



# ELGA

## Austrian National eHealth Infrastructure Use-cases, Policies and Architecture



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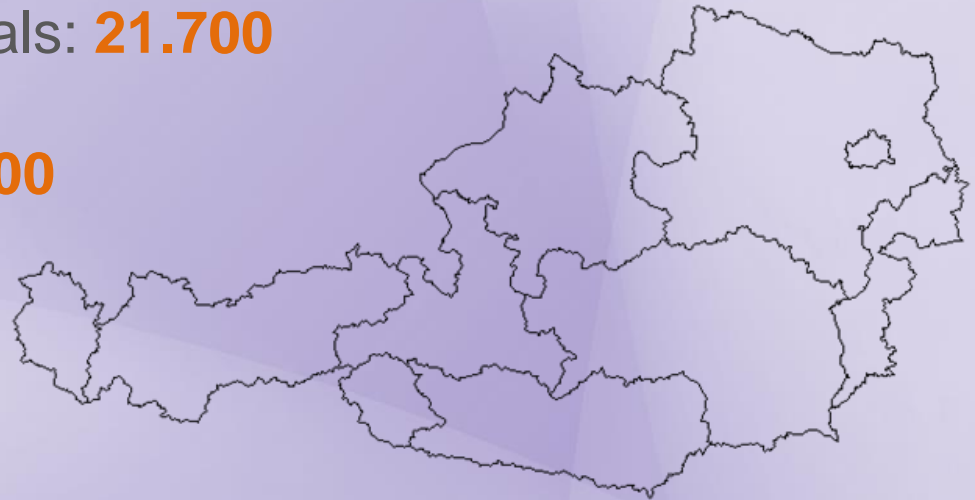
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IHE Services team

CodeWerk Software Services and Development GmbH

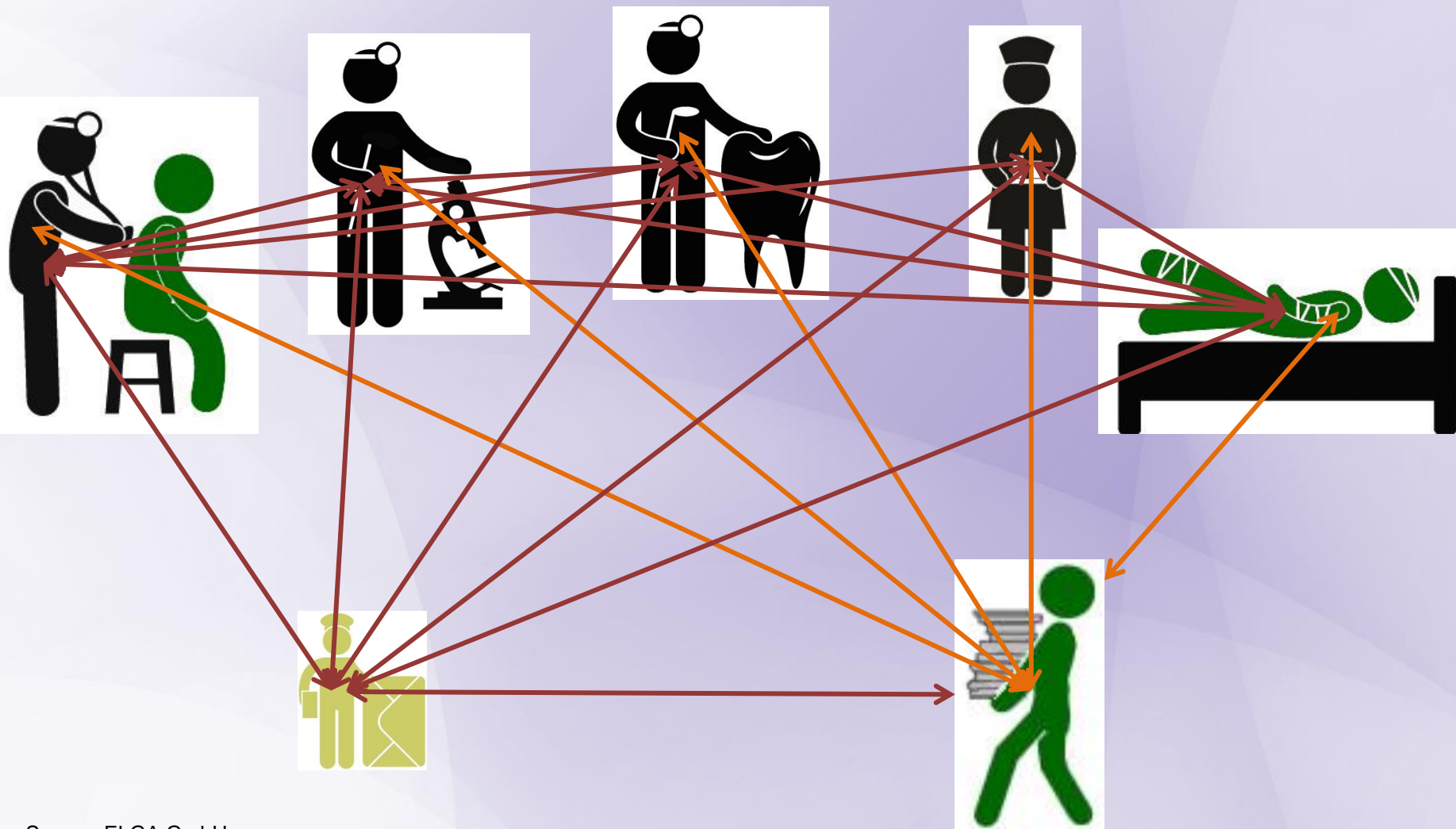


- Population: **8,36 Mio** (equipped with e-card)
- Hospitals: **266** (containing 64.000 beds)
- Medical Doctors in hospitals: **21.700**
- Care personnel: **82.600**
- General practitioners: **6.400**
- Specialists: **19.200**
- Dentists: **4.600**
- Doctors in training: **6.900**
- Midwives: **1.800**
- Pharmacies: **2.250**
  - (Public pharmacies and pharmacies in hospitals and with general practitioners)
- **Financing by Federal entity, Provinces and Social insurances**



**The 3 owners  
of ELGA**

## Information / communication without ELGA



Source: ELGA GmbH

## Information / communication with ELGA



**Medical information,  
whenever and wherever needed**



- **Current use cases (operational)**
  - Identification of patient and access to demographic data
  - Authentication of health service provider and patient
  - Access control and logging
  - **ELGA app 1: e-Reports:** Sharing clinical documentation
    - Discharge Summary (Physician, Nursing), Radio report, Lab report, Nursing report
  - **ELGA app 2: e-Medication:** Sharing medication data (clinical scope)
    - Aka „Patient’s Medication List“
- **Currently in pilot**
  - e-Immunization: Immunization registry for all citizens
  - Exchange of Images: Sharing clinical images
- **Currently in design phase**
  - e-Prescription (reimbursement scope)
  - e-Reports: Outpatient report

# ELGA - Base principles

**All citizens are “in” by default**  
(Opt-out possible)

**All ELGA applications designed for “full coverage”**

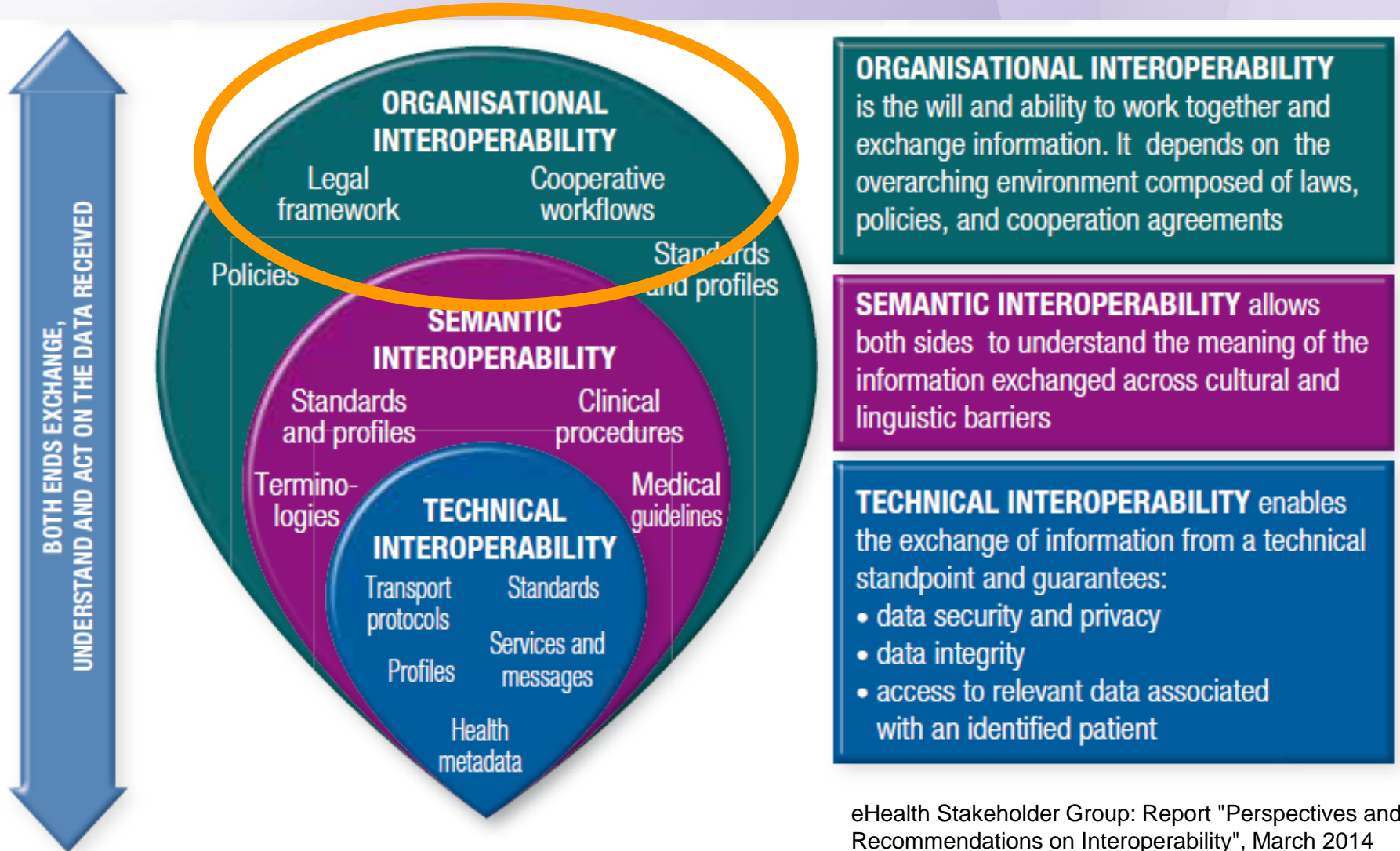
No pilots, but step-wise rollout

**ELGA connects all facilities**

It's the national e-Health  
“backbone infrastructure”

**No portals!**  
Systems connected natively

# Layers of Interoperability



eHealth Stakeholder Group: Report "Perspectives and Recommendations on Interoperability", March 2014

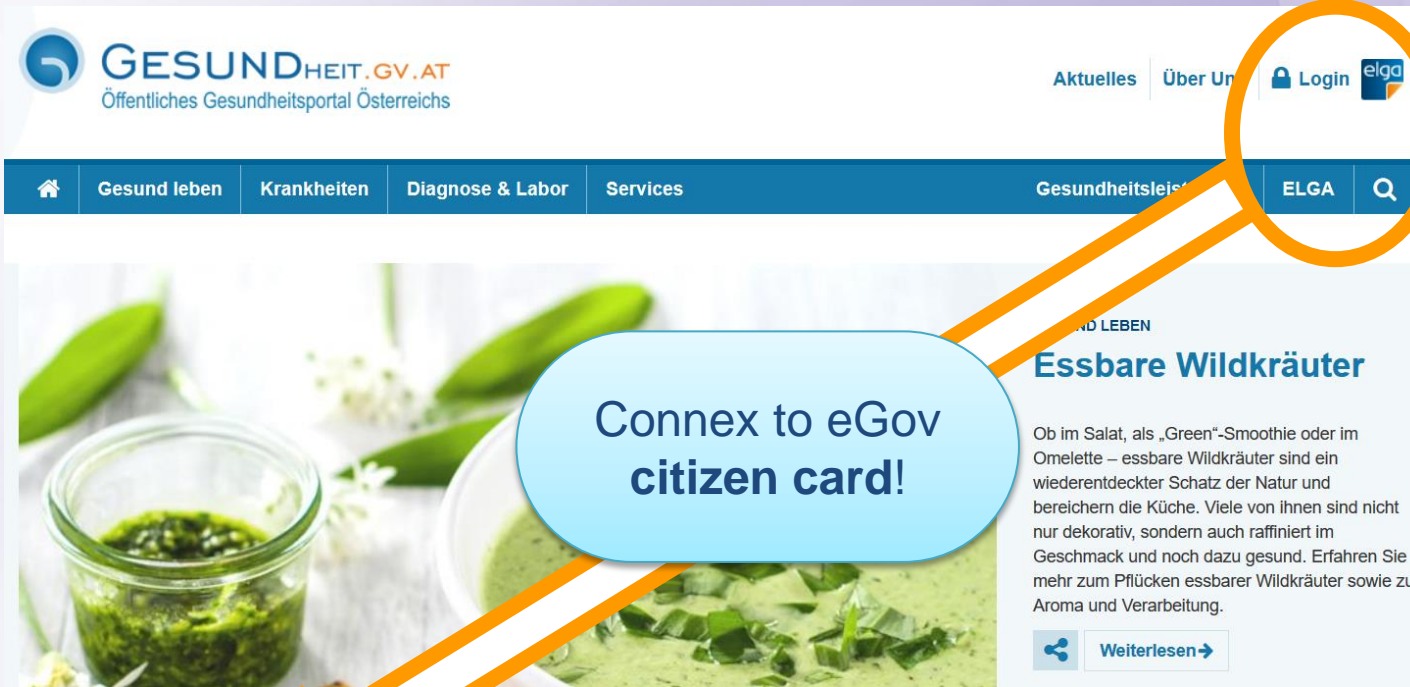
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- Federal ELGA law created in 2013 as legal basis ([Link to ELGA law](#))
- Participation in ELGA of citizens is voluntarily by „Opt Out“ („in“ by default)
  - Objection against the **creation** of data
    - generally or
    - within the individual case of treatment and care (“situative opt-out”)
  - Objection against **access** to data
    - generally or
    - concerning individual applications or
    - for specific HCPs or documents
  - View documents: **Patient can view/download** own documents and medication list
  - View access log: **Patient can view who has accessed** which data at which time
- Participation in ELGA of healthcare service providers is **mandatory**
- Provisions to the quality of documents in ELGA
  - **Only nation-wide harmonized document-types are allowed!**
- Ban on use for (physicians of) insurances, government, employers, etc.
- Timeline: Decision: 2006 - Planning: 2007- 2014 - Rollout: since 2015

**This ensures semantic interoperability!**





## Citizen portal

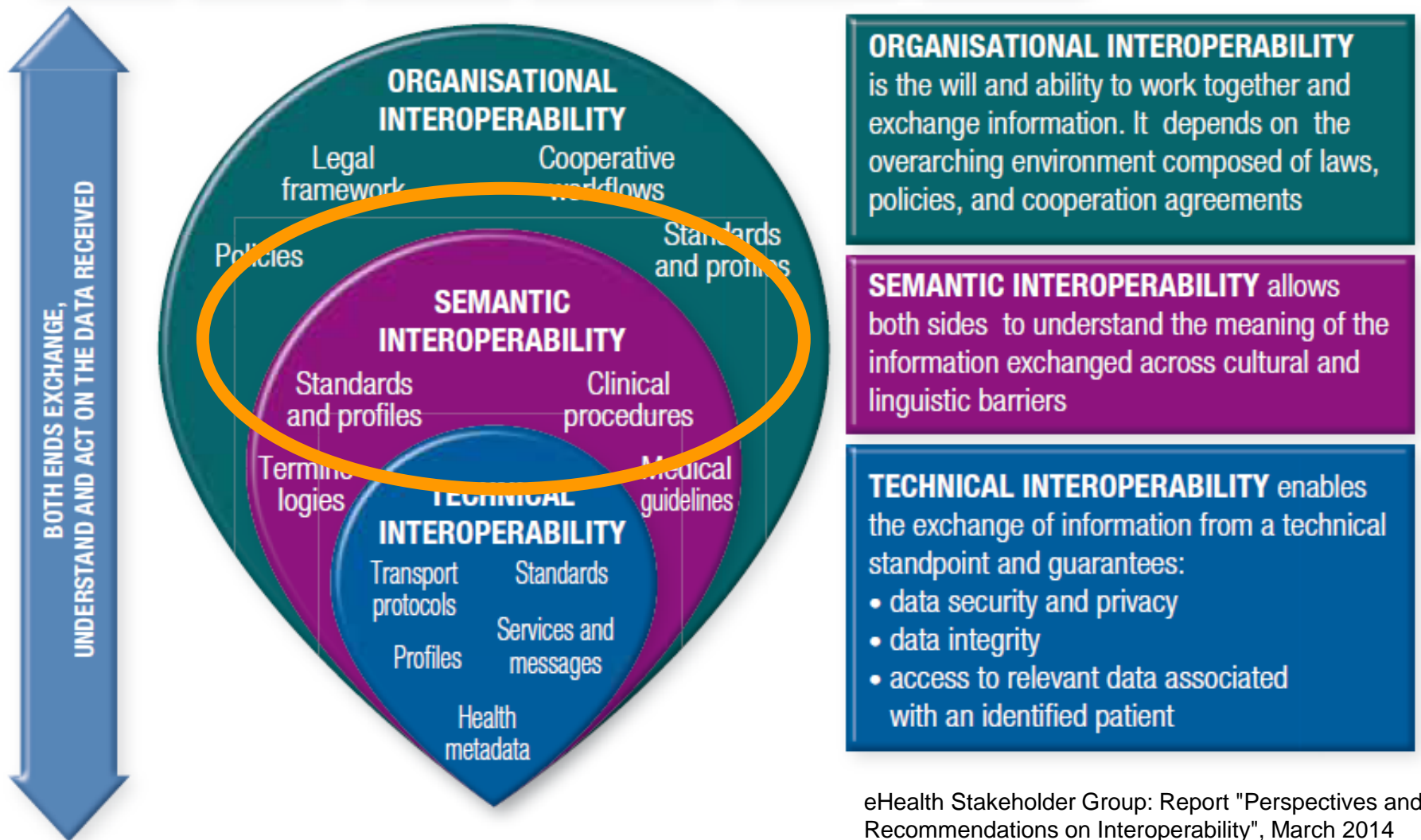
- Common health info
- ELGA info
- Login to ELGA
- Sponsor-free

## ELGA portal

- Declare Opt-out
- View ELGA documents
- Manage access rights
- View access log



# Layers of Interoperability



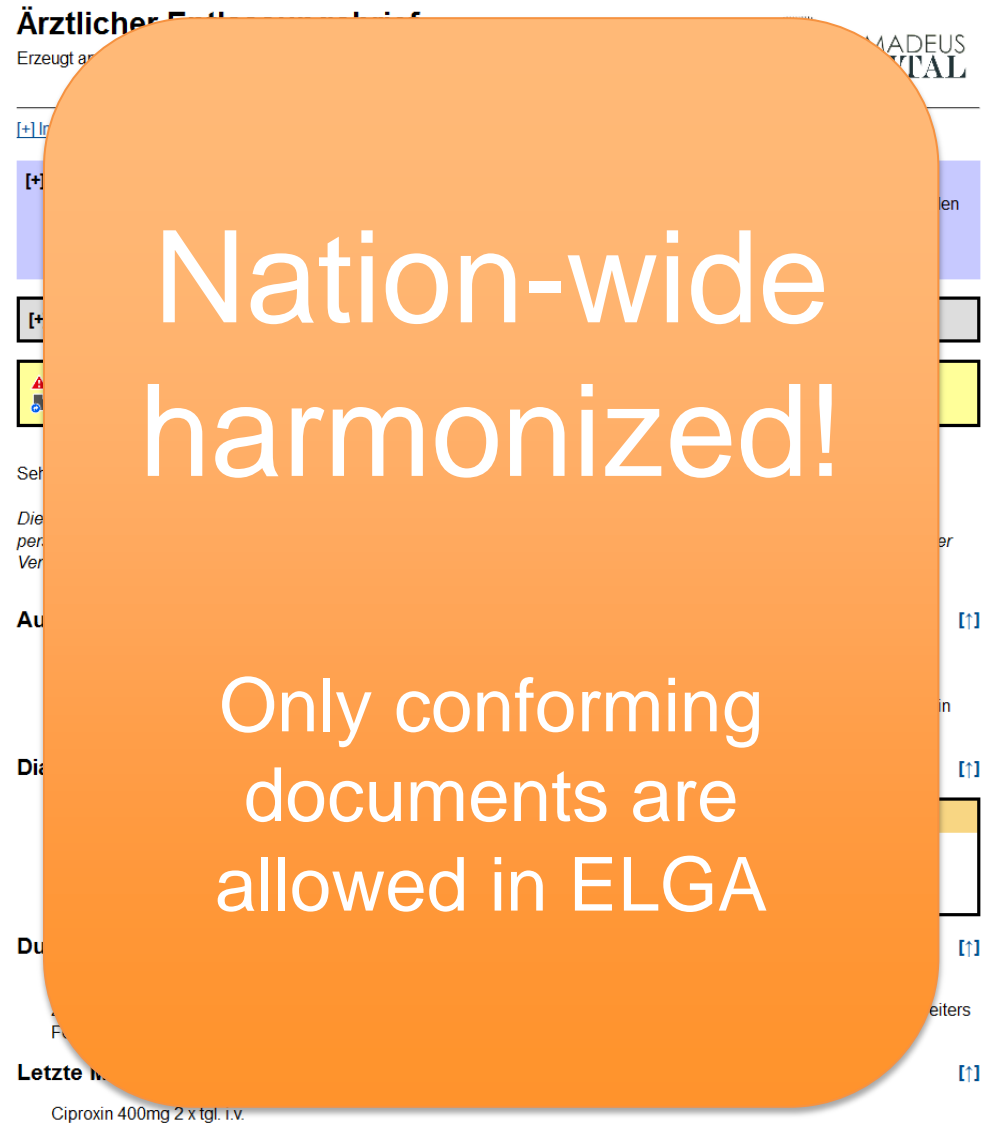
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[http://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=5168&usg=AFQjCNEkGJHkR4TyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A](http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A)

- **Uniform content and structure**
  - User friendly
  - Quality assured
- **Coded entries combined with narrative/free text**
- **Machine-processable**
  - Faster workflow
  - Automation
  - Decision support

Nation-wide  
harmonized!

Only conforming  
documents are  
allowed in ELGA



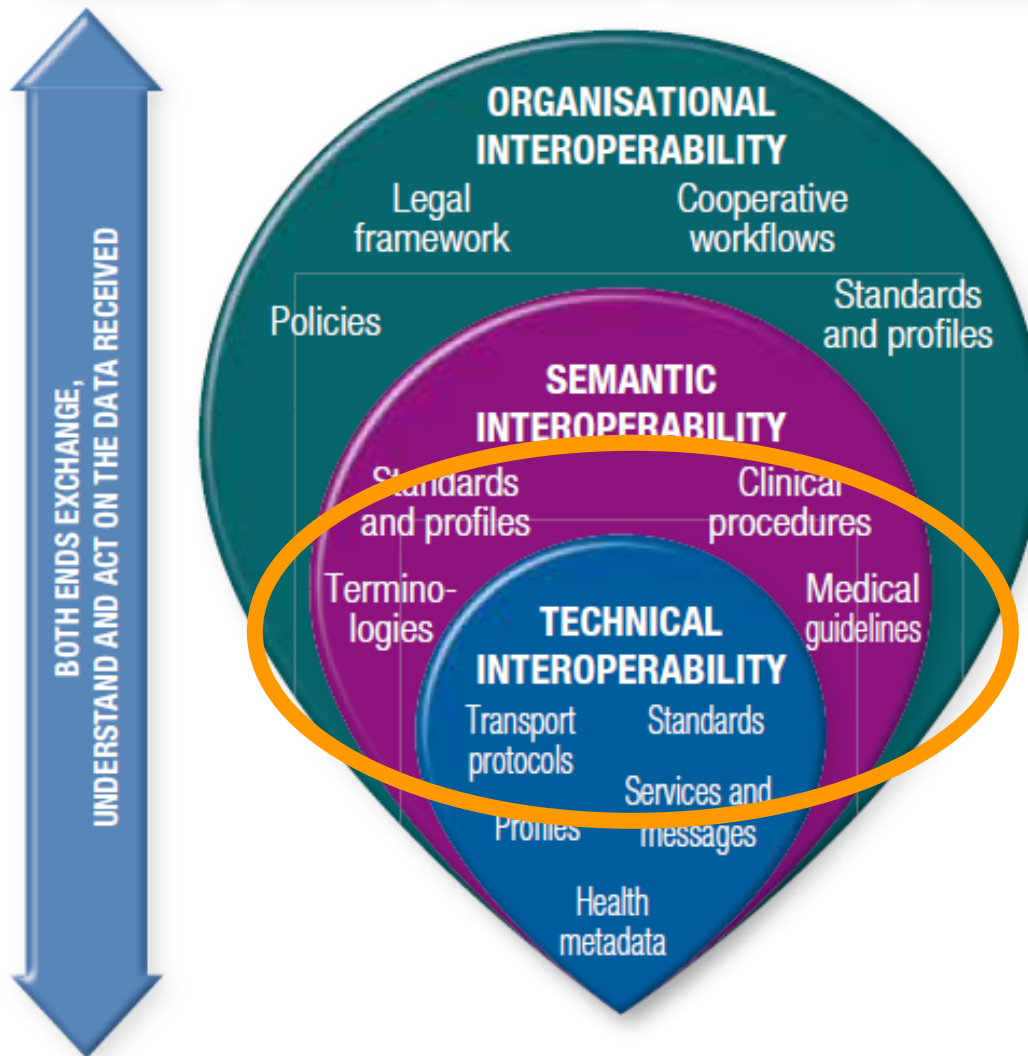
- Information and tools for implementers ([link](#))
  - **ELGA CDA Implementation Guides**
  - XDS-Metadata specification
  - Value Sets (code lists)
  - CDA-Sample Reports (XML)
  - ELGA Referenzstylesheet (XSLT)
  - XML-Schema for ELGA CDA (XSD)
  - Conformance Testing (Schematron)
  - Styleguides
  - :
  - OID Registry ([link](#))
  - CDA-Online-Validator ([link](#))
  - Terminology Server ([link](#))

Stepwise implementation  
of semantic interoperability

EIS Basic/Structured  
EIS Enhanced  
EIS Full support

Usability of ELGA-functions within  
PHR/EHR-Systems is a critical  
success factor!

## Layers of Interoperability



### ORGANISATIONAL INTEROPERABILITY

is the will and ability to work together and exchange information. It depends on the overarching environment composed of laws, policies, and cooperation agreements

**SEMANTIC INTEROPERABILITY** allows both sides to understand the meaning of the information exchanged across cultural and linguistic barriers

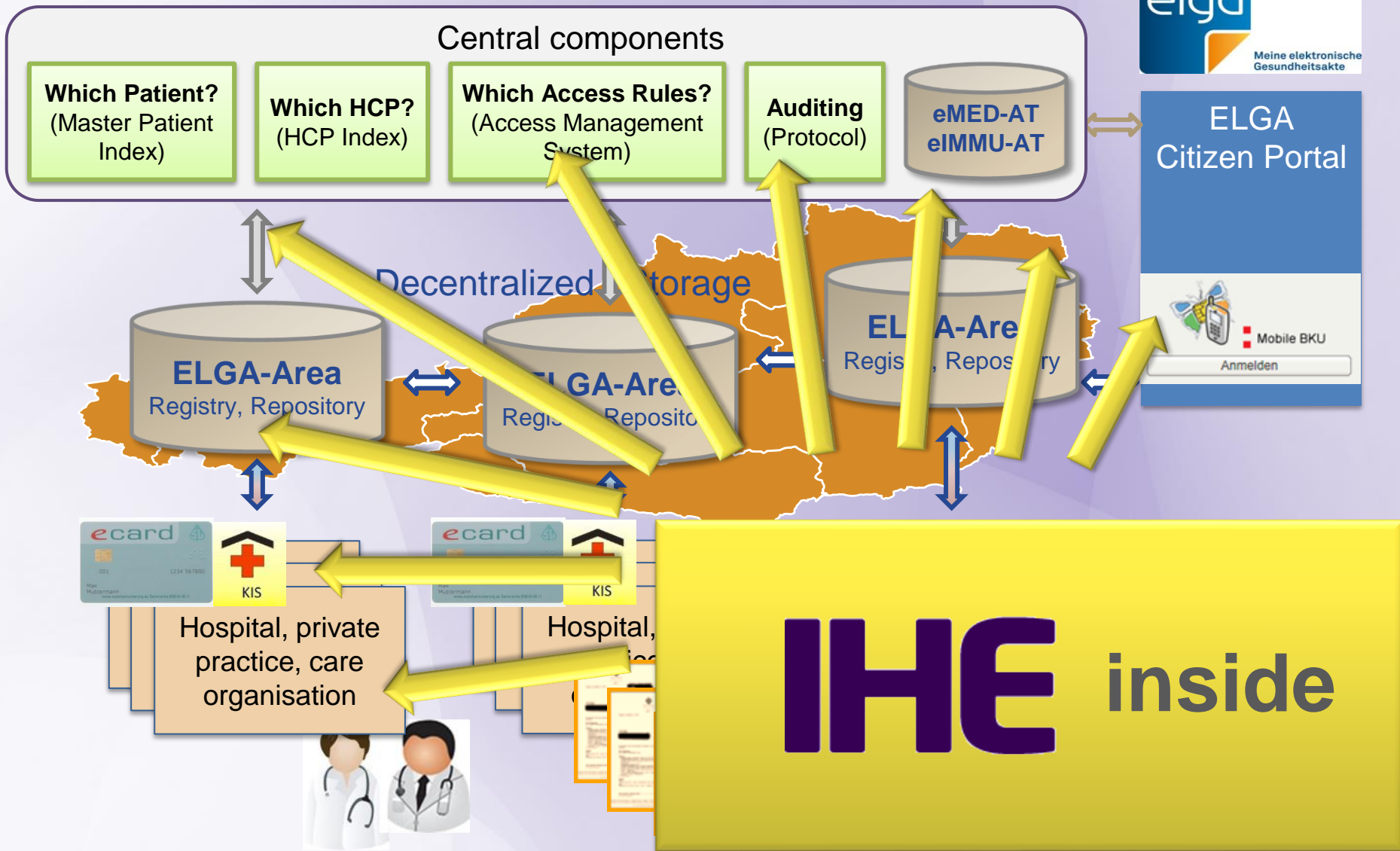
**TECHNICAL INTEROPERABILITY** enables the exchange of information from a technical standpoint and guarantees:

- data security and privacy
- data integrity
- access to relevant data associated with an identified patient

eHealth Stakeholder Group: Report "Perspectives and Recommendations on Interoperability", March 2014

[http://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=5168&usg=AFQjCNEkGJHkR4TyyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A](http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A)





- IHE Profiles used:
  - Patient identification and demographics: **PIXv3/PDQv3**
  - Sharing clinical documents: Cross-Enterprise Document Sharing (**XDS.b**), **XCA**
  - Sharing medication information: **CMPD, PRE, DIS, PADV, PML**
  - Access control and audit: **ATNA**
  - Healthcare Provider Authentication: **XUA**
  - Discharge Summaries and Nursing Reports: **XDS-MS**
  - Laboratory reports: **XD-LAB**
- International standards used (endorsed by IHE profiles):
  - Transport standards: W3C (SOAP, HTTP), TLS, OASIS SAML, WS-Trust
  - OASIS ebXML for Cross-Enterprise Document Sharing
  - **HL7® CDA®** for nation-wide harmonized clinical documents
  - HL7® v3.x for patient-identification related communication
  - **DICOM** – international imaging standard (WADO)
- Terminologies & classifications used:
  - **ICD-10, LOINC, SNOMED-CT**, Austrian terminologies (medicines, etc.)



## ■ Coverage of ELGA

### ■ e-Report:

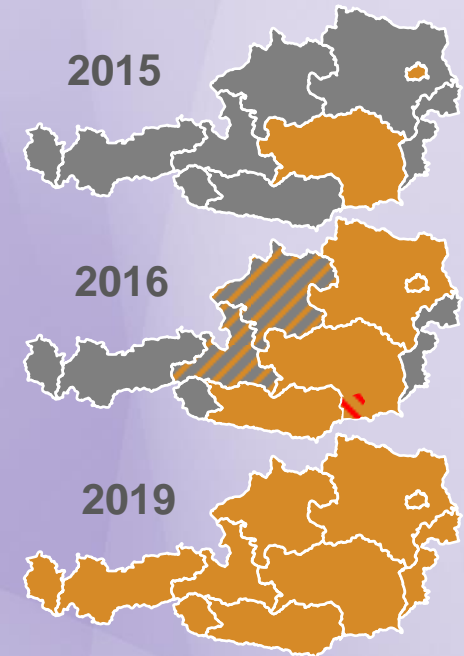
- Gov hospitals: 97,5% (89% of total beds)
- Other hospitals: 25%
- Selected PCPs reading

### ■ e-Medication:

- PCPs: 87%
- Pharmacies: 53%

## ■ Patients in ELGA

- 7,6 M patients registered in ELGA since go-live
- 99,5% unique ID coverage (non-citizens get an ID)
- 3% opted out (generally)
- 0,62% opted out (situative)



- **Stage 1: eHealth Digital Service Infrastructure (eHDSI)**

- Cross-border exchange of ...
  - Patient Summary
  - e-Prescription

Future

Design phase



- **Stage 2: EC Recommendation on an European EHR Exchange format**

- Further extend eHDSI by ...
  - Discharge Summary
  - Radiology report and -images
  - Lab reports

Available

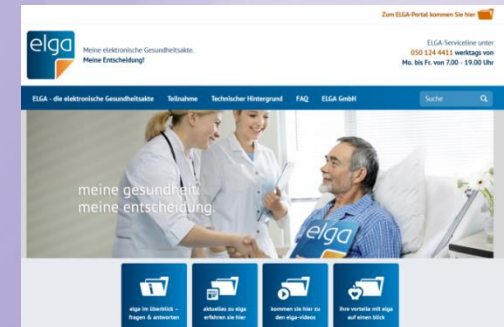
Pilot phase

Available

Available

- **Future use-cases / applications**
  - **Share more document types (“more e-Reports”)**
    - Pathology report, Patient Summary, Advanced directives, ...
  - **e-Referral**
  - **Tele-consultations** and **Tele-monitoring** (device communication)
  - All use-cases needed for engagement of the citizen by **mHealth**
    - Appointments, Doctor/Patient communications, Mother/Child management and process
- **ELGA “Plus”**
  - Use infrastructure for provider-specific / regional applications (virtual network)
- **Main focus on convergence of Clinical- and Administration processes!**

- **ELGA**
  - Austrian Citizen Health portal: [www.gesundheit.gv.at](http://www.gesundheit.gv.at)
  - ELGA Homepage: [www.elga.gv.at](http://www.elga.gv.at)



- **European Union**
  - eHealth Stakeholder Group: Report "Perspectives and Recommendations on Interoperability"
    - [Stakeholder Group Report](#)
  - European Commission recognizes 27 IHE profiles that should be referenced in public procurement documents
    - [EC Recommendation](#)
  - EC Recommendation on a European Electronic Health Record exchange format
    - [European Electronic Health Record exchange format](#)

# IHE

Integrating  
the Healthcare  
Enterprise

## Changing the Way Healthcare CONNECTS

<http://www.ihe.net>



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