ITU activities on Digital Product Passport for ICT products

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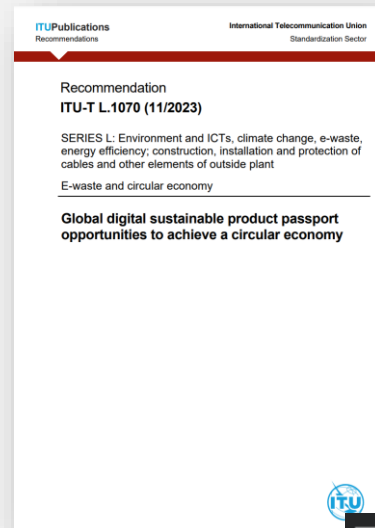
Digital Product Passport

- *ITU definition*

Digital Product Passports: Structured collection of product-specific data conveyed through a unique identifier.
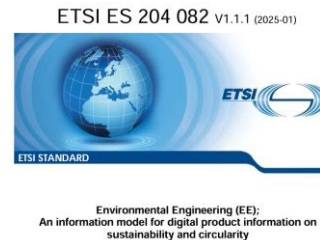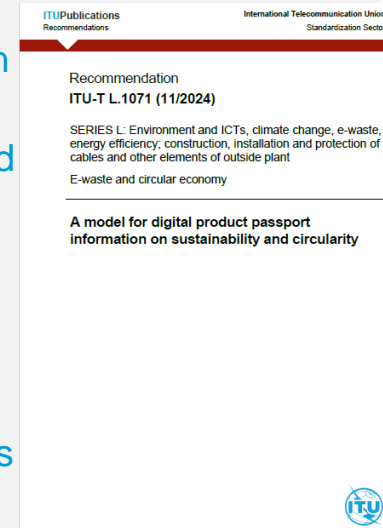
Digital Product Passport Opportunities
ITU-T L.1070

Provides an overview of global and common opportunities to represent sustainability, mainly environmental-related, details about digital technology products

ETSI TS 103 881 V1.1.1 (2024-01)

TECHNICAL SPECIFICATION

Environmental Engineering (EE);
Global digital sustainable product passport opportunities
to achieve a circular economy

ITU Publications
Recommendations
International Telecommunication Union
Standardization Sector

Recommendation
ITU-T L.1070 (11/2023)

SERIES L: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant

E-waste and circular economy

Global digital sustainable product passport opportunities to achieve a circular economy

Digital Product Passport Information on sustainability and circularity
ITU-T L.1071

Provides a structured collection of information items organised to represent circularity and environmental sustainability information in accordance with relevant standards of ICT products for various actors during the product lifespan up to recycling.

ETSI ES 204 082 V1.1.1 (2025-01)

ETSI STANDARD

Environmental Engineering (EE);
An information model for digital product information on
sustainability and circularity

ITU Publications
Recommendations
International Telecommunication Union
Standardization Sector

Recommendation
ITU-T L.1071 (11/2024)

SERIES L: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant

E-waste and circular economy

A model for digital product passport information on sustainability and circularity

Jointly developed with ETSI

Regional and global specifications

- **EU DPP** (EU ESPR)

- **UN Transparency protocol– B2B DPP**
  (UNECE Rec 49)
  - Issued by the freight forwarder, it is the carrier of product and sustainability information for each serialized product item (or product lot) that is shipped between actors in the value chain.
  - It contains links to compliance credentials, which add confidence to the ESG claims in the passport.
  - The UNTP DPP does not conflict with national regulations such as the EU DPP.

Beneficiary users

- Facilitates the activities of product operators:
    - Manufacturers
    - Buyers
    - Owners
    - Repairers
    - Remanufacturers
    - Recyclers
    - National authorities
    - Auditors
- It could empower consumers with relevant information.
- It may have different content depending on the role and accreditation of the operator.
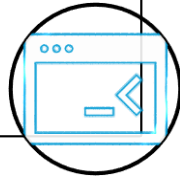
Information contained

- Materials
- Design
- Use, maintenance and repair instructions
- Ways to recover and disassemble components and recycle them
- Equipment life
- Energy consumption

Relevant useful information on

- Specifications
- Programming
- Firmware
- Software

Includes

- Raw materials (scarce, critical and secondary)
- Adverse social and environmental risks due to the presence of hazardous substances

Pays special attention

- Provide monitoring
- Facilitating procurement proceedings
- Reversed logistics
- Facilitate extended producer responsibility

Manufacturers

What is inside ITU-T L.1070?

Provides an overview of global and common opportunities to represent:

- sustainability, mainly environmental related (including human health),
- details about digital technology products:
  - Collective ICT product models
  - Batches
  - Individual product items.

Global scope for harmonization, i.e., relevant to any region

Example of information that could contain in the scope of regional and global conventions

- globally harmonized system for classification and labelling: categories, symbols and risk phrases for hazardous substances
- UN Numbers for hazardous substances
- Hazardous substances and materials SDSs
- Harmonized systems codes for trade categories of products and e-waste
- Basel Convention codes
- Transport codes
- Schemes for classification and labelling of raw and secondary materials

- Transport codes
- Schemes for classification and labelling of raw and secondary materials
- product conformity database
- Traceability registries.

Desirable principles

- Digitalization
- Data findability, accessibility, interoperability and reusability
- Usefulness
- Accuracy
- Inclusivity
- Transparency
- Accountability
- Standardization
- Information privacy
- Information protection

Data quality properties

- Accessibility
- Free access to relevant information
- Persistency
- Authenticity
- Identifiability
- Composability
- Integrity
- Verifiability
- Traceability (of products)

What is inside ITU-T L.1071?

Mapping of different terminology between EU ESPR and B2B DPP data model and propose a model for the information

Environmental sustainability information about a product also referred to as a **product-related information** can be mapped to B2B DPP **claim data** instances,

- Source specification (**standard or regulation**) and the specific *criteria source*/**criteria reference** within the as a verifiable document/credentialstandard or regulation against which the claim is made, both as a document/resource reference (URI).
- *Informed values*/**claimed values** as a metric: one or more actual values of environmental information.
- Conformity, with details about, when relevant:
  - A *reference value*/**benchmark value** against which the claimed value can be assessed,
  - A *source of the reference value*/**benchmark reference** to evidence to support the benchmark value as an URI,
  - An indicator (logic: boolean) of **conformance** that expresses whether or not this product has achieved compliance against the criteria and,

A reference to **conformity evidence,** as a URI pointing to the evidence supporting the environmental information, such as:

Table 1. Mapping of environmental information in this Recommendation to the B2B DPP data model

Environmental sustainability information model	B2B DPP data model
environmental information item/instance	sustainability claim
informed value	claimed value
criteria source	criteria reference
reference value	benchmark value
source of the reference value	benchmark reference
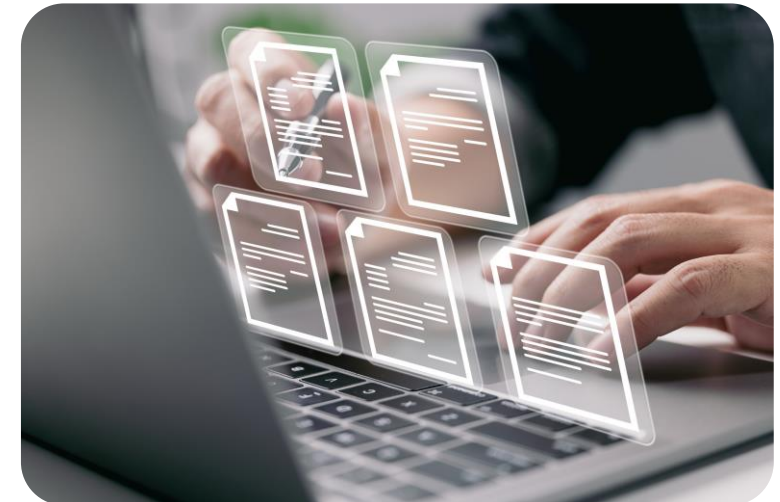
Topic	Standard or regulation	Criteria reference	Environmental information / Claimed values (Metric)			Conformity					Rationale
Code/name from vocabulary	Source URI	Criteria URI	Name	Value	Unit	Accuracy	Reference/Benchmark value	Source for the reference value / Benchmark reference to evidence to value	Conformance indicator (boolean)	Expected evidence	Reference to conformity evidence	Description
Low halogen electronics: electronics.halogen	ITU-T L.1015	https://www.itu.int/rec/T-REC-L.1015/#PCB-chl	PCB and accessories, chlorine: electronics.halogen.chlorine	100	ppm	empty	900	https://x.int/standard-about-benchmark-value	true	Evidence PCB and accessories meet requirements	https://manufact.com/DPP1/electronics.chlorine	PCB and accessories < 900 ppm chlorine

New Work Item

L.DPP4C - Consumer-oriented environmental information and reversed value chain information about ICT goods on digital product passports

- Will analyse the use of DDP to provide information to customers and how this information needs to be conveyed to consumers.

- Will define which product information is useful to be included in DPP with particular attention to the reverse value chains and how to present it.

Inputs are welcome

Potential global benefit

- They can be linked and provide information on compliance with regulations and standards that can be digitally verified.

- It benefits all stakeholders and reduces the burden of making informed decisions to optimize and assess the sustainability of products.

- Harmonized global system for product information exchange that provides a balance between transparency and confidentiality, as well as privacy, security and verifiability.

- Discussion, consensus, standardization and legislative processes can enable agreements to develop concrete and specific specifications, including mandatory and voluntary values for countries (recommended or optional) in these systems.

Thank you

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SG5: Environment, climate
change and circular economy