

Digital Product Passports Festival 2025

Session 1D: **DPP Applied Research Projects**

*Projects
funded by*



**TOPSECTOR
ICT**
dutch digital



Session 1D: **DPP Applied Research Projects**



- 1) Opening + introduction applied research by Dutch universities of applied sciences (Erik Knol, Regieorgaan SIA)
- 2) Pitches of 7 DPP applied research projects
- 3) Conversation with the audience:
“How to make these projects as successful as possible?”



Introduction to applied research by Dutch universities of applied sciences

Erik Knol (Regieorgaan SIA)

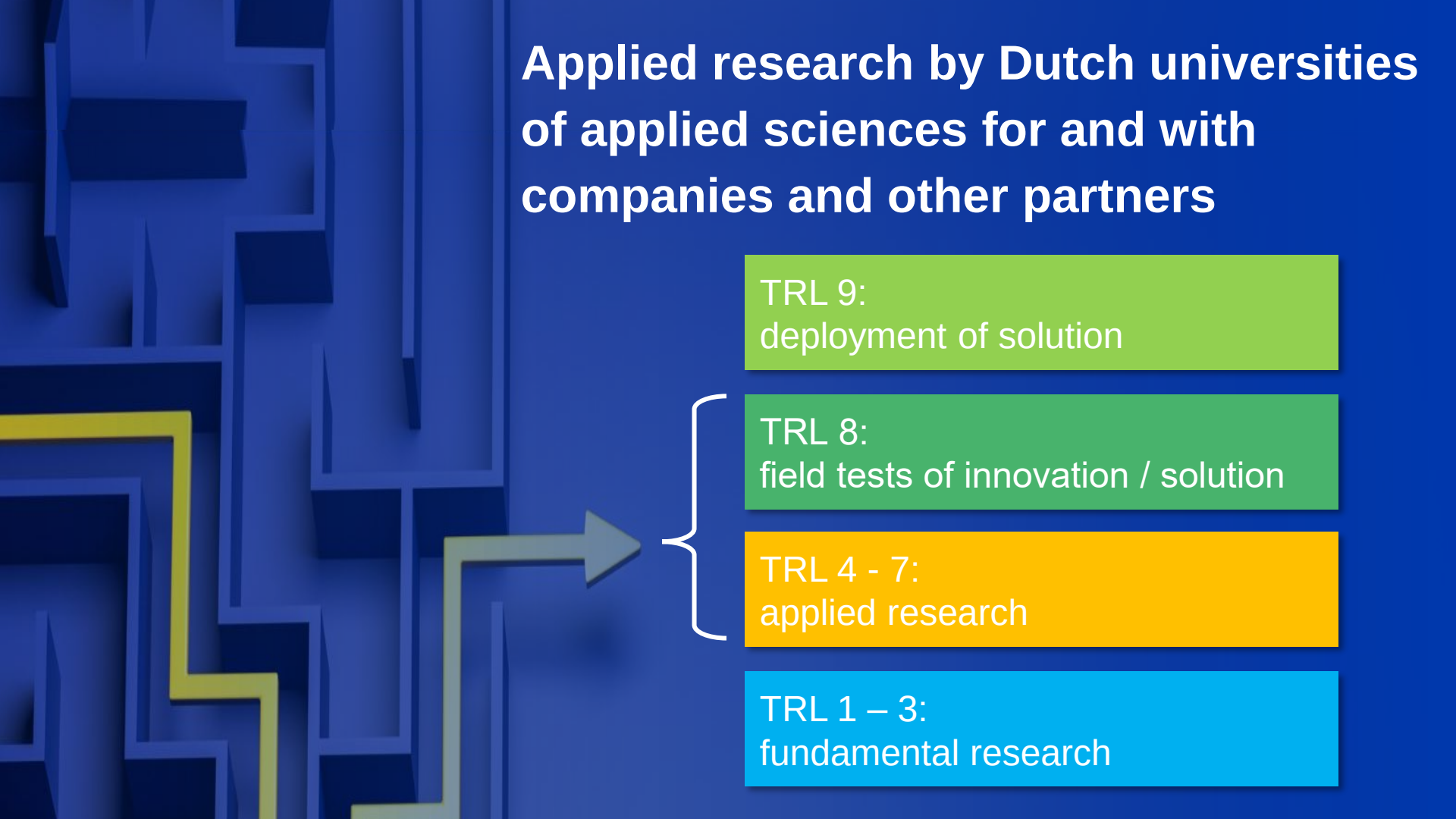
Dutch universities of applied sciences in transition

Education institute



Knowledge institute
part of the regional innovation ecosystem

Applied research by Dutch universities of applied sciences for and with companies and other partners



TRL 9:
deployment of solution

TRL 8:
field tests of innovation / solution

TRL 4 - 7:
applied research

TRL 1 – 3:
fundamental research

Development of research at the Dutch universities of applied sciences

2009

- 270 professors
- Research:
1329 fte

Funding streams:

- 1st 64 Meuro
- 2nd 13 Meuro
- 3rd 22 Meuro

2022

- 723 professors
- Research:
2702 fte

Funding streams:

- 1st 194 Meuro
- 2nd 122 Meuro
- 3rd 28 Meuro

- **First stream funding:** structural funding from the government (e.g. through the Ministry of Education, Culture and Science in the Netherlands).
- **Second stream funding:** project-based funding provided by e.g. NWO (Dutch Research Council, including “Regieorgaan SIA” – part of NWO) or EU programmes like Horizon Europe.
- **Third stream funding:** funding from contract research, collaborations with companies or societal organisations (e.g. private sector partners, NGOs etc.).

How it this applied research organised in the Netherlands?

Research groups

Digital > 50

Centres of Expertise

Digital > 15

**National professorship
networks on themes**

**National research
collaborations
on themes
'SPRONG'**

**Thematic
"Hbo Thematafels"**
(positioning towards
policy, community)

Regieorgaan SIA
("Taskforce for applied
research" - part of NWO)

- Funder of applied research (>70 Meuro per year)
- Strategic partnerships for (multiyear) thematic applied research programmes
- Facilitating connections and networks

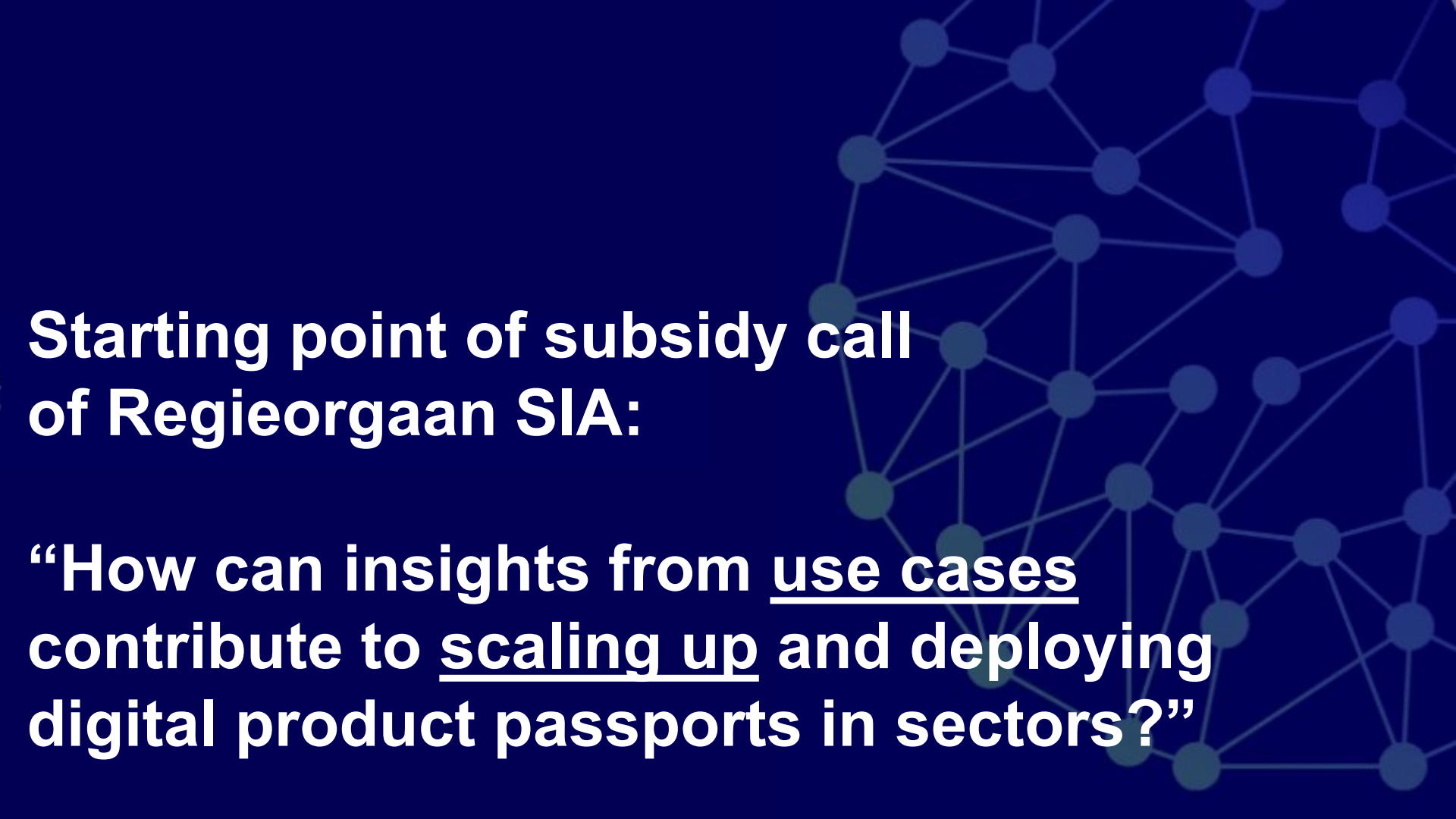
Subsidy call of Regieorgaan SIA on DPP implementation

- Subsidy call for applied research by Regieorgaan SIA.
- Two funders of this call: Regieorgaan SIA (50%) and Topsector ICT (50%).
- Focus of the call: ***“How can insights from use cases contribute to scaling up and deploying digital product passports in sectors?”***
- Call for proposal closed in Q1 2025. Q2 2025: 7 projects received funding.
- As from Q3 2025: 7 projects will start, with a duration of 2 years.
- As from Q3 2025: Regieorgaan SIA and the universities of applied sciences will work on knowledge sharing and mutual learning the coming years.
- More information: <https://regieorgaan-sia.nl/nieuwsoverzicht/7-aanvragen-digitale-productpaspoorten-gehonoreerd/> (Dutch) and <https://topsector-ict.nl/en/news/these-are-the-7-projects-selected-in-the-digital-product-passports-call> (English)

7 pitches:

DPP applied research projects





**Starting point of subsidy call
of Regieorgaan SIA:**

**“How can insights from use cases
contribute to scaling up and deploying
digital product passports in sectors?”**

7 pitches

1. **DPP4CD: Digital product passport(s) for circular denim: from pilot to practice**
Pramod Agrawal (Saxion) (textiles)
2. **Digital product passport for circular channel slabs (COKaP)**
Franco De Vita (Saxion) (construction sector)
3. **Standardisation and automation of modern product passports (STAMP)**
Eva Koenders (HAN) (batteries)
4. **Digital product passports: key to a circular value chain for electronic devices**
Pascal Sluiter (Hogeschool Utrecht) (household appliances)
5. **Fibre forward**
Tahis Marti (Avans) and Helmer van Merendonk (Hogeschool Utrecht) (textiles)
6. **The molecular digital physical digital product passport (M-DPP)**
Gwen Parry (Hogeschool van Amsterdam) (textiles)
7. **Digital transformation with DPP in the construction sector (TEMPO)**
Helmer van Merendonk (Hogeschool Utrecht) (construction sector)

**Pramod Agrawal
(Saxion)**

Textiles

<https://www.sia-projecten.nl/project/dpp4cd-digital-product-passports-for-circular-denim-from-pilot-to-practice>

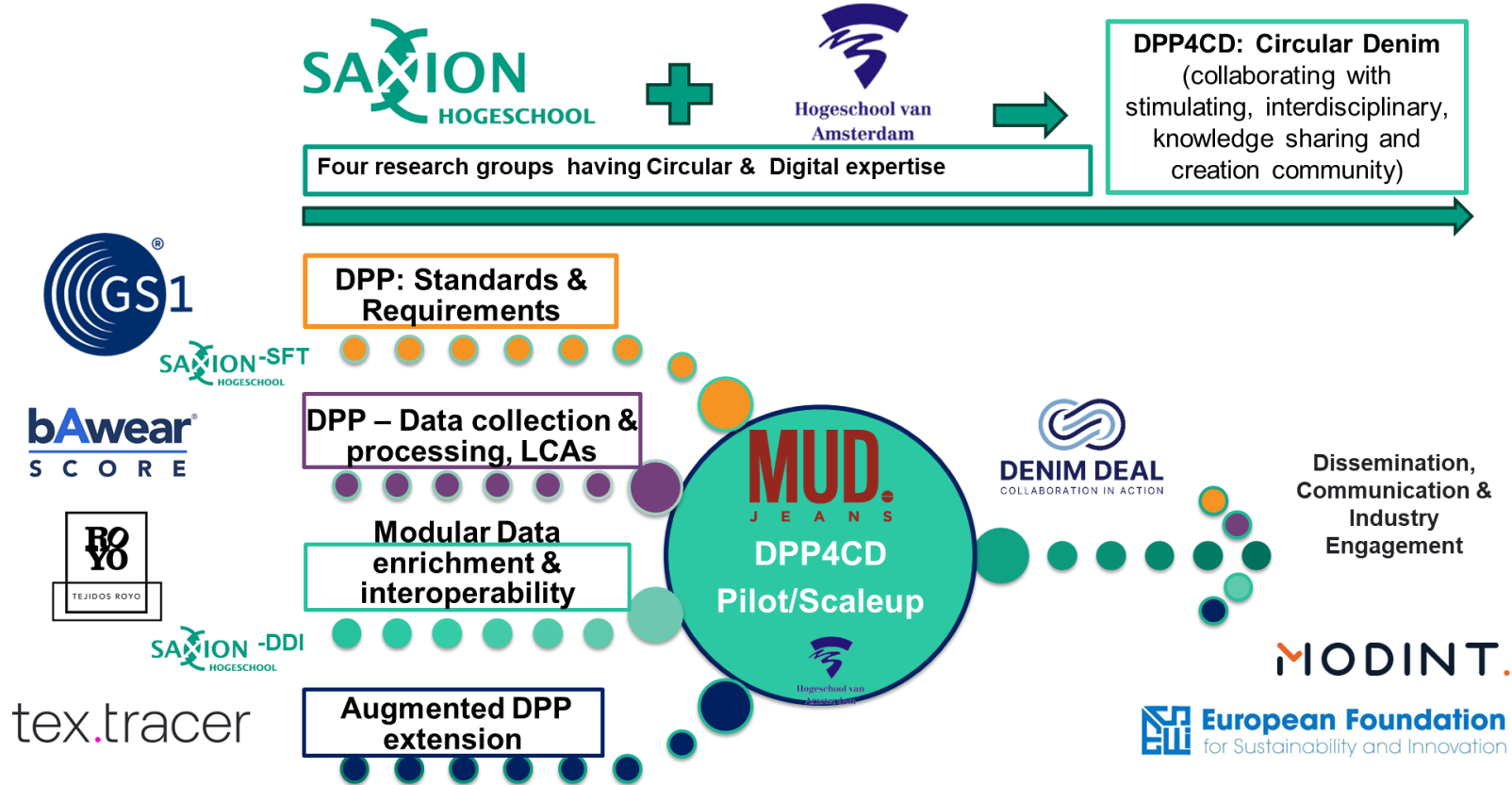


What is the goal of your use case project?

DPP4CD: Digital Product Passport(s) for Circular Denim: From Pilot to Practice

Goal: To develop, pilot, and scale DPPs for the circular denim supply chain, using existing technologies, in order to support sustainable, transparent, and EU-compliant supply chains - and to provide scalable solutions for SMEs in textiles and beyond

Which partners are involved?



What will be the main results of your project?

-  **Pilot DPP** for Circular denim (real supply chain test)
-  **Data Framework for Traceability, LCA & Circularity**
-  **Augmented DPP Extension** ensuring compliance & Interoperability
-  **Practical Guidance** for SMEs on DPP implementation
-  **Scalability Roadmap** with policy recommendations
-  **Knowledge sharing** across textile & wider sectors

**Franco De Vita
(Saxion)**

Construction industry

<https://www.sia-projecten.nl/project/digitaal-productpaspoort-voor-het-circulair-oogsten-van-kanaalplaten-cokap>



Goal “Circular Oogsten van Kanaalplaten (COKaP)”

Circular Harvesting of Channel Slabs



Develop a PoC for a DPP ecosystem for ‘used channel slab floor elements’, based on

- ❑ Digital Trust (role-based access, Digital ID, anchoring DLT)
- ❑ Facilitating high-value reuse by documenting their history, current status, and future potential (reducing CO₂ emissions)

For other reuse chains:
Provide a Roadmap for DPP adoption

Partners involved

1	Lagemaat Sloopwerken b.v.
2	cepezed projects b.v.
3	Ter Velde & Den Besten b.v.
4	Dycore b.v.
5	DEMO Consultants b.v.
6	Cirmar b.v.
7	Quintessence research b.v.
8	Sphereon IDTech b.v.
9	Veras vereniging
10	Windesheim, Hogeschool
11	Saxion, Hogeschool
other	Rijkswaterstaat, Ministerie I&W

“Circular Harvesting of Channel Slabs (COKaP)” Main Results

Technical

- ❑ Datasheet with product history, usage status, and processing details
- ❑ DPP ecosystem for data storage, access, and sharing
- ❑ "go-to-data-carrier" to link physical slabs to their digital records
- ❑ Integration with Building Information Modeling (BIM)

Governance

- ❑ Data model clarifying roles, responsibilities, and data ownership across the reuse chain
- ❑ A business case demonstrating the economic and environmental benefits of DPP-driven circularity

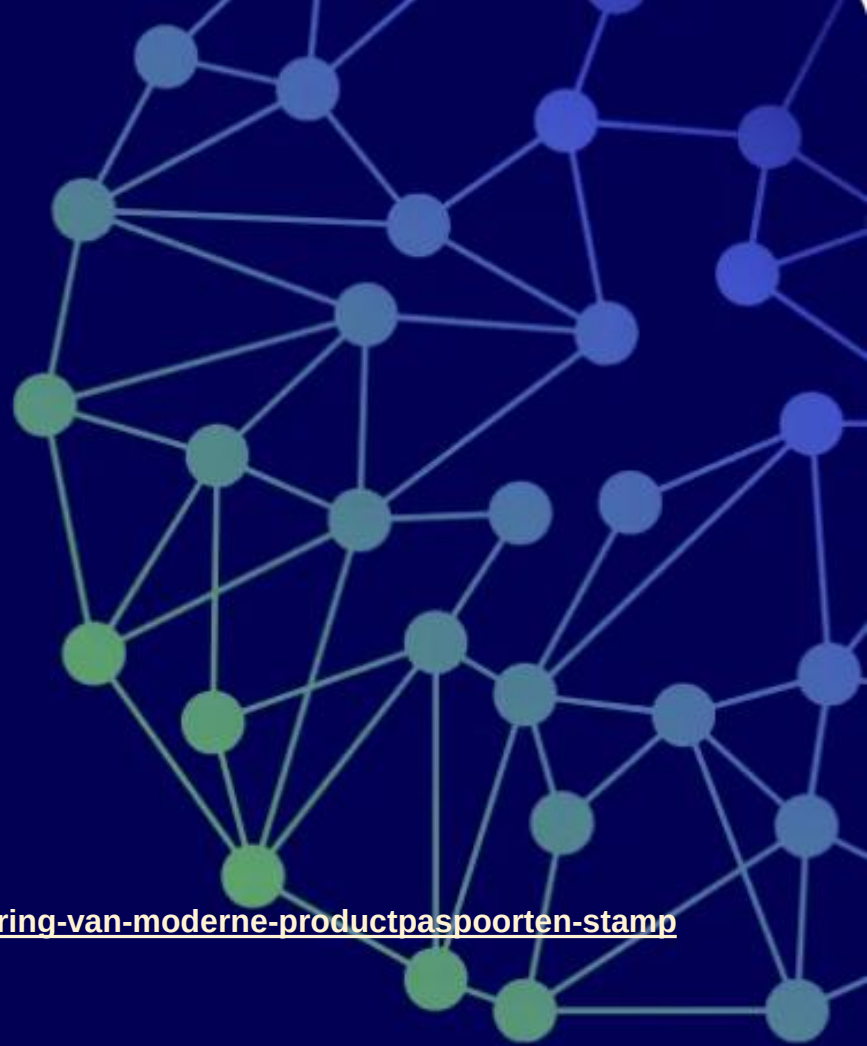
Future Projects

- ❑ A Scalable roadmap for DPP implementation in other reuse chains
- ❑ Publications, workshops, and a final congress

**Eva Koenders
(HAN)**

Batteries

<https://www.sia-projecten.nl/project/standaardisatie-en-automatisering-van-moderne-productpaspoorten-stamp>



What is the goal of your use case project?

- Practical implementation of an interoperable open DPP dataspace and detailed DPP data model based on semantic web technologies for the use case.
- Focus on reuse of existing data space standards and building blocks, and (battery) DPP ontologies and data models.
- Sharing obtained knowledge and resources (standards, building blocks, lessons learned) with others in the (battery) value chain.

Which partners are involved?



Cleantech engineering company specialized in electrification of transportation- and construction machines.



Embedded solutions developer specialised in hardware, software and FPGA-design.



IT-solution developer with expertise in model-driven software development and GS1-standards.



Platform provider for product traceability and DPPs specialised in product circularity.



IT-solution provider specialised in sustainable mobility, data integration and linked data.



Lectorate Applied Data Science & AI
Data science, machine learning, explainable AI, data-ethics/privacy, data-drive business and applied AI.



Lectorate Ambient Intelligence
Smart industry, smart disassembly, autonomous driving and energy systems.



Lectorate High Tech Embedded Software
Connected embedded systems, applied data science and augmented interaction.

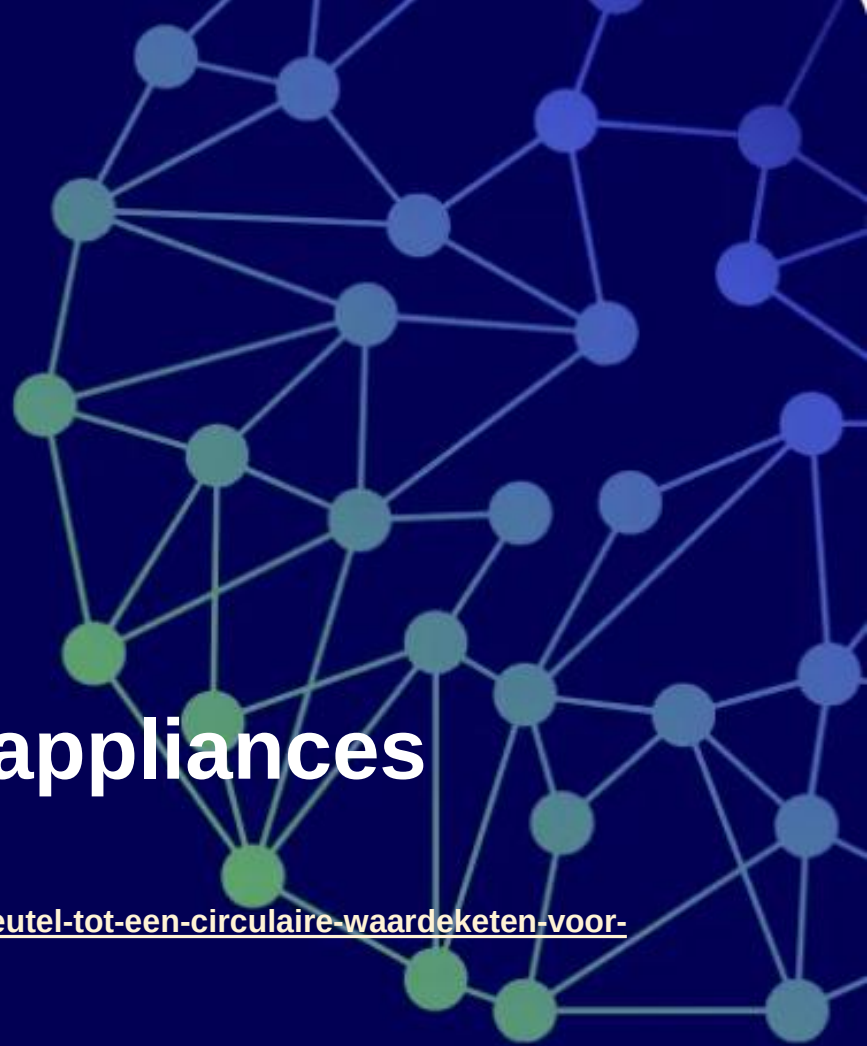
What will be the main results of your project?

- A working DPP prototype and open DPP dataspace for the use case provider.
- Interoperable, standardized and reusable:
 - Building blocks for implementing an open DPP dataspace.
 - Data model and ontology for the (battery) DPP based on semantic web technologies (RDF/OWL/SHACL).
- Lessons learned from the implementation process and future directions towards a fully standardized, interoperable and functional open DPP dataspace and (battery) DPP.

**Pascal Sluiter
(Hogeschool Utrecht)**

Electrical and electronic appliances

<https://www.sia-projecten.nl/project/digitale-productpaspoorten-sleutel-tot-een-circulaire-waardeketen-voor-huishoudelijke-apparaten>



What is the goal of your use case project?

Developing a DPP solution that enables companies throughout the lifecycle of household appliances to support the circularity of the product.

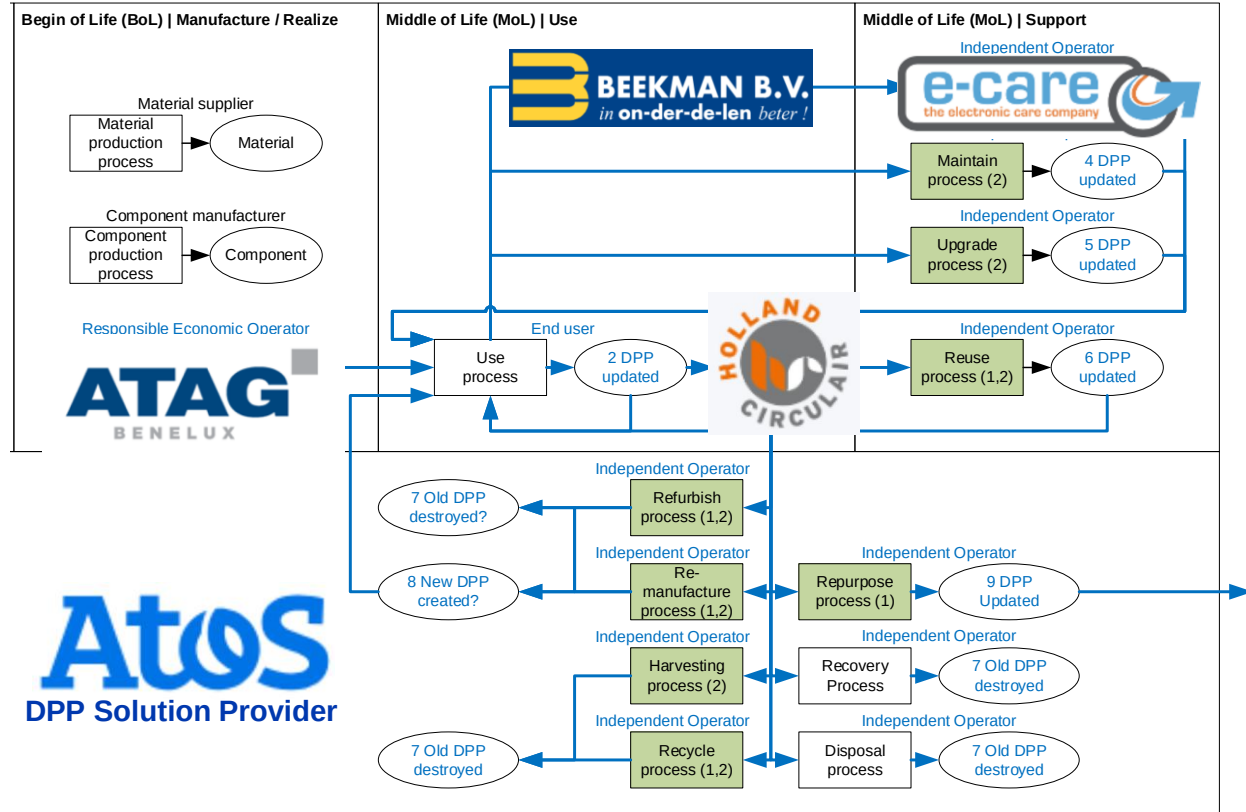
Besides delivering a technological solution, we also evaluate the needs of companies to integrate the DPP into their daily operations.

Which partners are involved?

Knowledge partners



Impact partners



What will be the main results of your project?

- Proof of concept of a DPP solution that supports the circular activities in the middle of life phase of household appliances.
- Possibilities and opportunities of integrating sensor data into a DPP.
- Practical tools to integrate DPP into the daily operations.

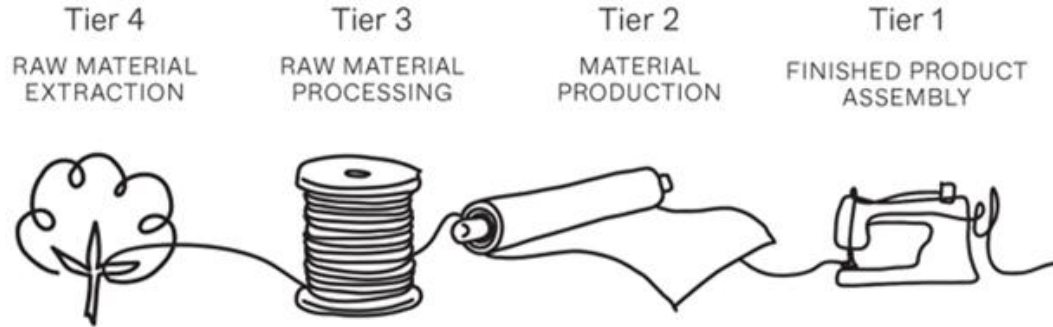
**Tahis Marti (Avans)
Helmer van Merendonk
(Hogeschool Utrecht)**

Textiles

<https://www.sia-projecten.nl/project/fibre-forward>



Goal of Use Case Fibre Forward



Digital trust (by integrating verifiable credentials)

Contribute to an inclusive system for supply chains across the Global South and North

Partner Universe Fibre Forward

Raddijs
STICHTING



Centre of Expertise
**Wellbeing Economy &
New Entrepreneurship**
Powered by *avans*



Expected results Fibre Forward



- Trusted DPP
 - Digital trust building block (by integrating verifiable credentials)
 - Verifiable data on fibre origin, social and ecological impact, aligned with chain partner needs and ESPR compliance.
- Toolkit with guidelines, illustrations & roadmap for scalable implementation



**Gwen Parry
(Hogeschool van Amsterdam)**

Textiles

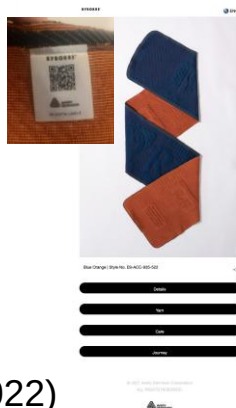
<https://www.sia-projecten.nl/project/the-molecular-digital-physical-digital-product-passport-m-dpp>

What is the goal of your use case project?

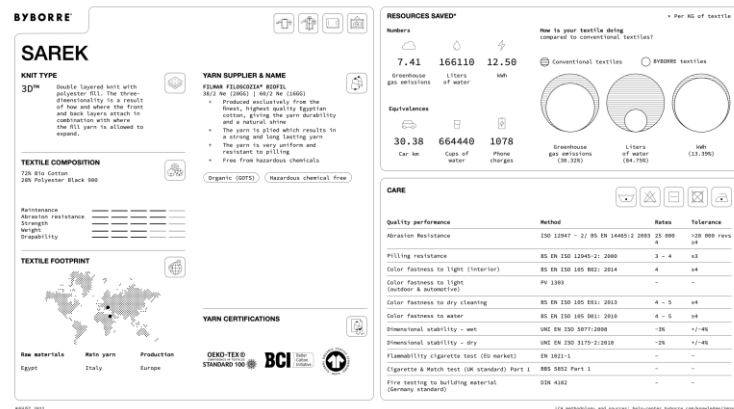
- M-DPP will create a Textile DPP platform for Micro SME's < 10 people



Statiegeld Systeem bij New Optimist en Candour.Digital (2023)



DPP Systeem bij byBorre en Avery Denison (2022)

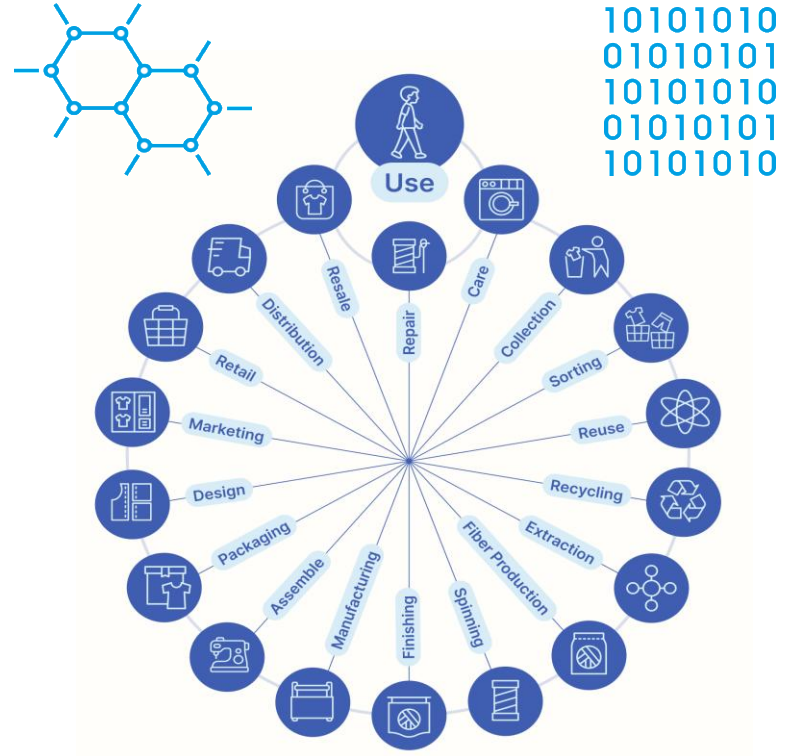
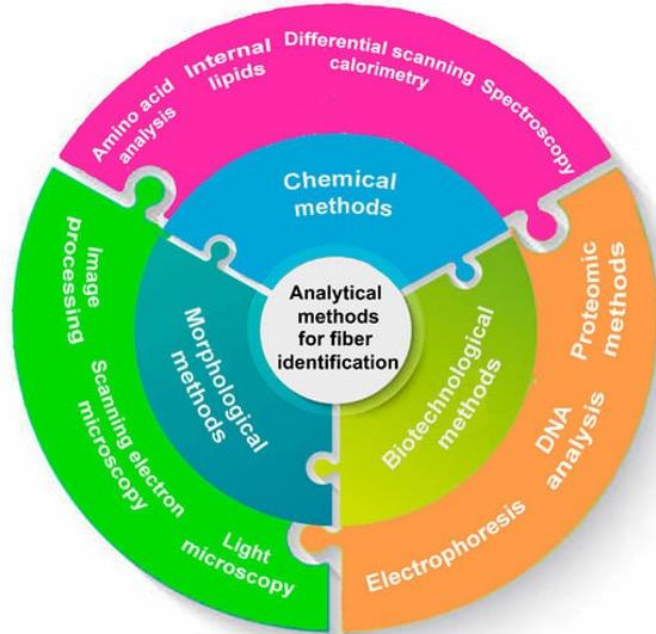


Which partners are involved?

- Responsible IT and Fashion Technology, HBO ICT and AMFI, Hogeschool van Amsterdam, Faculteit Digitale Media en Creatieve Industrie | CoE Applied AI and Creative Innovation
- Biobased Innovations, HAN University of Applied Sciences | CoE HAN BioCentre
- Candour.digital
- BYBORRE,
- New Order of Fashion,
- Textielregie DCTV

What will be the main results of your project?

- We will create a **molecular protocol-based** backbone suitable for textiles and other products.



**Helmer van Merendonk
(Hogeschool Utrecht)**

Construction industry

<https://www.sia-projecten.nl/project/digitaal-tempo-in-de-bouw>

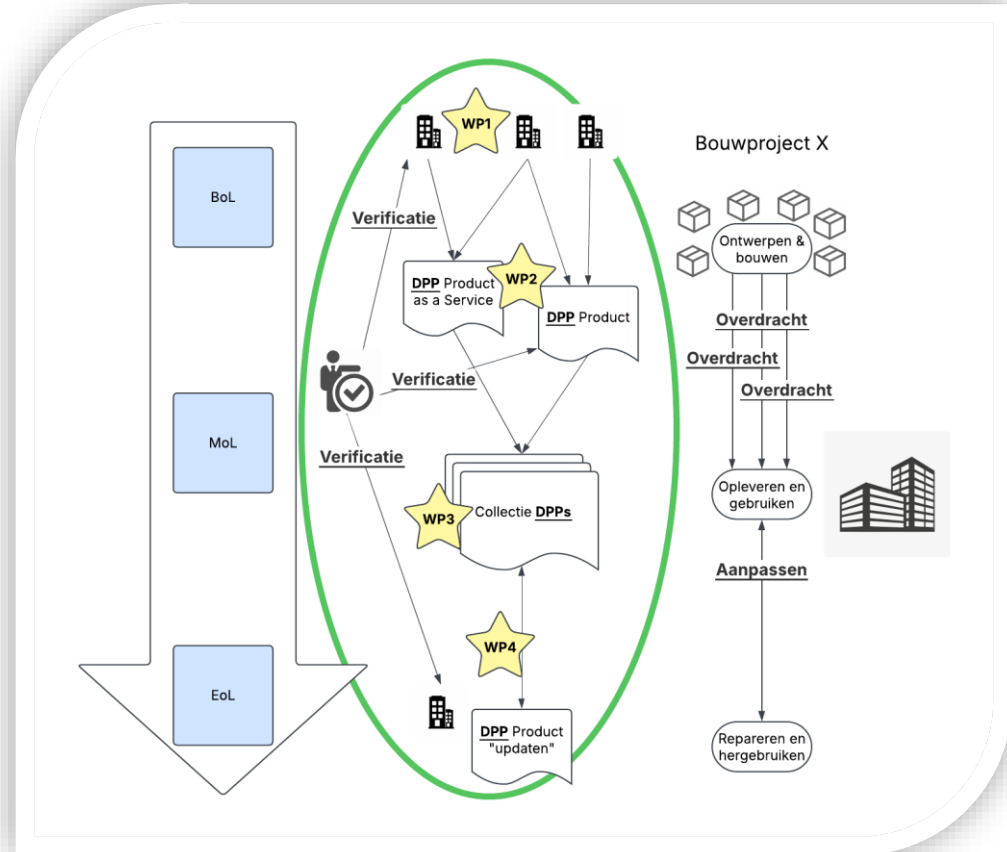


What is the goal of your use case project?

TEMPO in Construction

Scattered industry
Challenge for SMEs

Improve circularity



Which partners are involved?



What will be the main results of your project?

TEMPO in Construction

Traceable and transparent

Easy & efficient to use

Materials that last

Product Passports

Open Source & interoperable





Conversation with the audience:

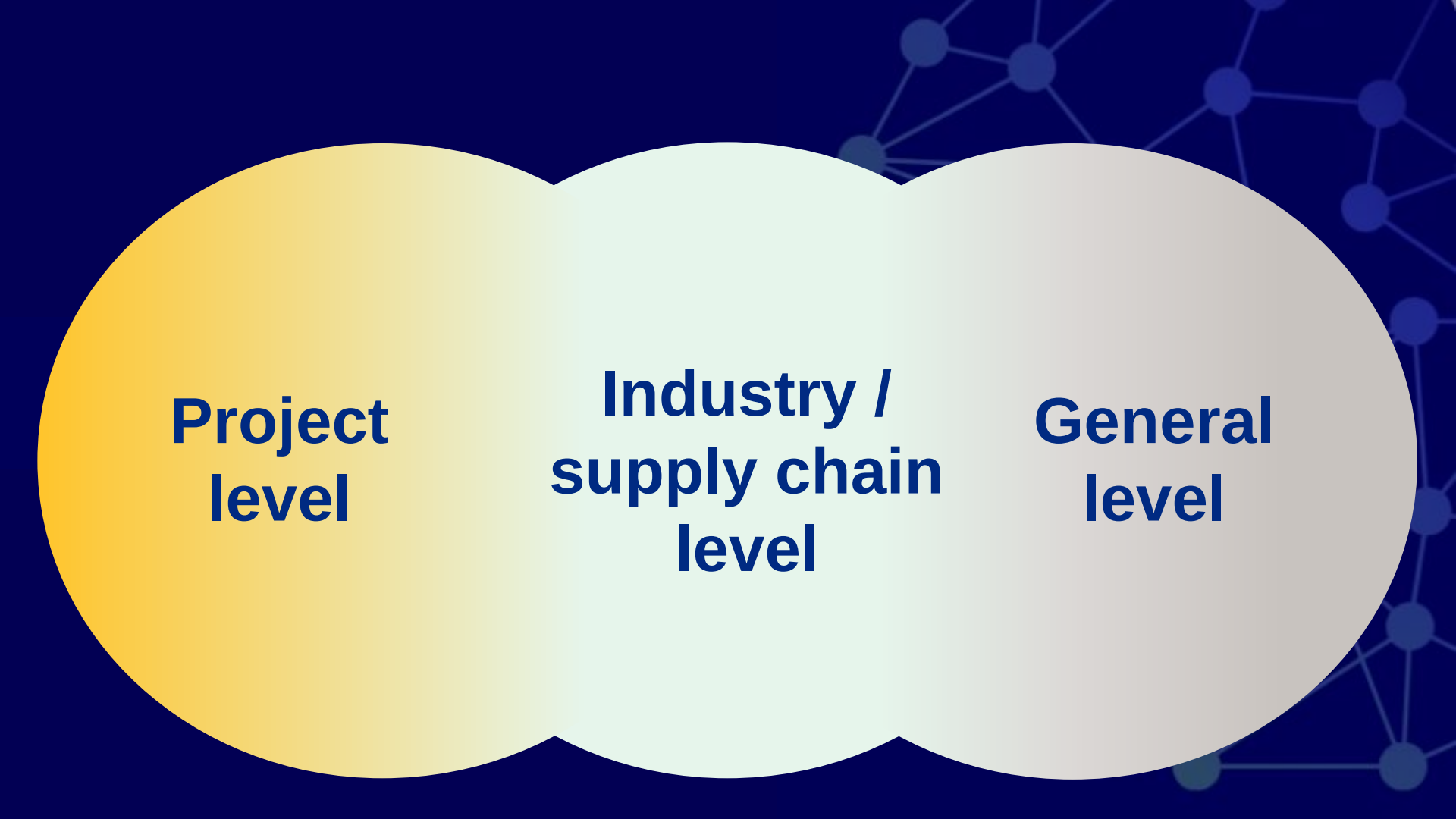
**“How to make these projects
as successful as possible?”**



**First some indicative signals
from the 7 DPP projects:**

“What or who do you need?”

Disclaimer: first indications; status October 2025



**Project
level**

**Industry /
supply chain
level**

**General
level**

Indications 'Project level'

Strong partnerships

**Alignment with DPPs
advancements within
the product group**

**Open communication about
preferences and developments of
DPP standards and ontologies**

**Reasons to choose for
a certain technology/protocol:
DIDs, blockchain, UNTP**

**Commitment of project partners to
fully integrate DPP within their
business operations**

Shared vision
(commitment to circularity
and risk mitigation 'DPP')

**Involvement of as much
companies (SMEs &
micro companies)**

**Expertise in
data standards,
blockchain, LCA**

Indications 'Sector & supply chain level'

Initiative mapping

**Knowledge sharing /
Central knowledge hub**
'Share also what's not working'

Connect with other projects / initiatives
Learning engaging tier 3 and 4 suppliers

Existing examples of DPPs showcasing
transparency and verification

**Active cooperation and
communication with
stakeholders**

**Stakeholder
participation**
(from sector / industry)

**Valorisation /
industry
adoption**

Policy alignment & regulatory uptake
'compliance assessment'

**Infrastructure: scalable digital
platforms & testbeds**

Indications 'General level'

Open standards:

e.g. data carriers, secure repositories, DIDs,
and integration with IT-landscape

Clear information

regarding the developments in legislation
and regulations related to the DPP



Conversation with the audience:

**“How to make these projects
as successful as possible?”**

For further contact:

Regieorgaan SIA: Erik Knol & Annelotte Vonk