EFFRA – European Factories of the Future Research Association

Stakeholder Webinar Consultation MiE Work Programme 2025-27

16 May 2023 -Human-centered manufacturing Services in Manufacturing



Agenda 16 May 2023

9h30 - 10h00

Welcome by EFFRA and the European Commission Made in Europe Work Programme(s) 25-27 - where we stand

10h00 - 10h45

Proposed priorities from the perspective of **human-centred manufacturing**The modalities of the consultation
Examples of past and ongoing projects
Q & A

10h45 – 11h00: Break

11h00 - 11h30

Proposed priorities from the perspective of **services in manufacturing** Examples of past and ongoing projects Q & A



European Commission & Member States



European Factories of the Future Research Association





2021-2027

European manufacturing industry vision

"Ensuring competitiveness & sustainability and supporting resilient and adaptive manufacturing ecosystems, able to cope with external disturbances and rising environmental and social requirements"

"Europe to be the leading 'solution provider' in production technology, digitalisation, resource efficiency and circular economy implementation."

"Europe to be the most attractive region for producing sustainable high-added value goods and services"



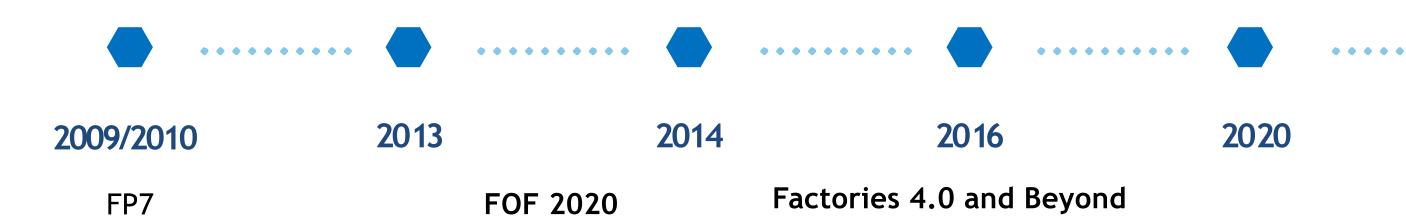
Political Focus:

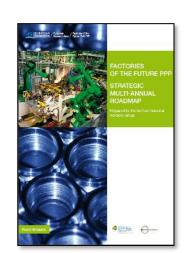
- Resilience of European Industry
- Strategic autonomy of European Industry
- Environmental sustainability of Europe Industry

Made in Europe Partnership story line















Present

MiE General objectives



Leadership & manufacturing excellence, generating new products and new markets

European Green Deal

Circular and climate-neutral manufacturing

An Economy that Works for People and SMEs

Attractive value added manufacturing jobs

A Europe Fit for the Digital Age

Digital transformation of manufacturing industry, trusted and robust



MiE Specific Objectives

- Excellent, responsive and smart factories & supply chains
- Circular products & Climateneutral manufacturing
- New integrated business, product-service and production approaches; new use models
- Human-centered and humandriven manufacturing innovation

MiE Key Technologies and Enablers

- Advanced smart material and product processing technologies, and process chains
- Smart mechatronic systems, devices and components
- Intelligent and autonomous handling, robotics, assembly and logistic technologies
- De-manufacturing, recycling technologies, and life-cycle analysis approaches
- Simulation and modelling (digital twins)
 covering the material processing level up to
 manufacturing system, and factory and value
 network level from design until recycling.
- Robust and secure industrial real-time communication technologies, and distributed control architectures and standardized equipment protocols
- Data analytics, artificial intelligence, machine learning and deployment of digital platforms for data management and sharing
- New business and new organisational approaches, including links with regulatory aspects such as safety, data ownership, and liability
- Skilled workforce
- **Standards**

Call 2021

CL4-2021-TT-01-01: All enhanced robotics system for smart manufacturing (IA)

CL4-2021-TT-01-02: Zero-defect manufacturing towards zero-waste (IA)

CL4-2021-TT-01-03: Laser-based technologies for green manufacturing (RIA)

CL4-2021-TT-01-05: Manufacturing technologies for bio-based materials (RIA)

CL4-2021-TT-01-07: Artificial Intelligence for sustainable, agile manufacturing (IA)

CL4-2021-TT-01-08: Data-driven Distributed Industrial Environments (IA)





Call 2022

CL4-2022-TT-01-01: Rapid reconfigurable production process chains (IA)

CL4-2022-TT-01-02: Products with complex functional surfaces (RIA)

CL4-2022-TT-01-03: Excellence in distributed control and modular manufacturing (RIA)

CL4-2022-TT-01-04: Intelligent work piece handling in a full production line (RIA)

CL4-2022-TT-01-06: ICT Innovation for Manufacturing Sustainability in SMEs (I4MS2) (IA)

CL4-2022-TT-01-07: Digital tools to support the engineering of a Circular Economy (RIA)

Call 2023

CL4-2023-TT-01-02: High-precision OR complex product manufacturing – potentially including the use of photonics

CL4-2023-TT-01-04: Factory-level and value chain approaches for remanufacturing

CL4-2023-TT-01-07: Achieving resiliency in value networks through modelling and Manufacturing as a Service

CL4-2023-TT-01-08: Foresight and technology transfer for Manufacturing As A Service

Call 2024

CL4-2024-TT-01-01: Bio-intelligent manufacturing industries

CL4-2024-TT-01-03: Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand

CL4-2024-TT-01-05: Technologies/solutions to support circularity for manufacturing

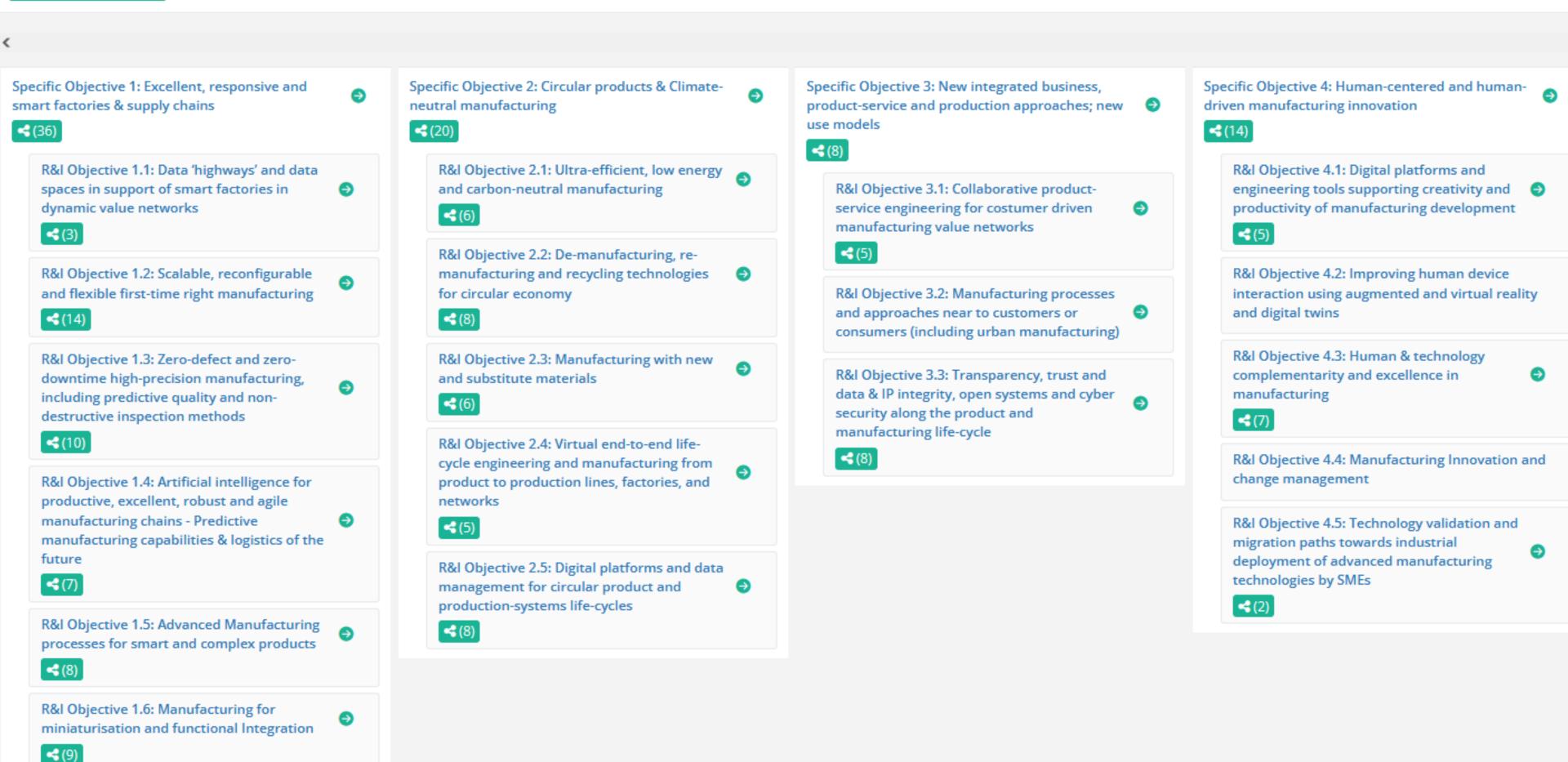




MiE SRIA R&I Priorities

Mapped projects (49)

Portfolio analysis - allocation of MiE call topics to SRIA R&I Objectives



Made in Europe and inclusive productivity: doing better (creating more added value) with less

- Excellent productive and flexible Manufacturing automation for open strategic autonomy
- Sustainable value network resilience and competitiveness through robust and flexible production technologies
- Recovering and preserving the European leadership in strategic and high value-added products
- Circular, connected manufacturing ecosystems
- The next level of circular economy through scalable, highly productive and zero-defect remanufacturing technologies
- Manufacturing with new/ limited raw materials availability
- Solutions for energy-efficiency for realising netzero discrete manufacturing processes and value chains

- Quick response service deployment for maintaining optimal manufacturing operations using trusted AI and digital twins
- Life-cycle management of manufacturing solutions and associated services for flexible, productive and sustainable manufacturing industry
- Data spaces and cloud/edge solutions for responsive and robust manufacturing
- Digitally enabled compliance and integration of innovative manufacturing solutions
- Understanding the transformation of the factory work and organisation
- Physical and cognitive augmentation of human capabilities for inclusive and socially sustainable manufacturing
- Digitally enabled upskilling, qualification and job transformation





Bio-intelligent Manufacturing

Made in Europe and inclusive productivity: doing better (creating more added value) with less

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produ MiE Specific Objectives

- Recover leadeprodu
- Circul
- The nscalalmanu
- Manu availa
- Soluti zero o chain

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Bio-intelligent Manufacturing

Examples of relevant past/ongoing projects



Factory2Fit | Empowering and participatory adaptation of factory automation to fit for workers

01-10-2016 - 30-09-2019

2: 46 | **3**: 9

Show more information -



INCLUSIVE | Smart and adaptive interfaces for INCLUSIVE work environment

01-10-2016 - 30-09-2019

⊘: 43 | **②**: 3

Show more information -



MANUWORK | Balancing Human and Automation Levels for the Manufacturing Workplaces of the Future

01-10-2016 - 31-03-2020

⊘: 26 | **⊙**: 3

Show more information ▼







A4BLUE | Adaptive Automation in Assembly For BLUE collar workers satisfaction in Evolvable context

01-10-2016 - 30-09-2019

2: 15 | **3**: 4

Show more information -



HUMAN | HUman MANufacturing

01-10-2016 - 30-09-2019

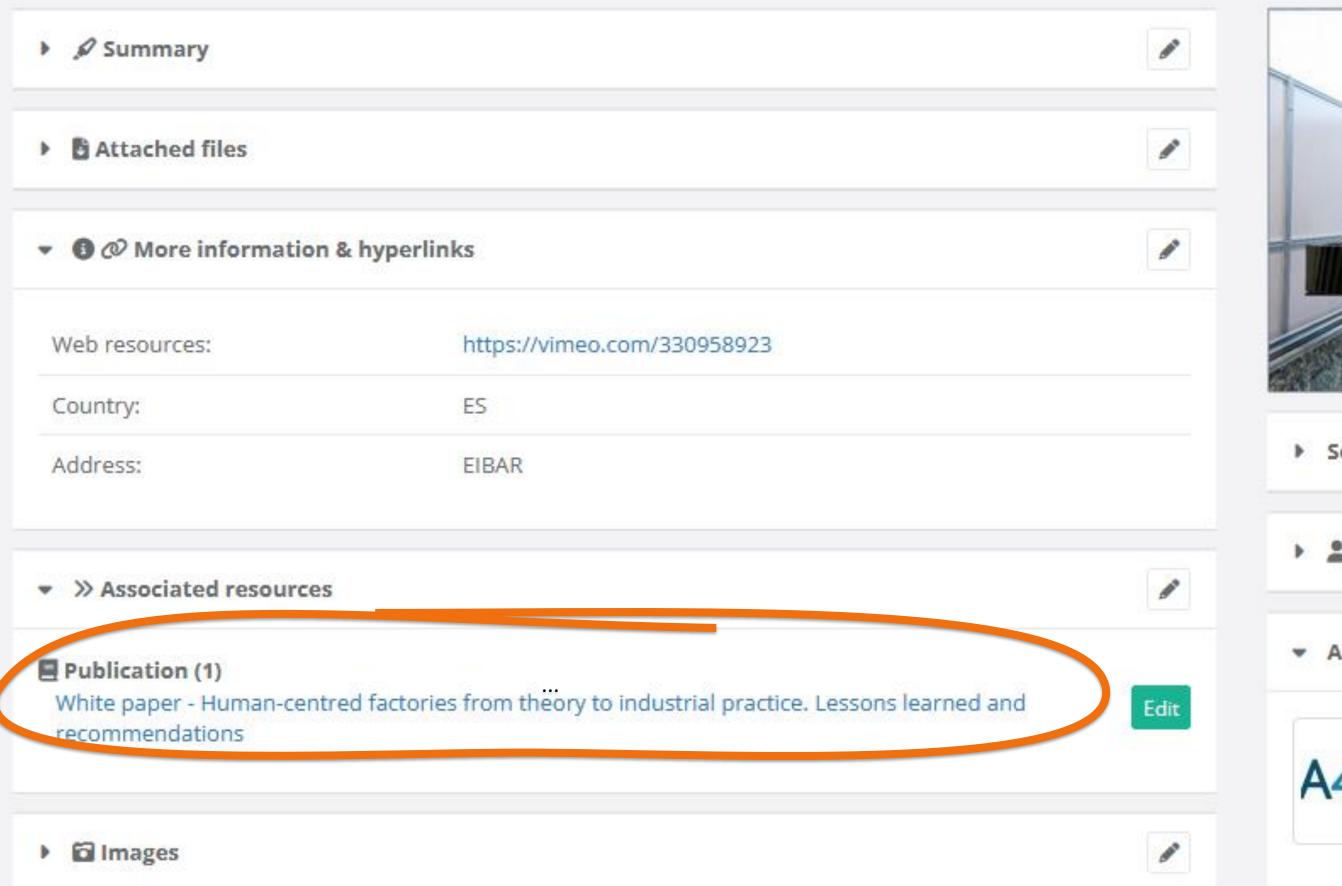
⊘: 30 | **②**: 3

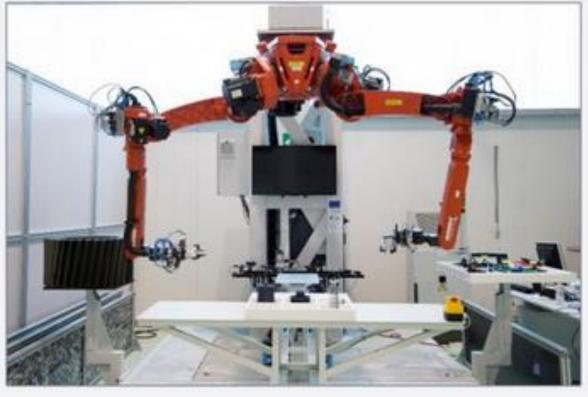
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FOF-04-2016 Continuous adaptation of work environments with changing levels of automation in evolving production systems



Collaborative assembly in a fenceless environment (IK4-TEKNIKER)













A4BLUE - Adaptive Automation in Assembly For BLUE collar workers satisfaction in Evolvable context

Examples of relevant past/ongoing projects

Showing 1 to 5 of 5 results

Toggle all information ▼



ROSSINI | RObot enhanced SenSing, INtelligence and actuation to Improve job quality in manufacturing

01-10-2018 - 31-03-2022

⊘: 52 | **②**: 4

Show more information ▼



Collaborate | Co-production Cell performing Human-Robot Collaborative AssEmbly

01-10-2018 - 31-03-2022

2: 92 | **3**: 9

Show more information ▼



HR·Recycler

HR-Recycler | Hybrid Human-Robot RECYcling plant for electrical and eLEctRonic equipment

01-12-2018 - 30-11-2022

⊘: 54 | **⊙**: 3

Show more information -



SHAREWORK | Safe and effective HumAn-Robot coopEration toWards a better cOmpetiveness on cuRrent automation lack manufacturing processes.

01-11-2018 - 31-10-2022

3: 61 | **3**: 4

Show more information -



SHERLOCK | Seamless and safe human - centred robotic applications for novel collaborative workplaces

01-10-2018 - 30-09-2022

2: 7 | **3**: 4

https://www.effra.eu/news/collaborative-robotics-land-european-factories

Show more information ▼





DT-FOF-02-2018 Effective Industrial Human-**Robot Collaboration (RIA)**

Examples of relevant past/ongoing projects

Showing 1 to 4 of 4 results

Toggle all information ▼



Fluently | Fluently - the essence of human-robot interaction

01-06-2022 - 31-05-2025

Show more information ▼



CONVERGING | Social industrial collaborative environments integrating AI, Big Data and Robotics for smart manufacturing

01-09-2022 - 31-08-2026

@: 4

Show more information ▼



COGNIMAN | COGNITIVE Industries for smart MANufacturing (COGNIMAN)

01-01-2023 - 31-12-2026

Show more information ▼



AI-PRISM | AI Powered human-centred Robot Interactions for Smart Manufacturing

01-10-2022 - 30-09-2025

Show more information -

HORIZON-CL4-2021-TWIN-TRANSITION-01-01: Al enhanced robotics system for smart manufacturing (IA)





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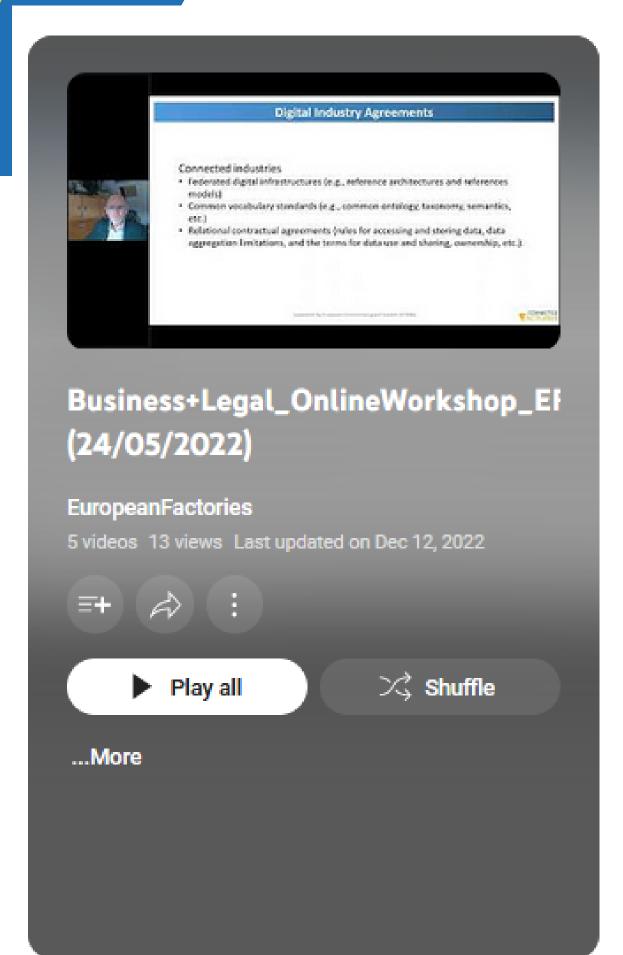
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ConnectedFactories Online workshop - Business and legal workshop 2022





Legal aspects of digitalisation in manufacturing - Intro

EuropeanFactories • 6 views • 5 months ago



Legal aspects of data platforms - data act, etc... CF Webinar 24/05/2022

EuropeanFactories • 4 views • 5 months ago



Business models and digital platforms

EuropeanFactories • 3 views • 5 months ago

https://www.connectedf actories.eu/news/connec tedfactories-finalnewsletter#Business%20 and%20Legal%20Worksh op



Business model aspects of digital manufacturing

EuropeanFactories • 3 views • 5 months ago



Standards and legal aspects

EuropeanFactories • 2 views • 5 months ago

ConnectedFactories Online workshop - Business and legal workshop 2022



Toggle all information ▼



PROSECO | Collaborative Environment for Design of Aml enhanced Product-Services Integrating Highly Personalised Innovative Functions with Minimal Ecological Footprint along Life Cycle and of Their Production Processes

01-10-2013 - 30-09-2017

2: 16

Show more information ▼



EASY-IMP | Collaborative Development of Intelligent Wearable Meta-Products in the Cloud

01-09-2013 - 31-08-2016

3:3 | **3**:2

Show more information -



USE-IT-WISELY | Innovative continuous upgrades of high investment product-services

01-09-2013 - 30-11-2016

⊘: 12 | **⊘**: 6

Show more information -

FoF.NMP.2013-5 - Innovative design of personalised product-services and of their production processes based on collaborative environments





Toggle all information ▼



FALCON | Feedback mechanisms Across the Lifecycle for Customer-driven Optimization of iNnovative productservice design

01-01-2015 - 01-01-2018

⊘: 22 | **⊙**: 4

Show more information -



MANUTELLIGENCE | Product Service Design and Manufacturing Intelligence Engineering Platform

01-02-2015 - 01-02-2018

2: 45

Show more information ▼



ProRegio | Customer-driven design of product-services and production networks to adapt to regional market requirements

01-01-2015 - 01-01-2018

⊘: 58 | **②**: 19



ICP4Life | An Integrated Collaborative Platform for Managing the Product-Service Engineering Lifecycle

01-01-2015 - 01-01-2019

2: 19 | **3**: 6

Show more information ▼



DIVERSITY | Cloud Manufacturing and Social Software Based Context Sensitive Product-Service Engineering Environment for Globally Distributed Enterprise

01-02-2015 - 01-02-2018

⊘: 23 | **②**: 1

Show more information -



PSYMBIOSYS | Product-Service sYMBIOtic SYStems

01-02-2015 - 01-02-2018

⊘: 80 | **⊘**: 3

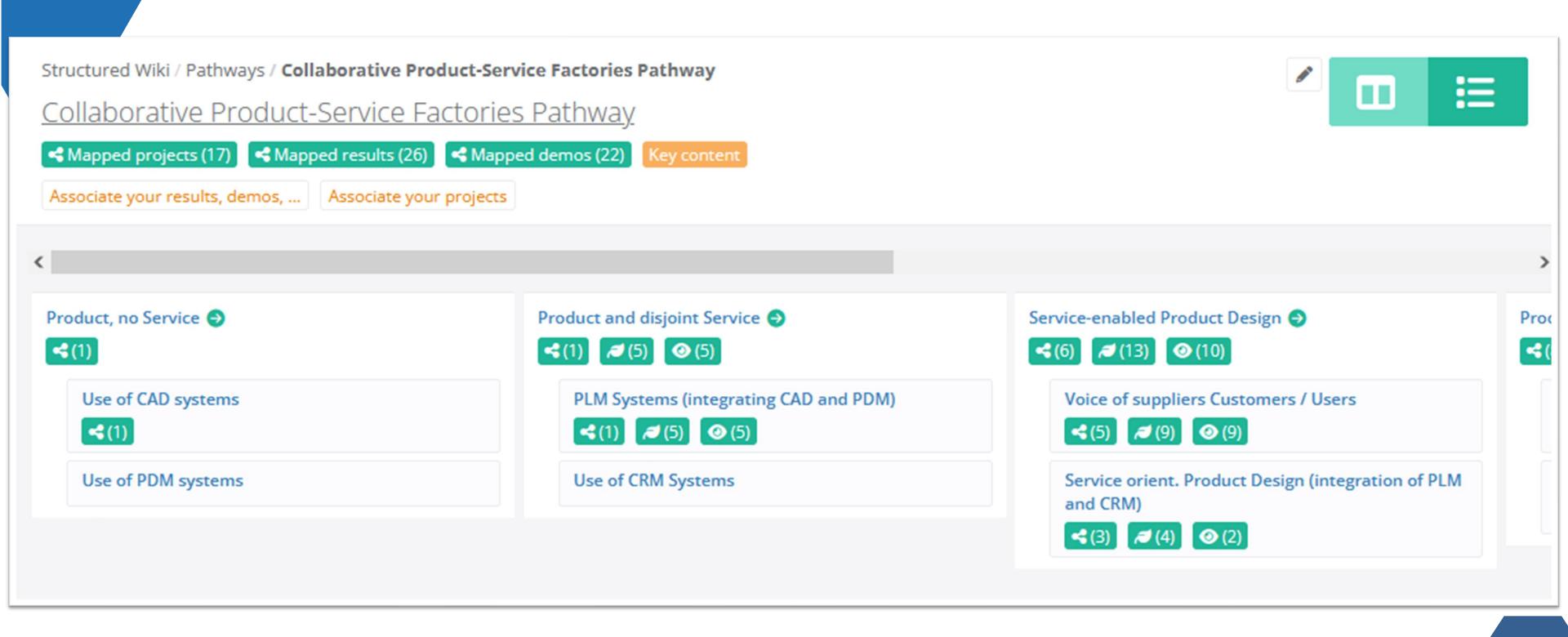
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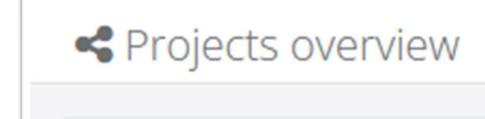


FoF-05-2014 Innovative Product-Service design using manufacturing intelligence









Acronym search

service



ICP4Life | An Integrated Collaborative Platform for Managing the Product-Service Engineering Lifecycle

01-01-2015 - 01-01-2019

3: 19 | **3**: 6

Show more information -

Description The second component is a Product-**Service** configuration tool for customers, enabling the easy and intuitive formation of Products and **Services**.

Organisation SCIENTIFIC ACADEMY FOR SERVICE TECHNOLOGY EV

Comments Innovation Collaborative Product-Service Factories Pathway Service Innovation and new Business Models Pathways Product-Service Innovation Collaborative Product-Service Factories Pathway Voice of suppliers

- Existing Product-Services Result title Existing Product-Services
- State of the Art on product-services development Result description Review of the state of the art on different development methods for product services
- Web-services / Composability Taxon title Web-services / Composability
- Engineering open to customers and final users. Advanced services integrated.



PROSECO | Collaborative Environment for Design of Aml enhanced Product-Services Integrating Highly Personalised Innovative Functions with Minimal Ecological Footprint along Life Cycle and of Their Production Processes

01-10-2013 - 30-09-2017

3: 16

Show more information -

Description A Cloud Manufacturing approach will be applied for effective collaborative design of product-services and their production processes, and the effective implementation of innovative services.

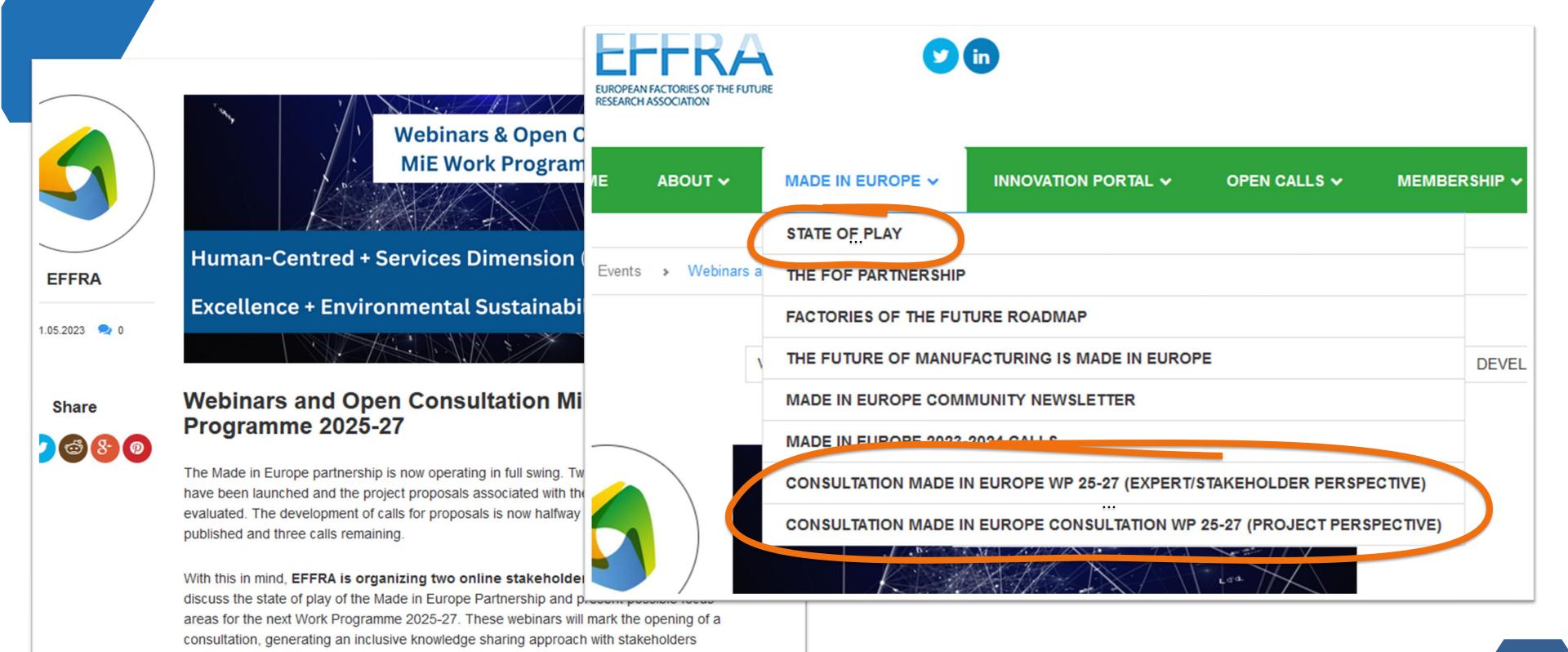
Comments Collaborative and Mobile Enterprises Number of developed systems and technologies Additional KPIs Social Simulation tool Data Maning tool Ecotool Ami selection tool Contex modeling tool Collaboration Portal Service

- Service Broker Result title Service Broker Result description The Service

 Composition Engineering tool is a tool based on BPMN languange that allows the composition of core and application specific services with the aim of creating more complex services/functionalities Result acronym Service Broker
- ProSEco Deployment Platform Result description The Service Composition Engineering tool is a tool based on BPMN languange that allows the composition of core and application specific services with the aim of creating more complex services/functionalities

RP 6.3 Collaborative product-service systems design environments for SME involvement Taxon title RP 6.3 Collaborative product-service systems design

How to contribute to the consultation







CONSULTATION MADE IN EUROPE WP 25-27 (EXPERT/STAKEHOLDER PERSPECTIVE)

CONSULTATION MADE IN EUROPE CONSULTATION WP 25-27 (PROJECT PERSPECTIVE)



This page concerns the consultation on the Work Programme 25-27 of the Horizon Europe Programme with respect to manufacturing research & innovation, in particular with regard to the Made in Europe Partnership.

More background to this consultation can be found here.

Please note that there is also a consultation where feedback is requested from the perspective of past or ongoing projects (see here).

Via this consultation, you are invited as an experts/stakeholder to comment and rate (in terms of importance) the suggested priorities for the WP 25-27 that are described in this document.

Your prioritisation and comments would address observations such as:

- Which priorities are key for the work programme 25-27? You can express the importance of the priorities by rating them from 0 to 100 in steps of 10.
- Please add comments to explain why a priority matters in order to generate impact on the competetiveness and sustainability of Manufacturing in Europe.
- If the R&I Objectives were only partially addressed in the past, please describe which aspects should be addressed more specifically in the next work programme.

Please also note that:

- For this consultation, your answer to the consultation is publicly available via your profile page on the EFFRA Innovation portal.
- You can edit and refine your input at any time. You just need to save the comments when you edit your response. There is no 'final submission button'.

Access to the consultation:

First, please make sure that you are logged in on the EFFRA Innovation Portal (https://portal.effra.eu).





Consultation Made in Europe WP 25-27- Projects' perspective

More background to the consultations in preparation of the Made in Europe Partnership can be found here.

This page concerns the track that focusses on obtaining information from the **project's perspective**.

The guidance regarding the **consultation from the expert/stakeholder perspective** can be found here.

The suggested priorities for the WP 25-27 that are described in this document have been included in a taxonomy list on the EFFRA Innovation Portal.

Project representatives are requested to provide the following feedback:

- indicate the priorities to which your project has contributed most. Please only indicate the items that are really relevant (You can use the rating bar to indicate differences in the relevance)
- please add a comment that explains briefly:
 - what the project has contributed essentially
 - which future developments are in particular necessary, drawing from the (expected) outcome of your project

<u>Please note that the information that is provided by the projects is made publicly available via the respective project pages on the EFFRA Innovation Portal. Also, you can add and edit feedback in several steps, the list and editing permissions will stay available.</u>

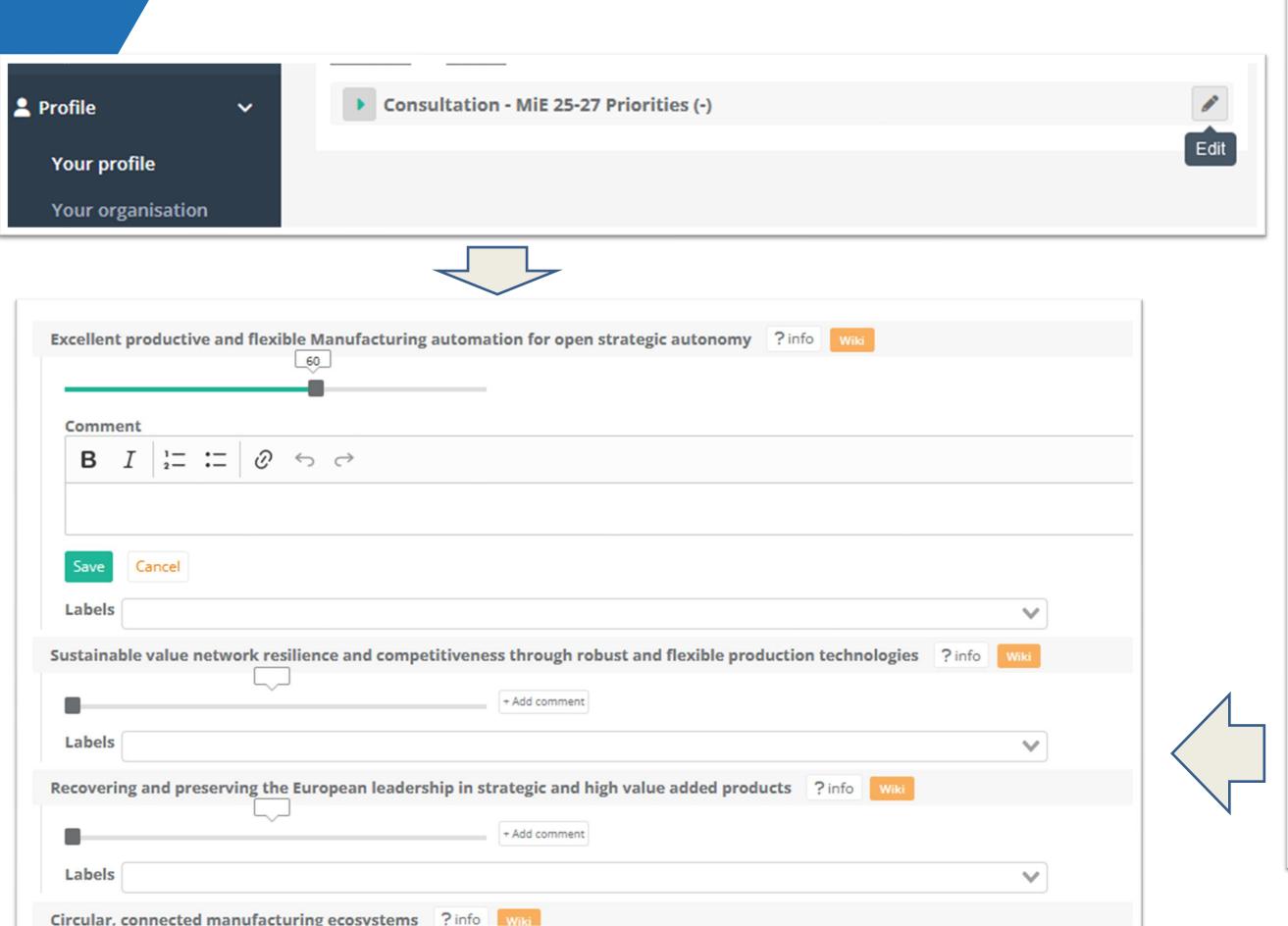
If you wish to include and promote other projects (also national and regional projects) on the EFFRA Innovation Portal, then please let us know.

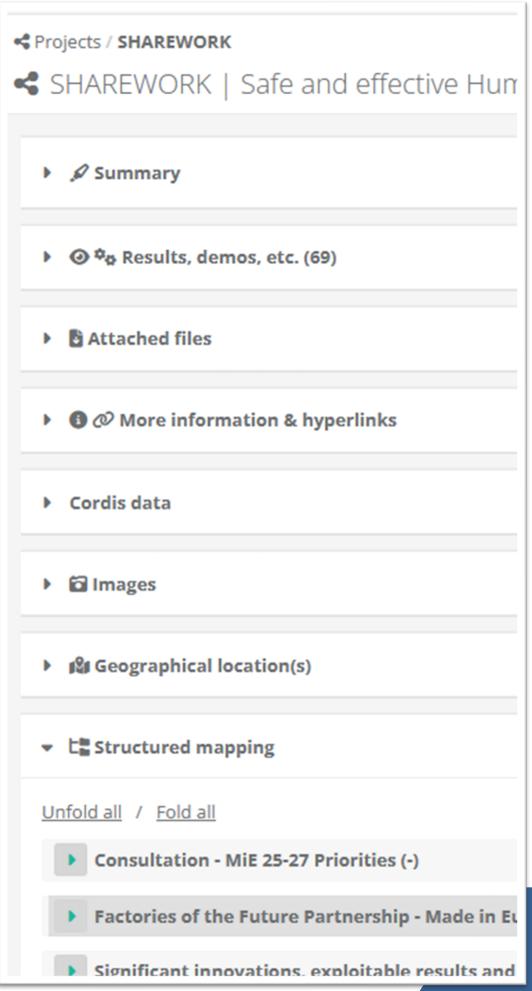
Please see the screenshot of a project page here below - the edit buttons are only available to these users that have editing permissions on the project.

Images



Contribute via your profile or via your project





THANK YOU

Contact: info@effra.eu



