

**BUSINESS
FINLAND**

Eureka Programmes – Funding for Cross-Border R&D Newsflash Autumn 2020

EU Update Webinar

Sustainable Manufacturing Finland Programme

27.10.2020

Heikki Uusi-Honko

Head, International Networks

Business Finland

Tom Warras

Eureka National Project Coordinator

Business Finland

**BUSINESS
FINLAND**

**European call for innovative
smart manufacturing projects
within
the SMART EUREKA CLUSTER**

EUREKA Clusters



Telecommunications
PO
17.10.2020



Smart electronic
systems
PO
26.2.2021



Low carbon energy
technologies



Software intensive
systems and services
PO
10.11.2020



New Cluster on
Metallurgy



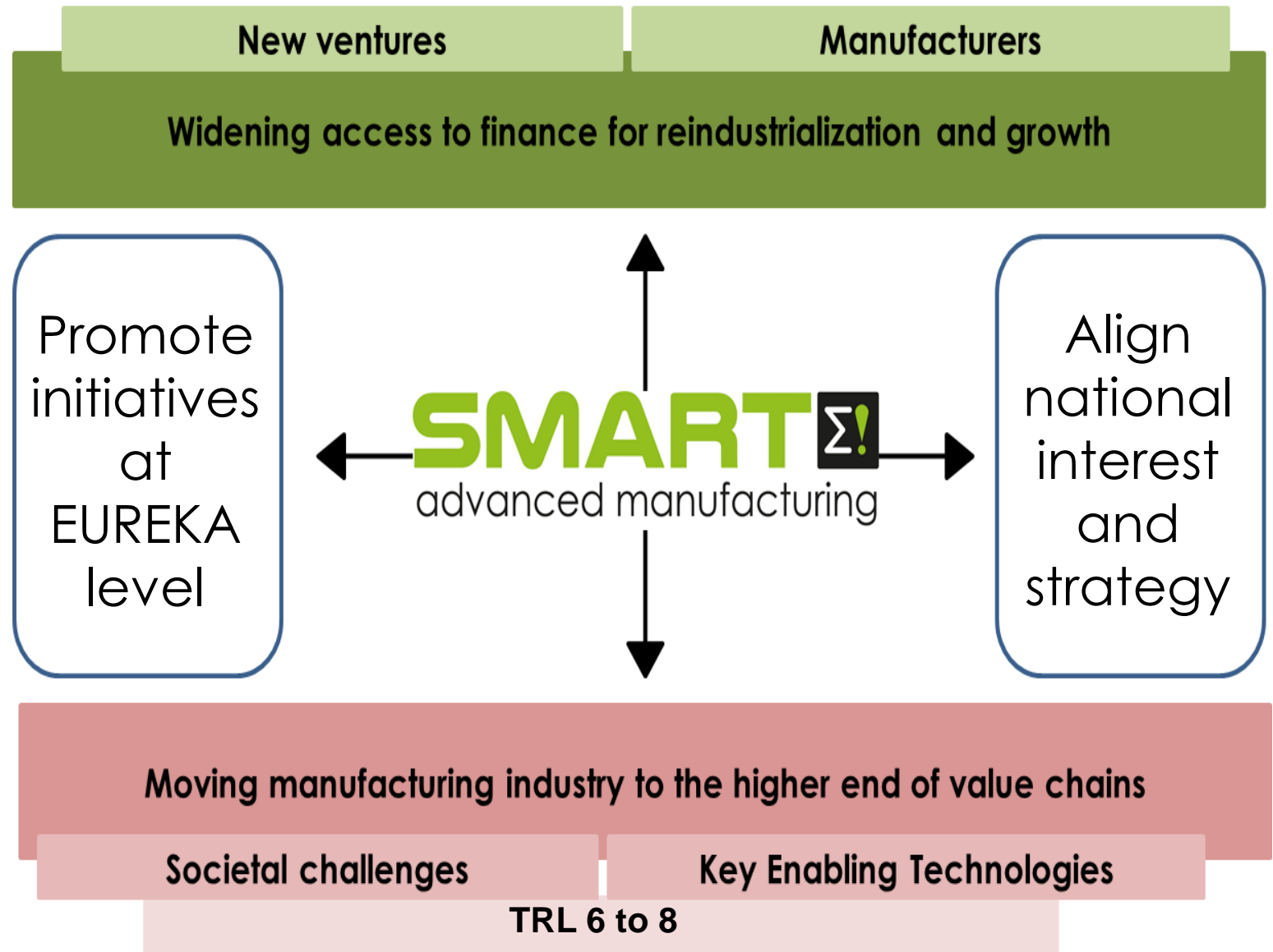
Micro and Nano
electronic technologies
and applications
PO
26.2.2021



PO 14.12.2020

MISSION

SMART mission is **to boost the competitiveness, growth and attractiveness** of the **discrete manufacturing industries** through the promotion of R&D&I in an open community of large industries, SMEs, RTOs, academia and user organizations.



SMART BOARD MEMBERS

10 Core Group Members form the Board of the SMART EUREKA CLUSTER International Association

VICE-CHAIR

AIRBUS



CHAIR



Irish
Manufacturing
Research

SECRETARY

Royo[®]












**RI
SE**

SUPPORTING & INTERESTED COUNTRIES

Supporting Countries

 Austria	 Belgium (Flanders Region)	 Chile	 Czech Republic
 Denmark	 Lithuania	 Norway	 Portugal
 Slovakia	 South Korea	 Spain	 Sweden
 United Kingdom	 Turkey	 Germany	 Finland

Interested Countries

 Belgium (Brussels region)	 Canada	 United States
 Hungary	 Ireland	 Israel
 Russia	 Slovenia	 Switzerland

TECHNICAL DOMAINS



Advanced Manufacturing Processes



Intelligent and Adaptive Manufacturing Systems



Digital, Virtual and Efficient Companies



Person-Machine Collaboration



Sustainable Manufacturing



Customer-based Manufacturing

TECHNICAL DOMAINS

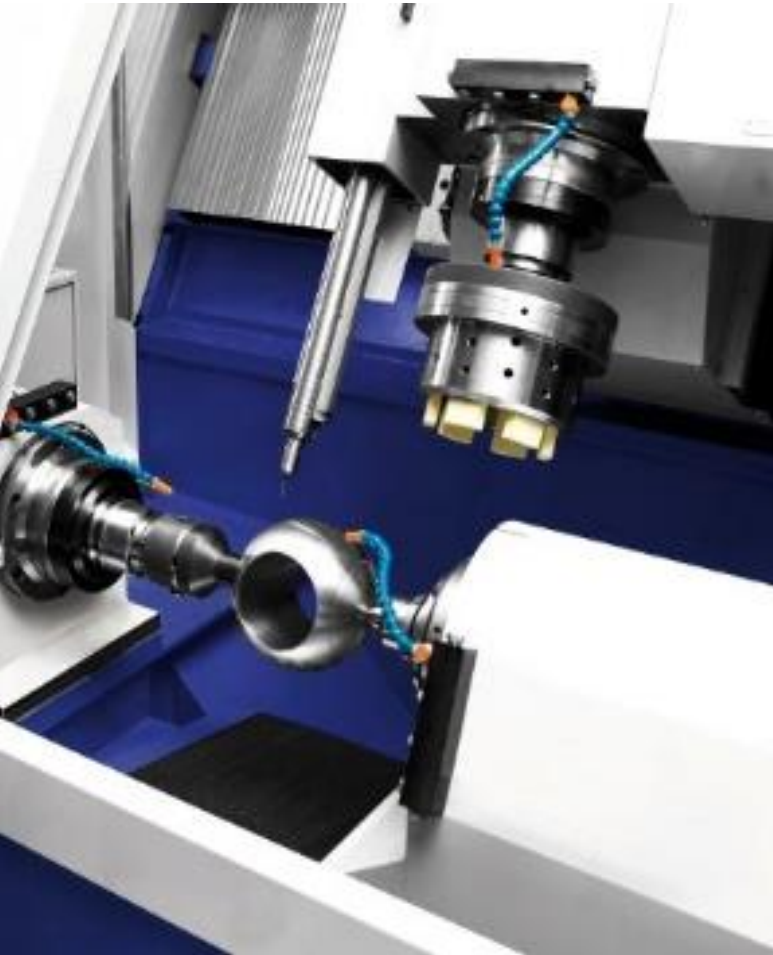
Advanced Manufacturing Processes

- **Production processes for new composites**, ceramic and thermoplastic materials.
- Development of low cost **composite materials** and processes for **high volume production**, including out of autoclave.
- **Integration of Manufacturing Processes**: machining, laser, chemical, ultrasonic, additive,...
- **Resource (material and energy) efficient** metal removal processes for advanced metallic alloys.
- Generation of **new part functionalities through surface** manufacturing processes.
- Advanced **additive manufacturing technologies** for optimum light designs and manufacturing aids.
- **Advanced modelling and simulation** tools for manufacturing process design and optimization.
- Advanced **union of hybrid materials**.



TECHNICAL DOMAINS

Intelligent and Adaptive Manufacturing Systems



- Advanced **on-line processes monitoring and control** systems.
- Development of **measurement systems, sensors and indicators** algorithms for process diagnosis and optimization.
- Robotic toolbox including **light automation and collaborative robotics**
- **Real-time monitoring and optimization** of machines and equipment.
- **Advanced metrology** and non-contact, vision based parts on-line measurement in manufacturing processes.
- Advanced sensor system, **multi-sensor fusion**.
- Advanced automated **non-destructive inspection operations (NDT)**
- On-line inspection for **zero defects manufacturing**

TECHNICAL DOMAINS

Digital, Virtual and Efficient Companies

- **Simulation techniques** in manufacturing and assembly processes to increase ergonomics, first-time -right and production rates.
- Use of **big data and evolutionary algorithms for process diagnosis**, monitoring & control as well as predictive maintenance.
- Complete **traceability of tools, production progress and products** in real time.
- **Cybersecurity** and secured concepts for communications and cloud computing.
- **Virtual reality and augmented reality** simulators for planning and operation of manufacturing systems.
- Comprehensive modelling and simulation tools. **Cost models linked to design**, productivity, end of life and recycling.



TECHNICAL DOMAINS

Person-Machine Collaboration



- Smart use of **IoT and virtual or augmented reality**.
- **Improved visualisation** and analysis of complex production flows.
- Advanced **operator information systems**, production and process model based systems to support operator decisions
- **Intuitive programming devices**, aimed at multimodal tasks and based on new dialogues between humans, machines and robots
- Friendly and **inclusive work environments** (noises, emissions, vibrations, loads, repetitive tasks, ergonomics).
- Ergonomic **human-robot collaboration**, for Human performance improvement and error minimisation.
- Concepts for **safe automation of operations and of system integration**
- **Augmented and immersive reality** for fast training, secure and efficient operation

TECHNICAL DOMAINS

Sustainable Manufacturing

- **Cleaner processes, with less resource consumption:** materials, energy, lubricants, etc. and reduction of generated waste
- Improving the **cost and weight of parts** using additive manufacturing and other net-shape manufacturing techniques
- **Design aimed at manufacturing, assembly, disassembly remanufacturing, reuse and recycling.**
- Processes with **zero emissions and waste.** Towards zero defects.
- **Industrial symbiosis:** using, recovering and redirecting resources for reuse.
- **Reduction of the carbon footprint of production processes.**
- **Recyclability** of new materials.



TECHNICAL DOMAINS

Customer-based Manufacturing



- Simulation, concurrent engineering methods and prototyping technologies for **shortening development and certification cycles**.
- **Rapid prototyping** techniques.
- **Customization** of products and processes.
- Towards **manufacturing as a service** and additional services for manufacturing operation support.
- Modular systems, reconfigurable machines and processes for **efficient adaptation to customer demands**.



SMART 
advanced manufacturing

CALL FOR PROJECTS

**Consortium comprised of
at least 2 industrial
companies from 2 different
EUREKA participating
countries**

**Innovative and market
oriented**

Eligibility criteria

Civil purpose

**Budget must be balanced
among partners**



2 Stage procedure

SMART Call will follow a 2-stage procedure, each of them having the following characteristics:

- **Project Outline (PO):** the intention of this short document (approx. 15 pages) is to provide an overview of the project, its main objectives, partnership and impact. Those POs positively evaluated are invited to the second stage.
- **Full Project Proposal (FPP):** describes the project implementation plan in detail, the advance beyond the state of the art and the exploitation and financial plan.

Typical SMART Projects



4 - 6 M€



6 - 8 participants



2 - 4 countries



24 - 36 months

*Mean figures from previous SMART calls.
There are no limits on size, duration or budget.*

Fourth Call

Calendar - Fourth Call (Opening: 16 SEP 2020)



2020
14 DEC
Deadline for PO

2021
25 JAN
Announcement of
successful POs

2021
24 MAR
Deadline for FPP

2021
17 MAY
Selected projects
receive SMART label

SMART Cluster offers

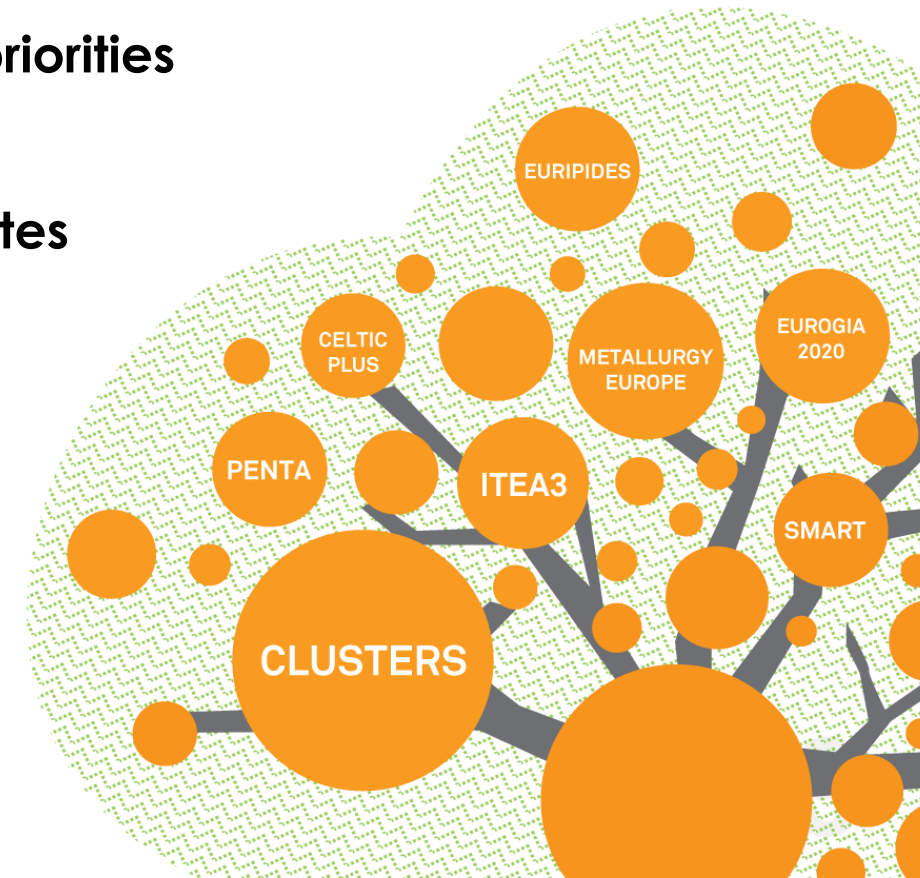
Opportunities for funding **trans-national** R&D&I consortia
In a **fast and efficient** way within a global network

Projects **initiated by industry in line with national/regional priorities**
Agile and flexible project support

A **community** of the **best companies and knowledge institutes**
Aiming at economic impact via research and innovation

Options to integrate along the **whole value chain**
involving **end-users, labs, startups, SMEs and large companies**

Support of **experts with an industrial viewpoint**
To ensure project **relevance** and **quality**



Contact people for Finland:

Kari Koskela

Senior Advisor, Sustainable Manufacturing Finland

Tel. +358 40 587 8587

kari.koskela (at) businessfinland.fi

Jarmo Raittila

Senior Advisor, Sustainable Manufacturing Finland

Tel. +358 50 323 2442

jarmo.raittila (at) businessfinland.fi

Tom Warras

National EUREKA Project Coordinator

Tel. +358 50 5577 839

tom.warras (at) businessfinland.fi