OStrails
Open Science Plan-Track-Assess Pathways

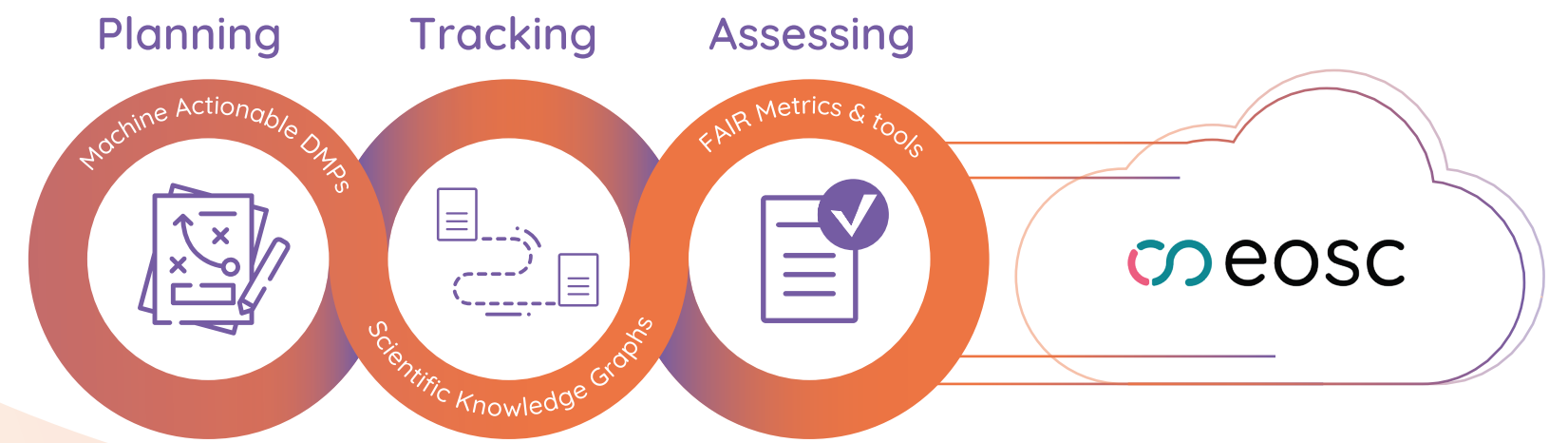# Delivering the Commons to Plan.Track.Assess Research in EOSC

Context

Establishing the Pathways and Interoperability Reference Architecture (IRA) to enable seamless integration and information exchange between Scientific Knowledge Graphs (SKGs), Data Management Planning (DMP) platforms, and FAIR assessment tools
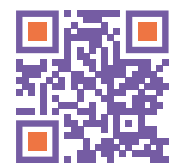
Impact on EOSC

- Enhanced FAIRness: Ensures research outputs within EOSC are findable, accessible, interoperable, and reusable.
- Improved Data Management: Converts DMPs into living documents, enhancing the research lifecycle within EOSC.
- Greater Interoperability: Facilitates seamless data sharing and integration across EOSC's diverse research domains

The Goal of OStrails

Planning — Machine Actionable DMPs
Tracking — Scientific Knowledge Graphs
Assessing — FAIR Metrics & tools

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Tools and Services

12 SKGs
Enhancing data interoperability and knowledge discovery.

7 DMP Platforms
Creating and managing DMPs that support FAIR data practices

10 FAIR Assessment Tools
Evaluating and ensuring the FAIRness of data and DMPs

Other Services
(27 Repositories and CRIS systems , 4 PID infrastructures, 3 other catalogues and search interfaces, 3 monitoring systems, 2 Lab notebooks ,1 workflow system)

Conceptual Components

SKGs IF

Accessed Interfaces:
Subscribe to event

SKG

Provided Interfaces:
Access record by ID Search by criteria
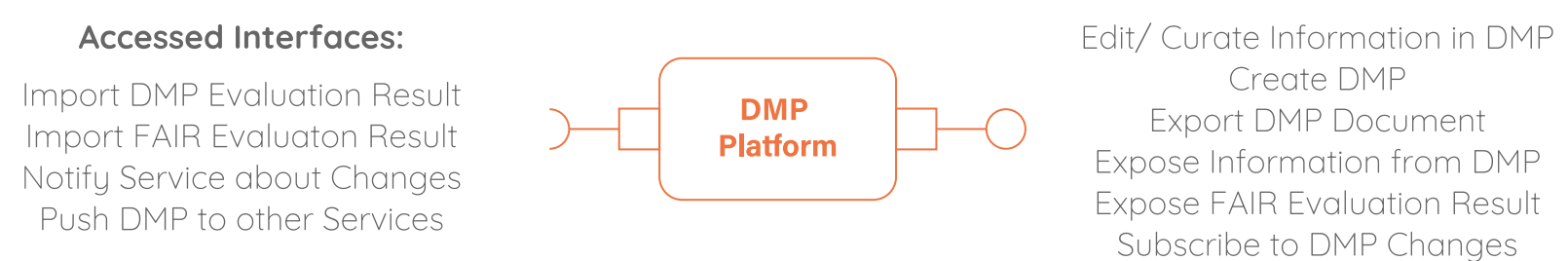Resolve by ID and relationship type

Support access to metadata and links in SKGs from other services:
Notifying other services about "interesting events" regarding records in SKGs; Allowing other services to contribute to SKGs (modify/create)

Commons: Starting from the RDA SKG-IF:

RDA RESEARCH DATA ALLIANCE

DMPs IF

Accessed Interfaces:
Import DMP Evaluation Result
Import FAIR Evaluaton Result
Notify Service about Changes
Push DMP to other Services

DMP Platform

Provided Interfaces:
Edit/ Curate Information in DMP
Create DMP
Export DMP Document
Expose Information from DMP
Expose FAIR Evaluation Result
Subscribe to DMP Changes

Exposing DMPs to (any) other services -Notifying other services about "interesting changes" in DMPs; Consuming notifications about "DMP-related interesting changes" from other services; Pushing DMPs to other services; Allowing other services to contribute to DMPs (modify/create/populate); Listing/searching records from other tools

Commons: Starting from the RDA DCS

RDA RESEARCH DATA ALLIANCE

Extras:
Data model and exchange formats for the APIs
Schema for notifications
Uniform schema(s) for records
Schema for results and metadata of DMP evaluation

FAIR Tools IF

FAIR Tool

Provided Interfaces:
Expose Test Execution
Expose Test Metadata
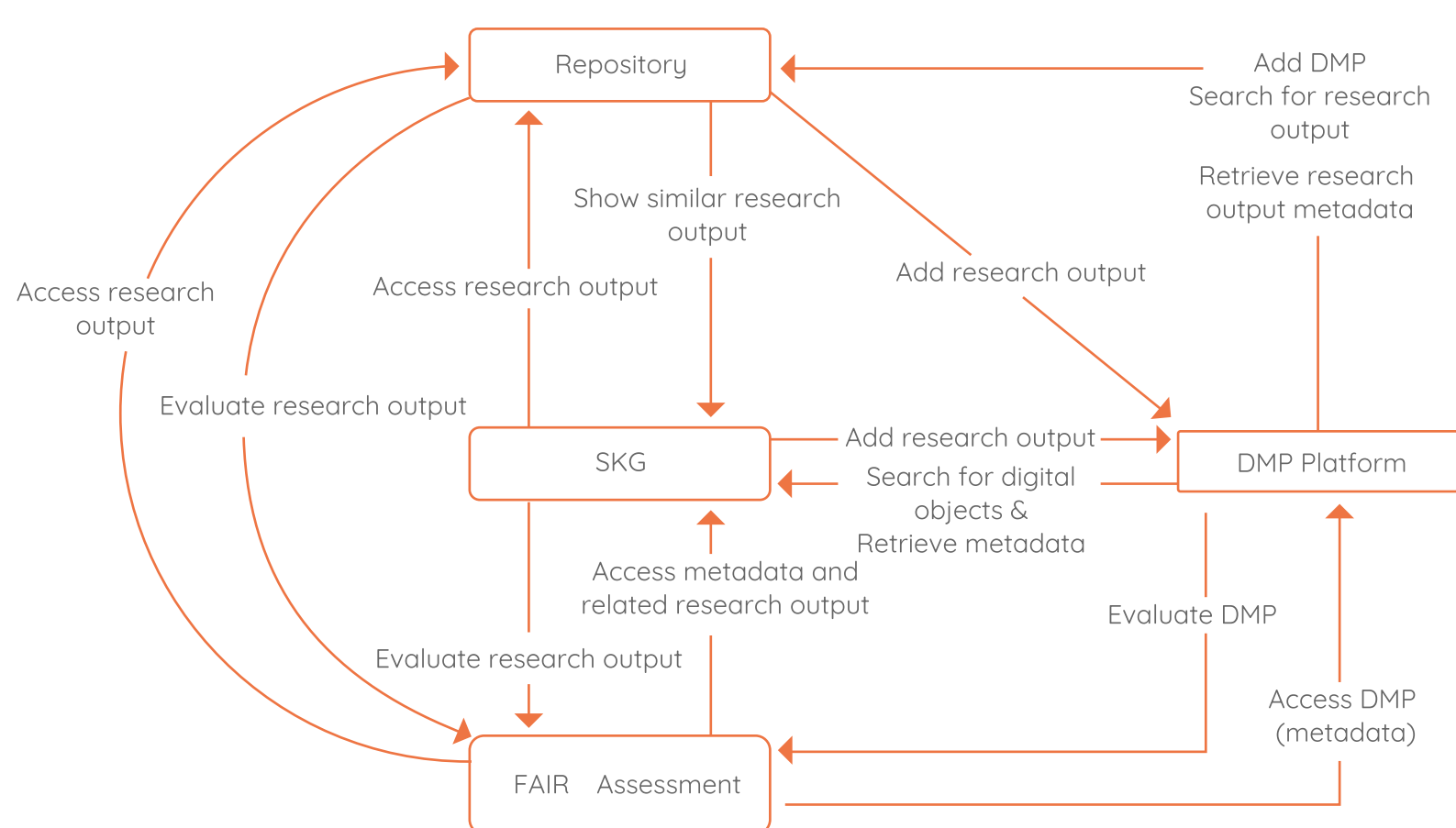Expose Metrics involved in FAIR Assesment

Exposing Test Implementation metadata; Exposing FAIR Metric metadata; Exposing FAIR Benchmark metadata; Initiate Test execution and retrieval of results; Initiate Algorithm execution and retrieval of results

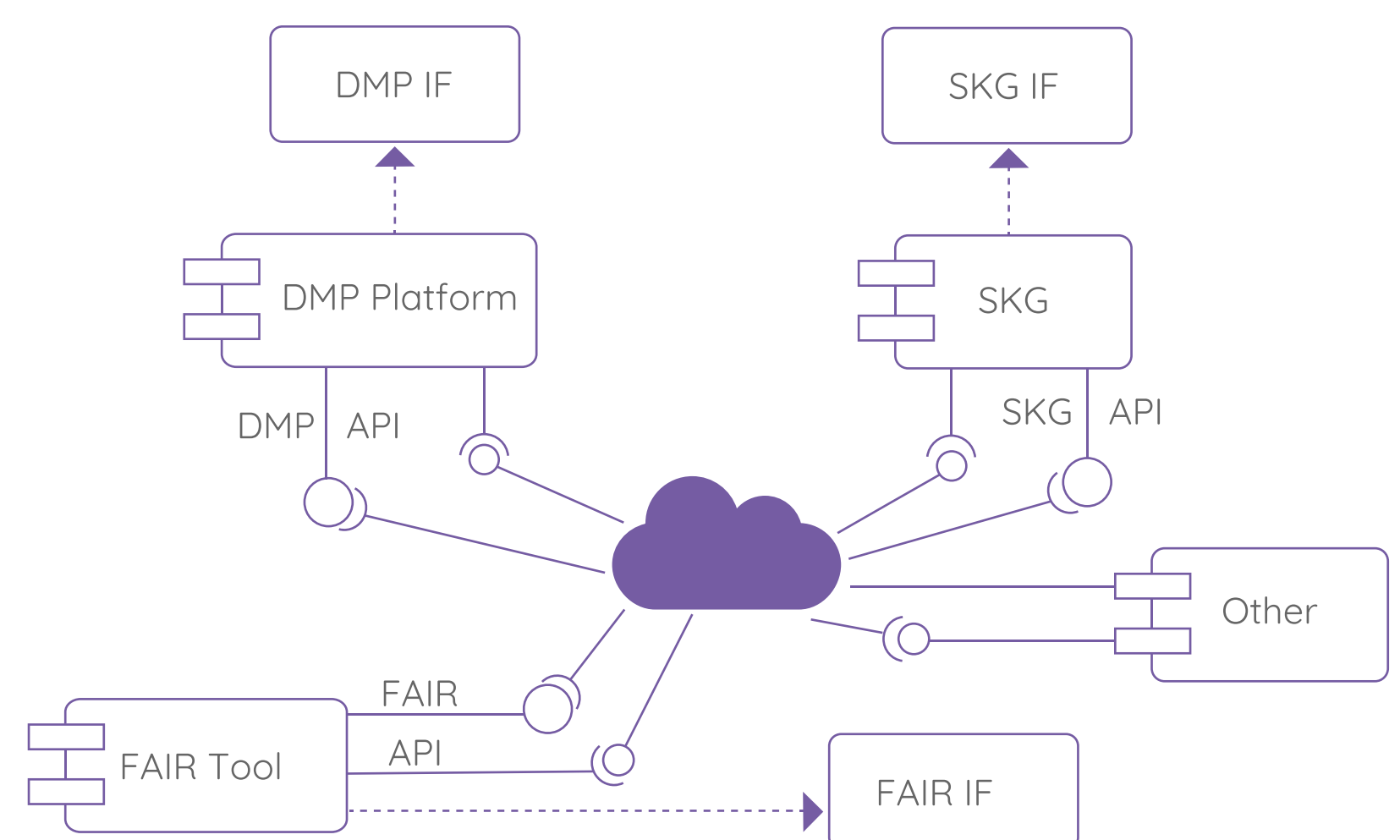**Commons:** Developing the Data Model for FAIR IF within the Project

Pathways

Blueprints outlining the interactions between DMPs, SKGs, and FAIR assessment tools, activated by user actions or tool integrations

Repository
Add DMP
Search for research output
Retrieve research output metadata
Show similar research output
Access research output
Add research output
Access research output
Evaluate research output
SKG
Add research output
Search for digital objects & Retrieve metadata
DMP Platform
Access metadata and related research output
Evaluate DMP
Evaluate research output
FAIR Assessment
Access DMP (metadata)

Architecture

A comprehensive framework defining the technical standards and protocols necessary for achieving interoperability among diverse components.

DMP IF
SKG IF
DMP Platform
SKG
DMP API
SKG API
FAIR Tool
FAIR API
Other
FAIR IF

Partners

OpenAIRE, ATHENA, TU WIEN, CTU, CITE, Consiglio Nazionale delle Ricerche, LifeWatch ERIC, Universität Wien, CLARIN, KNAW, OXFORD, icm, TU, Finnish Meteorological Institute, Sikt, FECYT, DUBLIN, ARISTOTLE UNIVERSITY OF THESSALONIKI, UNIVERSITY OF BELGRADE, CODEVENCE, fct, Inria, ÖAW, ESRF, SOLEIL, SOCIB, cessda, l'Observatoire, PSNC, RWTH, SURF, Tampere University, UK Data Service, CWTS, CRIS

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