



Lightning Talk on

CEF, eInvoicing, Infrastructure & Funding possibilities

16 November 2017

Tallinn, Estonia

 [#ConnectingEurope](#)

Topics

Introduction to CEF

CEF eInvoicing and our services

Infrastructure in coherence with CEF eInvoicing

Christian Rasmussen, DIGIT D3

Funding & Grants for CEF including eInvoicing

Discussion

About me

Christian Rasmussen

Christian is an experienced eProcurement Expert specialized in the execution of large scale ICT projects with past experience from the Nordic region including Denmark, Norway and Sweden.

Christian has also been involved in the past EU-funded large scale pilots PEPPOL.eu and eSENS.eu as Work packager leader including focus on new eProcurement and eDelivery development.

1998 - 2001

Project Manager, CBS

2001 - 2005

Team Leader, EDImatic/KMD

2005 - 2006

Team Leader, Software Innovation

2007 - 2008

Senior PM, LEGO

2008 - 2011

Chief Advisor, Ministry of Science, DK

2011 - 2013

Chief Advisor, Ministry of Finance, DK

2013 - 2016

Chief Advisor, Ministry of Finance, NO

2016 - 2017

Chief Advisor, DTI

Other assignments, certifications

Experienced enterprise architect in TOGAF9.1

Senior Advisor, External Reviewer – European Commission 2009 - present

Certified Scrum Professional incl. Scrum Master and Scrum Product Owner

Speaker - OECD, World Bank 2008 - present

Six Sigma Green Belt

Prince2

Objectives of talk

Participants will learn about:

- CEF and our background, CEF eInvoicing and our services
- **Infrastructure** components in coherence with **CEF eInvoicing**
- **Funding possibilities within CEF**

Audience for this workshop

- Public authorities
- Private entities
- Policy makers
- Members of standardisation bodies
- eInvoicing implementers for:
 - Software services
 - Solution providers



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What is CEF ?

What is CEF?



TRANSPORT
€26.25bn

TELECOM

Digital Service Infrastructures
€970 M *

Broadband
€170 M

ENERGY
€5.85bn

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

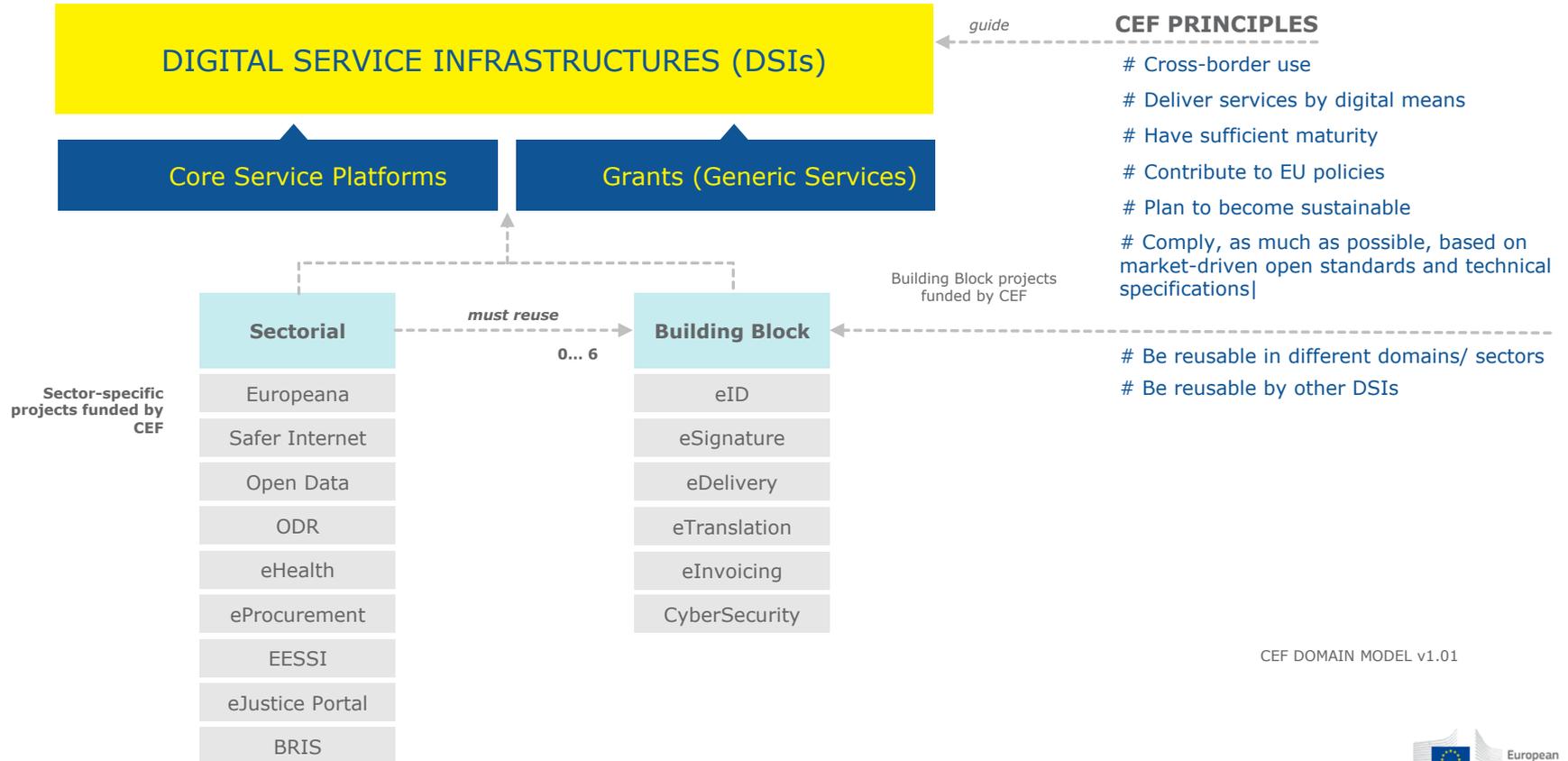
The CEF Telecom guidelines cover the specific objectives and priorities as well as eligibility criteria for funding of broadband networks and Digital Service Infrastructures (DSIs).

CEF Work Programmes

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

* - 100 M Juncker Package

What are Digital Service Infrastructures?



(*) A Building Block is a package of technical specifications, services and sample software that can be reused in different policy domains:

The 'Big Picture'

Funding for the
EUROPEAN COMMISSION



eJustice

ODR

Open Data

BRIS

EESSI, etc.

CORE SERVICE PLATFORMS

Services offered by the
European Commission



IDENTIFY
with eID



SIGN
with eSignature



INVOICE
with eInvoicing



EXCHANGE
with eDelivery



TRANSLATE
with eTranslation

Funding for the
MEMBER STATES

GRANTS

Projects in the Member
States



Typically 'deployment' projects at national level (up to
75% of eligible cost)

Example 1:



EUROPEAN
DATA PORTAL

<https://www.europeandataportal.eu>

**CORE
SERVICE
PLATFORM**



Internet



CITY

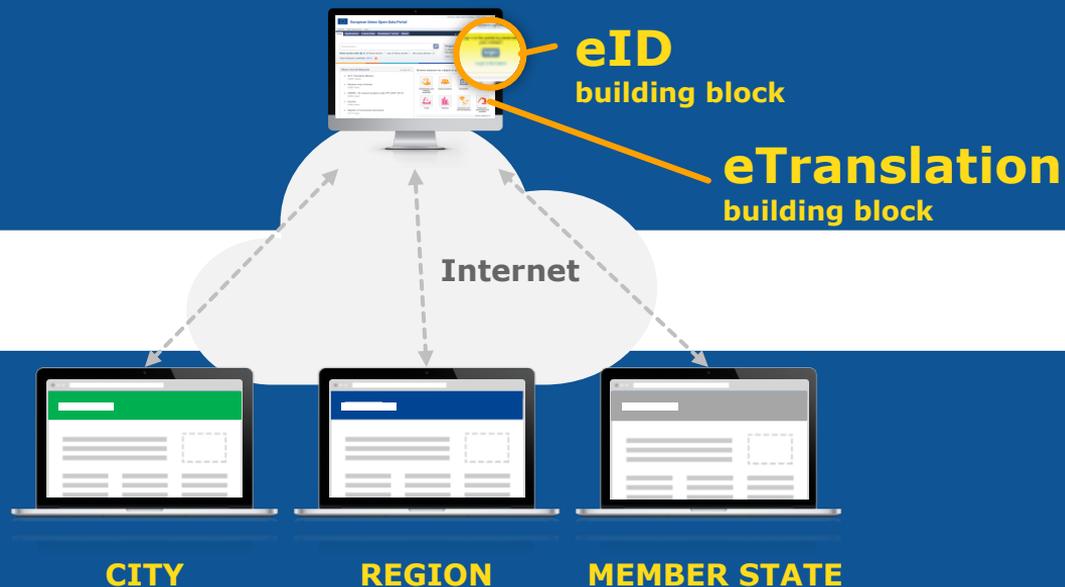
REGION

MEMBER STATE

Open Data reuses eID and eTranslation

<https://www.europeandataportal.eu>

**CORE
SERVICE
PLATFORM**



GRANTS

Example 2:



<https://e-justice.europa.eu>

**CORE
SERVICE
PLATFORM**



Access Point

Internet

GRANTS

Access Point

Germany

Access Point

Italy

Access Point

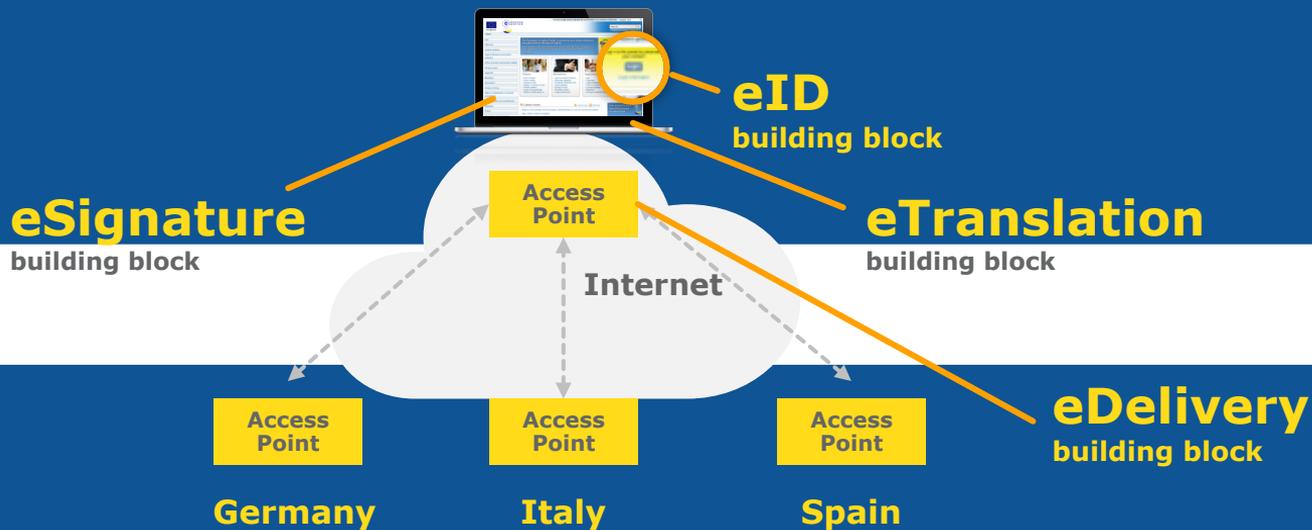
Spain

eJustice reuses eID, eTranslation, eSignature and eDelivery



<https://e-justice.europa.eu>

**CORE
SERVICE
PLATFORM**



CEF Work Programmes

2013

2014

2015

2016

2017

2018

2019

2020

Work Programmes



€970 M in DSIs =

€ 86.5 M

€ 85.2 M

€ 101.6 M

€ 101.6 M

Example of the eDelivery DSI

CORE SERVICE PLATFORM
Services offered by the European Commission

€ 8 M

€ 1 M

GRANTS
Projects in the Member States



€ 0



€ 1 M



€ 0.5 M



€ 0.5 M



Building Block grants since 2014

According to information received from INEA



	Available Budget	Nbr. of Proposals	Requested Budget		Available Budget	Nbr. of Proposals	Requested Budget		Available Budget	Nbr. of Proposals	Requested Budget
eID	8.7 M	22	6.5 M	eID	7 M	9	9.7 M	eID/ eSig	4.5 M	24	3.1 M
				eDelivery	1 M	8	1.9 M	eDelivery	0.5 M	14	1.8 M
				eInvoicing	7 M	14	7.3 M	eInvoicing	7 M	21	15 M

* Includes eDelivery

To learn more about CEF's Digital Service Infrastructures (DSIs)

CORE SERVICE PLATFORMS

All information about the services offered by the European Commission (focus on the building blocks).

<https://ec.europa.eu/cefdigital/>

The screenshot shows the 'eDelivery' services hub. It features a navigation menu with 'Home', 'Discover', 'How it works', 'Services', and 'Collaboration'. The main content area is titled 'The eDelivery services hub' and includes sections for 'TECHNICAL SPECIFICATIONS', 'SOFTWARE', 'MANAGED SERVICES', and 'TESTING SERVICES'. A table lists 'eDelivery Components' with columns for 'Service offering', 'Access Point', 'SMP', 'SML', 'Connector', and 'Trust Establishment'.

	eDelivery Components				
	Access Point	SMP	SML	Connector	Trust Establishment
SUPPORTING SERVICES	Technical Specifications	e-SENS ASN profile	e-SENS SMP profile	e-SENS ebCore Party ID profile	ETSI REM profile
ONBOARDING SERVICES		OpenPEPPOL		e-SENS B2XL	ETSI electronic signatures and infrastructures profile

GRANTS

All information about the grants: requirements, deadlines, how to apply, documentation, FAQs, etc.

<https://ec.europa.eu/inea/connecting-europe-facility/cef-telecom>

The screenshot shows the INEA website page for '2016 CEF Telecom calls for proposals'. It includes a navigation menu with 'HOME', 'CONNECTING EUROPE FACILITY', 'HORIZON 2020', 'TEN-T', 'MARCO POLO', 'NEWS & EVENTS', and 'ABOUT US'. The main content area features a '2016 CEF Telecom call 3 Virtual Info Day - 22 September' announcement, a 'Help us improve!' button, and a 'Did you find what you were looking for?' search bar. A table lists 'Indicative Call Planning' with columns for 'Call', 'Call open', and 'Deadline for submissions'.

Call	Call open	Deadline for submissions
CEF-TC-2016-1 Business Registers Interconnection System (BRIS) (indicative budget: €3 million)	3 March 2016	Closed on 19 May 2016
CEF-TC-2016-1		

Linking CEF to the #DigitalSingleMarket

Commission 2017 Work Programme



https://twitter.com/EU_Commission

European Commission
@EU_Commission

Our priorities for 2017. 21 key initiatives:
europa.eu/!Bw68Yw (pdf)

Delivering
A Europe that protects, empowers and defends
Commission Work Programme 2017

130 per year
2009-2014

RETWEETS 266 LIKES 204

7:05 AM - 2 Jan 2017

33 266 204

KEY INITIATIVES

21 key initiatives to implement our 10 political priorities in 2017

A New Boost for Jobs, Growth and Investment
A Europe that preserves our way of life and empowers our young

1. Youth initiative
2. Implementation of the Action Plan on Circular Economy
3. Financial framework beyond 2020



A Connected Digital Single Market
A Europe that empowers its citizens and businesses

4. Implementation of the Digital Single Market Strategy



A Resilient Energy Union with a Forward-Looking Climate Change Policy
A Europe that takes responsibility for delivery on promises made

5. Implementation of the Energy Union Strategy: low-emission travel and mobility



A Deeper and Fairer Internal Market with a Strengthened Industrial Base
A Europe that makes a strong contribution to jobs and growth and stands up for its industry

6. Implementation of the Single Market Strategy
7. Fairer taxation of companies
8. Implementation of the Space Strategy for Europe
9. Implementation of the Capital Markets Union Action Plan



A Deeper and Fairer Economic and Monetary Union
A Europe that protects our economies and ensures a fair playing field for workers and business

10. A strong Union built on a strong EMU
11. European Pillar of Social Rights



Trade: A reasonable and Balanced Free Trade agreement with the U.S.

A Europe that is open and trading with our partners while strengthening its defence instruments

12. Implementation of the Trade for All strategy



An Area of Justice and Fundamental Rights Based on Mutual Trust
A Europe that defends and preserves our values of freedom, democracy and the rule of law

13. Data Protection Package
14. Progress towards an effective and genuine Security Union



Towards a New Policy on Migration
A Europe that protects our borders and delivers on a responsible migration policy

15. Implementation of the European Agenda on Migration



A Stronger Global Actor
A Europe that protects also defends our interests beyond our borders

16. Implementation of the European Defence Action Plan
17. Implementation of the EU Global Strategy
18. EU Strategy for Syria
19. Africa – EU Partnership: renewed impetus



A Union of Democratic Change
A Europe that takes responsibility, listens and delivers

20. Modernisation of Comitology procedures
21. A more strategic approach to enforcement of EU law



Benefits with an impact

10 TOP PRIORITIES OF THE EC

Jobs, growth and investments

Digital Single Market

Energy Union and Climate

Internal market

A deeper and fairer economic and monetary union

A balanced EU-US free trade agreement

Justice and fundamental rights

Migration

A stronger global actor

Democratic change

PROBLEM

- Europeans often face barriers when using online tools and services
- At present, markets are largely domestic in terms of online services
- Only 7% of EU small- and medium-sized businesses sell cross-border

SOLUTION

- This includes common EU data protection, copyright rules, boosting digital skills, accessible online content
- ...and Cross-border Digital Public services (CEF Digit)

CONSEQUENCE

- Maximise economic potential, growth/jobs – anticipated to be 415€ billion to EU economy

For more information see also the DSM [page on the Europa website](#) and the DSM [roadmap](#)

SOCIETAL CHALLENGES

Only 59% of Europeans can access 4G networks

90% of jobs will soon require digital skills

+ €11 billion in savings for consumers when shopping online

THE DIGITAL CITIZEN OF THE FUTURE

eIDAS



IDENTIFY
with eID



TRANSLATE
with eTranslation



INVOICE
with eInvoicing



SIGN
with eSignature



EXCHANGE
with eDelivery

SOCIETAL CHALLENGES

Small businesses could save €9.000 per market on legal and translation fees thanks to harmonised national laws in the EU

52% of cross-border purchases are blocked

THE DIGITAL ENTERPRISE OF THE FUTURE

eIDAS



IDENTIFY
with eID



TRANSLATE
with eTranslation



INVOICE
with eInvoicing



SIGN
with eSignature



EXCHANGE
with eDelivery

Political support in the eGovernment Action Plan 2016 - 2020

DIGITAL PUBLIC SERVICES

Online • Transformative • Lean • Open

DIGITALISE AND ENABLE

Efficient and effective
public services

Make it simple

CONNECT

Deliver public services
across borders

Make it for all

ENGAGE

Get involved in designing
/ delivering new services

Make it together

Actions related to the (CEF) Building Blocks:

ACTION 3: Commission will ensure the sustainability of the building blocks by 2018

ACTION 6: Commission will use common building blocks such as CEF DSIs

CEF Building Blocks

Scope and Service Offerings

All Policy Domains have similar cross-border needs

SECTORS



eJustice



ODR



eHealth



EESSI

BUILDING BLOCKS



IDENTIFY

with eID



TRANSLATE

with eTranslation



INVOICE

with eInvoicing



SIGN

with eSignature



EXCHANGE

with eDelivery

NEEDS

Authentication based on eID systems in the Member States

Automated translation of data and documents

Electronic **invoicing** respecting the **European Standards**

Recognition of eSignatures

Securely exchange electronic **data** and **documents**

What is a CEF Building Block?

SECTORS



BUILDING BLOCKS



IDENTIFY

with eID



TRANSLATE

with eTranslation



INVOICE

with eInvoicing



SIGN

with eSignature



EXCHANGE

with eDelivery

DEFINITION

A Building Block is a package of technical specifications and/or services and/or sample software that can be reused in projects of any policy domain. In particular:

- The technical specifications of a Building Block are as much as possible open and market-driven.
- The services of a Building Block must be well defined i.e. documented, with SLAs, training, helpdesk, etc.
- The software of a Building Block must have sufficient maturity i.e. successfully piloted for cross-border transactions.

How it started and where is it going?

PILOTING

STORK
PEPPOL
SPOCS
epSOS
eCODEX

e-SENS

SCALING UP

REGULATORY

- EU Legislation e.g. eIDAS

DEMAND CREATION

- CEF Work Programmes 
- eGovernment Action Plan
- DSM Catalogue of Standards

SUPPLY CREATION

- Grants (subsidies) 

SUSTAINING

PROGRAMME (?)

PUBLIC-PRIVATE PARTNERSHIP (?)

AGENCY (?)

...

2014

2020

Reuse watch

Visualise the reuse of each CEF Building Block by other CEF DSIs, and the evolution of reuse over time.

[Reuse by CEF DSIs](#)

[Reuse by other projects](#)

[Reuse by domains](#)

[Project acronym glossary](#)

Reuse overview

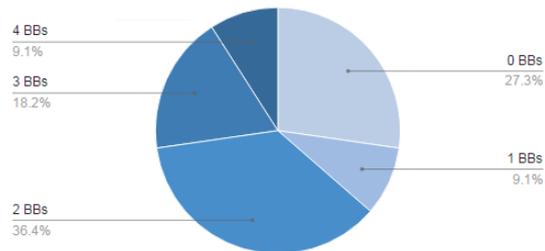
Filter by

Quarter

2016 Q3

73% of the CEF Sector Specific Digital Service Infrastructure are reusing or committed to reuse at least one Building Block.

The pie chart below shows how many sectorial DSIs are reusing 0 or more Building Blocks. For more information on how this figure is computed, click [here](#).



[ec.europa.eu/
cefdigital](https://ec.europa.eu/cefdigital)

Reuse of building blocks by CEF's sectorial projects

Building Block DSIs

Sector Specific DSIs		Building Block DSIs				
		eDelivery 	eSignature 	eID 	eTranslation 	eInvoicing 
Europeana*	DG CONNECT					
Safer internet*	DG CONNECT					
Public open data	DG CONNECT					
ODR	DG JUST					
eHealth	DG SANTE					
eProcurement	DG GROW					
EESSI	DG EMPL					
EU e-Justice portal	DG JUST					
BRIS (ECP)	DG JUST					
Cybersecurity	DG CONNECT					
eTranslation	DGT					

 Commitment to analyse

 Commitment to reuse

 Reusing

* Projects run together with Member States through grants provided by CEF.

Main objective of the building block Core Service Platforms





2

Background and history of CEF eInvoicing

What is CEF eInvoicing?

- CEF eInvoicing was introduced to support the Directive 2014/55/EU on electronic public procurement and the European standard for eInvoicing
- On 16th April 2014 the Directive was approved in the European Parliament and Council to set up one single pan-European standard for eInvoicing
- The Directive was a direct consequence of the many standards for eInvoicing across European and as successor of the PEPPOL project initial work on eInvoicing.
- The standard and definition is maintained by CEN, but the European Commission will assist through its CEF work programmes – more on this later..

Background and history of CEF eInvoicing – PEPPOL.eu

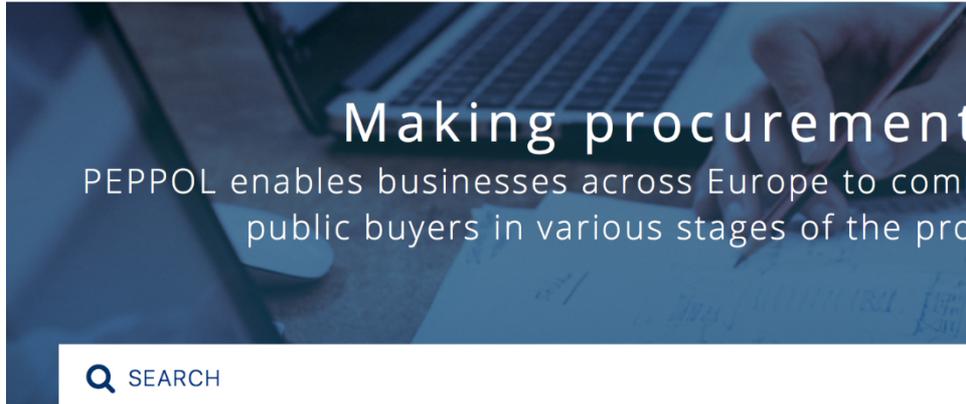
- In 2008 the PEPPOL project was initiated on the best practices within mandatory eInvoicing for public administrations in the Nordic countries
- During the PEPPOL project a good number of the approximately 500 different eInvoicing platforms in Europe was connected through a single infrastructure and with a common semantical standard for eInvoicing – the PEPPOL BIS
- PEPPOL initiated the process of interoperability and connectivity between the “Islands of Procurement” in Europe
- At the end of August 2012 the PEPPOL project was finalised, and all services was handed over to the new non-profit association “OpenPEPPOL”



[About OpenPEPPOL](#)

[What is PEPPOL?](#)

[Get involved](#)



[Join us today for knowledge and benefits that matter](#)

[Learn more](#)

[Already a member](#)

Background and history of CEF eInvoicing – eSENS.eu



*moving
services
forward*★.eu

- In April 2013 a new project eSENS.eu was initiated again bringing in the public procurement domain and eInvoicing
- During the eSENS project lifetime the directive on public procurement was voted for by the European Parliament and Council
- Main focus for eSENS was further improvements to the common components and building blocks of the past Large Scale Pilots - including new transport components for eDelivery and conformance testing of new semantical mapping and eDocuments
- For eInvoicing this mainly meant piloting with existing PEPPOL BIS standards, as CEN was not ready with the new European standard for eInvoicing

Background and history of CEF eInvoicing - Now

- At the end of March 2017 the eSENS was finalised, and most developed services and building blocks was handed over to the European Commission for further development, maintenance and support
- This included the testing of eInvoicing PEPPOL BIS on eSENS eDelivery AS4 results between the partners of eSENS including a number of eDelivery solution providers
- A number of the partners in eSENS and within the eInvoicing piloting has then applied for CEF eInvoicing funding through the grants made available by the European Commission – more on this later...



3

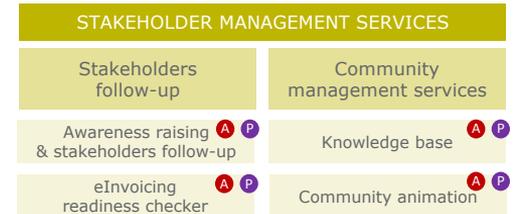
Our services

CEF eInvoicing Service Offering

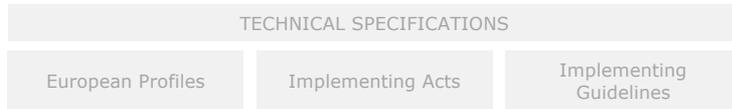
ENABLING SERVICES *enable the adoption of the core services*



ENHANCING SERVICES *enhance customer experience*



TECHNICAL SPECIFICATIONS



STANDARDS OF ESOs



CORE SERVICES *facilitate cross-border/ cross-sector technical interoperability among heterogeneous information systems*

AUDIENCE

- ^A Public Administrations
- ^P Solution Providers

CEF Digital



CEF Digital
Connecting Europe

MENU ▾COMMUNITY

CEF Digital Home

eInvoicing

Helping public entities adopt the European standard on electronic invoicing.

Learn about eInvoicing	+
Everything you need to know about eInvoicing	
Use eInvoicing	+
For public entities getting started with eInvoicing in public procurement	
Make your solution conformant	+
For solution & service providers looking to adopt the European standard on eInvoicing	
Join the community	+
Join one or more communities or help promote the uptake of eInvoicing	

Featured

Call for [grants](#) opens 28 June 2017

Communities

[eInvoicing User Community](#) 

[European Multi-Stakeholder Forum on eInvoicing](#) 

Quick Links

-  [Contact support](#)
-  [All eInvoicing Services](#)
-  [Readiness Checker](#)
-  [Monitoring dashboard](#)

Latest

[CEN Publishes eInvoicing Semantic Data Model](#)

The Innovation and Networks Executive Agency (INEA) launches grants of up to €10 million to support electronic invoicing (eInvoicing) in Europe.

eInvoicing Readiness Checker

The screenshot displays the eInvoicing Readiness Checker website. At the top right, there is a 'Support' link and a language selector set to 'en English'. The header features the CEF DIGITAL logo and the breadcrumb 'European Commission > CEF Digital > eInvoicing > Readiness Checker'. Below the header is a search bar and a navigation menu with links for 'Home', 'Take the test', 'Find a Public Entity', 'Find a Solution & Service Provider', and 'Countries'. A 'Login to the Readiness Checker' link is also present.

The main content area is divided into three columns:

- About:** Contains a paragraph explaining the checker's purpose and a 'Download User Manual' button.
- Public Entities:** Features a building icon, the question 'Is your administration ready for eInvoicing?', and a 'Take the test' button.
- Solution & Service Providers:** Features a person icon, the question 'Can you offer eInvoicing solutions that Public Entities need?', and a 'Create a profile' button.

A footer section contains three icons with labels: 'Public Entities' (building icon), 'Solution & Service Providers' (person icon), and 'Countries' (map of Europe icon).

eInvoicing User Community

CEF DIGITAL

eINVOICING USER COMMUNITY

FORUM

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

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

Prev 1 2 Next

[Visit Forum](#)

[Create new topic](#)

CONTRIBUTE

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

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

About the community

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

Your space moderators



CEF eInvoicing Trainings



Implementation workshops

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



Remote trainings

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



Webinars

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

Trainings – Modules list

1. Introduction to eInvoicing
2. The legal background
3. The European norm and its content
4. Infrastructure based on the eDelivery DSI architecture
5. eInvoicing from a user's perspective (including ordering and payments)
6. Examples of early adopters of large scale eInvoicing – lessons learned
7. Basic XML using examples from the EN-syntaxes + mapping/conversion considerations
8. XML Validation mechanisms
9. Understanding OASIS UBL 2.1 & UN/CEFACT CII D16B
10. Funding and grants for eInvoicing
11. Introduction to CEF eInvoicing resources and tools
12. Introduction to CEF Digital and eInvoicing Readiness Checker

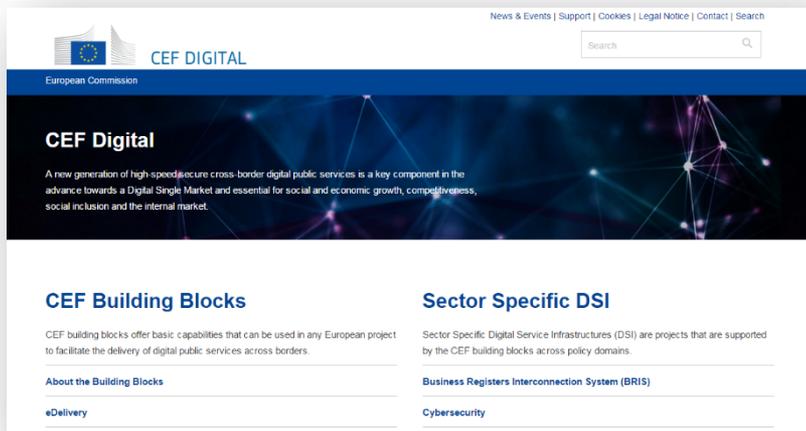
- **45-60 minutes** for each module
- Each module contains topics/questions to be used for **group discussions and collaborations**
- Some modules can contain **collaborative exercises** to improve the audience's understanding
- For on-site Implementation workshops, the combination of modules will be **agreed with the host** and **adjusted for the intended target audience**
- The workshops should enhance the knowledge of **CEF eInvoicing** in the Member States

A decorative graphic consisting of three overlapping squares in shades of blue and white, positioned to the left of the main text.

4

How to get started

Interested to find out more?



The screenshot shows the CEF Digital website homepage. At the top, there is a navigation bar with links for 'News & Events', 'Support', 'Cookies', 'Legal Notice', 'Contact', and 'Search'. The CEF Digital logo is prominently displayed on the left, featuring the European Union flag and the text 'CEF DIGITAL'. Below the logo, the text 'European Commission' is visible. The main content area has a dark background with a network diagram of nodes and lines. The heading 'CEF Digital' is followed by a paragraph: 'A new generation of high-speed, secure cross-border digital public services is a key component in the advance towards a Digital Single Market and essential for social and economic growth, competitiveness, social inclusion and the internal market.' Below this, there are two columns of content. The left column is titled 'CEF Building Blocks' and includes a sub-heading 'About the Building Blocks' and a list item 'eDelivery'. The right column is titled 'Sector Specific DSI' and includes a sub-heading 'Business Registers Interconnection System (BRIS)' and a list item 'Cybersecurity'.

Visit the CEF Digital Single Web Portal

<https://ec.europa.eu/cefdigital/>

DG GROW

Directorate-General for
Internal Market, Industry,
Entrepreneurship and SMEs

DIGIT

Directorate-General for
Informatics

Contact us



CEF-BUILDING-BLOCKS@ec.europa.eu

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A decorative graphic consisting of three overlapping squares in shades of blue and white, positioned to the left of the main text.

5

More webinars on eInvoicing

More Webinars Related to the Standard and the Directive

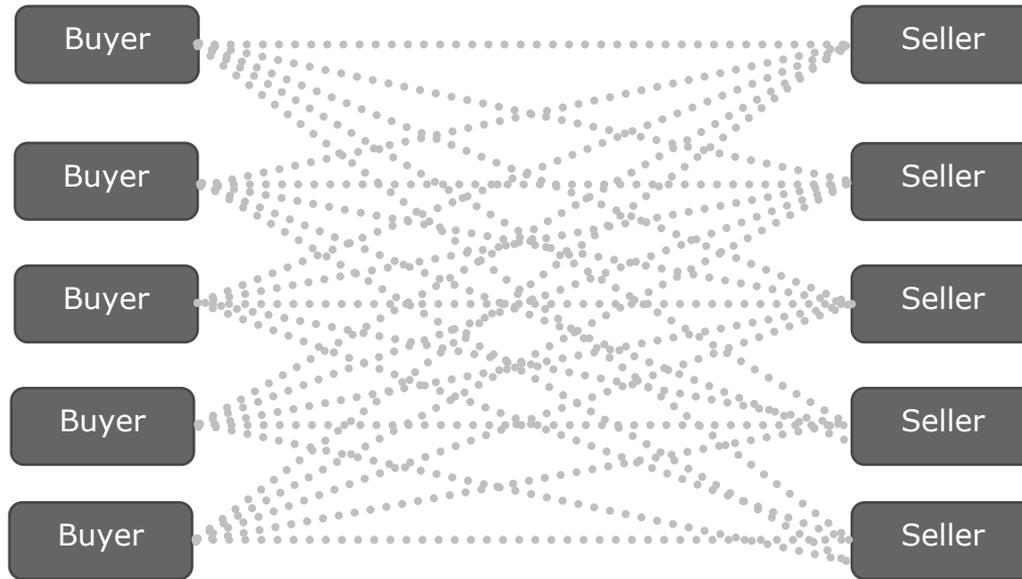
- September** ● Webinar #3 The European norm and its content (eInvoicing Directive)
- October** ● Webinar #4 Infrastructure based on CEF eDelivery DSI
- November** ● Webinar #5 eInvoicing from a user's perspective (incl. ordering & payments)
- December** ● } Webinar #6 Examples of Early Adopters of large scale eInvoicing
- January** ● } Technical webinars
- February** ● } Webinars #7, 8 & 9 Basic XML + XML Validation mechanisms + OASIS UBL 2.1 and UN/CEFACT CII D16B

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6

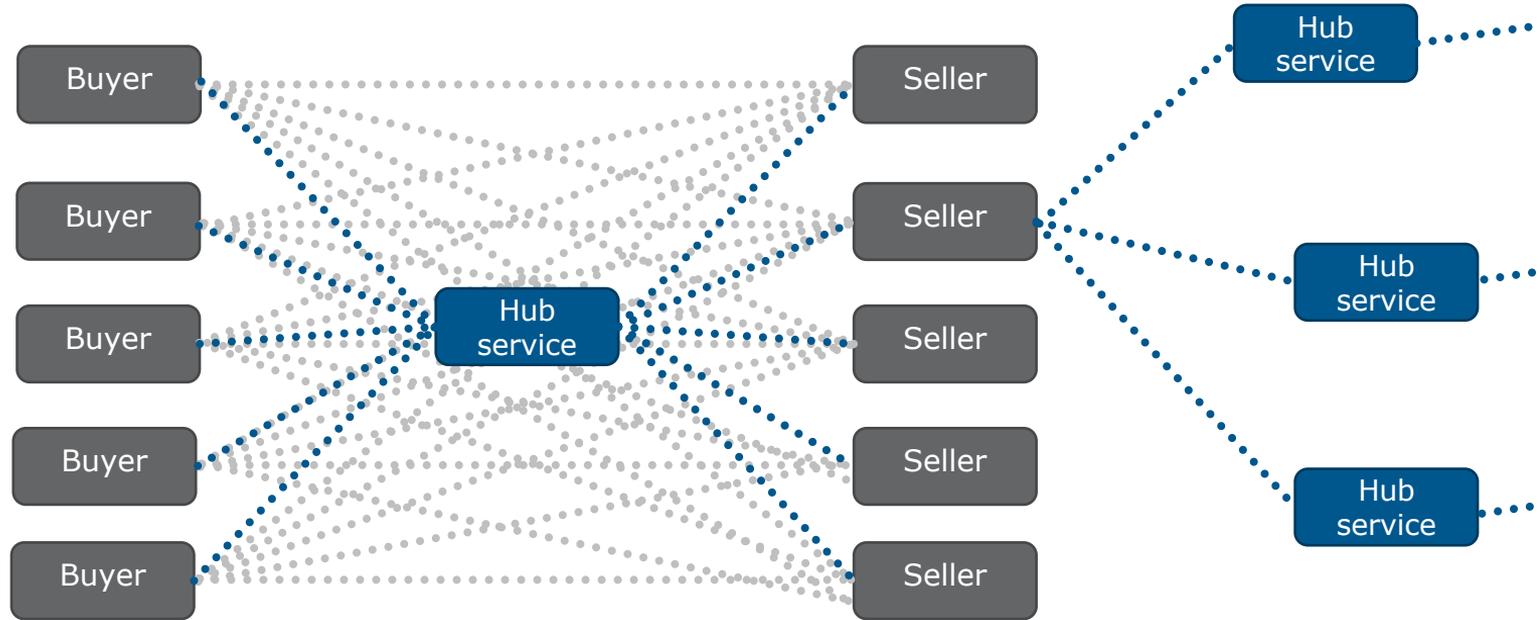
**Infrastructure:
A short introduction to the (former)
challenges in electronic business**

How it used to work...



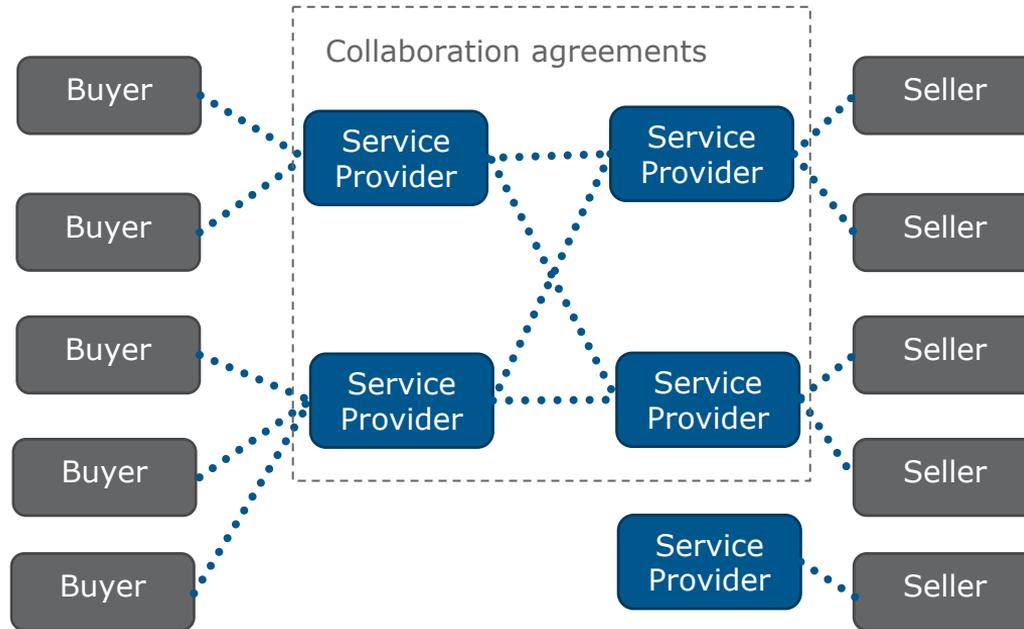
- Bilaterally agreed configuration of format, protocol, security
- In-house IT-solutions
- Each new connection => a project

How it used to work...



- Central hub takes care of the routing
- Buyer and seller becomes customers of the hub
- Business partners must use the same hub

How it used to work...



- Service providers acting on behalf of the buyer or seller
- Have collaboration-agreements defining SLA, technical details...
- End point (addressing)-information stored by the service provider or the issuer

Typical problems we see today as a result

- Complex process to connect new business partners
- Very costly to configure new connections
- Hard to know which format/standard is used for messages
- Almost impossible to connect cross-border in a rational way
- All service providers don't collaborate
- Very costly to change service provider



7

**Different approaches on how to solve the
issues (unsuccessfully)**

Attempts to solve the problems on routing/addressing in the 4-corner model

- Require the issuer to provide all the information to the service provider
- List of receivers in a file format shared/copied by all Service Providers
- Central database with all address-information

Common issues:

- Single point of failure
- Old information
- In-complete information
- Commercial trust-issues

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8

The CEF eDelivery Discovery Model approach

PEPPOL – A deployment of CEF eDelivery DSI

AP

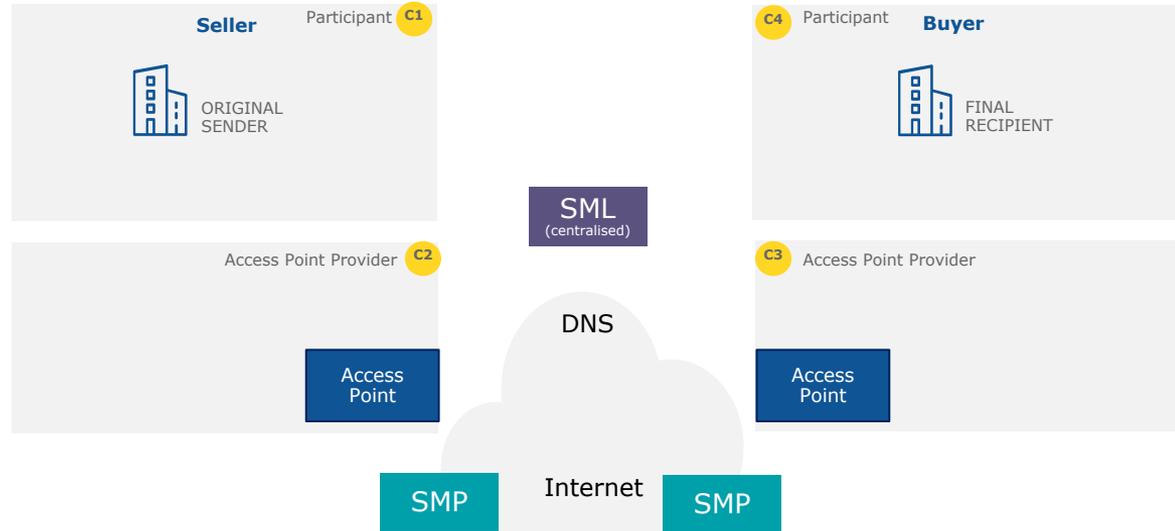
The role of the AP (Access Point) is to send and receive messages in a secure and reliable way, on behalf of the Participants. The AP is essentially a simple which is often offered together with other value added services by a Service Provider.

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.

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.

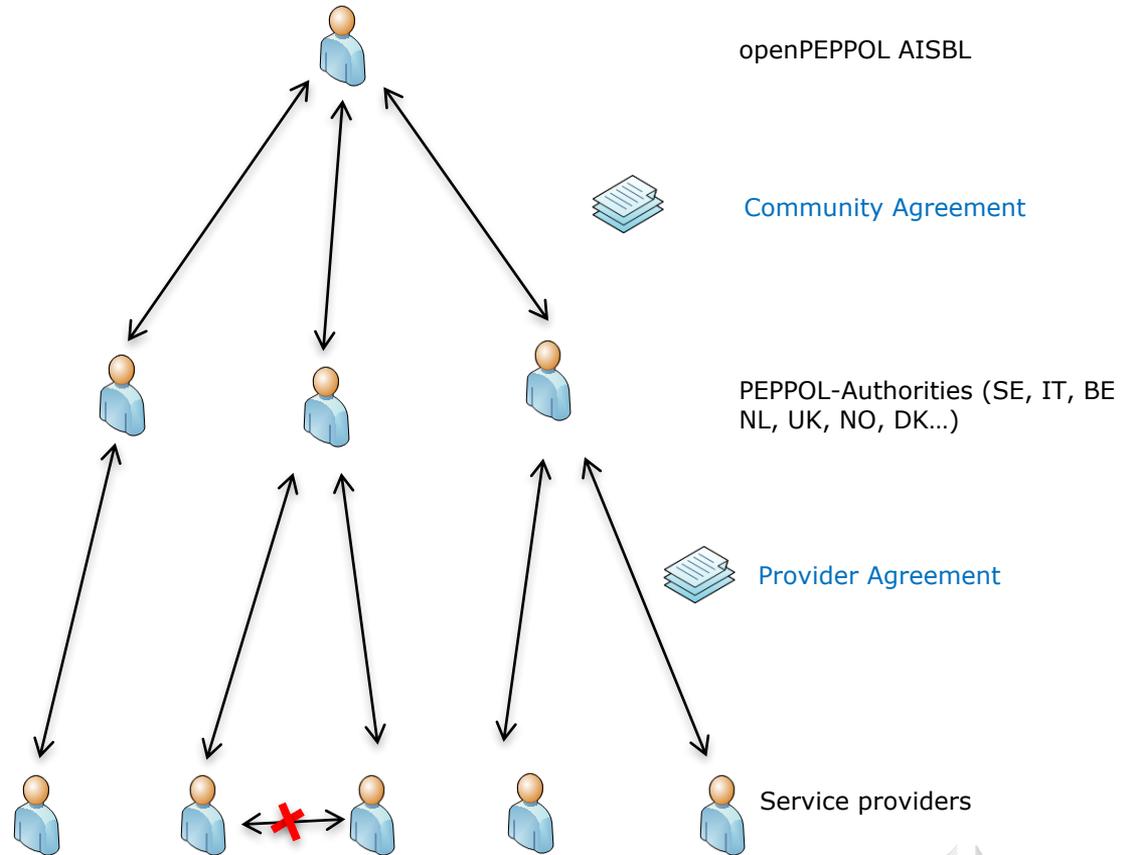


Transport Infrastructure Agreements (TIA)

The Access Point Provider and the Service Metadata Publisher Provider must sign a contract with openPEPPOL (or any of the PEPPOL Authorities)

Agreements defines responsibilities, expectations, service levels and more

Only providers who have signed the agreements can participate in the network (controlled by digital certificates on a communication level)



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

Dynamic discovery in detail

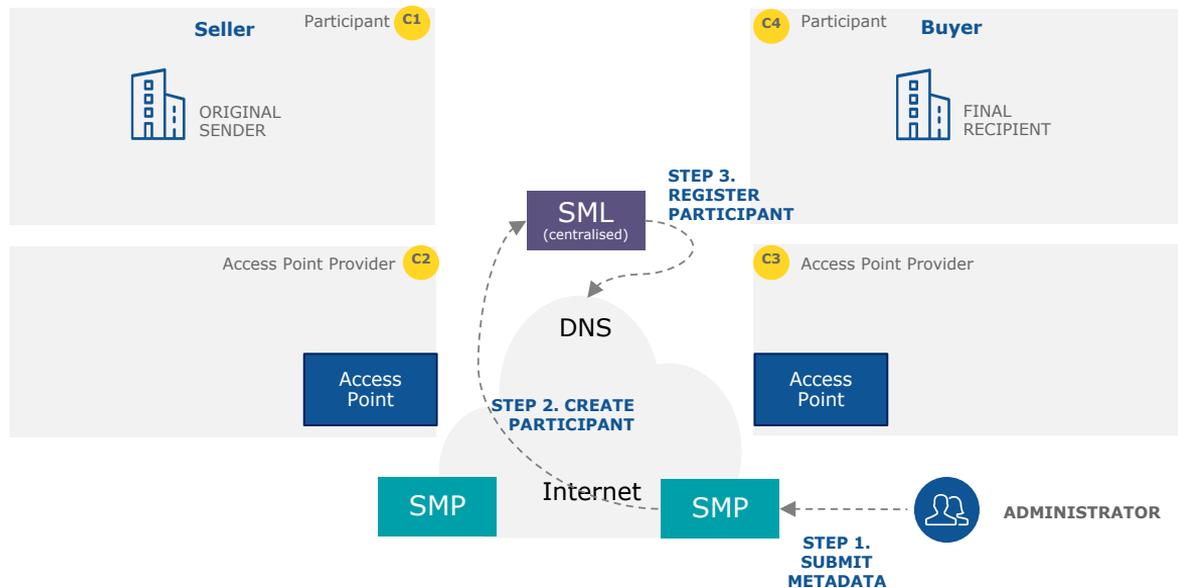
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Phase 1: Registration



Dynamic discovery in detail

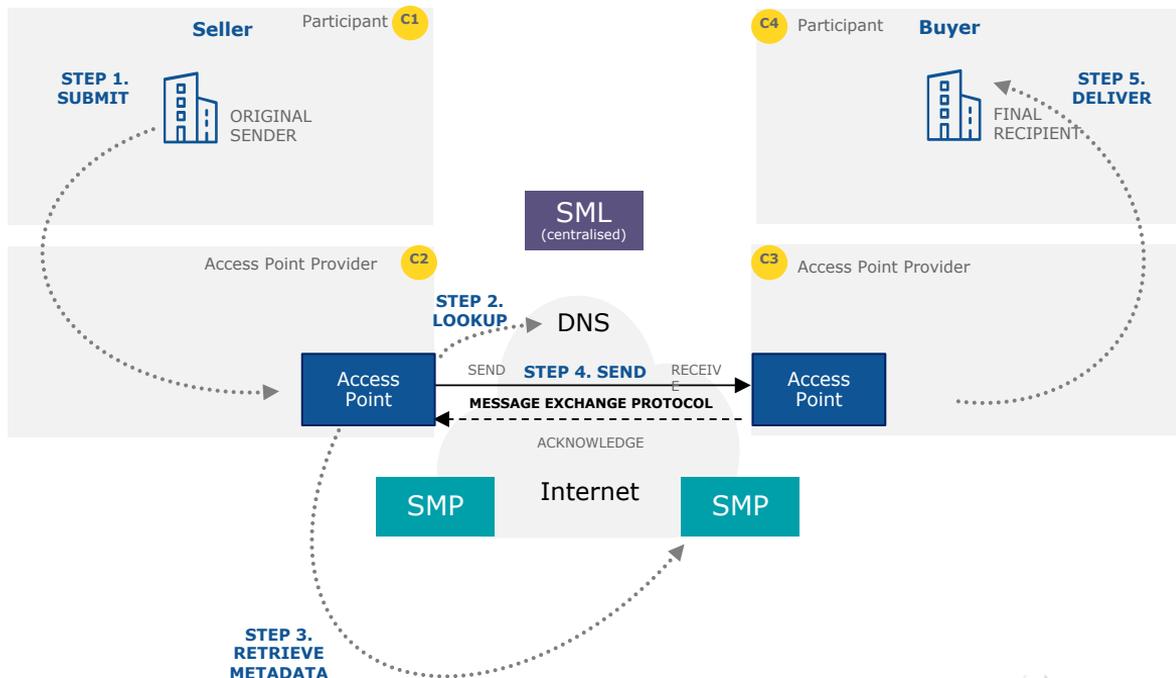
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Phase 2: Operations



Service Metadata Example

```
<?xml version="1.0" encoding="UTF-8"?>
<ns3:SignedServiceMetadataType xmlns:ns3="http://busdox.org/serviceMetadata/publishing/1.0/" xmlns="http://busdox.org/transport/identifiers/1.0/" xmlns:ns2="htt
  <ns3:ServiceMetadata>
    <ns3:ServiceInformation>
      <ParticipantIdentifier scheme="iso6523-actorid-upis">0007:123412342</ParticipantIdentifier>
      <DocumentIdentifier scheme="busdox-docid-qns">urn:oasis:names:specification:ubl:schema:xsd:Order-2::Order##urn:www.cenbii.eu:transaction:biicoretrdm
    <ns3:ProcessList>
      <ns3:Process>
        <ProcessIdentifier scheme="cenbii-procid-ubl">urn:www.cenbii.eu:profile:bii03:ver1.0</ProcessIdentifier>
      <ns3:ServiceEndpointList>
        <ns3:Endpoint transportProfile="busdox-transport-start">
          <ns2:EndpointReference>
            <ns2:Address>https://82.99.4.199/busdox-transport-start-server/accesspointService</ns2:Address>
          </ns2:EndpointReference>
          <ns3:RequireBusinessLevelSignature>false</ns3:RequireBusinessLevelSignature>
          <ns3:MinimumAuthenticationLevel>1</ns3:MinimumAuthenticationLevel>
          <ns3:ServiceActivationDate>2010-12-18Z</ns3:ServiceActivationDate>
          <ns3:ServiceExpirationDate>2012-12-31Z</ns3:ServiceExpirationDate>
```

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

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9

Consequences for the users

Consequences for the users

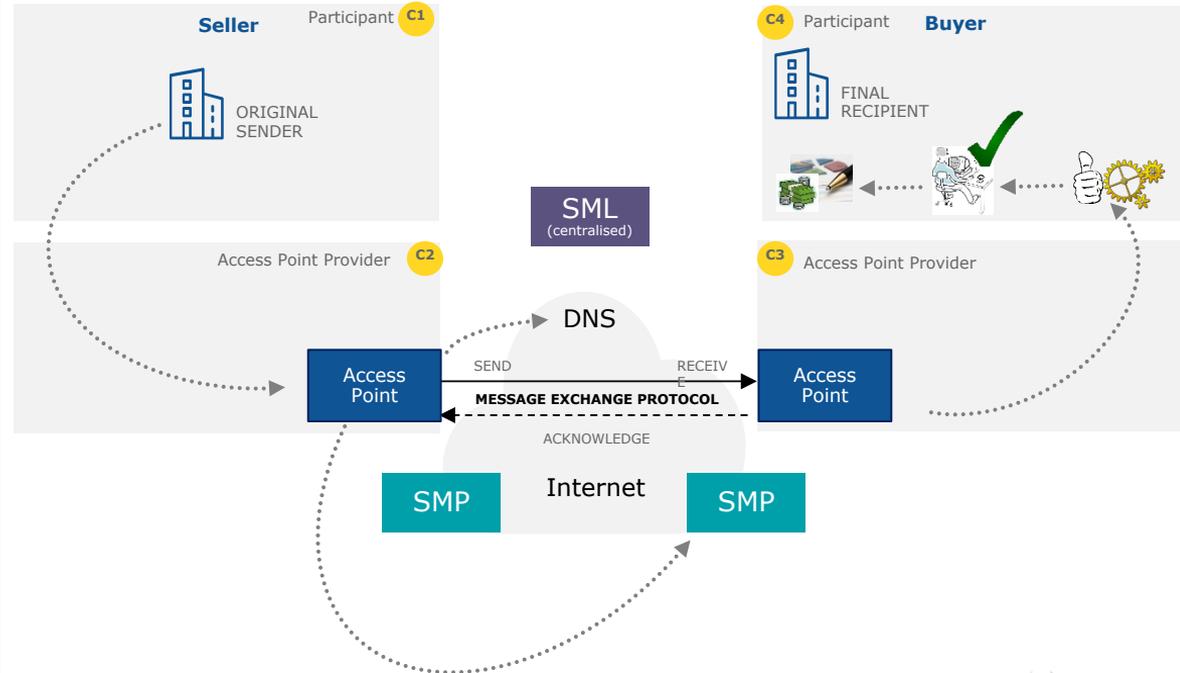
A participant registered in the PEPOL Infrastructure is visible as a receiver by everybody. The SML/SMP is open for queries.

Only certified and approved Access points can send messages in the infrastructure

Receiving Access points are not allowed to refuse an incoming message if it comes from a certified Access point

Participants must implement routines for handling new connections!

Scenario - Known business partner



Consequences for the users

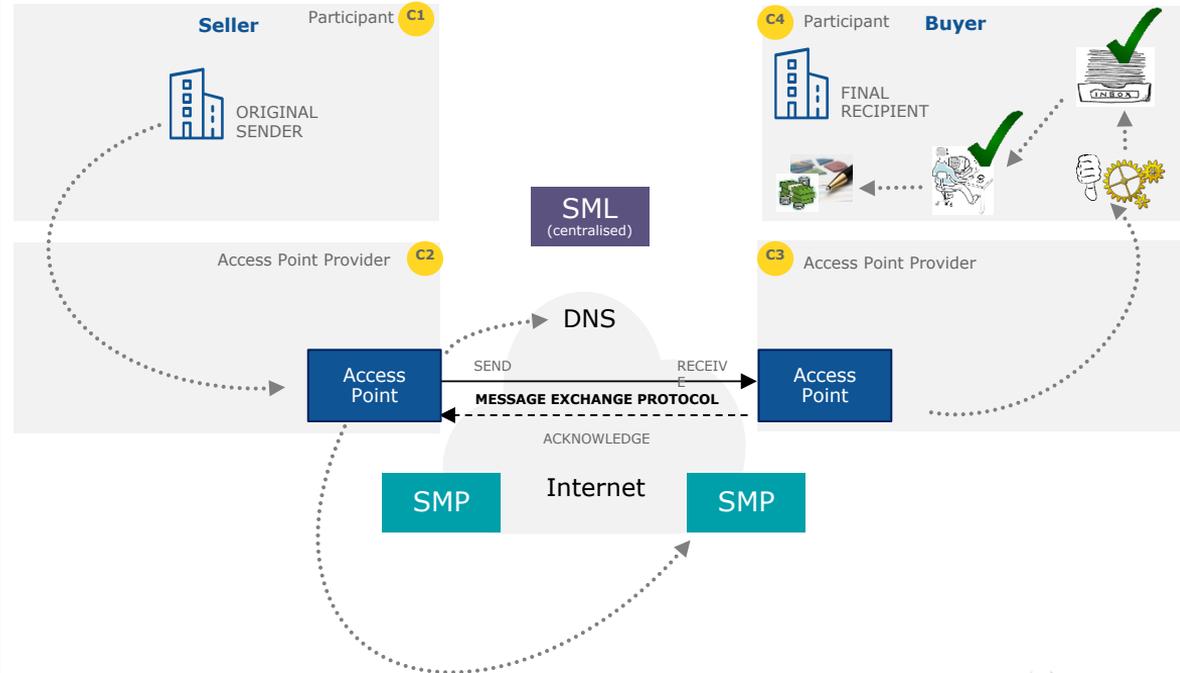
A participant registered in the PEPPOL Infrastructure is visible as a receiver by everybody. The SML/SMP is open for queries.

Only certified and approved Access points can send messages in the infrastructure

Receiving Access points are not allowed to refuse an incoming message if it comes from a certified Access point

Participants must implement routines for handling new connections!

Scenario – Unknown business partner





10

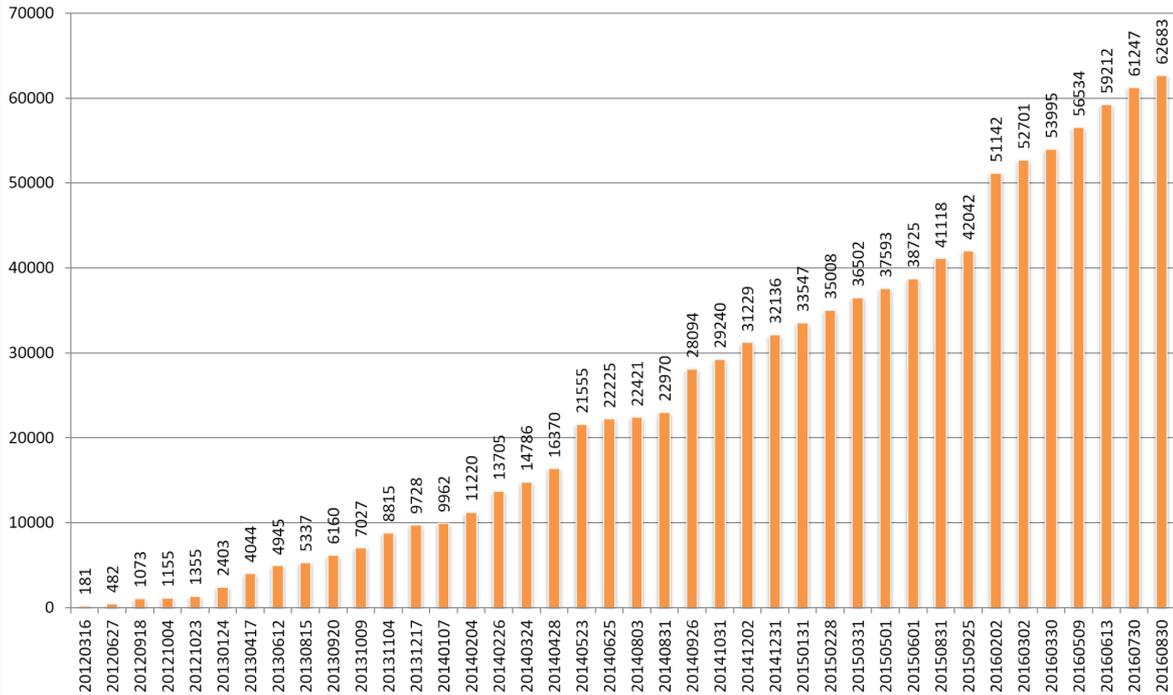
Scalability of the infrastructure

Scalability of the infrastructure

The discovery mechanism is using DNS, well known for stability and performance

The only central service, the SML, is for administration of the participants, not the message flow itself

Total number of organizations capable of receiving eInvoices in PEPPOL



Source: www.galaxygw.com

2017 Q1: 85.000 registered receivers!
2017 Q3: 100.000 registered receivers!

CEF eDelivery is not a one-size fits all solution

SCOPE OF CEF eDELIVERY

				Your CEF eDelivery implementation
EXCHANGE MODEL	TOPOLOGY	4-corner model	4-corner model	Your choice
	PROTOCOL	PEPPOL AS2 profile	e-SENS AS4 profile	e-SENS AS4 profile recommended
	INTEGRATION APPROACH	Service Providers (Market)	Specific Connector	Your choice
DISCOVERY MODEL		Dynamic	Static	Your choice
SECURITY MODEL	TRUST CIRCLE	PKI	Mutual trust	Your choice
	SECURITY CONTROL	Liberal inner security	Inner security with connector	Your choice

Reuse of building blocks by CEF's sectorial projects

Building Block DSIs

Sector Specific DSIs		eDelivery 	eSignature 	eID 	eTranslation 	eInvoicing 
Europeana*	DG CONNECT					
Safer internet*	DG CONNECT					
Public open data	DG CONNECT					
ODR	DG JUST					
eHealth	DG SANTE					
eProcurement	DG GROW					
EESSI	DG EMPL					
EU e-Justice portal	DG JUST					
BRIS (ECP)	DG JUST					
Cybersecurity	DG CONNECT					
eTranslation	DGT					

 **Commitment to analyse**

 **Commitment to reuse**

 **Reusing**

* Projects run together with Member States through grants provided by CEF.

Open Source Implementations of CEF eDelivery and Certified PEPPOL Access Point Providers

CEF Digital Home > eDelivery > All CEF eDelivery services > Access Point software

e-SENS AS4 conformant solutions

This page lists the solutions that have passed or are in the process of passing the conformance testing according to the e-SENS AS4 profile:

- [Domibus \(EC sample implementation\)](#)
- [EESI AS4.NET](#)
- [Flame](#)
- [Holodeck](#)
- [IBM](#)
- [Laurentius](#)
- [Mendelson](#)
- [RSSBus](#)
- [ADES](#)
- [iFenix](#)

All eDelivery Services

- TECHNICAL SPECIFICATIONS
 - [Access Point specifications](#)
 - [Connector specifications](#)
 - [Security Controls guidance](#)
 - [SML specifications](#)
- SOFTWARE
 - Access Point software**
 - [SML software](#)
 - [SMP software](#)
 - MANAGED SERVICES
 - [PKI Service](#)
 - [SML service](#)
 - TESTING SERVICES
 - [Connectivity testing](#)
 - [Conformance testing](#)
 - SUPPORTING SERVICES

Certified PEPPOL Access Points (APs)

SEARCH

Who is who

OpenPEPPOL member list

Certified PEPPOL Access Points (APs)

PEPPOL Authorities (PAs)

Coordinating Community (CC) Leaders

Work Group Leaders

Change Management Boards (CMBs)

Managing Committee (MC)

Coordinating Community

Certified PEPPOL Access Points (APs)

PEPPOL Access Point Providers	AP Location	PEPPOL Authority	Contact Name
AdValvas Europe	Belgium	FEDICT	Michel Gills
Advanced Business Software and Solutions UK	UK	OpenPEPPOL	Peter Leigh
Akness Innkjøp (ProsjektService AS)	Norway	DIFI	Tommy Storjord
Aknesspunkt Norge AS	Norway	DIFI	Morten Buskop
Aliquid Italy	Italy	OpenPEPPOL	Fabrizio Pastorello
Amesto Solutions Purchasing A/S	Norway	DIFI	Thomas Karlsen
Anachron B.V.	Netherlands	DIGST	Marco Eeman
Apix Messaging Oy	Finland	DIFI	Antti Marjala
Apro Consulting Services B.V.	Netherlands	Simpler Invoicing	Heinen Wijmand
Archiva S.r.L.	Italy	OpenPEPPOL	Lorenzo Della Vedova
Archivium Srl	Italy	OpenPEPPOL	Lauritano
At Work Systems	Norway	DIFI	Tore Solheim
Babelway	Belgium	OpenPEPPOL	Mathieu Pasture
Basware	Finland	DIFI	Fredrik Heimerback
BEAst AB	Sweden	ESV	Peter Fredholm
BIZbrains A/S	Denmark	DIGST	Per Lund Thomsen
Bluzor B.V.	Netherlands	DIFI	M. Frenksen

Summary

- Automatic discovery is necessary for mass-use of electronic business
- A common collaboration agreement and security structure
- The service metadata contains all you need to know to dynamically connect and exchange messages
- Necessary to implement routines for handling new business partners
- No roaming fees or discrimination of participants allowed
- Standardized specification



11

Funding and Grants – possibilities within CEF

2017 CEF Telecom calls

Call	Indicative budget	Launch date	Deadline
<u>CEF-TC-2017-1</u> BRIS EESSI eID & eSignature European e-Justice Portal	€2 million €17 million €7 million €1.5 million	17 February 2017	18 May 2017
<u>CEF-TC-2017-2</u> Cyber Security eDelivery eHealth eProcurement	€12 million €0.5 million €9 million €4 million	6 May 2017	21 September 2017
<u>CEF-TC-2017-3</u> eInvoicing eTranslation Europeana Public Open Data	€10 million €6 million €2 million €6 million	28 June 2017	28 November 2017

2017-3 eInvoicing call

(2017 Work Programme - section 3.4)

2017-3 eInvoicing call

Launch date

28 June 2017

Deadline

28 November 2017

Who can apply?/Consortium composition

Minimum 2 private or public entities from one or several Member States

Budget

€10 million

Co-financing

75% of the eligible costs

Indicative duration

12 months

2017-3 eInvoicing call: **scope**

Proposals must meet objective 1 or 2:

1. Uptake of eInvoicing solutions compliant with the EN and its ancillary deliverables by public entities

2. Update of eInvoicing solutions compliant with the EN and its ancillary deliverables by solution providers and public authorities

Promotion of eDelivery:

Deployment of the eDelivery Building Block or use of eDelivery through a service provider

- Must be carried out in conjunction with objective 1 or 2

2017-3 eInvoicing call: expected outcomes

Increased uptake and use of eInvoicing by public authorities (especially regional/local) in meeting the requirements of the eInvoicing Directive

Support for service providers in making their existing solutions compliant with the requirements of the eInvoicing Directive

Past eInvoicing calls

2015-1 eInvoicing call

Call opening: 15 September 2015 - Call closure: 11 February 2016

Call objective:

Increase uptake and the use of the eInvoicing DSI by supporting authorities – especially at the regional and local levels – in meeting the requirements of the eInvoicing Directive

Overall indicative budget: €7 million

Co-funding rate: 75% of eligible costs

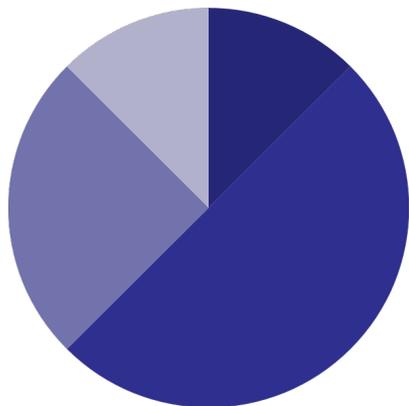
Proposals received: 10

Eligible proposals received: 8

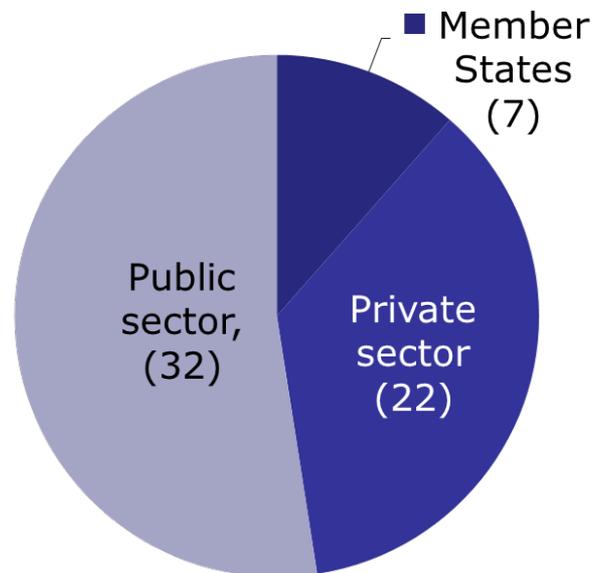
Grant agreements: 8

Maximum EU contribution: €4,426,111

2015-1 eInvoicing call: Member States involved (13)



- 5 members
(1 consortium)
- 6 members
(4 consortia)
- 7 members
(2 consortia)
- 8 or more
members
(1 consortium)



2015-1 eInvoicing call

1 action already completed

7 actions on-going (all aiming to implement European eInvoicing standard), supporting:

- Solution providers (AT - ecasio, ES - EDICOM, UK - ELCOM) in upgrading their solution to the eInvoicing standard + supporting users of the solutions
- Uptake and upgrade of national eInvoicing platforms (CY, HR, ES, IT)
- Tool for eInvoicing format mapping (NL, DE)

2016-3 eInvoicing call

Call opening: 13 September 2016 - Call closure: 15 December 2016

Call objective:

Increase uptake and the use of the eInvoicing DSI by supporting authorities – especially at the regional and local levels – in meeting the requirements of the eInvoicing Directive

Overall indicative budget: €7 million

Co-funding rate: 75% of eligible costs

Proposals received: 21

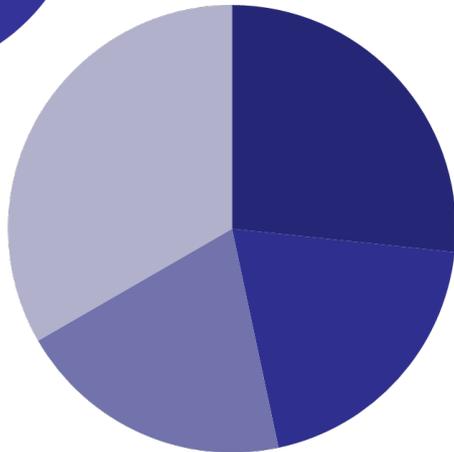
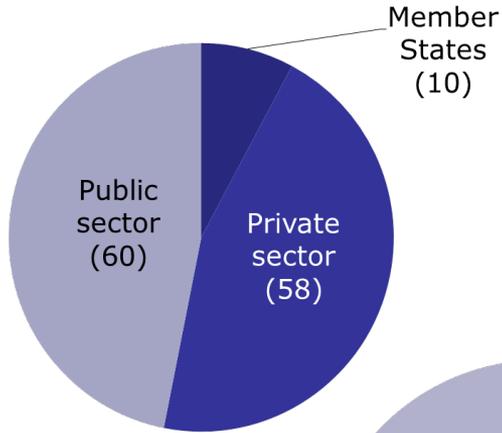
Eligible proposals received: 20

Recommended proposals: 15

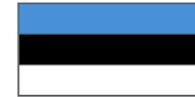
Recommended funding: €10,401,818

2016-3 eInvoicing call

Member States involved (22)



- 5 members (4 consortia)
- 6 members (3 consortia)
- 7 members (3 consortia)
- 8 or more members (5 consortia)



2016-3 eInvoicing call

Info below still indicative: grant agreement preparation now on-going (to be finalised by mid-September)

Most of the actions to start between May and September 2017 and run until end of 2018

- All will ensure the compliance with the European eInvoicing standard
- Most will also deploy eDelivery

Actions will support:

- Solution providers and national eInvoicing solutions, including at the local level, to make them compliant with eInvoicing standard
- Strong focus of some of the actions on onboarding suppliers and engaging with SMEs

How to apply:

READ all call documentation, forms, Guide for Applicants, FAQs, call webpage

REFLECT on the call content & requirements

REMEMBER that successful applications take time and effort, but guidance is available!

CEF Telecom calls:
for more information



inea-cef-telecom-calls@ec.europa.eu



<https://ec.europa.eu/inea/en/connecting-europe-facility/cef-telecom/apply-funding/2017-cef-telecom-calls-proposals>



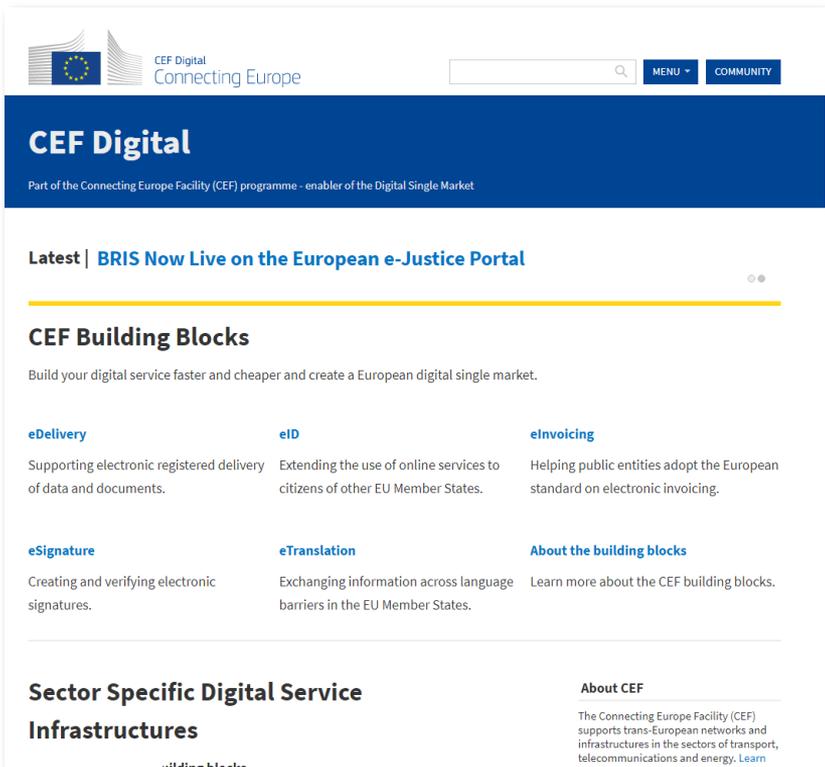
[@inea_eu](https://twitter.com/inea_eu)

Discussion

 [#ConnectingEurope](#)

Find out more on CEF Digital

ec.europa.eu/cefdigital



The screenshot shows the CEF Digital website homepage. At the top left is the logo for CEF Digital, featuring the European Union flag and the text "CEF Digital Connecting Europe". To the right of the logo is a search bar and two buttons labeled "MENU" and "COMMUNITY". Below the logo area is a dark blue header with the text "CEF Digital" in white, followed by "Part of the Connecting Europe Facility (CEF) programme - enabler of the Digital Single Market". The main content area has a white background and features a "Latest" section with a link to "BRIS Now Live on the European e-Justice Portal". Below this is a section titled "CEF Building Blocks" with the subtext "Build your digital service faster and cheaper and create a European digital single market." This section contains six items arranged in a 2x3 grid: eDelivery, eID, eInvoicing, eSignature, eTranslation, and About the building blocks. Each item has a brief description. At the bottom of the page, there is a "Sector Specific Digital Service Infrastructures" section and an "About CEF" section with a brief description of the CEF's role.

CEF Digital
Part of the Connecting Europe Facility (CEF) programme - enabler of the Digital Single Market

Latest | BRIS Now Live on the European e-Justice Portal

CEF Building Blocks

Build your digital service faster and cheaper and create a European digital single market.

eDelivery Supporting electronic registered delivery of data and documents.	eID Extending the use of online services to citizens of other EU Member States.	eInvoicing Helping public entities adopt the European standard on electronic invoicing.
eSignature Creating and verifying electronic signatures.	eTranslation Exchanging information across language barriers in the EU Member States.	About the building blocks Learn more about the CEF building blocks.

Sector Specific Digital Service Infrastructures

About CEF
The Connecting Europe Facility (CEF) supports trans-European networks and infrastructures in the sectors of transport, telecommunications and energy. [Learn more about CEF.](#)

Contact us



CEF-BUILDING-BLOCKS@ec.europa.eu

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Thanks!