

16.04.2010



# epsos

**EUROPEAN PATIENTS  
SMART OPEN SERVICES**





# **From strategies to services**

## **– eHealth as the enabler for cross-border healthcare**





- Healthcare a strict national prerogative
- Previously only limited co-operation on a general policy level
- Substantial **variations** between national healthcare systems, but also similar challenges are faced and....
- ...substantial **similarities** in political ambitions to reform healthcare as well as in the challenges to reach these goals
- The work started in 2003-2006 at the Ministerial Conferences
- In 2004 the eHealth Action Plan was adopted and the I2010 was created
- In 2007 in Berlin the eHealth Initiative was created....

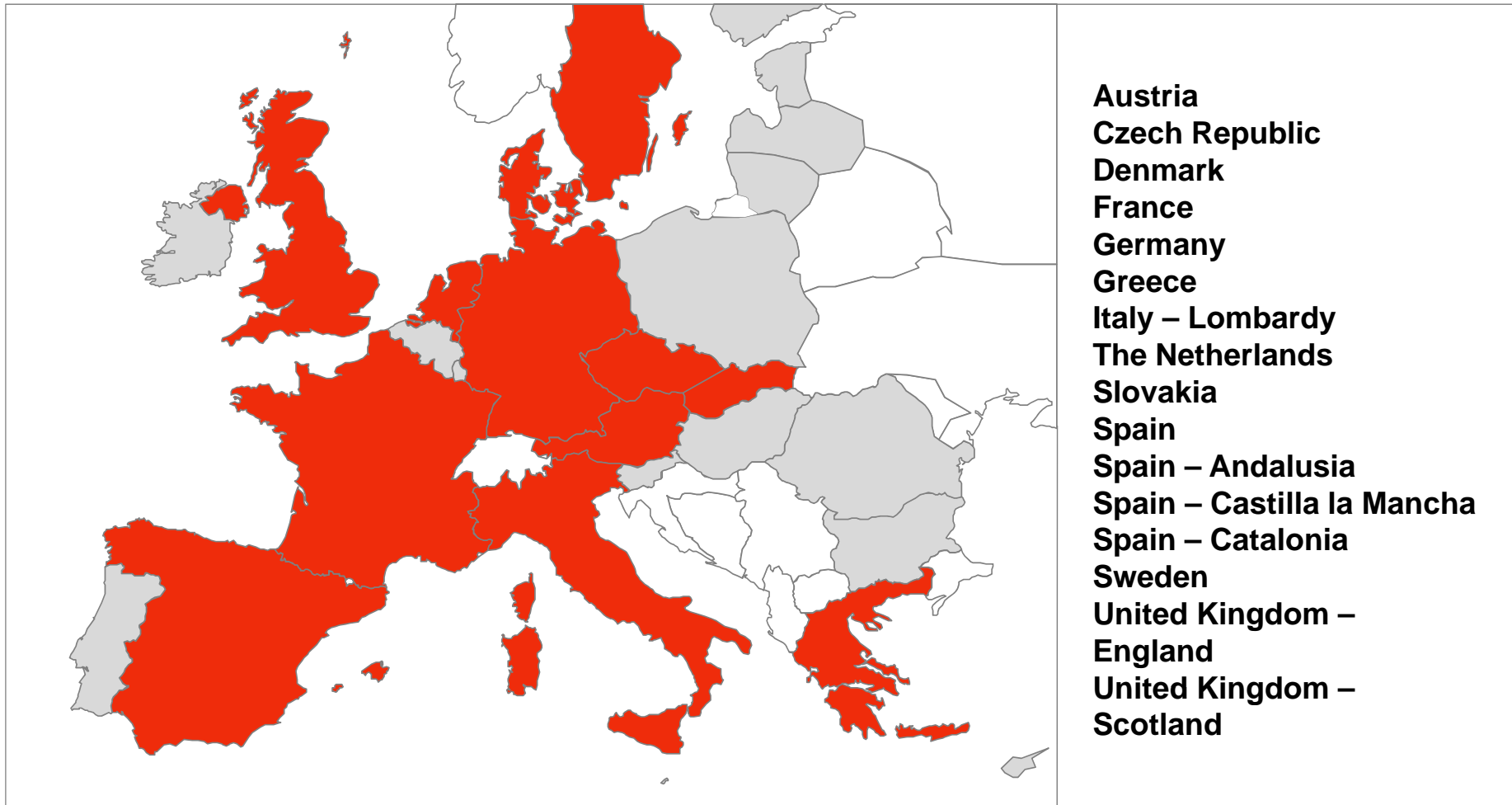




## a new era in legal and policy framework for EU Cooperation on eHealth

- Proposal for a European [Directive](#) on patients' rights in cross-border healthcare
- Commission [Recommendation](#) on cross-border interoperability of electronic health record systems
- [Communication](#) on telemedicine for the benefit of patients, healthcare systems and society
- eHealth [Standardisation](#) Mandate 403
- 2009, the European eHealth Governance Initiative through a Joint Action Initiative was launched







The Project Team consists of 27 beneficiaries from 12 member states: **AT, CZ, DE, DK, EL, ES, FR, IT, NL, SK, SE and the UK**

- **ATNA, ANDA, CATA, CLM, CNRS, DENA, DKNA, ELGA, EMPIRICA, ESNA, FRAUNHOFER, FRNA, GEMATIK, GIPDMP, IHE, IZIP, LOMBARDY MEDCOM, NHS, NHIC, NICTIZ, NLNA, PHARMAXIS, SALAR, SENA, THESS, ZI**
- Competence Centers Including/working with local organizations with thousands of Contributors
- IHE-Europe representing ICT industry team



# The epSOS Industry Team

- Accenture
- Engineering  
Ingegneria  
Informatica S.p.A
- Oracle
- Agfa Healthcare
- ETIAM
- Posam
- Apollo
- GE Healthcare
- RISE
- BT
- Gemalto
- Sineura S.p.A
- Carecom
- Gnomon
- Steria Mummert  
Consulting AG
- Cisco
- ICW
- Tiani-Spirit
- CMP Medica
- Indra
- TrebleM
- CompuGROUP
- Mawell
- Insiel
- T-Systems
- dbMotion
- Intel Corporation  
S.A.
- X-tention
- Dedalus
- Microsoft
- 3M
- Electronic Record  
Company
- Netsmart



# Goals & Challenges



- Goal for the epSOS eHealth Project:
  - “*to develop a practical eHealth framework and ICT infrastructure that will enable secure access to patient health information, particularly with respect to a basic patient summary and ePrescription, between European healthcare systems*”
- Challenges to get there:
  - Legal Interoperability
  - Organisational Interoperability
  - Semantic Interoperability
  - Technical Interoperability





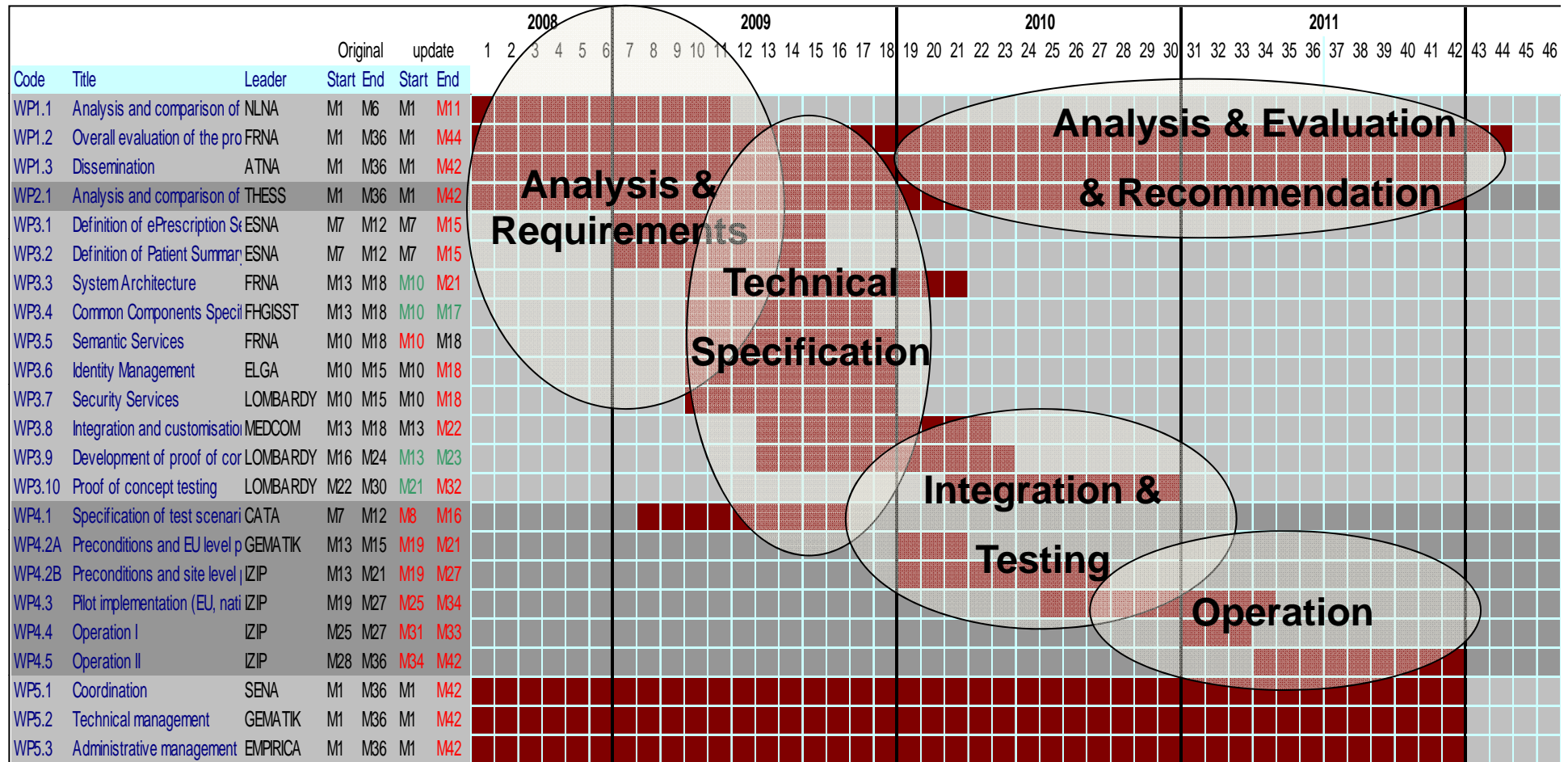
# From Strategies to Services

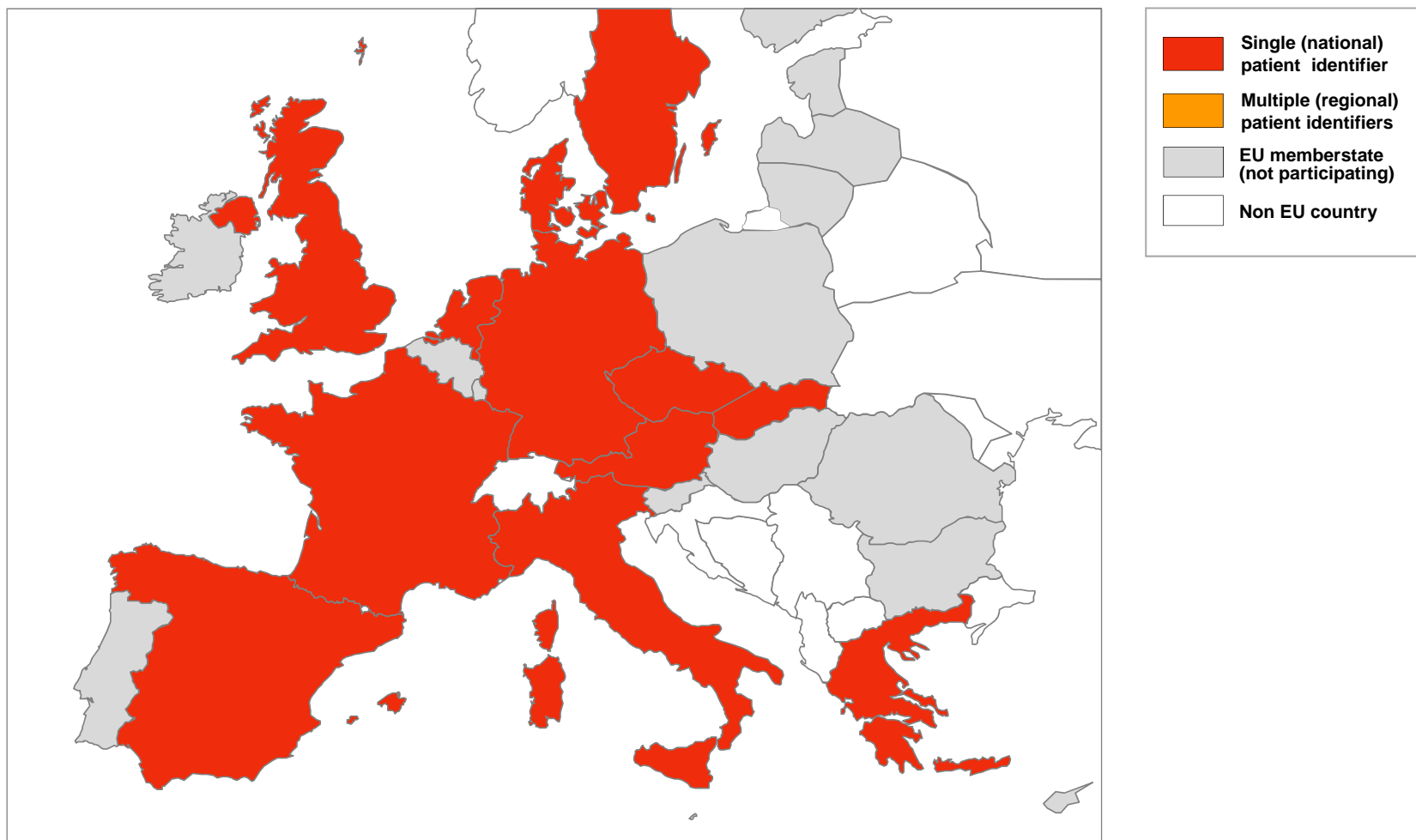


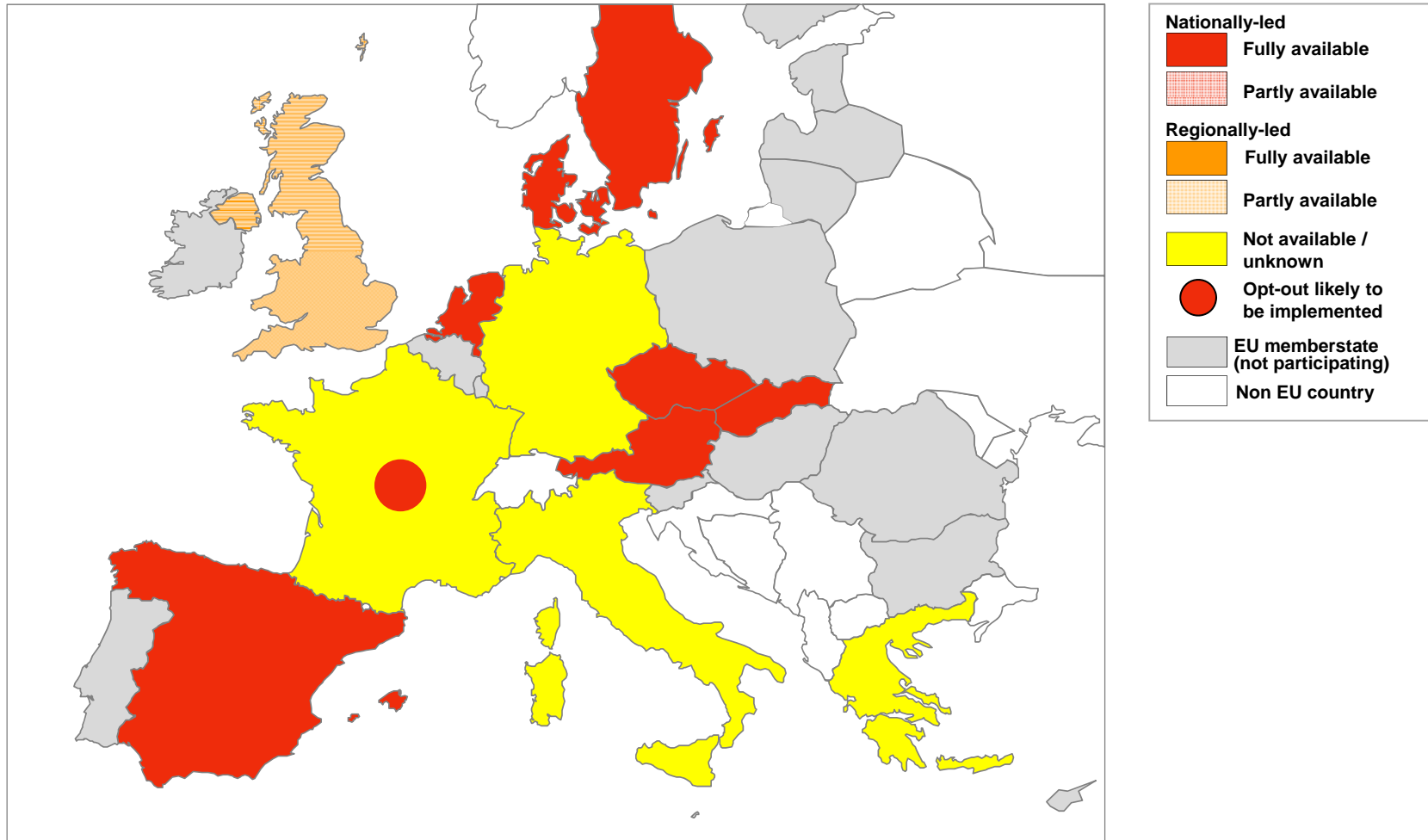
Provide **concrete cross border services** that ensure safe, secure and efficient medical treatment for citizens when travelling across Europe

- Focus on services close to the patient:
  - **Patient Summary for EU Citizens**
    - Occasional Visit
    - Regular Visit
  - **ePrescribing for EU Citizens**
    - Medication ePrescription
    - Medication eDispensation
- Build on **existing National eHealth Projects** and use experiences and knowledge from all Member States

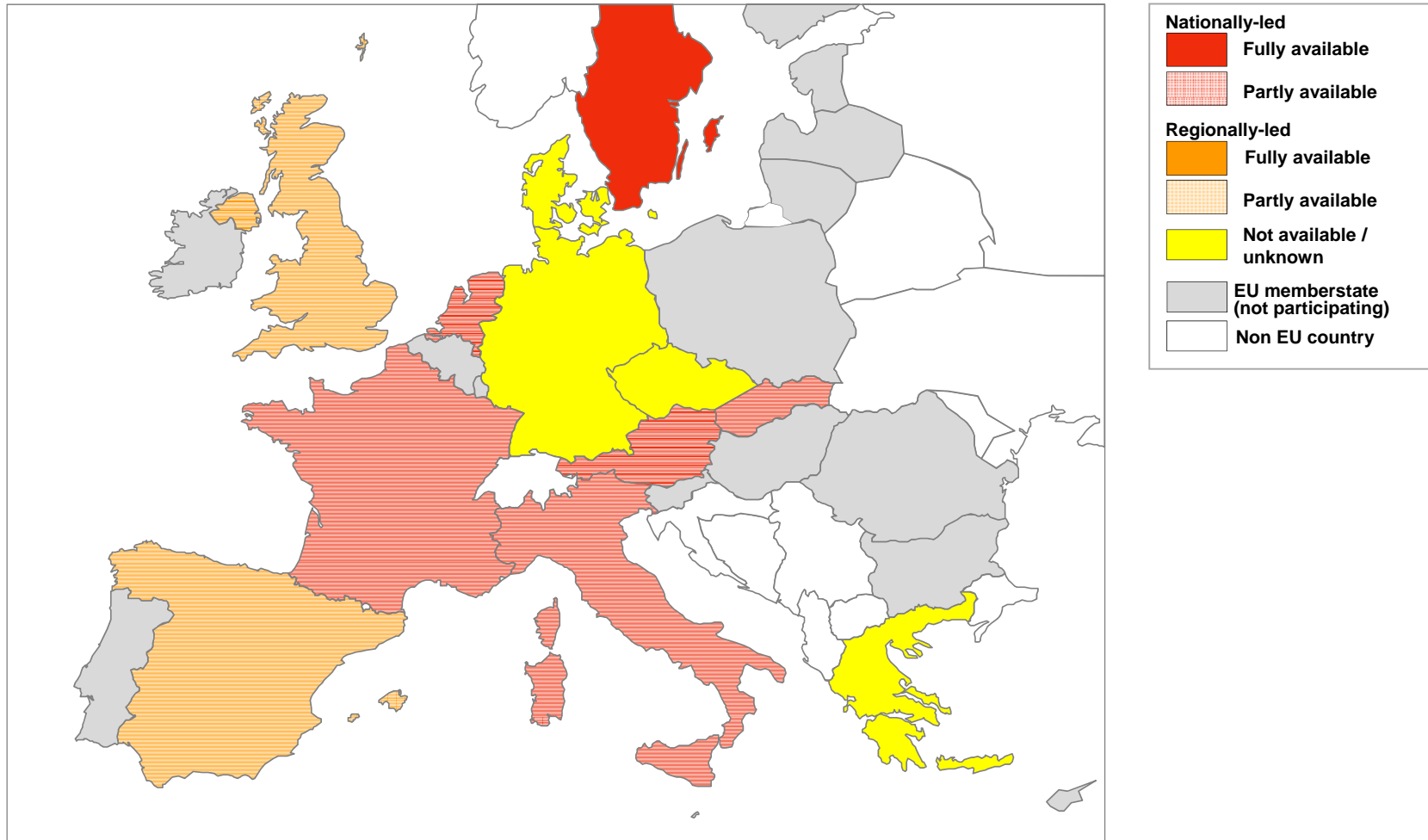




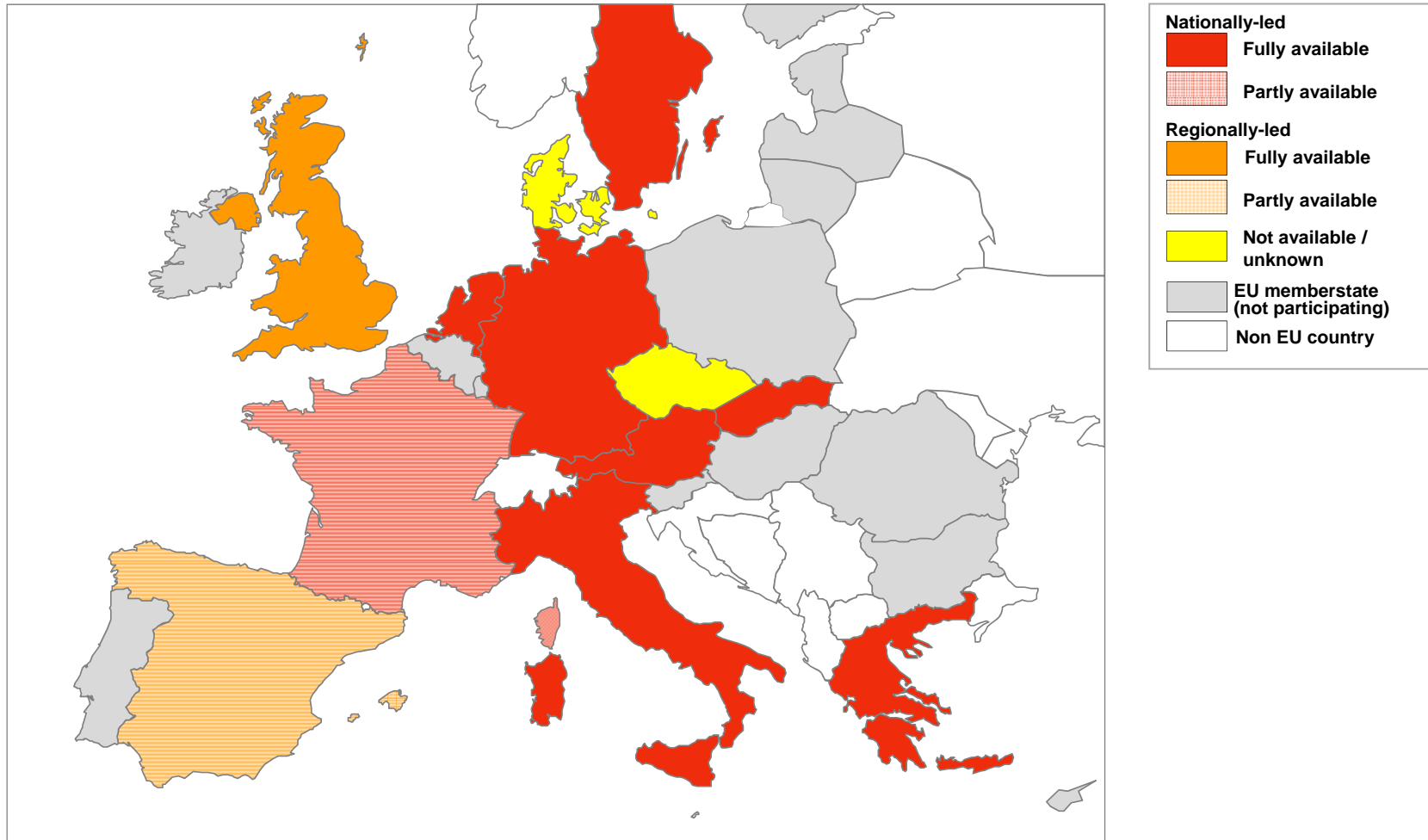


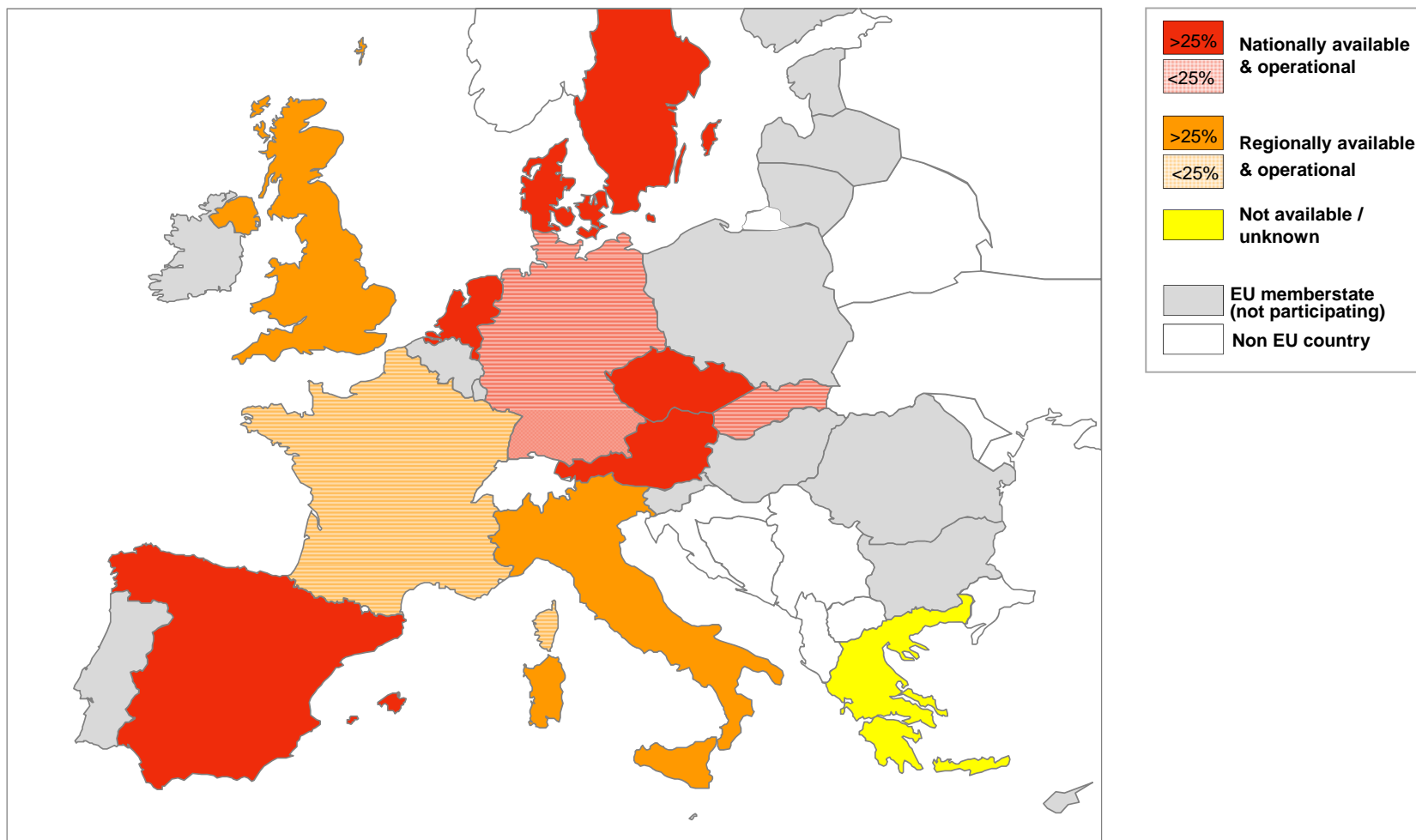


# HCP Identifier suitable for Auth & Digital Signature 2008

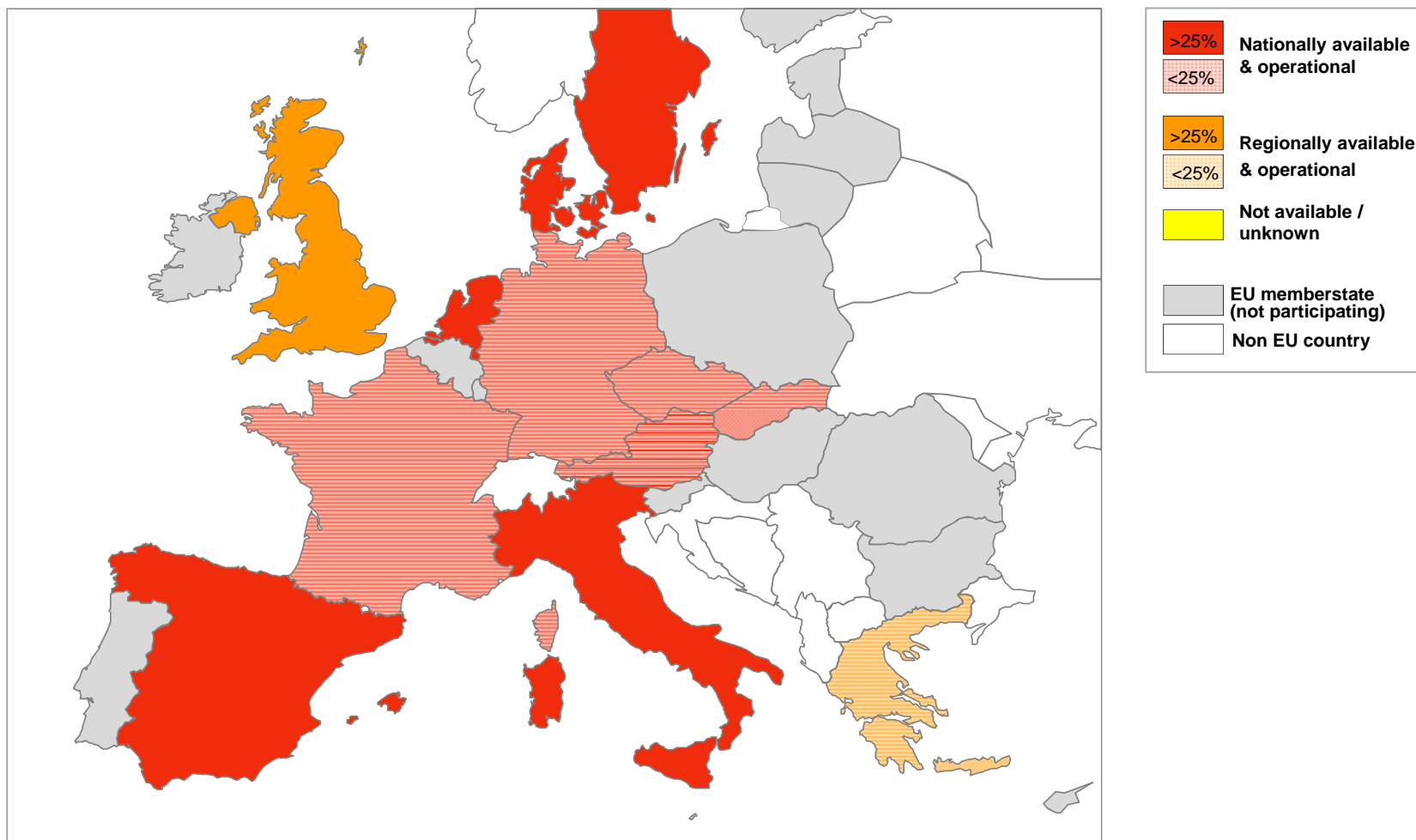


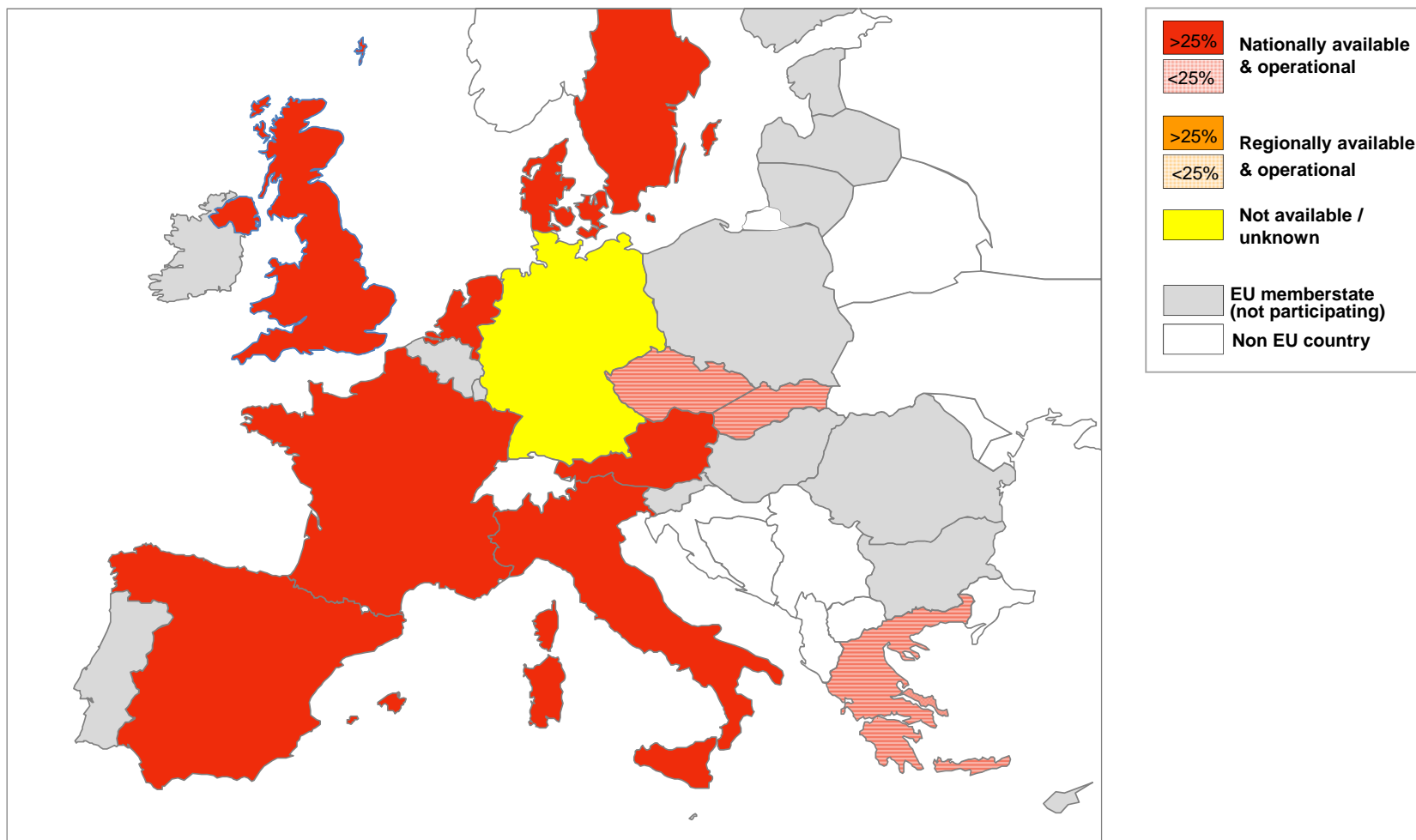
# HCP Identifier suitable for Auth & Digital Signature 2010





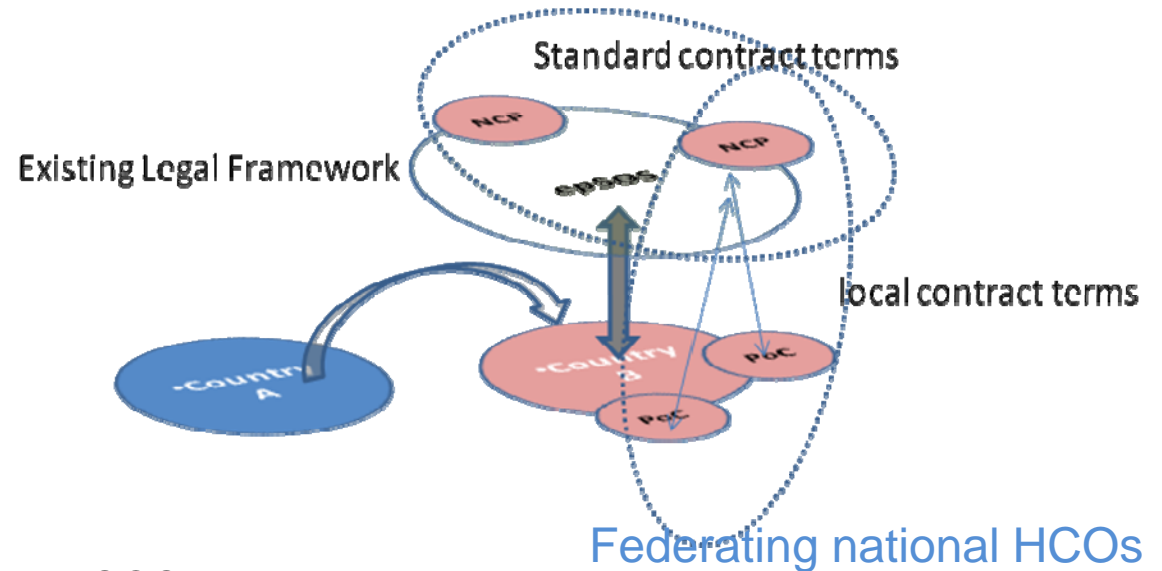






<b>Main Issues</b>	<b>Legal Certainty</b>	
<b>Data Protection and Confidentiality</b>	<b>sufficient</b>	<b>Pilot and beyond</b>
<b>Health Systems</b>	<b>sufficient</b>	<b>pilot</b>
<b>Professional aspects and social context</b>	<b>sufficient</b>	<b>pilot</b>
<b>Liability</b>	<b>sufficient</b>	<b>pilot</b>
<b>Access to standards-IPR issues</b>	<b>sufficient Explored</b>	<b>Pilot beyond</b>

## Federating countries



A country becomes a member of the epSOS trusted domain.....

If a health care provider organisation (HCPO) demonstrates conformance to epSOS requirements then it may offer the epSOS services

The HCPO is accountable to the NCP

The NCP is accountable to the epSOS community

Information/dataset	Contains
Patient Identification	Unique identification for the patient in that country.
Patient Personal information	Full name. Date of birth Gender
Allergies	Allergy description and agent
Medical Alerts	Other alerts not included in allergies
List of current problems	Problems/diagnosis that need treatment and/or follow up by a HCP
Medication Summary	Current medications
Country	Name of Country A
Date of creation of PS	Data on which PS was generated
Date of last updated	Data on which PS was updated
Author organization	At least an author organization (HCPO) shall be listed. In case there is not HCPO identified at least a HCP shall be listed.

- **Three different blocks in each dataset**
  - **Patient Identification**
  - **HCP identification**
  - **Medicine: prescription and dispensed medicine data**

**Prescription Item ID**

**Original or copy of the prescription in Country A**

**Country B Single concept**

—Active ingredient (Country B)

—Strength of the medicinal product (Country B)

—Medicinal product package (in Country A)

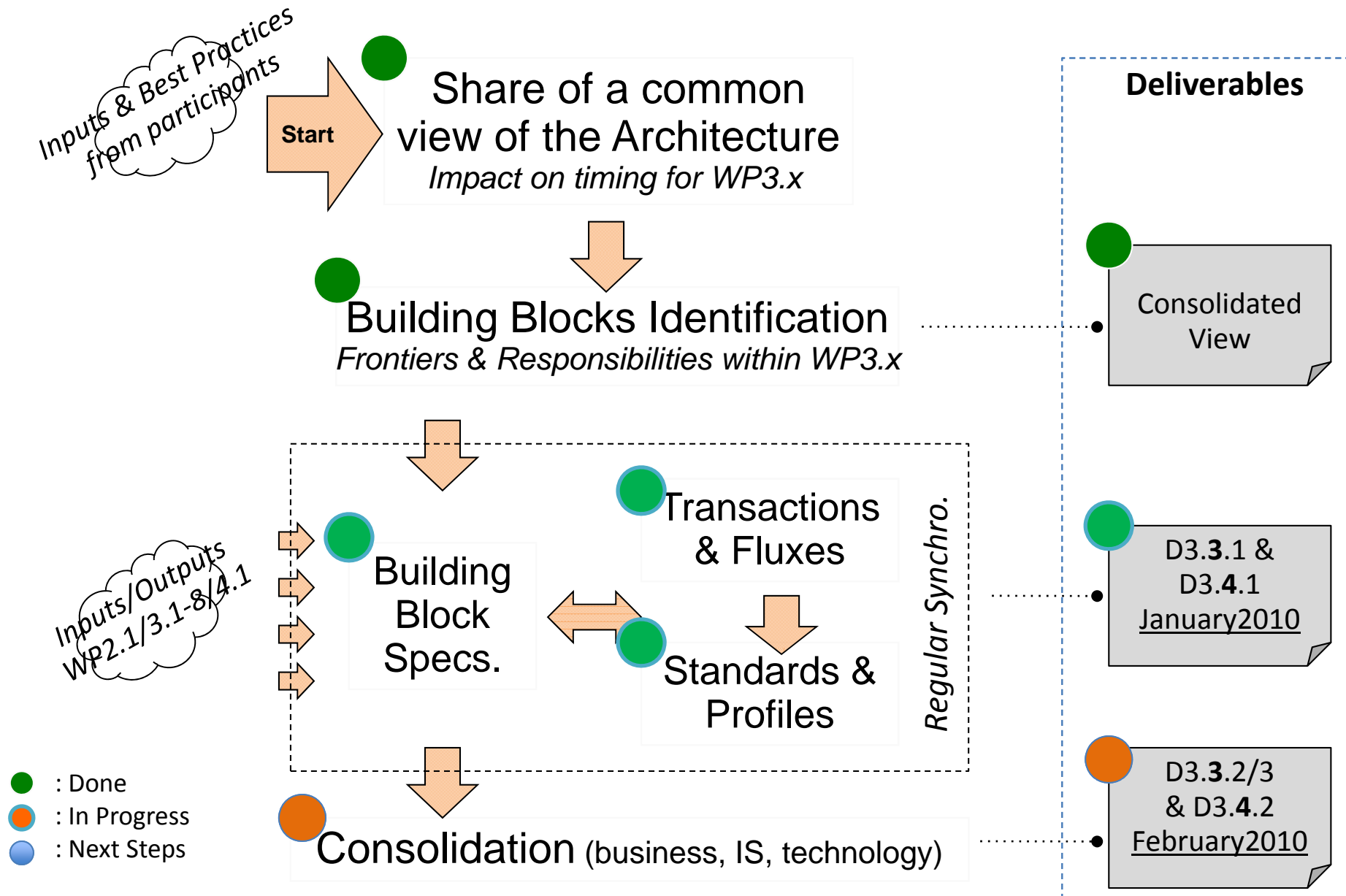
—Pharmaceutical dose form (in Country B)

**Brand name of the medicinal product prescribed in Country A**

**Number of packages**

**Posology**

**Date of issue of the prescription**





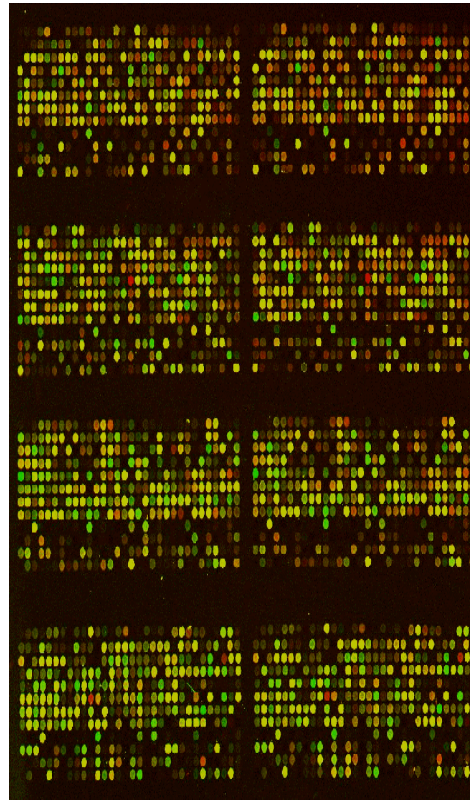


## Example of a WP (3.5 - Semantic services)

### Deliverables

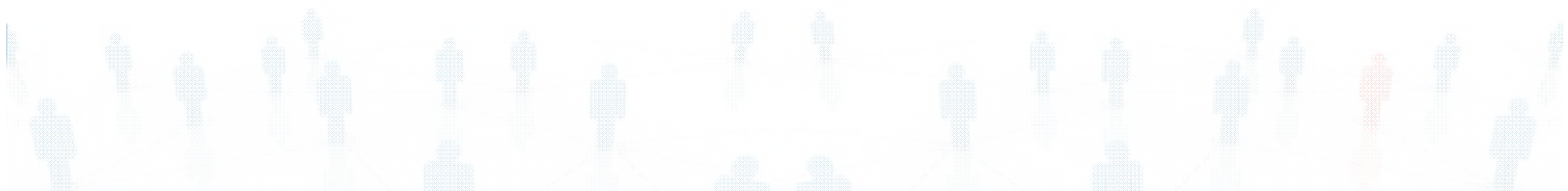
- “*The Semantic Service Definitions*” document, with:
  - **Appendix A** - Glossary
  - **Appendix B** - Data Elements Correspondence
  - **Appendix C** - Implementation Specifications
  - **Appendix D** - Master Value Sets Catalogue Content (MVC)
  - **Appendix E** - Ontology Specifications
  - **Appendix F** - Terminology Access Services
  - **Appendix G** - EN13606 Implementation







1. ***International standard***
2. ***In Use***
3. ***Existence of transcoding systems / services***
4. ***Cost of licences, of implementation and maintenance***
5. ***Implementable***
6. ***Relevancy to scope documents***
7. ***Information sufficient for clinical decision***
8. ***Information systems behind***
9. **Frequency of use**
10. **Severity**
11. **Content evaluation and acceptance**
12. **Syntactical and orthographical rules of each language have to be held.**
14. **Reconcilability**
15. **Unambiguity**
16. **Clinical acceptability**
17. **Consistency and systematic order**





## Content

Total amount of concepts: 9126 (ATC 6088, other 3038)

- 25- valuesets:
  - A. LOINC (2), Id doc & section, Blood pressure, pregnancy information
  - B. HL7 (3), technical & IHE specific,
  - C. SNOMED CT (13), Adverse Event Type (drug, food, substance), Allergies (Allergen), Blood group, Vaccination, Medical devices, Procedures, Social history
  - D. ICD-10 (1), Diagnosis, Illnesses, Problems (Allergy symptoms)
  - E. UCUM (1), Units
  - F. EDQM (3), routes, dosage forms, container
  - G. ISO (1), language
  - H. ATC (1), Drugs, Active ingredient

Temporary OID's on all value sets



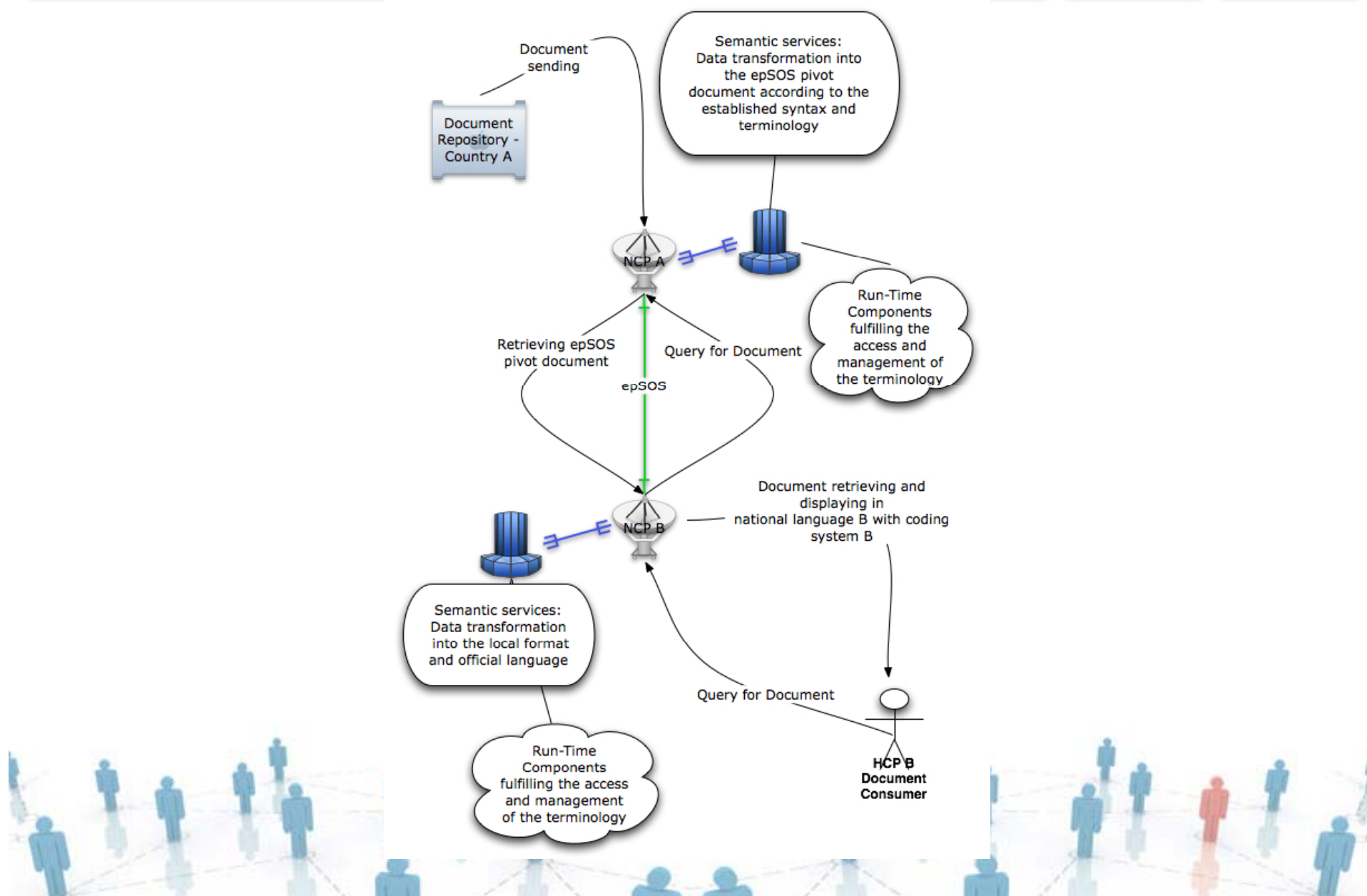




## Development strategy

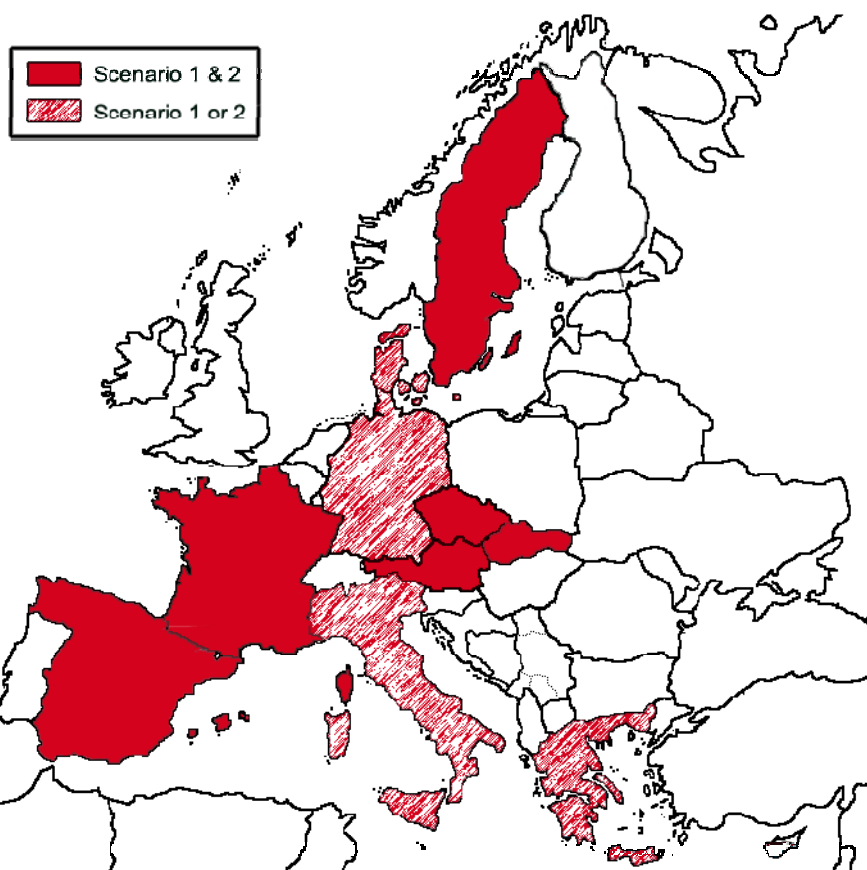
- In creating the reference terminology existing standards have to be taken into account.
- The format of reference terminology must be in parallel with the ongoing *Semantic Web* efforts. We propose Web Ontology Language (OWL2 DL) as format.
- The initial epSOS Ontology should be small and simple in order to be effective. This basis will be evolved.
- The paradigms of best practice in ontology development must be taken into account.







### epSOS Pilot Sites: Patient Summary



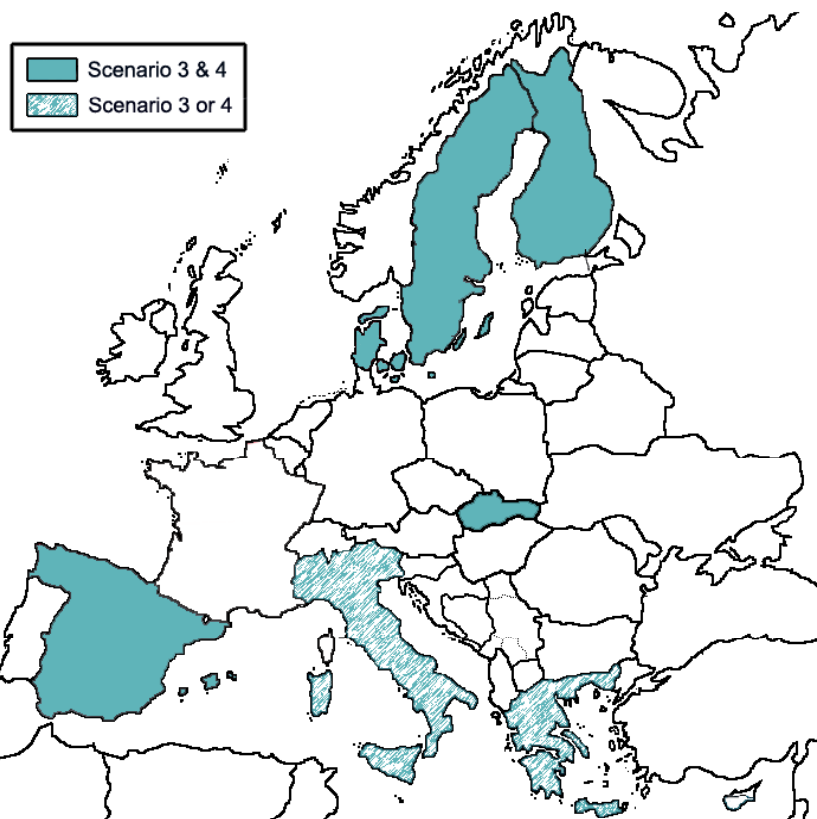
- **Scenario 1:** acting as Country B (receiver of patient information)
- **Scenario 2:** acting as Country A (sender of patient information)







## epSOS Pilot Sites: ePrescription

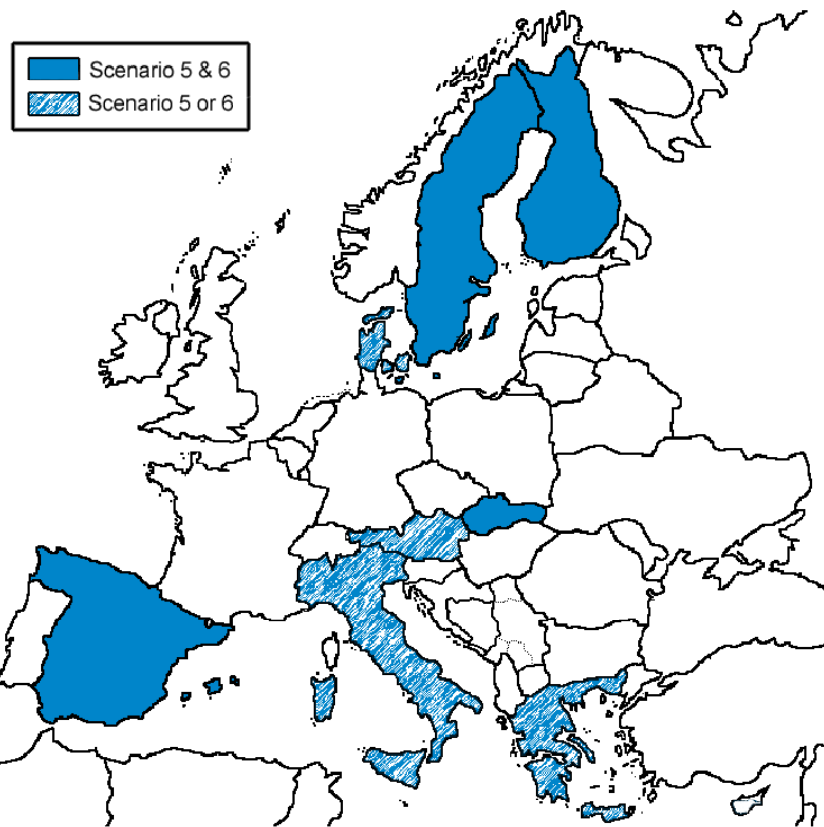


- **Scenario 3:** acting as Country A (sender of prescription information)
- **Scenario 4:** acting as Country B (receiver of prescription information)





## epSOS Pilot Sites: eDispensation



- **Scenario 5:** acting as Country B (sender of dispensed medicine information)
- **Scenario 6:** acting as Country A (receiver of dispensed medicine information)

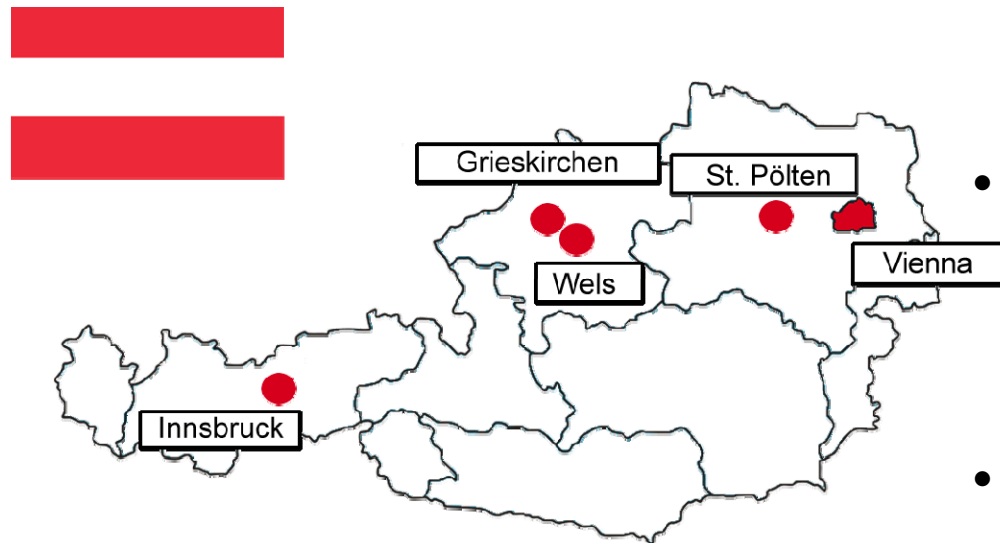


**Total numbers**

<b>INFRASTRUCTURES INVOLVED</b>	
<b>HCPO</b>	<b>3.445</b>
• <b>Hospitals</b>	<b>183</b>
• <b>Farmacies</b>	<b>2.149</b>
• <b>PoC</b>	<b>1.113</b>
<b>HUMAN RESOURCES INVOLVED</b>	
<b>HCP</b>	<b>30.157</b>



## Pilot Site Candidates: Austria

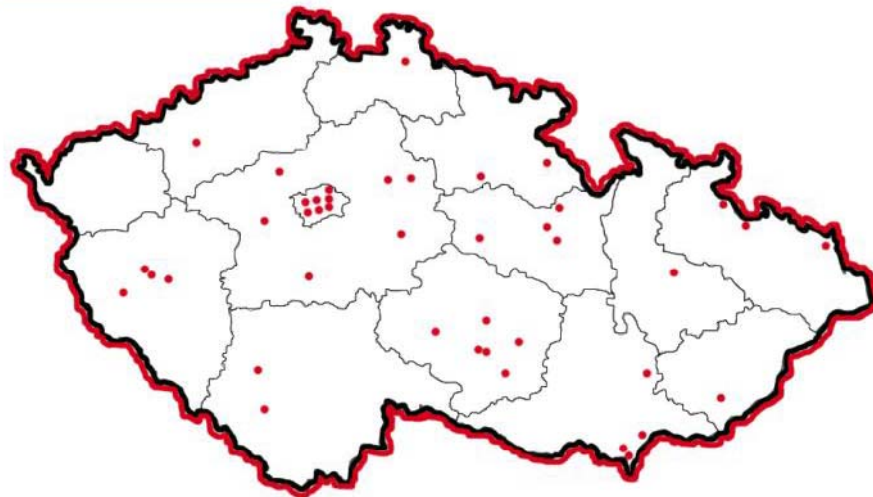


- **Involved regions:** five cities - Innsbruck, Grieskirchen, St. Pölten, Vienna and Wels
- **Coverage:** Patient Summary (acting as Country A & B) in Innsbruck, St. Pölten and Vienna. eDispensation (acting as Country A) in Grieskirchen and Wels
- **Acting as Country A:** Estimated annual outwards patient flow: approx. 7,200
- **Acting as Country B:** 4 hospitals, 136 GPs and specialists





## Pilot Site Candidates: Czech Republic



- **Involved regions:** the whole country
- **Coverage:** Patient Summary, acting as Country A & B
- **Acting as Country A:** over one million patients with an electronic health record. Estimated annual outwards patient flow to epSOS countries: 7,300
- **Acting as Country B:** 10,000 HCPs within 6,000 HCOs, of which 50 are hospitals (see map), scattered all over the country





## Pilot Site Candidates: Denmark



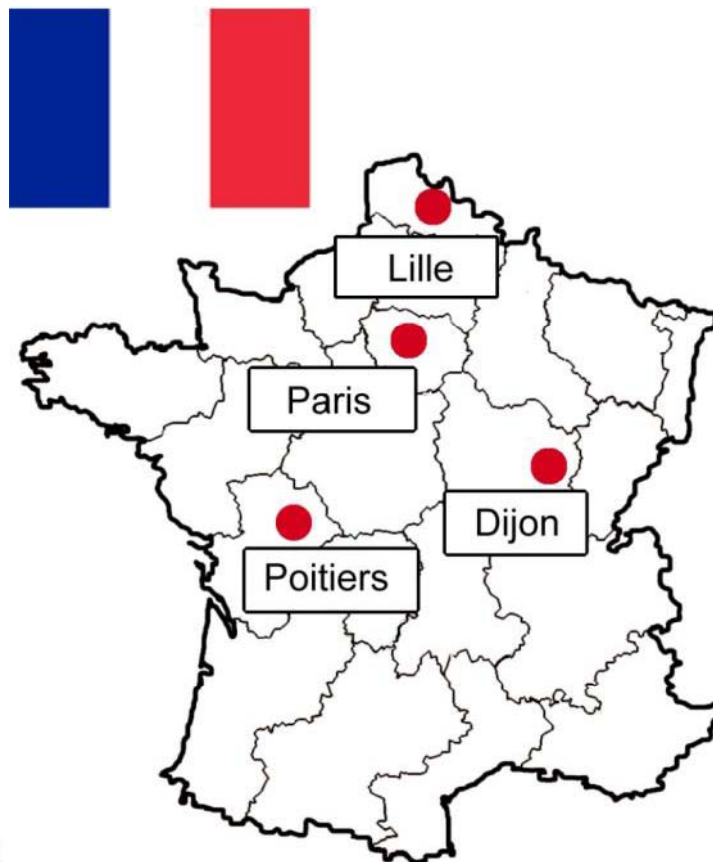
- **Involved regions:** the whole country, and in particular Copenhagen
- **Coverage:** Patient Summary (acting as Country A), ePrescription (acting as Country A & B) and eDispensation (acting as Country A & B)
- **Acting as Country A:** eP for the entire country. Estimated outwards patient flow: approx. 8,000
- **Acting as Country B:** 3,100 GPs and specialists, 60 hospitals, eDispensation at 2 pharmacies in Copenhagen







## Pilot Site Candidates: France



- **Involved regions:** four cities - Dijon, Lille, Paris and Poitiers
- **Coverage:** Patient Summary (acting as Country A & B) for incoming and outgoing Erasmus students at the universities of Dijon, Lille, Poitiers and Paris-X.
- **Acting as Country A:** 600 French students from the 4 universities participated in the Erasmus programme 2006/07 (outgoing)
- **Acting as Country B:** the four universities received more than 400 incoming Erasmus students in 2006/07







## Pilot Site Candidates: Germany



- **Involved regions:** Baden-Württemberg, Bavaria, Rhineland-Palatinate
- **Coverage:** Patient Summary, acting as Country A





## Pilot Site Candidates: Greece



- **Involved regions:** two cities – Athens and Thessaloniki
- **Coverage:** Patient Summary and ePrescription/eDispensation, acting as Country B
- **Acting as Country B:** estimated HCOs/HCPs involved: 15 pharmacies, 2 hospitals, 20 HCPs. Total annual tourist flow (inwards): over 6 million visitors





## Pilot Site Candidates: Italy



- **Involved regions:** Lombardy, in particular the provinces of Pavia and Brescia
- **Coverage:** Patient Summary (acting as Country A & B) and ePrescription/ eDispensation (acting as Country A)
- **Acting as Country A:** Acting as sender of PS in the provinces of Pavia and Brescia. The whole region Lombardy acting as sender of eP information and receiver of dispensed medicine information
- **Acting as Country B:** Acting as receiver of PS in the Garda Lake area (Brescia)





## Pilot Site Candidates: Slovakia



- **Involved regions:** Martin and Dolný Kubín

**Coverage:** Patient Summary and ePrescription/Dispensation, acting as Country A & B

**Acting as Country A:** PS and eP for 10,000 citizens

**Acting as Country B:** eP at 8 pharmacies in Martin and Dolný Kubín. PS at 2 hospitals and 15 outpatient care units





## Pilot Site Candidates: Spain



- **Involved regions:** Andalusia, Balearic Islands, Castile - La Mancha, Catalonia, Valencia
- **Coverage:** Patient Summary and ePrescription/Dispensation, acting as Country A & B
- **Acting as Country A:** PS for the entire population of all five regions. eP for the entire population of all regions except CLM.
- **Acting as Country B:** PS and eP/eD in the whole regions of Valencia and the Balearic Islands, and in selected cities/provinces in Andalusia, Catalonia and CLM







## Pilot Site Candidates: Sweden



- **Involved regions:** the whole country, and in particular Östergötland, Scania, Stockholm and Norrbotten
- **Coverage:** Patient Summary and ePrescription/Dispensation, acting as Country A & B
- **Acting as Country A:** eP for the entire country. Acting as sender of PS in Östergötland and Norrbotten
- **Acting as Country B:** acting as receiver of PS in Östergötland and Norrbotten. eP/eD at selected pharmacies in Stockholm, Scania and Norrbotten





- epSOS & CALLIOPE in CALLIOPE WG7
- Communication with a broader audience in both directions
- Infrastructure for dissemination activities
- Qualified feedback
- Input from Calliope's defined areas of work (Roadmap, EU-recommendations, Standards)



Welcome to CALLIOPE  
A European Thematic Network for eHealth Interoperability

<http://www.calliope-network.eu/>

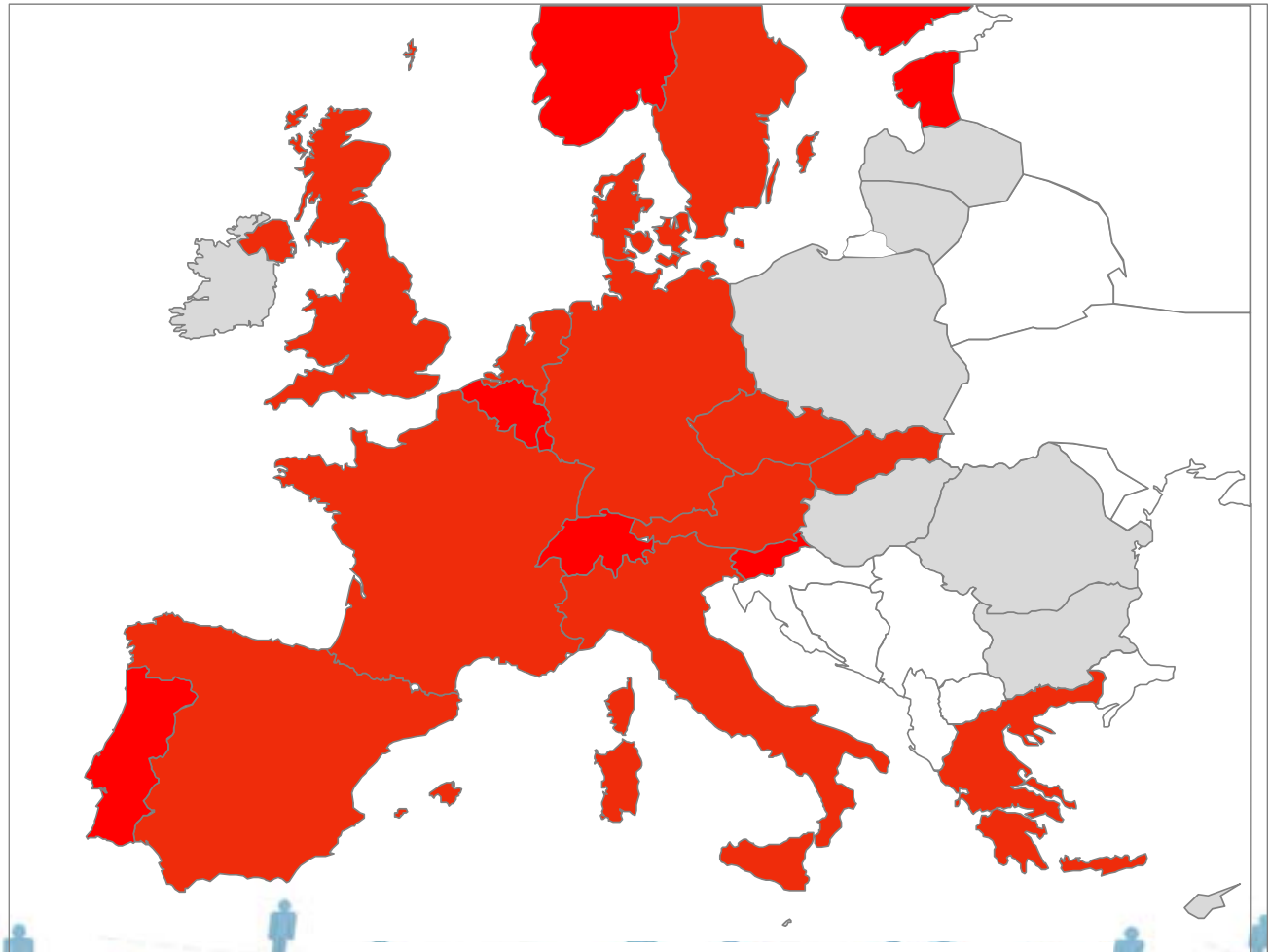


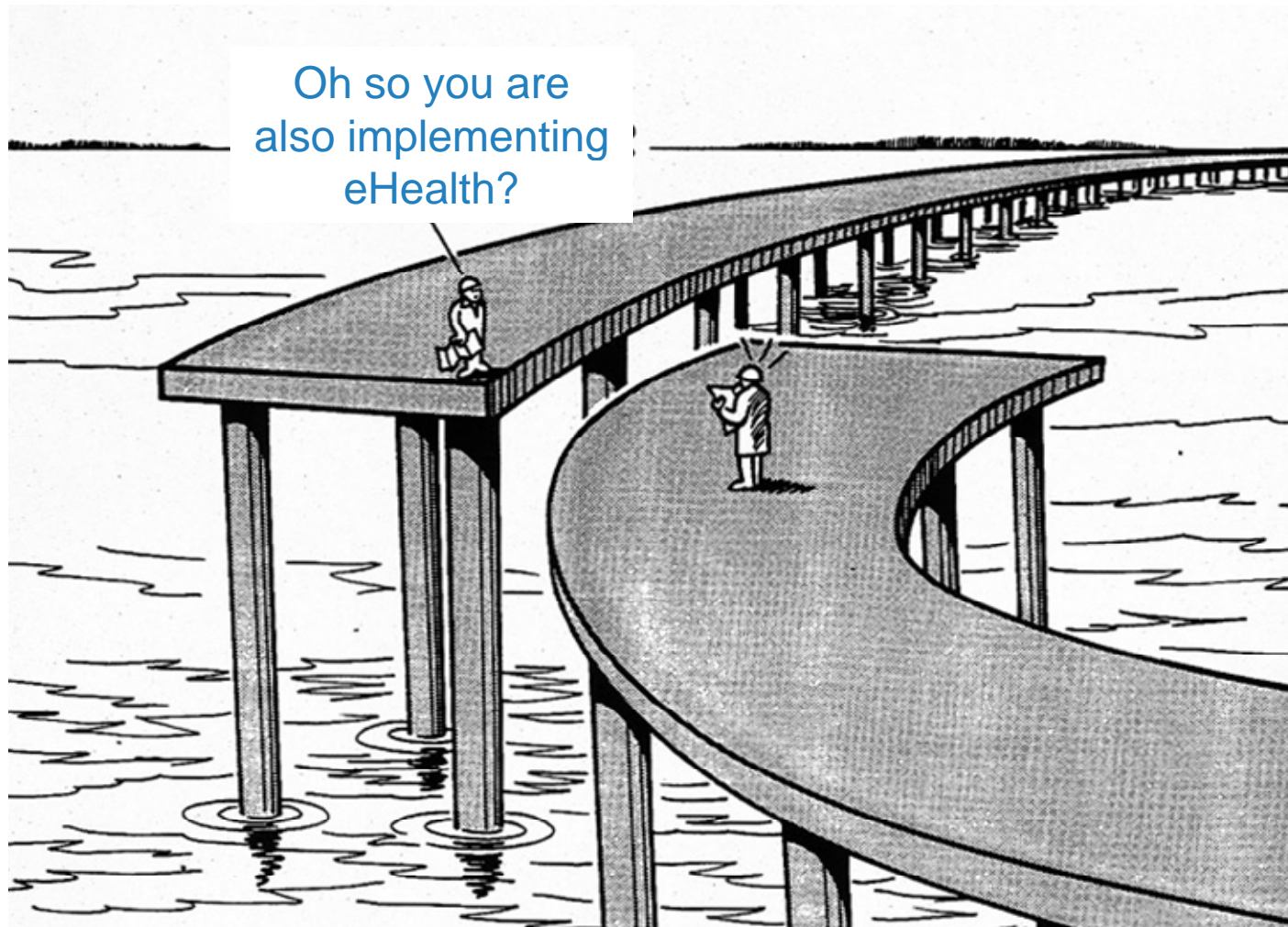




Have joined CALLIOPE  
WG 7

- Estonia
- Finland
- Iceland
- Slovenia
- Portugal
- Norway
- Switzerland
- Luxembourg
- Belgium
- Malta





*base from Mikael Erlandsson*

Thank you for your  
attention!

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