DELOS

Network of Excellence on Digital Libraries

Task 1.6
Management of and Access to Virtual Electronic Health Records

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T1.6 Task Overview

T1.6 Partners

- University of Athens (GR)
- ETH Zürich (CH)
- OFFIS Oldenburg (DE)
- HITT Innsbruck (AT)
- UMIT (AT)
- (University of Basel, CH)

Task Description ...

Electronic health record

- is a virtual entity
- consists of a set of distributed artefacts
- which cannot be materialized for organizational reasons

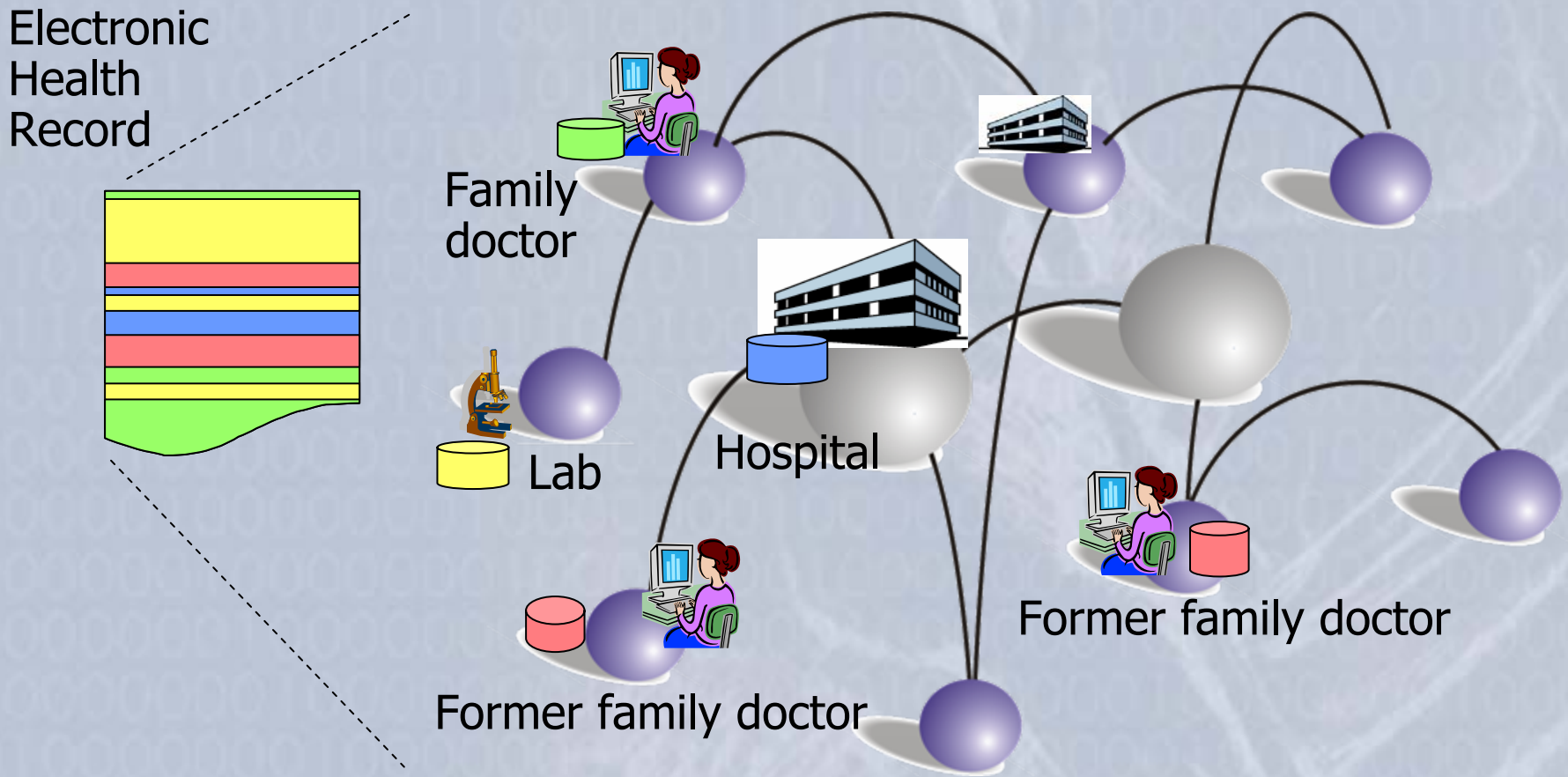
Goal:

- identify, design, and build demonstrators for the basic building blocks needed to access virtual electronic health records
- Examples: location of different artefacts, integration of data from the different healthcare providers, etc.

Usage:

- Patient-specific queries: Find all artefacts in the health record of patient X

Virtual Electronic Health Record



... Task Description

Requirement:

- Transparent access to distributed data
- Efficient scheduling of computationally intensive services (e.g., sophisticated load balancing using Grid technology)

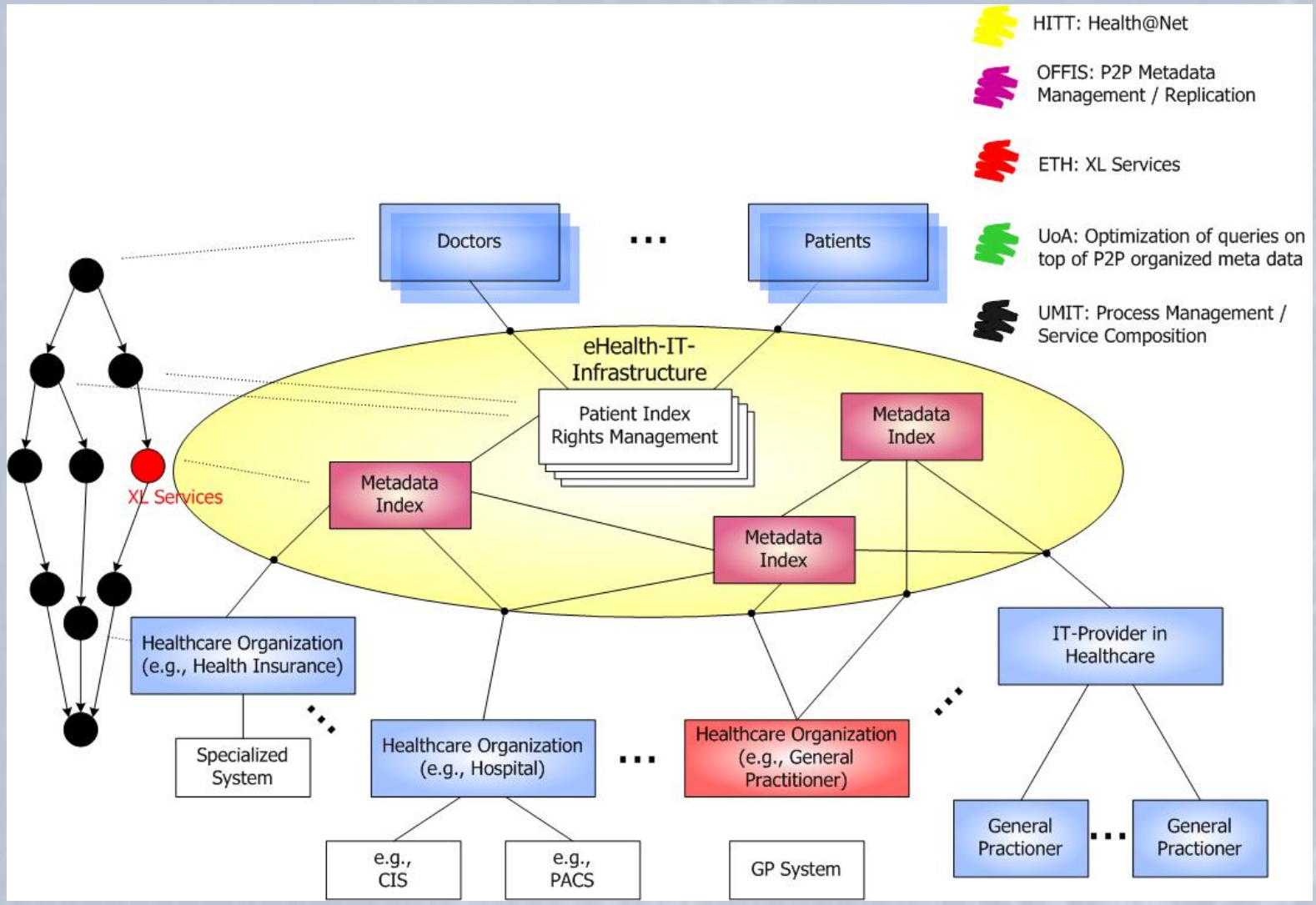
Core activities

- Identification of the basic building blocks to
  - access distributed artefacts
  - intelligently search within a set of these artefacts.
- Reliable platform for the integration of building blocks into processes

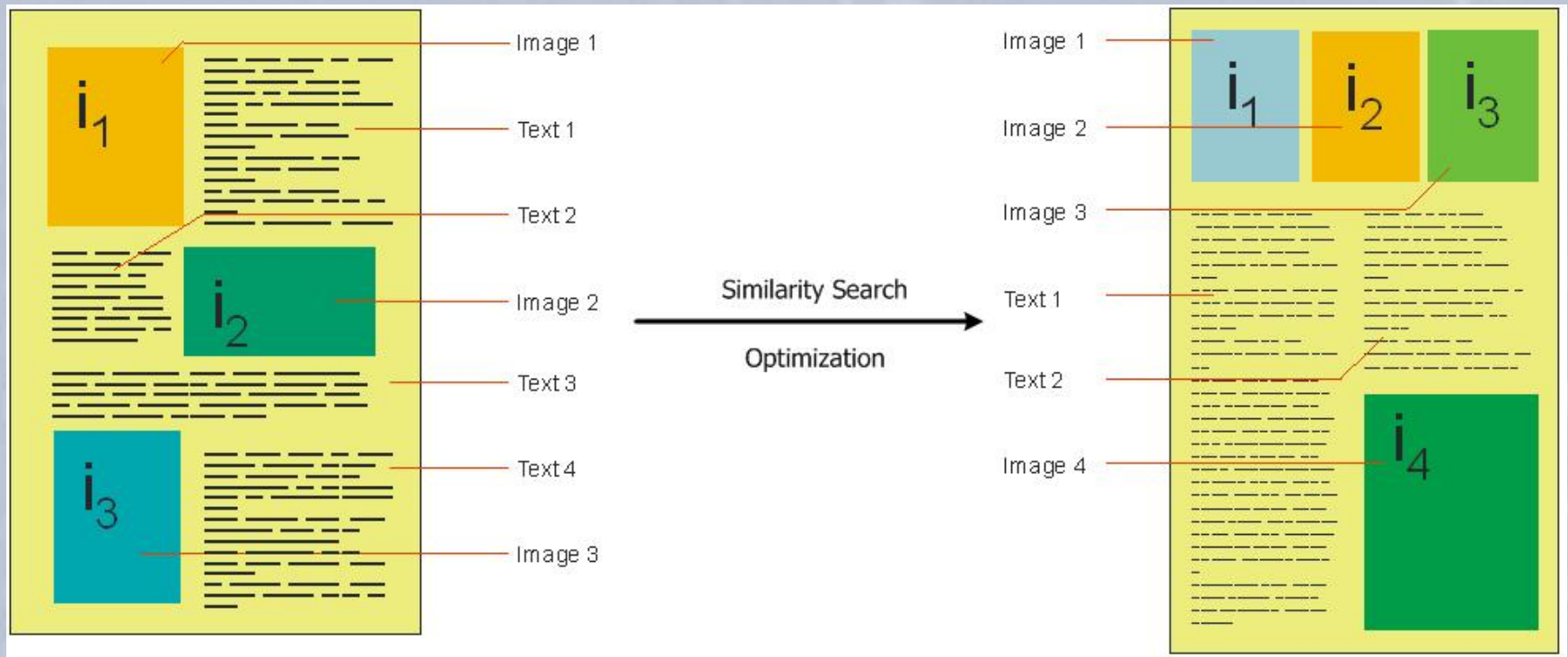
Results

- Implementation of sample building blocks and processes

An Infrastructure for Virtual Electronic Health Records



Multi-object Multi-feature Queries



HITT: provide data (pdf documents with written reports and medical images); to be anonymized

UoA: Optimization

UMIT: Similarity search in multi-media health records

Proposed New Activities

Cross-patient queries: disease-, location- and/or profession-specific

- show me all X-ray images of the lungs of people where symptoms have been detected similar to the ones of person X for whom SARS has been diagnosed
- show me all blood values of people living close to the atomic power plant XYZ
- show me all pathological deviations of lung lab values from former mining workers in the Saarland

Dynamic, automatically adapting replication schemes for meta data

- performance of queries in virtual electronic health records strongly dependent on availability of appropriate meta data
- more replicas of meta data better support queries while leading to higher costs in maintenance