Austrian MPI in the context of EHR (ELGA)
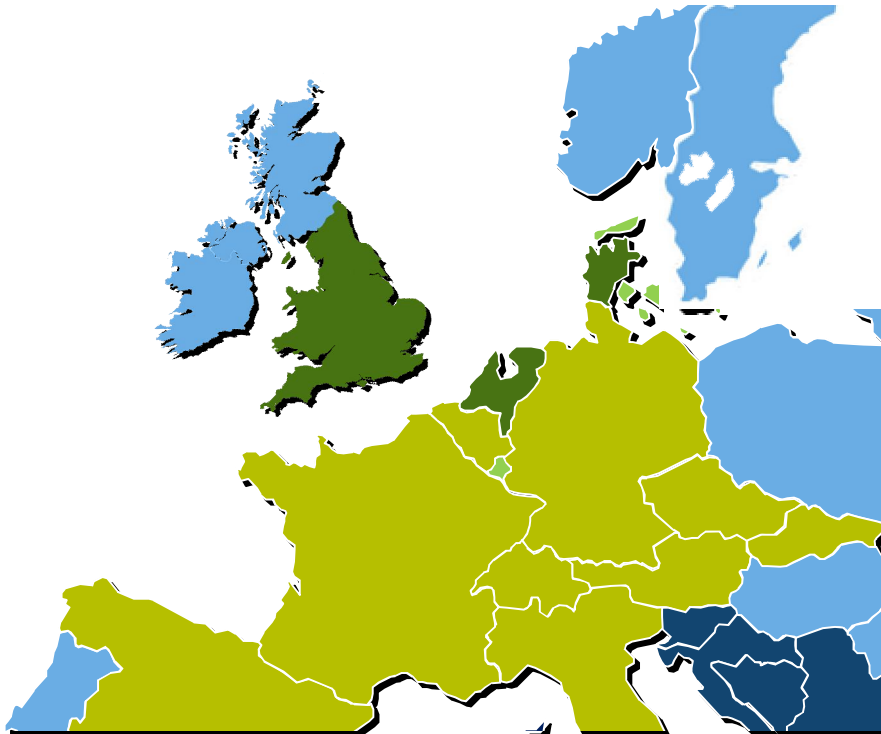
CSC Health Services

October 2011

Provider

Payor

Patient

Pharma

Government

Research

itapa

CSC

Although the starting points, requirements and funding options may differ from country to country, the progress, challenges and lessons learned from these pioneering efforts provide valuable guidance to all large scale governmental Health initiatives, namely within the European Union.
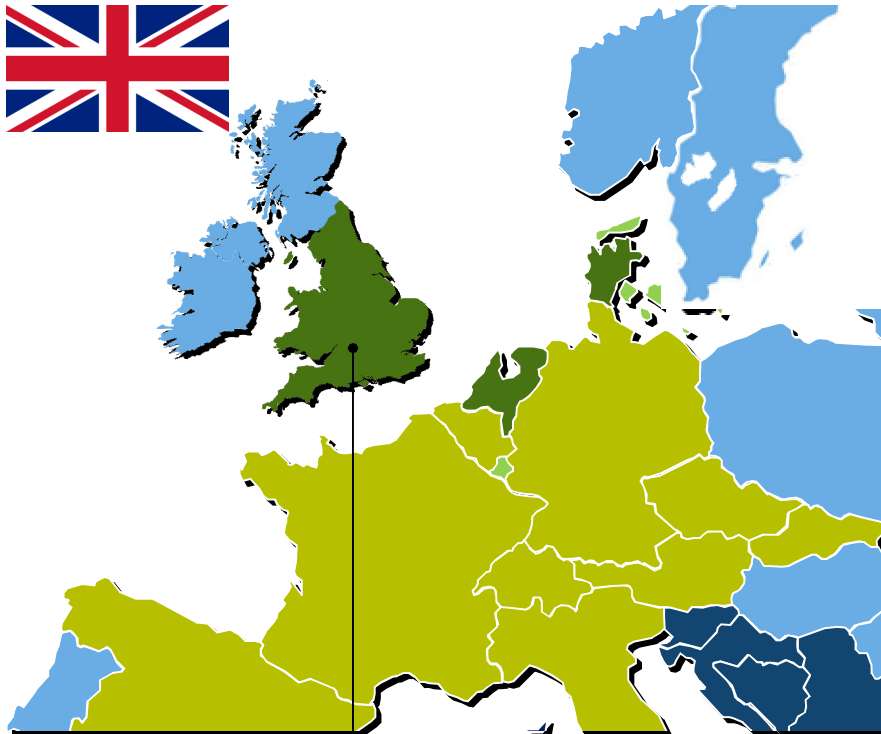
CSC EMEA Health Services:
Market Leading in European Large Scale Healthcare Programes

- 1.75 bn$ overall healthcare sector revenue
- In Europe: #1 with 650 M$
- >20% growth year on year
- Approximately 3,000 healthcare IT experts
- Healthcare operations in eleven countries

CSC EMEA Health Services:
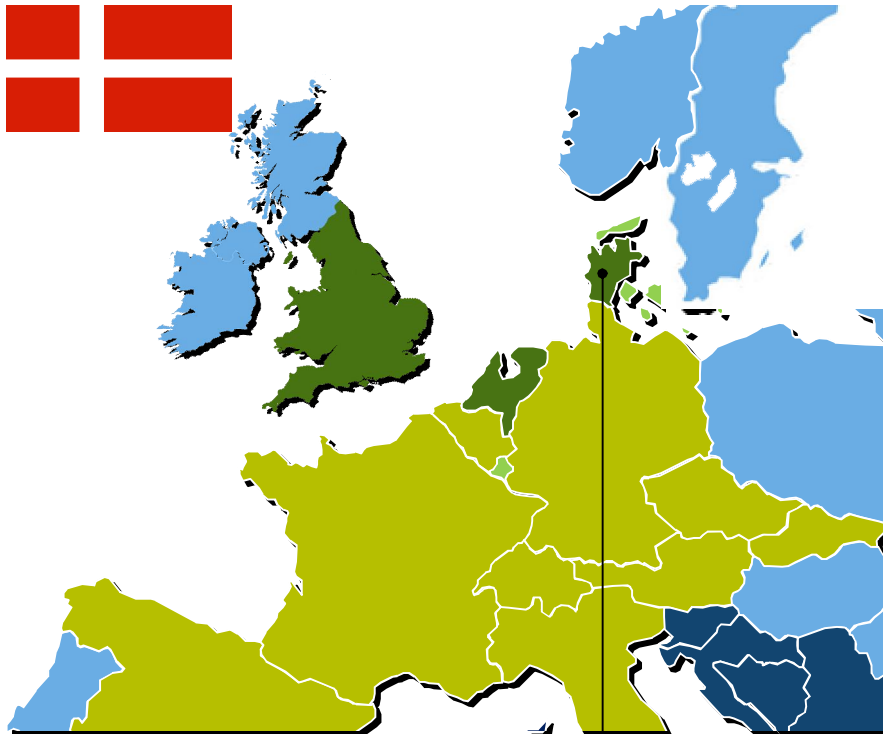# Market Leading in European Large Scale Healthcare Programes

- 1.75 bn$ overall healthcare sector revenue
- In Europe: #1 with 650 M$
- NHS: Nearly 40% of the business in EMEA
- Strong profitability
- >20% growth year on year
- For more than 2/3 of all trusts in UK CSC is prime contractor

UK: NHS
- Largest eHealth programme worldwide
- More than 100,000 Professionals
- More than 60% of population
- Largest PACS/RIS operations in Europe
- Over 1,000 General Practitioner systems

CSC EMEA Health Services:
# Market Leading in European Large Scale Healthcare Programes

- 1.75 bn$ overall healthcare sector revenue
- In Europe: #1 with 650 M$
- Approximatly 300 experts working for ScandiHealth in Denmark
- ScandiHealth - Largest Healthcare IT company in Scandinavia, Clinical suite, Scandihealth's EMR, are cornerstones of the solution, with applications for Physician Portal, Patient Administration Laboratory, Home Health and Nursing Homes

Denmark
- Excellent health system
- More than 70% of population covered
- Wide range of clinical packages
- ePrescription, adverse incidents solutions

CSC EMEA Health Services:
# Market Leading in European Large Scale Healthcare Programes
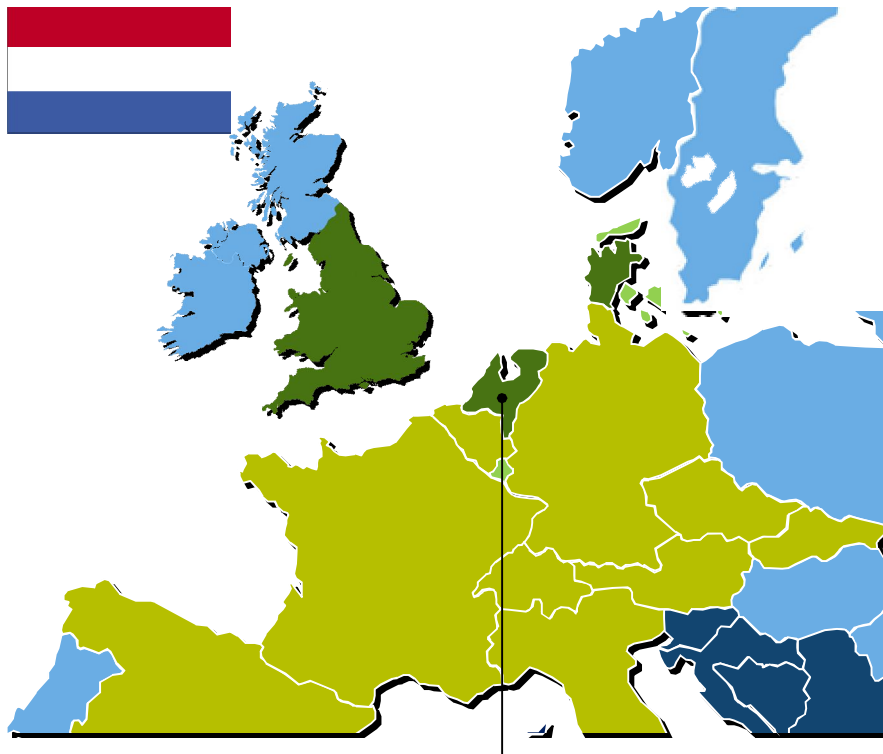
- 1.75 bn$ overall healthcare sector revenue
- In Europe: #1 with 650 M$
- >20% growth year on year
- Approximately 3,000 healthcare IT experts
- Healthcare operations in eleven countries

The Netherlands
- Very competitive market
- Operate the National Infrastructure (NICTIZ)

CSC EMEA Central Region Health Services:
Leverage EMEA expertise and Solutions to drive Growth.

- 1.75 bn$ overall healthcare sector revenue
- In Europe: #1 with 650 M$
- 28 Mio M$ in CR
- More than 100 German speaking healthcare experts in CR
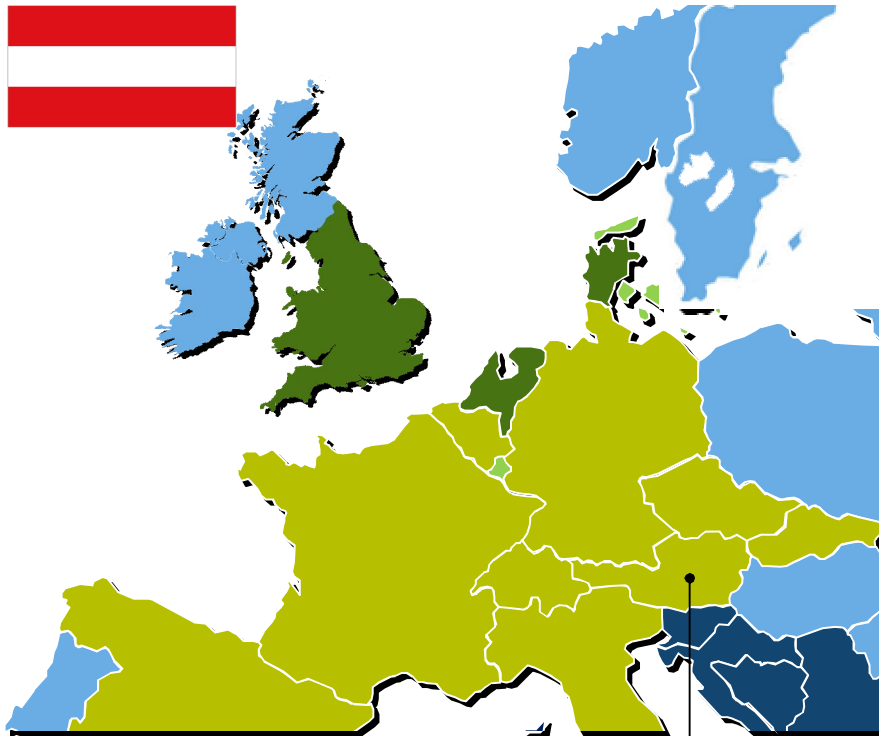
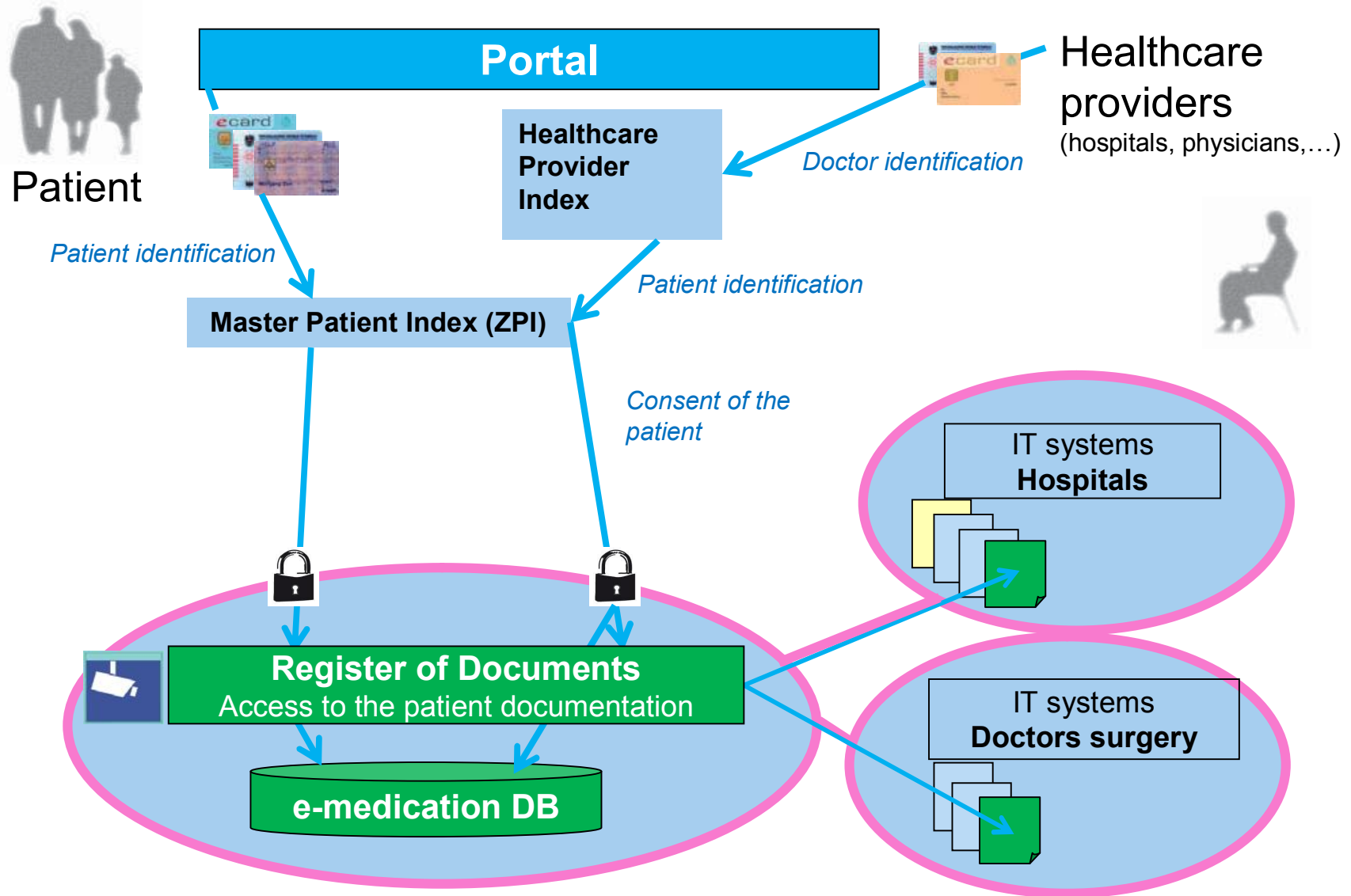**Austria**
- Strong value proposition in public health and statutory accident insurance.
- MPI, ZPV and MVB provided by CSC.
- Foster EPR, Archiving & Document Management in provider space

ELGA System Architecture (1/2)

Patient

Portal

Healthcare
Provider
Index

Healthcare
providers
(hospitals, physicians,…)

Doctor identification

Patient identification

Patient identification

Master Patient Index (ZPI)

Consent of the
patient

Register of Documents
Access to the patient documentation

e-medication DB

IT systems
Hospitals

IT systems
Doctors surgery

ELGA System Architecture (2/2)
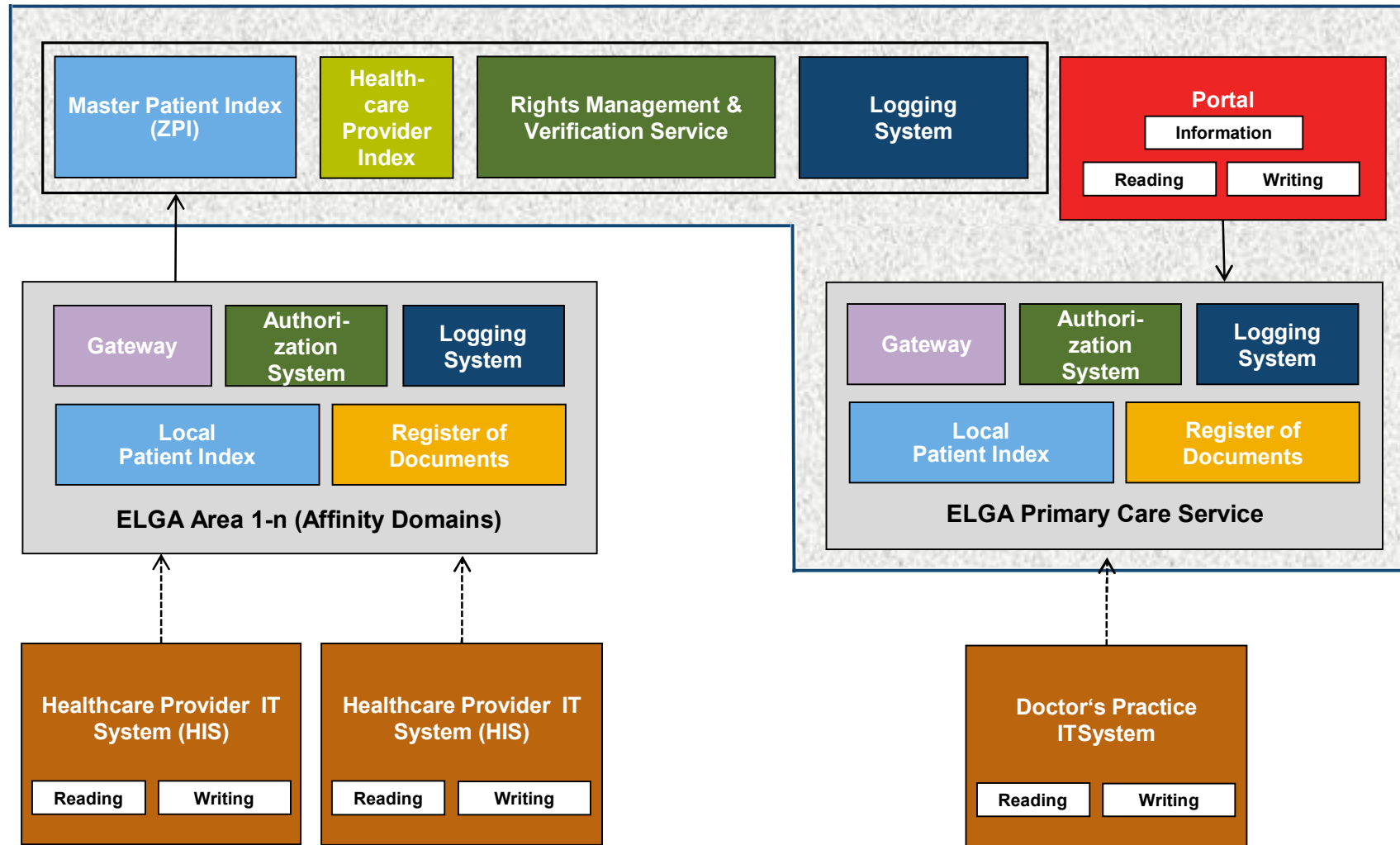
ELGA Basic Components & Core Applications

Central Basic Components

- Master Patient Index (ZPI)
- Healthcare Provider Index (GDA)
- Register of Documents
- ELGA Portal
- Authorization & Logging System
- Information Security Management System (ISMS)

Core Applications

- Discharge Information (doctor/patient letter)
- Laboratory Findings
- X-ray Findings
- eMedication
- Planned
  - Pacemaker Supply
  - Mother-Child-Pass
  - OP-Report
  - Vaccination Data

ELGA Master plan / Roadmap

Past and future developments

- Healthcare Provider Index enabled December 2010

- Master Patient Index (ZPI) starts June 2011

- Integration of Healthcare Provider Index and Master Patient Index with a supplementary and logging system from the second half year of 2011

- IHE compliant local ELGA areas (Affinity Domains)
  - Some already exist
  - Others will still arise

- Piloting eMedication in 3 pilot regions 2011-2012
  - Austria-wide rollout depends on evaluation

- Rollout (i.e. integration of the local ELGA areas with the central components) from 2012

- Further development of ELGA portal

- Ongoing development of clinical documents (CDAs)

The Austrian Master Patient Index:
Implementation of a Central Component of the Austrian Electronic Health Record

ITSV GmbH
(IT-Services of the Austrian Social Security)

ITSV Key Data

Founded **3rd of Nov 2004** as a 100% subsidiary of the Austrian Social Security. More than 8M customers.

Headquarter in Vienna:
- Johann-Böhm-Platz 1, 1020 Vienna
Additional location:
- Gruberstraße 77, 4021 Linz

~320 Employees

Key Competences:
- IT Governance
- Call Center
- Software Development
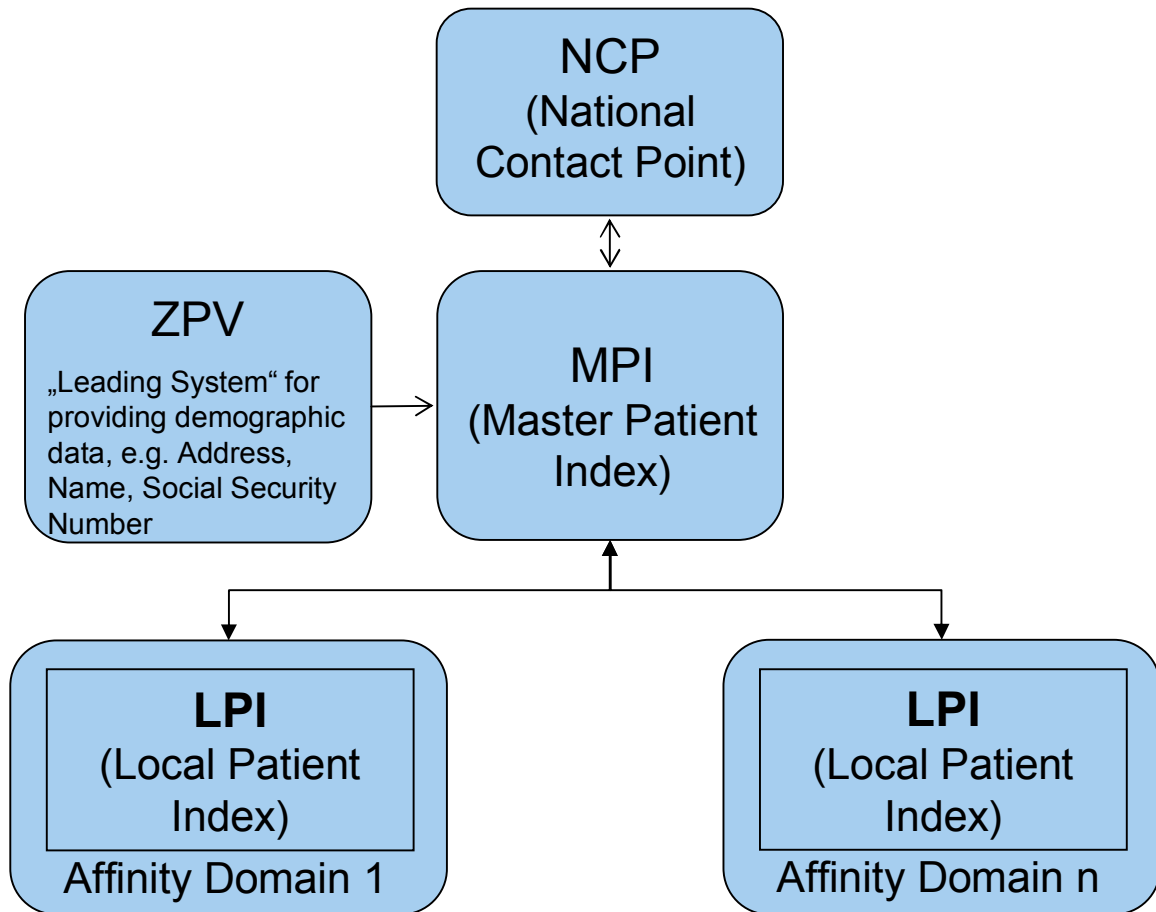- Data Center Services

ITSV is a non-profit company.

ITSV – Current Services

- Consolidation of Data Center Services
- Coordination of IT activities of the Austrian social security institutions and setup of IT strategies, architecture and standards
- Support in exchanging core applications and migration of applications to the latest standard and version
- Maintenance, Development and Operation of central application
- Partner in the realization and operation of the Electronic Health Record (ELGA in Austria)

www.itsv.at

MPI Use Cases

NCP
(National Contact Point)

ZPV
„Leading System" for providing demographic data, e.g. Address, Name, Social Security Number

MPI
(Master Patient Index)

LPI
(Local Patient Index)
Affinity Domain 1

LPI
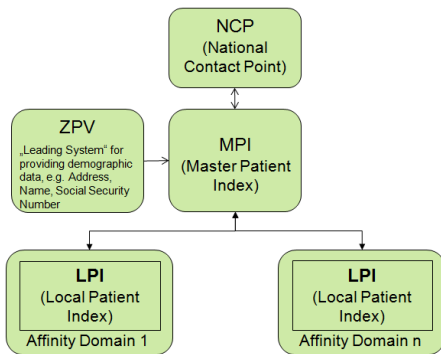(Local Patient Index)
Affinity Domain n

Interface to the European National Contact Point (NCP)

Linking of Patient Identities from various Affinity Domains (PDQ & PIX functionality)

Linking of Patient Identities from various Hospitals within one Affinity Domain

MPI Use Cases

Request of a LPI: „In which Affinity Domains can I find Mr. Max Maier" "

Response of the MPI: „Affinity Domain 1 and 4".

MPI

| LPID	Name	Social Security#
ZPVID-1111	Maximilian Maier	1234010101
LPID-1-135	Max Maier	1234010101
LPID-4-246	Max Mayer	1234010101

„Link Group" of one Patient Identity

Affinity Domain „1"

LPID	KIS-ID	Name	Soc.Sec#
LPID-1-135	KIS-1-123	Max Maier	1234010101
LPID-1-135	KIS-2-341	Max Maier	1234010101

Affinity Domain „4"

LPID	KIS-ID	Name	Soc.Sec#
LPID-4-246	KIS-A-111	Max Mayer	1234010101
LPID-4-246	KIS-B-555	Max Mayer	1234010101

MPI Use Cases

> ## Use Case: Search Patient Data (PDQ[1])

>> ### Patient goes to Hospital the 1st time

>> ### HCP asks the LPI for demographic data, the LPI (optionally) forwards this request to the MPI

>> ### For a person which has social security in Austria, the MPI will return demographics data because of the connection to ZPV

>> ### Advantage: demographics data fast and with high quality
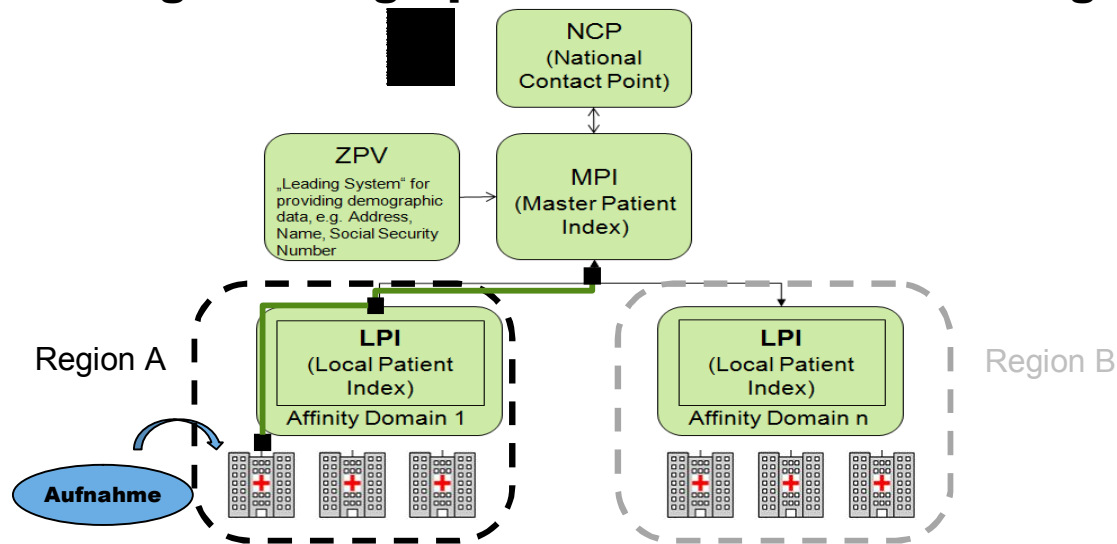
1   **Patient Demographic Query (Request of a patient´s demographics data)**

MPI Use Cases

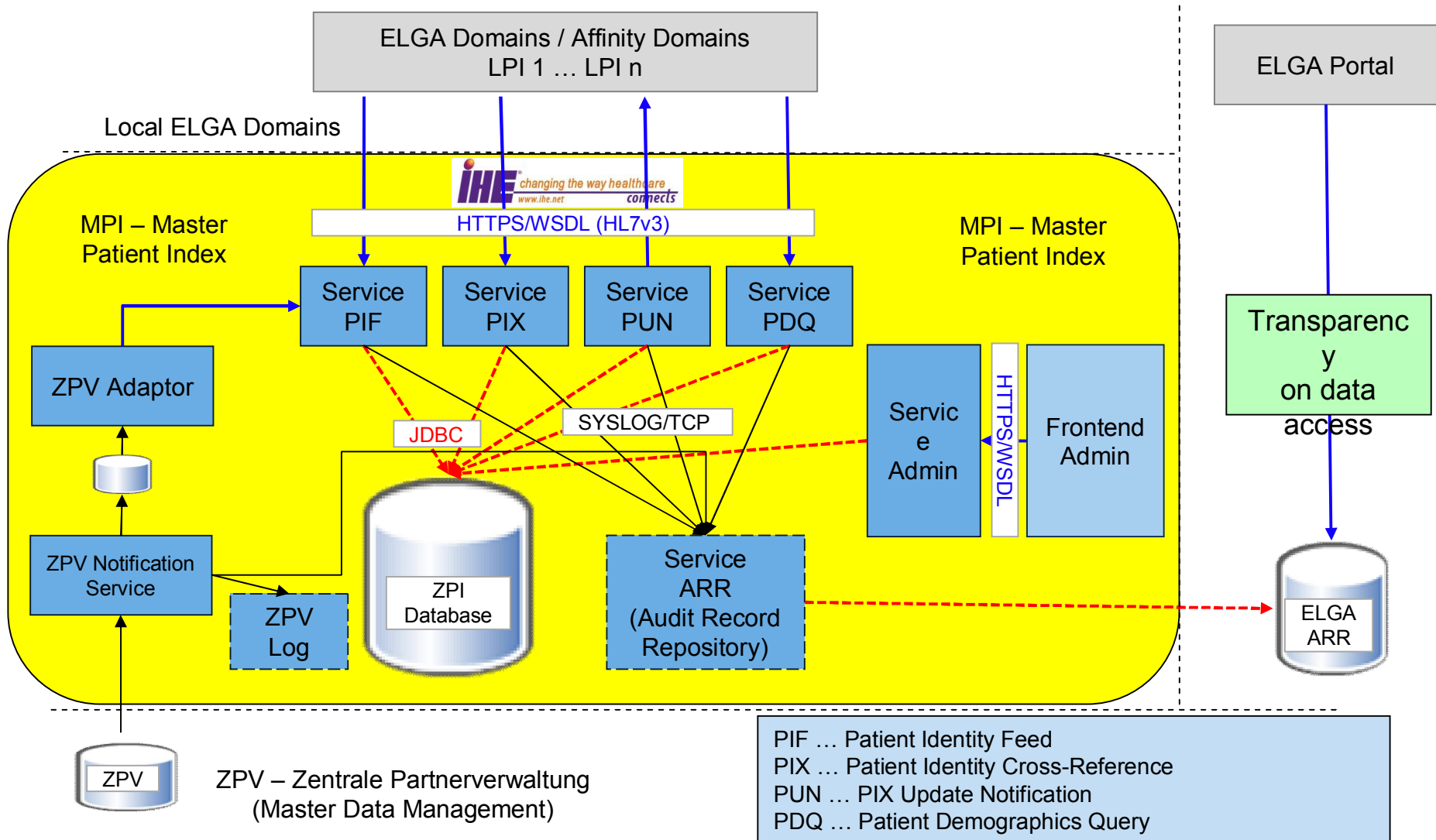> ## Use Case: Search Patients in other Affinity Domains (PIX[1])
>> ### HCP sends request to LPI and then to the MPI. Response:
>>> #### PIX Query delivers the affinity domains where the patients occurs as well.
>>> #### The response DOES NOT include health records.
>> ### Advantage: PIX serves as preparation to generate EHR.
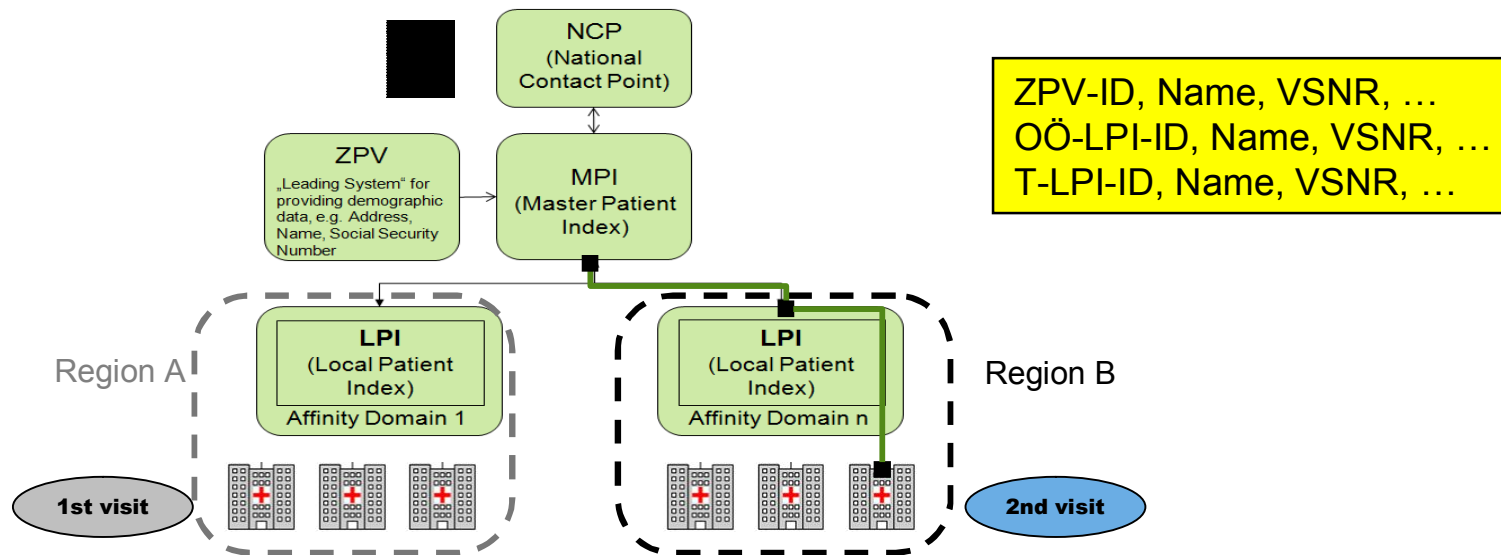
Requirements

- Information required for Patient Identities in MPI
    - Austrian Social Security Number ($\rightarrow$ high data quality)
    - EHIC (Challenges: Doublet Management)
    - Children w/o SS and EHIC (Challenges: multiple births)
- Link/Merge of patient identities
- Delivery of demographic data (PDQ)
- Provide information about other affinity domains for a specific patient (PIX)
- Logs of all access
- Interfaces according to IHE and participation at IHE Connectathon

Architecture & Technical Details

ELGA Domains / Affinity Domains
LPI 1 … LPI n

ELGA Portal

Local ELGA Domains

MPI – Master Patient Index

HTTPS/WSDL (HL7v3)

MPI – Master Patient Index

Transparency on data access

Service PIF

Service PIX

Service PUN

Service PDQ

ZPV Adaptor

JDBC

SYSLOG/TCP

Service Admin

HTTPS/WSDL

Frontend Admin

ZPV Notification Service

ZPI Database

Service ARR (Audit Record Repository)

ELGA ARR

ZPV Log

ZPV

ZPV – Zentrale Partnerverwaltung (Master Data Management)

PIF … Patient Identity Feed
PIX … Patient Identity Cross-Reference
PUN … PIX Update Notification
PDQ … Patient Demographics Query

Architecture & Technical Details

Service	Description
PIF	The LPIs (Local Patient Indices) use this service to load patient data from the affinity domains into the MPI (social security number, EHIC, LPID, demographic data).
PIX	Using a technical key (LPID) the LPI can use this service to find out all affinity domains the patient (with LPID) appears in.
PDQ	Various search options exist to get demographic data. Restrictions are defined in order to prevent "patient surfing".
ATNA	All transactions generate a ATNA messages and are logged.
CT	The clock of the MPI server is synchronized with an NTP server.
ZPV Notification Service	Continuous Update of demographics data from ZPV in order to update the MPI demographic data. Data is loaded via the PIF Service.
Clearing	Batch process to find Clearing cases. A GUI exists for administrators.

Summary and Outlook

- **Status**
    - **Scope, progress and Budget according to plan**
    - **Validated Design (by ELGA)**
    - **MPI Services developed and verified by internal tests (PIF, PIXv3, PDQv3, ATNA, CT)**
    - **Successful participation at the Connectathon in Pisa, 2011 (secure node, PIXv3, PDQv3, ATNA, CT)**
    - **First successful tests with LPIs (OÖ, VG/BHB)**
- **Outlook:**
    - **Realistic test scenarios with various LPIs and MPI**
    - **Performance and Stress tests in May**
    - **Stabilize, increase maturity and get acceptances from the project steering committee**

Connectathon 2011 Results

http://connectathon-results.ihe-europe.net/

ZPI in context of eHealth and ELGA in Austria at a glance … questions you might have …

- Why MPI?
  - Unique and consistent linkage of information towards a distinct person/patient
- Who was involved?
  - itSV (client) and CSC as prime contractor
- Planned time?
  - 18 months
- Needed time?
  - Less then
- Planned budget?
  - 2M€
- Real budget spent?
  - Less then

- Client happy?
  - YES ☺
  - Why - High quality, all „certifications" reached, less time and budget needed
- Why CSC?
  - Highest qualification and quality, highest fullfillment of requirements/criteria defined and best price
- Further key Initiatives interlocked?
  - Protocoll and Authorisation System, GDA (HPI), Local Patiend Index (LPI)
- Further key components of eHealth from the Social Security Agency in Austria
  - MVB
  - ZPV

CSC

Although the starting points, requirements and funding options may differ from country to country, the progress, challenges and lessons learned from these pioneering efforts provide valuable guidance to all large scale governmental Health initiatives, namely within the European Union.

CSC

Peter Christen
Health Services Eastern Europe

CSC Austria GmbH
m +43 664 162 39 32

www.csc.com | pchristen@csc.com

Ďakujem vám!

Thank you!