



CRIS 2026 CONFERENCE AZORES

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

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| Motivation and Research Questions

CRIS as Critical Infrastructure

- Aggregates central researcher data, publications, and funding projects for institutional reporting.
- Drives strategic planning and formal evaluation processes within academic institutions.

The Research Gap

- Discourse is dominated by technical interoperability (CERIF) and data quality, leaving ethics underexplored.
- Embedding metric-based evaluation logics directly impacts academic careers and research culture.

Core Research Questions

RESEARCH QUESTION 1

What specific ethical challenges arise in the design and organizational use of CRIS?

RESEARCH QUESTION 2

How can Ethics-by-Design principles be effectively operationalised within CRIS architectures?

RESEARCH QUESTION 3

How can ethical principles be transformed into concrete tools and governance mechanisms?

| Theoretical Background



CRIS as Socio-Technical Systems

Research Information Systems are not neutral tools; they embed normative assumptions and values through data models, metrics, and classifications.

Moor (1985), Floridi (2013)



Ethics-by-Design Framework

Proactive integration of ethical principles like transparency, fairness, and accountability into the architecture and governance from the outset.

Stahl et al. (2016), Dignum et al. (2018)



Responsible Research Metrics

Quantitative indicators must support and inform expert judgment rather than replace it, applied contextually within academic evaluation.

Leiden Manifesto (2015), Hicks et al. (2015)

| Ethical Challenges in CRIS



Metric Bias & Misrepresentation

Oversimplification of research quality, disciplinary blindness, and quantity-over-quality incentives.



Lack of Transparency

Opaque data sources and no traceability of indicators, hindering scrutiny and validation.



Data Protection & Privacy

Compliance with GDPR and broader ethical obligations regarding sensitive personal researcher data.



Accountability Gaps

Diffuse responsibility structures across developers, administrators, and academic decision-makers.



Normative System Design

Data models and architectures that inherently privilege specific academic practices or disciplines.



AI Amplification Risk

Increasing AI integration for automated evaluation, recommendation, and decision support amplifies existing bias, opacity, and accountability risks within CRIS frameworks (Azeroual et al., 2024).

| Methodology: Qualitative Case Study

Study Context

- Institution: **FernUniversität in Hagen (FeU)**, Germany
- System: **HISinOne-RES** under active implementation
- Focus: Ethical implications during the design and rollout phase

Data Collection

- **Document Analysis:** Project specs and policy docs
- **System Analysis:** Architectures and data models
- Integration of internal and external bibliometric data

Stakeholder Interviews

- Multi-perspective semi-structured interviews
- Participants: Admins, IT developers, DPOs, Ethics reps
- Scope: Academic leadership and researcher perspectives

Analytical Approach

- **Thematic Coding:** MaxQDA-supported analysis
- **Deductive:** Based on Ethics-by-Design principles
- **Inductive:** Emerging local CRIS governance challenges

| The eFIS Framework

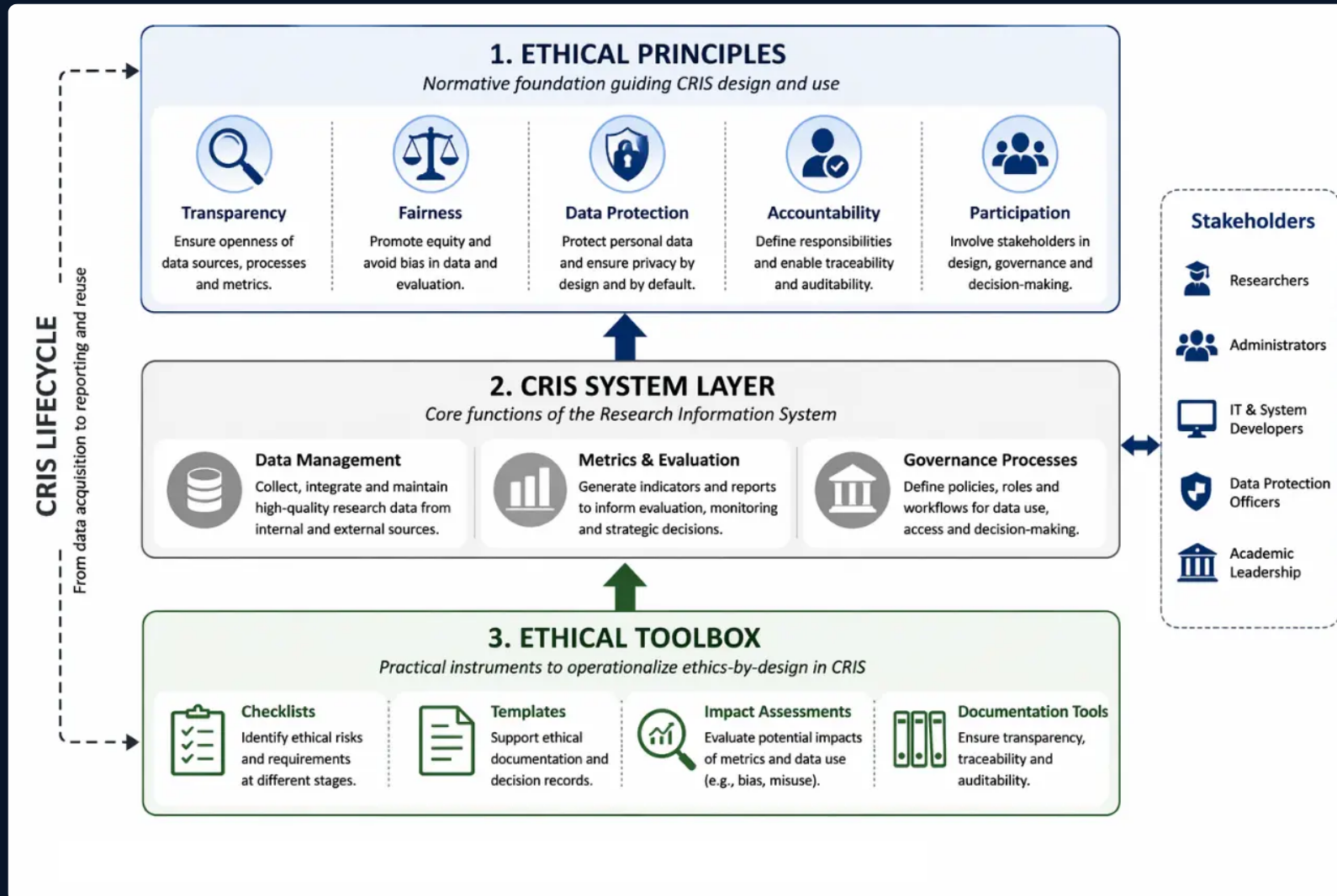


Fig. 1. The eFIS Framework: Ethics-by-Design for CRIS. Source: Authors' elaboration.

| eFIS Ethical Toolbox and Prototype

PRACTICAL ETHICAL TOOLBOX

Checklists & Templates

Risk evaluation at each design stage and structured templates to document data use decisions.

Metric Impact Assessments

Dedicated instruments to assess potential bias and unintended effects of research metrics.

Governance & Documentation

Guidelines for data provenance and tools ensuring full transparency and auditability.

EFIS MODULE PROTOTYPE

Provenance Dashboard

Advanced visualization of data sources and automated audit trails for tracking data flows.

Decision Support System

Automated flagging of ethical risks during evaluation workflows and data aggregation.

Role-based Interfaces

Tailored views for administrators, researchers, and DPOs ensuring appropriate data access.

| Project Timeline: eFIS and Collaboration with euroCRIS



**Project
Duration:**

**36
Months**



**Strategic
Partner:**

**euroCRIS (Standards &
Dissemination)**



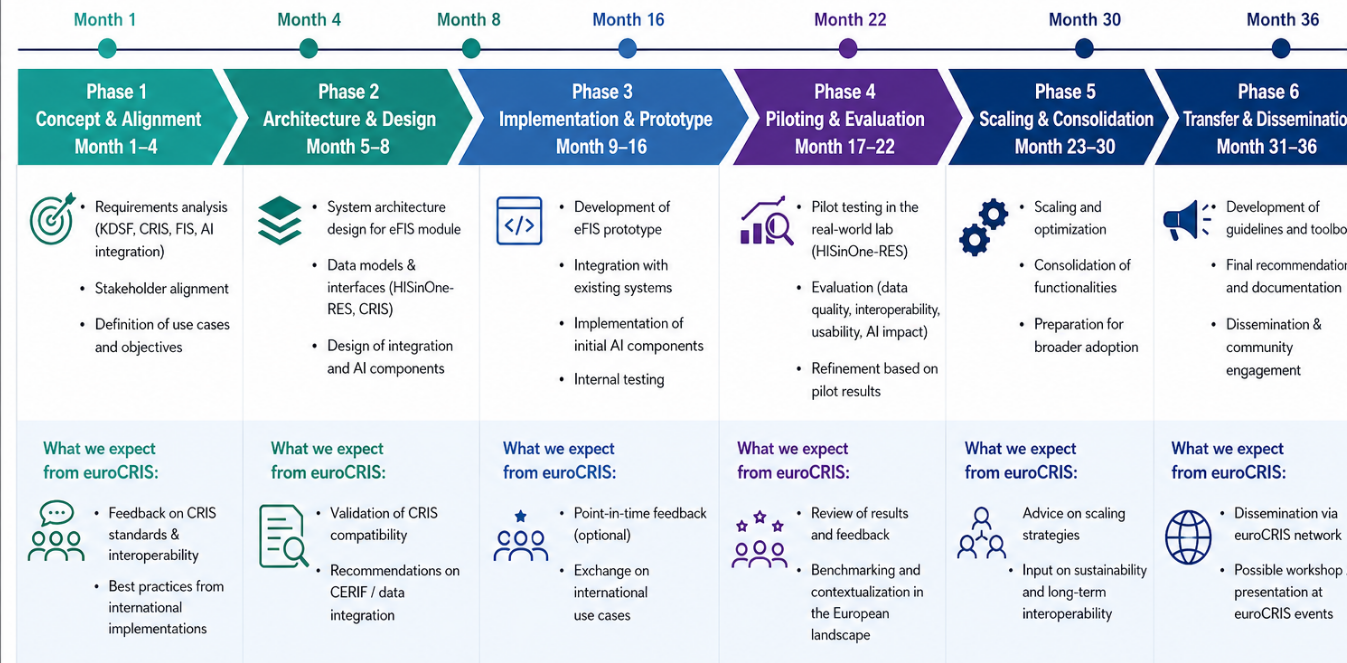
**Key
Objective:**

**Operationalising Ethics-by-
Design**

Project eFIS – Timeline & Engagement with euroCRIS



Project duration (planned): 36 months



Our collaboration with euroCRIS

euroCRIS acts as a key strategic partner and sounding board throughout the project, ensuring **interoperability**, **standards compliance**, and **European relevance**.

euroCRIS
Connecting Research Information

| Discussion and Implications

Theoretical

- Reconceptualizes CRIS as **ethical infrastructures**, not just technical repositories.
- Shifts paradigm from "ethics as compliance" (GDPR) to **ethics as integral design**.

Practical

- CRIS implementation is a **governance challenge** requiring cross-unit responsibility.
- Requires explicit workflows for **transparency and accountability** in data use.

Policy

- Aligns CRIS with **Responsible Research Evaluation** (e.g., Leiden Manifesto).
- Addresses critical risks as **AI integration** accelerates in academic evaluation.

LIMITATIONS

Findings based on a single case study at FernUniversität in Hagen (FeU), allowing for analytical rather than statistical generalization. The eFIS framework and module are currently undergoing multi-institutional evaluation to refine scalability and broader sector-wide governance guidelines.

| Conclusion

"CRIS should be understood not only as technical data infrastructures but as ethical infrastructures that shape research evaluation, governance, and academic practices."

Key Contributions

- 🛡️ Identification of 5 core ethical challenge areas in modern Research Information Systems.
- 📦 Development of the eFIS Framework integrating principles, system layers, and practical tools.
- 🧰 Delivery of a practical Ethical Toolbox and an eFIS module prototype for HISinOne-RES.
- 🔑 Shift from reactive GDPR compliance to proactive Ethics-by-Design in CRIS architecture.

The Roadmap Ahead

- 🔧 Full implementation and pilot testing of the eFIS module within the FernUniversität in Hagen (FeU) infrastructure.
- 🏢 Multi-institutional evaluation to validate the framework across diverse academic contexts.
- 🔧 Establishment of sector-wide governance guidelines for ethical research evaluation.
- 🧠 Deepening research into AI ethics specifically tailored for automated CRIS components.
- 🌐 Continued collaboration with euroCRIS to standardize ethical data models (CERIF).

| Thank You

Thank You for Your Attention

Questions & Discussion

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