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

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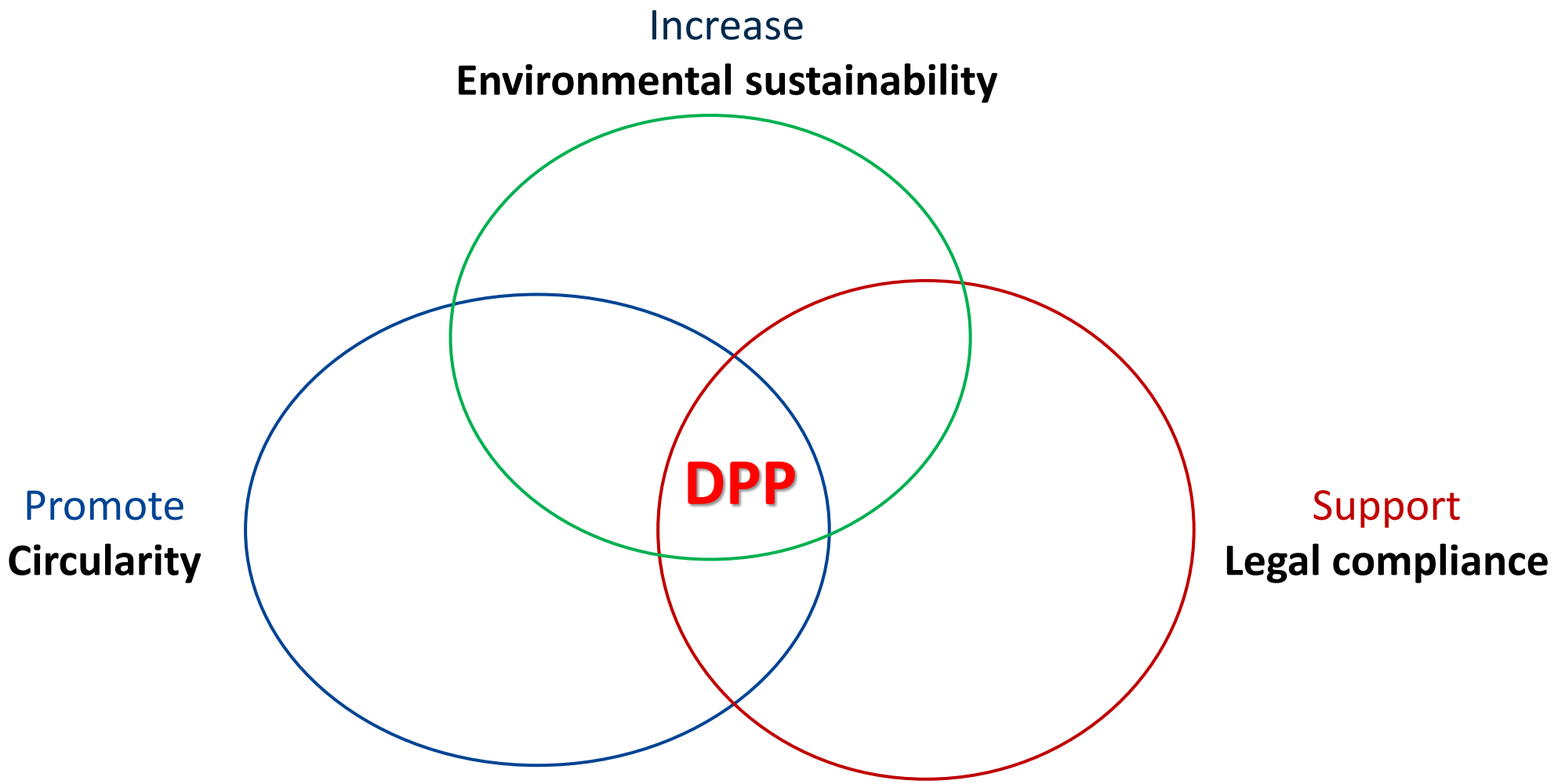
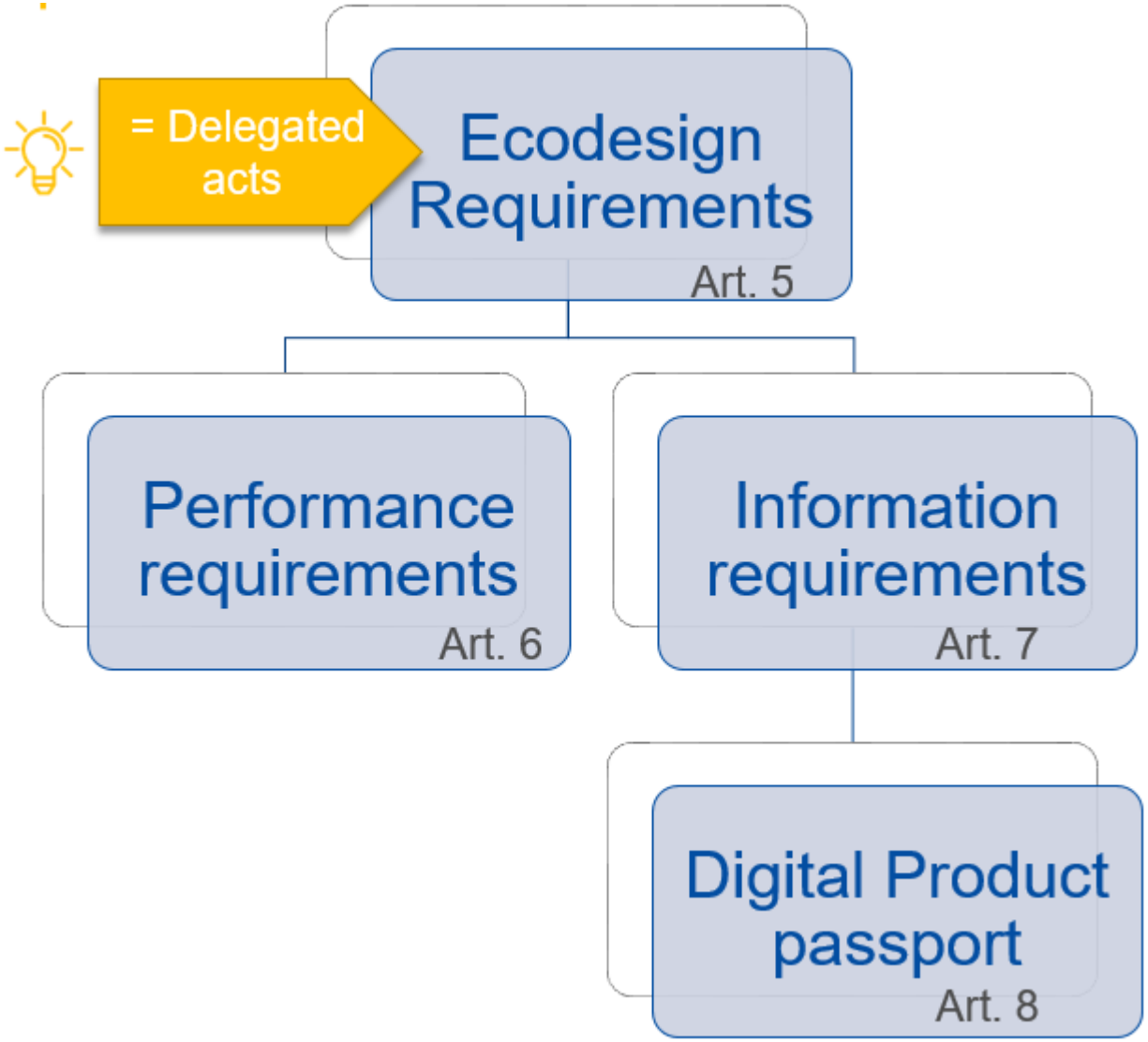
DPP – a tool to support three policy objectives



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

DPP-system

Digital Product Passport

DPP-data

(to be developed before DPP deployment)

(to be identified when developing product-group specific secondary legislation)

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

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

https://www.standict.eu/landscape-analysis-report/landscape-digital-product-passport-standards

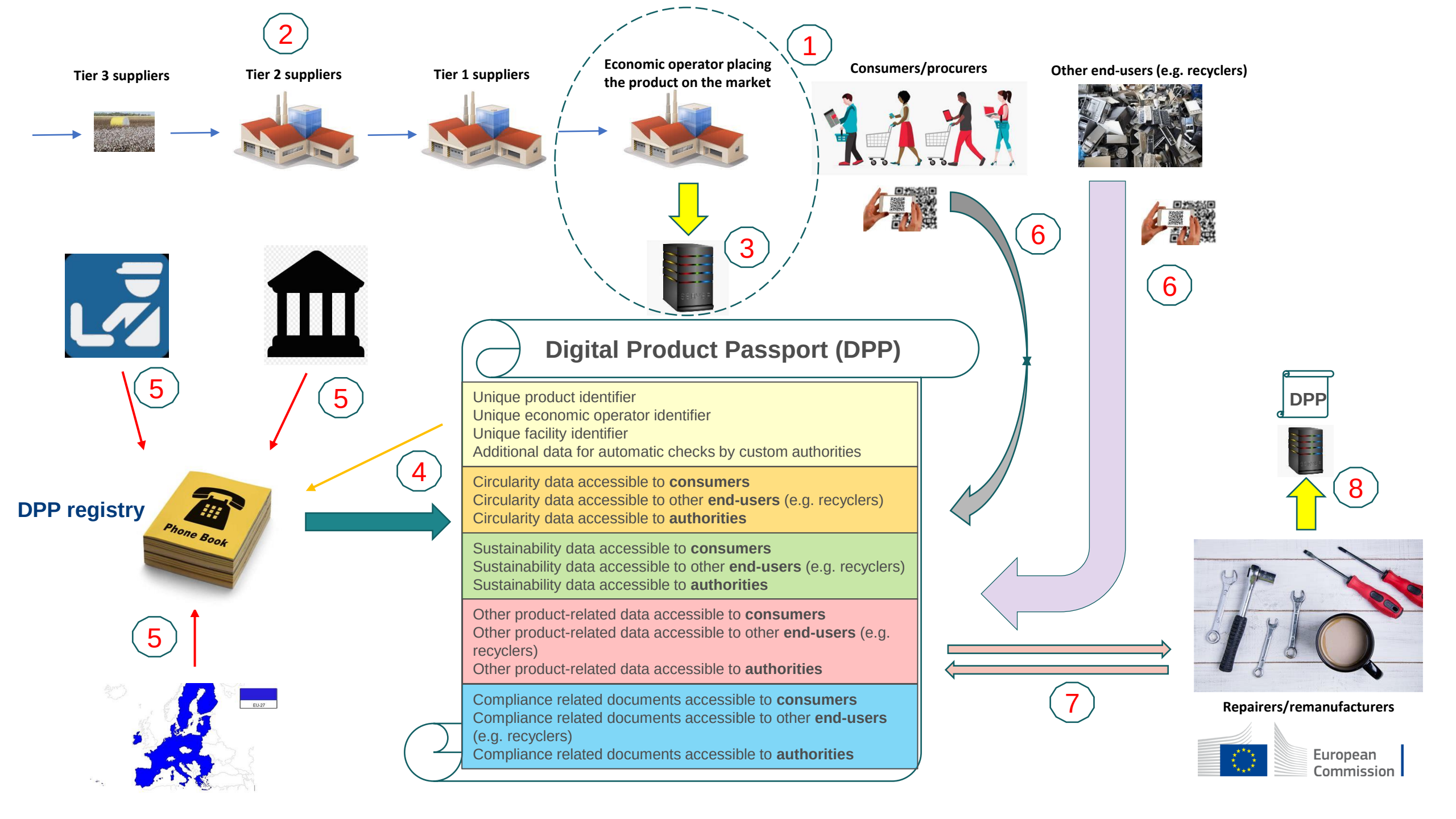
Possible Track & Trace identifiers

- 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
- …

European Commission


2
Tier 3 suppliers
Tier 2 suppliers
Tier 1 suppliers
Economic operator placing the product on the market
1
Consumers/procurers
Other end-users (e.g. recyclers)
3
6
6
5
5
5
4
DPP registry
Phone Book
Digital Product Passport (DPP)
Unique product identifier
Unique economic operator identifier
Unique facility identifier
Additional data for automatic checks by custom authorities
Circularity data accessible to consumers
Circularity data accessible to other end-users (e.g. recyclers)
Circularity data accessible to authorities
Sustainability data accessible to consumers
Sustainability data accessible to other end-users (e.g. recyclers)
Sustainability data accessible to authorities
Other product-related data accessible to consumers
Other product-related data accessible to other end-users (e.g. recyclers)
Other product-related data accessible to authorities
Compliance related documents accessible to consumers
Compliance related documents accessible to other end-users (e.g. recyclers)
Compliance related documents accessible to authorities
DPP
8
7
Repairers/remanufacturers
European Commission

Online data: storage and management

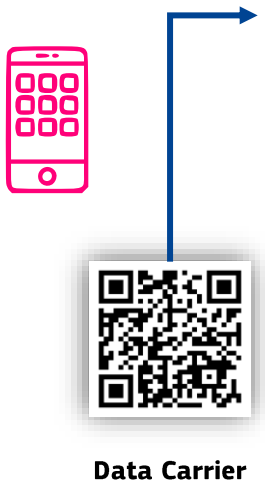
Discarded | **Under consideration**

Data Storage / ***Management of DPP data is done via***	Centralised hosting	Federated hosting	Decentralised hosting
Centralised service	**Option A** All DPP data in the Central Register		
Federated services/ Based on Service Providers		**Option B** National Authorities provide DPP service	**Option D** Accredited Private Platforms provide DPP service. similar to eFTI **Option E (hybrid)** Like **Option C&D**. Self-hosted DPPs must be registered into Federated DPPaaS* providers for validation and redundancy. DPP Resolution through DPPaaS link for versioning.
Decentralised services/ Self-Sovereign			**Option C** Economic Operators self-manage and self-host their DPPs

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

DPP basic Data Architecture

Offline data



Data Carrier

PART.A. Cross-sectorial Basic Data Elements

PART.B. Links to DPP

PART.C. Control Data Elements

Decentrally stored online data

DPP

Public data

Restricted data

- Structured/ Machine readable 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

Standardisation request in support of 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