Det digitale produktpas

Webinar den 5. februar 2024

Program

01

Intro til standardisering og det digitale produktpas

Bjørn Hvidtfeldt, Dansk Standard

02

Det politiske arbejde med det digitale produktpas

Rasmus Rohde & David Meyrowitsch, Erhvervsstyrelsen

03

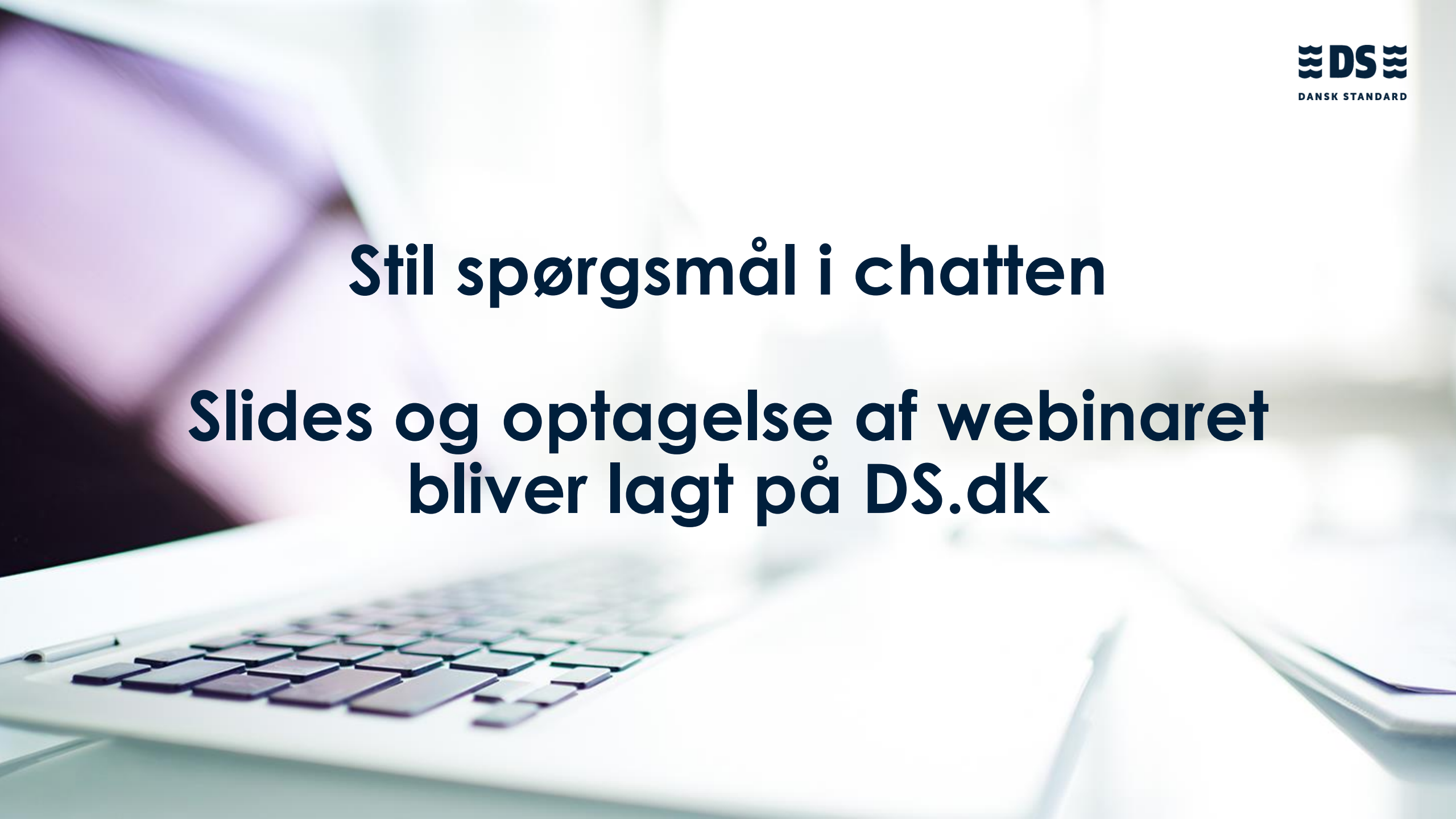
Standardisering af det digitale produktpas

Thomas Knothe, Chair for CEN-CLC/JTC 24 'Det digitale produktpas'

04

Øvrige standardiseringsaktiviteter og næste skridt

Bjørn Hvidtfeldt, Dansk Standard



Stil spørgsmål i chatten

Slides og optagelse af webinaret bliver lagt på DS.dk

1. Introduktion til standardisering og det digitale produktpas

Om Dansk Standard

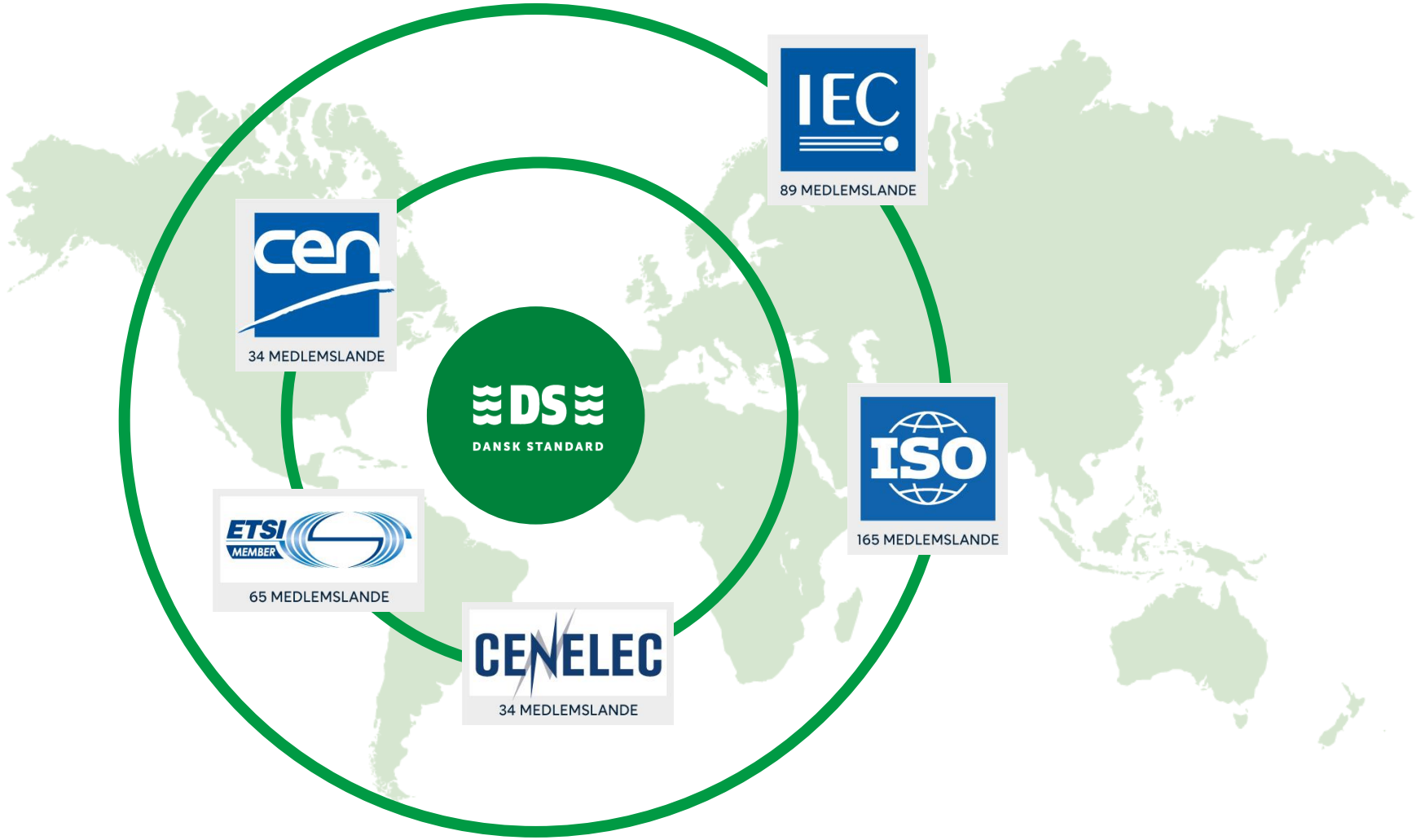
Hvem er Dansk Standard

- Danmarks officielle standardiseringsorganisation
- Erhvervsdrivende fond, grundlagt i 1926
- Erhvervspolitisk partnerskab med Erhvervsministeriet

Vi er medlem af:

En stærk platform af solide brands:

Dansk Standard er indgangen til standardisering – både europæisk og internationalt



Det digitale produktpas

Miljøvenligt design for bæredygtige produkter (ecodesign-forordningen)

2022/0095 (COD)

Hvad er det digitale produktpas?

- En teknisk løsning til at dokumentere digitale bæredygtighedsdata af fysiske produkters livscyklus.

- Produktpasset giver mulighed for at verificere, styre og synliggøre et produkts bæredygtighed i praksis.

Formål

- forbedre et produkts end-to-end-sporbarhed i hele værdikæden
- Hjælpe forbrugerne med at træffe informerede valg
- Understøtte reparatører eller genvindingsvirksomheder til at få adgang til relevante oplysninger
- Lette kontrol.

Standarder skal danne grundlaget for det digitale produktpas

CEN-CLC/JTC 24 ‘Digital Product Passport – Framework and system’

- Første møde i den nyoprettede komité blev afholdt den 18. december 2023 i Bruxelles, Belgien.
- Tysk sekretariat
- Chair er Thomas Knothe fra Fraunhofer IPK
- Komitéen skal udarbejde de standarder, som Europa-Kommissionen anmoder om.

Hvad skal i første omgang standardiseres?

DPP-system

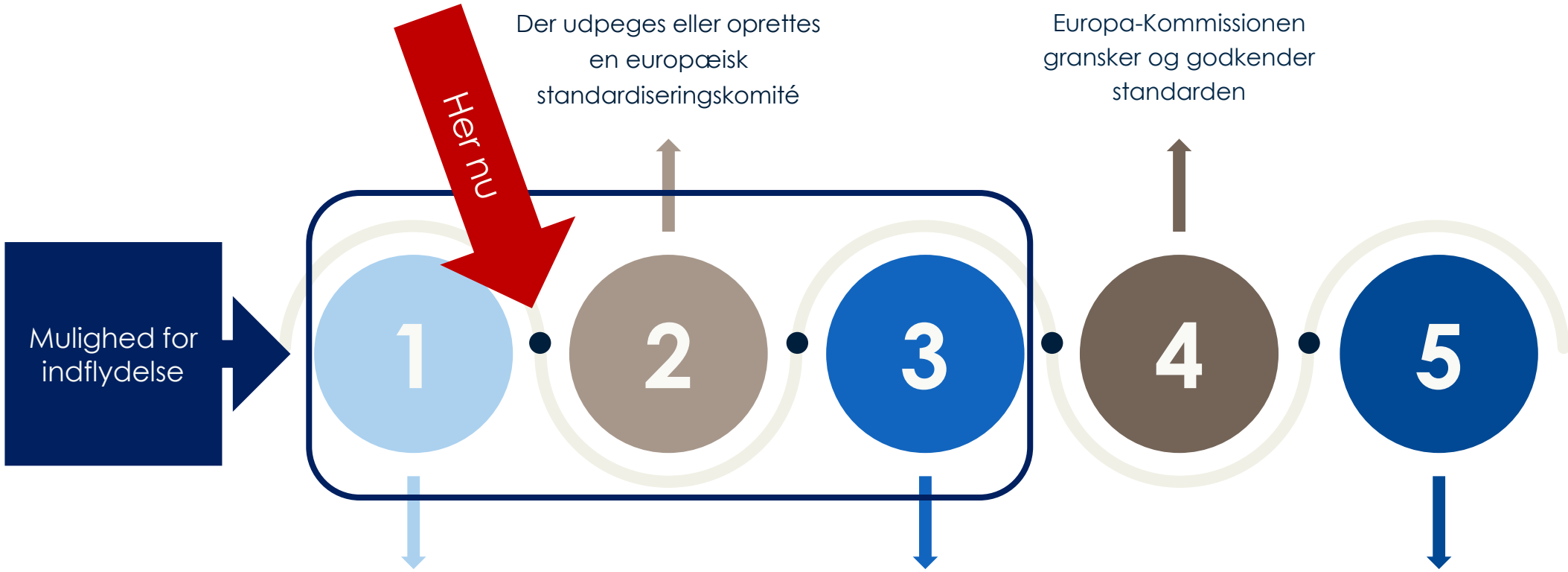
(to be developed before DPP deployment)

Digital Product Passport

DPP-data

(to be identified when developing product-group specific secondary legislation)

Fra EU-lovgivning til standard



ANMODNING

Europa-Kommissionen udsteder en standardiseringsanmodning

KOMITÉ

Der udpeges eller oprettes en europæisk standardiseringskomité

UDARBEJDELSE

Nationale eksperter kan skrive og kommentere udkast

GODKENDELSE

Europa-Kommissionen gransker og godkender standarden

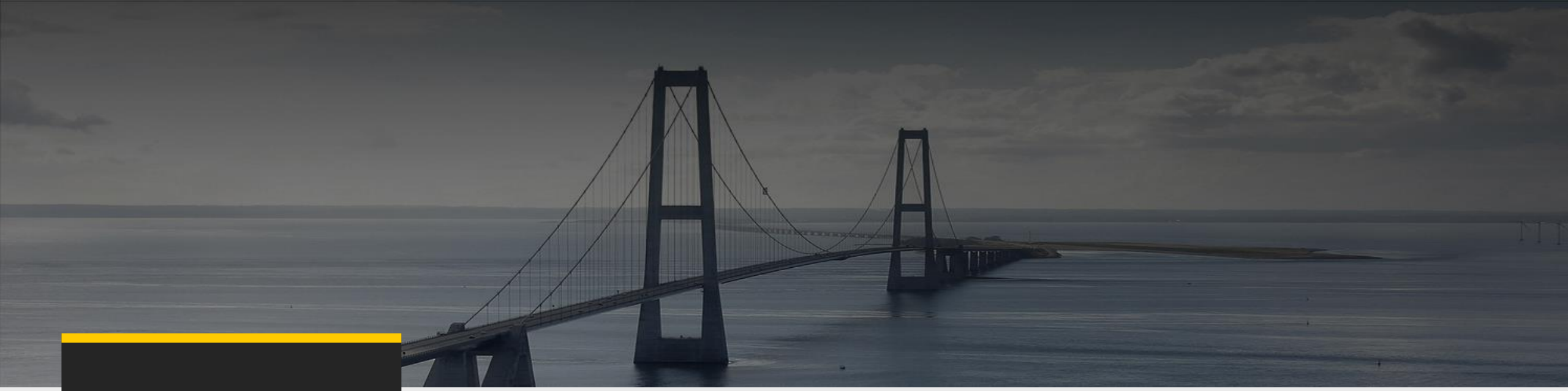
OFFENTLIGGØRELSE

Standarden offentliggøres i EU's officielle Tidende (OJEU)

Liste over harmoniserede standarder, som forventes skal udarbejdes

Reference information		Deadline
1	Harmonised standard(s) on unique identifiers	31 December 2025
2	Harmonised standard(s) on data carriers and links between physical product and digital representation	
3	Harmonised standard(s) on access rights management, information, system security, and business confidentiality	
4	Harmonised standard(s) on interoperability (technical, semantic, organisation)	
5	Harmonised standard(s) on data processing, data exchange protocols and data formats	
6	Harmonised standard(s) on data storage, archiving, and data persistence	
7	Harmonised standard(s) on data authentication, reliability, integrity	
8	Standards on APIs for the DPP lifecycle management and searchability	

2. Det politiske arbejde med det digitale produktpas



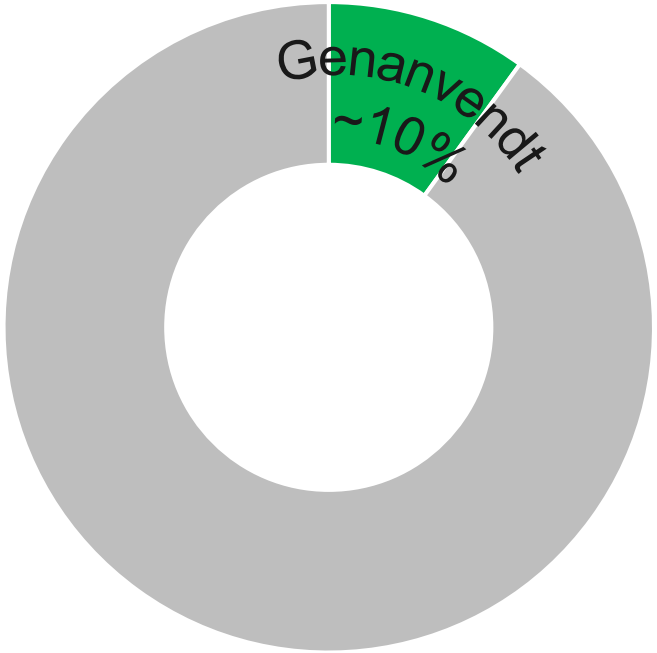
Erhvervsstyrelsens politiske arbejde med det Digitale Produktpas

5. Februar 2024 v. Dansk Standard

Rasmus Rohde & David Meyrowitsch

ERHVERVSSTYRELSEN

Hvor cirkulære er vi i dag?



- **Sænke vandforbrug**
- **Forlænge levetid**
- **Sænke klimaaftryk**

* Circle Economy (2022): The circularity gap report 2022 (https://www.circularity-gap.world/2022)

Reguleringsmæssig ramme

EU GREEN DEAL (2019)

… ANDRE REGULATORISKE INITIATIVER

VISION

PLAN

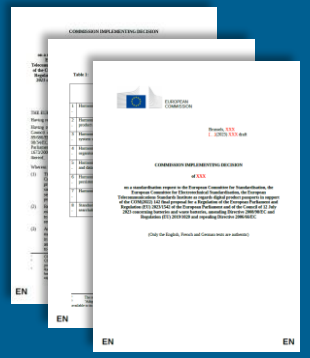
MEKANISME

Handlinsplan for Cirkulær Økonomi (2020)

EcoDesign (2022)

VÆRKTØJ

Digital Produktpas (2022)



CSRD

EU Taxonomy

CSDDD

Corporate sustainability due diligence directive

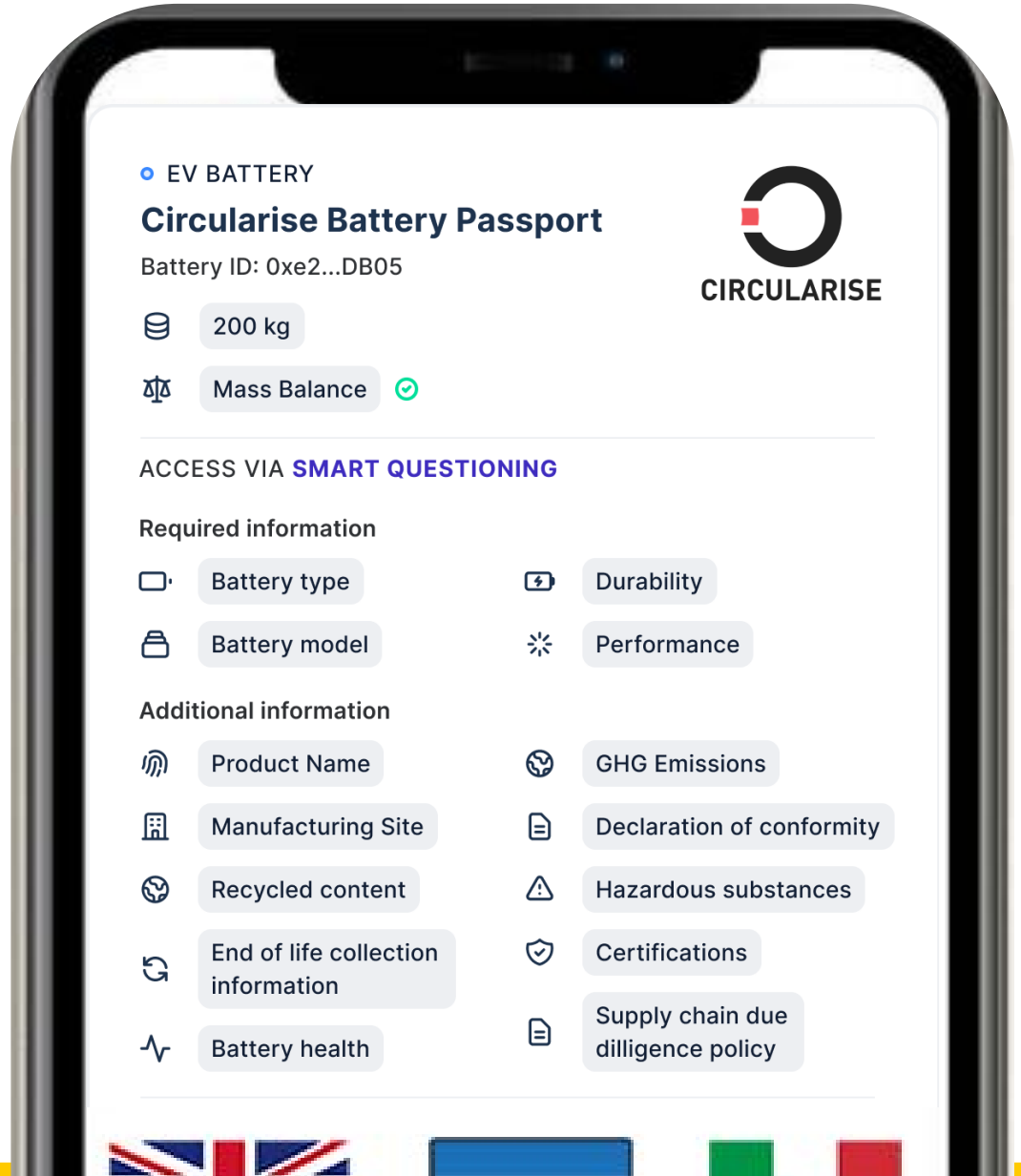
…

Hvordan skal man tage det grønne valg?

KRITERIER

- Produkters levetid og holdbarhed
- Muligheder for genanvendelse
- Vedligeholdelse og istandsættelse
- Bæredygtighedshåndtering af stoffer/kemi
- Energiforbrug og -effektivitet
- Genanvendt materiale i produktet
- Muligheder for genbrug og genfremstilling
- Genvinding af materialer eller energi indlejret i produkterne
- Miljø- og klimamæssigt ”footprint”
- Forventede affaldsmængder
- Opgradering
- Reparation
- Ressourceeffektivitet

Deling af bæredygtighedsdata



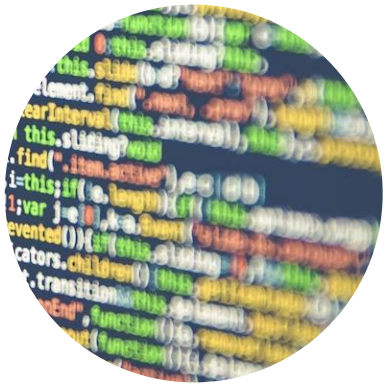
Problemstillinger i udarbejdelsen af arkitekturstandarden til DPP

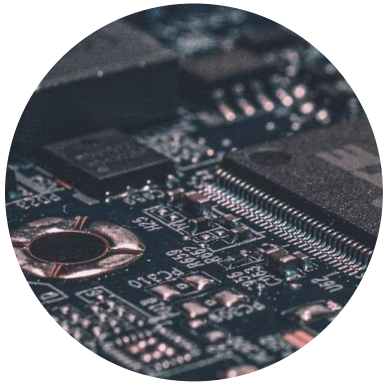
Unik Identifikation

- **Produktniveau, serieniveau eller modelniveau**

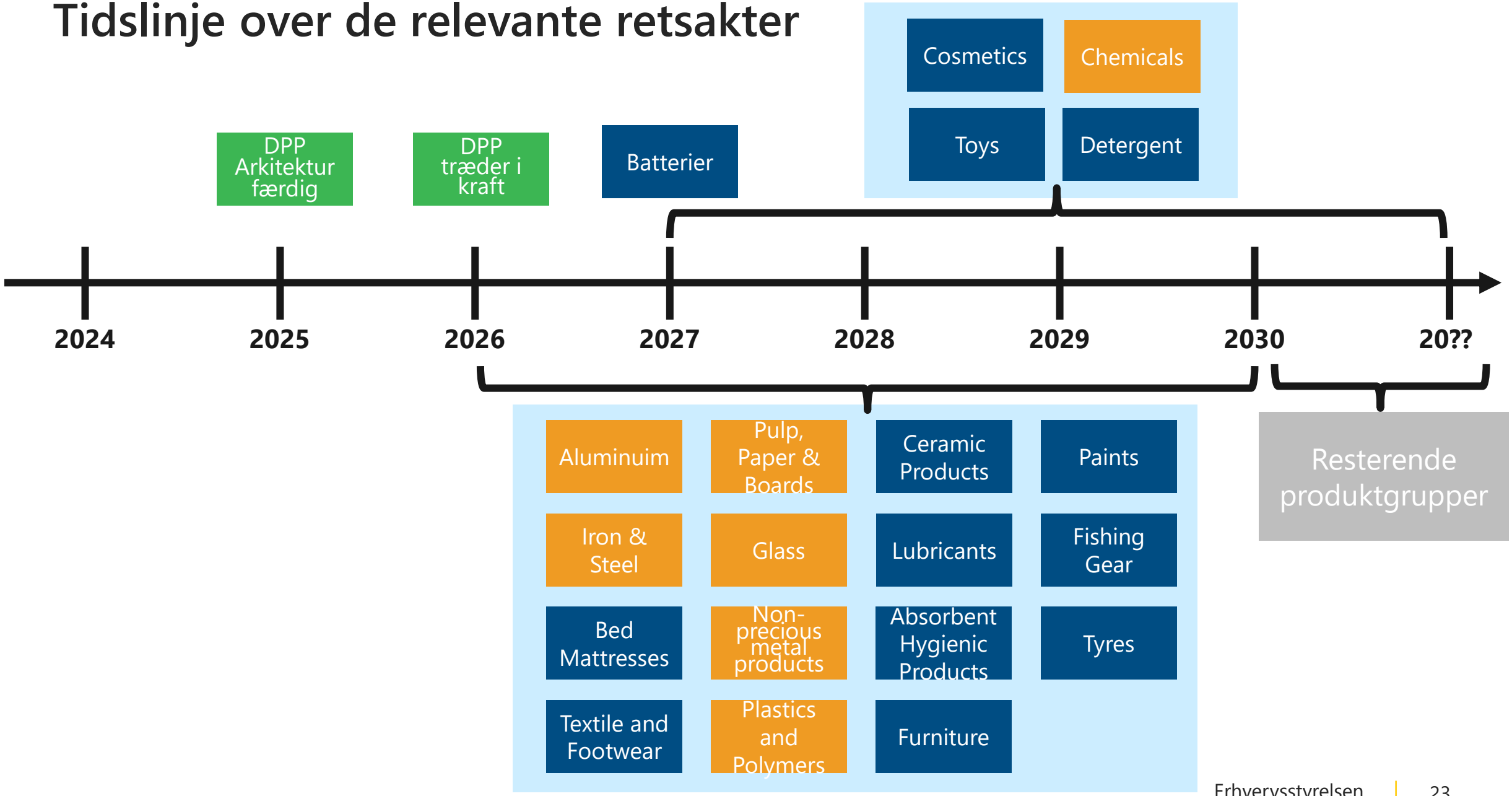
Datadeling

- **Operatørfastlåsning**
- **Transaktionsgebyer**





Tidslinje over de relevante retsakter



Digitale Grønne Produktdata

GroenData@erst.dk

Rasmus Rohde

RasRoh@erst.dk

35 29 14 58

David Meyrowitsch

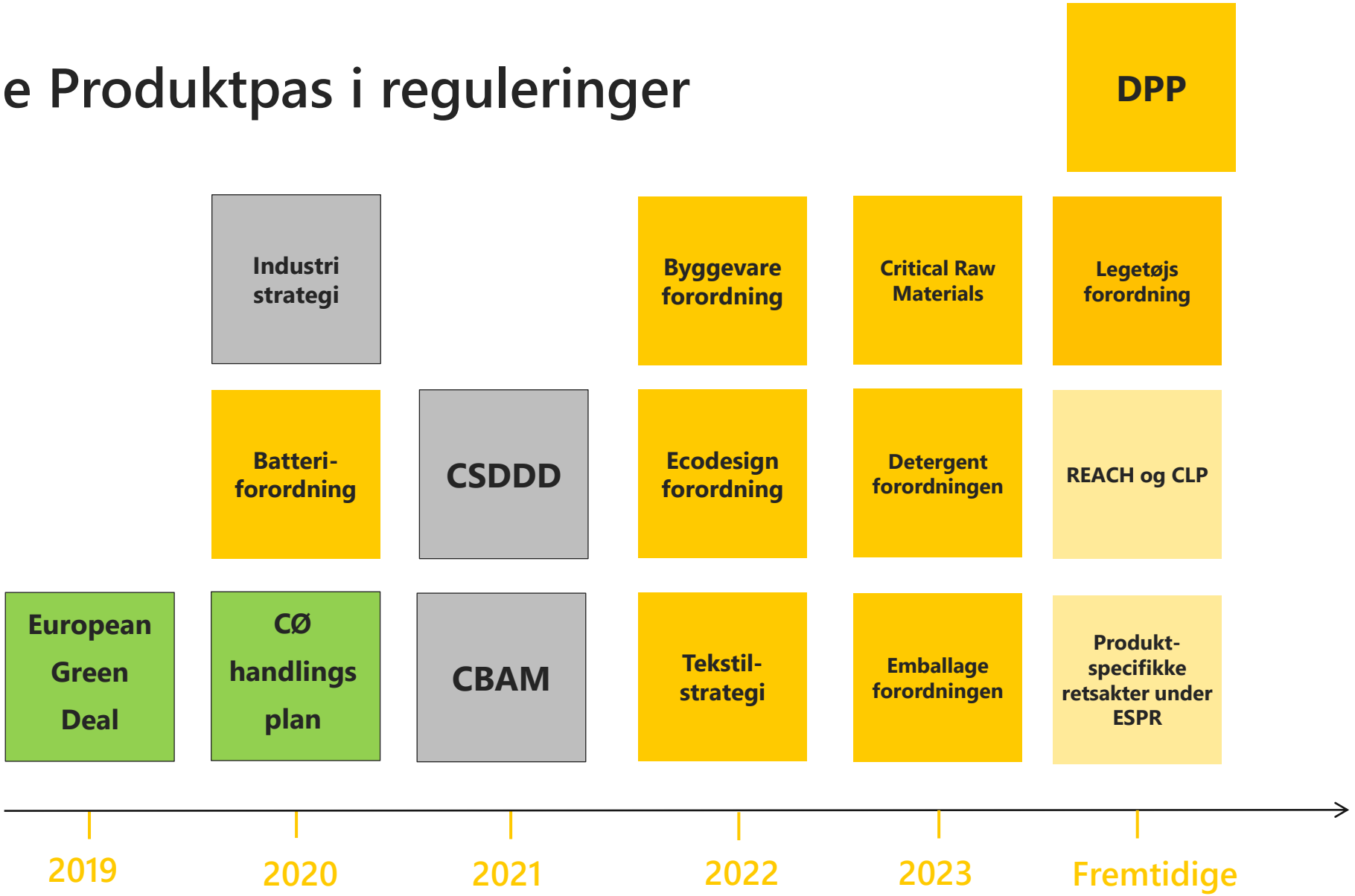
DavMey@erst.dk

35 29 14 99

ERHVERVSSTYRELSEN

Baggrundsslides

Digitale Produktpas i reguleringer



Deling af produkters bæredygtighedsinformationer

KRITERIER

Produkters levetid og holdbarhed

Muligheder for genanvendelse

Opgradering

Reparation

Vedligeholdelse og istandsættelse

Bæredygtighedshåndtering af stoffer/kemi

Energiforbrug og -effektivitet

Ressourceeffektivitet

Genanvendt materiale i produktet

Muligheder for genbrug og genfremstilling

Genvinding af materialer eller energi indlejret i produkterne

Miljø- og klimamæssigt "footprint"

Forventede affaldsmængder

2 typer krav – bestemt i **delegerede retsakter** (artikel 4)

Ydeevnekrav (performance): Minimums- eller maksimumsværdier for relevante kriterier, kvalitative og funktionelle

Oplysningskrav: Performance, håndtering i værdikæden, best performance, forbrugerrettet information, sporing af kemiindhold (farer for sundhed og miljø undtaget)

Grønne offentlige indkøb: nye krav i form til offentlige indkøb i form af obligatoriske tekniske specifikationer, udvælgelseskriterier, tildelingskriterier, klausuler om kontraktens udførelse eller mål

Alle produkter omfattet af en delegeret retsakt, SKAL have et digitalt produktpas

Q&A

Rasmus Rohde & David Meyerowitsch, Erhvervsstyrelsen

3. Standardisering af det digitale produktpas

European Standardization Organizations

JTC24 –
Digital Product Passport – Framework and System

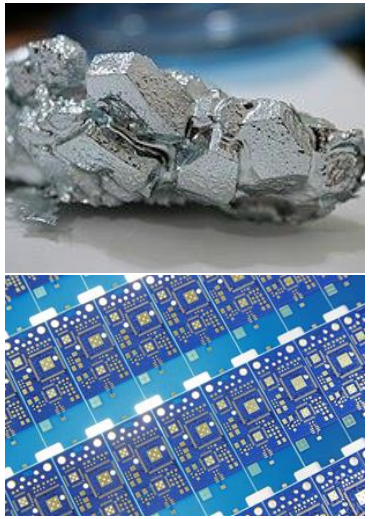
CEN CENELEC JTC24
Convenor: Thomas Knothe,
Secretary CEN CENELEC: Carolina Müller, Secretary DIN: Katharina Sehnert

Agenda

1. **Why JTC24 - Sustainability and Regulation**
2. **Scope of Standardisation in JTC24**
3. **Who should be interested in JTC24**
4. **How to participate in JTC24 and time line**

We need Circularity to be competitive in Future Markets

Example Gallium – Key Material for Chip Industry



The EU introduces digital product passports (DPP) as part of its broader regulatory ambition towards sustainability with the first being required for batteries from 2027

European Green Deal

Comprehensive plan to make the EU climate-neutral by 2050, safeguard biodiversity, establish a circular economy and eliminate pollution, while boosting the competitiveness of the European industry and ensuring a just transition for the regions and workers affected.

Circular Economy Action Plan

Initiative promoting the sustainable use of resources, especially in resource-intensive sectors with high environmental impact.

Provisional agreement

Ecodesign for Sustainable Product Regulation (ESPR)

- Proposed in Mar 2022, as central part to the Commission's strategy for eco-friendly and circular products
- Extends beyond current Ecodesign Directive, which exclusively addresses energy-related products
- Aims to promote environmental sustainability across a broader range of products

Introduces **digital product passports** as a general concept

Entered into force

Battery Regulation

- Initially proposed in 2020 complementing the Strategic Action Plan for Batteries
- Entered into force in Aug 2023 replacing the EU Battery Directive
- Provides a legal framework aiming to promote sustainability, circularity, safety and transparency

Mandates a **battery passport** for all EV, LMT, and industrial (>2kWh) batteries starting Feb 2027

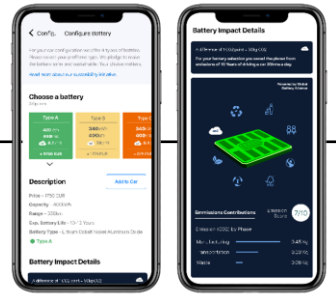
Proposal

End-of-Life Vehicle Regulation

- Proposed in Jul 2023, as result of the review of the End-of-life Vehicle Directive
- Will replace the End-of-life Vehicle Directive as well as the Type-approval Directive
- Governs the entire vehicle lifecycle, from design to end-of-life treatment

Mandates a **circularity vehicle passport** starting 7 years after entry into force of the regulation

A DPP consist on data and system



DPP Data

DPP data sector specific for:

- Batteries
- Electronics
- Textiles
- Construction Materials

→ Defined in different regulations
(e.g., the Battery Regulation with further information available in the Battery Passport Content Guidance)

DPP System

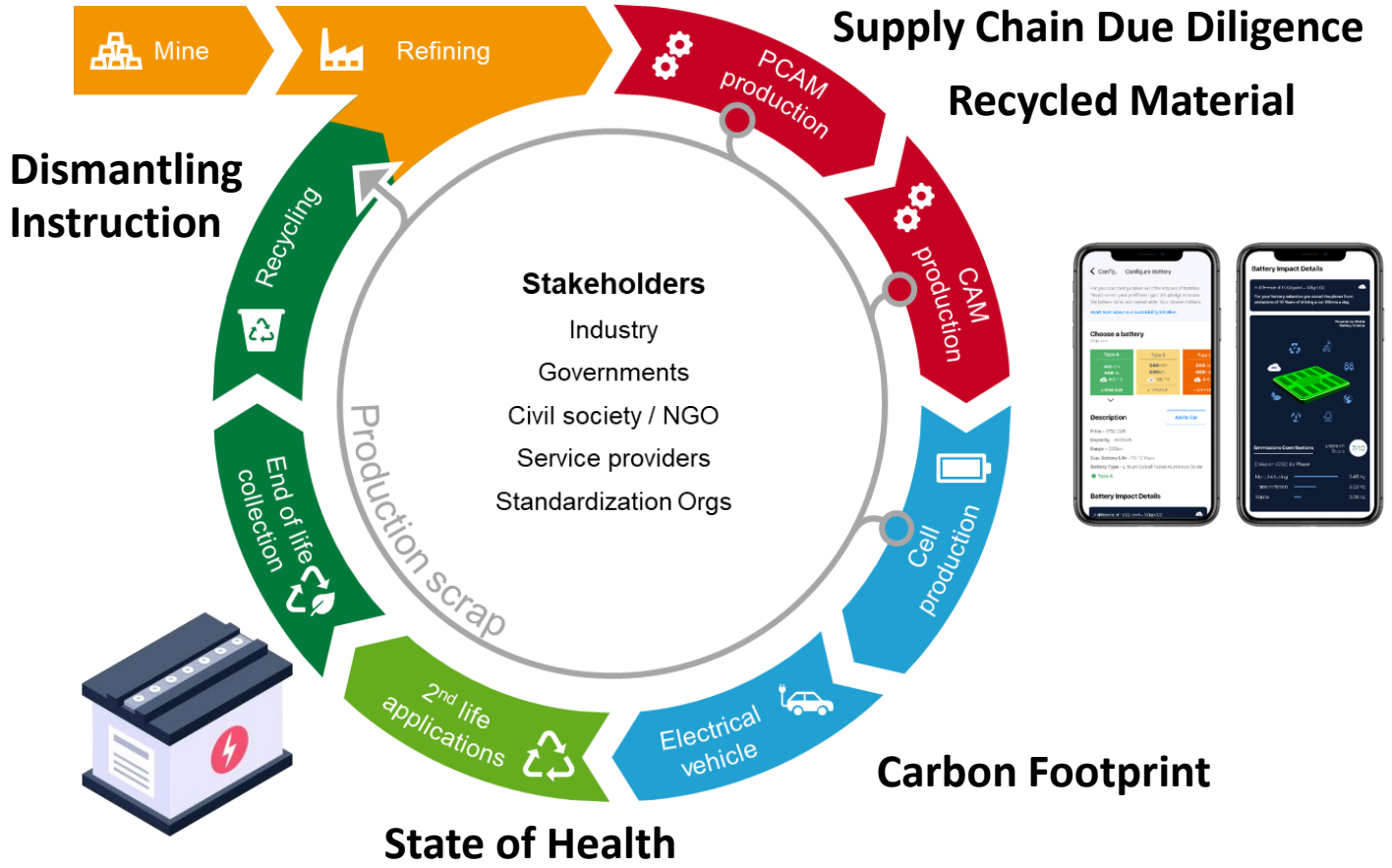
Harmonized technical system for all DPPs:

- Data Storage
- Data Carrier Identifier
- Trust / Security / Sovereignty / Access
- Data Exchange
- IT Services / APIs
- Workflows and Data Processing

Why Circularity requires Digital Product Passport (DPP)?

Combine circularity with the other sustainability aspects – example batteries

Mandatory Data in Battery Passport



Source: BASF, Torsten Freund

Example of a DPP – the Battery Pass
Up to 90 data attributes, clustered into seven categories

Not exhaustive

Battery Pass

Battery ID: 0101010
Battery passport ID: 1111010
Responsible economic operator

General information

- Manufacturing info (identity, place, date)
- Battery category
- Battery weight
- Battery status

Labels and certifications[1]

- Symbols and labels
- Meaning of labels & symbols
- Declaration of conformity
- Compliance of test results

Carbon footprint

- Carbon footprint (5 metrics)
- Weblink to CF study
- CF performance class

Supply chain due diligence

- Due diligence report

Materials and composition

- Hazardous substances
- Battery chemistry
- Critical raw materials
- Materials used in cathode, anode, electrolyte

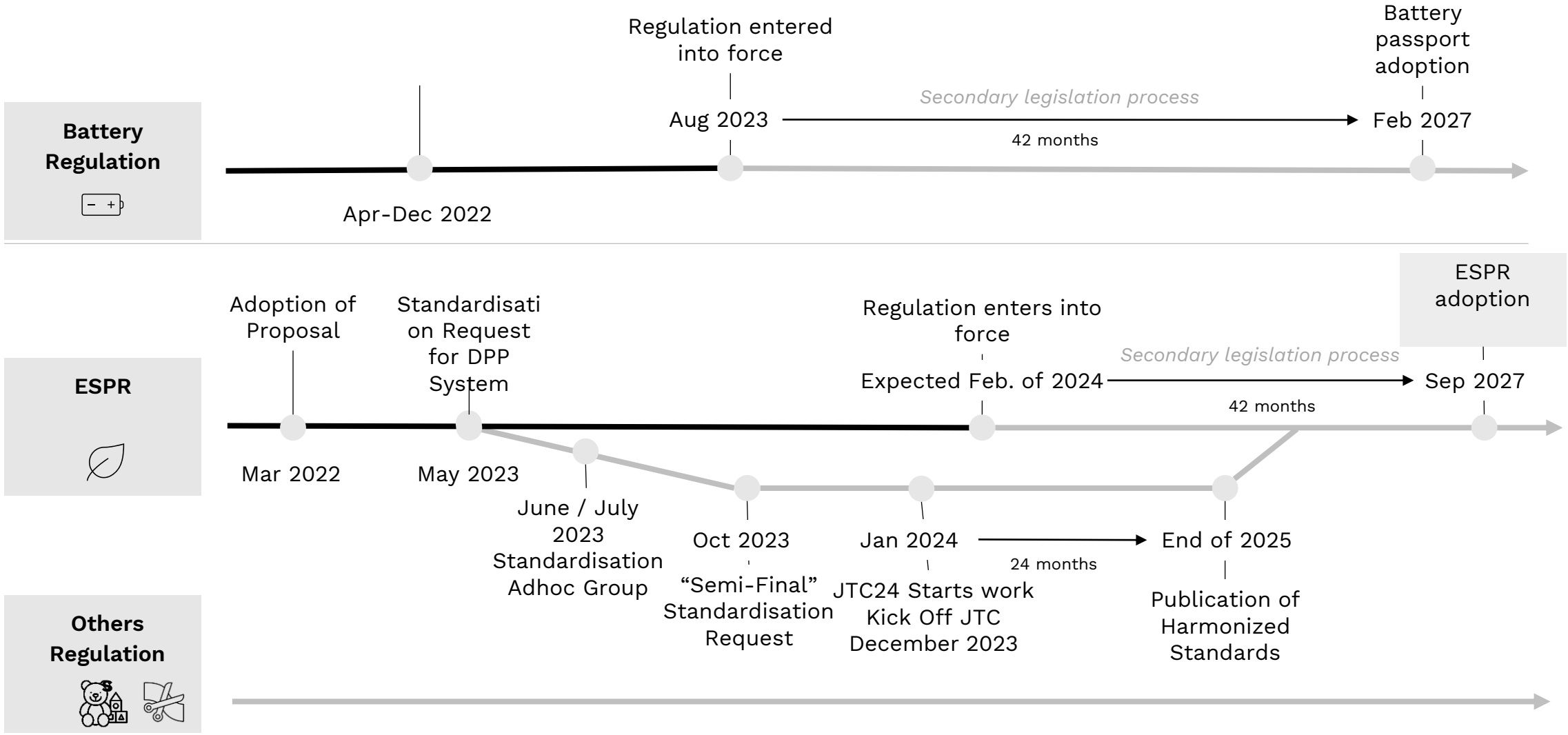
Circularity & resource efficiency

- Recycled content shares
- Manuals for removal, disassembly, dismantling
- Component part numbers & spare parts information
- Safety measures/instructions

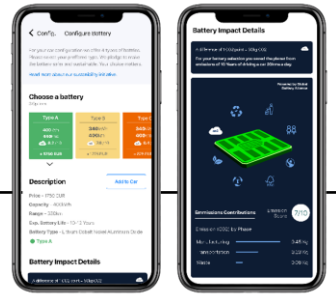
Performance & durability

- Capacity, energy, power, SoH
- Expected lifetime
- Negative events

Tough Timeline for Standardisation



System Scope of JTC24 is to deliver harmonised standards for the DPP System



DPP Data

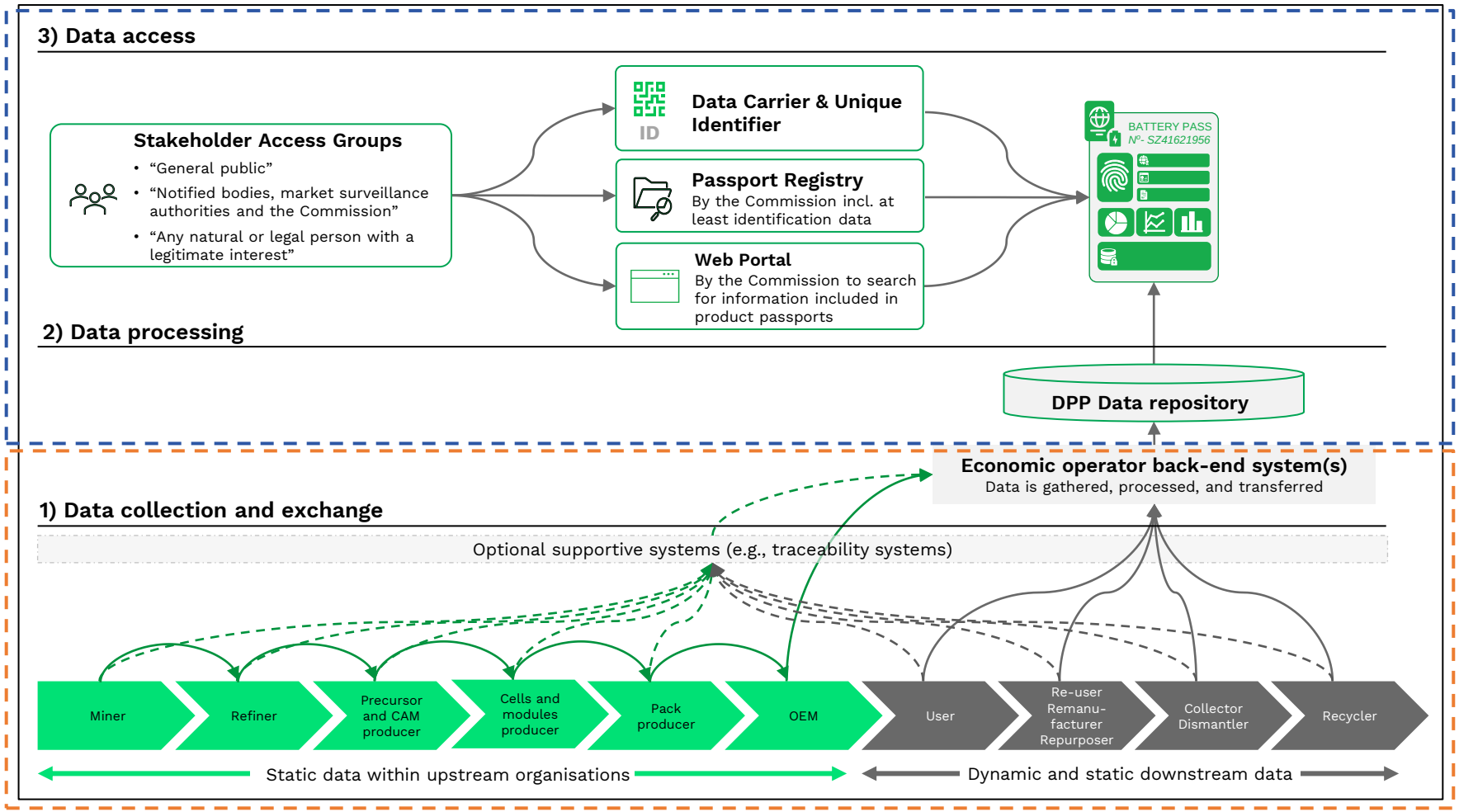
Passport Data is out of Scope in JTC24

DPP System

Harmonized technical system for all DPPs:

- Data Storage
- Data Carrier Identifier
- Trust / Security / Sovereignty / Access
- Data Exchange
- IT Services / APIs
- Workflows and Data Processing

Process Scope of JTC24

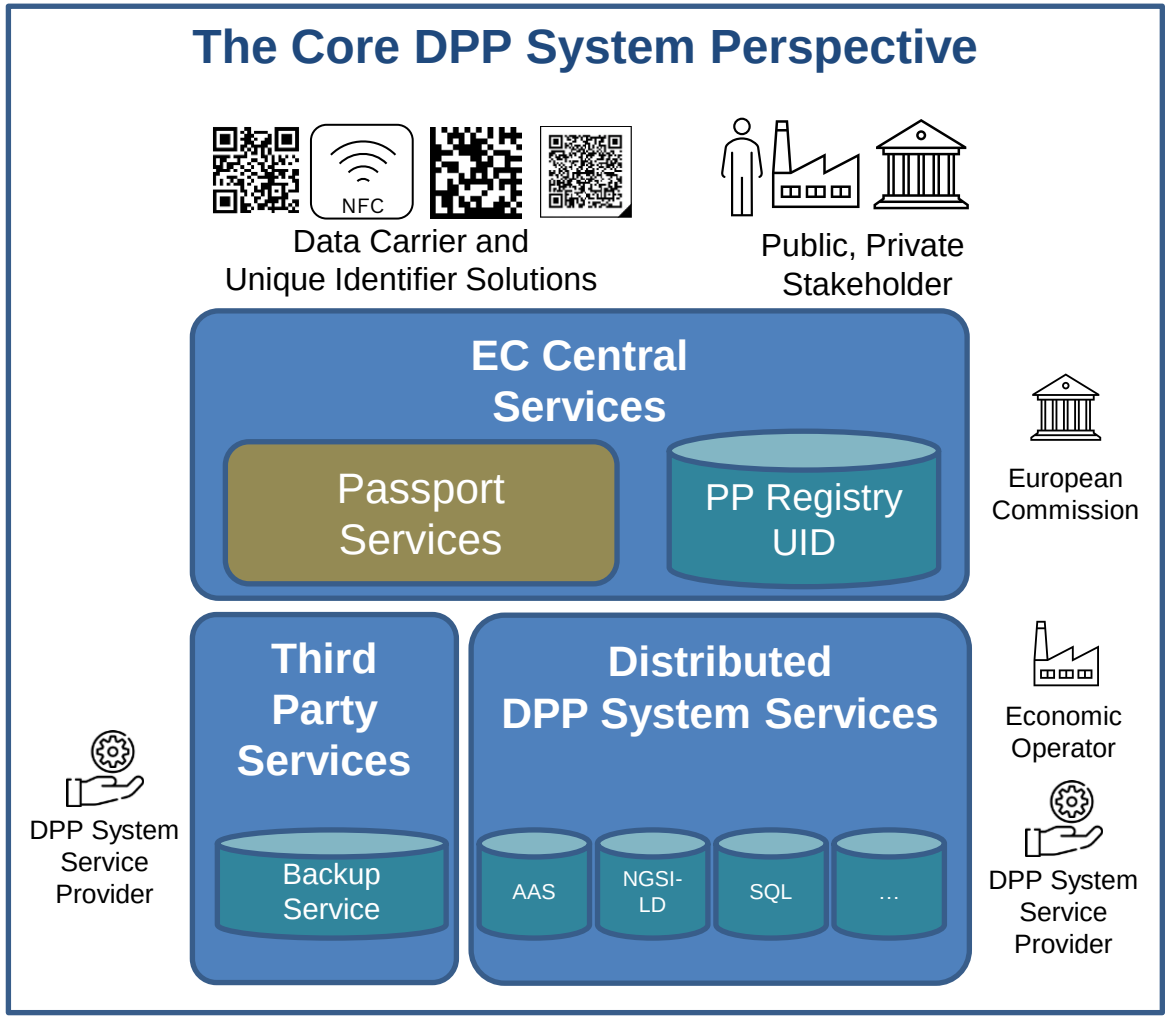


Scope in JTC24: Data Access, Data Processing

Out of Scope in JTC24: Data Collection and aggregation

1) Galatola, M. Digital Product Passport (DPP). Circular Economy Europe. [Online] [Cited: 20 03 2023.] https://circulareconomy.europa.eu/platform/sites/default/files/michele-galatola-european-commission.pdf

Who should be interested into JTC24



European Commission and National Authorities
(e.g. Market Surveillance)

Economic Operators, brings products on the market
(e.g. manufacturers, importers)

DPP System and Service Providers
(e.g. for operating services, backup services)

DPP System Component Suppliers
(e.g. for Data Carrier)

Partners in the value chain (e.g. supplier, dealer, recycler)
to know how data has to be provided, how to get access

Standardisation Bodies
(e.g. for sector specific data standardisation)

Consumer Organisations
to ensure applicability of DPP

How to participate into JTC24

Provisional Work Group Overview				
Advisory group	Technical coordination	System elements		
Work group 1	Work group 2	Work group 3	Work group 4	Work group 5
Facilitate, coordinate and excgange between working groups	Use cases	Unique Identifier for Product	Individual decentral Data Repository	API for CRUD (Create, read, update, delete) of data
allocation of new work	System architecture	Unique Identifier for Economic Operator	System for (role /function/attribute-based) access rights management	Querying of Passport Data
coordinate the development of work program	Liaisons	Unique Identifier for Facilities	Verification of authentication	Back Up Data Base
Progress monitoring	Interaction with sector specific data standardisation	Data Carrier	Verification of DPP conformance	Data Modelling:
clarify non-technical issues	Interaction with EC	Registry	Cryptographic verification of DPP (digital signature check)	DPP Issuing Service
		Routing Services	Data verification of data integrity and originality	Data modelling services
			Logging Monitoring	Schema Definition

Technical Expert for elaborating harmonised standards (hEN) for system elements

- Select and adopt existing standards
- Elaborate interoperability solutions
- Elaborate new standards

Convener of Working Groups (WG)

Part of Liaison Organisations (e.g. ETSI)

Meetings

Plenary Meeting – 4 times/year – Decisions

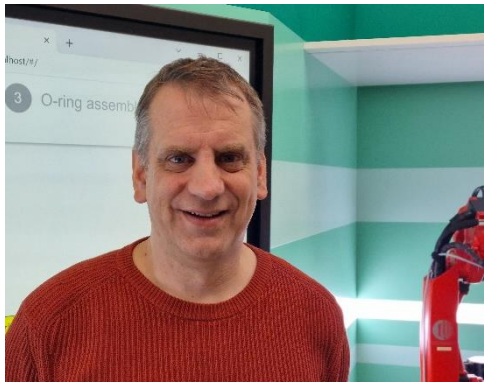
Work Group Meetings - Elaboration

Time Frame

JTC24 – 5 Years

Delivery of hEN until end of 2025

Thank you very much



Thomas Knothe
thomas.knothe@ipk.fraunhofer.de

www.cencenelec.eu

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List of Standards to be delivered by JTC24

List of European standards to be drafted and deadlines for their adoption as referred to in Article 1

	Reference information	Deadline for the adoption by the ESOs
1.	European standard(s) on unique identifiers	31 December 2025
2.	European standard(s) on data carriers and links between physical product and digital representation	31 December 2025
3.	European standard(s) on access rights management, information, system security, and business confidentiality	31 December 2025
4.	European standard(s) on interoperability (technical, semantic, organisation)	31 December 2025
5.	European standard(s) on data processing, data exchange protocols and data formats	31 December 2025
6.	European standard(s) on data storage, archiving, and data persistence	31 December 2025
7.	European standard(s) on data authentication, reliability, integrity	31 December 2025
8.	European standards on Application Programming Interfaces (APIs) for the product passport lifecycle management and searchability	31 December 2025

Curriculum Vitae Thomas

Prof. Dr.-Ing. Thomas Knothe (born in 1971 in Cottbus)
Head of Department Business Process and Factory Management since: 2010

Background in Computer Science and Manufacturing Engineering
Dipl.-Ing. (1997) and Dr.-Ing. (2011) at Technical University Berlin

Major Topics in Applied Research and industrial development:
Model Based Corporate Systems Engineering and Automation
Business and Technical Interoperability

Global: Applied research in EU, USA, Russia, China, South Africa

Sectors: Automotive, Aircraft, Mechanical Equipment, Bio-Tech, Defense

Roles

Research: Board Member of I-Vlab – Interop – Virtual Lab - 30 Institutions in Europe
German Battery Passport Project - Lead Technical Standards

Standardization: Member of ISO (ISO TC 184 SC5 – Enterprise Integration and Interoperability)
Chair of JTC24 at CEN/CENELEC for DPP – Framework and System

Inventions: Open Patent: Modular Shopfloor IT (together with Audi)
Self-organized Planning and Control of MRO for Transportation Systems

Education: Honorary Professor at University of applied Science in Wildau
Lecturer at Technical University Berlin

Q&A

Thomas Knothe, Chair of CEN-CLC/JTC 24 ‘Digital product passport – Framework and system’

4. Øvrige standardiseringsaktiviteter og næste skridt

Opsummering

I har nu hørt om:

- De kommende krav i ecodesign-forordningen
- Det digitale produktpas og kommende standardiseringsaktiviteter
- Hvorfor det er relevant at deltage.

S-896 Det digitale produktpas

- Dansk S-udvalg S-896 'Det digitale produktpas' blev etableret per 1. januar 2024.
- Udvalget har allerede syv medlemmer. Alle er velkomne til deltage.
- Pris for 2024 er 22.300 kr. ekskl. moms med 50 pct. rabat for små virksomheder og universiteter.

Udvalget fastlægger de danske prioriteringer

- Hvilke emner er vigtige at følge fra danske side?
- Er der tekniske eller strategiske problemstillinger, som skal tages hensyn til i udviklingen af det digitale produktpas?
- Skal Danmark hjemtage en arbejdsgruppe eller stå i spidsen for en standard?

Behov for koordination på tværs

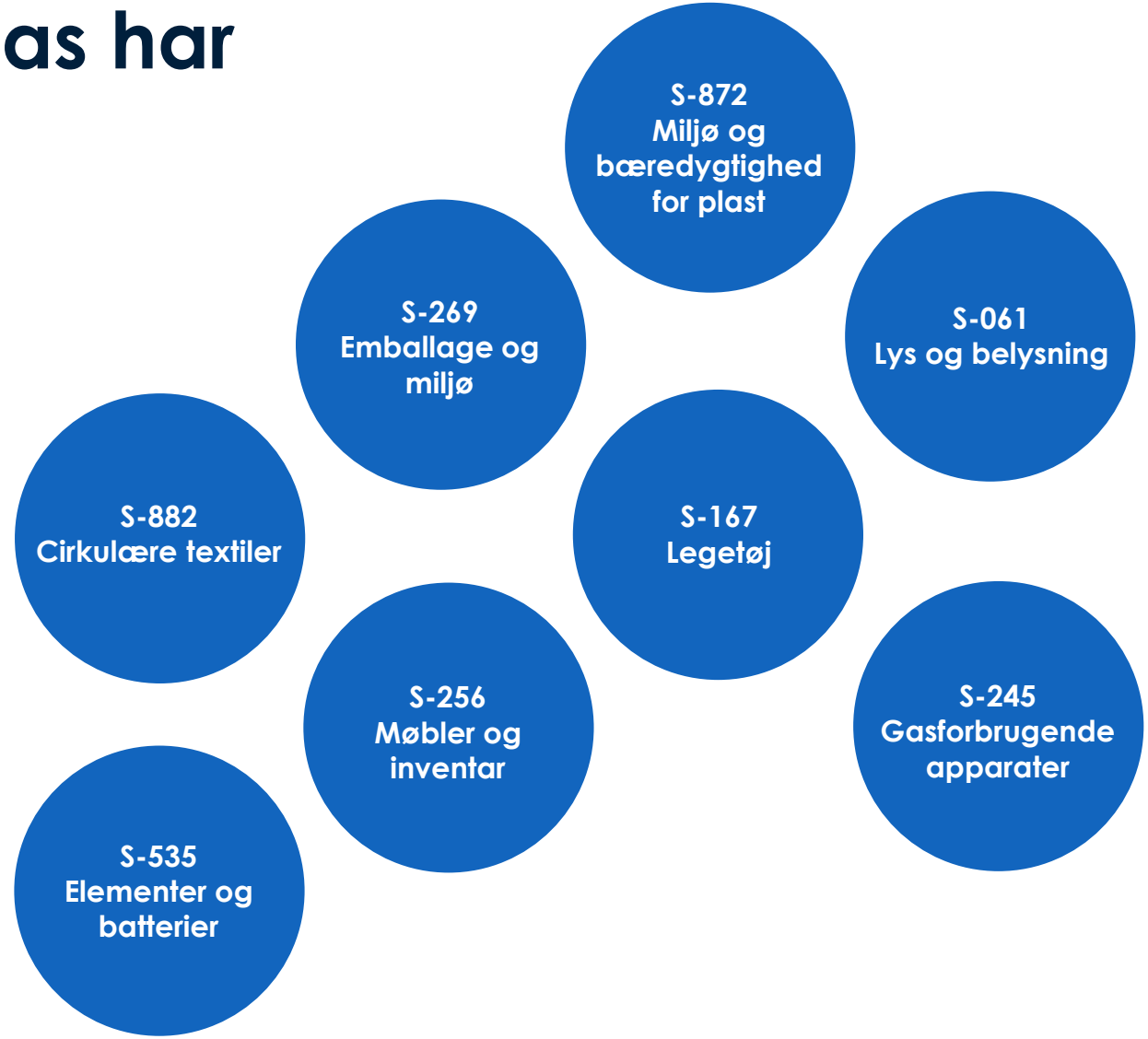
Det digitale produktpas er en del af en større sammenhæng

- Der er mange indsatser inden for bæredygtighed og den grønne økonomi.
- Det kræver overblik og koordination på tværs – Både inden for politik, lovgivning og standardisering.

Det digitale produktpas har mange snitflader

- Tekstiler, især beklædningsgenstande og fodtøj
- Jern, stål
- Aluminium
- Møbler, herunder madrasser
- Dæk
- Rengøringsmidler
- Maling
- Smøremidler
- Kemikalier
- ICT-produkter og anden elektronik

… m.m



Eksempler på andre relevante komiteer

Datastyring

- ISO/IEC JTC 1/SC 32 Data management and interchange
- ISO/TC 184/SC 4 Industrial data

IoT og digitale tvillinger

- ISO/IEC JTC 1/SC 41 Internet of Things and Digital Twin

Blockchain og sikker identitet

- ISO/TC 307 Blockchain and distributed ledger technologies
- ISO/IEC JTC 1/SC 27 WG5 ID management and privacy
- CEN/CLC/JTC 13 Cybersecurity and Data Protection

Indholdsstruktur

- ISO/TC 59/SC 13 Organisation and digitalisation of information about buildings and civil engineering works, including building information modelling (BIM)
- CEN/TC 442 Building Information Modelling (BIM)
- ISO/TC 323 Circular Economy

Datafangst og identifikation

- ISO/IEC JTC 1/SC 32 Automatic identification and data captures
- CEN/TC 225 – AIDC Technologies
- IEC/TC 65 Industrial-process measurement control and automation

Horisontale snitflader

CEN/CLC JTC 10

Material efficiency aspects for products in scope of Ecodesign legislation

(S-611 Miljø og cirkulær økonomi)

- Terminologi
- Holdbarhed
- Reparation
- Genfremstilling
- Genanvendelse/genbrug
- Mærkning og dokumentation
- Cirkulært design

EN4555X-serien

CEN/TC 473 Circular Economy

(S-1000/U05 Cirkulær økonomi)

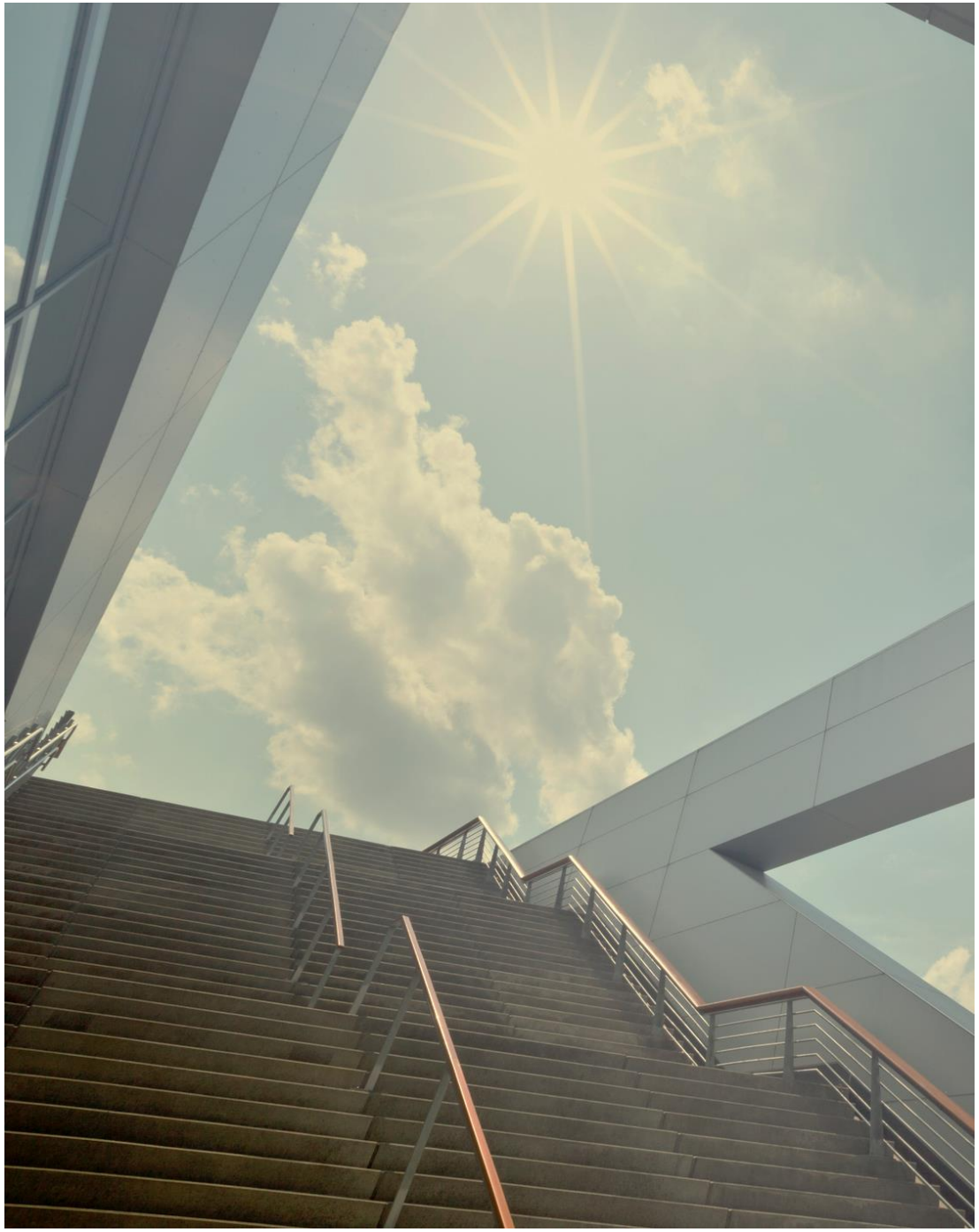
- EU Circular Economy Terminology, Framework & Principles
- Information Sharing
- Extended Producer Responsibility
- Circular Business Models


Informationsmøde til sommer

Q&A

Bjørn Hvidtfeldt, Dansk Standard

Afrunding



Næste skridt

- Standardiseringsarbejdet er i gang.
- Hvis du er interesseret i at følge arbejdet så kontakt os i Dansk Standard.
- Næste møde i det danske udvalg (S-896) er mandag den 11. marts.

Kontaktinfo

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