**Scoring of candidate**

**Permanent Unique Identifiers (PUIDs)**

**in the context of the Global Information System (GLIS)**

Please score candidates as follows: **1**=Poor/Not supported, **2**=Good, **3**=Best

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| **#** | **Requirement** | **ARK** | **DOI** | **LSID** | **Comments** |
| 1 | **Uniqueness** | 2 | 2 | 3 | DOI and ARK identifier names are only truly globally unique when given the respective context. The typical DOI or ARK identifier alphanumeric string is too short to guarantee any global string uniqueness independently of the respective context. |
| 2 | **Permanence** | 2 | 2 | 2 | Permanence is ultimately a question of trust, also when delegated to a central service. |
| 3 | **Opacity** | 3 | 3 | 2 | The LSID identifier name includes a DNS domain name. LSID names also include a namespace part that commonly in existing LSIDs has a semantic meaning. These LSID identifier name strings carry semantic meaning and therefore a lack of opacity. Some existing DOI and ARK identifiers have also been created with identifier name string fragments that have semantic meaning. The opacity need to be ensured when creating the DOI or ARK identifier name, it is not automatically given. |
| 4 | **Resolvability** |  | 3 | 1 | LSIDs require a DNS hack that is often not fulfilled in “live” LSIDs. I lack experience regarding the resolvability of ARKs. |
| 5 | **Discoverability** | 2 | 2 | 2 | Resolvable PUIDs greatly enhance the discoverability of respective content! However, I understand this requirement as the level of discoverability for the actual identifier name itself. Eventual services providing a (searchable) inventory of relevant identifiers need to be built. I believe that such discovery portals will function fine with all of these three PUID types. |
| 6 | **Security** | 2 | 2 | 2 |  |
| 7 | **Scalability** | 3 | 3 | 1 | The LSID resolver protocol requires a modification to the DNS. The modification to the DNS for a potentially large number of LSID issuers (data owners) would be a major scalability issue. However, when this is done I believe the scalability for the actual LSID names is not an issue. |
| 8 | **Interoperability** | 2 | 2 | 2 |  |
| 9 | **Compatibility** |  | 2 |  |  |
| 10 | **Content negotiation** | 3 | 3 | 3 | I believe that similar mechanisms for content negotiation using W3C standards would be equally possible for all three PUID types. |
| 11 | **Accepted standard** | 2 | 3 | 1 | DOIs are gaining users while I believe that LSIDs are loosing user support. |
| 12 | **Acquisition and maintenance costs** | *2* | *2* | *2* | While LSIDs are free to generate, the maintenance costs including maintaining the DNS hack would obviously not be trivial*.* |
| 13 | **Acceptance by publishers** |  | 3 | 1 |  |
| 14 | **Popularity** | 2 | 3 | 1 | DOIs are gaining popularity and user groups. I am not sure how active the further development of LSIDs still is. LSIDs seem to still maintain some popularity in the community for nomenclature and taxon names. |
| 15 | **Availability of tools** |  | 3 |  |  |
| 16 | **Resolution service and multiple resolution** |  | 2 |  |  |
| 17 | **Framework design** | 3 | 3 |  |  |
| 18 | **Metadata** | 2 | 2 | 2 | Resolver response format and controlled attribute terminology would for all PUID types need some efforts to be agreed and standardized. |
| 19 | **Relations** | 2 | 2 | 2 | I assume that attribute properties for describing relations would need to be declared as part of the metadata – and some development required independently of the chosen PUID type? |
| 20 | **Identification of fragments** | 3 | 2 | 2 | ARK has a suffix-pass-thru feature that might perhaps be used for fragments? LSIDs might perhaps similarly use the last optional version part for identification of fragments?? |