Welcome to the CEF eDelivery Live Hands-on Webinar: Send your first AS4 message!

19 June 2018
Start 15:00 (CET)

Ground Rules for the Live Webinar

Please mute your microphone before the webinar starts

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

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CEF eDelivery

Hands-on Webinar: Send your first AS4 message!

Adrien Ferial - DIGIT
Ioana Dragusanu - DIGIT

Today's speakers

Adrien Ferial

Adrien Ferial is the leader of the technical office of CEF eDelivery which is responsible for the evolutive maintenance of the sample implementations. He joined DIGIT in 2014 as a technical expert and has more than 10 years of experience in IT. Through his professional experience, he participated to multiple projects in software development and system analyses, including managing and implementing large, scalable, distributed systems.

Ioana Dragusanu

Ioana Dragusanu has been working for the past three years at DIGIT on the CEF eDelivery project, implementing Domibus - the open source, eDelivery AS4 conformant Access Point. She has a strong understanding and practical experience in creating robust SOAP and REST web-services using J2EE technologies, SOA principles and enhanced knowledge on the B2B communication area, ebMS3.0 standard, eDelivery AS4 profile, SOAPwA protocol, x.509 digital certificates for encryption and signing.

Agenda

1	Introduction to CEF eDelivery Adrien Ferial – DIGIT	10'
2	CEF eDelivery Service offering Adrien Ferial – DIGIT	10'
3	Hands-on session - Send your first AS4 message: Launch instance on Fiware Lab PMode Configuration Security File Configuration Message sending Ioana Dragusanu– DIGIT	45'
4	Q&A and sharing of experiences All	25'

Highlights of the webinar

DURING

Ask questions

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AFTER

Download the webinar recording

Interact with our online community

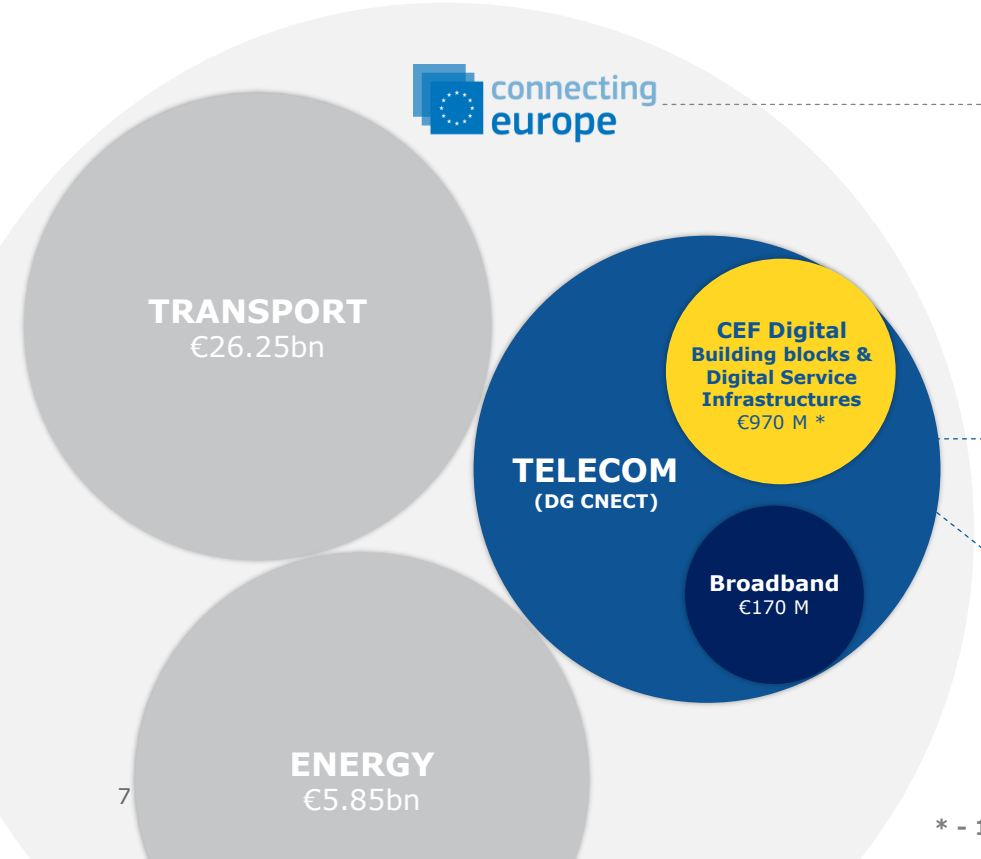
European Commission

1

Introduction to CEF eDelivery

Adrien Ferial – DIGIT

The CEF building blocks are funded by the Connecting Europe Facility



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

European Commission

CEF enables the European Digital Transformation

1 Sectorial Projects

Justice, home affairs and citizens' rights		Science and Technology	Business	Employment and Social Rights	
eJustice Portal	**ODR**	**Open Data**	**BRIS**	**EESSI**	**etc.**

2 Building Blocks

- IDENTIFY *with* eID
- SIGN *with* eSignature
- EXCHANGE *with* eDelivery
- INVOICE *with* eInvoicing
- TRANSLATE *with* eTranslation

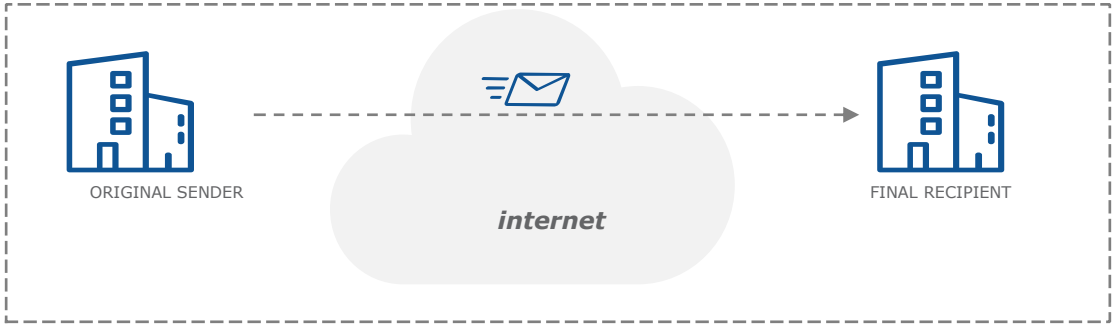
3 Grants

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

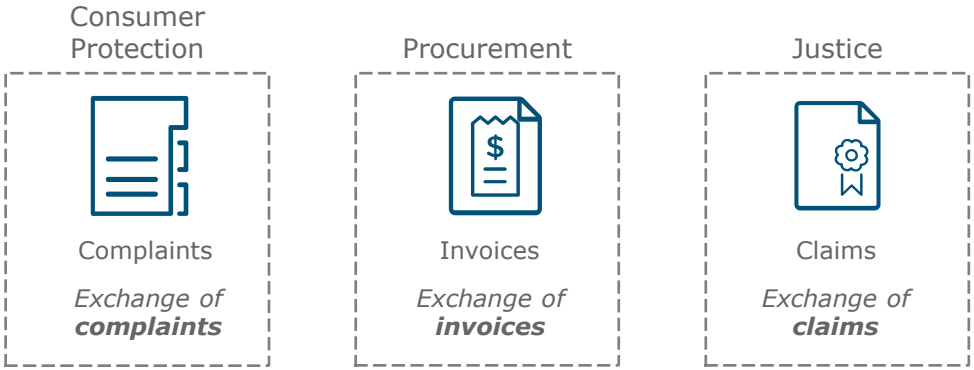
European Commission

The eDelivery Use-Case

DOMAIN-NEUTRAL USE CASE

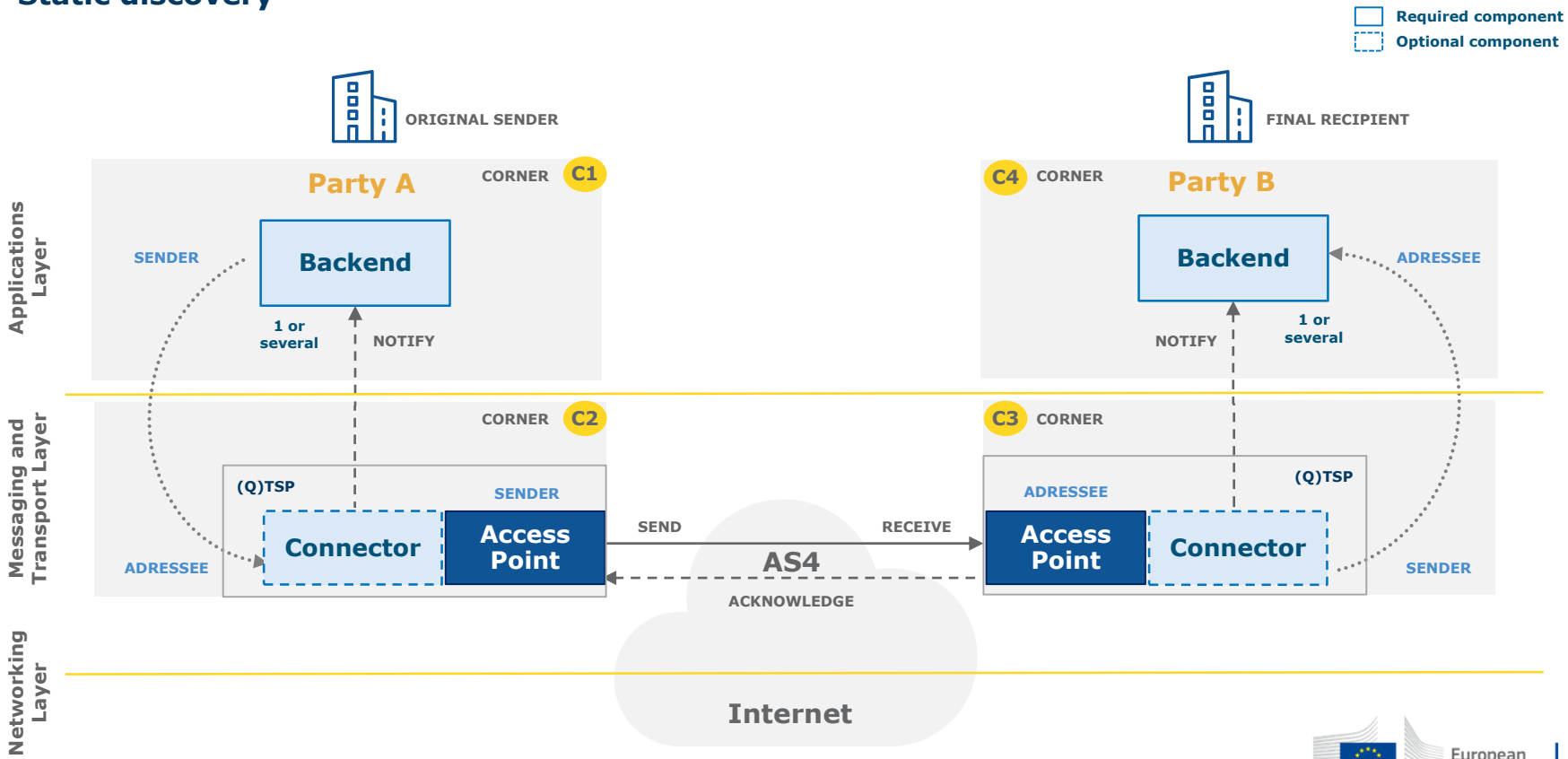


Examples of DOMAIN-SPECIFIC USE CASES



eDelivery Messaging Infrastructure based on the 4-Corner Model

Static discovery



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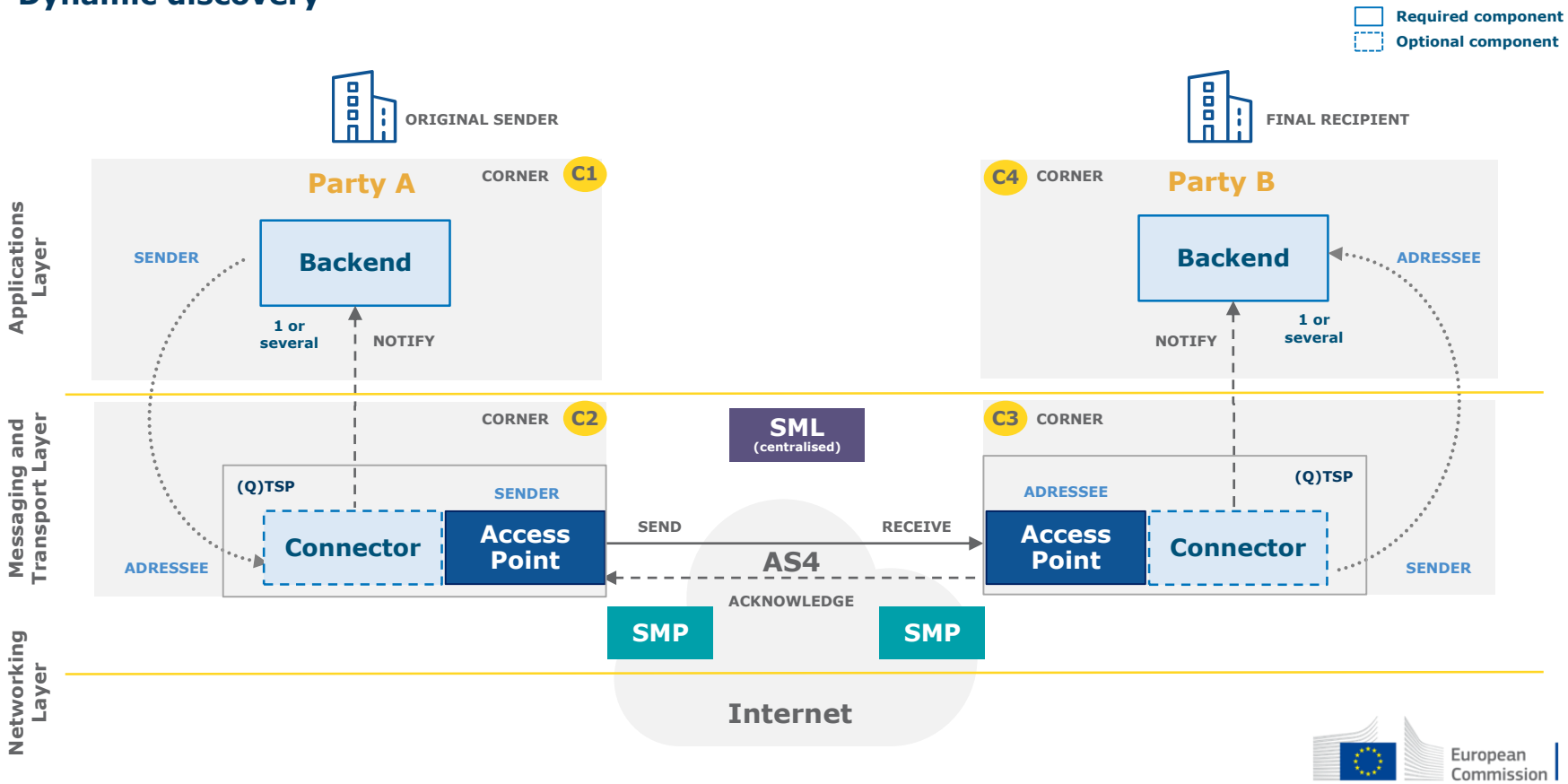
eDelivery Messaging Infrastructure based on the 4-Corner Model

Dynamic discovery



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CEF eDelivery specifications

•The approach employed by eDelivery is to promote the use of existing technical specifications and standards rather than to define new ones.

•The profiling work of eDelivery and PEPPOL on these standards, i.e. constraining configuration choices, is equally taken on board. Even though eDelivery makes software available implementing these specifications, the use of commercial software or other Open Source software projects is also possible.

COMPONENT	KEY SPECIFICATIONS
Access Point	➢ eDelivery AS4 profile of the ebMS3/AS4 OASIS Standards ➢ PEPPOL AS2 profile of AS2 and SBDH (for the eProcurement only)
Digital Certificates	➢ ETSI – Electronic Signatures and Infrastructures profile
Connector	➢ ETSI REM for evidences
Service Metadata Locator (SML)	➢ eDelivery Profile based on the OASIS BDXL Specification ➢ eDelivery ebCore Party ID Profile
Service Metadata Publisher (SMP)	➢ eDelivery Profile based on the OASIS BDX-SMP Specification

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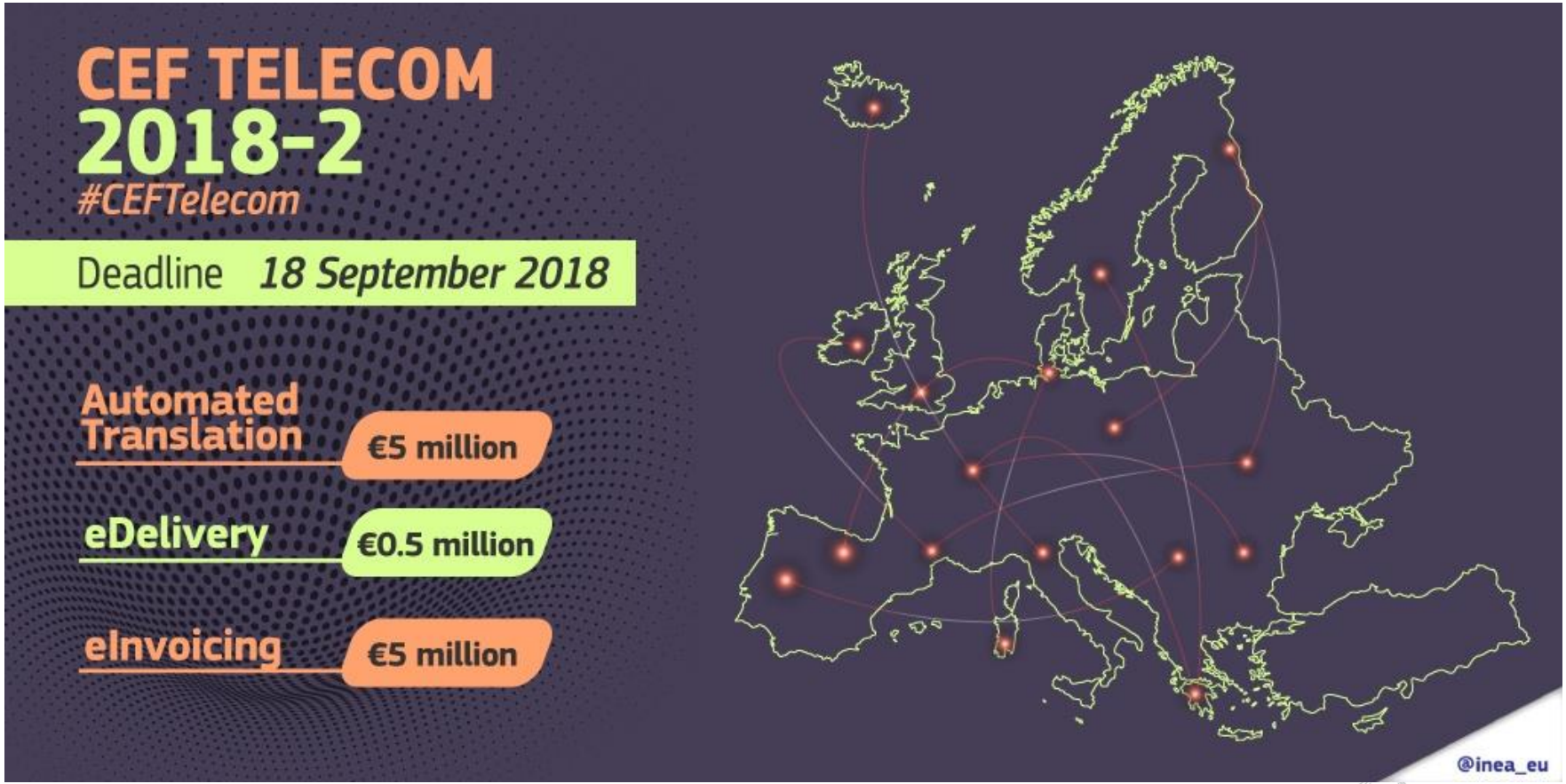

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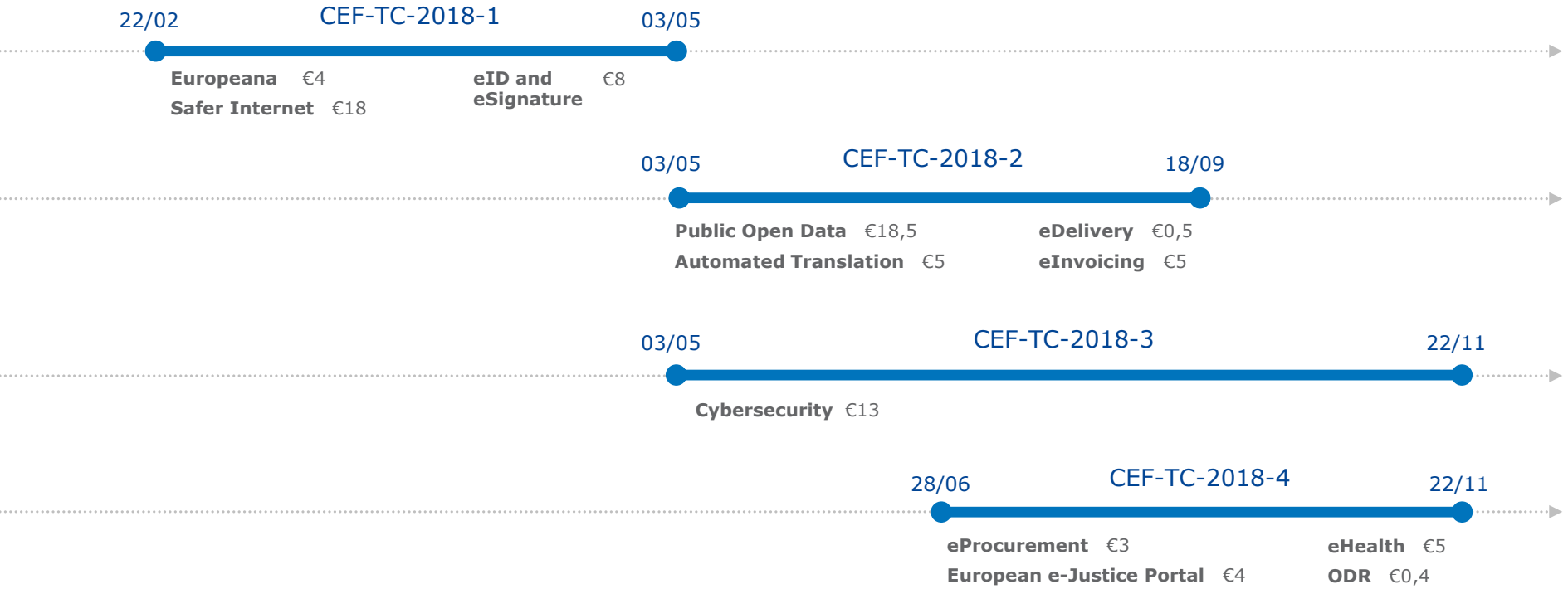
More information: https://ec.europa.eu/inea/



* All values are expressed in MILLION euro

European Commission

eDelivery *onboarding-race*

COMMITEMENT GATE

SET UP

PHASE	PROSPECTING	ELICIT requirements	DESIGN eDelivery infrastructure	SELECT eDelivery solutions	DEPLOY eDelivery solutions	OPERATE eDelivery solutions	
CEF DSIs	CyberSec **DG CNECT** eTranslation **DGT** ELRC **DGT** ePayments **ECB**		eHealth (AS4) **DG SANTE**		eHealth (SMP) **DG SANTE** EESSI **DG EMPL**	ODR **DG JUST** eProcurement (*) **GROW | DIGIT**	EU-CEG **DG SANTE** PNR *(regulated)* **DG HOME** e-Justice | eCodex **DG JUST** BRIS **DG JUST**
Other Policy Projects	Customs Single Window **DG TAXUD** ECRIS **DG JUST** IRI **DG JUST** Maritime Single Window **DG MOVE** Central Clearance Import **DG TAXUD** IRMA **DG HOME** e-enforcement academy **DG JUST** IMI **DG GROW**	CISE **DG MARE** eTransport Docs **DG MOVE**	TACHOnet **DG MOVE** eEvidence **DG JUST** EUDAMED 3 **DG GROW**	DECIDE (upgrade) **SG** EPREL **DG ENER** ICS2 **DG TAXUD**			
Member State led projects (including CEF grants)			Utdataprojektet **ESV**	TOOP (once-only) Development of NL eDelivery gateway **Logius.nl**	Slovenia Supreme Court's communications **Laurentius** e-Impact (CEF Transport)	NOBLE project (Postal Services)	PEPPOL (upgrade to AS4)
Other institutions	**European Data Protection Supervisor** **European Union Agency for Railways** **European Chemicals Agency** NEW **European Anti-Fraud Office** NEW	Parliamentary Q + Trialogue + OP **Parliament** **European Aviation Safety Agency**	**European Citizens' Initiative**		CIxP **The European Council** eDocX2017 **DG HOME (EMCDDA)**		ENTSOG (Gas operators)

(*) Also part of PEPPOL

European Commission

Roadmap to deploy CEF eDelivery

Domain Owner — *Participants in eDelivery Messaging Infrastructure*

PHASE	ELICIT requirements	DESIGN eDelivery infrastructure	SELECT eDelivery solutions	DEPLOY eDelivery solutions	INTEGRATE with backend(s)	INTEGRATE with partners	OPERATE eDelivery solutions
CEF TEAM	Technical Specifications Onboarding Self-Assessment tool	Documentation (COD, SOD, …) Design message exchange model	List of Software solutions SML Service PKI Service	Service Desk Training and deployment		Connectivity Testing	Service Desk CEF eDelivery Community
YOUR TEAM	Attend workshops • Complete self-assessment tool • Identify business requirements • Carry out feasibility study	Design discovery model • Design security model • Design integration approach • Participate in the writing of a SDD • PoC (optional)	***Open source*** Assess OSS projects Customise/ extend solution ***Commercial solution*** Assess Vendors Buy solution ***Custom built*** Build solution	Deploy components • Configure components	Integrate with eDelivery Access Point • Perform Integration testing • Perform Pre-production testing	Participate in Connectivity testing • Perform Pre-production testing	***Open source*** Hosting • Maintenance ***Commercial solution*** Hosting • Fees ***Custom built*** Hosting • Maintenance

2

CEF eDelivery Service offering

Adrien Ferial – DIGIT

CEF eDelivery Service offering

SOFTWARE

Sample software maintained by the EC (with documentation)

- Access Point (AP)
- Service Metadata Publisher (SMP)
- Service Metadata Locator (SML)

OPERATIONS SERVICES

Managed services

- Public Key Infrastructure (PKI)
- Service Metadata Locator (SML)

Testing services

- Connectivity testing
- Conformance testing

Supporting services

- Training & Deployment
- Service Desk

STAKEHOLDER MANAGEMENT SERVICES

Onboarding services (for stakeholders)

- Self-assessment tool (reuse approach)
- Onboarding of new stakeholders

Community management services

- Developers Community

Available

Coming soon

(example) TECHNICAL SPECS OF EU-WIDE INITIATIVES

- Access point specifications
- SMP specifications
- SML specifications
- Security control guidance

STANDARDS OF ESOs

- Connector specification

Service offering Description (SoD)

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

Service Level Arrangements (SLA)

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

eLearning, videos, success stories

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

CEF Digital platform

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

CEF Digital >

Operations services

Managed services

OBJECTIVE OF THE SERVICE

Sample software centrally hosted and managed by the EC, based on sample implementations that are based on technical specifications of CEF eDelivery.

The European Commission develops, maintains and provides software as a service for the following components of a CEF eDelivery solution:

- Public Key Infrastructure (PKI)
- Service Metadata Locator (SML)

These services facilitate the re-use of CEF eDelivery by different Policy Domains.

BENEFITS

- Reduced cost of hosting the service, which is sustained by the European Commission
- Full support by the European Commission
- Defined and agreed Service Levels

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Connectivity testing

OBJECTIVE OF THE SERVICE

Test if a newly installed AS4 Access Point, conformant with the CEF eDelivery specifications, can successfully communicate with the sample AS4 Access Point hosted by the European Commission. If successful, these tests confirm that the new Access Point is in all likelihood correctly deployed and configured.

The CEF Support Team facilitates the Connectivity Testing by making available a sample AS4 Access Point in a cloud environment, as well as providing guidelines and support during the testing process.

BENEFITS

- Confirm that newly deployed AS4 Access Points can successfully communicate with a neutral organization i.e. the sample Access Point of the European Commission;
- Testing anywhere at anytime
- Testing supported by professional staff of the European Commission

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Conformance testing

OBJECTIVE OF THE SERVICE

Verify that an implementation of the CEF eDelivery Access Point and SMP specifications, a software package either commercial or Open Source, conforms to the specifications of the CEF eDelivery Access Point.

The following specifications are tested within the scope of this service:

- eDelivery AS4 Profile
- eDelivery SMP Profile

The CEF eDelivery Team provides ready to use test cases, a testing platform, and supports the users of the CEF eDelivery Conformance Testing service during the entire testing process.

BENEFITS

- Confirm and assure your users/customers that your software package or implementation of the CEF eDelivery Access Point conforms to the CEF eDelivery specifications
- Testing anywhere at anytime
- Testing supported by professional staff of the European Commission

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eDelivery AS4 conformant solutions

CEF Digital
Connecting Europe

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

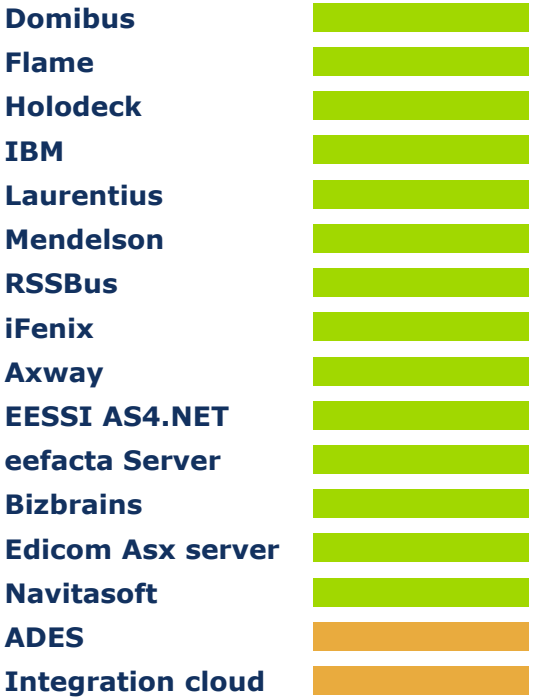
eDelivery AS4 conformant solutions

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

- Axway
- Bizbrains
- Domibus (EC sample implementation)
- eefecta Server
- EESSI AS4.NET
- Edicom ASx Server
- Flame
- Holodeck
- IBM
- iFenix
- Laurentius
- Mendelson
- Navitasoft – IP Systems AS4-IP
- RSSBus
- ADES
- Integration Cloud

More information on CEF Digital

Conformant Solutions >



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Software

Sample software maintained by the EC

OBJECTIVE OF THE SERVICE

Standard software implementations of the technical specifications of CEF eDelivery. The European Commission maintains and develops sample software that is openly available to be re-used. The following components of a CEF eDelivery solution are provided:

- Access Point
- Service Metadata Publisher (SMP)
- Service Metadata Locator (SML)

Through the "Operational Management Board", CEF eDelivery stakeholders define the evolution of these solutions, by suggesting features that are then developed by the CEF's team.

BENEFITS

- Released under an open source license
- Viable solutions for use in production environment
- Fully supported by the European Commission
- Based on market-driven technical specifications

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Operations services

Supporting services

OBJECTIVE OF THE SERVICE

The CEF eDelivery team offers:

- **Service Desk** – a Single Point of Contact (SPOC) to address questions, incidents, requests and changes reported by the Users with regards to the CEF eDelivery service offering.
- **Training and deployment support -** Training sessions about the technical specifications underpinning the components of CEF eDelivery, the services offered by the Commission and its sample implementations, and interactive sessions to support in the deployment of the solution.

BENEFITS

- Day to day monitoring and 24h/7days service to maintain a high-level of availability and capacity of the CEF eDelivery Managed Services
- Proactive incident detection and resolution
- Increased autonomy of the Public Administration in handling and maintaining the CEF eDelivery components

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Stakeholder management services

Onboarding services

OBJECTIVE OF THE SERVICE

CEF offers onboarding services for new projects interested in re-using CEF eDelivery:

- **Self-assessment tool** - a survey that maps the requirements of the users to the CEF eDelivery Service Offering. During the self-assessment, users assign different scores to the relevant requirements of their business system and the eDelivery messaging infrastructure. Based on the answers provided, the tool calculates how CEF eDelivery can help users achieve their goals by indicating which services provided by CEF eDelivery will allow them to meet their specified needs and requirements.
- **Onboarding of new stakeholders** – A direct contact point for all policy domains interested in re-using CEF eDelivery, that will facilitate the understanding, adoption and deployment of the solutions.

BENEFITS

- Business-driven and time-efficient assessment
- Comparability – the self-assessment tool provides a benchmarking with use cases of other projects already re-using CEF eDelivery
- Direct and easy contact with the CEF eDelivery technical teams, through the onboarding services

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Stakeholder management services

Community management

OBJECTIVE OF THE SERVICE

Develop, expand and engage with a community of developers contributing to the evolution of CEF eDelivery's open source sample implementations.

Among the 5 components that the CEF eDelivery team develops, CEF manages an online community of developers interested in contributing to the code of the sample implementations.

BENEFITS

- Cost effective development
- Wide set of skills
- Faster response to emerging requirements

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Developers

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3

Hands-on session - Send your first AS4 message:

Launch instance on Fiware Lab

PMode Configuration
Security File Configuration
Message sending

Ioana Dragusanu– DIGIT

Let's get started

FI-WARE

eDelivery

Connecting Europe

https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery

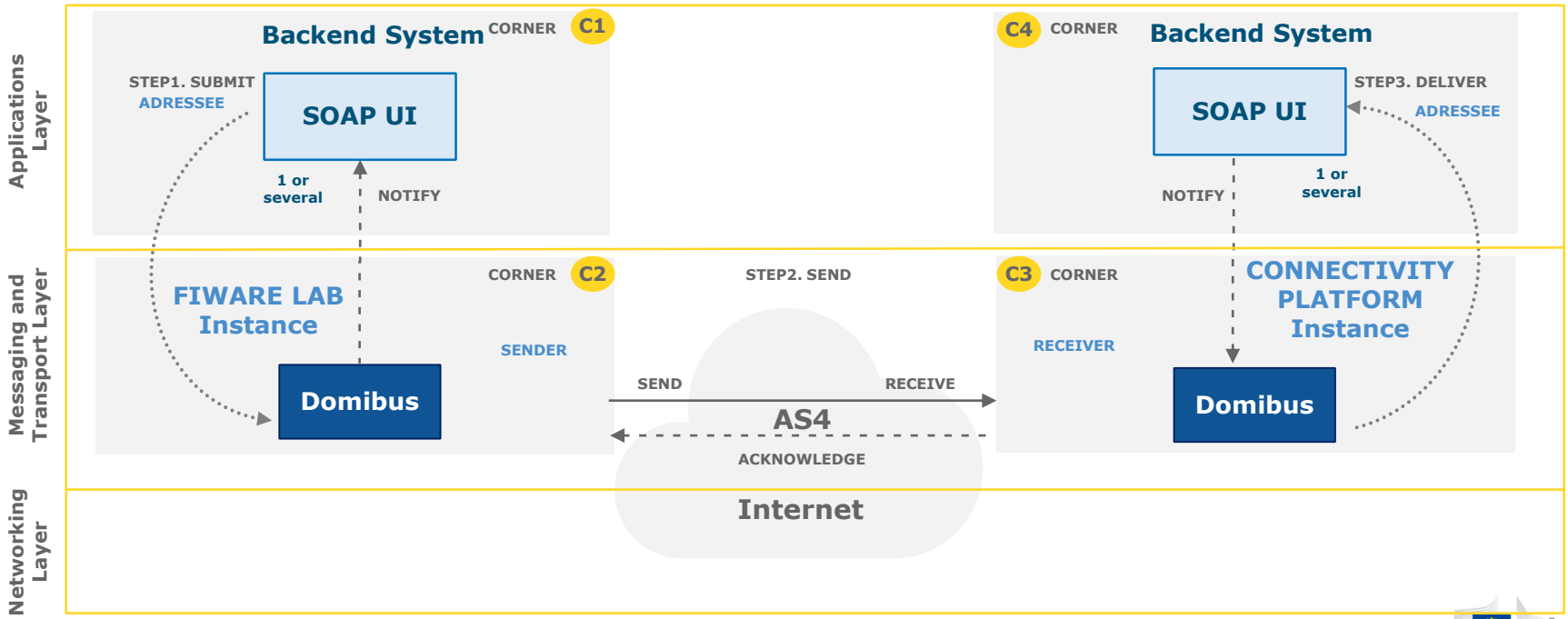
FIWARE Catalogue

https://catalogue.fiware.org/enablers/electronic-data-exchange-domibus

FIWARE Lab

https://www.fiware.org/lab/

Demo in detail



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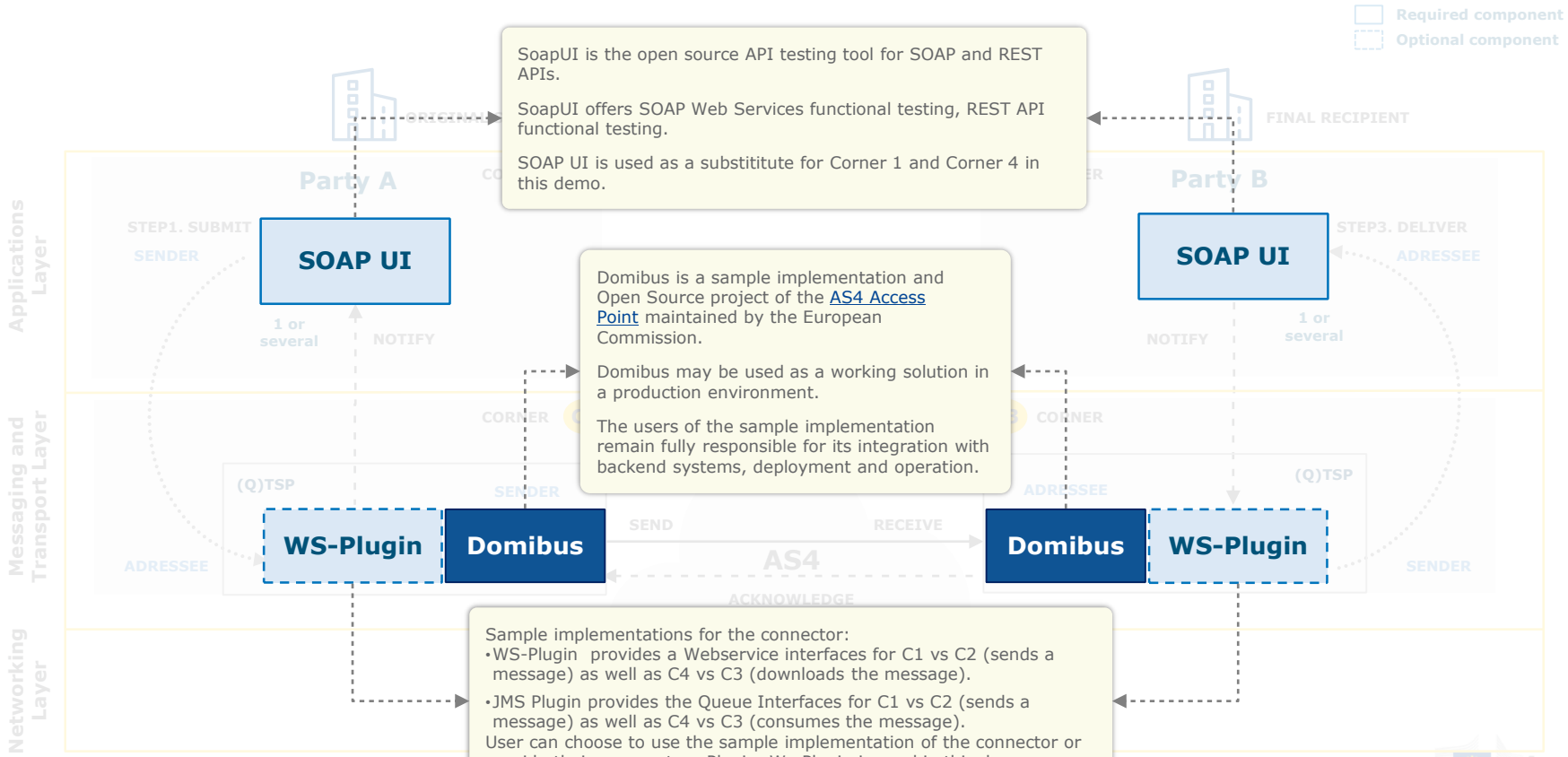
Demo scenario



Demo Steps

DEMO TIME

Launch instance

FIWARE LAB Instance

- Launch an instance based on a public VM image on the FIWARE lab.

DEMO TIME

Configuration *(pre-configured)*

PMode File

- Configure the parties, endpoint URLs for the sending and receiving Access Points
- Configure compression, number of retries, etc.

Truststore .jks

- Configure the public certificate of the CTP

DEMO TIME

Runtime Scenario

Backend C1 sends the message to Access Point C2

The Message is sent from sender Access Point C2 to receiving Access Point C3

An acknowledgement is sent from C3 to C2

C4 downloads the message from C3

I. Launch instance

Image: domibus-3.3.2

II. Configuration

a. PMode Configuration

Configure Parties container

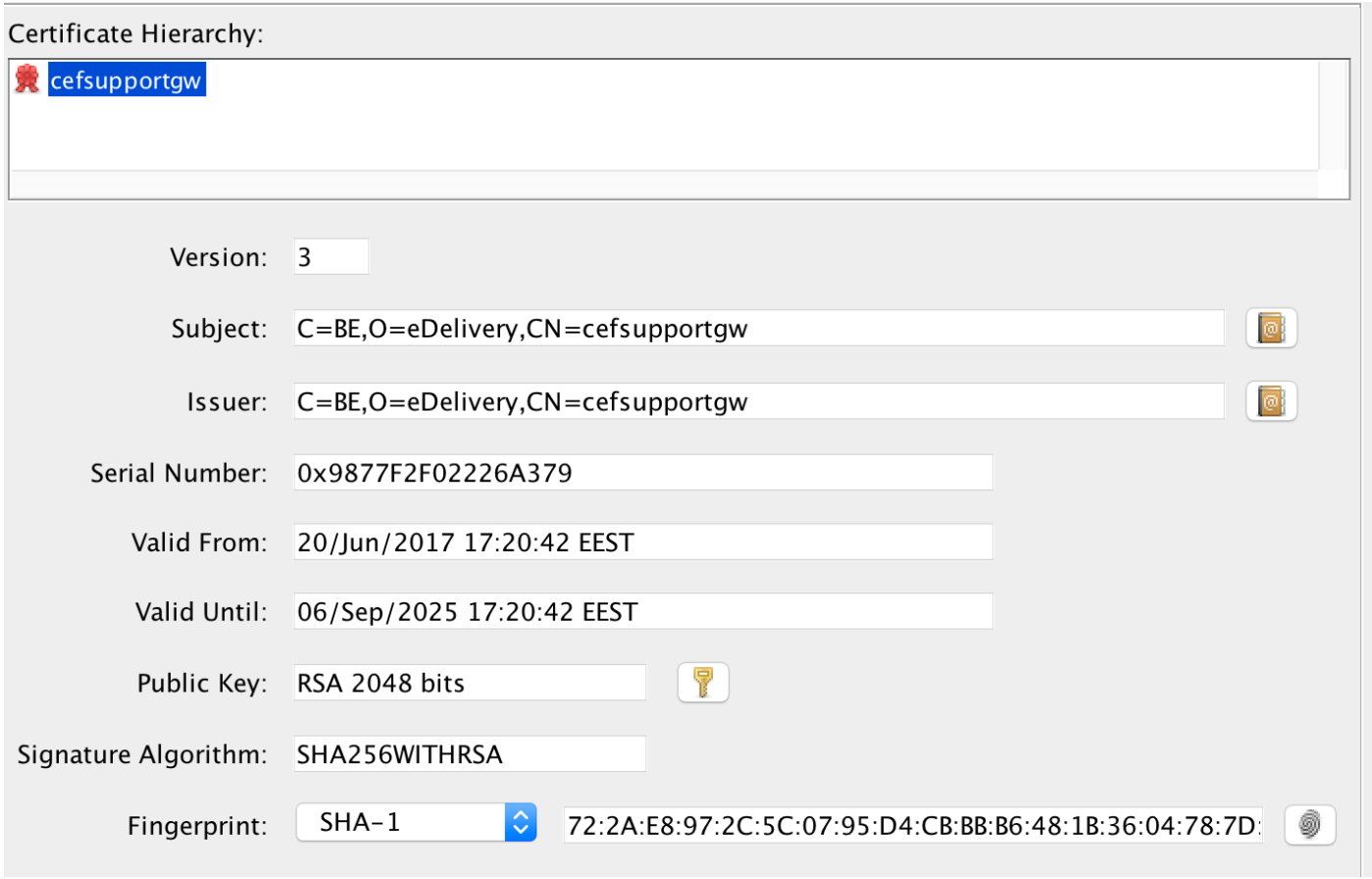
PMode[1].businessProcesses.parties.party: This parameter Contains the name of the partner Access Points and the address (endpoint URL) of the Receiver MSH to which User Messages under this PMode are to be sent.

PMode[1].businessProcesses.parties.party.Identifier: This Parameter contains the name of the clients' backend associated to the parent Access Point.

```
<party name="cefsupportgw"
         endpoint="http://40.115.23.114:8080/domibus/services/msh"
         allowChunking="false">
         <identifier partyId="cefsupportgw" partyIdType="partyTypeUrn"/>
</party>
<party name="ceftestparty9gw"
         endpoint="http://domibus.lab.fiware.org:8080/domibus/services/msh"
         allowChunking="false">
         <identifier partyId="ceftestparty8gw" partyIdType="partyTypeUrn"/>
</party>
```

b. Truststore upload

Truststore .jks file



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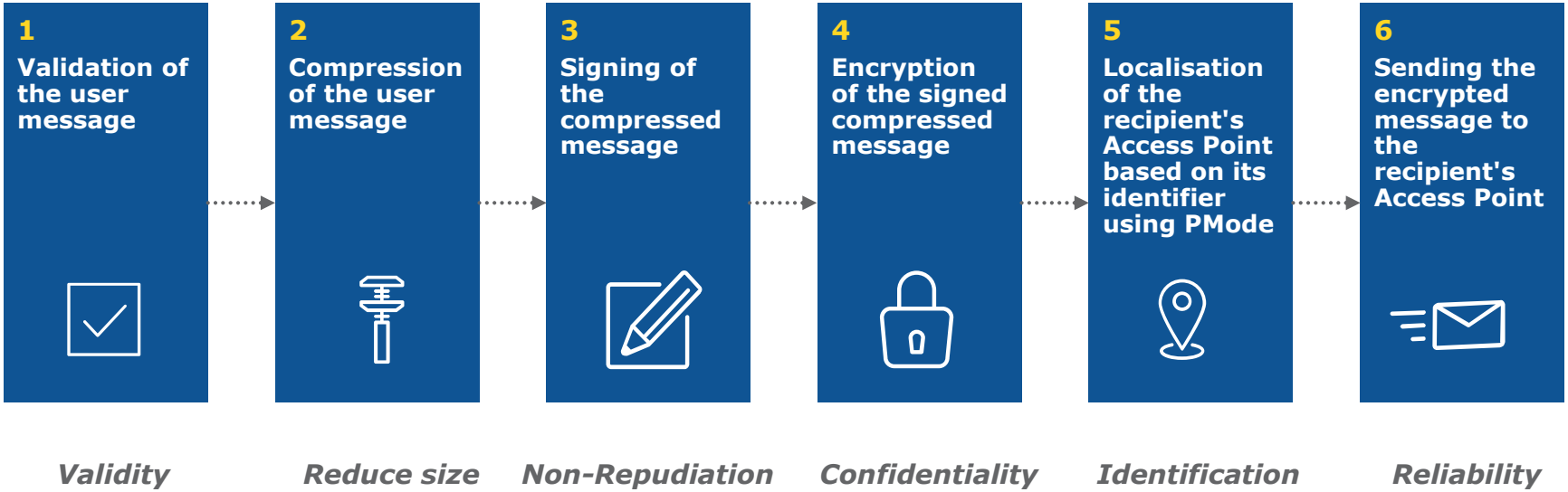
III. Run-time process

SEND: Processing at C2.



RECEIVE: Process at C3

1 Receives the encrypted message

Duplicates detection

2 Decrypts the encrypted message

Confidentiality

3 Verifies the sender's signature

Non-Repudiation

4 Decompresses the decrypted message

Original size

5 Validates the original user message

Validity

6 Sends the acknowledgement to the sender Access Point C2

Reliability

7 Archives the user message

Retention

European Commission

Release 3.3

Specifications

- eDelivery AS4 Profile
- OASIS AS4 Profile
- ebMS3 Core

App servers

- Tomcat 8, WebLogic 12, Wildly 9

Databases

- MySQL, Oracle

Technologies

- SOAP 1.2 *with attachments*
- Apache CXF
- Apache WSS4J
    - WS-Security: *WSSSMA, WSSX509, WSSSWA,*
    - *WS-Policy: rsa-sha256, aes128-gcm, rsa-oaep, mgf1sha256*
- GZIP
- WS, JMS, FileSystem plugins

Anatomy of a message

```
<?xml version="1.0" encoding="utf-8"?>
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
        <env:Header>
                <eb:Messaging xmlns:eb="http://docs.oasis-open.org/ebxml-msg
        <eb:UserMessage mpc="http://docs.oasis-open.org/ebxml-msg                                                    ...
                    </eb:UserMessage>
                </eb:Messaging>
                <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss
                    <xenc:EncryptedKey xmlns:xenc="http://www.w3.org/2001
                                <xenc:EncryptionMethod Algorithm="http://www.w3.
                                ...
                    </xenc:EncryptedKey>
                    <xenc:EncryptedData xmlns:xenc="http://www.w3.org/2001
                        <xenc:EncryptionMethod Algorithm="http://www.w3.org/2009/xmlenc11#aes128-gcm"/>
                                ...
                    </xenc:EncryptedData>
                    <ds:Signature xmlns:ds=""http://www.w3.org/2000/09/xmldsig#"
                               ...
                    </ds:Signature>
                </wsse:Security>
        </env:Header>
   <env:Body/>
</env:Envelope>
```

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4

Q&A and sharing of experiences

All

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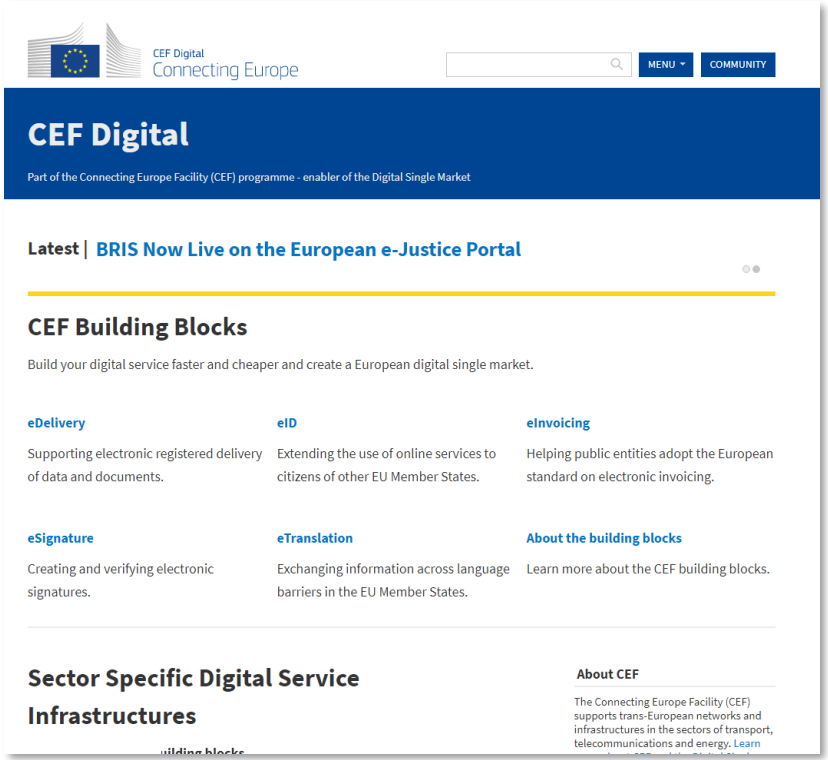
ec.europa.eu/cefdigital



#BIG REUSE

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