DPP Architecture

A CIRPASS Suggestion

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Design goals

- Interoperability
- Flexibility
- Combinability
- Extensibility
- Standardised level playing field

- Product-centric
- Decentralized in all kinds of ways
Integrating easily and effectively with existing Infrastructure but open to the Future.
Easy to create

- Produce DPP from existing information workflows
- Combine information from a variety of sources
- Easy registration/ automated red tape API
  - API for information exchange with authorities
  - Validation tools from authorities
- Control
  - Access control, usage control, compliance automation
Basic Features intended

- Public DPP information for consumers
  - Easy & reliable discoverability
  - Easy to display on any device (web)

- Flexibility
  - Deliver information based on needs (role based access for “recyclers” & “repairers”)
  - Usability for authorities as data-centric system (from data to Product & not from Product to Data)
Extensibility

- Integrates well into:
  - Dataspace concept
  - Gaia-X and data sovereignty

- Extend DPP data
  - To add non mandatory data easily
  - Ability to carry Industrie 4.0 data
Decentralized & interoperable Basis for thousand flowers to bloom
How?
One system, two ways to access

<table>
<thead>
<tr>
<th>Product UID</th>
<th><a href="https://example.org/UID">https://example.org/UID</a></th>
<th>did:method:UID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DNS or ISO 15459</td>
<td>DID method (e.g. EBSI, web method)</td>
</tr>
<tr>
<td></td>
<td>Resolver</td>
<td>DID Document</td>
</tr>
</tbody>
</table>

**Decentralized Data Repository (or dataspace or maybe with Linked data API)**
Parallel interoperable designs

- **HTTP Architecture**
  - Short term vision
  - Availability of tools high
  - Decentralized
  - 5 roles

- **DID Infrastructure**
  - Longer term
  - Includes advanced features
  - 5 roles

*Different path to the same information: The DPP is the same*
Common to both approaches

- Decentralized
  - DID is even more decentralized
- Product centric
  - Product UID scopes DPP
- Linked data as interoperability layer
  - Transforms to and from Linked data

- Decentralized Data Repository
  - One or more Repos
  - APIs standardised
  - 1000 ways to implement
- Tailored access role types:
  - “Consumer”, “Recycler”, “Repairer”, “Remanufacturer”, “Market Authority”
HTTP Structure
DPP Creation
Making a UID/URI & a Data Carrier

1. Initiates minting
   Responsible Economic Operator (REO)

Minting Product UID

2. Product UID

Data Carrier Production

3. Data Carrier

Product
Steps for DPP issuing (maximum data re-use)
Using the DPP
Simplified: Consumer Info (HTML)
Default: Public Consumer Info (HTML)
CEOPs may need privileged data

Product/Data Carrier

DPP structured Data RDF/JSON-LD

Resolver

ACL Policy Decision Point

REO Identity Management or eID

DPP Data Repository
CEOP: Privileges need to be managed
DPP Data Repo is a concept
Conclusion

- Internet/Web based system
  - Standards-based level playing field
- Flexible & highly interoperable
  - Can digest a large variety of solutions
- Combinable:
  - All nodes can be services
  - Data from a variety of sources can be merged
- Extensible (can integrate into the EU data strategy)

https://cirpassproject.eu/