EC (DG SANTE)

The eHealth DSI

2017-04-04, Solution Provider

Materials prepared by the eHDSI Solution Provider

v10, updated 2017-04-04

Topics tackled

1. **CEF eHealth** DSI (eHDSI)
2. Use Cases: **Patient Summary** and **ePrescription**
3. eHDSI System **Architecture**
4. eHDSI **Service** Offering
5. eHDSI **Core** Services
6. eHDSI **Generic** Services
7. eHDSI **Timescales**
8. eHDSI Communication & **Collaboration**

eHealth DSI

1. CEF eHealth DSI (eHDSI)

Updated 2017-04-04, Solution Provider

CEF eHDSI

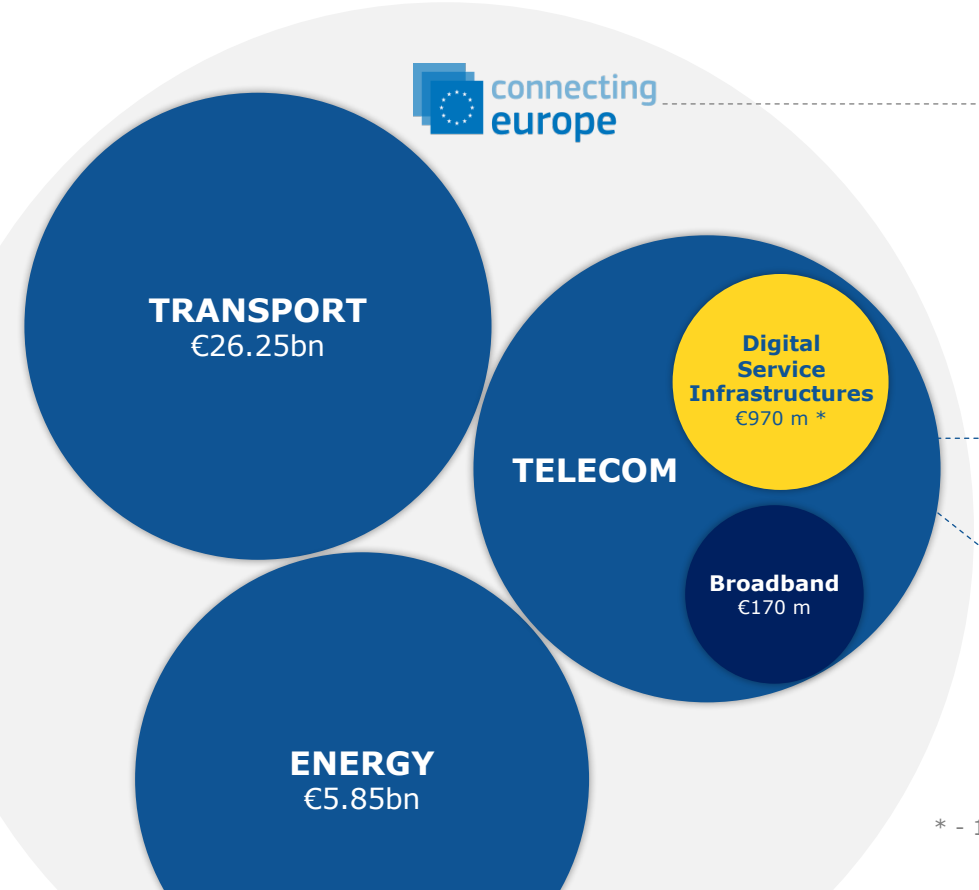
- **CEF - Regulation & Funding**
- **eHealth – Policies & Requirements**
- **Digital – Information and Communication Technologies**
- **Service – Healthcare (Use Cases)**
- **Infrastructure – Core (central) & Generic (Countries)**

CEF eHealth DSI

- Is it a Project?
- Is it a Pilot?
- Is it a Service?

- What is it?

What is CEF



HOW IS IT REGULATED?

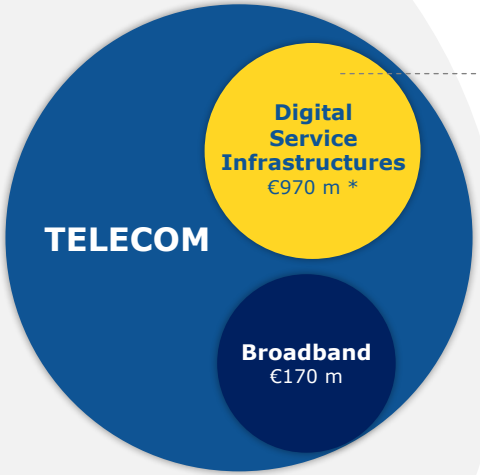
CEF Regulation (REGULATION (EU) No 1316/2013)
The Connecting Europe Facility (CEF) is a regulation that defines how the Commission can finance support for the establishment of trans-European networks to reinforce an interconnected Europe.

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

* - 100 m Juncker Package

What is Digital Service Infrastructure (DSI)



What is a DSI?

**DSI describe solutions that support the implementation of EU-wide projects. They provide trans-European interoperable services and which are composed of core service platforms and generic services.

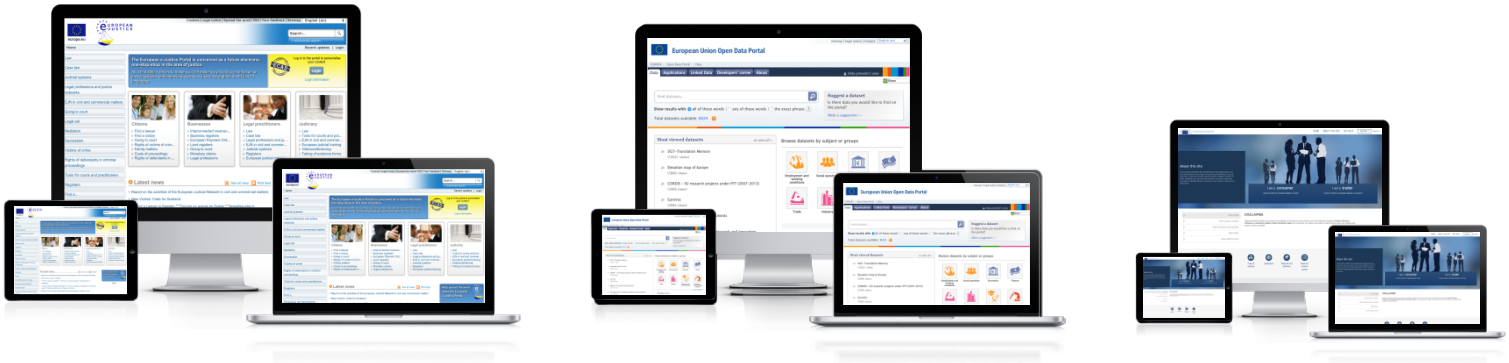
**Building Block DSI Building Blocks are basic digital service infrastructures, which are key enablers to be reused in more complex digital services.

**Sector Specific DSI provide trans-European interoperable services for specific domains (e.g. eHealth, Cybersecurity, e-Justice, e-Procurement) using BB DSI

* - 100 m Juncker Package

**Source: Regulation (EU) No 283/2014

CEF Telecom – what does it finance



DIGITAL SERVICE INFRASTRUCTURES (DSIs)

EUROPEAN COMMISSION

MEMBER STATES

CORE SERVICE PLATFORM
(Services offered by the European Commission)

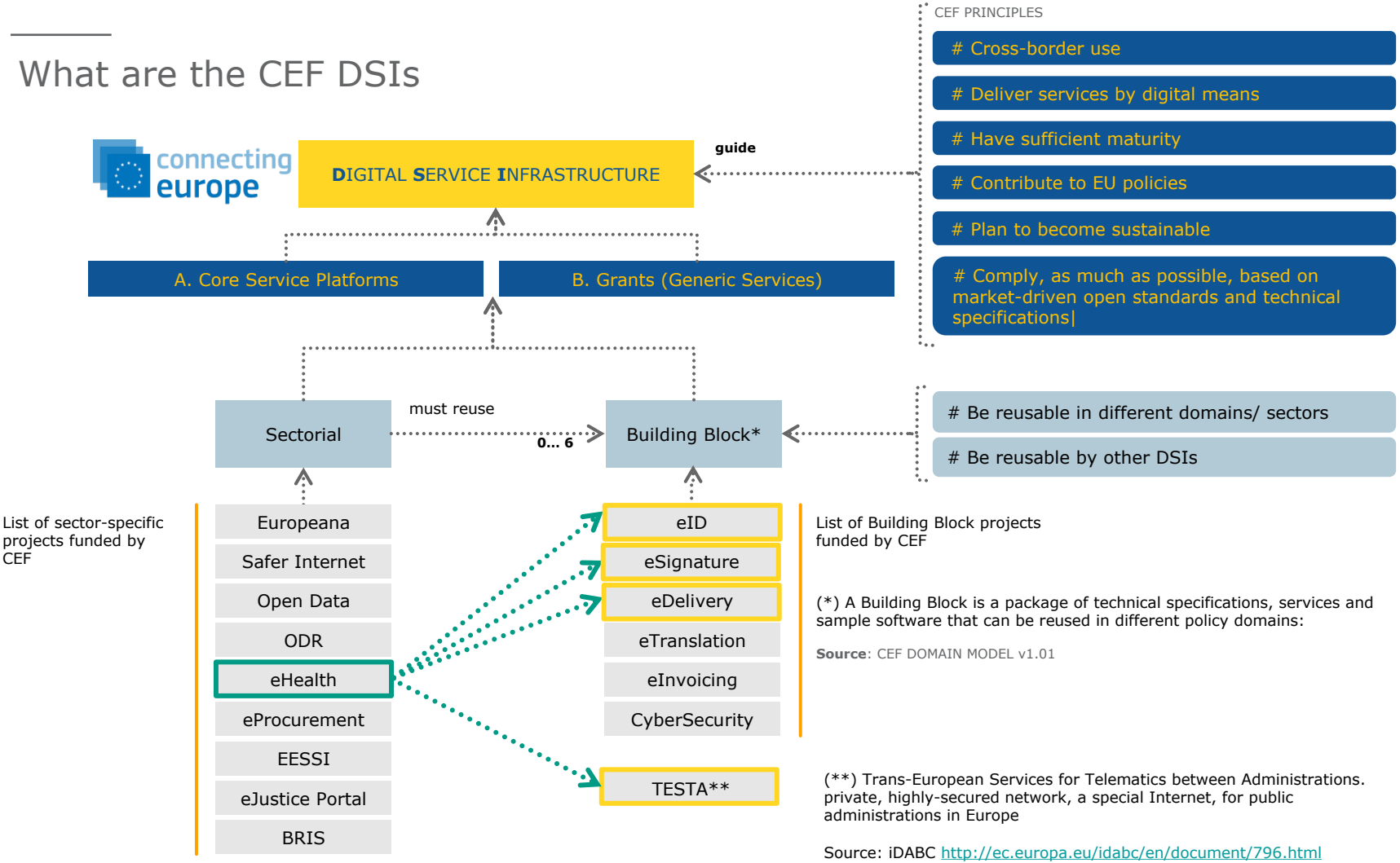
GENERIC SERVICES
(Grants for projects in the Member States)

https://ec.europa.eu/cefdigital/wiki/x/QAFfAQ

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

European Commission

What are the CEF DSIs



CEF eHealth DSI (eHDSI)

What is the eHDSI challenge?

- Many **EU citizens travel to** or **work** in **another** Member State.
  - However, their clinical information **is not always accessible** in the Member States where citizens **may need health care**.
  - The **increased mobility** of citizens coupled with the advancements of **digital technologies** requires both **health policies** and **health systems** across the European Union to be more and **more interconnected, more interoperable**.

CEF Rationale

(…) the Union needs an up-to-date, high-performance infrastructure to help connect and integrate the Union and all its regions (…)

(…) Those connections should help improve the free movement of persons, goods, capital and services. (..)

CEF eHealth DSI (eHDSI)

What is the eHealth DSI?

- **Services** and **Infrastructure** using ICTs that enable cross border Healthcare services.

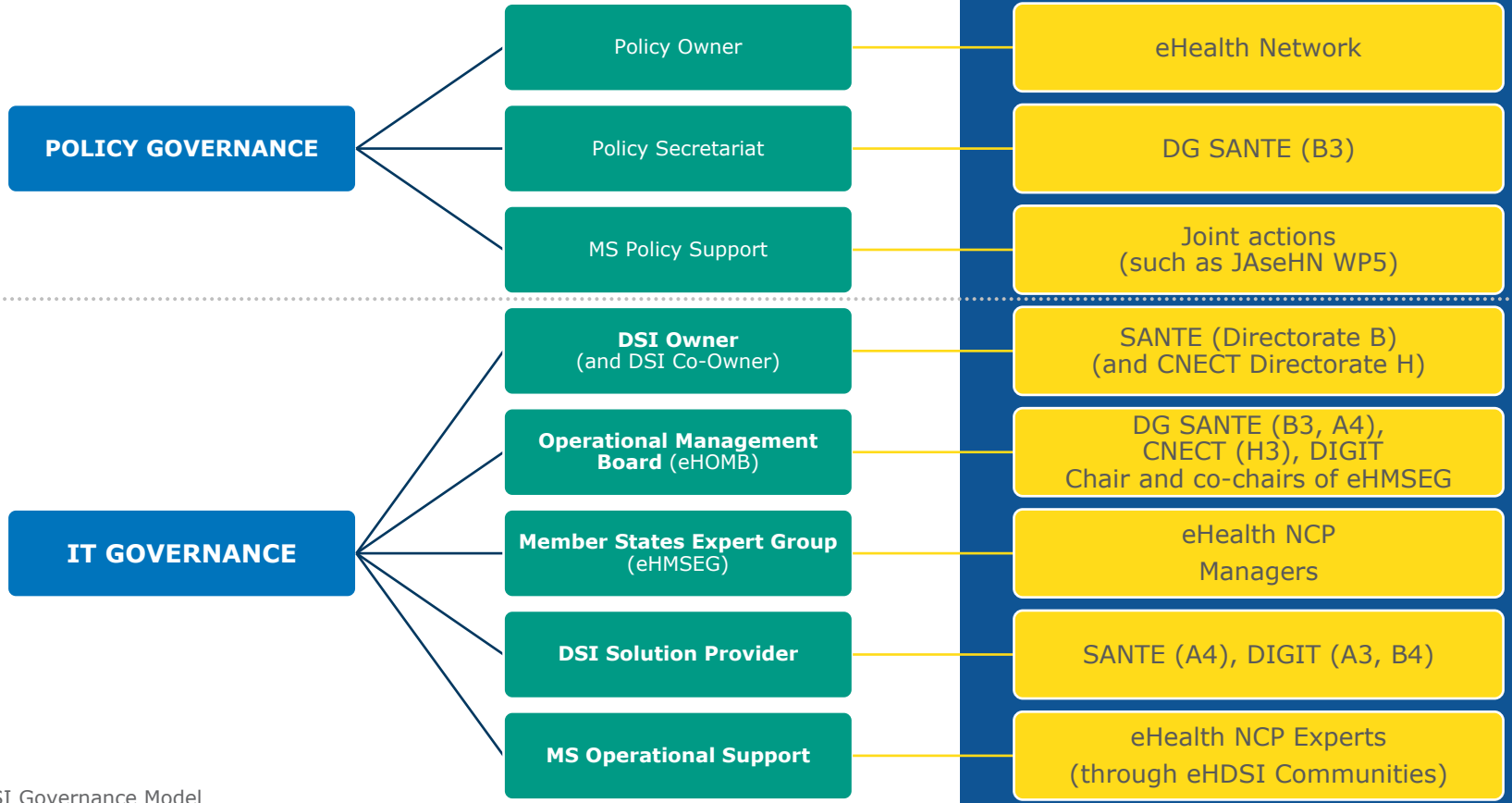
- Use Cases:
  - **Patient Summary**, provides access to health professional to verified key health data of a patient during an unplanned care encounter while abroad

  - **ePrescription**, enables patients to receive equivalent medication treatment while abroad to what they would receive in their home country

eHealth DSI
Deploying Countries

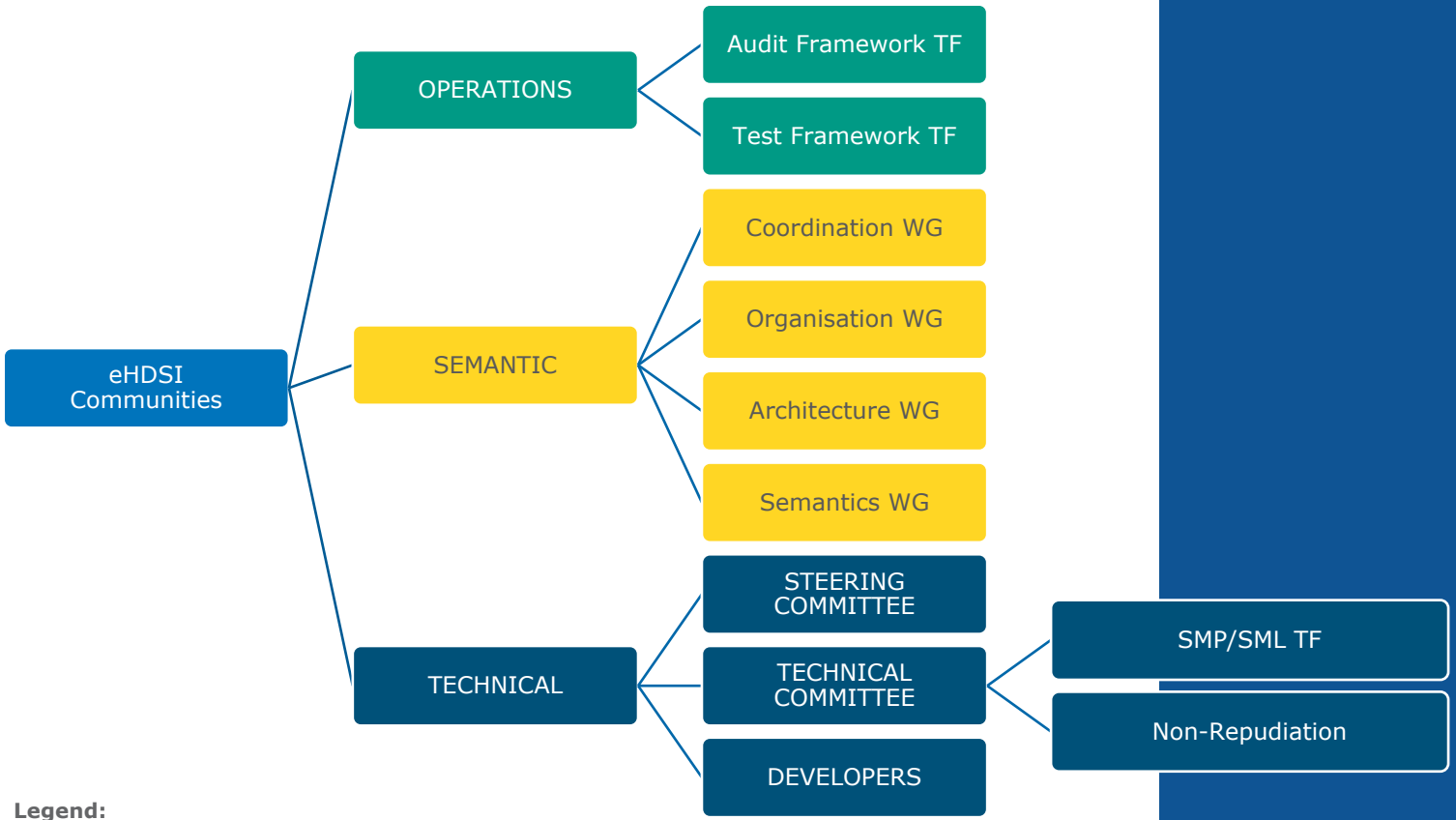
	PS	eP
Austria	♥	♥
Croatia	♥	♥
Cyprus	♥	♥
Czech Republic	♥	
Estonia	♥	♥
Finland		♥
France	♥	
Germany	♥	
Greece	♥	♥
Hungary	♥	♥
Ireland	♥	♥
Italy	♥	♥
Luxembourg	♥	
Malta	♥	
Portugal	♥	♥
Sweden		♥
Switzerland	♥	♥

eHDSI **Governance organisation**



Source: eHDSI Governance Model
https://ec.europa.eu/cefdigital/wiki/x/z0QZAg

eHDSI **Operation Communities**



Legend:
TF: Task Force
WG: Work Group

eHealth DSI

2. Use Cases: **Patient Summary** and **ePrescription**

Updated 2017-03-13, Solution Provider

Use Cases: **Patient Summary** and **ePrescription**

JASEHN
Joint Action to Support the eHealth Network

GUIDELINE

on

the electronic exchange of health data under Cross-Border Directive 2011/24/EU

Release 2

Patient Summary for unscheduled care

Document Information:

Document status:	Adopted by the eHealth Network at their 10th meeting on 21st November 2016
Approved by JAseHN sPSC	Yes
Document Version:	V4.0
Document Number:	D5.3.1
Document produced by:	Joint Action to support the eHealth Network • WP 5 - Interoperability and Standardisation • Task 5.3 - Update & revision of EU eHealth Guidelines
Author(s):	Jeremy Thorp (HSCIC), Daisy Smet (ASE Luxembourg), Christof Gessner (GEMATIK)
Member State Contributor(s):	Austria, Finland, Germany, Greece, Hungary, Lithuania, Malta, Sweden
Stakeholder Contributor(s):	CEN IPS, COCIR, DG SANTE, EMA, European Society of Cardiology (ESC), Eurocee, HI7 Foundation, Pharmaceutical Group of the European Union (PGEU), Results4care

JASEHN
Joint Action to Support the eHealth Network

GUIDELINE

on

the electronic exchange of health data under Cross-Border Directive 2011/24/EU

Release 2

ePrescriptions and eDispensations

Document Information:

Document status:	Adopted by the eHealth Network at their 10th meeting on 21st November 2016
Approved by JAseHN sPSC	Yes
Document Version:	V4.0
Document Number:	D5.3.2
Document produced by:	Joint Action to support the eHealth Network • WP 5 - Interoperability and Standardisation • Task 5.3 - Update & revision of EU eHealth Guidelines
Author(s):	Jeremy Thorp (HSCIC), Daisy Smet (ASE Luxembourg), Christof Gessner (GEMATIK)
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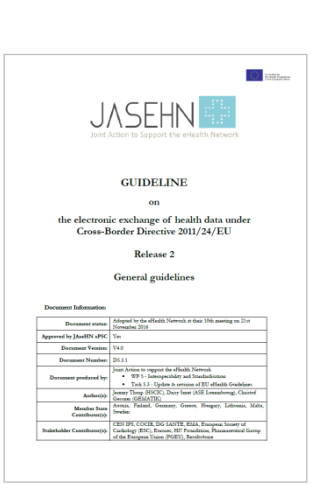


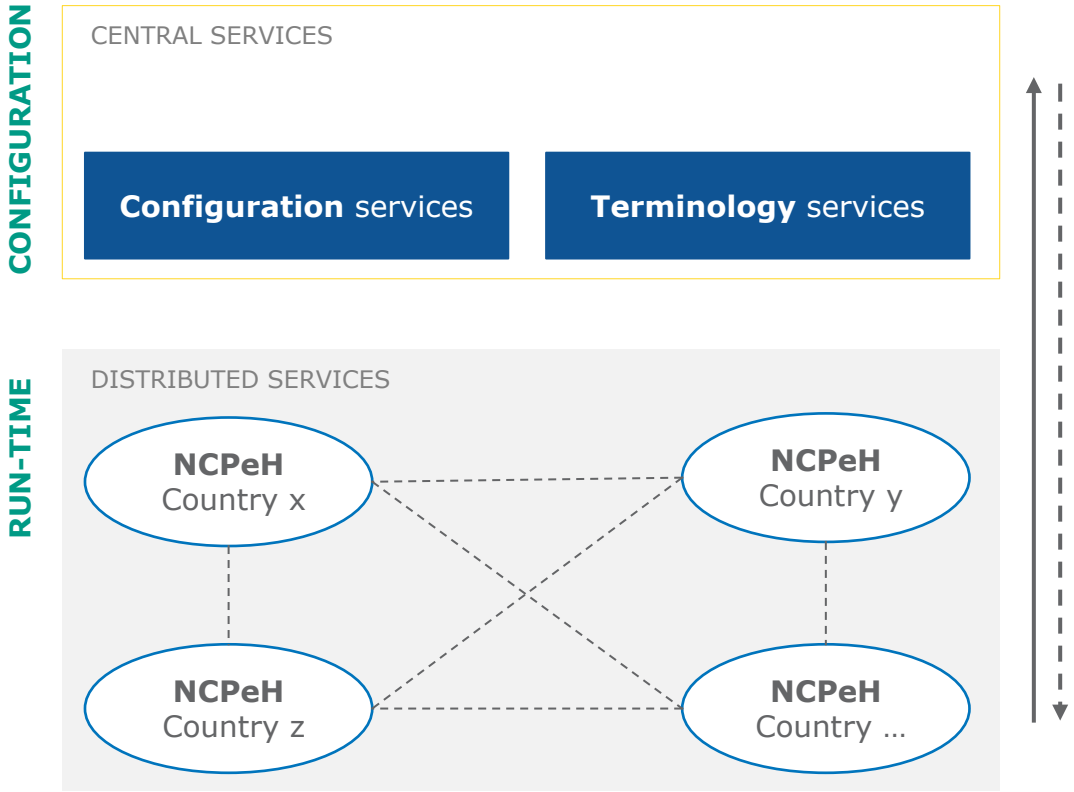
European Commission

eHealth DSI

3. eHDSI System Architecture

Updated 2016-11-14, Solution Provider

eHDSI System Architecture



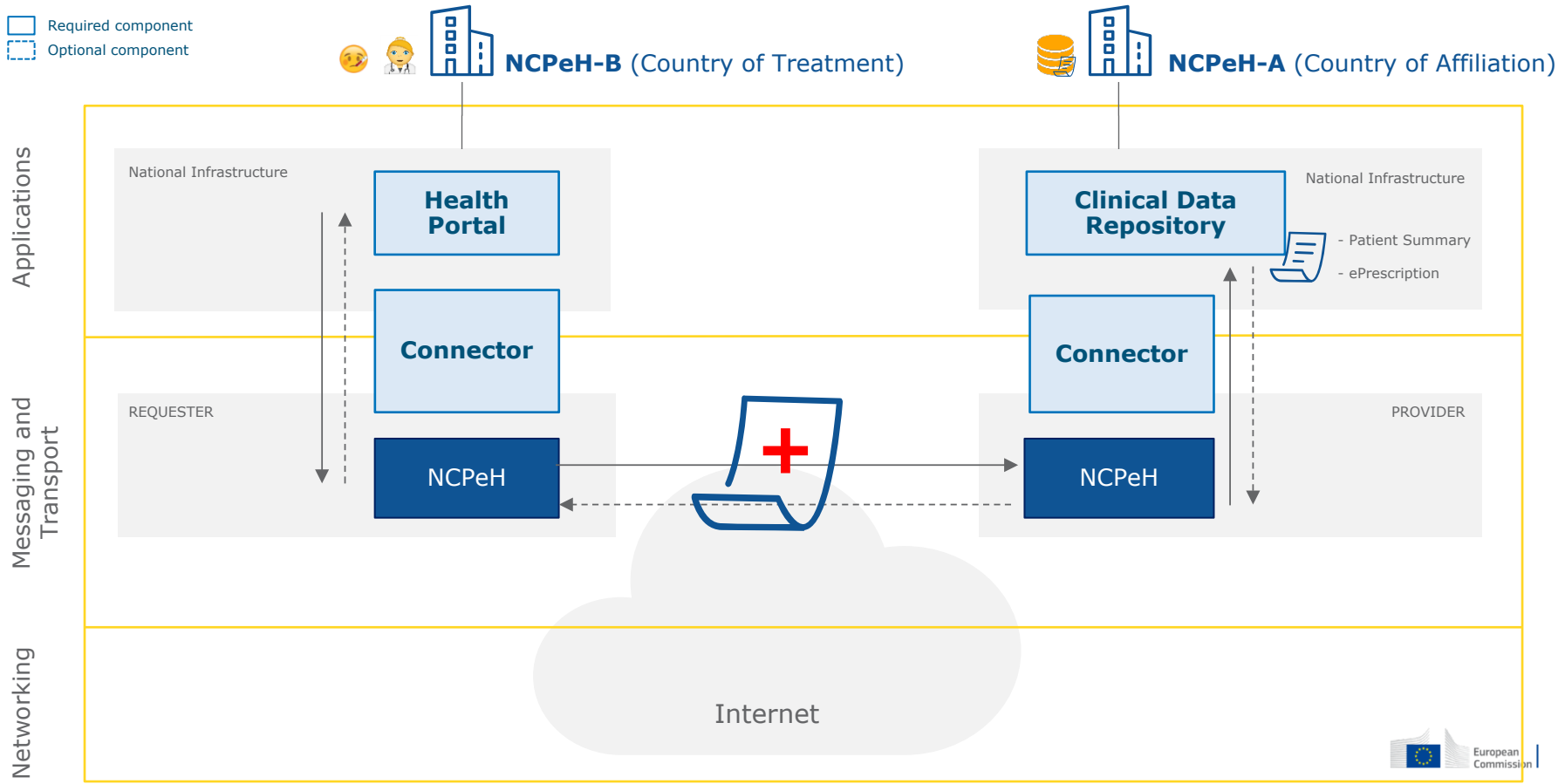
Central Services

- 1 EU wide instance
- Configuration

NCPeH – National contact Point for eHealth

- 1 per Country
- Run-time

The interoperability challenge



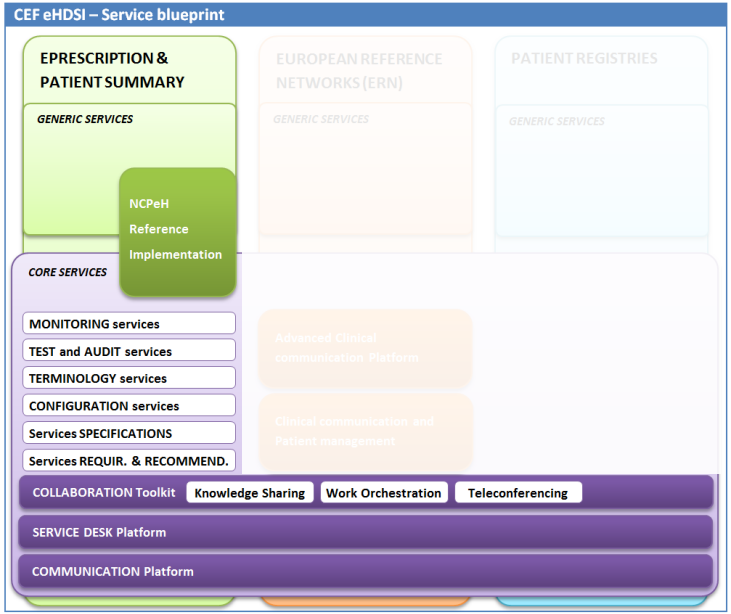
eHealth DSI

4. eHDSI Service Offering

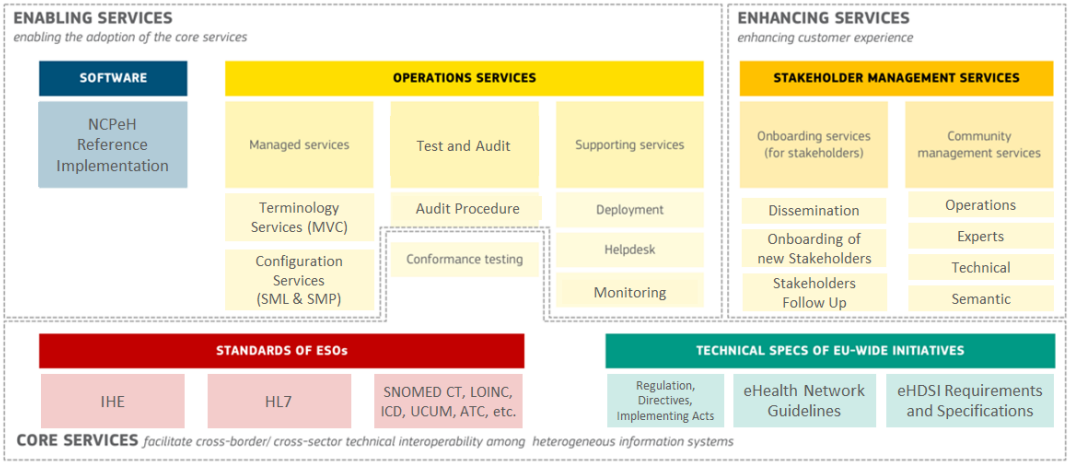
Updated 2016-11-14, Solution Provider

eHDSI Service Offering

SOLUTION PROVIDER perspective



USERS perspective



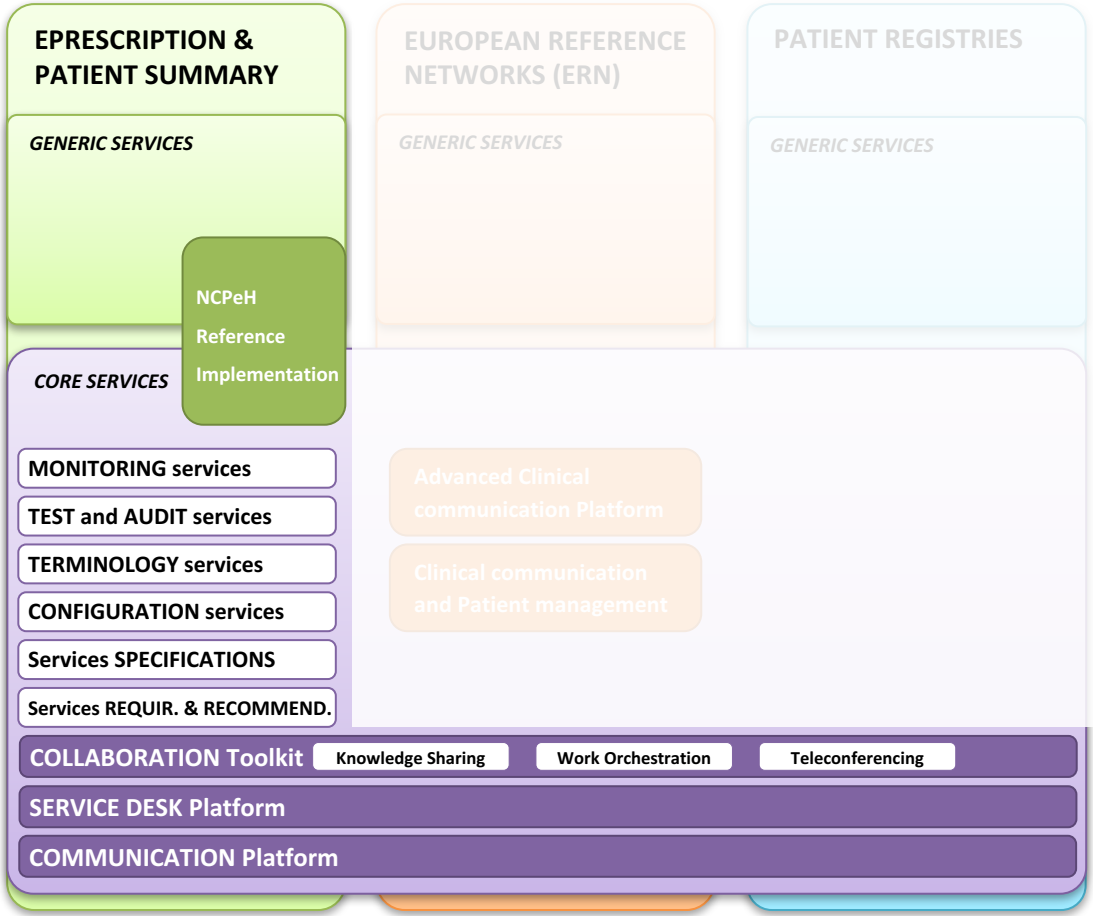
Online version: https://ec.europa.eu/cefdigital/wiki/x/3EQZAg

European Commission

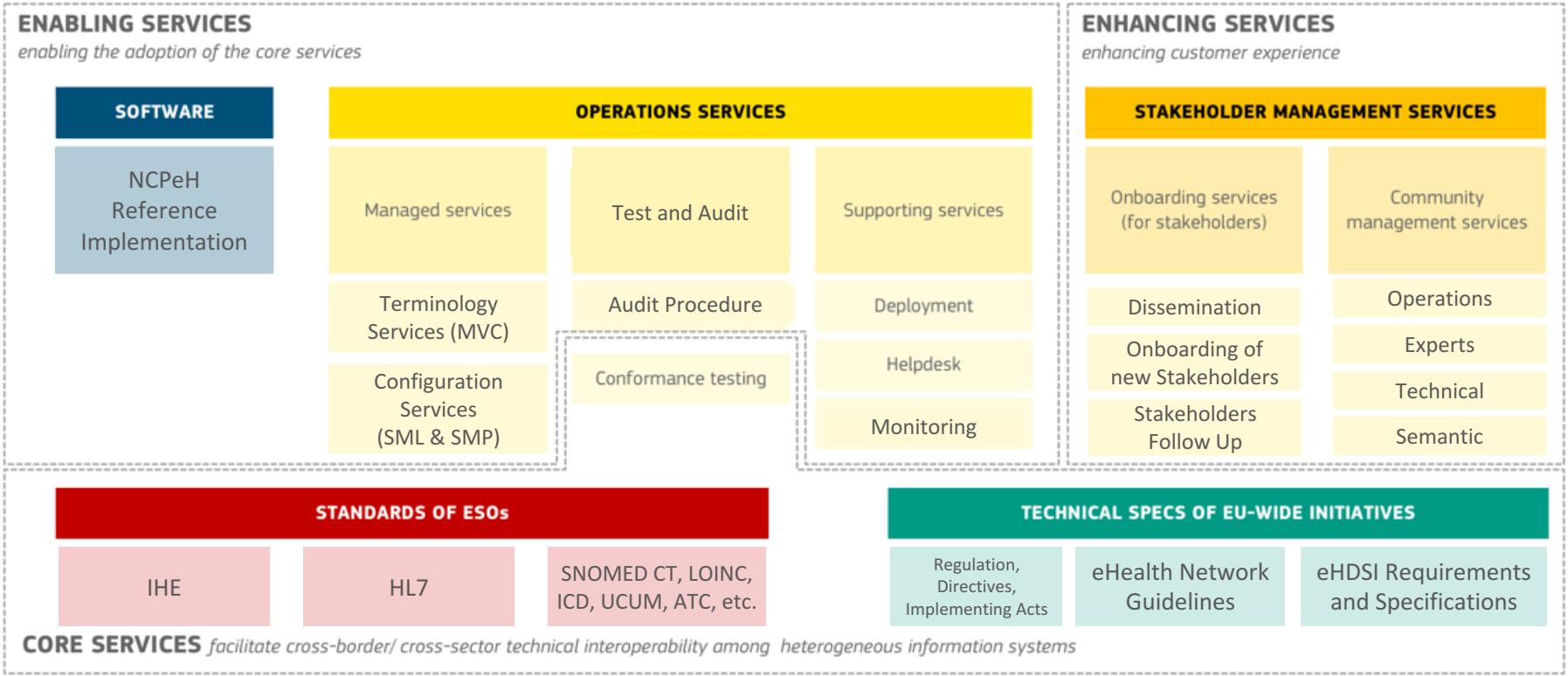
eHDSI Service Offering - Solution Provider perspective

each **Member State**

EC – eHDSI **Solution Provider**



eHDSI Service Offering – Users perspective



Inspiration source: https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Service+Offering

eHealth DSI

5. eHDSI Core Services

Updated 2017-03-13, Solution Provider

eHDSI Core Services (1 of 2)

SERVICE	PURPOSE
Services REQUIREMENTS	Provide a clear set of policy and business requirements elicit from Regulation, Directives, Implementing acts, policies and guidelines, that drive the specification, implementation and operation
Services SPECIFICATION	Provide eHDSI Interoperability specifications that enable the building of NCPeH and the Service Network
CONFIGURATION services	Enable NCPeH Service Network establishment through automated configuration management
TERMINOLOGY services	Enable MVC distribution and support MTC management
TEST AND AUDIT services	Establish the Tests and Audit requirements that must be fulfilled to enter in the NCPeH Operational Network

Provided by:

- eHDSI
  - Owner (DG SANTE B3)
  - Solution Provider (DG SANTE A4)

eHDSI Core Services (2 of 2)

SERVICE	PURPOSE
MONITORING services	Gather evidence about core and generic services performance
COMMUNICATION services	Multistakeholder dissemination
SERVICE DESK services	Resolve End-Users issues (of CORE SERVICES)
COLLABORATION services	Streamline stakeholders interaction and joint work
NCPeH Reference Implementation	Ease MS effort by providing a jointly build NCPeH reference implementation

Provided by:

- eHDSI
  - Owner (DG SANTE B3)
  - Solution Provider (DG SANTE A4)

Specifications

enable the building of NCPeH and the Service Network

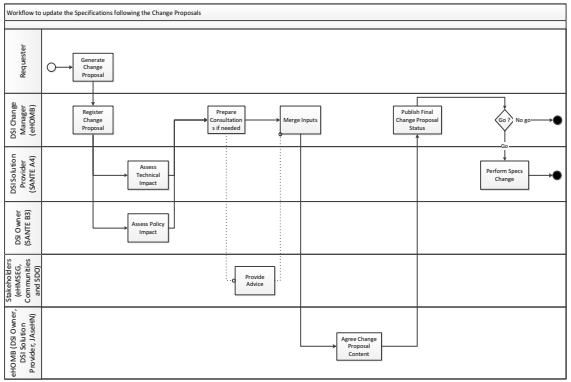
Updated 2017-03-13, eHDSI Solution

Specifications and Change Proposals

Specifications Blueprint

Interoperability Specification [+]	Policy "Why ?"	Content "What ?"	Behaviour "How ?"	Implementation "Where ?"
	Business Viewpoint	**Information Viewpoint**	**Computational Viewpoint**	**Engineering Viewpoint**
Conceptual	Requirements and Recommendations			
Logical		*Technical* System Architecture Specification [+]		
	PS Functional requirements [+] eP Functional requirements [+]	*Semantic* Semantic Services Specification [+]	*Technical* NCPeH Architecture Specification [+] Identity Management Specification [+] Security Services Specification [+] Section I - Security Policies [+] Section II - Security Services [+] Section III - Congruity and Suitability Analysis [+] *Semantic* Central Reference Terminology Server [+] Terminology Access Services [+] Transformation Manager - Component Functionality [+] TSAM Synchronizer – Conformance Functional Profiles [+]	*Technical* NCPeH Components Specification [+] *Semantic* TSAM Synchronizer – Conformance Implementation Profiles [+]
Implementable	*Organizational* Test Framework Audit Framework Monitoring Framework Support Framework	*Semantic* CDA templates Master Value Sets Catalogue [+]	*Technical* Cryptographic Algorithms [+] Audit Trail Profiles [+] BPPC Profile [+] XCA Profile [+] XCPD Profile [+] XDR Profile [+] Messaging Profile [+] SAML Profile [+] TSL Profile [+] X.509 Certificate Profiles [+]	*Semantic* TM and TSAM implementation [+] *Technical* openNCP Implementation [+] NCPeH Deployment [+]

Change Proposal procedure



Change Proposal Registry

Change Proposal Title	Status
CP-eHealthDSI-001 : Add Non Repudiation Feature	In Consolidation (since 14 Feb 2017 to 21 Feb 2017)
CP-eHealthDSI-002 : Add SMP/SML capabilities	In Consolidation (since 14 Feb 2017 to 21 Feb 2017)
~~CP-eHealthDSI-003 : Clarification on the usage of some RFNA optionality~~	Deprecated at 18 Oct 2016 by: CP-eHealthDSI-008, CP-eHealthDSI-009, CP-eHealthDSI-010
CP-eHealthDSI-004 : Implementation of the national connector, work-flow manger and access control components	Requester (eHDSI Solution Provider)
~~CP-eHealthDSI-005 : Implementation of a caching mechanism~~	Deprecated at 08 Nov 2016 by: CP-eHealthDSI-011
~~CP-eHealthDSI-006 : Adding message signature~~	Deprecated at 08 Nov 2016 and will be reconsidered later
~~CP-eHealthDSI-007 : Add the eID functionalities~~	Deprecated at 08 Nov 2016 and will be replaced by the Technical Feasibility Report
CP-eHealthDSI-008 : Adoption of computable CDA Template specifications (HL7 DSTU template exchange format)	Approved for implementation (01 Feb 2017) CP-eHealthDSI-008_AdoptionOfComputableCDATemplate _v1.0.pdf
CP-eHealthDSI-009 : Formal approval of changes agreed in the EXPAND project for the description of medication	Approved for implementation (01 Feb 2017) CP-eHealthDSI-009_ConfirmationOfMedicinesRelatedCPAgreedInEXPAND_v1.0.pdf
CP-eHealthDSI-010 : Formalization in ART DECOR of the CDA templates used for the transmission of the original Patient Summary and ePrescription	Approved for implementation (01 Feb 2017) CP-eHealthDSI-010_FormalizationOfPS_eP_CDAL1_v1.0.pdf
CP-eHealthDSI-011 : Specification of Configuration Manager into the NCP Architecture	Requester (eHDSI Solution Provider)
CP-eHealthDSI-012 : Remove all references to the epSOS LSP, work packages information, project management information, requirements and PAC, HCER and MRO services	Approved for implementation (01 Feb 2017) CP-eHealthDSI-012_RemoveEPSOSLSPReference_v1.5.pdf
CP-eHealthDSI-013 : MVC update for eHDSI Wave 1 Go Live	In Consolidation (since 15 Feb 2017 to 22 Feb 2017)

European Commission

Specifications Blueprint

Interoperability Specification [+]	Policy "Why ?"	Content "What ?"	Behaviour "How ?"	Implementation "Where ?"
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*Source: HL7 Service-Aware Interoperability Framework (SAIF) and Enterprise Conformance Compliance Framework (ECCF) stack

Online version: https://ec.europa.eu/cefdigital/wiki/x/3EQZAg

Purpose

Provide eHDSI Interoperability specifications that enable the building of NCPeH and the Service Network

Description

Fundamental design information that map requirements into clear indications on what is to be built.

Specifications Blueprint

Implementable	*Organisational*	*Semantic*	*Technical*	*Semantic*
	Test Framework	CDA templates	Cryptographic Algorithms [+]	TM and TSAM implementation [+] *Technical*
	Audit Framework	Master Value Sets Catalogue [+]	Audit Trail Profiles [+]	openNCP Implementation [+]
	Monitoring Framework		BPPC Profile [+]	NCPeH Deployment [+]
	Support Framework		XCA Profile [+]	
			XCPD Profile [+]	
			XDR Profile [+]	
			Messaging Profile [+]	
			SAML Profile [+]	
			TSL Profile [+]	
			X.509 Certificate Profiles [+]	

*Source: HL7 Service-Aware Interoperability Framework (SAIF) and Enterprise Conformance Compliance Framework (ECCF) stack

Online version: https://ec.europa.eu/cefdigital/wiki/x/3EQZAg

In Numbers

- Documents: 36
- Pages: around 2000
- Knowledge accumulated: over 8 years.

Actual stage

- Latest version epSOS/EXPAND documents
- 1st eHDSI release March 2017

Change Proposals - Registry

Change Proposal Title	Status
CP-eHealthDSI-001 : Add Non Repudiation Feature	In Consolidation (since 14 Feb 2017 to 21 Feb 2017)
CP-eHealthDSI-002 : Add SMP/SML capabilities	Approved for implementation (27 Feb 2017) CP-eHealthDSI-002_SMP SMLCapabilities_v1.0.pdf
~~CP-eHealthDSI-003 : Clarification on the usage of some RFNA optionality~~	Deprecated at 18 Oct 2016 by: CP-eHealthDSI-008, CP-eHealthDSI-009, CP-eHealthDSI-010
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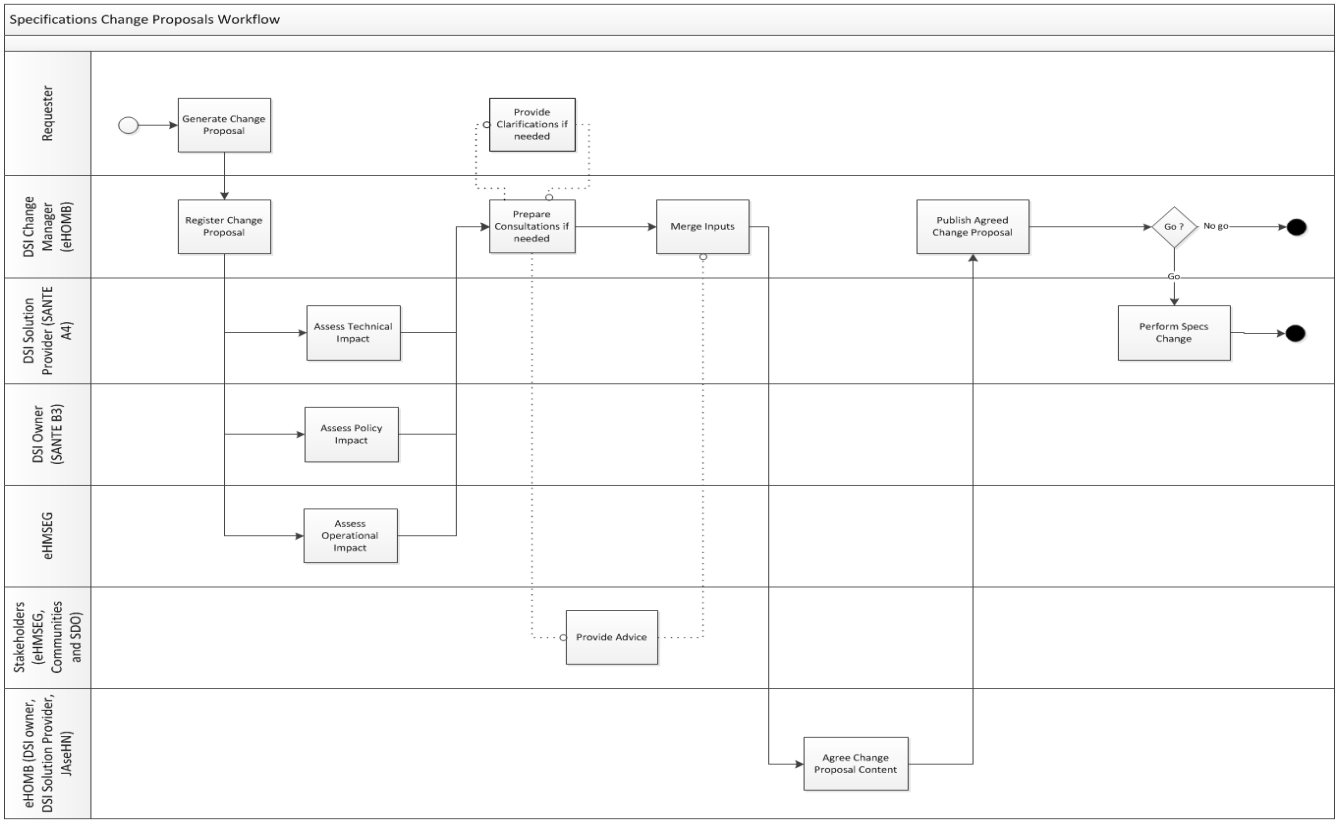
CP-eHealthDSI-013 : MVC update for eHDSI Wave 1 Go Live	Approved for implementation (27 Feb 2017) CP-eHealthDSI-013_MVCUpdateForeHDSIWave1GoLive_v1.0.pdf

Monitoring

- Completed: 0
- In implementation: 6
- For eHOMB Adoption: 0
- In Consolidation: 1
- In preparation (known): 4

Change Proposal procedure review - rationale



Revision

Adopted by eHOMB and eHMSEG (September 2016) for trial use

Fine-tuning and approval for routine operation (March 2017)

Use of eID for Patient Identification

draft study on "The use of CEF eID in the CEF eHealth DSI"

Updated 2016-11-29, eHDSI Solution Provider (source: draft study "The use of CEF eID in the CEF eHealth DSI", Deloitte, 2016-12-01

CORE Services: **Interoperability Specifications on eHealth eID**

Objective

Possible use of the CEF eID building block in the eHealth DSI use cases.

Purpose

Patient Identification when receiving health care while abroad

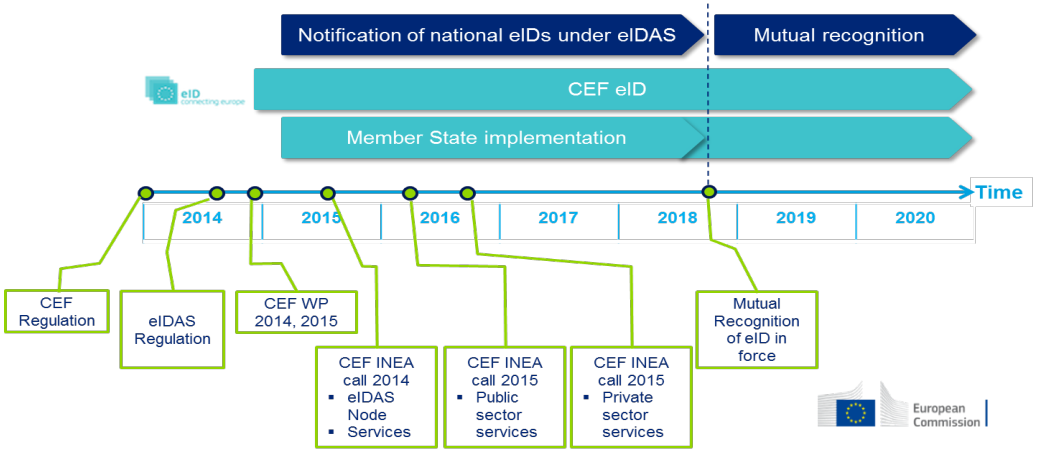
eHealth use cases

- Patient Summary (Cross-border)
- ePrescription and eDispensation (Cross-border)

Context – eIDAS & CEF eID

- **eIDAS Regulation**: (2014) requires Member States to recognise eIDs from other Member States (mutual recognition):
  - By Sep 2018, any Member State that provides public services using an eID must recognise eIDs from other Member States;
  - Until then Member States can notify their national eID schemes to make them available through the eIDAS Network;
  - For this, they need to make their national eID schemes interoperable across borders.

- **CEF eID:**
  - CEF eID: supports MS in defining technical specs and sample software
  - CEF: financially supports the deployment in MS

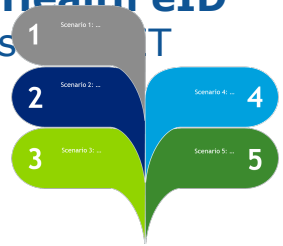


Benefits of using CEF eID for eHealth

- eIDAS Regulation and CEF eID building block could provide a meaningful way for **cross-border patient identification and authentication** in the eHealth use cases:
  - The eIDAS Regulation provides a clear legal framework, both for interoperability and level of security/assurance
  - Expected that almost all Member States would implement an eIDAS Node by September 2018
  - Relevant information required for the identification of patients can be provided through the eIDAS Network
  - The use of cross-border authentication through the eIDAS Network provides a reliable, responsible and convenient manner for online-services to identify their users

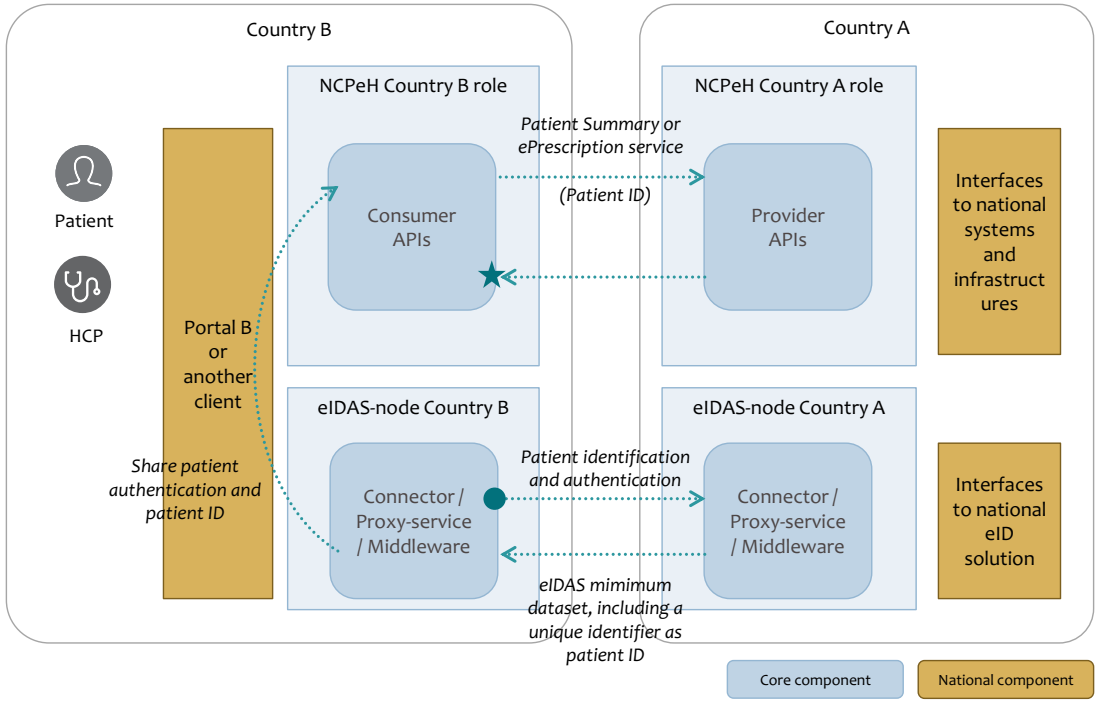
Identified scenarios

- Depending on the current situation in MS, different scenarios are possible for the use of eIDs in eHealth:
  - Scenario 1: Use of eIDAS notified **nationally issued eID** scheme with **unique identifier** that is used as the patient ID number for eHealth use cases (e.g. LU, FI, SE, IT in the future)
  - Scenario 2: Use of eIDAS notified **nationally issued eID** scheme with unique identifier that is **not used as the patient ID number** for eHealth use cases (e.g. PT, AT (currently))
  - Scenario 3: Use of eIDAS notified **nationally issued sector specific eHealth eID** scheme with **sector specific patient ID number** for eHealth use cases (e.g. DE, CZ (currently))
- Aim to identify:
  - barriers, requirements, steps to be taken



Key Findings - Scenario 1

Scenario 1 – Use of **national eID** scheme with **unique identifier** that is used as the patient ID number for eHealth use cases



Key Findings - Scenario 1

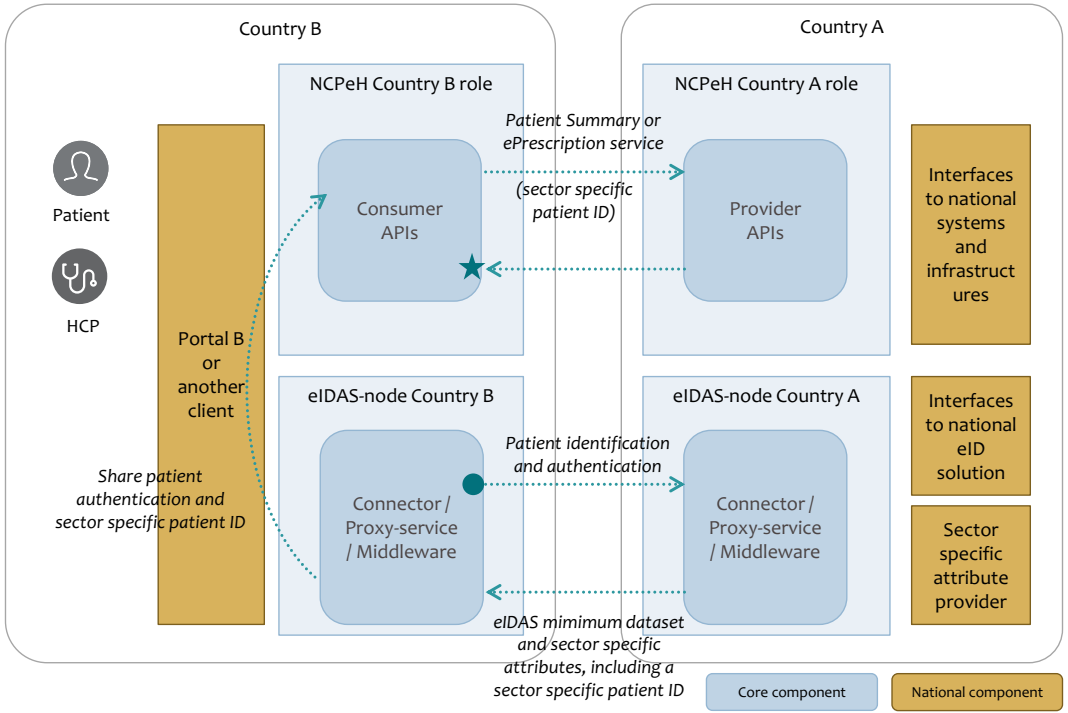
Implementation actions:

- **Set up of the eIDAS node and notification of the eID scheme** under eIDAS, and implementation of the requirements concerning the minimum data set
- **Integration of the national eIDAS node to the NCPeH**
- **No need for the use of the Identification Service** for requesting a valid patient ID, as this is provided in the eIDAS minimal dataset

✓ **Most ideal, easy and straightforward scenario for the use of eID under eIDAS for cross-border eHealth**

Key Findings - Scenario 2

Scenario 2 – Use of **national eID** scheme with unique identifier that is **not used as the patient ID number** for eHealth use cases (e.g. AT, PT);



Key Findings - Scenario 2

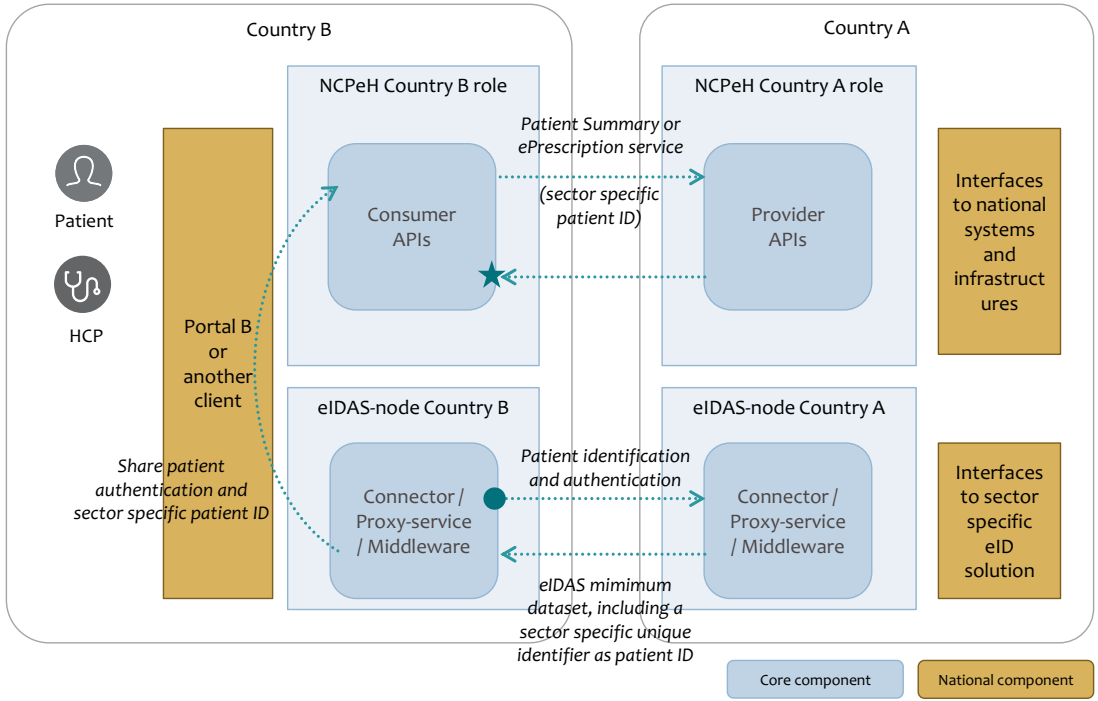
Implementation actions:

- **Set up of the eIDAS node and notification of the eID scheme** under eIDAS, and implementation of the requirements concerning the minimum data set
- **Integration of the sector specific attributes including patient ID** in the MS eIDAS Node
- **Integration of the national eIDAS node to the NCPeH**
- **No need for the use of the Identification Service** for requesting a valid patient ID, as this sector specific patient ID is provided in the sector specific dataset in the eIDAS Node
- **Exception:** if specific attributes are not integrated in the national eIDAS Node, MS need to provide an Identification Service (at the NCPeH in the country of affiliation) for retrieving a valid sector specific patient ID

✓ **Feasible scenario for the use of eID for eHealth under eIDAS, but would require additional efforts to integrate patient identification systems with the national eIDAS Node**

Key Findings - Scenario 3

Scenario 3 – Use of national **sector specific eHealth eID** scheme with **sector specific patient ID number** for eHealth use cases (e.g. IT (current situation)).



Key Findings - Scenario 3

Implementation actions:

- Assumption that sector specific eID schemes **use sector specific patient ID numbers**, and not a national citizen ID. No need for integrating sector specific attribute providers and attributes in the eIDAS Node

- **Set up of the eIDAS node and notification of the sector specific eID scheme** under eIDAS, and implementation of the requirements concerning the minimum data set. Possibility for MS to notify multiple eID schemes under eIDAS

- **Integration of the national eIDAS node to the NCPeH**

- **No need for the use of the Identification Service** for requesting a valid patient ID, as this is provided in the eIDAS minimal dataset

✓ **Straightforward scenario for the use of eID for eHealth under eIDAS, similar to Scenario 1, but may require notification of multiple eID schemes**

Recommendations

- For **Member States**:
  - Assess their **specific national situation** with regard to the implementation of the eHealth use cases as well as notification of national eID schemes under eIDAS
  - Identify the **relevant scenario** that applies to the specific situation
  - Identify **next steps** required to deploy the use of eID in eHealth
  - Assess their **legal conditions** to share the patient unique identifiers across borders

- For the **eHealth Network**:
  - Assess and foster an agreement between MS on the **use of a sector-specific dataset under eIDAS** (incl. information and its format) to enable the exchange of relevant patient identity attributes across borders
  - Assess the need for a common agreement between MS on the **required levels of security/assurance** in relation to the identification of patients

Challenges in hand

- Challenge current scenarios
- Identify further impact at MS level as well as EU level
- Itemize MS (generic services) and EU (core services) milestones
- Bring clarity on related matters (e.g. eSignature, policies)
- Search for eIDAS technical sub-group advice on how to move forward.

TERMINOLOGY services

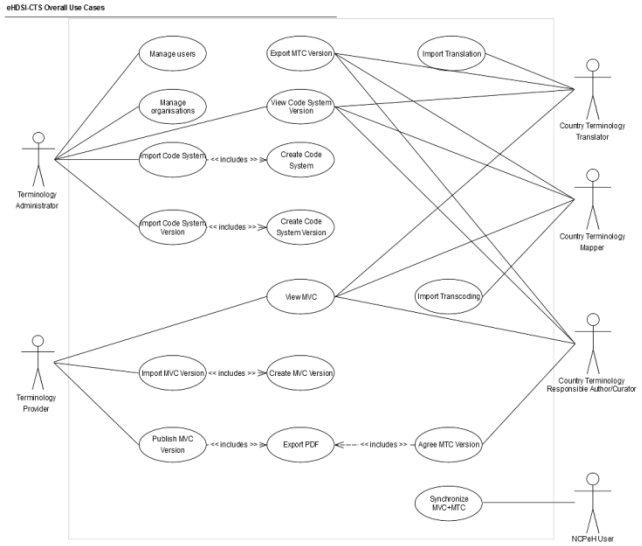
Terminology Services and management Portal

Updated 2017-03-14, eHDSI Solution Provider, source: eHDSI CTS Function Specifications and *Solution Demo*

CORE Services: **TERMINOLOGY services**

PURPOSE

Enable **MVC publishing** and **distribution** as well support **MTC management** and **synchronization**



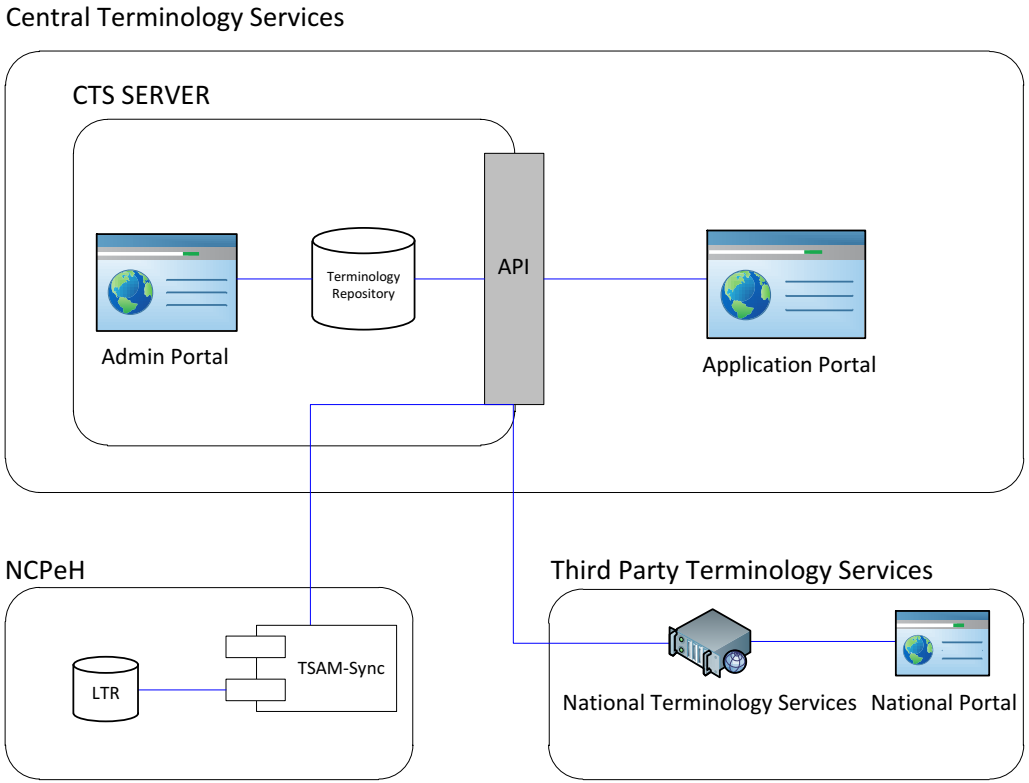
SCOPE

- Central Terminology Services
  - **Minimum Viable Product**

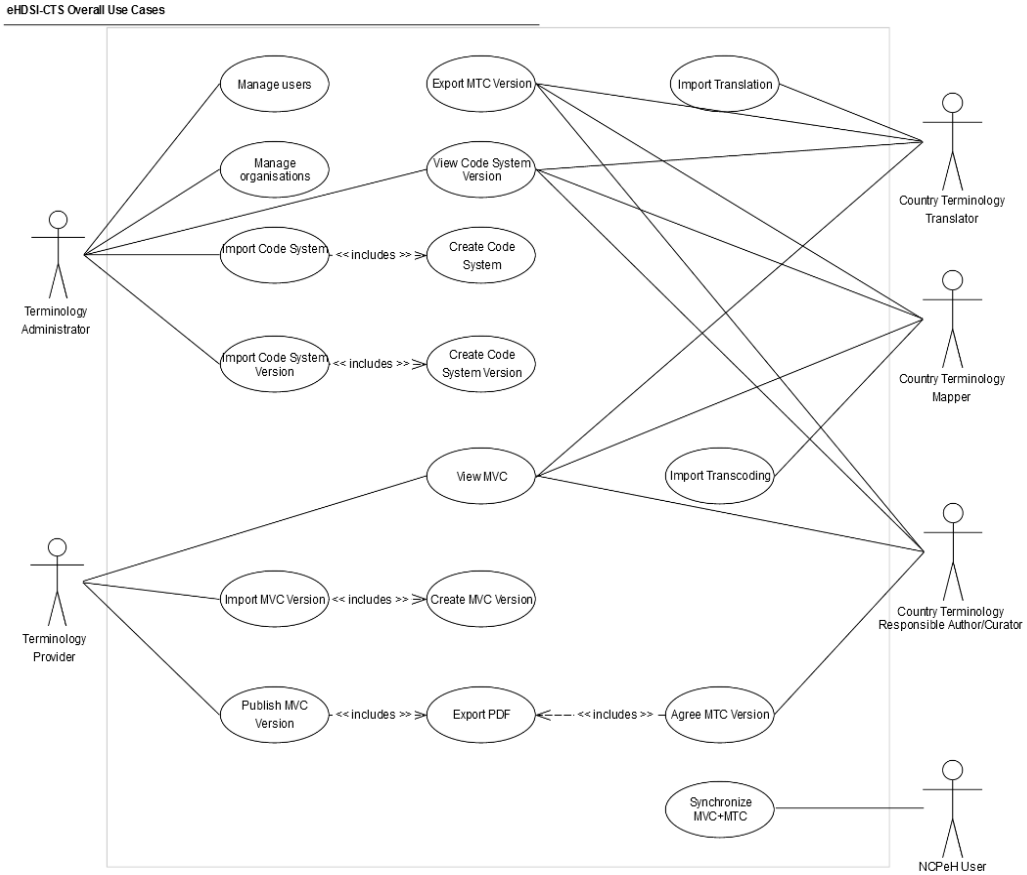
Baseline

- ePSOS Semantic Services Definition
- epSOS Central Terminology Services Specifications

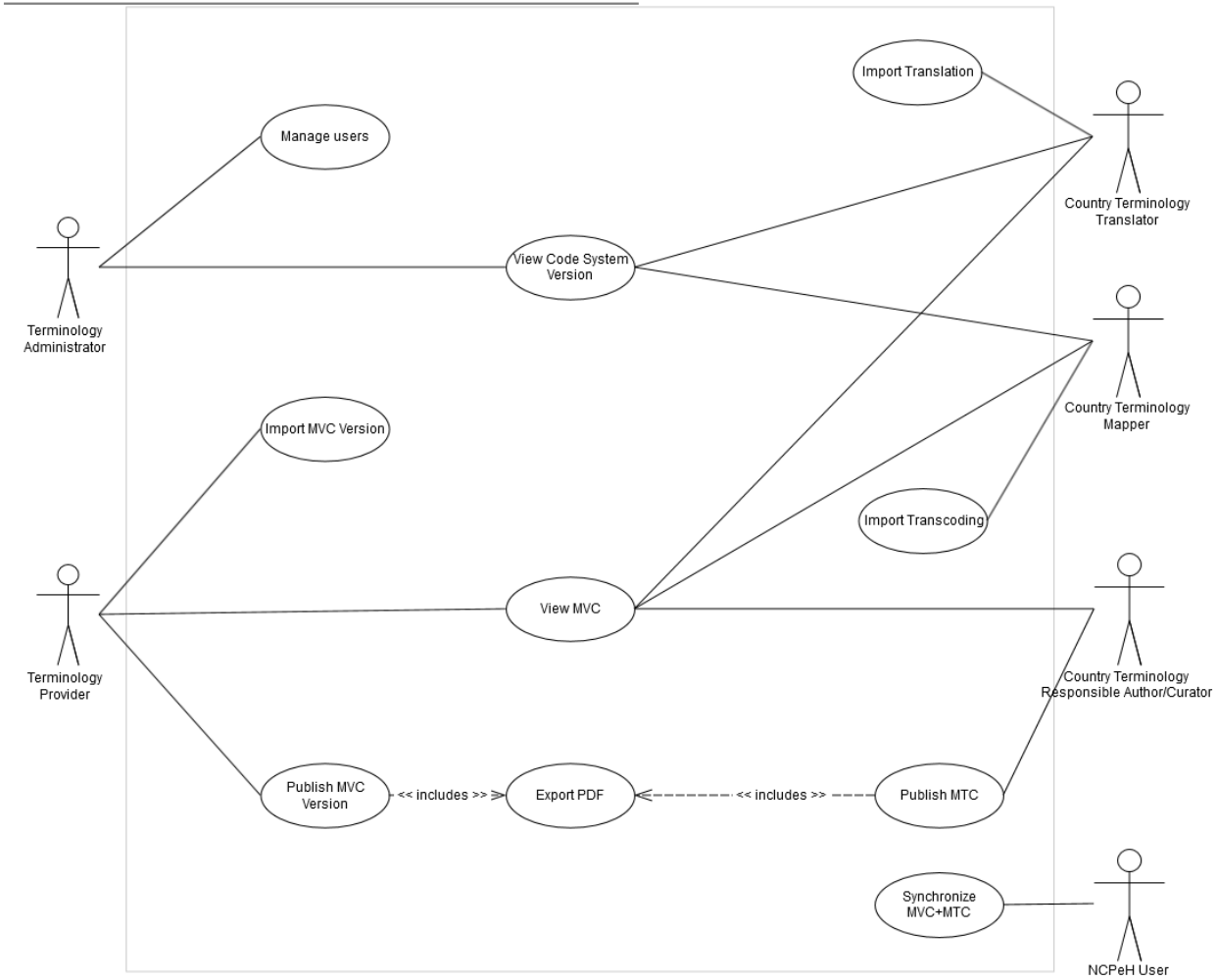
CORE Services: **TERMINOLOGY services** (Architecture)



CORE Services: **TERMINOLOGY services** (Use Cases Overview)



eHDSI-CTS Overall Use Cases



TERMINOLOGY services *(Use Cases Demo)*

UC01 Manage Users

Actor: CTS Administrator *(eHDSI Solution Provider)*

Pre-Condition: *Server Online*

Input: user credential requests from MS

Output: activation links to created users

***Demonstrator*: https://webgate.ec.europa.eu/ehealth-term-server/console**

TERMINOLOGY services *(Use Cases Demo)*

UC02 Browse Code Systems

Actor: all users

Pre-Condition: ***Import Code System*** *(CSV or official formats)*

Input: --

Output: --

Demonstrator**:** http://ehealth.ouvanous.com

TERMINOLOGY services *(Use Cases Demo)*

UC03 Browse MVC

Actor: all users

Pre-Condition: ***Create MVC*** *(excel file, prepared from ART DECOR)*

Input: --

Output: --

Demonstrator**:** http://ehealth.ouvanous.com

TERMINOLOGY services *(Use Cases Demo)*

UC04 Publish MVC

Actor: Central Terminology Provider *(eHDSI Solution Provider)*

Pre-Condition: ***Create MVC*** *(excel file, prepared from ART DECOR)*

Input: --

Output: PDF *(immutable evidence on action and content)*

***Demonstrator*:** 

TERMINOLOGY services *(Use Cases Demo)*

UC05 Import Translations

Actor: MS Translator

Pre-Condition: *a published MVC*

Input: *MVC translation, Excel file*

Output: *(export already imported translations, Excel file)*

***Demonstrator*:**

input

output

TERMINOLOGY services *(Use Cases Demo)*

UC06 Import Mappings

Actor: MS Mapper

Pre-Condition: *a published MVC, import National Code System*

Input: *MVC mapping, Excel file*

Output: *(export already imported mappings, Excel file)*

***Demonstrator*:**

TERMINOLOGY services *(Use Cases Demo)*

UC07 Publish MTC

Actor: MS Terminology Responsible

Pre-Condition: *Published MVC, [optional]*

Input: *translations & mappings*

Output: PDF *(immutable evidence on action and content)*

***Demonstrator*:** 

Adobe Acrobat Document

TERMINOLOGY services *(Use Cases Demo)*

UC08 Synchronize MVC+MTC

Actor: by MS NCPeH [machine]

Pre-Condition: *Published MTC*

Input: *MVC + MTC (translations + mappings)*

Output: MVC + MTC loaded into NCPeH LTR

***Demonstrator*:** Retrieve MS MTC ValueSet List *…/api/sync/valuesetcatalog(MTC Publish Date)*

Retrieve MY MTC ValueSet Concepts *… api/sync/valueset/VS ID/valuesetdefinition/*

CORE Services: **TERMINOLOGY services**

NEXT STEPS

- **March 28 – Release Candidate**
  - **available for Pre-Production testing (all Deploying Countries)**

- **June 1st – Production Release**
  - **available for Wave 1 Deploying Countries**

CONFIGURATION services

SML (Service Metadata Locator) and SMP (Service Metadata Publisher)

Updated 2016-12-07, eHDSI Solution Provider, source: eDelivery Webinar materials, DG DIGIT, 2016-10-28

CORE Services: **CONFIGURATION services**

Dynamic Discovery models

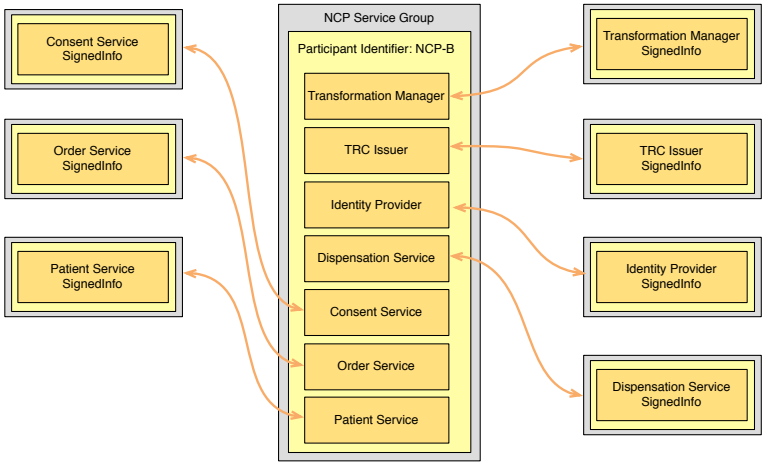
1. enables the sender to dynamically discover the endpoint address and other capabilities of the receiver (e.g., certificates and digital identities of services).

2. Enable Trust Bootstrap in the defined Direct Brokered Trust

3. 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

4. The correct URL of the SMP service is obtained by performing a Domain Name System (DNS) lookup in the **Service Metadata Locator (SML)**

5. By knowing this URL, the sender is able to dynamically locate the right SMP and therefore the right receiver.



Dynamic discovery in detail

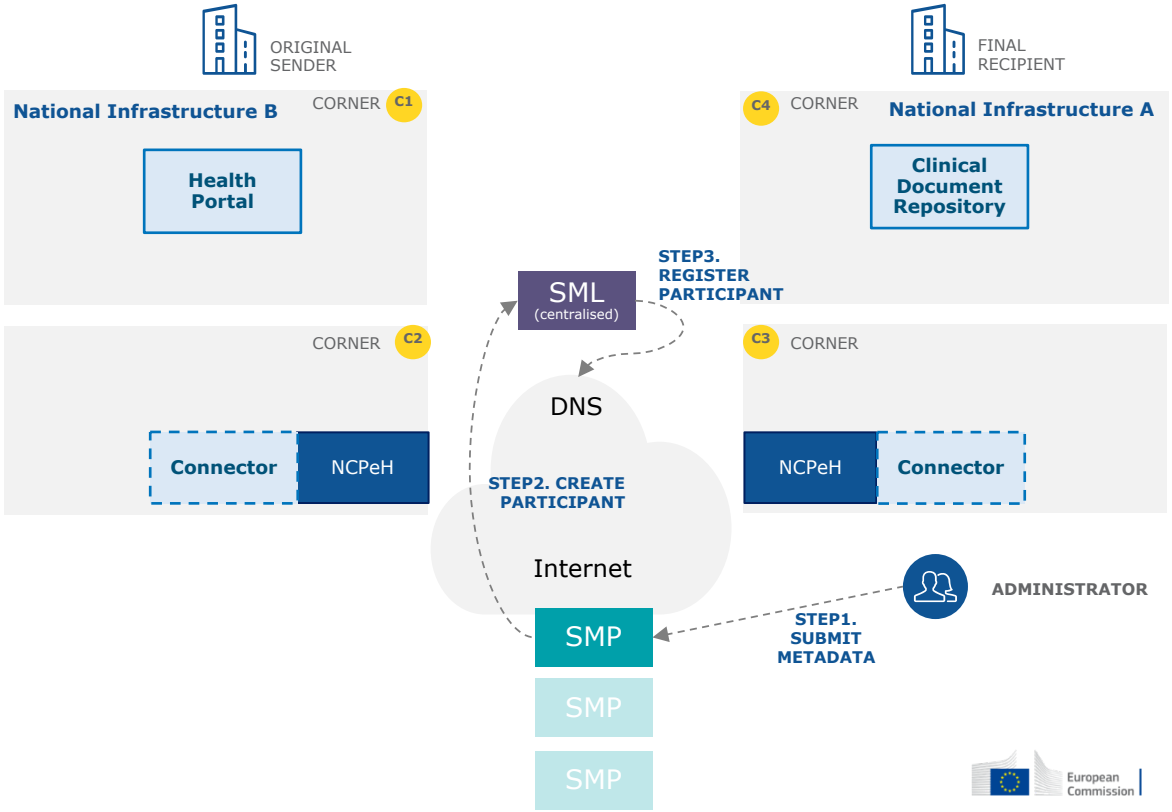
SML

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.

Phase 1: Registration



Dynamic discovery in detail

SML

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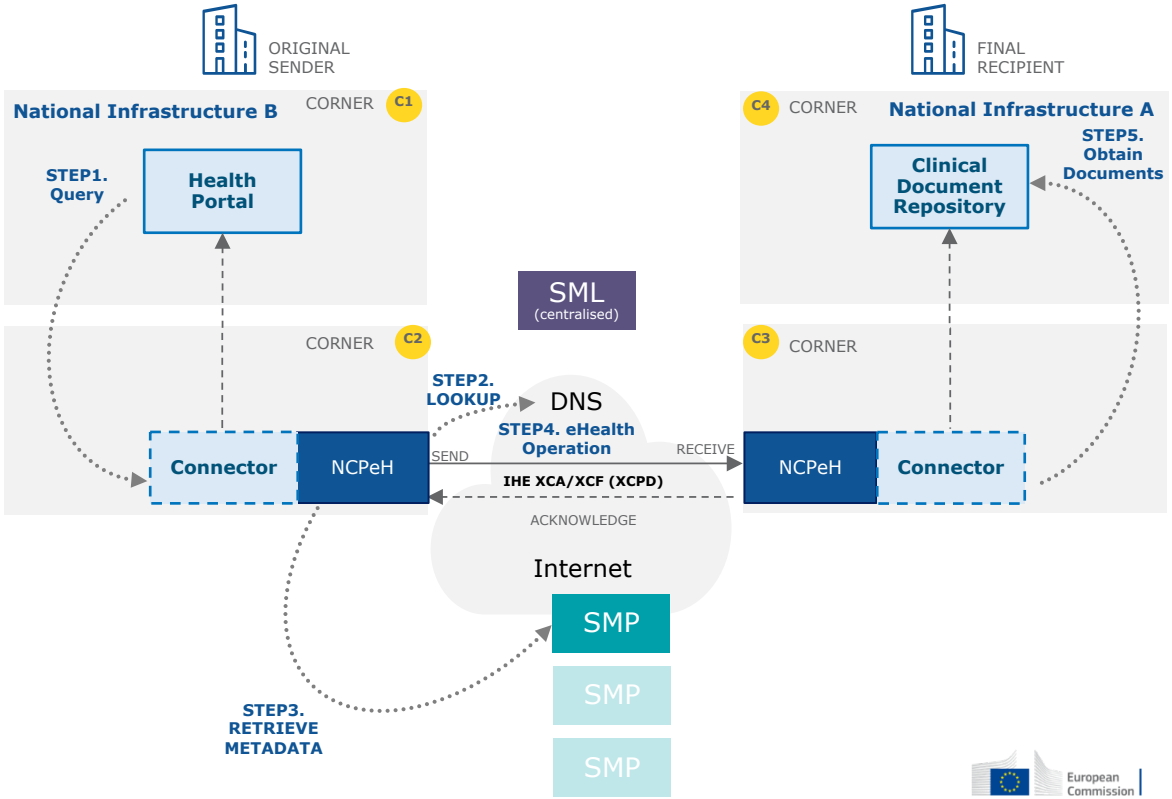
SMP

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.

Phase 2: Operations



CORE Services: **CONFIGURATION services**

	NCP Trust Service Status List (NSL)	SML & SMP solution
PROS & CONS	+ Piloted during epSOS Large Scale Pilot, but with security relaxations	+ Mutualized solution (reuse of CEF BB)
	+ High speed as there is no overhead processing	+ More automated and flexible
	- Less flexible, change of irrelevant references	+ Auto configuration of NCPs with no human interaction
	- Less secure	+ Can work in a centralised or distributed architecture
	- Ad hoc solution	+ Standards based solution (e.g. BDX-SM*)
	- Centralised architecture	+ Improved the NCPeH operations efficiency
	- Non-standard solution	- Slower speed, as some overhead processing is required
		- Piloted in e-SENS eHealth Pilot (but with few NCPeH nodes)

*BDX-SMP: OASIS-OPEN Business Document Exchange Service Metadata Publishing,

Non Repudiation Services

Evidence Emitter

1. Non-repudiation was an epSOS requirement, relaxed during pilot, aiming at,
   - Generate, collect, validate and make available evidence concerning a claimed event;
   - to resolve disputes about the occurrence or non-occurrence of the event;

2. **Evidence Emitter ABB** provides an horizontal framework to
   - produce cross-border, cross sectorial, non-repudiation tokens, named “evidence”,
   - mapping ISO 13888 tokens to ETSI REM through execution of XACML policies.

3. **Evidence Emitter ABB** for eHDSI defines tokens for non-repudiation of origin, and non-repudiation of receipt, linked to the audit-trails enabling traceability amongst the NCPeH.
   - Formally proves answer to “who did what, from where, using which server, and when?”

eHDSI next steps towards eDelivery

Next Steps

1. Approve e-SENS submitted Change Proposal, formalizing it in the eHDSI Interoperability Specifications (in progress)

2. Learn with e-SENS pilot and deploy an operation ready services

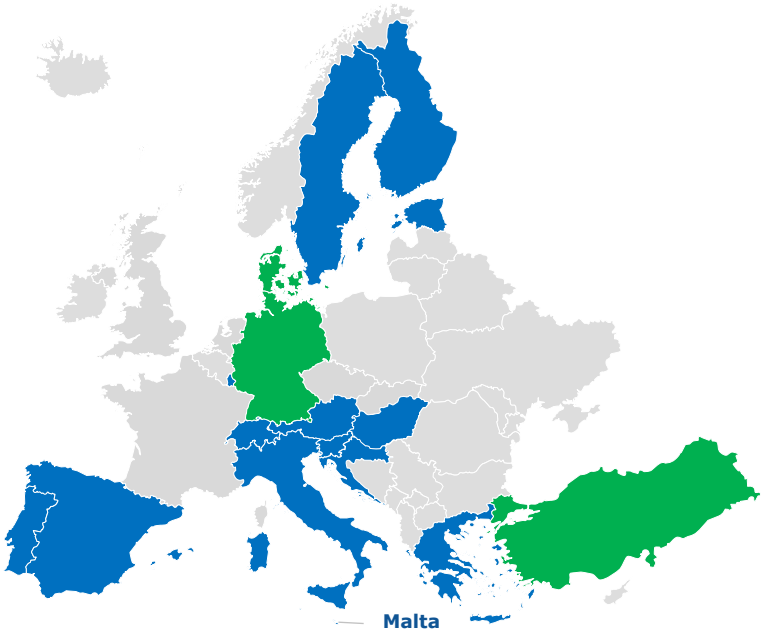
eHealth DSI

6. eHDSI Generic Services

Updated 2017-03-13, Solution Provider

eHDSI Generic Services

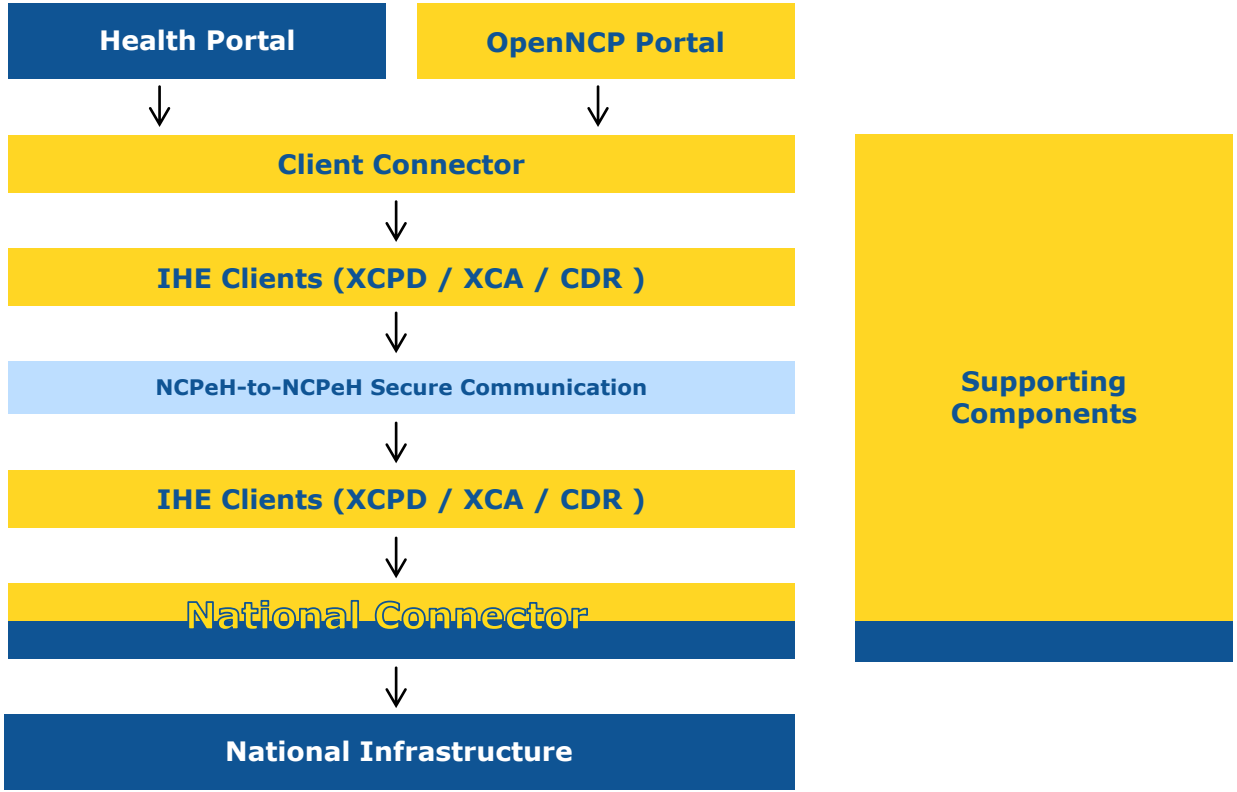
- National Contact Point for eHealth Reference Implementation
  - OpenNCP **COMMUNITY & TECHNOLOGY**



USAGE 14 MS	CONTRIBUTING 3 MS
AT, CH, PT, EE, FI, GR, HU, IT, ES, SE, SI, LU, HR, MT	GE, DK, TR

eHDSI Generic Services

OpenNCP Technology – Generic Architecture



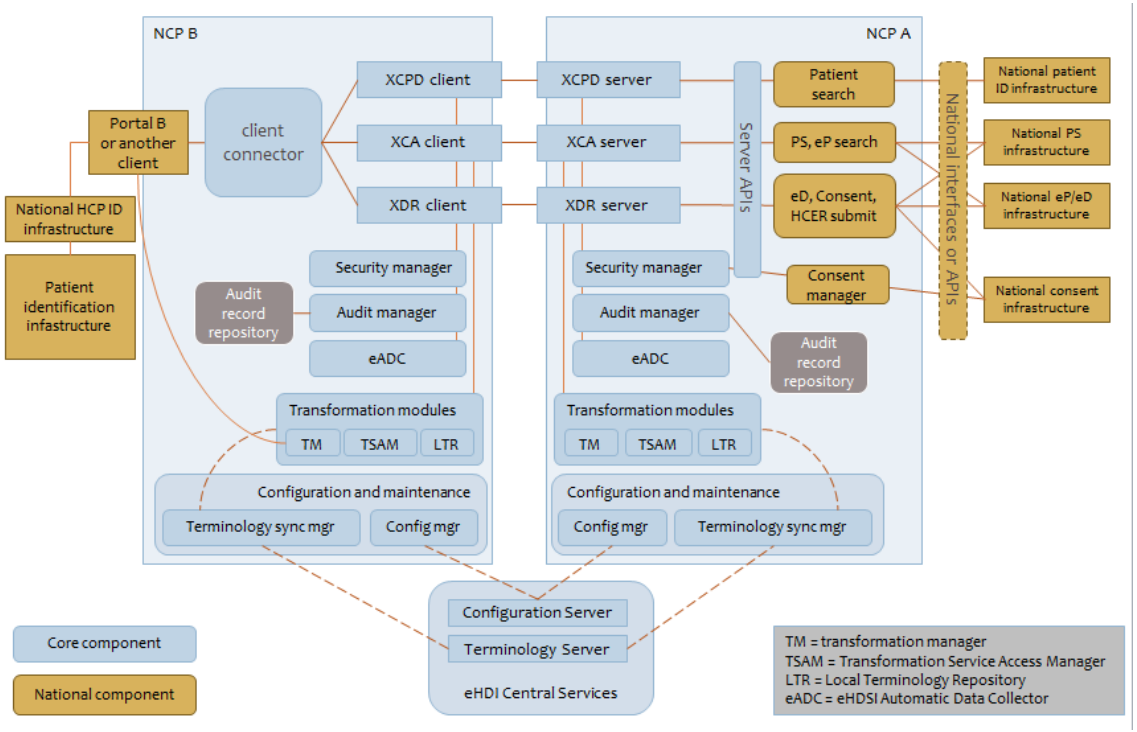
National Components

NCPeH Open Source Reference Implementation

Legend

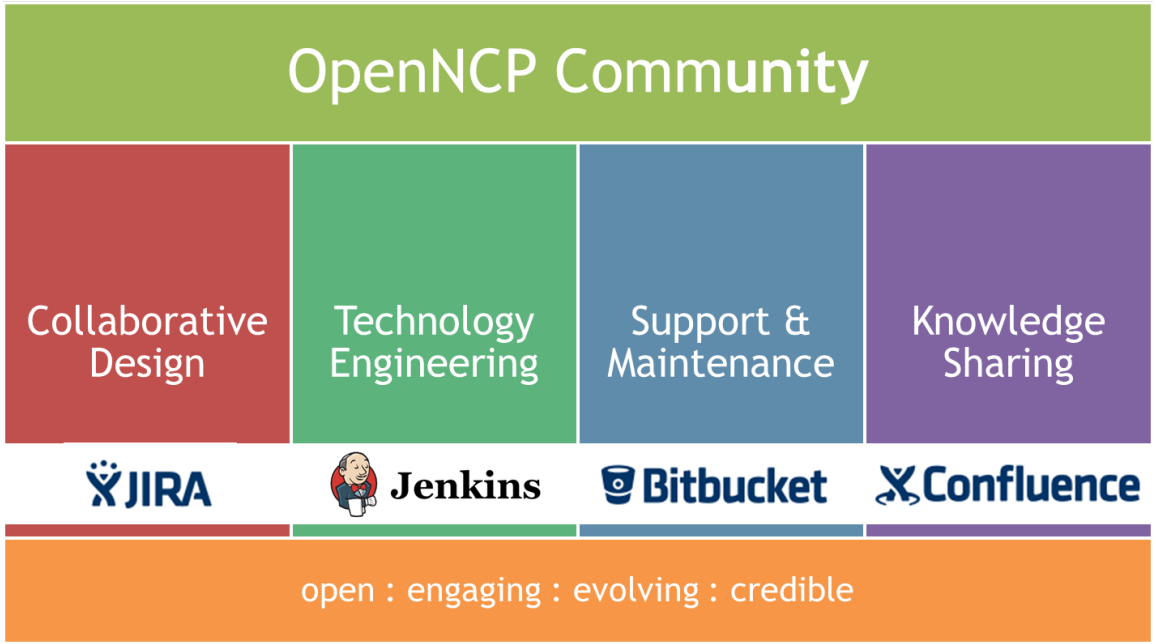
eHDSI Generic Services

OpenNCP Technology – Component Architecture



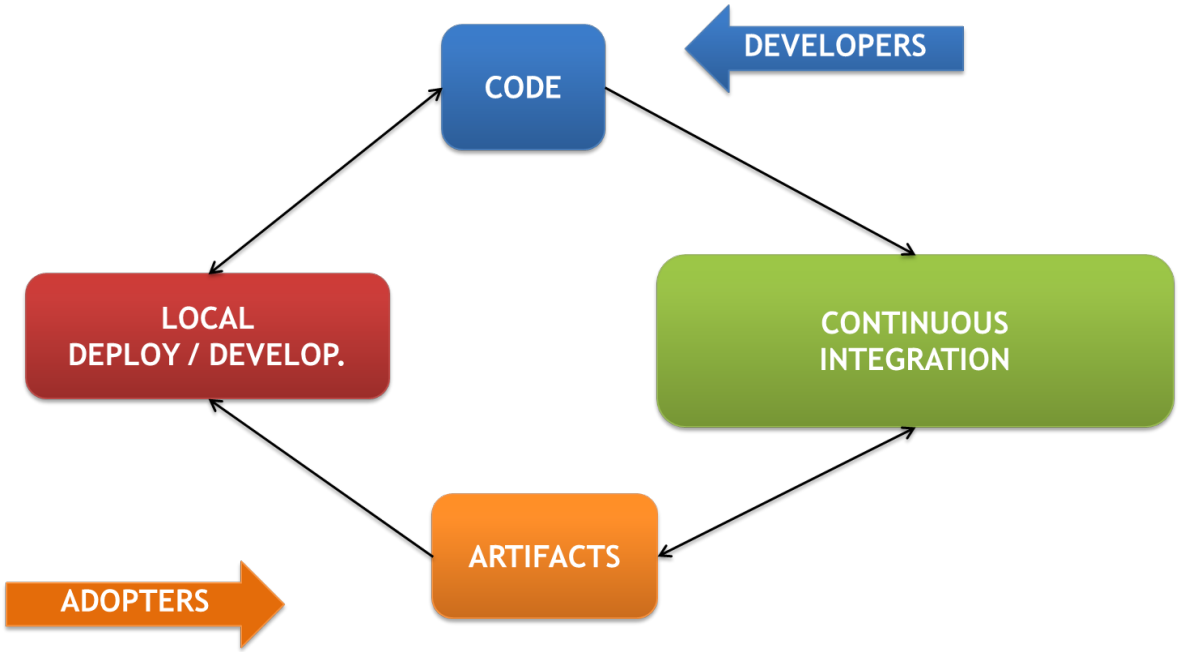
eHDSI Generic Services

OpenNCP Technology - Community



eHDSI Generic Services

OpenNCP Technology - Community



eHDSI Generic Services

eHDSI Deploying Country

Decision on how to implement the NCPeH technical gateway:

1. Use OpenNCP (deploy and ☺ **collaborate on the development**)

2. Develop an NCPeH implementation based on eHDSI Interoperability Specifications

3. Buy a commercial solution that implements eHDSI Interoperability Specifications

eHDSI Generic Services

NCPeH Technical Gateway deployment Challenges (using OpenNCP)

Develop a national connector (examples supplied)

- Communication with the national infrastructure
- Generation of eHDSI friendly documents, processing incoming documents

Develop a consent management service and a policy manager

- Implement a consent and policy manager, to replace the default (supplied) one
- Develop a service for citizens, to give/revoke consents

Customize the portal (epsos-web or OpenNCP portal)

- Develop an HCP authentication module, to replace the default one
- Patient identification infrastructure
- May involve communication with other national services (e.g. in Finland, the national pharmacy register and the national professional rights register)

Setting OpenNCP is perhaps the easiest part

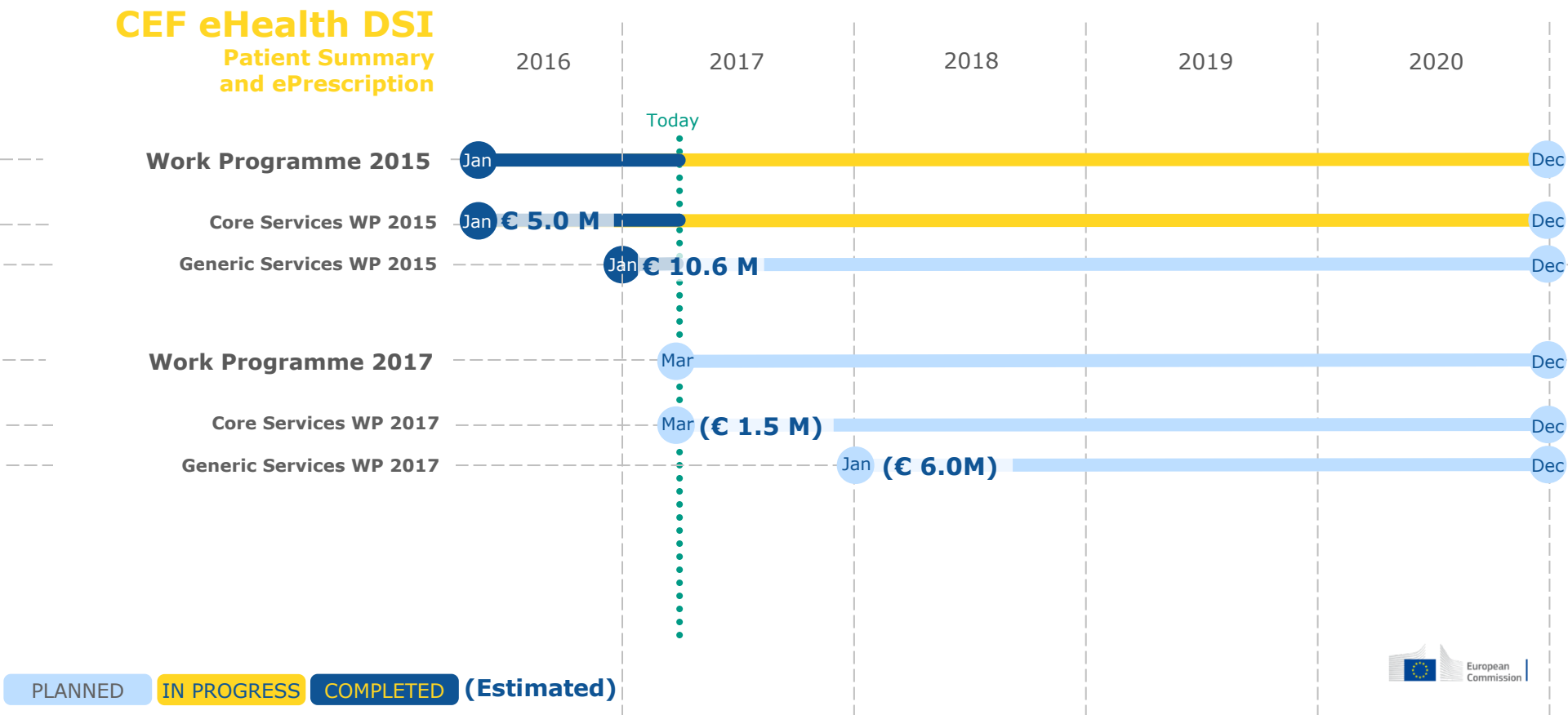
- An estimate for Finland: 25 % of eHDSI work international, 75 % national, despite (or maybe due to) a well-established and stable national infrastructure
- Easy to do a demo or a small pilot, hard to make a solution to cover a full nation. The same 25/75 % rule is an optimistic guesstimate.
- All challenges/obstacles are known only after all of them have been cleared.

eHealth DSI

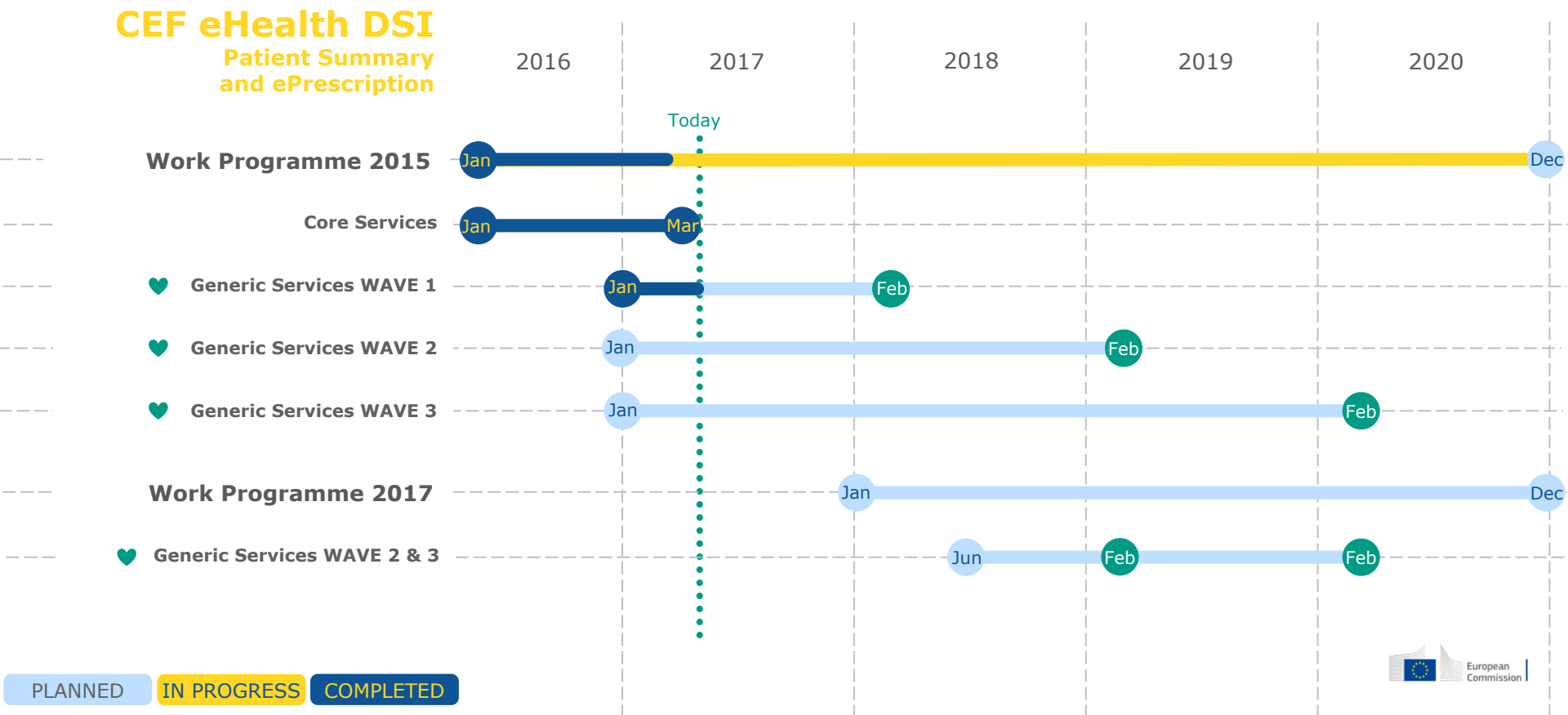
7. eHDSI Timescales

Updated 2017-03-13, Solution Provider

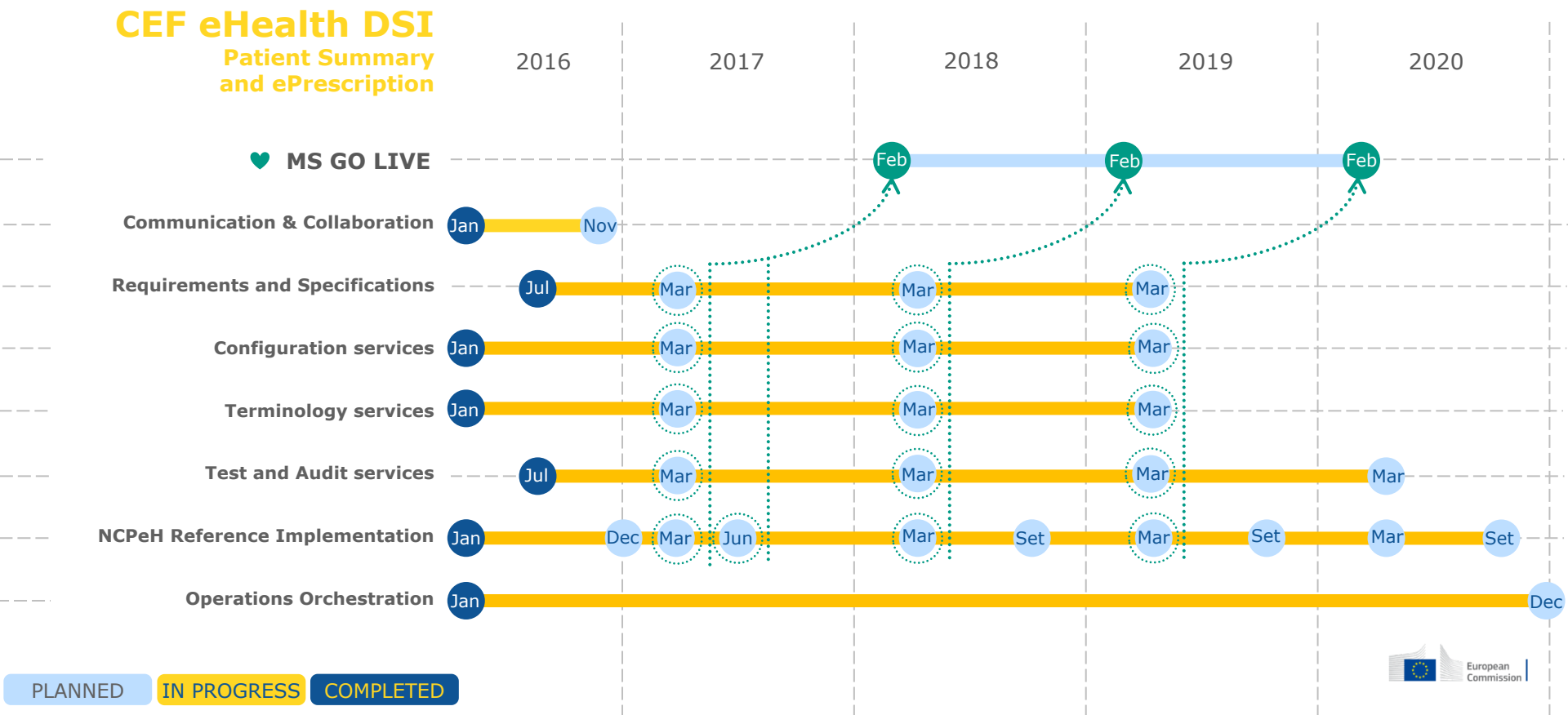
eHDSI Timescales: **Overall**



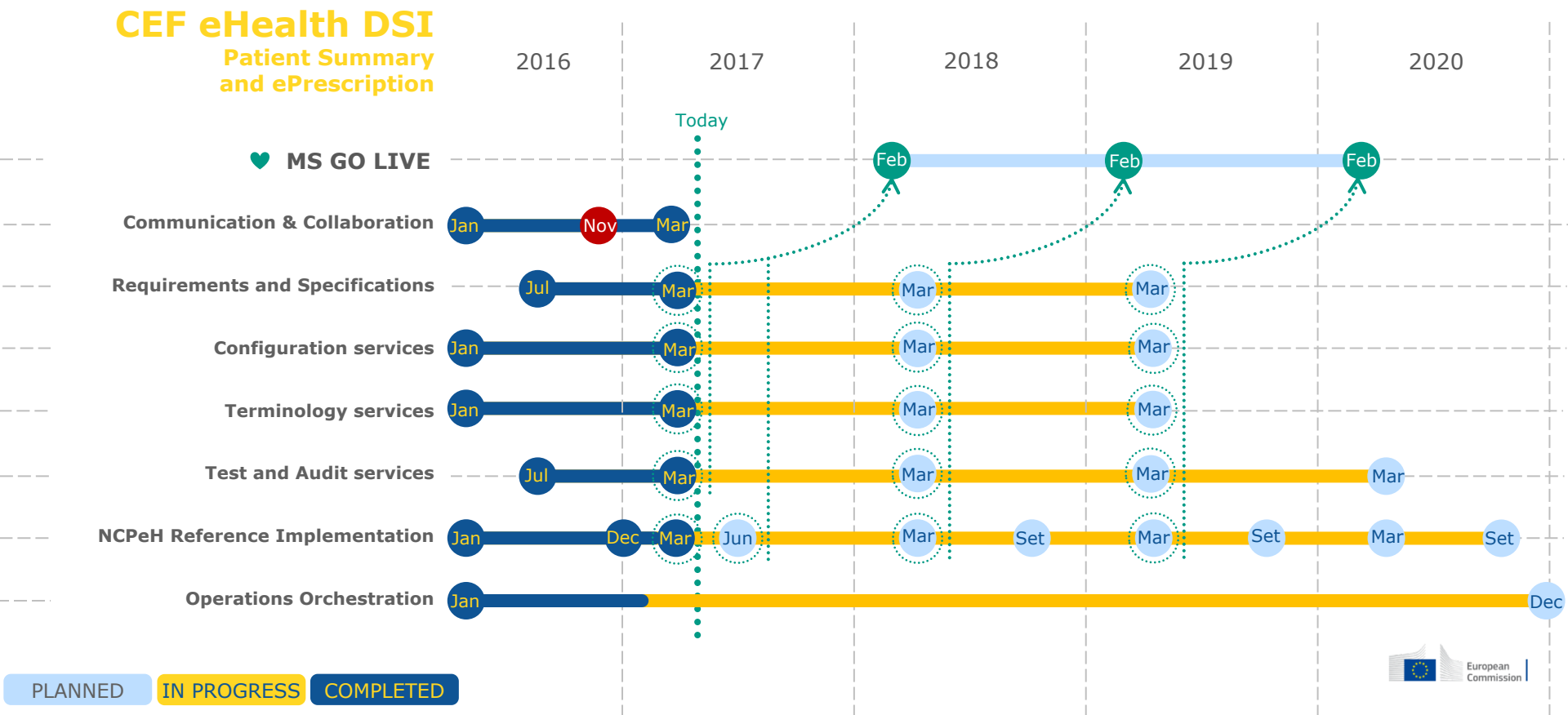
eHDSI Timescales: **GoLive**



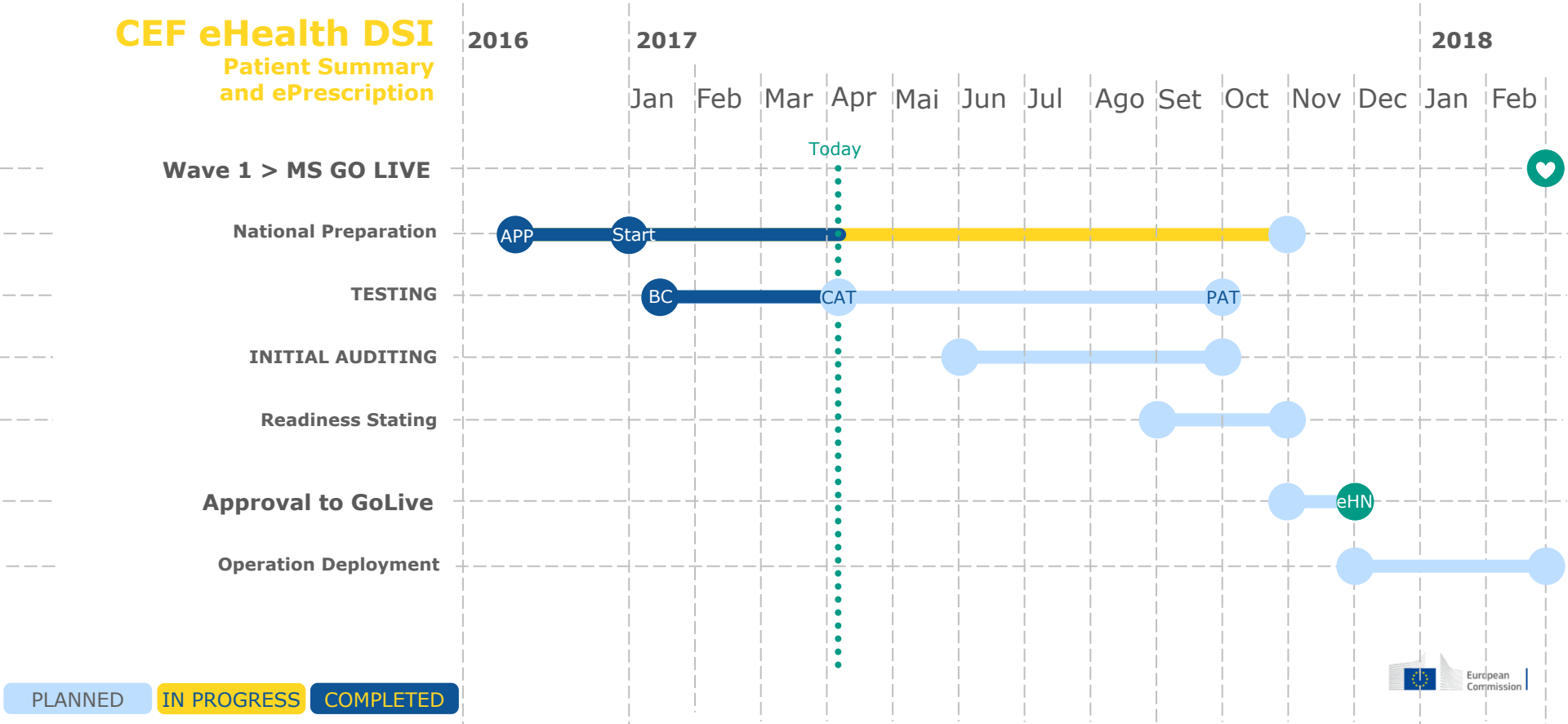
eHDSI Timescales: **Core Services**



1. eHDSI eP a& PS Service Blue Print and Delivery Plan - Progress



eHDSI Timescales: **Generic Services Wave 1**

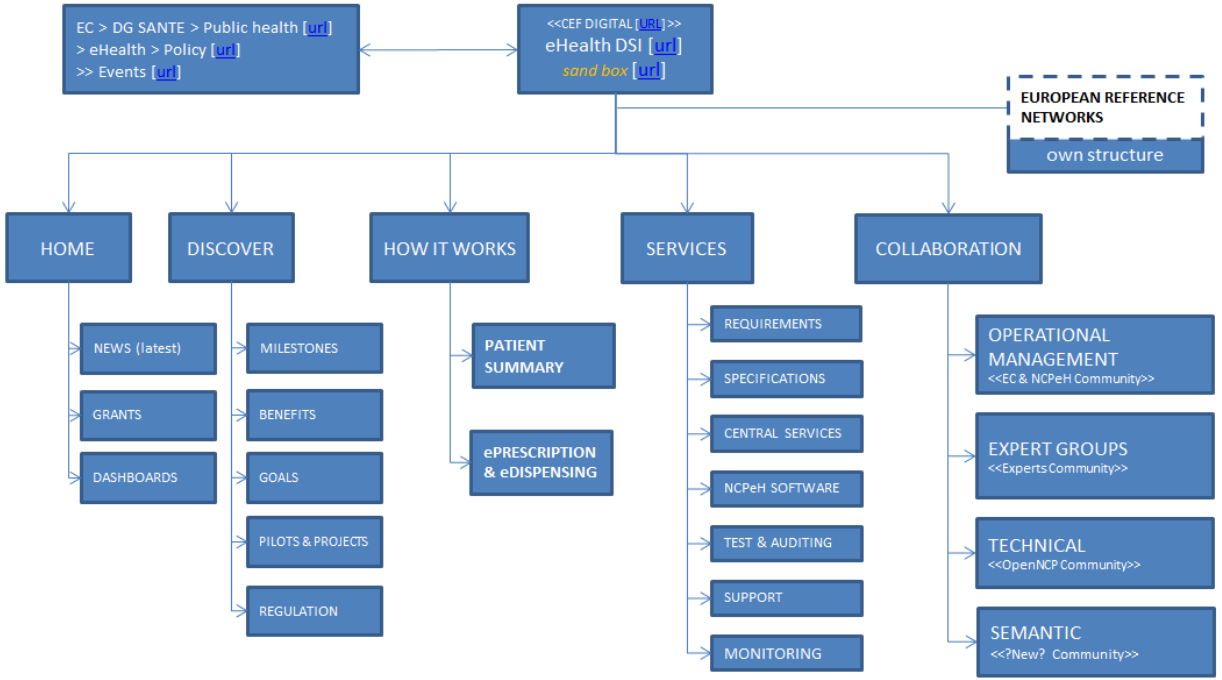


eHealth DSI

8. eHDSI Communication & Collaboration

Updated 2016-11-14, Solution Provider

eHDSI Communication & Collaboration



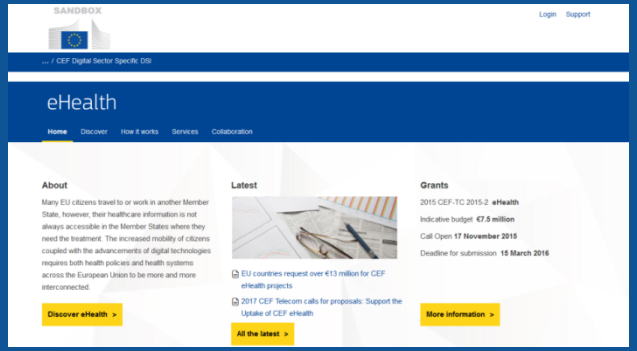
Be part and make it Yours

Web Presence

- https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eHealth

Communities

- Operations https://ec.europa.eu/cefdigital/wiki/x/iT4ZAg
- Semantic https://ec.europa.eu/cefdigital/wiki/x/hj4ZAg
- Technical https://ec.europa.eu/cefdigital/wiki/x/8CEZAg



https://ec.europa.eu/cefdigital

These materials have been crafted to provide a comprehensive summary on the issues at stake.

For further clarifications, please:

Contact us

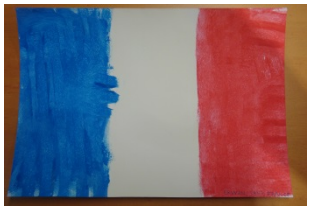
SANTE-EHEALTH-DSI@ec.europa.eu

a gift from the ***Future***

A gift from the Future















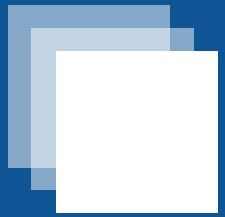




European Commission

The meaning for jointly Pursuing and Achieving

Other Topics



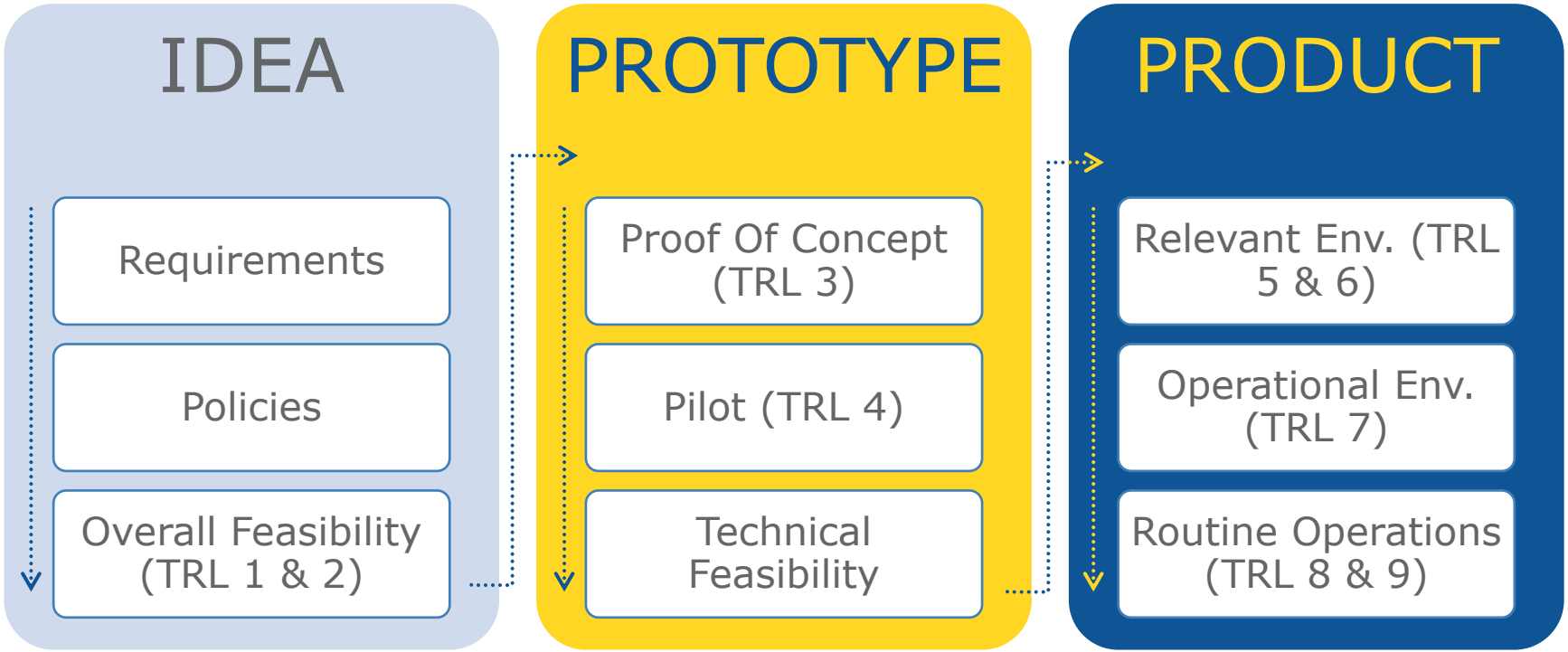
CEF Building Blocks

TRL and e-SENS Integration

TRL - Technology readiness levels

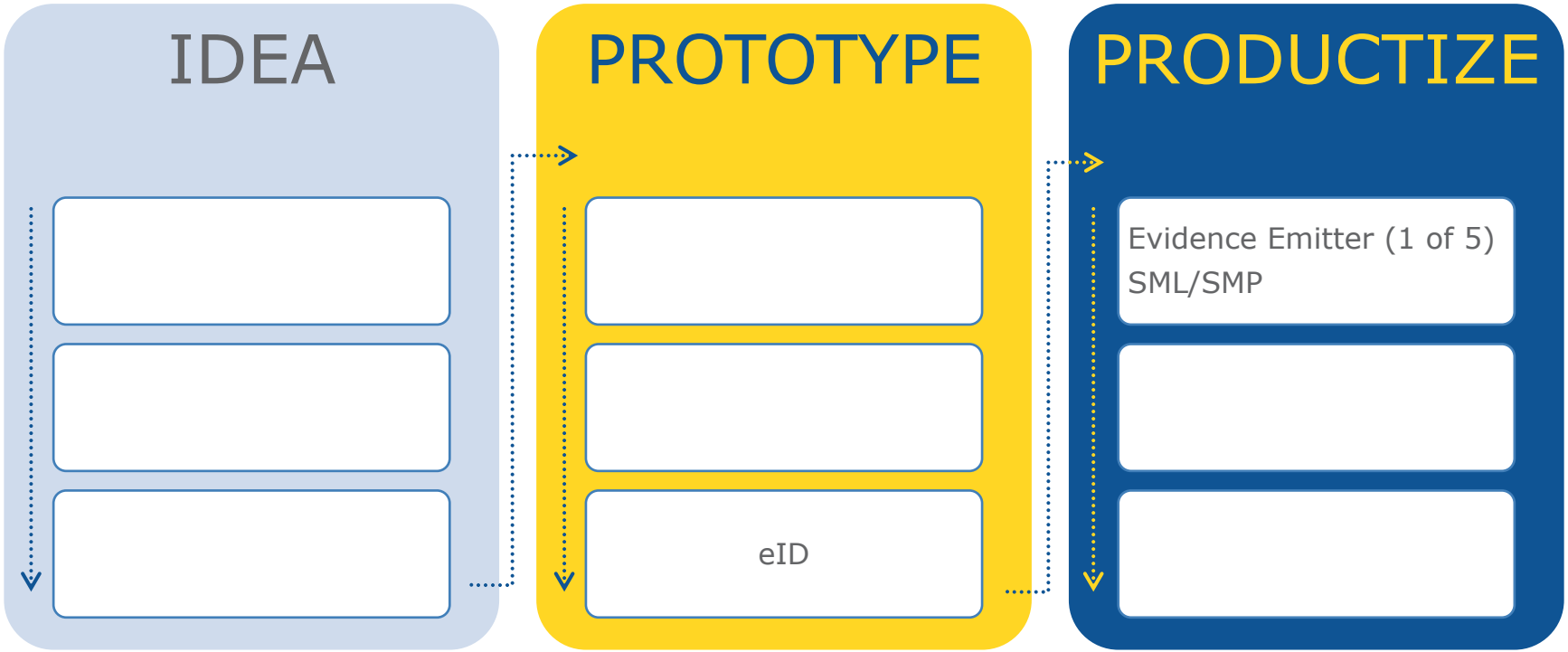
- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

CEF Building Blocks - adoption stage



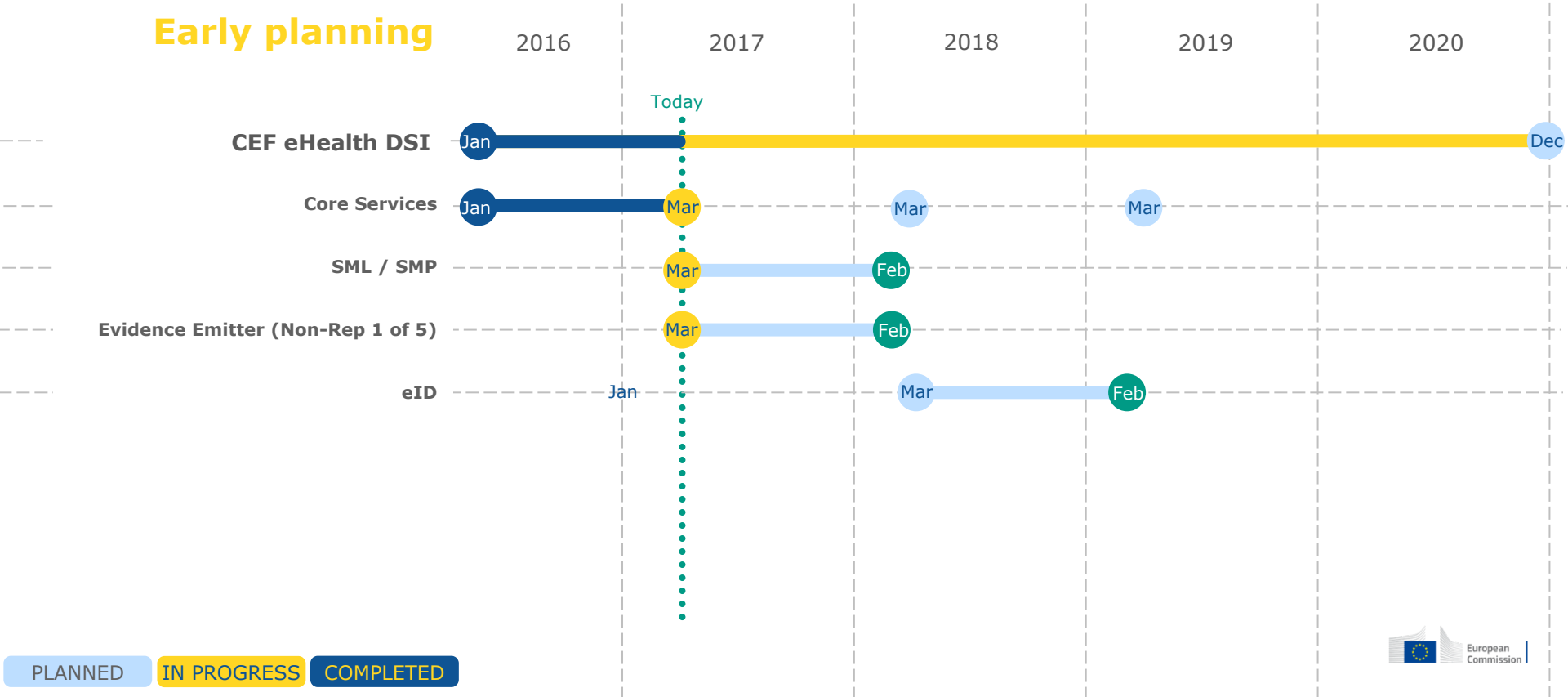
TRL - Technology readiness levels (Annex G from *HORIZON 2020 – WORK PROGRAMME 2014-2015*

CEF Building Blocks – e-SENS eHealth Outcomes



TRL - Technology readiness levels (Annex G from *HORIZON 2020 – WORK PROGRAMME 2014-2015*

CEF Building Blocks - adoption roadmap (routine operations)



CEF Building Blocks - adoption **challenges** (routine operations)