Welcome to the Live Webinar #9: Understanding UBL and CII

Start 10:00 (CET)

Ground Rules for the Live Webinar

Please **mute your microphone** before the webinar starts

To chat with other participants and submit questions, please use the **Chat function to the right** of your screen

To connect your audio go to the Quick Start tab and connect your audio (dial-in, dial-out or connect via computer)

Live Webinar #9

Understanding OASIS UBL 2.1 and UN/CEFACT Cross Industry Invoice D16B

7 March 2018

Today's speakers

Martin Forsberg

Martin Forsberg works as an expert in the area of electronic business, customs and financial processes. Martin was involved in the PEPPOL and eSENS Large Scale Pilots. He is active in standardization committees such as CEN TC434 and OASIS UBL.

Thomas Fillis

Thomas Fillis is a Communications Consultant in DIGIT working on CEF Digital. Prior to joining DIGIT, Thomas advised a Member of the European Parliament, and worked in the private and not-for-profit sectors. A native of Liverpool, and has certifications from Universities in the UK, Germany and the Netherlands.

Agenda

10 00	Welcome	Thomas Fillis, DIGIT
10 05	CEF eInvoicing services	
10 15	Syntaxes which comply with the European standard on eInvoicing	Martin Forsberg, DIGIT
10 30	UBL Version 2.1 – ISO/IEC 19845:2015	
10 40	UN/CEFACT Cross Industry Invoice D16B	
10 50	Syntax bindings	
11 00	Where to find the specifications	
11 15	Q & A	All
11 30	Close	Thomas Fillis, DIGIT

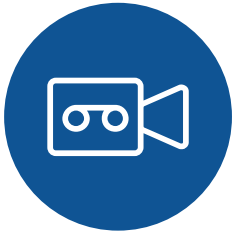
Highlights of the webinar

DURING

Ask questions

Download the presentation

AFTER



Download the webinar recording

Interact with our online community

Objectives of this module

- Introduction to the syntaxes
- Learn where to find the specifications and how to navigate the specification packages
- Insights into the XML schemas and technical artefacts
- Where to learn more

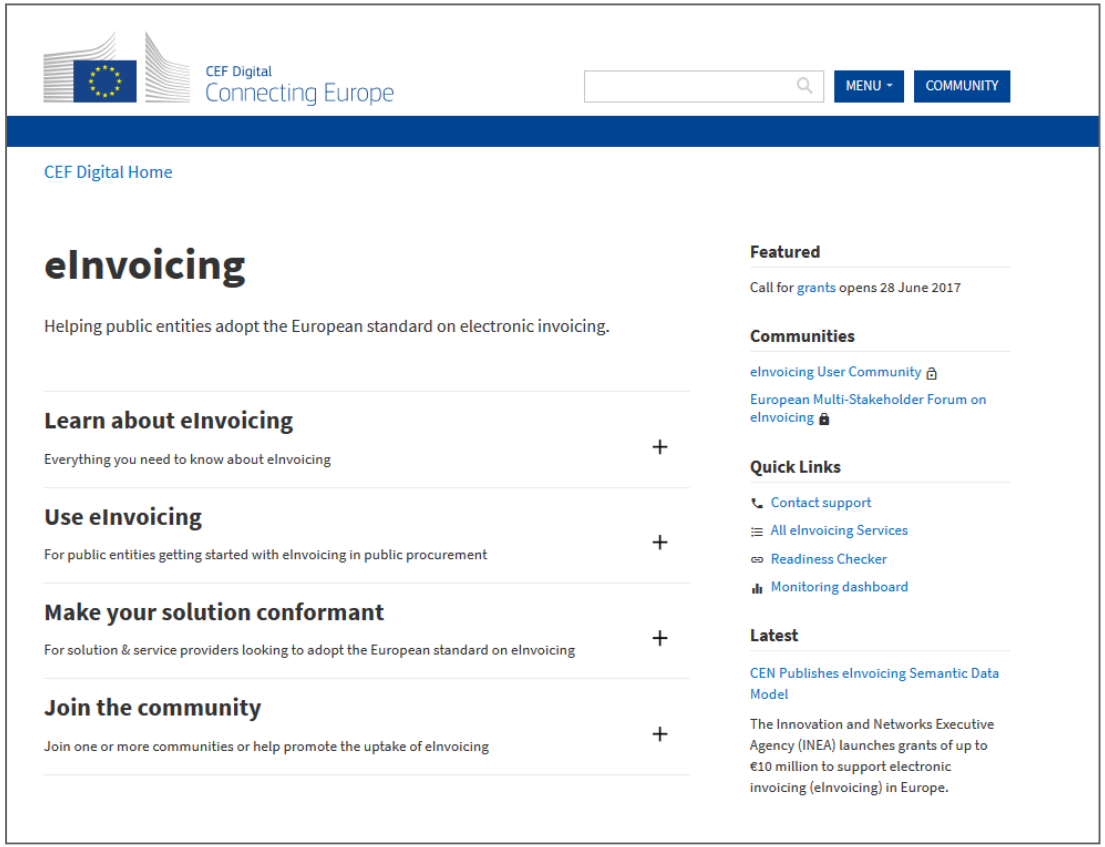
Audience for this webinar

- Public authorities
- Private entities
- Policy makers in the Member States
- Members of standardization bodies
- eInvoicing implementers for…
  - Software services
  - Solution providers

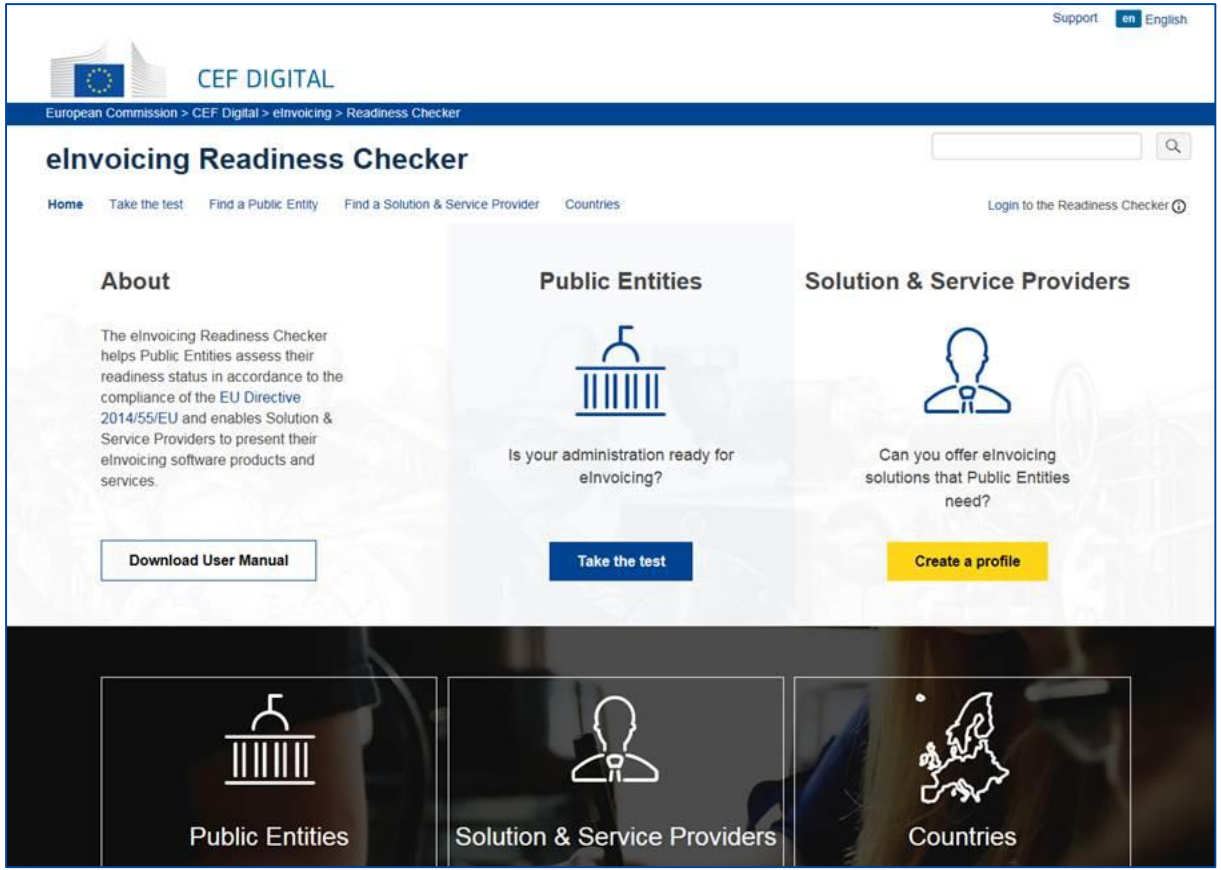
CEF eInvoicing services

Thomas Fillis
DIGIT

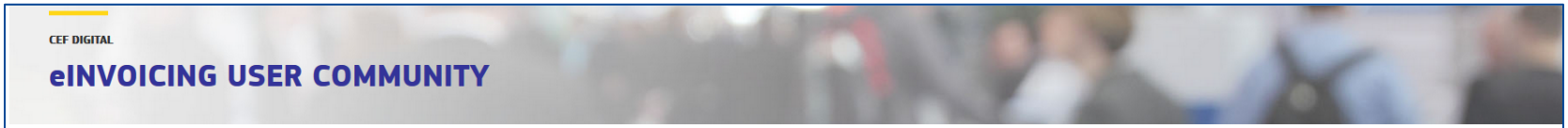
CEF Digital


CEF Digital
Connecting Europe
MENU
COMMUNITY
CEF Digital Home
eInvoicing
Helping public entities adopt the European standard on electronic invoicing.
Learn about eInvoicing
Everything you need to know about eInvoicing
Use eInvoicing
For public entities getting started with eInvoicing in public procurement
Make your solution conformant
For solution & service providers looking to adopt the European standard on eInvoicing
Join the community
Join one or more communities or help promote the uptake of eInvoicing
Featured
Call for grants opens 28 June 2017
Communities
eInvoicing User Community
European Multi-Stakeholder Forum on eInvoicing
Quick Links
Contact support
All eInvoicing Services
Readiness Checker
Monitoring dashboard
Latest
CEN Publishes eInvoicing Semantic Data Model
The Innovation and Networks Executive Agency (INEA) launches grants of up to €10 million to support electronic invoicing (eInvoicing) in Europe.

eInvoicing Readiness Checker



eInvoicing User Community



FORUM

The CEF eInvoicing User Community **Forums** are a great place to post questions and share comments with fellow eInvoicing users, implementors and Service and Solution providers. Discuss a variety of topics, from implementing Directive 2014/55/EU to promoting the adoption of eInvoicing solutions.

Topic	Author	Creation date	
Implementations of the new European Norm in the Member States - What is your plans?	@Christian Vindinge RASMUSSEN	31-05-2017	3 2
Webinar # 1: CEF eInvoicing - What's in it for you?	@Ines COSTA	08 May 2017	
CEF eInvoicing Implementation Workshops - register now!	@Ines COSTA	02 May 2017	2
Standard Definitions for Techniques of Supply Chain Finance	@José VICENTE	18 Apr 2017	
ZUGFeRD Developers meet in May 2017	@Stefan ENGEL-FLECHSIG	20 Mar 2017	1 3

Prev 1 2 Next

Visit Forum | Create new topic

CONTRIBUTE

The objective of the **Contribute** section in the CEF eInvoicing User Community is to allow eInvoicing stakeholders to participate in ongoing activities launched by CEF eInvoicing by providing information, feedback, comments or taking action in a different range of initiatives.

Title	Excerpt	Status	Deadline	
2016 eInvoicing Country Sheets	As national representatives you are asked to verify the eInvoicing situation in your country.	COMPLETED	31 Dec 2016	4
2017 State of Play of B2G eInvoicing: Participate in an online survey	Participate in an online survey to help us to obtain input on the state of play of your country's B2G eInvoicing in public procurement	OPEN	Ongoing	
eInvoicing Pioneer Group	Are you active in eInvoicing from the public or private sector side? Join this group to provide feedback to the EC on eInvoicing matters and to drive activities to support the launch of the European Standard on eInvoicing and compliance with Directive 2014/55/EU.	OPEN	Ongoing	1 6
2017 State of Play of B2G eInvoicing: Bring your contribution!	Define what questions should be address in the state of play of B2G eInvoicing in public procurement study, and who should be invited to answer the questions.	COMPLETED	28 Feb 2017	13 4
The future mandate of the forum	As the current European Multi-Stakeholder Forum on eInvoicing (EMSFEI) mandate is coming to an end, we warmly invite you to play an active role in the definition of the future mandate of this forum.	COMPLETED	15 Feb 2017	1 1

About the community

The eInvoicing User Community space enables stakeholders involved and interested in cross-border eInvoicing, to discuss eInvoicing in the EU public and private sectors. The space is also used for co-creative activities with the Advisory Group and Early Adopters of the upcoming eInvoicing Match-Making Website, which is designed to help public administrations implement electronic invoicing, as per the requirements of Directive 2014/55/EU.

Your space moderators

European Commission

CEF eInvoicing Trainings

Implementation workshops

- Typically at least one full or one half-day workshop;
- Possibly in combination with **bilateral meetings** b/w EC and MS;
- So far workshops in **Cyprus**, **Finland, Estonia, Poland** and **Greece**;
- Planned workshops in Croatia, Ireland, Malta and EESPA
- **Apply** here: CEF-BUILDING-BLOCKS@ec.europa.eu

Remote trainings

- Live sessions on a focused eInvoicing topic for a specialised target audience;
- 1-3 hour-long sessions provided on-line;
- Focused training sessions on key areas derived from the on-site workshops.

Webinars

- **About 1 hour-long sessions with core elements from on-site and remote trainings to gain expertise in key areas.**

CEF eInvoicing Service offering

OPERATIONS SERVICES

Testing services

- Conformance testing (A, P)

Supporting services

- Service Desk (A, P)
- Training (A, P)

STAKEHOLDER MANAGEMENT SERVICES

Stakeholders follow-up

- Awareness raising & stakeholder follow-up (A, P)
- eInvoicing Readiness Checker (A, P)

Community management services

- Knowledge base (A, P)
- Community animation (A, P)

AUDIENCE

- A Public Administrations
- P Solution Providers

Available

Coming soon

STANDARDS OF EUROPEAN STANDARDS ORGANIZATIONS (ESOs)

CEN semantic standard for eInvoicing in public procurement (A, P)

Service offering Description (SoD)

All services are described in an SoD describing its purpose, the users for which it is for, its benefits and the process to use it

Service Level Arrangements (SLA)

Documents that describe Service Level Targets to be reached when delivering Building Block Services.

eLearning, videos, success stories

Some services feature multimedia such as eLearnings, instructional videos or success stories to help grasp what the service is about

CEF Digital platform

CEF eInvoicing service offering, and more about the building block, can be found online

CEF Digital >

More Webinars Related to the Standard and the Directive

September — Webinar #3 The European norm and its content (eInvoicing Directive)

October — Webinar #4 Infrastructure based on CEF eDelivery DSI

November — Webinar #5 eInvoicing from a user's perspective (incl. ordering & payments)

December — Webinar #6 Examples of Early Adopters of large scale eInvoicing

January — Technical webinars

February — Webinars #7, 8 & 9 Basic XML + XML Validation mechanisms + OASIS UBL 2.1 and UN/CEFACT CII D16B

More information on the events can be found here:
https://ec.europa.eu/cefdigital/wiki/x/MQHpAQ

1

Syntaxes which comply with the European standard on eInvoicing

Many syntaxes – a problem?

- There are a large number of syntaxes in use
- Many communities are already using eInvoicing since a long time
- Use of many syntaxes result in interoperability problems

(9)
In order to further simplify the use of electronic invoicing and to reduce costs, one of the long-term objectives should be to limit the number of syntaxes used, preferably by concentrating on those most commonly used.

Article 3
Establishment of a European standard
…
The Commission shall request that the relevant European standardisation organisation provide a list with a limited number of syntaxes which comply with the European standard on electronic invoicing, the appropriate syntax bindings and guidelines on transmission interoperability, in order to facilitate the use of such standard.

Article 7
Receipt and processing of electronic invoices
Member States shall ensure that contracting authorities and contracting entities receive and process electronic invoices which comply with the European standard on electronic invoicing whose reference has been published pursuant to Article 3(2) and with any of the syntaxes on the list published pursuant to Article 3(2).

The standardization request from EC defined a number of criteria

Req ID	Requirement of sub-requirement
1	Comply with the core invoice semantic data model specified in the EN
2	Be international, open and free to use
3	Have a governance and sustainability model
3.1	There is an established organisation maintaining the syntax (format)
3.2	There is a maintenance process that is: - documented with defined participation and voting rules; - governed; - open to participation for stakeholders.
3.3	There is a funding model allowing further development and maintenance.
3.4	Support can be provided (consulting, educating, training) to solution providers (implementers) or users (companies, PAs etc.).
4	Be part of a coherent set of standards and technical specifications to support the broader e-procurement process or the broader e-invoicing supply chain
5	Be widely used in the EU or worldwide
6	Be used in production environments (and not just test) by both the public and the private sector
7	Reflect well-accepted technology and aim to incorporate the latest technological developments considered to be state of the art
8	Have guidelines, code lists, validating tools freely available to ease implementation by ICT vendors and suppliers
9	Have a set of official, freely available syntax-dependent artefacts for validation (the XML Schema or Schematron) to support tool independent validation
10	Have an official updating and versioning strategy that takes due account of backward compatibility, as well as appropriate guidelines for customisation that explain how to extend and restrict the syntax

Specifications from CEN/TC434

Reference	WG	Title
EN 16931-1	WG1	Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice
TS 16931-2	WG2	Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1
TS 16931-3-1	WG3	Electronic invoicing - Part 3-1: Methodology for syntax bindings of the core elements of an electronic invoice
TS 16931-3-2	WG3	Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note
TS 16931-3-3	WG3	Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Cross Industry Invoice D16B
TS 16931-3-4	WG3	Electronic invoicing - Part 3-4: Syntax binding for UN/EDIFACT INVOIC D16B
~~TS 16931-3-5~~	~~WG3~~	~~Electronic invoicing - Part 3-5: Syntax binding for the Financial Invoice based on ISO 20022~~
TR 16931-4	WG4	Electronic invoicing - Part 4: Guidelines on interoperability of electronic invoices at the transmission guideline
TR 16931-5	WG5	Electronic invoicing - Part 5: Guidelines on the use of sector or country extensions in conjunction with EN 16931-1, methodology to be applied in the real environment
TR 16931-6	WG6	Electronic invoicing - Part 6: result of the test of EN 16931-1 with respect to its practical application for an end user

Specifications from CEN/TC434

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TS 16931-3-2	WG3	Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note
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A closer look at UBL and CII

For both UBL 2.1 and UN/CEFACT Cross Industry Invoice

- Overview of the Specifications, XML-schemas and other resources
- Use of namespaces, versioning and document types
- Handling of code lists
- Typical message design and key syntactical features

2

UBL Version 2.1 – ISO/IEC 19845:2015

Overview of the standard

- UBL stands for Universal Business Language
- OASIS UBL 2.1 is developed and maintained by the UBL Technical Committee within OASIS
- UBL is an ISO-standard (ISO/IEC 19845-2015)

- UBL was developed with starting point in the CBL/xCBL format
- Sweden and Denmark early adopters around 2003-2004

UBL 2.1

- 62 business documents
- Library of >2300 elements
- Built based on input from projects like CEN/BII, PEPPOL, ePRIOR and freight management projects
- Backward compatible with UBL 2.0.
  - Any XML-instance produced based on UBL 2.0 will validate using UBL 2.1

Additional guidelines

- Customization Methodology
- Genericode Code list support
- Digital signature extension (XAdES)

Sourcing (product and price synchronization)
- Catalogue Request, Catalogue, Catalogue Item Specification Update,
- Catalogue Pricing Update, Catalogue Deletion, Request For Quotation, Quotation

Fulfilment (shipping)
- Forwarding Instructions, Packing List, Bill Of Lading, Waybill, Certificate Of Origin
- Transportation Status ,Fulfilment Cancellation

Billing
- Invoice, Credit Note, Debit Note, Self Billed Invoice, Self Billed Credit Note, Freight Invoice, Reminder

Payment
- Remittance Advice, Statement

Tendering
- Awarded Notification, Call for Tenders, Contract Award Notice, Contract Notice
- Guarantee Certificate, Prior Information Notice, Tender, Tender Receipt
- Tenderer Qualification, Tenderer Qualification Response, Unawarded Notification

VICS Collaborative Planning, Forecasting, and Replenishment
- Exception Criteria, Exception Notification, Forecast, Forecast Revision
- Item Information Request, Product Activity

Vendor Managed Inventory
- Instruction for Returns, Inventory Report, Retail Event, Stock Availability Report
- Trade Item Location Profile

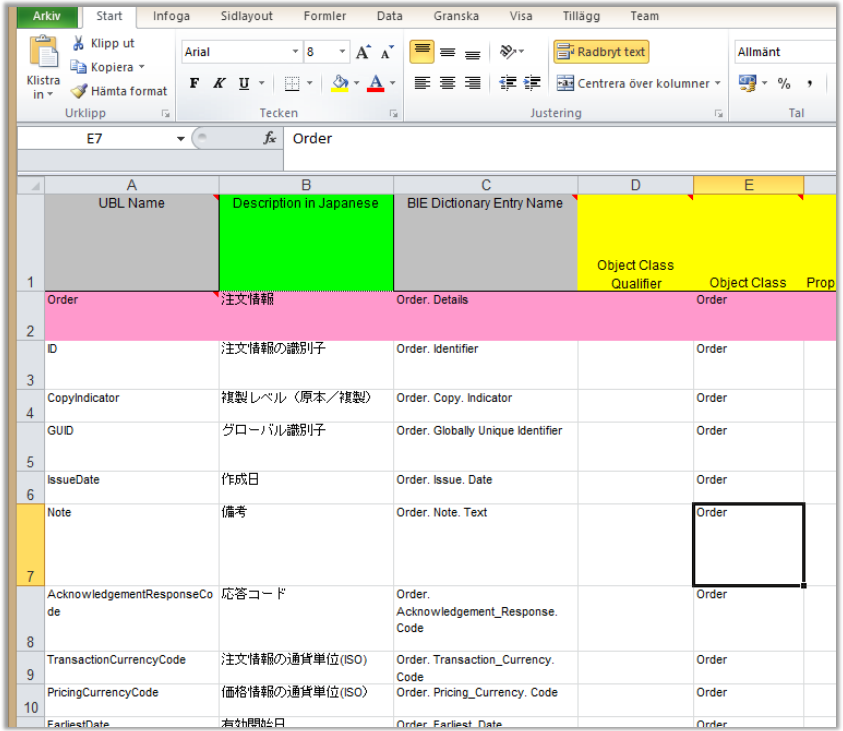
Intermodal Freight Management
- Goods Item Itinerary, Packing List, Transport Execution Plan, Transport Execution Plan Request
- Transport Progress Status, Transport Progress Status Request, Transport Service Description
- Transport Service Description Request, Transportation Status, Transportation Status Request

Utility Billing
- Utility Statement

Additional Documents
- Application Response, Attached Document
- Document Status, Document Status Request

Localization

- UBL TC has a number of localization subcommittees
- Translated business term names and definitions
- UBL 1 is translated into
  - Chinese (traditional and simplified)
  - Japanese
  - Korean
  - Spanish
  - Italian
- UBL 2 is translated into
  - Italian
  - Spanish
  - German
  - Slovak
- And partially to
  - Danish
  - Turkish
  - Hungarian
  - Lithuanian



Arkiv | Start | Infoga | Sidlayout | Formler | Data | Granska | Visa | Tillägg | Team

Klipp ut | Kopiera | Hämta format | Klistra in | Urklipp

Arial | 8 | Radbryt text | Centrera över kolumner | Allmänt | Tecken | Justering | Tal

E7 | Order

	A	B	C	D	E
1	UBL Name	Description in Japanese	BIE Dictionary Entry Name	Object Class Qualifier	Object Class	Prop
2	Order	注文情報	Order. Details		Order	
3	ID	注文情報の識別子	Order. Identifier		Order	
4	CopyIndicator	複製レベル（原本／複製）	Order. Copy. Indicator		Order	
5	GUID	グローバル識別子	Order. Globally Unique Identifier		Order	
6	IssueDate	作成日	Order. Issue. Date		Order	
7	Note	備考	Order. Note. Text		Order	
8	AcknowledgementResponseCode	応答コード	Order. Acknowledgement_Response. Code		Order	
9	TransactionCurrencyCode	注文情報の通貨単位(ISO)	Order. Transaction_Currency. Code		Order	
10	PricingCurrencyCode	価格情報の通貨単位(ISO)	Order. Pricing_Currency. Code		Order	
	EarliestDate	有効開始日	Order. Earliest. Date		Order	

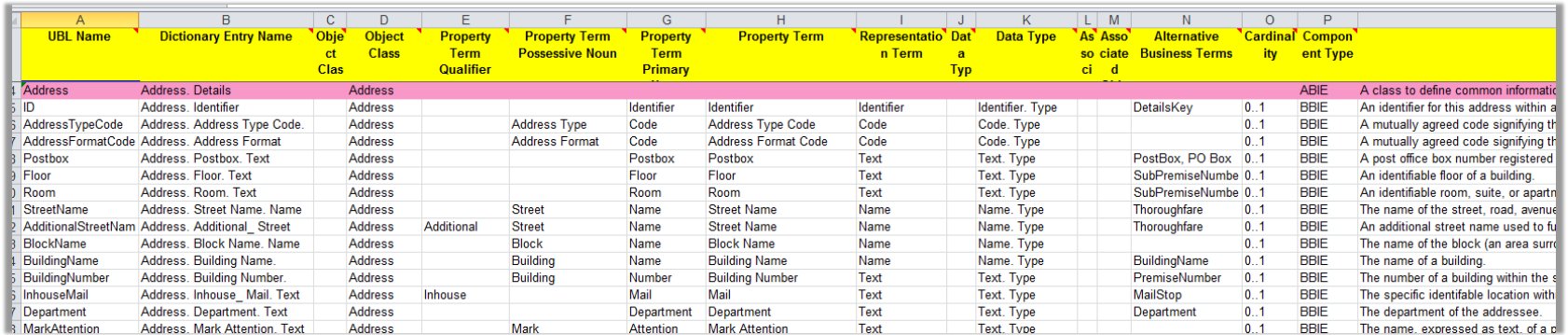
European Commission

UBL Architecture

- Built using the Core Component Technical Specification (ISO 15000-5, CCTS 2.01)
- UBL has its own ”Naming and Design Rules for XML”
- A library of reusable components (ABIEs)
- Document models

Core Component Technical Specification + Naming and Design Rules for XML

- Core Component Technical Specification says how business terms (Business Information Entities) should be represented in a standardized manner



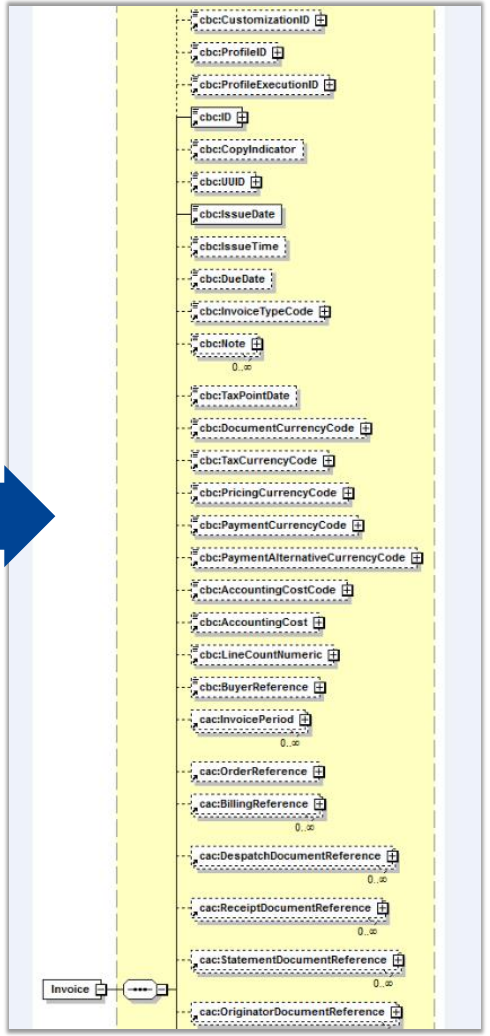
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
	UBL Name	Dictionary Entry Name	Object Clas	Object Class	Property Term Qualifier	Property Term Possessive Noun	Property Term Primary	Property Term	Representation Term	Data Typ	Data Type	Associ	Associated	Alternative Business Terms	Cardinality	Component Type	
4	Address	Address. Details		Address												ABIE	A class to define common informatic
5	ID	Address. Identifier		Address			Identifier	Identifier	Identifier		Identifier. Type			DetailsKey	0..1	BBIE	An identifier for this address within a
6	AddressTypeCode	Address. Address Type Code.		Address		Address Type	Code	Address Type Code	Code		Code. Type				0..1	BBIE	A mutually agreed code signifying th
7	AddressFormatCode	Address. Address Format		Address		Address Format	Code	Address Format Code	Code		Code. Type				0..1	BBIE	A mutually agreed code signifying th
8	Postbox	Address. Postbox. Text		Address			Postbox	Postbox	Text		Text. Type			PostBox, PO Box	0..1	BBIE	A post office box number registered
9	Floor	Address. Floor. Text		Address			Floor	Floor	Text		Text. Type			SubPremiseNumbe	0..1	BBIE	An identifiable floor of a building.
10	Room	Address. Room. Text		Address			Room	Room	Text		Text. Type			SubPremiseNumbe	0..1	BBIE	An identifiable room, suite, or apartn
11	StreetName	Address. Street Name. Name		Address		Street	Name	Street Name	Name		Name. Type			Thoroughfare	0..1	BBIE	The name of the street, road, avenue
12	AdditionalStreetNam	Address. Additional_ Street		Address	Additional	Street	Name	Street Name	Name		Name. Type			Thoroughfare	0..1	BBIE	An additional street name used to fu
13	BlockName	Address. Block Name. Name		Address		Block	Name	Block Name	Name		Name. Type				0..1	BBIE	The name of the block (an area surro
14	BuildingName	Address. Building Name.		Address		Building	Name	Building Name	Name		Name. Type			BuildingName	0..1	BBIE	The name of a building.
15	BuildingNumber	Address. Building Number.		Address		Building	Number	Building Number	Text		Text. Type			PremiseNumber	0..1	BBIE	The number of a building within the s
16	InhouseMail	Address. Inhouse_ Mail. Text		Address	Inhouse		Mail	Mail	Text		Text. Type			MailStop	0..1	BBIE	The specific identifable location with
17	Department	Address. Department. Text		Address			Department	Department	Text		Text. Type			Department	0..1	BBIE	The department of the addressee.
18	MarkAttention	Address. Mark Attention. Text		Address		Mark	Attention	Mark Attention	Text		Text. Type				0..1	BBIE	The name, expressed as text, of a p

- Naming and Design rules (NDR) describes how to express in XSD/XML
- UBL also have syntax representations **for binary format (ASN.1)** and a **JSON representation** is under development

Semantic model transformed to XML syntax using naming and design rules

	A	B	C	D	E	
	UBL Name	Dictionary Entry Name	Object Class Qualifier	Object Class	Property Term Qualifier	Property
	Invoice	Invoice. Details		Invoice		
	UBLVersionID	Invoice. UBL Version Identifier. Identifier		Invoice		UBL Versic
	CustomizationID	Invoice. Customization Identifier. Identifier		Invoice		Customizat
	ProfileID	Invoice. Profile Identifier. Identifier		Invoice		Profile
	ProfileExecutionID	Invoice. Profile Execution Identifier. Identifier		Invoice		Profile Exe
	ID	Invoice. Identifier		Invoice		
	CopyIndicator	Invoice. Copy_ Indicator. Indicator		Invoice	Copy	
	UUID	Invoice. UUID. Identifier		Invoice		
0	IssueDate	Invoice. Issue Date. Date		Invoice		Issue
1	IssueTime	Invoice. Issue Time. Time		Invoice		Issue
2	DueDate	Invoice. Due Date. Date		Invoice		Due
3	InvoiceTypeCode	Invoice. Invoice Type Code. Code		Invoice		Invoice Typ
4	Note	Invoice. Note. Text		Invoice		
5	TaxPointDate	Invoice. Tax Point Date. Date		Invoice		Tax Point
6	DocumentCurrencyCode	Invoice. Document_ Currency Code. Code		Invoice	Document	Currency
7	TaxCurrencyCode	Invoice. Tax_ Currency Code. Code		Invoice	Tax	Currency
8	PricingCurrencyCode	Invoice. Pricing_ Currency Code. Code		Invoice	Pricing	Currency
9	PaymentCurrencyCode	Invoice. Payment_ Currency Code. Code		Invoice	Payment	Currency
0	PaymentAlternativeCurrencyCod	Invoice. Payment Alternative_ Currency Code.		Invoice	Payment Alternative	Currency
1	AccountingCostCode	Invoice. Accounting Cost Code. Code		Invoice		Accounting
2	AccountingCost	Invoice. Accounting Cost. Text		Invoice		Accounting
3	LineCountNumeric	Invoice. Line Count. Numeric		Invoice		Line
4	BuyerReference	Invoice. Buyer_ Reference. Text		Invoice	Buyer	
5	InvoicePeriod	Invoice. Invoice_ Period. Period		Invoice	Invoice	
6	OrderReference	Invoice. Order Reference		Invoice		
7	BillingReference	Invoice. Billing Reference		Invoice		
8	DespatchDocumentReference	Invoice. Despatch_ Document Reference.		Invoice	Despatch	
9	ReceiptDocumentReference	Invoice. Receipt_ Document Reference.		Invoice	Receipt	
0	StatementDocumentReference	Invoice. Statement_ Document Reference.		Invoice	Statement	
1	OriginatorDocumentReference	Invoice. Originator_ Document Reference.		Invoice	Originator	
2	ContractDocumentReference	Invoice. Contract_ Document Reference.		Invoice	Contract	

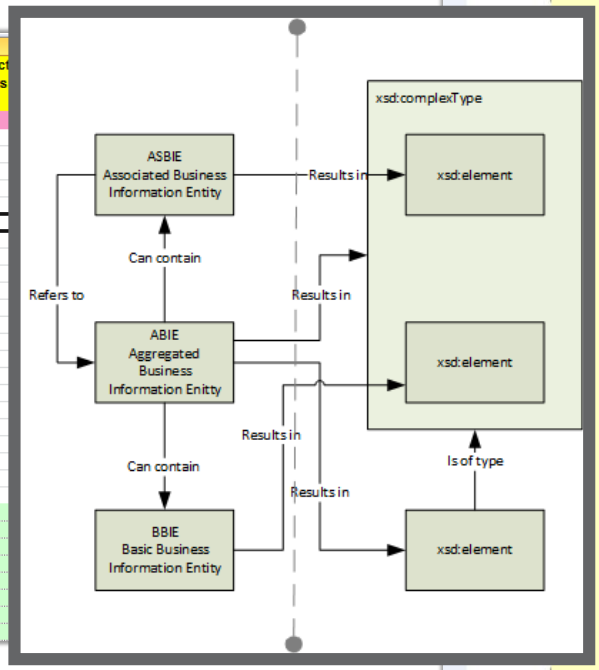
UBL NDR

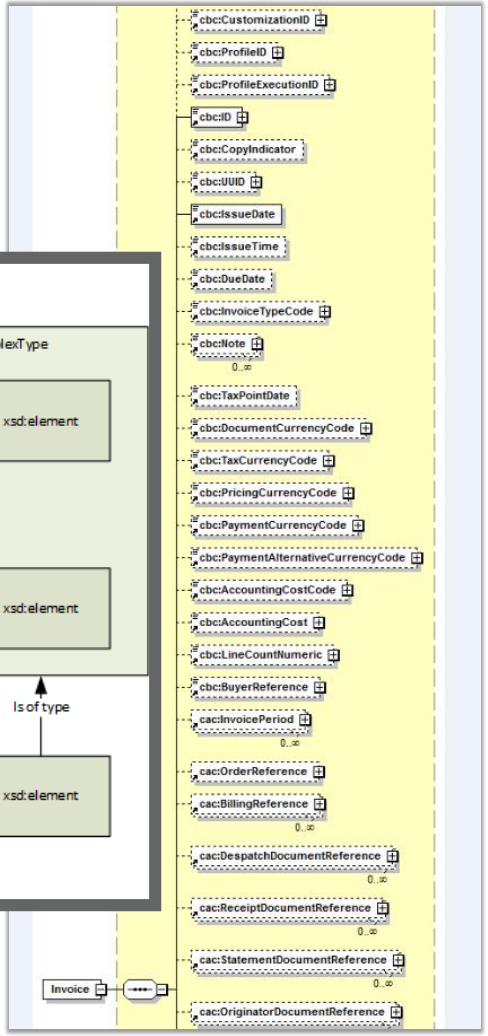


European Commission

Semantic model transformed to XML syntax using naming and design rules

	A	B	C	D
	UBL Name	Dictionary Entry Name	Object Class Qualifier	Object Class
	Invoice	Invoice. Details		Invoice
	UBLVersionID	Invoice. UBL Version Identifier. Identifier		Invoice
	CustomizationID	Invoice. Customization Identifier. Identifier		Invoice
	ProfileID	Invoice. Profile Identifier. Identifier		Invoice
	ProfileExecutionID	Invoice. Profile Execution Identifier. Identifier		Invoice
	ID	Invoice. Identifier		Invoice
	CopyIndicator	Invoice. Copy_ Indicator. Indicator		Invoice
	UUID	Invoice. UUID. Identifier		Invoice
10	IssueDate	Invoice. Issue Date. Date		Invoice
11	IssueTime	Invoice. Issue Time. Time		Invoice
12	DueDate	Invoice. Due Date. Date		Invoice
13	InvoiceTypeCode	Invoice. Invoice Type Code. Code		Invoice
14	Note	Invoice. Note. Text		Invoice
15	TaxPointDate	Invoice. Tax Point Date. Date		Invoice
16	DocumentCurrencyCode	Invoice. Document_ Currency Code. Code		Invoice
17	TaxCurrencyCode	Invoice. Tax_ Currency Code. Code		Invoice
18	PricingCurrencyCode	Invoice. Pricing_ Currency Code. Code		Invoice
19	PaymentCurrencyCode	Invoice. Payment_ Currency Code. Code		Invoice
20	PaymentAlternativeCurrencyCod	Invoice. Payment Alternative_ Currency Code.		Invoice
21	AccountingCostCode	Invoice. Accounting Cost Code. Code		Invoice
22	AccountingCost	Invoice. Accounting Cost. Text		Invoice
23	LineCountNumeric	Invoice. Line Count. Numeric		Invoice
24	BuyerReference	Invoice. Buyer_ Reference. Text		Invoice
25	InvoicePeriod	Invoice. Invoice_ Period. Period		Invoice
26	OrderReference	Invoice. Order Reference		Invoice
27	BillingReference	Invoice. Billing Reference		Invoice
28	DespatchDocumentReference	Invoice. Despatch_ Document Reference.		Invoice
29	ReceiptDocumentReference	Invoice. Receipt_ Document Reference.		Invoice
30	StatementDocumentReference	Invoice. Statement_ Document Reference.		Invoice
31	OriginatorDocumentReference	Invoice. Originator_ Document Reference.		Invoice
32	ContractDocumentReference	Invoice. Contract_ Document Reference.		Invoice

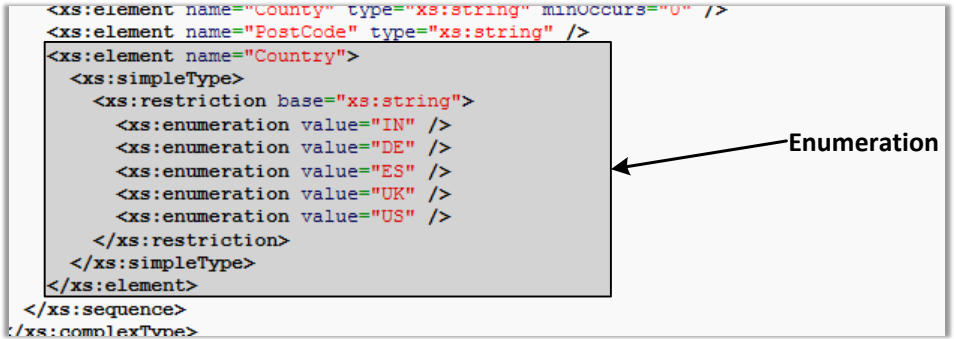




European Commission

Use of code lists in XML Schemas

- Built in ”enumerations” of code values is a common way of defining allowed value domains
- Code lists must then be published as an integrated part of the XML Schemas
- New versions of XML Schemas must be used to get access to new code values
- Potential compatibility issues between publications




```
<xs:element name="County" type="xs:string" minOccurs="0" />
<xs:element name="PostCode" type="xs:string" />
<xs:element name="Country">
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="IN" />
      <xs:enumeration value="DE" />
      <xs:enumeration value="ES" />
      <xs:enumeration value="UK" />
      <xs:enumeration value="US" />
    </xs:restriction>
  </xs:simpleType>
</xs:element>
</xs:sequence>
</xs:complexType>
```

- **UBL is not using tightly bound code lists**

Use of code lists in XML Schemas

- Built in ”enumerations” of code values is a common way of defining allowed value domains
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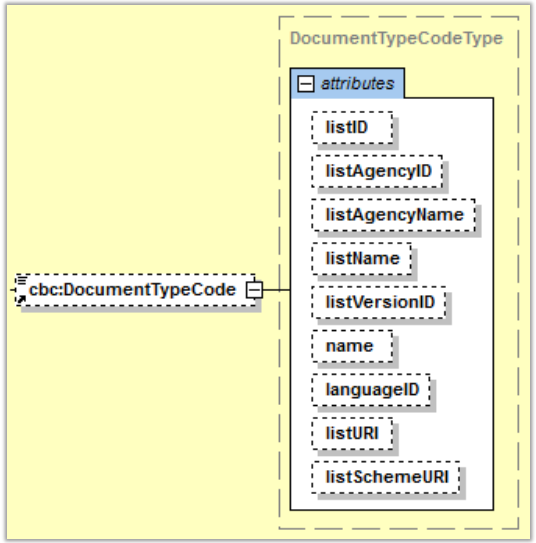
      <xs:enumeration value="UK" />
      <xs:enumeration value="US" />
    </xs:restriction>
  </xs:simpleType>
</xs:element>
</xs:sequence>
</xs:complexType>
```

Enumeration



- **UBL is not using tightly bound code lists**
- **However – UBL is still referring to the code lists in supporting documentation**

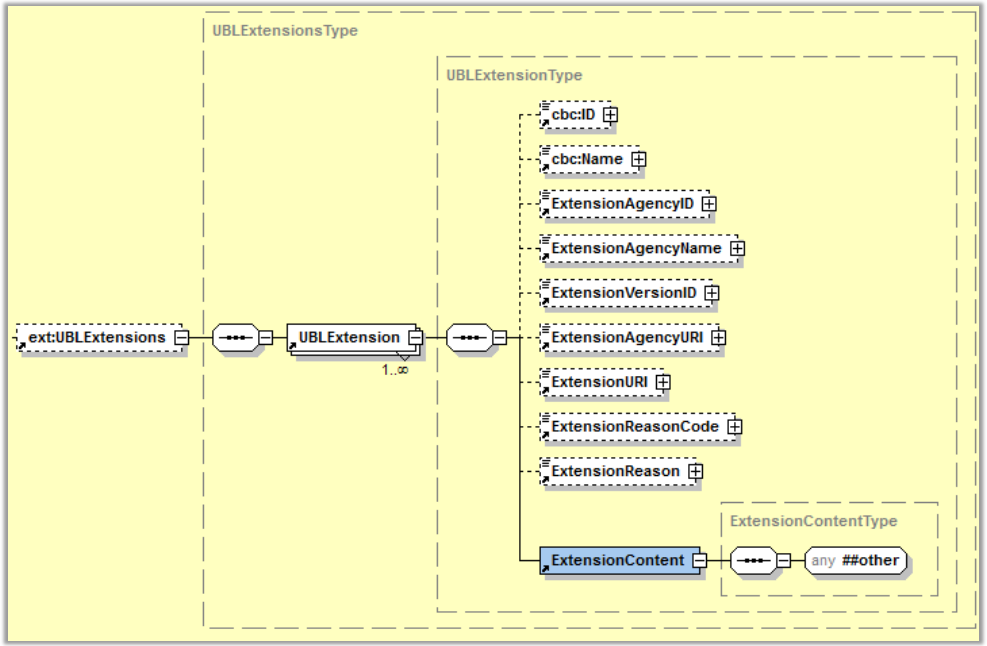
Use of namespaces, versioning and document types

- Each document type has its unique Namespace
  - **Invoice**: urn:oasis:names:specification:ubl:schema:xsd:Invoice-2
  - **CreditNote**: urn:oasis:names:specification:ubl:schema:xsd:CreditNote-2
- Only major version of UBL is ”visible” in namespace
- Minor version number is stated in the message: <cbc:UBLVersionID>2.1</cbc:UBLVersionID>

UBL Extension

- All UBL Documents have an extension point as the first element
- Gives possibility to do custom extensions without breaking compatibility
- Structure contains
  - Placeholder for the XML
  - Metadata about the extension

This is NOT the same type of extension as defined by CEN/TC434



3 UN/CEFACT Cross Industry Invoice D16B

Overview of the standard

- CII stands for Cross Industry Invoice
- CII is developed and maintained by UN/CEFACT
- UN/CEFACT serves as the focal point for trade facilitation recommendations and electronic business standards, covering both commercial and government business processes that can foster growth in international trade and related services.
- UN/CEFACT develops and maintains UN/EDIFACT, XML Schemas, Code lists and a number of UNECE Recommendations (such as Recommendation N°. 20 - Codes for Units of Measure)

Cross Industry messages

- Version 1 published 2009 (as part of D09A)
- In D09B, Cross Industry Order, Catalogue and DespatchAdvice were added
- New schemas are normally published 2 times a year
- Since 2016, UN/CEFACT publishes two branches of the Cross Industry Invoice XML Schemas
- One branch following the same method as before. Currently it contains 16 different Cross Industry (messages) XML schemas
- One branch called the Supply Chain Reference Data Model (SCRDM) which are process-driven schemas derived from the model. Currently it only contains the Cross Industry Invoice-message

XML Schemas

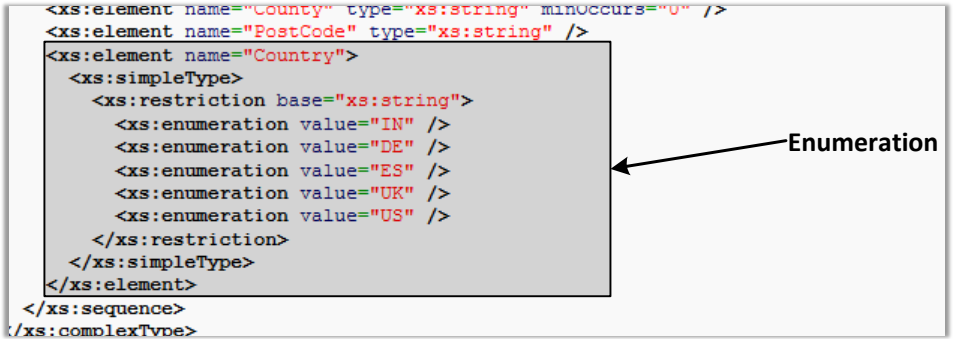
Issued	Document Title	Download
2017	XML Schemas version 17B	ZIP
	Validation Report	PDF
2017	XML Schemas version 17A	ZIP
	Validation Report	PDF
2016	XML Schemas 16B (SCRDM - CII)	ZIP
	XML Schemas version 16B	ZIP
	Validation Report	PDF
	Release notes	PDF
2016	XML Schemas update 16A.1 (SCRDM - CII)	ZIP
	XML Schemas version 16A	ZIP
	Validation Report	PDF
	Release notes	PDF
2015	XML Schemas version 15B	ZIP
	Validation Report	PDF
	Release notes	PDF
2015	XML Schemas version 15A	ZIP
	Validation Report	PDF
	Release notes	PDF
2015	XML Schemas version 14B	ZIP
	Validation report	PDF
	Release notes	PDF
2014	XML Schemas version 13B	ZIP
	Validation report	PDF

Cross Industry Invoice Architecture

- Built using the Core Component Specification (ISO 15000-5, CCTS 2.01)
- Managment of reference model and subsetting using CCBDA (Core Components Business Document Assembly Technical Specification)
- UN/CEFACT has its own ”Naming and Design Rules for XML”
- Several layers of components
- Guarantees coeherence within and between different messages as they inherit from the same super structures

Use of code lists in XML Schemas

- Built in ”enumerations” of code values is a common way of defining allowed value domains
- Code lists must then be published as an integrated part of the XML Schemas
- New versions of XML Schemas must be used to get access to new code values
- Potential compatibility issues between publications




```
<xs:element name="County" type="xs:string" minOccurs="0" />
<xs:element name="PostCode" type="xs:string" />
<xs:element name="Country">
  <xs:simpleType>
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      <xs:enumeration value="IN" />
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      <xs:enumeration value="ES" />
      <xs:enumeration value="UK" />
      <xs:enumeration value="US" />
    </xs:restriction>
  </xs:simpleType>
</xs:element>
</xs:sequence>
</xs:complexType>
```

- **CII XML Schemas are published in three variants**
  - Uncoupled: Message schemas without coupling to Code List Modules **based on the SCRDM-branch**
  - Coupled: Message schemas with coupling to Code List Modules **based on the SCRDM-branch**
  - Coupled: Message schemas with coupling to Code List Modules **based on the “old”-branch**

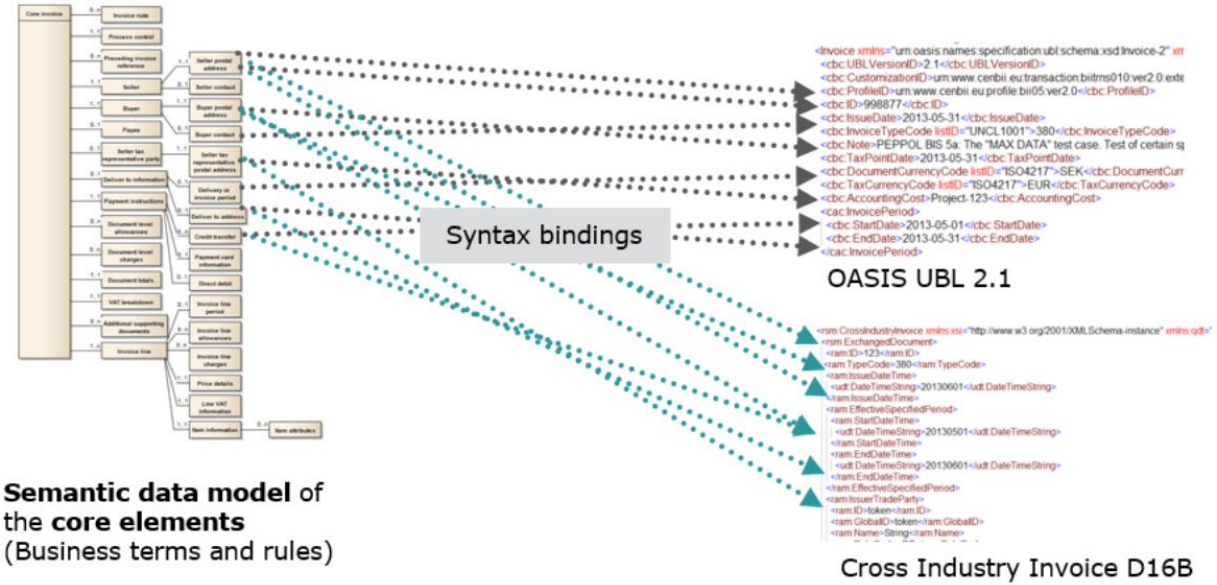
Use of namespaces, versioning and document types

- Each document type has its unique Namespace (Invoice and CreditNote use the same schema)
  - **SCRDM branch CrossIndustryInvoice**: urn:un:unece:uncefact:data:standard:CrossIndustryInvoice:100
  - **”Old” branch CrossIndustryInvoice**: urn:un:unece:uncefact:data:standard:CrossIndustryInvoice:13

- The List of syntaxes that comply with EN 16931-1 has evaluated and includes the SCRDM-version

4 Syntax bindings

Syntax binding specifications



Syntax binding – Semantic model → Syntax

ID	Level	Card.	BT	Desc.	DT	Path	Type	Card.	Match	Rules
BT-1	1	1..1	Invoice number	A unique identification of the Invoice.	I	/Invoice/cbc:ID	I	1..1		
BT-2	1	1..1	Invoice issue date	The date when the Invoice was issued.	D	/Invoice/cbc:IssueDate	D	1..1		
BT-3	1	1..1	Invoice type code	A code specifying the functional type of the Invoice.	C	/Invoice/cbc:InvoiceTypeCode	C	0..1	CAR-2	
BT-5	1	1..1	Invoice currency code	The currency in which all Invoice amounts are given, except for the Total VAT amount in accounting currency.	C	/Invoice/cbc:DocumentCurrencyCode	C	0..1	CAR-2	
BT-6	1	0..1	VAT accounting currency code	The currency used for VAT accounting and reporting purposes as accepted or required in the country of the Seller.	C	/Invoice/cbc:TaxCurrencyCode	C	0..1	SEM-2	

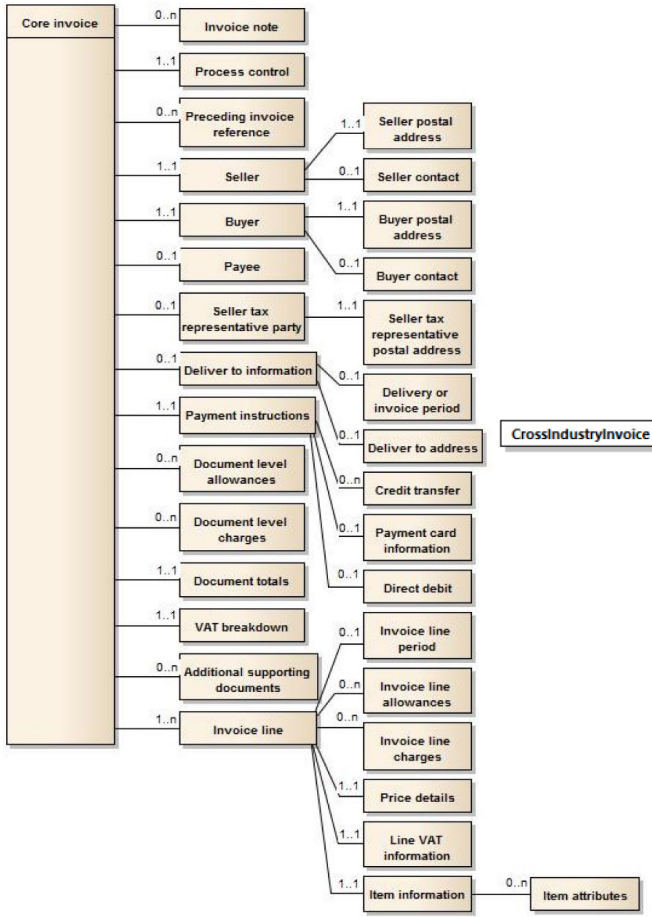
Syntax binding – Syntax → Semantic model

Path	Card.	ID	Level	Card.	BT	Desc.	DT
/Invoice							
/Invoice/cbc:CustomizationID	0..1	BT-24	2	1..1	Specification identifier	An identification of the specification containing the total set of rules regarding semantic content, cardinalities and business rules to which the data contained in the instance document conforms.	I
/Invoice/cbc:ProfileID	0..1	BT-23	2	0..1	Business process type	Identifies the business process context in which the transaction appears, to enable the Buyer to process the Invoice in an appropriate way.	T
/Invoice/cbc:ID	1..1	BT-1	1	1..1	Invoice number	A unique identification of the Invoice.	I
/Invoice/cbc:IssueDate	1..1	BT-2	1	1..1	Invoice issue date	The date when the Invoice was issued.	D
/Invoice/cbc:DueDate	0..1	BT-9	1	0..1	Payment due date	The date when the payment is due.	D
/Invoice/cbc:InvoiceTypeCode	0..1	BT-3	1	1..1	Invoice type code	A code specifying the functional type of the Invoice.	C

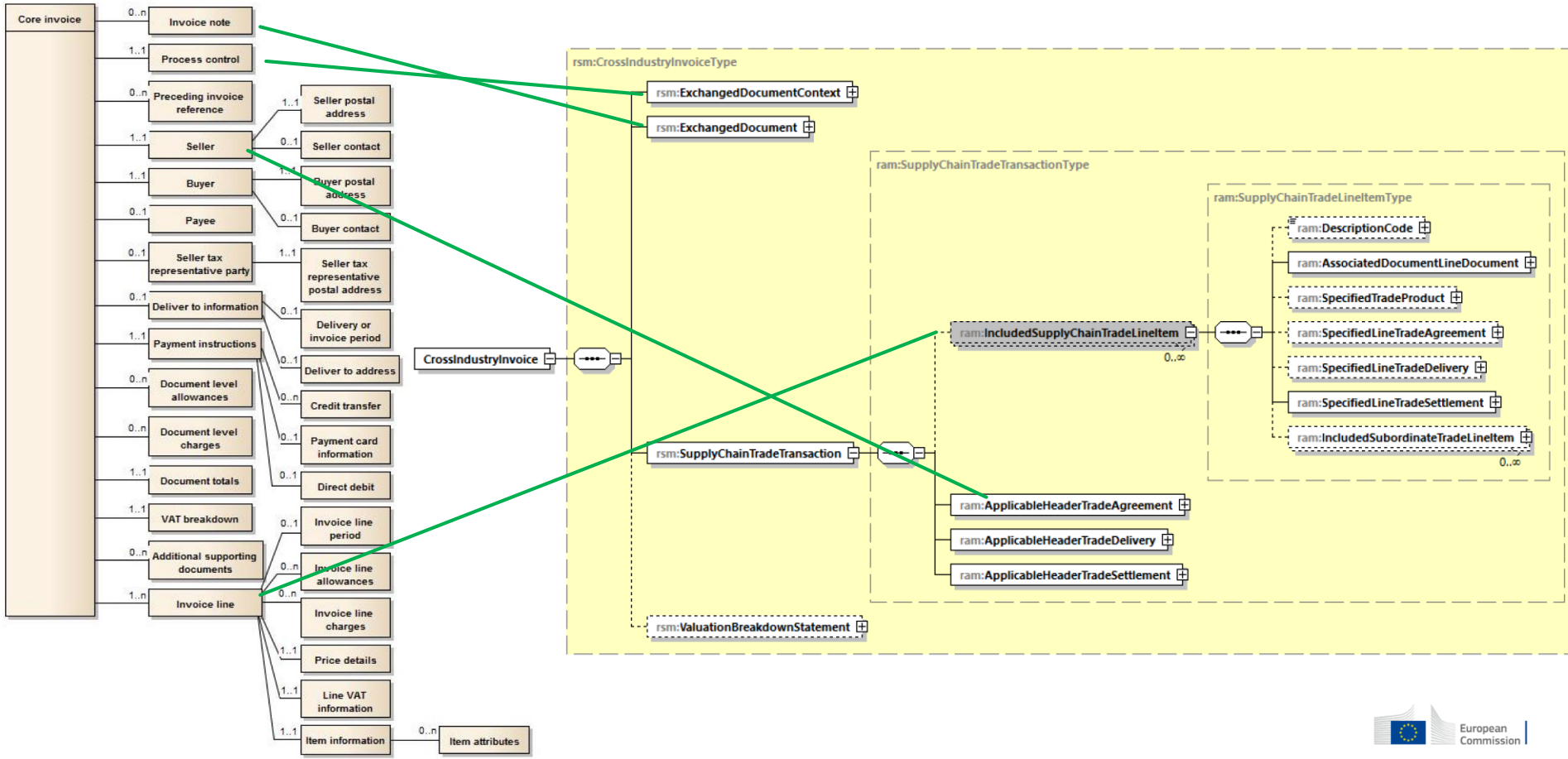
Not a simple pair matching game

- Not all business terms can be mapped to a single element, often qualifiers are necessary
- The syntaxes have different structures and order of elements
- The syntaxes may have different cardinalities or even datatypes

- The syntax mappings have additional and separate validation rules



European Commission



European Commission

```
<Invoice
 xmlns:cac="urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2"
 xmlns:cbc="urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2"
 xmlns="urn:oasis:names:specification:ubl:schema:xsd:Invoice-2">
    <cbc:CustomizationID>urn:cen.eu:en16931:2017</cbc:CustomizationID>
    <cbc:ProfileID>P3</cbc:ProfileID>
    <cbc:ID>TOSL108</cbc:ID>
    <cbc:IssueDate>2013-06-30</cbc:IssueDate>
    <cbc:DueDate>2013-07-20</cbc:DueDate>
    <cbc:InvoiceTypeCode>380</cbc:InvoiceTypeCode>
    <cbc:Note>Ordered in our booth at the convention</cbc:Note>
    <cbc:TaxPointDate>2013-06-30</cbc:TaxPointDate>
```

```
<rsm:CrossIndustryInvoice
 xmlns:udt="urn:un:unece:uncefact:data:standard:UnqualifiedDataType:100"
 xmlns:rsm="urn:un:unece:uncefact:data:standard:CrossIndustryInvoice:100"
 xmlns:ram="urn:un:unece:uncefact:data:standard:ReusableAggregateBusinessInformationEntity:100">
    <rsm:ExchangedDocumentContext>
        <ram:BusinessProcessSpecifiedDocumentContextParameter>
            <ram:ID>P3</ram:ID>
        </ram:BusinessProcessSpecifiedDocumentContextParameter>
        <ram:GuidelineSpecifiedDocumentContextParameter>
            <ram:ID>urn:cen.eu:en16931:2017</ram:ID>
        </ram:GuidelineSpecifiedDocumentContextParameter>
    </rsm:ExchangedDocumentContext>
    <rsm:ExchangedDocument>
        <ram:ID>TOSL108</ram:ID>
        <ram:TypeCode>380</ram:TypeCode>
        <ram:IssueDateTime>
            <udt:DateTimeString format="102">20130630</udt:DateTimeString>
        </ram:IssueDateTime>
        <ram:IncludedNote>
            <ram:Content>Ordered in our booth at the convention</ram:Content>
        </ram:IncludedNote>
    </rsm:ExchangedDocument>
```

BT-1 Invoice number
BT-23 Business process type
BT-24 Specification identifier
BT-2 Invoice Issue date

```
<cac:AccountingSupplierParty>
    <cac:Party>
        <cac:PartyIdentification>
            <cbc:ID schemeID="0088">1238764941386</cbc:ID>
        </cac:PartyIdentification>
        <cac:PostalAddress>
            <cbc:StreetName>Main street 34</cbc:StreetName>
            <cbc:AdditionalStreetName>Suite 123</cbc:AdditionalStreetName>
            <cbc:CityName>Big city</cbc:CityName>
            <cbc:PostalZone>303</cbc:PostalZone>
            <cbc:CountrySubentity>RegionA</cbc:CountrySubentity>
            <cac:Country>
                <cbc:IdentificationCode>NO</cbc:IdentificationCode>
            </cac:Country>
        </cac:PostalAddress>
        <cac:PartyTaxScheme>
            <cbc:CompanyID>NO123456789MVA</cbc:CompanyID>
            <cac:TaxScheme>
                <cbc:ID>VAT</cbc:ID>
            </cac:TaxScheme>
        </cac:PartyTaxScheme>
        <cac:PartyLegalEntity>
            <cbc:RegistrationName>Salescompany ltd.</cbc:RegistrationName>
            <cbc:CompanyID>123456789</cbc:CompanyID>
        </cac:PartyLegalEntity>
        <cac:Contact>
            <cbc:Name>Antonio Salesmacher</cbc:Name>
            <cbc:Telephone>46211230</cbc:Telephone>
            <cbc:ElectronicMail>antonio@salescompany.no</cbc:ElectronicMail>
        </cac:Contact>
    </cac:Party>
</cac:AccountingSupplierParty>
```

```
<ram:ApplicableHeaderTradeAgreement>
    <ram:SellerTradeParty>
        <ram:GlobalID schemeID="0088">1238764941386</ram:GlobalID>
        <ram:Name>Salescompany ltd.</ram:Name>
        <ram:SpecifiedLegalOrganization>
            <ram:ID>123456789</ram:ID>
        </ram:SpecifiedLegalOrganization>
        <ram:DefinedTradeContact>
            <ram:PersonName>Antonio Salesmacher</ram:PersonName>
            <ram:TelephoneUniversalCommunication>
                <ram:CompleteNumber>46211230</ram:CompleteNumber>
            </ram:TelephoneUniversalCommunication>
            <ram:EmailURIUniversalCommunication>
                <ram:URIID>antonio@salescompany.no</ram:URIID>
            </ram:EmailURIUniversalCommunication>
        </ram:DefinedTradeContact>
        <ram:PostalTradeAddress>
            <ram:PostcodeCode>303</ram:PostcodeCode>
            <ram:LineOne>Main street 34</ram:LineOne>
            <ram:LineTwo>Suite 123</ram:LineTwo>
            <ram:CityName>Big city</ram:CityName>
            <ram:CountryID>NO</ram:CountryID>
            <ram:CountrySubDivisionName>RegionA</ram:CountrySubDivisionName>
        </ram:PostalTradeAddress>
        <ram:SpecifiedTaxRegistration>
            <ram:ID schemeID="VA">NO123456789MVA</ram:ID>
        </ram:SpecifiedTaxRegistration>
    </ram:SellerTradeParty>
```

BT-29 Seller identifier
BT-30 Seller legal registration identifier
BT-27 Seller name
BT-31 Seller VAT-identifier

5 Where to find the specifications

Where can I find the specifications?

UBL 2.1 specifications:

- XML schemas + supporting material: http://docs.oasis-open.org/ubl/os-UBL-2.1/UBL-2.1.html

CII specifications:

- XML Schema: http://www.unece.org/cefact/xml_schemas/index (SCRDM - CII)
- Business Requirement Specification: http://www.unece.org/cefact/brs/brs_index.html
- Requirement Specification Mapping: http://www.unece.org/cefact/rsm/rsm_index.html

Lessons learned

QUESTIONS?