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# eInvoicing Workshop

Vienna, Austria

Exchange-Summit

2nd October

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## Connecting Europe Facility

### DIGIT

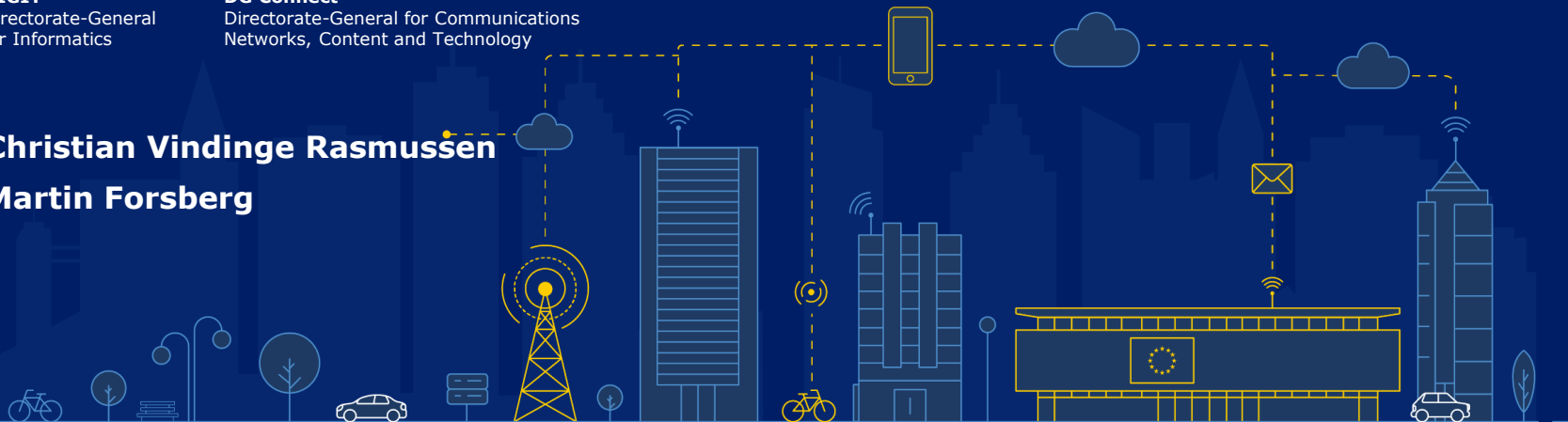
Directorate-General  
for Informatics

### DG Connect

Directorate-General for Communications  
Networks, Content and Technology

**Christian Vindinge Rasmussen**

**Martin Forsberg**



# Today's speakers

## **Christian Vindinge Rasmussen**

Christian is an experienced eProcurement Expert specialized in the execution of large scale ICT projects with past experience from the Nordic region. Christian has been involved in the past EU-funded large scale pilots PEPPOL.eu and eSENS.eu as Work packager leader with focus on new eProcurement and eDelivery development.

Christian works as a business development manager for e-Boks, Denmark.

## **Martin Forsberg**

Martin Forsberg works as a subject matter 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.

Martin works as a consultant for ECRU, Sweden across EU.

# Today's agenda

## Introduction to CEF, their tools and supporting service

- How to benefit from CEF: Which and where are the resources?
  - Examples of CEF funded projects that have enabled countries
- Round table discussion / Open floor debate*

## Ways of implementing the EN

- CIUS creation, Validation, and handling of the invoices
- Round table discussion / Open floor debate*

09:00

10:40

12:00

LUNCH

13:00

14:40

16:00

END

## Methods for exchange electronic invoices

- How to enable cross border and domestic solutions
  - How to combine four corner model and central hub 3 corner model
- Round table discussion / Open floor debate*

## Taking E-Invoicing to the next level

- How to work with automation. Onboarding of suppliers
- Round table discussion / Open floor debate*

# Mentimeter

[www.menti.com](https://www.menti.com)

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# What is an implementation workshop?

- Build knowledge on the European standard
- Share best practices
- Strong cross-border perspective
- Help with roadmap on mass adoption
- Give practical input to implementation projects
- Give ideas on how to proceed and prioritize
- Learn about CEF services



# **A short retrospect**

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# A short retrospect

Workshops so far...

- Finland
- Cyprus
- Poland
- Estonia
- Greece
- Sweden
- Austria
- Denmark
- Malta
- Ireland
- Lithuania
- Czech Republic
- Germany
- EESPA
- Romania
- Latvia



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# Common themes brought up by the participants

- What are other countries doing?
- What does it mean to comply with the European Standard?
- Intellectual Property Rights and Copyright
- Cross border exchange of eInvoices
- Policy – what is necessary for smooth adoption





# Level of Readiness

- Growing sense of urgency
- Plans are getting more and more concrete
- Still focus on technical aspects
- Lack of appreciation of the change process
- Focus on compliance rather than potential gains



# Look ahead and reap the benefits

Focus for 2019, 2020

- Take advantage of the investments made
- Strategies for supplier onboarding
- Digitalization of the full procurement process
- ***Beyond compliance - bring e-Invoicing to the next level***

e-Invoicing from a user perspective





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# Introduction to CEF, our tools and supporting service

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**Christian Vindinge Rasmussen**  
DIGIT

# Mentimeter

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Enter #11 10 31



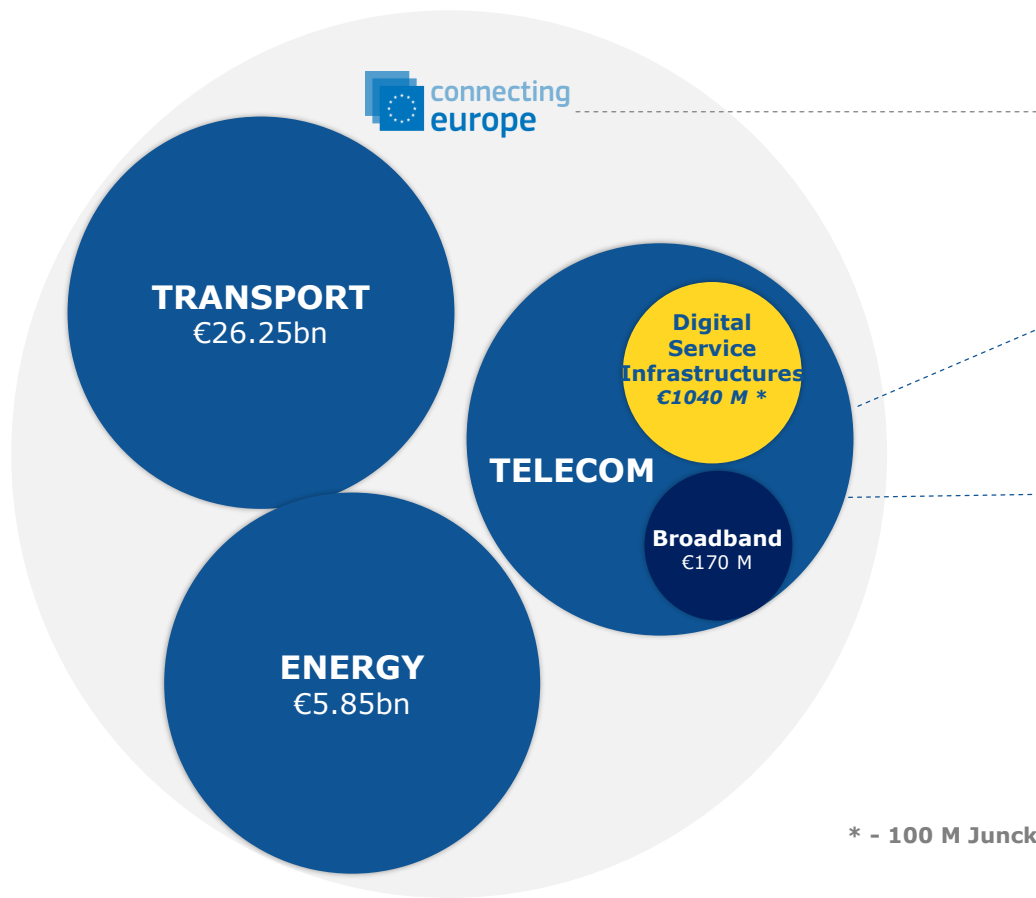


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**What are**

the CEF building blocks?

## What is CEF?



## HOW IS IT REGULATED?

### CEF Regulation

The Connecting Europe Facility (CEF) is a regulation that defines how the Commission can finance support for the establishment of trans-European networks to reinforce an interconnected Europe.

### CEF Telecom Guidelines

The CEF Telecom guidelines cover the specific objectives and priorities as well as eligibility criteria for funding of broadband networks and Digital Service Infrastructures (DSIs).

### CEF Work Programmes

Translates the CEF Telecom Guidelines in general objectives and actions planned on a yearly basis.

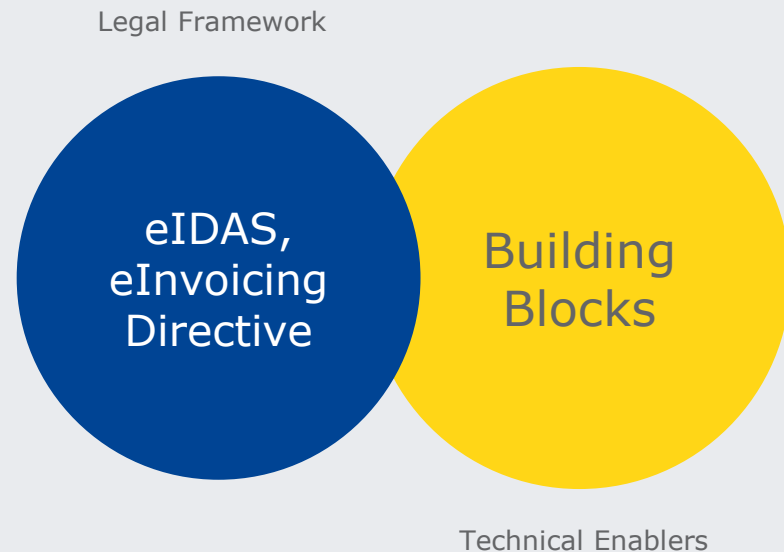
### CEF Funding

From 2014-2020 1.040M Euro will be re-invested into adoption of the core building blocks in the DSIs.

Budget indications from 2020-2024 gives additional 1.6-9.2M Euro for further funding of implementation

\* - 100 M Juncker Package

The Commission provides the legal framework and technical enablers to help build services people can trust, across sectors and across borders.

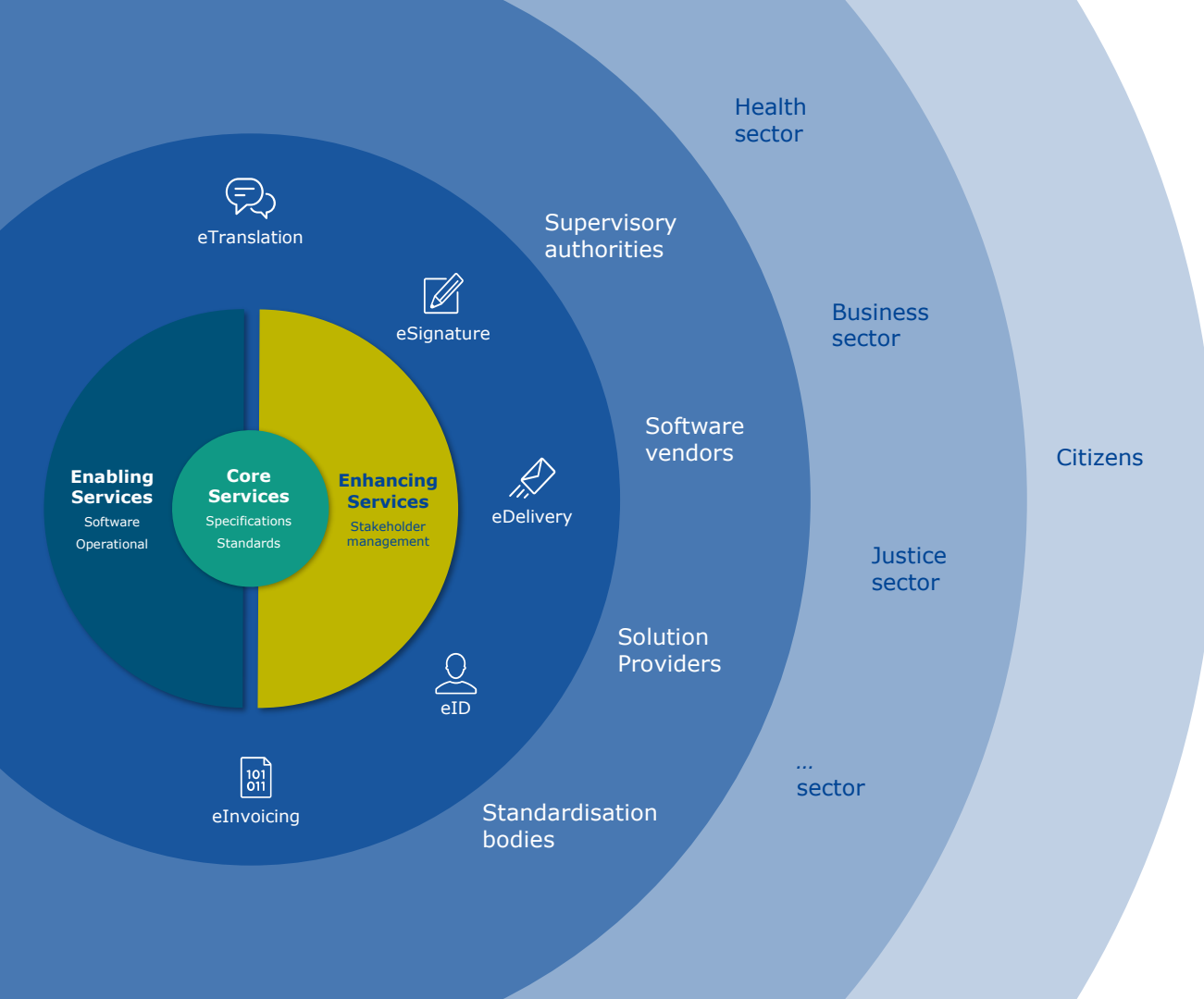


The **building blocks of the Connecting Europe Facility** promote the adoption of the same **open standards and technical specifications**, by the **different sectors** of the Union, for the most basic & common functionalities of any sectorial project/ platform.

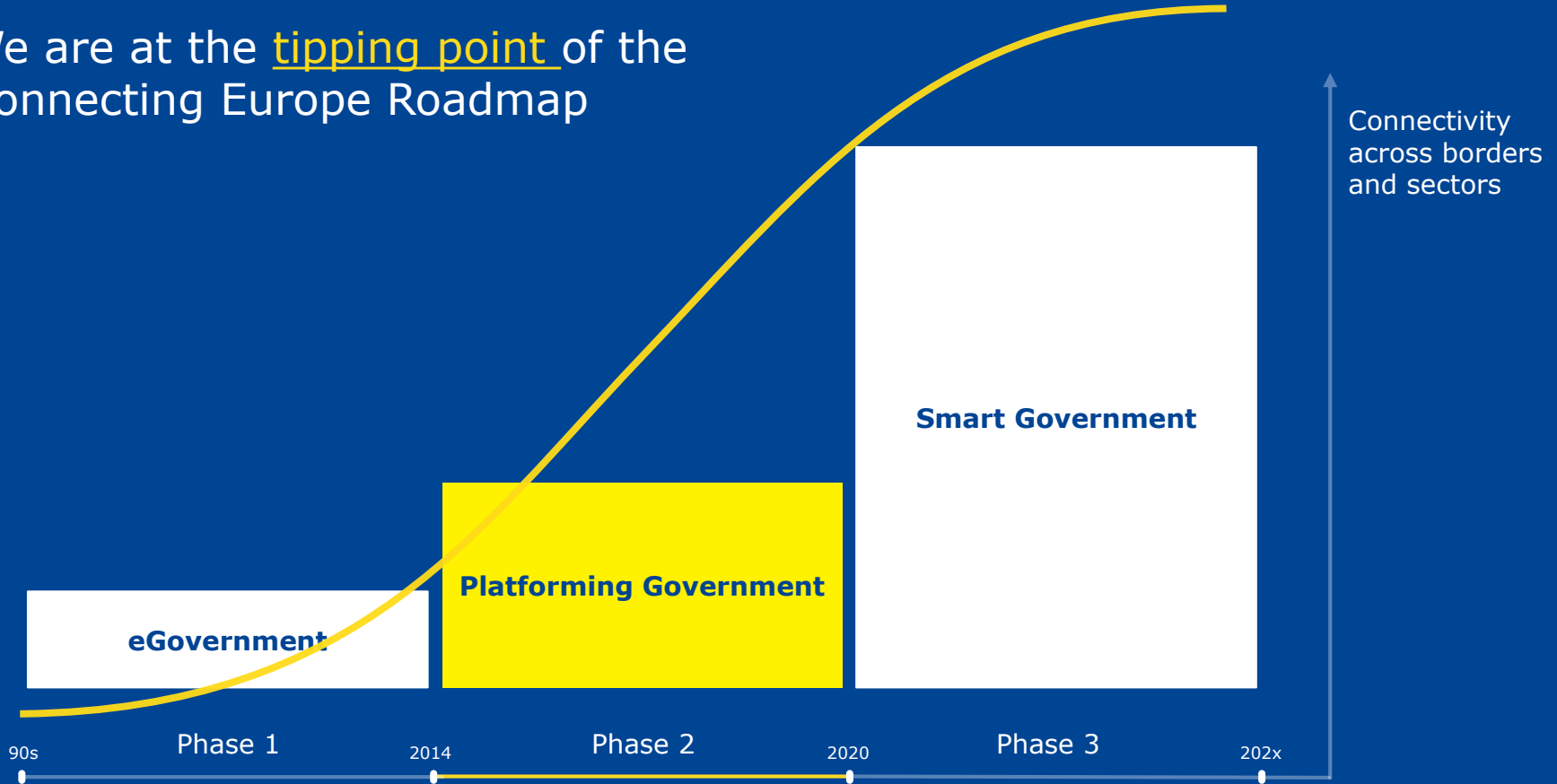
**These core commonalities will enable interoperability across borders and sectors.**



# The CEF Building Blocks are creating a common digital platform across Europe

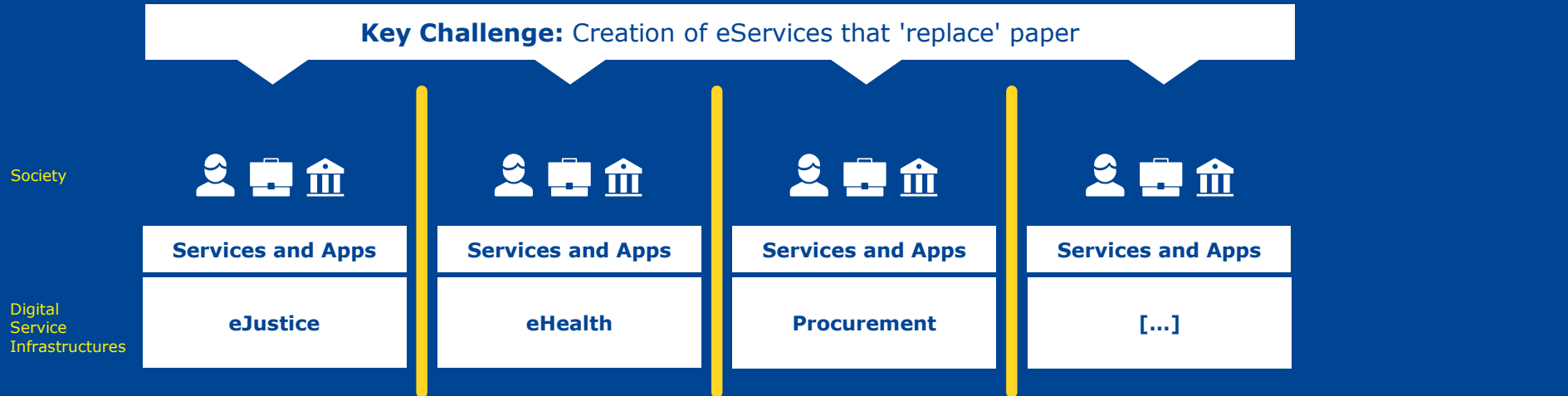


# We are at the tipping point of the Connecting Europe Roadmap



# Phase 1: eGovernment.

However Europe cannot fully benefit from it because we are still working in silos, we still have digital borders....



# Phase 2: Platforming Government.

We need to remove digital barriers to create a fully functioning Digital Single Market.

**Key Challenge:** Connecting eServices across-borders and across-sectors

Society



Services and Apps

Services and Apps

Services and Apps

Services and Apps

Services and Apps

eJustice

eHealth

Procurement

Taxation

[...]

Digital Service Infrastructures

←..... Enabling Seamless Flow of Data .....→

Powered by the CEF Building Blocks



eID



eSignature



eDelivery



eInvoicing



eTranslation

CEF Building Blocks

Sectors are still being on boarded



Citizens



Businesses



Public Administrations



Phase 3: **Smart Government**. This is how we will ensure high quality, user-centric digital public services for citizens and seamless cross-border public services for businesses.

**Key Challenge:** Exploitation of the Digital Platform i.e. Once Only, Digital by Default, ...

Society



Services and Apps

Services and Apps

Services and Apps

Services and Apps

eJustice

eHealth

Procurement

Other Sectors

Digital Service Infrastructures

EIF Principles

← ..... Enabling Seamless Flow of Data ..... →



eID



eSignature



eDelivery



eInvoicing



eTranslation

CEF Building Blocks



Citizens

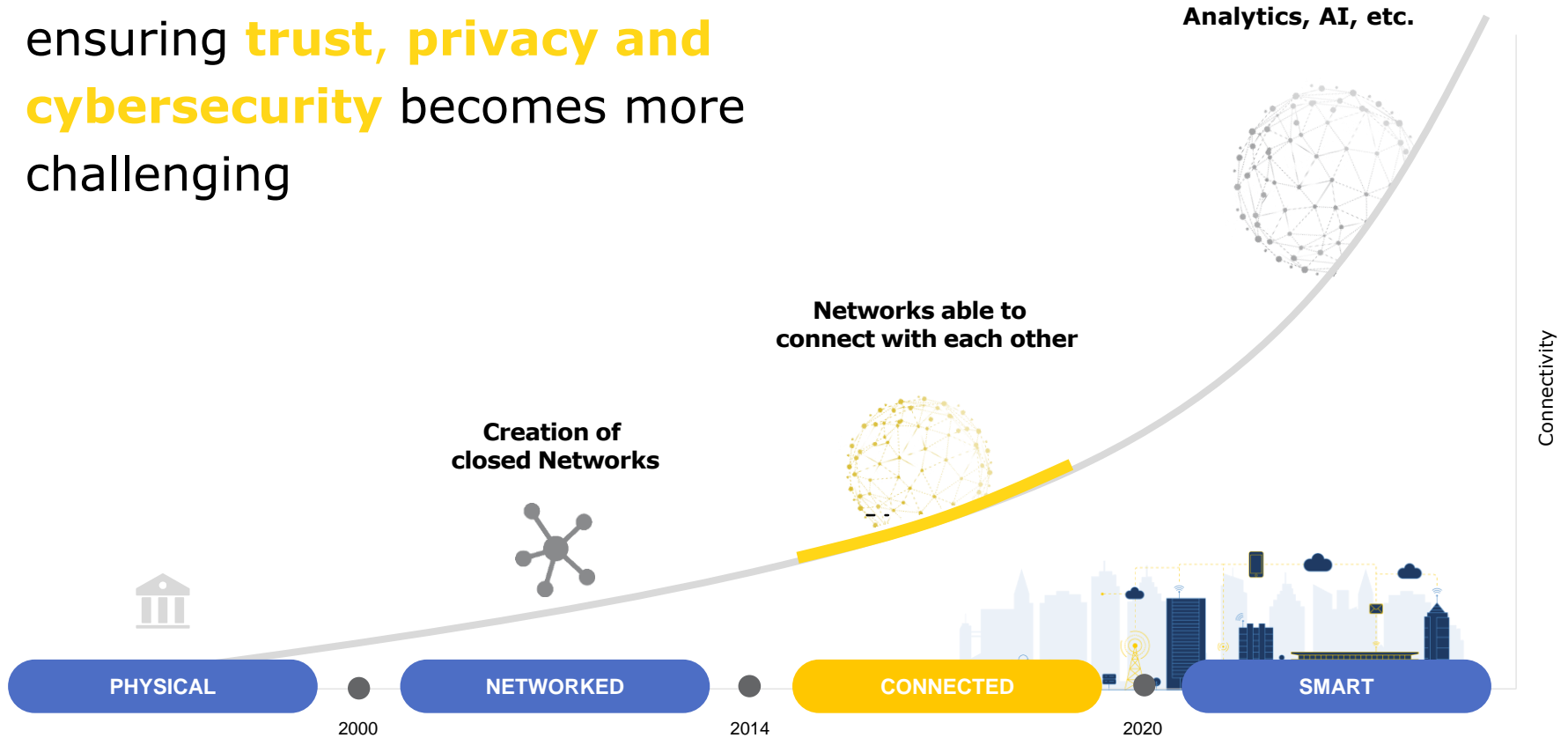


Businesses



Public Administrations

As we become more connected, ensuring **trust, privacy and cybersecurity** becomes more challenging



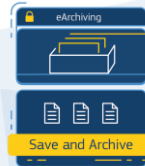
# Digital Europe's building blocks are designed to help you build **digital services people can trust**



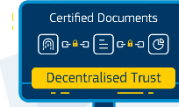
**Big Data Test Infrastructure**



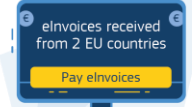
**Context Broker**



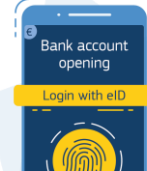
**eArchiving**



**European Blockchain Service Infrastructure**



**eInvoicing**



**eID**



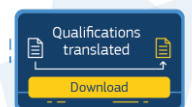
**eDelivery**



**eSignature**



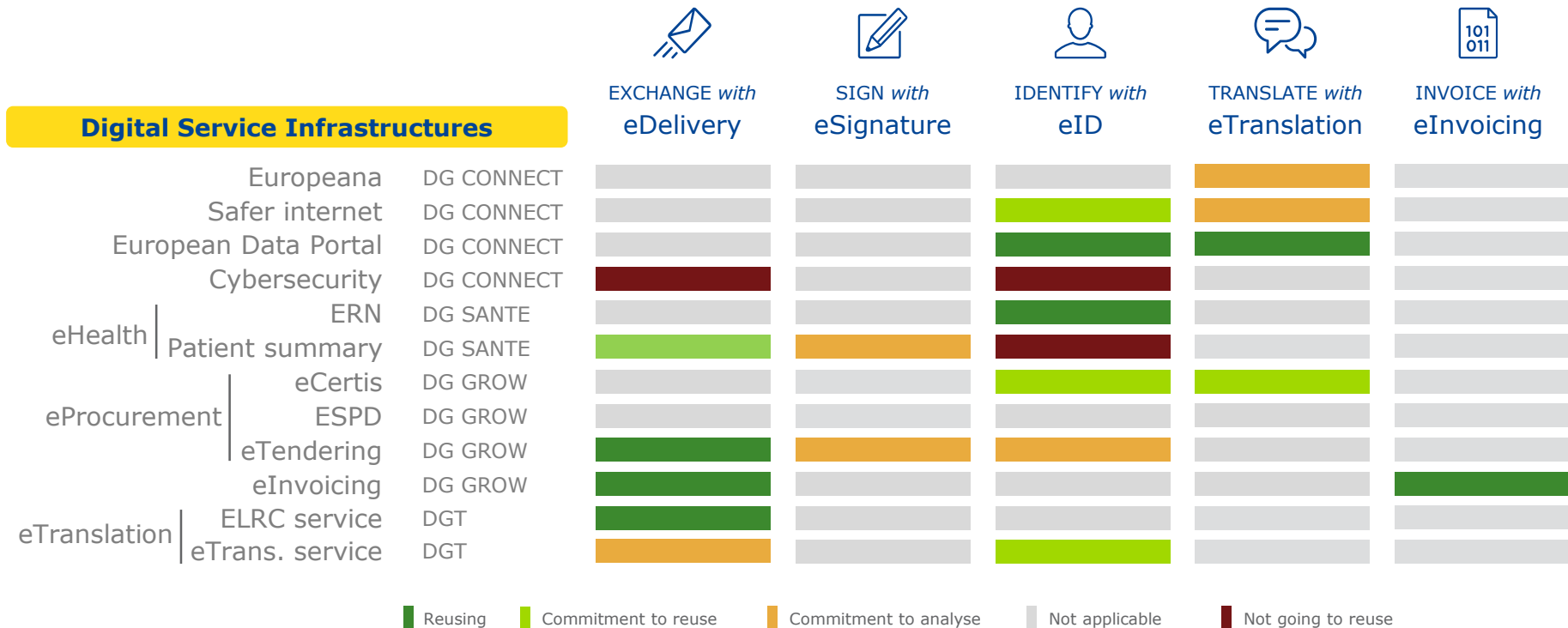
**Once Only Principle**



**eTranslation**





***Uptake of the  
CEF building blocks***

# Deployment in the CEF Digital Programme



■ Reusing   
 ■ Commitment to reuse   
 ■ Commitment to analyse   
 ■ Not applicable   
 ■ Not going to reuse

# Deployment in the CEF Digital Programme

<b>Digital Service Infrastructures</b>		 EXCHANGE with eDelivery	 SIGN with eSignature	 IDENTIFY with eID	 TRANSLATE with eTranslation	 INVOICE with eInvoicing
e-Justice	e-Justice portal	DG JUST	Reusing	Reusing	Reusing	Not applicable
	E-evidence	DG JUST	Commitment to reuse	Commitment to reuse	Commitment to analyse	Not applicable
	IRI	DG JUST	Commitment to reuse	Not applicable	Not applicable	Not applicable
	Standard forms	DG JUST	Not applicable	Not applicable	Not applicable	Not applicable
	Me-CODEX	DG JUST	Reusing	Reusing	Not applicable	Not applicable
	e-Justice BRIS	DG JUST	Reusing	Commitment to analyse	Not applicable	Not going to reuse
	ODR	DG JUST	Reusing	Not going to reuse	Reusing	Not applicable
	ESSI	DG GROW	Reusing	Reusing	Reusing	Reusing
	P2P Mobile Payments	DG FISMA	Commitment to reuse	Commitment to analyse	Commitment to analyse	Commitment to analyse
eArchiving	DG CNECT	Commitment to analyse	Commitment to analyse	Commitment to analyse	Commitment to analyse	Not applicable

■ Reusing   
 ■ Commitment to reuse   
 ■ Commitment to analyse   
 ■ Not applicable   
 ■ Not going to reuse

# Significant growth in the last year. Since November 2017...

## Reuse

+ 128 %

41 more projects at the EC are **reusing** the CEF Building Blocks

32

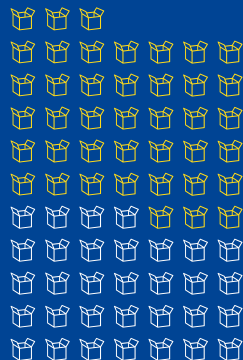
EC projects reusing BBs



Nov. 2017

73

EC projects reusing BBs



Nov. 2018

[Monitoring dashboard on CEF Digital](#)



## Success Stories

+ 350%

21 more teams told us how they have successfully re-used the CEF Building Blocks

6

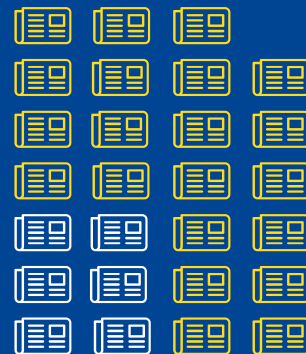
Success Stories



Nov. 2017

27

Success Stories



Nov. 2018

[View Success Stories on CEF Digital](#)



# How does CEF support projects to use the building blocks?

In two ways:

- **One**, it provides services to help you implement them in your system. There are a range of services across the building blocks but services typically include training, sample software, testing services.
- **Two**, CEF provides grant funding. You can apply for grant funding to pay for the implementation of a building block in you system. More information on how you can apply, grant winners and on-going projects is available via INEA's website.

## Free Services



Training sessions



Sample software



Testing services





## Funding opportunities

Call	Open Calls	Deadline for submissions
CEF-TC-2019-1 <b>Automated Translation</b> (indicative budget: €4M)	14 February 2019	14 May 2019
CEF-TC-2019-1 <b>eID &amp; eSignature</b> (indicative budget: €5M)	14 February 2019	14 May 2019
CEF-TC-2019-1 <b>eDelivery</b> (indicative budget: €1M)	14 February 2019	14 May 2019
CEF-TC-2019-1 <b>eInvoicing</b> (indicative budget: €6.2M)	14 February 2019	14 May 2019

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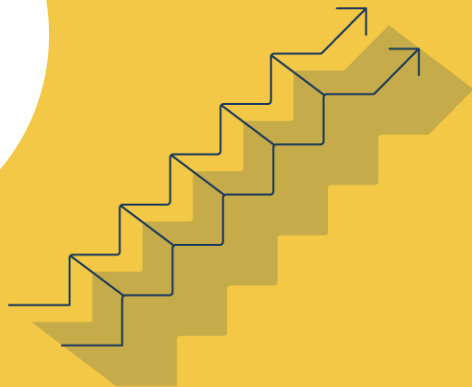
[Visit INEA Website](#)

# How many projects have used the building block?

**118**  
projects

[View Dashboard](#)

**Growing potential cases**  
are bringing us closer to  
fulfilling the dream.

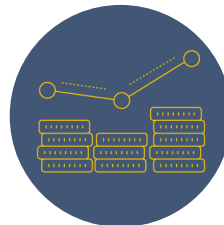


## Connected Europe

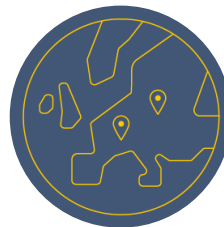
### Vision



**Great experience for  
citizens and businesses**



**Building a data-economy**



**Promoting cross-border  
interoperability**

# Main Benefits

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**1**

The building blocks are mature, ready to deploy solutions that will save projects time and money.



**2**

The building blocks are based on open European standards so you avoid vendor lock-in.



**3**

They help public administrations connect to collaborate to deliver a great European experience for citizens and businesses.

# How do we support you?

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**1**

Apply for grant funding to pay for the implementation of a building block



**2**

The CEF Digital website has details of a range of services across to support your implementation



**3**

Our service desk is available for you to provide answers to any questions you may have



# Join us, we're Connecting Europe!

The vision is to deliver user-centric digital public services for citizens and seamless cross-border public services for businesses.

Public administrations must exchange data securely across borders in order to collaborate effectively and deliver a great experience to citizens and businesses.

Projects using the building blocks are supporting the digital transformation of Europe by implementing eIDAS and contributing to the digital single market.



***CEF Digital***

# CEF Digital

The screenshot displays the CEF Digital website interface. At the top left is the CEF Digital logo with the text 'Connecting Europe'. A navigation menu includes 'About', 'Building Blocks', 'Sectors', 'Success Stories', 'Grants', 'Monitoring', and 'Contact'. Below the navigation is a blue banner with the text 'CEF Digital Home' and a large heading 'eInvoicing'. Underneath the heading is the subtext 'Send and receive electronic invoices in line with the European directive and standard' and a yellow 'GET STARTED' button. A secondary navigation bar contains 'Home', 'Get Started', 'Services', 'Documentation', 'Grants', and 'Support'. The main content area is titled 'Latest News and Success Stories' and features three news items:

- Video:** 'Come to the eInvoicing and eProcurement EU policy session' featuring two speakers in a video player.
- Exchange Summit:** 'Exchange Summit 2019: What's next for eInvoicing and eProcurement' with a date of 'October 2, 2019 | Vienna, Austria'.
- Code List Change:** 'Deadline for eInvoicing Code List Change Requests for Autumn Release'.

The bottom right corner of the page features the European Commission logo.

CEF Digital Home

## eInvoicing

Send and receive electronic invoices in line with the European directive and standard

GET STARTED

[Home](#) [Get Started](#) [Services](#) [Documentation](#) [Grants](#) [Support](#)

### Latest News and Success Stories



[Last Chance to Register | eProcurement and eInvoicing EU policy at the #EURegionsWeek](#)



[Exchange Summit 2019: What's next for eInvoicing and eProcurement Workshop](#)



[Deadline for eInvoicing Code List Change Requests for Autumn Release](#)

# CEF eInvoicing User Community

The screenshot shows the Facebook page for the CEF eInvoicing User Community. The page has a blue header with navigation options like Spaces, People, Polls, Calendars, Analytics, and a Create button. The main content area features a large banner for 'eINVOICING USER COMMUNITY' with a background image of people. Below the banner, there are three main sections: 'THE EUROPEAN STANDARD', 'FEATURED TWEETS', and 'About the community'. The 'THE EUROPEAN STANDARD' section includes a countdown timer showing 328 days remaining until 18 April 2019. The 'FEATURED TWEETS' section highlights a tweet about the Country Sheets for invoicing 2017. The right sidebar contains an 'About the community' section with a description of the space's purpose and a list of moderators. At the bottom, there is a 'Contact us' section with a 'Contact' button and a link to the eInvoicing Service Desk. A blue banner at the bottom of the page promotes a video and infographic available for download.

UC eInvoicing User Community

Pages 1 JIRA link Analytics

CEf DIGITAL

## eINVOICING USER COMMUNITY

### THE EUROPEAN STANDARD

The European Parliament and Council adopted **Directive 2014/55/EU**, establishing the European standard. The recent publication of the European Standard on invoicing in the Official Journal of the European Union marks the beginning of the implementation phase of the standard.

The Directive mandates an 18-month implementation period after the publication of the standard, with **18 April 2019** fixed as the deadline for this.


328 Days

[Learn More](#)

### FEATURED TWEETS

The Country Sheets for invoicing 2017 are here! Want to **learn more**? Simply click on the button below and **visit the Country Sheets!**


We kindly invite you to **spread the word!** By simply **retweeting** this message, together we create **more visibility** for the invoicing B2G status throughout Europe.

 Did you know that according to the Public Procurement Code, all public procurement processes in Portugal 🇵🇹 should preferably be performed electronically? More on #eInvoicing in Portugal: <http://europa.eu/!Gn73bt> #ConnectingEurope

### About the community

The invoicing User Community space enables stakeholders involved and interested in cross-border invoicing, to discuss invoicing 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 invoicing Readiness Checker Website, which is designed to help public administrations implement electronic invoicing, as per the requirements of Directive 2014/55/EU.

Your space moderators



### Contact us

Get in touch with the CEF invoicing team for questions, comments or other type of requests.

[Contact](#)

Read more about the invoicing Service Desk

[New Video & Infographic Now Available](#)

Space tools

Stakeholder management services

# Knowledge base

## OBJECTIVE OF THE SERVICE

This service provides public entities and solution & service providers an easy reference repository for eInvoicing related information.

It includes information about access to the different code lists, codes used and their meaning, and a glossary of elements used in the European eInvoicing standard.

The Knowledge base provides information on EU and country specific levels.

## BENEFITS

- This service provides a useful and reliable information repository that helps users to find, consult and interpret information resources about eInvoicing in Europe.
- It provides useful information that public administrations can use to plan, initiate and execute eInvoicing implementation plans and strategies.

The screenshot shows a news article on the CEF Digital website. At the top left is the CEF Digital logo with the text 'Connecting Europe'. Below the logo is a search bar. The article title is 'CEF eInvoicing Video and Infographic: Available Now'. The main image is a blue graphic with the text 'Directive 2014/55/EU' at the top. It features three computer monitors with checkmarks, a central monitor with a document icon, and a city skyline at the bottom with labels for 'REGIONAL', 'CENTRAL GOVERNMENT', and 'LOCAL GOVERNMENT'.

## USERS

- Public entities
- Policy makers
- Economic operators & suppliers
- Solution & service providers

## More info

[CEF Digital](#) >

## Get started

[Contact us](#) >



# 2018 Country Factsheets



CEF Digital  
Connecting Europe

MENU COMMUNITY

[CEF Digital Home](#) > [eInvoicing](#)

## Situation per country

Interested in the uptake of eInvoicing in Europe?

[CEF Monitoring Dashboard >](#)

Every European Union Member State has a unique approach to dealing with eInvoicing. For each country you can find out more about their:

- policy framework
- eInvoicing platform (if existing)
- approach for receiving and processing electronic invoices

### Summary

Organisation responsible for eInvoicing	
eInvoicing legislation	
eInvoicing is mandatory for	
eInvoicing standard(s)	
eInvoicing platform	

### Full Country Factsheet

#### Legislation

..

#### eInvoicing platform and eInvoicing management solutions

..

#### Approach for receiving and processing eInvoices

..

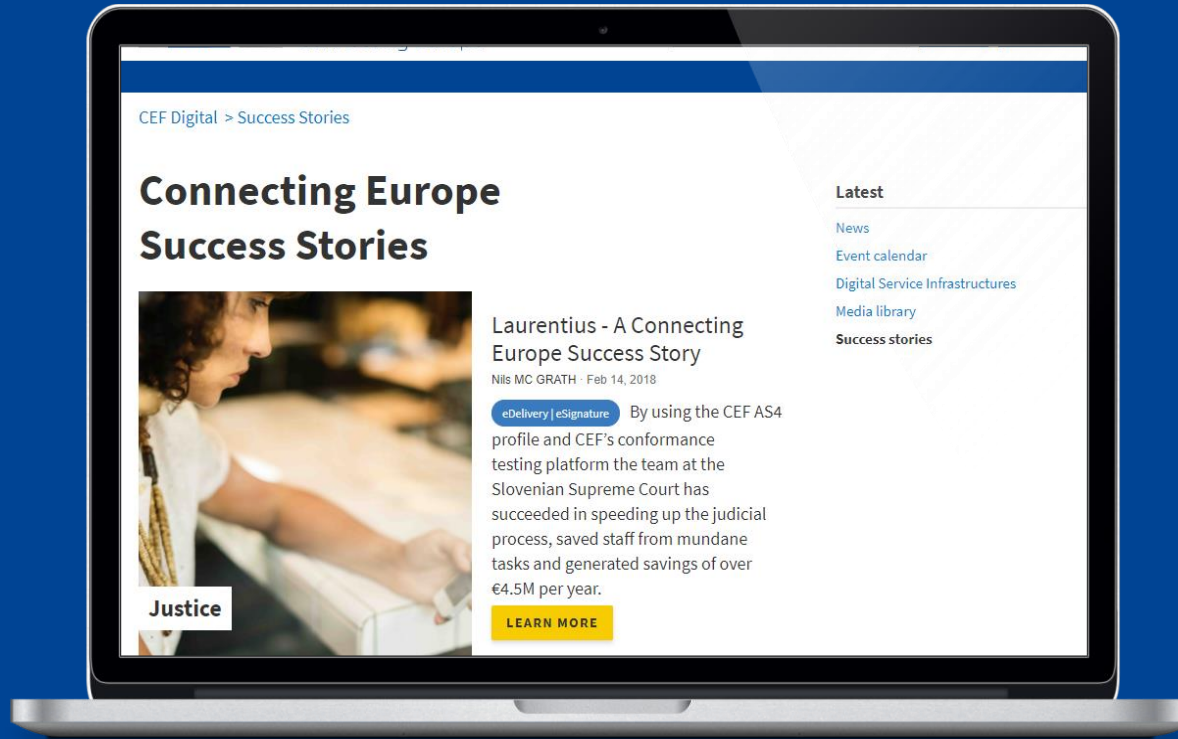
#### Additional information

..

## Country factsheets

### EU Member States

<a href="#">Austria</a>	<a href="#">Italy</a>
<a href="#">Belgium</a>	<a href="#">Latvia</a>
<a href="#">Bulgaria</a>	<a href="#">Lithuania</a>
<a href="#">Croatia</a>	<a href="#">Luxembourg</a>
<a href="#">Cyprus</a>	<a href="#">Malta</a>
<a href="#">Czech Republic</a>	<a href="#">The Netherlands</a>
<a href="#">Denmark</a>	<a href="#">Poland</a>
<a href="#">Estonia</a>	<a href="#">Portugal</a>
<a href="#">Finland</a>	<a href="#">Romania</a>
<a href="#">France</a>	<a href="#">Slovakia</a>
<a href="#">Germany</a>	<a href="#">Slovenia</a>
<a href="#">Greece</a>	<a href="#">Spain</a>
<a href="#">Hungary</a>	<a href="#">Sweden</a>
<a href="#">Ireland</a>	<a href="#">United Kingdom</a>
<b>ADDITIONAL EEA (European Economic Area) COUNTRIES</b>	
<a href="#">Iceland</a>	<a href="#">Norway</a>
<a href="#">Liechtenstein</a>	



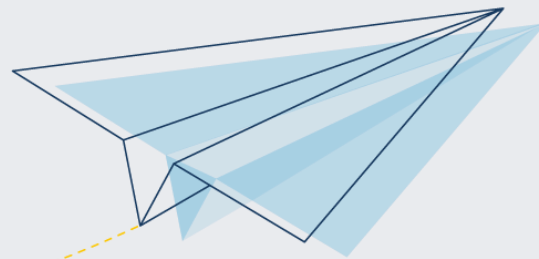
Read all the Connecting Europe success stories on CEF Digital

[View >](#)

# Ready to get started?

Reach out to us to learn more!

Or visit our website [www.ec.europa.eu/cefdigital](http://www.ec.europa.eu/cefdigital)



## **Funding and Grants – possibilities within CEF**

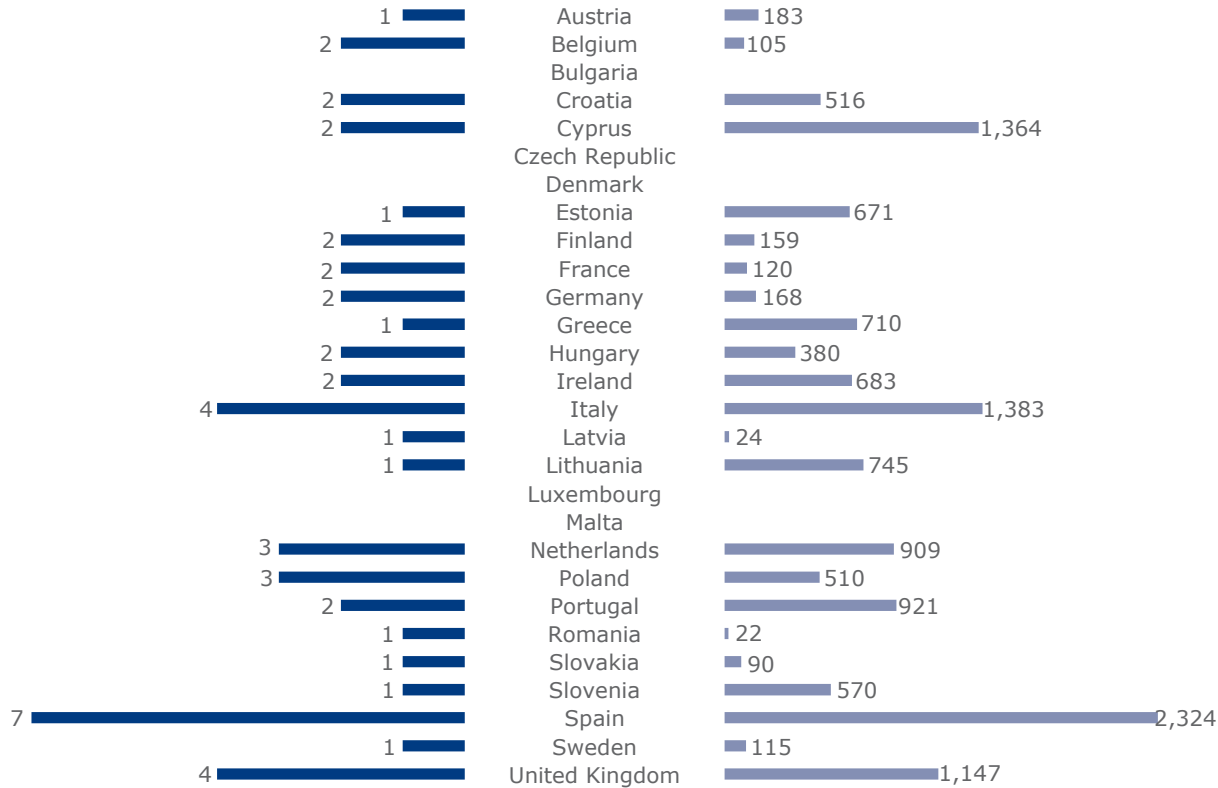


## Funding opportunities

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Visit INEA Website

## Member States Number of projects and CEF funding (€ thousand)



## EEA and Third Countries Number of projects and CEF funding (€ thousand)



# CEF Telecom 2014-2016

## List of grant agreements for eInvoicing DSI building blocks

Project Code	Title	Beneficiary countries	Start Date	End Date	Project Status	CEF funding for the action (€)
2015-AT-IA-0049	EVA - e-Invoicing for Austria	AT	01/09/2016	31/12/2017	Ongoing	183,000
2015-CY-IA-0052	E-invoicing Cyprus	CY	01/10/2016	31/12/2017	Ongoing	561,430
2015-ES-IA-0055	SMART eINVOICING PLATFORM TO ENFORCE CROSS-BORDER DOCUMENTATION EXCHANGE (SEINPEX)	ES	01/08/2016	31/12/2017	Ongoing	222,781
2015-EU-IA-0050	eIGOR - eInvoicing GO Regional	IT,UK	01/01/2017	31/12/2017	Ongoing	1,252,500
2015-EU-IA-0054	Semantic conversion of business documents (SCOBDO)	DE,NL	01/09/2016	31/12/2017	Ongoing	283,199
2015-EU-IA-0058	GOVeIn European eInvoicing Project: implementation of the European electronic invoice within the Public Health area	ES,FR,HU,IE,IT,NL,PL,RO,UK	01/10/2016	31/10/2017	Ongoing	770,249
2015-HR-IA-0048	Croatian eInvoicing Business-to-Administration Exchange Project	HR	02/06/2016	30/05/2017	Closed	251,328
2015-UK-IA-0056	eInvoice Expansion	UK	01/10/2016	31/12/2017	Ongoing	901,624
2016-CY-IA-0105	Cy e-Invoicing (Local Authorities)	CY	01/01/2018	31/12/2018	Ongoing	802,134
2016-EL-IA-0130	Interoperable eInvoicing in Greece (GRInv)	EL	01/10/2017	30/09/2018	Ongoing	710,065
2016-ES-IA-0117	FACe - The core platform of the Spanish public authorities to process the European standard on electronic invoice	ES	01/09/2017	30/11/2018	Ongoing	298,691
2016-ES-IA-0134	EUeInvoicing.cat - European standards adoption for eInvoicing in Catalonia	ES	01/09/2017	31/08/2018	Ongoing	622,833
2016-EU-IA-0086	Tools and support towards the adoption of the future EN on electronic invoicing in SMEs	BE,ES,IT	01/09/2017	31/08/2018	Ongoing	372,054
2016-EU-IA-0096	GOV2EU - Supporting public entities to adopt EU Standard on electronic invoice for cross-border transactions	BE,DE,ES,FR,HU,IT,PL,PT,SK	01/09/2017	31/10/2018	Ongoing	1,248,208
2016-EU-IA-0109	SAPHeIN – Implementing SAPHetydoc for the wide adoption of eInvoicing	ES,PT	01/06/2017	31/08/2018	Ongoing	908,837
2016-EU-IA-0119	Facilitate and increase the use of the European Norm on e-invoice and the use of access point in the EU	FI,NO,SE	15/12/2016	01/06/2018	Ongoing	887,879
2016-EU-IA-0120	Internet of Business (IoB)	EE,FI,LV	01/06/2017	31/05/2018	Ongoing	795,248
2016-EU-IA-0126	Promote uptake of e-invoicing in Ireland	IE,UK	01/07/2017	30/06/2018	Ongoing	755,904
2016-HR-IA-0090	eINVOICING For Croatian Public Authorities (eICPA)	HR	19/09/2017	19/09/2018	Ongoing	264,201
2016-LT-IA-0104	eInvoicing cross-border LT	LT	01/09/2017	01/09/2018	Ongoing	744,553
2016-NL-IA-0088	NL eInvoicing	NL	16/12/2016	31/05/2018	Ongoing	705,068
2016-PL-IA-0106	European cross-border e-invoice in local public procurement in Poland	PL	01/10/2017	30/11/2018	Ongoing	420,442
2016-SI-IA-0103	Readiness of Slovenian E-invoicing	SI	01/06/2017	01/06/2018	Ongoing	570,248

---

# Curious to learn more?!

## Contact info

- [CEF-BUILDING-BLOCKS@ec.europa.eu](mailto:CEF-BUILDING-BLOCKS@ec.europa.eu)

## Planning for 2019

- Several workshops in planning

## Meanwhile – take a look at the available material on CEF Digital

- <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eInvoicing>





# Mentimeter

[www.menti.com](https://www.menti.com)

**Enter #11 10 31**



**BREAK**



---

# Methods for exchange of electronic invoices

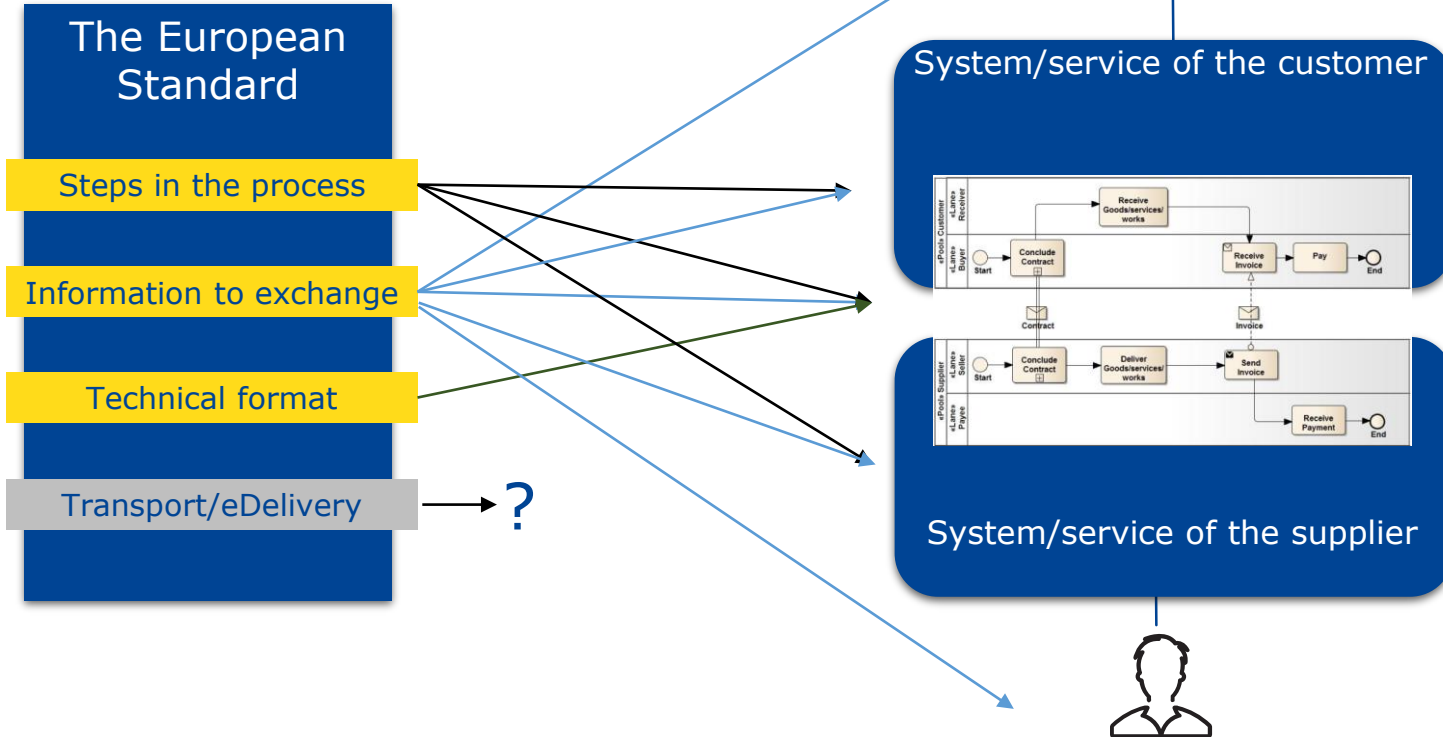
---

**Martin Forsberg**

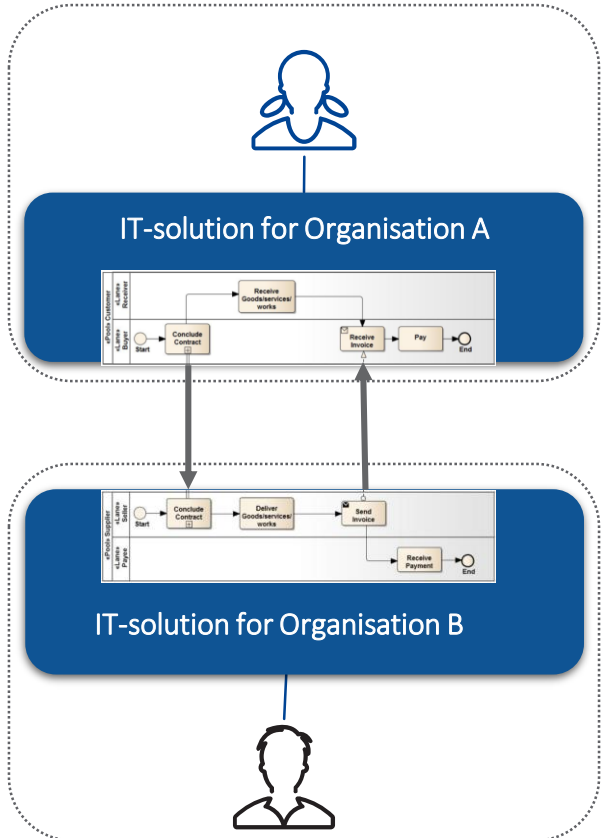
**Christian Vindinge Rasmussen**

DIGIT

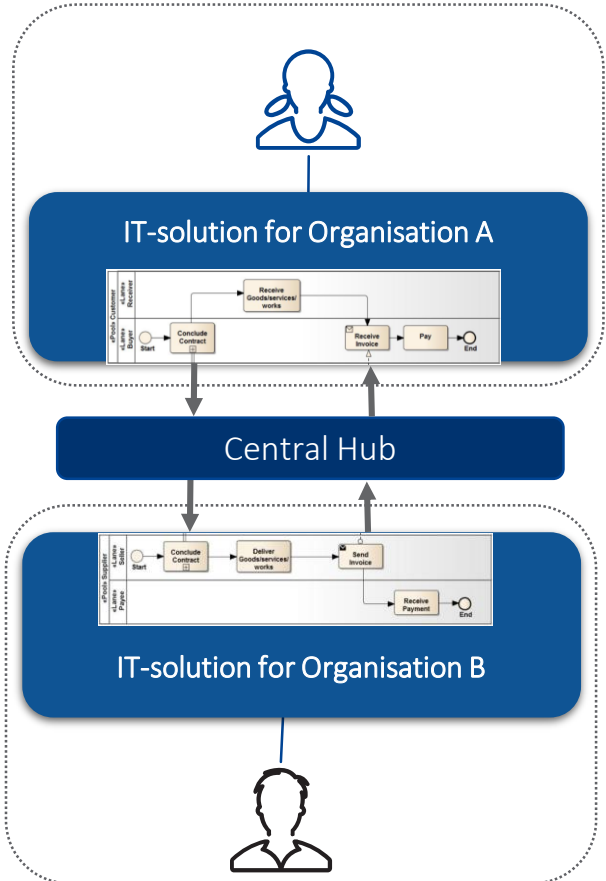
# Areas covered by the European standard



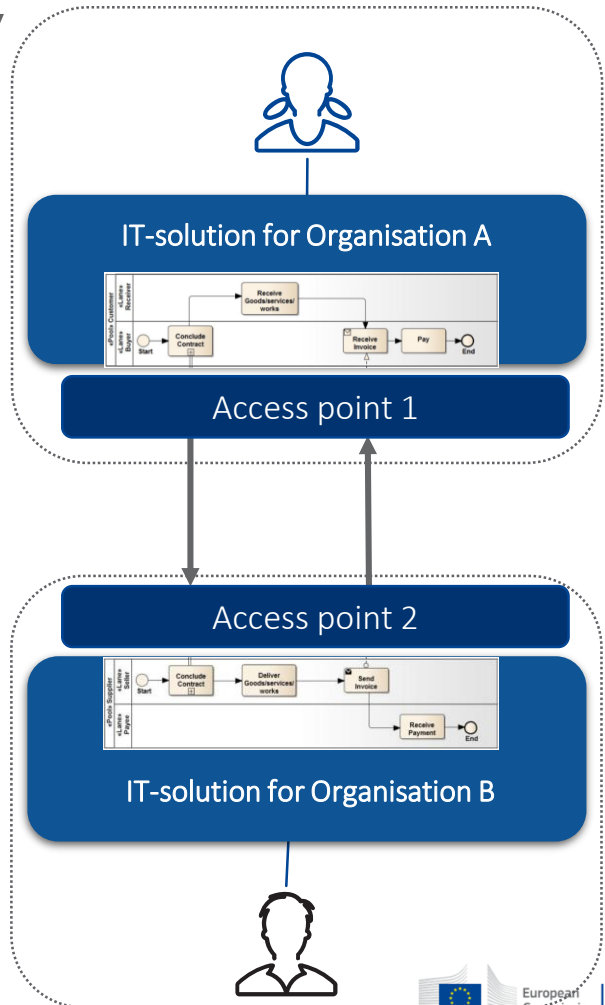
# Different solutions for interconnectivity



2-corner model



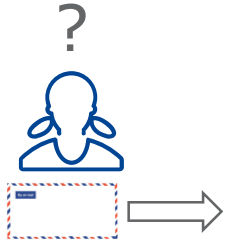
3-corner model



4-corner model

---

Exchange infrastructure –  
a challenge which will  
take time to solve



---

# Four-corner model

A common approach for service provider collaboration

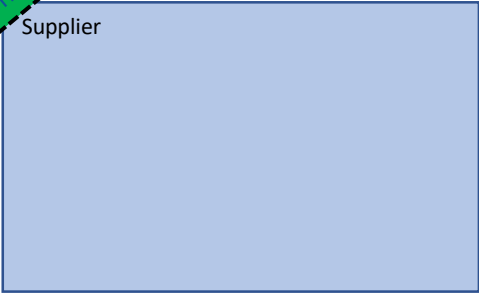
**System environments tend to be very complex today**

**Many critical business functions are carried out as services provided by third parties**



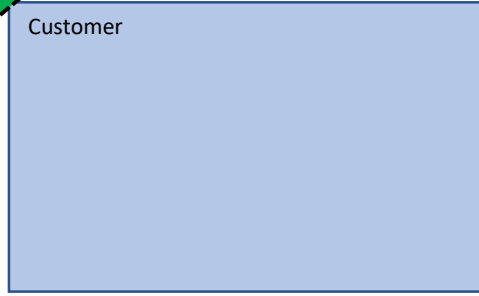
Corner 1

Supplier



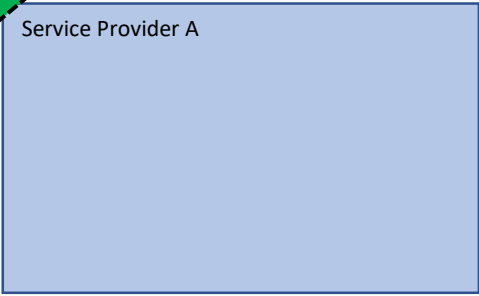
Corner 4

Customer



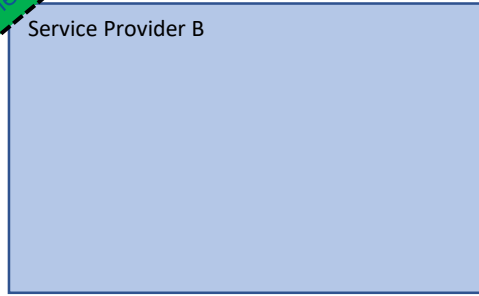
Corner 2

Service Provider A



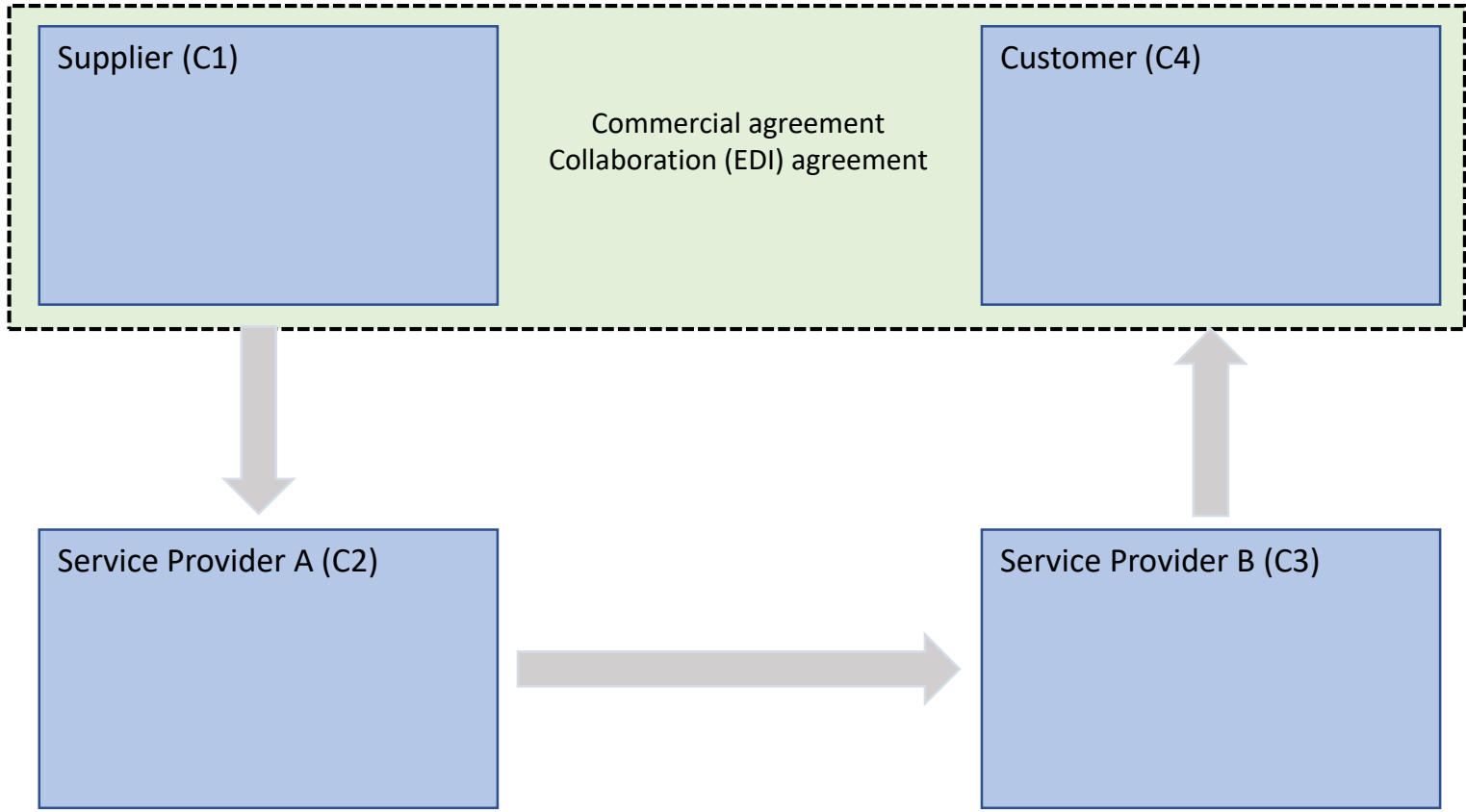
Corner 3

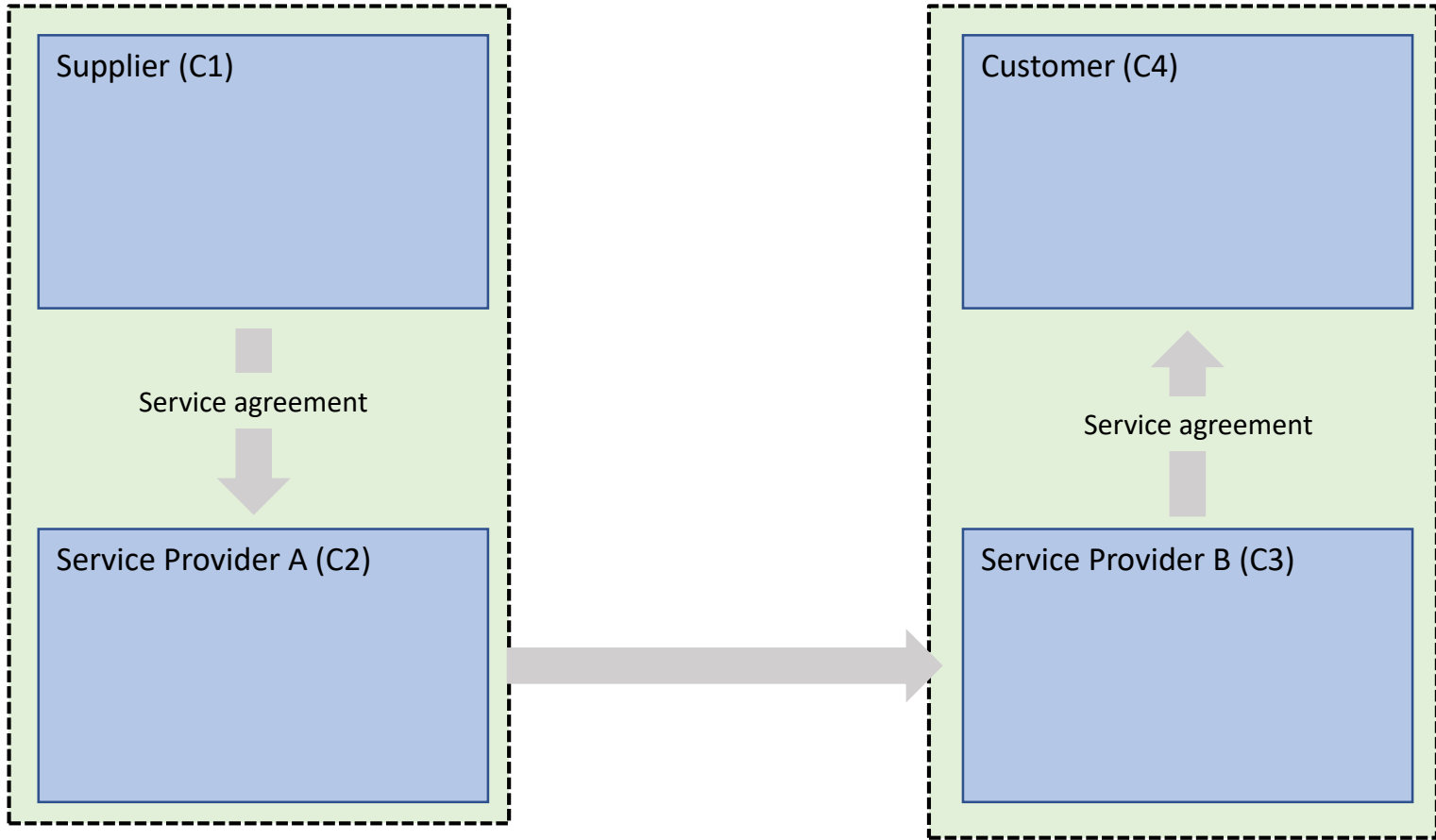
Service Provider B

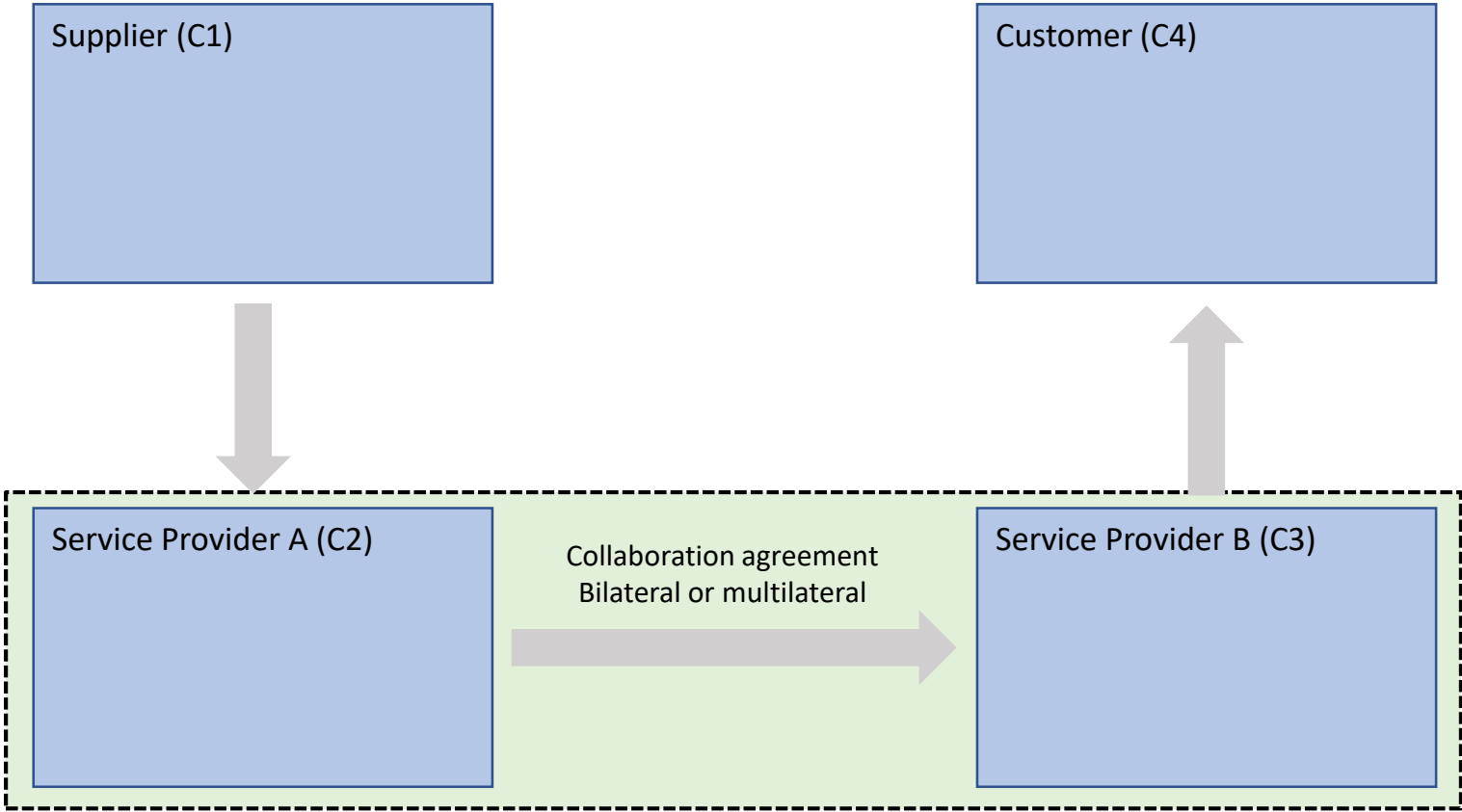


# Contractual view

on four-corner-model

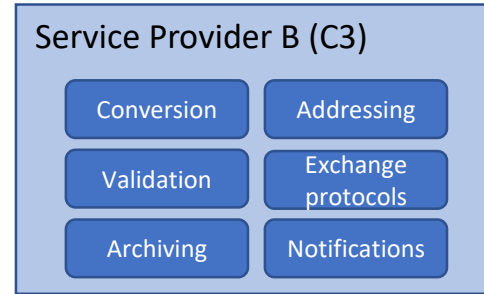
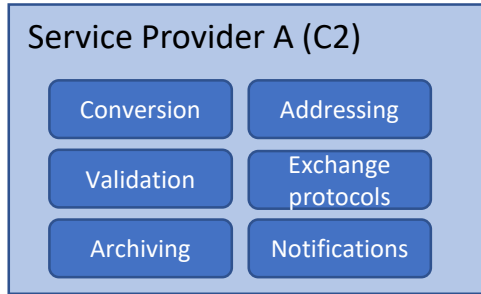
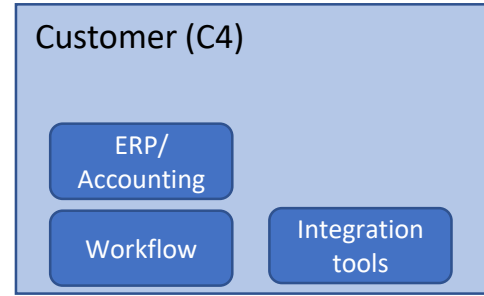
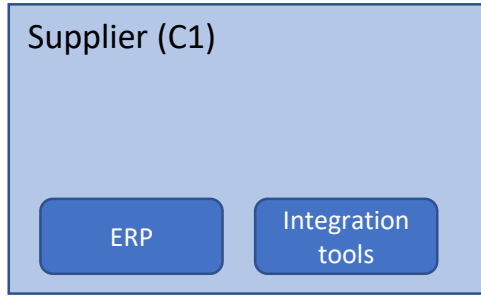






# Functional view and common added services

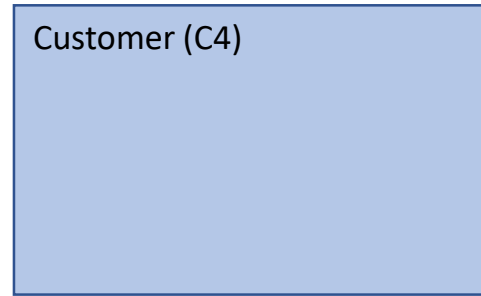
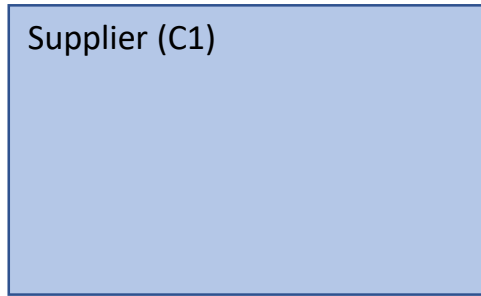
in four-corner-model



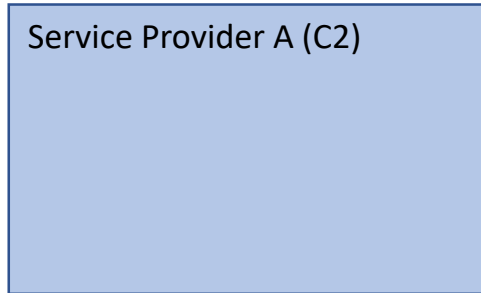
# Use of standards

in four-corner-model





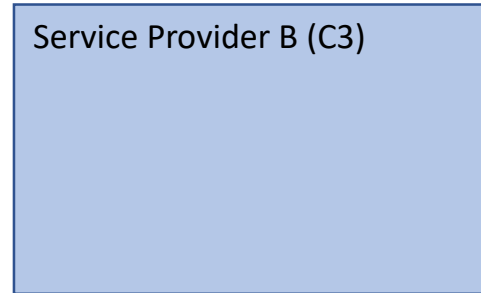
← **Common protocols:** FTP, Web services, REST, MQ →  
← **Common formats:** Inhouse (flatfile), Proprietary XML →



**Common protocols:** AS2/AS4,  
Web services, FTP

A large, light gray arrow pointing from the Service Provider A (C2) box to the Service Provider B (C3) box.

**Common Formats:** EDIFACT,  
XML (UBL, CII, other)  
The European Standard!



## Supplier (C1)

GL3004	A1111	608175	20120604-71.03	608175	2857125	3TN
GL3004	A1111	608186	20120604-1867.33	608186	2857128	3TN
GL3004	A1111	608357	20120604-59.70	608357	2857142	3TN
GL3004	A1111	608404	20120604-1848.52	608404	2857146	3TN
GL3004	A1111	608408	20120604-183.02	608408	2857147	3TN
GL3004	A1111	608527	20120604-8.95	608527	2857151	3TN
GL3004	A1111	608534	20120604-903.61	608534	2857152	3TN
GL3004	A1111	608547	20120604-1648.16	608547	2857153	3TN
GL3004	A1111	608567	20120604-478.96	608567	2857157	3TN
GL3004	A1111	608582	20120604-394.42	608582	2857158	3TN
GL3004	A1111	608603	20120604-62.57	608603	2857160	3TN
GL3004	A1111	608644	20120604-26.00	608644	2857164	3TN
GL3004	A1111	608652	20120604-16.92	608652	2857165	3TN

## Service Provider A (C2)

Conversion    Addressing  
Validation    Exchange protocols  
Archiving    Notifications

## Customer (C4)

ERP/  
Accounting  
Workflow

```
{1:F01BPHKPLPKXXX0000000000}{2:I940BOFAUS6BxBAMN}{  
:20:TELEWIZORY S.A.  
:25:BPHKPLPK/320000546101  
:28C:00084/001  
:60F:C031002EUR5000,00  
:61:031020102001088,41FTRFREF 12345678/2003//83270  
Transfer  
:86:020700wypłata/przelew?20DEUTSCHE ELEKTROAPPARA  
SE 4 MUNCHEN?22OCMT/EUR1088,41?23CHGS/SHA/EUR20,00  
/2003 ZAPŁATA ZA?25FABRYKATY DO TUB 200 SZTUK?26GZ  
UK GZY 77 T?27RANZYSTORY 300 SZTUK BT345X?28OPORNI  
:38DE09700202701890012872  
:62F:C031020EUR3891,59  
:}|
```

## Service Provider B (C3)

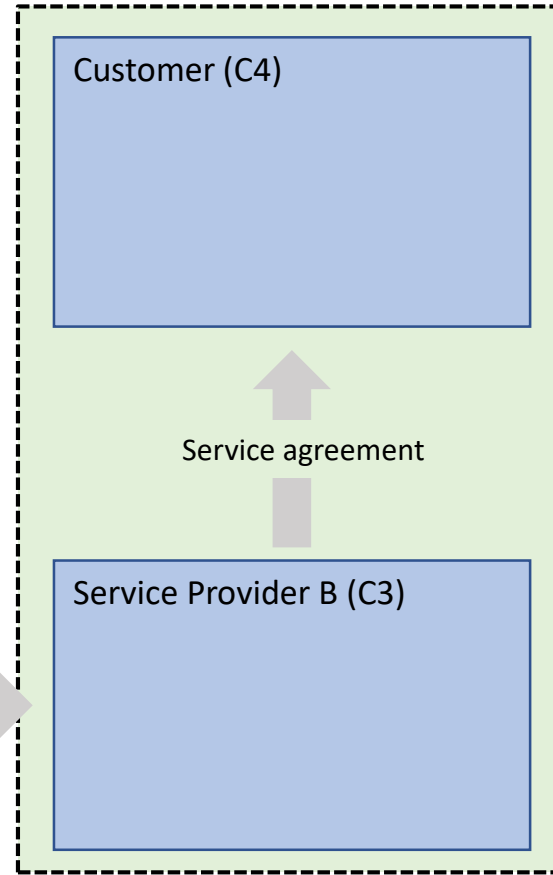
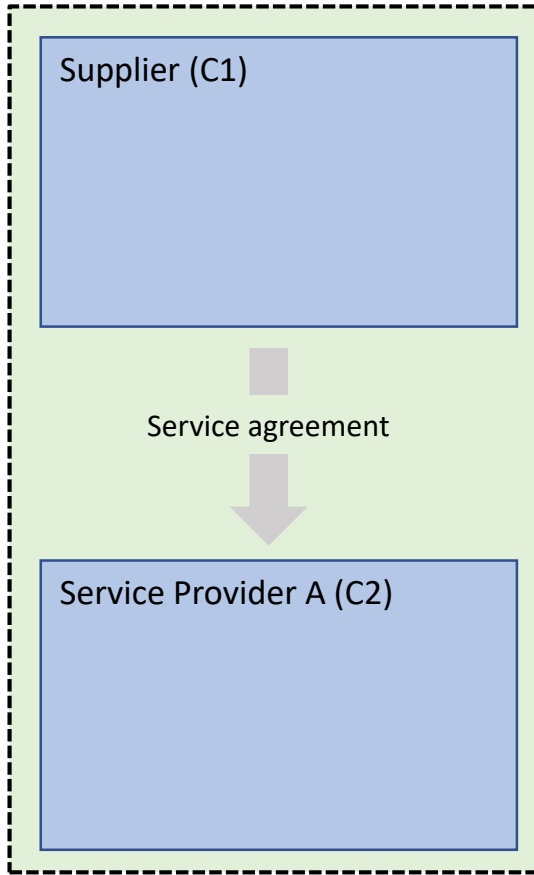
Conversion    Addressing  
Validation    Exchange protocols  
Archiving    Notifications

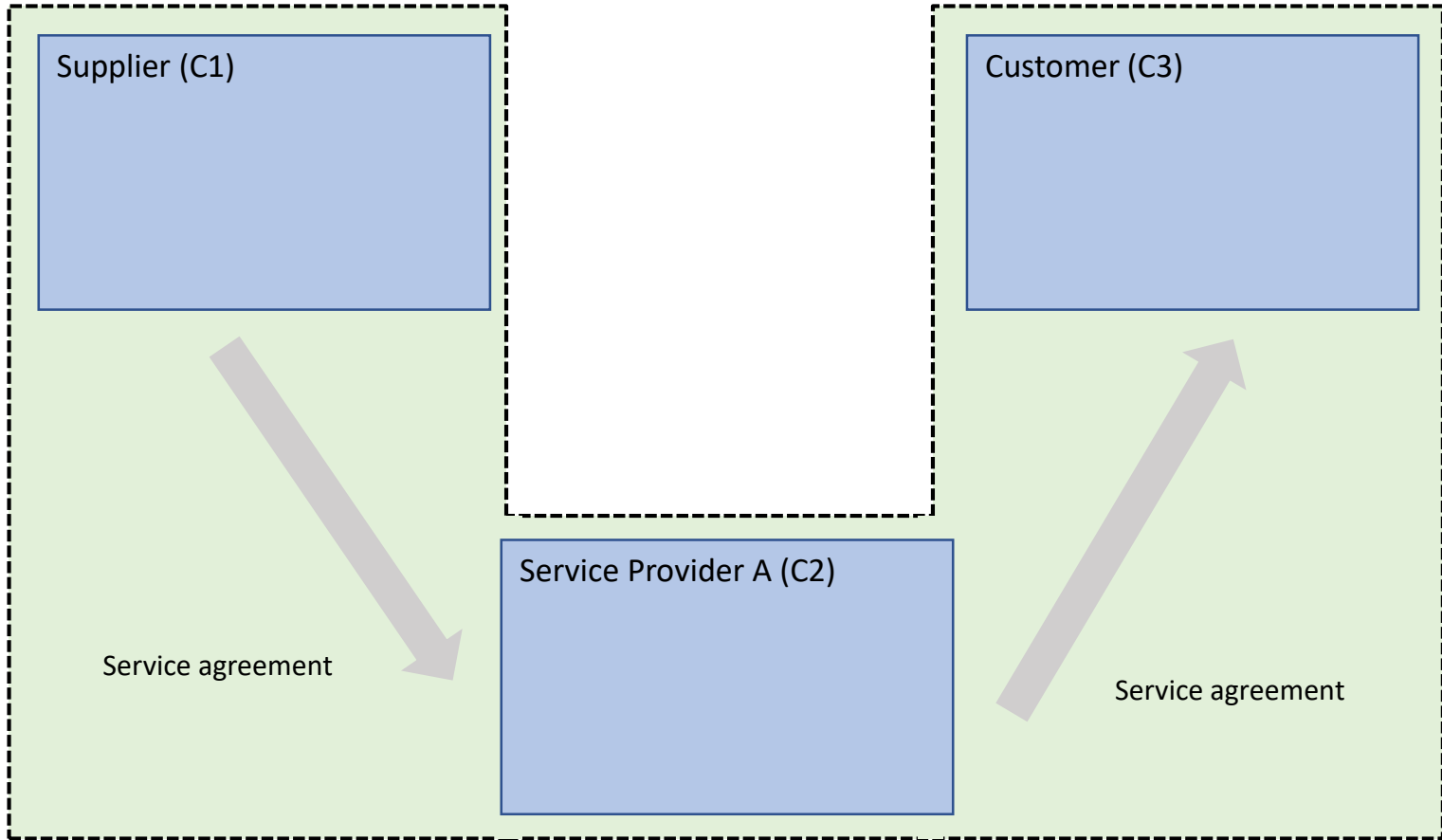
```
<cac:SellerParty>  
<cac:Party>  
<cac:PartyIdentification>  
<cac:ID IdentificationSchemeAgencyID="9">7300009010479</cac:ID>  
</cac:PartyIdentification>  
<cac:PartyName>  
<cbc:Name>Atea Sverige AB</cbc:Name>  
</cac:PartyName>  
<cac:Address>  
<cbc:Postbox>Box 18</cbc:Postbox>  
<cbc:CityName>Kista</cbc:CityName>  
<cbc:PostalZone>16493</cbc:PostalZone>  
</cac:Address>  
<cac:PartyTaxScheme>
```

# Four-corner model characteristics (in the context of eInvoicing/EDI)

- *End Entities (Supplier/Customer)* may choose any *Service Provider* connected to the network.
- The *Service Providers* are acting on behalf of the *End Entities*.
- *The Service Provider* collaborates in networks, either with bilateral or multilateral collaboration agreements
- The collaboration agreements specifies technical aspects (such as type of transport protocol) but also service levels and issue resolution procedures
- The *Exchange Format* of payloads/messages used between the *Service Provider* are often pre-agreed.
- Each *End Entity* only needs to enter into a contractual agreement with its selected *Service Provider* .
- *Service Providers* may transform data to/from the agreed *Exchange Format* before sending or after receiving depending of the *End Entity's* preferences. The creation of the business document, in its *Exchange Format*, can happen either in the issuer's own systems or it may be translated from an *In-house Format* to the *Exchange Format* by the *Service Provider*.
- The *Service Provider* often offers more added value services to the *End Entity* (such as archiving, syntax validation, syntax transformation).

What about the  
three-corner model?





Supplier (C1)

Customer (C3)

Service Provider A (C2)

Service agreement

Service agreement

# Collaboration between service providers is necessary!



- Non-for profit trade association with 70 member organisations
- Recommends best practices
- Promotes interoperability
- Advocates wide adoption of e-invoicing



- Non-for-profit association with 300 member organisations (260 service provider/Access points)
- Recommends and develops standards for use in e-procurement
- Provides the legal framework and technical services for an exchange network

Big overlap of members in the two associations



# PEPPOL

PAN-EUROPEAN PUBLIC PROCUREMENT ONLINE



---

A short introduction



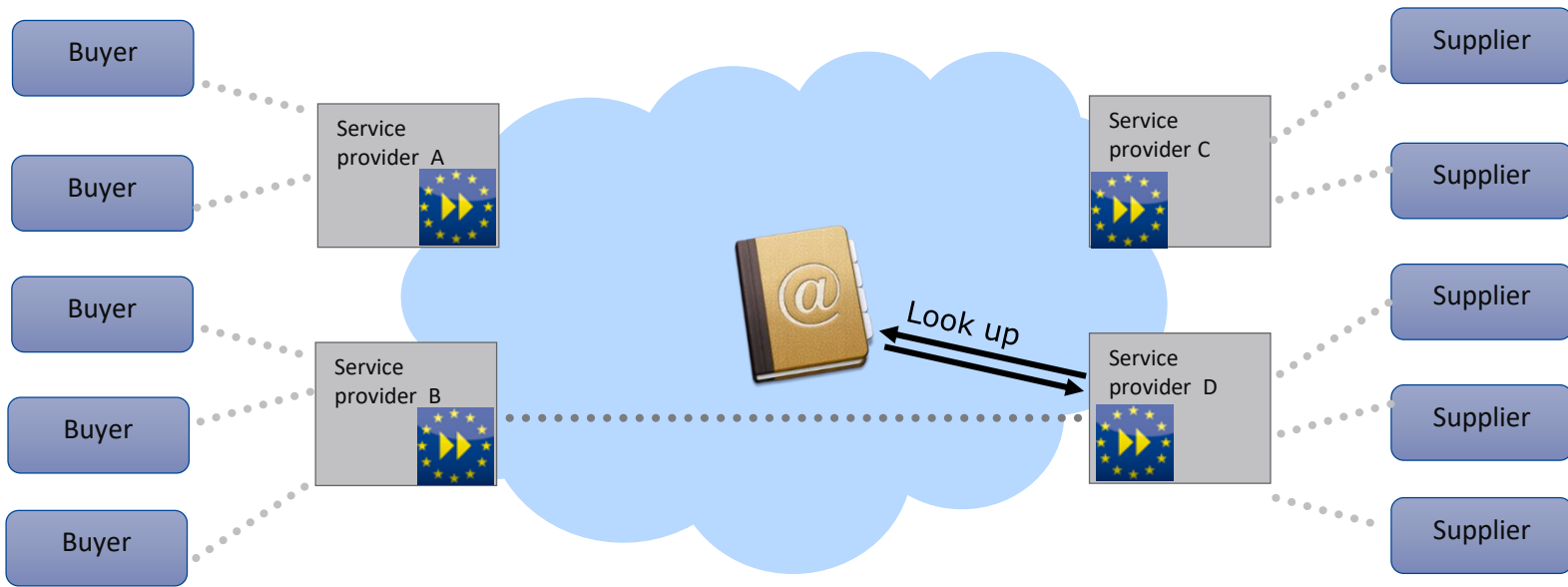
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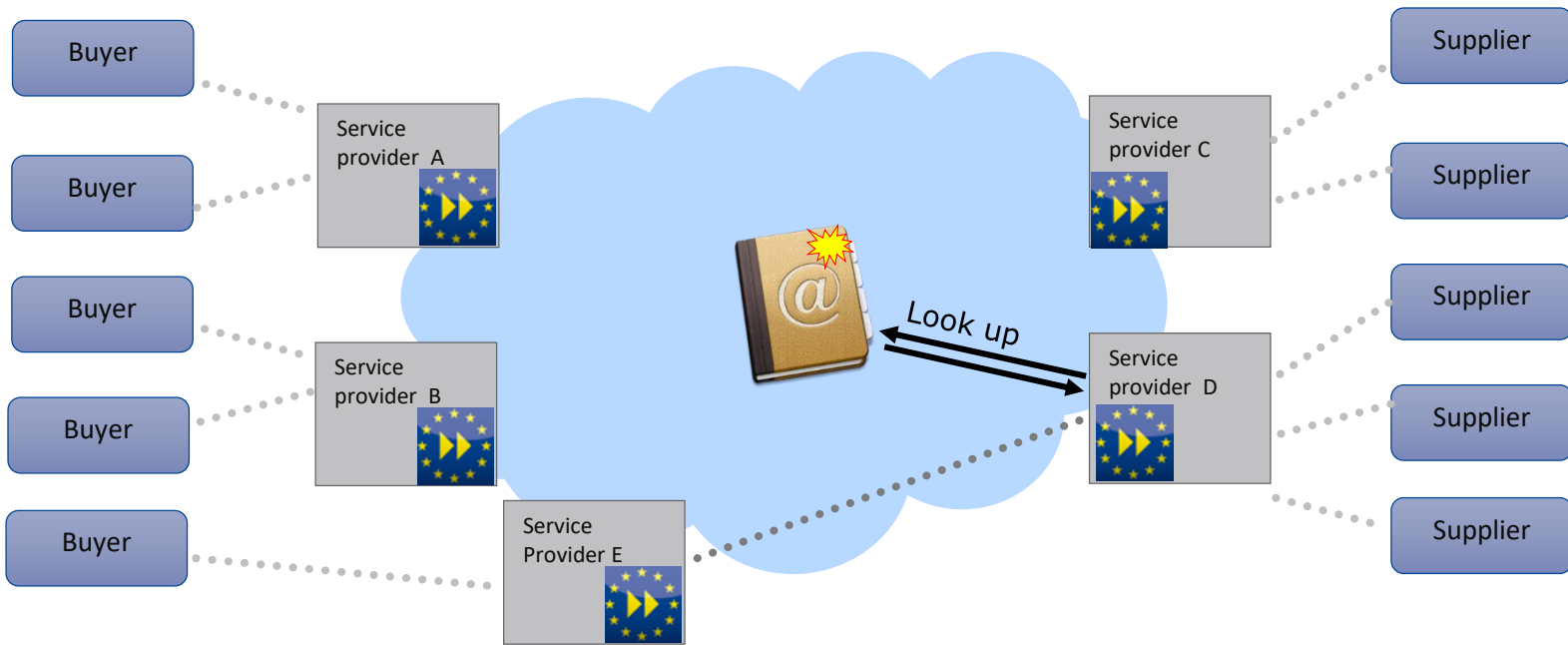
# What is PEPPOL

Infrastructure where  
Buyers and Sellers can  
exchange  
e-documents

Specifications for  
electronic invoice,  
order, catalogue...

Non-for-profit  
organisation which  
maintains and  
governs





# INVOICE



East Repair Inc.  
485 Amsterdam Avenue  
New York, NY 1023

## BILL TO

John Smith  
2 Court Square  
Long Beach City

## SHIP TO

John Smith  
694 Lexington Avenue  
6th Floor  
New York, NY 10022

## INVOICE #

00234

## INVOICE DATE

03/25/2014

## P.O.#

1742/2014

## DUE DATE

04/09/2014

123

QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Front and rear brake cables & Throttle cable	56.00	56.00
1	New set of pedal arms	182.00	182.00
3	Labor 3hrs	25.00	75.00
	Subtotal		313.00
	Sales Tax 5.0%		15.65
	<b>TOTAL</b>		<b>\$328.65</b>

## Buyer

- Name and address
- Party identifiers

## Delivery location

- Address
- Identifiers

## Electronic address identifier (EndpointID)

- "PEPPOL-ID" (GLN, DUNS etc)



PEPPOL-ID Receiver: 0007:5512345672  
PEPPOL-ID Sender: 0007:2020332423

0007 : 5512345678

Type code for  
Swedish  
organisation  
number

The actual number



GÖTEBORGS UNIVERSITET

Gothenburg 2016-09-23

### Billing the University of Gothenburg

#### E-invoice

The University of Gothenburg prefers e-invoicing. Our suppliers can send e-invoices via PEPPOL, which enables European businesses to easily deal electronically with any European public sector buyer in their procurement process. Our PEPPOL-id is 0007:2021003153.



**KUSTBEVAKNINGEN**  
SWEDISH COAST GUARD

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## Invoicing

The Swedish Coast Guard is gradually changing over to receiving only electronic invoices. The Swedish Coast Guard does not accept invoices in PDF format sent via e-mail. There are several ways in which to submit e-invoices:

### Via PEPPOL

Our preferred method for receiving electronic invoices is via the PEPPOL network. The Swedish Coast Guard's electronic address in PEPPOL is 0007:2021003997.

### Via the Swedish Coast Guard's invoice portal

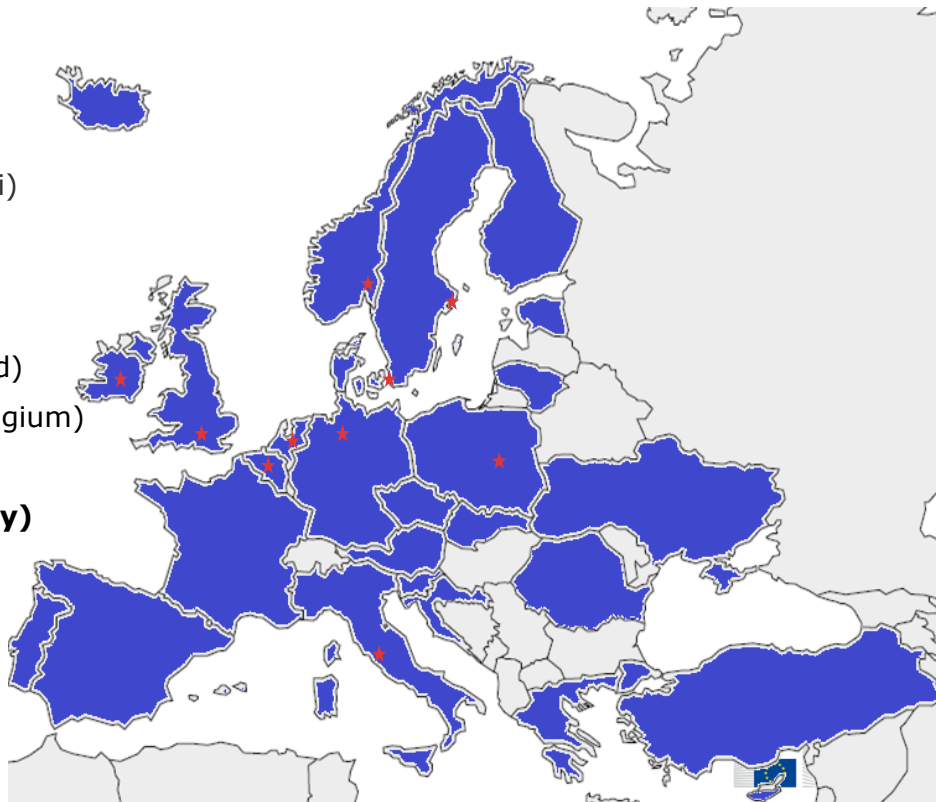
If you are unable to send electronic invoices, you can use our invoice portal free of charge to register them manually. This solution is intended for smaller suppliers who only issue a few invoices. Log in and register at: [fakturaportalen.se](http://fakturaportalen.se)

# PEPPOL today

**+200** Certified Access Points in **20** European countries, plus Singapore, Canada and USA. More than **150.000** e-Invoice receiving organizations connected. **60 million** e-invoices between APs in 2017.

## 12 PEPPOL Authorities

- Agency for Digital Italy (AgID) (Italy)
- Agency for Public Management and eGovernment (Difi) (Norway)
- Danish Business Authority (Denmark)
- Department of Health (UK)
- Department of Public Expenditure and Reform (Ireland)
- Federal Public Service Policy and Support (BOSA) (Belgium)
- Agency for Digital Government (DIGG) (Sweden)
- **Free Hanseatic City of Bremen – KoSIT (Germany)**
- Ministry of Economic Development (Poland)
- SimplerInvoicing (Netherlands)
- **Info-communications Media Development Authority (IMDA) (Singapore)**
- OpenPEPPOL AISBL



ZC Solution SRL	Italy	Consumer Cloud Technology Services Pte Limited	Singapore	Genesis IT AB	Sweden	Onetrail BV	Netherlands	Telemas AS	Estonia
216 Accountants B.V	Netherlands	Compello AS	Norway	Generix Group Benelux	Belgium	Oppgjorskontoret AS	Norway	Telenor Norge AS	Norway
AdValvas Europe	Belgium	Credemtel S.p.A.	Italy	GHX UK	UK	Opus Capita Group Oy	Finland		
Advanced Business Software and Solutions	UK	Credemtel S.p.A.	Italy	Goldman Solutions & Services Ltd.	Cyprus	Outsourcia AS Bakke	Norway		
Advania Holding hf.	Iceland	Crediflow Försäljnings AB	Sweden	GXS (OpenText)	USA	Pagero	Sweden	Tesisquare S.p.A	Italy
Akssess Innkjöp (Prosjektservice AS)	Norway	Consp SpA (Italy)	Italy	Hafslund Tellier AS	Norway	Pagero HBS GmbH	Germany	TIE Kinetix	Netherlands
Aksspunkt Norge AS	Norway	crossinx GmbH	Germany	Hogia Business Products AB	Sweden	Pagero Norway	Norway	Tieto	Finland
Aliquid Italy	Italy	CS Amed SRL	Italy	Ibistic	Norway	Palette Software AB	Sweden	Tradeinterop	Netherlands
Amesto Solutions Purchasing A/S	Norway	Daldata AS	Norway	IBM Corporation	USA	Payt B.V.	Netherlands	Tradeshift	Denmark
Azets Insight AS	Norway	DataPost Pte Ltd	Singapore	IBM Denmark ApS	Denmark	PaperLess Innovation Ltd.	Malta	Tradeshift AB	Sweden
Order2Cash – (Anachron B.V.)	Netherlands	Data Interchange	UK	iEDI ApS	Denmark	Pearl Norge AS	Norway	Transalis Ltd.	UK
Apix Messaging Oy	Finland	Danish Business Authority (ERST)	Denmark	IFIN Sisstemi S.r.L. a socio unico	Italy	PIMEC, Petita i Mitjana Empresa de Catalunya	Spain	Tripletex AS	Norway
Apro Consulting Services B.V.	Netherlands	Dcode Websolutions AS	Norway	ILGE Sybscription Management	Belgium	PinkRoccade Local Government	Netherlands	True Commerce (Coventry) Ltd.	UK
Archiva S.r.L.	Italy	DERWID.com GmbH	Austria	Implema AB	Sweden	PostNord (Strålfors Svenska AB)	Sweden	TrueCommerce ApS Denmark	Denmark
Archivium Srl	Italy	Desk Drive	Belgium	In.Te. S.A.	Italy	PowerOffice Software AS	Norway	Truelink A/S	Denmark
Arco Information N.V.	Belgium	Digital Cab ApS	Denmark	Inaras NV	Belgium	PracBiz Pte Ltd	Singapore	Tungsten Network Ltd.	UK
At Work Systems	Norway	DocuTen (Enxendra Technologies)	Spain	InExchange Factorum AB	Sweden	Projektservice AS	Norway	Tyringe Konsult AB	Sweden
B2B Router (Invinet Sistemes)	Spain	Doxee S.p.A.	Italy	Infinite Sp. z.o.o.	Poland	Qvalia Group AB	Sweden	TX2 Concept	Singapore
B4 value.net GmbH	Germany	Dynatos NV	Belgium	INPOSIA Solutions GmbH	Germany	Reknes AS	Norway	UNI MICRO AS	Norway
Babelway	Belgium	DXC	UK	Integrasjonssystemer AS	Norway	Resforma AS	Norway	UnifiedPost	Netherlands
Basware	EU	Easy Systems B.V.	Netherlands	Intercent-ER	Italy	Ricoh Netherlands B.V.	Netherlands	UnifiedPost	Netherlands
BEAst AB	Sweden	EC/DG DIGIT	Belgium			S.A.T.A.	Italy	Unit4 Software	Iceland
Billit	Belgium	eConnect International (eVerbinding)				sted Services	Germany	Unit4 Agresso	Norway
BIZbrains A/S	Denmark	ecosio InterCom Group					Portugal	Upheads AS	Norway
Bluzor B.V.	Netherlands	eDelivery s.r.o. – for						UPRC Greece	Greece
Brain2	Belgium	EDI Plus Ltd	UK	Kamli Setterberg Data Akteologi	Sweden	Scancloud AB	Sweden	ValidatedID S.L.	Spain
Bundesrechenzentrum GmbH (BRZ)	Austria	EDICOM CAPITAL S.L.	Spain	KBC Commercial Finance	Belgium	SeeBurger Warehouse Limited	UK	Van Meijel	Netherlands
Calvi Business Software BV	Netherlands	EDIGard AS	Norway	KMD Denmark	Denmark	SEEBURGER AG	Germany	Viaduct AB	Sweden
Catalog360 Limited	UK	EDISON S.A.	Poland	Kofax Sweden Services AB	Sweden	Seen Solution Srl	Italy	Virtualstock Ltd.	UK
CEGEDIM	France	Effektus AS	Norway	LBMX Inc.	Canada	Seres	France	Visma Labs	Sweden
Celtrino – EDI Factory	Ireland	eFinans AS	Norway	Liaison Technologies Oy	Finland	Seres SA	Spain	Visma Software International AS	Norway
Centric Netherlands	Netherlands	Elcom	UK	Logiq AS	Norway	SIA S.p.A.	Italy	Voxel Media S.L.	Spain
CGI Sverige AB	Sweden	Electronic Data Transfer S.A.S.	France	Lyanthe	Netherlands	Simple Invoicing	Netherlands	Wax Digital Ltd.	UK
CloudOffice AS	Norway	Enable-U B.V.	Netherlands	Maritech Systems AS	Norway	SINGAPORE E-BUSINESS PTE LTD	Singapore	Webware Internet Solutions GmbH	Germany
Cloud Trade Technology Ltd.	UK	Enercom Swiss Finance SA	Switzerland	Millium AS	Norway	Skaitos kompiuteriu servisas	Lithuania	Workflow Management & Document Consulting Asia Pte Ltd	Singapore
CodaBox N.V.	Belgium	Epoca S.r.l.	Italy	Ministry of Finance, Republic of Slovenia	Slovenia	Smartbook Technology AS	Norway		
Comarch SA	Poland	Esker S.A.	France	Miracle A/S	Denmark	Sorvive Technologies Inc.	USA		
Commerce-Connections	UK	Eesti Post AS (Omniva)	Estonia	Moneybird	Netherlands	STDM Srl	Italy		
Consorti Administració Oberta de Catalunya (AOC)	Spain	EVRY AS	Norway	mySupply ApS	Denmark	StarHub Ltd	Singapore		
Consumer Cloud Technology Services Pte Limited	Singapore	Exact	Netherlands	NetClient AS	Norway	Storecove (Datajust B.V.)	Netherlands		
		F.R. Biernat	Norway	NetEDI	UK	SYMTRAX S.A.	France		
		Faber system Srl	Italy	Netropolix Software NV	Belgium	System Kredit AS	Norway		
		FIKEN AS	Norway	Nets Norway AS	Norway	Svea Ekonomi AB	Sweden		
		FinHill Hilversum B.V.	Netherlands	nexMart GmbH & Co. KG	Germany	TB Okonomi AS	Norway		
		Financijska agencija	Croatia	Norwegian Labour and Welfare Service (NAV)	Norway	Tecmarket Servizi S.p.A.	Italy		
		Fitex Group	Estonia			Teal IT	Belgium		
		Fylkesmannen i Sogn og Fjordane	Norway						

# Access points in PEPOL



3

## **The CEF eDelivery Discovery Model approach**



# Discovery models

CEF eDelivery

## Static

In a Static Service Location model the IP address and related attributes are static. The IP address of all the Access Points in the network are stored on a central location for the other Access Points to reference. To send a message, the sending Access Point looks at the static list of IP addresses on the networks' Domain Name System (DNS) to locate the Access Point of the receiver.

## Dynamic

Dynamic Service Location enables the sending AP to dynamically discover the IP address and capabilities of the receiver. Instead of looking at a static list of IP addresses, the sender consults a **Service Metadata Publisher (SMP)** where information about every participant in the data exchange network is kept up to date. As at any point in time there can be several SMPs, every participant must be given a unique ID that must be published by **the Service Metadata Locator (SML)** on the network's Domain Name System (DNS). By knowing this URL, the sender is able to dynamically locate the right SMP and therefore the right receiver.

## PROS & CONS

- + High speed as there is no overhead processing
- Less flexible, change of irrelevant references

- + More automated and flexible
- Slower speed, as some overhead processing is required

# PEPPOL – A deployment of CEF eDelivery DSI

## AP

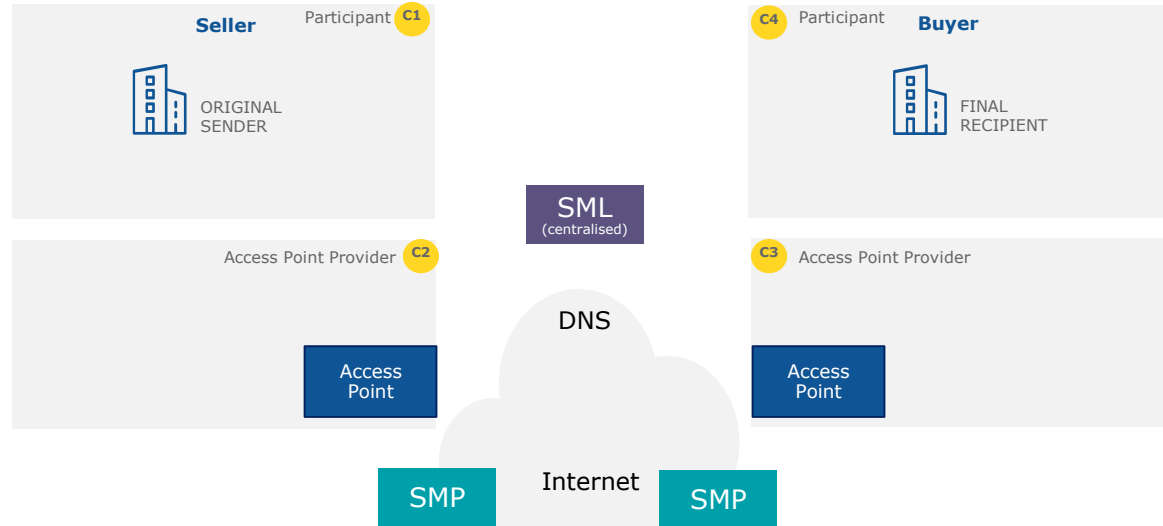
The role of the AP (Access Point) is to send and receive messages in a secure and reliable way, on behalf of the participants. The AP is essentially a simple which is often offered together with other value added services by a service provider.

## SMP

Once the sender discovers the address of the receiver's SMP, it is able to retrieve the needed information (i.e. metadata) about the receiver. With such information, the message can be sent. The SMP is usually a distributed component in an eDelivery Messaging Infrastructure.

## SML

The role of the SML (Service Metadata Locator) is to manage the resource records of the participants and SMPs (Service Metadata Publisher) in the DNS (Domain Name System). The SML is usually a centralised component in an eDelivery Messaging Infrastructure.



# Dynamic discovery in detail

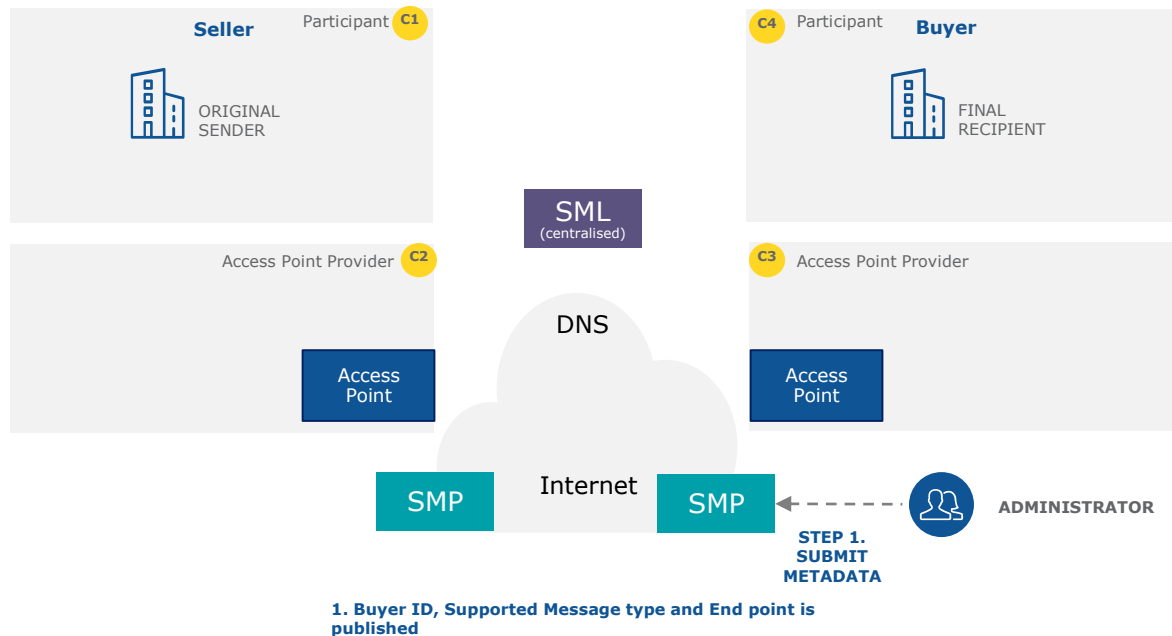
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## Phase 1: Registration



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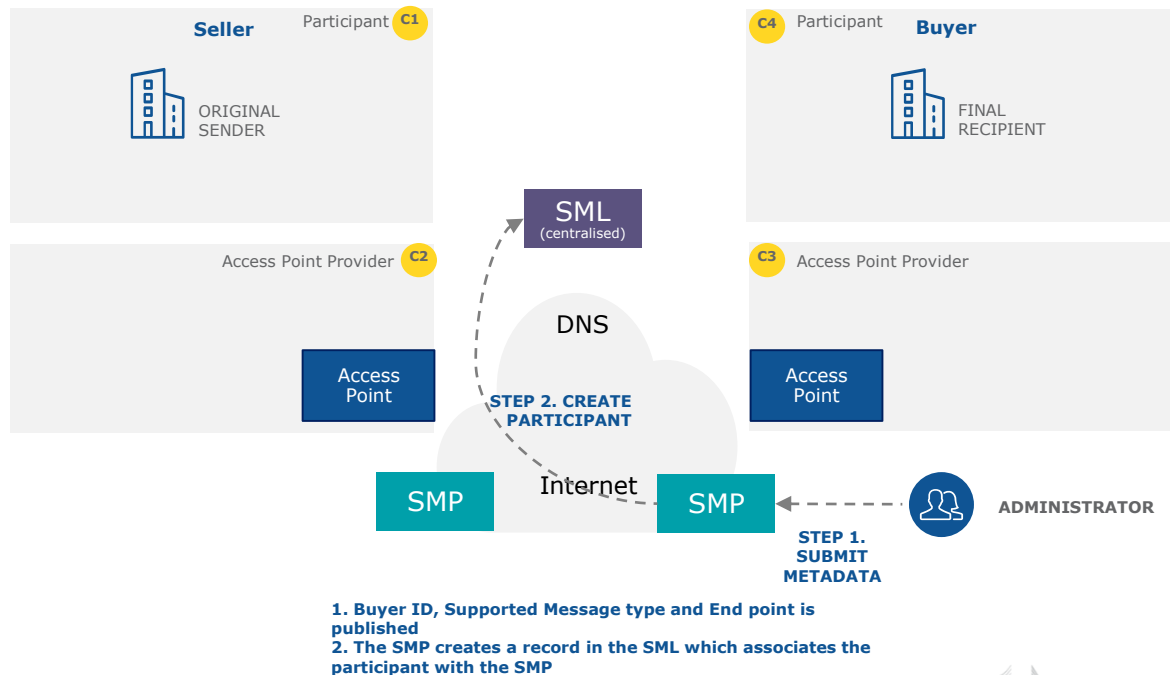
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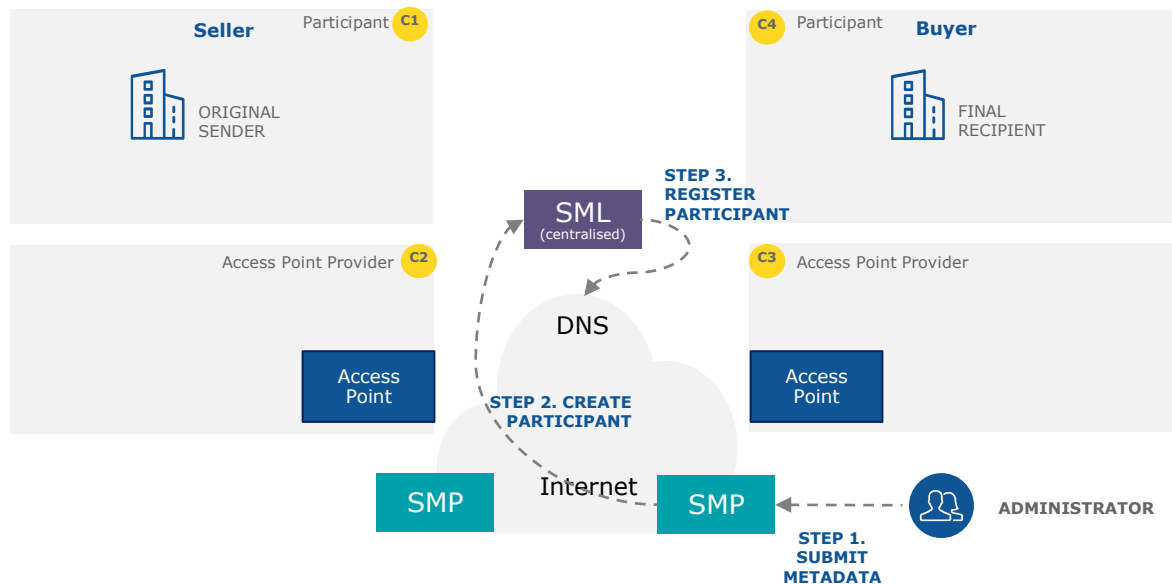
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## Phase 1: Registration



1. Buyer ID, Supported Message type and End point is published
2. The SMP creates a record in the SML which associates the participant with the SMP
3. The SML updates the DNS which creates a DNS record for the participant, pointing to the SMP

# Dynamic discovery in detail

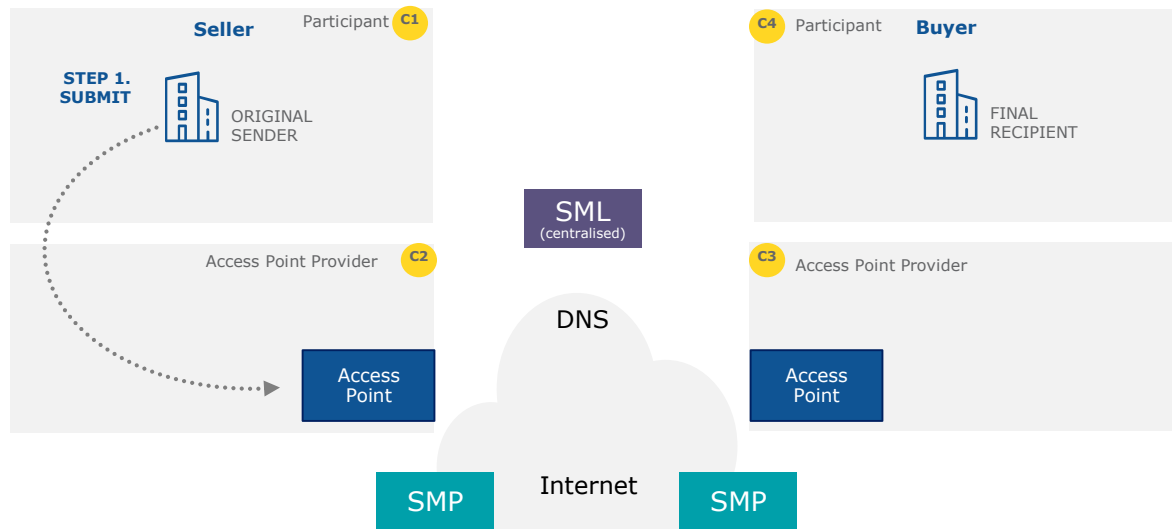
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## Phase 2: Operations



1. Seller issues an eInvoice (or other eDocument) and hands it over to the AP

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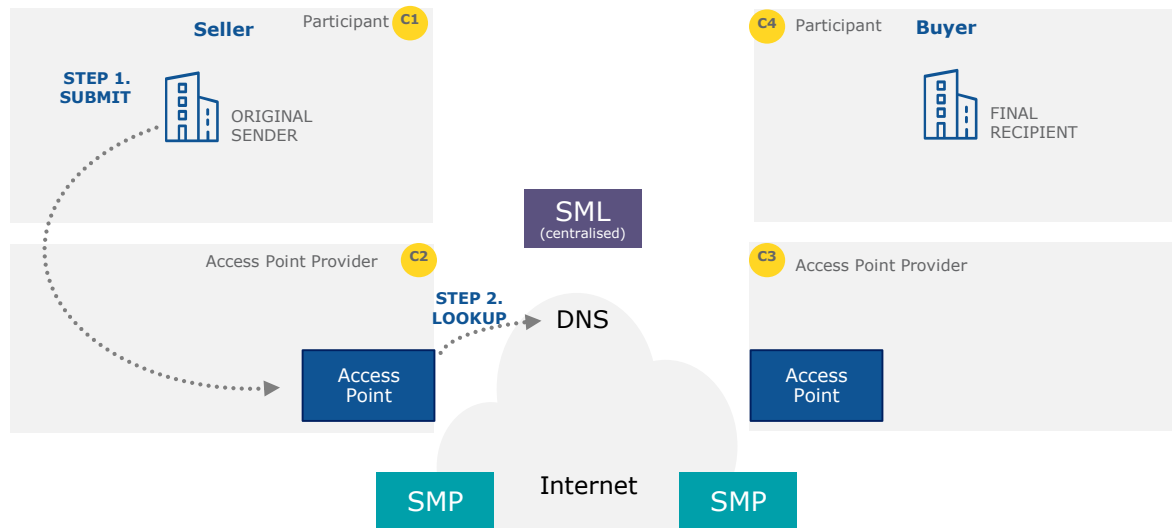
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2. The AP makes a lookup using a HTTP GET. The DNS directs the AP to the participant's SMP

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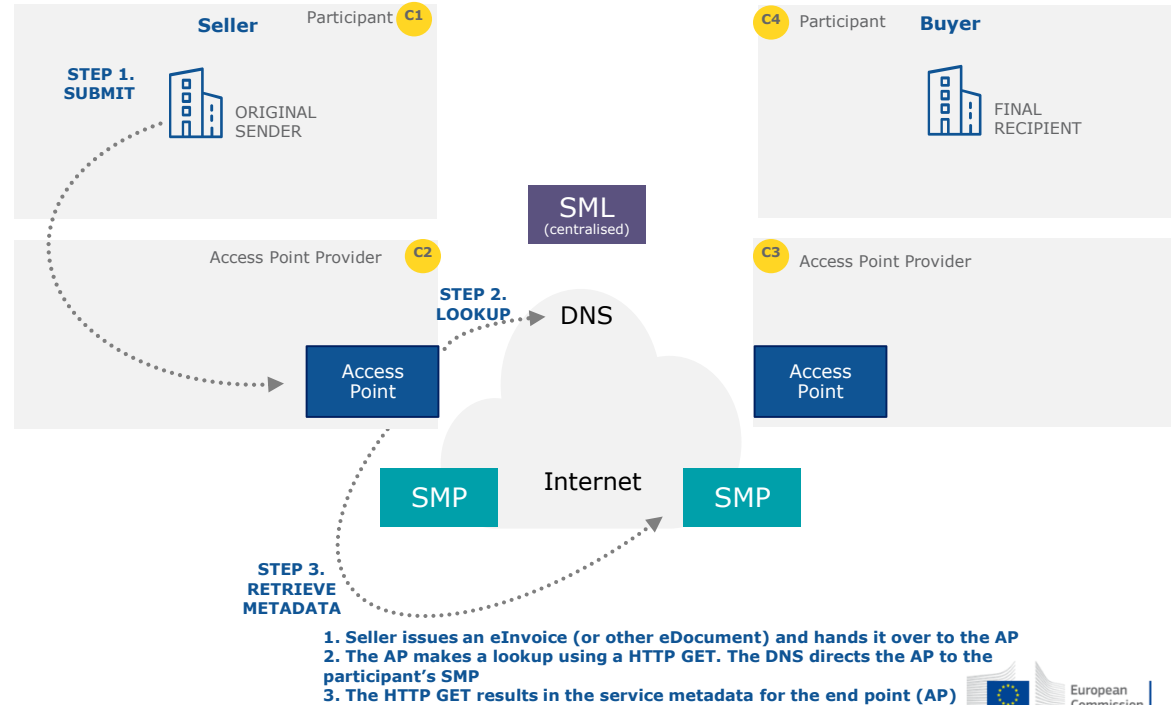
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## Phase 2: Operations





# Service Metadata Example

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns3:SignedServiceMetadata xmlns="http://busdox.org/transport/identifiers/1.0/" xmlns:ns2="http://www.w3.org/2005/08/addressing" xmlns:ns3="
http://busdox.org/serviceMetadata/publishing/1.0/">
  <ns3:ServiceMetadata>
    <ns3:ServiceInformation>
      <ParticipantIdentifier scheme="iso6523-actorid-upis">0088:50512318800008</ParticipantIdentifier>
      <DocumentIdentifier scheme="busdox-docid-qns">
urn:oasis:names:specification:ubl:schema:xsd:Invoice-2::Invoice#urn:www.cenbii.eu:transaction:biitrns010:ver2.0:extended:urn:www.peppol.eu:b
      <ns3:ProcessList>
        <ns3:Process>
          <ProcessIdentifier scheme="cenbii-procid-ubl">urn:www.cenbii.eu:profile:bii05:ver2.0</ProcessIdentifier>
          <ns3:ServiceEndpointList>
            <ns3:Endpoint transportProfile="busdox-transport-as2-ver1p0">
              <ns2:EndpointReference>
                <ns2:Address>https://peppol.zzz.com/yyyy/adapter/inbound/as2peppol</ns2:Address>
              </ns2:EndpointReference>
              <ns3:RequireBusinessLevelSignature>false</ns3:RequireBusinessLevelSignature>
              <ns3:MinimumAuthenticationLevel>1</ns3:MinimumAuthenticationLevel>
              <ns3:ServiceActivationDate>2017-03-13Z</ns3:ServiceActivationDate>
              <ns3:ServiceExpirationDate>2027-03-13Z</ns3:ServiceExpirationDate>
              <ns3:Certificate>MIIENiCCAx6gAwIBAgIOAovA/eZvyKgJmu+nv11PdDANBgkqhkiG9w0BAQsFADBX
```

- The Participant's identifier
- Type of supported business message
- Type of business process
- Type of transport protocol to use for this message
- Technical endpoint/address to where the message should be sent

# Dynamic discovery in detail

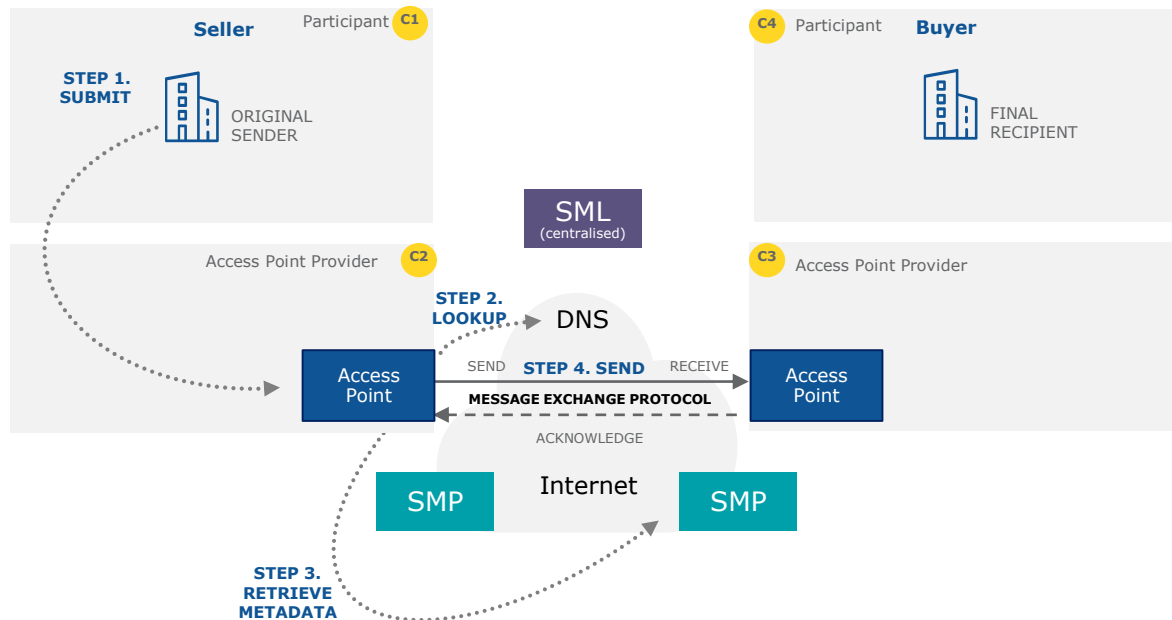
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4. The AP sends the eInvoice to the receiver's AP

# Dynamic discovery in detail

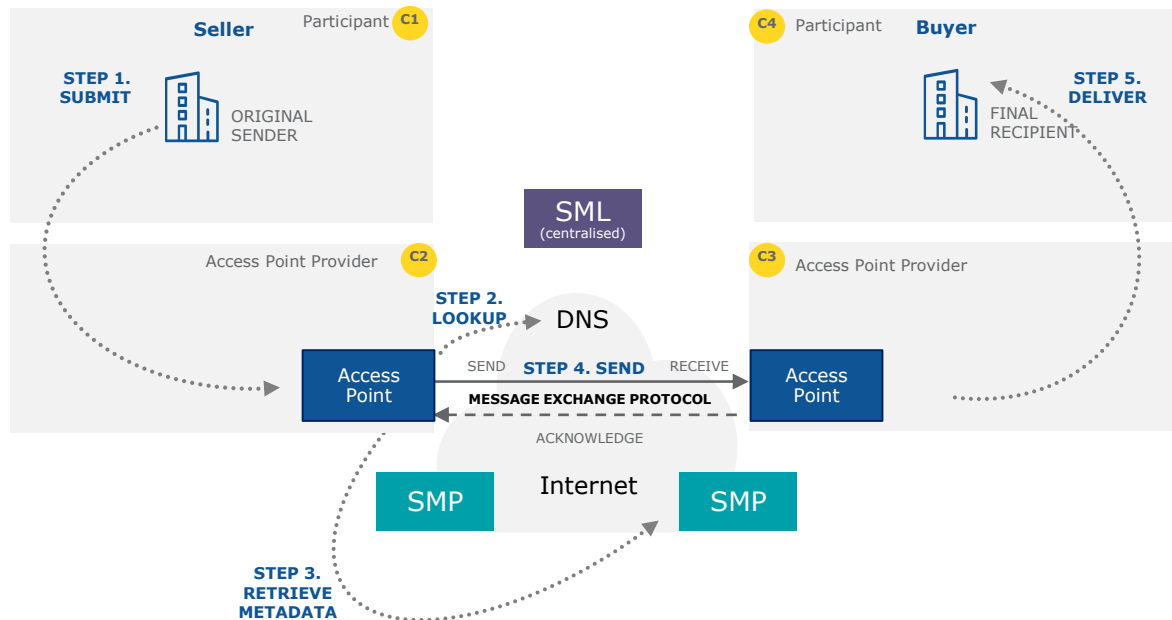
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3. The HTTP GET results in the service metadata for the end point (AP)
4. The AP sends the eInvoice to the receiver's AP
5. The receiver's AP hands the eInvoice over to the Buyer

# Mentimeter

[www.menti.com](https://www.menti.com)

Enter #11 10 31



**LUNCH**



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# Ways of implementing the EN

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**Martin Forsberg**  
DIGIT

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# Initiation of the standardisation

## From article 3

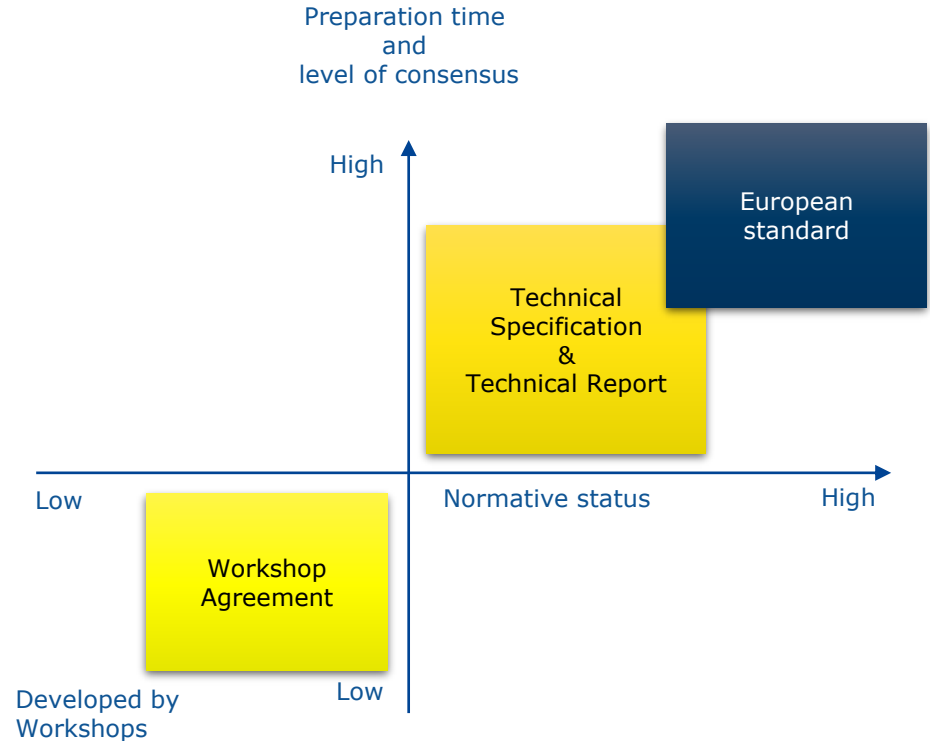
*The Commission shall request that the relevant **European standardisation organisation** draft a European standard for the semantic data model of the core elements of an electronic invoice (the 'European standard on electronic invoicing').*

...

*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.*

# CEN/TC 434 was established

- CEN - European Committee for Standardisation
- The work started in a project committee (PC434) but was later changed into a technical committee (TC434)
- TC434 has over 100 committee members from 31 countries
- Participation in the work must go through the national standardisation committees.
- The committee is about to finalize all deliverables defined in the standardisation request





# Current status

Number	Title	Status
<b>EN 16931-1</b>	Semantic data model of the core elements of an electronic invoice	Approved!
<b>CEN/TS 16931-2</b>	List of syntaxes that comply with EN 16931-1	Approved!
<b>CEN/TS 16931-3-1</b>	Methodology for syntax bindings of the core elements of an electronic invoice	Approved!
<b>CEN/TS 16931-3-2</b>	Syntax binding for ISO/IEC 19845 (UBL2.1) invoice and credit note	Approved!
<b>CEN/TS 16931-3-3</b>	Syntax binding for UN/CEFACT XML Cross Industry Invoice D16B	Approved!
<b>CEN/TS 16931-3-4</b>	Syntax binding for UN/EDIFACT D16B	Approved!
<b>CEN/TR 16931-4</b>	Guidelines on interoperability of electronic invoices at the transmission level	Approved!
<b>CEN/TR 16931-5</b>	Guidelines on the use of sector or country extensions in conjunction with EN 16931-1, methodology to be applied in the real environment	Approved!
<b>CEN/TR 16931-6</b>	Result of the test of EN 16931-1 with respect to its practical application for an end user	Approved!

# **Introduction to key concepts of the standard**

EUROPEAN STANDARD

EN 16931-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2017

ICS 35.240.20; 35.240.63

English Version

Electronic invoicing - Part 1: Semantic data model of the  
core elements of an electronic invoice

Facturation électronique - Partie 1: Modèle sémantique  
de données des éléments essentiels d'une facture  
électronique

Elektronische Rechnungsstellung - Teil 1:  
Semantisches Datenmodell der Kernelemente einer  
elektronischen Rechnung

This European Standard was approved by CEN on 17 April 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Ref. No. EN 16931-1:2017 E

Section 1-3 - Scope, references, terms & definitions

Section 4 – The concept of a core invoice

Section 5 – Business process to support

Section 6 – The semantic model, rules and data types

Section 7 – Core Invoice Usage Specification (and  
compliance)

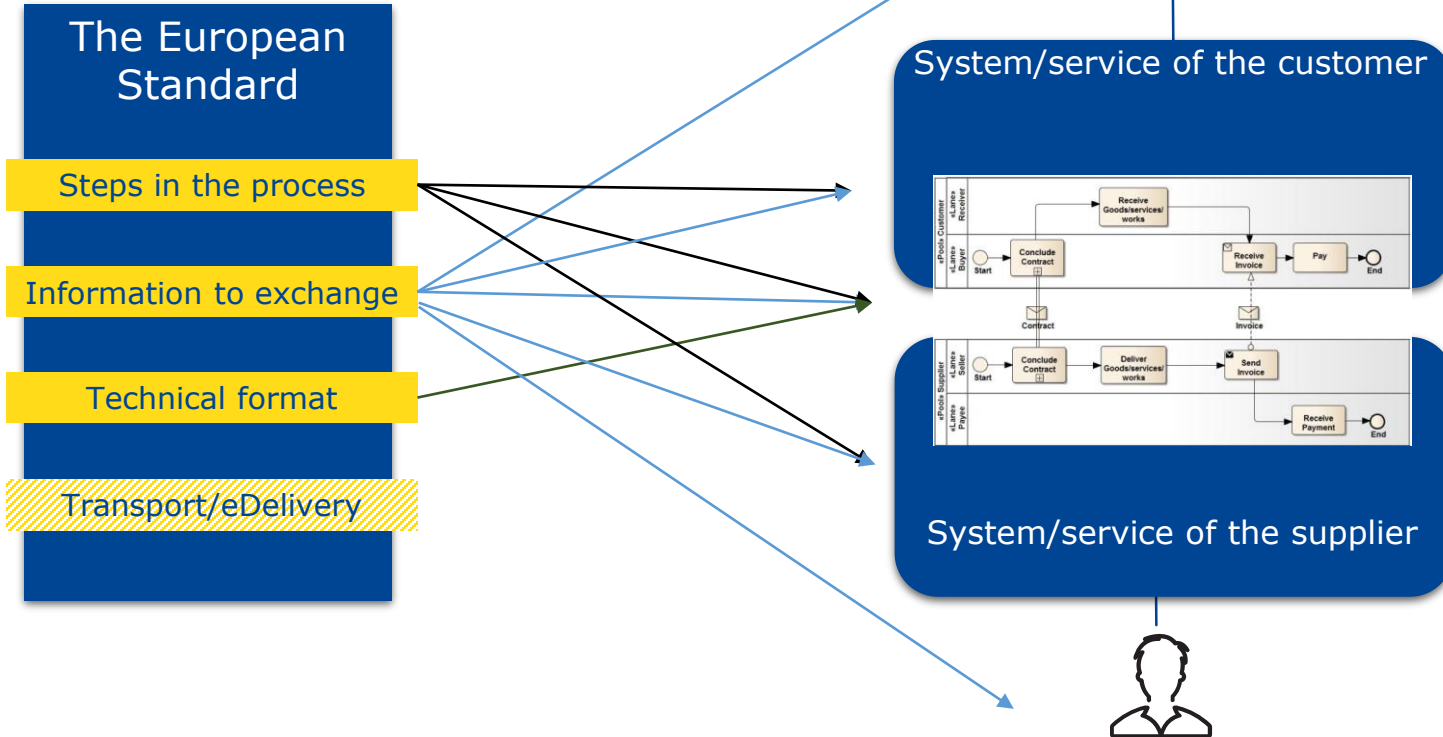
Annex A – Examples (Informative)

Annex B – Assessment of the EN towards the  
Standardization request (Informative)

Annex C – How does the EN meet legal  
requirements (Informative)

Annex D – BPMN symbols (informative)

# Areas covered by the standard



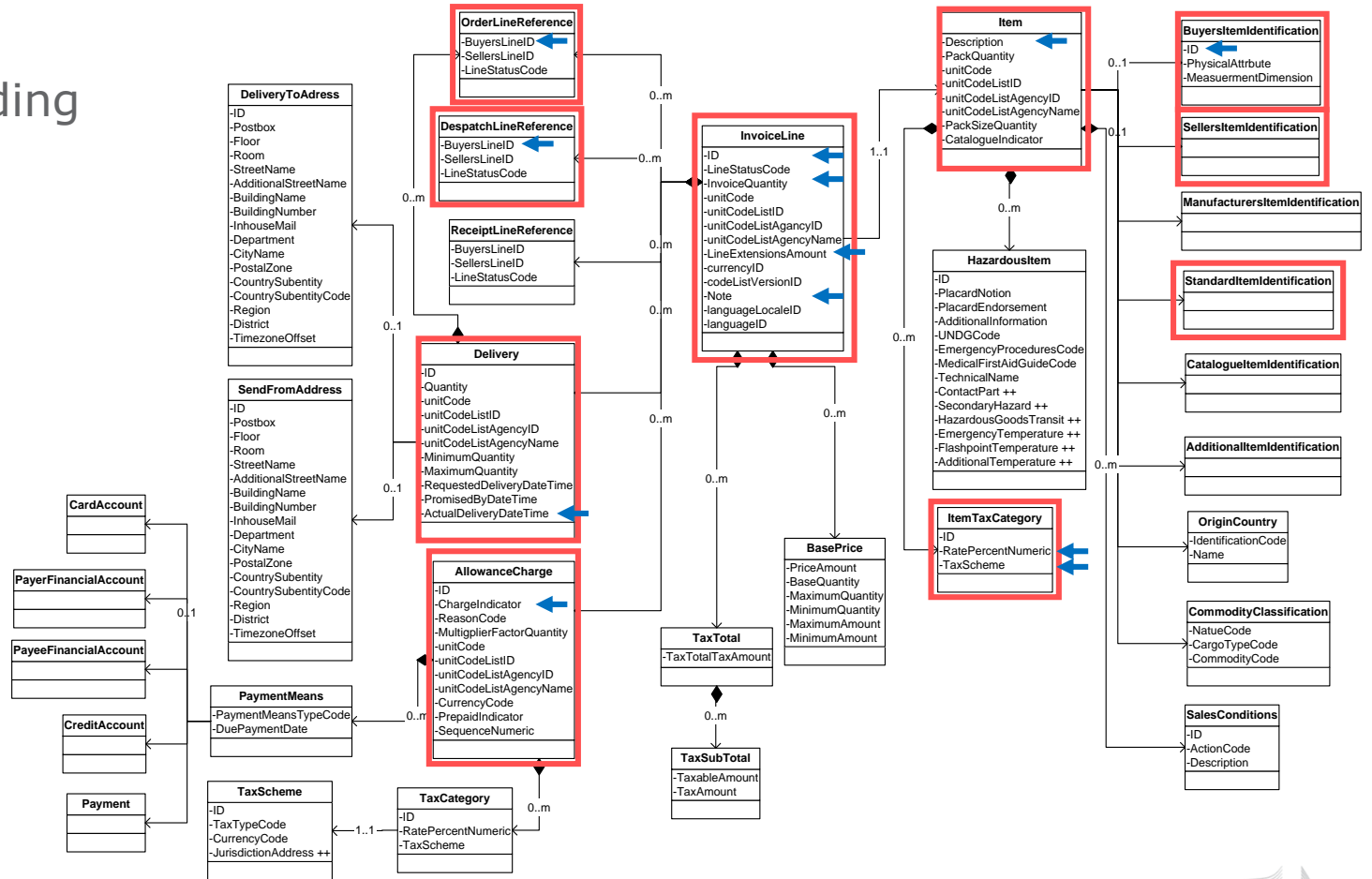
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# Reasons for a core invoice

The European standard recognises the following reasons:

- Business environment is diverse – also the need for information exchange
- Invoices from different situations may potentially contain many information elements – a complete model becomes very large and complex
- Even if it would technically be possible to have a large model, it would be challenging and costly
- When different countries/industries use subset of large standards, interoperability is hampered and silo-implementations are created

# Common understanding



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# The concept of a core invoice – How?

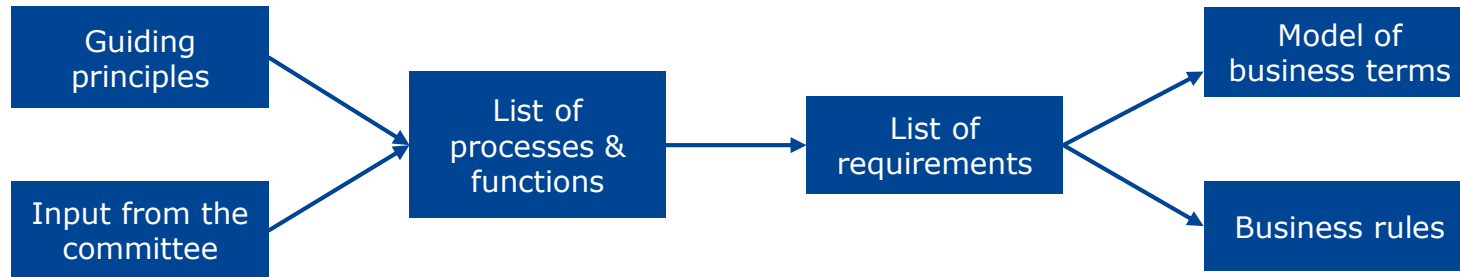
The norm identifies a few **guiding principles**:

- It should be easier to use than paper invoicing
- Standardised information elements makes processing more efficient (than paper invoices)
- It should be possible to use without prior consultation or bilateral agreements
- It should contain information to enable efficient and automatic processing
- Software should be able to present all information, and automatically process structured data
- Structured data should result in optimised business processes
- The core invoice model should not make assumptions on the method of creation, delivery or processing
- The core invoice model should not make assumptions on the syntax or transmission technology

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# Requirement driven approach on defining the model

- Each business term in the model comes from one or more documented (and numbered) requirement
- The requirements give a good understanding of the background

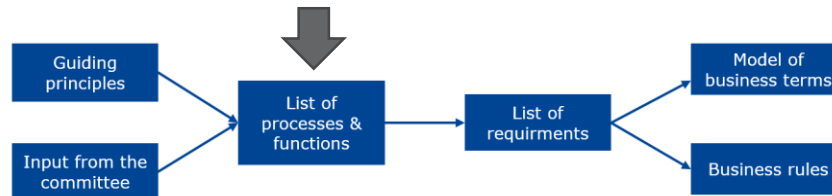




# Business processes to support

The invoice model contains information elements to support the following processes

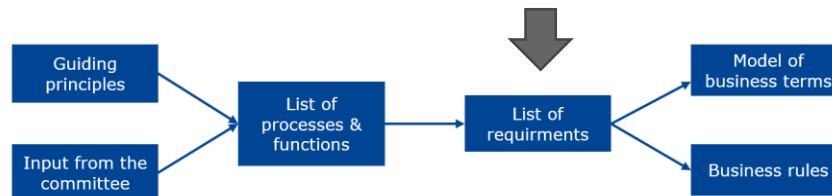
- P1: Invoicing of deliveries of goods and services against purchase orders, based on a contract
- P2: Invoicing deliveries of goods and services based on a contract
- P3: Invoicing the delivery of an incidental purchase order
- P4: Pre-payment
- P5: Spot payment
- P6: Payment in advance of delivery
- P7: Invoices with references to a despatch advice
- P8: Invoices with references to a despatch advice and a receiving advice
- P9: Credit notes or invoices with negative amounts, issued for a variety of reasons including the return of empty packaging
- P10: Corrective invoicing (cancellation/correction of an invoice)
- P11: Partial and final invoicing
- P12: Self billing

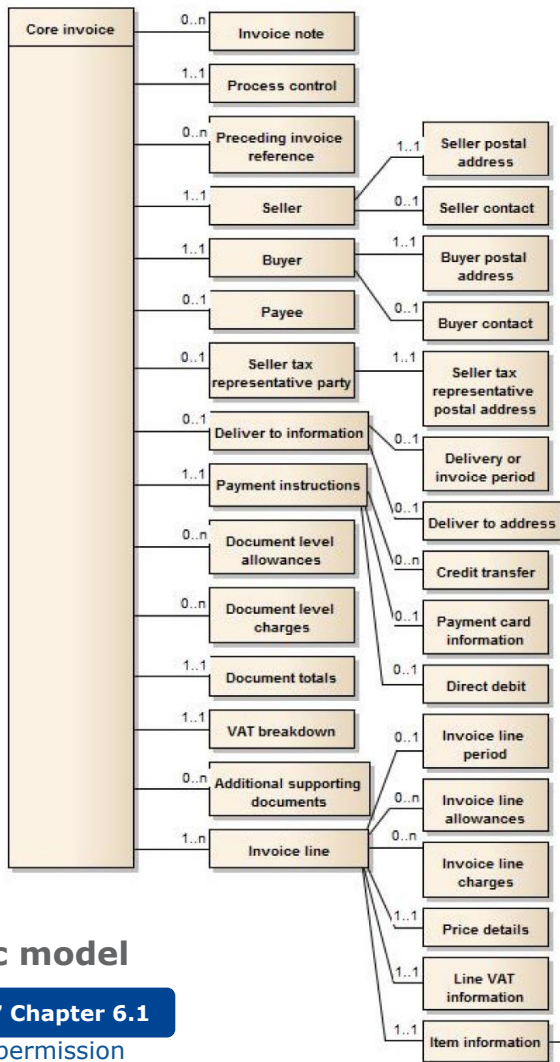


# Business requirements derived from the processes

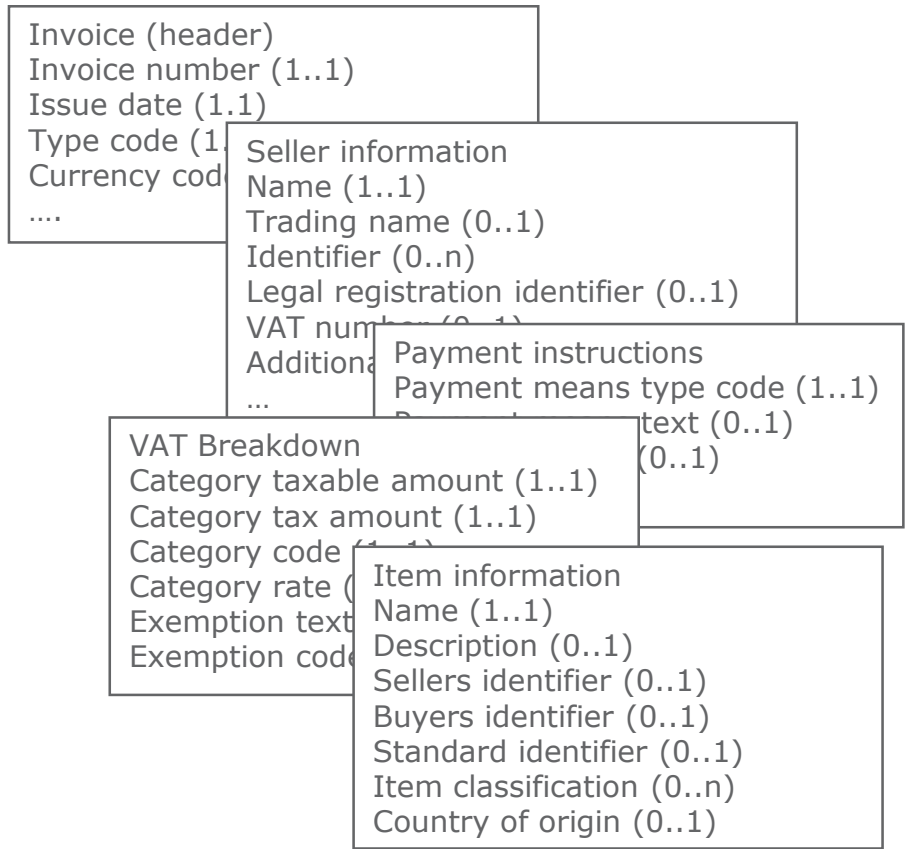
- Based on the identified processes and listed invoice functions, requirements are defined
- Each requirement has an assigned identifier

- R5 information to trace to a single related purchase order from the document level (all processes, except P2 and P5);
- R6 information to trace to a single related purchase order line from the invoice line (all processes, except P2 and P5);
- R7 information to trace to a single contract and the underlying call for tenders from the document level (all processes, except P3 and P5);





## Examples of key components



## The semantic model

EN 16931-1:2017 Chapter 6.1

# Examples of business terms

ID	Level	Cardinality	Business Term	Description	Usage Note	Req. ID	Semantic data type <sup>2</sup>
BT-1	+	1..1	Invoice number	A unique identification of the Invoice.	The sequential number required in Article 226(2) of the directive 2006/112/EC [2], to uniquely identify the Invoice within the business context, time-frame, operating systems and records of the Seller. It may be based on one or more series of numbers, which may include alphanumeric characters. No identification scheme is to be used.	R56	Identifier
BT-2	+	1..1	Invoice issue date	The date when the Invoice was issued.		R56	Date
BT-3	+	1..1	Invoice type code	A code specifying the functional type of the Invoice.	Commercial invoices and credit notes are defined according to the entries in UNTDID 1001 [6]. Other entries of UNTDID 1001 [6] with specific invoices or credit notes may be used if applicable.	R44	Code

**ID** – Unique id for each business term

**Level** – indicates depth in model (+, ++, +++, +++++)

**Cardinality** – Indicates optionality, repetitions allowed

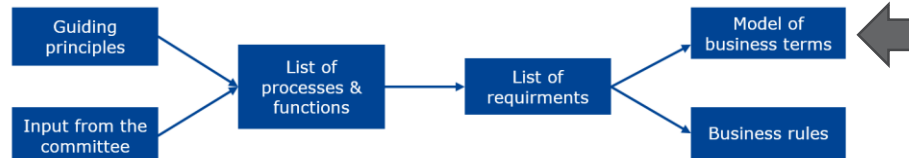
**Business term** – name of the business term

**Description** – short description/definition

**Usage note** – guiding/explanatory information

**Req id** – reference to underlying requirement

**Data type** – the type of



# Semantic datatypes

## Primitive types

- Binary
- Date
- Decimal
- String

Primitive types used in

## Semantic datatypes

- Amount (two decimals)
- Unit Price Amount
- Quantity
- Percentage
- Identifier
- Document reference
- Code
- Date
- Text
- Binary object

Component	Use	Primitive Type	Example
Content	Mandatory	Binary	
Mime Code	Mandatory	String	"image/jpeg"
Filename	Mandatory	String	"drawing5.jpg"

A Receiver of an Invoice, conformant to this document shall accept and process attachments that are of the following mime types (commonly used file extensions are added between brackets):

- application/pdf (.pdf)
- image/png (.png)
- image/jpeg (.jpg)
- text/csv (.csv)
- application/vnd.openxmlformats-officedocument.spreadsheetml.sheet (.xlsx)
- application/vnd.oasis.opendocument.spreadsheet (.ods)

**Data types can have supplementary components/attributes**

# Business rules

- Conditions – dependencies between terms
- Integrity constraints (In many cases, the data model cardinality indicates the same thing)

ID	Description	Target / context	Business term / group
BR-CO-8	Invoice line charge reason code and Invoice line charge reason shall indicate the same type of charge reason.	Invoice Charges	line BT-144, BT-145
BR-CO-9	The Seller VAT identifier, Seller tax representative VAT identifier, Buyer VAT identifier shall have a prefix in accordance with ISO code ISO 3166-1 alpha-2 by which the country of issue may be identified. Nevertheless, Greece may use the prefix 'EL'.	VAT identifiers	BT-31, BT-48, BT-63
BR-CO-10	Sum of Invoice line net amount = $\sum$ Invoice line net amount.	Document totals	BT-106

**ID** – Unique id for each business rule

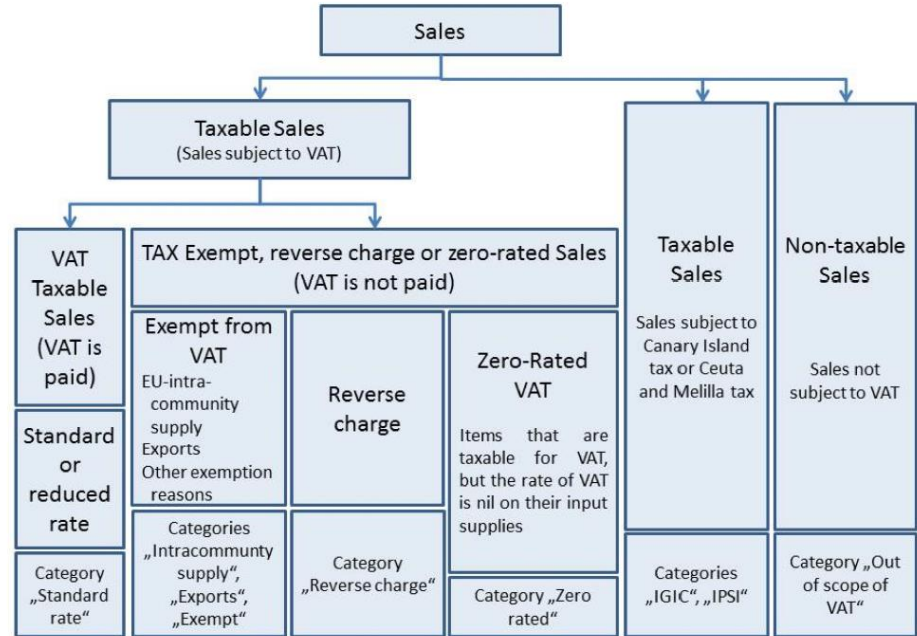
**Description** – textual description of the rule

**Target/Context** – the cgroup/class for where the rule applies

**Business term/group** – reference to the term for which the rule applies

# Business rules – VAT Rules

- VAT Rules – Rules for each VAT category



ID	Description
BR-Z-1	An Invoice that contains a line, a document level allowance where the Invoiced item VAT category code (BT-151, BT-152) shall contain in the VAT breakdown (BG-23) exactly one equal with “Zero rated”.
BR-Z-2	An Invoice that contains a line where the Invoiced item VAT category code (BT-151) is “Zero rated” shall contain the Sellers VAT Identifier (BT-31), the Seller Tax registration identifier (BT-32) or the Seller tax representative VAT identifier (BT-63).
BR-Z-3	An Invoice that contains a document level allowance where the Invoiced item VAT category code (BT-95) is “Zero rated” shall contain the Sellers VAT Identifier (BT-31), the Seller Tax registration identifier (BT-32) or the Seller tax representative VAT identifier (BT-63).

# Each rule is implemented as Schematron validation rules

RuleID	Rule	Popularity
PEPPOL-EN16931-R120	Invoice line net amount MUST equal (Invoiced quantity * (Item net price/item price base quantity) + Sum of invoice line charge amount - sum of invoice line allowance amount	3204
PEPPOL-EN16931-R008	Document MUST not contain empty elements.	3055
BR-CO-15	BR-CO-15]-Invoice total amount with VAT (BT-112) = Invoice total amount without VAT (BT-109) + Invoice total VAT amount (BT-110).	2951
BR-S-08	[BR-S-08]-For each different value of VAT category rate (BT-119) where the VAT category code (BT-118) is "Standard rated", the VAT category taxable amount (BT-116) in a VAT breakdown (BG-23) shall equal the sum of Invoice line net amounts (BT-131) plus the sum of document level charge amounts (BT-99) minus the sum of document level allowance amounts (BT-92) where the VAT category code (BT-151, BT-102, BT-95) is "Standard rated" and the VAT rate (BT-152, BT-103, BT-96) equals the VAT category rate (BT-119).	2625
UBL-CR-412	[UBL-CR-412]-A UBL invoice should not include the PaymentMeans PaymentDueDate	2563
BR-CO-16	[BR-CO-16]-Amount due for payment (BT-115) = Invoice total amount with VAT (BT-112) -Paid amount (BT-113) +Rounding amount (BT-114).	2381
BR-CL-10	[BR-CL-10]-Any identifier identification scheme identifier MUST be coded using one of the ISO 6523 ICD list.	2312
BR-CL-11	[BR-CL-11]-Any registration identifier identification scheme identifier MUST be coded using one of the ISO 6523 ICD list.	2187
BR-CO-17	[BR-CL-17]-Invoice tax categories MUST be coded using UNCL5305 code list	2004
PEPPOL-EN16931-R004	Specification identifier MUST have the value 'urn:cen.eu:en16931:2017#compliant#urn:fdc:peppol.eu:2017:poacc:billing:3.0'.	1919
BR-CL-23	[BR-CL-23]-Unit code MUST be coded according to the UN/ECE Recommendation 20 with Rec 21 extension	1831
PEPPOL-EN16931-R003	A buyer reference or purchase order reference MUST be provided.	1797
UBL-CR-657	[UBL-CR-657]-A UBL invoice should not include the DocumentCurrencyCode listID	1766
BR-S-09	[BR-S-09]-The VAT category tax amount (BT-117) in a VAT breakdown (BG-23) where VAT category code (BT-118) is "Standard rated" shall equal the VAT category taxable amount (BT-116) multiplied by the VAT category rate (BT-119).	1710
UBL-CR-656	[UBL-CR-656]-A UBL invoice should not include the InvoiceTypeCode listID	1701
UBL-CR-663	[UBL-CR-663]-A UBL invoice should not include the unitCodeListID	1689
BR-CO-13	[UBL-DT-13]-Unit code list identifier attribute should not be present	1670
BR-07	[BR-07]-An Invoice shall contain the Buyer name (BT-44).	1661
UBL-CR-660	[UBL-CR-660]-A UBL invoice should not include the Country Identification code listID	1655
PEPPOL-EN16931-CL008	Electronic address identifier scheme must be from theodelist "Electronic Address Identifier Scheme"	1641
BR-CO-09	[BR-CO-09]-The Seller VAT identifier (BT-31), the Seller tax representative VAT identifier (BT-63) and the Buyer VAT identifier (BT-48) shall have a prefix in accordance with ISO code ISO 3166-1 alpha-2 by which the country of issue may be identified. Nevertheless, Greece may use the prefix 'EL'.	1526
BR-CO-10	[BR-CO-10]-Sum of Invoice line net amount (BT-106) = Σ Invoice line net amount (BT-131).	1520
PEPPOL-EN16931-R010	Buyer electronic address MUST be provided	1412



# Access to the specifications

EC is sponsoring access – to the EN and the list of syntaxes. These specifications are available for free download

The other specifications must still be purchased

cen European Committee for Standardization

CEN COMMUNITY TECHNICAL BODIES STANDARDS EVOLUTION AND FORECAST SEARCH STANDARDS

Technical Bodies > CEN/TC 434

## CEN/TC 434 - Electronic Invoicing

General Structure Work programme Published Standards

EN FR DE

### CEN/TC 434 Published Standards

Reference, Title	Publication date	Sales Points
<a href="#">CEN/TR 16931-4:2017</a> (WI=00434004) Electronic invoicing - Part 4: Guidelines on interoperability of electronic invoices at the transmission level	2017-07-05	
<a href="#">CEN/TR 16931-5:2017</a> (WI=00434005) 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	2017-07-05	
<a href="#">CEN/TR 16931-6:2017</a> (WI=00434006) Electronic invoicing - Part 6: Result of the test of EN 16931-1 with respect to its practical application for an end user	2017-10-18	
<a href="#">CEN/TS 16931-2:2017</a> (WI=00434002) Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1	2017-06-28	
<a href="#">CEN/TS 16931-3-1:2017</a> (WI=00434007) Electronic invoicing - Part 3-1: Methodology for syntax bindings of the core elements of an electronic invoice	2017-07-05	
<a href="#">CEN/TS 16931-3-2:2017</a> (WI=00434008) Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note	2017-10-18	
<a href="#">CEN/TS 16931-3-2:2017/AC:2018</a> (WI=00434C01) Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note	2018-07-18	
<a href="#">CEN/TS 16931-3-3:2017</a> (WI=00434009) Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Industry Invoice D16B	2017-10-18	
<a href="#">CEN/TS 16931-3-4:2017</a> (WI=00434010) Electronic invoicing - Part 3-4: Syntax binding for UN/EDIFACT INVOIC D16B	2017-10-18	
<a href="#">EN 16931-1:2017</a> (WI=00434001) Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice	2017-06-28	



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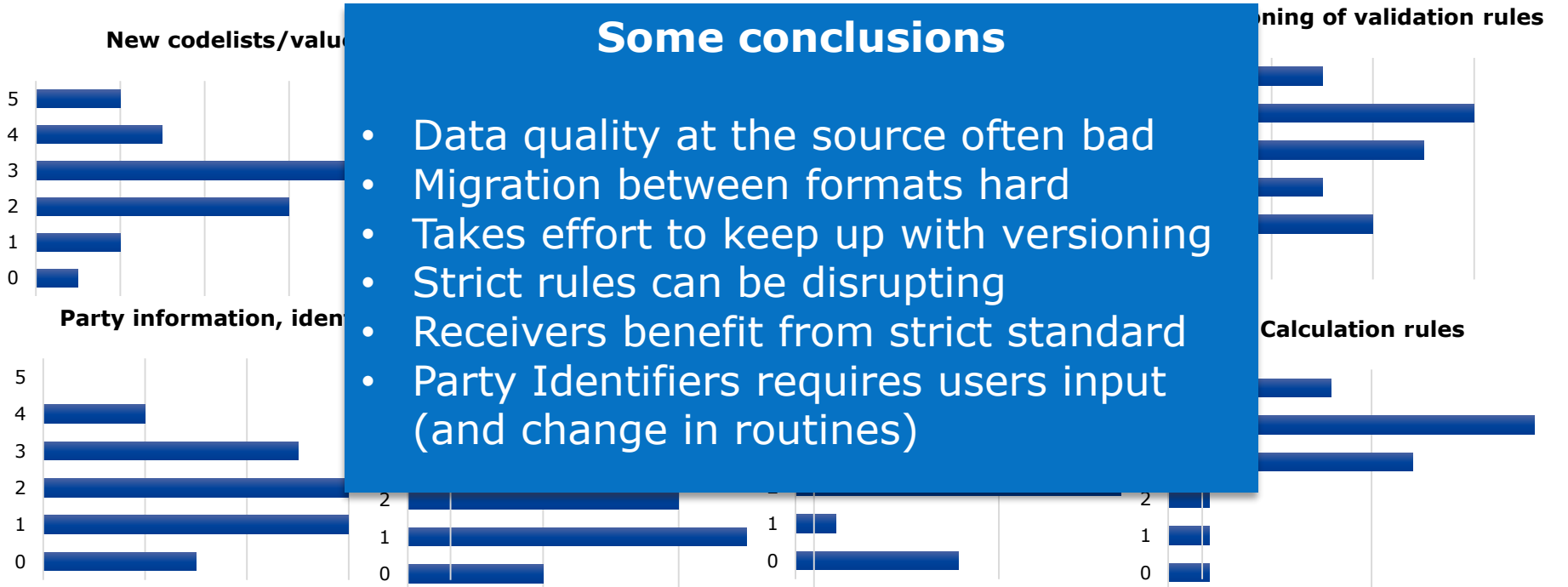
# Experiences from implementers

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**Martin Forsberg**  
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# Challenges in implementation

(Based on a survey and dialog with 25 Nordic implementers)



5 = very challenging, 0 = not challenging

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## Supporting tools

- All implementers are regularly using validation services
- Most of them have been in contact with some support channel (CEF, SFTI, others)
- Most of them have attended trainings and seminars
- Few are using online forums



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# Syntaxes which comply with the European standard on eInvoicing

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## Many syntaxes – a problem?

- There are a large number of syntaxes in use
- Many communities are already using e-invoicing 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: <ul style="list-style-type: none"><li>- documented with defined participation and voting rules;</li><li>- governed;</li><li>- open to participation for stakeholders.</li></ul>
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

Reference	WG	Title
EN 16931-1	WG1	Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice
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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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TS 16931-3-4	WG3	Electronic invoicing - Part 3-4: Syntax binding for UN/EDIFACT INVOIC D16B
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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

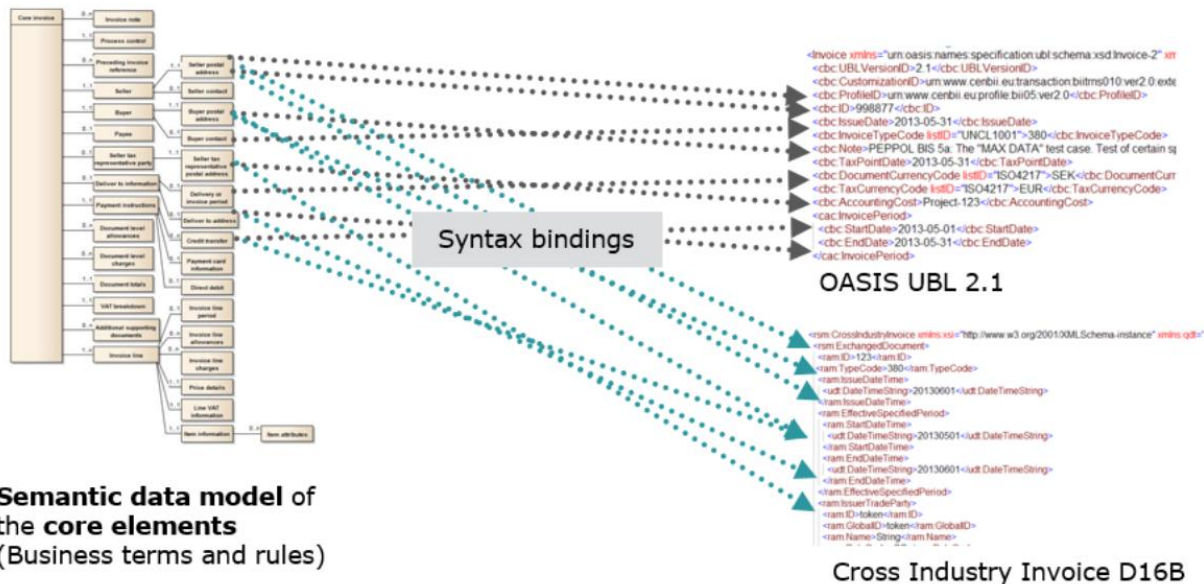
Reference	WG	Title
EN 16931-1	WG1	Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice
TS 16931-2	WG2	Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1
TS 16931-3-1	WG3	Electronic invoicing - Part 3-1: Methodology for syntax bindings 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
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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





## Syntax bindings

# Syntax binding specifications



**Semantic data model of the core elements**  
(Business terms and rules)

## 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



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# Usage specifications and compliance

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# Compliance and conformance - The European standard defines these concepts

## **Compliant**

some or all features of the core invoice model are used and all rules of the core invoice model are respected



Core Invoice Usage Specifications

## **Conformant**

all rules of the core invoice model are respected and some additional features not defined in the core invoice model are also used



Extensions

**From article 7 in the directive**

### ***Receipt and processing of electronic invoices***

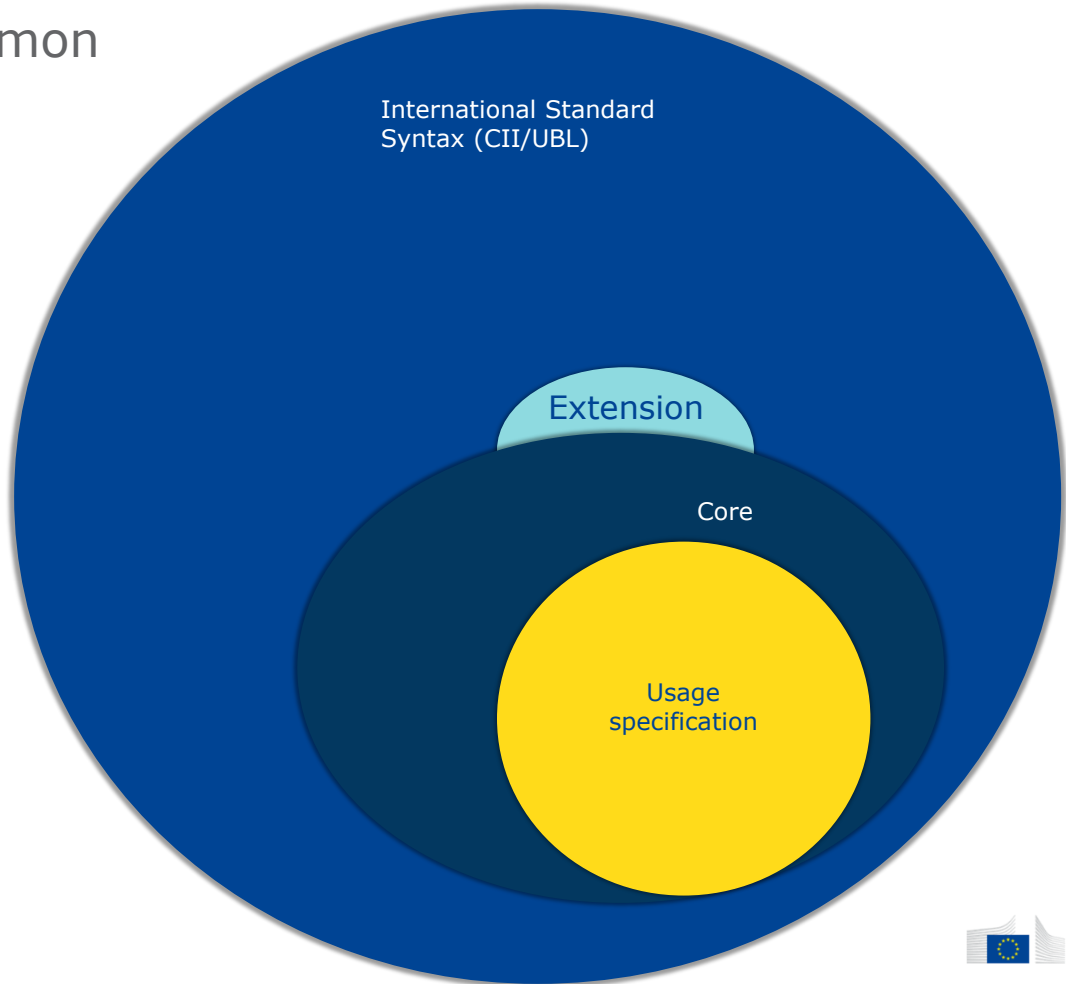
*Member States shall ensure that contracting authorities and contracting entities receive and process electronic invoices which **comply** with the European standard on electronic invoicing whose reference has been published pursuant to Article 3(2) and with any of the syntaxes on the list published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

---

## Core – something in common

### **IMPORTANT**

An invoice which follows a CIUS  
MUST ALWAYS also be compliant  
towards the (non-restricted)  
norm.



---

# Requirements for the contracting authorities/entities

## From 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).*

---

# Claiming compliance towards the norm

## ***Compliance of sending or receiving party***

*A receiving party may only claim compliance to the core invoice model if he accepts invoices that comply with the core invoice model in general, **or with a CIUS**, that is itself compliant with the core invoice model.*

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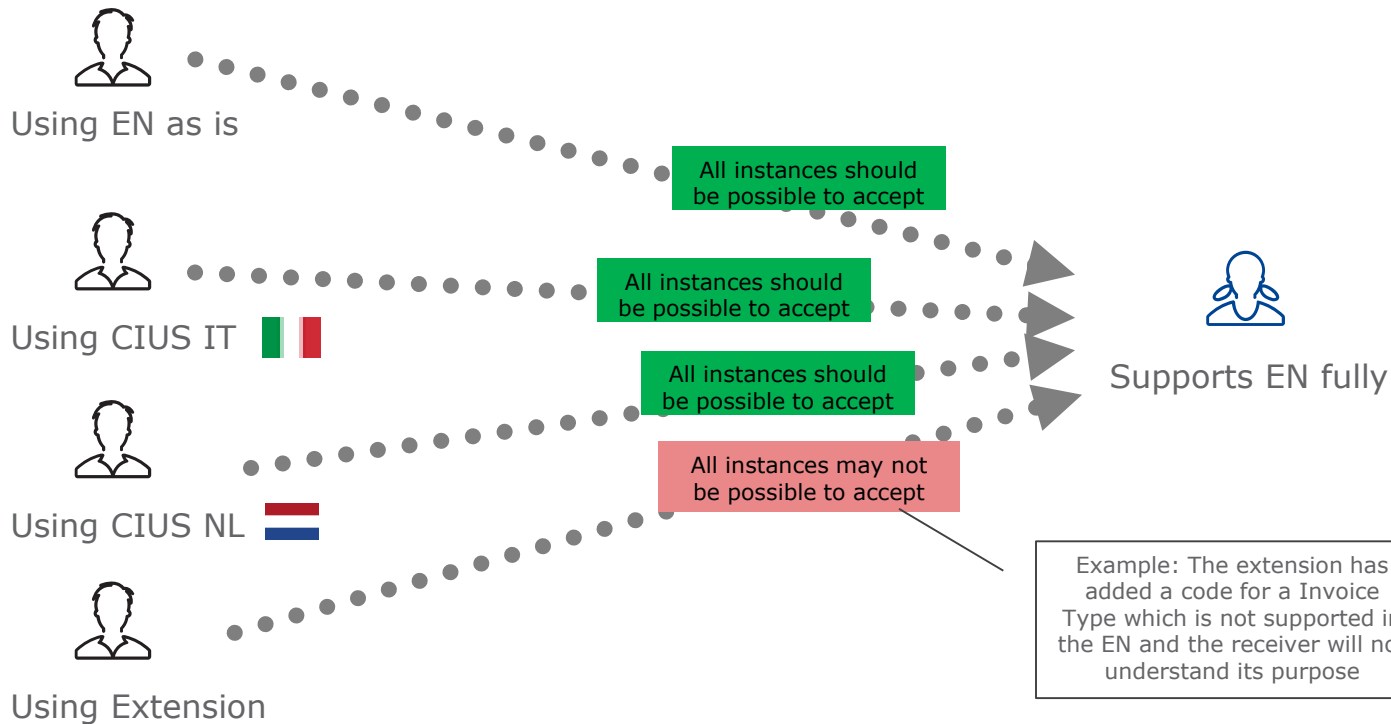
# What is allowed to restrict in a Core Invoice Usage Specification

- "Forbid" optional elements 0..n/0..1 → 0..0
- Make definition narrower
- Add synonyms or explanatory text
- Make optional element mandatory
- Limit allowed number of repetitions
- Change data type to narrower representation (alphanumeric → numeric)
- Limited allowed code values
- Add additional business rules or make existing more restrictive
- Restrict field lengths
- Require certain formatting on values
- Restrict number of decimals/fractions

## **IMPORTANT**

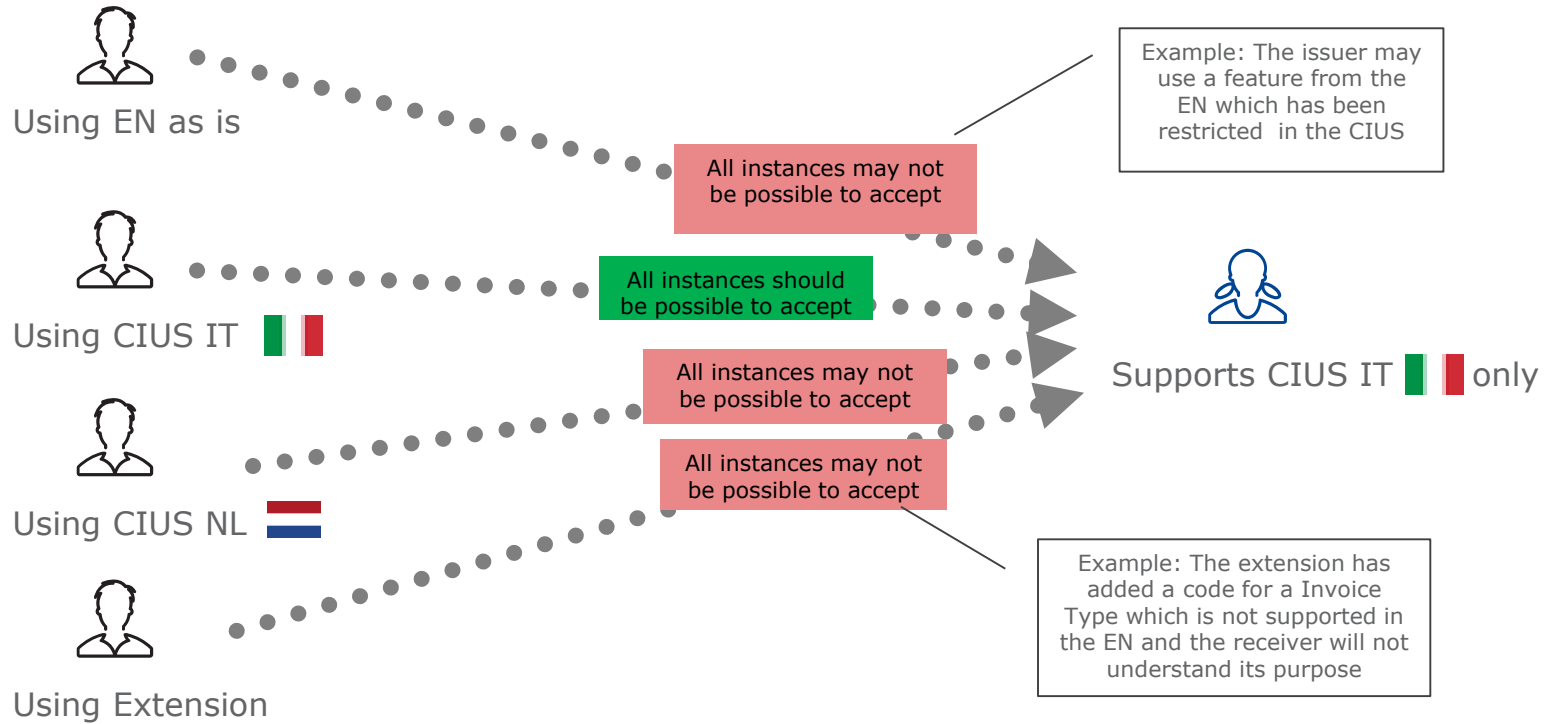
An invoice which follows a CIUS **MUST ALWAYS** also be compliant towards the (non-restricted) norm.

# A few scenarios



Assuming the invoices are conformant against its specification (EN/CIUS/Extension)

# A few more scenarios



Assuming the invoices are conformant against its specification (EN/CIUS/Extension)

SPACE SHORTCUTS

CEF Knowledge Base

PAGE TREE

- > eInvoicing news & events
- > Forum
- > Contribute
  - > CEF eInvoicing Implementation Work
    - Guidance Paper for EU public admini:
  - > eInvoicing Pioneer Group
  - **Community-driven Registry of CIUS**
    - Catalogue of Good Practices to supp
    - > Older posts (CONTRIBUTE)
    - > Follow-up actions after the CEF elnvc
- > Archive
- Meta
- Links

## Community-driven Registry of CIUS (Core Invoice Usage Specifications) and Extensions

Created by Ines COSTA, last modified by Philip HELGER on Oct 29, 2018

<b>Topic</b>	Registry of CIUS (Core Invoice Usage Specifications) and Extensions
<b>Excerpt</b>	This page aims to give the eInvoicing community the opportunity to share the ongoing and planned initiatives across Member States and sectors to create CIUS and Extensions on the European standard on eInvoicing.
<b>Status</b>	<span style="background-color: green; color: white; padding: 2px;">OPEN</span>
<b>Deadline</b>	Ongoing

### Provide information on CIUS and Extensions

The table below aims to give the eInvoicing community the opportunity to share the ongoing and planned initiatives across Member States and sectors to create CIUS and Extensions on the European standard on eInvoicing. The content is community-driven and the contributors take the sole responsibility of the information shared. Please note that the information available does not have an authoritative character.

We invite you to contribute to build on the information available about the CIUS and Extensions on the European standard on eInvoicing by filling the table below:

Name	Type	Country	Sector	Purpose of the CIUS or Extension	Publisher	Governor	Underlying specification	Further info	Status	Contact
OpenPEPPOL BIS 3.0 5A	CIUS	Any	Any	Restricts the business process scope of the EN with reference to BIS2 business processes.	OpenPEPPOL	OpenPEPPOL	EN16931	<a href="http://docs.peppol.eu/poacc/billing/3.0/">http://docs.peppol.eu/poacc/billing/3.0/</a>	<span style="background-color: #004a99; color: white; padding: 2px;">ACTIVE</span>	<a href="#">@Olav Astad KRISTIANSEN</a>
Icelandic national CIUS	CIUS	IS	Any	Applies national regulations and imposes data format to payment instructions when using national payment clearing services.	IST	ISgov	PEPPOL BIS 3.0 5A	<a href="http://www.stadlar.is/stadlastarf/fagstadlarad-i-upplysingataekni.aspx">http://www.stadlar.is/stadlastarf/fagstadlarad-i-upplysingataekni.aspx</a>	<span style="background-color: green; color: white; padding: 2px;">DEVELOPMENT</span>	<a href="#">@Georg BIRGISSON</a>
Austrian national CIUS	CIUS	AT	Any	Apply national regulations	BRZ	BRZ	EN16931	Publication on <a href="http://eRechnung.gv.at">eRechnung.gv.at</a> asap	<span style="background-color: #004a99; color: white; padding: 2px;">ACTIVE</span>	<a href="#">@Philip HELGER</a>
Austrian government CIUS	CIUS	AT	Any	Additional regulations only applying to the mandatory government interface. This CIUS builds on top of the Austrian national CIUS!	BRZ	BRZ	AT national CIUS	Publication on <a href="http://eRechnung.gv.at">eRechnung.gv.at</a> asap	<span style="background-color: #004a99; color: white; padding: 2px;">ACTIVE</span>	<a href="#">@Philip HELGER</a>
Energy eInvoice	Extension	NL	Energy	Enables the addition of information concerning: 1) Measured energy use, including meter info, meter readings, fuel type etc. 2) VAT specification for more than one party, which is a consequence of the so called supplier-centered model.	Energy eInvoice steering committee	Energy eInvoice steering committee	SimplerInvoicing (SI-UBL)	<a href="https://energie-efactuur.nl/en/">https://energie-efactuur.nl/en/</a>	<span style="background-color: green; color: white; padding: 2px;">DEVELOPMENT</span>	Wouter van den Berg (TNO)
Italian national CIUS	CIUS	IT	Any	Applies national regulations and restricts data format in compliance with eInvoice national format (FatturaPA)	AgID, AdE	AgID, AdE	EN16931	<a href="http://www.agid.gov.it/agenda-digitale/pubblica-amministrazione/cef-telecom-einvoicing-eigor">http://www.agid.gov.it/agenda-digitale/pubblica-amministrazione/cef-telecom-einvoicing-eigor</a>	<span style="background-color: green; color: white; padding: 2px;">DEVELOPMENT</span>	Fabio MASSIMI
NLCIUS	CIUS	NL	Any	Applies national regulations and conventions. The purpose of the NLCIUS is to prevent the need for any other NL	NEN / SMef	NEN / SMef	EN16931	NLCIUS is a joint initiative of government, industry and	<span style="background-color: #004a99; color: white; padding: 2px;">ACTIVE</span>	Michiel Stornebrink (TNO)



# Identification of a CIUS

- Business term Specification Identifier indicates that the message complies to the European standard
- Also used to identify if it follows a specific CIUS

```
]<CreditNote xmlns="urn:oasis:names:specification:ubl:schema:xsd:CreditNote-2"
  xmlns:cac="urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2"
  xmlns:cbc="urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2">
  <cbc:CustomizationID>urn:cen.eu:en16931:2017#compliant#urn:fdc:peppol.eu:2017:poacc:billing:3.0</cbc:CustomizationID>
  <cbc:ProfileID>urn:fdc:peppol.eu:2017:poacc:billing:01:1.0</cbc:ProfileID>
  <cbc:ID>018304 / 28865</cbc:ID>
  <cbc:IssueDate>2019-09-23</cbc:IssueDate>
  <cbc:CreditNoteTypeCode listID="UNCL1001">381</cbc:CreditNoteTypeCode>
  <cbc:DocumentCurrencyCode>EUR</cbc:DocumentCurrencyCode>
  <cbc:BuyerReference>018304 / 28865</cbc:BuyerReference>
) <cac:InvoicePeriod>
  | <cbc:StartDate>2019-02-01</cbc:StartDate>
  | <cbc:EndDate>2019-02-28</cbc:EndDate>
- </cac:InvoicePeriod>
) <cac:AccountingSupplierParty>
) | <cac:Party>
  | <cbc:EndpointID schemeID="9956">0000000196</cbc:EndpointID>
) | <cac:PartyName>
```

# General rules and country-qualified rules

- A **general rule** applies for all invoices
  - The rule is triggered by the existence of a specific business term

## Rule text from the standard

In an Invoice line where the Invoice item VAT category code (BT-151) is "Export outside the EU" the Invoiced item VAT rate (BT-152) shall be 0 (zero).

## Context (what triggers the rule)

Existence of

***InvoiceLine/Item/ClassifiedTax/CategoryCode='XYZ'***

## Example rule text from a CIUS

The Seller Name must not have more than 50 characters

## Context (what triggers the rule)

Existence of

***Seller/Name***

- A **country-qualified rule** applies only for invoices issued in a specific country
  - The rule is triggered by the given country code of the seller

## Example rule text from a Country specific CIUS

When the Seller is Swedish, the Legal Registration Number must be numeric with 10 digits.

## Context (what triggers the rule)

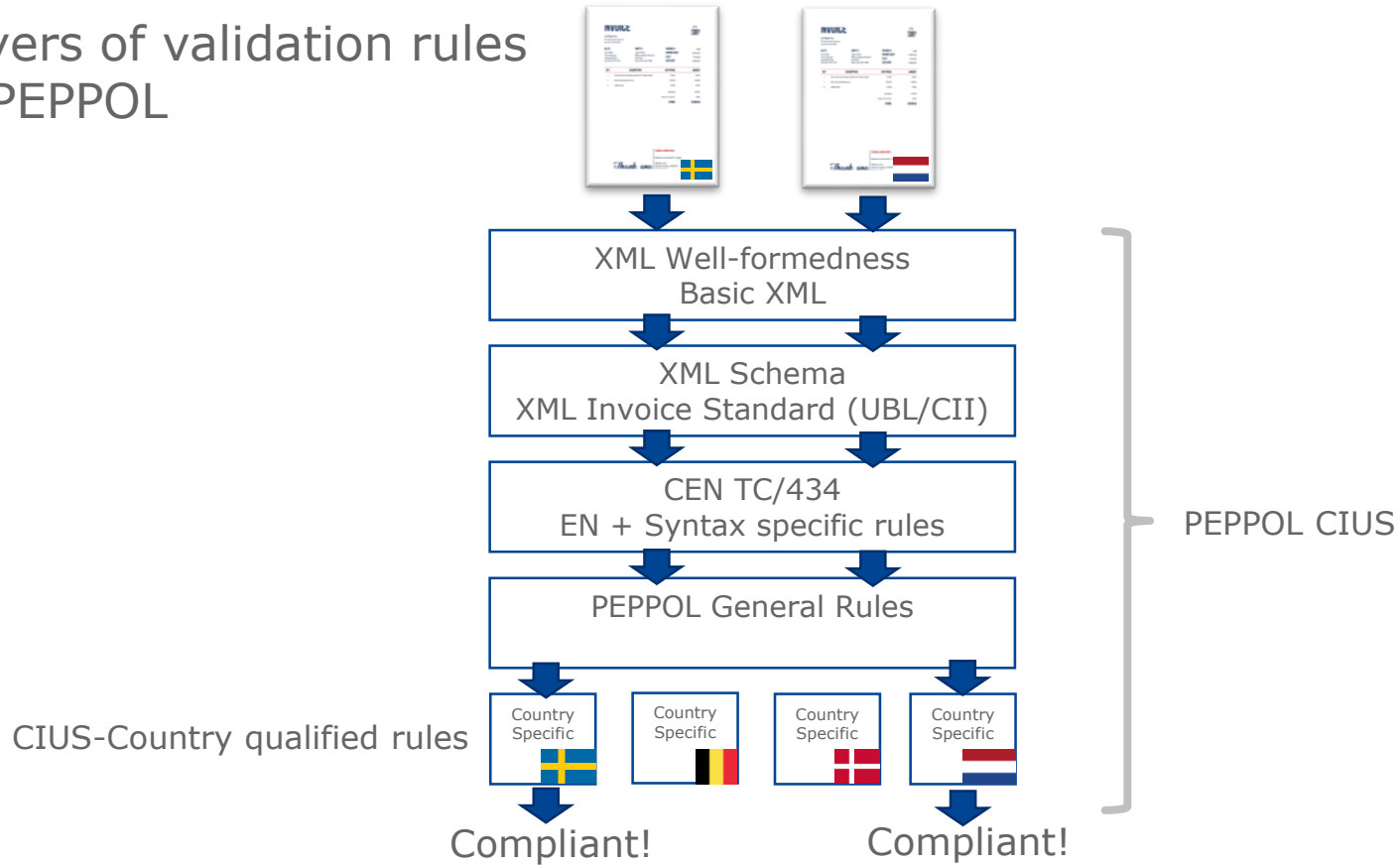
Existence of

***Seller/Address/CountryCode='SE'***

AND existence of

***Seller/LegalRegistrationNumber***

# Layers of validation rules in PEPPOL



# National rules in PEPPOL CIUS

To avoid creation of national CIUS'es:

- affected based on the country of the seller.
- Don't affect invoices issued in other countries.
- PEPPOL Authority responsible

## Appendix C: National rules

The following rules have been defined by PEPPOL Authorities in addition to the rules for [PEPPOL BIS](#) in general. These rules are affected based on the country of the seller, and **will not affect invoices issued in other countries.** They apply in **all** profiles that use this transaction specification.

National rules are provided by each country's PEPPOL Authority, and if you need any changes or additions to these rules, please contact your PEPPOL Authority.

*Table 18. National transaction business rules*

Rule	Message/Context/Test
DK-R-001 (warning)	<b>For Danish suppliers when the Accounting code is known, it should be referred on the Invoice.</b>
	ubl-creditnote:CreditNote   ubl-invoice:Invoice
	not(cac:AccountingSupplierParty/cac:Party/cac:PostalAddress/cac:Country/cbc:IdentificationCode = 'DK' and (normalize-space(cbc:AccountingCost/text()) = ''))
DK-R-002 (fatal)	<b>Danish suppliers MUST provide legal entity (CVR-number).</b>
	ubl-creditnote:CreditNote   ubl-invoice:Invoice
	not(cac:AccountingSupplierParty/cac:Party/cac:PostalAddress/cac:Country/cbc:IdentificationCode = 'DK' and (normalize-space(/cac:AccountingSupplierParty/cac:Party/cac:PartyLegalEntity/cbc:CompanyID/text()) = ''))

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## Example - Swedish rules

- Formats for VAT and organisation numbers
- Swedish VAT rates
- Tax registration F-Skatt
- Payment means Bankgiro and Plusgiro

<b>SE-R-001</b> For Swedish suppliers, Swedish VAT-numbers must consist of 14 characters.	fatal
<b>SE-R-002</b> For Swedish suppliers, the Swedish VAT-numbers must have the trailing 12 characters in numeric form	fatal
<b>SE-R-003</b> Swedish organisation numbers should be numeric.	fatal
<b>SE-R-004</b> Swedish organisation numbers consist of 10 characters.	fatal
<b>SE-R-005</b> For Swedish suppliers, when using Seller tax registration identifier, 'Godkänd för F-skatt' must be stated	fatal
<b>SE-R-006</b> For Swedish suppliers, only standard VAT rate of 6, 12 or 25 are used	fatal
<b>SE-R-007</b> For Swedish suppliers using Plusgiro, the Account ID must be numeric	warning
<b>SE-R-008</b> For Swedish suppliers using Bankgiro, the Account ID must be numeric	warning
<b>SE-R-009</b> For Swedish suppliers using Bankgiro, the Account ID must have 7-8 characters	warning
<b>SE-R-010</b> For Swedish suppliers using Plusgiro, the Account ID must have 2-8 characteres	warning
<b>SE-R-011</b> For Swedish suppliers using Swedish Bankgiro or Plusgiro, the proper way to indicate this is to use Code 30 for PaymentMeans and FinancialInstitutionBranch ID with code SE:BANKGIRO or SE:PLUSGIRO	warning

# Mentimeter

[www.menti.com](https://www.menti.com)

Enter #11 10 31



**BREAK**



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# Taking e-Invoicing to the next level

---

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**Christian Vindinge Rasmussen**  
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# Requirements for the contracting authorities/entities

## From 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).*

a list with a limited number of syntaxes which comply with the European standard on electronic invoicing

Semantic data model of the core elements of an electronic invoice



# Key dates

**16 April 2014**

Directive 2014/55/EU

**17 October 2017**

Publication of the reference to the European Standard on eInvoicing in the Official Journal

**18 April 2019**

Deadline for Member States to transpose into national law

**18 April 2020**

Extended deadline (upon request) for contracting authorities and entities which are not central government authorities

# So eInvoicing, in the context of the Directive, is

- Formatted in a structured way so that it can be processed efficiently
- Issued, transmitted and received electronically

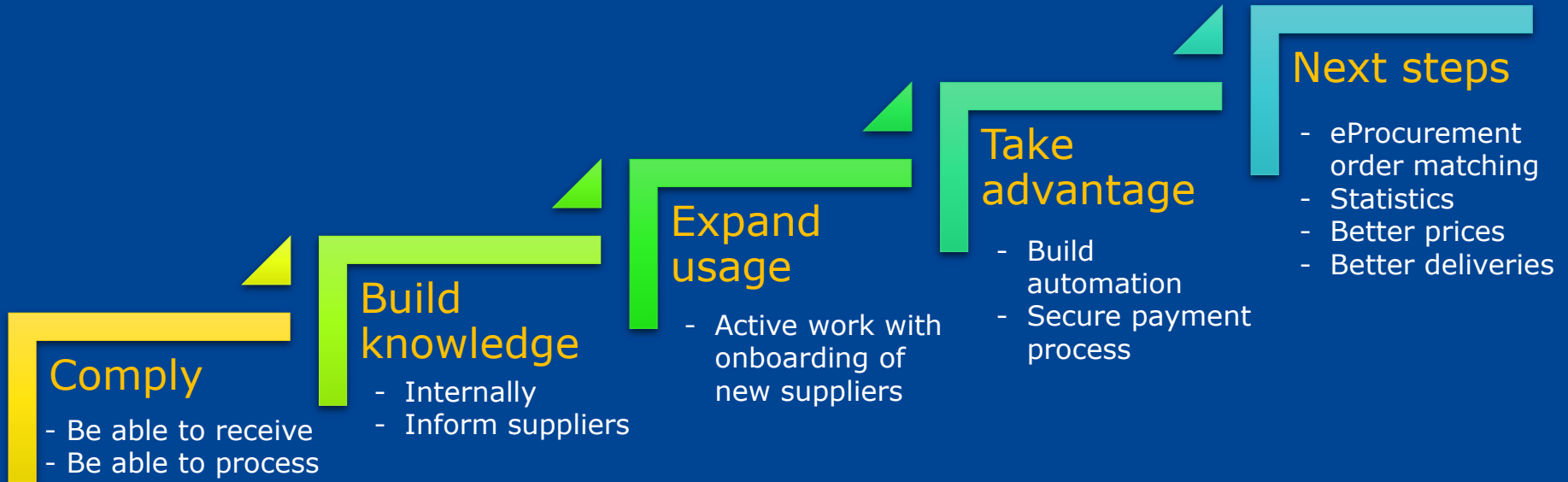
This rules out:

- Paper invoices which are scanned by the receiver but managed in an electronic workflow system
- PDF-invoices created by the issuer and sent to the receiver

# Implementation of the Directive – requirements on public entities and suppliers

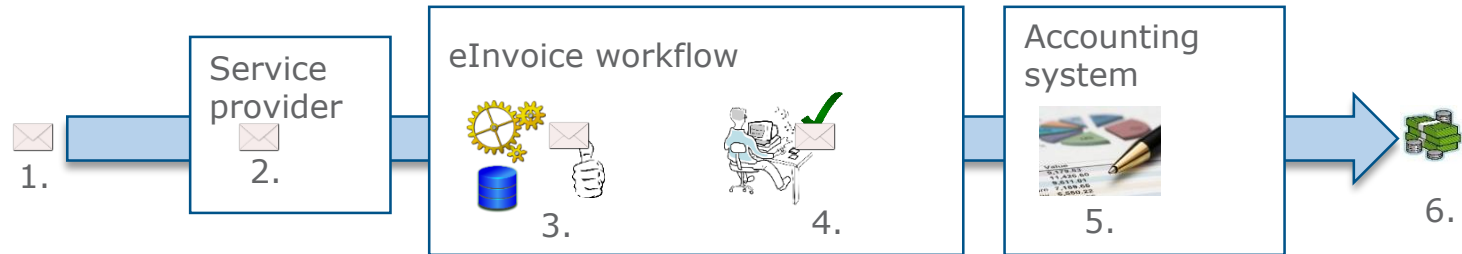
1. As is – no additional restrictions
2. As 1 but with policy that requirement for eInvoice must be part of contracts/call for tenders
3. Requirement for suppliers to also send

# Level of readiness



**From the buyer's perspective**

# Buyer process

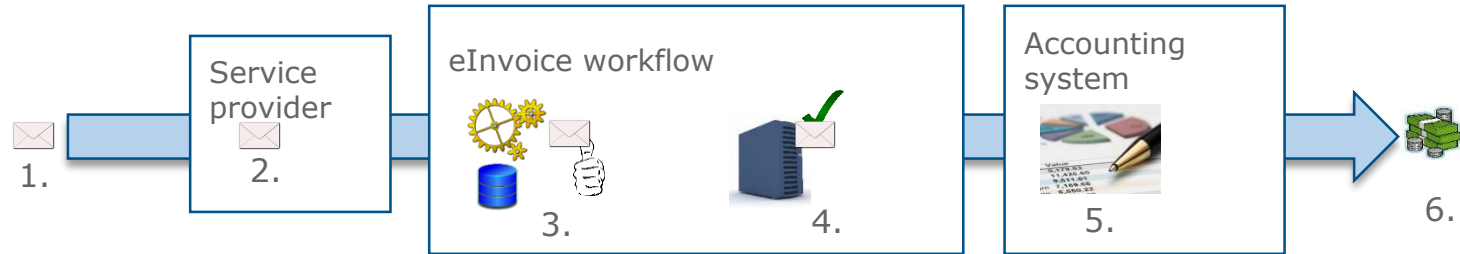


- The invoice is received
- The invoice is routed automatically to the workflow
- The supplier is known by the buyer
- There is a buyer reference in the invoice for forwarding in the workflow
- The invoice is assessed, approved and payment is initiated



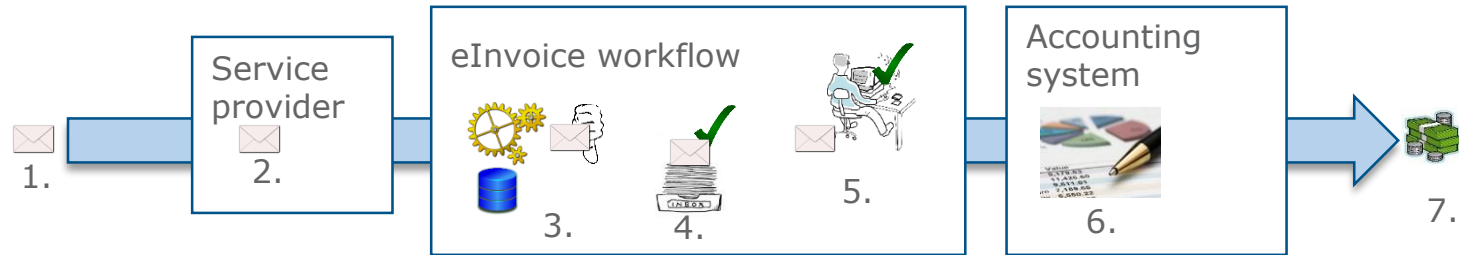
# Buyer process

## Automated assessment/validation



- The invoice is received
- The invoice is routed automatically to the workflow
- The supplier is known by the buyer
- The invoice has a reference to an order or a registered object (e.g subscription number, rent object id). Rules for approval is associated with the registered object
- The invoice is automatically assessed, approved and payment is initiated

# Buyer process Unknown supplier



- The invoice is received
- The invoice is routed automatically to the workflow
- The supplier is not known by the buyer and is placed in a queue for handling
- The supplier is accepted and registered in the system
- There is a reference in the invoice for forwarding in the workflow
- The invoice is assessed, approved and payment is initiated

## City of Skövde, Sweden – an example

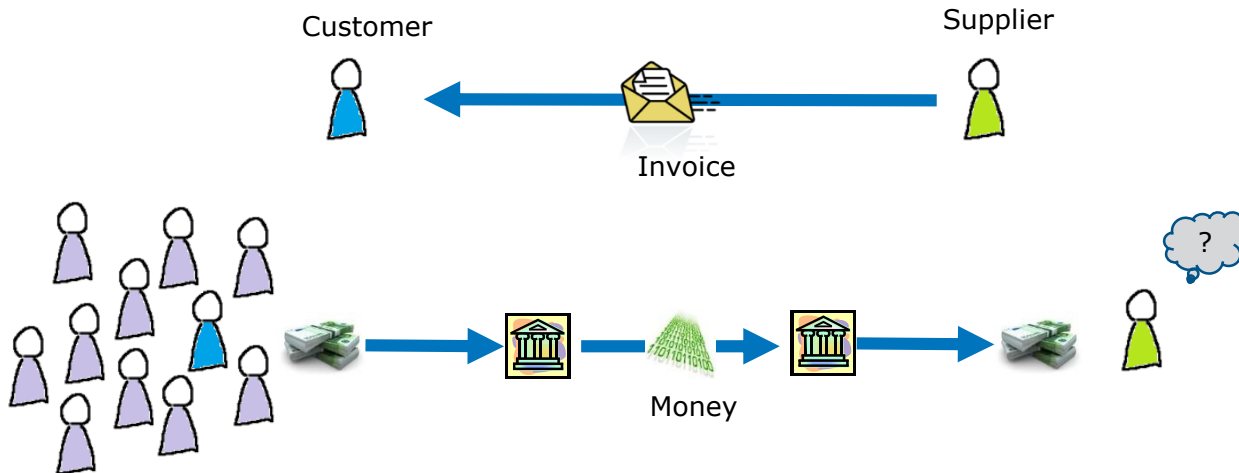


Workflow using BuyerReference	47 445	37,70%
Order matched invoices	32 000	25,43%
Periodical/non-ordering invoices	23149	18,39%
Paper invoices	23 255	18,48%
<b>Total</b>	<b>125 849</b>	<b>100%</b>

# Payment process

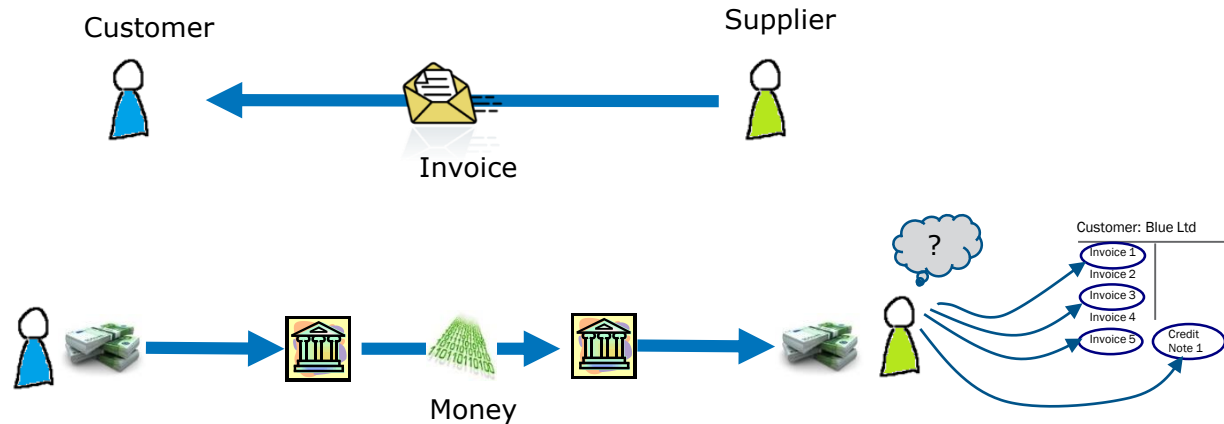
# Payment reconciliation

- Payment reconciliation is the process where the supplier determines whether the invoices have been paid
- The supplier must verify that the records match – are all invoices paid?
- Often payments are done in batches and do not correspond one-to-one with the invoice



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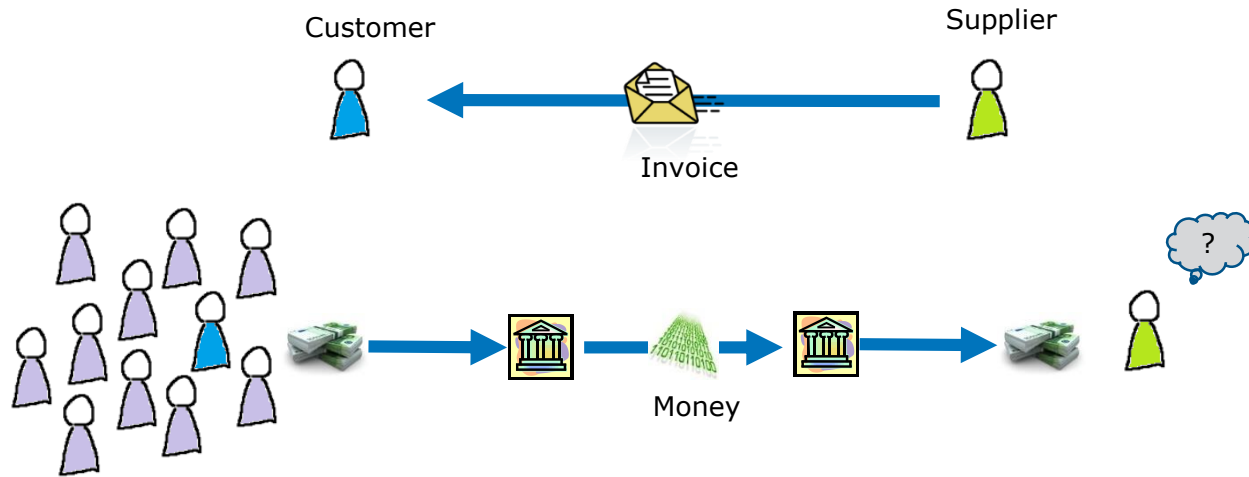
# Referencing in payments

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- Extra important when handling many customers



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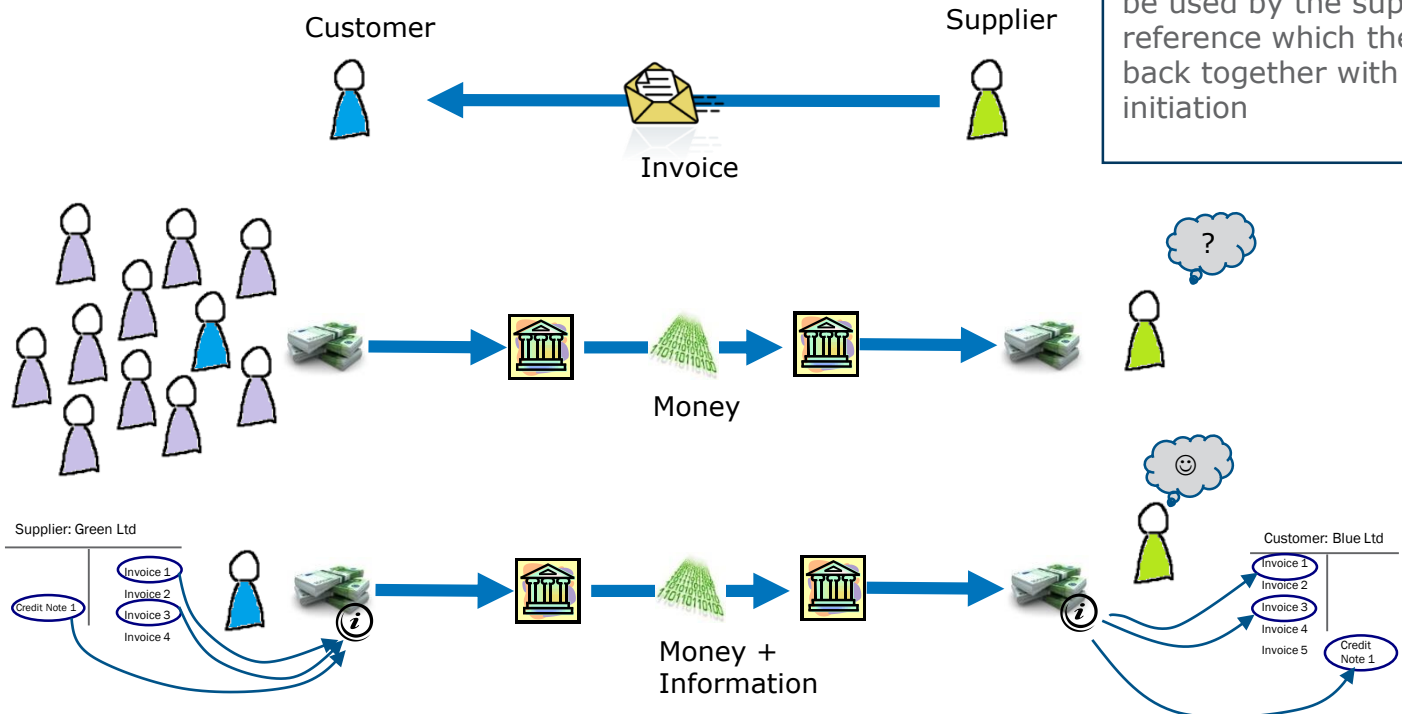




# Referencing in payments

- Remittance information in the invoice can be used to connect the events
- Extra important when handling many customers

In the European Standard, the business term BT-83 "Remittance information" can be used by the supplier to provide a reference which the customer may send back together with the credit transfer initiation



# ***Governance and policy***

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# Governance...

## Characteristics from countries with high penetration of e-Invoicing

- Strong initiative from public sector
- Either a governmental authority or collaboration between several
- Provide policy/directions – standards and infrastructure
- Give support and provide capacity building
- Involvement in EU-level initiatives
- EMSFEI (High level and policy issues)
- OpenPEPPOL (Operational and practical issues)

# Examples of things to consider when developing a roadmap for eInvoicing

## Policy for For the supplier/issuer

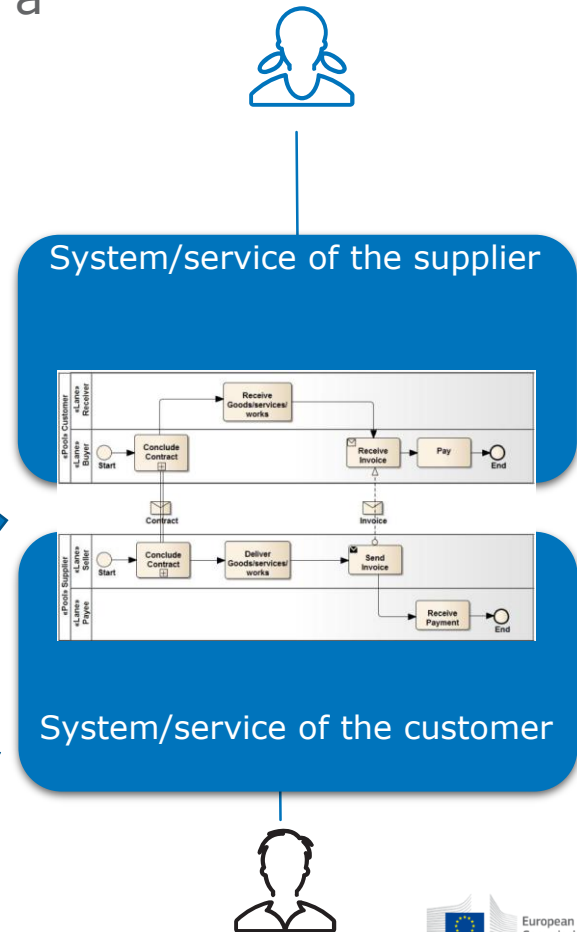
- Suppliers have a diverse environment (such as different technical solutions, processes, maturity level)
- Clear policy around standards helps
- Supporting tools can be provided – validation tools, presentation style sheets, translations
- Aligned requirements on use of references and identifiers if possible

## Policy for Interconnectivity

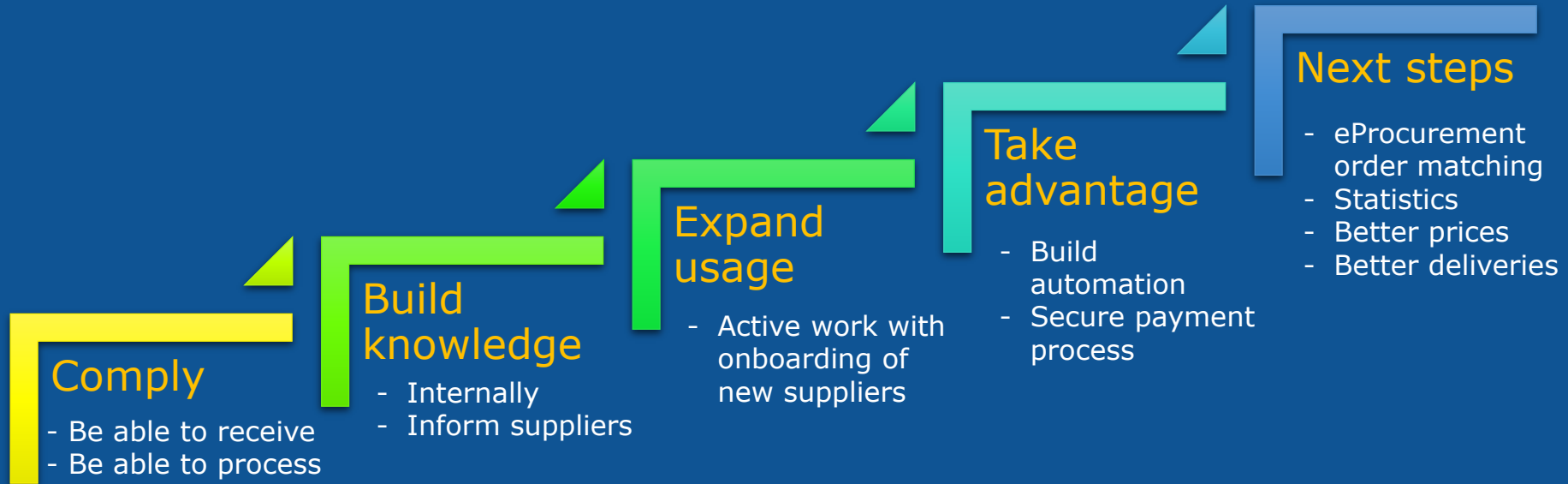
- Minimum requirement on technology for how to connect and for service providers to collaborate
- Publicly available strategy on how to handle the European standard – both domestically and cross border (CIUS)
- Transmission cross border (eDelivery)

## Policy for the public sector

- Up to each entity to tender for solutions or centrally provided?
- Maturity level of the public entities – are temporary solutions necessary?
- Mandate eInvoicing? Through law/contracts? Also below threshold?
- Centrally provided supporting tools, help desk, training and capacity building?



# Level of readiness



# Mentimeter

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# Introduction from a European Point of View

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**Martin Forsberg**  
DIGIT

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# Background

- Problems with **many standards**
- **Lack of normative contextualised standards** (only workshop agreements)
- **Different approaches and ambitions** in Member States to implementing eInvoicing and eProcurement
- The Directive on electronic invoicing in public procurement ([Directive 2014/55/EU](#)) was developed, setting a **minimum requirement** for the public sector
- The Directive can in the transposition add further requirements

## From the Directive

*The benefits of electronic invoicing are maximised when the generation, sending, transmission, reception and processing of an invoice can be fully automated.*

...

*A mere image file should not be considered to be an electronic invoice for the purpose of this Directive.*



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# Requirements for the contracting authorities/entities

## From 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).*

a list with a limited number of syntaxes which comply with the European standard on electronic invoicing

Semantic data model of the core elements of an electronic invoice



# Key dates

**16 April 2014**

Directive 2014/55/EU

**17 October 2017**

Publication of the reference to the European Standard on eInvoicing in the Official Journal

**18 April 2019**

Deadline for Member States to transpose into national law

**18 April 2020**

Extended deadline (upon request) for contracting authorities and entities which are not central government authorities

# So eInvoicing, in the context of the Directive, is

- Formatted in a structured way so that it can be processed efficiently
- Issued, transmitted and received electronically

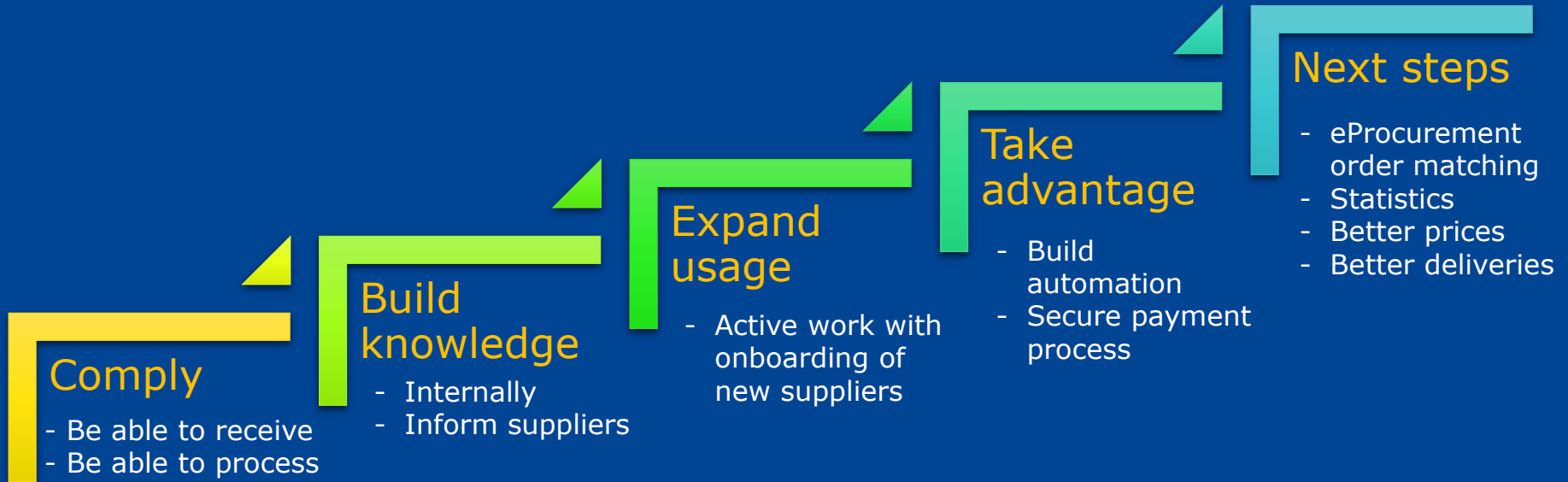
This rules out:

- Paper invoices which are scanned by the receiver but managed in an electronic workflow system
- PDF-invoices created by the issuer and sent to the receiver

# **Implementation of the Directive – requirements on public entities and suppliers**

1. As is – no additional restrictions
2. As 1 but with policy that requirement for eInvoice must be part of contracts/call for tenders
3. Requirement for suppliers to also send

# Round table discussion



# Our contact details

**Christian Vindinge Rasmussen**



**Martin Forsberg**



**Lessons learned**

**QUESTIONS?**





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## Country facts and plans for the future

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# Country Facts

- **Growing sense of urgency**
- **Plans are getting more and more concrete**
- **Still focus on technical aspects**
- **Lack of appreciation of the change process**
- **Focus on compliance rather than potential gains**

## Sweden

- Early adopter
- PEPPOL Authority
- Mandating

## Denmark

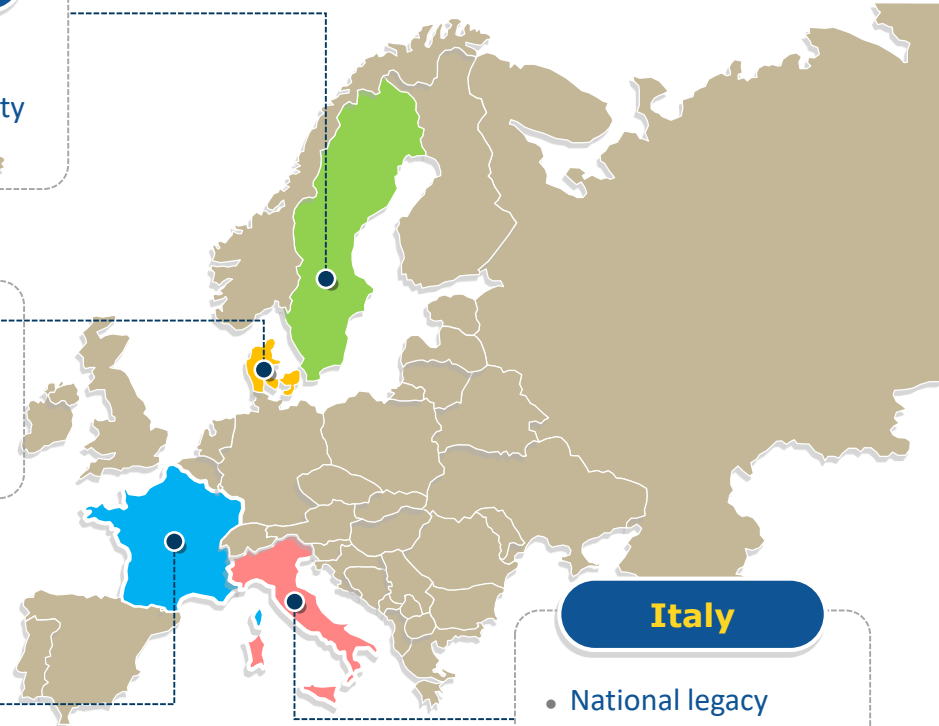
- First mover
- PEPPOL Authority
- Mandating

## France

- Strong legacy
- Partly Mandating

## Italy

- National legacy
- Mandating



## Responsible

Danish Business Authority (Ministry of Industry, Business and Financial Affairs)

## Legislation

- Consolidation Law on public payments, etc. Act. No.798 of 02.28.2007
- Order on electronic settlement with public administrations, Order No. 206 of 11.03.2011
- Order on Information and transport of OIOUBL electronic invoice used for electronic settlement with public authorities, Order No. 354 of 03.26.2010

B2G eInvoicing is mandatory in Denmark since 2005

## Transposed the Directive 2014/55/EU

YES

## Use of the extra year for compliance of non-central entities (by 19 Apr 2020)

YES

## Mandatory for

Submitting: Economic operators  
Receiving and processing: Central authorities, Regional authorities & Local authorities

## Standard(s)

OIOUBL (national UBL 2.0 standard) – mandatory, BIS 3 UBL optional

## Platform

NemHandel

## Use of CIUS and/or Extensions

NO

Before 2019

2019 →

### eInvoice usage in public sector

98 %

PEPPOL CIUS  
(+Rules for domestic suppliers)

### Main syntax standard

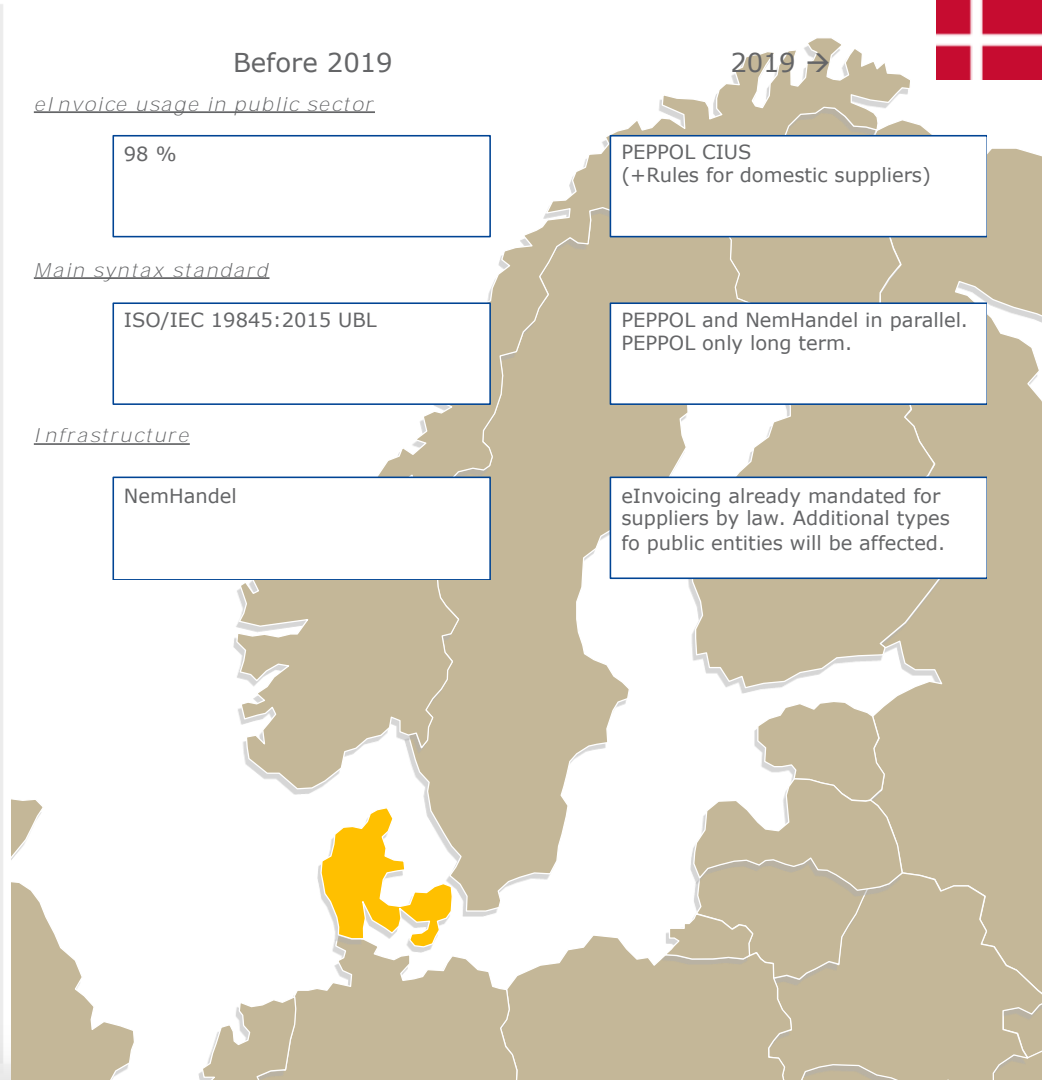
ISO/IEC 19845:2015 UBL

PEPPOL and NemHandel in parallel.  
PEPPOL only long term.

### Infrastructure

NemHandel

eInvoicing already mandated for suppliers by law. Additional types for public entities will be affected.



<b>Responsible</b>	Ministry of Finance and the Agency for Digital Government (DIGG)
<b>Legislation</b>	eInvoicing is mandatory in Sweden since 2008 for central government agencies
<b>Transposed the Directive 2014/55/EU</b>	<b>YES</b>
<b>Use of the extra year for compliance of non-central entities (by 19 Apr 2020)</b>	<b>NO</b>
<b>Mandatory for</b>	Receiving, processing and sending: All public authorities i.e including municipalities and regions and their suppliers (by 1 April 2019)
<b>Standard(s)</b>	<p>PEPPOL BIS invoice</p> <p>Svefaktura version 1 (a national subset of UBL 1.0 defined in 2004)</p> <p>SFTI Fulltextfaktura (an Edifact D96A invoice aligned to GS1 EANCOM specifications)</p> <p>These standards are mandatory for central government and recommended for regional and local authorities. The regulations also include PEPPOL-based standards for ordering and delivery processes.</p>
<b>Platform</b>	Provided to central authorities by solution providers. Use of PEPPOL is encouraged.
<b>Use of CIUS and/or Extensions</b>	<b>YES</b> PEPPOL 3 as CIUS



Before 2019

2019 →

eInvoice usage in public sector

50% local/regional authorities  
60% governmental authorities

Implementaion of the EN/ CIUS

PEPPOL CIUS  
(+Rules for domestic suppliers)

Main syntax standard

ISO/IEC 19845:2015 UBL

Plans for infrastructure

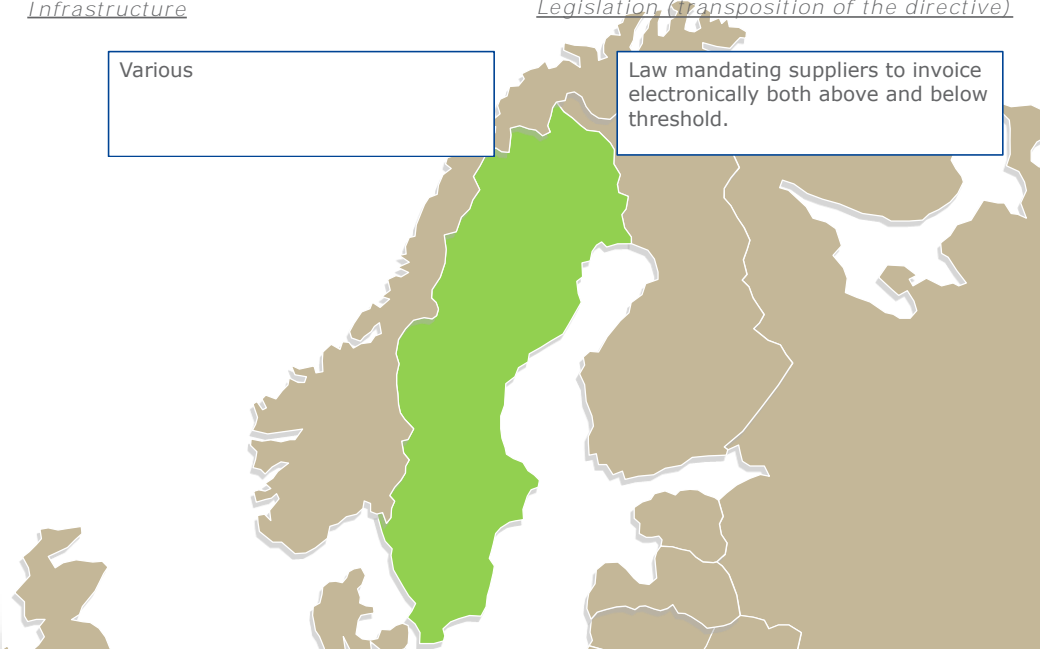
PEPPOL

Infrastructure

Various

Legislation (transposition of the directive)

Law mandating suppliers to invoice electronically both above and below threshold.



**Responsible** Ministry for the Economy and Finance (policy making)  
Agency for State Financial Information (AIFE)  
(implementation and maintenance)

**Legislation** Ordinance No. 2014-697 of 26 June 2014 on the development of electronic invoicing

[Business Growth and Transformation law - PACTE](#)  
(currently under Parliamentary examination)

B2G eInvoicing will be mandatory in France gradually from 2017 until 2020

**Transposed the Directive 2014/55/EU**

YES

Directive 2014/55/EU was transposed as part of the draft law for the Business Growth and Transformation (PACTE) which was adopted in the first quarter of 2019.

**Use of the extra year for compliance of non-central entities (by 19 Apr 2020)**

YES

**Mandatory for** Submitting: Economic operators  
Receiving and processing: Central authorities, Regional authorities & Local authorities

**Standard(s)**

- OASIS UBL 2.1
- CII UN/CEFACT

**Platform** Chorus Pro (in production)

**Use of CIUS and/or Extensions**

YES

- CIUS for Chorus Pro
- CIUS for Factur-X, Basic profile

Before 2019

eInvoice usage in public sector

Small number

Main syntax standard

ISO/IEC 19845:2015 UBL

Infrastructure

Centralized solution

2019 →

Implementation of the EN CIUS

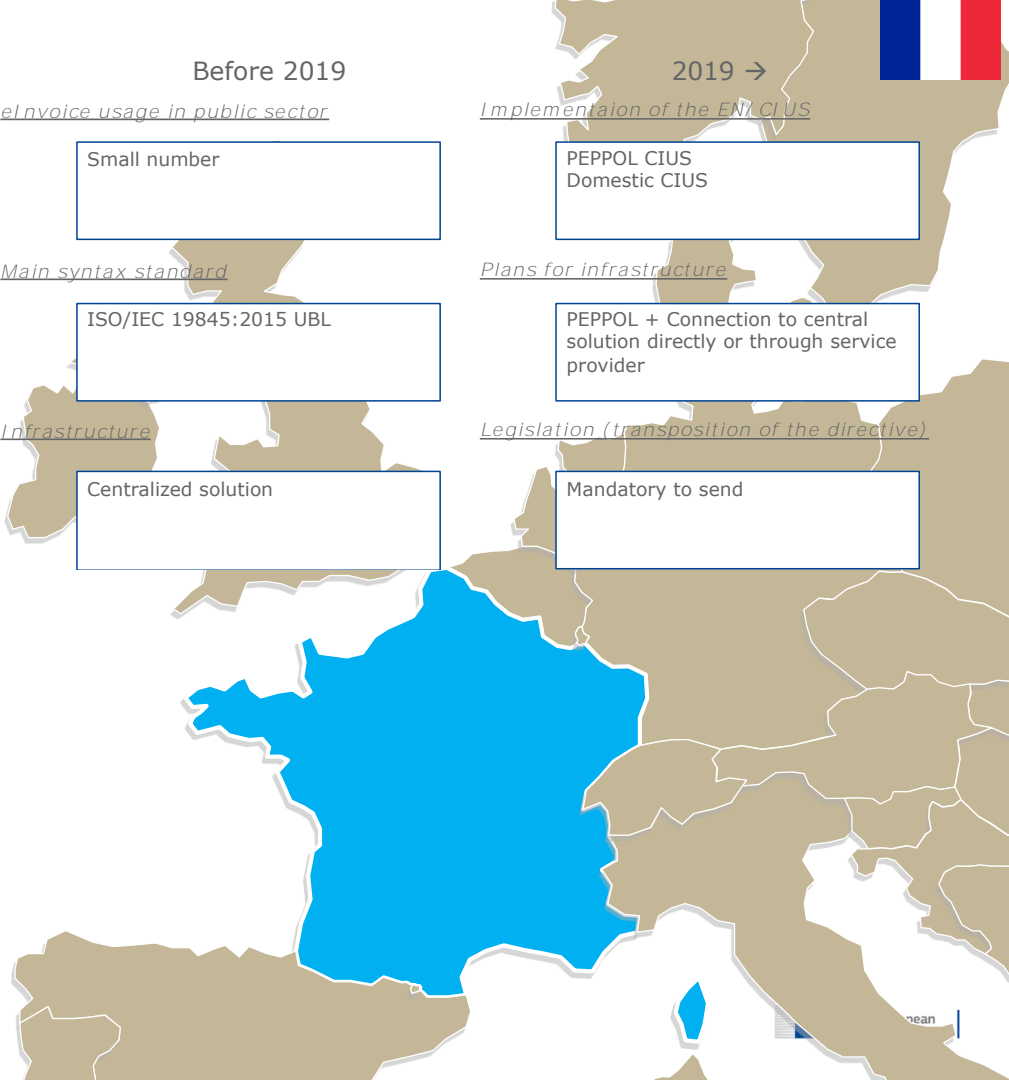
PEPPOL CIUS  
Domestic CIUS

Plans for infrastructure

PEPPOL + Connection to central solution directly or through service provider

Legislation (transposition of the directive)

Mandatory to send



**Responsible** Ministry of Economy and Finances, supported by the Revenue Agency

**Legislation** Multiple legislation  
B2G invoicing is mandatory since 2014

**Transposed the Directive 2014/55/EU** YES

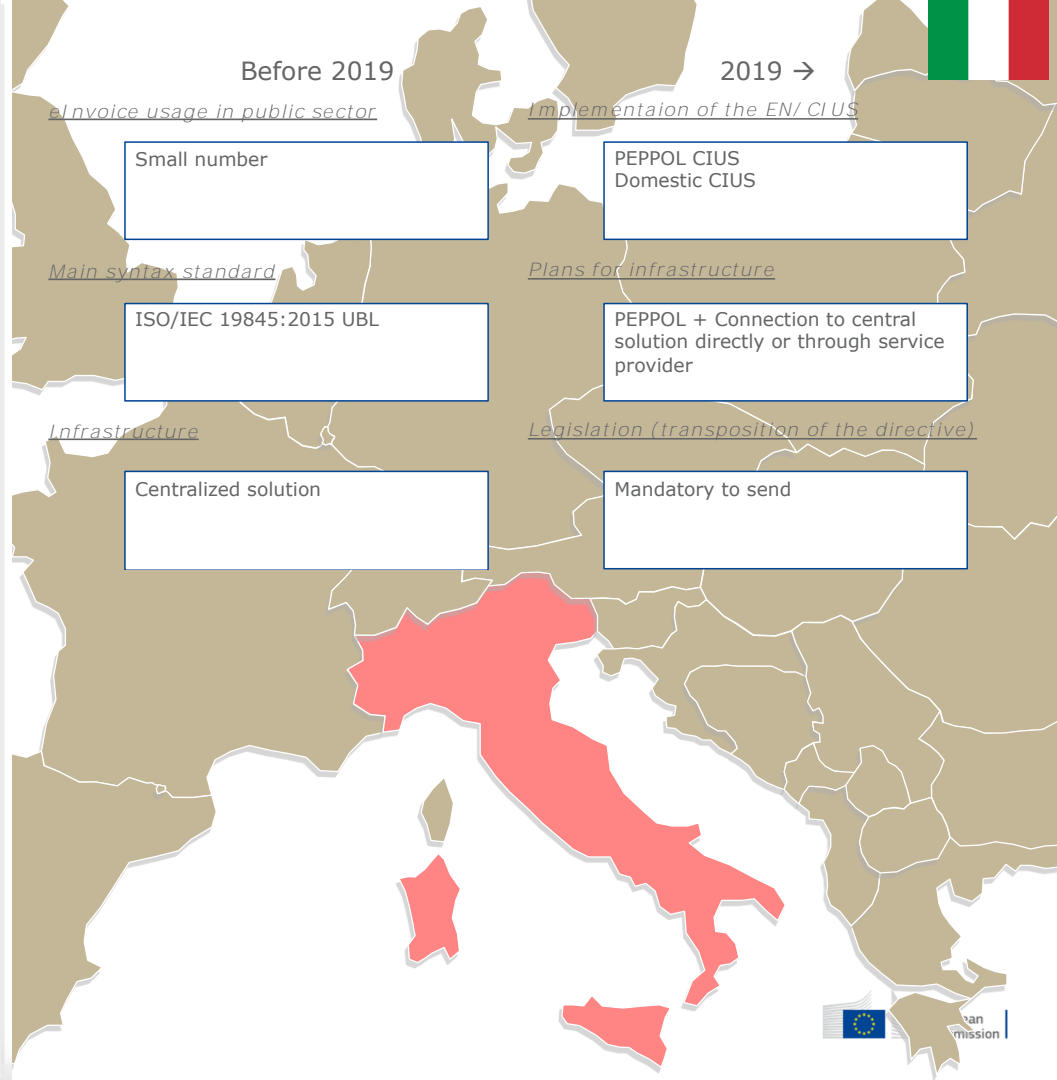
**Use of the extra year for compliance of non-central entities (by 19 Apr 2020)** YES

**Mandatory for** Submitting: Economic operators  
Receiving and processing: Central authorities, Regional authorities & Local authorities, Economic operators

**Standard(s)** FatturaPA (national XML standard)

**Platform** Exchange system (Sistema di Interscambio)

**Use of CIUS and/or Extensions** YES



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