For Italian suppliers BT-32 minimum length 11 and maximum length shall be 16. Per
i fornitori italiani il BT-32 deve avere una lunghezza tra 11 e 16
caratteri</assert>
</rule>
```

Example of a CreditNote-only rule:

```
<rule context="/ubl-creditnote:CreditNote[$supplierCountry =
'NL']/cbc:CreditNoteTypeCode">
<assert id="NL-R-001"
test="/*cac:BillingReference/cac:InvoiceDocumentReference/cbc:ID"
flag="fatal">[NL-R-001] For suppliers in the Netherlands, if the document is a
creditnote, the document MUST contain an invoice reference
(cac:BillingReference/cac:InvoiceDocumentReference/cbc:ID)</assert>
</rule>
```

Example of using a local variable:

```
<pattern>
<let name="isGreekSender" value="($supplierCountry = 'GR') or ($supplierCountry
= 'EL')"/>
<rule
context="cac:AccountingSupplierParty[$isGreekSender]/cac:Party/cac:PartyTaxScheme[
normalize-space(cac:TaxScheme/cbc:ID) = 'VAT']/cbc:CompanyID">
<assert id="GR-R-003" test="substring(.,1,2) = 'EL' and
u:TinVerification(substring(.,3))" flag="fatal">For the Greek Suppliers, the VAT
must start with 'EL' and must be a valid TIN number</assert>
</rule>
</pattern>
```

## 7 Test files

Test files for each country rule **MUST** be present in the deliverable from the Peppol Authority to have the national rules approved.

The test files **SHALL** include both positive and negative tests, meaning tests that both fire the rule, and tests where the rule is not fired.

All rules **SHALL** have at least one test where it is demonstrated that the rule(s) do(es) not fire for other countries.