Digital Product Passport (DPP)

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Sustainability is not only about GHG emissions reduction

Decoupling concept

Well-being decoupling
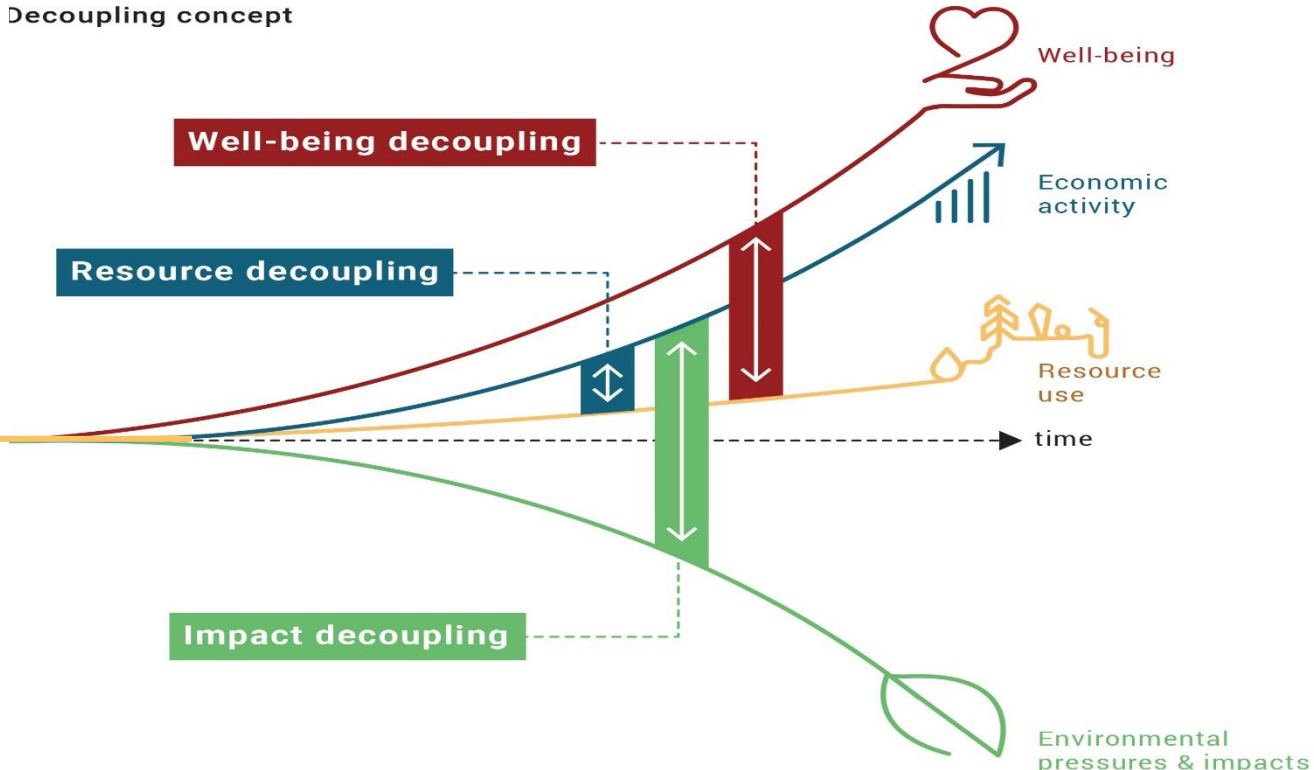
Resource decoupling

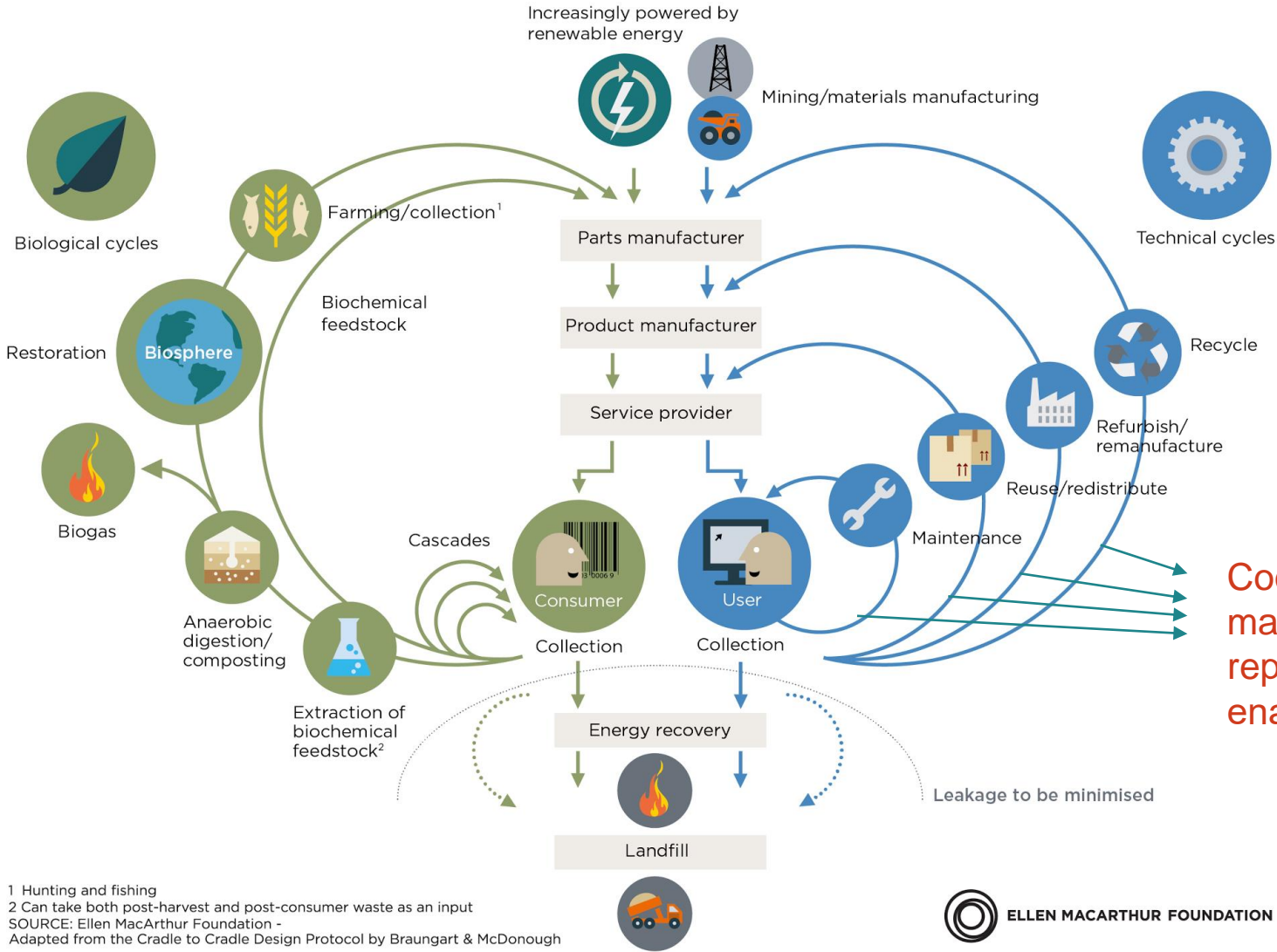Impact decoupling

Well-being

Economic activity

Resource use

time

Environmental pressures & impacts

Key for Sustainability - Circular economy

CIRCULAR ECONOMY - *an industrial system that is restorative by design*

Increasingly powered by renewable energy

Mining/materials manufacturing

Biological cycles

Farming/collection[1]

Biochemical feedstock

Restoration

Biosphere

Technical cycles

Recycle

Parts manufacturer

Product manufacturer

Service provider

Refurbish/ remanufacture

Biogas

Reuse/redistribute

Cascades

Maintenance

Consumer

User

Anaerobic digestion/ composting

Collection

Collection

Extraction of biochemical feedstock[2]

Energy recovery

Leakage to be minimised

Landfill

Cooperation among manufacturers, retailers, repairers, recyclers, .. to enable these 'circles'

1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
SOURCE: Ellen MacArthur Foundation -
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

ELLEN MACARTHUR FOUNDATION

European Commission

Transition to Circular economy

Sustainable products – durable, re-usable, reparable, refurbishable, …recyclable

Sustainable Business models – e.g. Product as a service,

Key enabler: Digital Product Passport

Recent EU legislations:

- [Ecodesign for sustainable products - European Commission](#) – product requirements, information requirements across who supply chain, **Digital Product passport** (30.3.2022)

- [Empowering consumers for the green transition - European Commission](#) (30.3.2022)

- [Initiative on substantiating green claims - European Commission](#) (coming soon)

Sustainable products package

Complementary sectoral rules
on construction and other product categories
(e.g. batteries, chemicals, packaging)

Ecodesign Working Plan 2022-2024
→ Higher energy efficiency and circularity for energy-related products
→ New rules for consumer electronics (smartphones, tablets, solar panels)

Strategy for Sustainable and Circular Textiles
→ Binding eco-design requirements, incl. durability, reparability, and recycled fibre content
→ Stop microplastics pollution
→ Tackle fast fashion, textile waste, and the destruction of unsold products
→ Accurate green claims
→ Sustainable global value chains

Ecodesign for Sustainable Products Regulation
→ Performance and information requirements for greener products
→ Tackle the destruction of unsold goods
→ Waste prevention and reduction
→ Mandatory criteria for green public procurement
→ Digital Product Passport and new labelling rules
→ Stronger market surveillance

Support for circular business models
→ European circular business hub
→ Guidance to businesses

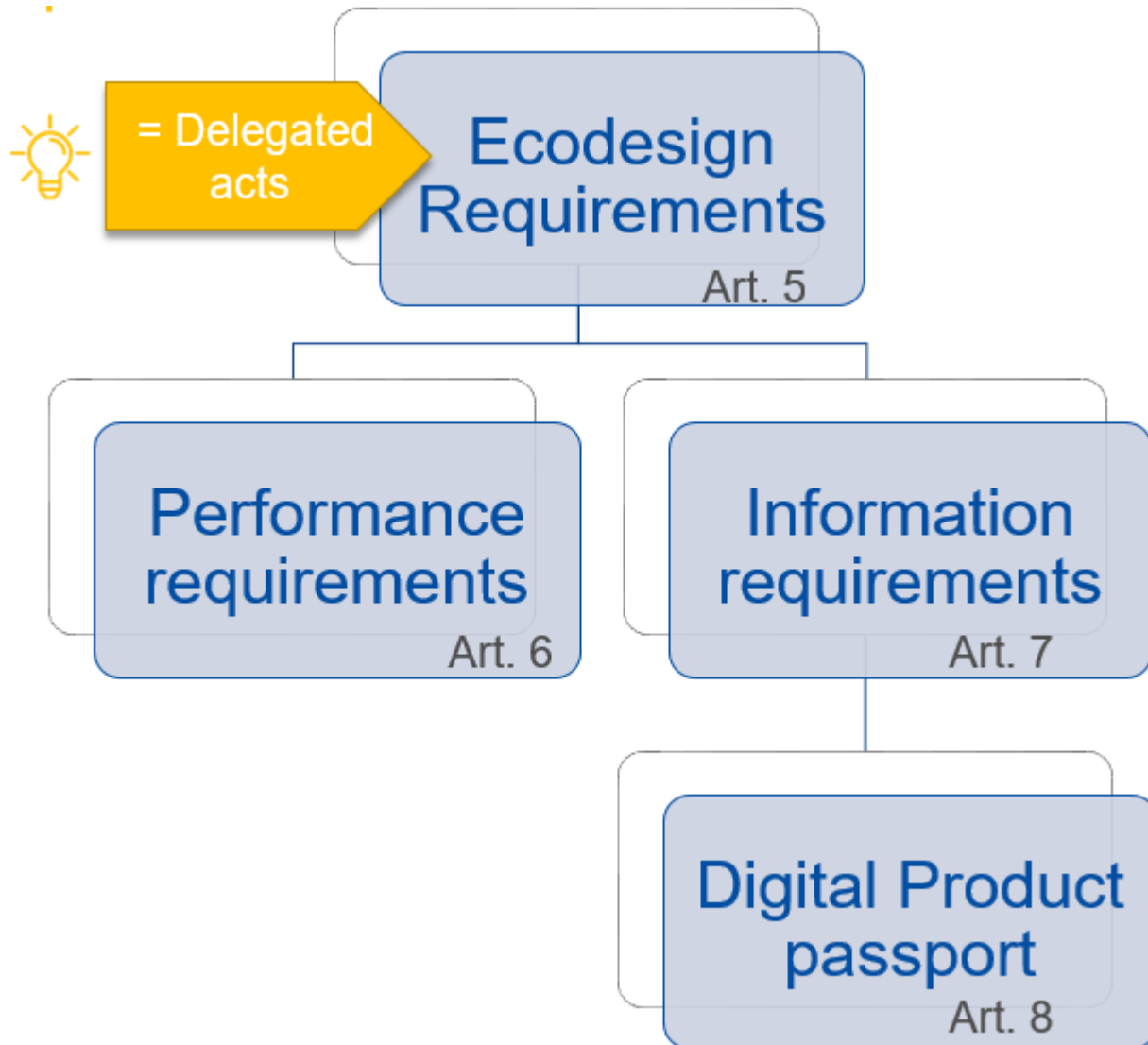**New rules to empower consumers for the green transition**
→ Protection against greenwashing and the deliberate planning or design of products with limited lifespans
→ Information on product durability and reparability

Global action
→ Corporate sustainability due diligence
→ Global sustainable consumption and production forum

5

European Commission

ESPR
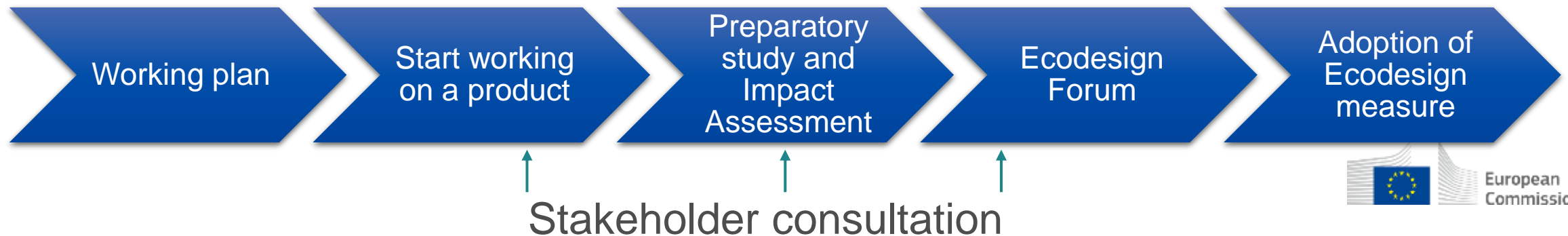## Key Ecodesign product aspects

- **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.

ESPR
Building on the Ecodesign framework

- **Key features of the Ecodesign Directive approach maintained:**

  - ✓ **Framework legislation**: a new Regulation on Ecodesing for sustainable products

  - ✓ Regularly updated **multiannual working plans** setting out priorities

  - ✓ **Product-specific measures** based on dedicated impact assessment

| Working plan | Start working on a product | Preparatory study and Impact Assessment | Ecodesign Forum | Adoption of Ecodesign measure |

Stakeholder consultation

ESPR
Digital Product Passport (DPP)

There are 3 'milestones' introduced ahead of the full operalisation of the DPP:

1. <u>Regulation</u>: Introduction of the DPP **concept**, description of the **scope**, identification of some **key features.**

2. Identification of **essential technical requirements** to be developed through <u>standardisation</u> process. A safety clause is introduced in case of delays or if the quality of the standards is not 'fit for purpose'. In such case the Commission shall adopt **common specifications** with the technical requirements needed.

3. <u>Delegated acts</u>: Identification of the **specific information** to be included in the DPP for each product or product group.

DPP mandatory for all products for which there is a delegated act

Key features already included in the ESP regulation

- **No proprietary solutions**: All information included in the product passport shall be written in an **open, standard, inter-operable format** and shall be machine-readable, structured, and searchable, in accordance with the essential requirements included in Article 9.

- **Granularity**: The information included in the product passport shall refer to the product **model** (e.g. iPhone 13), **batch** (e.g. iPhone 13, produced in factory XYZ), or **item** (e.g. iPhone 13, serial number 123456789) as specified in the applicable delegated act referred to in Article 5(1).

- **Access rights ('need-to-know')**: the access to information included in the passport shall be regulated in accordance with the essential requirements included in Article 9. The specific access rights at product group level will be identified in the applicable delegated act referred to in Article 5(1).

- **Liability**: The **economic operator** placing the product on the market is responsible for making available the EU DPP and for the information included therein.

- **Track & tracing**: Article 11 specifies that unique **operator** identifiers and unique **facility** identifiers may be requested. These are key information component to allow the track & tracing of information along the supply chain
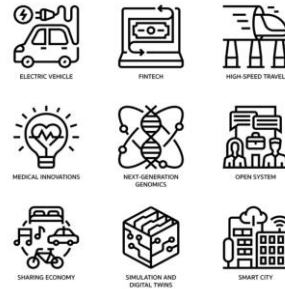
ESPR
Digital Product Passport (DPP)

Tracking of **raw materials extraction/production**, supporting due diligence efforts

Enable **manufacturers** to create products **digital twins**, embedding all the information required

Tracking the life story of a product, enabling services related to its **remanufacturing, reparability, re-use/re-sale/second-life, recyclability**, new business models

Benefit **market surveillance authorities and customs authorities**, by making available information they would need to carry out their tasks

Make available to **public authorities and policy makers** reliable information. Enable to link **incentives** to **sustainability performance**
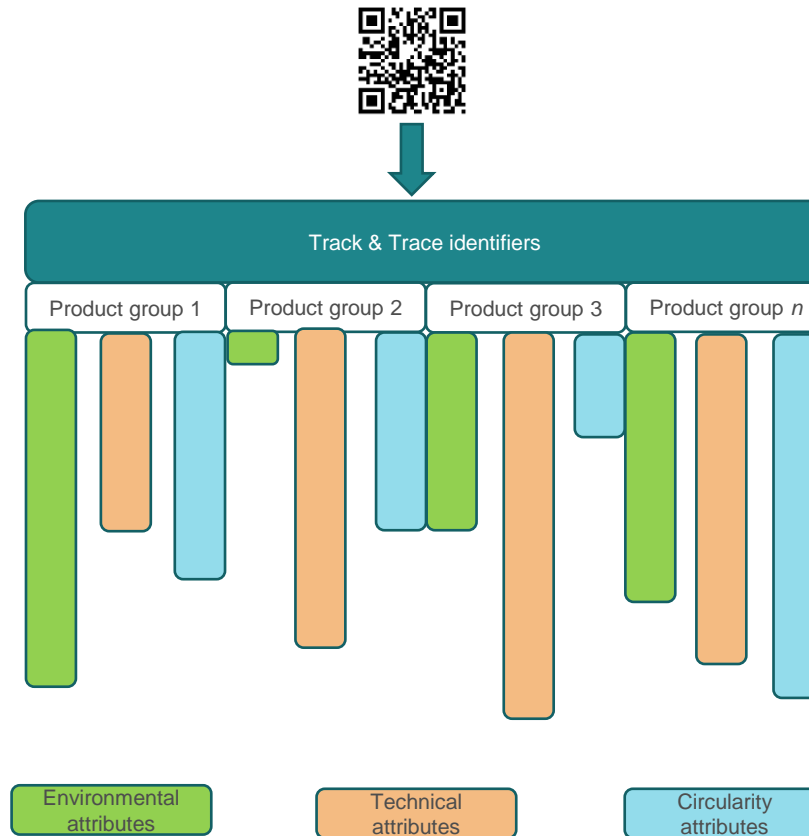

Allow **citizens** to have access to **relevant and verified information** related to the characteristics of the products they own or are considering to buy/rent (e.g. using apps able to read the identifier

European Commission

DPP
Working principles

The economic operator responsible for placing the product on the market fills in all the information required in the corresponding delegated act

A master data is created as part of the delegated act preparatory study. It includes the structure and template of the DPP for that specific product group

Track & Trace identifiers

| Product group 1 | Product group 2 | Product group 3 | Product group *n* |

Possible Track & Trace identifiers

- Economic operator's name, registered trade name
- Global Trade Identification Number or equivalent
- TARIC code
- Global location number
- Authorised representative
- Reference of the back-up data repository
- …

Example of potential attributes

- Description of the material, component, or product
- Recycled content
- Substances of concern
- Environmental footprint profile
- Classes of performance
- Technical parameters
- Bill of materials (if relevant)
- Manuals
- Labels
- …

Environmental attributes

Technical attributes

Circularity attributes

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ESPR
Digital Product Passport (DPP)

International or European **Standards** will be needed at least in the following areas:

➢ Data carriers and unique identifiers

➢ Access rights management

➢ Interoperability (technical, semantic, organisation), including data exchange protocols and formats

➢ Data storage

➢ Data processing (introduction, modification, update)

➢ Data authentication, reliability, and integrity

➢ Data security and privacy

Thank you

DPP
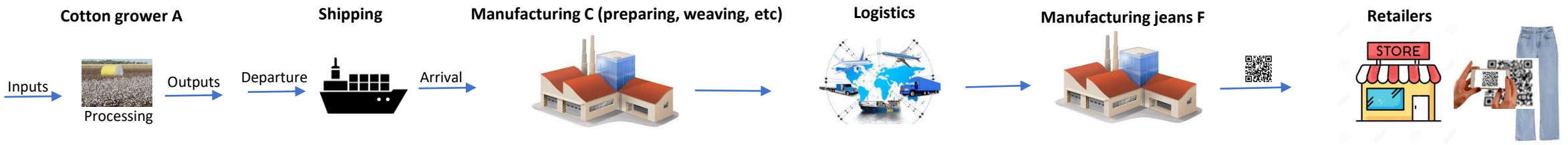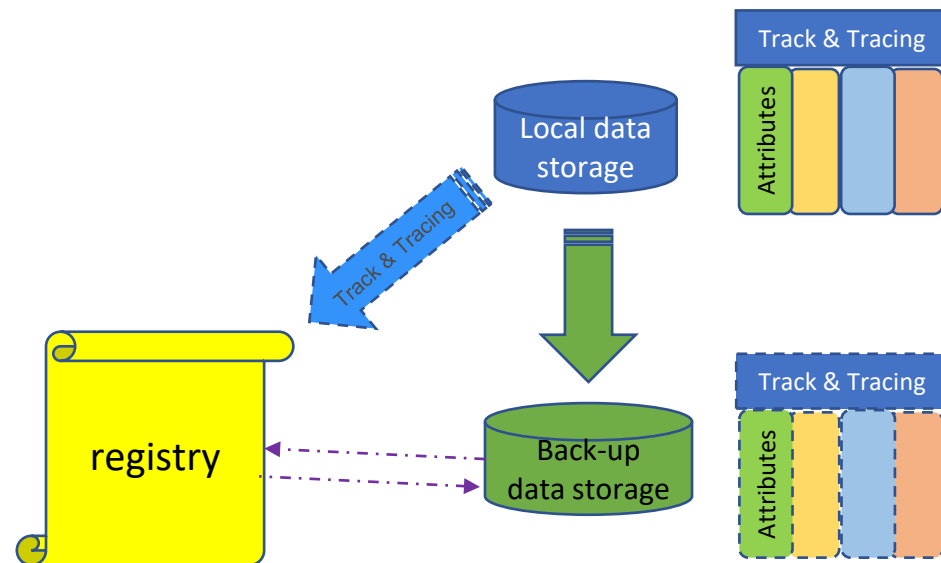# Working principles

The economic operator organise the information in his/her own web-page and store it on an own server or through an external service provider (the external service provider may always be needed to guarantee an independent back-up storage location)

Cotton grower A — Inputs → Processing → Outputs

Shipping — Departure → Arrival

Manufacturing C (preparing, weaving, etc)

Logistics

Manufacturing jeans F

Retailers — STORE

Only the Track & tracing information is transferred to the registry managed by the Commission. All the attributes (including the more confidential information) remains with the economic operator.

In case of bankruptcy liquidation, cessation of activity or in any other case in which the data are not accessible from the economic operator's own data storage, then the Commission and enforcement authorities can access (all) the data from the (decentralized) back-up data storage

Track & Tracing — Attributes

Local data storage

Track & Tracing

registry

Back-up data storage

Track & Tracing — Attributes

DPP
Working principles

Access to information is enabled through a data carrier and the corresponding unique identifier

Manufacturing (preparing, weaving, etc)

Manufacturing jeans

Cotton grower

Economic operator placing the product on the market

1

2

https://{domain}/identifier1

3

4

5

6

Local storage system

registry

Back-up storage

Provenance/traceability

Footprint

Labels

Substances of concern

Durability

Classes of performance

Warranty

Compliance documents

European Commission