FAIRCORE4EOSC

Developing EOSC-Core components to enable a FAIR EOSC ecosystem

Presentation title: FAIRCORE4EOSC - Extending the EOSC Platform to support FAIR

14 | 12 | 2023 Tommi Suominen, FAIRCORE4EOSC Coordinator, CSC – IT Center for Science, Finland

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faircore4eosc.eu
Twitter: @FAIRCORE4EOSC
LinkedIn: company/faircore4eosc
Youtube: FAIRCORE4EOSC

Context

Enhancing FAIRness in the EOSC ecosystem

The European Open Science Cloud (EOSC) is an ecosystem of research data and related services that will enable and enhance seamless access to and reliable re-use of FAIR research objects (including data, publications, software, etc.).

The Strategic Research and Innovation Agenda (SRIA) for EOSC was created in 2021, as a roadmap for future development. Priorities highlighted in the SRIA are the establishment of the Web of FAIR data and a Minimum Viable EOSC (MVE) by 2027, that is the core components and functions to enable EOSC to operate (the EOSC-Core).

2021

Minimum Viable EOSC

Web of FAIR Data

Findable   Accessible   Interoperable   Reusable

2027

![FAIRCORE4EOSC logo]

FAIRCORE4EOSC in a nutshell

- today at month 19/36

Full name: Developing EOSC-Core components to enable a FAIR EOSC ecosystem

Research and Innovation Action

Budget: 10 million EUR

Duration: June 2022 – May 2025

Consortium: 22 partners, coordinated by CSC – IT Center for Science

Coordinator Tommi Suominen (CSC**), Project Manager** Anu Märkälä (CSC) and **Technical Coordinator** Mark van de Sanden (SURF)

Website: faircore4eosc.eu

Key results: In response to the gaps identified in the SRIA, the project will develop nine new EOSC-Core components aimed to improve the discoverability and interoperability of an increased amount of research outputs.

Amsterdam, Netherlands – Kick-off meeting, June 2022

Implementation Challenges (SRIA) addressed

FAIRCORE4EOSC develops 9 new EOSC CORE components to address gaps identified in the SRIA. Our concrete service development work furthers the realisation of the priorities highlighted in the SRIA, that are the Minimum Viable EOSC (MVE) and web of FAIR data.

- *Identifiers:* Introducing new resource types; machine-actionable persistent identifiers (PIDs); establishing a PID meta-resolver; standardising PID graphs; PID compliance framework to ensure compliance to the EOSC PID policy and to ensure quality of service for PIDs;

- *Metadata and Ontologies:* Provide or embrace/stimulate existing registries of metadata schemas, ontologies and crosswalks, develop services that build on metadata registries and can facilitate the creation and sharing of crosswalks;

- *Interoperability:* Enable discovery of data sources available in different formats, making search tools available; Provide tools for quality validation of metadata records and of digital objects; Implement EOSC PID Policy;

- *Research Software:* metadata description standards for research software, automated deposit of new releases into a scholarly repository and Software Heritage.

Kajaani, Finland – Technical project meeting, April 2023

The 9 FAIRCORE4EOSC components supporting FAIR

RDGraph (F, A)
EOSC Research Discovery Graph

EOSC Research Discovery Graph (RDGraph) is a flexible and federated EOSC search service across EOSC repositories that extends EOSC Research Catalogue.

PIDGraph (F, A)
EOSC PID Graph

Services for providing access to the PID Graph, which is made up of links and records gathered from persistent identifier (PID) authority data sources.

MSCR (I, R)
EOSC Metadata Schema and Crosswalk Registry

Support publishing, discovery and access of metadata schemas and crosswalks and provide functions to operationalise metadata conversion by combining crosswalks.

The 9 FAIRCORE4EOSC components supporting FAIR

DTR (I, R)
EOSC Data Type Registry

Provide user friendly and machine actionable Interfaces for the registration and usage of Data Types and Kernel Information Profiles.

PIDMR (F, A)
EOSC PID Meta Resolver

Provides users with a common interface to resolve different types of PIDs regardless of their originating system. The PIDMR either resolves to a given URI or provides Kernel Information Profiles if available.

CAT (F, I)
EOSC Compliance Assessment Toolkit

The Compliance Assessment Toolkit will support the EOSC PID policy with services to encode, record, and query compliance with the policy.

The 9 FAIRCORE4EOSC components supporting FAIR

RAiD (F, A)
EOSC Research Activity Identifier Service

The EOSC RAiD will mint PIDs for research projects, which will allow authorised EOSC users and services to manage information about project-related participants, services, and outcomes.

RSAC (F)
EOSC Research Software APIs and Connectors

Ensure the long-term preservation of research software in different disciplines. APIs and connectors will be developed to interconnect research outputs infrastructures with the Software Heritage universal source code archive, using the CodeMeta standard, and the Software Heritage intrinsic identifiers (SWHID).

SWHM (F, A)
EOSC Software Heritage Mirror

Equip EOSC with a mirror of the Software Heritage universal source code archive. In order to prevent information loss, a mirror of Software Heritage will be established by GRNET to serve the EOSC community and will be updated regularly to follow the growth of the universal source code archive.

Case Studies

Social Sciences and Humanities — CLARIN

This case-study will focus on improving the discoverability of CLARIN data through the integration of the Digital Object Gateway (DOG), a crucial component for the interoperability of the CLARIN infrastructure, Language Resource Switchboard and Virtual Collection Registry tools.

Adopted components: DTR, MSCR, PIDGraph, PIDMR, RDGraph

Climate Change — DKRZ DEUTSCHES KLIMARECHENZENTRUM

ENES supports climate modellers in their work, in particular in the area of data management. In this case study we demonstrate how the developed EOSC-Core components can improve the discoverability and re-use of research results from the ENES community.

Adopted components: DTR, MSCR, PIDGraph, RAiD, RDGraph

Mathematics — FIZ Karlsruhe, Leibniz Institute for Information Infrastructure

zbMATH Open & swMATH projects aggregate significant scientific advances in mathematics and related disciplines supporting researchers in finding relevant publications and data. The case study will increase the discoverability of the zbMATH Open and swMATH data and services in the mathematical and EOSC community.

Adopted components: MSCR, PIDGraph, PIDMR, RDGraph, RSAC

European Integration of National-level Services — CSC

The case study will showcase how the developed components can enrich the content of the national research information systems displaying international connections to research objects and improve their interoperability.

Adopted components: DTR, MSCR, PIDGraph, RAiD, RDGraph, RSAC, SWHM

EOSC Service Providers — EUDAT Collaborative Data Infrastructure, Data shared and preserved across borders and disciplines
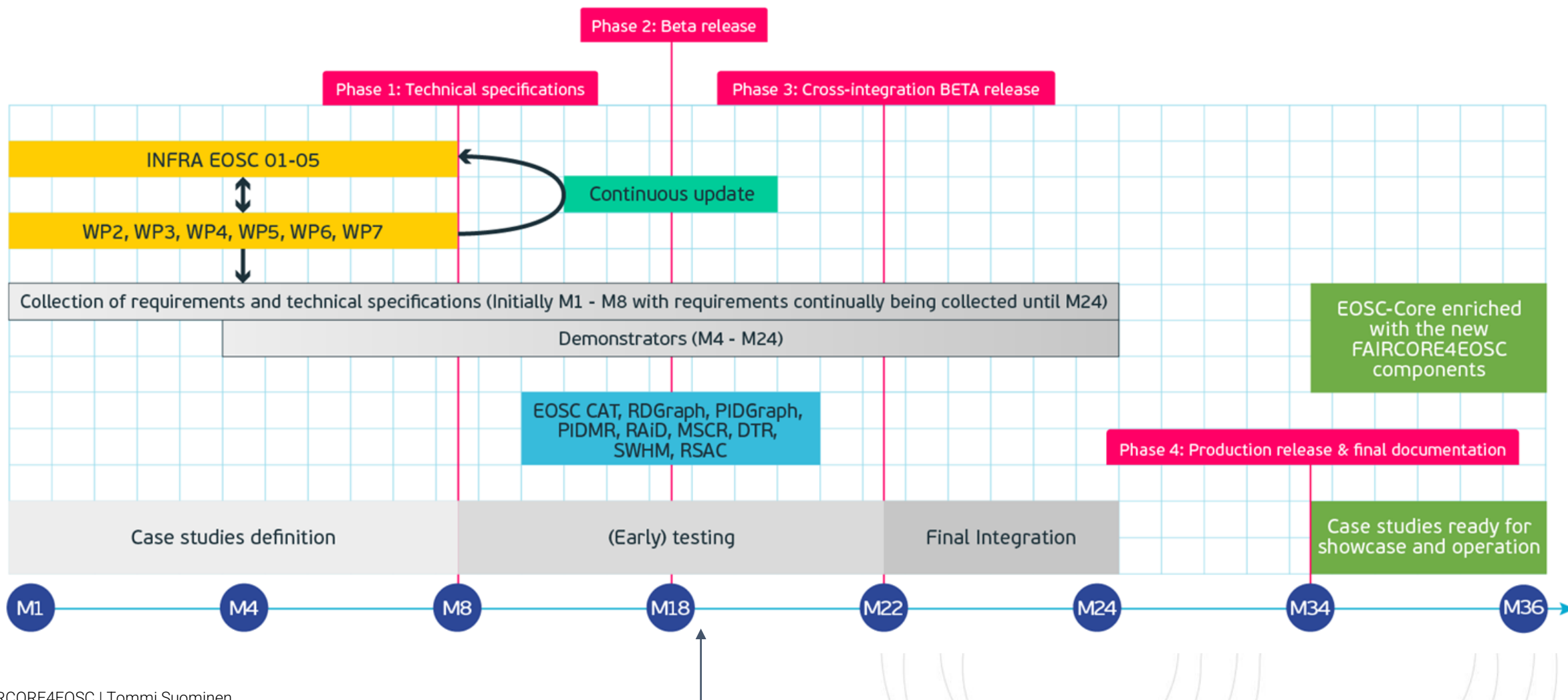
The case study aims to meet domain-specific requirements of research communities for common data services that improve discovery, access and reusability of research data. Leveraging the EUDAT services, the case study will act as a rule model for other service providers to increase the adoption of the developed components.

Adopted components: CAT, DTR, MSCR, PIDGraph, RAiD, RDGraph

FC4E Implementation timeline

We are FAIRCORE4EOSC
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