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SMART
3RD CALL PO PROPOSERS' DAY

LEUVEN (BELGIUM)

3rd October 2019

EUREKA
innovation across borders

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WHAT IS SMART CLUSTER?

Transnational and **industry-driven R&D&I programme** in the domain of advanced manufacturing technologies.

SMART is a EUREKA Cluster programme, enabling a **global ecosystem** of large industry, SMEs, start-ups, academia and research organisations.

SMART promotes **bottom-up projects**.

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MISSION

SMART mission is to boost the **competitiveness, growth and attractiveness of the European discrete manufacturing industries** through the promotion of R&D&I in an **open ecosystem of industrial organisations**: large industries, SMEs, associations; **RTOs and academia**.

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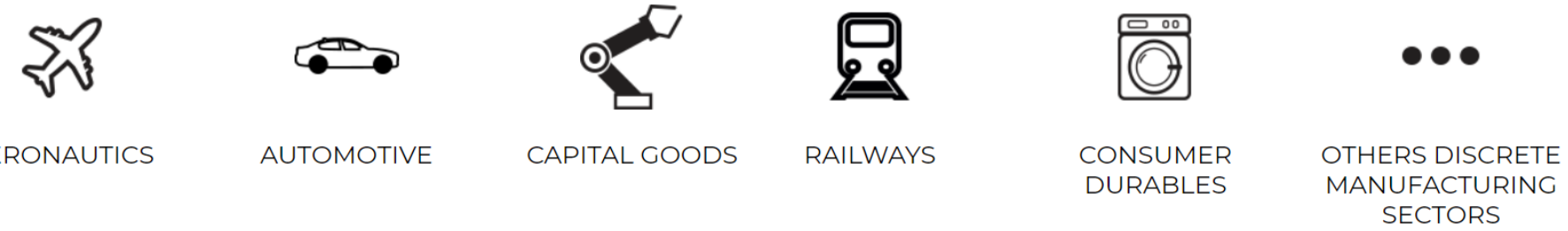
VISION

SMART vision is to become the **preferred programme for international close-to-market R&D&I advanced manufacturing projects** in the following sectors:



SMART will be permanently adapting to **rapidly changing market needs, national priorities and dynamic strategic movements** that European manufacturing companies must address to remain competitive and stay at the cutting edge of technological development.

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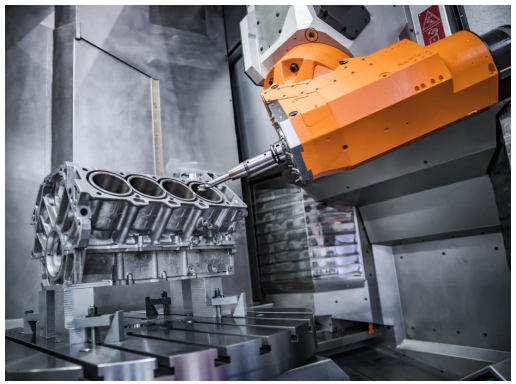
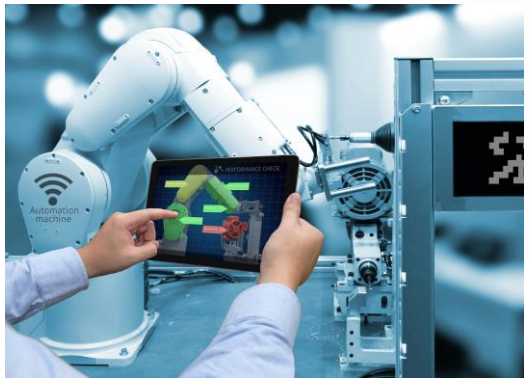
TECHNICAL DOMAINS



Advanced Manufacturing Processes

Intelligent and Adaptative Manufacturing Systems



Digital, Virtual and Efficient Companies

Person-Machine Collaboration

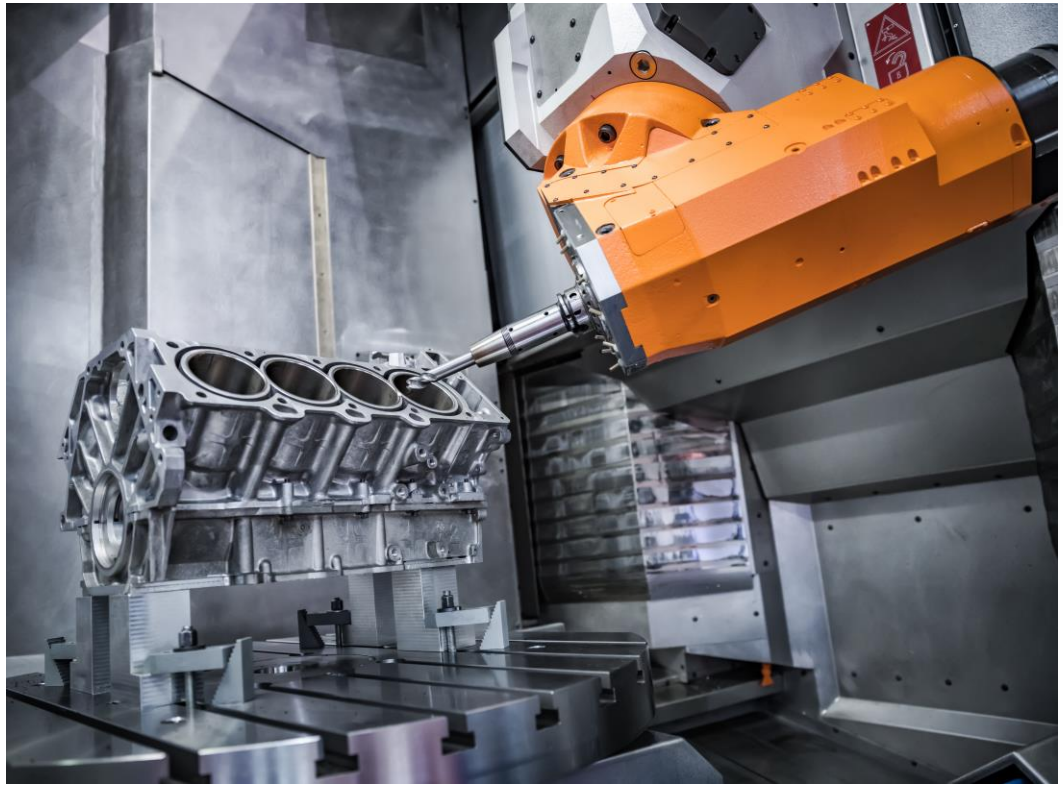
Sustainable Manufacturing

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**.



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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**

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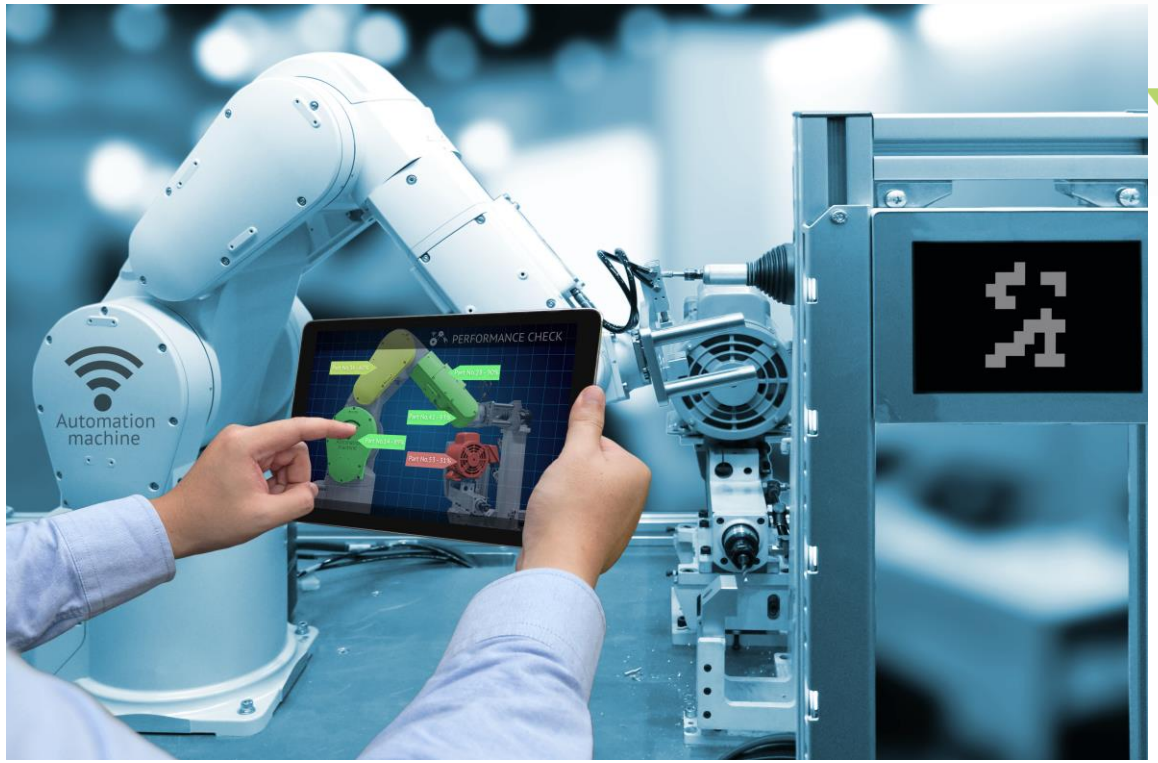
Technical Domains

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.



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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

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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.

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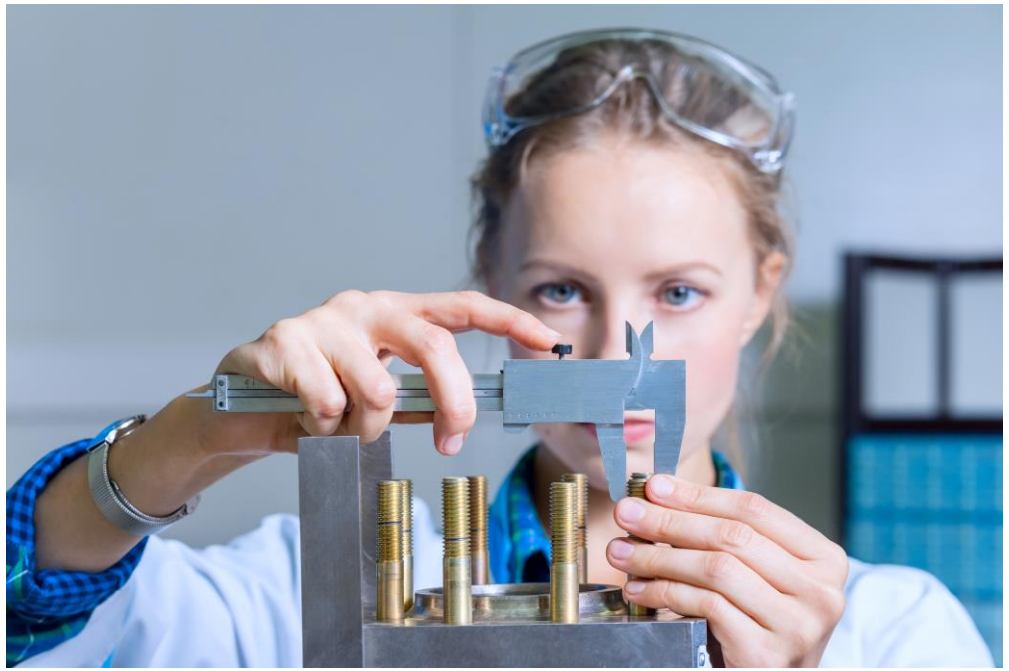
Technical Domains

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**.



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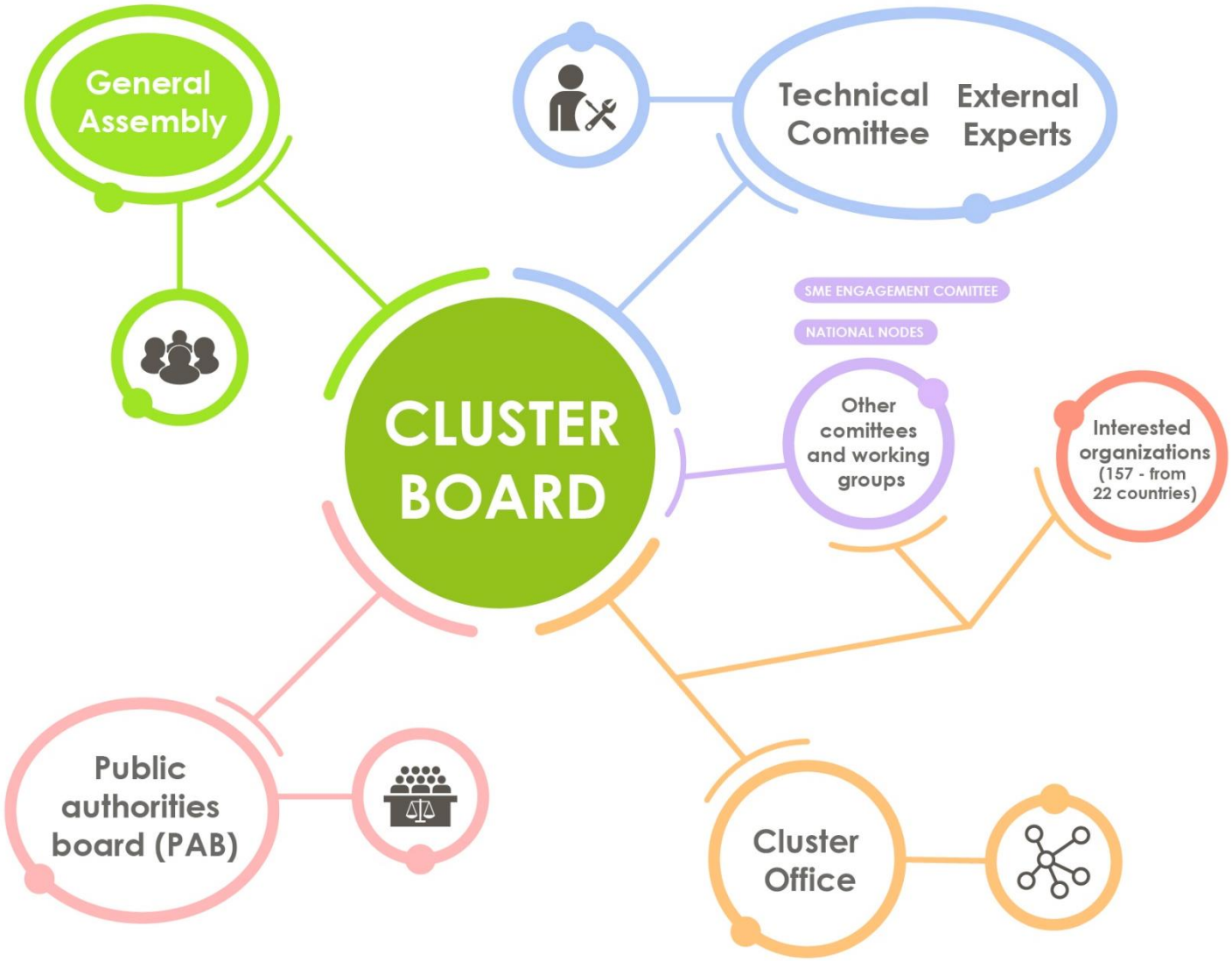
ORGANISING STRUCTURE



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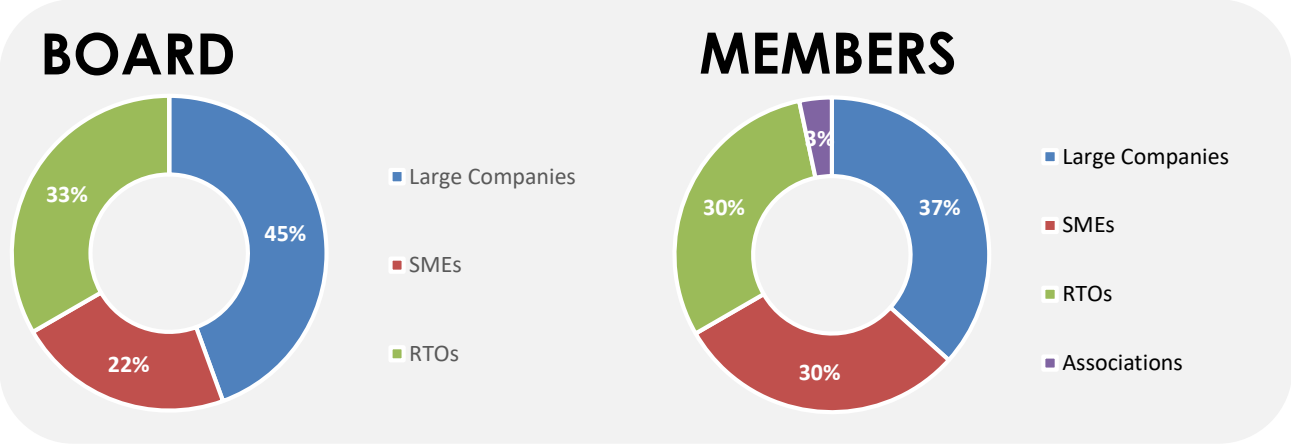
SMART MEMBERS



	Board	Members
Large Companies	4	11
SMEs	2	9
RTOs	3	9
Asspociations		1
	9	30

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SUPPORTING & INTERESTED COUNTRIES

Supporting Countries

Austria

Belgium
(Flanders Region)

Chile

Czech Republic

Denmark

Finland*

Lithuania

Norway

Portugal

Slovakia

South Korea

Spain

Sweden

United Kingdom

Turkey

*In process

Interested Countries

Belgium
(Brussels region)

Canada

Germany

Hungary

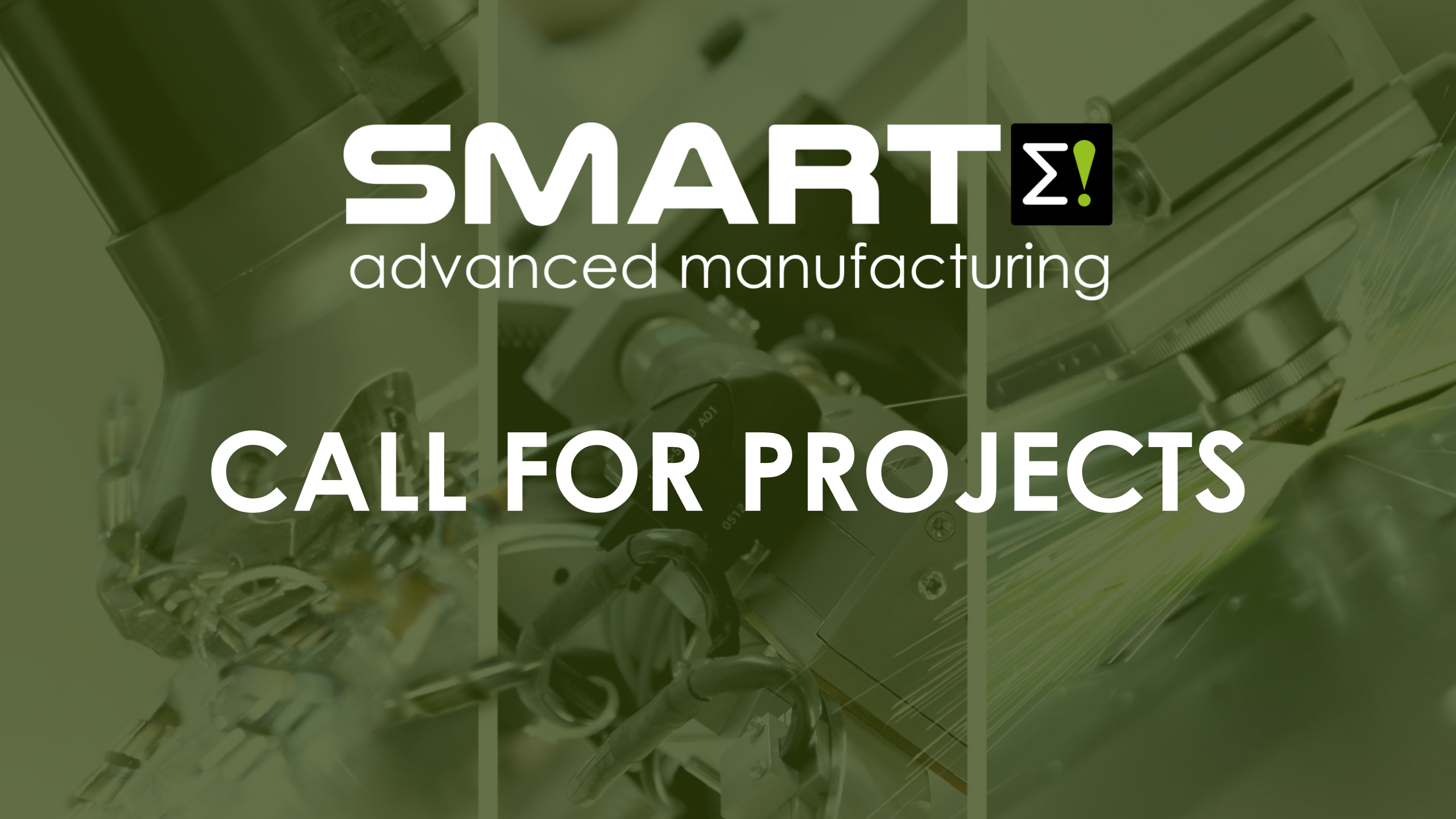
Ireland

Israel

Russia

Slovenia

Switzerland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CALL FOR PROJECTS

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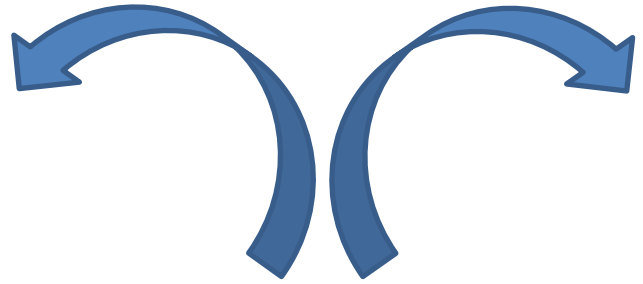
Eligibility criteria

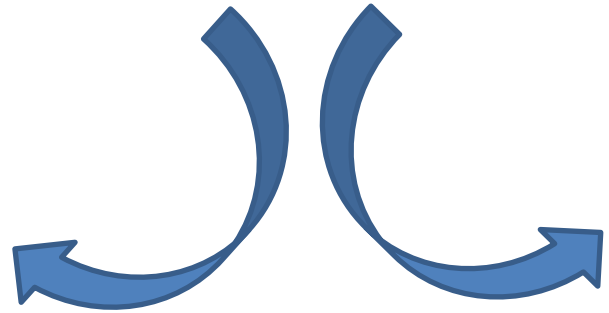
Consortium comprised of at least 2 industrial companies from 2 different EUREKA participating countries

Innovative and market oriented



Civil purpose

Budget must be balanced among partners



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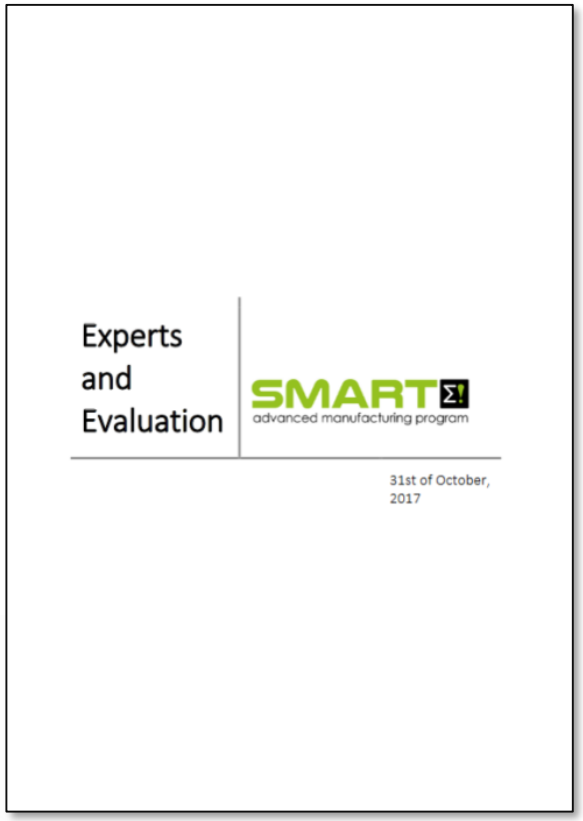
2 Stage procedure

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.

Evaluation



- **Relevance to SMART Program**
- **Quality and efficiency of the implementation – Project planning and consortium quality**
  - Quality of the consortium
  - Added value through co-operation
  - Realistic and clearly defined project management and planning
  - Reasonable cost structure
- **Impact - Market and Commercialization**
  - Market application and impact
  - Market access and risk
  - Competitive advantage
  - Clear and realistic commercialization plan
- **Excellence - Innovation and R&D**
  - Degree of innovation
  - New applied knowledge
  - Level of Technical challenge
  - Technical achievability and risk
- **Contact with NFAs**
  - Contact with National Funding Authorities

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Typical SMART Projects

4 - 6 M€

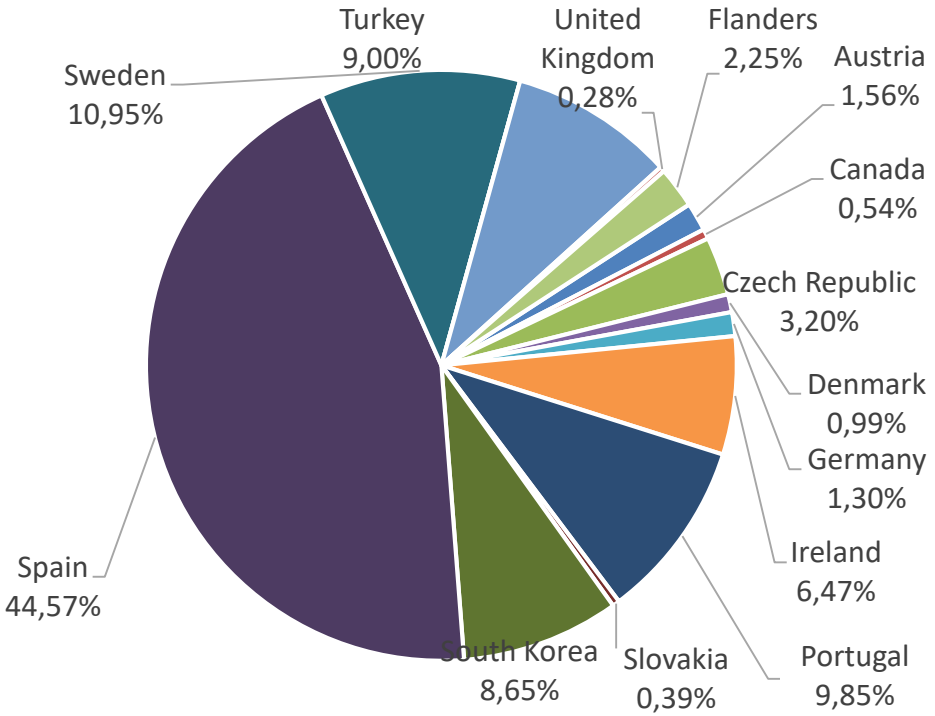
6 - 8 participants

2 - 4 countries

24 - 36 months

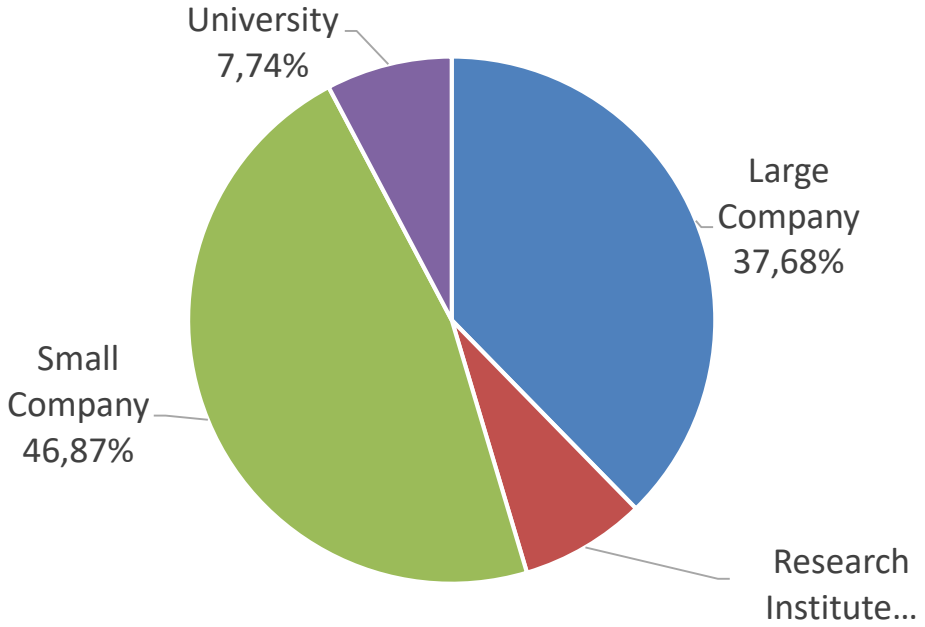
Mean figures from previous SMART calls.
There are no limits on size, duration or budget.

SMART FIGURES



Budget by countries

- **Number of Labelled Projects: 27**
- Total Cost: 54 M€
- **79% success rate**
- Number of Participating Organizations: 147



Budget by legal entity

Participating Countries: 15

- Supporting Countries: 11
- Interested Countries: 3
- Other Countries: 1

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Third Call

Calendar - Third Call (Opening: 09 SEP 2019)

2019
11 NOV
Deadline for PO

2019
16 DEC
Announcement of successful POs

2020
23 MAR
Deadline for FPP

2020
18 MAY
Selected projects receive SMART label

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SMART Cluster offers

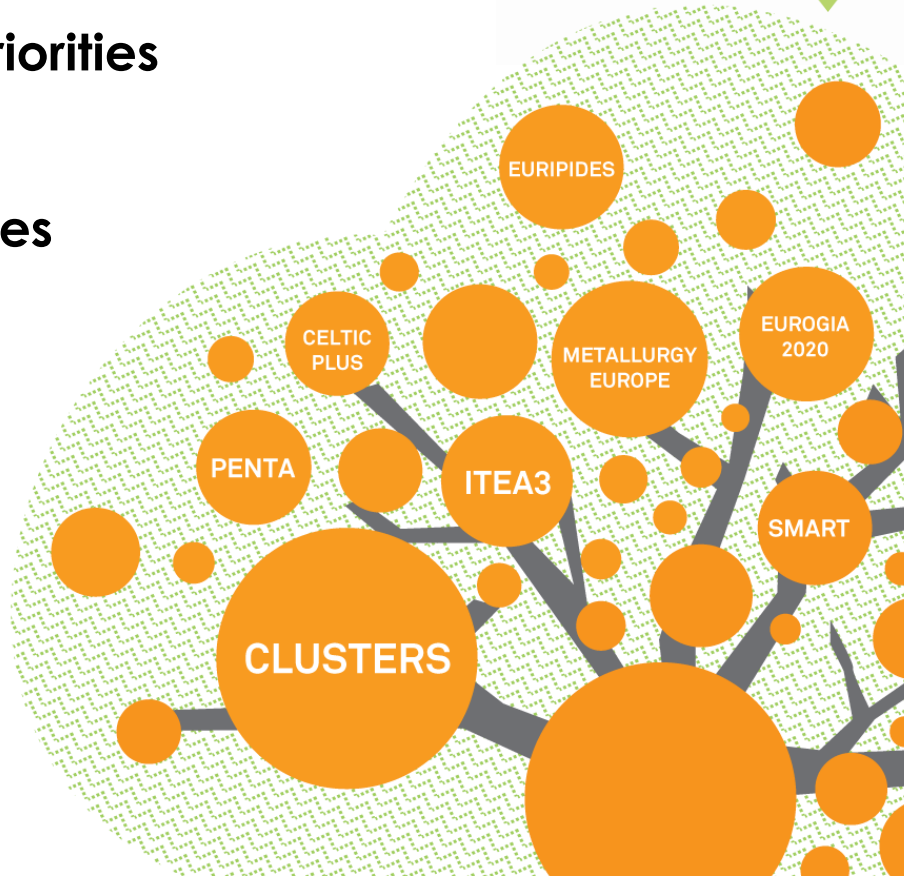
Opportunities for funding **trans-national** R&D&I consortia
In a **fast and efficient** way within a global network

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**



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THANKS FOR YOUR ATTENTION

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