Supporting interoperable solutions via standards

The DPP system framework

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With missing regulatory details, the Battery Pass developed a “Standard Stack”, the technical backbone to operate the passport and perform required systems management.

Interoperability is the biggest challenge

“... interoperability is the ability of organisations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organisations, through the business processes they support, by means of the exchange of data between their ICT systems”

→ Capability on several levels

The Battery Pass Technical Standard Stack

1'Enterprise Interoperability Framework
A top-down approach was followed to identify an initial longlist of standards for each element of the Technical Standard Stack.

<table>
<thead>
<tr>
<th>Standards origin &amp; hierarchy</th>
<th>Select examples</th>
<th>Evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Global standards</td>
<td>ISO, IEC</td>
<td>1 Cross sector suitability</td>
</tr>
<tr>
<td>2 European standards</td>
<td>CEN, CENELEC, ETSI</td>
<td>2 Open, non-proprietary and independent of specific technical implementation</td>
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<td>3 German standards</td>
<td>DIN, DKE</td>
<td>3 Co-existence of standards</td>
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<tr>
<td>4 Standard setters</td>
<td>IETF, W3C</td>
<td>4 Consideration of requirements of all stakeholders</td>
</tr>
<tr>
<td>5 Associations</td>
<td>Catena-X, Gaia-X</td>
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→ existing mature international standards
→ new and innovative approaches
A variety of building blocks beyond the regulation are needed for an operational system.
A variety of interoperability challenges need to be solved.

**Core DPP System Perspective**

- **Data Carrier and Unique Identifier Solutions**
  - Data Carriers
  - Allow different principles of Unique Identifiers
  - Routing to different distributed DPP Systems
  - Application of different data management technologies
  - Secure and reliable supply chain data acquisition and exchange

- **Public, Private Stakeholder**
  - EC Central Services
    - Passport Data Services
    - Registry UID
    - Support Services
  - 3rd Party Services
    - Backup Services
    - Distributed DPP System Services
      - Translator Services
      - Backup
      - NGSI-LD
      - AAS
      - SQL
      - ... Sector Specific Data Structure and Formats
  - Distributed Data Spaces
  - Sector Specific Policies and Rules
  - Cross-domain interoperability across different data spaces
  - Realise connectivity to products for dynamic data acquisition in use and r-phases
  - Seamless and secure provision of access to different stakeholder groups with sector specific policies and rules
  - How to align with global DPP initiatives (sector, country)

**Global Value Stream Perspective**

- **Upstream Supply Chain**
- **Downstream**

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