

# Towards Smarter Persistent Identifiers

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## ABSTRACT

This workshop is a follow up to the Tutorial on Persistent Identifiers. The goal of the workshop is to discuss in detail key current issues and recent developments in persistent identifiers that are interesting for the Digital Preservation community

This workshop deals directly with new initiatives and capabilities of persistent identifiers.

## Keywords

Persistent Identifiers; Smarter Persistent Identifiers; Multiple Resolution; Handle System; DOI; ARK; URN; URN:NBN.

## 1. INTRODUCTION

It is obvious that we need identifiers in a digital world to unambiguously determine what a resource is and where it can be found. However, over time it has become widely acknowledged that there is often great value in creating identifiers that are also persistent. As a result many different systems have emerged to address this need, so that a link to a resource can be guaranteed to work into the future [1].

Moreover, the scope of persistent identifiers has grown way beyond documents to include datasets, software, audiovisual content, people and other entities. Furthermore, innovative services have been developed alongside the identifiers. For instance, there is a service that allows funding agencies to track the impact of its funding across the academic domain [2].

A characteristic of the world today is that (content) domains are no longer discrete and independent. Researchers for instance want to make their datasets available and to link them to their formal publications. Libraries and archives are increasingly wanting to link out to data stored elsewhere rather than ingest everything themselves. As the domain entwine there is a growing realisation that the different persistent identifier systems must agree a framework for interoperability between the systems.

The European Commission under the Horizon 2020 programme had funded the THOR Project [3] to establish seamless integration between articles, data, and researchers. The objectives are to establish interoperability and integrate services across the partners. The goal is to make things easier and more open for researchers.

Most Persistent Identifiers resolve to a single resource but increasingly there is a need for multiple resolution where one entity to be resolved to multiple other pieces of data or entities [4].

We need smarter persistent identifiers. Identifiers that are machine readable and that do so much more than map to a single URL. We need identifiers that can work together to make things easier for everyone.

Smarter persistent identifiers have been discussed a lot in the IETF URNBIS working group [5]. One aspect of this is syntax: how should we attach resolution related requests to the identifier itself? Currently every system has a different solution to this problem, which is not an optimal situation.

The other issue is semantics: what kind of resolution services are there? Requesting provenance metadata is just one of the many, many services that potentially could be developed. Rights metadata has been discussed a lot (who has the copyright; is there a license; who is entitled to access the document; what can be done with it once it has been downloaded), and preservation metadata is another hot topic (what has happened to the document during archiving). What is clear is that HTTP is not sufficient; we need intelligent resolvers, which can pass requests to the correct servers in the right form. And in order to achieve this, our persistent identifiers must get a lot smarter than they currently are.

## 2. SCOPE

This workshop will present the latest developments in the Persistent Identifier world that are relevant for the iPRES community. This includes interoperability and (metadata) services such as multiple resolution.

## 3. TOPICS

The topics will depend to a great extent on the participants and their experiences and case studies. However, it is anticipated that at least the following topics will be covered in the workshop.

- The THOR project - establishing seamless integration between articles, data, and researchers
- Interoperability frameworks
- Multiple resolution
- Contextual resolution

## 4. INTENDED AUDIENCE

This workshop has a strong practitioner focus although it will cover only the most recent developments. It will be especially interesting for those working with Digital Archives and Digital Collections and all those who understand how important smarter persistent identifiers are. It will be an opportunity to share experiences and to discuss use cases in a highly interactive way.

## 5. EXPECTED LEARNING OUTCOMES

The aim of this workshop is to stimulate discussion and the exchange of ideas between the iPRES community and those involved in building smarter persistent identifiers. There is a need to connect the dots not only between the different systems but also between the different people involved.

## 6. WORKSHOP DESIGN

The audience is expected to contribute their experiences and case studies. In any event, there will be contributions from ORCID/DataCite (THOR), IDF, The Office of Publications of the European Union and RDA.

The workshop leader will be Jonathan Clark. Alongside his part-time work as Managing Agent for the DOI Foundation, Jonathan also designs, produces and runs innovative workshops for clients all over the world.

## 7. REFERENCES

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