

RWTH cBMB

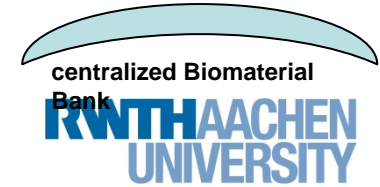
The centralized Biomaterial Bank
of the RWTH Aachen University

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)

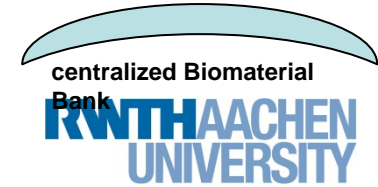
National Biobank Initiative – Kickoff-Meeting
Friday, April 8th, 2011 in Berlin

Overview of short presentation



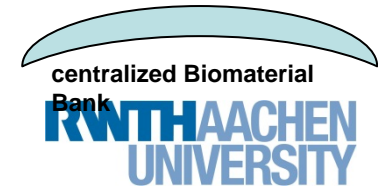
1. **What is the RWTH cBMB?**
2. **Communication processes**
3. **Biobank-Management System**
4. **Integration of inhouse databases and data security**
5. **Perspective: Networking and Internationalisation**

Overview of short presentation



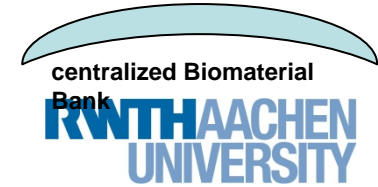
- 1. What is the RWTH cBMB?**
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RWTH cBMB unifies ten different Biomaterial Banks of the University Hospital



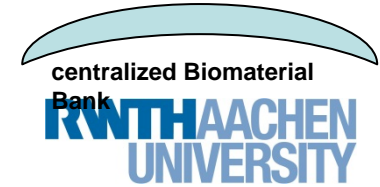
1. [ECCA Oncology Bank](#)
Prof. Ruth Knüchel-Clarke (Pathology)
2. [UKA Liver Disease Biobank](#)
Prof. Christian Trautwein (Med. Clinic III)
3. [UKA Renal Disease Biobank](#)
Prof. Jürgen Floege (Med. Clinic II)
4. [UKA Cardiovascular Disease Biobank](#)
Prof. Nikolaus Marx (Med. Clinic I)
5. [UKA 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)

RWTH cBMB unifies ten different Biomaterial Banks of the University Hospital



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UKA Occupational Medicine Biobank



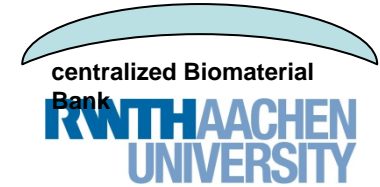
since 2002:

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



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

PCB scandal Envio



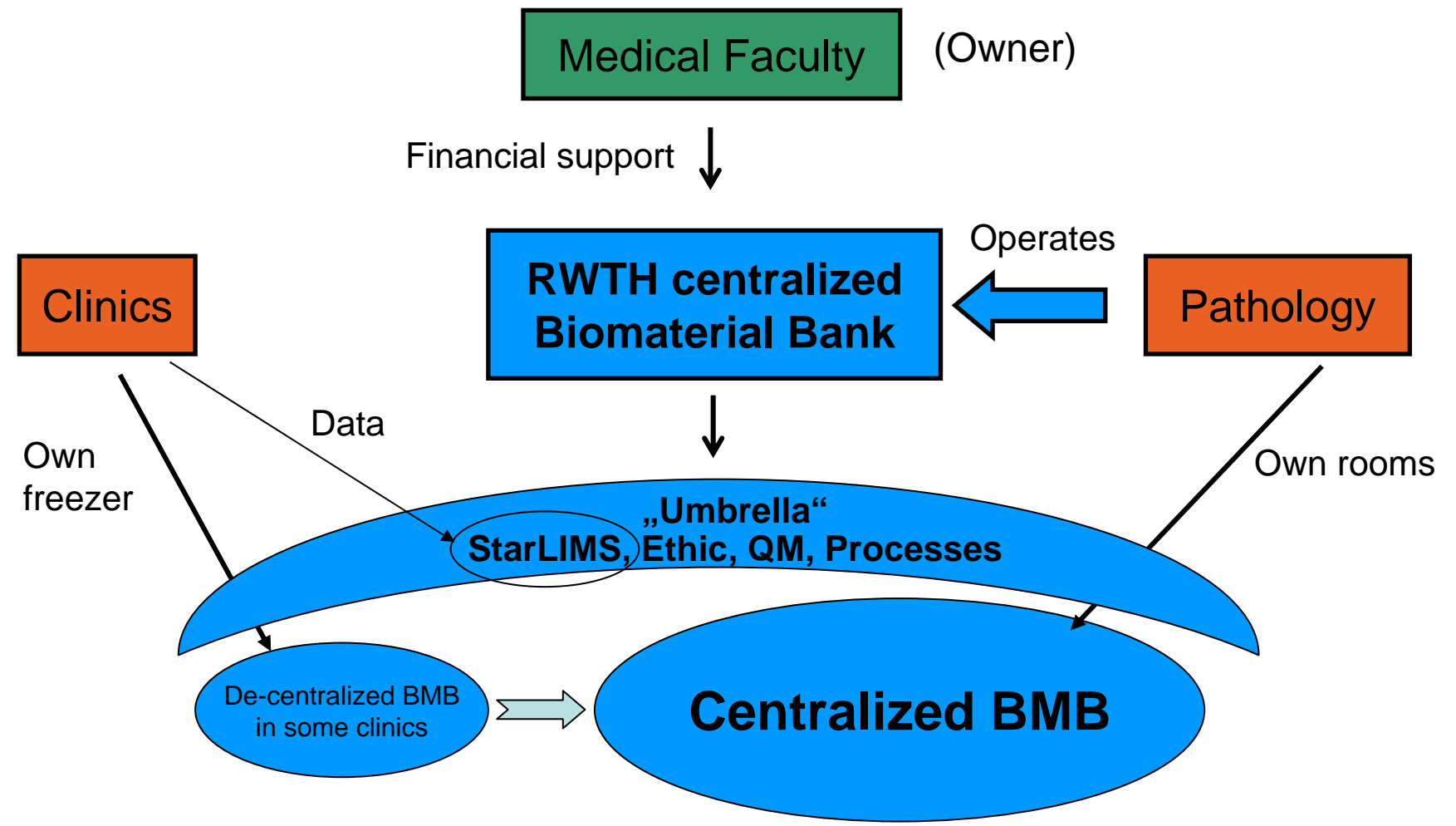
since 2010:

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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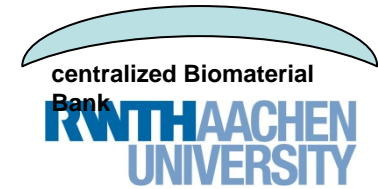
RWTH cBMB: Biobank-Wiki as the central communication tool



Advantages of a Wiki platform:

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

Blobank-WIKi Aachen (BIWIKa) as the central communication tool



BIWIKa

Navigation

- Hauptseite
- WikiBBM-Portal
- Aktuelle Ereignisse
- Letzte Änderungen
- Zufällige Seite
- Hilfe

Suche

Seite Suchen

Werkzeuge

- Links auf diese Seite

Seite Diskussion Bearbeiten Versionen/Autoren Löschen

Hauptseite

Inhaltsverzeichnis [Verbergen]

- Aktuelles
- Projekte
- Kommunikation
- Dokumentation

Aktuelles

- Protokoll der letzten Fortbildungsveranstaltung vom 28.03.2011

Projekte

Wofür?

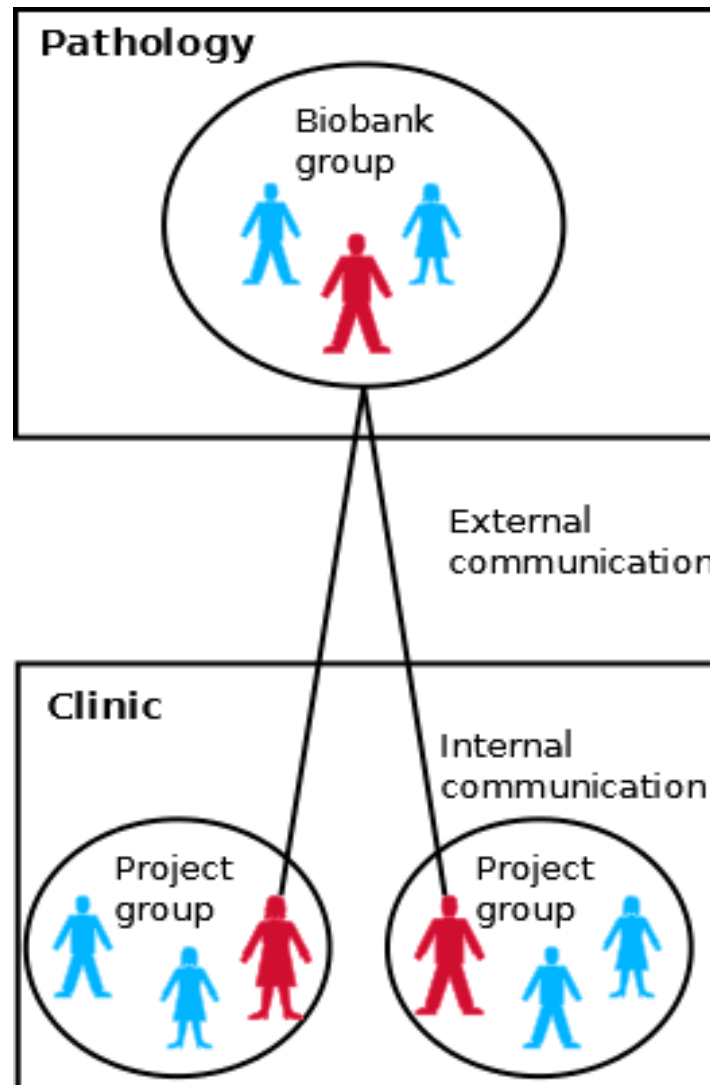
- Projekte

Projekte

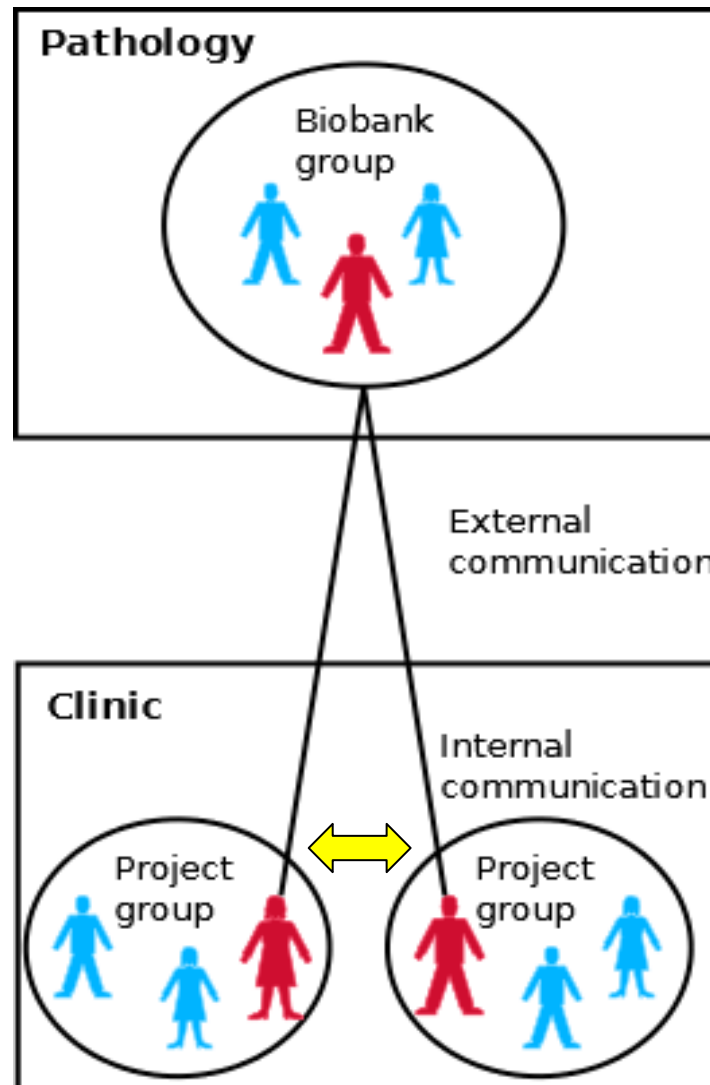
- BEISPIEL Entität
- Blut
- Cardio-Renales Syndrom
- Colon
- Diabetes Plaques
- Explantate
- GIST
- Gebärmutter
- Hamblase
- Haut
- Knochen
- Kopf Hals
- Leber
- Lunge
- Mamma
- Neurologie
- Neuroonkologie
- Niere
- Ovar
- Pankreas
- Prostata
- Sepsis

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

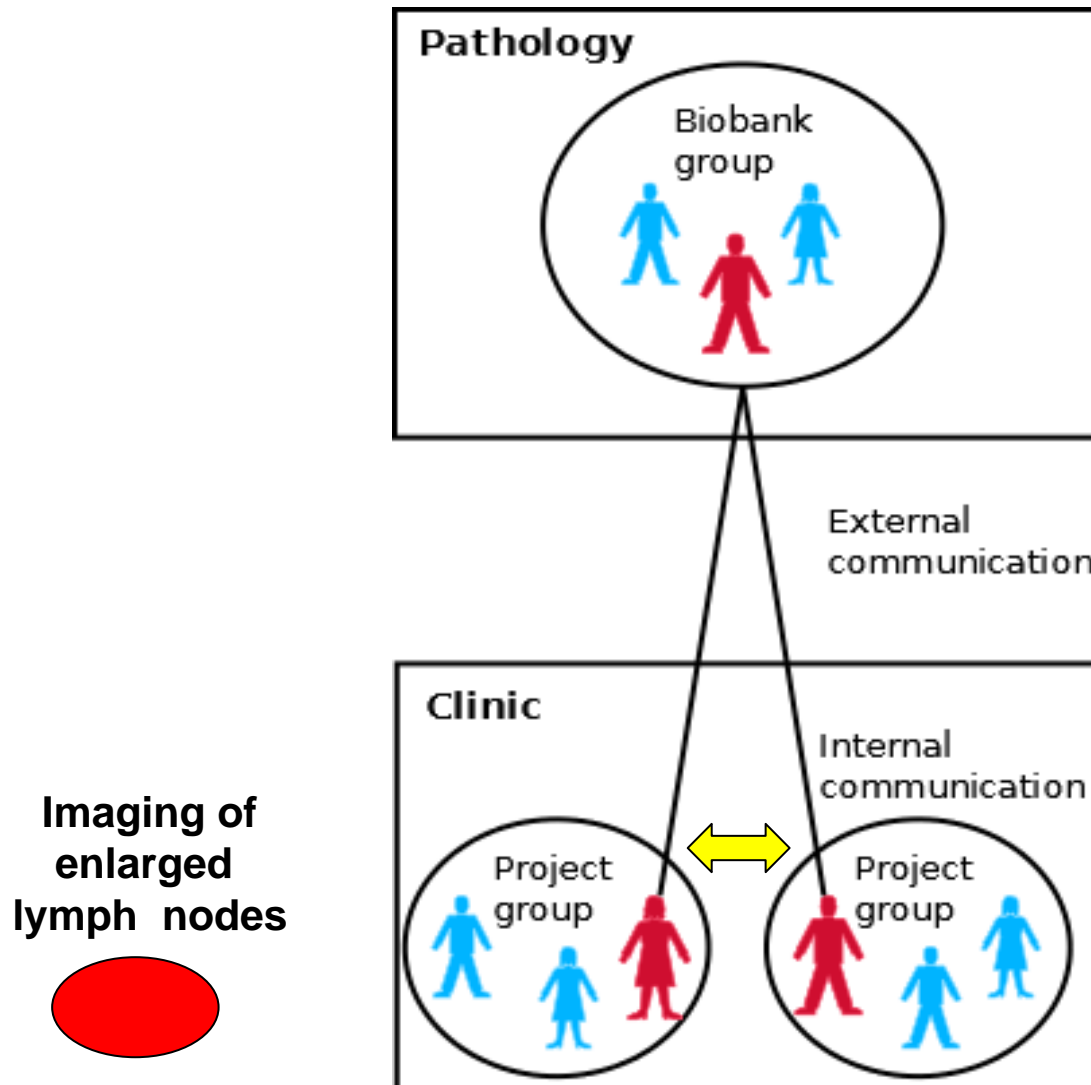
Communication between project groups



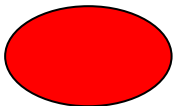
Communication between project groups



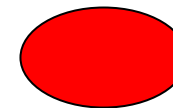
Communication between project groups



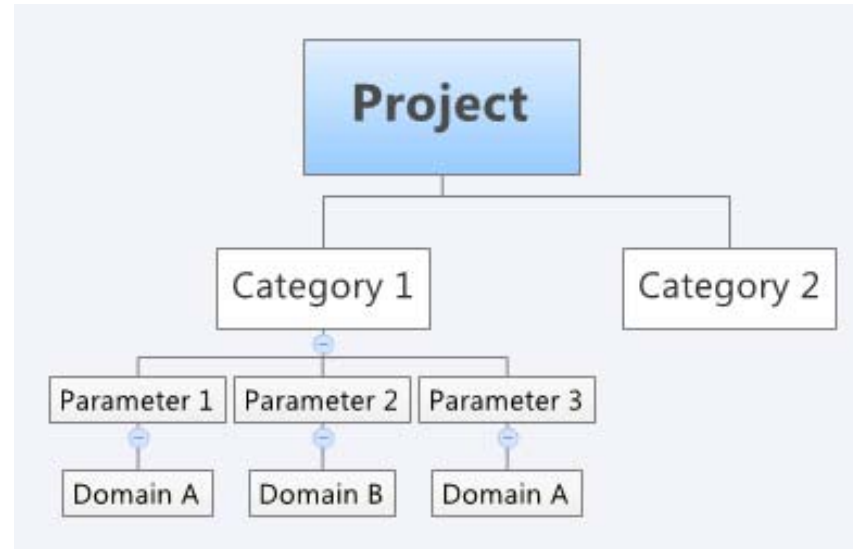
Imaging of
enlarged
lymph nodes



Lymphomas



Define projects, categories, parameters and domains



(Wertebereich)

Parameter submission interface

BIWIKA

Navigation

- [Hauptseite](#)
- [WikiBBM-Portal](#)
- [Aktuelle Ereignisse](#)
- [Letzte Änderungen](#)
- [Zufällige Seite](#)
- [Hilfe](#)

Suche

Mit Formular bearbeiten

Bezeichnung:	<input style="width: 90%;" type="text" value="Geschlecht"/>
Definition:	<input style="width: 90%;" type="text" value="Geschlecht des Patienten"/>
Parameterkategorie:	<input style="width: 90%;" type="text" value="Allgemeine Patientendaten"/>
International:	<input style="width: 90%;" type="text" value="Gender"/>
ÜbernommenVon:	<input style="font-size: 0.8em; font-weight: normal; border: none; background-color: #f0f0f0; padding: 2px 5px;" type="text" value="Manuelle Eingabe"/> ▾
Sonstiges:	<input style="width: 90%;" type="text"/>

BIWIKA serves to optimise the parameter collection later applied in StarLIMS

BIWIKA

Seite Diskussion Bearbeiten

Beispiel SL

- Tumorsize
- Lymphnode Status
- Lymphnodes removed
- Lymphnodes Affected
- Sentinel Lymphnode
- Metastasis
- Angio Invasion
- Residual Tumor**
 - Category:
 - no residual tumor
 - microscopic
 - macroscopic
- Estrogen Receptor Status RS
- Progesteron Receptor Statur IRS
- HER2xIHCyDako Score
- HER2xFISH

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- Links auf diese Seite
- Änderungen an

StarLIMS

PathologyEntranceNo

TumorSize

* LymphnodeStatus

LymphnodesRemoved

LymphnodesAffected

SentinelLymphNode

Metastasis

AngioInvasion

ResidualTumor

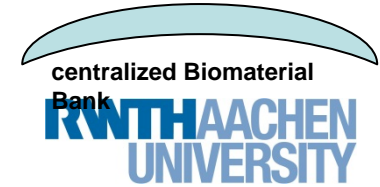
EstrogenReceptorStatusIRS

ProgesteronReceptorStatusIRS

HER2xIHCxDakoScore

HER2xFISH

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Biobank management system (BBMS) StarLIMS

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

Chain of custody in the BBMS

Workflows acquired using Wiki-application

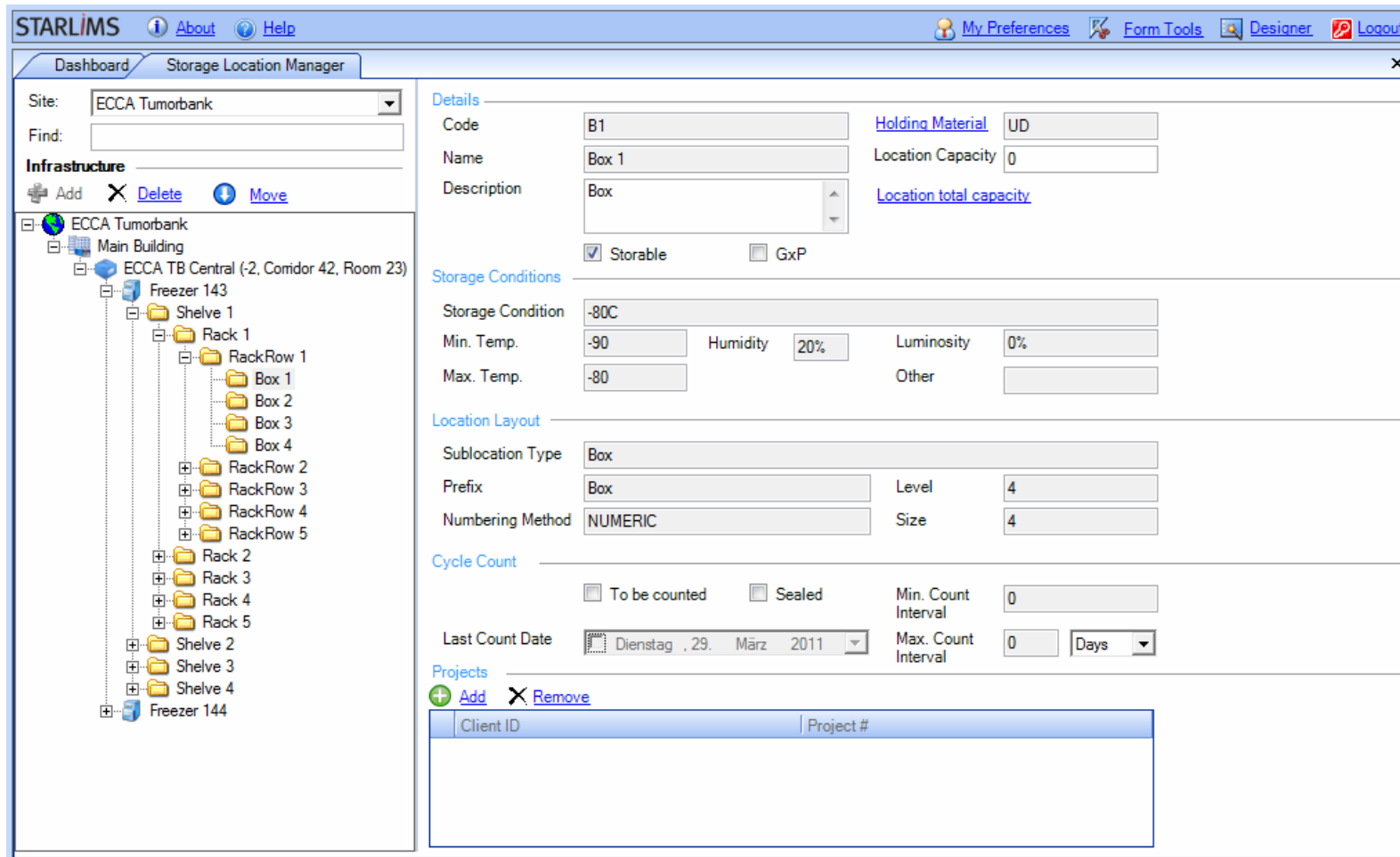


Chain of custody based on workflow specification

The image illustrates the integration of a Wiki-based workflow into a chain of custody system. It features three main components:

- Wiki Page:** A screenshot of a Wiki page titled "Material fuer die ECCA vorbereiten". It includes a navigation menu, a search bar, and a workflow diagram. The diagram starts with "Gewebe untersuchen (ID: Material fu)" and branches into "Prostate" and "andere Gewebe". The "Prostate" path involves "Die 4 Lutetoliposomen auf Stempel legen (ID: Material fuer die ECCA vorbereiten)", while the "andere Gewebe" path involves "Gewebe im Stickstoffbehälter einfrieren lassen (ID: Ma)". Both paths lead to "Gewebe für die ECCA abgeben (ID: Material fu)".
- Audit Dialog:** A "Choose Audit Type" dialog box from STARLIMS. It prompts the user to "Please select from the audit types below." and offers several options:
 - Electronic Signature
 - Witness
 - Comment
 - Agreement
 - Silent
 - No Audit
 Buttons for "OK" and "Cancel" are at the bottom.
- Action List:** A vertical list of actions on the right side of the image, including "Approve trigger", "Approve Work Sheet", "Cancel Test/s", "Close maintenance", "SAMPLELOGIN_G...", "DBDE audit", "Cancel Folder", and "Delete Order".

StarLIMS: Location management



The screenshot shows the STARLIMS Storage Location Manager interface. The top navigation bar includes 'About' and 'Help' links. The main interface is divided into two main sections: a tree view on the left and a details form on the right.

Left Panel (Infrastructure):

- Site: ECCA Tumorbank
- Find: [Search Field]
- Buttons: Add, Delete, Move
- Tree View:
 - ECCA Tumorbank
 - Main Building
 - ECCA TB Central (-2, Coridor 42, Room 23)
 - Freezer 143
 - Shelve 1
 - Rack 1
 - RackRow 1
 - Box 1
 - Box 2
 - Box 3
 - Box 4
 - RackRow 2
 - RackRow 3
 - RackRow 4
 - RackRow 5
 - Rack 2
 - Rack 3
 - Rack 4
 - Rack 5
 - Shelve 2
 - Shelve 3
 - Shelve 4
 - Freezer 144

Right Panel (Details):

- Details:**
 - Code: B1
 - Name: Box 1
 - Description: Box
 - Storage: Storable, GxP
- Storage Conditions:**
 - Storage Condition: -80C
 - Min. Temp.: -90, Humidity: 20%, Luminosity: 0%
 - Max. Temp.: -80, Other: [Field]
- Location Layout:**
 - Sublocation Type: Box
 - Prefix: Box, Level: 4
 - Numbering Method: NUMERIC, Size: 4
- Cycle Count:**
 - To be counted, Sealed
 - Min. Count Interval: 0
 - Last Count Date: Dienstag, 29. März 2011
 - Max. Count Interval: 0 Days
- Projects:**
 - Buttons: Add, Remove
 - Table:

Client ID	Project #

StarLIMS: Search Interface

STARLIMS

Search Advanced Metadata

*Metadata Template: PAN Samples v.17

Metadata Fields QBE Fields

Not	Field	Operator	Values
<input type="checkbox"/>	complicationsWhich	=	
<input type="checkbox"/>	CRP (mg/l)	=	
<input type="checkbox"/>	cycles	=	
<input type="checkbox"/>	Data Final	=	
<input type="checkbox"/>	dateOp	=	
<input type="checkbox"/>	diabetes	=	
<input type="checkbox"/>	drainage	=	
<input type="checkbox"/>	duration (min)	=	
<input type="checkbox"/>	furtherInt	=	
<input type="checkbox"/>	which	=	
<input type="checkbox"/>	albumin (g/l)	=	
<input type="checkbox"/>	ASA	=	
<input type="checkbox"/>	bilirubin (mg/dl)	=	
<input type="checkbox"/>	Birthday	=	
<input type="checkbox"/>	CA19-9 (kU/l)	=	
<input type="checkbox"/>	cardialDisease	=	

OK Cancel

StarLIMS: Search Results

STARLIMS [About](#) [Help](#) [My Preferences](#) [Form Tools](#) [Designer](#) [Logout](#)

Dashboard BioRepository

BioRepository

[Search](#) [Add](#) [Delete](#) [Print](#) [Edit Metadata](#) [Save Cart](#) [Load Cart](#) Records Per Page 25 Page 1 / 1 [Refresh](#)

Samples Containers

Repository Items Search: [Go](#)

Drag a column header here to group by that column.

Icon	Inv. ID	Status	Matcode	Container	External Id	Expiry Date	Location	Owner	Custodian	Consent
	160	Released	PAN Samples	N/A			Gefrierschrank 123 » Shelve 2 »...		SYSADM	
	161	Released	PAN Samples	N/A			Gefrierschrank 123 » Shelve 2 »...		SYSADM	
	162	Released	PAN Samples	N/A			Gefrierschrank 123 » Shelve 2 »...		SYSADM	
	163	Released	PAN Samples	N/A			Gefrierschrank 123 » Shelve 2 »...		SYSADM	
	166	Draft	PAN Samples	N/A			Gefrierschrank 123 » Shelve 1 »...		SYSADM	
	167	Draft	PAN Samples	N/A			AS-Beispiel » SHELF 1		SYSADM	
	168	Draft	PAN Samples	N/A			Gefrierschrank 123 » Shelve 1 »...		SYSADM	

Transactions

- Add Comment
- Change Status
- Adjustment (Qty)
- Assign Consent
- Change Custodian
- Change Owner
- Assign Tests
- Consume
- Dispose
- Increase Thaw Count
- Move (from container to container)

General Storage Genealogy Attachments Chain of Custody Patient

General

Inv. ID Project

Matcode Work Order #

External Id Amount Left

Expiry Date Concentration

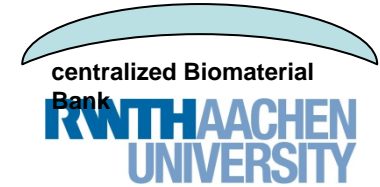
GP Name

GP Tel. Number

mobileNumber

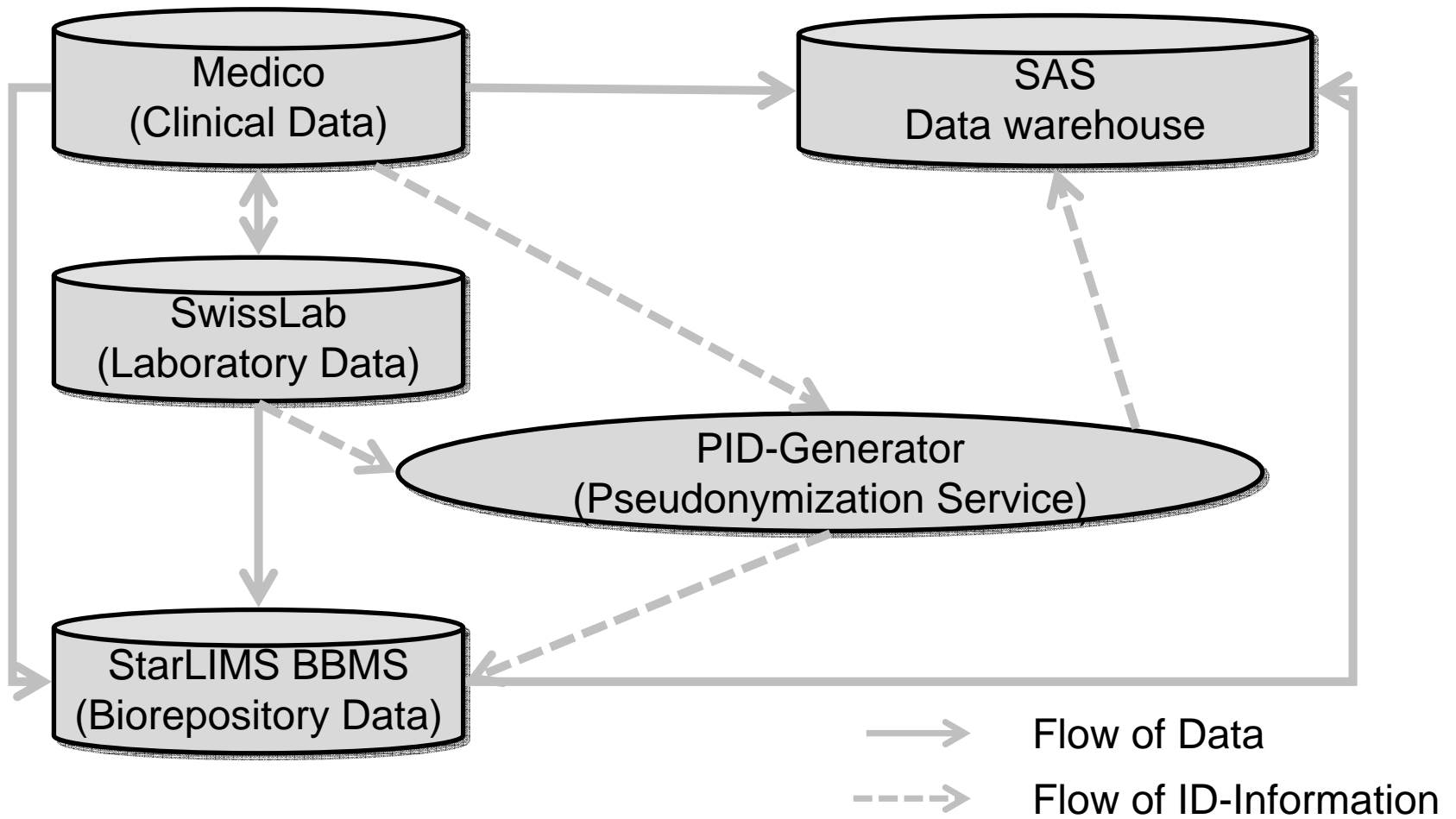
Gender

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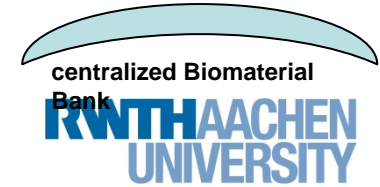
Planned integration of inhouse databases



Data security challenges

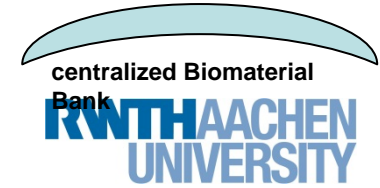
- Separation of medical and personal identification data (TMF generic data security concept)
- Import of medical data from CIS
- Role specific data access
- External user interface

Overview of short presentation

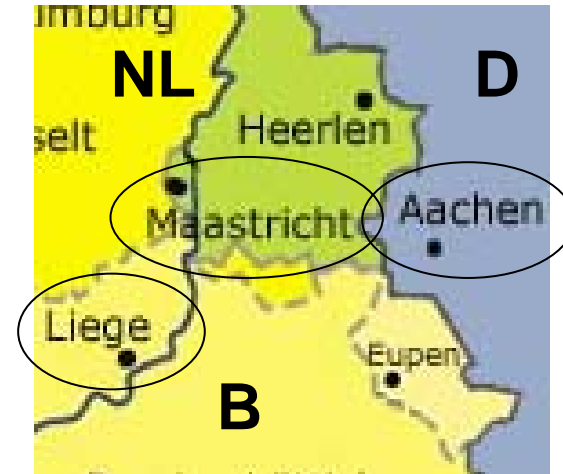


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Networking and Internationalisation



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

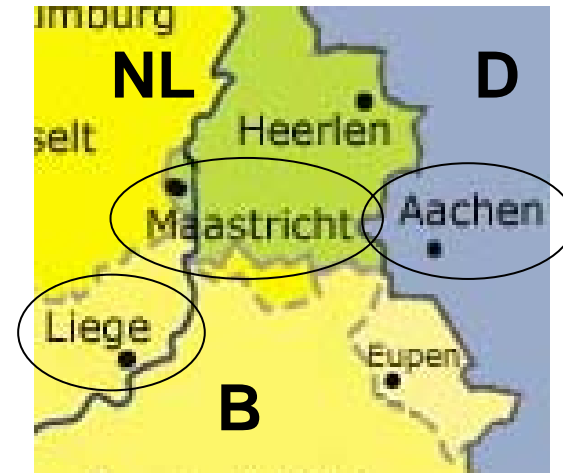


www.hans-laumanns.de/Euregio_MR

Networking and Internationalisation

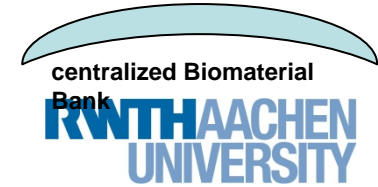


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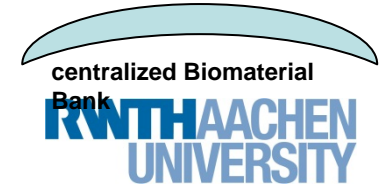
www.hans-laumanns.de/Euregio_MR

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



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

The RWTH cBMB Biobank Team



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)

Thanks a lot for your attention



END

Management of the RWTH cBMB

