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# Defining Criteria for Assessing PID Policies and Services

IDCC Conference 2024
Edinburgh, February 19th 2024
09:00 - 12:00

Funded by
the European Union

# Workshop agenda

| Time | Topic | Presenter |
|---|---|---|
| 09:00 - 09:10 | Welcoming words & introduction to the FAIR-IMPACT project | Josefine Nordling, CSC (Persistent Identifier WP lead) |
| 09:10 - 09:20 | Setting the scene - PIDs & the EOSC context | Josefine Nordling, CSC |
| 09:20 - 09:50 | The PID landscape | René van Horik, DANS (PID policy task lead) |
| 09:50 - 10:20 | Mentimeter discussion on PID policies | René van Horik & Josefine Nordling |
| 10:20 - 10:40 | Break | |
| 10:40 - 10:55 | Introducing the Compliance Assessment Toolkit & assignment of group work | Natascha van Lieshout, SURF (PID implementation programme task lead) |
| 10:55 - 11:25 | Assessing Compliance: A Tale of Two Service Providers Activity | |
| 11:25 - 11:45 | Feeding back from groups on PID policy criteria | Joy Davidson, DCC (Engagement, Adoption & Implementation WP lead) & Josefine Nordling (CSC) |
| 11:45 - 11:50 | FAIR-IMPACT Open Call | Joy Davidson, DCC |
| 11:50 - 12:00 | Conclusion & next steps | René van Horik, DANS |

# Goal of this workshop

*Introduction of a compliance assessment method to determine the characteristics of Persistent Identifier policies and services*

# Introduction

Quick round of introductions:

- Organisers of the workshop: the FAIR-IMPACT project
- Participants of the workshop: background & relation with PIDs

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# FAIR-IMPACT
# A bird's eye view

Call HORIZON-INFRA-2021-EOSC-01-05

Enabling discovery and interoperability of federated research objects across scientific communities

**Expanding FAIR solutions in Europe**

Partly following up on FAIRsFAIR

EU funded project

Coordination and Support Action

10 million euro

36 months, starting 1 June 2022

28 partners and affiliate entities

From 10 EU member states: NL, FI, FR, DK, IT, DE, ES, NO, BE, RO

and the UK

# FAIR-IMPACT overall objective

**WHAT**:
to realise a FAIR EOSC by supporting the implementation of FAIR-enabling practices across scientific communities and research outputs at a European, national, and institutional level;

**HOW**:

- identifying current and emerging components for enabling FAIR (practices, policies, tools & technical specifications);
- translating viable solutions, guidelines and frameworks that have been developed for one domain or research output and supporting their application in others;
- taking the next step in implementation by defining the support, governance, and coordination mechanisms required to ensure the continuous function of FAIR-enabling practices in the EOSC.

# FAIR-IMPACT project design

# Persistent Identifiers - Strategic alignment with the EOSC

- "Implement the EOSC PID policy and architecture" *(Operational Objective 11 Strategic Research and Innovation Agenda p. 166)*
- "Promote and sustain the use of Persistent Identifiers (PIDs) that are already common practice. Support activities where PID usage is not yet a common practice."
- "Integrate widely used and adopted PIDs into institutional services and incentivise usage of PID technologies being developed in EOSC (like PID Meta Resolver, Data Type Registry, PID graph, PID Policy Compliance Assessment Toolkit)" *(European level priority 2.1.A/ national level priority 2.2.H, resp., national level priority 2.2.I/ institutional level priority 2.3.K EOSC Multi-Annual Roadmap (MAR) 2025 and 2026-2027)*

# EOSC PID Policy guiding our work

- Published in 2020
- Authored by the EOSC FAIR WG and the EOSC Architecture WG
- Defines roles and components in PID infrastructures
- Written for senior decision makers for potential EOSC infrastructure and service providers
- Defines a set of expectations through definitions, guidelines & usage requirements

According to the EOSC PID Policy

# PIDs are …

## Globally Unique

- To enable global uniqueness a PID should follow a controlled syntax to avoid clashes or duplicates.

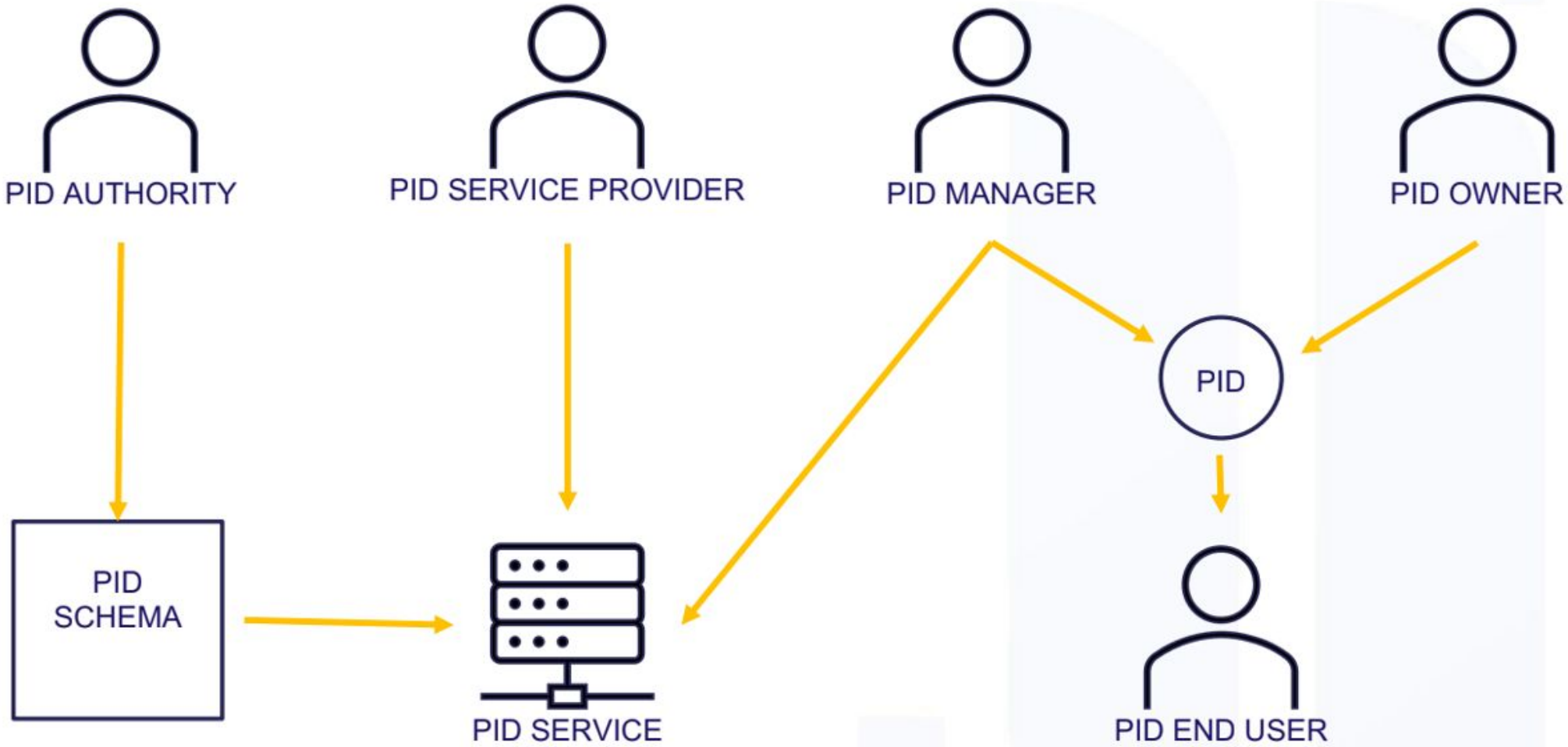
## Persistent

- The PID should be managed and governed in a way that confers long term trust
- The syntax should not change
- The referred core object should not change

## Resolvable

- Human and machine users should be able to access data about the object and know how to access it
- Information about the object should be accessible even when the object itself is no longer available

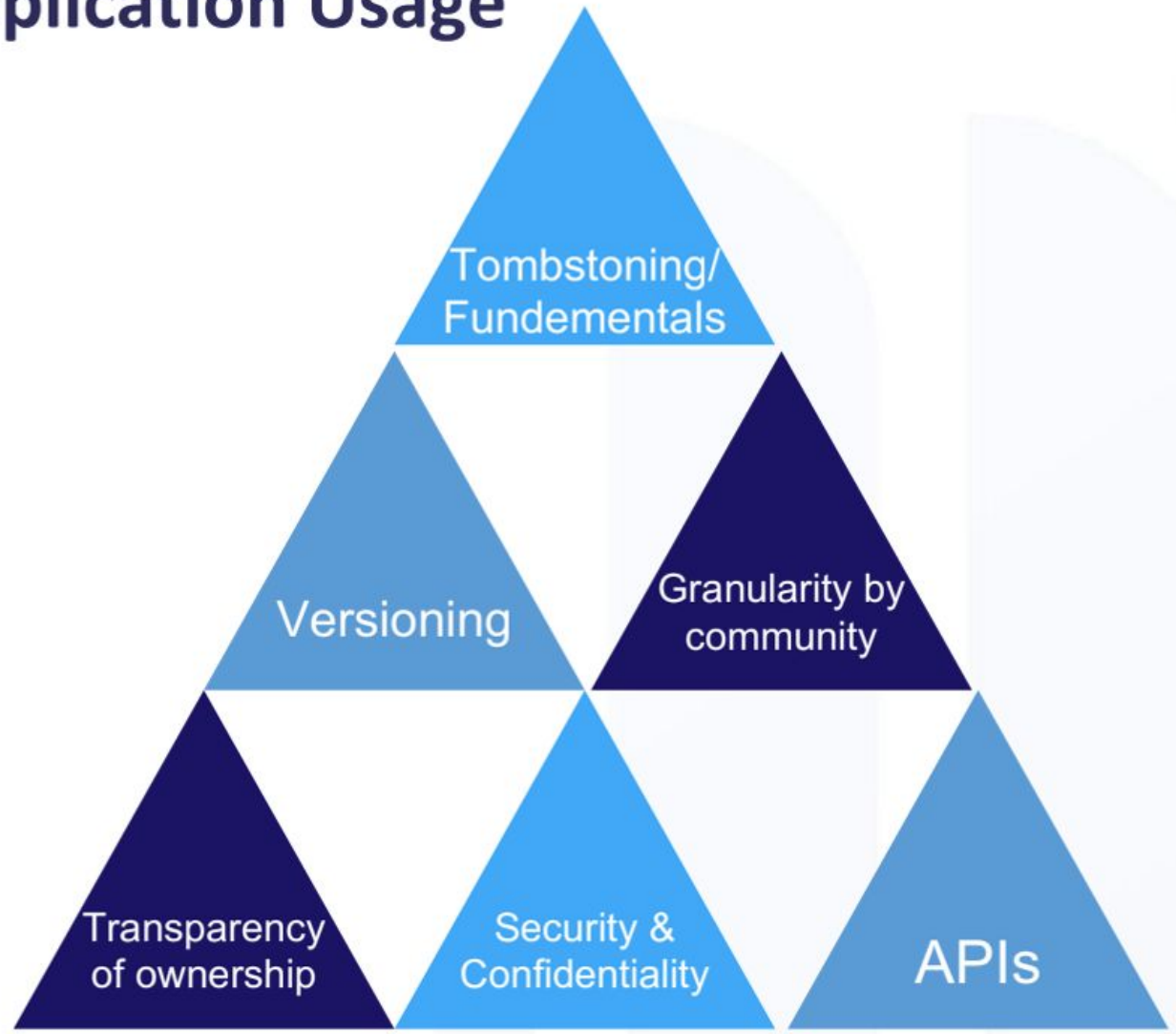
# EOSC PID Policy: Roles and Components



# EOSC PID Policy: Guiding principles

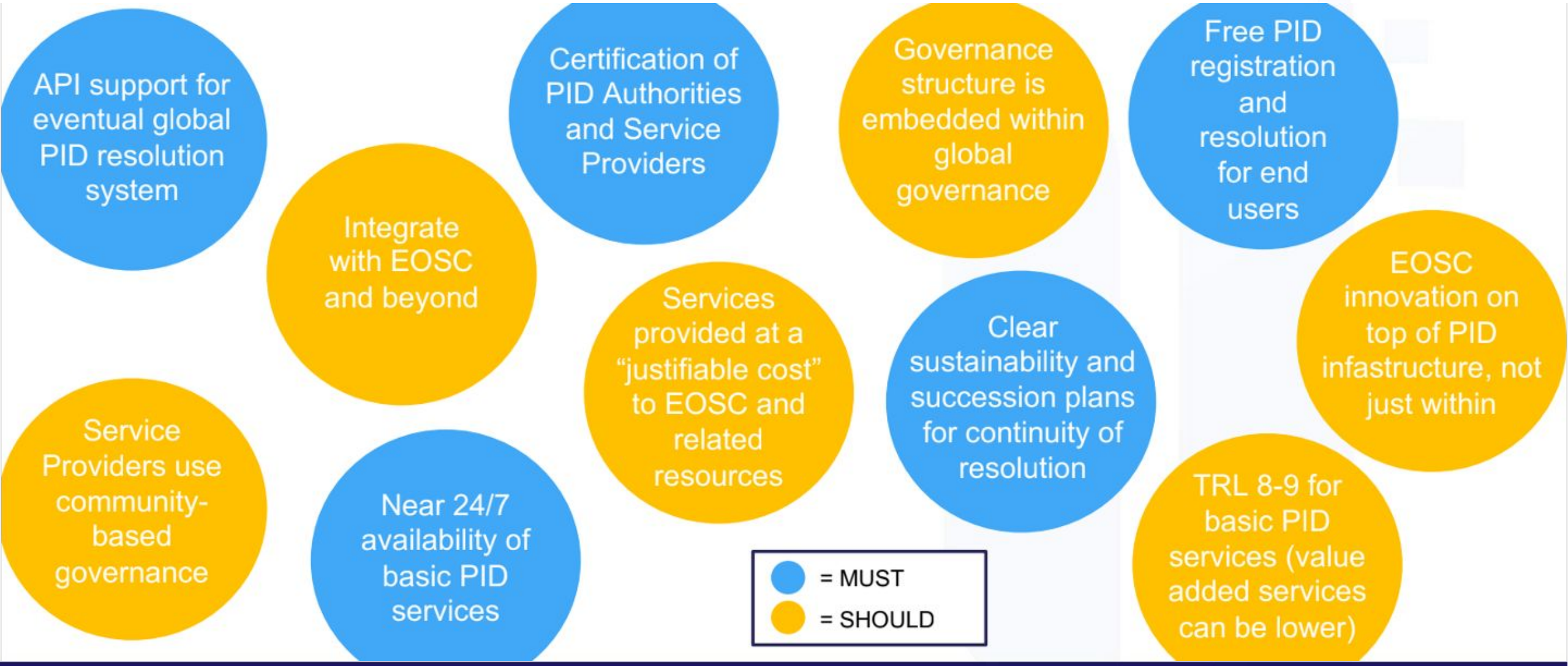
1. Viable, trusted PID infrastructure suitable for the long-term
2. Wide use case coverage
3. PIDs as the preferred method for reference
4. Enable a FAIR research environment
5. Interoperable PID ecosystem
6. Technological independence for flexibility
7. Supports mature and established PID practices, technologies, providers etc.
8. Sustainability & persistence
9. Innovative tools and services
10. Regular updates/review of policy

# EOSC PID Policy: PID Application Usage Requirements



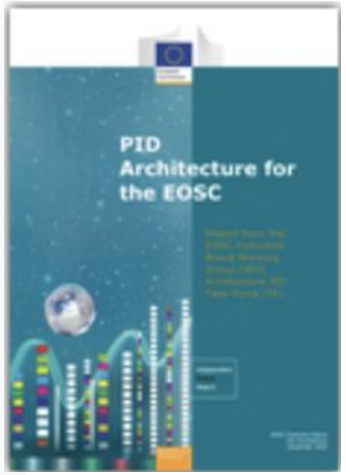
# EOSC PID Policy:

## PID Services, Service Providers, Governance and Sustainability Usage Requirements



# EOSC PID Architecture guiding our work

- Describes a high-level view on components and stakeholders relevant inside a PID architecture based on namespaces
- Technology-agnostic definitions
- The report identifies:
  - Stakeholders at different levels of PID namespaces, their roles and their ability to enforce policies
  - Opportunities for how interoperability between PID services can be achieved within the framework of the EOSC
- Written for PID and generic service providers and provides guidelines on implementation of PIDs and related services compliant with the EOSC PID Policy



# The PID Landscape

René van Horik

SURF

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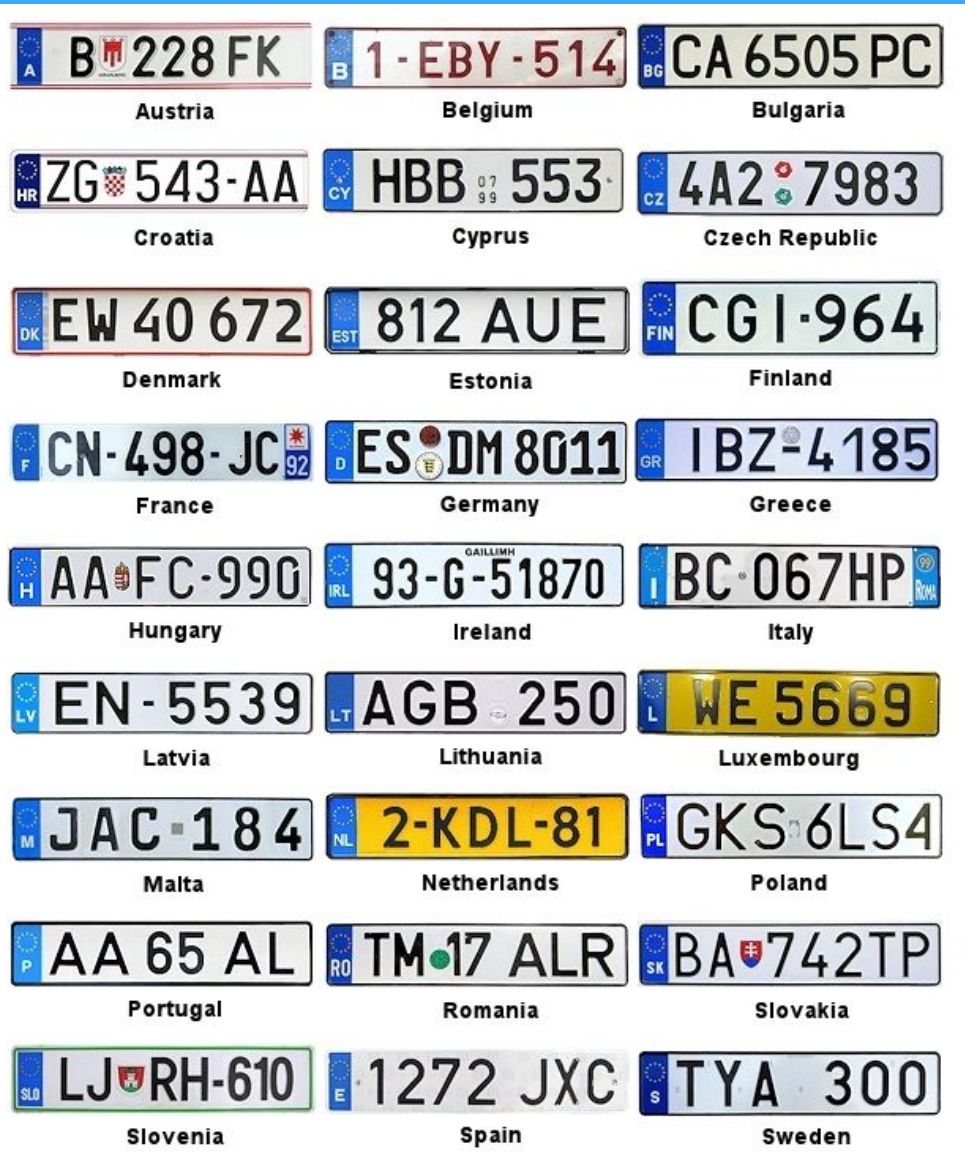
the European Union

# The PID Landscape

- Actors:
  - Scheme
  - Owner
  - Manager
  - Service provider
  - Authority



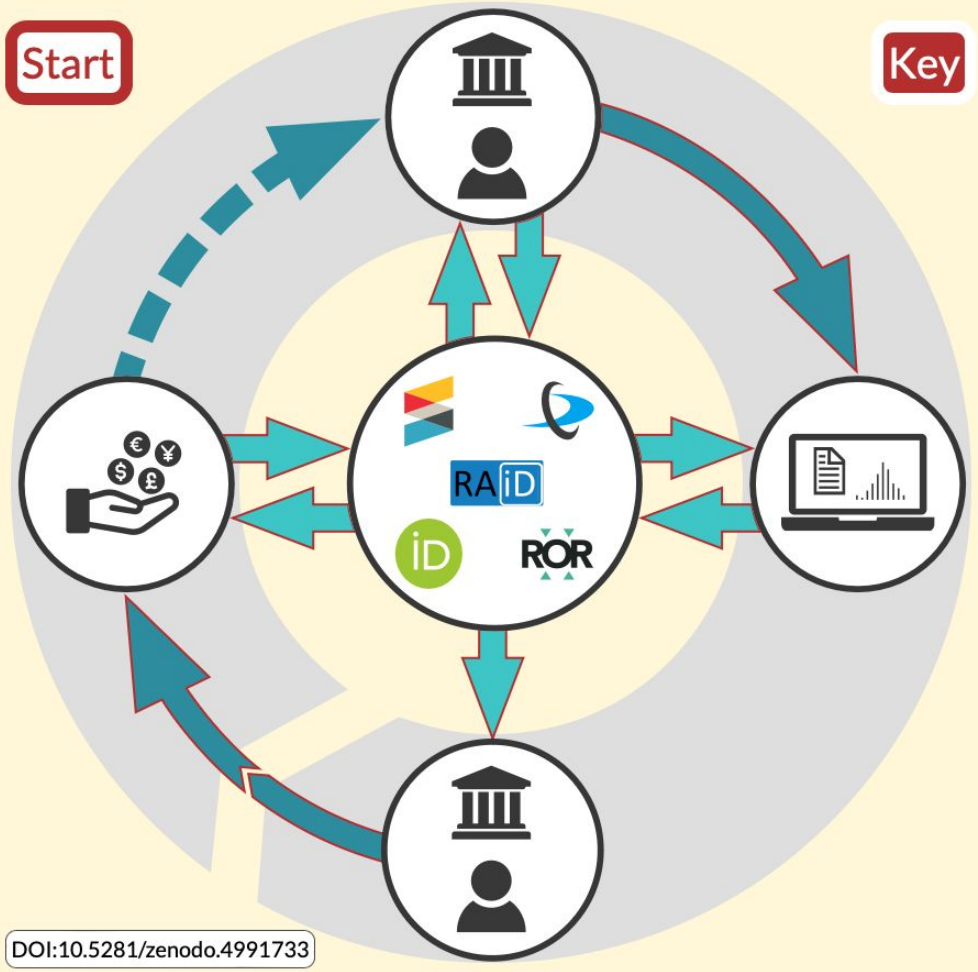

http://www.worldlicenseplates.com/world/EU_EURO.html

# PIDs for entities in the research workflow

- Researchers -> e.g. ORCID
- Projects -> e.g. RAID
- Data -> e.g. Handle
- Publications -> e.g. DOI
- Funders -> e.g. ROR
- Instruments -> e.g. PIDinst
- Software -> e.g. SWHID
- Etc.

MOREBRAINS

# The PID-optimised research cycle




## Actors and entities

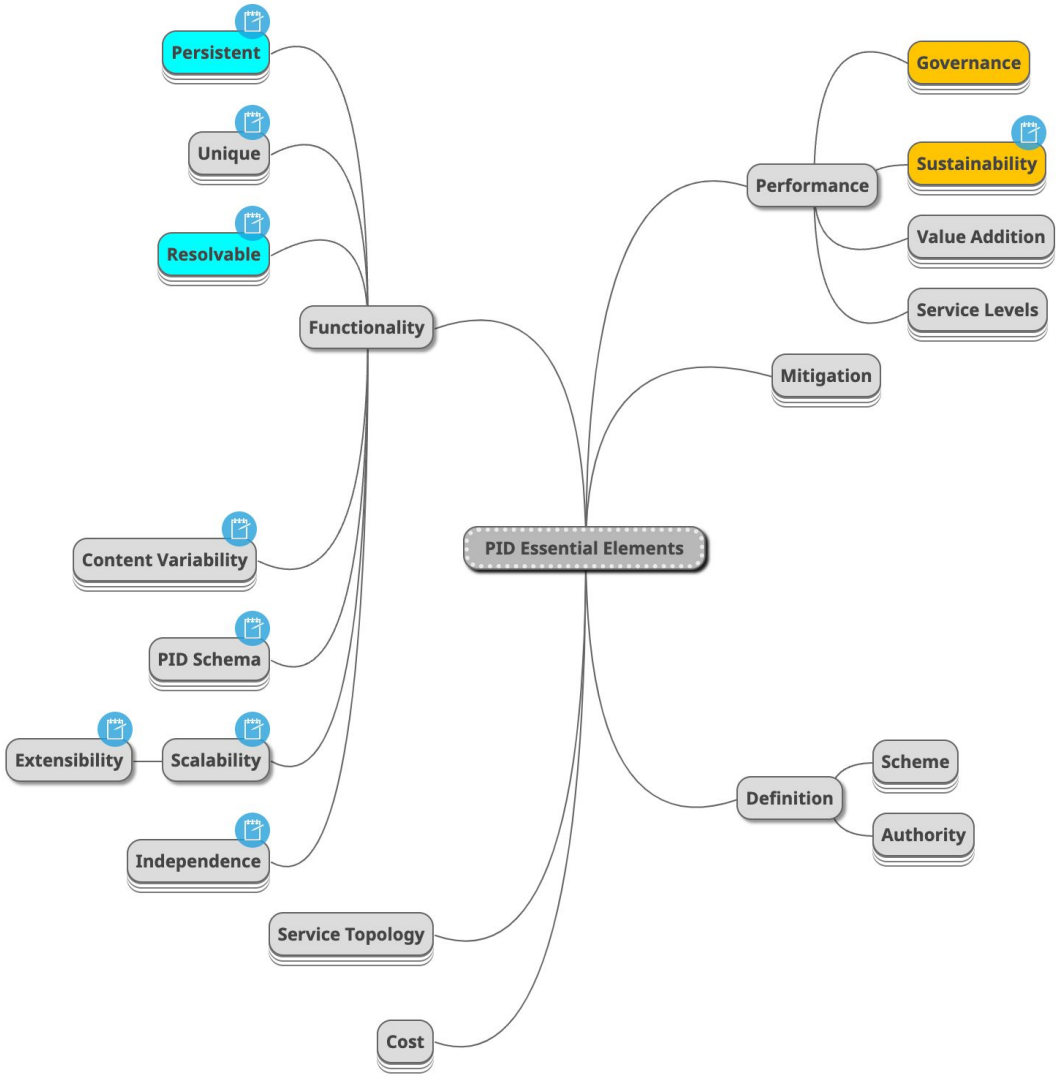
- = Funding organisations
- = Research-performing organisations
- = Research contributors
- = Research output platforms/publishers (articles, data, algorithms, etc)

## Priority PIDs and registries

- = Crossref
- = Datacite
- = ORCID
- = Digital Object Identifier (DOI)
- = Research Activity Identifier (RAiD)
- = Research Organisation Registry (ROR)

Brown, J., Jones, P., Meadows, A., & Murphy, F. (2021). The PID-optimised Research Lifecycle. Zenodo.https://doi.org/10.5281/zenodo.4991733

# Elements, Characteristics and Attributes of PID Stacks

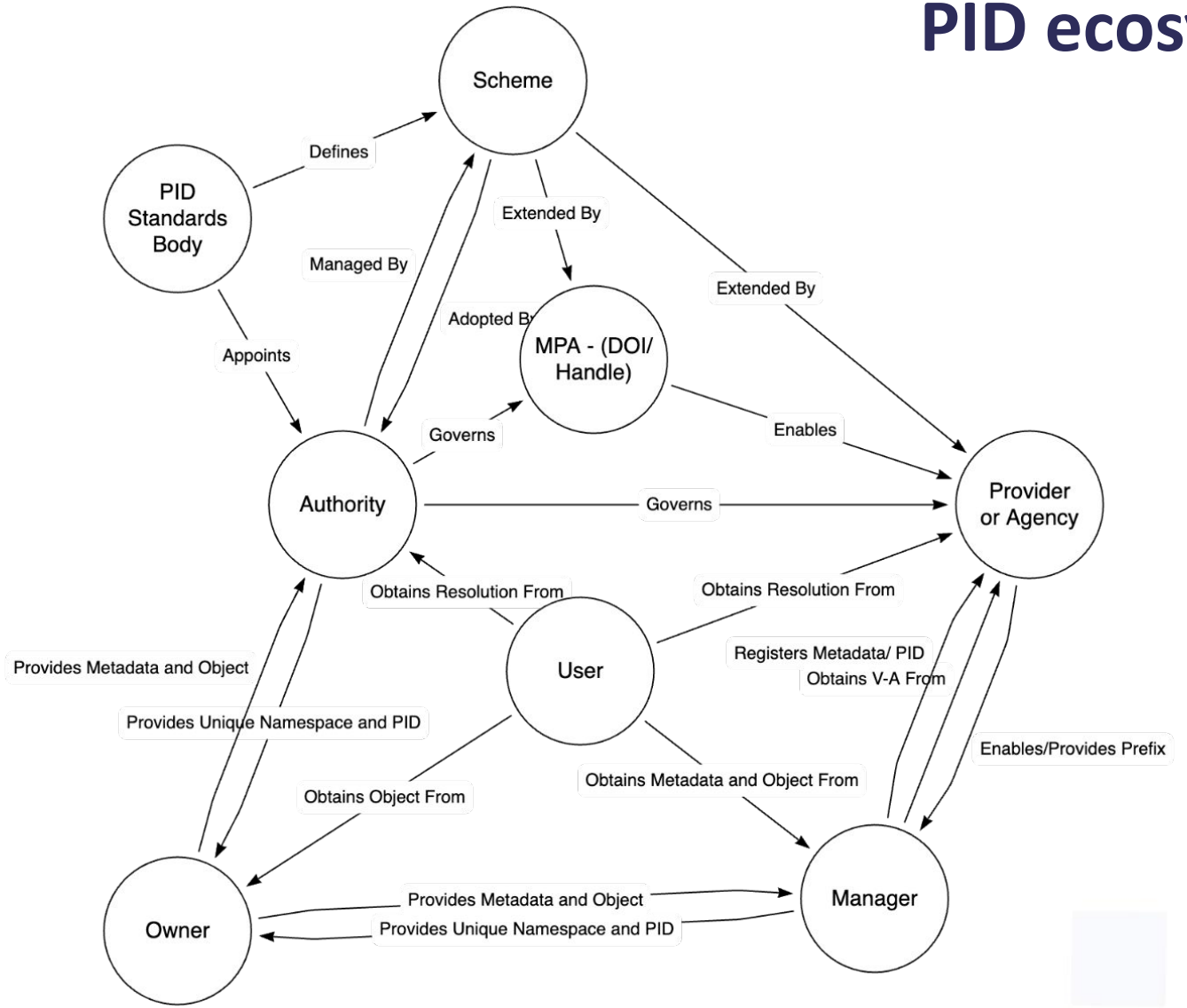



This inventory and classification is in development by the FAIR-IMPACT project. It consolidates the expectations of the community, assertions and features advertised by PID Stacks, and the content of the EOSC PID Policy into a multi-level hierarchy.

Live version

https://atlas.mindmup.com/scientilla/f43_4_1_pid_essential_elements/index.html#

# PID ecosystem -> Actors and Roles



# PID Stacks

PID Stacks are best described by looking at some examples. The table on the right shows a number of PID Stacks built from the Handle System. It includes popular stacks such as the **DataCIte** and **CrossRef** DOIs, as well as **ePIC**.

| Scheme | Authority | MPA | Provider (Registration Agencies) |
|---|---|---|---|
| Handle System | DONA Foundation | Corporation for National Research Initiatives (CNRI) | Not investigated |
| Handle System | DONA Foundation | Coalition for Handle Services – China | Not investigated |
| Handle System | DONA Foundation | GDWG/ ePIC | See A.4.6 |
| Handle System | DONA Foundation | CTIC | Not investigated |
| Handle System | DONA Foundation | MISADI | Not investigated |
| Handle System | DONA Foundation | Smart Africa Alliance | Not investigated |
| Handle System | DONA Foundation | Tunisian Internet Alliance | Not investigated |
| Handle System | DONA Foundation | RosTelecom | Not investigated |
| Handle System | DONA Foundation | International DOI Foundation | Airiti |
| Handle System | DONA Foundation | International DOI Foundation | BSI Identify |
| Handle System | DONA Foundation | International DOI Foundation | Chinese DOI |
| Handle System | DONA Foundation | International DOI Foundation | CNKI |
| Handle System | DONA Foundation | International DOI Foundation | CrossRef |
| Handle System | DONA Foundation | International DOI Foundation | DataCite |
| Handle System | DONA Foundation | International DOI Foundation | EIDR |
| Handle System | DONA Foundation | International DOI Foundation | HAND |
| Handle System | DONA Foundation | International DOI Foundation | JaLC |
| Handle System | DONA Foundation | International DOI Foundation | KISTI |
| Handle System | DONA Foundation | International DOI Foundation | mEDRA |
| Handle System | DONA Foundation | International DOI Foundation | EU-OP |

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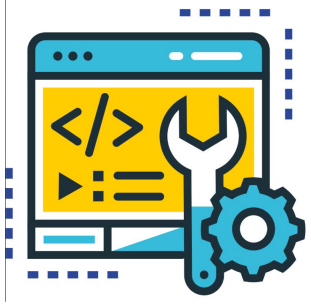
# Introduction to Compliance Assessment Toolkit (CAT)

By: Natascha van Lieshout

Funded by the European Union



# CAT
## EOSC Compliance Assessment Toolkit

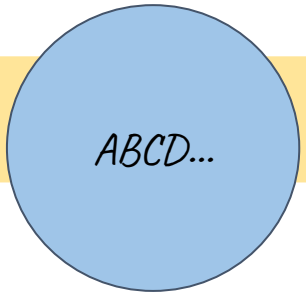
**Objectives:**

1. Allow consistent and unambiguous encoding of assessment principles, objectives, criteria, metrics and tests using a vocabulary developed for the toolkit
2. Enable the recording of PID policy compliance for a range of important actors in the ecosystem. Some assessments are made by the administrators of the CAT on behalf of the community, while the majority of service providers and managers will be able to conduct self-assessments,

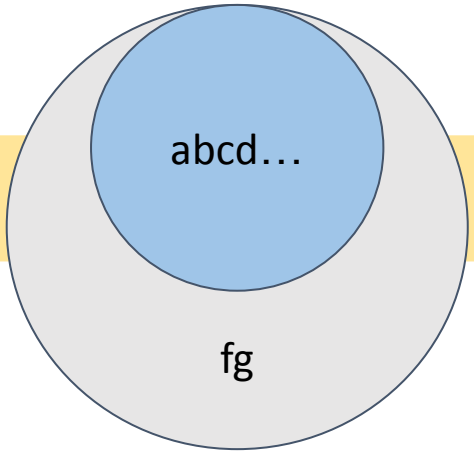
**Description:**

The FAIRCORE4EOSC Compliance Assessment Toolkit (CAT) will assist actors in the PID ecosystem with assessment of their compliance with policy. The toolkit is by design capable of accommodating a wide variety of compliance assessment use cases but will initially focus on PID compliance only.

# Development of the Principles, Criteria, Tests and Guidance

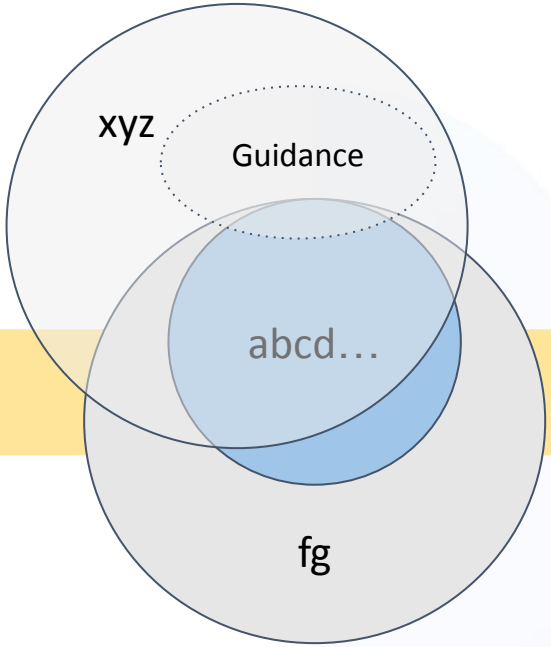



European Commission, Directorate-General for Research and Innovation, Hellström, M., Heughebaert, A., Kotarski, R., et al., **A Persistent Identifier (PID) policy for the European Open Science Cloud (EOSC),** Publications Office, 2020, https://data.europa.eu/doi/10.2777/926037




Hugo, W., Steinhoff, W., Turner, D., Buys, M., & Zamani, T. (2023). D2.1 **Compliance Assessment Specification**. Zenodo. https://doi.org/10.5281/zenodo.10067253

FAIRCORE4EOSC
Core Components Supporting a FAIR EOSC




Work in Progress: FAIR-IMPACT WP3

**Community Expectations**
**Use Cases**
**Workflows**
**PID Policies**
**Best Practices**

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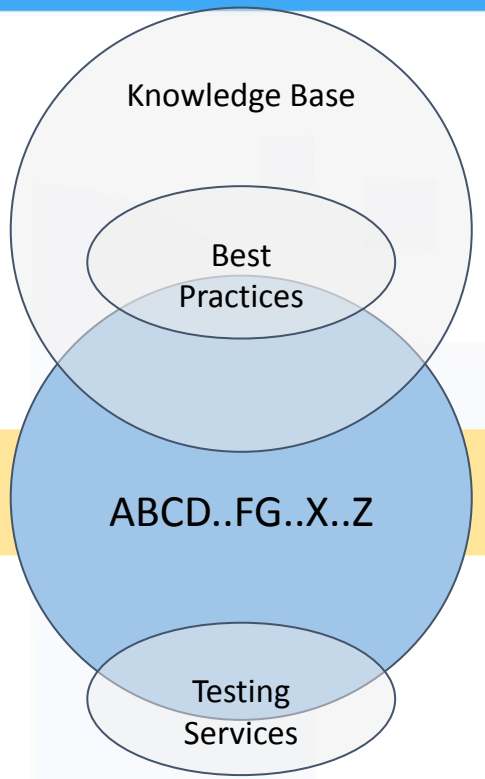
Expanding FAIR solutions across EOSC




Work in Progress: FAIR-IMPACT WP3, FC4E WP2

**PID Knowledge Base integrated with CAT**

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FAIRCORE4EOSC
Core Components Supporting a FAIR EOSC

# Key Definitions

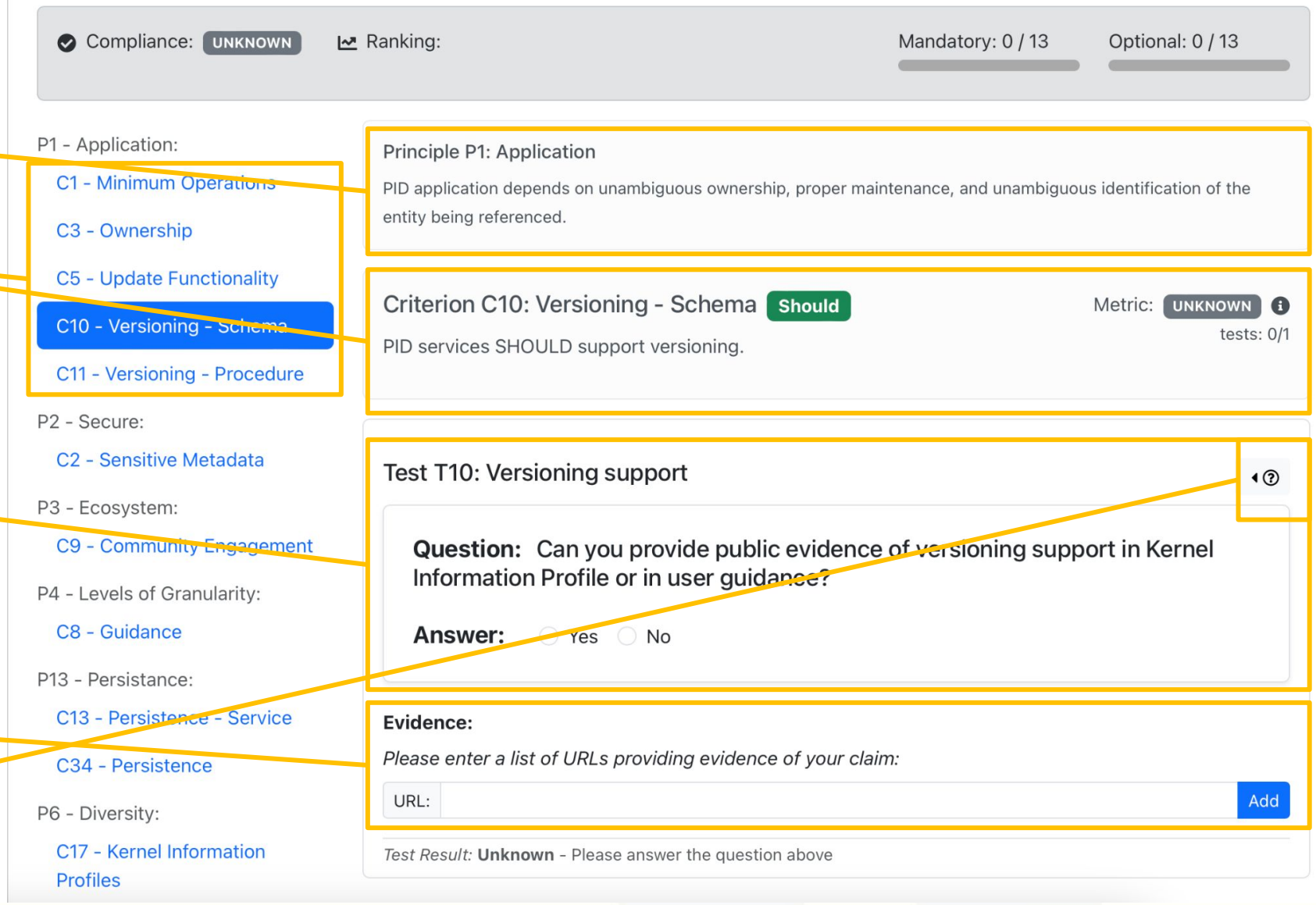
Principle

Criteria

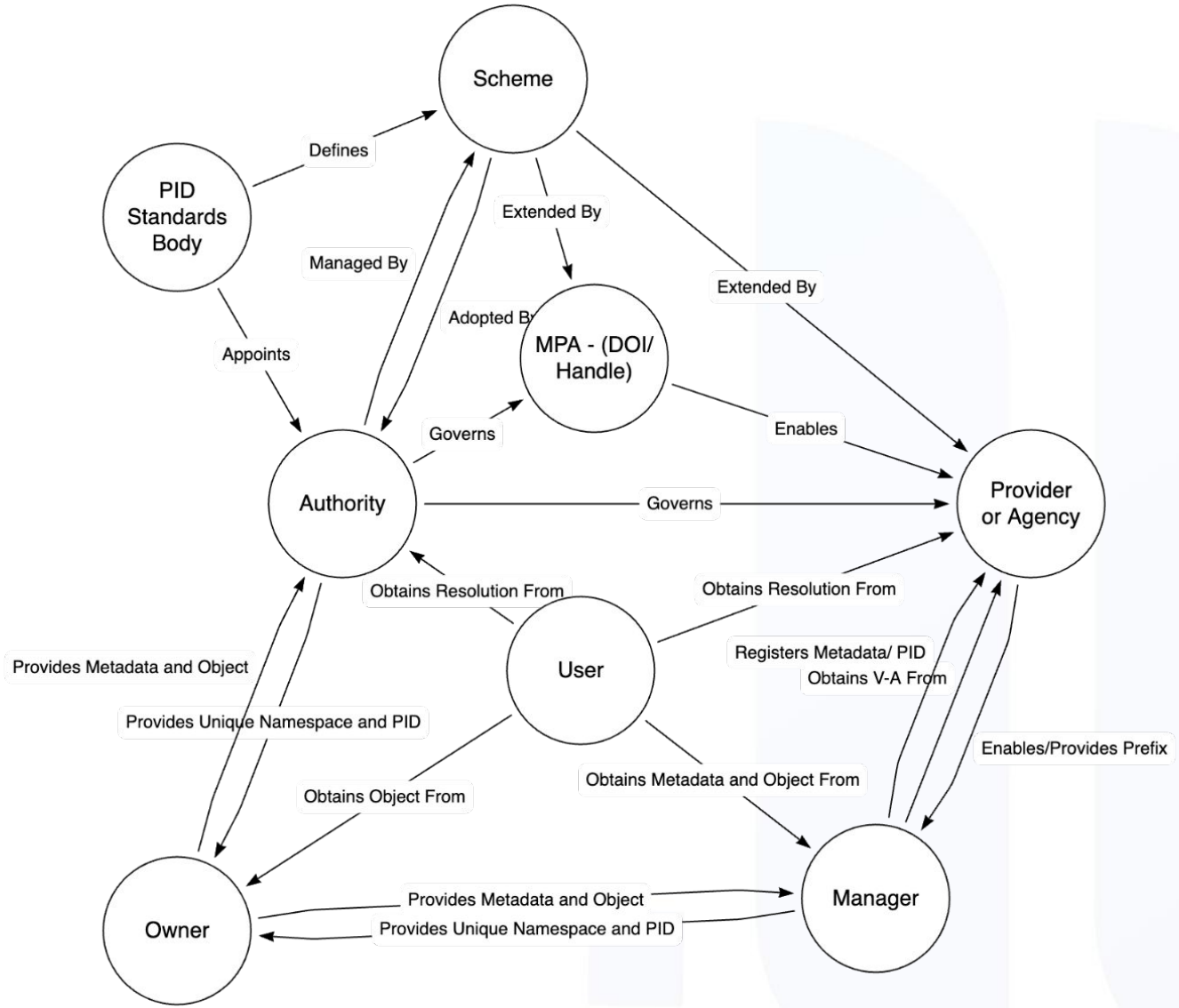
Test

Evidence

Guidance



# Roles


Scheme
Defines
PID Standards Body
Extended By
Managed By
Extended By
Adopted By
MPA - (DOI/ Handle)
Appoints
Governs
Enables
Authority
Governs
Provider or Agency
Obtains Resolution From
Obtains Resolution From
User
Registers Metadata/ PID
Obtains V-A From
Provides Metadata and Object
Provides Unique Namespace and PID
Enables/Provides Prefix
Obtains Metadata and Object From
Obtains Object From
Owner
Provides Metadata and Object
Provides Unique Namespace and PID
Manager

# Mapping Principles and Criteria to Roles

| # | Criterion | Imperative | Scheme | Authority | Service Provider | Manager | Owner |
|---|---|---|---|---|---|---|---|
| C1 | Minimum Operations | SHOULD | | | ✓ | | |
| C2 | Sensitive Metadata | MAY | | ✓ | ✓ | | |
| C3 | Ownership | MUST | | ✓ | ✓ | | |
| C4 | Maintenance | SHOULD | | | | | ✓ |
| C5 | Update Functionality | MUST | | | ✓ | ✓ | |
| C6 | Ownership Transfer | SHOULD | | | | ✓ | |
| C7 | Resolution Integrity | MUST | | | | ✓ | |
| C8 | Guidance | SHOULD | | | ✓ | | |
| C9 | Community Engagement | SHOULD | | | ✓ | | |
| C10 | Versioning - Schema | SHOULD | | | ✓ | | |
| C11 | Versioning - Procedure | SHOULD | | | ✓ | ✓ | |
| … | … | … | … | … | … | … | … |

# Evaluation

Compliance: UNKNOWN  Ranking:  Mandatory: 11 / 13  Optional: 12 / 13

## assessments

+ Create New  View Your Assessments

Read about different actors in the ecosystem before starting.

PID Authority

View public assessments

PID Service Provider

View public assessments

PID Manager

View public assessments

PID Owner

View public assessments

## PID Service Provider assessments

Filter

| name | type | subject type | subject name | organisation | Created On | Actions |
|---|---|---|---|---|---|---|

No data found...

<< < 1 of 1 > >>  Back

# Why do it?

- ➔ Get guidance on how to improve
- ➔ Demonstrate citable commitment to policy and best practices
- ➔ Advertise to potential new users and collaborators
- ➔ Gain trust
- ➔ Help build a consistent, aligned and interoperable international PID infrastructure

# Assessing Compliance: A Tale of Two Service Providers Activity

# Instructions

We have created two fictional PID Service Provider websites:

Gal ID: https://tests.cat.argo.grnet.gr/galid/
BAD ID: https://tests.cat.argo.grnet.gr/badid

Please go explore and assess the websites of the given (fictional) PID service providers, Gal ID and BAD ID, based on the principles and criteria provided below. We encourage you to discuss and reflect on the criteria as well as offer guidance to Gal ID and BAD ID on how to improve their service.

# Final Discussion and Reflection

# Support Call

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# 2nd open call for Route 2 support

## The second call for Route 2 support will be open for applications from 31st January-31st March 2024. Applicants can apply to join the following support actions.

### #1: Assessing and improving Research Software

Software plays a crucial role in academic research, not only as a tool for data analysis but also as a research outcome or result, or even the object of research itself. It is important for producers of research software to make sure that their software is usable by others. This can be achieved by being well described with metadata and made FAIR. In a FAIR ecosystem, software should receive the same level of attention and recognition as publications and datasets. However, the lack of standardised guidelines and best practices for software development and curation has resulted in challenges for researchers, developers, and other stakeholders in finding, reusing, and reproducing research results.

This support action offers two paths to enhance the FAIRness and impact of research software.

- **Path 1** focuses on the assessment and improvement of existing research software using a new extension of **F-UJI**.
- **Path 2** centers on implementing the **Research Software MetaData** guidelines for better archiving, referencing, describing, and citing research software artefacts.

Learn more

### #2: Creating EOSC compliant Persistent Identifier (PID) policies

The persistent identification of research outputs is part of good research data management practice and are central to the FAIR Principles and the vision of the European Open Science Cloud (EOSC). There are many types of persistent identifiers (PIDs) currently being used to identify data and other kinds of research outputs but also different actors involved in the creation of outputs and the organisations that employ them or fund their work.

To foster harmonisation on the use of different persistent identifiers, there is a need to define and implement research data and/or PID policies. This support action will help with the definition of EOSC compliant PID policies by completing self-assessments with regard to PID policy readiness through the use of FAIRCORE4EOSC's **Compliance Assessment Toolkit** **(CAT)** service, which strives to encode, record, and query compliance with the EOSC PID policy and more (including TRUST, FAIR, Reproducibility, GDPR, and Licences).

Successful applicants will receive **10 000 €** to enable their participation.

### #3: Recommendations for trustworthy and FAIR-enabling data repositories

FAIR-enabling and trustworthy data repositories play a central role in making and keeping data FAIR over time. While there is ongoing debate on what constitutes trustworthiness, there is broad agreement that transparency and evidence is essential to enable end users to make informed decisions about the repository services they use. In the scope of FAIR assessment, there are also steps to take in the findability of assessment information, and the exposure of assessment results. FAIR-IMPACT has developed **guidelines to improve the transparency of, and trust in, repositories**. In this support action successful applicants will have the opportunity to test the guidelines and receive guidance on exposing relevant metadata at the organisational and object level to facilitate discovery, provide context, and support interoperability.

Successful applicants will receive **4000 €** to enable their participation.

Learn more

### #4: Improving the availability and machine readability of data policies with FAIRsharing

To ensure that researchers are working in a FAIR-enabling ecosystem, policymakers at the national, funding body, publisher, and organisational levels have been developing and aligning their policies to support the creation and use of data that are findable, accessible, interoperable and reusable. Monitoring the evolving policy landscape is labour intensive and focuses mainly on what is happening at the national level. As such, it can be hard to know what is happening at the institutional and research infrastructure level where most of the research is carried out. To provide a more complete picture of the policy landscape, this support action will work support the registration of data policies from a wider range of stakeholders using **FAIRsharing** and work collectively to consider how we can leverage this shared pool of information for ongoing policy monitoring activities.

Successful applicants will receive **4000 €** to enable their participation.

# The Consortium