Institute of Pathology

centralized Biomaterial Bank
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RWTH cBMB

The centralized Biomaterial Bank of the RWTH Aachen University

Institute of Pathology

Prof. Dr. med. Ruth Knüchel-Clarke (Medical Head)
Prof. Dr. rer. nat. Edgar Dahl (Scientific Head)
Dr. rer. nat. Cord Spreckelsen (Scientific consultant IT)
Dipl.Inform. Robert Schmidt (Biobank-Manager)

National Biobank Initiative – Kickoff-Meeting
Friday, April 8th, 2011 in Berlin

Overview of short presentation

centralized Biomaterial Bank

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1. **What is the RWTH cBMB?**
2. **Communication processes**
3. **Biobank-Management System**
4. **Integration of inhouse databases and data security**
5. **Perspective: Networking and Internationalisation**

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RWTH cBMB unifies ten different Biomaterial Banks of the University Hospital

centralized Biomaterial Bank

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1. **ECCA Oncology Bank**
   Prof. Ruth Knüchel-Clarke (Pathology)

2. **UKA Liver Disease Biobank**
   Prof. Christian Trautwein (Med. Clinic III)

3. **UKA Renal Disease Biobank**
   Prof. Jürgen Floege (Med. Clinic II)

4. **UKA Cardiovascular Disease Biobank**
   Prof. Nikolaus Marx (Med. Clinic I)

5. **UKA Sepsis Biobank**
   Prof. Gernot Marx (Dep. Intensive Care)

6. **UKA Implant/Explant Biobank**
   Prof. Ulf Peter Neumann (Surgery)

7. **UKA Occupational Medicine Biobank**
   Prof. Thomas Kraus (Occupational Medicine)

8. **UKA Human Genetics Biobank**
   Prof. Klaus Zerres (Human Genetics)

9. **UKA Neuromuscular Disease Biobank**
   Prof. Joachim Weis (Neuropathology)

10. **UKA Hematologic disease Biobank**
    Prof. Tim H. Brümmendorf (Med. Clinic IV)

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UKA Occupational Medicine Biobank

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since 2002:

Blood (serum/plasma), urine and breath condensate from individuals with work-related diseases

e.g. asbestosis, silicosis etc.

➡ ~ 12,000 biomaterial samples from more than 4,000 patients

UKA Occupational Medicine Biobank

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e.g. asbestosis, silicosis etc.

→ ~ 12,000 biomaterial samples from more than 4,000 patients

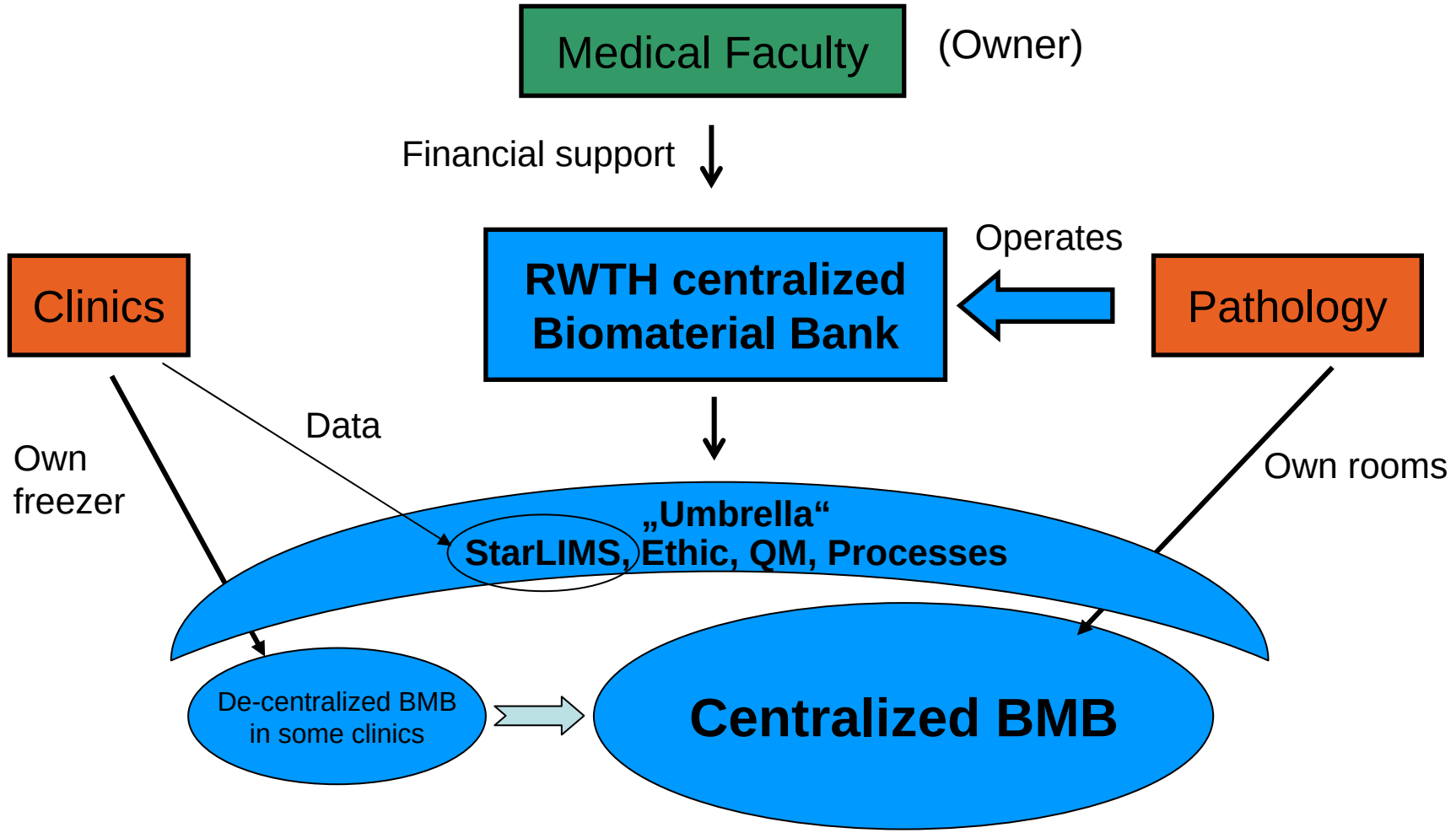
PCB scandal Envio

since 2010:

Project for recording and medical attendance of individuals that have been exposed to polychlorinated biphenyles (PCBs)

→ ~ 1,400 blood probes (plasma) are available

Organigram of the RWTH cBMB



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RWTH cBMB: Biobank-Wiki as the central communication tool

Advantages of a Wiki platform:

- **everybody can join the process**
- **collaborative work**
- **versioning history**
- **complete transparency**

BIobank-WIKi Aachen (BIWIKA) as the central communication tool

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Concept: Dr. Cord Spreckelsen, Institute of Medical Informatics, Aachen

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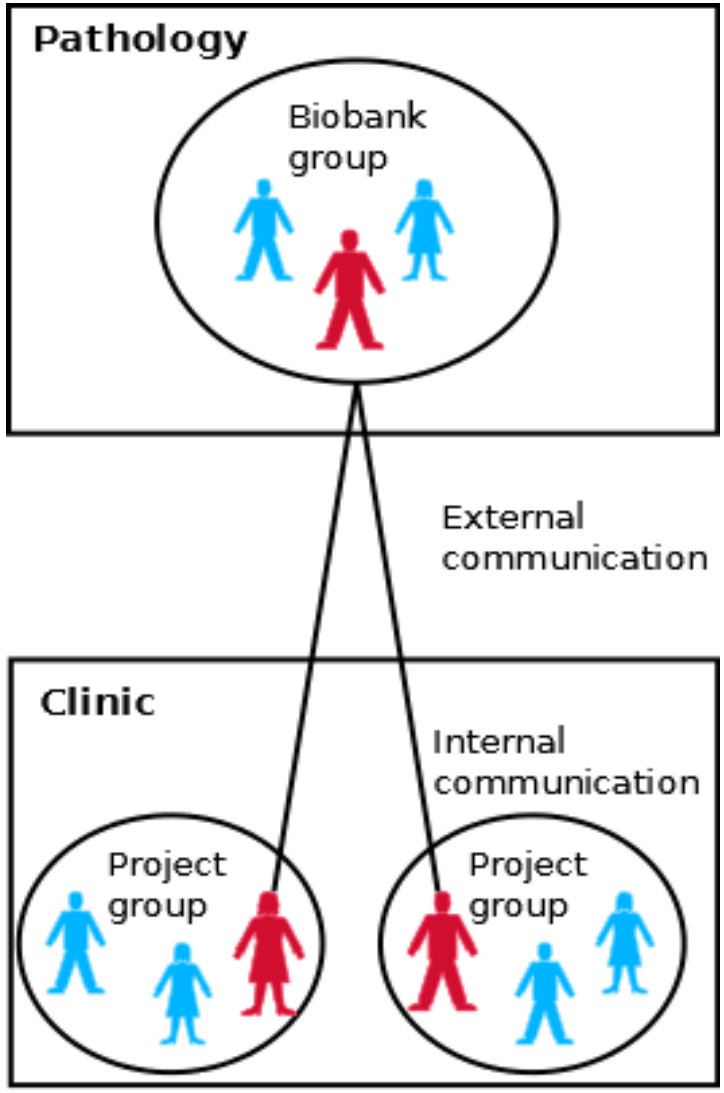
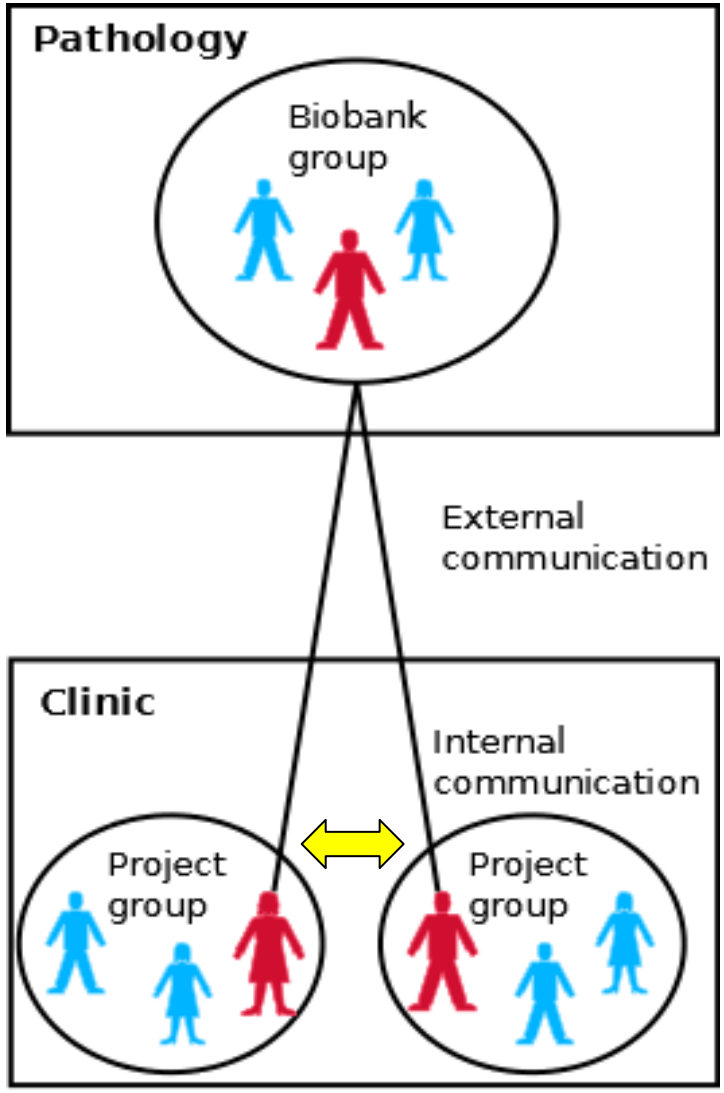
Communication between project groups



Communication between project groups



Communication between project groups

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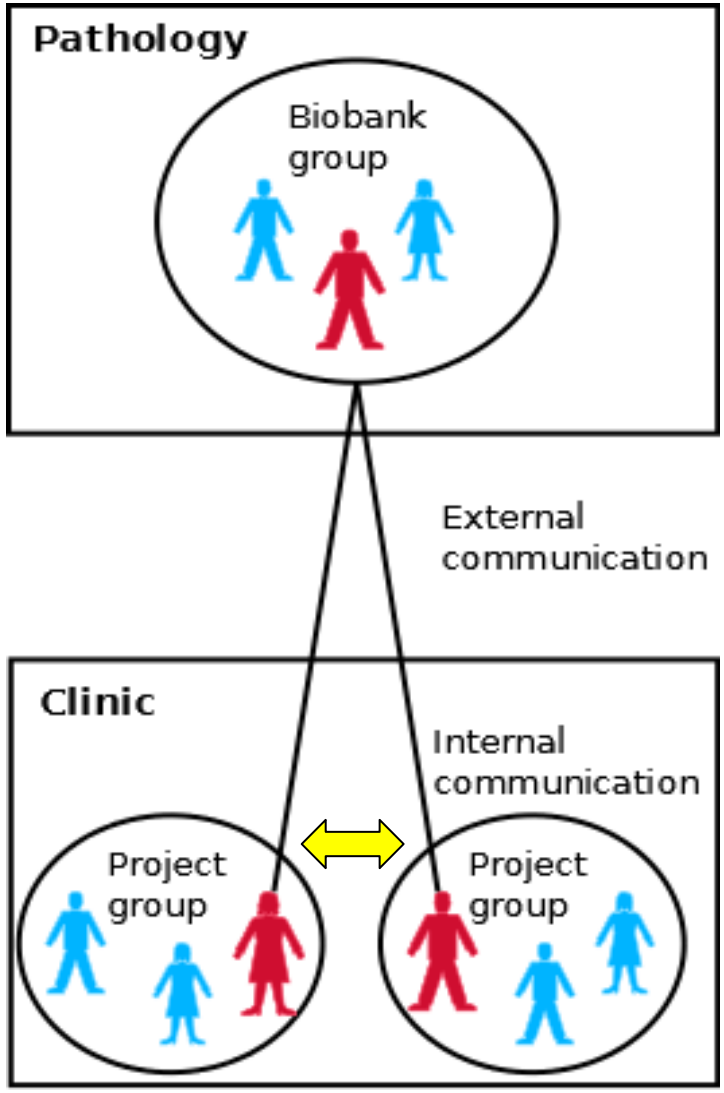

Imaging of enlarged lymph nodes

Lymphomas

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Define projects, categories, parameters and domains

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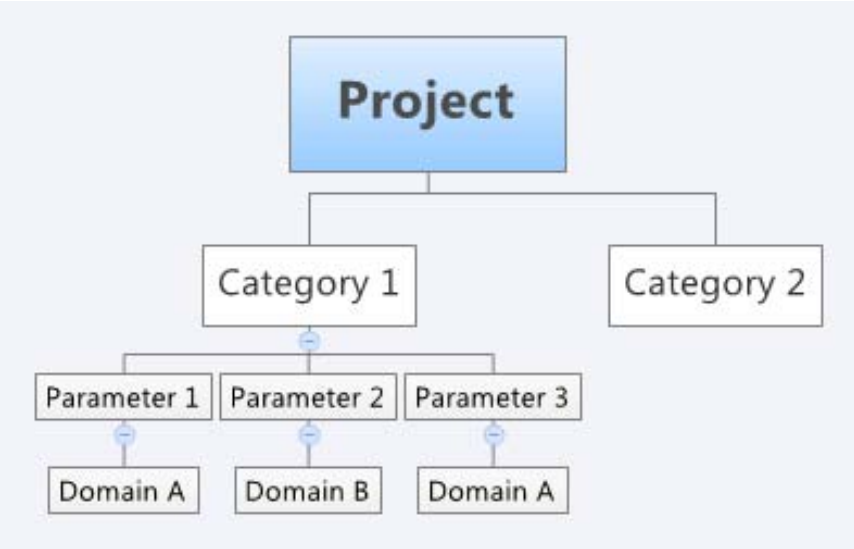
(Wertebereich)



Parameter submission interface

BIWIKA serves to optimise the parameter collection later applied in StarLIMS

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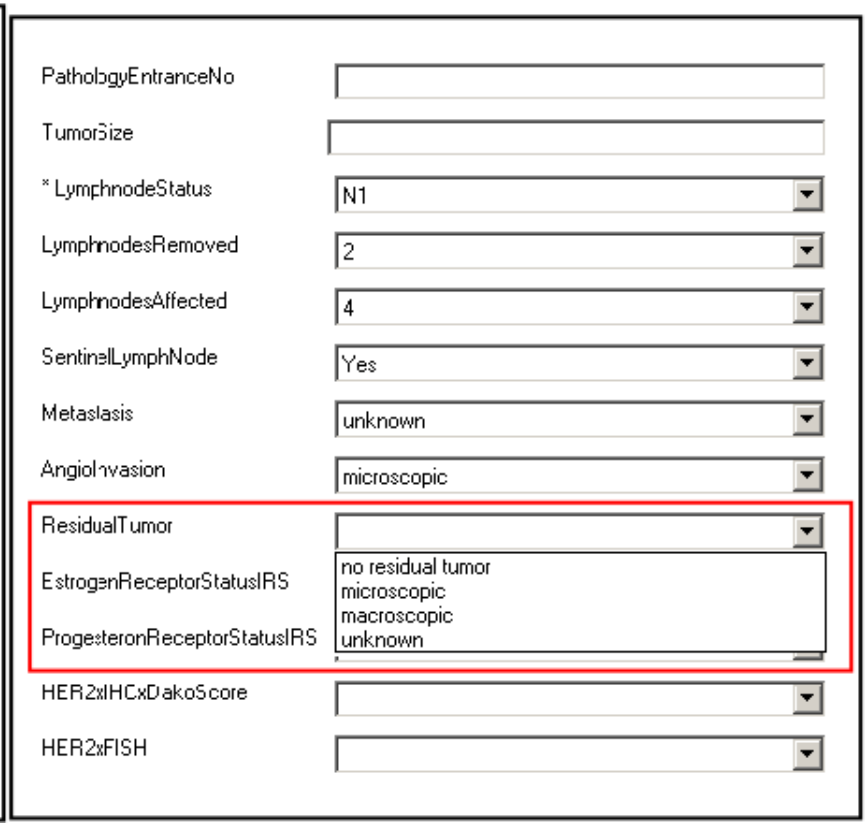
BIWIKA

StarLIMS



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Biobank management system (BBMS) StarLIMS

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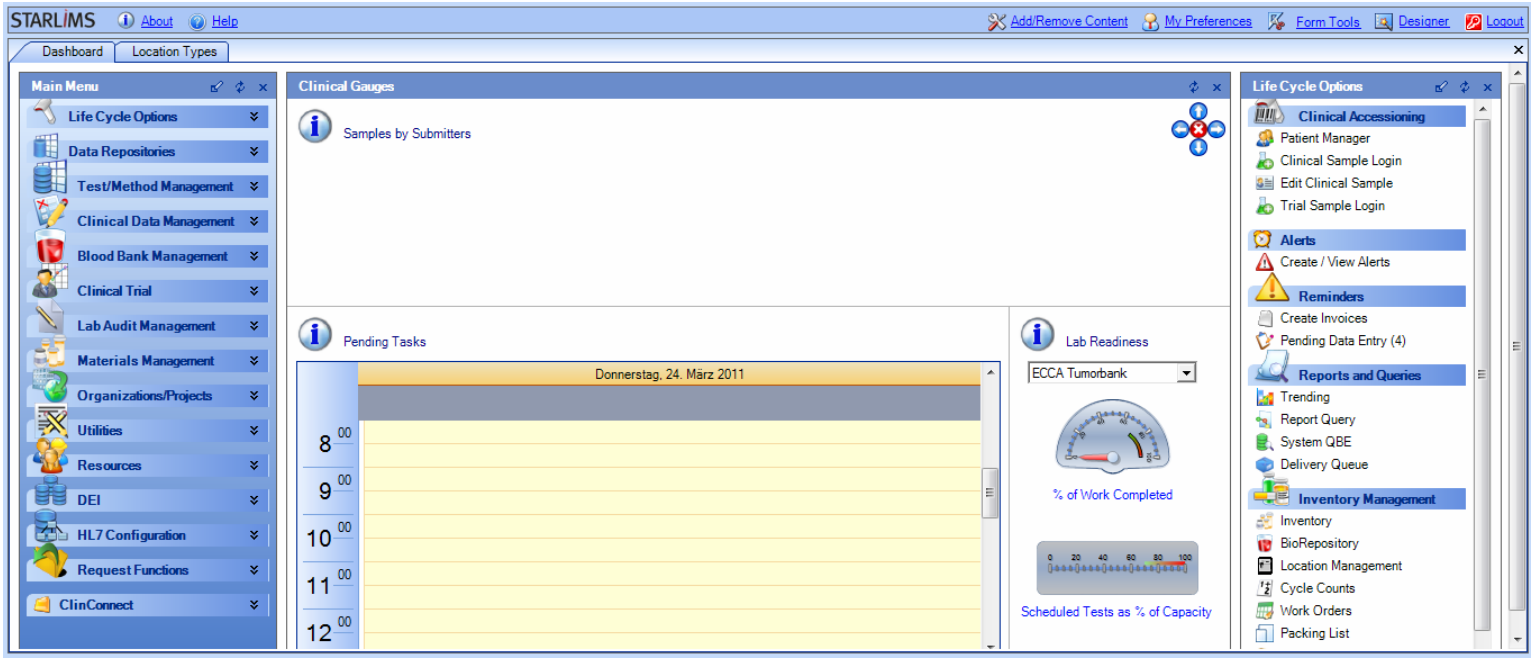

- **Storage and documentation management of biomaterials**
- **Highly customisable, according to given biobanking processes**
- **Chain of custody**
- **Workflow management**

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Chain of custody in the BBMS

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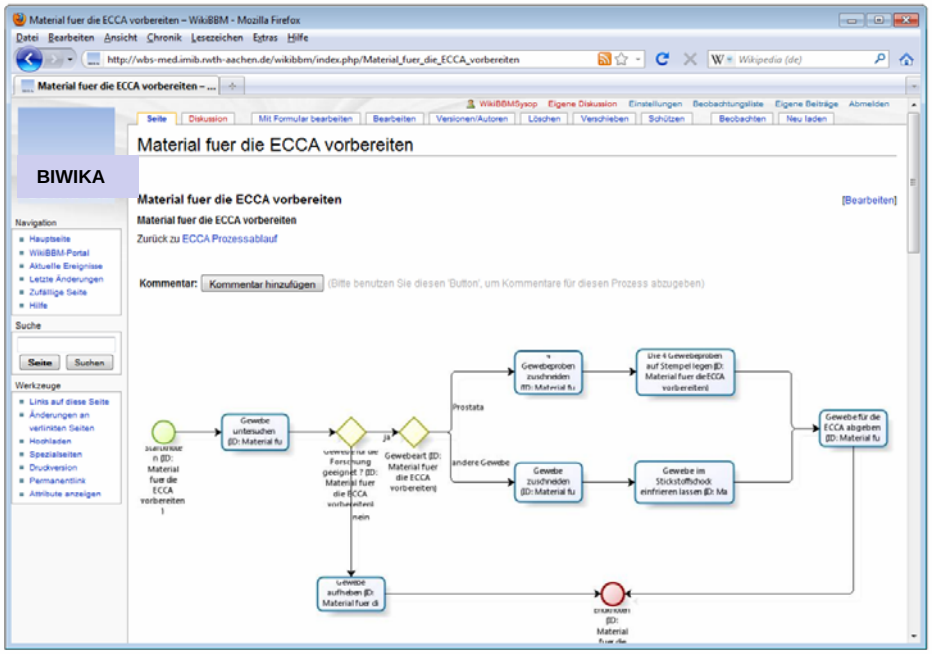
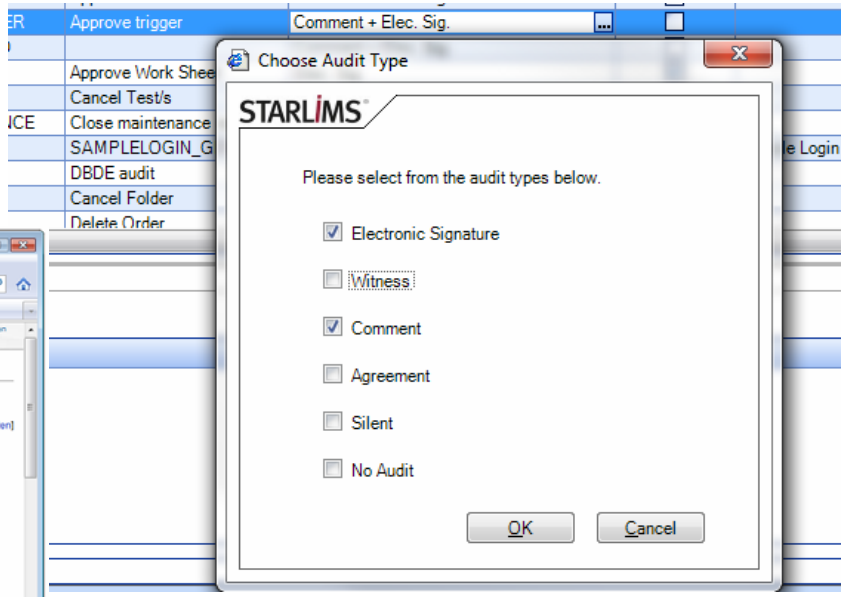
Workflows acquired using Wiki-application

↳ Chain of custody based on workflow specification





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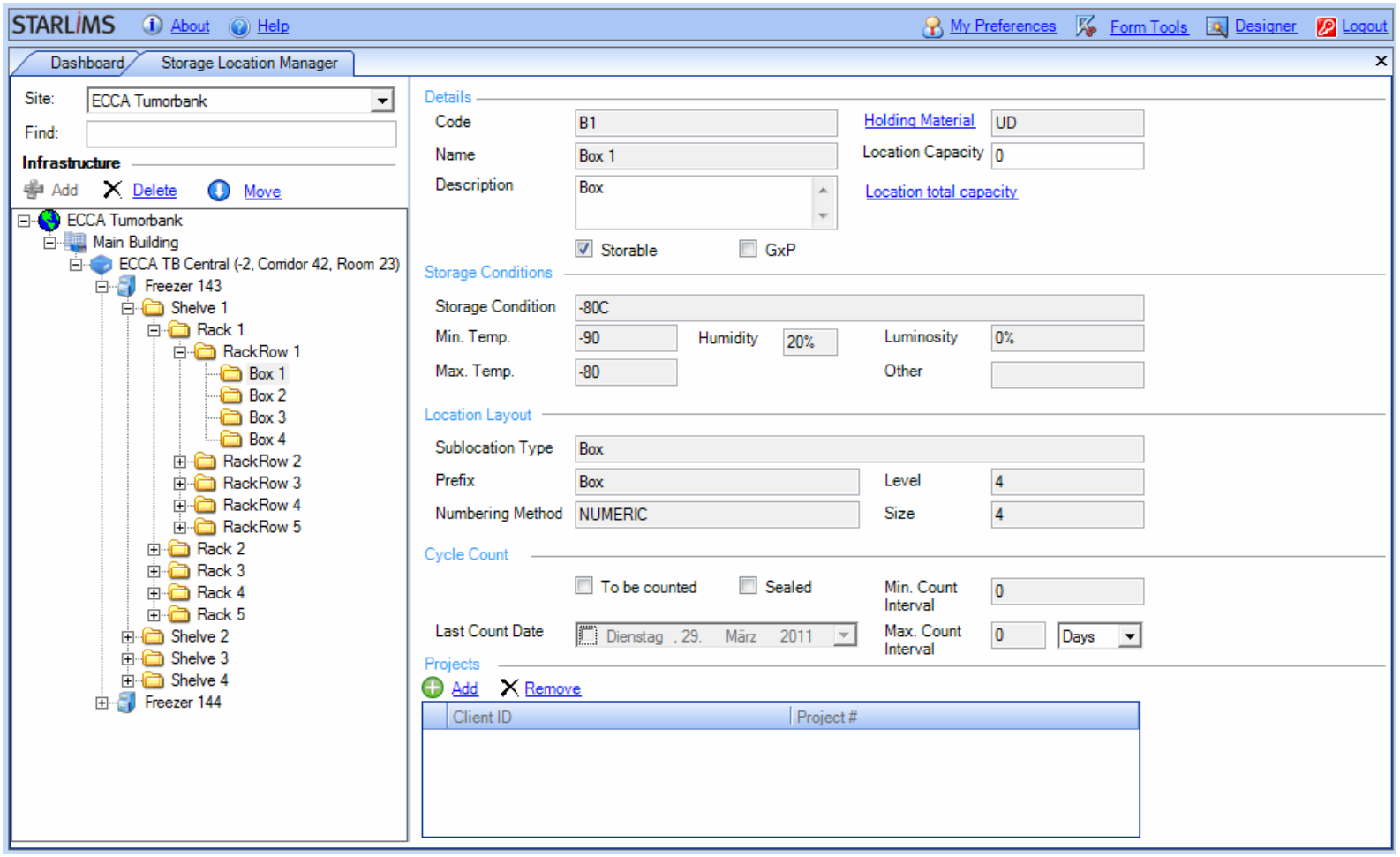
StarLIMS: Location management



StarLIMS: Search Interface

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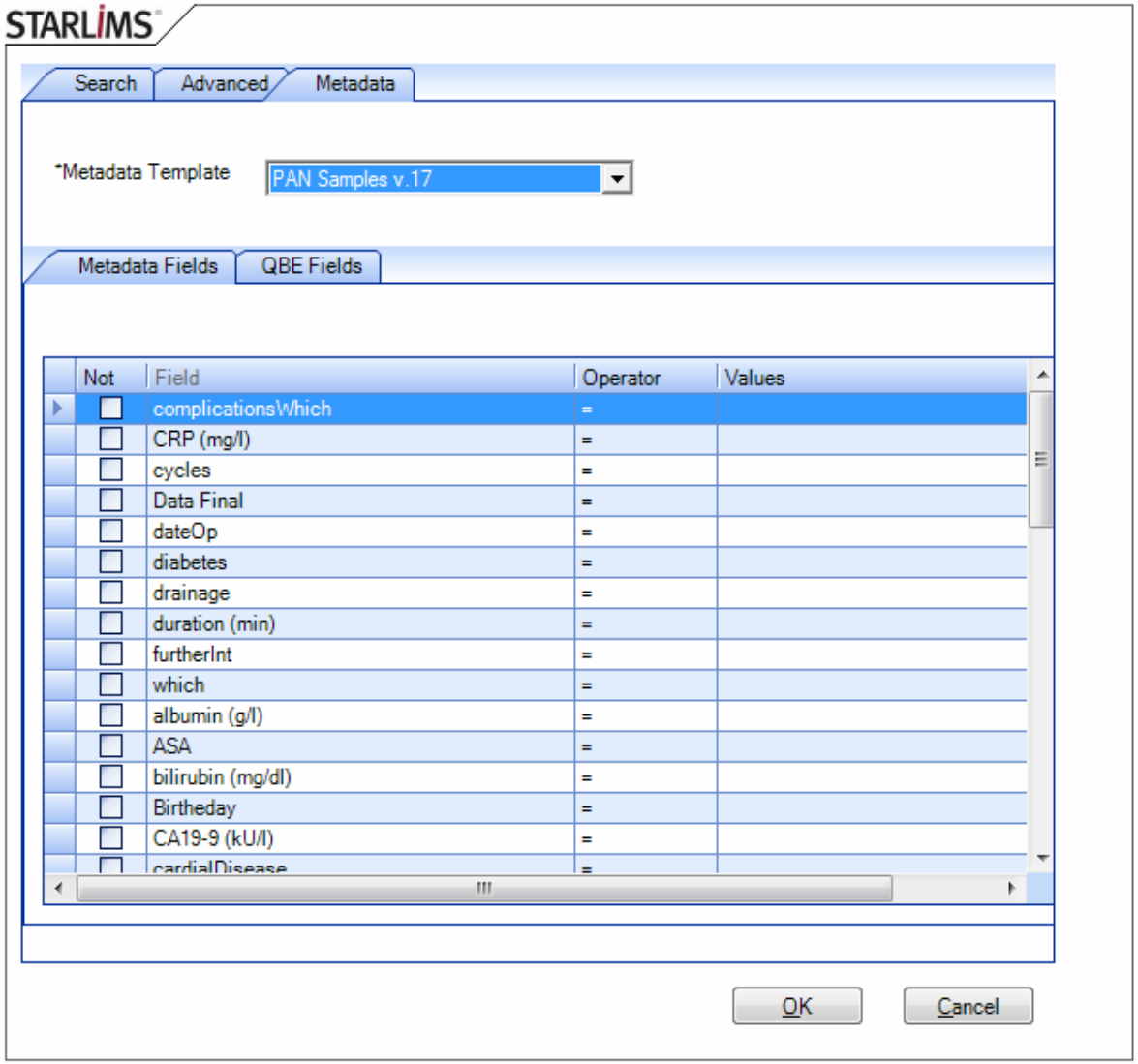
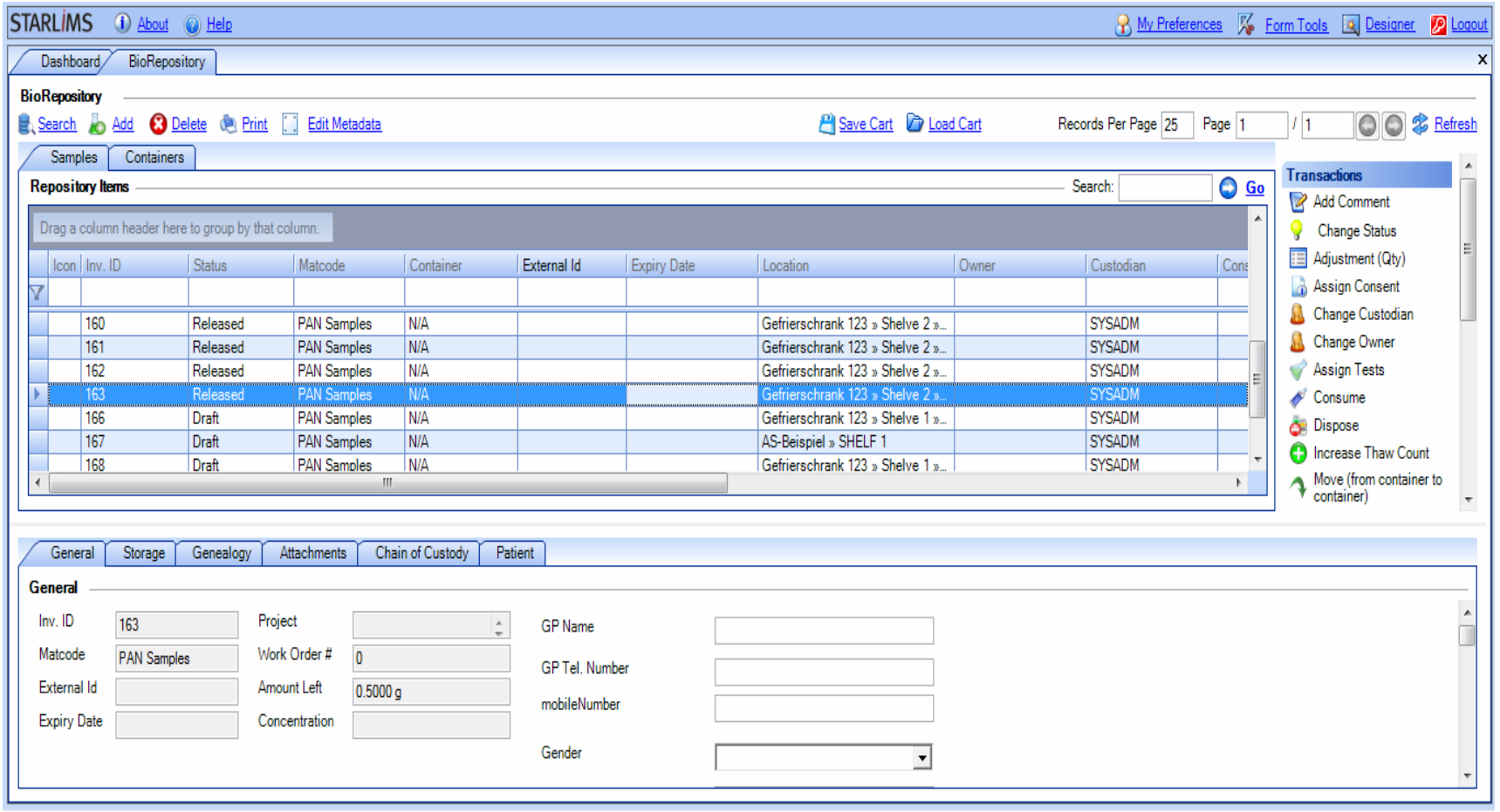


StarLIMS: Search Results



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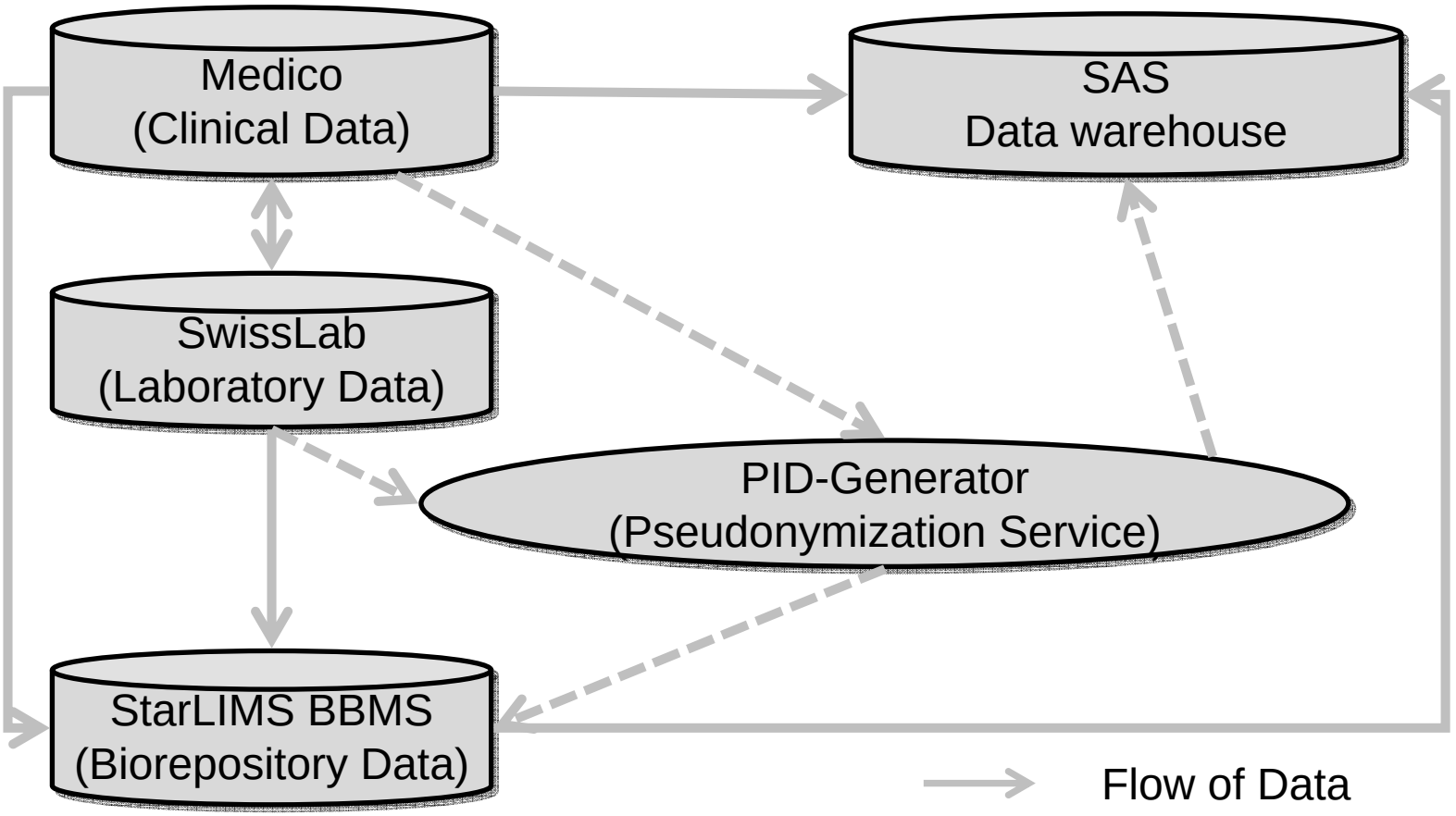
Planned integration of inhouse databases



Data security challenges

- Separation of medical and personal identification data
  (TMF generic data security concept)
- Import of medical data from CIS
- Role specific data access
- External user interface

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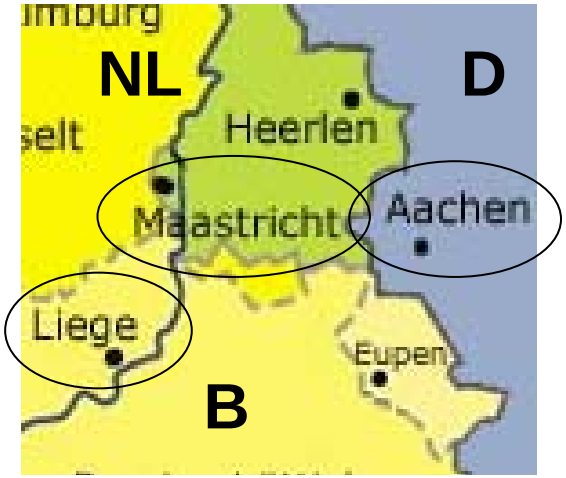
http://www.thieme.de/viamedici/studienort/dach2_karte.jpg



www.hans-laumanns.de/Euregio_MR

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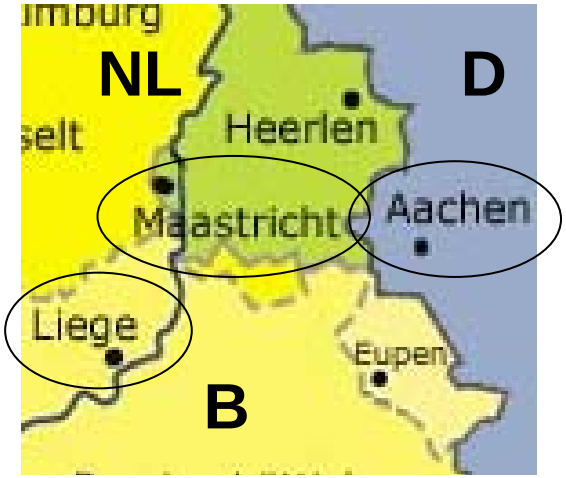

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Networking and Internationalisation: Issues for establishing virtual „Super-Biobanks“

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- Standardisation of terminology
- Common / similar collection of parameters is highly desired
- Consenting of SOPs
- Data communication protocols
- Discussion of trans-national legal issues

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The RWTH cBMB Biobank Team

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Prof. Knüchel-Clarke
Medical Head

Prof. Dahl
Scientific Head

R. Schmidt
Biobank Manager

R. Davtalab
Biobank technician

J. Wipperfürth
Biobank technician

C. Spreckelsen
Scientific consultant
(Inst. of Med. Informatics)

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Thanks a lot for your attention

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END

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Management of the RWTH cBMB

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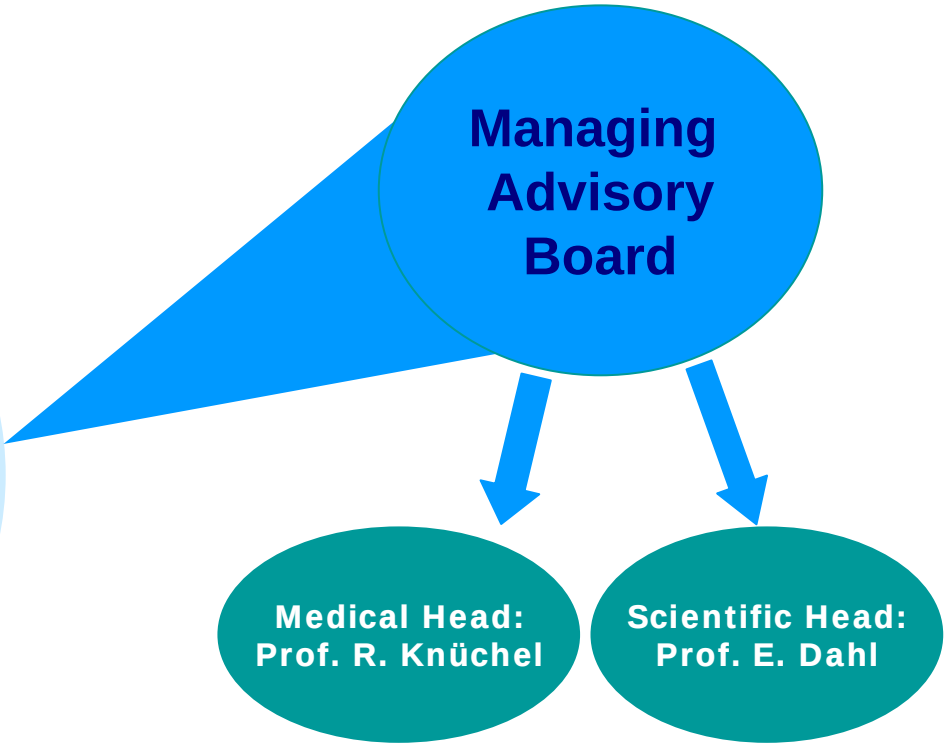
Advisory Board of the RWTH cBMB



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