

Considerations and Concepts for an Austrian Biobank Infrastructure



Medizinische Universität Graz



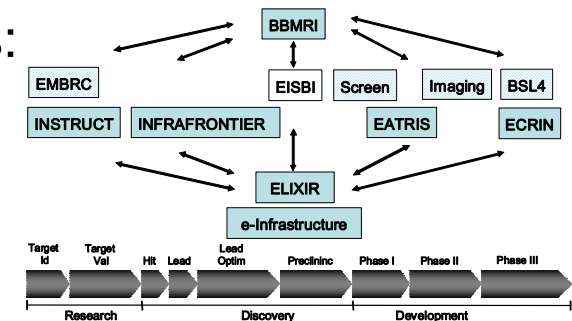
Meeting of the Austrian Biobank Network
9.07.2009

Univ.-Prof. Dr. Andreas Tiran

Biobanking in Austria: Status quo



- ▶▶ Accessibility to high quality samples/data is #1 roadblock in biomedical research → biobanks
- ▶▶ European research infrastructures in Life Sciences: revolutionary change of research landscape
- ▶▶ Austria assumes a leading role in BBMRI
 - ▶ one of the largest biobanks worldwide
 - ▶ forerunner operational concept of interdisciplinary biobank serving whole hospital
 - ▶ forerunner in international biobank community
- ▶▶ European Headquarter of BBMRI in Austria



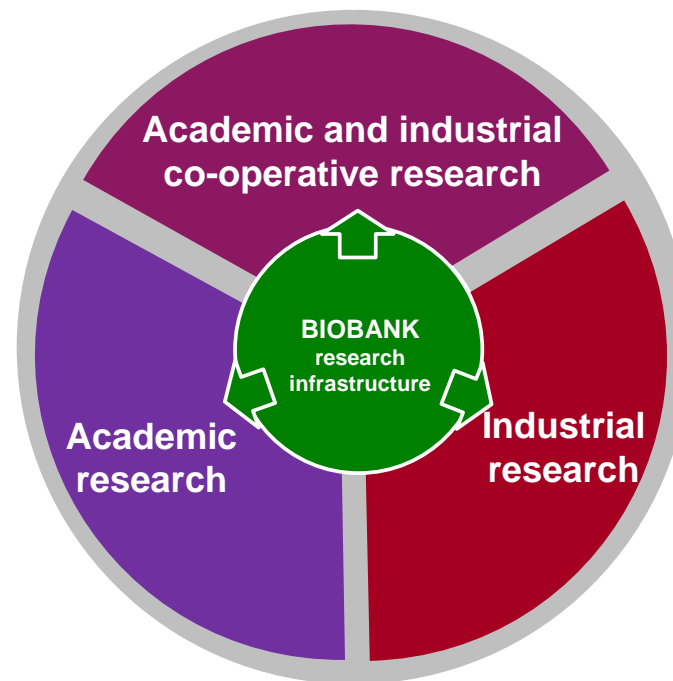
to take this chance
→ quick
→ joint action



Austrian Biobank Infrastructure BBMRI-AT

Foundation of BBMRI-AT as partition of the BBMRI network

- ▶▶ to position Austria among the leadership of the BBMRI community
- ▶▶ to create a large, nationwide critical mass of research potential



BBMRI-AT: Benefits



- ▶▶ Common usage and further development of best practice solutions
 - ▶ Informed consent
 - ▶ governance structures
 - ▶ IT solutions
 - ▶ SOPs (processes, sample handling)
 - ▶ data definitions and standards
 - ▶ questionnaires
 - ▶ quality management
 - ▶ data protection policy
 - ▶ calculation of costs and fees of biobanks
- ▶▶ enhance targeted collections, enrich informational content, improve accessibility
- ▶▶ provide basis for establishing large study cohorts, to qualify for participation in international study cohorts
- ▶▶ increase logistical and organisational stability of sample collections
- ▶▶ improve perspective for future national and international funding



Biobank of MUG → BBMRI-AT



nationwide biobank network?

How can some implement an ~~interdisciplinary clinical biobank~~ ?

▶▶ S i m p l i c i t y

▶▶ T r u s t

▶▶ R e w a r d



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Basic principles

- ▶▶ build-up on existing biobanks, achievements and expertises
- ▶▶ existing and emerging biobanks well-embedded in local and regional infrastructure and basing on local strengths and research interests
- ▶▶ access decision to samples and data remain with the sample collecting and data generating body

What should BBMRI-AT be?

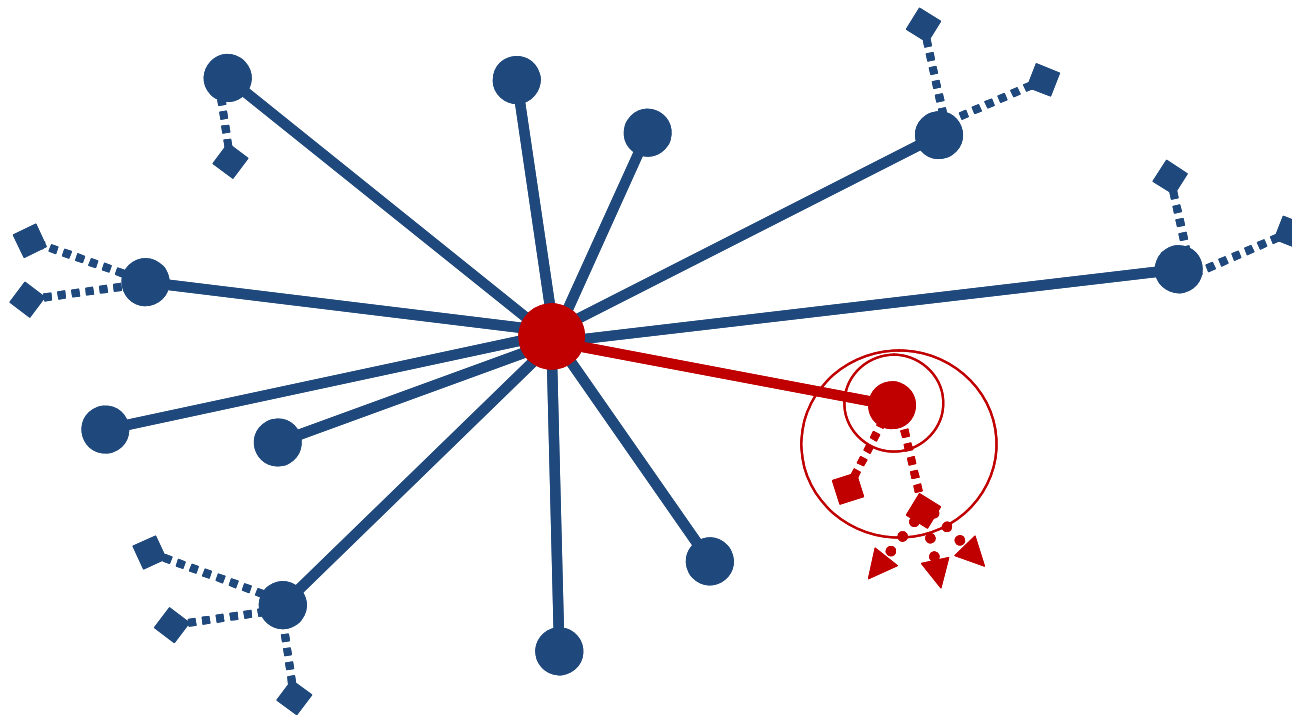
- ▶▶ distributed network of cross-anotated and connected biobanks
- ▶▶ closely connected to a network of technology facilities (-omics, bioinformatic)
- ▶▶ links in the network modeled on the „hub-and-spokes“-model
- ▶▶ national hub links BBMRI-AT to the European BBMRI infrastructure



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Hub-and-spokes structure of BBMRI



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Chances for BBMRI-AT

- ▶▶ European headquarter of BBMRI
- ▶▶ Contact point and integrator for eastern European biobank initiatives



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- ▶ Harmonization of Clinical Biobanks
SEEBI (South East European
Biobanking Initiative)
- ▶ Biobank-infrastructure
(TEMPUS)
- ▶ WHO/ IACR – training program

**BBMRI-AT as contact point and integrator center of
eastern European biobank resources**



Austrian Biobank Infrastructure BBMRI-AT



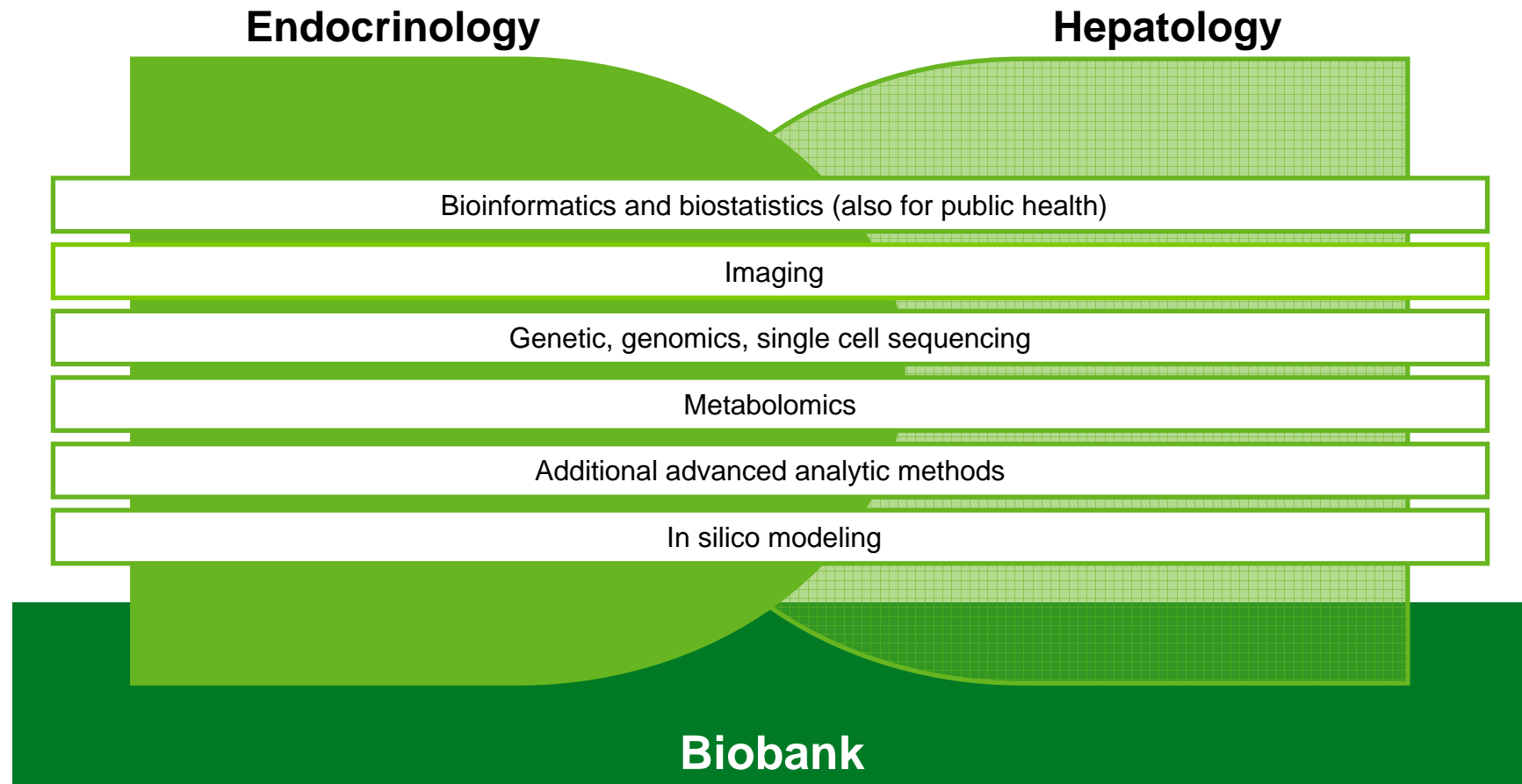
Chances for BBMRI-AT

- ▶▶ European headquarter of BBMRI
- ▶▶ Contact point and integrator for eastern European biobank initiatives
- ▶▶ Nationwide excellence center basing on biobank infrastructure (K-project Biomarker, Oncotyrol, ...)





Structure of planned K-Project



Austrian Biobank Infrastructure BBMRI-AT



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- ▶▶ Analyses centers

From a resource provider to a resource
integrator and value generator.



Austrian Biobank Infrastructure BBMRI-AT



Model: String of Pearl Initiative, The Netherlands

- ▶▶ 8 University Medical Centers
- ▶▶ Prospective, disease oriented collection network
- ▶▶ each center scientific coordinator for a disease entity

| University Medical Center | Disease entity |
|---------------------------|----------------------------|
| AMC | Inflammatory Bowel Disease |
| LUMC | Rheumatoid Arthritis |
| UMCU | CVA |
| UMC St. Radboud | hereditary Bowel cancer |
| ErasmusMC | Leukemia |
| MUMC | Dementia |
| VUMC | Diabetes |
| UMCG | Renal diseases |

Disease based harmonization, broad commitment



Requirements for a biobank to join BBMRI-AT I



- ▶▶ General principles
 - ▶ purpose of biobank is research
 - ▶ commitment to goals and strategies of BBMRI and OECD guidelines
 - ▶ share best solutions and knowledge in network

- ▶▶ Implementation of legally and ethically appropriate governance structure and organisation
 - ▶ establishment of biobank as a clear defined organisation, decision bodies and responsibilities
 - ▶ clear and transparent access policy
 - ▶ implementation of an appropriate data protection policy
 - ▶ approval of the biobank by the local Ethical Committee, registration by DVR
 - ▶ set up of quality assurance measures, set up of a QMS where appropriate



Requirements for a biobank to join BBMRI-AT II



- ▶▶ Samples and data
 - ▶ readiness to share samples and data with external cooperation partners
 - ▶ readiness to take part in a standardization and harmonization process (evidence based SOPs, common data standards)

- ▶▶ BBMRI concept of network wide search for samples
 - ▶ interphase to BBMRI meta databases

- ▶▶ Financing and sustainability
 - ▶ personel and technical resources to meet minimal requirements of guidelines (personel, IT and storage systems, lab space and equipment)
 - ▶ business plan to secure longterm funding

- ▶▶ BBMRI-AT
 - ▶ joint development of structure and operational concept of BBMRI-AT
 - ▶ active contributions to BBMRI-AT working parties



Role models according to types of biobanks



| Type of BB | Example | Tasks within BBMRI | Public liaison | Development of technical biobank solutions | | Quality management | Technical equipment, security | BBMRI IT network | Education, training | Intern. Boards (guidelines, research strategies of OECD, ESFRI) |
|--|--|--|---|--|----------------------------------|--|---|--|--|---|
| | | | | Evidence based SOPs | IT, storage systems, disposables | | | | | |
| National coordinating BB | Inter-disciplinary BB of university | <ul style="list-style-type: none"> External representation Coordination on national level Coordination/sample handling in multicenter research projects | <ul style="list-style-type: none"> National coordination of PL Contact to stake holders, donor groups BBMRI-AT website | ✓ | ✓ | Complete QMS, certification | <ul style="list-style-type: none"> High throughput sample processing capacity Automated storage systems 24h technical inspection service | <ul style="list-style-type: none"> Operation of National BBMRI server Automated update of sample data National coordination of requests | National coordination Organisation of training programs | ✓ |
| Central BB | Inter-disciplinary BB of university | <ul style="list-style-type: none"> Coordination on regional level Coordination /sample handling in multicenter research projects | <ul style="list-style-type: none"> Regional coordination of PL Website | (✓) | (✓) | Complete QMS, certification | <ul style="list-style-type: none"> High throughput sample processing capacity Automated storage systems 24h technical inspection service | <ul style="list-style-type: none"> Automated update of sample data Regional coordination of requests | Organisation of BB training programs | (✓) |
| Special BB of institutes or workgroups | MyoBank Wien | Specialized know-how | <ul style="list-style-type: none"> Specific donor information Website | (✓) | -- | Quality assurance (minimal requirements) | Specialized equipment according to research focus (on call duty?) | Regular update | Specialized know-how | (✓) |
| Study cohort | ÖSVS | Scientific excellence | <ul style="list-style-type: none"> Specific donor information Website | -- | -- | Quality assurance (minimal requirements) | Standard equipment for sample collection (on call duty?) | Regular update | -- | (✓) |
| Sample collection center | Hospital (LKH), blood donation center (RK) | Enlarge sample collection | -- | -- | -- | Quality assurance (minimal requirements) | Standard equipment for sample collection (on call duty?) | Regular update | -- | -- |

BB must be a major research area

BB as perfect support function for university

user of BB infrastructure

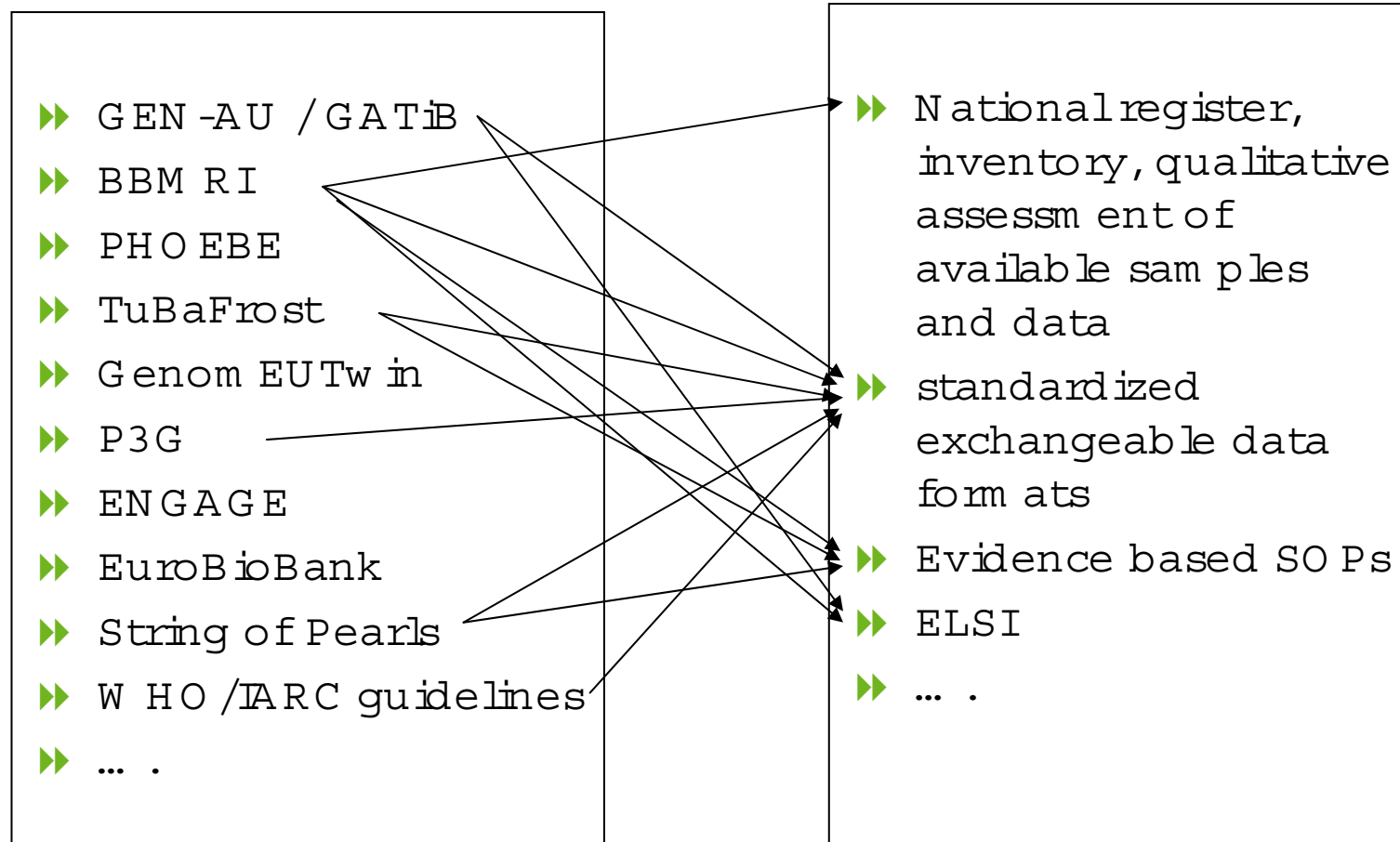
Governance and Funding of BBM RI-AT

- ▶▶ Establishment of the BBM RI-AT consortium as a legal person (workgroup, society, non-profit organization, ...)
 - Initiation by bm .w f
 - Central management
 - Steering group (expert representative from all institutions)
 - International Scientific Advisory Board
 - Working parties
 - Database development, ICT
 - Technological issues (SOPs, ...)
 - Ethical, legal, social issues

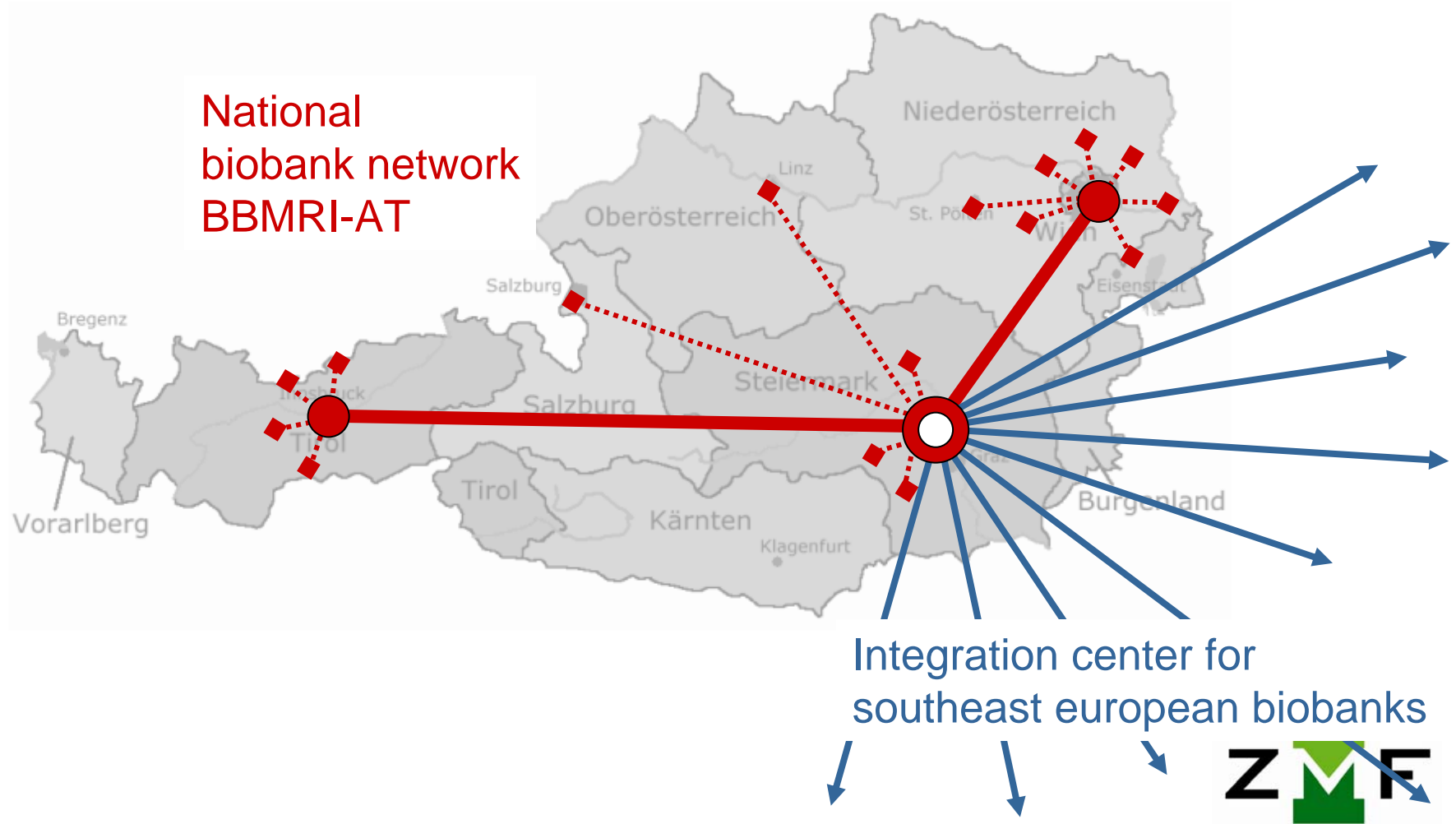
- ▶▶ Funding of BBM RI-AT
 - Membership fee
 - Performance agreement of universities (Leistungsvereinbarung) with ministry
 - Research grants
 - ...



BBM RI-AT working parties



National Biobank Network BBMRI – AT



○



Zentrum für Medizinische Grundlagenforschung

Thank you for your attention!