

m<sup>4</sup>

# Biobank Alliance

**H.-Erich Wichmann**

**Helmholtz Zentrum München  
LMU München**

**Nationale Biobank Initiative – Kickoff-Meeting 8. April 2011 TMF Berlin**



# m<sup>4</sup>

personalized medicine and target-orientated therapies

Coordination: Prof. Horst Domdey, Bio-M Martinsried

Spitzenclusterwettbewerb des BMBF  
Begutachtung am 12. November 2009



Bayerisches Staatsministerium für  
Wirtschaft, Infrastruktur, Verkehr und Technologie

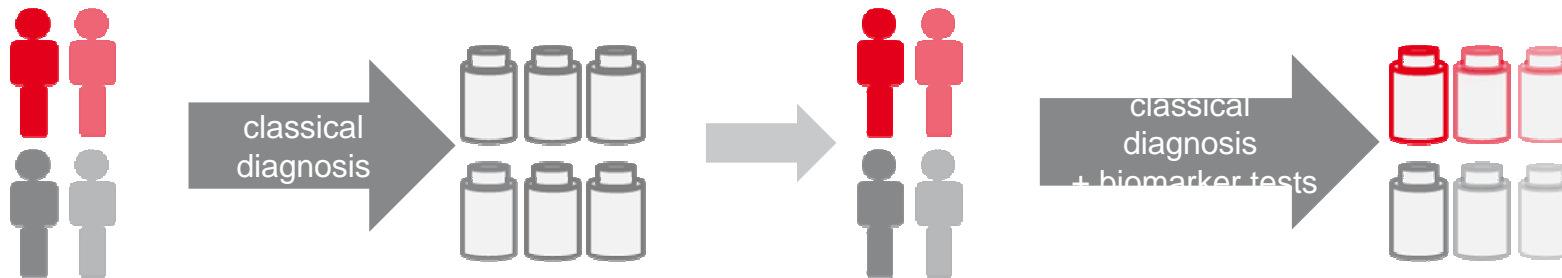


## symptom-based medicine

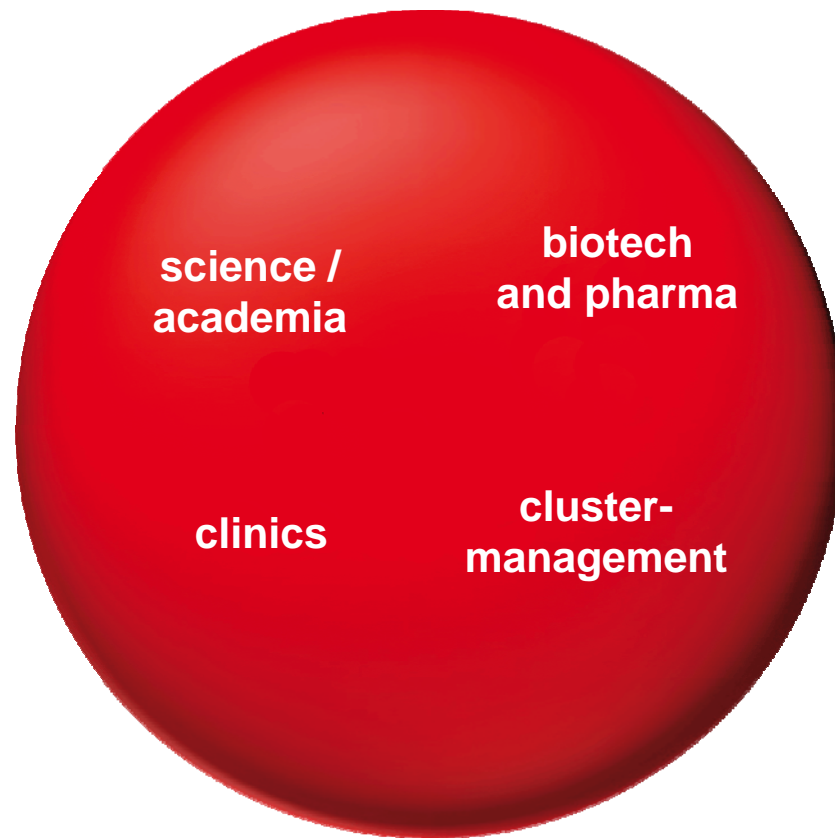
- „one fits all“ drug / blockbuster
- limited efficiency (40-60%)
- high rates of side effects
- high drop-out rates
- long development time
- high development costs

## personalized medicine

- specific drugs for patient groups
- more effective drugs
- higher drug safety
- lower drop-out rates
- smaller clinical studies necessary
- lower costs for clinical studies



# 4 partners in Munich



# participants

**NOVARTIS** **Roche** **WACKER** **SIEMENS** **morphosys** **MERCK SERONO**

**HelmholtzZentrum münchen**  
Deutsches Forschungszentrum für Gesundheit und Umwelt

**apceth**  
applied cell therapy

**LMU** **PHILIPS** **corImmuno**  
LMU MUNCHEN PHILIPS GERMANY

**TUM** **XL-protein**  
Improved Biopharmaceuticals

**GENEART**  
THE GENE OF YOUR CHOICE

**aurigon** **Life Science** **MAX-PLANCK-GESellschaft**

**micromet** **GE**

**proteros fragments** **biomax**  
biomax Informatics ag

**WILEX**  
Focused Cancer Therapies

**FGK** **AFFECTIS**  
PHARMACEUTICALS

**proteros biostructures** **PARTNERS HARVARD MEDICAL INTERNATIONAL**

**CORLIOLIS** **PharmaService GmbH** **itm**  
Isotopen-technologien münchen AG

**paktis** **antibody service** **Intana**  
Bioscience GmbH

**SuppreMol** **TRION**  
RESEARCH

**GenomatiX**  
understanding gene regulation

**mi**  
multi immune

**LMU KLINIKUM**  
DER UNIVERSITÄT MÜNCHEN

**Blutspendedienst**  
des Bayerischen Roten Kreuzes

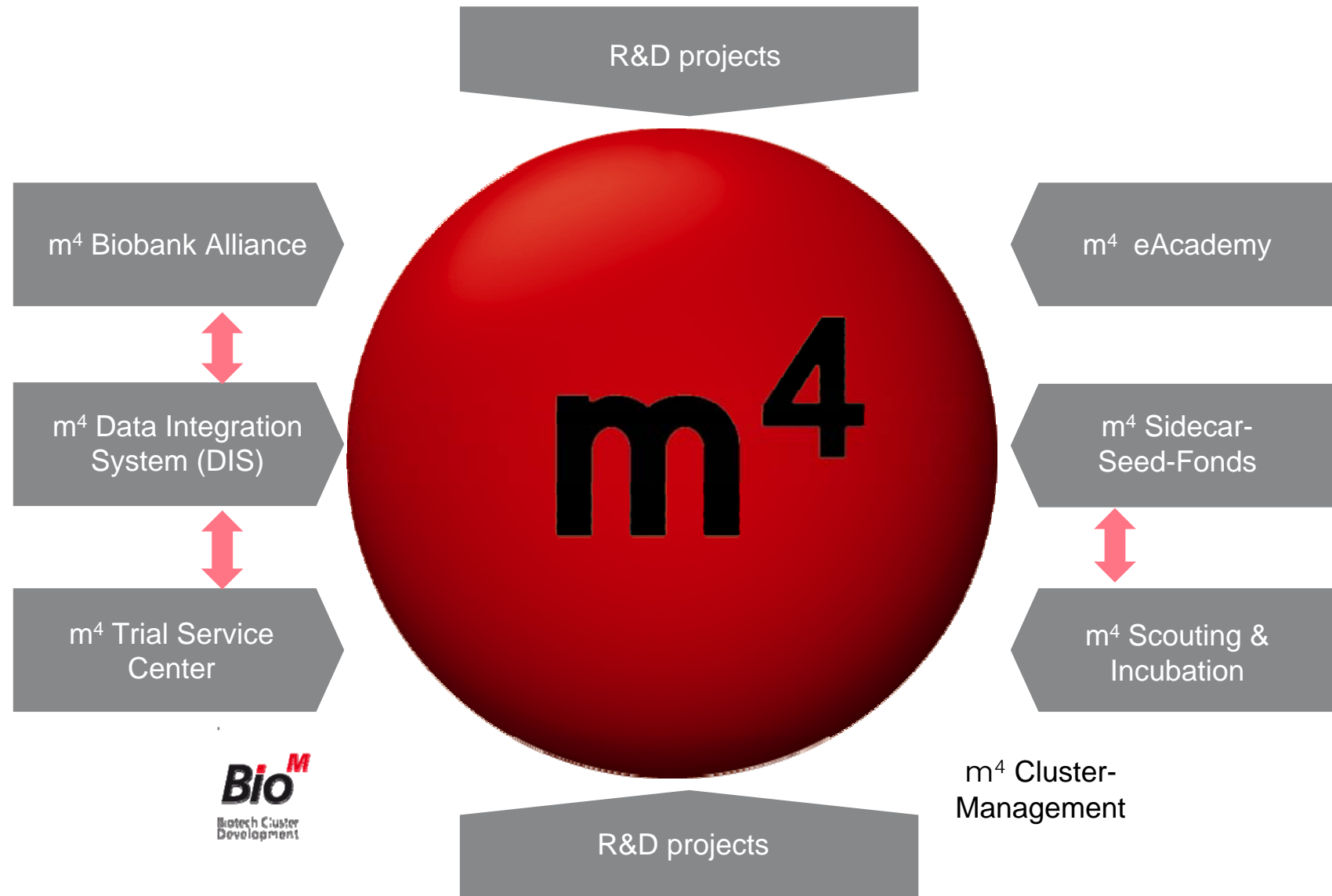
**KINAXO**  
Biotechnologies GmbH

**BIO SIGNA** **MEDICAL DIAGNOSTICS**

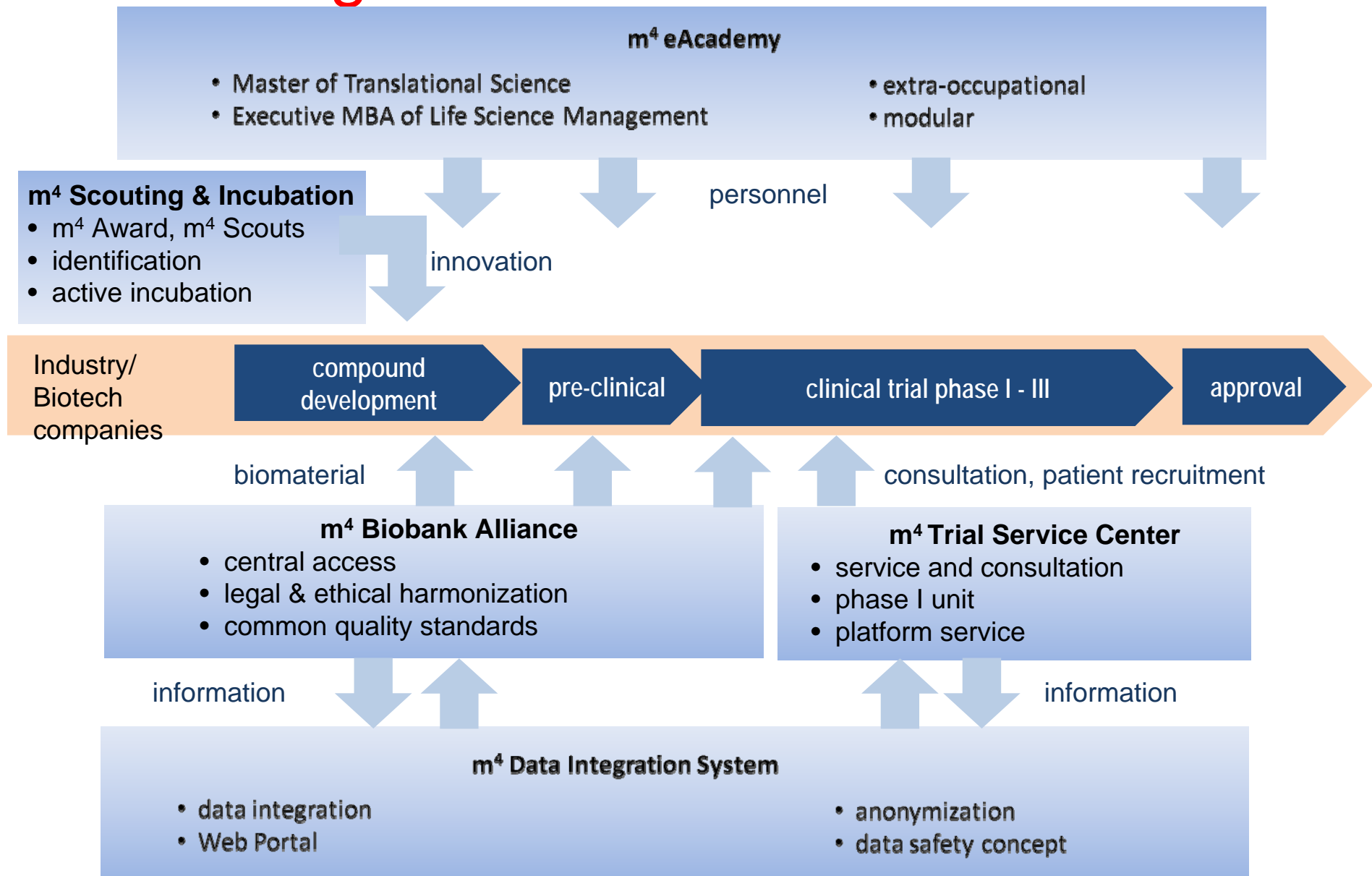
**ACTIVAERO**  
TECHNOLOGIES

**AMSilk**  
high performance antibodies

# m<sup>4</sup>-strategy of the Munich biotech cluster



# Integration of the infrastructure



Presseerklärung 26.1.2010:

**m<sup>4</sup> einer der 5 Gewinner**

**im Spitzencluster-Wettbewerb 2009/10 des BMBF**

- vom BMBF bewilligt: 40 Mio. €
- mit einem mindestens gleich hohen Anteil an Eigenfinanzierung der beteiligten industriellen Partner zu einem Gesamtvolumen von 80 Mio. € aufgestockt.
- Land Bayern: weitere rund 14 Mio. € für einen Ausbau des Clustermanagements, für Firmengründungen sowie für eine Zwischenfinanzierung besonders erfolgversprechender Projekte
- Mittel des bayerischen Staates zum Teil als Sockel für einen speziellen Fonds gedacht, in den weitere Finanzmittel von Investoren integriert werden sollen.
- das Gesamtvolumen beläuft sich damit auf fast 100 Mio. €.



# m<sup>4</sup> Biobank Alliance – current status

- + excellent resources of tissue and serum/plasma biosamples
- + established models for transfer of samples to industry and academia
  
- different SOPs and prospective description of samples
- missing models for quality management
- different biobanking models

# m<sup>4</sup> Biobank Alliance - aims

- standardized collection & supply of high quality biological samples
  - quality management in biobanking
  - uniform material access
  - discovery and validation of biomarkers
  - consideration of quality and structural demands of science and industry
  - integration of existing regional sample resources and data
  - central, standardized data acquisition and processing
  - installation of a central sustained support organization (access sharing)
- 
- funding 5 m€
  - funding period 5 years
  - project manager  
Prof. Dr. Dr. H.-Erich Wichmann,  
Helmholtz Zentrum München

# m<sup>4</sup> Biobank Alliance

key structure for biomarker identification  
central access to market-orientated sample collection

m<sup>4</sup> Data Integration System  
uniform IT-solution and central portal

common standards  
sample handling  
logistics  
SOPs  
quality criteria

sample collection  
sample examination

common  
organizational  
structure  
- marketing  
- ethical / legal  
framework  
- sustainability  
- common public  
interest

integration of biobank resources in Munich  
14 biobanks, 900,000 biosamples (tissue, serum, plasma, DNA, RNA)

# m<sup>4</sup> Biobank Alliance - structure

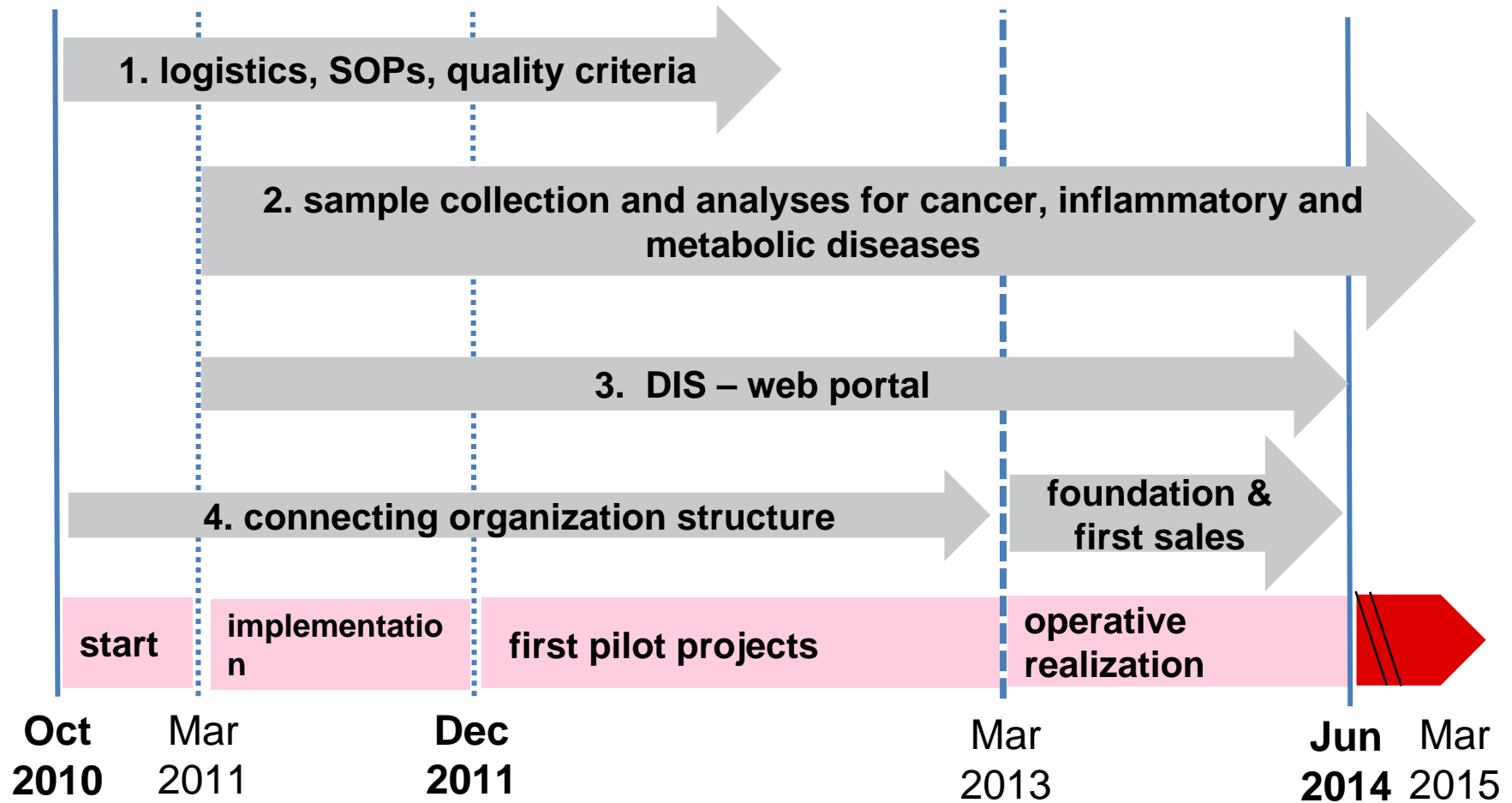
work package	title of work package	institution	PI
AP1	management of the biobank alliance	HMGU	Wichmann
AP2	development and implementation of SOPs for storage of tissue samples	TUM/LMU	Höfler/Kirchner
AP3	development of ,state of the art' analyses of tissue samples	TUM/LMU	Höfler/Kirchner
AP4	development and implementation of SOPs for storage of non tissue based biosamples	HMGU	Illig
AP5	development of ,state of the art' analyses of blood-based biosamples	HMGU	Meitinger
AP6	IT for the biobank alliance	TUM	Kuhn
AP7	collection and characterization of tumour tissues	LMU	Jauch/Thasler
AP8	collection and characterization of tissues and blood-based biosamples of inflammatory diseases	LMU	Jauch/Thasler
AP9	collection and characterization of tissues and blood-based biosamples of metabolic diseases	HMGU	Illig
AP10	concept of an exploitation plan	HTCR, LMU	Jauch/Thasler

# m<sup>4</sup> Biobank Alliance - content

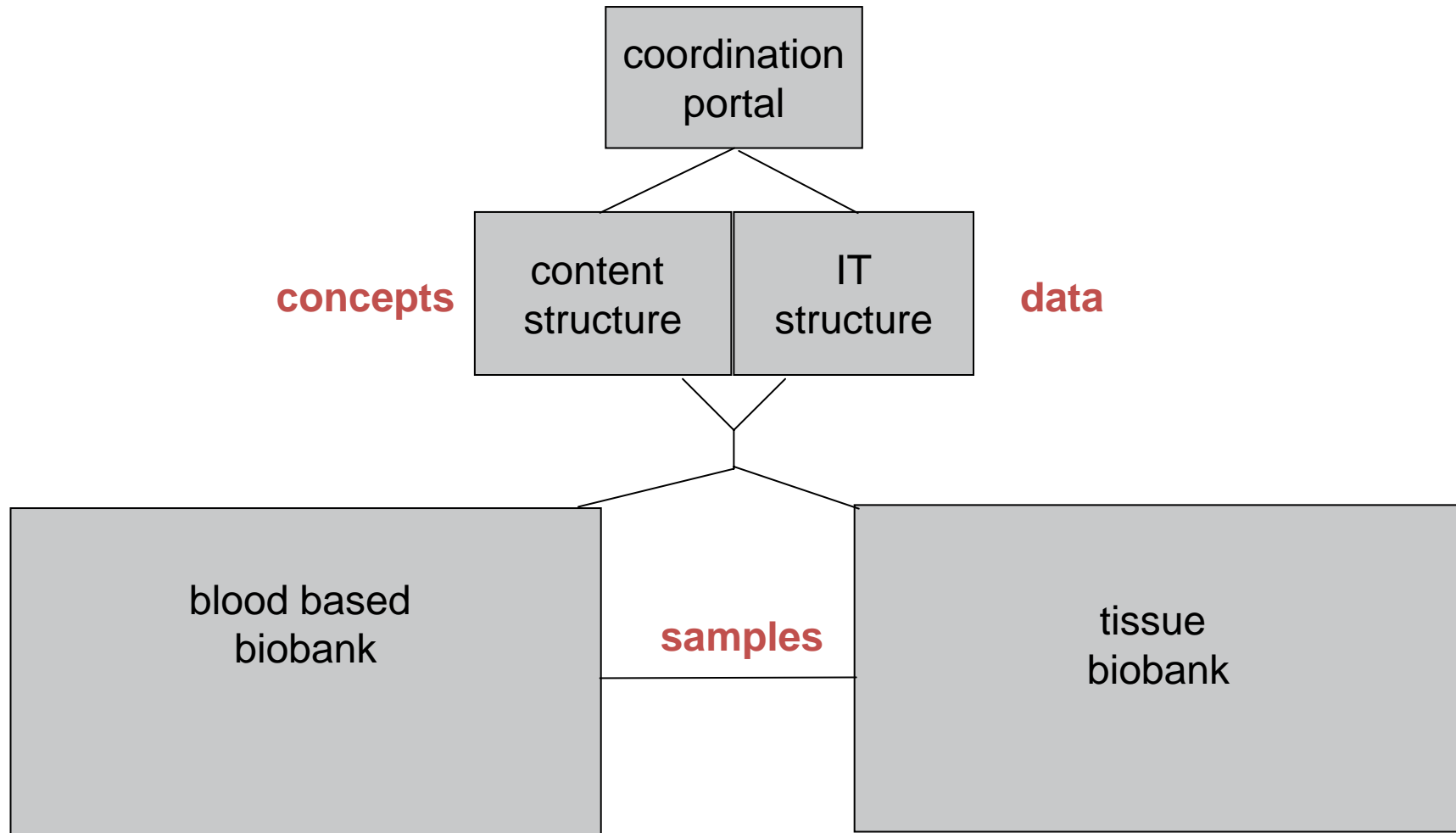
- standardization of sampling and sample processing (tissue and non tissue material)
- central data capture and utilization
- warranted data protection and data safety
- ethical and legal harmonization
- sample collection for cancer, inflammatory and metabolic diseases
- connection to m<sup>4</sup> Trial Center (biosamples/disease related data) and m<sup>4</sup> Data integration system (IT architecture, data protection concept)
- detailed market verification
- development of a business plan and founding of a new company
- public relation und marketing



# m<sup>4</sup> Biobank Alliance – time schedule



# m<sup>4</sup> Biobank Alliance - organization



# participation of existing Munich biobanks

## **Cardiovascular diseases**

- Existing donors: 29,000
- Expected donors within the next 5 years: 12,000
- Collection 1: early onset atrial fibrillation
- Collection 2: cardiovascular disease
- Collection 3: coronary artery disease
- Collection 4: myocardial infarction registry
- Collection 5: heart tissue

## **Diabetes/metabolic diseases**

- Existing donors: 74,000
- Expected donors within the next 5 years: 7,000
- Collection 1: type 1 diabetes, gestational diabetes
- Collection 2: type 2 diabetes families
- Collection 3: type 2 diabetes donors
- Collection 4: obese children



# participation of existing Munich biobanks

## **Lung diseases/allergies**

- Existing donors: 7,000
- Expected donors within the next 5 years: 3,000
- Collection 1: lung bronchoscopies
- Collection 2: tissue from lung tumours
- Collection 3: lung cancer in the young (blood)
- Collection 4: allergies

## **Neurological disorders**

- Existing donors: 31,000
- Expected donors within the next 5 years: 12,000
- Collection 1: stroke, neurodegenerative disorders
- Collection 2: schizophrenia, suicidal behaviour, dementia
- Collection 3: stroke
- Collection 4: brain tissue

# participation of existing Munich biobanks

## **Rare diseases**

- Existing donors: 8,000
- Expected donors within the next 5 years: 6,500
- Collection 1: developmental disorders
- Collection 2: neuromuscular disorders
- Collection 3: endocrine disorders

## **Tissues from pathology and surgery**

- Existing donors: 200,000 FFPE, 16,500 cryo-preserved
- Expected donors within the next 5 y: 150,000 FFPE, 12,500 cryo-preserved
- Collection 1: pathology TUM (mainly tumours)
- Collection 2: pathology LMU (mainly tumours)
- Collection 3: surgery LMU (tumours, liver and other non-malignant tissues)

# participation of existing Munich biobanks

## **Population-based biobanks**

- Existing donors: 124,000
- Expected donors within the next 5 years: 110,000
- Collection 1: general population Augsburg (KORA)
- Collection 2: Bavarian Blood Donor Service