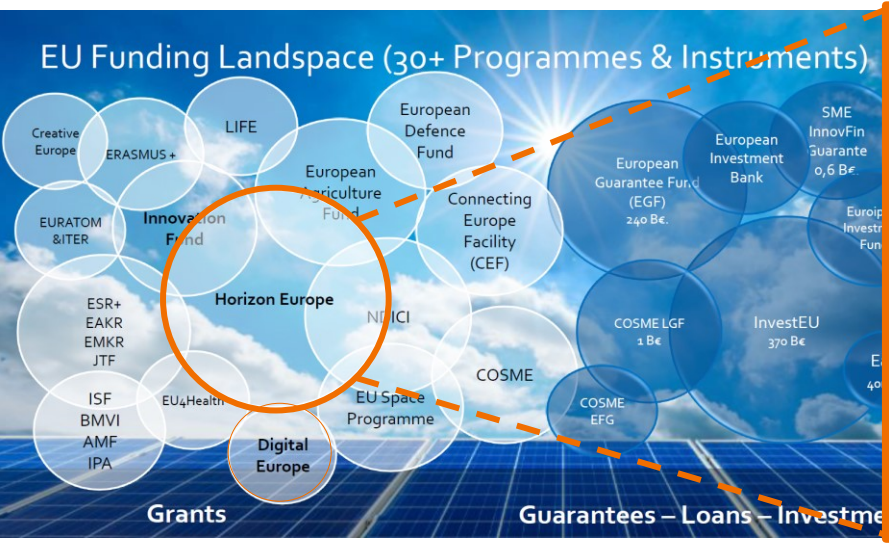
EU:n tutkimus- ja innovaatiomaisema ja kumppanuudet 9.3.2022

Riikka Virkkunen
työelämäprofessori, VTT
@VirkkunenRiikka

EU:n tutkimus- ja innovaatiomaisema ja kumppanuudet

- Horisontti Euroopan kumppanuudet ja toimintatapa
- Teollisuudelle tärkeät kumppanuudet
  - Valmistava teollisuus - Made In Europe
  - Prosessiteollisuus - Process4Planet
  - Tekoäly, data ja robotiikka - AI, Data and Robotics

Horizon Europe



Pillar 1
EXCELLENT SCIENCE

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre

Pillar 3
INNOVATIVE EUROPE

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

- Widening participation and spreading excellence
- Reforming and Enhancing the European R&I system

Source “EU Funding for Twin Transition” 17.11.2021
Pekka Rantala, Business Finland

Partnerships are relevant for industry

Made in Europe (MIE)

Process4Planet (P4Planet)

AI, data and robotics (ADR)

Key Digital Technologies (KDT)

High Performance Computing

Smart Networks and Services

Photonics Europe

Clean Steel - Low Carbon Steelmaking

European Metrology

Global competitive space systems

How do partnerhips work?

- common agenda setting influencing the calls
- networking and collaboration
- feedback and source of information for actors (incl. the Commission and the member states)
- platform for bringing together national and regional initiatives
- evaluate performance
- take different forms (co-programmed, co-funded, institutional)

Impact!

More effectively achieve EU policy objectives than Horizon Europe alone

Made In Europe

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

Activities and investments need to focus on:

- Resilience of European Industry
- Sovereignty of European Industry
- Environmental sustainability of Industry

EFFRA
EUROPEAN FACTORIES OF THE FUTURE RESEARCH ASSOCIATION

MADE IN EUROPE

MADE IN EUROPE

(1) Influence

European Commission & Member States

EFFRA
EUROPEAN FACTORIES OF THE FUTURE RESEARCH ASSOCIATION

European Factories of the Future Research Association

FoF
Factories of the Future
Public Private Partnership
2010-2020

MADE IN EUROPE
2021-2027

(2) Collaborate

EFFRA Community

The manufacturing research & innovation community at European level

MADE IN EUROPE

MIE General objectives

- Ensuring European Leadership & manufacturing excellence; generating new products and markets
- Achieving Circular and climate-neutral manufacturing
- Mastering the digital transformation of manufacturing industry
- Creating attractive added-value manufacturing jobs

MIE Specific Objectives

- Excellent, responsive and smart factories & supply chains
- Circular products & Climate-neutral manufacturing
- New integrated business, product-service and production approaches; new use models
- Human-centred and human-driven manufacturing innovation

Operational/R&I Objectives

1. Zero-defect and zero-downtime high precision manufacturing
2. Manufacturing for miniaturisation and functional integration
3. Scalable, reconfigurable & flexible first-time right manufacturing
4. Artificial intelligence for productive, excellent, robust and agile manufacturing chains - Predictive manufacturing capabilities & logistics of the future
5. Advanced manufacturing processes for smart and complex products
6. Data highways and data spaces in support of smart factories in dynamic value networks

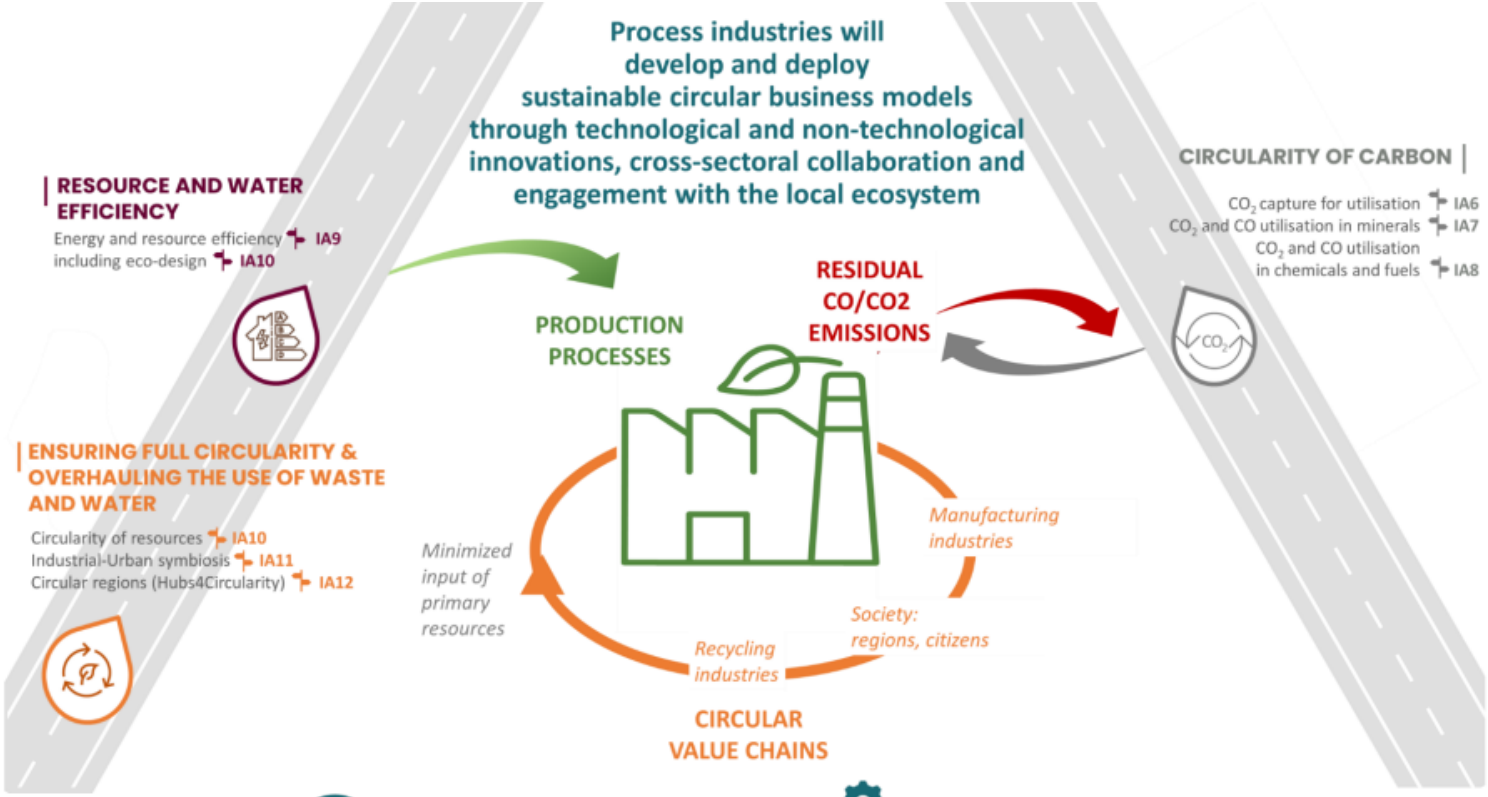
1. Ultra-efficient, low energy and carbon-neutral manufacturing
2. De-manufacturing, re-manufacturing and recycling technologies for circular economy
3. Manufacturing with new and substitute materials
4. Virtual end-to-end life-cycle engineering and manufacturing from product to production lines, factories, and networks
5. Digital platforms and data management for circular product & production-systems life-cycles

1. Collaborative product-service engineering for consumer driven manufacturing VNs
2. Manufacturing processes and approaches near to customers or consumers
3. Transparency, trust and data integrity along product and manufacturing LC
4. Secure communication & IP management for factories in dynamic value networks

1. Digital platforms and engineering tools for creativity and productivity of manufacturing
2. Improving human device interaction using augmented and virtual reality and digital twins.
3. Human & technology complementarity and excellence in manufacturing
4. Manufacturing Innovation and change management
5. Technology validation and migration paths towards industrial deployment of advanced manufacturing technologies by SMEs

Process for Planet (P4Planet) partnership

Process4Planet



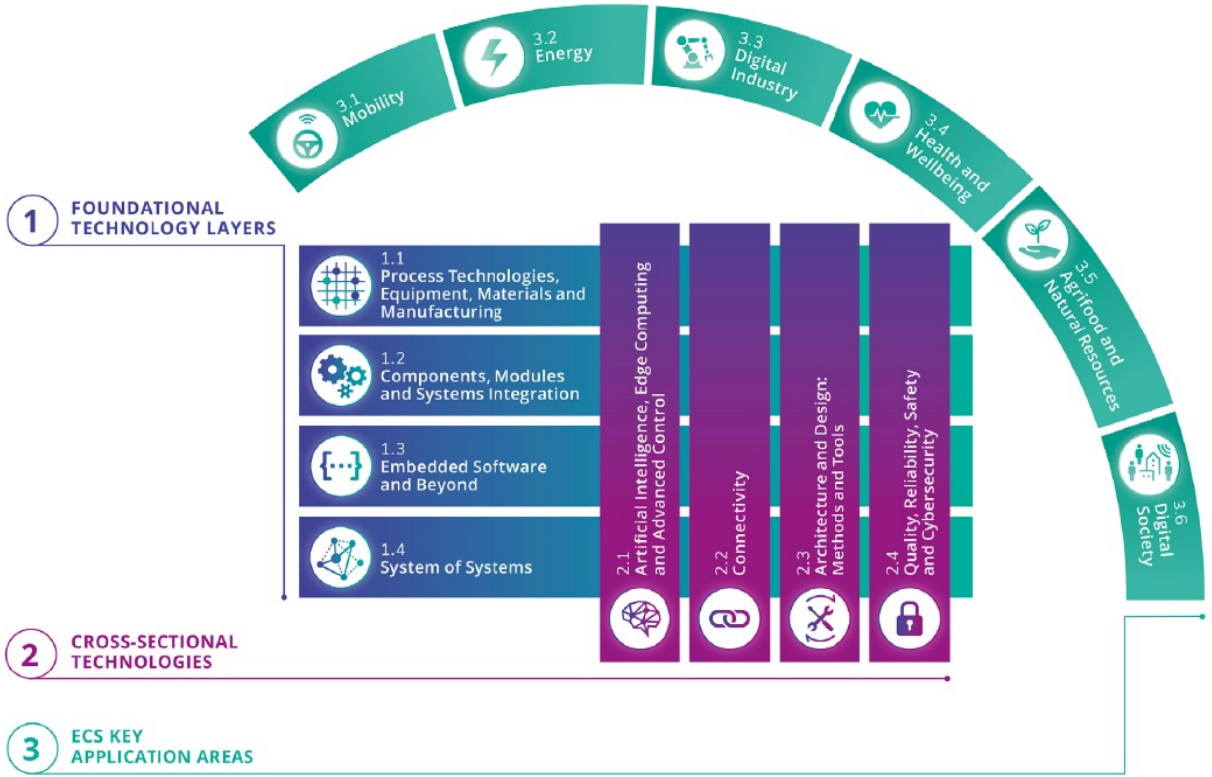
AI, Data and Robotics Partnership

The AI Data Robotics Association

A joint initiative by

BDV BIG DATA VALUE ASSOCIATION · CLAIRE · ellis European Laboratory for Learning and Intelligent Systems · EurAI · eu ROBOTICS

Key Digital Technolofgies (->Chips Act)



https://www.kdt-ju.europa.eu/sites/default/files/2021-12/2021_ECS-SRIA-final_1501.pdf

Summary

- **Partnerships for industry in Horizon Europe, e.g.**
  - Made In Europe
  - P4Planet
  - AI, Data and Robotics
  - Key Digital Technologies
- **Partnerships to**
  - influence,
  - network and collaborate,
  - build winning consortia

Work program with latest call texts: Horisontti2020@businessfinland.fi

More information: ec.europa.eu/info/horizon-europe_en

beyond
the obvious

Riikka.virkkunen@vtt.fi
+358 505202381

@VTTFinland
@VirkkunenRiikka

www.vtt.fi