

Health Data in Germany – treasure or trap?

German Data Science Days | Dr. Nils Hellrung

Medical knowledge is growing exponentially

The medical world will never change as slowly as it is now

Time period for medical knowledge to double

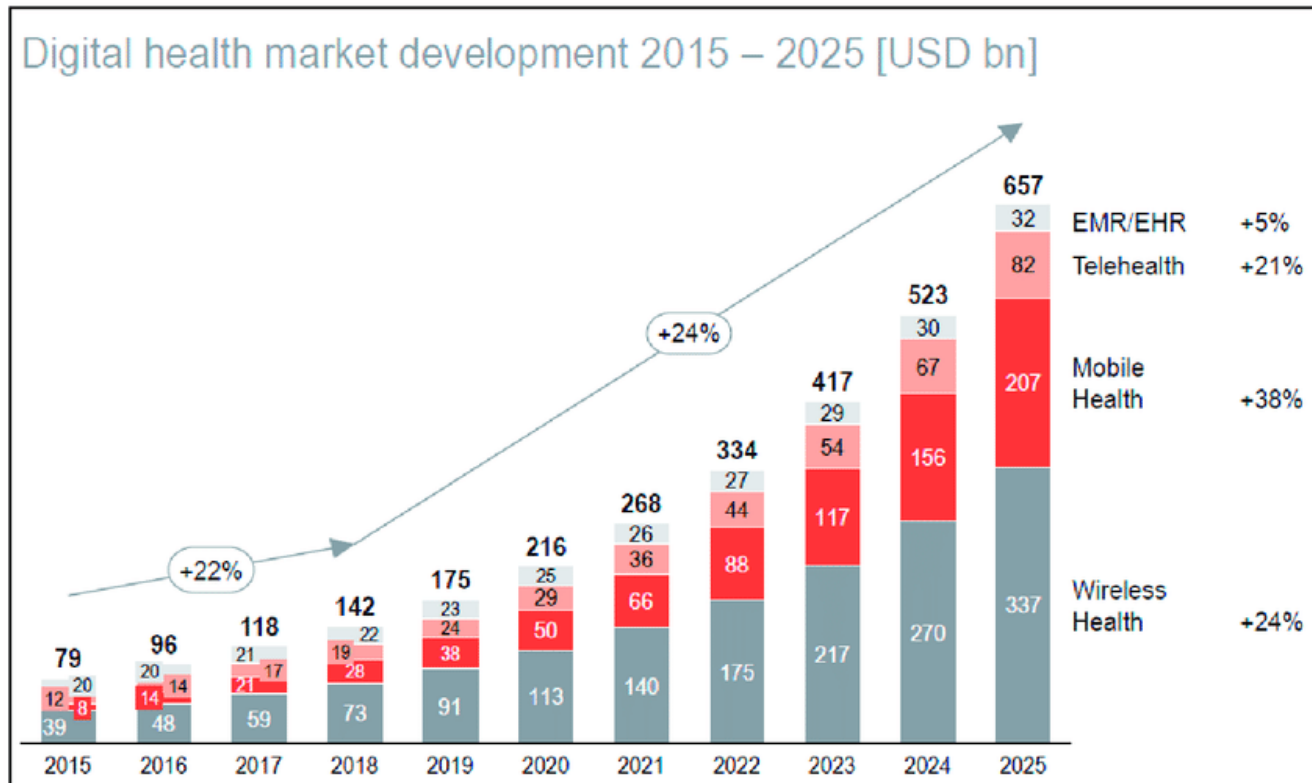
1950:
50 yrs

1980:
7 yrs

2010:
3,5 yrs

2020:
73 days

Digital Health is on the Rise worldwide



Digital health is paving the path for individual data to be collected, stored, integrated and analyzed by sophisticated and accurate algorithms in the cloud, enabling doctors to identify trends that can not only treat diseases but predict and prevent them. Driven by the mammoth growth prospects that digital health industry is characterized by, medical care stakeholders are putting in massive efforts to advance the expansion of this business space. With the pervasive presence of

A stubborn problem: the exchange of data and knowledge

Background image: Medical treatise by the Roman doctor Galenus (approx. 2,000 years old) on the subject of “hysterical apnea”

“In health care communication becomes a problem, when information has to be presented where it is needed and when it is needed.”

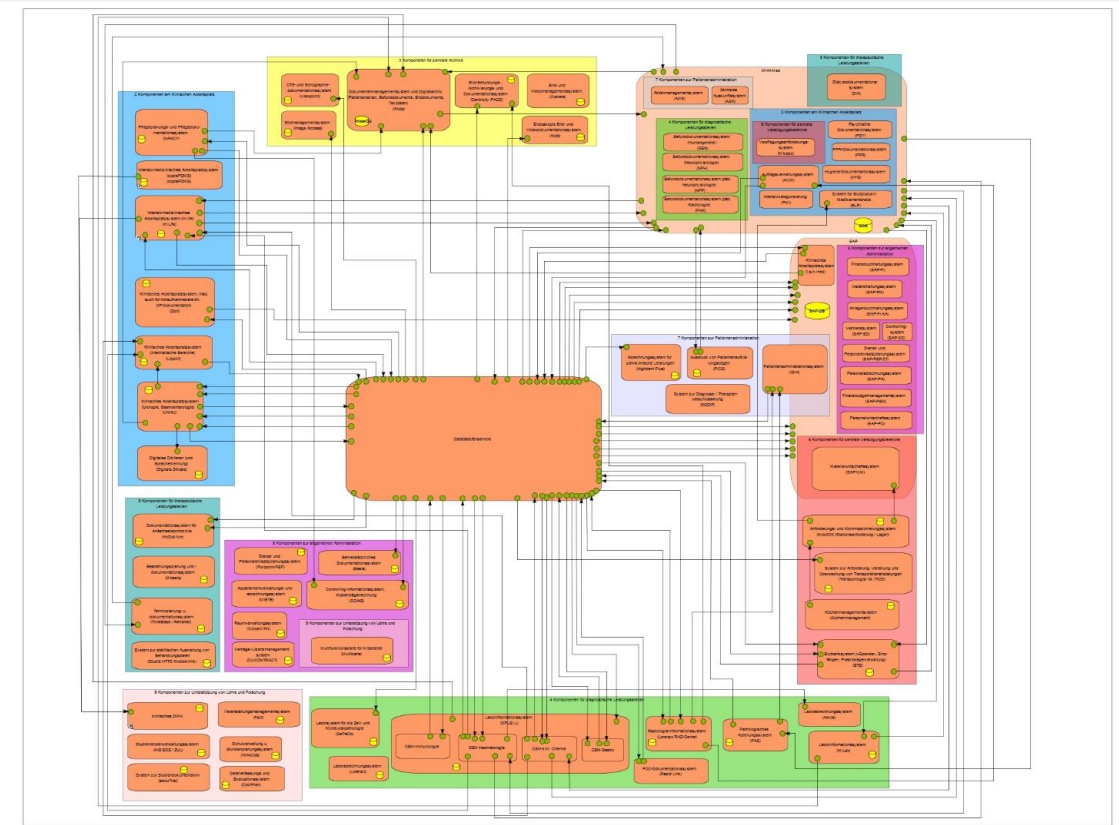
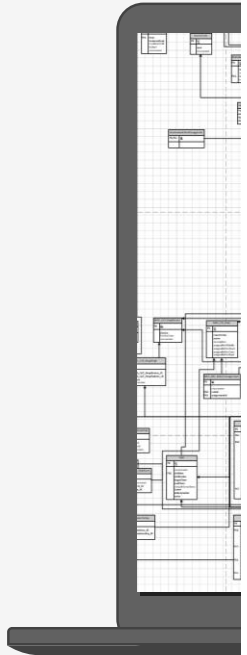
Synchronization and integrity of the various data pools is necessary for proper functioning and in order to avoid repetitive data capture and update.”



Peter L. Reichertz, 1984

Health data is trapped in proprietary systems today

Systems are not built for data exchange or re-use of data



Diastolic
Systolic
t Diastolic
t Systolic
ht Diastolic
ht Systolic

The promise
„More data = better healthcare“
is fallacy today.
Only 22% of data is
"understood" semantically
correct when exchanged across
different systems from more
than one vendor. So most of the
data in patient records today is
not interoperable.

The dominant business model in health IT: dependency

Due to proprietary systems, hospitals are hardly able to innovate.



No independent process adjustments



No access to own data



High costs for interfaces



No best of breed ecosystem



Lost in translation: Epic goes to Denmark



SAP-Healthcare-Strategie nicht mehr nachvollziehbar

Veröffentlicht 03.03.2023 10:30, Kim Wehrs

IT-Riese Dedalus
kauf

Gesundheits-IT wächst rasant. Nun
italienische Anbieter Dedalus zum
wertung von bis zu 3 Mrd. Euro
h.

Christoph Ruhkamp

Investor Hg startet
von Medifox

Finanzinvestor Hg Capital stellt die
Firma Medifox Dan zum

Is there a solution?



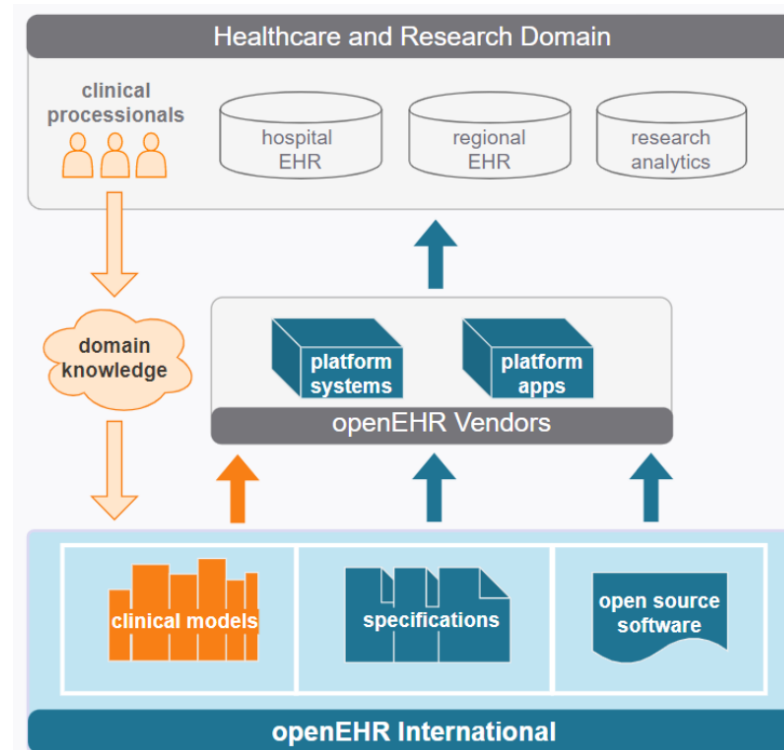
Think about Lego

- There are 2.500 variants of Lego bricks in production
- They can all be combined in an infinite number of combinations
- Why?

About openEHR

- openEHR is a **non-profit** organization (and **international community!**) that publishes **technical standards** for an **EHR platform** along with **domain-developed clinical models** to define content.
- The principal architectural concepts include the **lifelong, patient-centric shared health record**, future-proof data and clinical process support.
- All openEHR IP is published under **either Apache 2.0 or CC-BY licenses**.

https://openehr.org/about_us



Organisation

Vision

Intellectual Property

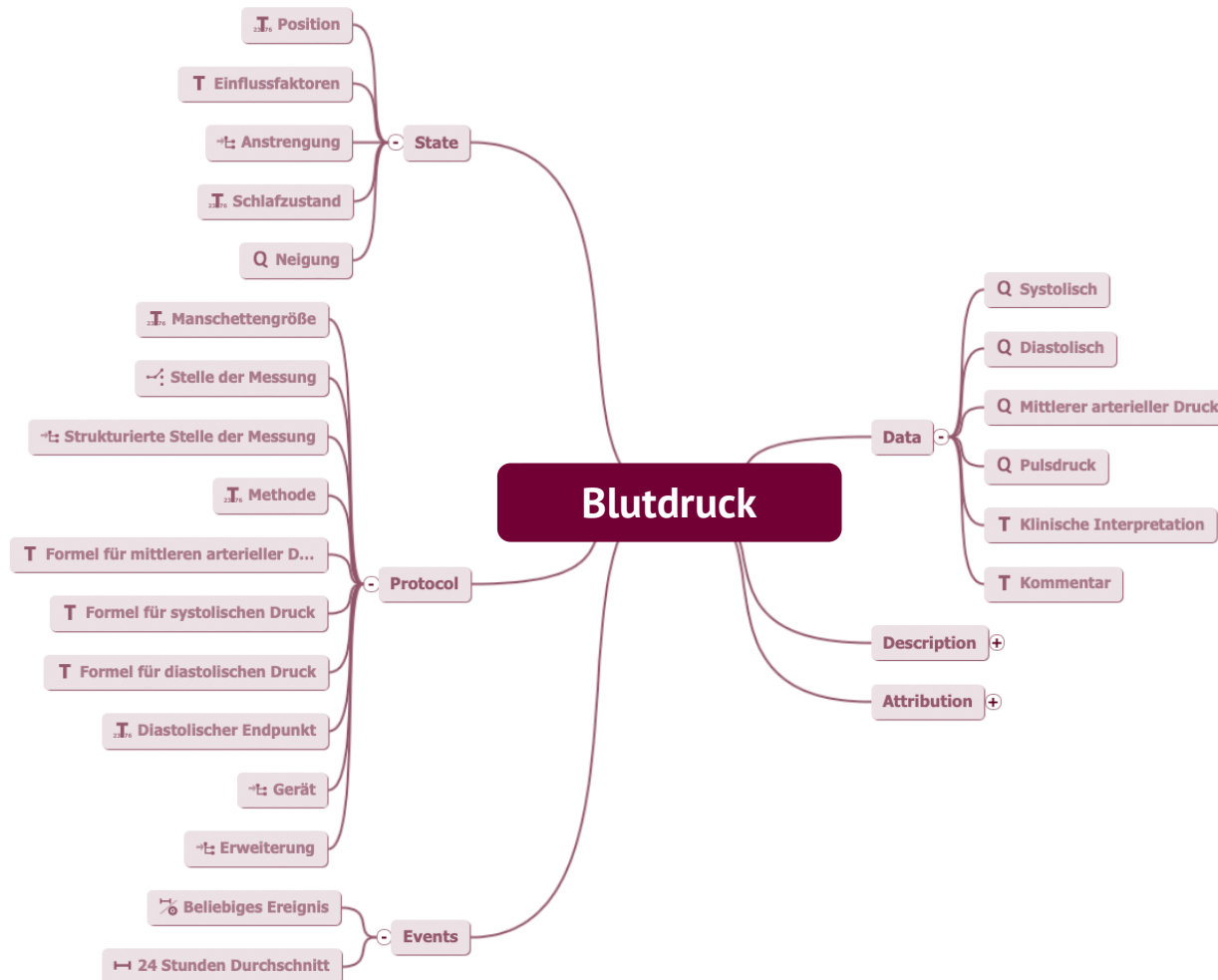
What is openEHR good for?

- Building standards-based clinical data repositories (CDRs)
- Modelling and standardizing clinical concept models (archetypes)
- creating complex data sets using combinations of standardized models (templates)
- building applications on data schemas generated from templates (operational templates)
- persisting clinical data in a standardized way (compositions)
- predictably retrieving clinical data (AQL)

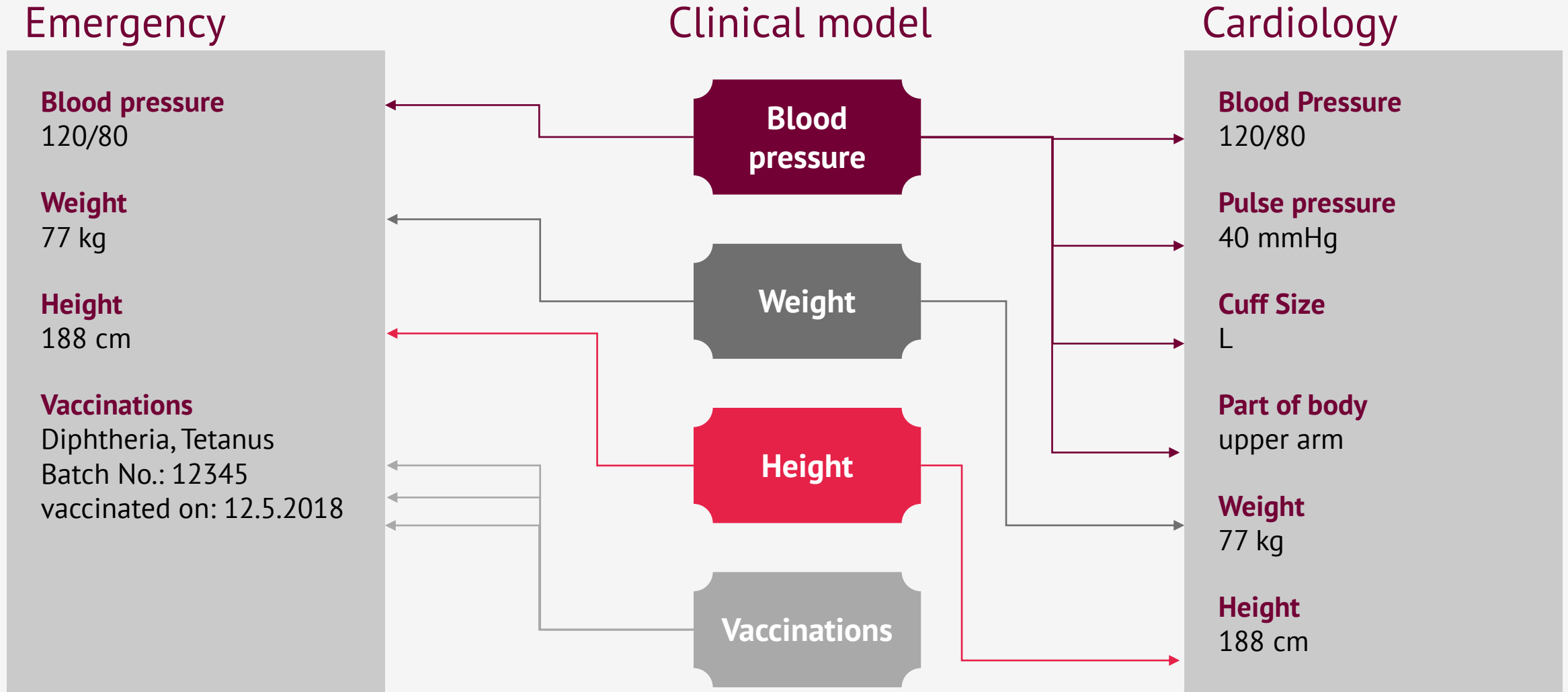


Open data models

Physicians, not computer scientists, have the data model in their hands

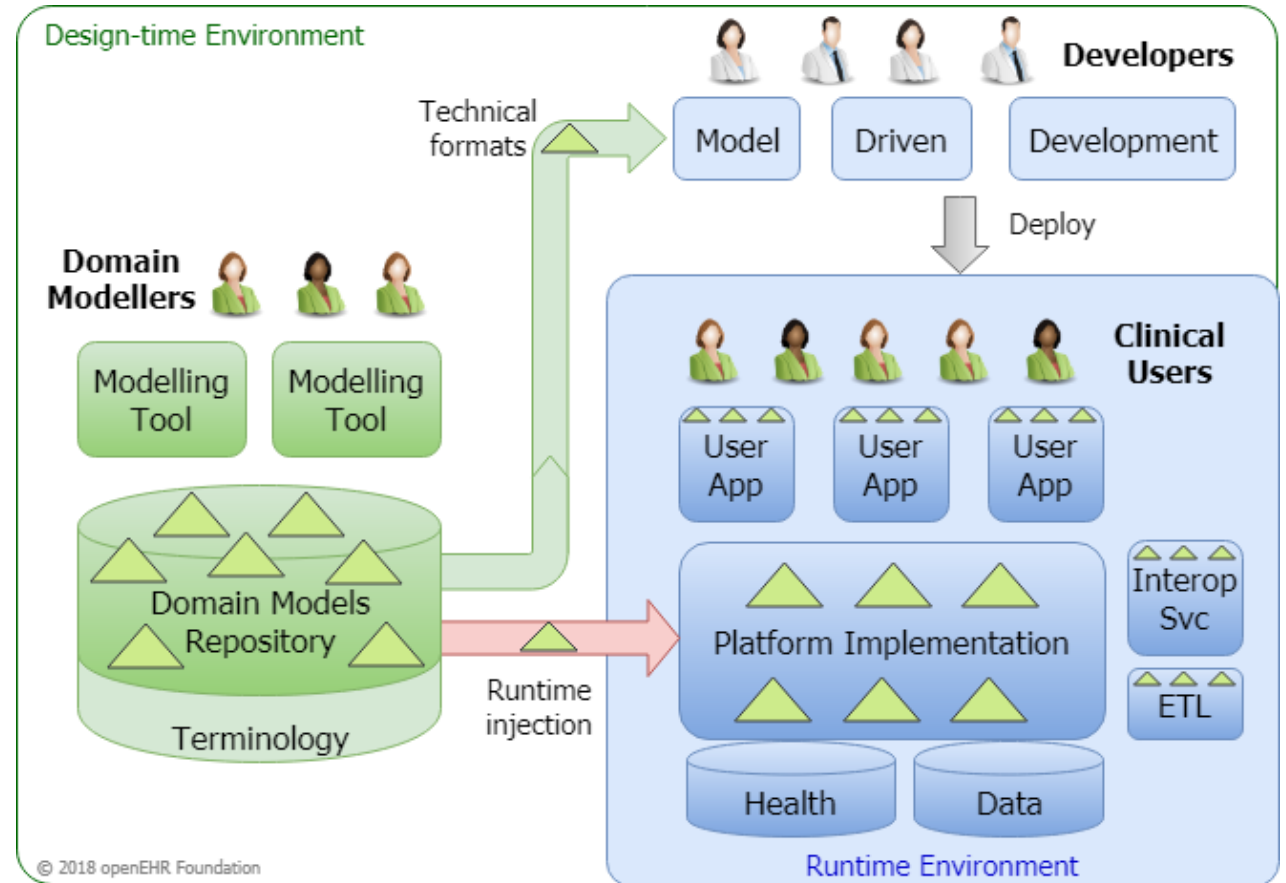


Templates – Reuse of Archetypes



openEHR Platform Approach

- Data Modelling is a fundamental activity in openEHR
- The domain models defined by clinical experts are directly used inside the platform
- Software artifacts in the platform (database, forms, data validation, queries) are derived from the models and contain their semantics
- Applications share the domain models and platform architecture, thereby becoming interoperable



The model-driven openEHR technology ecosystem

Catalan Health Service (CatSalut)

- **The Catalan Information System Master Plan: Building a digital health strategy for Catalonia**
- Establishment of a shared platform for the whole region of Catalunya
- Phase 1: Primary care sector shares one record based on openEHR
- A transactional system for up to 70.000 healthcare professionals

MK: Done



Karolinska

- Top 15 University Hospital in Europe and most renowned hospital in Sweden
- Transformation of the hospital information system towards openEHR
- Close alignment between research and care systems to enable data-driven decision making

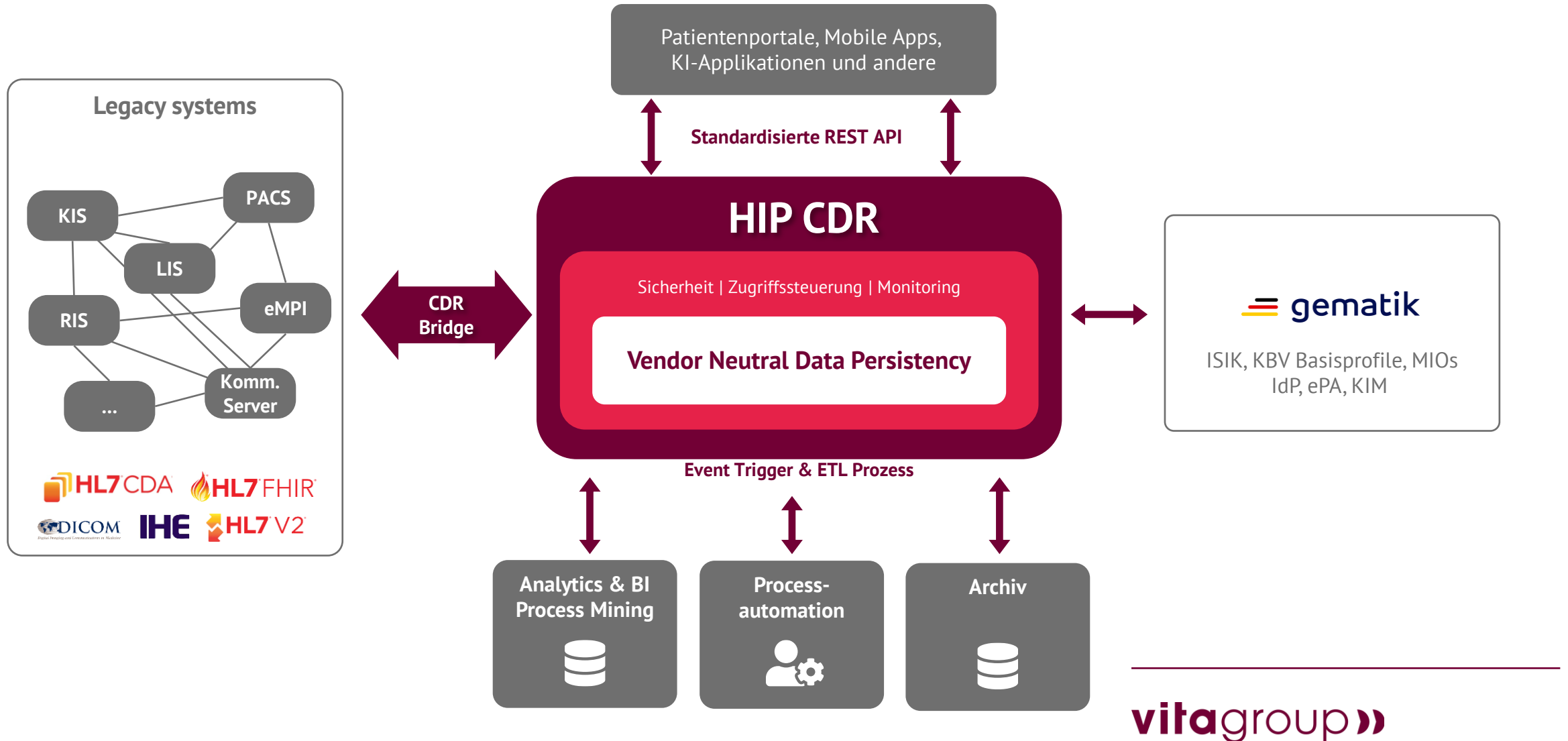
One London

- shared care record across the city of London
- provision of an „Urgent Care Plan“ (End of Life Care) across multiple organizations and healthcare professionals
- Commissioned by NHS London
 - 5 integrated care centers
 - 40 NHS trusts
 - 1.400 general practices
- „openEHR enforces a standardised approach to capturing information through a modern platform“

HiGHmed

- 10 German University Hospitals
- 4 additional non-university hospitals
- An open platform to build innovative apps and exchange data on care and research
- Complements the hospital information system
- Funded by the German government (Federal Ministry of Science and Education)

Data-centric open health platform by vitagroup





HEALTH INTELLIGENCE

Thank you.