

Beyond Metrics: Ethics-by-Design in Research Information Systems

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Extended abstract

Current Research Information Systems (CRIS) have become core digital infrastructures within universities and research organisations. They aggregate and process sensitive data on researchers, projects, publications, funding, and collaborations, and increasingly serve as a basis for performance assessment, strategic decision-making, and resource allocation. As such, CRIS do not merely support administrative processes but actively shape academic careers, institutional priorities, and representations of research performance.

Despite their growing influence, CRIS are predominantly discussed from technical, organisational, or standardisation-oriented perspectives, focusing on interoperability,

data quality, and compliance with reporting frameworks such as CERIF or national research information standards. In contrast, the ethical dimensions of CRIS remain largely underexplored. This gap is striking given that CRIS routinely process personal and evaluative data and embed metric-based logics that may affect hiring decisions, funding allocations, and institutional rankings (Ribeiro et al., 2016; Schöpfel, Azeroual & De Castro, 2022).

Building on insights from computer ethics and information ethics, this paper argues that CRIS should be conceptualised as value-laden socio-technical systems rather than neutral data infrastructures. Foundational work by Moor (1985) and Floridi (Floridi, 2013, Floridi & Taddeo, 2016) demonstrates that information technologies inevitably embody normative assumptions through their architectures, classifications, and decision-support mechanisms. More recent research on *ethics-by-design* and *responsible innovation* emphasises the need to integrate ethical principles proactively into system design instead of addressing ethical issues only retrospectively (Dignum et al., 2018; Stahl et al., 2016; Schöpfel, Koltay & Azeroual, 2025).

In the context of research information, ethical risks arise at multiple levels (Schöpfel & Azeroual, 2023). First, the extensive use of indicators and performance metrics can generate bias, misrepresentation, and unintended incentives, particularly when metrics are decontextualised or reused for purposes beyond their original scope (Hicks et al., 2015; Wilsdon, 2017). Second, CRIS increasingly integrate external data sources whose terminologies, classifications, and quality standards are not under institutional control, raising concerns about transparency and accountability (Schöpfel, Azeroual & Jungbauer-Gans, 2020). Third, the concentration of sensitive personal data in CRIS poses significant challenges for data protection, informed consent, and auditability, especially in light of the General Data Protection Regulation (GDPR) and evolving expectations of institutional responsibility (Schöpfel, Azeroual & De Castro, 2022).

This paper introduces eFIS (Ethical Research Information Systems), an applied research initiative that aims to systematically integrate ethical requirements into the design, implementation, and use of CRIS. The project follows an *ethics-by-design* approach and is grounded in an empirical case study conducted at FernUniversität in Hagen, where the research information system HISinOne-RES is being implemented as part of a comprehensive institutional transformation.

Methodologically, the project adopts a qualitative case-study design. Data will be collected through document analysis, system architecture analysis, and semi-structured interviews with key stakeholders, including research administrators, IT staff, data protection officers, ethics representatives, and members of academic leadership. This multi-perspective approach should enable the identification of ethical tensions, implicit normative assumptions, and governance gaps across the CRIS lifecycle, from data acquisition and modelling to reporting and reuse.

Based on the expected empirical findings, the project will develop a practice-oriented ethical framework for CRIS, structured around five core dimensions: transparency, fairness, data protection, accountability, and participation. Rather than formulating abstract principles alone, these dimensions will be operationalised through concrete artefacts, including role-specific guidelines, decision templates, and process models tailored to different institutional actors such as system developers, project managers, and end users.

A central contribution of eFIS will be the development of an ethical toolbox for CRIS, comprising checklists, templates, and assessment instruments that can be directly integrated into CRIS projects. These will include, among others, metric-impact assessments aligned with the principles of responsible metrics (Hicks et al., 2015), data-protection and bias-assessment components, and documentation mechanisms that enhance traceability and auditability of data flows and evaluation practices. In addition, a conceptual prototype of an eFIS module will be outlined, illustrating how ethical requirements can be embedded technically and organisationally into existing RIS environments.

The project's results will contribute to both theory and practice. Conceptually, the project extends the discourse on ethics in information systems by focusing on CRIS as a distinct and highly consequential class of systems that mediate between research, governance, and evaluation. Practically, it will provide actionable guidance for institutions seeking to implement CRIS in a manner that is not only efficient and compliant, but also ethically robust and socially responsible.

By moving beyond metrics and foregrounding ethical governance, our research initiative lays the foundation for a more reflective and trustworthy use of research information systems and opens new avenues for empirical and normative research at the intersection of information systems, research evaluation, and ethics.

Our communication will present the conceptual framework of the eFIS project, its purpose, methodology, and planning, along with the expected outcomes and impact.

Keywords

Ethics-by-design, current research information systems, responsible metrics, transparency and accountability, data governance, research evaluation.

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