



## Large Scale Health IT Projekt: epSOS

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# Agenda

- Brief Repetition
  - Electronic Health Record
  - National Health Infrastructures
- epSOS: Connecting Europe
  - Project Summary
  - Challenges
  - Architecture

# Electronic Health Record

An electronic health record (EHR), or electronic medical record (EMR), refers to the systematized collection of patient and population electronically-stored health information in a digital format.<sup>[1]</sup>

[1] Gunter, Tracy D; Terry, Nicolas P (2005). "The Emergence of National Electronic Health Record Architectures in the United States and Australia: Models, Costs, and Questions". Journal of Medical Internet Research. 7 (1): e3. doi:10.2196/jmir.7.1.e3. PMC 1550638. PMID 15829475.

- Demographic Data
- Medical Information
  - Courses of disease
  - Therapies
  - Medications
  - Vaccinations
  - Allergies
  - ...

# National Health Infrastructures

# National Health Infrastructures

- National Solutions
- National Development Stages
- National Stakeholders
- Electronic Health Record
- Electronic Prescription

- Interoperability: National and International
- International Mobility versus International Medical Care
- epSOS



epSOS

Smart Open Services for European Patients

Seamless Healthcare for European Citizens when travelling to another European country.

To design, build and evaluate a service infrastructure that demonstrates cross-border interoperability between electronic health record systems in Europe.

# epSOS in figures

epSOS	<a href="http://www.epsos.eu/">http://www.epsos.eu/</a>
Time period	1st July 2008 - 31st June 2014
Duration	72 months (6 years)
Volume	€ 36,5 Million: co-funded by the European Commission Competitiveness and Innovation Programme (CIP) within the ICT Policy Support Programme
Number of Beneficiaries	45 Beneficiaries: Consisting of national ministries of health, national/ regional competence centers , a consortium of industry and the Project Management Team: <ul style="list-style-type: none"><li>• Technical Project Management Leader: gematik</li><li>• Administrative Project Management: empirica</li><li>• Project Coordination: SALAR</li></ul>
Number of countries	25 different European countries: 22 EU member states and 3 non-EU member states.

- Improve the quality and safety of healthcare
- Develop an eHealth framework and ICT infrastructure enabling secure access to patient health information among different European healthcare systems
- Reduce the frequency of medical errors and by providing quick access to documentation
- Increase accessibility of prescribed medicine also abroad

- Provide life-saving information in emergency situations
- Reduce the (sometimes needless) repetition of diagnostic procedures
- Develop, pilot and evaluate cross-border eHealth services
- Formulate recommendations for future work

- Patient Summary (PS)
  - Access to important medical data for patient treatment
  - Compilation of Medical Data from the home country
  - Translation
- ePrescription (eP) and eDispensation (eD)
  - Cross-border use of electronic prescriptions
  - Choose the right ePrescription
  - Mark as dispensed (legal issues)

- Patient Access to Data
  - provide patients with access to their existing Patient Summaries generated and kept in other countries (different from the home country) with or without the presence of a health professional at the PoC or elsewhere.
- Medication Related Overview
  - supports all possible information that might be needed in the process of prescribing, dispensing (and possibly even administering) medication to the patient in a foreign country.

- Healthcare Encounter Report
  - inform the Country of Affiliation after a Patient Summary has been requested of the healthcare event that took place abroad.
  - with the consent of the patient only.
- ~~Integration of the European Health Insurance Card~~
  - use the EHIC identification data not only for submitting reimbursement requests, but also for identifying the patient
- ~~Integration of 112 services~~
  - allow European emergency services (112), and in particular the Emergency Medical Services, to securely and legally access Patient Summary data in order to improve the quality of care provided in the event their services are required.



- Political Interests
  - EU-Funding (pilot sites, beneficiaries)
  - International Reputation
  - Political Situation (national and international)
- Involved Legal Systems
  - Data Availability
  - Data Access Rights
  - Data Transmission Rights
- National Legal Competence Areas
- Project Management

# epSOS – Challenges (beneficiaries)

- Organisations
  - Ministries
  - Competence Centers
  - Industry Companies
- Individuals
  - Opinions
  - Interests
  - Approaches
  - Skills
- Interests
  - National
  - International
  - Personal

# epSOS – Challenges (technical)

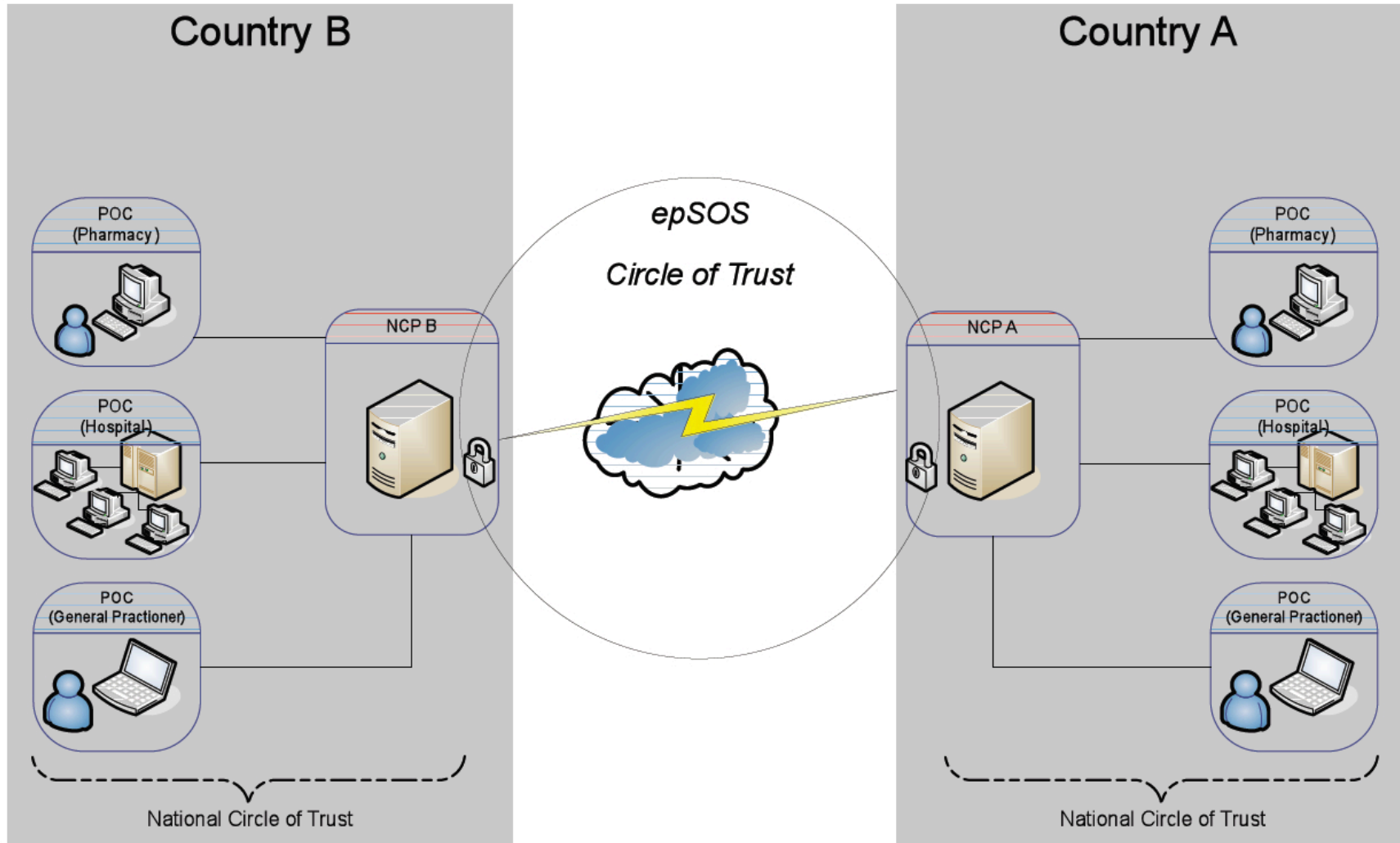
- Involved Health Care Systems
  - Technical Implementation
  - Communication
- Infrastructure
  - Network
  - National Communication
- Large Scale Project
  - Usability & Integration
  - Reliability & Exception Handling
  - Scalability & Extensibility
  - Security
  - ...

- Circle of Trust
  - Domains: epSOS, National
  - Who do I trust?
- National Contact Point (NCP)
  - Interface to National Domain
  - Interface to epSOS Domain
- Security
  - Identification
  - Authentication
  - Patient Consent
- Usecases
  - Patient Summary (PS)
  - electronic Prescription (eP)
- Main Roles
  - Patient
  - Health Care Professional (HCP)
  - Health Care Professional Organization (HCPO)

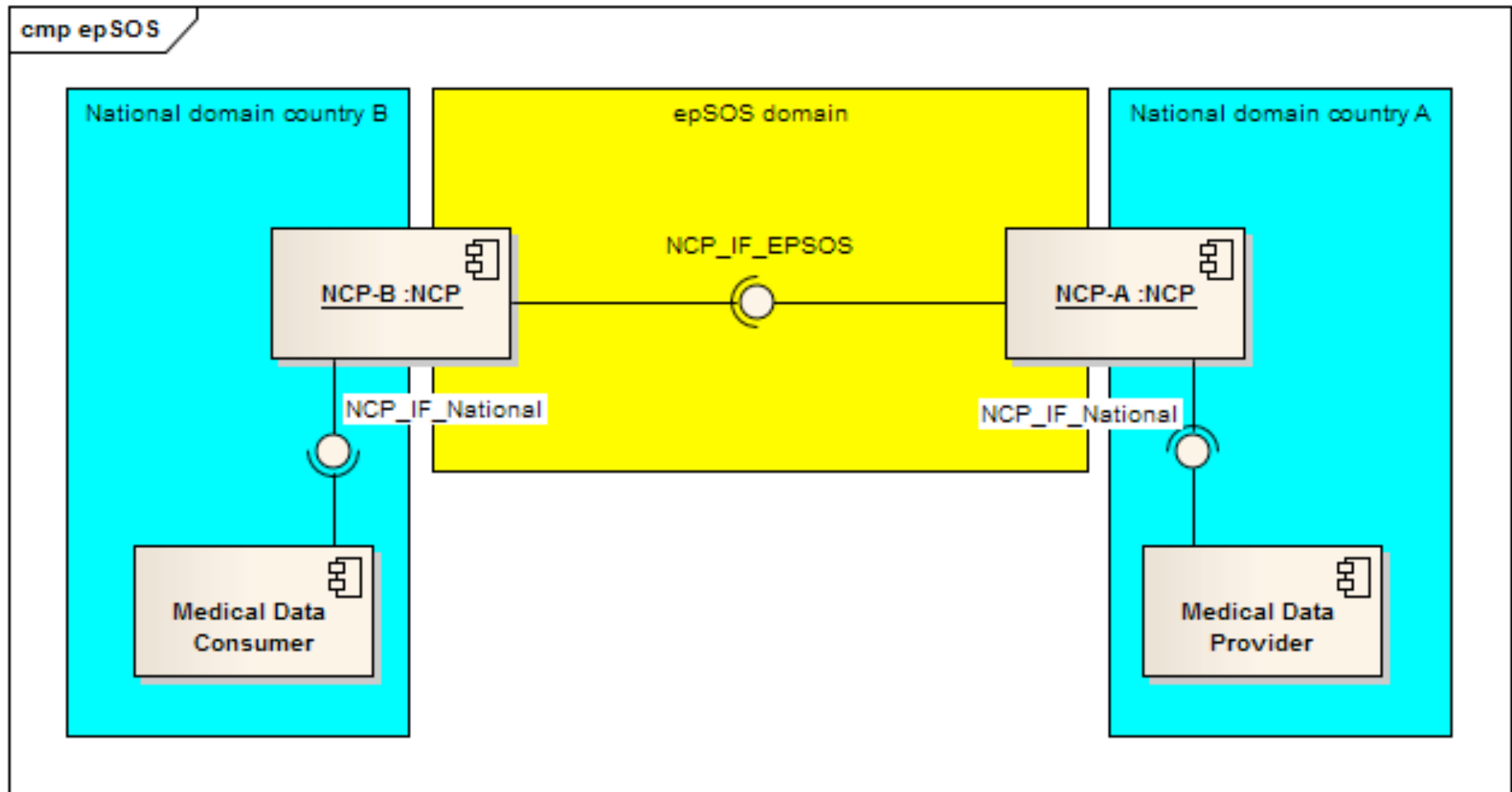
# epSOS – Key Concepts: Circle of Trust



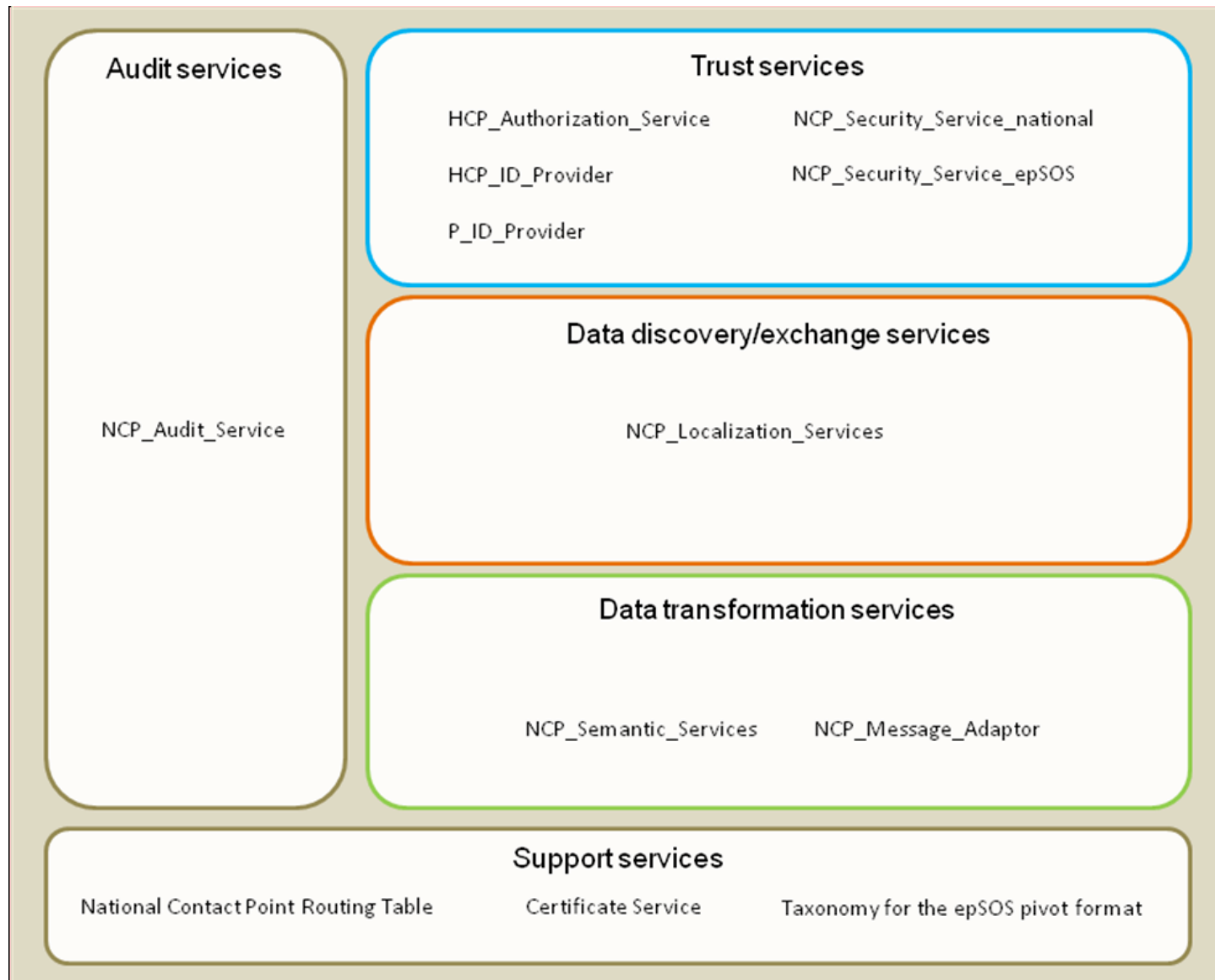
# epSOS – Key Concepts: Circle of Trust



# epSOS – Key Concepts: National Contact Point

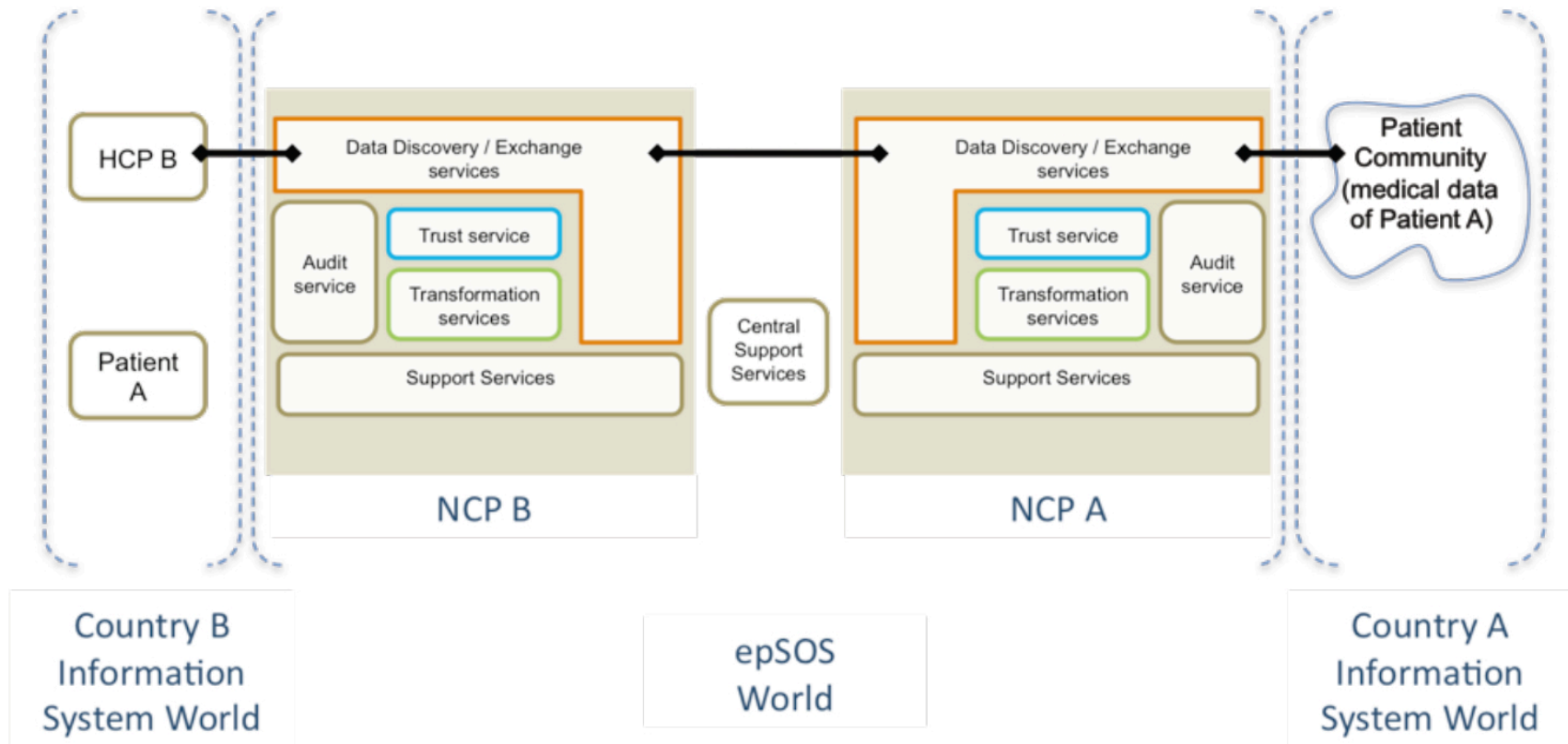


# epSOS – Key Concepts: National Contact Point

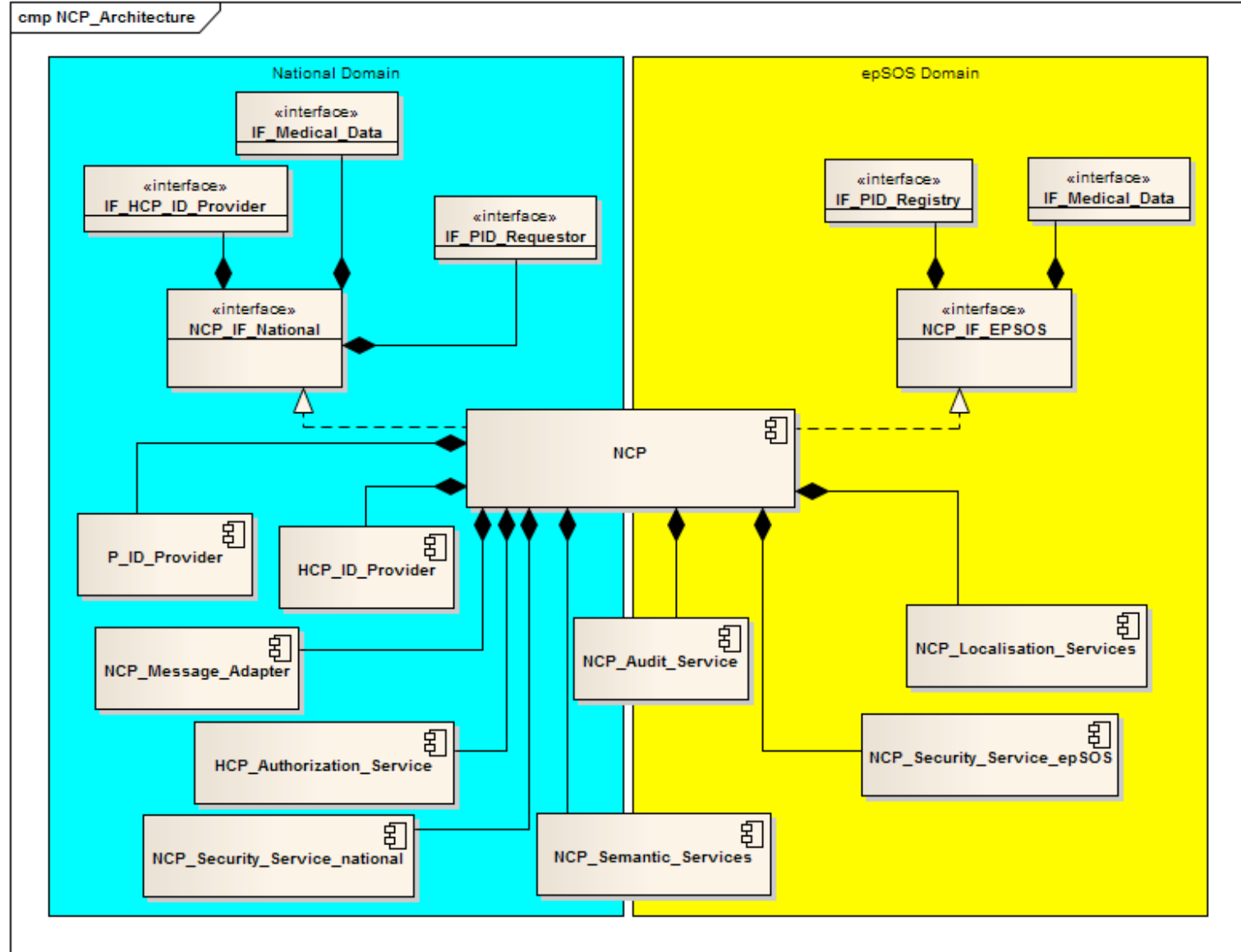




# epSOS – Key Concepts: National Contact Point



# epSOS – Key Concepts: National Contact Point



- Development of a solid basis for the pilot services, considering:
  - Governance, use cases, data content, semantics, specifications, architecture, testing mechanisms
- OpenNCP
  - <https://openncp.atlassian.net/wiki/display/ncp/OpenNCP+Community+Home>
- 16 pilots of epSOS services achieved live operations
- Fewer patients than originally envisioned

# epSOS – Retrospective (Hidden Agenda)

- Cooperation
- Networking
- Awareness Raising
- Know-How Transfer
- Infrastructure Improvements
- Law Improvements