

Implementation plan on using URN_NBN Persistent Identifiers

First of all we would like to say that the persistency of Identifiers and web resources is not about the technology one uses, but about organisation and sustainable business models. For more information about Persistent Identifier policies take a look at the successful [Persistent Identifier Linking INfrastructure \(PILIN\) project](#) in Australia that is part of the [ARROW](#) project.

To setup a persistent Identifier program based on [National Bibliographic Numbers \(NBN\)](#) URN identifiers and a resolver one needs to take the following steps:

1. **Work group:** Create a work group that manages all the technical and organisational details of such project. Also think about the syntax that is going to be used. For example urn:nbn:{country}:{sub-namespace}:{repositoryid}-{localid}. Country is the short name of the country, sub-namespace represents web resources that come from the repositories, repositoryid is a two digit representation of the repository and local id is the Identifier generated at the repository. This can for example result in the following Identifier for one publication urn:nbn:ie:ui:21-1234/5678 .
 2. **Formalities:** Since the urn:nbn:ie namespace is by default claimed by the National Library, one has to arrange an agreement with the National Library to use a sub-namespace for scientific material. This name should be short and have no semantic meaning. For example urn:nbn:ie:ui, or urn:nbn:ie:oa, or urn:nbn:ie:sp.
 3. **Registration Agency:** Create a registry in which repositories are given a short random number of two digits. This will create a sub-namespace in which a repository autonomously can distribute Persistent Identifiers for their publications. For example Trinity College Dublin (TCD) is registered as 21. The namespace for TCD to operate in will be urn:nbn:ie:ui:21.
 4. **Implementation at local level:** Each repository must generate Persistent Identifiers for each publication within their namespace that is provided and store this identifier in the database record. For example TCD can use existing identifiers to add after their namespace followed by a dash. In case TCD uses handle, the Identifier for one publication could look like the following urn:nbn:ie:ui:21-1234/5678. In case TCD uses database numbers urn:nbn:ie:ui:21-15874. (Make sure to store the identifier and not generate them on-the-fly. In case of database migrations these numbers might change and persistency is lost.)
 5. **Transport of identifiers and URL's:** Each repository must generate a DIDL package in which the URN and URL are included. See the MPEG-21 DIDL section in the main report.
 6. **National Resolution Service:** A national resolver can be made by harvesting the DIDL packages from each repository where the URL and URL bindings are extracted and stored. A web location must be created where the user or machine can go to for resolution of the identifier. For example <http://resolver.ie> where the user can insert an identifier and receive the current location of the web resource. For example <http://resolver.ie/urn:nbn:ie:ui:21-1234/5678> resolved to <http://repository.tcd.ie/1234/5678>
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