



# OpenPEPPOL and the avoidance of lock-in

**André Hoddevik**

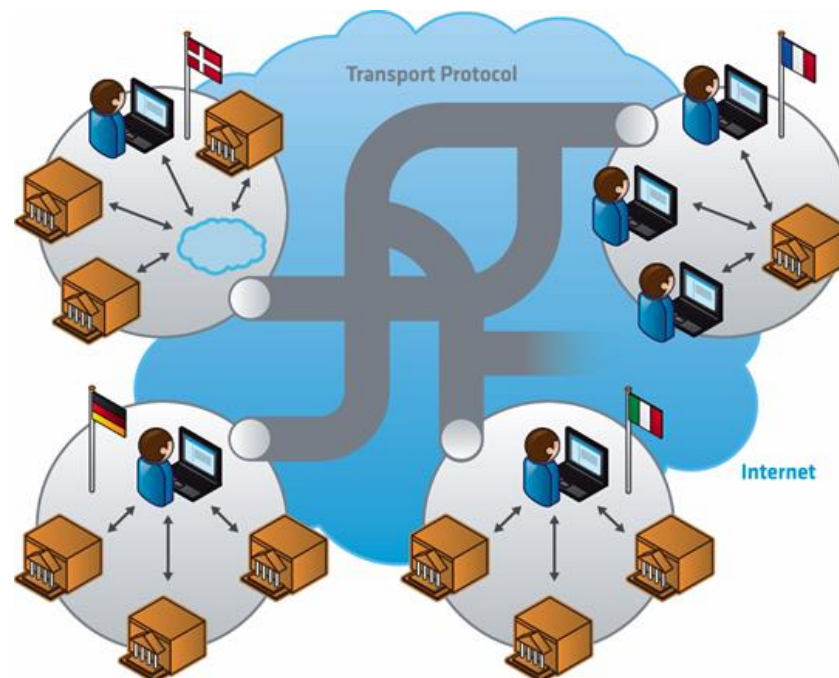
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# The PEPPOL project

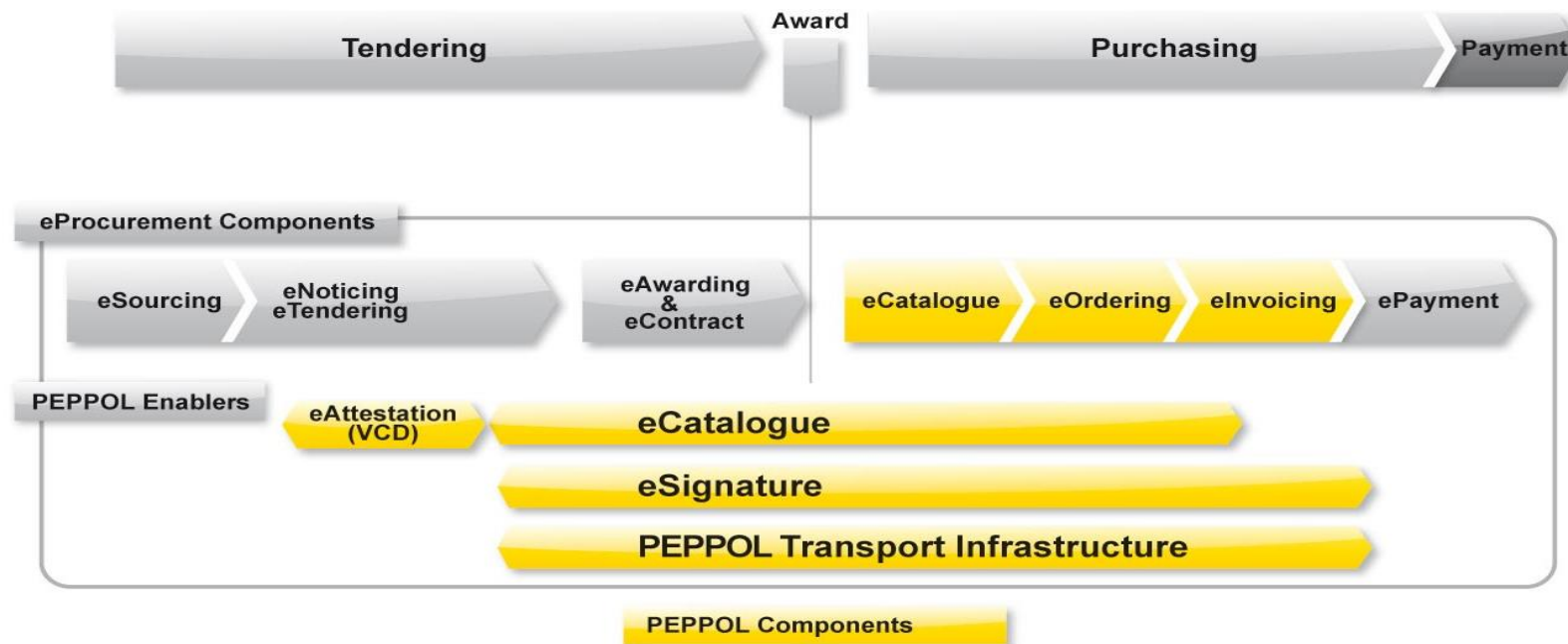
## PEPPOL Vision

*“To enable businesses to communicate electronically with any European government institution in the procurement process, increasing efficiencies and reducing costs.”*



The PEPPOL (Pan-European Public Procurement On-Line) project (2008-2012) was launched to address the key e-Procurement challenges in Europe. It was jointly funded by the EC and a consortium of 18 government agencies from 11 European Countries under the CIP ICTPSP. After the successful finalisation of the project, OpenPEPPOL AISBL was established to ensure long term sustainability and governance of PEPPOL specifications and services.

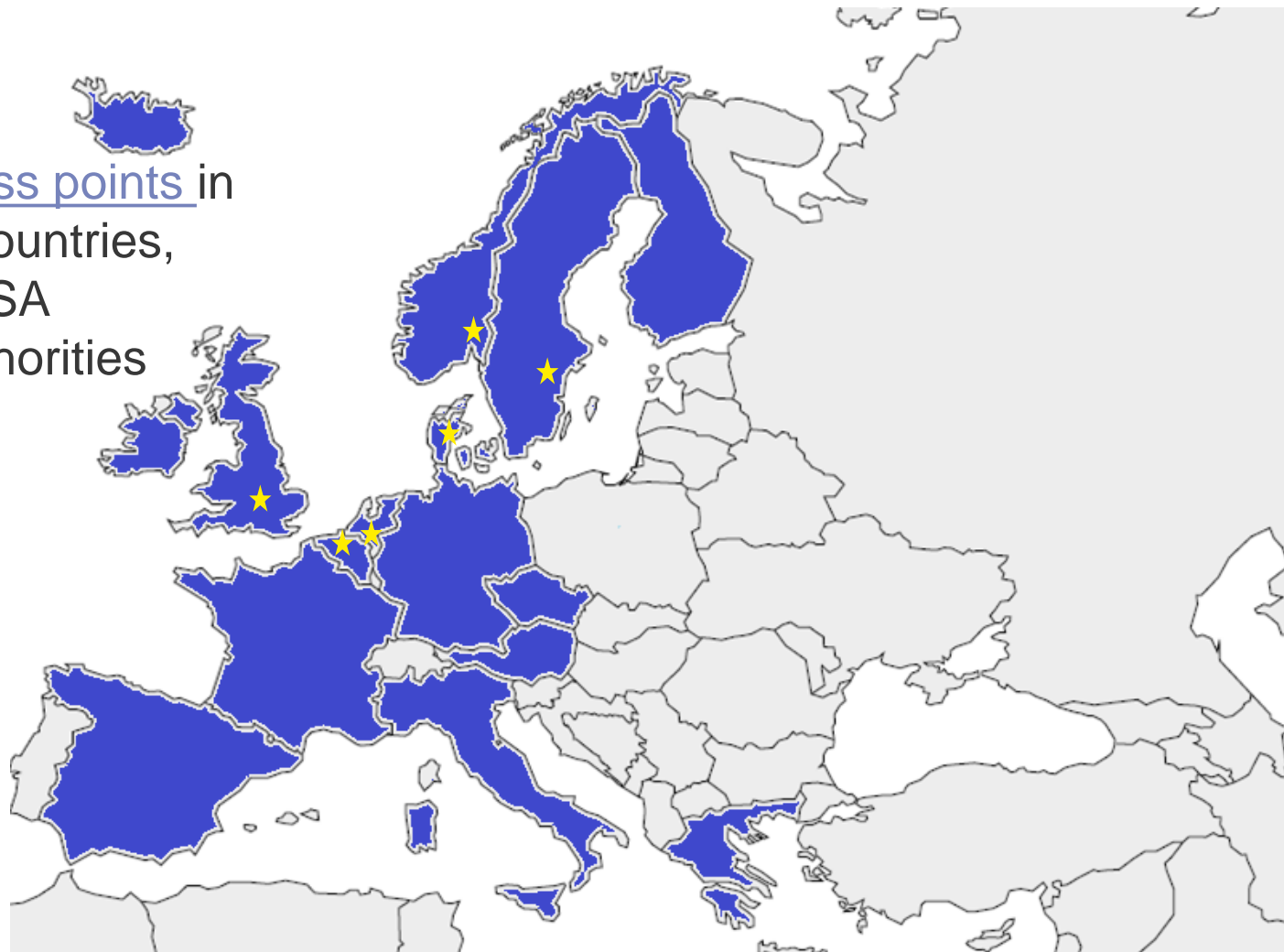
# PEPPOL Components: focus on the critical phases



- ▶ **PEPPOL Pre-award:** eAttestation (VCD), eCatalogues, eSignature validation, potential use of PEPPOL Transport Infrastructure
- ▶ **PEPPOL Post-award:** eCatalogues, eOrdering, eInvoicing, eDespatch Advices. Potential use of eSignature validation and eAttestations
- ▶ **PEPPOL Transport Infrastructure (eDelivery) and Governance** (legal framework based on the PEPPOL Transport Infrastructure Agreements)

# PEPPOL eDelivery network today

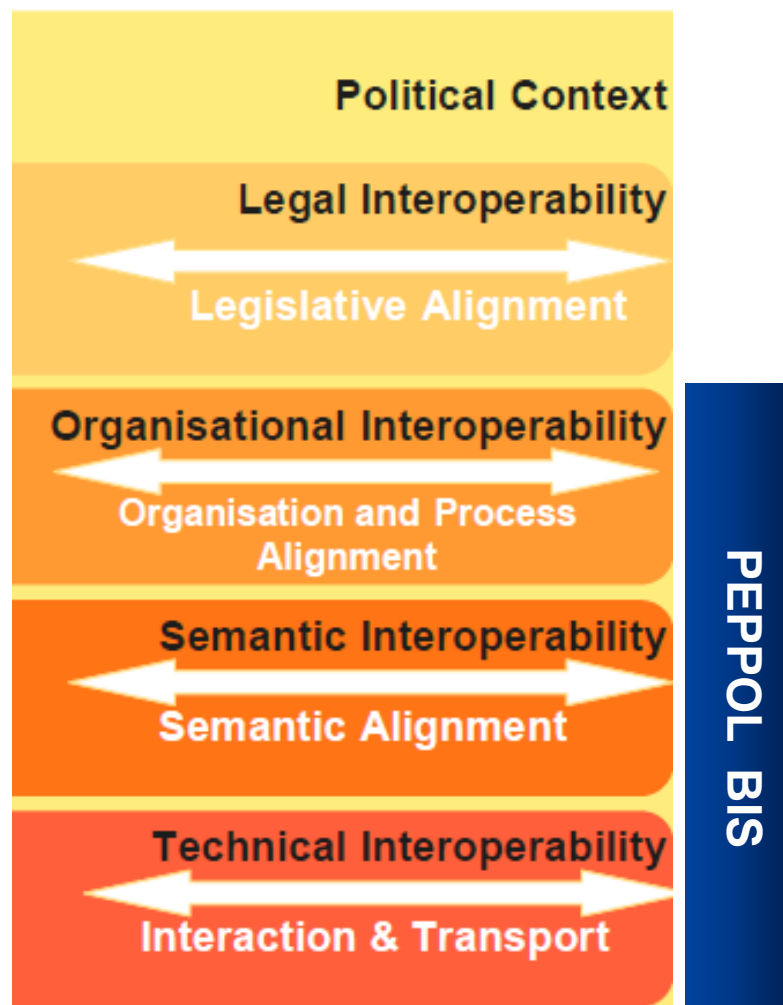
Over 100 Access points in  
16 European countries,  
Canada and USA  
6 PEPPOL Authorities



# The PEPPOL Interoperability framework



*making  
procurement  
better.eu*



- Single Market II, Digital Agenda etc
- EC Communication on End-to-end e-procurement etc
- Directives 2014/24/EU, 2014/55/EU etc
- Member state legal requirements
- PEPPOL Transport Infrastructure Agreements
- CEN WS Business Interoperability Interfaces On Public Procurement in Europe (CEN BII)
- CEN BII Profiles + PEPPOL business rules
- CEN BII Transactions Data Models
- PEPPOL business rules
- CEN BII syntax binding towards OASIS UBL (UN/CEFACT is an option, not implemented)
- PEPPOL eDelivery network (OASIS BDXR TC)

European Interoperability  
Framework 2.0

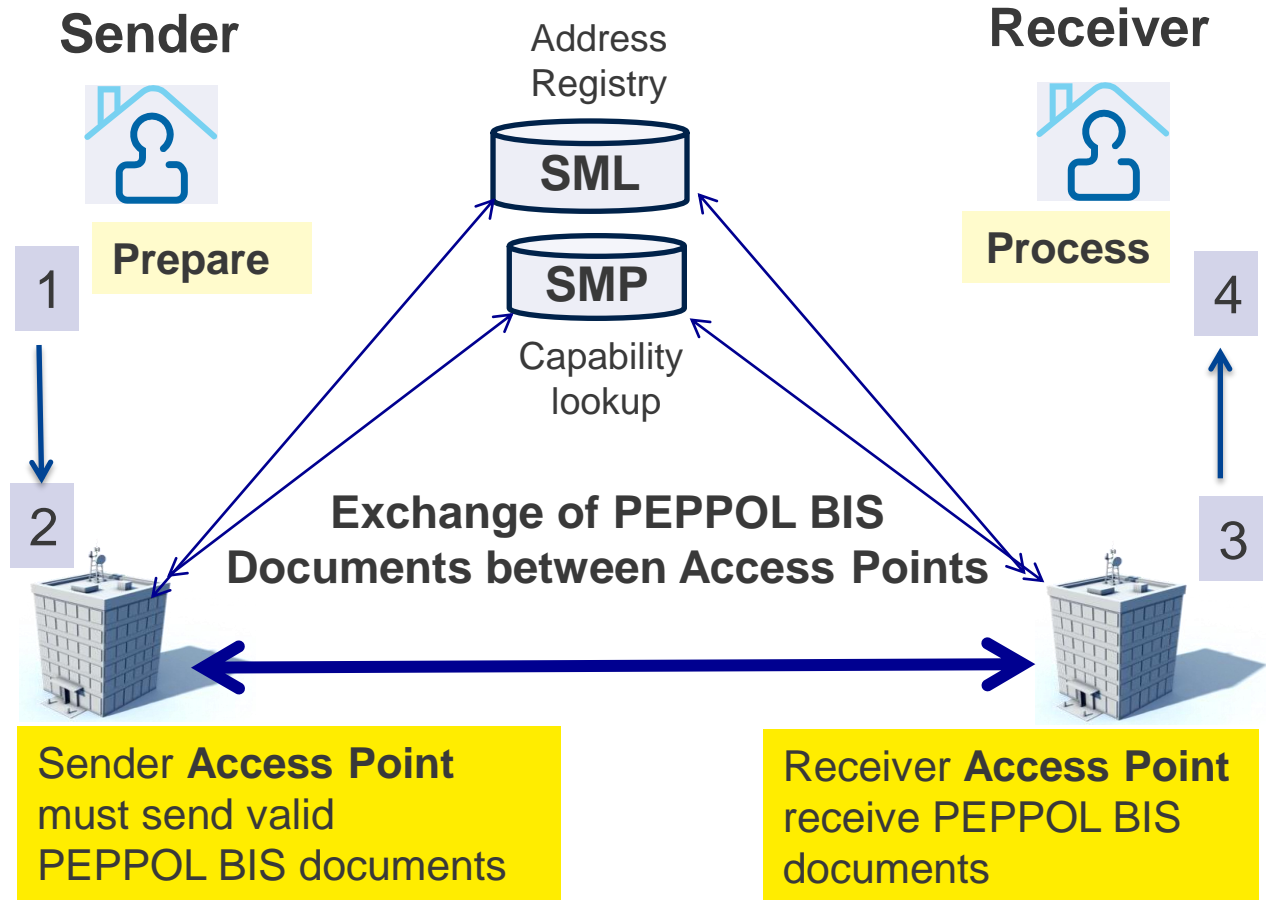
# PEPPOL network features

Free to choose  
ANY Access Point  
(100+) in ANY  
country

Sign ONE  
Agreement;  
Connect to ALL

Open FOUR-  
corner model

NO ROAMING fees  
between PEPPOL  
Access Points



# PEPPOL eDelivery Network Specifications

- ▶▶ Standards
  - ▶▶ UNCEFACT SBDH, supporting metadata in message transfer
  - ▶▶ ISO 6523 and 15459, participant identifier schemes
- ▶▶ The Messaging and Directory/Lookup services are based on specifications including
  - ▶▶ AS2, Protocol for message transfer
  - ▶▶ HTTP, Data transfer
  - ▶▶ XML, Mime
  - ▶▶ SSL/TLS, Message security
  - ▶▶ DNS
  - ▶▶ REST
- ▶▶ PKI/Trust services are based on a number of standards and specifications including
  - ▶▶ PKCS #1 v2.0: RSA Cryptography Standard
  - ▶▶ ITU-T Recommendation X.509
  - ▶▶ X.509 Internet Public Key Infrastructure Online Certificate Status Protocol – OCSP
  - ▶▶ Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile



# PEPPOL and CEF eDelivery/eInvoicing

	Electronic Invoicing ( <a href="#">CEF-TC-2015-1 - eInvoicing</a> )	Electronic Delivery ( <a href="#">CEF-TC-2015-1 – eDelivery</a> )
Total Budget	EUR 7 million	EUR 1 million
Funding	Up to 75 % of eligible cost	Up to 75 % of eligible cost
Beneficiaries	At least 5 legal entities, from one or more EU/EEA countries, composed of a majority of public entities	At least 5 legal entities, from one or more EU/EEA countries, from the private and the public sector
Objective(s)	<ul style="list-style-type: none"> <li>To support the uptake of the receiving of electronic invoices in Europe</li> <li>To support solution/service providers to implement the upcoming EN and its list of syntaxes</li> <li>Not replace existing eInvoicing standards – national systems can continue to be used</li> </ul>	<ul style="list-style-type: none"> <li><b>Increase uptake and use of the eDelivery DSI by supporting the set-up of access points</b></li> <li>Support the cross-border exchange of electronic documents between public entities, citizens and businesses</li> </ul>
Action(s) supported	<ul style="list-style-type: none"> <li>Support implementation of eInvoice solutions</li> <li>Specially on regional and local level</li> <li><b>Preferably based on CEN MUG or CEN BII</b></li> <li><b>Take results of European large scale pilot projects into account</b></li> <li>Solutions which are based on EU or international standards, if they envisage compliance with the future EN</li> </ul>	Set up of Access Points <ul style="list-style-type: none"> <li>Internal Capacity Building</li> <li>Architecture / Implementation Strategy</li> <li>Implementation</li> <li>Deployment and Governance</li> </ul>
Timeline	Call opening 30 October 2015 Call closing 19 January 2016	Call opening 30 October 2015 Call closing 19 January 2016





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Introduction to the Connecting Europe Facility  
**eDelivery building block**

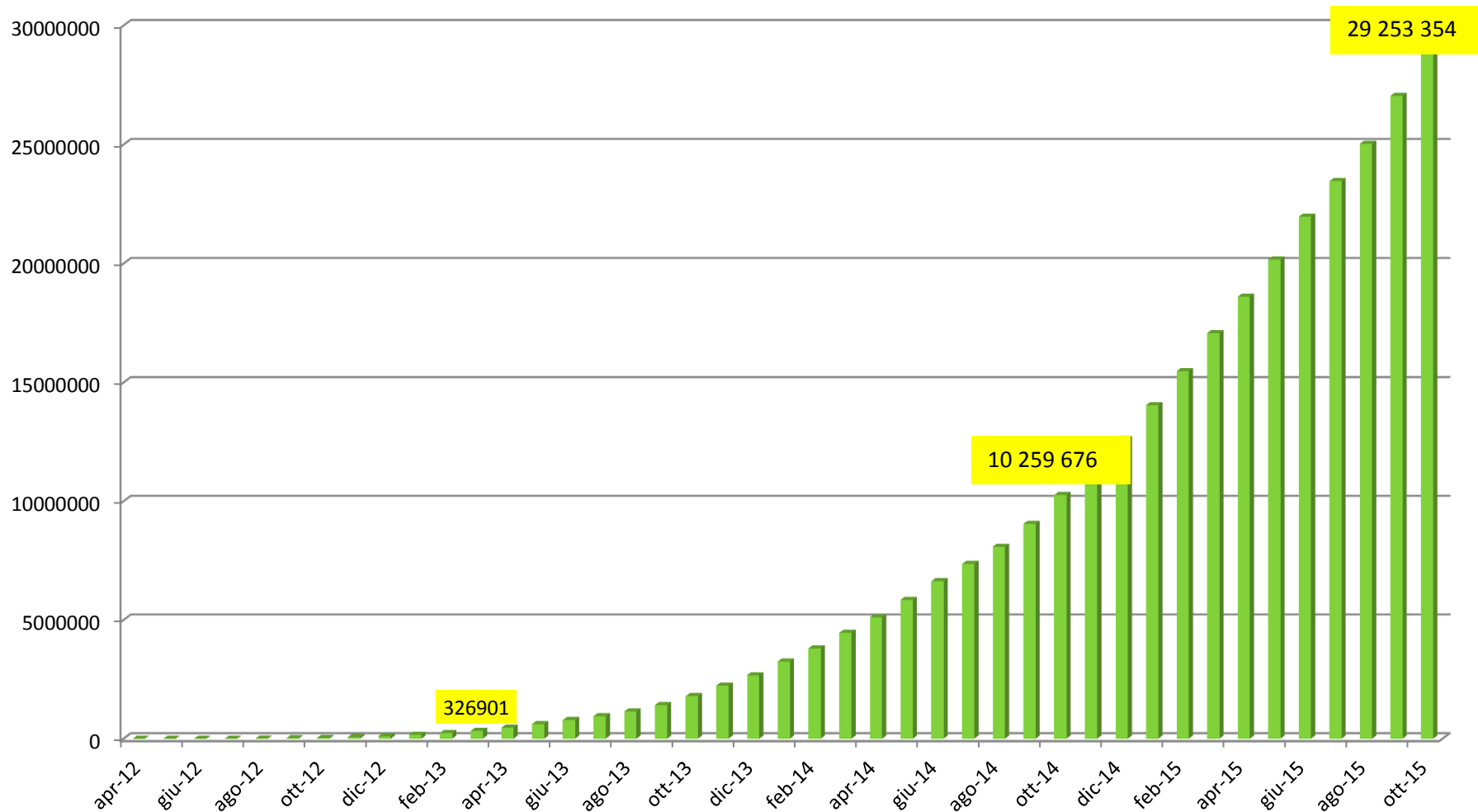
# PEPPOL based eInvoicing in Norway



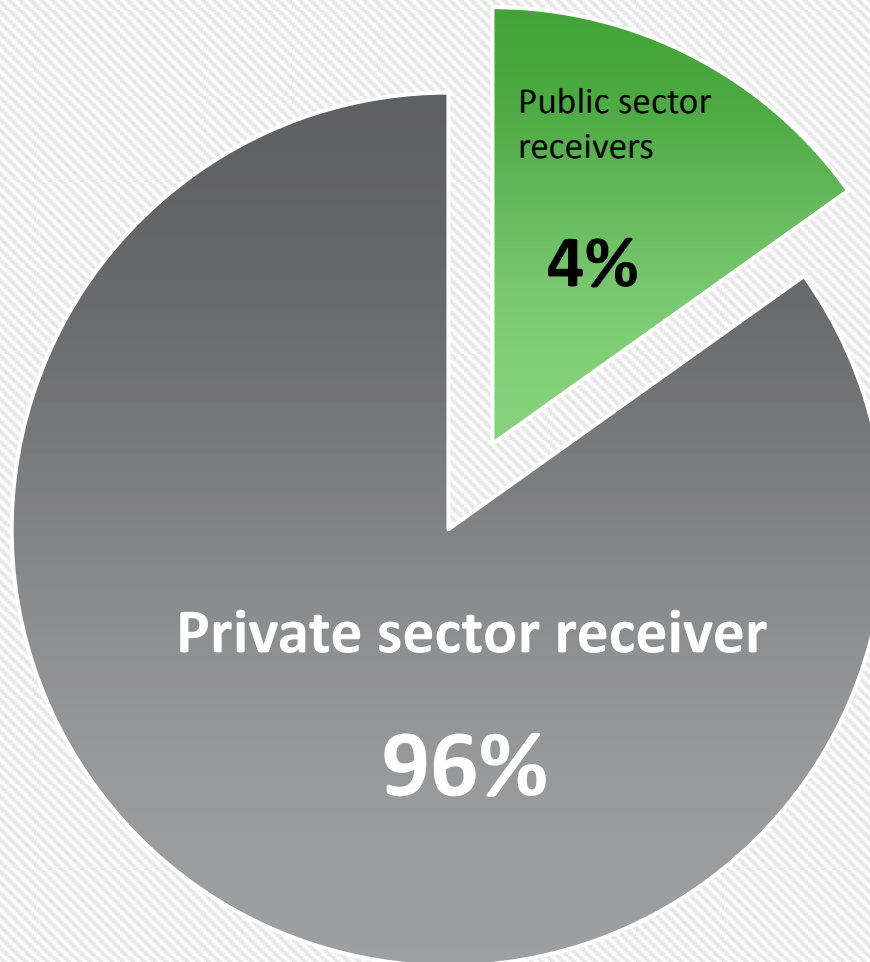
# Norwegian approach for eInvoicing

1. Make eInvoicing mandatory for public sector entities
2. Mandatory use of standard national e-Invoicing format, based on European standardisation
3. On-boarding of ERP vendors/invoice systems
4. Decision to use PEPPOL eDelivery network for transport of eInvoices
5. Establish a national receive capability and address register = SMP/ELMA, also open for private sector
6. On-boarding of access points through public sector demand
7. Web-portals for simplified e-invoicing from SMEs delivered by market

# Aggregated transactions



# Norwegian eInvoice receivers



4% is 98,04% of all public entities

# Support market delivery of services

High number of access points fosters high level of competition

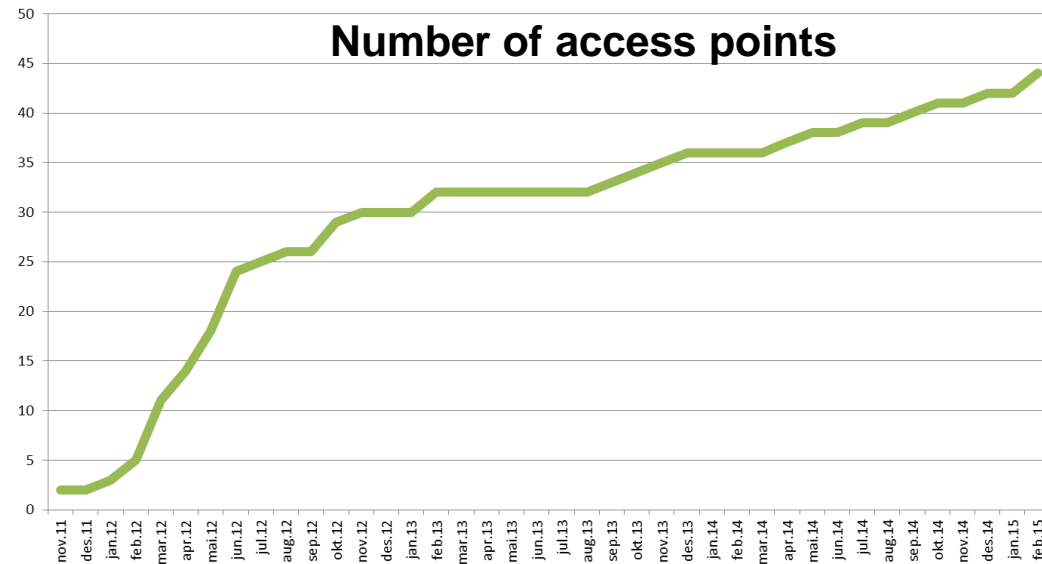


## Oxalis and CIPA

Open Source SW  
for access points

## Validation service

Open Source SW  
EHF  
PEPPOL BIS



## Test bed List

0102122		View
2331333		View
2121212		View

## Test bed

Uses Open Source SW  
Secure quality test  
Validates EHF and PEPPOL BIS

difi / oxalis

Most used access point software

Watch 38 Star 26 Fork 31

Oxalis - PEPPOL Access Point open source implementation

668 commits 4 branches 34 releases 14 contributors

Branch: master oxalis / +

teedjay	This fixes #235 and makes SMP code BOM aware even for UTF-8.	Latest commit d8a9c00 6 days ago
doc	Fixed a small typo	a month ago
images	Updated illustration	3 years ago
oxalis-api	Added Difi's test organisation number to enumeration of well known pa...	23 days ago
oxalis-as2	Activated previously removed verifyCertificate so the signers certifi...	3 months ago
oxalis-commons	This fixes #235 and makes SMP code BOM aware even for UTF-8.	6 days ago
oxalis-distribution	Updating oxalis-distribution. Fixes #206.	22 days ago
oxalis-inbound	Fixed issue 208 by adding secure processing to the xml parser.	28 days ago
oxalis-integration-test	Verified that multi threading works as expected.	5 months ago
oxalis-jdbc-dbc	[maven-release-plugin] prepare for next development iteration	11 months ago
oxalis-jdbc-jndi	[maven-release-plugin] prepare for next development iteration	11 months ago

Simultaneous development

Developers are closing issues

Wiki

11 open issues, 206 closed

Code

Issues 11

Pull requests 0

Wiki

Pulse

Graphs

HTTPS clone URL

https://github.com

You can clone with HTTPS or Subversion.

Clone in Desktop

Download ZIP



# ERP vendors and eInvoicing systems

- ▶ 43 ERP and invoice handling systems supporting EHF and PEPPOL BIS
  - ▶ Covers 95% of the Norwegian market
- ▶ 14 vendors with Nordic presence
- ▶ 4 vendors with European/international presence



# Learning points

- ▶ Mandating eInvoicing through legislative means is a powerful tool to ensure widespread usage  
...if combined with
- ▶ Standardisation of
  - ▶ Business processes
  - ▶ Information content (semantics)
  - ▶ Business document formats
  - ▶ Document delivery services

} EHF ← PEPPOL BIS ← CEN BII

} ELMA, AP ← PEPPOL eDelivery

...based on international standardisation efforts and European cooperation, and
- ▶ Availability of open source software components, support and governance

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European Norm on  
eInvoicing and list of  
mandatory syntaxes.  
CEN Project  
Committee 440

EHF ← PEPPOL BIS ← EN

ELMA, AP ← PEPPOL eDelivery

...based on international standardisation efforts and European cooperation, and

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# ***Thank for your attention***



**For more information:**

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