



**Risks and Trust in pursuit of a well functioning
Persistent Identifier infrastructure**

Recommendations and some selected outcomes

● The mission

● Commissioned by Knowledge Exchange (KE) is a collaboration between six national research supporting organisations - CSC (Finland), CNRS (France), DeiC (Denmark), DFG (Germany), Jisc (UK) and SURF (the Netherlands) - working together to support the use and development of ICT infrastructures for higher education and research.

“... to identify, through investigation, analysis and recommendations, what could be the best possible strategic and operational paths to achieve a well-functioning PID infrastructure for Knowledge Exchange (KE) member states and beyond. “

“... to identify the **main risks** when pursuing a well-functioning PID infrastructure for research, and to better understand the most important elements of **trust** in creating said infrastructure. Equally important is an analysis that reveals how outcomes and knowledge emerging from this investigation can be transformed into stakeholder recommendations.”

<https://www.knowledge-exchange.info/news/articles/24-06-2021>



● The team

- Pablo de Castro

Physicist. Open Access Advocacy Librarian at the University of Strathclyde in Glasgow since Jan 2017. Technical Secretary of the Dutch non-profit association euroCRIS since Jan 2018. Former OpenAIRE project officer. Member of the EOSC Association Task Force for PID Policy and Implementation. Associate of scidecode science consulting.

- Ulrich Herb

Sociologist & Information Scientist, since 2001 Open Access expert/ project manager/ head of the Publication and Research Support Department at Saarland University, board member of the learned society for Information Science in the German-Speaking countries. Associate of scidecode science consulting.

- Laura Rothfritz

Research assistant and PhD candidate at the Berlin School of Library and Information Science at Humboldt University Berlin. Associate of scidecode science consulting.

- Joachim Schöpfel

Professor for Information Science at the University of Lille and independent consultant.

● The study

● **Analysis** of the current state of the Persistent Identifier (PID) landscape in the six Knowledge Exchange partner countries with a focus on the e-infrastructure for the *currently available PID entities* (eg researchers, institutions, etc.) and *new PIDs* (eg conferences, research equipment, facilities).

Data collection by **literature study** & **expert interviews**

These fed into

- the construction of seven **case studies** highlighting issues of risk and trust in the PID infrastructure and
- the formulation of **recommendations** for good practice and on the best possible strategic and operational paths to achieve a well-functioning PID infrastructure.

The interviewees

Mathias	Astell	Hindawi	GBR	PID Manager
David	Aymonin	ABES	FRA	PID Authority
Geoffrey	Bilder	CrossRef	GBR	PID Service Provider
Matt	Buys	DataCite	GBR	PID Service Provider
Maria	Cruz	NWO	NL	PID Manager
John	Doove	SURF	NL	PID User
Nathalie	Fargier	CNRS	FRA	PID Owner
Martin	Fenner	formerly Technical Director at DataCite, involved in the FREYA project	GER	PID Manager
Stephanie	Hageman-Wilholt	TIB Hannover/ConfIDent	GER	PID Authority
Juha	Hakala	URN representative, National Library of Finland	FIN	PID Service Provider
Lars	Holm Nielsen	Zenodo	CHE	PID Owner
Karen	Hytteballe Ibanez	DTU - Technical University of Denmark	DNK	PID User
Jens	Klump	IGSN	GER	PID Service Provider
Rachael	Lammey	CrossRef	GBR	PID Service Provider
Dan	Smith	Wellcome Trust	GBR	PID Owner
Mark	van de Sanden	SURF, systems architect	NL	PID Authority
Herbert	Van de Sompel	DANS	NL	PID User
Peter	Verhaar	Leiden University	NL	PID Owner

Some (selective) findings

- Predominantly mentioned: **well-established PIDs** such as DOI, ORCID and ROR, to a lesser extent emerging PIDs (funder and grant IDs, RAIDs, ConfIDs), standards like URN and schemes like ARK.
- Main benefits: **Interoperability, value-added services, availability/interconnectivity** of rich metadata.
- Dichotomy of **'technical'** (bottom-up, researcher driven) and **'admin-oriented' PIDs** (top-down, uptake driven by institutions, publishers and research funders).
- **Open source** and **open data** are a key feature for trust and reliability.
- Establishing a **community of PID** users is a key factor for success and trustworthiness.
- PIDs are considered **socio-technical** infrastructures. It seems that trust in organisations or individuals is more important for the acceptance of PIDs than the technique used, as the risks associated with the techniques are considered amorphous.
- The **implementation of PIDs** requires a strategic analysis.



Recommendations



... addressing a wide range of stakeholders

- **National-level stakeholders**
- **Research funders**
- **PID Service Providers**
- **Institutions/ Research Performing Organisations (RPOs)**
- **Researchers**
- **Publishers**
- **A (possible) PID Federation**
- **Knowledge Exchange**



The recommendations

Research Funders

1. **Make sure you are represented in – or at least informed about – national-level coordination initiatives.**
2. **Be aware of what PIDs are relevant for your activity**, including for project proposal evaluation, reporting on funded research outputs and grant identification.
3. **Consider assigning grant IDs to your grants** whenever possible, allocating the appropriate human and technical resources to make it possible.
4. **Consider requiring specific PIDs from your funded researchers**, even for applicants to your funding calls.
5. **Be aware of the developments around emerging PIDs** that may be relevant to your area of activity including PIDs for instruments and facilities and PIDs for geo samples.
6. **Be aware of funder-specific coordination initiatives** at a national and international level, promoting and joining them whenever possible.



The recommendations

Institutions (Research-Performing Organisations, RPOs)

1. **Make sure you are represented in** – or at least informed about – national-level coordination initiatives.
2. Consider the possibility of drafting an **institutional PID policy**.
3. **Raise awareness** of the existing and emerging PID landscape among institutional researchers, including prompting them to use the appropriate ones.
4. **Be aware of your key role in the implementation of specific, admin-oriented PIDs.**
5. **Include as many PIDs as possible** in your research information management systems such as institutional repositories and CRIS systems (plus any other institutional system that feeds these).
6. **Be aware of technical PIDs** directly emerging from researcher communities in a bottom-up fashion.
7. **Stay informed about (still to come) mechanisms to issue (and share and use) institutional PIDs** such as RAiDs or PIDINSTs.

The recommendations

Publishers

1. **Ensure long-term availability** of publications with a PID through agreements with long-term archiving agencies or national libraries. Have exit policies in place stating you will notify the PID provider about the findability of publications in case of journal discontinuation so that resolving is maintained.
2. **Include entries for additional PIDs** in manuscript submission systems as these PIDs become more widely implemented.
3. **Provide information snippets** to researchers/authors on why PIDs are important.
4. **Be aware of the level of maturity of specific PID initiatives** in order to allow references to these to be included in manuscripts.
5. Make sure the PIDs you provide in your publications **are operational and resolve correctly**.
6. Where these are available, **consider including pre-existing PIDs for pre-prints in the final research publication webpage** alongside the PID for the Version of Record.
7. **Diamond OA publishers:** implement DOIs as the bare minimum, make use of the *Diamond OA Capacity Centre's* support, join initiatives where best practices may be shared.

- Publication note

- Final report on the study on “Risks and Trust in pursuit of a well functioning Persistent Identifier infrastructure” published in February 2023:

De Castro, Pablo; Herb, Ulrich; Rothfritz, Laura, & Schöpfel, Joachim. (2023). "Building the Plane as We Fly It": the Promise of Persistent Identifiers
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Thanks for your attention.

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