



OSCAR

Open Science Clusters' Action
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Funded project

NAPMIX: Nuclear, Astro, and Particle Metadata Integration for eXperiments

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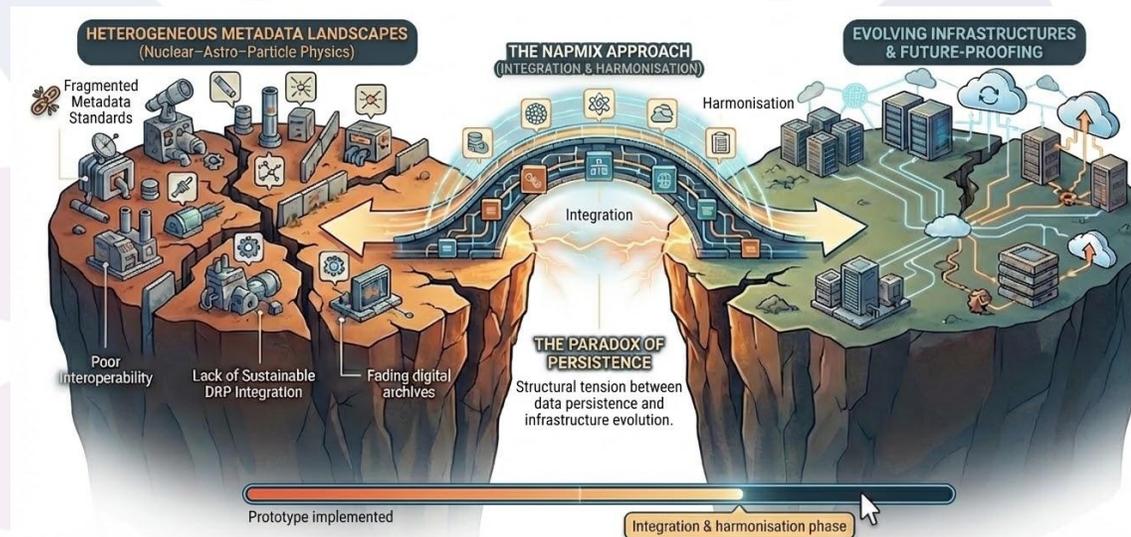
Implemented by



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Heterogeneous metadata landscapes in Nuclear–Astro–Particle physics

- Experiment-specific schemas, limited interoperability
- Weak alignment with FAIR & EOSC principles
- Long-term reuse depends on short-lived infrastructures
- Structural tension between persistence and evolution



Layered, FAIR-compliant metadata architecture

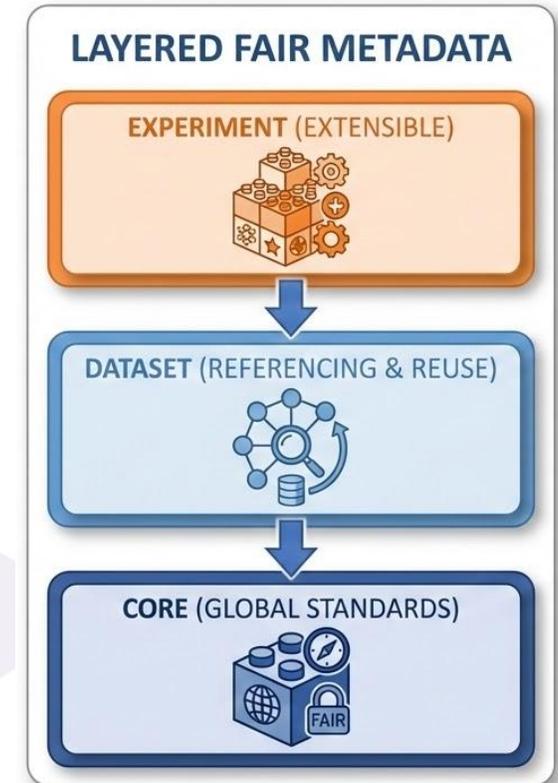
- Core layer aligned with global standards
- Dataset-level referencing & reuse layer
- Extensible experiment-specific layer

Technical implementation

- Django-based backend and React frontend
- Supports structured experiment documentation
- Cross-standard mapping (NeXus, OpenPMD)

Design principles

- Standard-based, not system-bound
- Infrastructure-independent abstraction

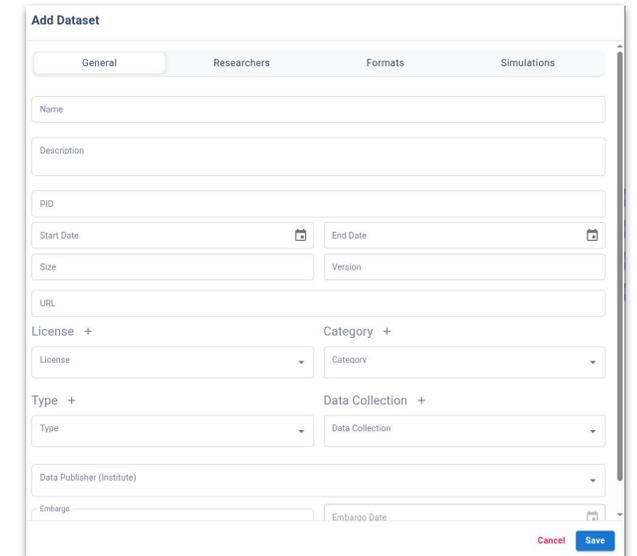


Key Results

- Operational prototype platform
- Implemented schema model in production-ready stack
- Cross-standard mappings established
- Facility-level validation cases
- Persistence-aware metadata design principle formalised

Availability

- Prototype web platform
- Public schema documentation
- Community workshops & harmonisation discussions



Add Dataset

General Researchers Formats Simulations

Name

Description

PID

Start Date End Date

Size Version

URL

License + Category +

License Category

Type + Data Collection +

Type Data Collection

Data Publisher (Institute)

Embargo Embargo Date

Cancel Save

Sustainability Strategy

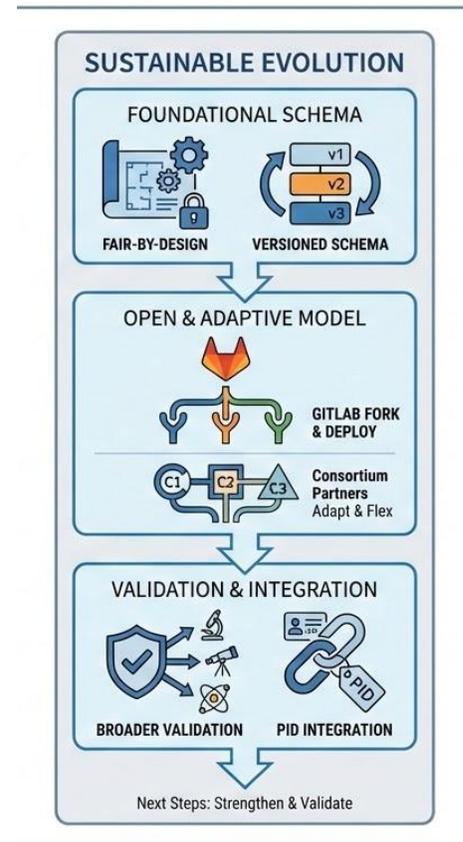
- FAIR-by-design, standard-aligned schema
- Open GitLab model & deployment - free to fork
- Schema versioning & Property ID specification
- Infrastructure-independent architecture

Community uptake

- Consortium partners already fork & adapt
- Flexible metadata generation & extension

Next Steps

- Broader cross-facility validation
- Strengthened PID integration



Who has been doing it?

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