

Scaling KDSF-Compliant CRIS Infrastructures: From the Regional Lusatian Research Portal to a Federal State-Wide CRIS for Brandenburg, Germany

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The transformation of research information management has become a central concern for research-performing organisations, funders, and policy-makers. Increasing demands for transparency, standardised reporting, and strategic use of research information require robust Current Research Information Systems (CRIS) and interoperable research information infrastructures. In Germany, these developments are closely linked to the Research Core Dataset (in German: Kerndatensatz Forschung; KDSF), a national standard designed to harmonise research information across institutions and administrative levels¹. Against this background, the planned project FiLa@FIP-BB aims to develop, implement, and evaluate KDSF-compliant CRIS infrastructures, embedded in a regional transformation context and oriented towards long-term federal-state-wide integration.

The project is located in the Lusatia region, which is currently undergoing a profound structural transformation due to Germany's coal phase-out. Beyond economic diversification and industrial renewal, this transformation emphasises the strengthening of the regional science and innovation ecosystem. Universities and research institutions are expected to act as drivers of knowledge creation, innovation, transfer, and skilled workforce development. For this end, the German government provides extensive funds to establish new research institutions in the region. The visibility and accessibility of research activities in the region are a critical challenge for the on-going economic transition. The planned development of CRIS-based research information portals is therefore intended to provide a strategic instrument for science

¹ <https://www.kerndatensatz-forschung.de/>

communication, regional development, evaluation and evidence-based policy-making, especially to create local links between research institutions.

Within the context of the project, two closely interlinked objectives are pursued. The first objective is to design and implement the Lusatian Research Information Portal (FIPL) as a KDSF-compliant, CRIS-based infrastructure to systematically aggregate and communicate research information for the region. The second objective is to use this regional portal as a living laboratory for the development of a nucleus of a federal-state-wide Research Information Portal for Brandenburg (FIPB), focused on standardised reporting, interoperability, and administrative efficiency. The overarching goal is to demonstrate how regionally anchored CRIS infrastructures can be scaled into federal-state-level research information systems while maintaining data quality, coherence of governance, and institutional autonomy.

The FIPL is planned as a multi-purpose CRIS-based research information portal, designed to serve different stakeholder groups. For the general public and potential skilled professionals, it will provide accessible and up-to-date information on research topics, institutions, and innovation activities in the Lusatia region. For the scientific community, it is intended to provide structured and detailed research information aligned with national standards. Technically, the portal will be based on a shared, extensible KDSF 2.0-compliant data model, enabling automated data exchange from institutional CRIS at participating organisations. Research information is expected to be updated regularly through technical interfaces to ensure timeliness and consistency, while avoiding redundant data collection.

The software to be used is based on a flexible information platform that provides basic functions for data integration, workflow-based data validation, and structured data preparation. Adaptation to individual use cases is implemented via a configuration file that is independent of the software, contains the system description, and can be easily adapted to changing requirements. This combines the advantages of standard software with the strengths of customized software.

The initial contributors to the FIPL are two institutions with markedly different organisational starting points: the Brandenburg University of Technology Cottbus–Senftenberg, an established technical university with a wide range of subjects that is currently in the process of establishing a CRIS implementation, and the Medical University of Lusatia – Carl Thiem, a newly founded medical university in the process of building its research information structures. This constellation is intended to allow the planned project to investigate KDSF-based CRIS implementations under contrasting institutional conditions. The experiences, anticipated challenges, and best practices will be systematically documented and used to develop a transferable guideline for CRIS introduction and operation.

Building upon the FIPL, the nucleus of the Brandenburg Research Information Portal (FIPB) will be developed. In contrast to the regional portal, the primary focus of the FIPB is not public science communication but the standardised provision of research

information for reporting and governance purposes at the federal state level. The portal will be designed to generate KDSF-compliant standard reports as well as flexible, non-standardised analyses for the federal government of Brandenburg. By relying on automated data exchange from institutional CRIS, the FIPB is expected to significantly reduce the administrative burden associated with recurring reporting obligations while improving data consistency and transparency.

A key design principle of the FIPB is interoperability by design. All participating institutions are expected to provide research information via technical interfaces and maintain regular automated updates. The portal architecture is explicitly designed to allow the integration of additional universities and research organisations during and after the project runtime. This scalable approach reflects the project's ambition to contribute not only to regional development but also to the long-term evolution of a state-wide CRIS infrastructure aligned with national and international standards.

Methodologically, the project will follow a living lab approach, combining technical development with organisational implementation and scientific analysis under real-world conditions. Core elements will include co-design workshops with stakeholders from research management, administration, and policy, iterative user testing, and continuous feedback loops addressing usability, governance, and data quality issues. This approach is intended to ensure that the resulting infrastructures are both scientifically grounded and operationally viable.

A central component of the project is its planned scientific accompanying research, which will systematically analyse the expected regional and administrative effects of the developed CRIS infrastructures. Two guiding research questions structure this work. First, the project will investigate how the Lusatian Research Information Portal is expected to influence the perception of the region as a research and innovation hub and whether enhanced visibility contributes to regional attractiveness for knowledge-intensive industries and skilled professionals. Second, it will examine to what extent the Brandenburg Research Information Portal improves efficiency, standardisation, and acceptance of research reporting processes at the federal state level. These questions address complementary impact dimensions: external visibility and regional development on the one hand, and internal efficiency and governance on the other.

To answer these questions, the project will employ a mixed-methods design combining quantitative and qualitative approaches. Web footprint analyses will be used to measure changes in the digital visibility of research activities. Surveys and interviews with institutional and policy stakeholders will capture perceptions, acceptance, and organisational effects. In addition, the project will analyse existing reporting obligations of Brandenburg universities to identify automation potential and structural redundancies. Key performance indicators are defined to monitor progress and assess expected impacts, including visibility metrics, reductions in reporting effort, and user satisfaction.

Sustainability is addressed at both institutional and systemic levels. The participating universities are expected to secure the long-term operation of their CRIS and the associated research information portals using institutional resources. For the federal-state-wide portal, cooperative governance and financing models involving additional institutions and federal-state-level actors are planned. By embedding sustainability considerations into the technical architecture and governance design, the project is intended to ensure that the developed infrastructures remain operational and adaptable beyond the project duration.

In summary, the planned project FiLa@FIP-BB aims to contribute to the euroCRIS discourse by demonstrating how KDSF-compliant CRIS infrastructures can be developed, evaluated, and scaled from a regional to a federal-state-wide level. The project integrates standards-based data modelling, interoperable system architectures, governance considerations, and a living lab framework. Its expected outcomes will provide transferable insights for institutions, regions, and policy-makers seeking to leverage CRIS as strategic infrastructures for research visibility, reporting efficiency, and evidence-based science governance-particularly in contexts of regional transformation.

Keywords:

Research Core Dataset (KDSF), living lab, research visibility, interoperability, research reporting