The Digital Product Passport (DPP) as a tool to promote sustainability, circularity, and legal compliance

Michele Galatola (DG GROW)
Ilias Iakovidis (DG CNECT)
William Neale (DG ENV)
Wojtek Sitarz (DG ENV)
Georgios Takoudis (DG ENER)
DPP – a tool to support three policy objectives

Increase Environmental sustainability

Promote Circularity

Support Legal compliance
ESPR
Key Ecodesign product aspects

- durability, reliability, reusability, upgradability;
- reparability, possibility of maintenance and refurbishment;
- presence of substances of concern;
- energy use or energy efficiency;
- resource use or resource efficiency;
- recycled content;
- possibility of remanufacturing and recycling;
- possibility of recovery of materials;
- environmental impacts, including carbon and environmental footprint;
- expected generation of waste materials.
Key Design Principles

01 Exploit modularity

02 Balance between Offline vs. Online data
Whereas online data is easier and cheaper to update, having data offline will make the DPP more usable and easier to consult.

Feature: Data Carrier includes Cross-sectorial Basic Data Elements.

03 Legacy friendly design
The DPP should take into account the diversity of identifiers used by economic operators and accommodate them as much as possible.

Feature: Use of contextual prefix in every data element of the data carrier.

04 Security of data carrier
Simple control data elements are foreseen:

Feature: Data Carrier includes a link to online information about how to distinguish an original product from a counterfeit. This link cannot be removed if the data carrier is copied from the original product and put on the counterfeit.

05 Balance between control and decentralisation

06 Decentralised access management for easier maintenance
Access management responsibility can be distributed where it is used. Decentralisation allows novel models like passing the right down the supply chain.
DPP design

• All standards and protocols related to the IT architecture
• The DPP registry

A landscaping report on available standards for DPP is available at:

Possible Track & Trace identifiers
• Economic operator’s name, registered trade name
• Global Trade Identification Number or equivalent
• TARIC code or equivalent
• Global location number or equivalent
• Authorised representative
• …

Example of potential attributes
• Description of the material, component, or product
• Recycled content
• Substances of concern
• Environmental footprint profile
• Classes of performance
• Technical parameters
• …
Tier 3 suppliers ➔ Tier 2 suppliers ➔ Tier 1 suppliers ➔ Economic operator placing the product on the market ➔ Consumers/procurers ➔ Other end-users (e.g., recyclers)

**Digital Product Passport (DPP)**

- Unique product identifier
- Unique economic operator identifier
- Unique facility identifier
- Additional data for automatic checks by custom authorities

**Data Access**

1. **Circularity data**
   - Accessible to **consumers**
   - Accessible to other **end-users** (e.g., recyclers)

2. **Sustainability data**
   - Accessible to **consumers**
   - Accessible to other **end-users** (e.g., recyclers)

3. **Compliance related documents**
   - Accessible to **consumers**
   - Accessible to other **end-users** (e.g., recyclers)
   - Accessible to **authorities**

**Other product-related data**

- Accessible to **consumers**
- Accessible to other **end-users** (e.g., recyclers)
- Accessible to **authorities**

DPP registry ➔ DPP ➔ Repairers/remanufacturers
## Online data: storage and management

<table>
<thead>
<tr>
<th>Data Storage</th>
<th>Centralised hosting</th>
<th>Federated hosting</th>
<th>Decentralised hosting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management of DPP data is done via</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centralised service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option A</td>
<td>All DPP data in the Central Register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federated services/ Based on Service Providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option B</td>
<td>Accredited Private Platforms provide DPP service. Similar to EFTI</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Authorities provide DPP service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option D</td>
<td>Accredited Private Platforms provide DPP service. Similar to EFTI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Like Option C&amp;D Self-hosted DPPs must be registered into Federated DPPaaS providers for validation and redundancy. DPP Resolution through DPPaaSlink for versioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decentralised services/ Self-Sovereign</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option E (hybrid)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic Operators self-manage and self-host their DPPs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) DPPaaS: DPP as a service / DPP service via a Service Provider
DPP basic Data Architecture

Offline data

- PART.A. Cross-sectorial Basic Data Elements
- PART.B. Links to DPP
- PART.C. Control Data Elements

Decentually stored online data

- Public data
  - Structured/Machine readable data
- Restricted data
  - Versioned
  - Retention period
- Counterfeiting info

(Few) centrally stored data

DPP registry

- All product unique identifiers
- Additional info relevant for custom controls
- The information that allows the verification of the authenticity of the DPP
The scope and legal requirements

• Basis for future **harmonised standards**

• **8 new areas of harmonised standards to be drafted** to support the implementation of the proposed **DPP-system**. In particular:
  a) Unique identifiers
  b) Data carriers
  c) Links between physical product and digital representation, including look-up mechanism
  d) Access rights management
  e) Interoperability (technical, semantic, organisation), including data exchange protocols and formats and data processing (introduction, modification, update)
  f) Data authentication, reliability, integrity
  g) Data security and privacy
Next steps

23rd May – Presentation of the draft standardisation request to the Standardisation Committee

24th May – Draft standardisation request to be sent to CEN/CENELC/ETSI and European stakeholder organisations representing consumers, environmental interests, trade unions and SMEs in standardisation - respectively SBS, ETUC, ANEC and ECOS, collectively known as “the Annex III organisations”

9th June – Presentation of the draft standardisation request to the Ecodesign Consultation Forum (either in person or as written contribution)

12th June pm (tbc) – Webex webinar to present the draft standardisation request to interested stakeholders