

TAMPERE/TEAMS – THURSDAY 8TH OF DECEMBER 2022



PILOT LINES AND G&D TOOLS - RESEARCH INFRA AS A SERVICE

Antero Kutvonen | Aino-Maria Hakamäki | Sari Laitinen | Professor Aki Mikkola

MoreSIM Research Platform

LUT University

Work package 4 - Pilot Lines and Green & Digital Toolboxes

PL & GDT ROLE IN DIGITALIZATION



Pilot lines and tools are increasingly virtual / digital
→ scalability increases

Industry digitalization is progressing rapidly
→ experimentation and need to learn increases



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ON A QUEST TO FIND THE HIDDEN GEMS

- » SIE works to make pilot lines and digital tools discoverable and accessible to Finnish SMEs
- » **Map of pilot lines**
 - Collecting the information about possible tools, services and pilot lines on a national level
- » **Catalogued Pilot Lines and Green & Digital Tools**
 - Providing more uniform descriptions of services, all in one online catalogue to simplify discovery
- » **Common access policy**
 - Making access easy, equal and transparent by proposing common rules, processes and policies



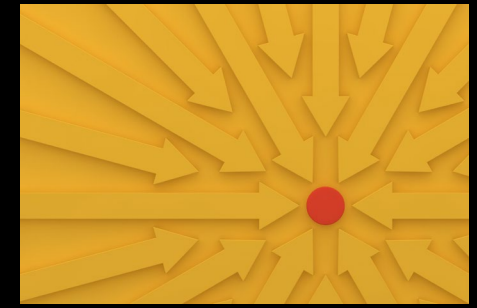
Map of pilot lines



Catalogue of tools
& services



Common access
policy



Availability on a
platform

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WHAT ARE PILOT LINES AND G&D TOOLS

"A pilot line is a **pre-commercial** (*'test before invest'*) production or prototyping environment, **physical** or **virtual** that enables **learning through experimentation** in new product, service and business development."

"Green and digital tools are **tools** and **services** that enable, accelerate and promote information-based **innovation** & **sustainability** in the energy and manufacturing industries"

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RESULTS – THE BIG PICTURE

- In total, 23 answers; **21 Pilot Lines** and **2 Green & Digital Tools** discovered
 - 40% of identified services are **free to use**, rest have fees depending on the case
- Major **offering types**: **testing facilities** (96 %), **services** (83 %) & **demonstrations** (70 %)
 - All **services** were identified as **consulting services**, with the focus on **test before invest** (76 %), **knowledge transfer services** (76 %) and **training services** (71 %)
 - 83 % of the respondents have **public or private customer references**
- Major **technology platforms** were **modelling & simulation** (72 %), **digital design & optimization** (67 %) and **industry 4.0** (56 %)
 - Majority of offerings are ready-for-use with **TRL 6+** (86 %)
- **Material & resource efficiency** (91 %), **circular economy** (70 %) and **product (or service life cycle management** (61 %) were the main **sustainability areas** affected

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COMMON ACCESS BUILDS ON SERVITIZATION

- PL/GDT offerings have idiosyncratic and unknown access requirements and processes
- Common access policy guidelines can promote
 1. **Easy discovery**: Public, open and promoted by an independent party or broad ecosystem; streamlined, common and comparable terminology and presentation
 2. **Transparent access**: Content openly sourced, updated or removed in co-creation with service providers; access requirements agreed on transparent terms (e.g. basis of fees)
 3. **Affordable use of a comprehensive set** of national research infrastructures: Building on long-term and non-pecuniary benefits; platform for national visibility

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FUTURE OUTLOOK: ONLINE CATALOGUE CONCEPT

- » Dynamic updates
- » Low threshold → no registration
- » Simple search / filter options
- » Open data
- » Processes for data update, add or delete
- » Independently hosted

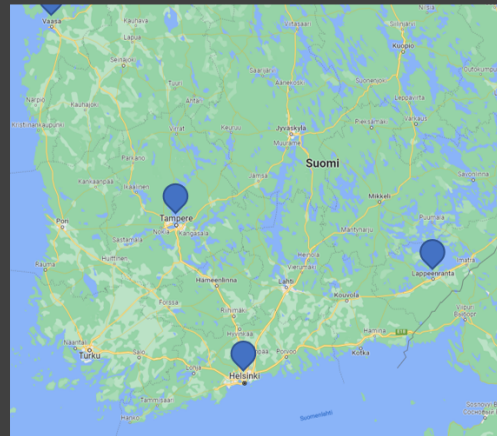
Search

City

Customer's industry

Offering type

Technology Readiness Level



Organization	Name of PL/GDT
VTT Technical Research Centre of Finland Ltd	Materials performance (VTT)
VTT Technical Research Centre of Finland Ltd	Maturity Self-Assessment Tools (VTT)
VTT Technical Research Centre of Finland Ltd	Metrology (VTT)
VTT Technical Research Centre of Finland Ltd	Optical measurements (VTT)
VTT Technical Research Centre of Finland Ltd	Secured connectivity (VTT)
VTT Technical Research Centre of Finland Ltd	Smart Manufacturing VTT
University of Vaasa	Metal 3D printing lab
Tampere University of Applied Sciences	Additive manufacturing of large biocomposite structures with an industrial robot
Tampere University of Applied Sciences	Design for Additive Manufacturing
Tampere University of Applied Sciences	FieldLab, Pilot line I: The testbed and capability creation for Industry 4.0 (TAMK)
Tampere University of Applied Sciences	FieldLab, Pilot line II: Additive manufacturing of large biocomposite structures with an industrial robot (TAMK)
Tampere University	Cold Spray
Tampere University	Composite processing lab
Tampere University	Directed Energy Deposition Pilot Line
Tampere University	HRC Pilot Line
Tampere University	Laser micro machining
Tampere University	Robolab Tampere
Tampere University	Thermoplastics' processing lab
Natural Resources Institute Finland	Biopaja: Solutions for the circular economy
Natural Resources Institute Finland	Bioruukki: Pressurised extraction and down stream processing
Natural Resources Institute Finland	FeedPilot - animal feed processing
Natural Resources Institute Finland	FoodPilot - Solution for processing healthy and safe food

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Thank you all for listening 😊



