



Collaborative Approaches towards Interoperable, Secure Medical Data Sharing

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Challenges towards the Application of AI in Healthcare

How can we achieve harmonized data structures?



How can we define consistent (broad) consent and governance policies?



How can we objectively measure and optimize data quality?



How can we securely implement ML training and application?



Routine Clinical Data

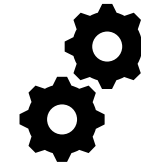
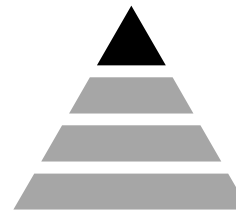
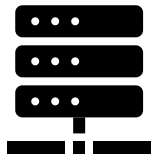
Patient Consent

Governance of data access

Structured Clinical Datasets

Training of ML Models

Application of AI in Healthcare



The German Medical Informatics Initiative (MII)

Nationwide Coverage of
all University Hospitals

Foster re-use of
routine clinical data

160 M€ funding
by BMBF



Demonstrate utility
through clinical use cases



Strengthen Medical
Informatics as a discipline

Long-term perspective

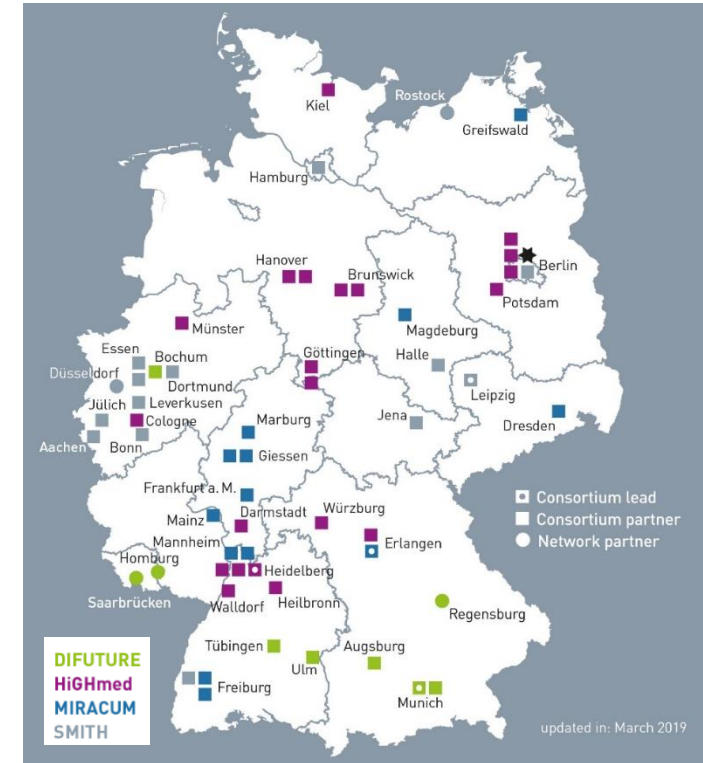
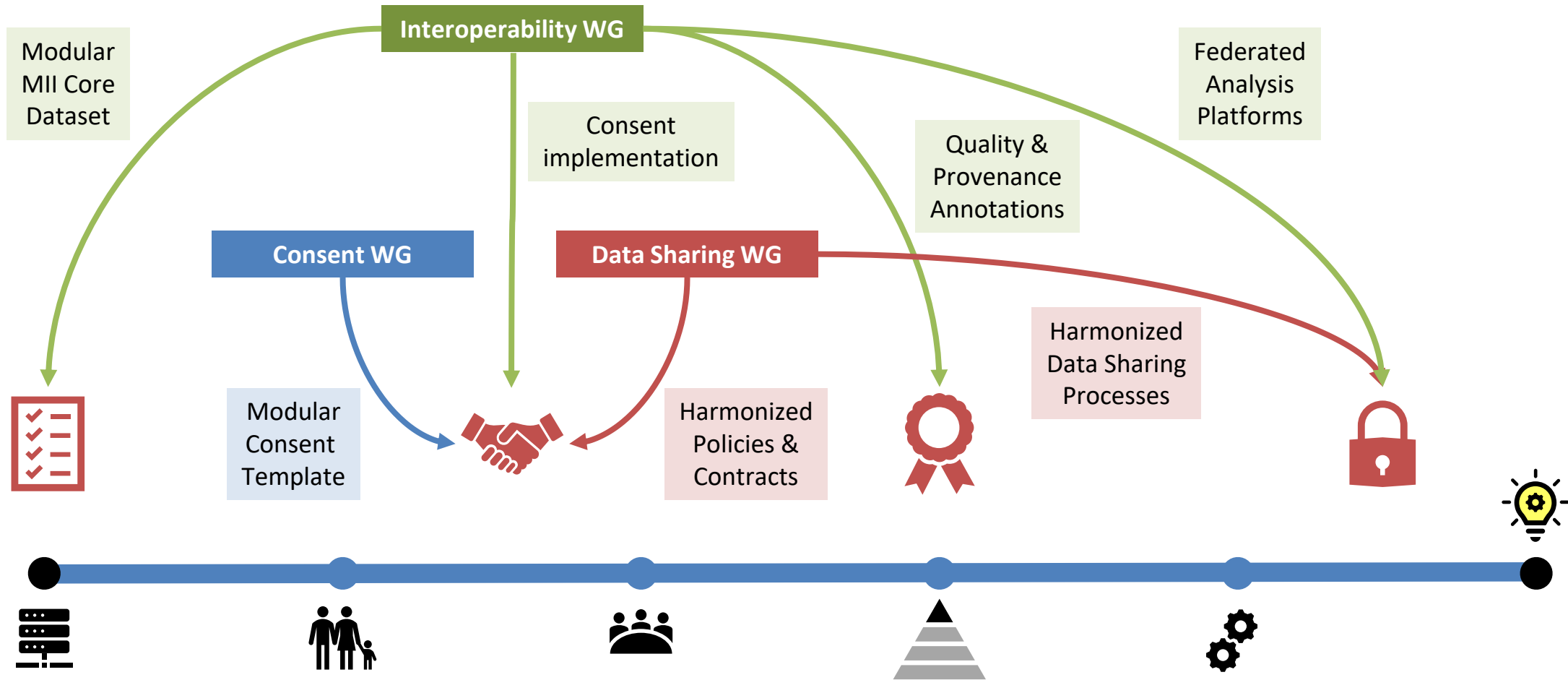


Image source: <http://www.medizinformatik-initiative.de/en/node/5>



Collaborative solutions through MII Working Groups



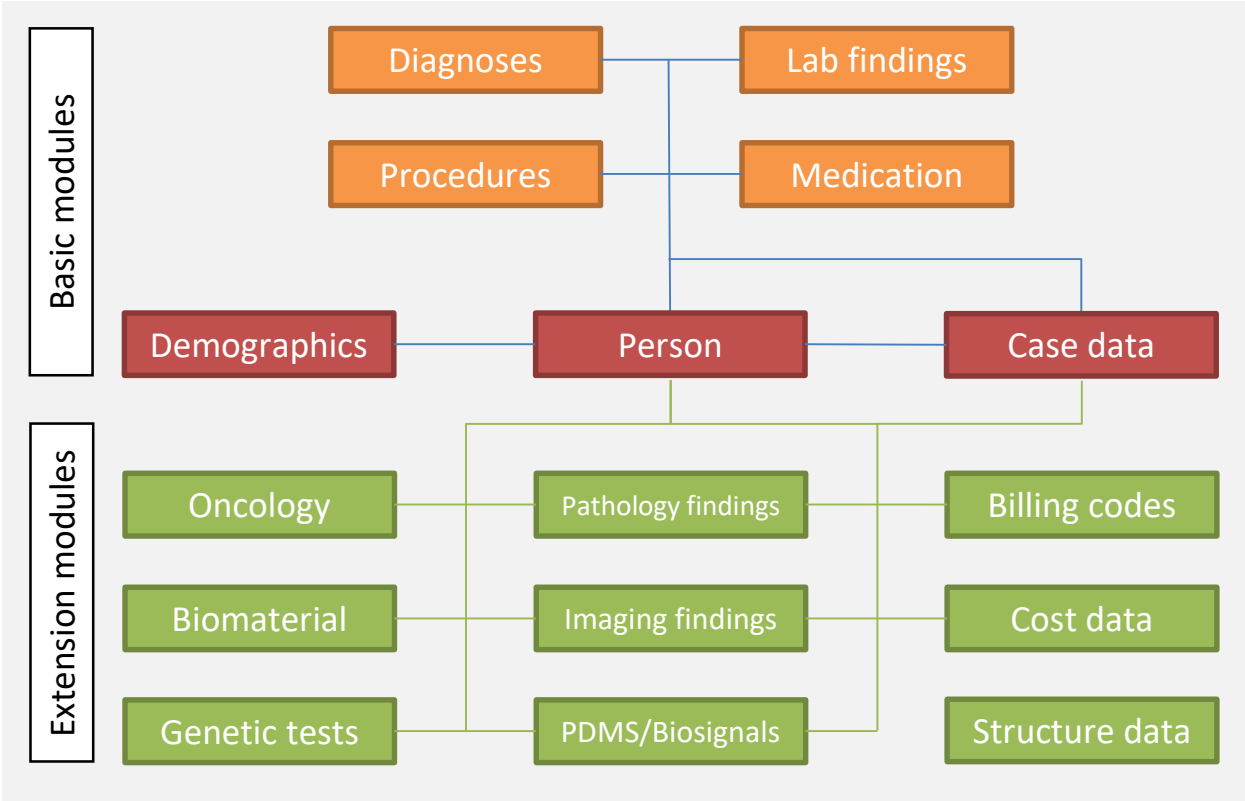
Interoperability WG

MII Modular Core Dataset

Data structures based on HL7 FHIR Standard



Semantic annotation based on international terminologies



Collaborative tools for requirements specification and data modelling



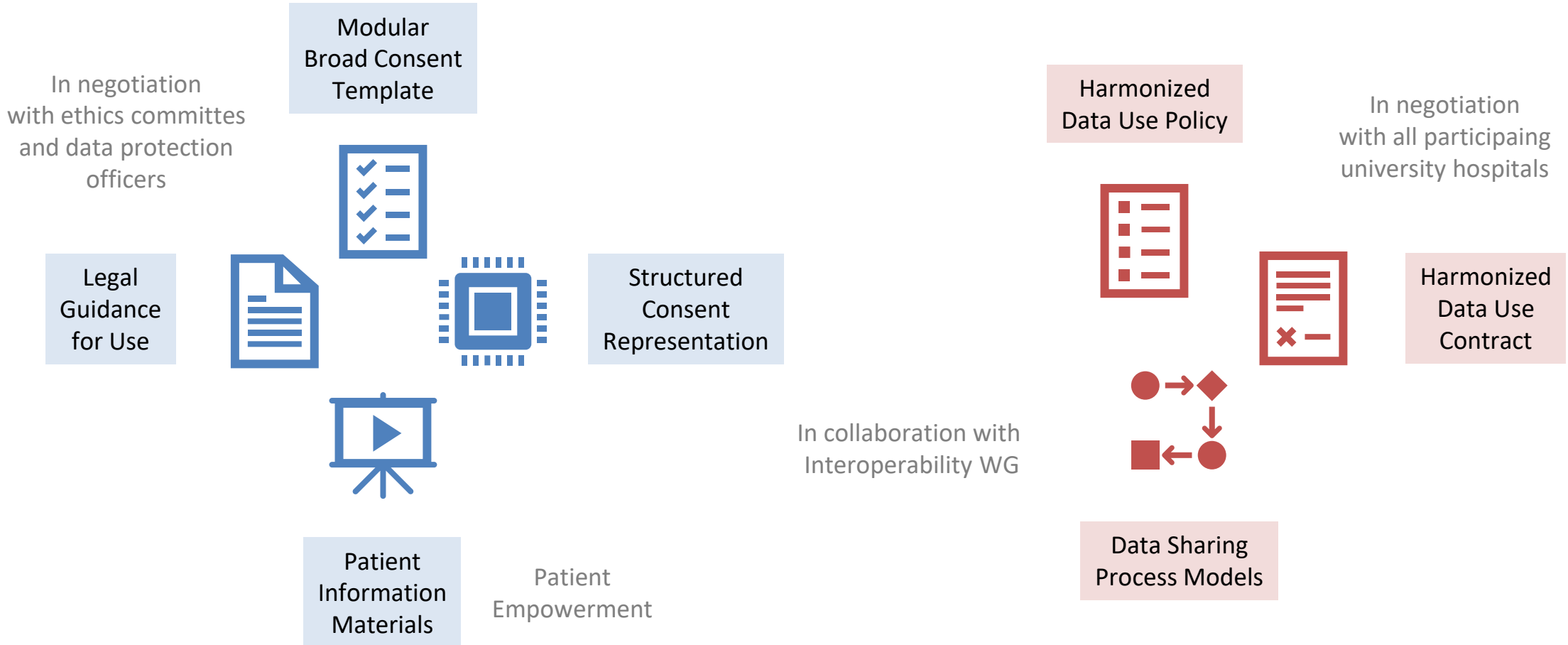
Open governance processes and balloting



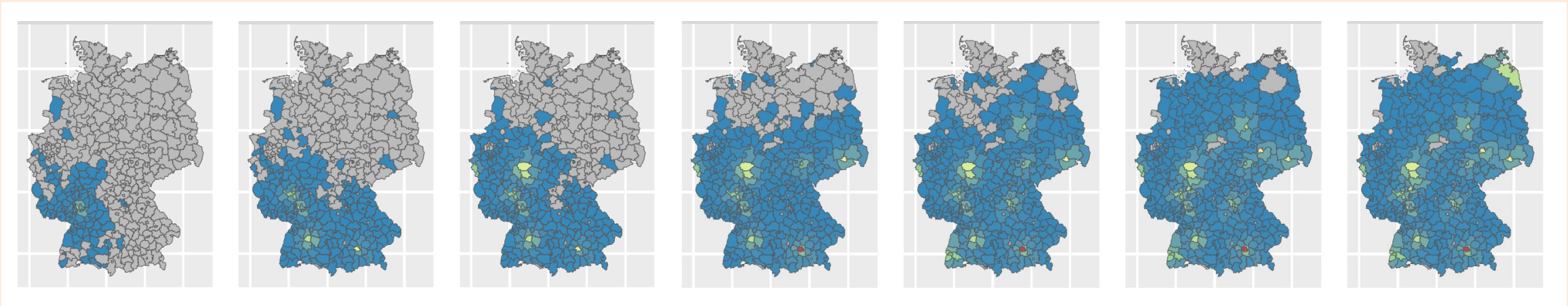
Consent WG

Data Sharing WG

Harmonized Consent & Governance



Demonstrator Study: Iterative approach, harvesting low-hanging fruit



(09/2018 - 03/2019)

Conclusions & Outlook: How we should approach Medical Data Sharing for AI

