

BOKU University has been developing its own FIS for over 25 years and is now taking the next step

On the initiative of the Ministry of Science, Austrian universities began developing research documentations at the end of the 1990s. Statutory requirements for universities (UG 2002, Intellectual Capital Reporting Act etc.) very quickly necessitated further development of these initial solutions in the direction of research information systems in order to fulfil these requirements (e.g. various research indicators for intellectual capital reports and performance agreements). Specific tools were also developed to provide BOKU researchers with a better tool for their own research activities within the university. BOKU University is now one of the few universities in Austria that relies exclusively on an in-house development of the research information system ("FIS") in order to react to changing requirements in a targeted manner at all times and to ensure the best possible integration into the university's own IT landscape. The following two Austrian universities – University of Klagenfurt (AAU) and TU Wien - also rely on in-house development or open-source solutions, while most other universities currently have no specific plans or are turning to commercial solutions, most notably PURE.

A special feature of BOKU's own development has always been its openness to cross-university co-operation. Thus, both in the initial phase and in the first development phase after the implementation of the UG 2002, it was possible to gain long-term university cooperation partners for the further development of the system, most recently the Medical University of Graz and the University of Veterinary Medicine, Vienna in 2005.

In 2014, the long-needed reprogramming (including further development) of the BOKU FIS was started with the help of public funds (HRSM), which were made available by the Ministry of Science through a national tender in the area of "Administration". The aim was to develop a modern, up-to-date application that would cover the following aspects, among others: increasing user-friendliness through bilingual, barrier-free data collection with a focus on sustainability, optimizing interfaces, in-depth documentation in the technical and content areas and implementing export functions for BOKU researchers.

After several years of reprogramming, interrupted by necessary developments in the area of project management (adaptation to EU state aid law; internal implementation recommendations) and unfortunately also delays (coronavirus), the "FIS3+" project went live on 4 March 2024. FIS3+ currently consists of the personal profile section with publications, lectures and community services, similar to most commercial systems. Publications are imported from Web of Science, Pubmed and, since March 2024, Scopus. Media contributions have also been added: Thanks to a strategic collaboration with Observer GmbH, which screens national print media and web portals in Austria, Germany and Switzerland on behalf of BOKU University and imports media contributions into FIS3+ via an interface, as well as the collaboration with the Association of Austrian Private Broadcasters, which provides radio contributions with a BOKU research reference "open", it was possible to develop data entry forms for customized media contributions in print and online media as well as radio and television for BOKU researchers.

On the technical side, the modular structure of FIS3+, optimized rights and role management, the use of API interfaces, login via Shibboleth and improved integration into the BOKU IT landscape should be mentioned. Test automation software ("Ranorex") has also been implemented for the first time, which represents a quantum leap in the verification of data entry forms (negative/positive testing etc.)! FIS3+ is to be certified in the near future (WACA, Web Accessibility Certificate).

The "Third-party funded projects" part is still in the "old" system and represents the electronic project file (from the idea via application to project completion). This part is to be

reprogrammed in the next development phase (see Outlook). At BOKU University, the research information system (FIS) is the upstream system for SAP. Project applications must be documented in FIS, for which the first cascading management processes were programmed a few years ago; depending on the type, size and strategic importance of the project, the approval process for project submissions extends all the way to the Rectorate. Acquired projects must be fully recorded in FIS so that SAP internal orders are generated in FIS and all relevant data for statutory reporting is documented. All individual SAP postings for the projects are mapped via DWH so that the project managers always have an up-to-date overview of the financial management of each research project. BOKU project managers must carry out a project assessment once a quarter to identify potential risks in the course of project management. The FIS is connected to external tools via additional interfaces for audit-proof project hours recording ("argeDATA"), for filing all project documents and records ("openText") and soon for mandatory cost planning ("Prevero").

The FIS is the data basis for statutory reports and surveys related to research (e.g. intellectual capital statement, performance and target agreements, research and development (R&D) survey), the starting point for the statutory financial statements, provides key research figures for the strategic and validated sustainability report and for quality assurance procedures (e.g. evaluation of professorships and departments). The university management recently decided that validated data extracts from the FIS should be used for habilitation and tenure track procedures. Support for appointment procedures, also based on validated analyses of applicants' research performance, is to be added in the near future.

Outlook

The next development phase of FIS3+ "reprogramming of the electronic project act" is to be realized from 2025 at the latest as part of the next performance agreement with a leaner database model, improved workflows and new, modern features. Preparatory planning has been underway for a few years now, with internal BOKU stakeholders from various service institutions, above all Controlling, Finance, the Project Accounting and Service Agency for Project-Audits, working together with the FIS team of BOKU's Research Support, Innovation & Technology Transfer to define the new processes, which are to be developed separately for "granted research", "contract research", "cooperative research" and other third-party funded activities. The results of the "RIS.Synergy" project will be taken into account by implementing interfaces for direct interaction with funding organizations. Other development aspects include the implementation of an interface to OA-Monitor Austria ("Austrian Datahub for Open Access Negotiations and Monitoring"), the integration of DaMap, a tool for creating machine-readable data management plans, and the development of interfaces to the InvenioRDM repository for research data, publications and OER materials.

With the new "FIS3+" system, BOKU University covers the needs and wishes of BOKU researchers and university management. It is thus optimally positioned for future developments, can react to new developments in a targeted manner and, above all, can adapt its own system at any time. This independence has been important for BOKU in the past and should remain so in the future. BOKU continues to be open to co-operation with other universities; many things can be developed more easily in exchange with partners.