



THE ECLASS SOLUTION ON THE DIGITAL PRODUCT PASSPORT

MARCH 12TH 2024

CAROLIN PRINZ

THORSTEN KROKE



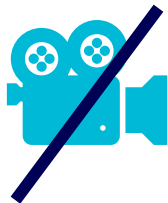
RULES FOR THE WEBINAR



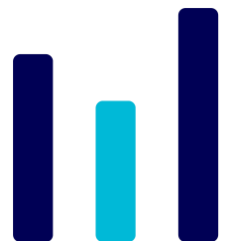
Please be muted



Please write your questions or comments in the chat.
We will answer the questions and react to the comments at the end of the webinar (Q&A)



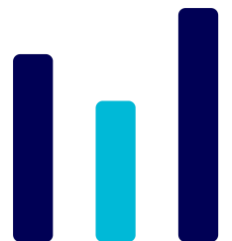
This webinar will not be recorded



AGENDA



- 01 BRIEF INTRODUCTION TO ECLASS**
- 02 BRIEF INTRODUCTION TO BCON² AND BEATS**
- 03 THE DIGITAL PRODUCT PASSPORT (DPP)**
 - Status quo of the DPP
 - ECLASS solution on DPP with demo
- 04 Q&A**



01

BRIEF INTRODUCTION TO THE ECLASS CLASSIFICATION STANDARD

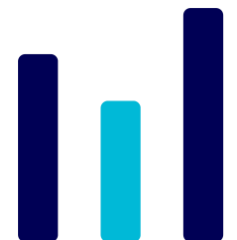
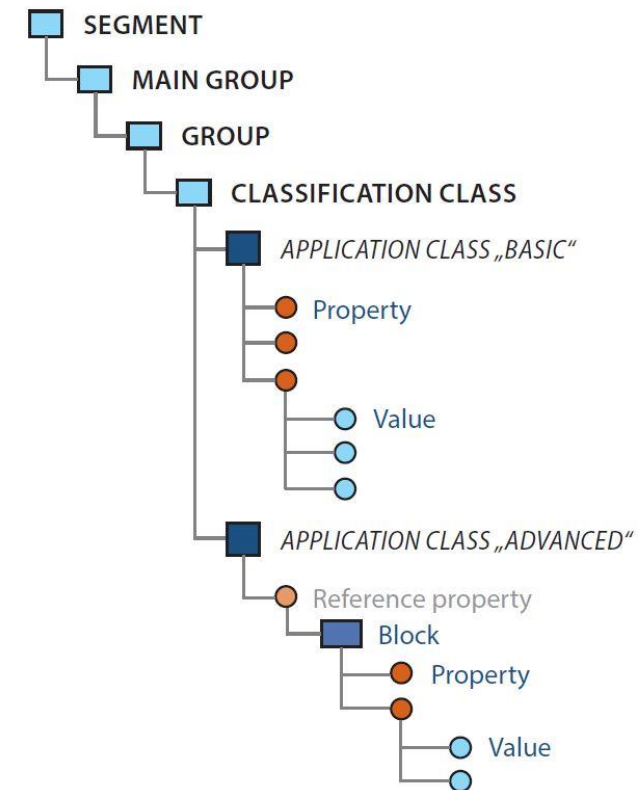


WHAT IS ECLASS?

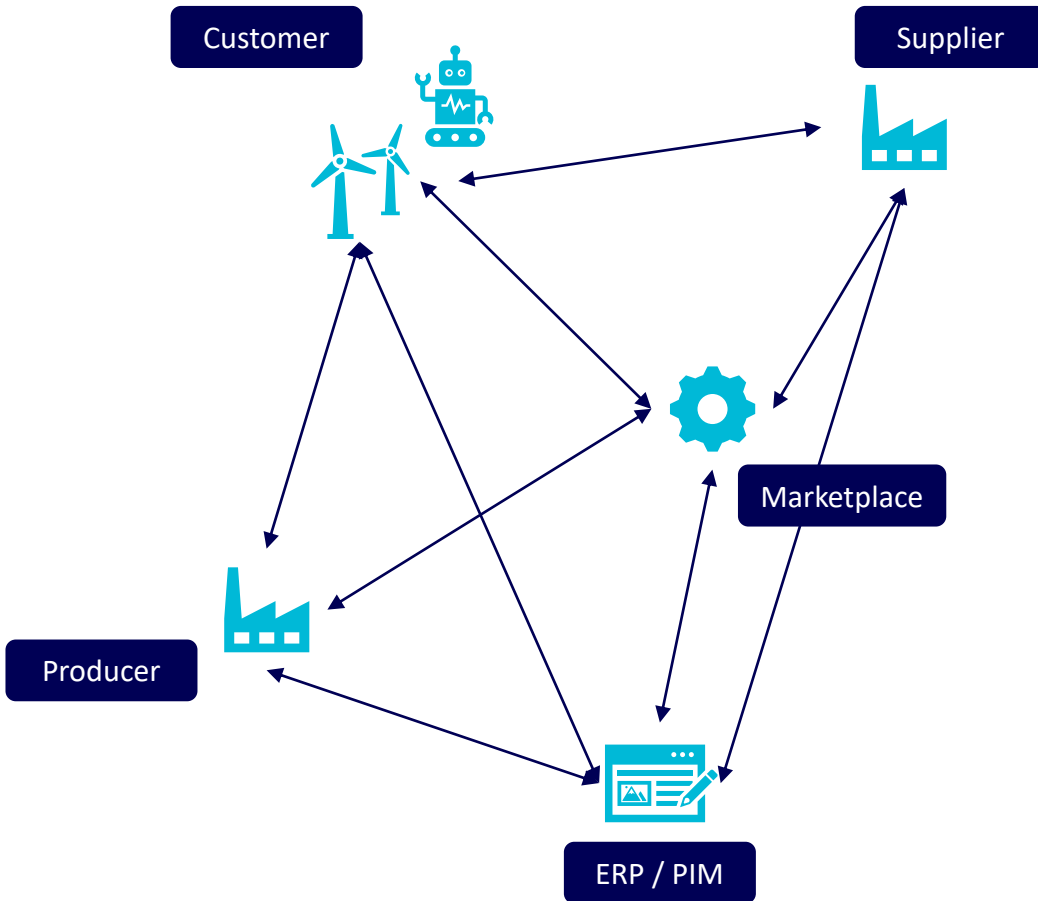


ECLASS CLASSIFICATION STANDARD

- ECLASS is a sector- and company-neutral, hierarchical standard for master data for the classification and description of products and services
 - Classification structure on 4 levels
 - Properties are allocated on the 4th level
 - Properties are allocated to values
 - Keywords are allocated to all levels



DIGITAL SUPPLY CHAINS VIA ECLASS



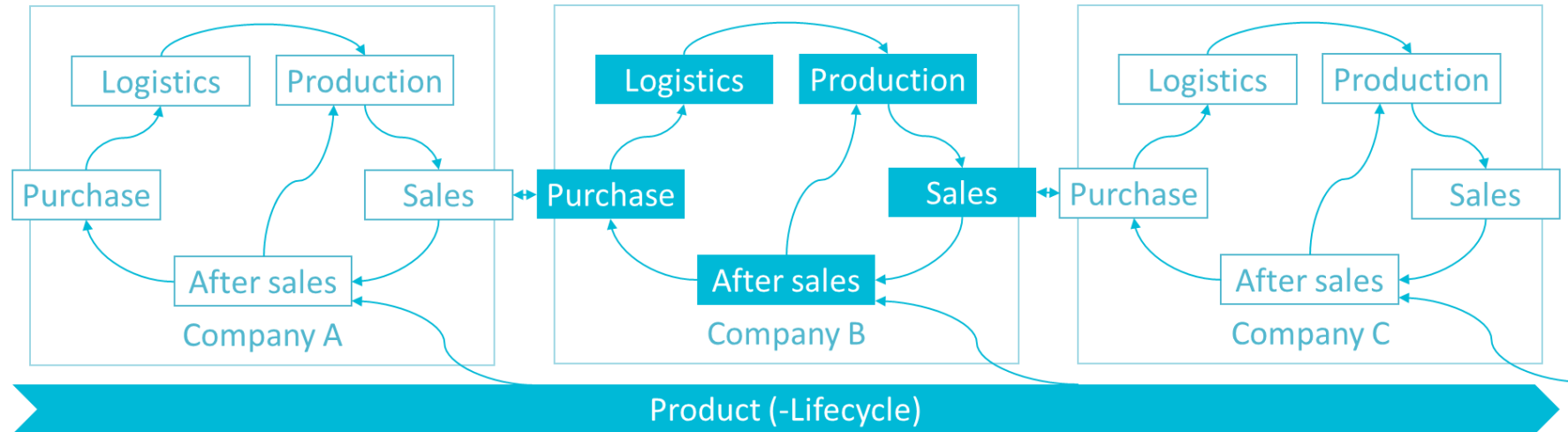
- ECLASS as a standard for master data management enables standardized and lossless data exchange in the supply chain between multiple companies
- Creation of a digital twin: the assets and products are clearly described in purely digital form
- ECLASS is machine-interpretable and available in 17 languages



WHY ECLASS?



Supports all business processes for all partners along the value chain and throughout the entire life cycle

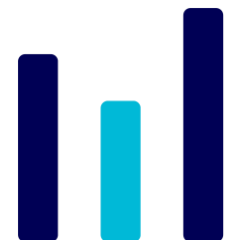


Distribution

- Electronic catalogs or marketplaces, purchasing and procurement
- Analyze and bundle purchasing portfolio according to criteria

Strategy and controlling

- Creating product groups
- No media disruptions




BENEFITS: TECHNICAL FIT FOR INDUSTRIAL BUSINESS



 **ISO / IEC**
based data model



Machine interpretable



```
<PRODUCT_FEATURES>  
<REFERENCE_FEATURE_SYSTEM_NAME>ECLASS-8.0<REFERENCE_FEATURE_SYSTEM_NAME>  
<REFERENCE_FEATURE_GROUP_ID>27010390<REFERENCE_FEATURE_GROUP_ID>  
<REFERENCE_FEATURE_GROUP_ID2>0173-1#01-ACN104#004<REFERENCE_FEATURE_GROUP_ID2>  
<FEATURE>  
...
```

Multilingual
for global usage



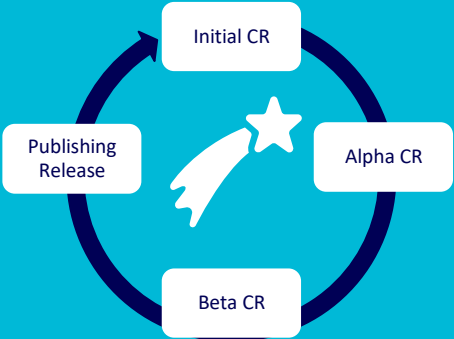
Cross sectoral and open development



Compatible to other data standards



Regular improvements



ECLASS – STRUCTURAL ELEMENTS



Structural element	Abbreviation	Definition
Classification Class	CC	A product group identified by a preferred name and an eight-digit coded name that represents the four-level classification structure
Application Class	AC	Class that comprises all characteristics described by properties
Property	PR	A characteristic of a class
Unit	UN	Standardized unit of measure
Value	VA	A specification of a characteristic
Value List	VL	A restrictive list of valid specifications of a property
Keyword	KW	An alternative name of a class
Synonym	SY	An alternative name of a property
Aspect	AS	Sub-class of an application class that comprises all properties describing a certain aspect of a product, not the product itself, e.g. packing information
Block	BL	Sub-class of an application class that comprises all properties describing a certain part of a product
Reference Property	RP	Property that references a block

➤ **Only in ADVANCE to structure the properties**

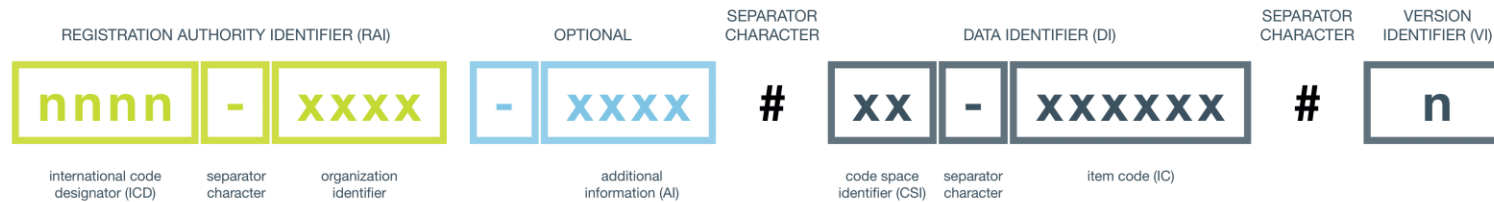


EACH STRUCTURAL ELEMENT HAS AN IRDI

International Registration Data Identifier

n = digit
x = safe character

ISO/IEC 11179-6
Annex A defines the international registration data identifier (IRDI)

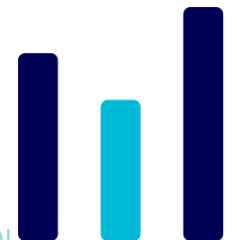


ISO/IEC 6523
defines requirements for identification of organization identification schemes

ISO 29002-5
defines syntax and requirements for concept identifiers

0173-1#02-AAO677#002

Corresponds to "manufacturer name"



02

BCON²



PRODUCT PORTFOLIO OF BCON² GMBH



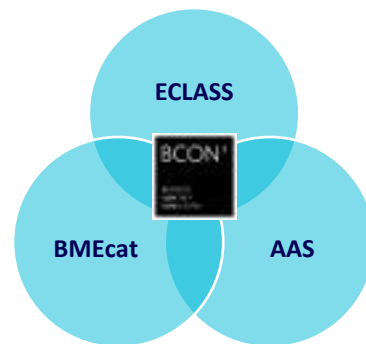
GOAL: SUPPORT FOR THE ENTIRE PRODUCT DATA SUPPLY CHAIN

- BCON² GmbH is a 100 % subsidiary of ECLASS e. V.
- Founded in 2021

Offering solutions around the ECLASS Standard

- Motivation and differentiation:
 - Fokus SMEs
 - Help small businesses build on standards

1. **Services**: Consultations on digital product data standards (in particular ECLASS)
2. **Software**: Scalable software products for asset data
3. **Technology**: Individual software solutions, e.g. for AAS in the I4.0 environment or serialization of data as well as interfaces



BCON² BEATS

[HTTPS://BEATS.BCON2.COM/](https://beats.bcon2.com/)

- The BEATS platform offers software apps for standards online
- Only by use of an ECLASS webservice certificate
- Solutions everything with ECLASS
 - DPP templates per download
 - AAS submodel template Generator for individual DPPs
 - AAS Generator



IdShort	Description	IRDI
AC-240	Tintenroller	0173-1---ADVANCED_1_1#01-AEV19
AC-851	Environmental Footprint	0173-1#01-AHE711#001

AAS and DPP with BEATS

Find out first-hand how you can create an Asset Administration Shell (AAS) or a Digital Product Passport (DPP) yourself with little effort!

With the BCON² platform BEATS, you can easily integrate ECLASS into standardized data containers such as AAS or BMEcats without additional software. The advantage: You generate your individual templates and templates for AAS and DPPs directly with ECLASS semantics for further processing in your company. If necessary, you can extend the existing ECLASS content to meet your individual requirements in compliance with standards. During the webinar, we will demonstrate the corresponding functions and possibilities of BEATS.

The event is aimed at data and product managers who design digital templates for the Asset Administration Shell or the Digital Product Passport of their products. Both beginners and successful users can generate DPPs and AAS templates, in which ECLASS is directly integrated, easily and without additional software.

Webinar (English): Wednesday, March 13, 2024, 13:30 - 15:00 h

The event is organized by BCON² GmbH and is free of charge for participants. Registration required.

On **Tuesday, March 12, 2024, from 14:00 to 15:30 h**, an additional webinar **in German** is offered. | Further information

[AAS und DPP mit BEATS - ECLASS](#)



Webinar: Asset Administration Shell (AAS) and Digital Product Passport (DPP) with the BEATS application

13
MAR
2024

In a compact webinar, we will use practical examples to show you how you can create with little effort templates for Asset Administration Shells (AAS) or Digital Product Passports (DPP) in the BEATS application and download them directly.

Date:
Tuesday, 03/12/2024 - Wednesday, 03/13/2024
00:00 - 00:00

Location:
Webinar / online
You will receive the access link by email approx. 24 hours before the start of the event.

Webinar (English): Wednesday, March 13, 2024, 13:30 - 15:00 h

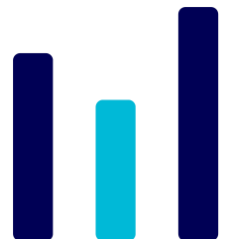
The event is organized by BCON² GmbH and is free of charge for participants. Registration required.

On **Tuesday, March 12, 2024**, from **14:00 to 15:30 h**, an additional webinar **in German** is offered. | Further information

Agenda

- 13:30 h **What is BCON² and what is BEATS?**
A brief introduction to BCON² GmbH and BEATS
- BEATS Basic Application**
Free web application for the use of ECLASS in data containers
- Defined Digital Product Passports (DPPs) as templates**
Download defined DPPs with ECLASS. Working directly is possible.
- Asset Administration Shells (AAS) Templates**
Design and customization of your own AAS submodel templates as templates for your processes and systems
- ECLASS Modeler to support individual AAS templates**
Generate missing ECLASS content for your individual AAS templates
- AAS for download**
Types and instances based on your AAS templates for validation
- Costs, Open questions**
- 15:00 h **End**

- Sales meetings as webmeetings:
 - DPP template bulk download
 - AAS template Generator
 - ECLASS Modeler – usage of structure and produce CRs in the background
 - DE: [AAS und DPP mit BEATS – ECLASS](#)
 - EN: [AAS and DPP with BEATS - ECLASS](#)



03

THE DIGITAL PRODUCT PASSPORT



THE GENESIS OF THE DPP

TIMELINE

Digital Product Passport is one of many initiatives by the European Commission towards a more sustainable European Union

March 2020

EU presented an [Circular Economy](#) Action Plan

December 2023

CEN/CENELEC establishing Development of deliverables for the deployment of the Digital Product Passport (DPP)

January 2020

[European Green Deal](#)

Starting discussions on the EU Green Deal as a plan for Europe's sustainable development and growth

December 2023

The Council and the Parliament reached a provisional deal on new ecodesign requirements for sustainable products ([ESPR](#))

2026

product passport implementation in textiles, battery content and consumer electronics

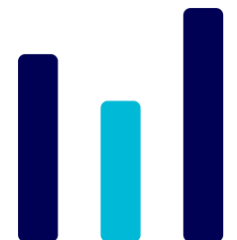
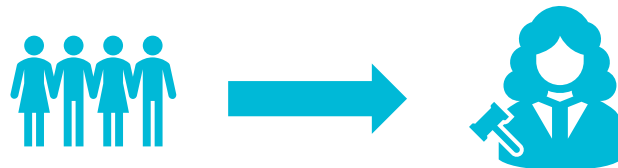


What role does ECLASS play in the DPP standardization environment?

- ECLASS is a member of the European committee **CEN/CENELEC** and the corresponding national mirror committee of **DIN/DKE**

What are the advantages of this participation for ECLASS and ECLASS users?

- Contribute to the standard
- Influence the standard
- Being conform with international and national developments in standardization

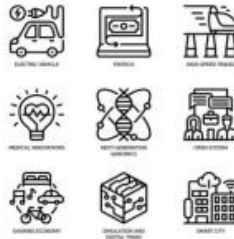


WHAT DOES THE DPP AIM FOR?

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)

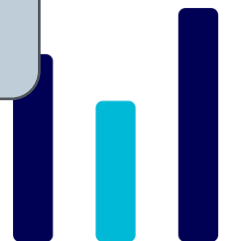
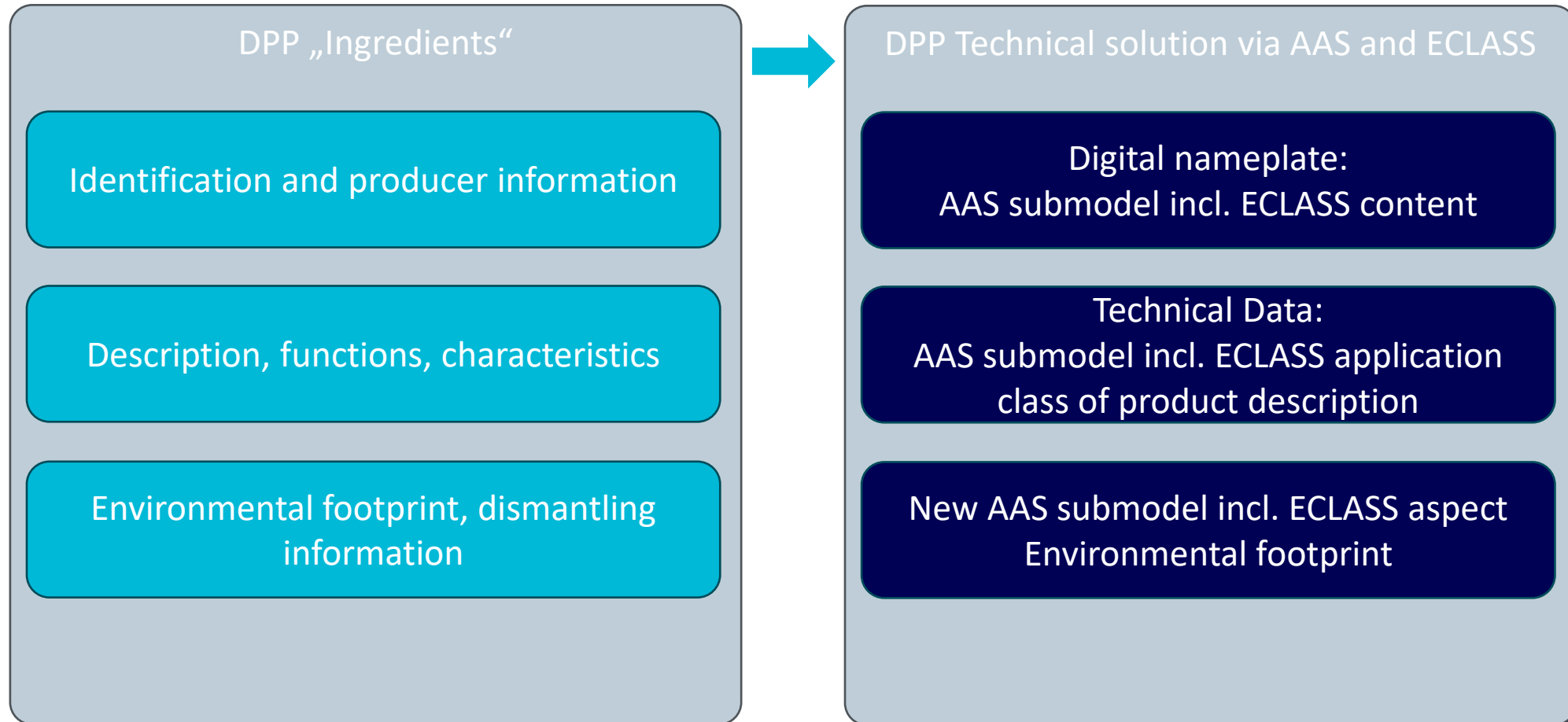


[Source: Green claims initiative 2nd ISG meeting \(europa.eu\)](https://europa.eu)

THE DPP AND ECLASS



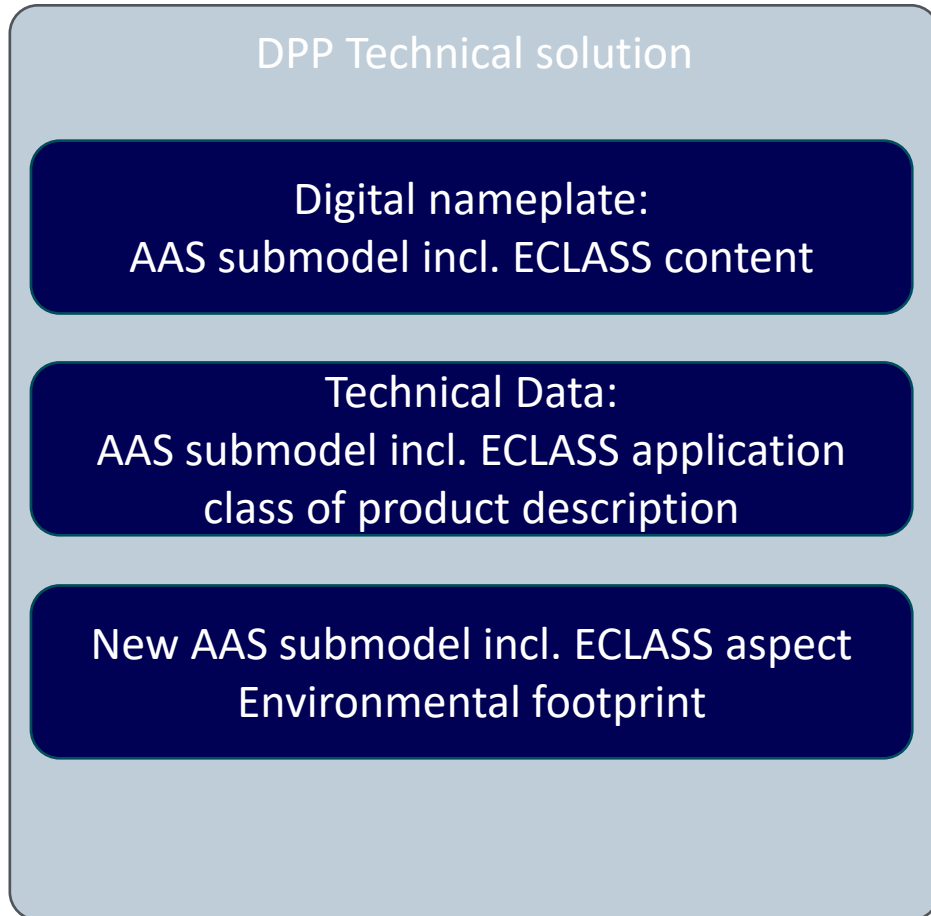
THE REQUIREMENTS OF THE DPP ARE SOLVED IN ECLASS



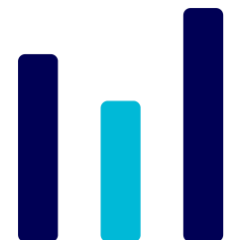
ECLASS TECHNICAL SOLUTION



THE REQUIREMENTS OF THE DPP ARE SOLVED IN ECLASS



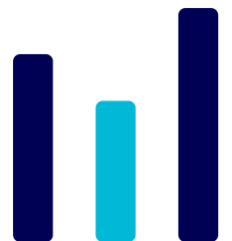
- Usage IDTA AAS as data container
- The digital nameplate consist of ECLASS properties and is available as ECLASS aspect
- The core of ECLASS: individual semantic properties to describe every product depending of classification
- All environmental information are standardized by ECLASS in a specific aspect



BENEFITS OF THIS SOLUTION



- + Interoperable usage of semantics for other use cases
- + Lossless information during the data supply chain, no media disruptions
- + ECLASS as proven industrial standard with deep content
- + Compliant to ISO and IEC
- + Open, flexible and fast development
- + Full use of benefits of ECLASS itself
 - + Cross sectoral
 - + Machine interpretable
 - + Multi language
 - + Etc.



CREATING AN AAS IN ECLASS



ECLASS Content Tree

E13 ECLASS Language: English EN 48 cprin

ECLASS Sandbox operated by BCON²

- Home
- ECLASS**
- Assets
- AAS
- Submodels
- Submodel Template
- BMEcat

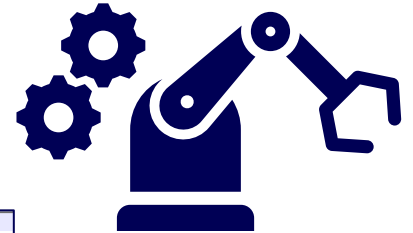
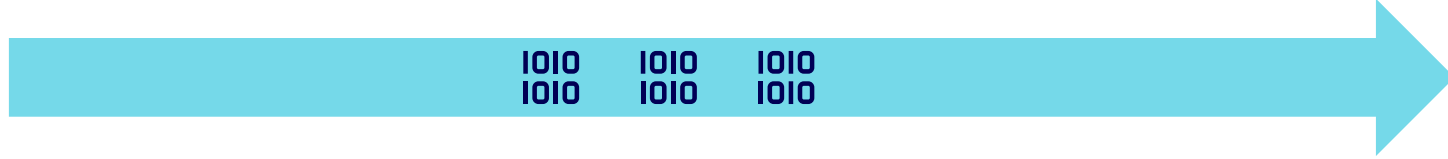
Preferred name	IRDI
▶ 13000000 - Development (Service)	0173-1#01-AFW236#004
▶ 14000000 - Logistics (Service)	0173-1#01-ADG629#004
▶ 15000000 - Maintenance (Service)	0173-1#01-ADG630#004
▶ 16000000 - Food, beverage, tobacco	0173-1#01-ACE546#007
▶ 17000000 - Machine, device (for special applications)	0173-1#01-AKJ644#009
▶ 18000000 - Equipment for mining, metallurgical plant, rolling mill and foundry	0173-1#01-AKK397#007
▶ 19000000 - Information, communication and media technology	0173-1#01-AKJ313#007
▶ 20000000 - Packing material	0173-1#01-AAT090#008
▶ 21000000 - Plant equipment, tool	0173-1#01-AAA183#009
▶ 22000000 - Construction technology	0173-1#01-AAA647#007
▶ 23000000 - Machine element, fixing, mounting	0173-1#01-AAA862#007
▶ 24000000 - Office product, facility and technic, papeterie	0173-1#01-AAB072#011
▶ 25000000 - General service	0173-1#01-AAB315#008
▶ 26000000 - Energy, extraction product, secondary raw material and residue	0173-1#01-AAN560#009
▶ 27000000 - Electric engineering, automation, process control engineering	0173-1#01-AAB572#007
▶ 28000000 - Vehicle (complete vehicle)	0173-1#01-AAC168#006
▶ 29000000 - Home economics, Home technology	0173-1#01-AAC286#009
▶ 30000000 - Auxiliary supply, additive, cleaning agent	0173-1#01-AAC350#009
▶ 31000000 - Polymer	0173-1#01-AAF397#010
▶ 32000000 - Laboratory material, Laboratory technology	0173-1#01-AAC473#012
▶ 33000000 - Installation (complete)	0173-1#01-AAD025#006
▶ 34000000 - Medical Device	0173-1#01-AAD111#009

Terms and Conditions | Protection of Data Privacy | Imprint

0.5.1 12/22/23, 1:18 PM



SHARE YOUR DATA



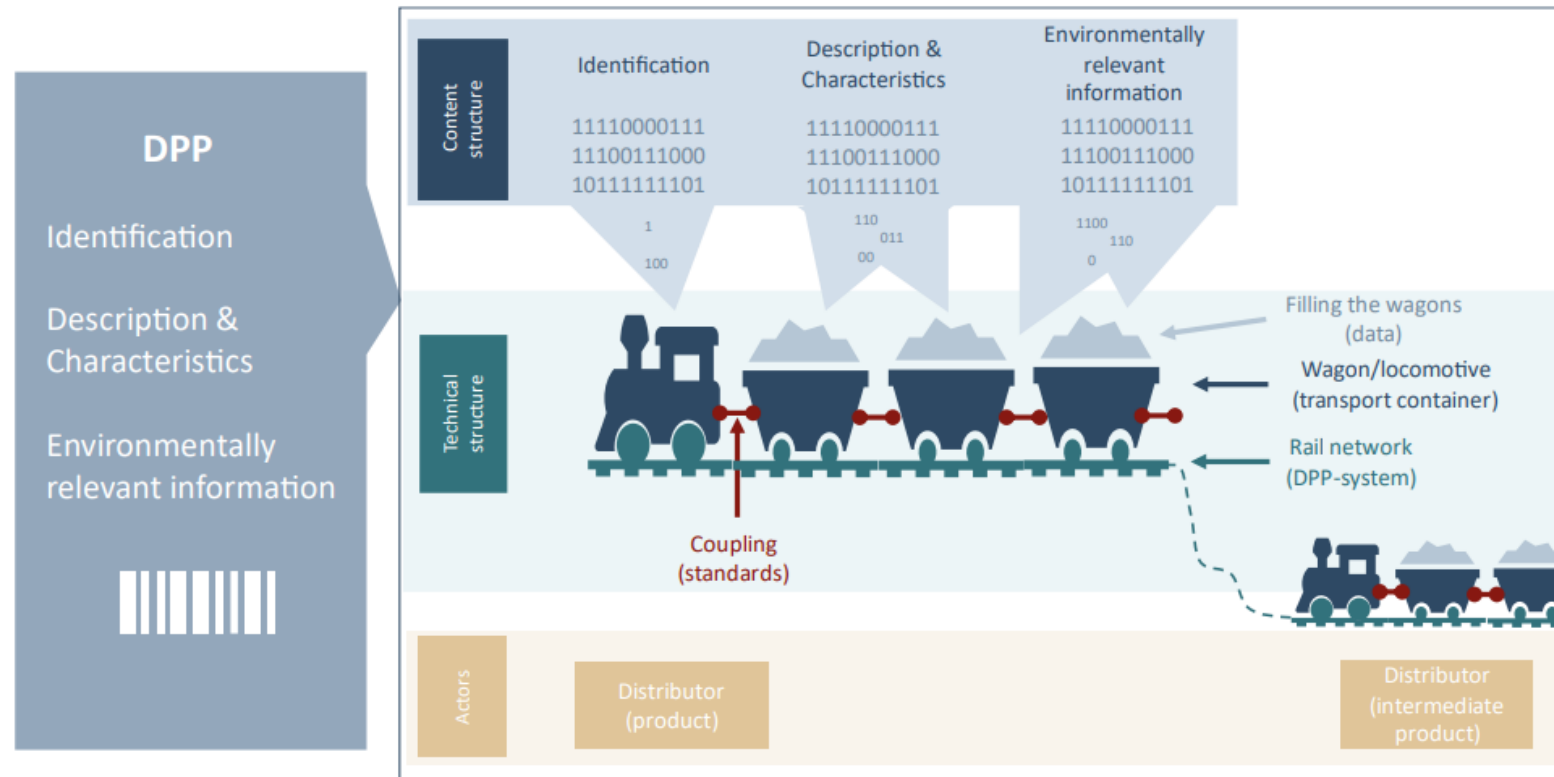
```
1 <?xml version='1.0' encoding='UTF-8'?>
2 <aas:environment xmlns:aas="https://admin-shell.io/aas/3/0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="https://admin-shell.io/aas/3/0 AAS.xsd">
3   <aas:assetAdministrationShells>
4     <aas:assetAdministrationShell>
5       <aas:idShort>AAS-885</aas:idShort>
6       <aas:id>Outdoor_Lamp</aas:id>
7       <aas:assetInformation>
8         <aas:assetKind>Type</aas:assetKind>
9         <aas:globalAssetId>http://beats.bcon2.com/aas/bcon2/BCON2Asset</aas:globalAssetId>
10        </aas:assetInformation>
11        <aas:submodels>
12          <aas:reference>
13            <aas:type>ModelReference</aas:type>
14            <aas:keys>
15              <aas:key>
16                <aas:type>Submodel</aas:type>
17                <aas:value>https://example.com/ids/sm/f36c27af-bc48-4560-af48-684ed3d410e3</aas:value>
18              </aas:key>
19            </aas:keys>
20          </aas:reference>
21        </aas:submodels>
22      </aas:assetAdministrationShell>
23    </aas:assetAdministrationShells>
24    <aas:submodels>
25      <aas:submodel>
26        <aas:idShort>Outdoor_Lamp</aas:idShort>
27        <aas:description>
28          <aas:langStringTextType>
29            <aas:language>en</aas:language>
30            <aas:text>Outdoor Lamp</aas:text>
31          </aas:langStringTextType>
32        </aas:description>
33        <aas:id>https://example.com/ids/sm/f36c27af-bc48-4560-af48-684ed3d410e3</aas:id>
34        <aas:kind>Instance</aas:kind>
35        <aas:semanticId>
36          <aas:type>ModelReference</aas:type>
37          <aas:keys>
38            <aas:key>
39              <aas:type>ConceptDescription</aas:type>
40              <aas:value>0173-EX-1#01-XEM494#001</aas:value>
41            </aas:key>
42          </aas:keys>
43        </aas:semanticId>
44        <aas:submodelElements>
45          <aas:submodelElementCollection>
46            <aas:idShort>General_battery_and_manufacturer_information</aas:idShort>
47            <aas:description>
48              <aas:langStringTextType>
49                <aas:language>en</aas:language>
50                <aas:text>General battery and manufacturer information</aas:text>
51              </aas:langStringTextType>
52            </aas:description>
```



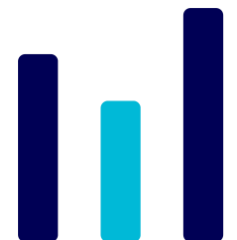


DIGITAL PRODUCT PASSPORT - ENABLER OF CIRCULAR ECONOMY

What information should be stored and how can this be implemented?



- [English Version](#)
- [German Version](#)



CONTACT



CAROLIN PRINZ



Consultant Standardization



prinz@eclass-office.com

THORSTEN KROKE

General Manager

kroke@eclass-office.com

