



Updates on CEF eDelivery

Workshop #3 - Informal Cooperation Network for eDelivery

3 April 2019

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Update on eDelivery guidance on
message signals and evidences

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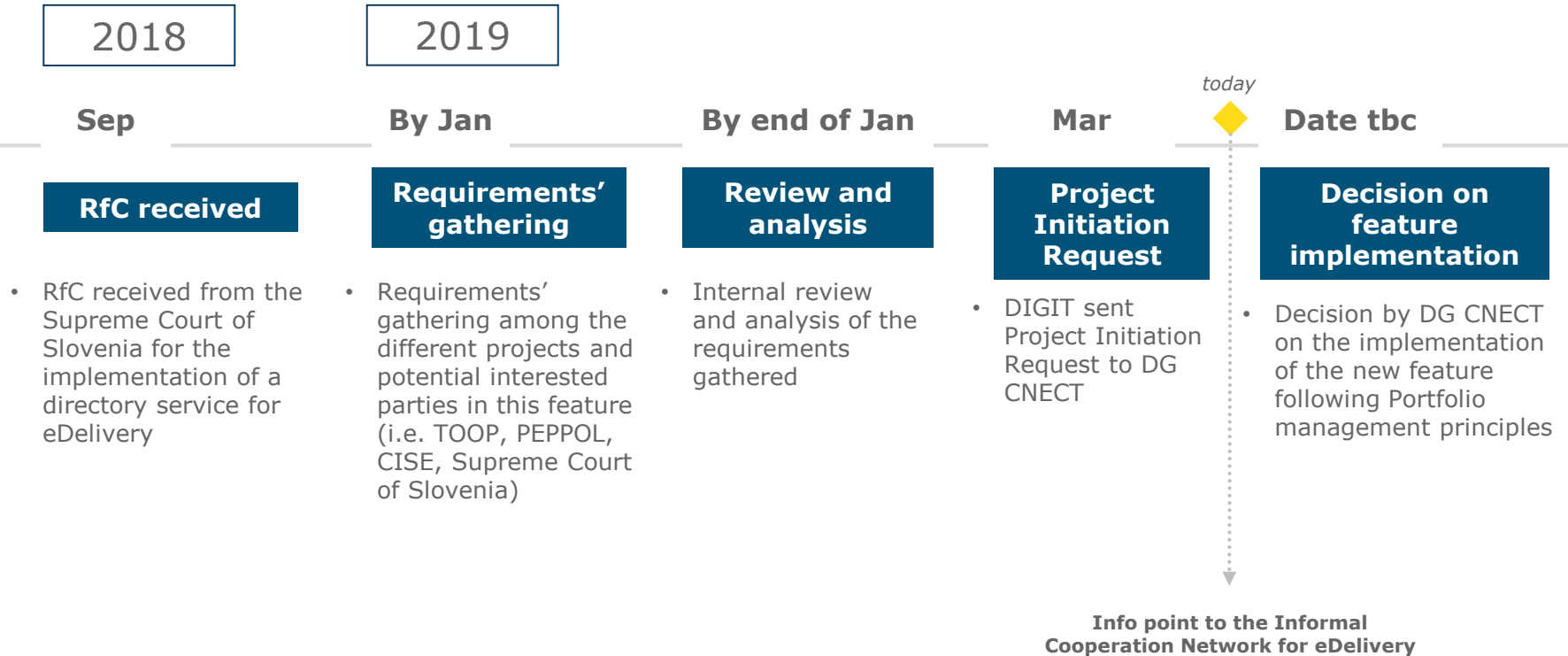
Directory services for eDelivery

Directory services in eDelivery

Requirement

- RfC from the Supreme Court of Slovenia
- Implementation and use of SML/SMP for the dynamic discovery of services (and not only for discovering at action level) OR an alternative way of discovering parties or capabilities based on a directory
- To be used in different domains

Indicative timeline



Outcome of Requirements' gathering

As a result of the interviews, two opportunities were identified as possible paths to extend the eDelivery specification.

Both identified areas concern the infrastructure for business services that assume data will be exchanged online, usually machine to machine.

➤ Automatic or manual search and selection of suitable business service(s) and service provider(s)

Requirement: a domain network should provide a function to allow the discovery within the network of business services and providers that match the user provided search criteria.

➤ Automatic connection setup and authorizing of the using of the service

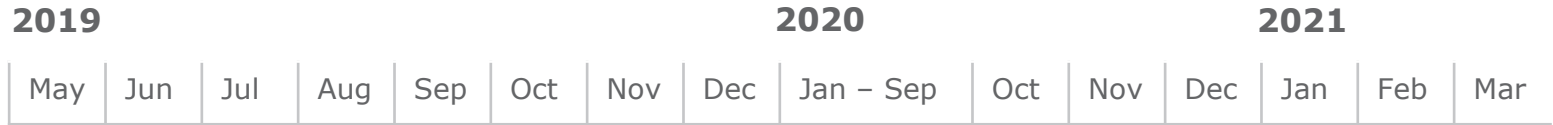
Requirement: for a selected service, from a selected provider, the domain network should supply all metadata required for automatically setting up the data connection between the provider's access point and the consumer. Setting up the connection should consider different authorizing scenarios, be it implicit authorization or based on provider's given confirmation.

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Roadmap for CEF eDelivery

Roadmap for CEF eDelivery

◆ Release Candidate
◆ Final Release



Domibus 4.1



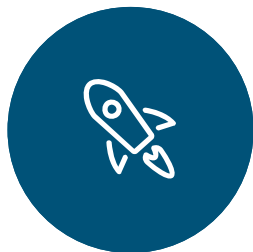
Domibus 4.2



SML 4.0



DOMIBUS 4.0.2 – current release



New Features

Release:

11 February 2019

| Development work Features | Version |
|---|--------------|
| Possibility to configure the payload cid in the FS Plugin | 4.0.2 |
| Allow proxy configuration without user/password | 4.0.2 |
| Possibility to cache the downloaded CRL | 4.0.2 |
| Allow sending a payload in the Soap body | 4.0.2 |
| Improved duplicate detection | 4.0.2 |
| Fixed several bugs related to the JMS Plugin | 4.0.2 |

DOMIBUS 4.1



New Features

Release Candidate:

20 May 2019

Final Release:

15 July 2019

| Development work Features | Version |
|---|------------|
| Support of Large files (Split and Join) | 4.1 |
| Change the log configuration at runtime | 4.1 |
| Interface with UUM&DS and STI | 4.1 |
| EU Login support | 4.1 |
| eSignature integration | 4.1 |
| Technical and Security improvements | 4.1 |
| Maintenance | |
| Maintenance of Domibus 3.3 | 3.3 |
| Maintenance of Domibus 4.0 | 4.0 |

DOMIBUS 4.2



New Features

Release Candidate:

21 September 2020

Final Release:

10 December 2020

| Development work Features | Version |
|---|---------|
| Possibility to prioritize sending messages based on predefined criteria: based on service and action, or authenticated user or a message property | 4.2 |
| Improve Pmode configuration tool with a scalable solution | 4.2 |
| Technical improvements | 4.2 |
| Maintenance | |
| Maintenance of Domibus 4.0 | 4.0 |
| Maintenance of Domibus 4.1 | 4.1 |

SML 4.0



New Features

Release Candidate:

15 May 2019

Final Release:

17 June 2019

Development work | Features

Improve audit logs to comply with the EU Send service monitoring tool

Create a web-service for:

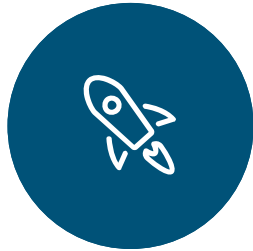
- new domain certificate
 - triggering inconsistency report
 - creating new subdomain
 - adding deleting updating DNS record
-

Database audit

Maintenance

Maintenance of SML 3.x

SMP 4.1 – current release



New Features

Final Release:

30 November 2018

Development work | Features

Database optimization for UI

Automatic database script generation

Database audit

Business event logging enhancement

Implementation of an SMP administration console

Maintenance

Maintenance of SMP 4.x

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eDelivery AS4 1.15 profile

Agenda

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Internal PoC for supporting Very Large Files in Domibus
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Public Consultation on Very Large Files in eDelivery
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Follow up actions after the Public Consultation
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Background for supporting Very Large Files in eDelivery

2018

Change Request raised by the e-CODEX project team

<https://ec.europa.eu/cefdigital/tracker/projects/EDELGOV/issues/EDELGOV-48>

The e-SENS LSP performed some analysis, but did not provide an official or final advice on which technological option is the best fit

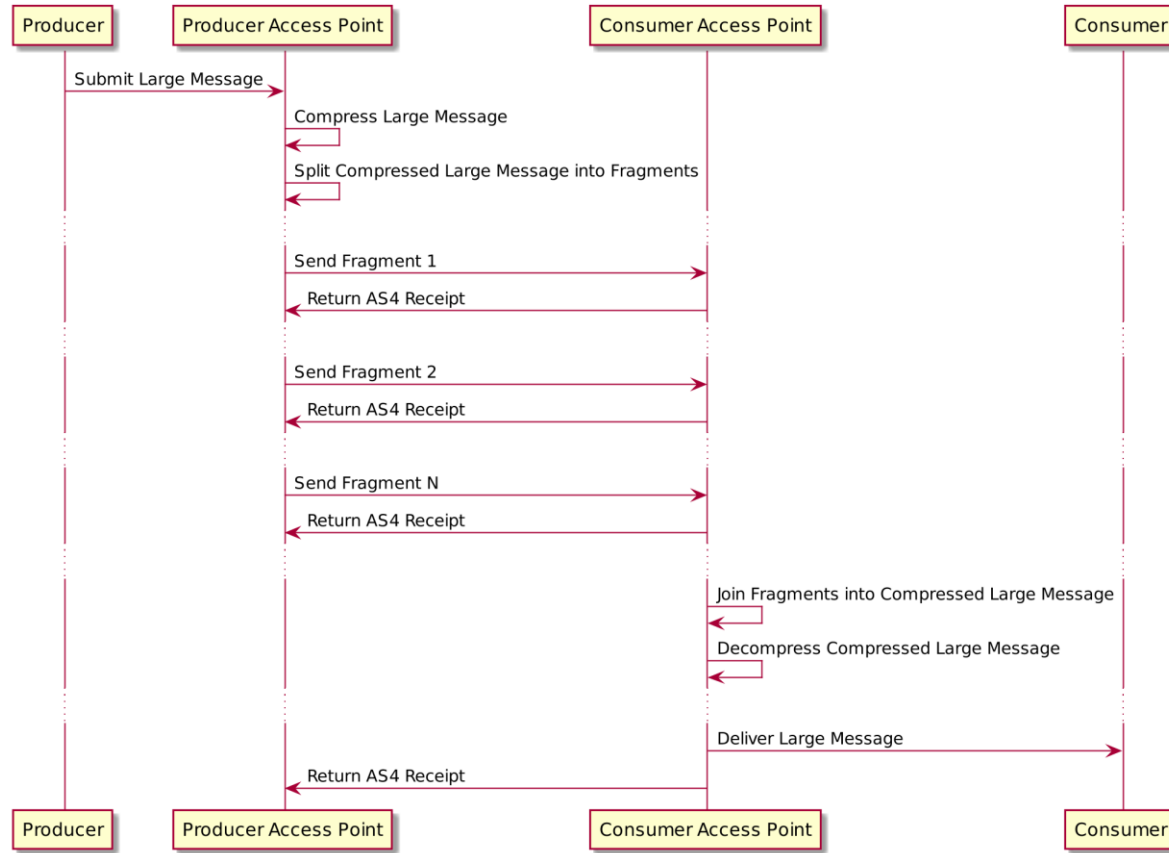
http://wiki.ds.unipi.gr/display/ES/ENS/E-SENS+Large+Messages+v0_2

After analysing both the CR and the e-SENS analysis, the **eDelivery team prepared a draft eDelivery AS4 profile (v1.15) including Split & Join for transferring very large files as an optional module.**

What is Split & Join and how would it be used?

| What is Split & Join? | Benefits | Use in eDelivery AS4 1.15 as a Profile Enhancement |
|---|--|--|
| <ul style="list-style-type: none">• Split & Joined is an open standard for large message exchange• Defined in OASIS ebMS3 Part 2 Advanced Features specification• Web Services-based protocol to exchange SOAP MIME messages as a series of message fragments | <ul style="list-style-type: none">• Signing and encryption applies to fragments: avoids limitations of security libraries, reduces load• Reliable messaging applies to fragments: no unnecessary retransmission of data that was already transmitted• Configurable maximum message size: compatible with network/security (firewall) policies of users• Better end-to-end monitoring• Compatible and well-suited for use with Pull, streaming and multi-hop• Full Non-Repudiation | <ul style="list-style-type: none">• Additional profiling for alignment with eDelivery AS4• Not part of Common Profile, not mandatory for users that do not need the feature |

Split & Join Protocol Flow



Internal PoC for supporting Very Large Files in Domibus

- As a PoC, the **eDelivery team implemented the draft specifications** in a development release of Domibus.
- The effort spent was +- 60 man-days.

Public Consultation on Very Large Files in eDelivery

- The proposed **1.15 eDelivery AS4 profile** was shared with the community during a **public consultation**.
- This public consultation resulted in **several comments from the community**.
- These comments have been discussed in **one-on-one sessions** to gather more feedback and the background on these comments.
- This resulted in **follow-up actions** for the eDelivery team.

Consultation on the eDelivery AS4 profile version 1.15

Created by Ines COSTA, last modified by Gregory STEENBEEK on Jan 17, 2019

Internal Consultations

| | |
|--------------------------------------|---------------------|
| Status | CLOSED |
| Consulted Expert Group / Stakeholder | eDelivery community |
| Outcome | Comments for input |
| Launch date | 28 Nov 2018 |
| Due date | 28 Dec 2018 |
| Main contact person | Adrien FERIAL |

Communication:

The Connecting Europe Facility (CEF) eDelivery team is opening a Public Consultation on a new eDelivery Draft Specification for Very Large Files (VLF) enhancement. For more information, please visit the new <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery+AS4+-+1.15> draft specification updates for VLF Enhancement.

Follow up actions after the Public Consultation

ACTION 1: Test sending a 100 GB file in the eDelivery development release

- **Motivation:** Show scalability to user-requested size
- **Result:** Done Successfully

ACTION 2: Use gzip instead of the proposed "Brotli" compression algorithm

- **Motivation:** Gzip is more widely supported in toolkits
- **Result:** Accepted for change

Follow up actions after the Public Consultation

ACTION 3: Analyse (validate or invalidate) the claim that "providing non-repudiation to all the message parts is not equal to providing non-repudiation for the complete (reassembled) message"

- **Status:** Positive feedback from neutral security expert; requested legal advice from DG CNECT (pending)
- Other / Complementary mechanisms have been investigated.

Follow up actions after the Public Consultation

ACTION 4: Check whether it is better to compress the full message or the message fragments

- **Result:** Compressing the full message will always result in more efficient compression rate.

Follow up actions after the Public Consultation

ACTION 5: Analyse if Very Large File support could be implemented in a Connector (application layer) instead of in the Access Point (messaging/transport layer)

- **Result:** It is recommended to keep the functionality as an optional module in the Access Point.
 - There are no common Connector specifications. This would lead to different business domains implementing the functionality in a custom, non-interoperable way.
 - This allows the reuse of existing AS4/ebMS signals (errors and receipts).
 - This is based on specifications developed as part of ebMS3 Part 2, Advanced Features specification in the OASIS ebXML Messaging Services TC.

Follow up actions after the Public Consultation

ACTION 6: Analyse if there are alternative implementation options such as external payloads

- **Result:** It is not recommended to use external payloads:
 - There is no detailed specification for this external payload feature with ebMS3 or AS4.
 - This would require a separate Web server component, increasing the complexity of a deployment.
 - The feature still requires that very large payload are downloaded as a single file (possibly with restarts). This can be problematic e.g. when using firewalls that have download or timeout limits.


Are you aware of any issues or limitations?

- **eDelivery Governance and Procedures** are documented on public Internet Page:
 - <https://ec.europa.eu/cefdigital/wiki/display/EDELGOV/Governance+and+Procedures>
- Additional document on **Change Management of eDelivery Specifications**
 - <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/About?preview=%2F82772925%2F82804036%2FCEF+Change+Management+Process.pdf>
 - **Types and versions** of deliverables
 - **Describes roles** of eDelivery Community, CEF eDelivery team, and eDelivery OMB
 - Use of **Public Consultations**

Governance and Procedures

Created by Vivian BAAS, last modified by Gianmarco PIVA on Oct 16, 2017


This page presents an overview of the rules, procedures and guidelines that apply to the Operational Governance of the DSIs and to the DSI Operation



Non-paper on the IT Governance

The "Non-paper on the IT Governance of CEF Building Block Digital Service Infrastructures (DSIs)" sets out an "integrated" IT Governance Model that aims to align both policy and implementation, and the operational practices of DSIs with CEF's long-term strategic goals. Its goal is to promote coherence across CEF building block DSIs and build trust between them and the sector-specific DSIs, while promoting efficiency and avoiding the duplication of structures.


[Download](#)



Change Management

Change Management is the process responsible for controlling the lifecycle of all Changes. The goal of the Change Management process is to ensure that standardised methods and procedures are used for efficient and prompt handling of all Changes, in order to minimise the impact of change-related incidents upon service quality, and consequently to improve the day-to-day operations of the organisation.

[Download](#)



Change Management of eDelivery specifications

This document addresses three types of CEF eDelivery specification documents and provides a simple change management process for CEF eDelivery and a related support policy. It also defines a metadata scheme for CEF eDelivery Specifications and explains how it relates to the support policy.

[Download](#)

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**Update on eDelivery guidance
on message signals and
evidences**

Agenda

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Background and Approach

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Guidance Document

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Analysis Document

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Recommendation

.....

Background

EU SPOCS project used **ETSI REM** (Registered Electronic Mail) for eDelivery

- Contributed to “eDelivery Convergence Task Force”
- Elaborated in e-CODEX and piloted in e-SENS

REM provides **additional** **“evidence”** **messages** to report events before/after Message Exchange

- Submission (to AP)
- Delivery, Relay, Download (from AP to final recipient)

Survey of use of REM in eDelivery pilots

- Some pilots use **REM XML syntax**, but otherwise no uniformity in approach
- **e-CODEX**: evidence exchanged in AS4 user messages
- **e-Tendering**: REM evidence attached to tender receipt business message
- **e-Health**: REM generated and stored (not exchanged as a message)
- For some other domains, REM concept is not a natural fit

Approach

CEF aims to provide:

- High level **guidance** and **background analysis** documentation
- **No additional technical specifications** and **no sample software** for REM or ERDS

“eDelivery Message Signals and Non-Repudiation” (high level document)

- High-level document covering “signals” for a broad range of events
- Non-repudiation, but also more general traceability/visibility
- Event set not limited to email-like use cases

“Non-Repudiation Services” (analysis document)

- Overview of Non-Repudiation concepts and terminology based on ISO 31888
- Analysis of standards: ETSI REM, ERDS, UBL, ebBP
- Analysis of use in pilots in e-Justice, e-Health, e-Tendering domains

eDelivery Message Signals and Non-Repudiation Paper

Introduces the **concept of "signals"** as a high-level concept for messages reporting events

- AS4 receipts/errors
- Other (application-generated) signals, generic or domain-specific
- Generated on Sender or Receiver side, then possibly relayed for end-to-end visibility

Distinguishes **two eDelivery patterns** and two deployment topologies

- Secure Digital Interface and Secure Digital Mail
- Four Corner or Point-to-Point

eDelivery Patterns

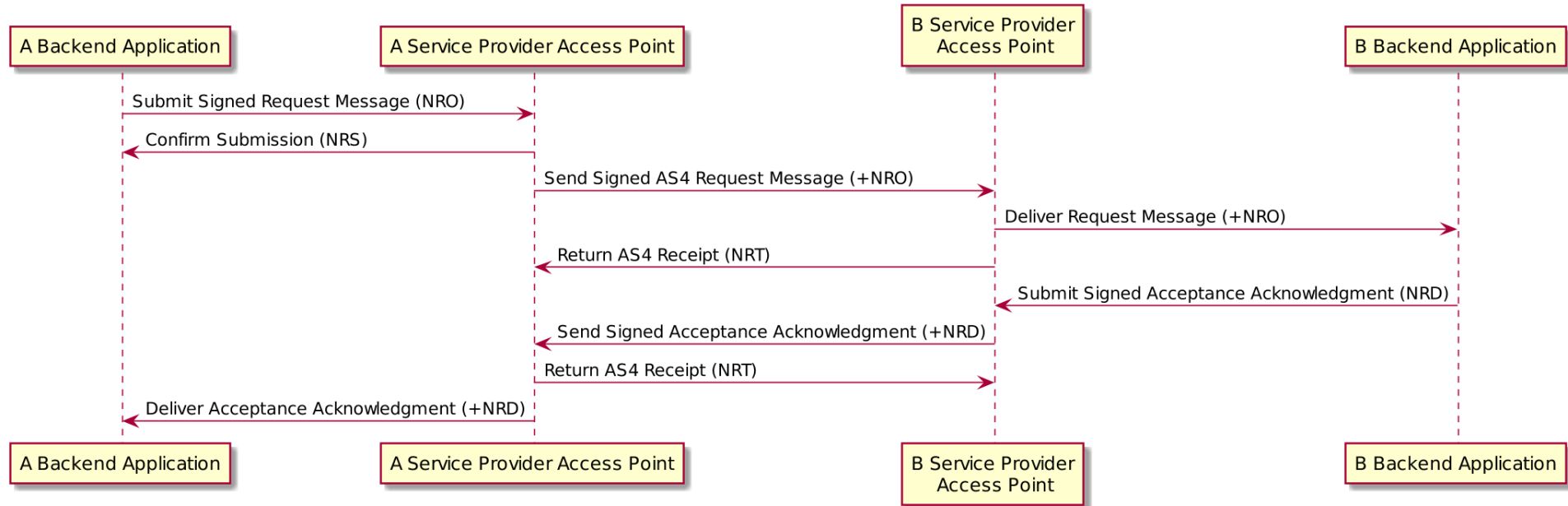
Secure Digital Interface

- Interconnection of MS messaging infrastructures, SOA/APIs
- Messages express invocations of actions on services, subject to defined business interactions
- Incoming messages are transmitted instantly for further processing
- Use monitoring of delivery of messages to application destinations
- May be time-critical
- Involve a payload (at least one) in agreed XML or other structured content format
- Require the ability to transform payloads from formats or schemas produced by producers and/or to formats consumed by consumers

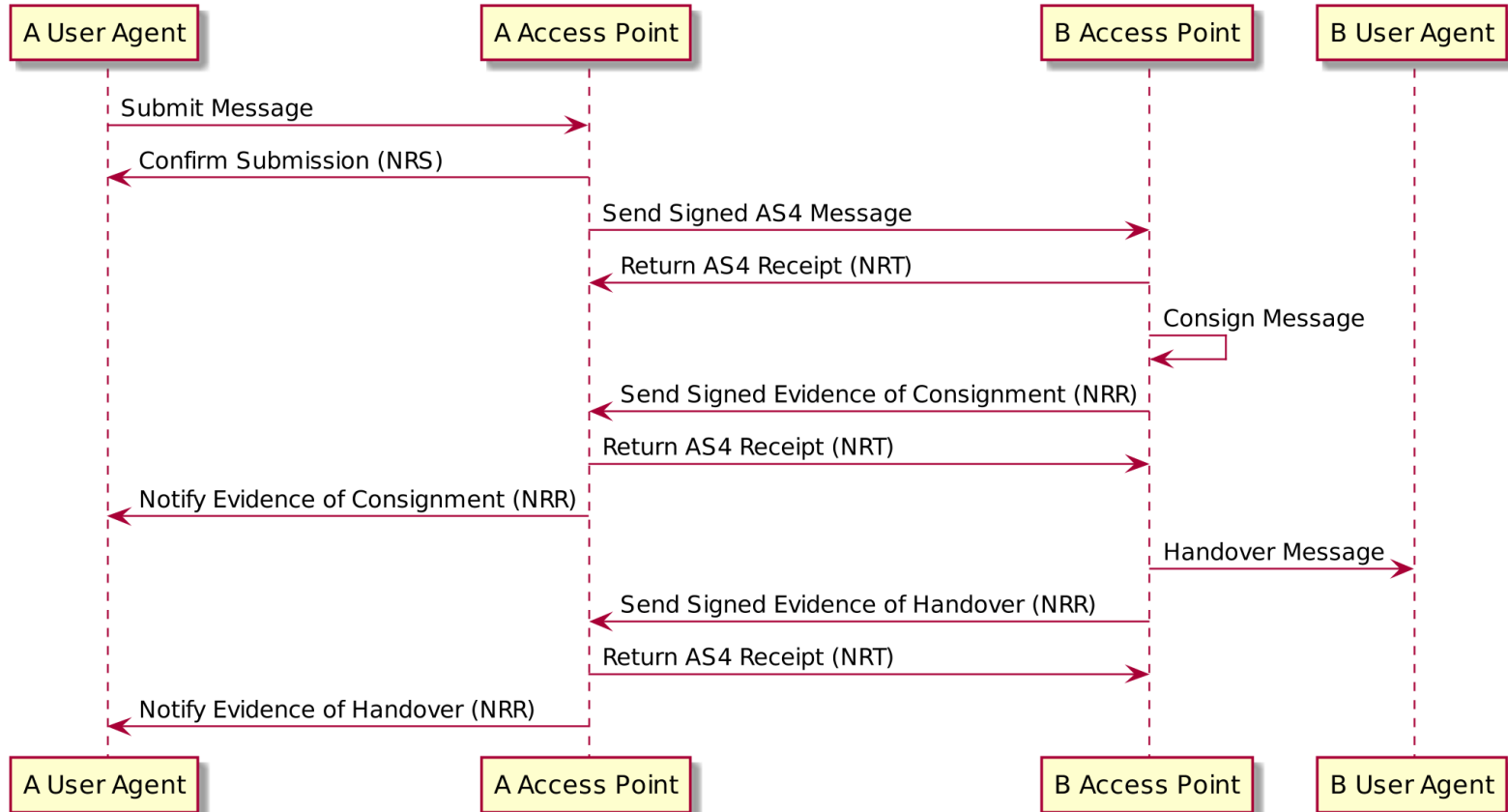
Secure Digital Mail

- Replacement for, or alternative to, paper-based or email-based systems
- Generic eDelivery process
- No immediate processing of messages
- Normally not time-critical
- Target individual citizens or employees of businesses rather than automated systems
- No structured content payloads
- No payload transformation
- Implied "User Agent" application that can provide and record end user access to data
- No guarantee that the recipient actually downloads messages from her mailbox

Secure Digital Interface Sample Flow



Secure Digital Mail Sample Flow



Recommendations

Use pattern concept to analyze domain requirements and design solutions

- Different domains may need different solutions

Secure Digital Interface, receiving side

- Extend semantics of AS4 receipt to cover transfer of responsibility, and define SLA accordingly
- Use a Business Acceptance signal (such as UBL ApplicationResponse or ebBP AcceptanceAcknowledgment) to indicate the transfer of responsibility is successful

Secure Digital Mail, receiving side

- AS4 receipt is less useful, as final recipient may reject consignment, or not download the message, so additional Evidence of Consignment is needed
- Use Evidence of Handover to signal delivery to User Agent

Evidence of Submission (e.g. from ERDS) potentially useful on sending side

- No interoperability constraints

Non-Repudiation Services: ISO 13888 reference model

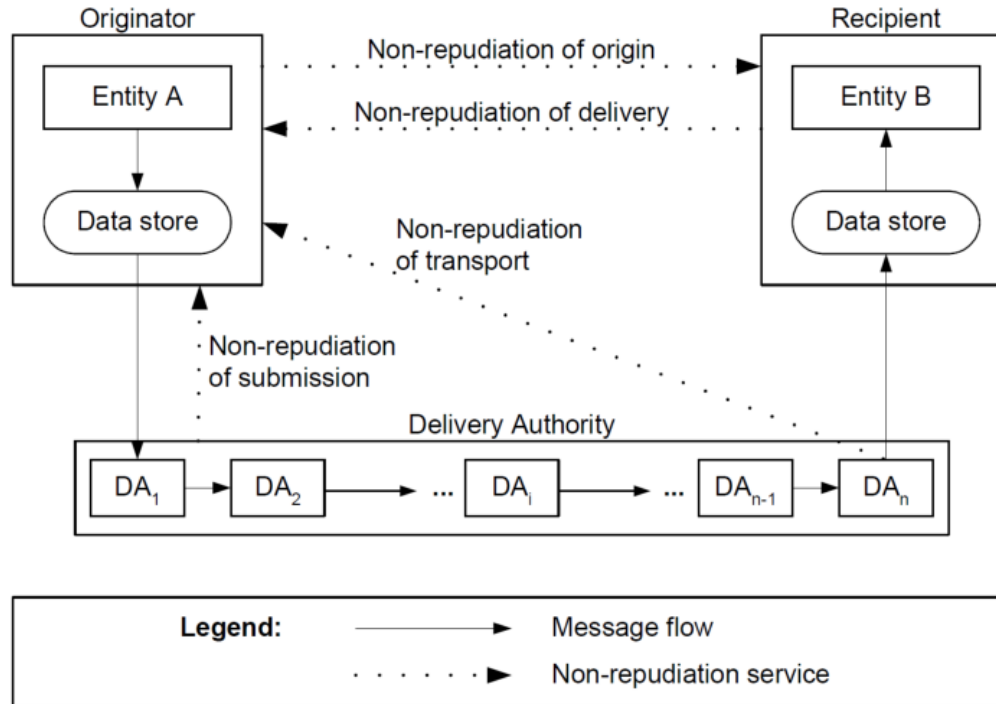


Figure 1 — Specific non-repudiation services

Non-Repudiation Services in a Four Corner Model

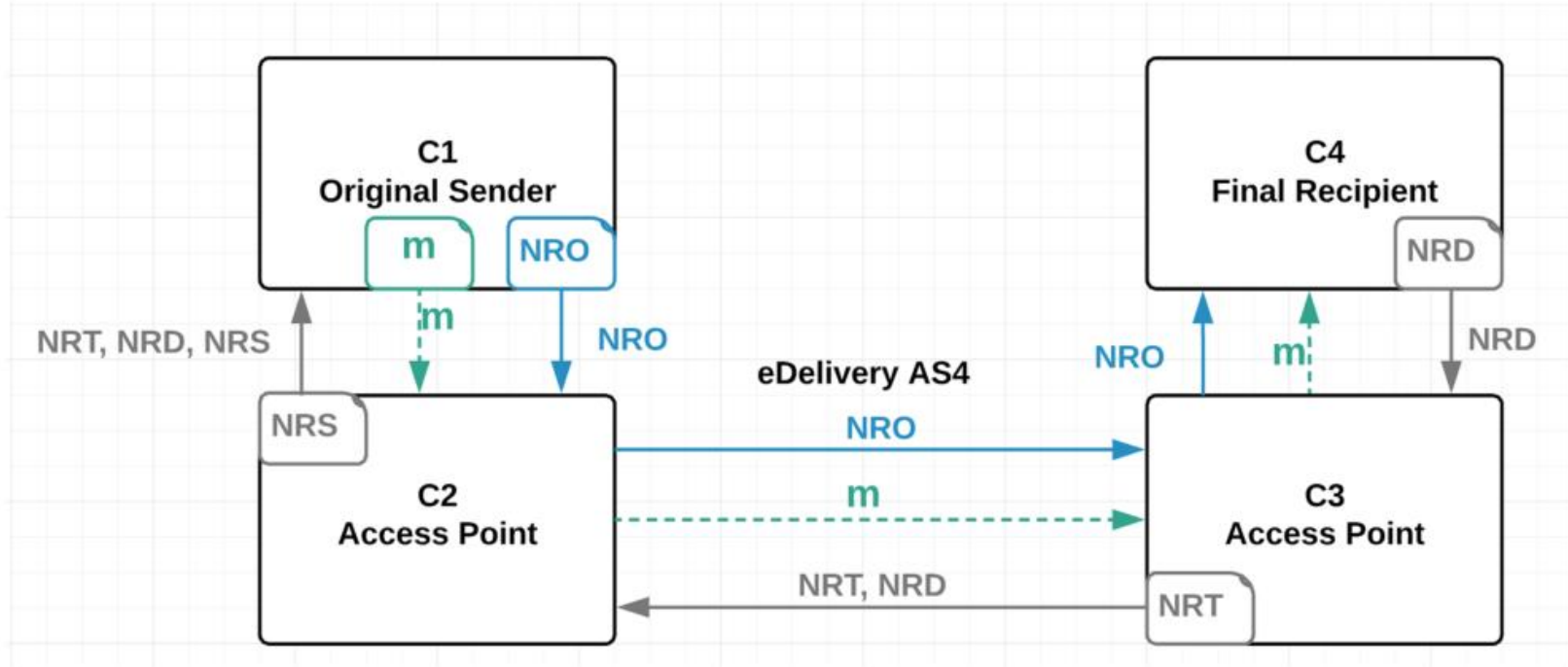


Figure 2: Flow of evidences in the 4-corner model

Non-Repudiation Services: Conclusions

Extended Delegation Scenario

- Defined in CEF Security Controls guidance document
- Assumes Access Points are delegated signers
- NRO based on message signature, NRR based on signed NR receipts

Delivery Authority model

- Access Points are relays without mandate to sign as delegees
- Provide Non-Repudiation of Transport

ebBP or UBL

- Taken knowledge of content

REM/ERDS (Delivery Authority)

- NRS, NRT, NRR

| | NRO | NRS | NRT | NRR | NRD |
|------------------------------------|-----|-----|-----|-----|-----|
| AS4 (Extended) Delegation scenario | OK | X | N/A | OK | X |
| AS4 Delivery Authority model | X | X | OK | N/A | X |
| <u>ebBP</u> | X | X | X | OK | OK |
| ETSI REM/ERDS | X | OK | OK | OK | X |

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 is a dark blue header with the text 'CEF Digital' and 'Part of the Connecting Europe Facility (CEF) programme - enabler of the Digital Single Market'. The main content area has a white background with a yellow horizontal line. Below the line is a 'Latest' section with the headline 'BRIS Now Live on the European e-Justice Portal'. The next section is 'CEF Building Blocks', which includes a sub-header 'Build your digital service faster and cheaper and create a European digital single market.' followed by three columns of services: eDelivery, eID, and eInvoicing. Below these are eSignature, eTranslation, and a link 'About the building blocks'. At the bottom, there is a 'Sector Specific Digital Service Infrastructures' section and an 'About CEF' section.

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.](#)

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Contact us



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