# Workshop Zusammenspiel
# von QI und Digitaler Produktpass (DPP)

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# Digital product passport – Demanded by politicians...

## European Green Deal

*"[...] for example, an electronic product passport could provide information about the origin, composition, repair and disassembly options of a product, as well as its handling at the end of its service life.*

- **March 2022: EC publishes legislative proposal for an Ecodesign Requirement for sustainable Products (ESPR)**
- **Mid 2025: Adoption of ESPR**
- **2026: Adoption of DPP for selected products**

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**March 2022:**

EC publishes legislative proposal for an Ecodesign Requirement for sustainable Products

# ESPR
# Key Ecodesign product aspects



= Delegated acts

Ecodesign Requirements
Art. 5

Performance requirements
Art. 6

Information requirements
Art. 7

Digital Product passport
Art. 8
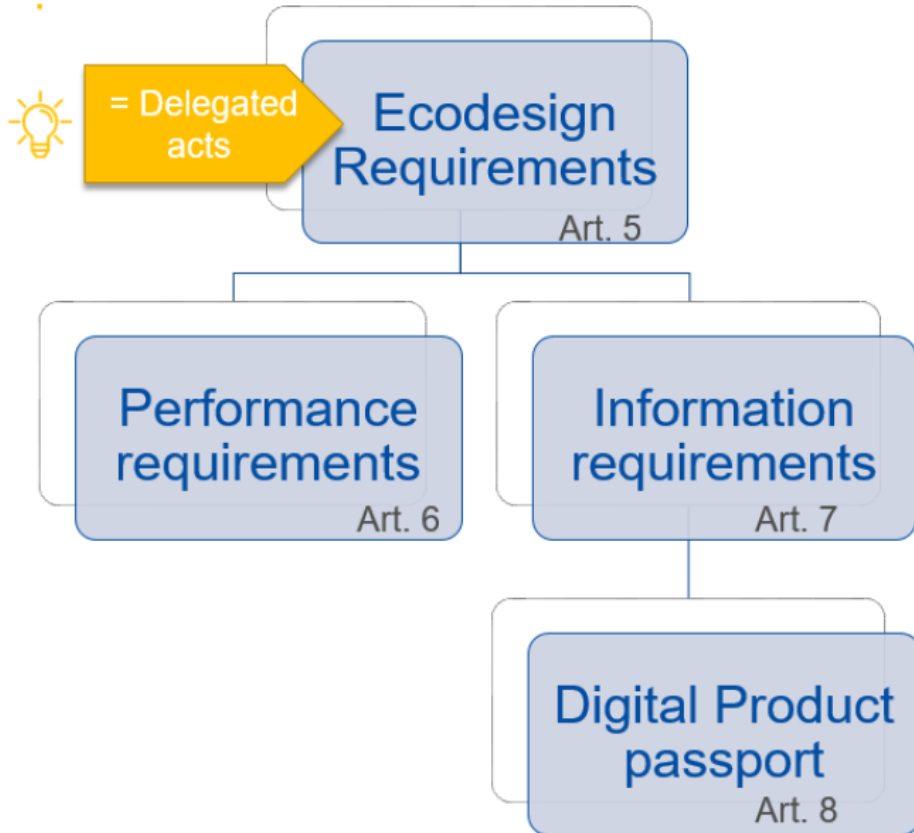
- **durability**, **reliability**; **reusability**; **upgradability**;

- **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.

European Commission

# DPP design



**DPP-system** ← 

(the "**HOW**". To be developed horizontally for all product groups and legislations)

**D**igital **P**roduct **P**assport

→ **DPP-data**

(the "**WHAT**". To be identified when developing product-group specific secondary legislation)

- All standards and protocols related to the IT architecture (**8** modules)

- The DPP registry

- The data to be included in each DPP will be decided through ESPR Delegated Acts adopted by the Commission when regulating specific product groups

# Standardisation request in support of DPP-system

## The scope and legal requirements

- Basis for future **harmonised standards**

- **8 'modules' of harmonised standards to be drafted** to support the implementation of the proposed **DPP-system**. In particular:

    a)      Unique identifiers

    b)      Data carriers and links between the physical product and digital representation

    c)      Access rights management, information, system security, and business confidentiality

    d)      Interoperability (technical, semantic, organisation)

    e)      Data processing, data exchange protocols and data formats

    f)      Data storage, archiving, and data persistence

    g)      Data authentication, reliability, integrity

    h)      APIs for the DPP lifecycle management and searchability

European Commission

DKE BKT-Sitzung Nr. 31, Frankfurt, 16.03.2023 | Prof. Dr. Dieter Wegener

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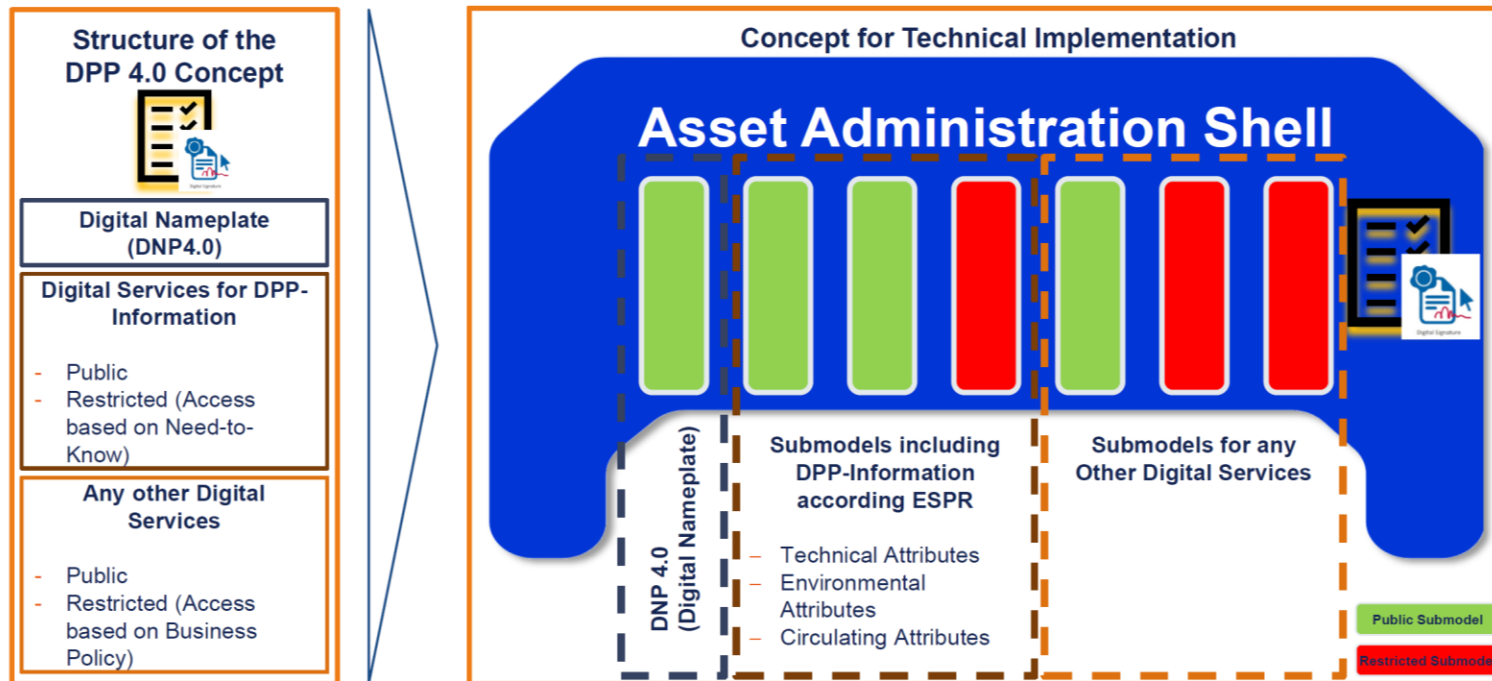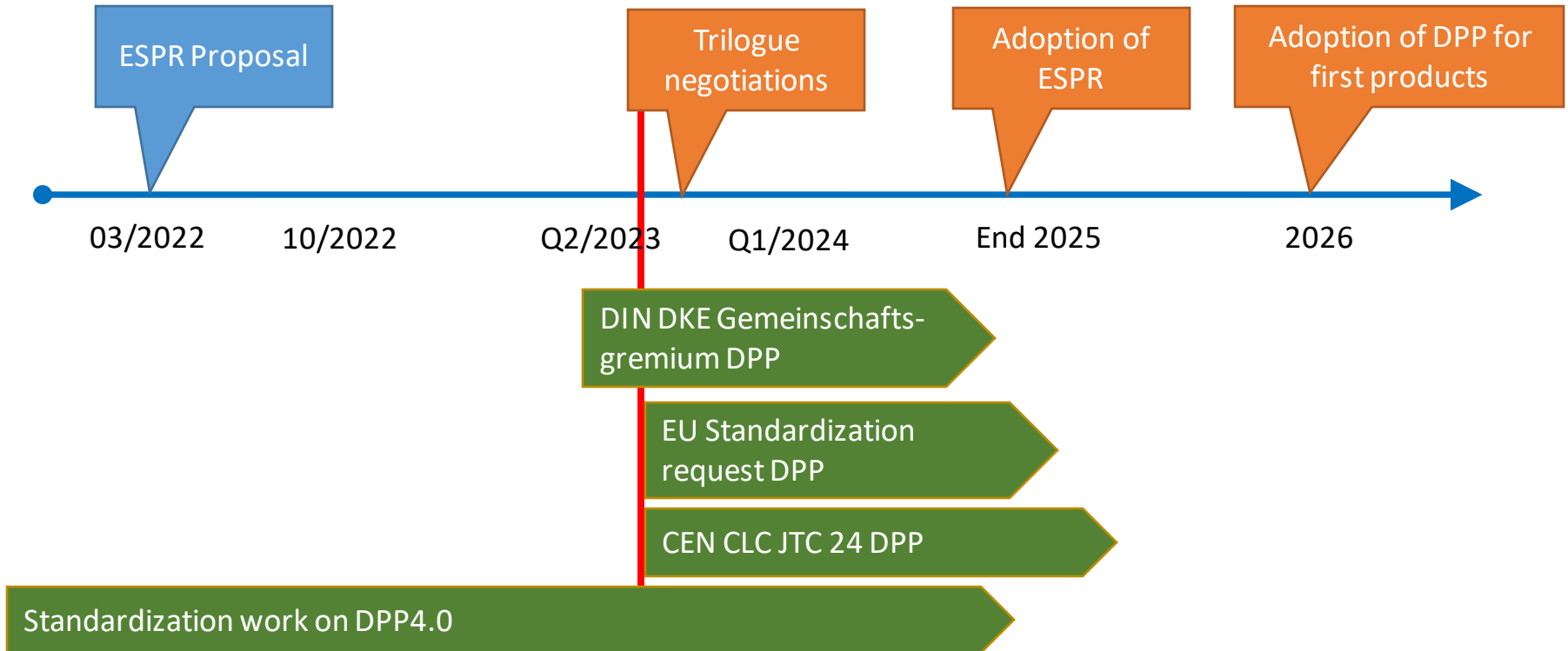
# DPP – Digitalisierung der Qualitätsinfratsruktur benötigt
**(exemplarisch von der Initiative QI-Digital)**

DIN  DKE

Smart Standards

DPP

MÜ

Dig. Kalibrierschein

D-CoC

BAM
Bundesanstalt für Materialforschung und -prüfung

DIN

DKE
VDE DIN

phys., chem., techn. Grundlagen (Metrologie)

Normen & Standards

Marktüber-wachung

PTB
Messen · Forschen · Wissen

Akkre-ditierung

Konformitäts-bewertung
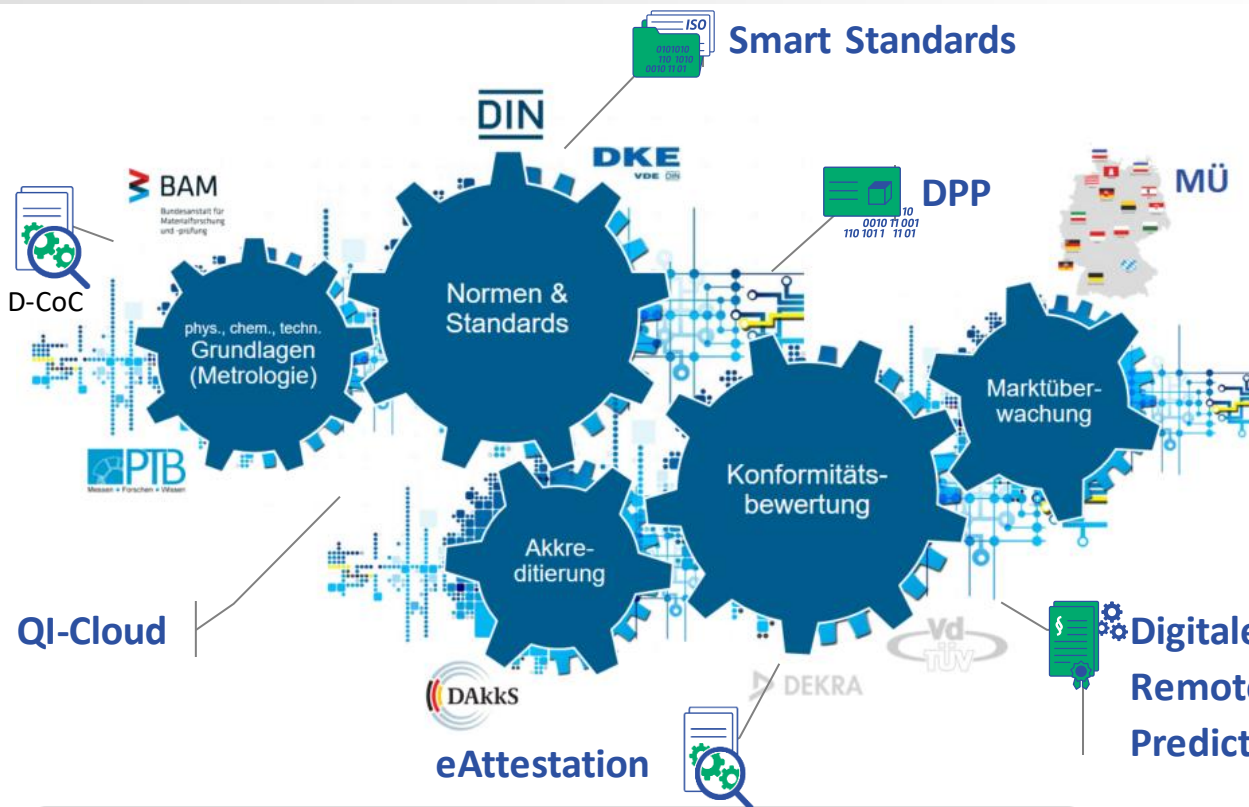
Digitale Zertifikate / KB
Remote Monitorings
Predictive Maintenance

QI-Cloud

DAkkS

Vd TÜV

DEKRA

eAttestation

Neue digitale Lösungen und Werkzeuge für eine digitale Qualitätsinfrastruktur → ein Instrument der DPP

qi

# Batteriepass – Pilot für DPP

## The digital battery passport

Electronic record for batteries ("battery passport"), which shall contain information relating to the battery model and information specific to the individual battery. (Article 77)

The European Commission defines a digital product passport (DPP) as "a structured collection of product related data with predefined scope and agreed data ownership and access rights conveyed through a unique identifier" (Source?)



**Data Carrier & Unique Identifier**
By the European Commission including at least identification data

**Access Groups**
Actors should be granted access to that information in line with their respective access rights

**Product Passport Registry**
By the European Commission including at least identification data

**4. Data access**

**3. Data processing**

**Economic operator back-end system(s)**
Economic operator gathers, processes, and transfers battery passport data

**2. Data exchange**

Optional supportive systems (e.g., traceability systems, IMDS)

Reverse data reporting

**1. Data collection**

Miner → Refiner → Precursor and CAM producer → Cells and modules manufacturer → Pack producer → OEM → End-user → Re-user Remanufacturer Repurposer → Collect or Dismantler → Recycler

Static data: within upstream organisations (e.g., via ERP, MES)

Dynamic and static downstream data (e.g., data from BMS)[1]

Static upstream data     Dynamic and static downstream data

1) Today, only data of the battery's use phase is made accessible via the battery passport
2) The actors named under "data collection" are included in the different access groups with specific access rights to be defined

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aufgrund eines Beschlusses des Deutschen Bundestages

# DPP –
# Die Elemente der QI – Digital

**Metrologie**

Automatisierte Messverfahren für DPP Daten
Verfahren für die Verifizierung

**Data Carrier & Unique Identifier**
By the European Commission including at least identification data

ID

**Access Groups**
Actors should be granted access to that information in line with their respective access rights

**Akkreditierung**

Verfahren für die Anomalieerkennung
Gültigkeit von Zertifikaten
Gültigkeit der Zulassungen
Konformität eingesetzter Testverfahren

**Marktüberwachung**

**Product Passport Registry**
By the European Commission including at least identification data

**Economic operator back-end system(s)**
Economic operator gathers, processes, and transfers battery passport data

**Konformitätsbewertung**

Automatisierte Verfahren, weniger interaktionsintensiv

Optional supportive systems (e.g., traceability systems, IMDS)

**Standards**

Automatisierte Transformation/ Update digitalisierter Content
Überführung digitaler Standards in das technische System
(z.B. Verifizierung von Identifiern)

| Miner | Refiner | Precursor and CAM producer | Cells and modules manufacturer | Pack producer | OEM | End-user | Re-user Remanu-facturer Repurposer | Collect or Disman tler | Recycle r |

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