//— GraspOS —//

next Generation Research Assessment to Promote Open Science

euroCRIS strategic partner meeting Nijmegen 01 December 2022 Clifford Tatum

//— a bit of context —//

CWTS
Meaningful metrics

ACUMEN

Academic Careers Understood through Measurements and Norms

Clifford Tatum and Paul Wouters
Centre for Science and Technology Studies
Leiden University, The Netherlands

Universiteit Leiden

euroCRIS - Porto, Portugal
14 November 2013

ACUMEN research

assessment of scientometric indicators in performance evaluation

assessment of webometric (and altmetric) indicators

comparative analysis of peer review systems in Europe

analysis of gender dimension in researcher evaluation

ethnographic study of important evaluation events

Common Data Strategy

15 European countries

Bulgaria	France	Netherlands
Czech Republic	Germany	Poland
Denmark	Hungary	Slovenia
Estonia	Israel	Spain
Finland	Italy	United Kingdom

4 Academic Disciplines

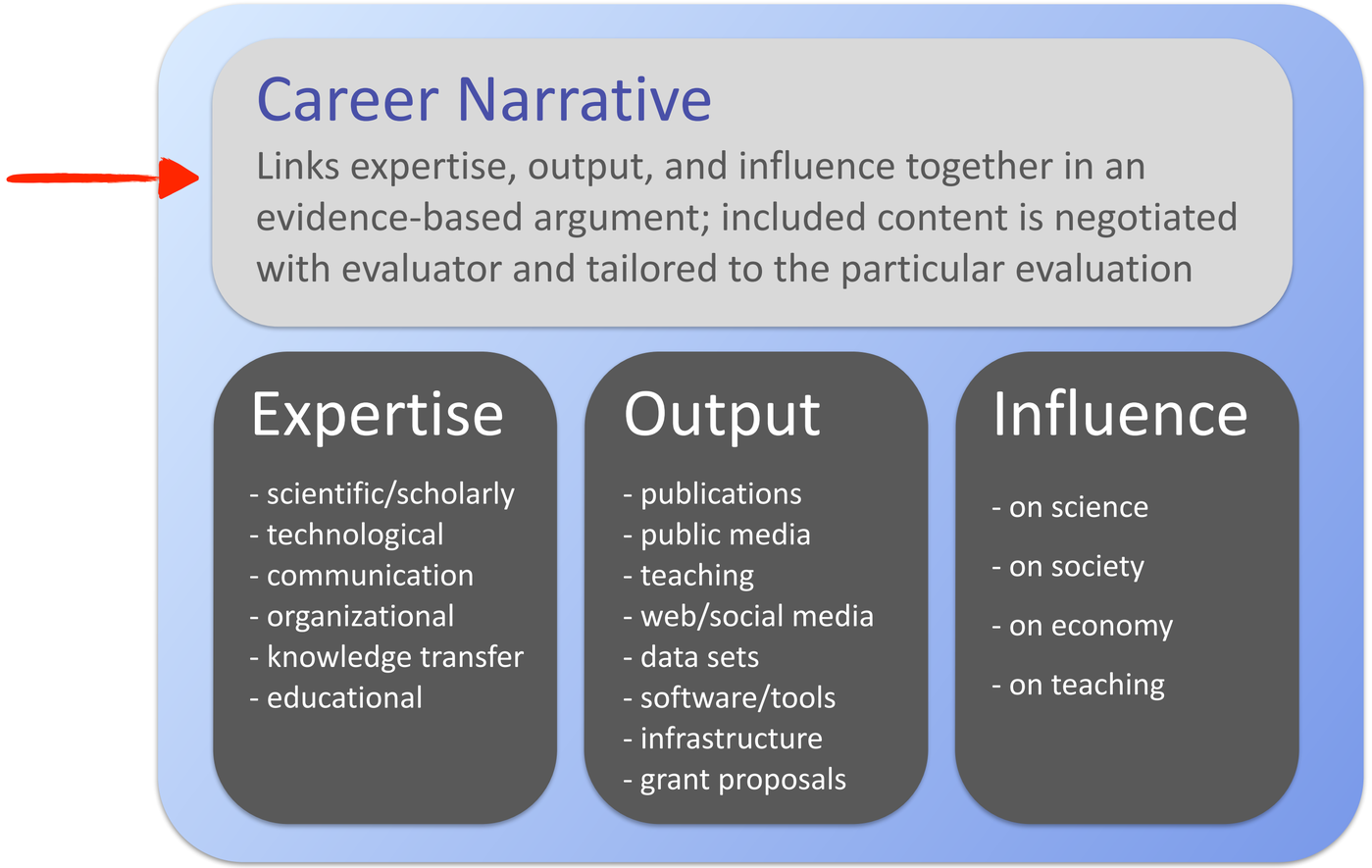
(a) astronomy and astrophysics

(b) public and occupational health

(c) environmental engineering

(d) philosophy (including history and philosophy of science)

ACUMEN Portfolio



Modest Proposal

- Portable ID Stack -
Interoperability among research metadata benefits from persistent IDs that are both ***open*** and ***accessible*** across systems

Author ID

DOI
- article
- dataset
- software
- other
- OA version

Organization

Funding source

Portable ID Stack

(for research information systems)

CERIF
casrai

CRIS systems
export to CERIF/XML for use elsewhere

facilitates research evaluation programs

open to use by Web services

CWTS

Principles and pragmatics of as open as possible:

persistent identifiers as the interface between research information commons and closed systems

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Josh Brown, ORCID
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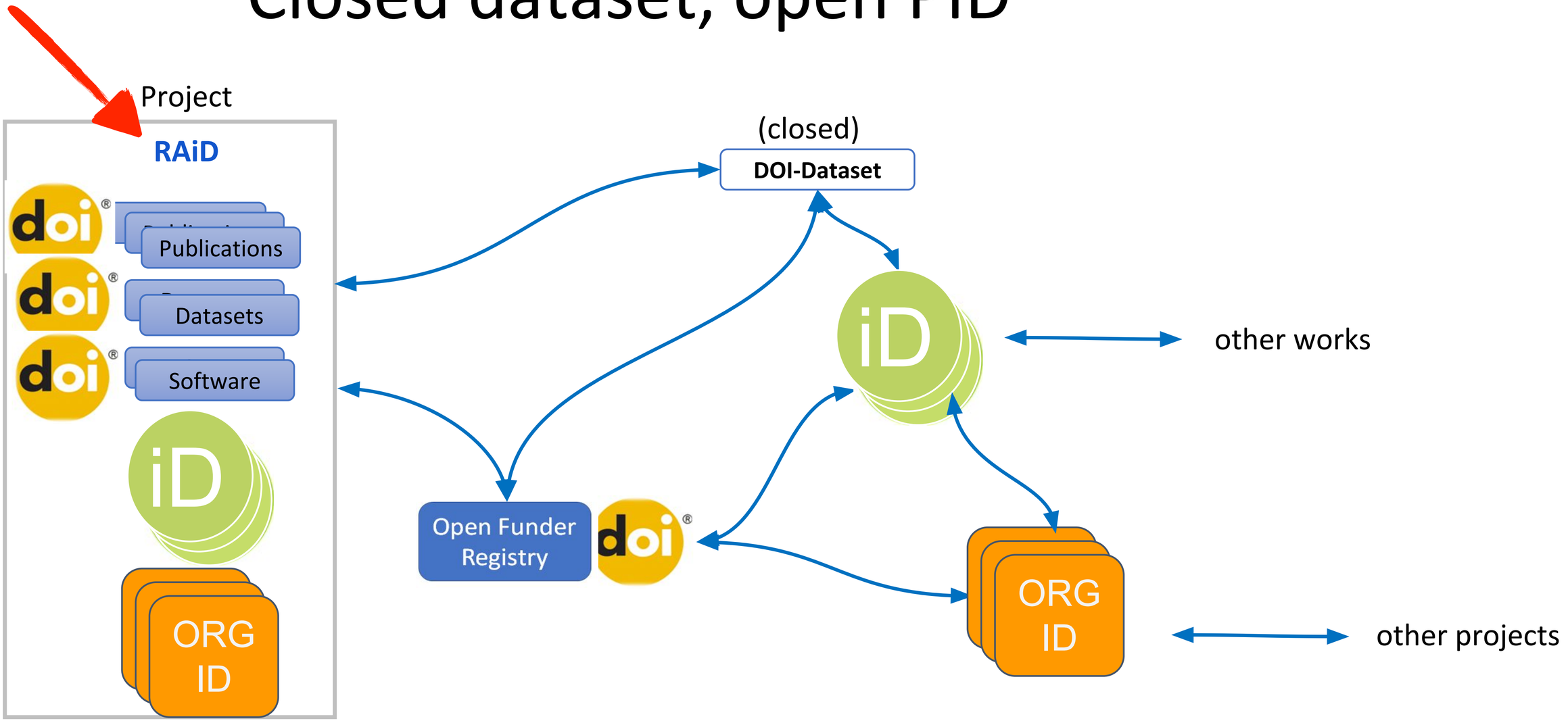
@joshbrown_orcid

CRIS2018 - Umeå, Sweden | 14-16 June 2018
URI: http://hdl.handle.net/11366/658

PID as interface:
Closed dataset, open PID



The (mis)alignment of Open Science and research evaluation:
addressing complexity with existing resources and context-sensitive evaluation

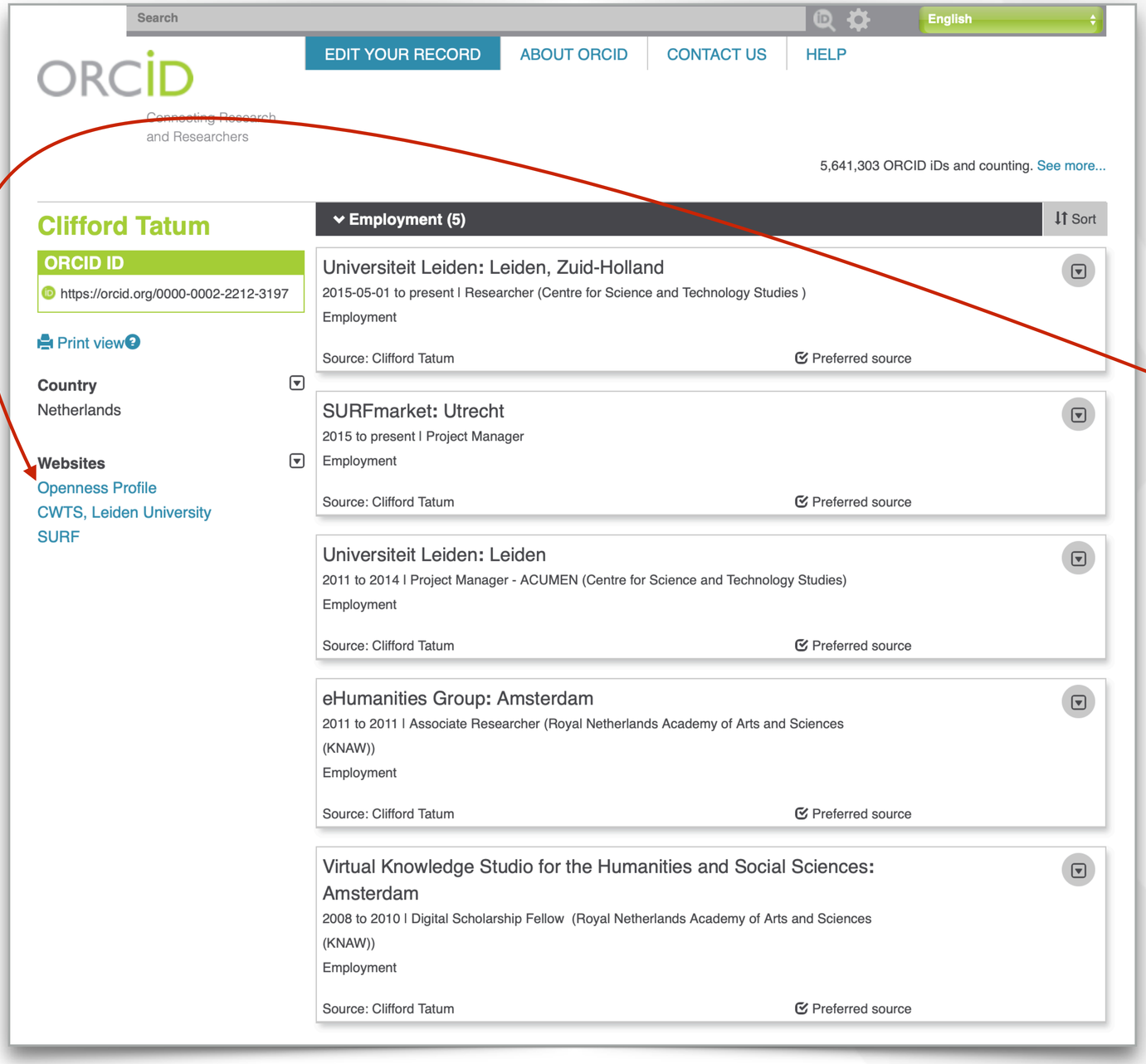
Clifford Tatum & Sarah de Rijcke
Centre for Science and Technology Studies
Leiden University, The Netherlands

euroCRIS Strategic Membership Meeting
Research Information Management: from an Institutional to a National-Level Implementation
Warsaw — 28 November 2018

DOI: https://doi.org/10.6084/m9.figshare.7392203

Openness Profile

(mock-up)



Human readable

Machine readable
- repository/DOI
- ORCID record (works)
- ORCID ingested in CRIS
- RAiD data documentation

Evaluative Inquiry, Open Science

- Evaluation organized on the basis of local epistemic priorities and community values
- Dialogue between researchers and evaluators regarding contributions to openness
- Configurations of openness form the basis of assessment and reflection
- Evaluation outcomes aimed at present and future role of openness in research
- Evaluator and evaluated engage in reflection and co-creation of new trajectories

// — draft slides — //

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An Open Research Metrics Dataspace

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Next Generation Metrics to include Open Science

//--draft slides--//

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Towards a Responsible Research Assessment

- Enable a **rewards and recognition system** based on a **new generation of (qualitative or quantitative) metrics and indicators**, leading to a culture and system change that increases the quality and impact, the creativity and the transparency of and trust in science
- Establish **a system of qualitative information** based on **community-led curation and annotations of research outcomes** that feeds into a revamped rewards and recognition system

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GraspOS at a glance

Develops, assesses and puts into operation an **open and trusted federated infrastructure for next generation research metrics and indicators**.

A Research Metrics Dataspace: Offers **data, tools, services** and **guidance** to support and enable policy reforms for research assessment.

At **three levels**

- individual/group researchers
- research and funding performing organisation
- country

Budget: 2.985M

Start date: 1/1/2023

Duration: 36M

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Objectives

Deliver	an Open Science Assessment Framework (OSAF) as a toolkit to assist tailoring and applying in practice new generation, OS-aware Responsible Research Assessment (RRA) approaches.
Develop & deliver	EOSC-integrated tools and services to support the implementation of new generation, OS-aware Responsible Research Assessment (RRA) approaches.
Develop	an EOSC-integrated, Federated Open Metrics Infrastructure to offer data, tools, and services.
Empower & bring	together different stakeholder communities to co-design, showcase, validate, and evaluate OS-aware RRA indicators, tools, services and infrastructure in real-world pilots.

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A multi-disciplinary consortium

Infrastructure experts + RRA + OS experts + Communities

ATHENA Research & Innovation Information Technologies

OpenAIRE

CWTS Meaningful metrics

INRAE

Consiglio Nazionale delle Ricerche

egi

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA

Federation of Finnish Learned Societies

UNIVERSITY OF EASTERN FINLAND

CSC

cesnet

Inria

OPERAS open scholarly communication in the european research area for social sciences and humanities

grnet

Faculty of Chemistry University of Belgrade

Utrecht University

uefiscdi

TÜBİTAK

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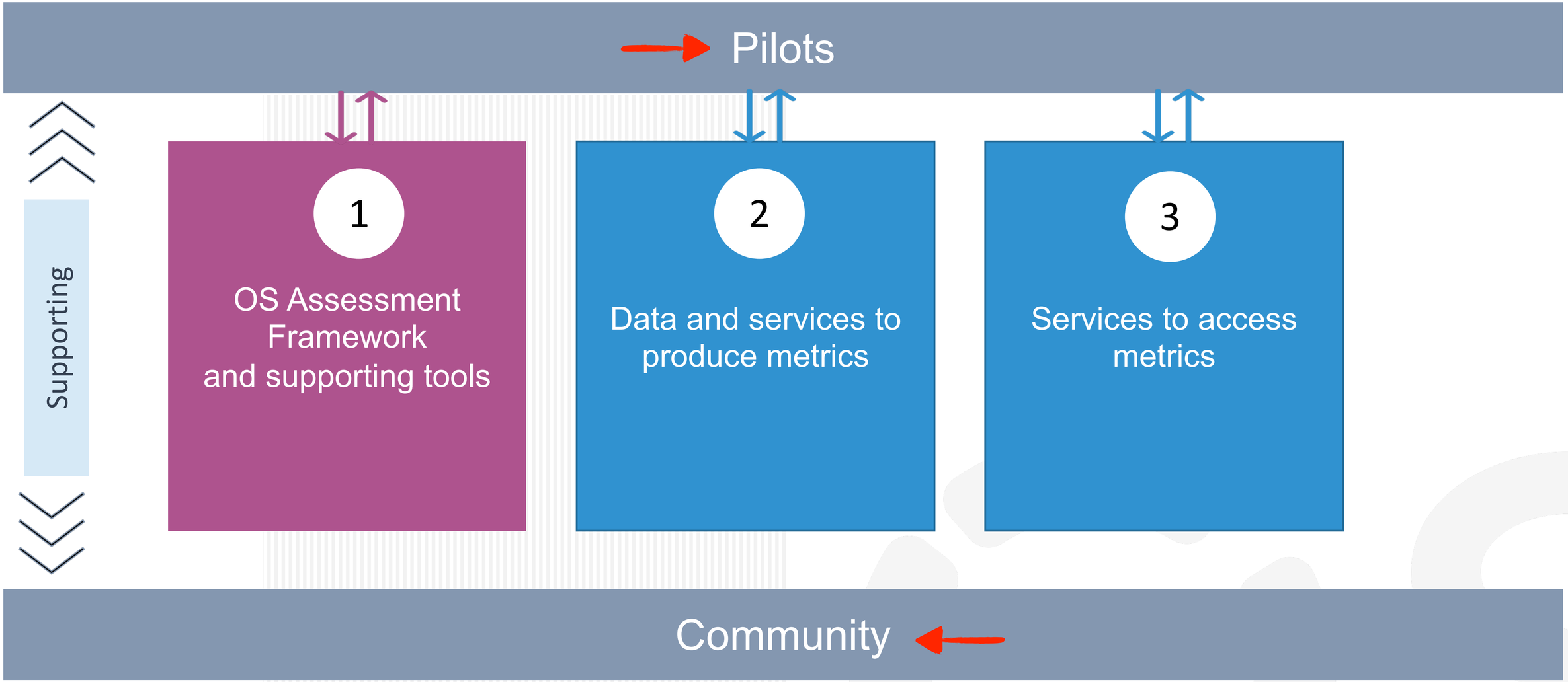
3 pillars of actions



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KEY EXPLOITABLE RESULTS

OPEN SCIENCE ASSESSMENT FRAMEWORK

A guide detailing indicator toolboxes and metrics capturing different OS practices and activities in various contexts

OPENNESS PROFILES

RRA templates to be used as fit-for-purpose templates for collecting and structuring quantitative and qualitative indicators

OSAF REGISTRY

An online structured database of OSAF-based Openness profiles and case studies to promote experience sharing and mutual learning

AI-DRIVEN METADATA ENRICHMENT TOOLS & SERVICES

Enhance missing attributes on research outputs.
Enrich research output links with semantics
Enrich research output with novel metrics capturing scientific impact or usage of OS from different perspectives

OS MONITORING SERVICES

OS Institutional Dashboard & OS Researcher Dashboard offering OS metrics and functions for manual annotations (correction/edits/additions) and narrative

COMMUNITY OF PRACTICE

Experts from RRA and Open Science domains

FEDERATED OPEN METRICS DATASPACE

Integrated data collections
Extended EOSC EIF
APIs for access

LEARNING MATERIAL

For researchers, research and funding performing organisations

Framework
Technical
Capacity

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The Infrastructure

Open Science has many flavours & parameters

Metadata is missing or is not good

Fragmented metrics data for openness & usage. Owned by commercial providers.

Novel indicators are not just not just about numbers. Composite indicators based on AI

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Open Science Assessment Framework

- Document and provide **options on how indicators and tools** used in a particular evaluation setting align with characteristics of the assessment context, (disciplinary and institutional context, individual researchers, research groups, research institutions, national level)

- Develop fit for purpose **Openness Profile** for researchers, research groups, and research institutions serving as assessment portfolios

- Develop an **Open Science Assessment Registry (OSAR)** service that captures information about OS assessments, related protocols and indicator toolboxes in a structured format

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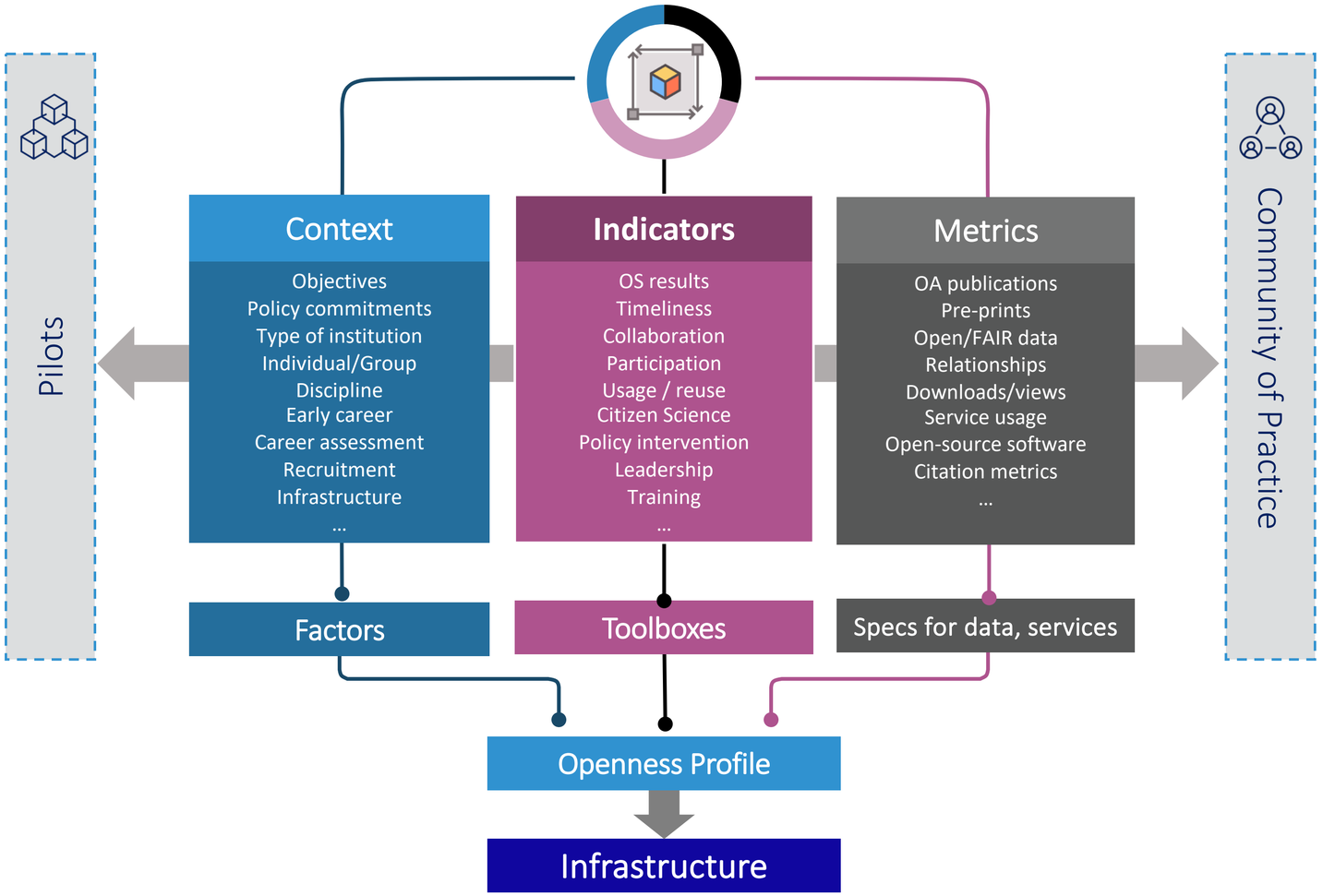
Open Science Assessment Framework (OSAF)



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What – in a nutshell

- Develop **fit-for-purpose tools and services** with the necessary characteristics to accelerate adoption:
  - **broad coverage** by including multiple types of research results from existing data sources
  - **quality** by imposing check and balances with national CRIS
  - **openness** by introducing open governance via EOSC processes
  - **novelty** by introducing new impact indicators for OS adding on to metrics for excellence
  - **attention to the detail** by capturing subtle metrics related to the practice of OS such as timeliness, collaboration, diligence
  - a mix of **automated (AI)** and **manually curated and annotated** metrics
- **Develop and operationalize** an infrastructure for metrics (data-tools-services)

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EOSC-integrated Federated Open Metrics Infrastructure

A **federated infrastructure** that **extends EIF** with metadata standards, protocols, components and APIs to support AI-driven annotation/enrichment

EOSC Core Metrics service – Data-as-a-Service

Services & tools to **access and configure metrics** via EOSC Exchange - EOSC Portal

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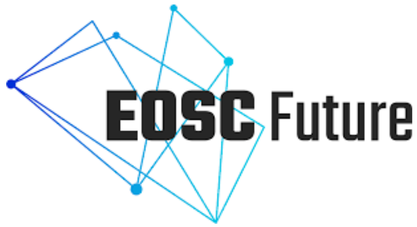
How – Use and adapt existing tools and resources



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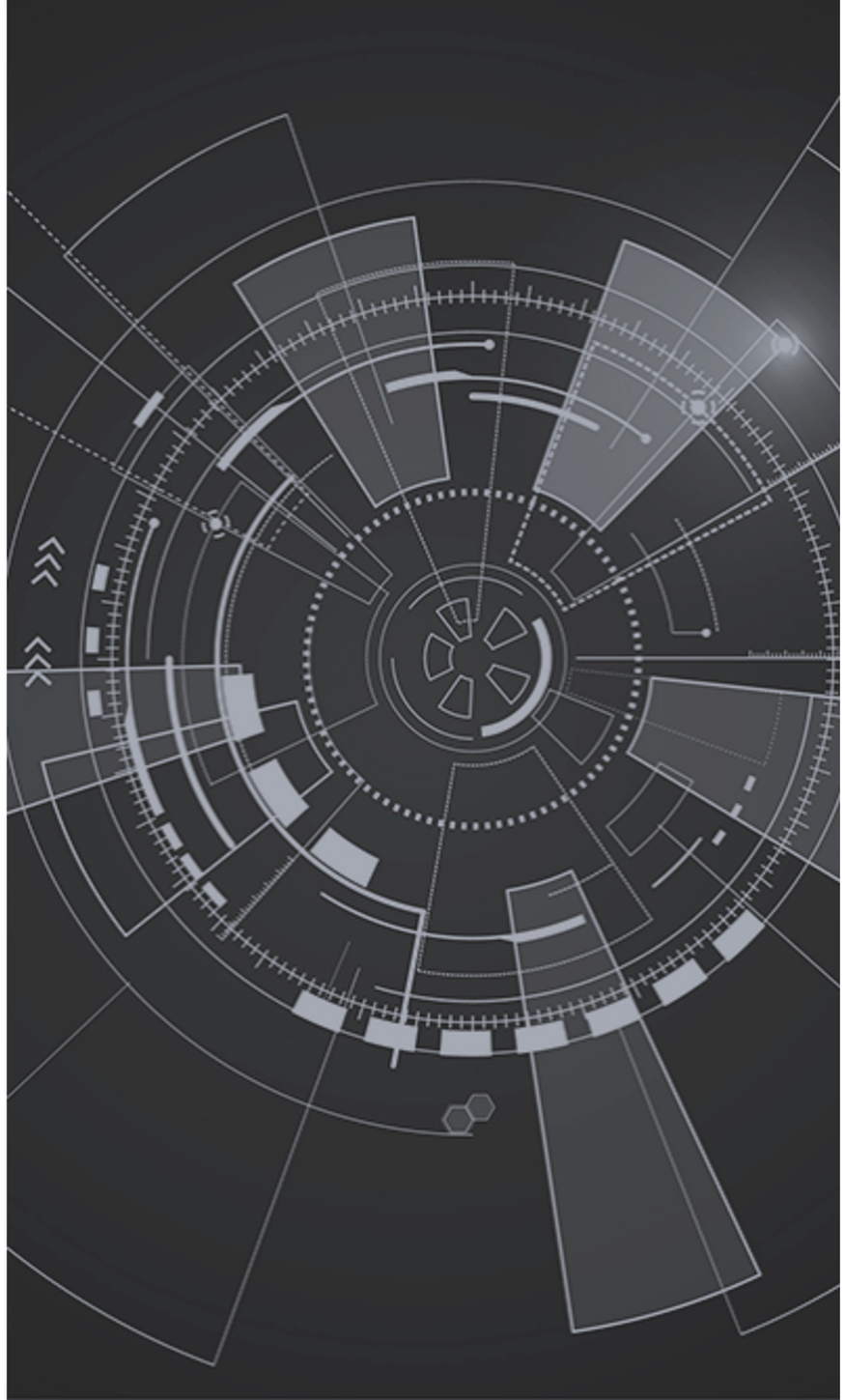

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OS MONITORING SERVICES

OS metrics and functions for **semi automated** and **manual annotations**

- Correction-edits-additions-narrative

OS Institutional Dashboard

- A tailor-made OS Profile for research performing organisations

OS Researcher Dashboard

- A tailor-made OS Profile for researchers,

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The Community

Different types of pilots

- Funders & national stakeholders
- Research performing organisations
- Research communities

Community of experts for RRA

Capacity via training

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Pilots supporting OS research assessment for funders & national stakeholders

Pilot A: National CRIS	Finland	CSC
Finland’s national CRIS system (Research.fi) compiles information on Finnish research from institutional, national and international sources. Its purpose is to provide an overall picture and a comprehensive information base of the research produced in Finland.		

Pilot B: National funding monitoring platforms	Romania	UEFISCDI
UEFISCDI is the main funder in Romania ensuring online submission and evaluation of RDI calls, online contracting, monitoring and reporting of projects and scientific progress, at both national and international levels.		

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Pilots supporting OS research assessment at universities

Pilot C: University / research group	Netherlands	U. Utrecth
This pilot will build on current OS monitoring activities and visions for novel forms of recognition and rewards put forward by the OS programme of the university, and will work at three levels: institution, research group, and individual(s)/teams, understanding how policies and practices interact at different levels. It will involve the Copernicus Institute of Sustainable Development, a multi- & interdisciplinary institute facilitating transformations to a sustainable and equitable society.		

Pilot D: National Research Organisation	Italy	CNR
The National Research Council of Italy (CNR) is currently redesigning the system used for monitoring its outcomes and the impact of its activities. The new system aims at providing researchers, research administrators and decision-makers with more timely and up-to-date information than in the past, at enlarging the set of research outcome types being monitored (including also hardware specifications and services) and embed Open Science..		

Pilot E: University academic recruitment	Finland	U. East Finland
University of Eastern Finland (UEF) is a pioneer of open science and science communication. In this pilot it will continue the development and testing of an impact portfolio to be used at individual-level research assessment at the university for in academic recruitment.		

Pilot F: Chemistry (University dept. level)	Serbia	U. Belgrade
This pilot aims at developing new generation metrics based on qualitative information deriving from the Cherry Repository that can support the Faculty of Chemistry to improve its research assessment practices.		

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Pilots supporting OS research assessment for disciplines

Pilot G: Computer Science	INRIA, U. Bologna, ATHENA RC
The pilot will provide general assessment criteria for computer science, considering the specificity of the domain: central role of conferences, wide usage of preprints in several subdomains of computer science (e.g., cryptography, natural language processing, networks), and importance of visibility and impact through software development.	
Pilot H: Agricultural & veterinary sciences	**INRAE**
INRAE's approach to open science includes engagement with different audiences (experts/non-experts), building trustworthy relationships with stakeholders — not-for-profit associations in particular — and involving stakeholders throughout the research process. INRAE supports policy makers, participatory science and research, open innovation (living labs, Innovation Regions programme) and dissemination of all types of research findings. Assessing the engagement and impact of OS is key for the institute and this is what this pilot is about.	
Pilot I: SSH	**Operas**
The pilot will provide general assessment criteria for Social Sciences and Humanities, considering the specificity of the domain: monographs, OA books, diamond OA journals and infrastructure developed by OPERAS at EU level.	

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Community of RRA experts

Focus on **binding the technical infrastructure** development and its operational aspects with **the RRA/OS community** and envisioned practices

Complement COARA and will consist of different actors and stakeholders brought in by the partner networks as follows:

- Research performing & funding organisations
- Providers of data/metrics infrastructure
- Local and national monitoring infrastructures
- Research Infrastructures
- National Open Science initiatives and bodies
- Scholarly societies and other professional bodies
- Researchers who focus on R&I assessment tapping on the Super MoRRI network

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Implementation details

- Phased design
- Tight workplan based
- Adaptation
- Delivery via OpenAIRE services and EOSC

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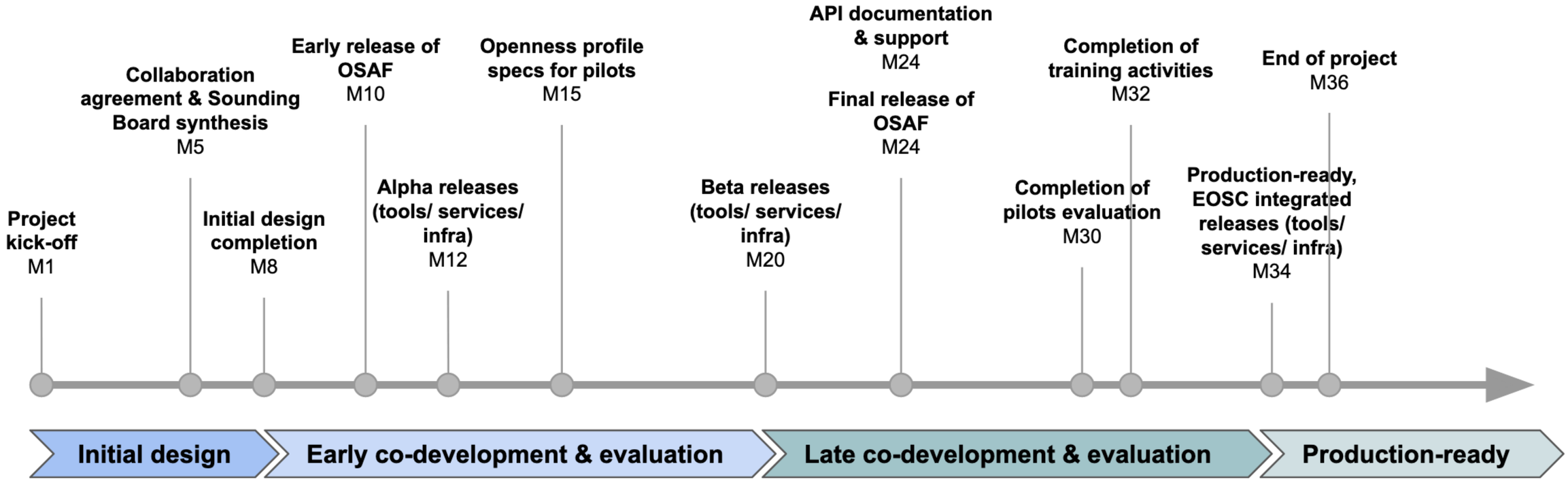
Timeline – in 3 phases



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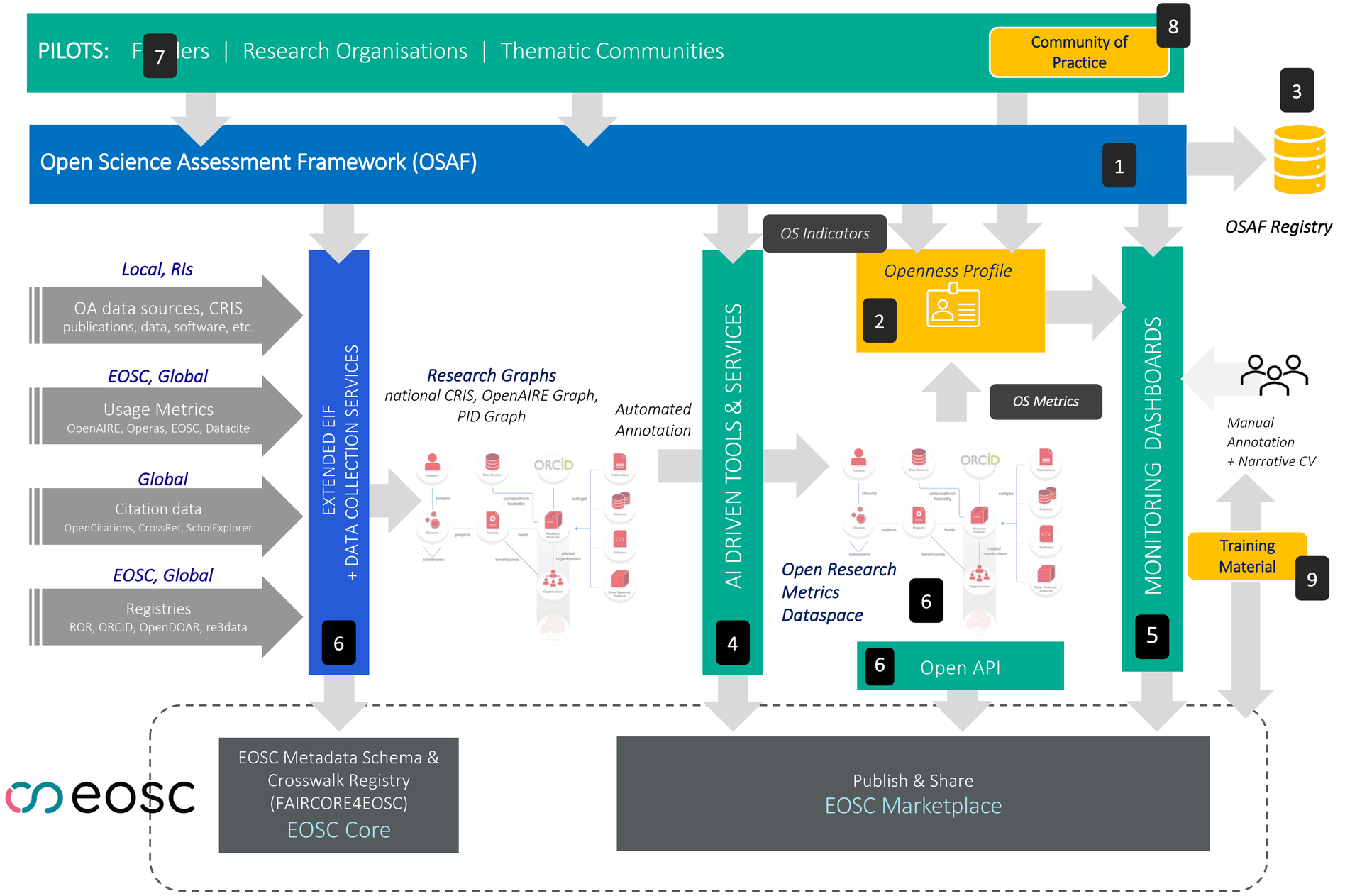
RESULTS

1. OSAF
   - ❑ OSAF Indicator toolboxes
2. Openness Profile templates
3. OSAF Registry
4. AI-driven metadata enrichment tools & services
5. OS Monitoring tools & services
6. Federated Open Metrics Infrastructure (Dataspace)
   - ❑ Integrated data collections
   - ❑ Extended EOSC EIF
   - ❑ APIs for access
7. OS-aware RRA pilots
8. CoP of OS-aware RRA experts
9. Training material



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Let’s make it happen! Together.

THANK YOU

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Thank you oh behalf of the GraspOS partners!

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