

# Working Group Digitalisation

## Digital Product Passport: What is ahead of us?

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## **Purpose, System & Impact**

Digital Product Passport (DPP)

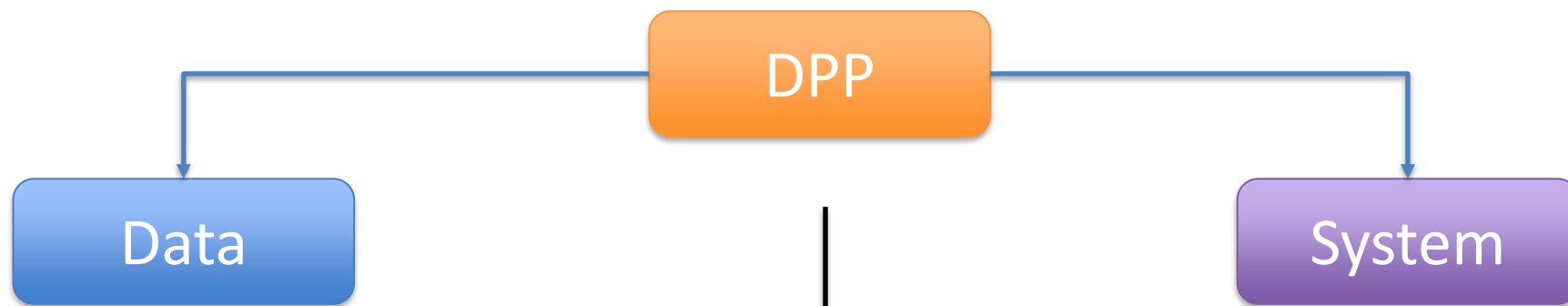
# What is a Digital Product Passport (DPP) ?

- ➔ **Digital document** that provides information about a product throughout its entire lifecycle.
- ➔ Objective: supply product information in a **digital format** to end-users.
- ➔ Driving Force: **Ecodesign for Sustainable Products Regulation** (ESPR) and **Revision of the Construction Products Regulation** (CPR).
- ➔ Responsible: CEN-CENELEC Joint Technical Committee 24 (**JTC 24**).

# How does it work in Practice?



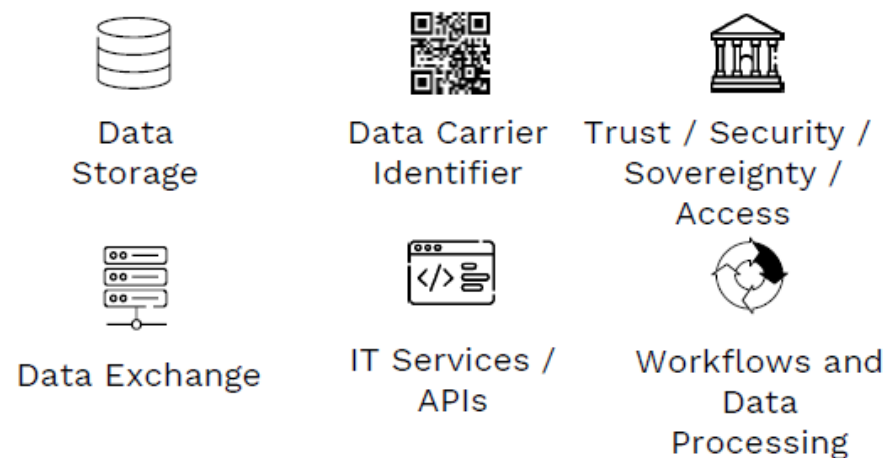
# DPP | Data & System



## Content of DPP

- Sector-specific data
- Defined in different regulations
- Delegated acts

## Harmonized Technical System



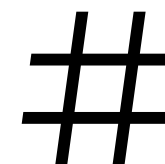
## Data Included in a DPP



DoC and  
DoP



Labels  
(when applicable)



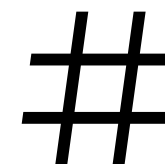
Product Identifier  
GTIN



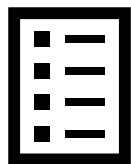
Product Data  
EPD Data



Data  
Carriers



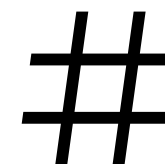
Operator Identifier  
VAT-Number



Technical  
Documentation

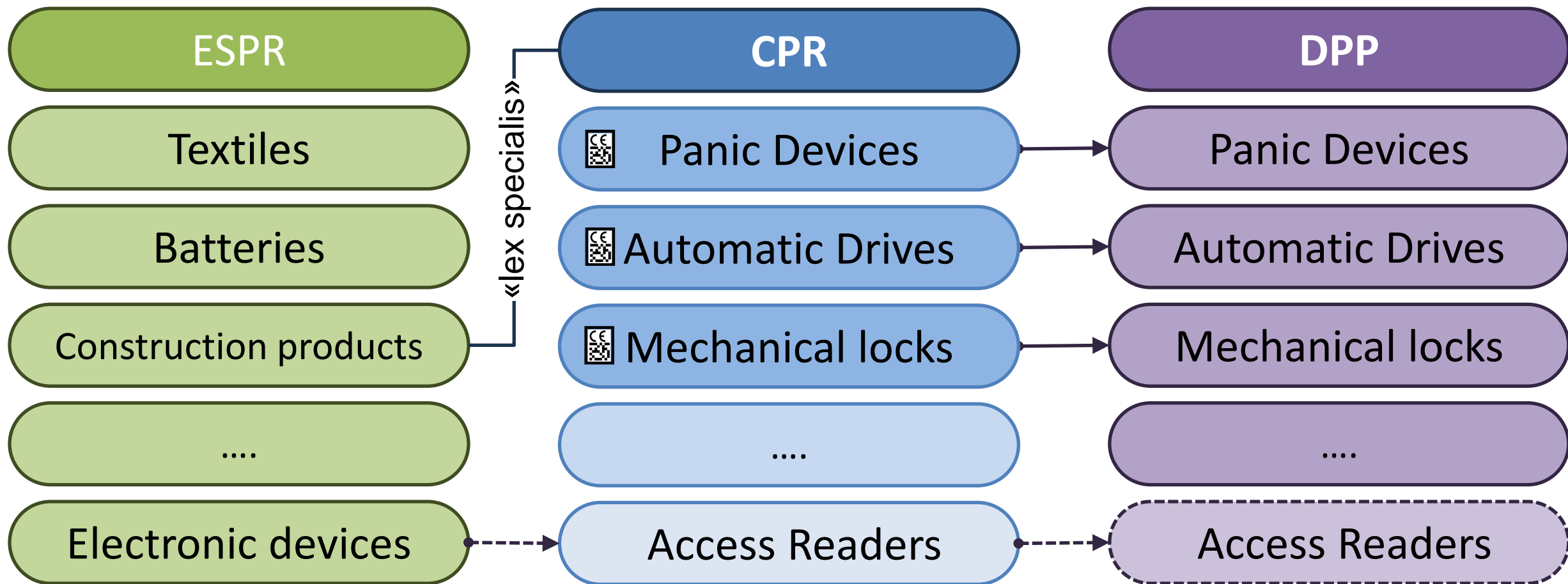


Documentation  
other EU Law



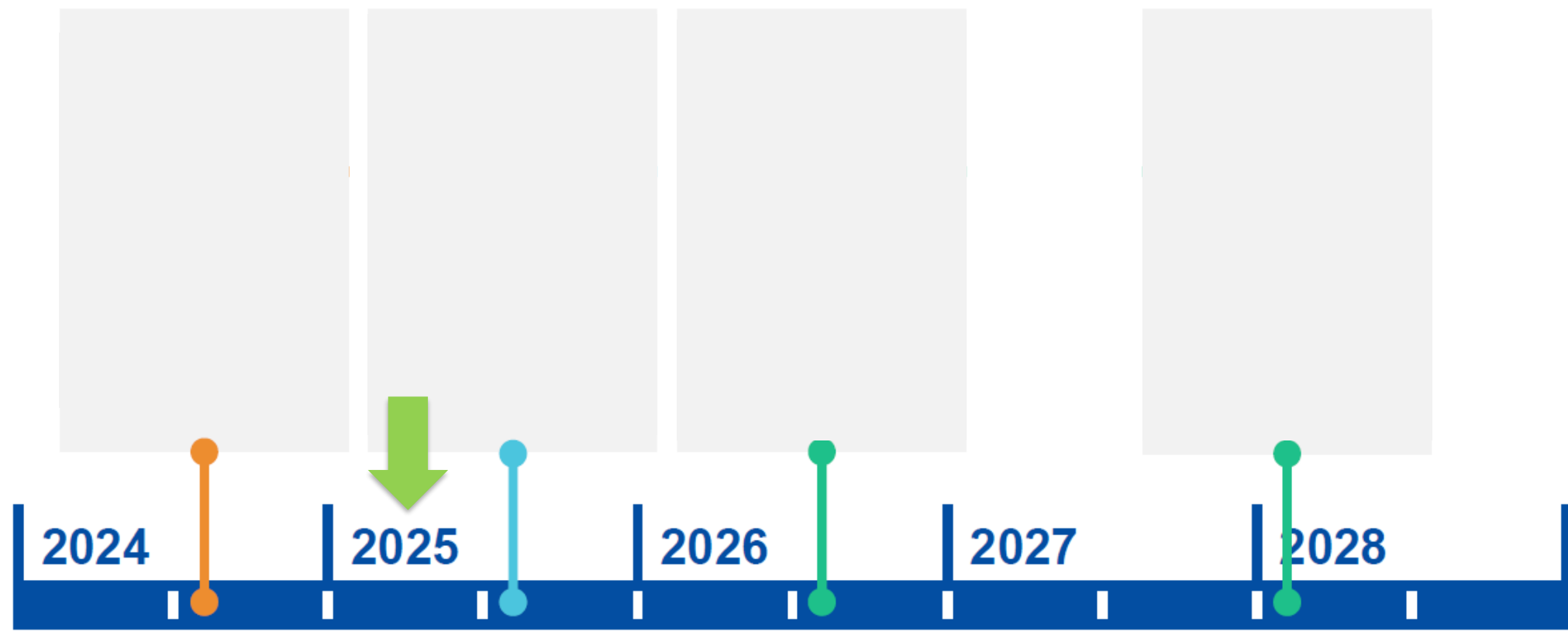
Facility Identifier  
ISO 3166-2

# DPP and Building Hardware





# DPP Roadmap | DG GROW



## Key environmental characteristics

Digital Product Passport (DPP)

# Pre-defined key environmental characteristics\* – Climate Change Indicators



Global warming potential (GWP) - total

GWP – fossil

GWP – biogenic

GWP – land use and land use change (luluc)

The GWP<sup>1</sup> across the life cycle is 330 kg CO<sub>2</sub>e

This is similar to the CO<sub>2</sub> produced from a roundtrip flight from Berlin to Zurich (1,300 km)



1) Carbon dioxide equivalent (CO<sub>2</sub>e) is the universal unit of measurement to indicate the global warming potential (GWP) of each of the six greenhouse gases, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.

# Pre-defined key environmental characteristics – Environmental Impact Indicators



Ozone depletion potential (ODP)
Acidification potential (AP)
Eutrophication potential (EP) – freshwater
EP – salt water
EP – land
Photochemical ozone creation potential (POCP)
Abiotic depletion potential (ADP) for minerals and metals (non-fossil resources)
Abiotic depletion potential (ADP) for fossil resources
Water deprivation potential (WDP)



# Pre-defined key environmental characteristics – Additional Impact Categories



Particulate matter emissions (PM)

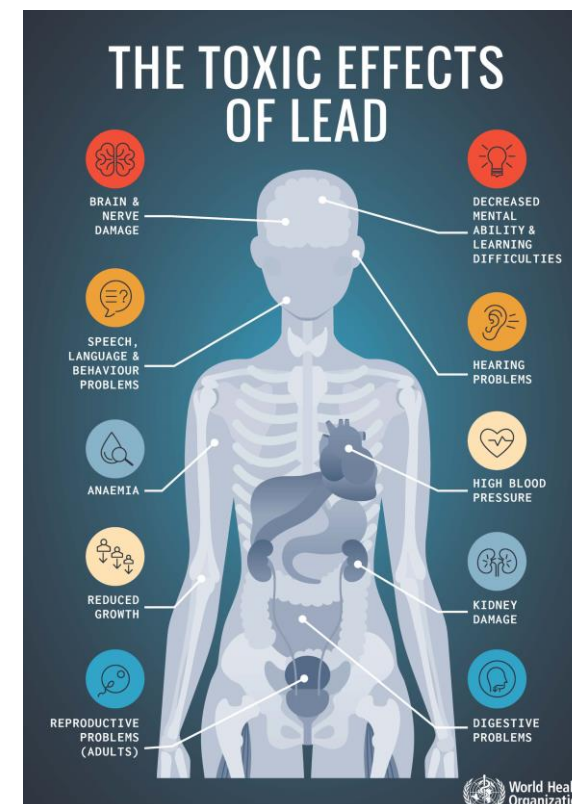
Ionising radiation, human health (IR)

Ecotoxicity freshwater (ETP-fw)

Human toxicity, cancerogenic (HTP-c)

Human toxicity, non-cancerogenic (HTP-nc)

Potential soil quality index (SQP)



# Life Cycle Assessments (LCA) provide the right data based on EN 15804+A2

## LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

## RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 door closer

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq	2.52E+01	2.37E-01	8.5E-02	0	1.4E-02	1.29E+00	0	-9.03E+00
GWP-fossil	kg CO <sub>2</sub> eq	2.59E+01	2.32E-01	2E-03	0	1.4E-02	5.62E-01	0	-9E+00
GWP-biogenic	kg CO <sub>2</sub> eq	-7.44E-01	5E-03	8.3E-02	0	6.32E-04	7.31E-01	0	-2.8E-02
GWP-luluc	kg CO <sub>2</sub> eq	9E-03	5.13E-06	1.4E-06	0	3.25E-07	3.83E-05	0	-2E-03
ODP	kg CFC11 eq	8.97E-11	2.31E-17	1.53E-17	0	1.44E-18	3.68E-16	0	-6.19E-11
AP	mol H <sup>+</sup> eq	1.29E-01	5E-03	2.38E-05	0	1.37E-05	2.04E-04	0	-3.3E-02
EP-freshwater	kg P eq	2.48E-05	5.1E-08	3E-09	0	2.93E-09	5.78E-08	0	-5.87E-06
EP-marine	kg N eq	2.06E-02	1E-03	8.6E-06	0	4.35E-06	5.67E-05	0	-4E-03
EP-terrestrial	mol N eq	2.19E-01	1.3E-02	1.07E-04	0	4.84E-05	9.48E-04	0	-4.8E-02
POCP	kg NMVOC eq	6.3E-02	3E-03	2.28E-05	0	1.23E-05	1.55E-04	0	-1.4E-02
ADPE	kg Sb eq	6.16E-04	6.44E-09	2.42E-10	0	4.1E-10	5.25E-09	0	-1.93E-04
ADPF	MJ	2.81E+02	3.04E+00	2.7E-02	0	1.94E-01	4.15E-01	0	-1.27E+02
WDP	m <sup>3</sup> world eq	3.9E+00	4.35E-04	1.1E-02	0	2.68E-05	1.33E-01	0	-5.04E-01

DPP expects key environmental characteristics!

## But why LCA data?

- **Holistic and quantitative** environmental impact assessment
    - Complete product life cycle approach
    - Holistic optimisation potential
    - Measurable indicators
    - Objective comparability (if same approach used)
    - Transparent environmental information based on international standards (e.g. ISO 14040/44)
- **Complete sustainability assessment possible**

## Summary & Take-Home Message

- ➔ The DPP is a **significant development** for sustainable product lifecycle management.
- ➔ Manufacturers should prepare by **improving data management** systems and **ensuring compliance** with regulations.
- ➔ The DPP presents an **opportunity** for product manufacturers.
- ➔ Development of **EPDs** is a good start!



# Thank you!

## Any questions?

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