eIGOR – eInvoicing GO Regional

CIUS-IT (Italian Core Invoice Usage Specification)

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24 **Acknowledgement**

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32 consortium (including the Commission Services).

33 **Change Log**

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67 # Glossary

B2B	Business to Business
B2G	Business to Government
BII	Business Interoperability Interfaces
C2G	Citizen to Government
CCTS	Core Component Technical Specification
CEF	Connecting Europe Facility
CEM	Certified Electronic Mail – Legal Mail (PEC Posta Elettronica Certificata in Italy)
CEN	European Committee for Standardisation
CII	Cross Industry electronic Invoice
CIUS	Core Invoice Usage Specification
DSI	Digital Service Infrastructures
DUNS	Data Universal Numbering System
EDI	Electronic Data Interchange
EDIFACT	Electronic Data Interchange For Administration, Commerce and Transport
EMSFEI	European Multi-Stakeholder Forum on eInvoicing
FatturaPA	Public administration electronic invoice framework (FatturaPubblica Amministrazione)
G2G	Government to Government
INEA	Innovation and Networks Executive Agency
SDI	Electronic exchange system in Italy (Sistema Di Interscambio)
SKOS	Simple Knowledge Organization System
TOGAF	The Open Group Architecture Framework
UBL	Universal Business Language
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNTDID	UN Trade Data Interchange Directory
URI	Uniform Resource Identifier
URL	Uniform Resource Location
URN	Uniform Resource Name
XML	Extensible Mark-up Language

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1 Introduction

This document aims to describe the Core invoice usage specification for the Italian context (CIUS-IT).

It includes a brief explanation of what is it the CIUS as defined by the EN 16931-1, what can be specified and how it has been built for the Italian eInvoicing system.

2 Audience

CIUS-IT directly applies to Italian or foreign sellers who are in need of preparing an eInvoice for a Public administration in Italy (B2G) in compliance with EN 16931-1 about the "*Semantic data model of the core elements of an electronic invoice*". According to the Directive 2014/55/EU on electronic invoicing in public procurement it will become mandatory for all contracting authorities and contracting entities to receive and process eInvoices complying with the European standard, starting in November 2018.

The European norm defines the list of official syntaxes accepted in TS 16931-2, namely:

1. **UN/CEFACT Cross Industry Invoice** XML message as specified in XML Schemas 16B (SCRDM - **CII**)
2. **UBL** invoice and credit note messages as defined in ISO/IEC 19845:2015

3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application.

It is important to notice that EN 16931 documents are analysed and referenced in their status at the time of this deliverable has been prepared (July 2017).

✓ EN 16931-1:2017 Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice
✓ CEN/TS 16931-2:2017 Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1
✓ CEN/TS 16931-3-2:2017 Electronic invoicing - Part 3 - 2: Syntax bindings of the core elements of an electronic invoice - Binding to ISO/IEC 19845 (UBL 2.1)
✓ CEN/TS 16931-3-3:2017 Electronic invoicing - Part 3 - 3: Syntax bindings of the core elements of an electronic invoice - Binding to UN/CEFACT XML

Moreover the following Italian documentation is referenced in this deliverable (version July 2017):

✓ Schema del file xml FatturaPA versione 1.2 - xsd
✓ Specifiche tecniche del formato della FatturaPA versione 1.2.1- pdf
✓ Rappresentazione tabellare del tracciato FatturaPA versione 1.2.1- pdf
✓ Rappresentazione tabellare del tracciato FatturaPA versione 1.2.1- excel
✓ Foglio di stile per la visualizzazione della FatturaPA versione 1.2.1 - xslt
✓ Foglio di stile per la visualizzazione della Fattura Ordinaria versione 1.2.1 - xslt
✓ Elenco modifiche al tracciato FatturaPA - pdf
✓ Suggerimenti per la compilazione della FatturaPA versione 1.5

4   CIUS definition

The core semantic data model is defined in the document EN 16931-1.

The core invoice model is based on the proposition that a quite limited, but nevertheless consists of a sufficient set of information elements which can be defined and support generally applicable invoice-related functionalities. These functionalities include invoice issuance and delivery, invoice validation, accounting, VAT reporting, payment and auditing. The core invoice model contains information elements that are commonly used and accepted, including those that are legally required.

The set of information elements that are contained in the core invoice model is commonly considered to consist of two parts: a **legal** part and a **common** part:

- The **legal** part of the core invoice model supports the **observance of both tax and commercial legal and regulatory requirements** pertaining to electronic invoicing commonly in force throughout the EU.
- The **common** part contains commonly used and accepted information elements that are **not sector or country specific**.

There are circumstances where the trading partners may wish to: Either 1. **restrict the information elements** to be used in an e-invoice or 2. To provide **additional information elements**. The first requirement is satisfied using a **Core Invoice Usage Specification (CIUS)**. The second requirement is satisfied using an **extension** specified in an Extension Specification.

4.1   Introduction

A "Core Invoice Usage Specification" (CIUS) is a specification that provides a seller with detailed guidance, explanations and examples, as well as rules (business rules) related to the actual implementation and use of structured information elements present in the core invoice model in a specific trading situation. **An instance document created following a given CIUS shall always be compliant with the European Standard**.

Typically, a CIUS will be created by a contracting entity (buyer) in relation to its own supply chain or by a group of contracting entities wishing to achieve consistency in the way that the information elements in the core invoice model are to be used by sellers trading with an identified sector or community of buyers. The requirements set out in such a CIUS will be communicated directly to sellers or placed on a web-site, and may be included or referred to in the contractual documentation between the parties. Alternatively, a CIUS may be created by a group of sellers and agreed in turn by their buyer or buyers in the context of a specific industry or supply chain. A CIUS is a **set of usage guidelines and/or restrictions made to the core invoice model that will still produce an invoice instance that is fully compliant with the core invoice model**. That means that a receiver of an invoice document instance that has been created in conformance with a CIUS is still able to receive and process it in accordance with the rules defined for the core invoice model.

The **main reasons** for developing a CIUS include:

- A receiver wishes to specify the way conditional information elements in the core invoice model are used or to restrict the content of mandatory or conditional information elements to a narrower set of requirements;
- A sender may be required to support requirements that are relevant to the trading situation. As an example, the sender may have to always provide certain information elements, even though they are specified as conditional in the core invoice model;
- a receiver requests that certain conditional elements are always used to facilitate increased automation in his processing. Examples include specified use of information elements relating to

153   the wide variety of reference data (purchase order, contract reference, tender identifier etc.)
154   provided in the core invoice model;

155   •   a sender may want to explain how he applies the core invoice model to his trading information;

156   •   a single buyer or a national and/or sectorial body may want to explain how the core invoice model
157   is applied to given use cases. Examples of such may include use of national payment methods, the
158   use of credit notes/negative invoices, the use of code lists and identifiers, or the use of line items.
159   They may also wish to use terminology and language that is familiar to the targeted user;

160   •   Another application is to restrict the information elements to those that could be included in a
161   user-friendly e-invoice for SMEs supplying basis goods and services.

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163   It is clearly a matter of good practice to confine the issue of a CIUS to convey essential requirements and
164   not to proliferate their use or complexity. They should be used sparingly for justified requirements to
165   ensure a balance between the needs of both buyer and seller.

4.2 Conformance

167   Conformance to the core invoice model, in the context of using a CIUS can be measured at three levels.

168   •   At the level of specifications,
169   •   the actual implementation of a given sender or receiver, and
170   •   the individual invoice instance documents.
171   Each of these levels is discussed in the following sub-clause.

172   **Conformance of the core invoice usage specifications**

173   The core invoice usage specifications that are used in conjunction with the core invoice model shall
174   themselves conform to the methodology and rules described in this guideline and expressed in the
175   following criteria:

176   •   The specification shall clearly state what business functions and/or legal requirements it is intended
177   to support.
178   •   The specification shall clearly state its issuer and responsible 'governor'.
179   •   The specification shall clearly state in what way the requirements of the CIUS differ from the core
180   invoice model, either by documenting the difference only or by specifically pointing out what the
181   differences are.
182   •   The resulting invoice document instance shall be fully conformant to the core invoice model.
183   •   The specification and, when relevant, its version shall be uniquely identifiable both for referencing
184   and for identification in processing.
185   •   The specification shall state its underlying specifications (the core invoice model as well as other
186   specifications that it may build upon).
187   •   The syntax binding of a specification shall follow the syntax binding methodology defined in CEN/TS
188   16931-3-1.
189   **Conformance of sending or receiving party**

190   A receiving party may only claim conformance to the core invoice model if he accepts invoices that comply
191   with the core invoice model in general, or with a CIUS, that is itself conformant with the core invoice
192   model.

193   A sending party may claim conformance if he sends invoices that conform to the core invoice model,
194   including those issued in accordance with a conformant CIUS.

195   **Conformance of an invoice document instance**

196 An invoice document instance is conformant to the core invoice model if it respects all rules defined for the
197 core invoice model, which may include the specification contained in a conformant CIUS.

198 If an invoice instance document supports requirements that can be considered as a use of a CIUS, the
199 invoice instance document is still conformant to the core invoice model. These invoice instance documents
200 can still be received and processed by a party who is not supporting the CIUS because it still conforms to
201 the rules of the core invoice model.

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5   The Italian CIUS

204 A gap analysis has been carried out during eIGOR (eInvoicing go Regional) CEF action in order to perform a
205 mapping between the core semantic model (as defined by EN 16931-1) and the Italian eInvoice XMLPA
206 syntax.

207 During the mapping from CEN to FatturaPa syntax different non conformities were identified between the
208 semantic model and the syntax elements. To solve these issues different steps have been performed:

209   -   To identify if a CIUS was needed
210   -   To identify if a mapping rule was needed
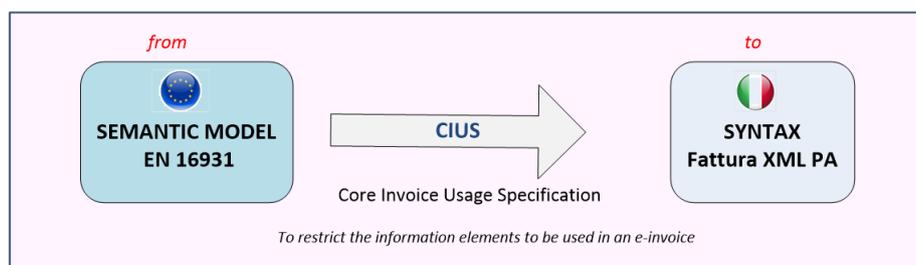
212   Figure 1 Mapping process from CEN to XMLPA including CIUS identification

213 Main objective has been to identify less CIUS specifications as possible in order to facilitate the eInvoice
214 issuer on the process of eInvoice preparation to be issued versus an Italian public authority.

215 The identified CIUS consists of a national set of restrictions needed to be compliant with FatturaPA syntax.
216 These specifications will be stored in a shared central database where all EU CIUS will be available for users.
217 This central process is still on the definition phase, the European technical committee TC 434 will soon
218 address the issue.

219 According to the methodology described in the European norm mainly country or sector CIUS can be
220 specified. In our gap analysis we primarily concentrated our effort on the definition of national CIUS (CIUS-
221 IT).

222 During the mapping process when a CIUS (restriction of the CEN semantic model) was considered to be
223 necessary it has been important to carefully evaluate if a corresponding "extension" of FatturaPA syntax
224 could represent a better solution. (*e.g. -ZIP code in XMLPA is numeric 5 digit-> a CIUS is required to restrict*
225 *CEN post code OR a relaxation of CAP in XMLPA to become alphanumeric of at least 10 chars*).

226 The CIUS-IT application scenario is represented in the following figure. An Italian public authority will
227 support eInvoices which are compliant to CIUS-IT. The Italian PA will be able to accept all instances from
228 foreign or Italian sellers who use the CIUS-IT for preparing their eInvoices in order to respect the
229 restrictions needed in the Italian context.
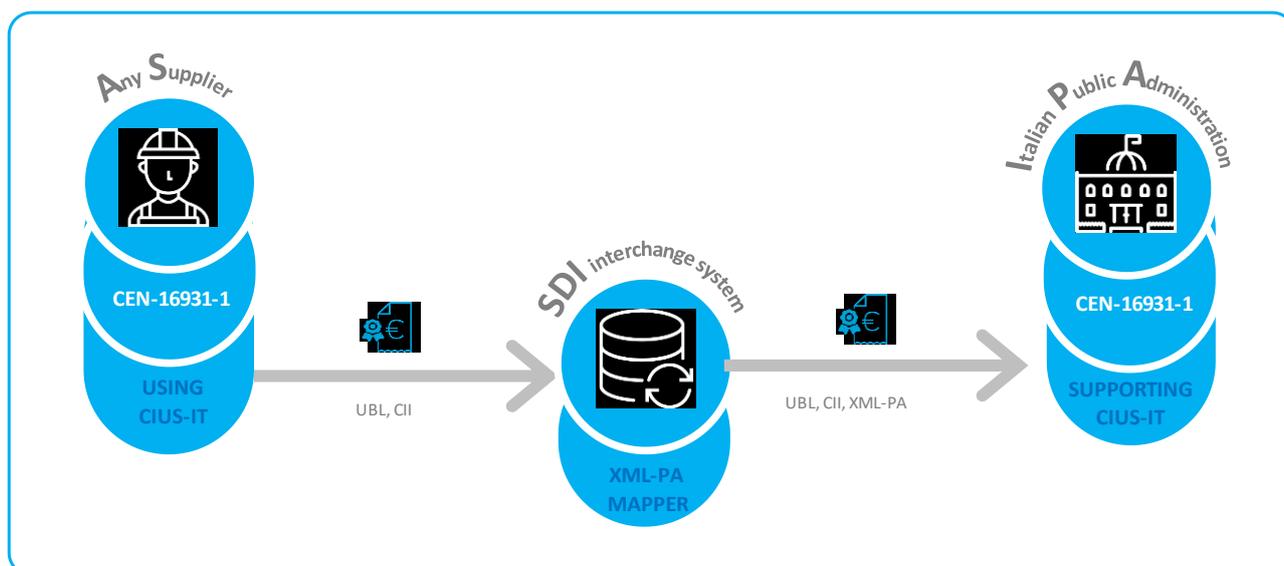
Figure 2 CIUS-IT application scenario

6   What may be specified in a CIUS

The reference point for any CIUS is always the core invoice model as defined in EN 16931-1. The specification shall clearly state in what way it creates usage guidelines or restrictions within the core invoice model.

The core invoice model is defined through the following key parameters which may be subject to further levels of specificity in a CIUS.

Business term: Business terms are used to identify an individual information element or group of information elements contained in the semantic model, and that may be exchanged in an invoice instance document. The core invoice model defines a set of business terms. Some are mandatory for the sender to include in all invoice instance documents. Others are conditional. The receiver is responsible for processing relevant information according to its processes. A CIUS may reduce the list of conditional elements or further specify their definition.

Cardinality: For each business term the core invoice model defines if it shall and how often it may appear in the same invoice instance document by stating their cardinality. A CIUS may restrict this and consequently affect how the receiver shall or can process the invoice instance document.

Semantic data type: Each business term defined in the core invoice model also has a defined semantic data type for the data it may contain. The semantic data type affects how the data shall or may be processed, as well as how it should be interpreted. For example, calculations can only be carried out using numbers, so business terms that are used in calculations are of the semantic data type number. Parties may want to further restrict the value domain of a semantic data type.

Codes and identifiers: Codes and identifiers are based on a list of schemas that define their meaning (in the case of codes) or how they are issued and structured (in the case of identifiers). For business terms that are defined as code or identifier the core invoice model specifies what code and identifier schemas may be used. In order to support specific requirements the trading partners may need to change these definitions.

258 **Business rules**: Many business terms in the core invoice model are governed by rules that control their use
259 and content. Partner may need to change or add to these rules in order to meet specific business
260 requirements.

261 **Value domain for an information element**: Only in few cases does the core invoice model define value
262 domains or the format of the data. Trading partners may want to prescribe such rules where there are
263 none or to restrict existing ones to support specific requirements. For example the core invoice model does
264 in some cases restrict allowed values to non-negative. On the other hand it does not set restrictions on text
265 lengths, which may be included in a CIUS.

266 The following paragraph lists in more detail the type of specification that can be made in a CIUS based on
267 the core invoice model and set out in a bilateral agreement between the trading parties.

6.1 Allowed specifications in a CIUS

269 Trading parties may make the following specifications within the core invoice model and the resulting
270 invoice instance will still be in conformance to the core invoice model and as result a receiver can process
271 the invoice without any modification to his processing. However, the recipient may choose to take
272 advantage of the specifications defined in the CIUS to further streamline his invoice processing.

Type of change	Example/remark
Business Terms	
Mark conditional Information element not to be used	Can be achieved by changing cardinality 0..x to 0..0. This essentially means that an element which use is conditional is not to be used. This will not affect the receivers processing. Care need to be taken to ensure that the business rules defined for the core invoice model are not broken.
Make semantic definition narrower	A narrower semantic definition of a business term means that the meaning conveyed is still within the meaning defined in the core invoice model and is already recognised by the receiver.
Add synonyms	As synonyms will only supplement the original business terms but do not replace it - the original term is still normative. A receiver who has designed his processing based on the core invoice model can continue to do so. Examples of synonyms are mapping of national or sector terminology to the terminology used in the core invoice.
Add explanatory text	Adding explanatory text that, for example, explains how a business term is used in a specific use case. There is a risk is that such text may also affect the semantic definition and this must be avoided. Explanatory information does not require any further action from the receiver and the automatic processing of the assigned invoice is still possible.
Cardinality	
Make a conditional element mandatory (0..x --> 1..x)	If a conditional element is made mandatory it simply means that the option of using it is applied. The receiver shall be prepared for the situation that a conditional element is used, so he does not need to modify his processing.
Decrease number of repetitions (x..n --> x..1)	If the number of repetitions is decreased they will remain within the limit that the receiver has catered for.
Semantic data type	
Change semantic data type from string to ...	If the semantic data type of a business term is changed from string to some other type the receiver can still process the value as a string.
Codes and identifiers	
Remove one of multiple defined lists	Where the core invoice semantic model defines more than one allowed list and the core invoice usage specification reduces the number of allowed lists then the invoice instance document is still conformant. However such a change shall leave at least one of the defined lists in place.
Mark defined values as not allowed	If the allowed code values are restricted within an existing list it simply means that certain values of the full list are being used and the receiver should have designed for processing them.
Business Rules	

Type of change	Example/remark
Add new non-conflicting business rule for existing element(s)	Represents an additional restriction on the allowed content within what is defined for the core invoice model. The receiver should therefore have designed for that content.
Make an existing business rule more restrictive	The exchanged content of the business term remains within what was defined for the core invoice model and the receiver should have designed for it.
Value domain for an element	
Restrict text or byte array length	If a maximum is set on the length where there was no limit the content remains within what was defined for the core invoice model.
Require defined structured values	When the core invoice model does not set a structure on a value the receiver would not have designed for processing in any particular form. Rules to enforce a given pattern should therefore not affect his processing.
Restrict allowed fraction digits	Fewer fraction digits result in a value that is within the accuracy that the receiver would have designed for when implementing the core invoice model.

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Figure 3 Allowed specifications in a CIUS

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7 CIUS-IT: Technical part

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7.1 How to identify an eInvoice using CIUS-IT

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279 Identified CIUS

280 An identification of the specification containing the total set of rules regarding semantic content,
281 cardinalities and business rules to which the data contained in the instance document conforms is reported
282 in BT-24 "Specification identification". This mandatory element identifies compliance or conformance to
283 this document. Conformant invoices specify: urn:cen.eu:en16931:2017. Invoices, compliant to a user
284 specification may identify that user specification here.

BT-24	++	1..1	Specification identification	urn:cen.eu:en16931:2017

285

286 When a CIUS is supported it is recommended that the invoice instance document itself carries the assigned
287 identifier in the business term BT-24 "Specification identification". This will allow the receiver of the invoice
288 instance document to apply processing of the document in accordance with the rules under which it was
289 generated.

290 For clear referencing and identification in processing each CIUS and its version shall be clearly identified
291 and have an assigned identifier.

292 The invoice sender shall indicate the CIUS-IT identifier in the corresponding semantic core model element
293 according to the syntax used for the eInvoice instance document.

294 The document TR 16931-5 indicates how to identify extension specification. The same methodology shall
295 be applied to identify CIUS.

296 An extension specification identifier shall be structured as follows:

297 SourceSpec[#Conformance#TargetSpec]

298 — SourceSpec shall be the core invoice model.

299 — Conformance states how the changes relate to the SourceSpec, using TOGAF terminology.

300 — TargetSpec are the identifiers for the extension specification itself and the extension specification **or**
301 **core invoice usage specification** that it builds on.

302 The TargetSpec and the SourceSpec shall be identified by giving a uniform resource name (urn). The
303 identifier for the European Norm is to include its EN number (EN 16931:2017)

304 For clarity, the main parts of the identifier shall be separated with a hash mark. Hash marks shall only be
305 used before and after the conformance type.

306 Following conformance types are allowed:

307 • Conformant (all features of the core invoice model are used in accordance with its rules, and is
308   extended with additional features)
309 • Compliant (uses some features of the core invoice model, but all features that are used are in
310   accordance with the rules of the core invoice model)
311
312 According to TOGAF terminology the difference between Conformant and Compliant is clarified in the
313 following figure.
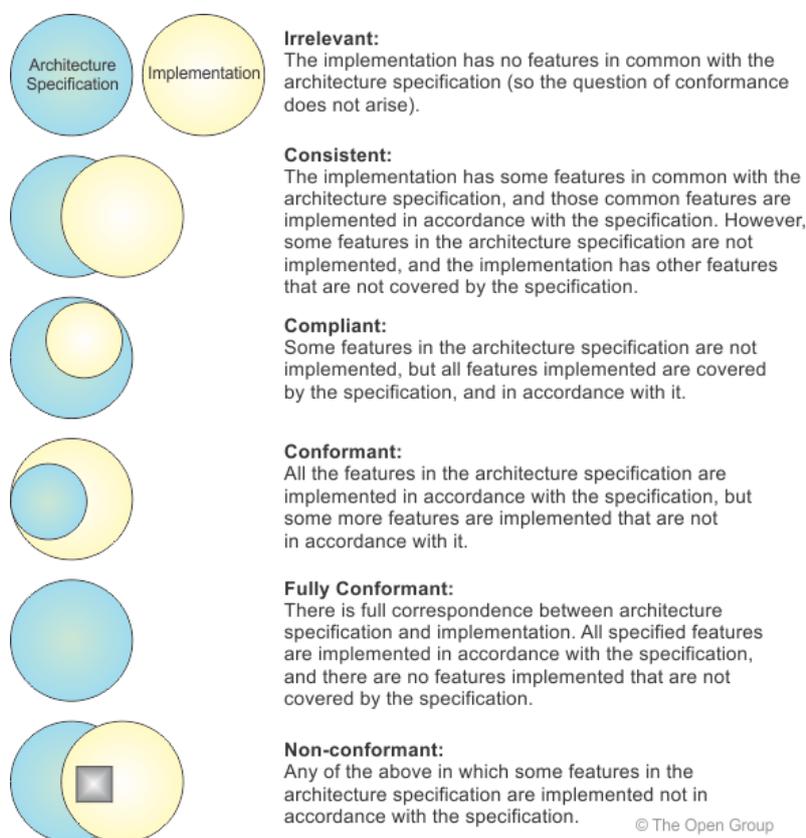
314
315 Figure 4 Levels of Architecture Conformance

316 Following examples show how the identifier is used in different situations.

317 A core invoice instance document is identified as follows:

318 urn:cen.eu:en16931:2017

319 An extended invoice instance document that is conformant to the core invoice model, where the extension
320 specification's identifier is "extensionid" and the governing body's urn is "userdomain.com" is identified as
321 follows:

322   urn:cen.eu:en16931:2017#conformant#urn:userdomain.com:extensionid

323   An extended invoice instance document that is based on an extension specification that is conformant to
324   the extension specification described in the previous example and still conforms to the core invoice model,
325   where the new extension specification's identifier is "extensionid2" and its governing body's urn is
326   "userdomai2.com" this invoice instance document, is identified as follows.

327   urn:cen.eu:en16931:2017#conformant#urn:userdomain.com:extensionid#conformant#urn:userdomain2.c
328   om:extensionid2.

329   According to this methodology the specification identifier will be composed by:

330   -   SourceSpec= urn:cen.eu:en16931:2017
331   -   Conformance states how the changes relate to the SourceSpec, using TOGAF terminology=
332   compliant
333   -   TargetSpec= urn:userdomain.com:CIUSid = urn:fatturapa.gov.it:CIUS-IT:1.0.0.20170801
334   where the userdomain is the Italian eInvoicing governing body's urn (fatturapa.gov.it); the
335   CIUS id is composed by the name=CIUS-IT and the version=1.0.0.20170801 which includes
336   the version date indication.

| BT-24 | 1..1 | Specification identification | **urn:cen.eu:en16931:2017#compliant#urn:fatturapa.gov.it:CIUS-IT:1.0.0.20170801** |

337

338   According to the eInvoice instance document syntax the specification identification will be:

339   -   UBL 2.1
340   <cbc:CustomizationID>urn:cen.eu:en16931:2017#compliant#urn: fatturapa.gov.it:CIUS-
341   IT:1.0.0.20170801</cbc:CustomizationID>
342   -   CII 16B
343   <rsm:ExchangedDocumentContext>
344   <ram:GuidelineSpecifiedDocumentContextParameter>
345   <ram:ID>urn:cen.eu:en16931:2017#compliant#urn:ade.it:CIUS-IT:1.0.0.20170801</ram:ID>
346   </ram:GuidelineSpecifiedDocumentContextParameter>
347   </rsm:ExchangedDocumentContext>

348   In case the BT-24 only indicates the urn:cen.eu:en16931:2017and not the CIUS-IT specification, the Italian
349   eInvoicing delivery system will try to apply the transformation using the mapping rules and the CIUS-IT
350   specifications which are a mandatory condition for having a proper validation of the resulting Fattura
351   XMLPA syntax. In case the transformation and validation process will fail the invoice instance will not be
352   accepted.

353   7.2   Supported Syntaxes
354   According to the European norm one of the two official syntaxes shall be used to prepare an eInvoce
355   instance document (as described in TS 16931-2): UBL 2.1 and UN/CEFACT CII 16B.

356   The CIUS-IT is available with the reference to these two syntaxes.

357   7.3   Detailed and technical Specifications
358   A CIUS shall always be documented with clear reference to the core invoice model. It may be documented
359   either as changes only, or as a full specification. If documented as a full specification, it shall be clear in
360   what way the specification differs from its underlying specification and represents a further specification
361   within the core invoice model.

362 It is recommended that core invoice usage specifications are documented in an appropriate repository for
363 retrieval and sharing. The availability of such a repository is expected to foster convergence over time.

364 Agreement between Buyers and Sellers on using a core invoice usage specification should be part of the
365 commercial contract between them.

366 So far there is no further indication on how to document in detail the CIUS. During the mapping process
367 within eIGOR CEF action a table has been defined to detail all CIUS specifications. The specifications are
368 ordered by CIUS categories and an identifier for each row has been created for implementation purposes.

369 A description of each specification is provided in the herewith reported table.

CIUS		Semantic model		Target Italian XMLPA syntax	CIUS specification description
ID	Type	ID	BT	XML PA field	Restriction description
	Business Terms				
CIUS-BT-98	Mark conditional Information element not to be used	**BT-32**	**Seller tax registration identifier**	**1.2.1.8 RegimeFiscale**	BT is a conditional field and shall not be used by a foreign seller as it is not possible to map into XMLPA. CEN business rules are not broken. In case the seller is Italian this field shall contain the codification of RegimeFiscale (1.2.1.8)
CIUS-BT-84	Make semantic definition narrower	**BT-84**	**Payment account identifier**	**2.4.2.13 IBAN**	The payment account identifier shall be an IBAN code
	Cardinality				
CIUS-CA-2	Make a conditional element mandatory (0..x --> 1..x)	**BT-49** **BT-49-1**	**Buyer electronic address** **Buyer electronic address identification scheme identifier**	**1.1.6 PECDestinatario** **1.1.4 CodiceDestinatario**	BT-49 shall contain a legal mail address (PEC) or IndicePA/CodiceDestinatario (see the Italian business rules). BT-49-1=IT:PEC or IT:IPA or IT:CODDEST
CIUS-CA-9	Make a conditional element mandatory (0..x --> 1..x)	**BT-31**	*Seller VAT identifier*	**1.2.1.1 IdFiscaleIVA 1.3.1.1 IdFiscaleIVA**	1.2.1.1 is mandatory in XMLPA (seller). BT-31 should be mandatory or copied from BT-63 (tax representative).
		BT-63	*Seller tax representative VAT identifier*	**1.2.1.1 IdFiscaleIVA 1.3.1.1 IdFiscaleIVA**	1.2.1.1 is mandatory in XMLPA (seller). BT-31 should be mandatory or copied from BT-63 (tax representative).
CIUS-CA-10	Make a conditional element mandatory (0..x --> 1..x)	**BT-35**	*Seller address line 1*	**1.2.2.1 Indirizzo, 1.2.2.4 Comune, 1.2.2.3 CAP**	Fields are mandatory in XMLPA Mapped BTs should be mandatory
		BT-37	*Seller city*		Fields are mandatory in XMLPA Mapped BTs should be mandatory
		BT-38	*Seller post code*		Fields are mandatory in XMLPA. Mapped BTs should be mandatory
CIUS-CA-11	Make a conditional element mandatory (0..x --> 1..x)	**BT-50**	*Buyer address line 1*	**1.4.2.1 Indirizzo, 1.4.2.4 Comune, 1.4.2.3 CAP**	Fields are mandatory in XMLPA. Mapped BTs should be mandatory
		BT-52	*Buyer city*		Fields are mandatory in XMLPA. Mapped BTs should be mandatory
		BT-53	*Buyer post code*		Fields are mandatory in XMLPA. Mapped BTs should be mandatory
CIUS-CA-12	Make a conditional element mandatory (0..x --> 1..x)	**BT-75**	**Deliver to address line 1**	**2.1.9.12.1 Indirizzo, 2.1.9.12.4 Comune, 2.1.9.12.3 CAP**	Fields are mandatory in XMLPA. Mapped BTs should be mandatory (If BG-15 is present)
		BT-77	**Deliver to city**		Fields are mandatory in XMLPA. Mapped BTs should be mandatory (If BG-15 is present)
		BT-78	**Deliver to post code**		Fields are mandatory in XMLPA. Mapped BTs should be mandatory (If BG-15 is present)
CIUS-CA-71	Make a conditional element mandatory (0..x --> 1..x)	**BT-125**	*Attached document*	**2.5.5 Attachment**	If BT-122 not empty then BT-124 or BT-125 should be mandatory as the mapped field is mandatory in XMLPA.
	Semantic data type				
CIUS-SD-73	Change semantic data type from string to ...	**BT-126**	**Invoice line identifier**	**2.2.1.1 NumeroLinea**	The BT value should be numeric
	Codes and identifiers				
CIUS-CI-13	Mark defined values as not allowed	**BT-6**	**VAT accounting currency code**		VAT accounting currency code should be € for invoices from EU to IT in accordance with 2006/112/CE art. 9
	Business Rules				
CIUS-BR-14	Add new non-conflicting business rule for existing element(s)	**BT-48** **BT-46, BT-46-1**	*Buyer VAT identifier* *Buyer identifier* *Buyer identifier identification scheme identifier*	**1.4.1.1 IdFiscaleIVA** **1.4.1.2 CodiceFiscale**	1.4.1.1 is not mandatory in XMLPA (buyer) but VAT number or Fiscal code should be indicated with scheme IT:CF or IT:VAT
	Value domain for an element				
CIUS-VD-15	Require defined structured values	**BT-16**	**Despatch advice reference**	**2.1.8.1 NumeroDDT** **2.1.8.2 DataDDT**	BT will be structured as unique ID containing the despatch date as well (e.g. 123456789_2017-03-05)
CIUS-VD-16	Restrict text or byte array length	**BT-16**	**Despatch advice reference**	**2.1.8.1 NumeroDDT** **2.1.8.2 DataDDT**	BT maximum lenght shall be 30 chars (20 digit + YYYY-MM-DD)

CIUS-VD-17	Restrict text or byte array length	**BT-27**	**Seller name**	**1.2.1.3.1 Denominazione**	BT maximum lenght shall be 80 chars
CIUS-VD-18	Restrict text or byte array length	**BT-44**	**Buyer name**	**1.4.1.3.1 Denominazione**	BT maximum lenght shall be 80 chars
CIUS-VD-19	Restrict text or byte array length	**BT-62**	**Seller tax representative name**	**1.3.1.3.1 Denominazione**	BT maximum lenght shall be 80 chars
CIUS-VD-20	Restrict text or byte array length	**BT-35, BT-36, BT-162**	*Seller address line 1 Seller address line 2 Seller address line 3*	**1.2.2.1 Indirizzo**	The sum of BTs maximum lenght shall be 60 chars (including separator)
CIUS-VD-21	Restrict text or byte array length	**BT-50, BT-51, BT-163**	*Buyer address line 1 Buyer address line 2 Buyer address line 3*	**1.4.2.1 Indirizzo**	The sum of BTs maximum lenght shall be 60 chars (including separator)
CIUS-VD-22	Restrict text or byte array length	**BT-75, BT-76, BT-165**	*Deliver to address line 1 Deliver to address line 2 Deliver to address line 3*	**2.1.9.12.1 Indirizzo**	The sum of BTs maximum lenght shall be 60 chars (including separator)
CIUS-VD-23	Restrict text or byte array length	**BT-37**	**Seller city**	**1.2.2.4 Comune**	BT maximum lenght shall be 60 chars
CIUS-VD-24	Restrict text or byte array length	**BT-52**	**Buyer city**	**1.4.2.4 Comune**	BT maximum lenght shall be 60 chars
CIUS-VD-25	Restrict text or byte array length	**BT-77**	**Deliver to city**	**2.1.9.12.4 Comune**	BT maximum lenght shall be 60 chars
CIUS-VD-26	Restrict text or byte array length	**BT-38**	**Seller post code**	**1.2.2.3 CAP**	BT maximum lenght shall be 15 chars (if country code =IT then it should be numeric and maximum length 5). In case the XMLPA will not be modified if country-code not =IT then CAP=99999 and CAP will be saved in attachment
CIUS-VD-27	Restrict text or byte array length	**BT-53**	**Buyer post code**	**1.4.2.3 CAP**	BT maximum lenght shall be 15 chars (if country code =IT then it should be numeric and maximum length 5). In case the XMLPA will not be modified if country-code not =IT then CAP=99999 and CAP will be saved in attachment
CIUS-VD-28	Restrict text or byte array length	**BT-78**	**Deliver to post code**	**2.1.9.12.3 CAP**	BT maximum lenght shall be 15 chars (if country code =IT then it should be numeric and maximum length 5). In case the XMLPA will not be modified if country-code not =IT then CAP=99999 and CAP will be saved in attachment
CIUS-VD-29	Restrict text or byte array length	**BT-39**	**Seller country subdivision**	**1.2.2.5 Provincia**	BT maximum lenght shall be 2 chars only used if country code=IT else the BT is not used
CIUS-VD-30	Restrict text or byte array length	**BT-54**	**Buyer country subdivision**	**1.4.2.5 Provincia**	BT maximum lenght shall be 2 chars only used if country code=IT else the BT is not used
CIUS-VD-31	Restrict text or byte array length	**BT-79**	**Deliver to country subdivision**	**2.1.9.12.5 Provincia**	BT maximum lenght shall be 2 chars only used if country code=IT else the BT is not used
CIUS-VD-32	Restrict text or byte array length	**BT-1**	**Invoice number**	**2.1.1.4 Numero**	BT maximum lenght shall be 20 digit
CIUS-VD-33	Restrict text or byte array length	**BT-11**	**Project reference**	**2.1.3.6 CodiceCUP**	BT maximum lenght shall be 15 chars
CIUS-VD-34	Restrict text or byte array length	**BT-12**	**Contract reference**	**2.1.3.2 IdDocumento**	BT maximum lenght shall be 20 chars
CIUS-VD-35	Restrict text or byte array length	**BT-13**	**Purchase order reference**	**2.1.2.2. IdDocumento**	BT maximum lenght shall be 20 chars
CIUS-VD-36	Restrict text or byte array length	**BT-15**	**Receiving advice reference**	**2.1.5.2 IdDocumento**	BT maximum lenght shall be 20 chars
CIUS-VD-37	Restrict text or byte array length	**BT-17**	**Tender or lot reference**	**2.1.3.7 CodiceCIG**	BT maximum lenght shall be 15 chars
CIUS-VD-38	Restrict text or byte array length	**BT-19**	**Buyer accounting reference**	**1.2.6 RiferimentoAmministrazione**	BT maximum lenght shall be 20 chars

CIUS-VD-39	Restrict text or byte array length	**BT-21, BT-22**	*Invoice note subject code Invoice note*	**2.1.1.11 Causale**	The sum of BTs maximum lenght shall be 200 chars or a split mechanism in multiple lines should be implemented
CIUS-VD-40	Restrict text or byte array length	**BT-25**	**Preceding Invoice number**	**2.1.6.2. IdDocumento**	BT maximum lenght shall be 20 chars
CIUS-VD-41	Restrict text or byte array length	**BT-31**	**Seller VAT identifier**	**1.2.1.1.1 IdPaese 1.2.1.1.2 IdCodice**	BT maximum lenght shall be 30 chars
CIUS-VD-42	Restrict text or byte array length	**BT-63**	**Seller tax representative VAT identifier**	**1.3.1.1.1 IdPaese 1.3.1.1.2 IdCodice**	BT maximum lenght shall be 30 chars
CIUS-VD-43	Restrict text or byte array length	**BT-48**	**Buyer VAT identifier**	**1.4.1.1.1 IdPaese 1.4.1.1.2 IdCodice**	BT maximum lenght shall be 30 chars
CIUS-VD-44	Restrict text or byte array length	**BT-41**	**Seller contact point**	**2.1.1.11 Causale**	BT maximum lenght shall be 200 chars
CIUS-VD-45	Require defined structured values	**BT-42**	**Seller contact telephone number**	**1.2.5.1 Telefono**	BT minimum length shall be 5 maximum lenght shall be 12 chars
CIUS-VD-46	Require defined structured values	**BT-43**	**Seller contact email address**	**1.2.5.3 Email**	BT minimum length shall be 7 maximum lenght shall be 256 chars
CIUS-VD-47	Require defined structured values	**BT-39**	**Seller country subdivision**	**1.2.2.5 Provincia**	Only if country code=IT coded according to Italian province list
CIUS-VD-48	Require defined structured values	**BT-54**	**Buyer country subdivision**	**1.4.2.5 Provincia**	Only if country code=IT coded according to Italian province list
CIUS-VD-49	Require defined structured values	**BT-79**	**Deliver to country subdivision**	**2.1.9.12.5 Provincia**	Only if country code=IT coded according to Italian province list
CIUS-VD-50	Restrict text or byte array length	**BT-59**	**Payee name**	**2.4.2.1 Beneficiario**	BT maximum lenght shall be 200 chars
CIUS-VD-51	Restrict text or byte array length	**BT-56**	**Buyer contact point**	**2.1.1.11 Causale**	BT maximum lenght shall be 200 chars
CIUS-VD-53	Require defined structured values	**BT-46, BT-46-1**	*Buyer identifier Buyer identifier identification scheme identifier*	**1.4.1.2 CodiceFiscale**	If BT-48 is empty then one of the buyer identifiers (0..n) should be the FiscalCode in BT-46. BT-46-1 shall contain the scheme IT:CF.
CIUS-VD-55	Restrict text or byte array length	**BT-82**	**Payment means text**	**2.1.1.11 Causale**	BT maximum lenght shall be 200 chars
CIUS-VD-56	Restrict text or byte array length	**BT-83**	**Remittance information**	**2.4.2.21 CodicePagamento**	BT maximum lenght shall be 60 chars
CIUS-VD-57	Require defined structured values	**BT-84**	**Payment account identifier**	**2.4.2.13 IBAN**	BT minimum length shall be 15 maximum lenght shall be 34 chars
CIUS-VD-58	Restrict text or byte array length	**BT-85**	**Payment account name**	**2.4.2.1 Beneficiario**	BT maximum lenght shall be 200 chars
CIUS-VD-59	Require defined structured values	**BT-86**	**Payment service provider identifier**	**2.4.2.16 BIC**	BT minimum length shall be 8 maximum lenght shall be 11 chars
CIUS-VD-60	Restrict text or byte array length	**BT-97, BT-98**	*Document level allowance reason Document level allowance reason code*	**2.2.1.4 Descrizione**	BTs maximum lenght shall be 1000 chars
CIUS-VD-61	Restrict text or byte array length	**BT-104, BT-105**	*Document level charge reason Document level charge reason code*	**2.2.1.4 Descrizione**	BTs maximum lenght shall be 1000 chars
CIUS-VD-62	Require defined structured values	**BT-112**	**Invoice total amount with VAT**	**2.1.1.9 ImportoTotaleDocumento**	BT minimum length shall be 4 maximum lenght shall be 15 chars
CIUS-VD-63	Require defined structured values	**BT-115**	**Amount due for payment**	**2.4.2.6 ImportoPagamento**	BT minimum length shall be 4 maximum lenght shall be 15 chars

CIUS-VD-64	Require defined structured values	BT-92, BT-99	*Document level allowance amount* *Document level charge amount*	2.2.1.9 PrezzoUnitario 2.2.1.11 PrezzoTotale	BT minimum length shall be 4 maximum lenght shall be 21 chars
CIUS-VD-65	Require defined structured values	BT-114	**Rounding amount**	2.1.1.10 Arrotondamento	BT minimum length shall be 4 maximum lenght shall be 15 chars
CIUS-VD-66	Require defined structured values	BT-116	**VAT category taxable amount**	2.2.2.5 ImponibileImporto	BT minimum length shall be 4 maximum lenght shall be 15 chars
CIUS-VD-67	Require defined structured values	BT-117	**VAT category tax amount**	2.2.2.6 Imposta	BT minimum length shall be 4 maximum lenght shall be 15 chars
CIUS-VD-68	Restrict text or byte array length	BT-120	**VAT exemption reason text**	2.2.2.8 RiferimentoNormativo	BT maximum lenght shall be 100 chars
CIUS-VD-69	Restrict text or byte array length	BT-122, BT-125-2	*Supporting document reference* *Attached document Filename*	2.5.1 NomeAttachment	BTs maximum lenght shall be 60 chars
CIUS-VD-70	Restrict text or byte array length	BT-123	**Supporting document description**	2.5.4 DescrizioneAttachment	BT maximum lenght shall be 100 chars
CIUS-VD-72	Restrict text or byte array length	BT-125-1	**Attached document Mime code**	2.5.3 FormatoAttachment	BT maximum lenght shall be 10 chars
CIUS-VD-74	Restrict text or byte array length	BT-126	**Invoice line identifier**	2.2.1.1 NumeroLinea	BT maximum lenght shall be 4 digits
CIUS-VD-75	Restrict text or byte array length	BT-127	**Invoice line note**	2.2.1.16.2 RiferimentoTesto	BT maximum lenght shall be 60 chars
CIUS-VD-76	Restrict text or byte array length	BT-128-1	**Invoice line object identifier identification scheme identifier**	2.2.1.3.1 CodiceTipo	BT maximum lenght shall be 35 chars
CIUS-VD-77	Restrict text or byte array length	BT-128	**Invoice line object identifier**	2.2.1.3.2 CodiceValore	BT maximum lenght shall be 35 chars
CIUS-VD-78	Restrict text or byte array length	BT-130	**Invoiced quantity unit of measure**	2.2.1.6 UnitaMisura	BTs maximum lenght shall be 10 chars
		BT-149	**Item price base quantity**	2.2.1.6 UnitaMisura	BTs maximum lenght shall be 10 chars
		BT-150	**Item price base quantity unit of measure code**	2.2.1.6 UnitaMisura	BTs maximum lenght shall be 10 chars
CIUS-VD-79	Restrict text or byte array length	BT-133	**Invoice line Buyer accounting reference**	2.2.1.15 RiferimentoAmministrazione	BT maximum lenght shall be 20 chars
CIUS-VD-80	Require defined structured values	BT-136, BT-141	*Invoice line allowance amount* *Invoice line charge amount*	2.2.1.9 PrezzoUnitario 2.2.1.11 PrezzoTotale	BT minimum length shall be 4 maximum lenght shall be 21 chars
CIUS-VD-81	Restrict text or byte array length	BT-139	**Invoice line allowance reason**	2.2.1.4 Descrizione	BTs maximum lenght shall be 1000 chars
		BT-140	**Invoice line allowance reason code**	2.2.1.4 Descrizione	BTs maximum lenght shall be 1000 chars
CIUS-VD-82	Restrict text or byte array length	BT-144	**Invoice line charge reason**	2.2.1.4 Descrizione	BTs maximum lenght shall be 1000 chars
	Restrict text or byte array length	BT-145	**Invoice line charge reason code**	2.2.1.4 Descrizione	BTs maximum lenght shall be 1000 chars
CIUS-VD-83	Require defined structured values	BT-146	**Item net price**	2.2.1.9 PrezzoUnitario	BT minimum length shall be 4 maximum lenght shall be 21 chars
CIUS-VD-85	Restrict text or byte array length	BT-153	**Item name**	2.2.1.4 Descrizione	BTs maximum lenght shall be 1000 chars

	Restrict text or byte array length	**BT-154**	**Item description**	**2.2.1.4 Descrizione**	BTs maximum lenght shall be 1000 chars
CIUS-VD-86	Restrict text or byte array length	**BT-155**	**Item Seller's identifier**	**2.2.1.3.2 CodiceValore**	BT maximum lenght shall be 35 chars
CIUS-VD-87	Restrict text or byte array length	**BT-156**	**Item Buyer's identifier**	**2.2.1.3.2 CodiceValore**	BT maximum lenght shall be 35 chars
CIUS-VD-88	Restrict text or byte array length	**BT-157**	**Item standard identifier**	**2.2.1.3.2 CodiceValore**	BT maximum lenght shall be 35 chars
CIUS-VD-89	Restrict text or byte array length	**BT-158**	**Item classification identifier**	**2.2.1.3.2 CodiceValore**	BT maximum lenght shall be 35 chars
CIUS-VD-90	Restrict text or byte array length	**BT-157-1**	**Item standard identifier identification scheme identifier**	**2.2.1.3.1 CodiceTipo**	BT maximum lenght shall be 35 chars
CIUS-VD-91	Restrict text or byte array length	**BT-158-1**	**Item classification identifier identification scheme identifier**	**2.2.1.3.1 CodiceTipo**	BTs maximum lenght shall be 35 chars
		BT-158-2	**Scheme version identifer**	**2.2.1.3.1 CodiceTipo**	BTs maximum lenght shall be 35 chars
CIUS-VD-92	Restrict text or byte array length	**BT-159**	**Item country of origin**	**2.2.1.16.2 RiferimentoTesto**	BT maximum lenght shall be 60 chars
CIUS-VD-93	Restrict text or byte array length	**BT-160**	**Item attribute name**	**2.2.1.16 AltriDatiGestionali 2.2.1.16.1 TipoDato**	BT maximum lenght shall be 10 chars
CIUS-VD-94	Restrict text or byte array length	**BT-161**	**Item attribute value**	**2.2.1.16 AltriDatiGestionali 2.2.1.16.2 RiferimentoTesto**	BT maximum lenght shall be 60 chars
CIUS-VD-95	Restrict allowed fraction digits	**BT-146**	**Item net price**	**2.2.1.9 PrezzoUnitario**	BT allowed fraction digits shall be 8
CIUS-VD-96	Restrict text or byte array length	**BT-132**	**Referenced purchase order line reference**	**2.1.2.4 NumItem**	BT maximum lenght shall be 20 chars
CIUS-VD-97	Restrict text or byte array length	**BT-49, BT-49-1**	*Buyer electronic address Buyer electronic address identification scheme identifier*		If BT-49-1= IT:PEC schema then BT-49 minimum length shall be 7 maximum lenght shall be 256 chars else if BT-49-1 = IT:IPA schema then BT-49 maximum lenght shall be 6 chars else if BT-49-1 = IT:CODDEST schema then BT-49 maximum lenght shall be 7 chars
CIUS-VD-99	Require defined structured values	**BT-32**	**Seller tax registration identifier**	**1.2.1.8 RegimeFiscale**	In case the seller is Italian this field shall contain the codification of RegimeFiscale (1.2.1.8 from RF01 to RF19)
CIUS-VD-100	Restrict text or byte array length	**BT-46, BT-46-1**	*Buyer identifier Buyer identifier identification scheme identifier*	**1.4.1.2 CodiceFiscale 1.4.1.3.5 CodEori 1.4.1.1 IdFiscaleIva**	case BT46-1=IT:CF then BT-46 minimum lenght 11 and maximum lenght shall be 16 BT-46-1=IT:EORI then BT-46 minimum lenght 13 and maximum lenght shall be 17 BT-46-1=IT:VAT then BT-46 maximum length 30 (the first two chars indicates country code)
CIUS-VD-101	Restrict text or byte array length	**BT-29, BT-29-1**	*Seller identifier Seller identifier identification scheme identifier*	**1.2.1.2 CodiceFiscale or 1.2.1.3.5 CodEORI**	case BT29-1=IT:CF then BT-29 minimum lenght 11 and maximum lenght shall be 16 BT-29-1=IT:EORI then BT-29 minimum lenght 13 and maximum lenght shall be 17 BT-29-1=IT:VAT then BT-29 maximum length 30 (the first two chars indicates country code)
CIUS-VD-102	Restrict text or byte array length	**BT-30, BT-30-1**	*Seller legal registration identifier Seller legal registration identifier identification scheme identifier*	**1.2.4.1 Ufficio 1.2.4.2 NumeroREA or 1.2.1.6 NumeroIscrizioneAlbo**	case BT-30-1=IT:REA then BT-30 minimum lenght 3 and maximum lenght shall be 22 (first two chars indicate the italian province code) BT-30-1=IT:ALBO then BT-30 maximum length 60

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7.4   Validation engine

To evaluate if an invoice is compliant with the EN 16931-1 about the "*Semantic data model of the core elements of an electronic invoice*", it is available a Schematron validation tool.

Schematron is a XML schema that is used to validate an XML document, capturing constraints in human language assertions and generating appropriate human-language diagnostics: this allows a level of user-friendliness not available in other schema languages.

Schematron has been standardized by the ISO as Information technology, Document Schema Definition Languages (DSDL), Part 3: Rule-based validation, Schematron (ISO/IEC 19757-3:2016).

This standard is available free on the [ISO Publicly Available Specifications](#).

The Italian CIUS is a specification containing the total set of rules regarding semantic content, cardinalities and business rules to which an invoice in compliance with EN 16931-1 about the "*Semantic data model of the core elements of an electronic invoice*" should be applied when issued for a Public administration in Italy.

Although the CIUS is related to the Semantic data model of the core elements of an electronic invoice that is independent from the used syntax, the schematron is not neutral about the used syntax.

According the European norm that defines the list of official syntaxes accepted in TS 16931-2, namely:

1. **UN/CEFACT Cross Industry Invoice** XML message as specified in XML Schemas 16B (SCRDM - **CII**)
2. **UBL** invoice and credit note messages as defined in ISO/IEC 19845:2015

the CIUS-IT schematron is available for these two syntaxes.

```xml
<pattern name="CIUS-BT-2">
    <rule context="cac:AccountingCustomerParty/cac:Party">
        <assert test="exists(cbc:EndpointID)" flag="fatal">
            [CIUS-BT-2]-BT-49 shall contain a legal mail address (PEC) or IndicePA/CodiceUfficio (see the Italian business rules).
        </assert>
    </rule>
</pattern>
```

Figure 5 Sample Schematron rule

To validate if an invoice, in UBL 2.1 or CII 16B syntax, comply with the Italian CIUS it is required to follow two sequential steps:

1. CEN Validation - The invoice must be compliant with the EN 16931-1 (in UBL 2.1 or CII 16B)
2. CIUS-IT Validation - The Invoice must be compliant with the Italian CIUS
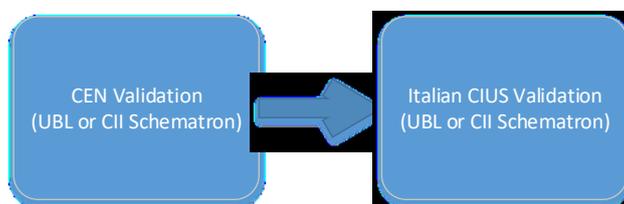
Figure 6 Validation Steps