

Chances and Challenges of Creating a **RESEARCH INFORMATION** Platform for the Berlin University Alliance

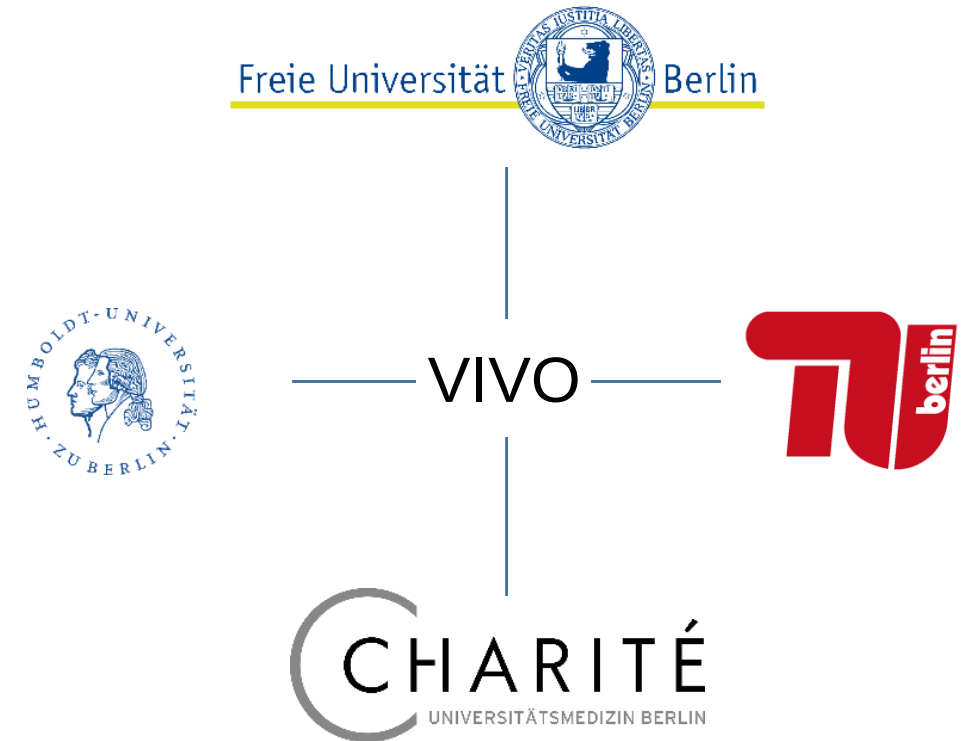
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BERLIN UNIVERSITY ALLIANCE

- The Berlin university alliance was founded in 2018 to encourage cooperation and facilitate the shared use of resources.
- Since the research process is undergoing digital transformation, our endeavor is to support the BUA by developing a platform for research information using VIVO.



PROJECT GOALS



Within the framework of Berlin University Alliance,
a platform for a structured and transparent
presentation of research information

Data linking: Semantic Web technology of the
"VIVO" software



Start: May 2021



Runtime: Dec. 2023



Funded by the Federal Ministry of Education
and Research (BMBF) and the state of Berlin
under the Excellence Strategy of the Federal
Government and the Länder.

COMMUNITY AND OUTREACH



Network:
BUA/GE/INT



Twitter



VIVO Talks:
Regular Events



HU-internal
Communication



Project-Webseite
and articles



Conferences and
workshops



Mailing list

Opportunities

- ☑ One research information platform for 3 universities + Charité
- ☑ Connect researchers to their work across disciplines and beyond boundaries
- ☑ Improve the visibility and discoverability of expertise
- ☑ Facilitate new research collaborations across disciplines
- ☑ Automated data harvesting from multiple sources
- ☑ Discovery through analytics and visualization tools
- ☑ Maintain public trust through transparency

DATA SOURCES

- 3 Clusters of Excellence:

- Matters of Activity
- Neurocure
- Science on Intelligence

+ Grand Challenges Projects (Social Cohesion)

DATA SOURCES



The researchers themselves → should currently be avoided for time limitations.



Differently formatted research information from each BUA partner → a lot of manual labor and difficult to keep the system up to date. Cannot be completely avoided.



Data harvesting though APIs → update, cleaning, and normalization of data. Scripts combine data from different APIs minimizing manual labor informing paths towards semi-automated pipelines.

CHALLENGES

- ☑ Protection of personal data
- ☑ Quality of available data
- ☑ Prejudice against open data records
- ☑ Creation of representative taxonomies and ontologies
- ☑ Using the correct semantics for four partners

UNDER DEVELOPMENT

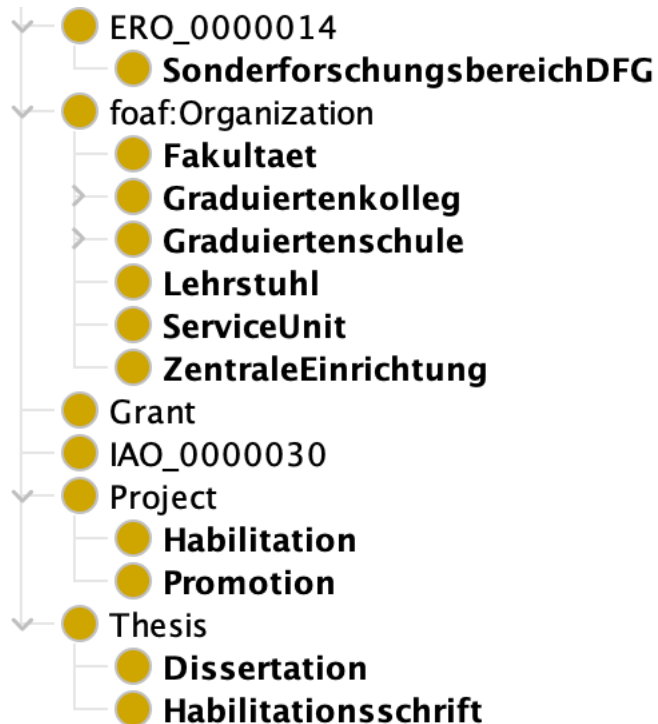
- Data classification schemas (disciplinary and interdisciplinary)
- Intermediary database for data protection control
- Text Mining (Title, Abstracts) to classify works
- Ontology to link structures of the BUA member organizations

ONTOLOGY EXTENSIONS

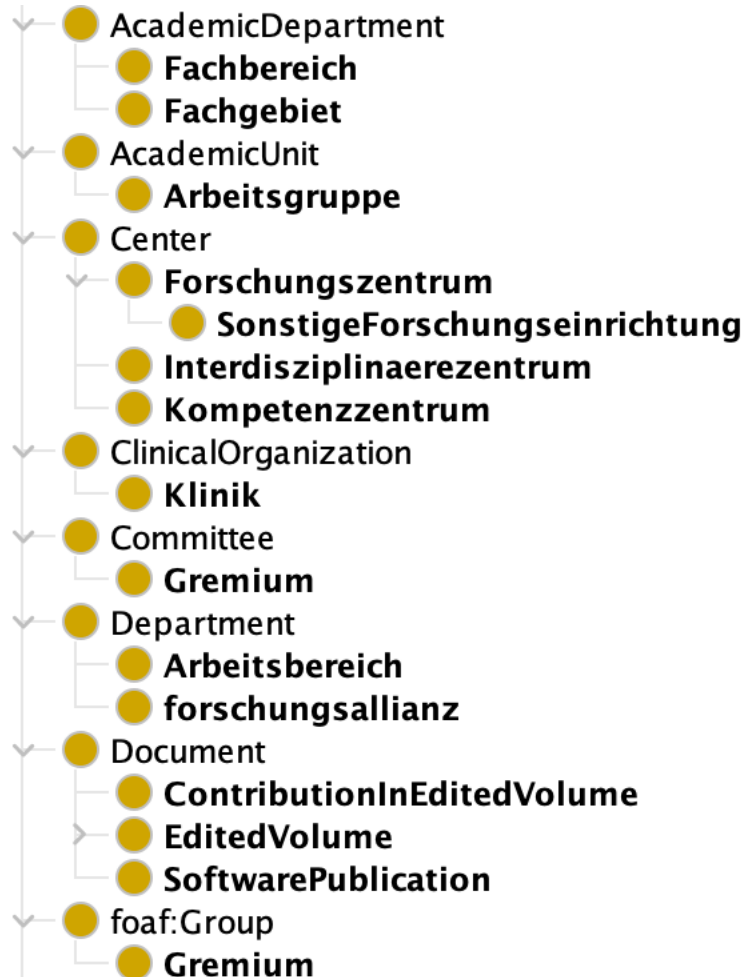
- Extension of the VIVO ontology for BUA-specific academic entities.
- Ontology for disciplinary data classification using [EUDAT-B2FIND](#) list
- Ontology for interdisciplinary data classification using the list of [Research Core Dataset](#).
- Ontology for BUA organigram

ONTOLOGY EXTENSIONS

VIVO.DE



VIVO-BUA



DISCIPLINES ONTOLOGY

- + Engineering Science
- + Humanities
- + Life Sciences
- + Natural Sciences
- + Social and Behavioural Sciences

- - Engineering Science
 - + Computer Science, Electrical and System Engineering
 - + Construction Engineering and Architecture
 - + Materials Science and Engineering
 - + Mechanical and industrial Engineering
 - + Thermal Engineering/Process Engineering
- - Humanities
 - + Ancient Cultures
 - + Fine Arts, Music, Theatre and Media Studies
 - + History
 - + Linguistics
 - + Literary Studies
 - + Philosophy
 - + Social and Cultural Anthropology
 - + Theology and Religion Studies
- - Life Sciences
 - + Agriculture, Forestry, Horticulture and Veterinary Medicine
 - + Biology
 - + Medicine
- - Natural Sciences
 - + Chemistry
 - + Mathematics
 - + Physics
- - Social and Behavioural Sciences
 - + Economics
 - + Education Sciences
 - + Jurisprudence
 - + Psychology
 - + Social Sciences

- Engineering Science
 - - Computer Science, Electrical and System Engineering
 - - Computer Science
 - Artificial Intelligence, Image and Language Processing
 - Computer Architecture, Computer Engineering and Embedded Systems
 - Information Science
 - Operating, Communication, Library and Information Systems
 - Research Data Management
 - Software Technology
 - Theoretical Computer Science
 - + Electrical Engineering
 - + Systems Engineering
 - + Construction Engineering and Architecture
 - + Materials Science and Engineering
 - + Mechanical and industrial Engineering
 - + Thermal Engineering/Process Engineering
- Humanities
 - - Ancient Cultures
 - Ancient History
 - Archaeology
 - Classical Archaeology
 - Classical Philology
 - Egyptology and Ancient Near Eastern Studies
 - Prehistory
 - + Fine Arts, Music, Theatre and Media Studies
 - + History
 - + Linguistics
 - + Literary Studies
 - + Philosophy
 - + Social and Cultural Anthropology
 - + Theology and Religion Studies

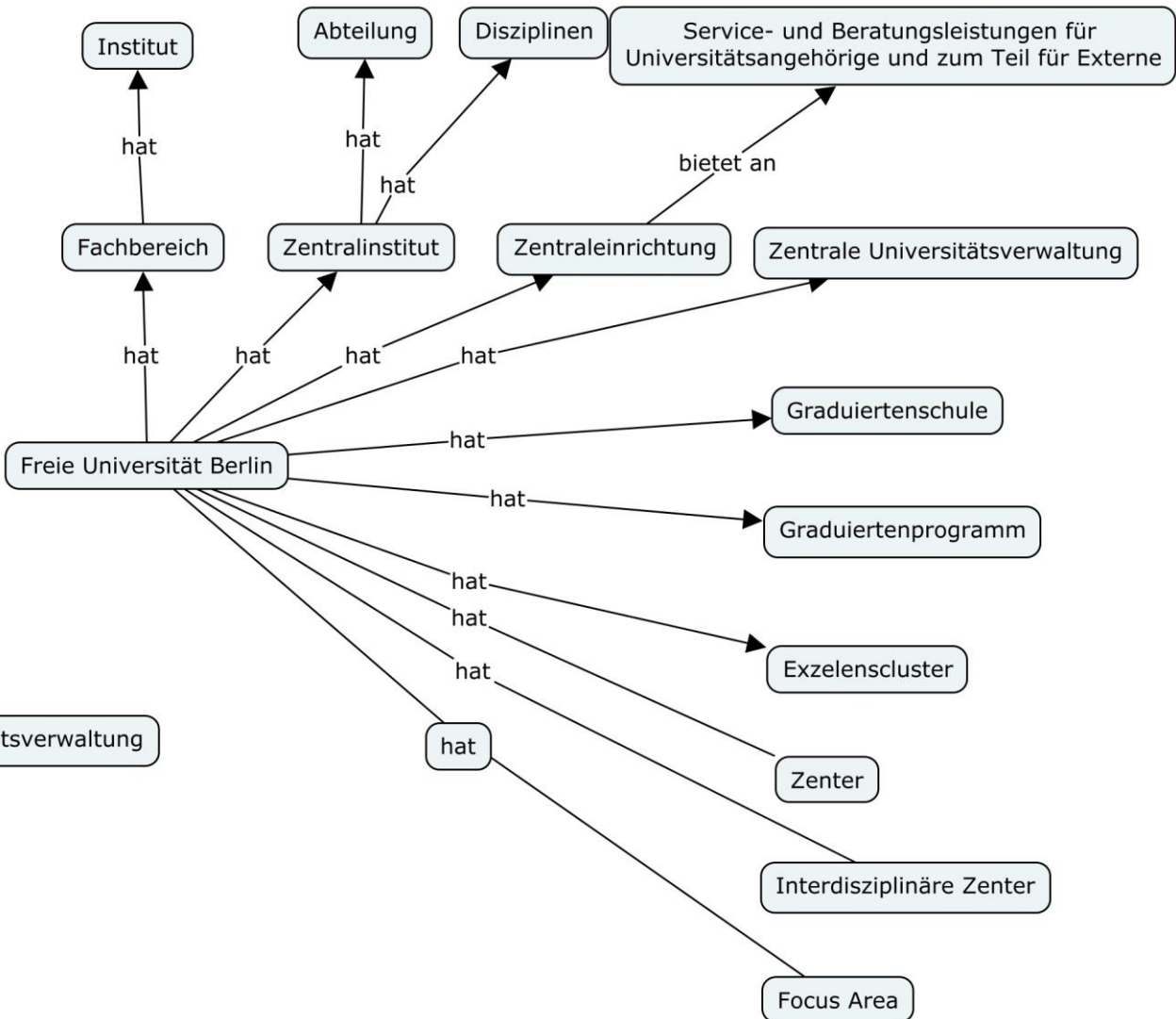
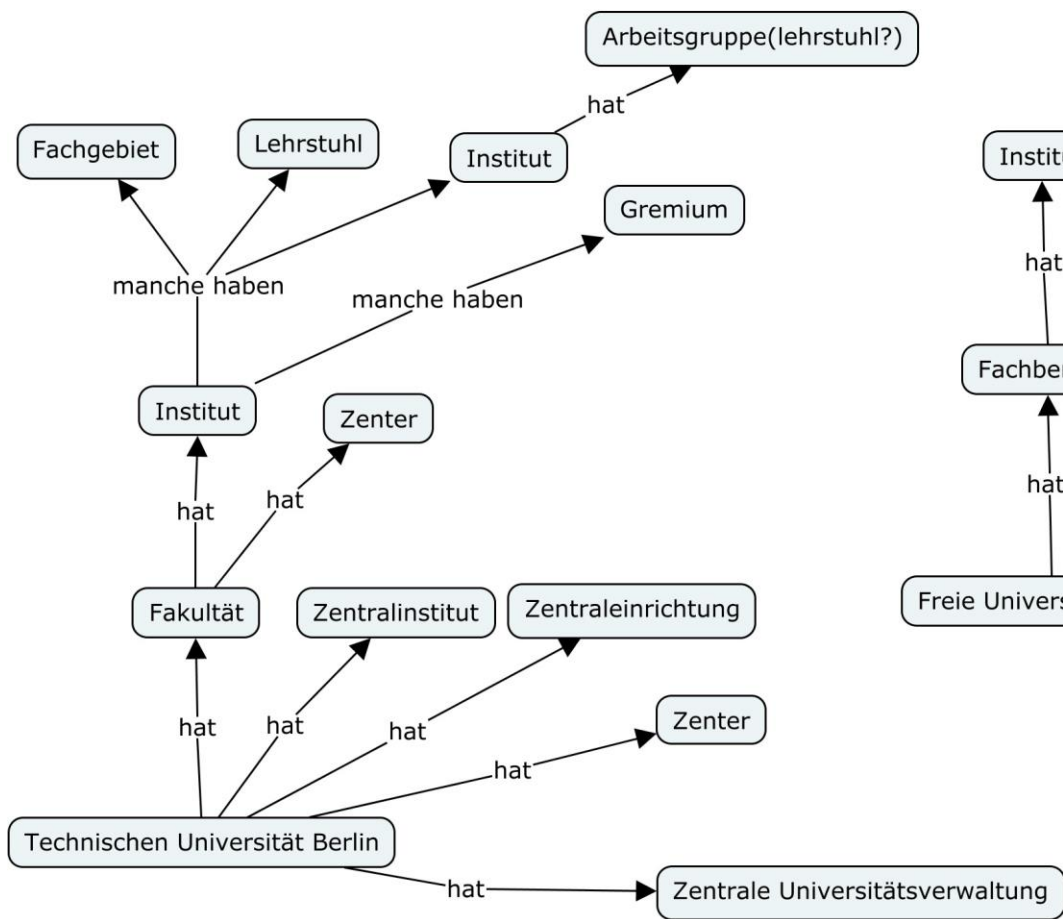
- + Work and Economy
- + Earth and cosmos
- + Globalization and sustainability
- + Industry
- + Information technology
- + Infrastructure
- + Cognition and knowledge
- + Culture
- + Life and wellbeing
- + Materials
- + People and Society
- + Nature and environment
- + Technology
- + Science

- - Work and Economy
 - Working world and design
 - Work and Economy - General
 - Digital Economy
- - Earth and cosmos
 - Earth and cosmos - General
 - Matter
 - Planet Earth
 - Regions of the world
 - Space
- - Globalization and sustainability
 - Development Cooperation
 - Globalization and Sustainability - General
 - Migration
 - Sustainability
- - Industry
 - Disposal and recycling
 - Industry - general
 - Smart Production
 - Robotics
- - Information technology
 - Information security
 - Information systems
 - Information technology
 - Information technology - general
 - Internet of things
 - Artificial intelligence and big data
 - Simulation research

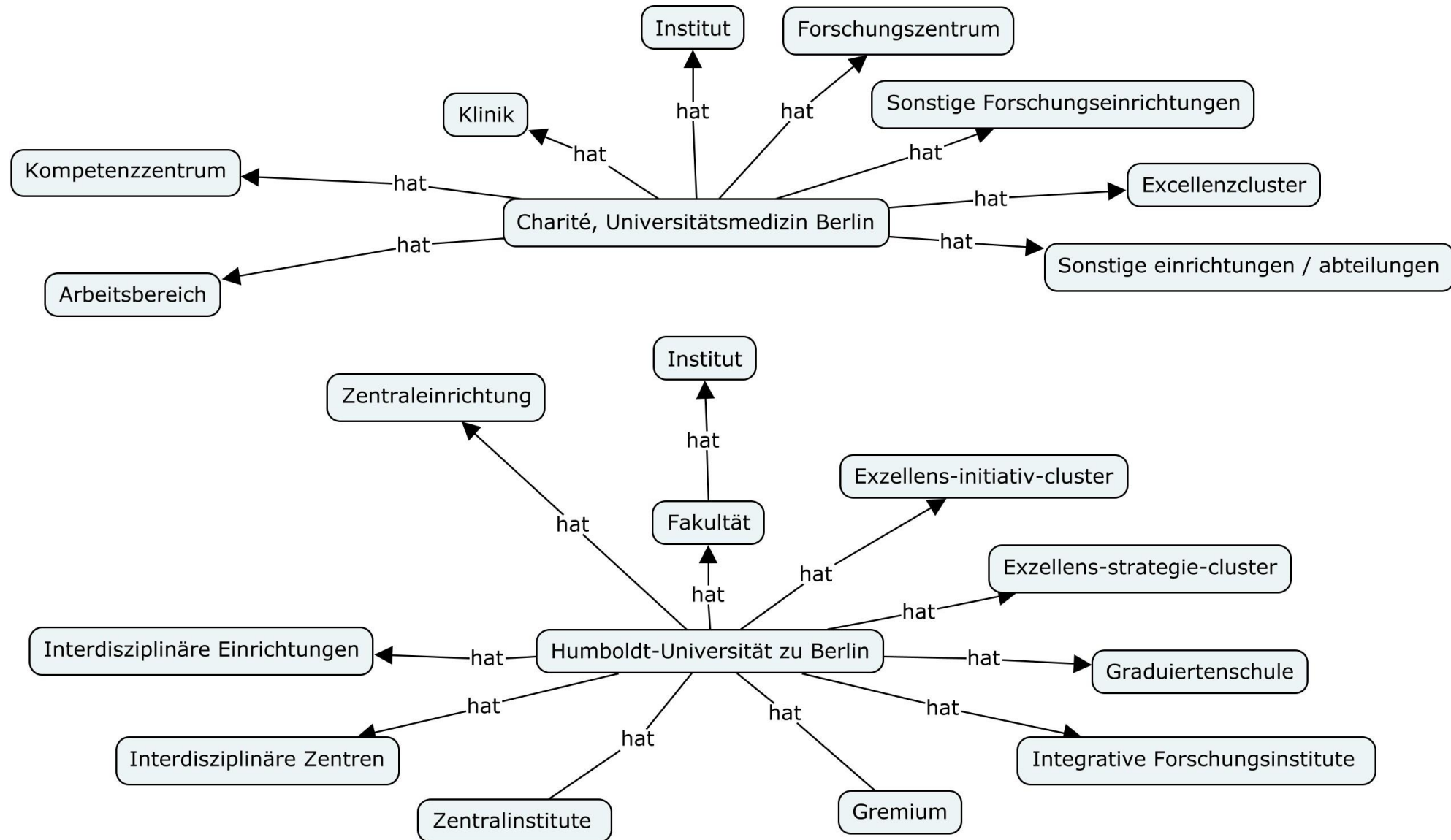
- Metropolitan areas and urban development
- Building and living
- Infrastructure - general
- Infrastructure and networks
- Mobility, transport and traffic
- - Cognition and knowledge
 - Innovation
 - Cognition and Knowledge - General
 - Learning and learning processes
 - Human brain
 - Language and language learning
 - Knowledge transfer and knowledge representation
- - Culture
 - Creativity and performance
 - Culture - general
 - Cultural goods and heritage
 - Media
- - Life and wellbeing
 - Artificial or synthetic life
 - Life and Wellbeing - general
 - Living beings
 - Disease prevention
 - Therapy and healing
 - Cells and genes
- - Materials
 - Materials - General
 - Surfaces and interfaces
 - Polymers
 - Elementary Materials

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ORGANIGRAM ONTOLOGY



ORGANIGRAM ONTOLOGY



NEXT STEPS

- Demonstrator (Metrics and Visualizations).
- Integration of more data within the BUA
- Development of stable Pipelines
- Multiple Frontends for different Alliance members
- Multilingual Support for multiple stakeholders
- Handling of general data protection regulation

THANK YOU!