

Circularity Dataset Standardization

ESCP
Matinale de l'Économie Circulaire
05/03/2020

An initiative of



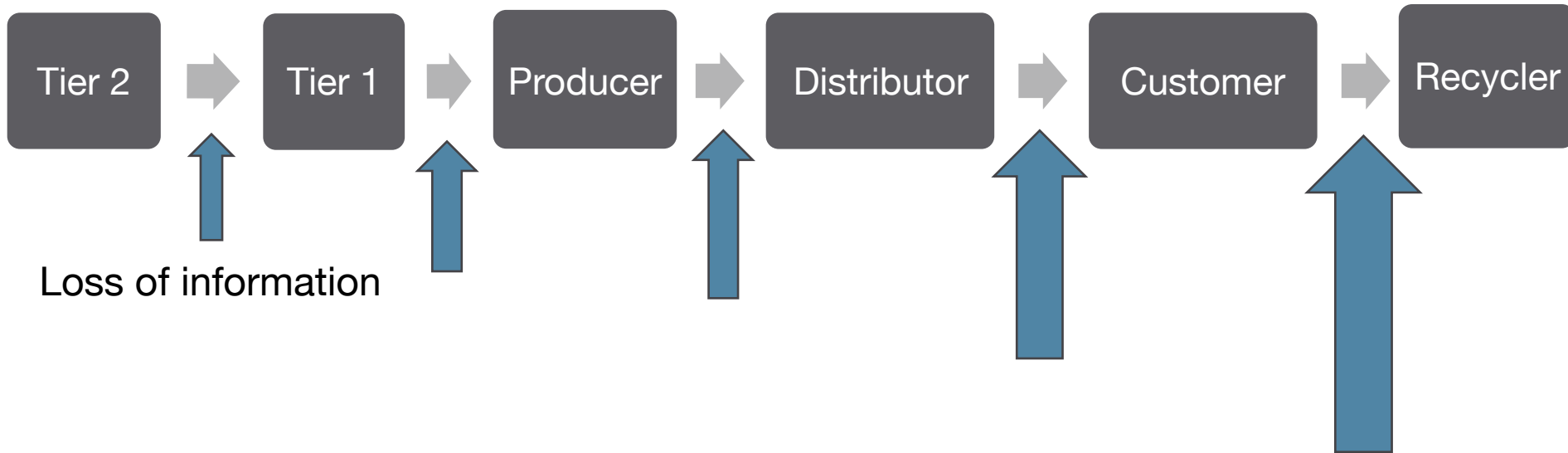
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Executive summary

The Product Circularity Data Sheet has been designed to:

1. become an **open standard developed by the industry** to serve everyone;
2. offer a **consistent format with verified content**, independently of the later use of the product in the supply chain;
3. provide the standard data foundation to **support circularity evaluation** and **decision-making**;
4. **help manufacturers take the first step in transparency** and product circularity practice;
5. be **harmonized with all major circularity tools and platforms**;

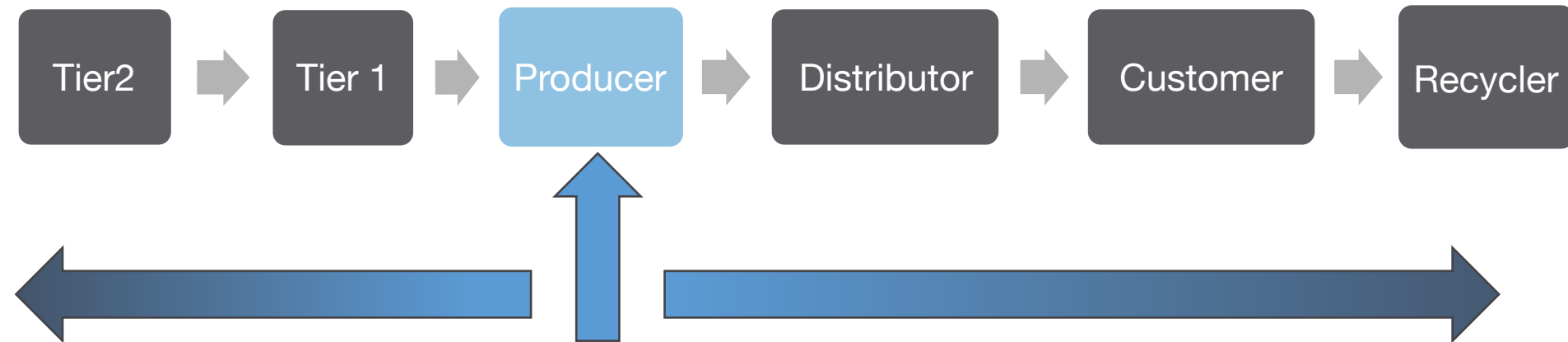
Problem statement



Linear economy : every sale leads to information loss about production details

Waste = material without information (Thomas Rau)

Current initiatives



- Start at final product
- Require
 - all the content information
 - Knowledge about the use and recycle scenario

Difficult to collect the information
Expensive !

*For the circular economy to work,
not only resources are required to circulate...*

...but also data on circularity of products along the value chain.

The Initiative

Supported by



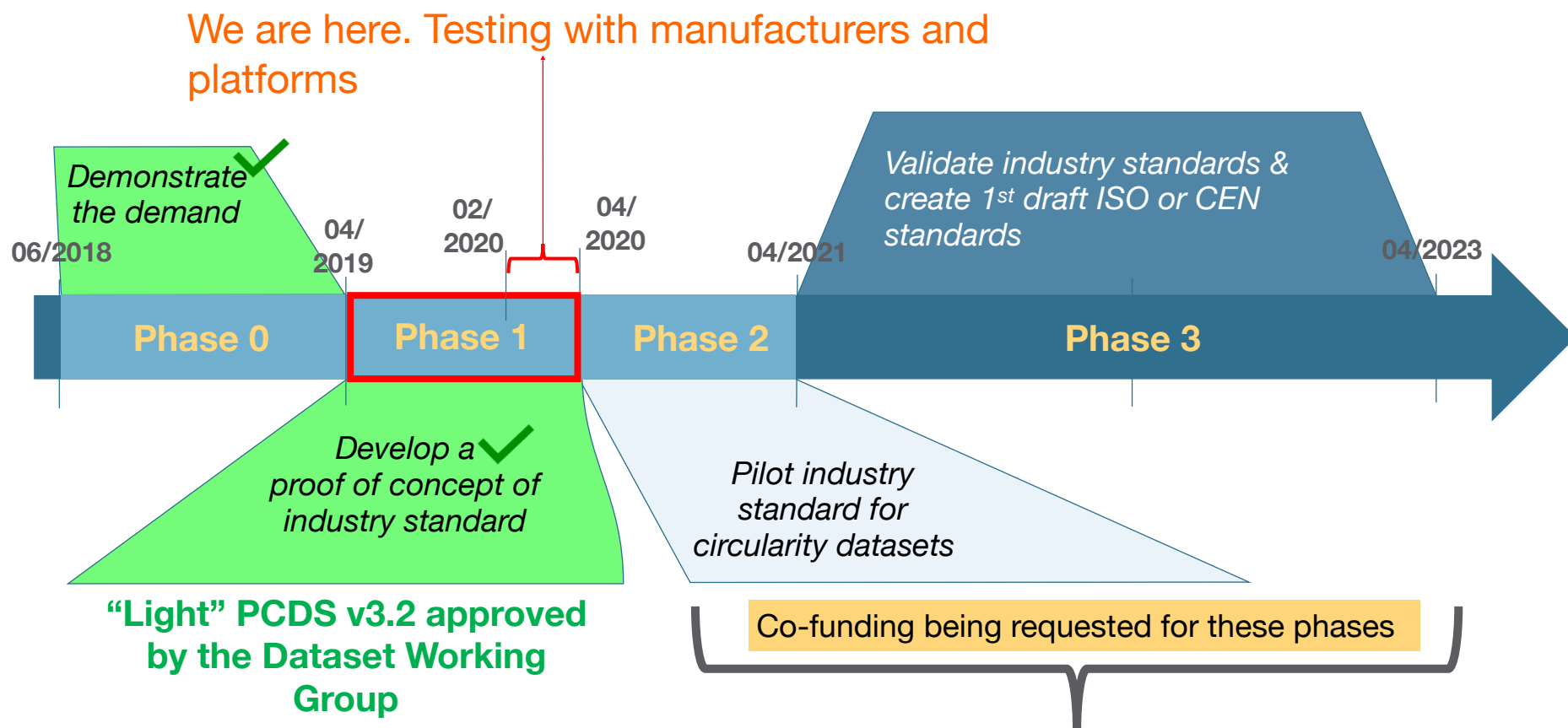
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aims to:

Establish A) de facto then B) an official industry standard for communicating data on the circularity of products, in order to:

1. Fill a gap in the circular economy (CE) data marketplace which is fragmented due to different data formats and multiple CE databases;
2. Provide standardized and reliable data on product circularity to all relevant stakeholders;
3. Save costs for manufacturers and other stakeholders who are being asked to provide similar CE data in many different formats;
4. Improve CE data sharing efficiencies across supply chains;
5. Encourage the improvement of the product performance in terms of circularity

Where this initiative stands today



■ Phases supported by the Ministry of Economy of Luxembourg with potential co-funding.

Participants & Governance

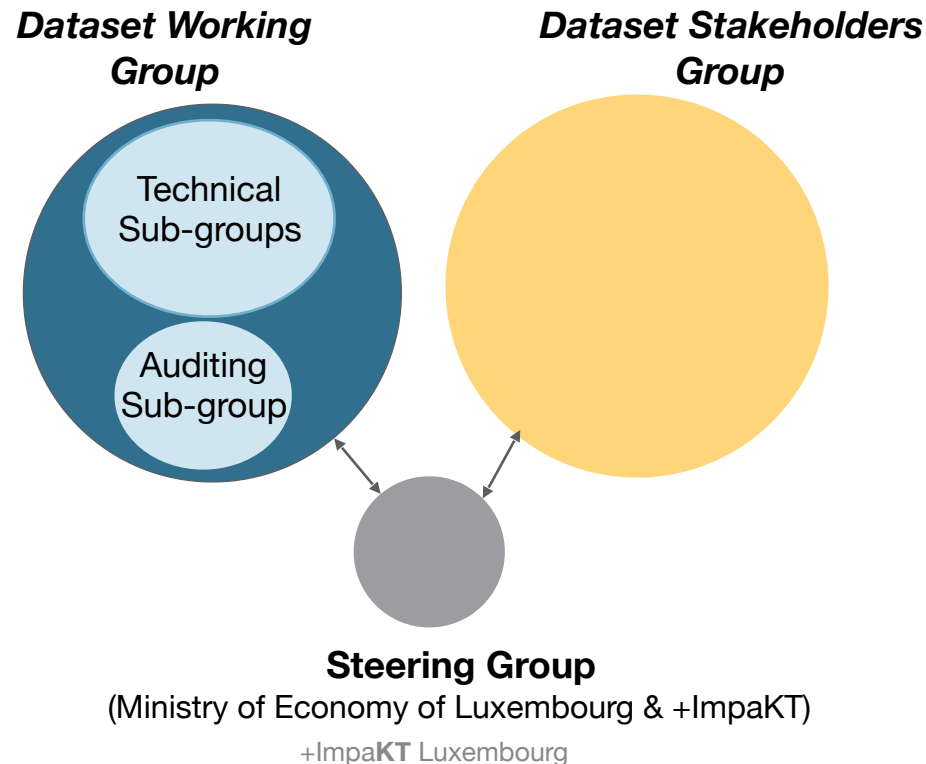
The **Dataset Working Group (DWG)** has developed the POC and the process for the industry standard

Technical sub-groups has developed the inputs and format for the POC.

Auditing sub-group is developing the audit protocols & where to apply them.

The **Dataset Stakeholders Group** follows progress and will pilot the POC mainly in phase 2.

The **Steering Group** prepares proposals for the DWG and acts as secretary to sub-groups. They also communicate with other standards and platforms initiatives.

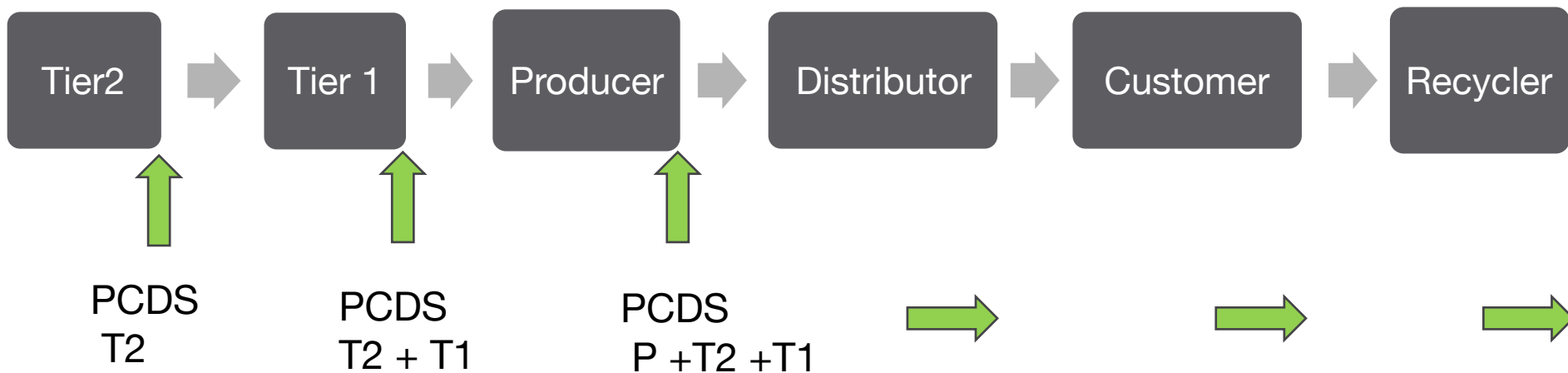


Solution: Product Circularity Data Sheet (PCDS)

*A PCDS is a product data template which contains **standardized** and **trustworthy information** on the **circularity of a product**, regardless of its position in the supply chain.*

1. **Enable later circular evaluations** of product by other stakeholders (e.g. platforms or consultants). Not designed for ranking or rating product circularity;
2. Address the **conflict between confidentiality** of information and the need for **transparency**, by using **a "light" and "extended" versions approach**;
3. Have a structured format that stands alone, **independently of the later use of the product**;
4. Be **integrated throughout the supply chain**, allowing the assembly of information from multiple PCDS.

Solution : Product Circularity Data Sheet (PCDS)



Standardized way to share information at each step of the production process

Product Circularity Data Sheet (PCDS)

Content Categories

Structured in different sections to describe the circular potential of a product:

Section 1: Product and Company identification

Section 2: Composition/Information on product constituents

Section 3: Design for better use

Section 4: Design for disassembly

Section 5: Design for re-use

based on statements: True or False

Product Circularity Data Sheet (PCDS)

Few extracts

Pre-consumer recycled content

Statements 2400-2406: only one statement can be true.

- 2400 The product contains 0% pre-consumer recycled content by weight.
- 2401 The product contains >0-10 % pre-consumer recycled content by weight.
- 2402 The product contains >10-25 % pre-consumer recycled content by weight.
- 2403 The product contains >25-50 % pre-consumer recycled content by weight.
- 2404 The product contains >50-75 % pre-consumer recycled content by weight.
- 2405 The product contains >75-95 % pre-consumer recycled content by weight.
- 2406 The product contains >95 % pre-consumer recycled content by weight.

Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
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Choose True/False ▼
Choose True/False ▼

SECTION 4: Design for disassembly

Demounting

- 4000 The product is designed to be installed and demounted using reversible connectors.

Choose True/False ▼

Disassembling

Statements 4100-4106: only one statement can be true.

- 4100 0 % of the product (weight in kg) is designed to be cleanly removed from the product.
- 4101 >0-10 % of the product (weight in kg) is designed to be cleanly removed from the product.
- 4102 >10-25 % of the product (weight in kg) is designed to be cleanly removed from the product.
- 4103 >25-50 % of the product (weight in kg) is designed to be cleanly removed from the product.
- 4104 >50-75 % of the product (weight in kg) is designed to be cleanly removed from the product.
- 4105 >75-95 % of the product (weight in kg) is designed to be cleanly removed from the product.

Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
Choose True/False ▼

SECTION 2 : Composition/Information on product constituents

Chemical substance threshold

Statements 2000-2002: only one statement can be true.

- 2000 The chemical substance threshold used by the manufacturer for disclosing the product composition is 1% (10000 ppm).
- 2001 The chemical substance threshold used by the manufacturer for disclosing the product composition is 0.1% (1000 ppm).
- 2002 The chemical substance threshold used by the manufacturer for disclosing the product composition is 0.01% (100 ppm).

Choose True/False ▼
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Choose True/False ▼

SECTION 3: Design for better use

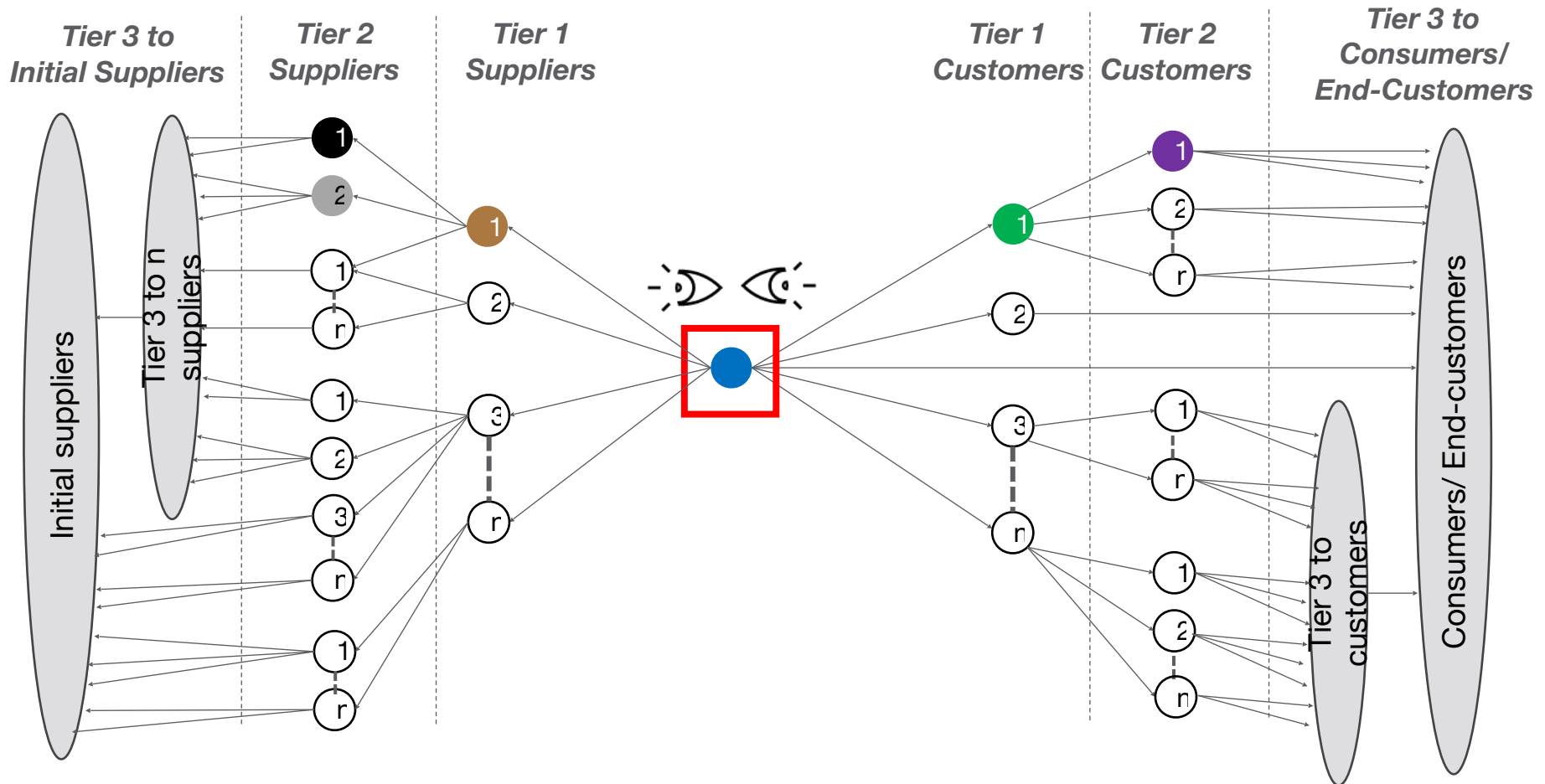
Designed for maintenance & repair

- 3000 The product can be maintained & repaired by untrained personnel at the location of the product use.
- 3001 The product can be maintained & repaired by trained personnel at the location of the product use.
- 3002 The product requires no maintenance or repair if the intended use of the product is followed.
- 3003 Maintenance or repair of the product during its use period is not possible due to the design of the product.

Choose True/False ▼
Choose True/False ▼
Choose True/False ▼
Choose True/False ▼

Use of PCDS throughout the supply chain

Schematic view of a supply chain: supplier's view



Advantages of the PCDS

1. **Multiple PCDS are combinable into complex product & systems.** Product & system assemblers can use PCDS from component suppliers to make their own PCDS for the assembled product,
2. No sophisticated software required to access the data. Open source.
3. Uses similar approach to MSDS so familiar to most users.
4. Provides guidance on what is a circularity characteristic without subjectively ranking performance. Completely neutral data.
5. Includes data that cover present use rather than only long term future use, so has immediate value.
6. Supports materials banking.
7. Supports healthy materials.

Platforms testing the PCDS



World Business Council for Sustainable Development



Product Data Template
cobuilder



ecopreneur.eu



THE INTERNATIONAL EPD® SYSTEM



TECHNICAL COMMITTEES
ISO/TC 323
Circular economy