

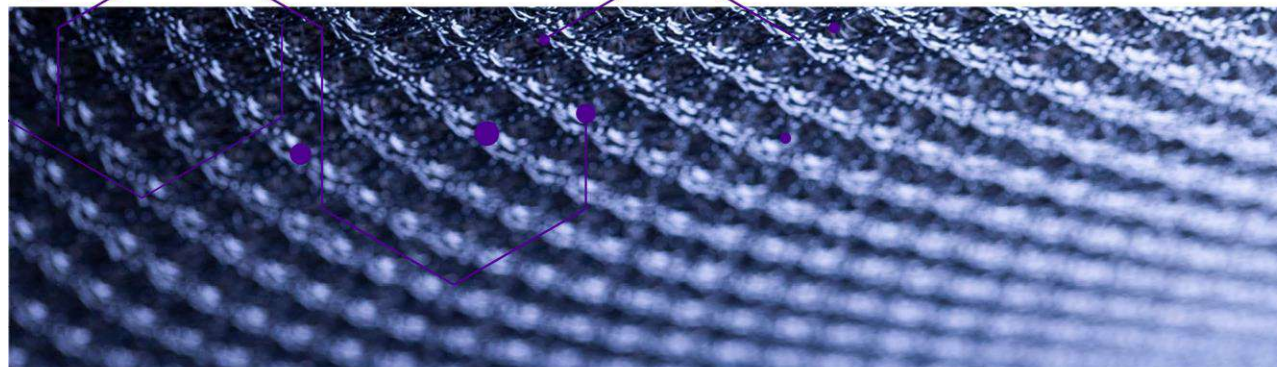
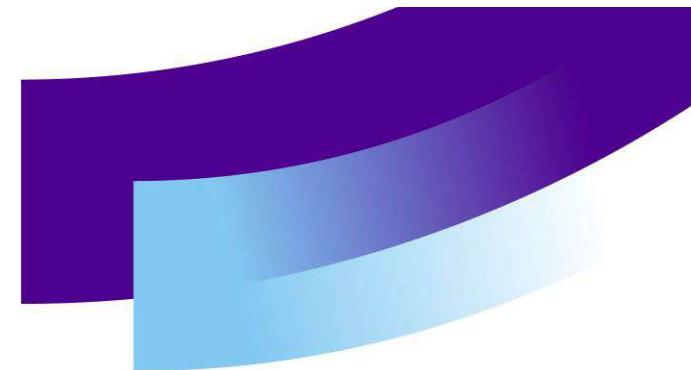


Leverage from  
the EU  
2014–2020

The project is funded by the REACT-EU  
programme as a COVID-19 measure of  
the European Union.



# Innovation and competence ecosystem in Tampere region for sustainable and smart textiles





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# Pilot 2 – Results

## A digital passport promoting responsibility, sustainability and transparency – TAMK and a group of companies and end users

**Final Seminar  
25.5.2023**



## Innovation and competence ecosystem in Tampere region for sustainable and smart textiles

*Pilot 1 'A relaxing garment providing haptic feedback'*

*Pilot 2 'A digital passport promoting responsibility, sustainability and transparency'*



# A digital product passport promoting responsibility, sustainability and transparency – TAMK and a group of companies and end users.

1. **Descriptions of production chains - Minna Varheenmaa TAMK**
2. Perspectives of Material manufacturers & processors in digital product passport - Jyrki Uotila Orneule Oy ja Kimmo Vänni Kilt Oy
3. Industrial wash & end user cycles & UHF-chips Ulla Lappalainen Sakupe Oy and Sanna Hattula Pirha
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# Digital Product Passport?

The Digital Product Passport (DPP) is a technology concept for a digital policy instrument that collects information about the value chain, sustainability, raw materials and safety of products across different sectors. The DPP could also collect information about how products are used, maintained, recycled and repurposed. This transparency is intended to encourage sustainable production, enable transition to circular economy, provide new business opportunities for economic actors, help authorities to verify compliance, and help consumers and end-users to make sustainable choices.

## Report

### Digital Product Passport.

Solita: Marika Nokelainen, Saana Tikkanen, Sami Köykkä and Lauri Kieksi.

Gaia Consulting: Anu Pulkkinen, Solveig Roschier, Annu Markkula, Päivi Luoma, Minna Jyrälä and Leo Bergman.

<https://www.stjm.fi/uutiset/digitaalinen-tuotepassi-lisaa-tuotetiedon-lapinakyvytta-ja-edistaa-kiertotaloutta/>



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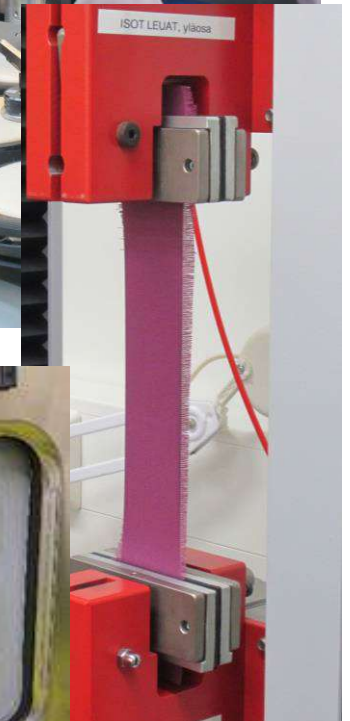
# Sustainability through proper material choices



Renewable  
Recycled, Recyclable  
Biobased



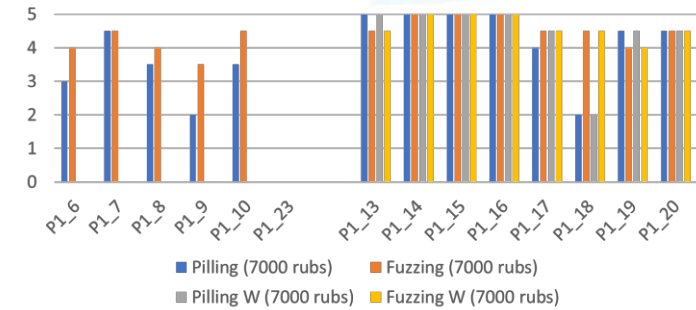
Durability in use, wear  
and wash



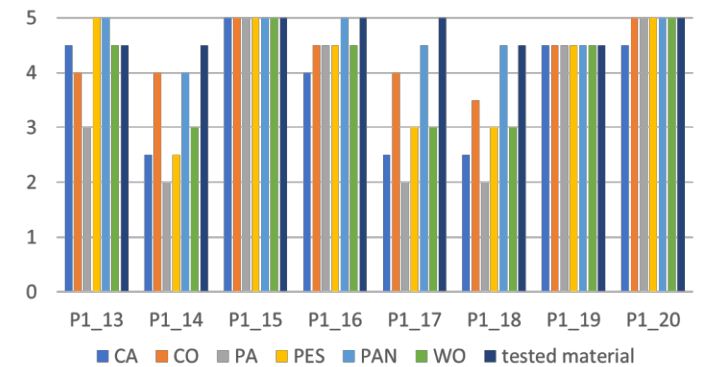
# Sustainability through testing the quality of materials



Pilling and Fuzzing, unwashed and washed (W)  
(SFS-EN ISO 12945-2)



Colour fastness to laundering  
SFS-EN ISO 105-C06



# Sustainability – certificates?

- Joutsenmerkki
- Öko-tex
- Reach
- RoHS
- Etc.
- Carbon footprint
- Fossil fuel footprint
- Water footprint
- Water eutrophication
- Recycled content
- Etc.



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# Demogarment



Drawing and the garment: Image Wear Oy

# Collecting data

Supplier/Manufacturer	Item	VAT number	Production country	Production place	Factoryname	Productname
DEMO_garment_oloasu/sweatpants_Collegejacket(1)_collegetrousers(2)_potilasasu						
COMPANY1 OY	Ribbon manufacturer	1234567-1	Finland	City 1	Factory 1	Ribbon component
COMPANY1 OY	Ribbon manufacturer	1234567-1	Finland	City 1	Factory 1	Ribbon component
COMPANYX OY	Ribbon manufacturer	1234567-X	Country X	City X	Factory X	Ribbon component
COMPANYX OY	Ribbon manufacturer	1234567-X	Country X	City X	Factory X	Ribbon component
COMPANYX OY	Ribbon manufacturer	1234567-X	Country X	City X	Factory X	Ribbon component
COMPANY2 OY	laundry (purchaser)	1234567-2	Finland	City 2	Factory 2	College1
COMPANY2 OY	laundry (purchaser)	1234567-2	Finland	City 2	Factory 2	Trouser1
COMPANY3 OY	RFID supplier	1234567-3	Finland	City 3	Factory 3	RFID
COMPANY3 OY	NFC supplier	1234567-3	Finland	City 3	Factory 3	NFC

1	Colour	Colour code	Size	Material name	Material number	Material	Material composition %	Material batch number
2								
3								
4	white		1	10 mm	Ribbon - seam support	PES textured	100 %	12345
5	white		2	11 mm	Ribbon - elastic with holes	PES textured/Elastane	59 / 41 %	67891
6				38mm	Rib knit binding			
7					Size label			
8				35x43	Care label	satin		
9				35x43	Care label	satin		
10								
11					M			
12					M			

Date of manufacturing	Date when taken into use	Number of washing cycles	date of disposal	Product certificates (number)	Factory cert
22.11.2022	22.11.2022			0	Öko-tex 12-1234
22.11.2022	22.11.2022			0	Öko-tex 12-1235



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# Main categories in data collection

Supplier/Manufacturer    Item    VAT number    Production country  
Production place    Factory name    Product name  
Product number    Product batch    Colour    Colour code  
Size    Material name    Material number    Material  
Material composition %    Material batch number  
Date of manufacturing    Date when taken into use  
Number of washing cycles    Date of disposal  
Product certificates (number)    Factory certificates (number)  
Waste type in the end of life cycle    RFID/NFC/QR tags  
Carbon footprint    Fossil fuel footprint    Water footprint  
Water eutrophication    Recycled content... **And much more?**

- **To B2B and to Consumer**



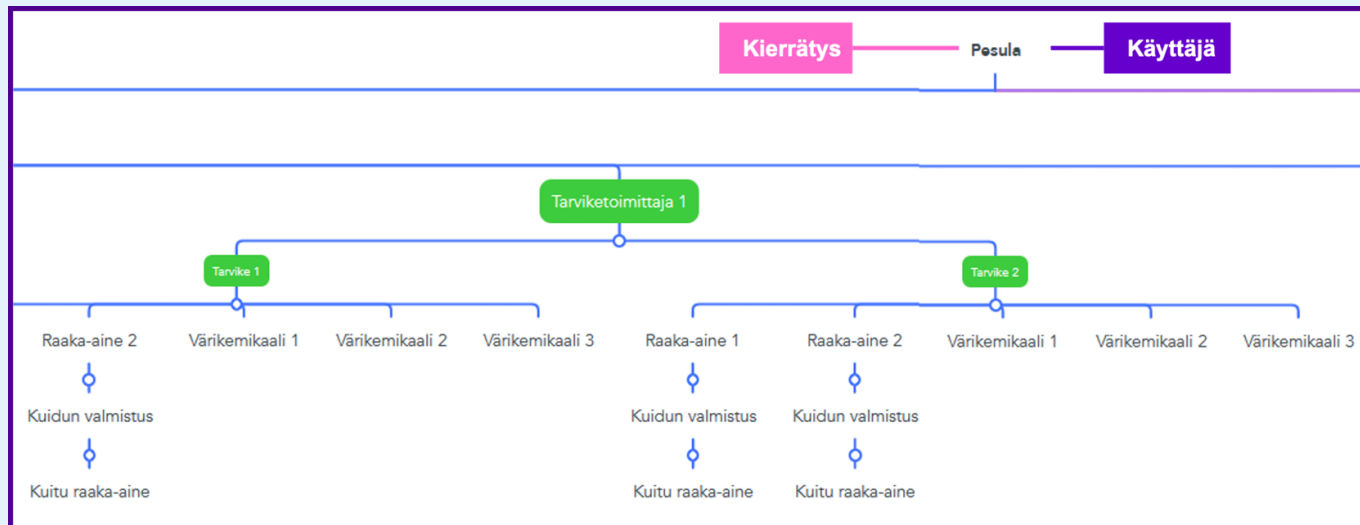
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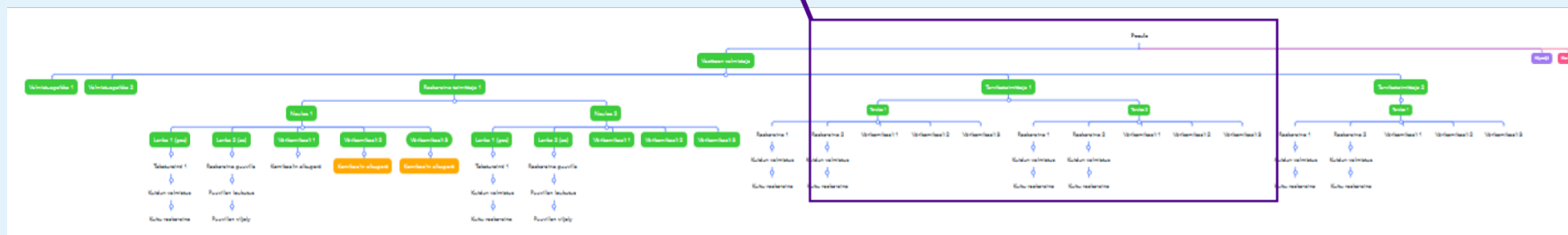
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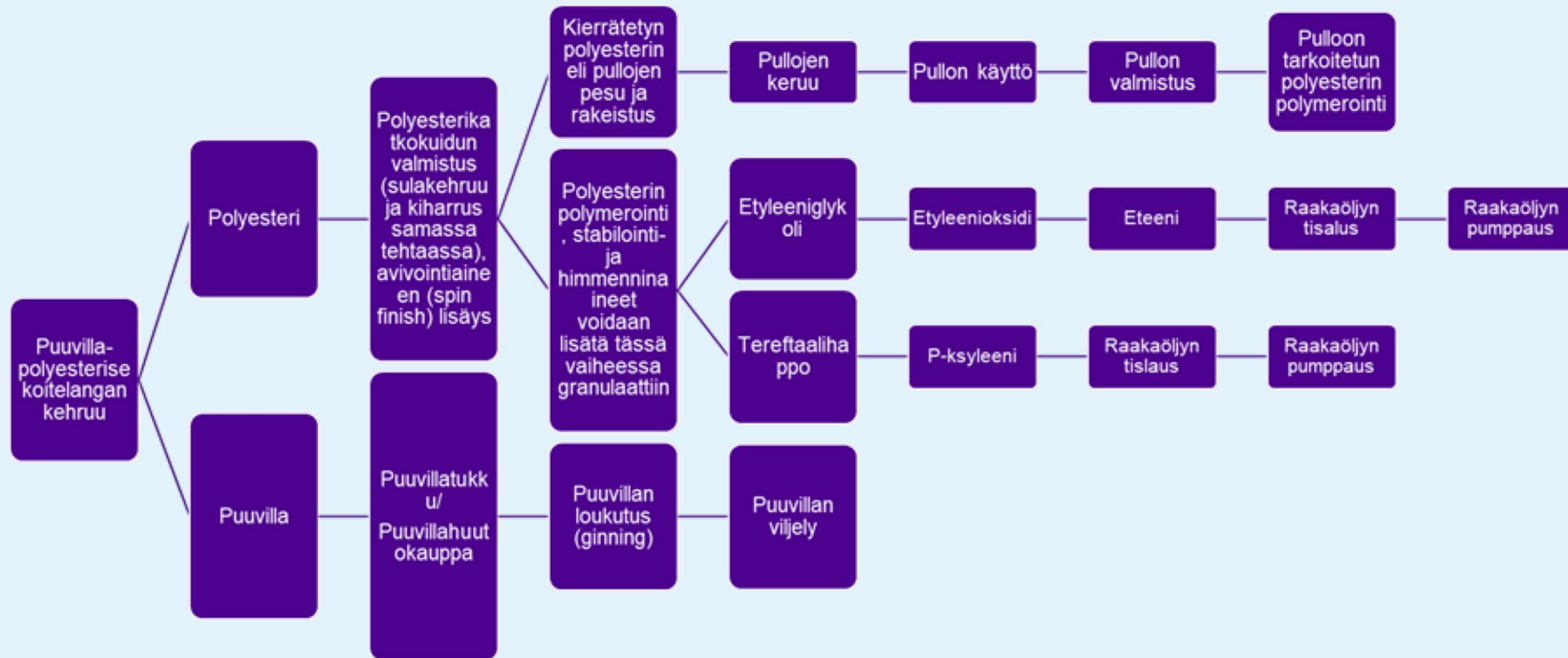
# Actors in the production chain



Modified from the description drawn by Mari Kuukkula  
Image: Roihu Inc.



# Example of Materials and chemicals in CO/PES –yarn production chain



Description of Marja Rissanen TAMK.



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# Perspectives from companies and end users

Digital Product Passport  
pros and cons

What did we learn in this project?



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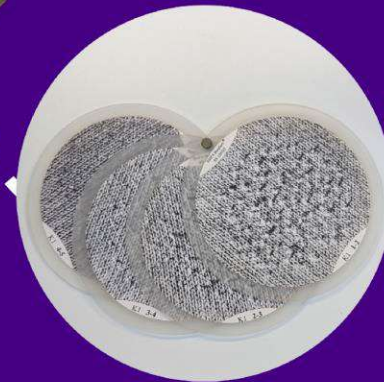




...to great sustainable and smart textiles!



From raw material...



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# Kiitos!

# Thank you !

# ?