EUREKA CLUSTERS

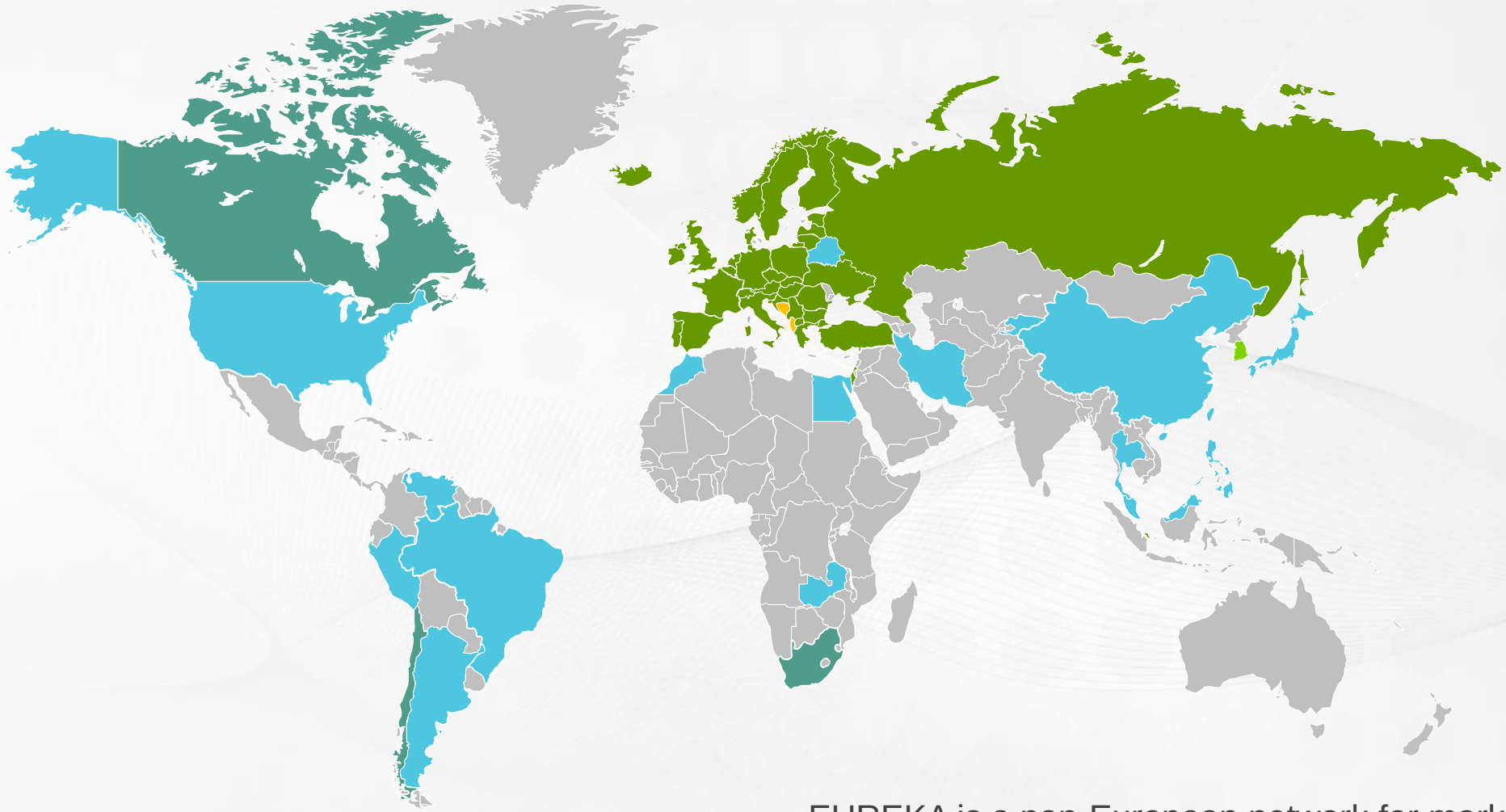
Driving industry-led innovation and collaboration

EUREKA

innovation across borders

EUREKA
innovation across borders

The EUREKA network



- Full members 41 full members
  (40 countries + European Commission)
- National information points
  (Albania, Bosnia and Herzegovina)
- Partner countries
  (South Korea)
- Associated countries
  (Canada, Chile, South Africa)
- International cooperation

EUREKA is a pan-European network for market-oriented, industrial R&D&I
EUREKA Clusters are active in 38 countries

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European innovation landscape

National

Develop & Maintain **Critical Mass** & **Differentiation**

EUREKA

Trans-National Programmes following **National Priorities**

European

Innovation Programmes following **European Strategy**

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innovation across borders

EUREKA instruments

Network projects

Cluster projects

Eurostars projects

Globalstars projects

> 45 countries

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Clusters

Micro and nano electronics
(Last Call in 2015 but projects will continue until 2019)

ICT and telecommunications

Smart electronic systems

Low carbon energy technologies

Software innovation

Advanced materials and manufacturing

Micro & nanoelectronics enabled systems and applications

Advanced manufacturing

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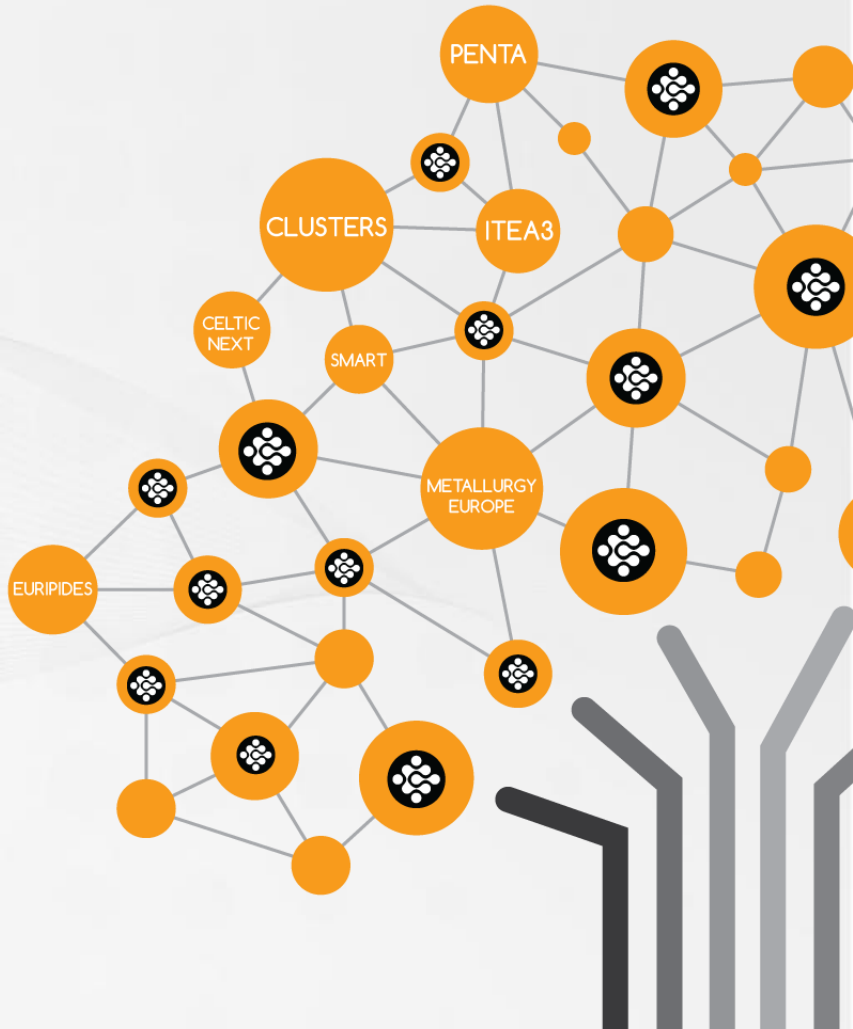
Cluster projects are...

- Industry-driven supported by Public Authorities
- Open to global cooperation
- Covering the full value chain to create innovative solutions
- Bottom-up
- Helping SMEs to scale up in consortia with large industry
- Market-oriented



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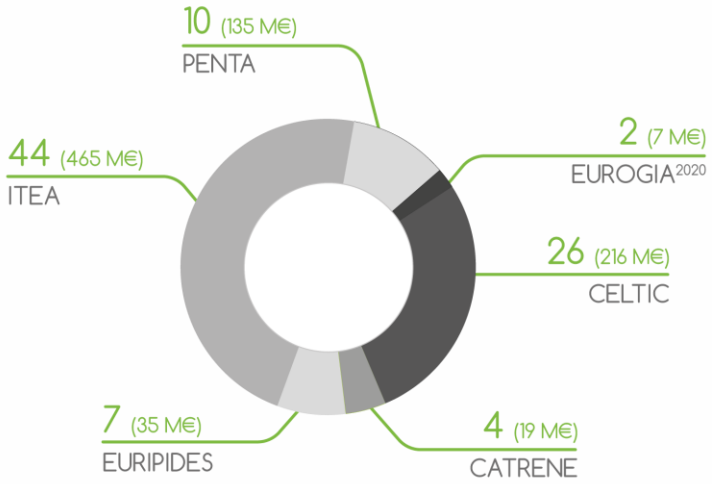
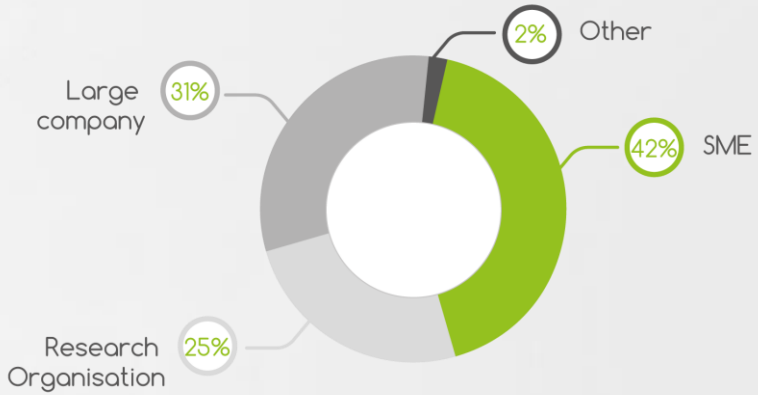
Cluster figures

Running projects (2018)



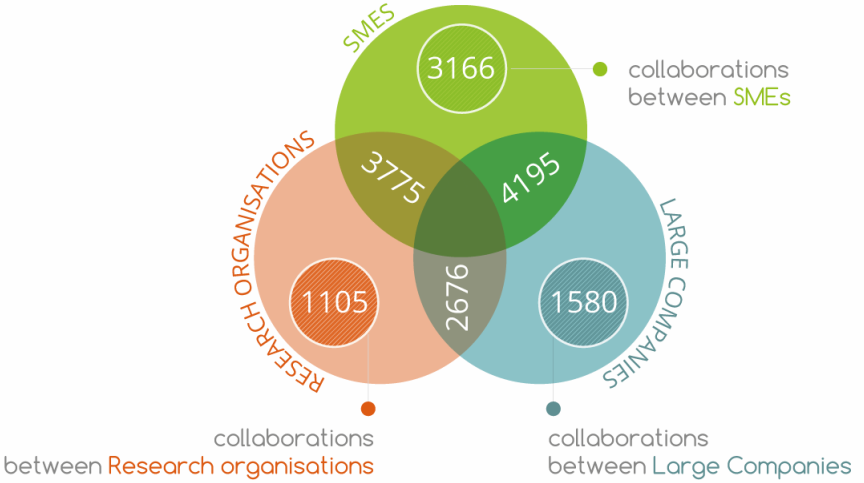
Participants in running projects (2018)



In 2018:

- 93 running projects
  with a total project cost of 876 M Euro
- 33 funded projects
  with a total project cost of 367 M Euro

Collaboration in running projects (2018)



Running projects *refers to projects ongoing at year-end (December, 31st).*

Funded projects *refers to projects where a funding decision was made during the year.*

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Cluster board members

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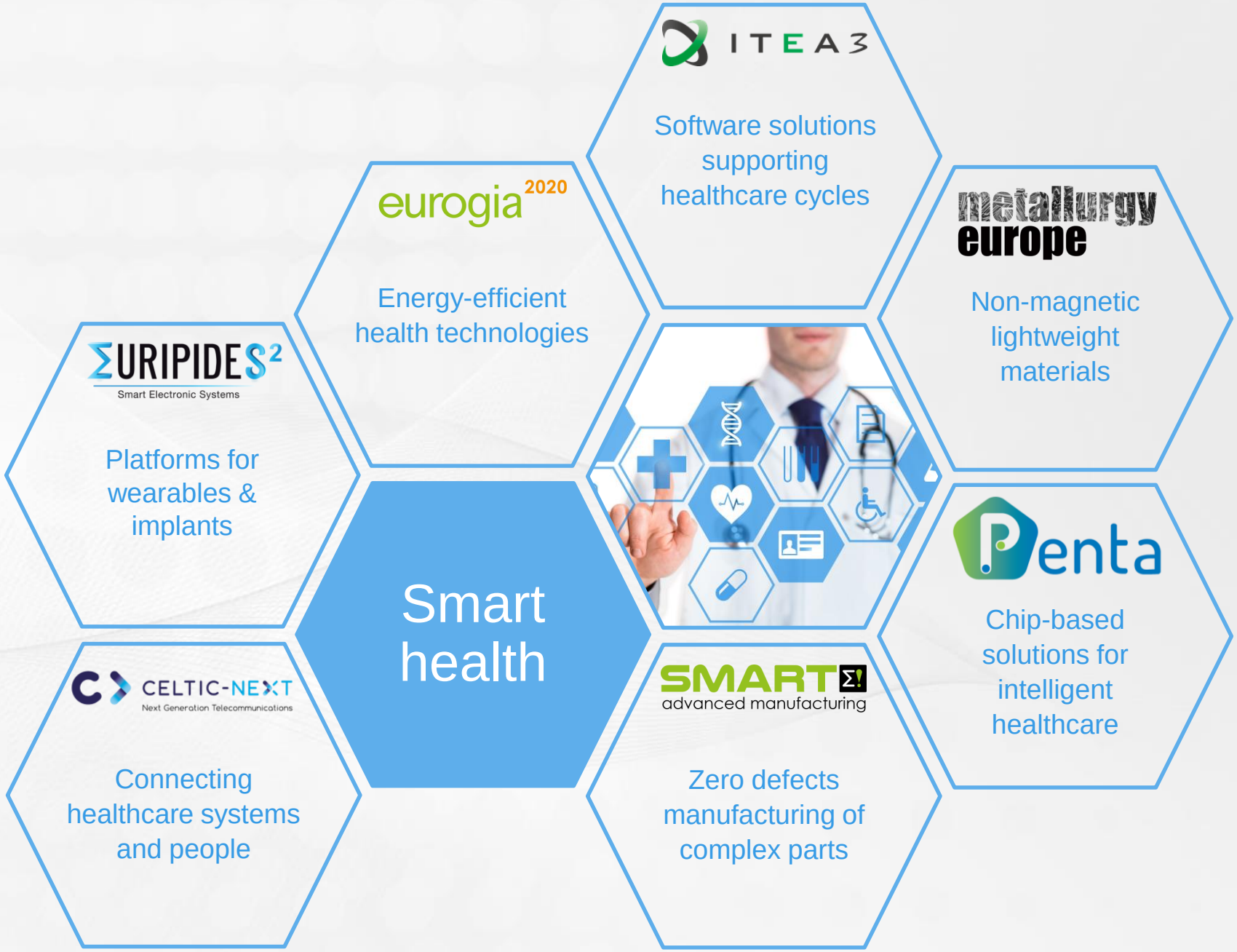
Challenge
Smart health



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Example
Medical center

eurogia2020

Smart energy use between idle & active modes

ITEA 3

Networked & digital operating room

metallurgy europe

Smart materials in the operating room

EURIPIDES²
Smart Electronic Systems

Cost efficient medical imaging solutions

Penta

MRI for patients with implants

CELTIC-NEXT
Next Generation Telecommunications

Remote diagnosis by enhanced imaging

SMART
advanced manufacturing

3D printing of customised prothesis

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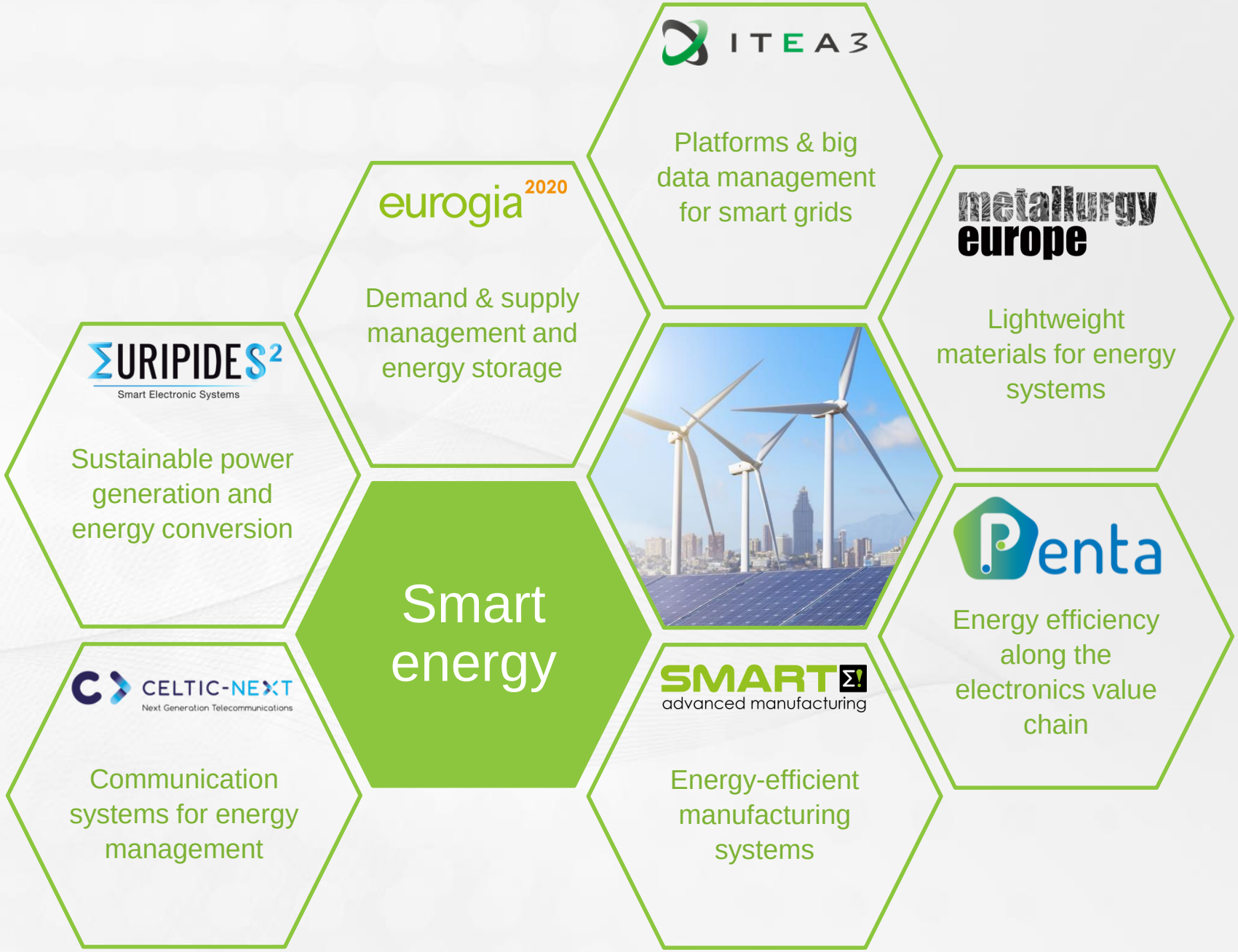
Challenge
Smart energy



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Example Distribution network

eurogia2020
Smart grids enabling demand management

ITEA 3
End-to-end monitor & control platform

metallurgy europe
New highly conductive materials

EURIPIDES²
Smart Electronic Systems
Integration of controls & communication

Penta
Low cost energy harvesting

CELTIC-NEXT
Next Generation Telecommunications
Power savings due to networking

SMART
advanced manufacturing
Mass production of energy storage systems

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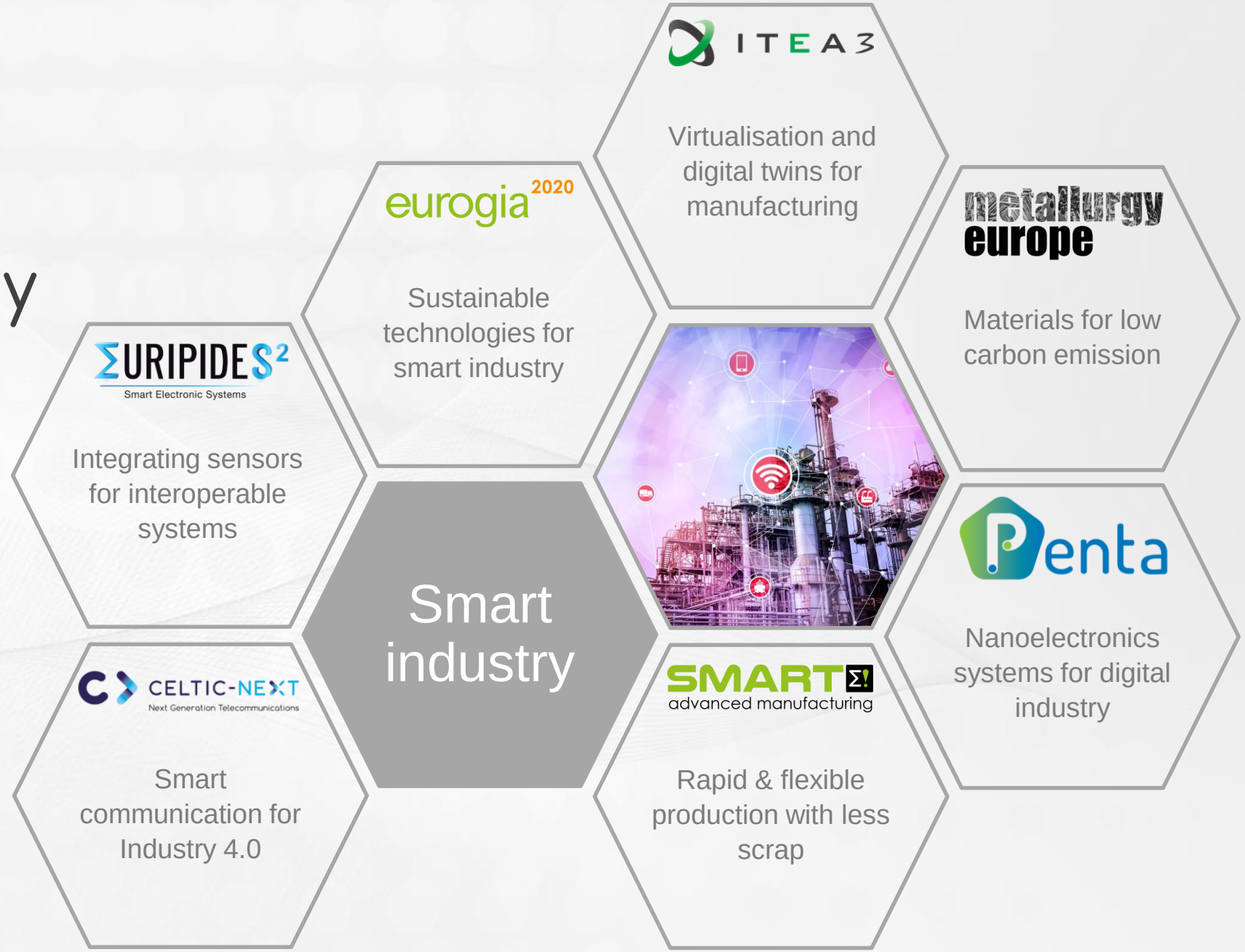
Challenge
Smart industry



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Example
Production line

eurogia2020

Energy-efficient production lines

ITEA 3

Framework for physics-based 3D simulation

metallurgy europe

Low friction and low wear materials

EURIPIDES²
Smart Electronic Systems

IoT chips for connectivity in manufacturing

Penta

Intelligent drive units for manufacturing

CELTIC-NEXT
Next Generation Telecommunications

Connectivity solutions to control product lifecycles

SMART
advanced manufacturing

Smart processes for collaborative manufacturing

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Challenge
Smart mobility

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Example Car

eurogia2020

Smart & stable charging services

ITEA 3

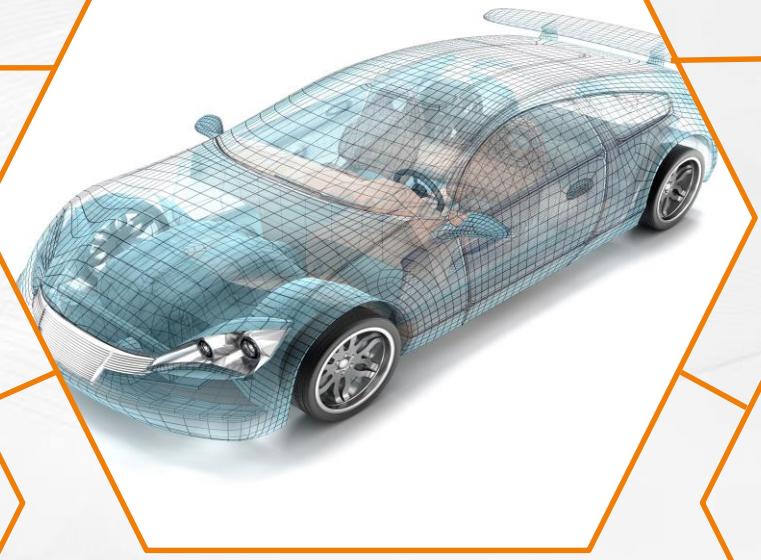
Standards for safe automotive applications

metallurgy europe

Nanomaterials in car coatings

EURIPIDES²
Smart Electronic Systems

Highly integrated ADAS sensors



Penta

Secure testing for safety critical systems

CELTIC-NEXT
Next Generation Telecommunications

Low latency communication for autonomous driving

SMART
advanced manufacturing

Mass production of lightweight parts

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EUREKA Clusters offer

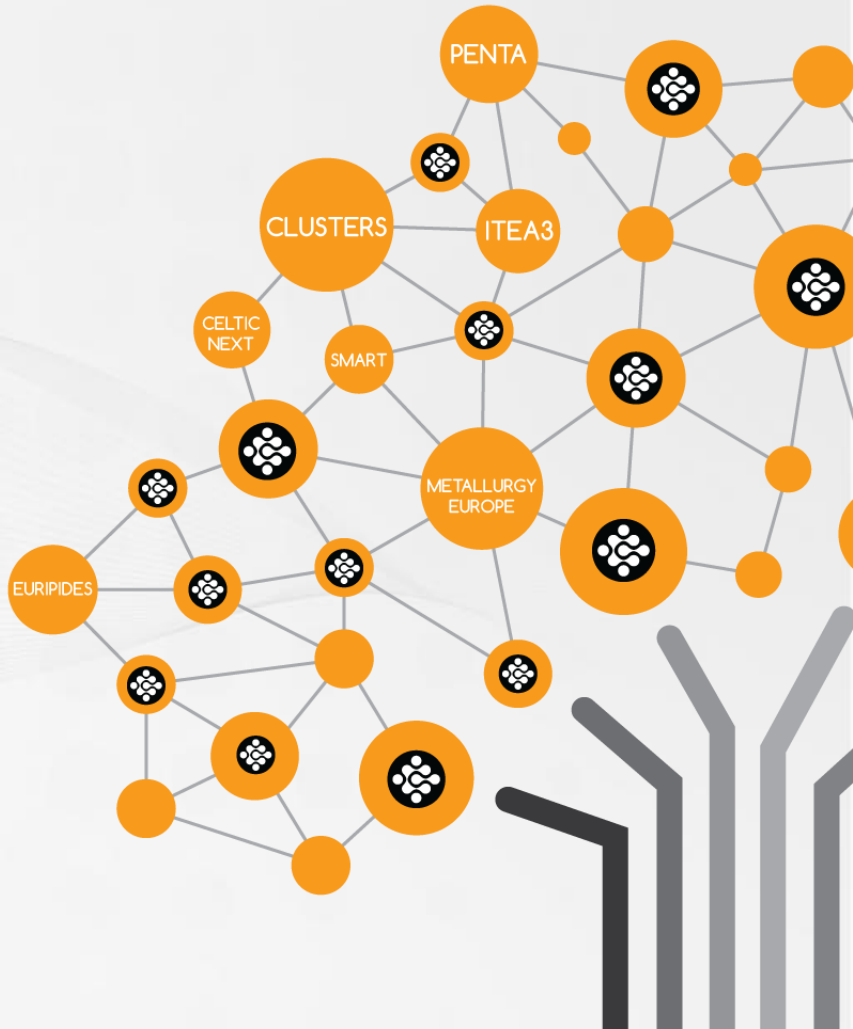
Opportunities for funding **trans-national** R&D&I consortia
- In a **fast and efficient** way within a global network

Projects **initiated by industry in line with national 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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Clusters create impact

Societal impact

Through employment, education and addressing societal challenges

Economic impact

Through creating new products, new processes, new materials and new services in Global markets

Innovation impact

Through new IP, standards and pushing the State-of-the-Art

Ecosystem impact

Through the development of new partnerships, supply chains and opportunities for growth

Increase speed and **decrease risk**

On innovation and new products

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CLUSTERS

Basic info

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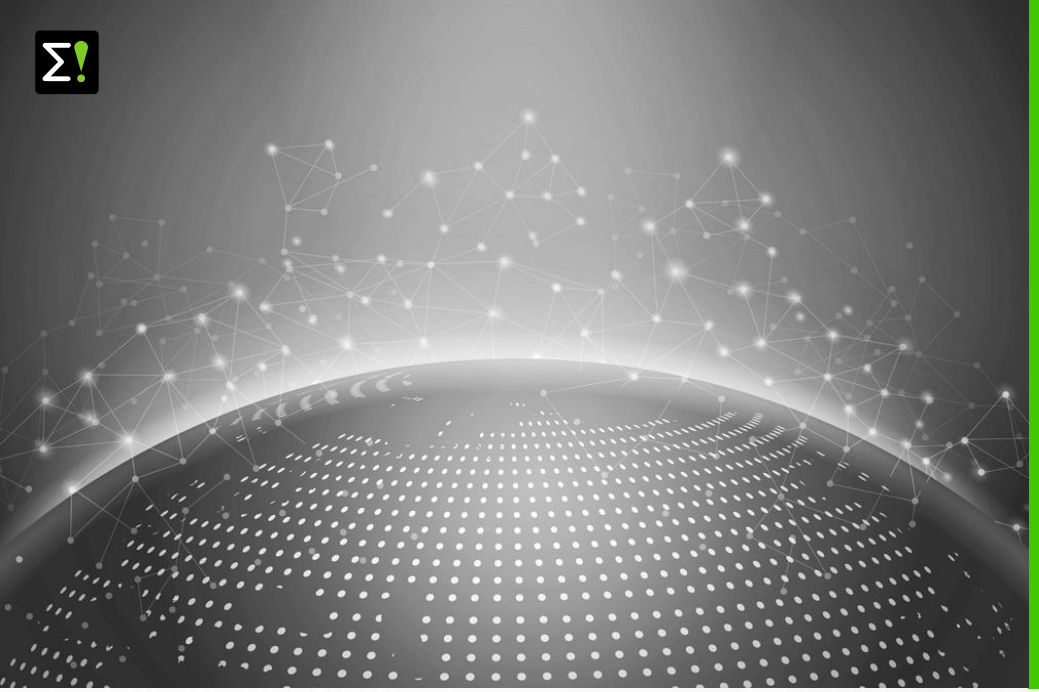

Focus area

CELTIC-NEXT focuses on telecommunication and ICT connecting people and businesses in a secure and reliable way. Key topics include network capacity, photonics, satellite, mobility, security, robustness, energy efficiency, 5G and beyond, Smart Cities, Smart Homes, Industry 4.0, Logistics, Automotive Telecom, Blockchain, Fintech, E-Health, Big Data, Internet of Things, Privacy, Identity and Public Safety and Security.

CELTIC-NEXT
Next Generation Telecommunications

2019 – 2027

EUREKA Cluster
CELTIC-NEXT

www.celticnext.eu

Purpose

CELTIC strengthens the competitiveness of the European industry by fostering European R&D cooperation in telecommunications and the well-being of the society by stimulating innovative information and telecommunication services.

Scope and Research Areas

Mission and Vision

Total number of projects
223

Total project costs
€ 1651M

The above figures relate to this Cluster and its predecessors

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CELTIC-NEXT
Next Generation Telecommunications

EUREKA Cluster
CELTIC-NEXT

Board members

ATOS Research, British Telecom, Deutsche Telekom, Ericsson, Eurescom, Orange-Labs, Gemalto, INDRA, imec, Italtel, NETAS, Nokia, RAD Data Communications, Siemens Convergence Creators, Telefónica I+D, Telenor, Thales, Turkcell, Türk Telekom

Examples of Cluster projects

SIGMONA: First SDN (Software Defined Network) solutions for 4 and 5G mobile networks

SASER: Secure Communications for Europe

CoMoSeF: Co-operative Mobility Services of the Future

4GBB-Gold-G.fast: by the end of 2020, 10 million premises will be connected

Project Call process

Two Calls per year

One-stage Call process

Call information

Call calendar

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Focus area

Smart electronic systems and smart systems integration; industrialisation and manufacturability of systems in application areas like vehicle of the future, transport & mobility; health & well-being; manufacturing; smart interconnection system; energy; aerospace; IoT; integration of hardware and software; safety & security.

EURIPIDES² Smart Electronic Systems

2013 – 2020

EUREKA Cluster
EURIPIDES²

www.euripides-eureka.eu

Purpose

Improve technological expertise and European sovereignty in electronics components and systems for the implementation of Industry 4.0, the industrial Internet of Things and Mobility of the future in the new Smart World.

Total number of projects

81

Total project costs

€ 471M

The above figures relate to this Cluster and its predecessors

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EURIPIDES²
Smart Electronic Systems

EUREKA Cluster
EURIPIDES²

Board members

ACAMP, RISE-ACREO, AIRBUS Defense and Space, AT&S, BIC Ostrava, C2MI, CEA-LETI, CSEM, EOLANE, EPoSS, ETRI, Fraunhofer IZM, IMEC, INFINEON, KENTKART, MURATA Oy, NOVAPACK, RADIALL, SAFRAN Electrical & Power, SAVRONIK, SOMFY, STMicroelectronics, THALES Airborne Systems, VERMON, VOLVO AB, VTT

Example of Cluster projects

- **ADORAS**: Advanced Onboard Data Recording and Analysis System
- **ADVANTEX**: ADVANced functional blocks & technologies for smart TEXtile products
- **EDDEMA**: Embedded Die Design Environment & Methodology for Automotive Applications
- **SAM3**: Smart Analysis Methods for 3D Integration in Advanced Microsystems and Corresponding Materials (Colabel CATRENE-EURIPIDES²)

Project Call process

Two Calls per year

Two-stage Call process with PO and FPP

Call information

Call calendar

© 2019 EUREKA Association

Focus area

EUROGIA2020 is the EUREKA Cluster for low carbon energy technologies. It supports and promotes innovative energy technology projects with the aim of mitigating climate change.

eurogia2020

2013 – 2020

EUREKA Cluster
EUROGIA2020

www.eurogia.com

Purpose

Reduce the carbon footprint of energy production and use. Develop new technologies for energy such as solar, wind, biomass, geothermal, energy efficiency, etc.

Total number of projects

68

Total project costs

€ 335 M

The above figures relate to this Cluster and its predecessors

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innovation across borders

eurogia2020

EUREKA Cluster
EUROGIA2020

Board members

Acciona Energy, Air Liquide, Bureau Veritas, Cardtek (2017-2018 Chair), DCNS, ENGIE, ENERJISA, GE Oil and Gas, Green Power Labs, Leading Enterprise, MERIC, SAFT

Example of Cluster projects

- **Windfarm vessels**: Offshore installation of wind turbines with attractive costs
- **RENERSTA**: Electricity at isolated places
  CO2FieldLab: Increasing carbon capture and storage safety
- **ILIS**: Innovative energy storage and management system
- **HYWINDESS**: Incorporation of energy storage systems for wind farms

Project Call process

Four project cut-off dates per year

Two-stage Call process with PO and FPP

Call calendar

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Focus area

- Software innovation
- Digital transformation

ITEA 3

2014 – 2021

EUREKA Cluster
ITEA 3

www.itea3.org

Purpose

ITEA stimulates transnational and industry-driven R&D&I in the domain of software innovation. ITEA enables a global and knowledgeable community to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society.

Total number of projects

248

Total project costs

€ 3247 M

The above figures relate to this Cluster and its predecessors

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innovation across borders

ITEA 3

EUREKA Cluster
ITEA 3

Board members

Airbus, ATOS/Bull, Barco, Bosch, Empower, Ericsson, Indra, KoçSistem, Nokia, Philips, Saab, Siemens, Software AG, Thales, Turkcell

Example of Cluster projects

- **SEAS**: Smart Energy Aware Systems
- **AVANTI**: Test methodology for virtual commissioning of production systems
  ADAX: Cyber Attack Detection And Countermeasures Simulation
- **SORTS**: Productivity and effectiveness in cancer treatment

Project Call process

One Call per year

Two-stage Call process with PO and FPP

Call information

Call calendar

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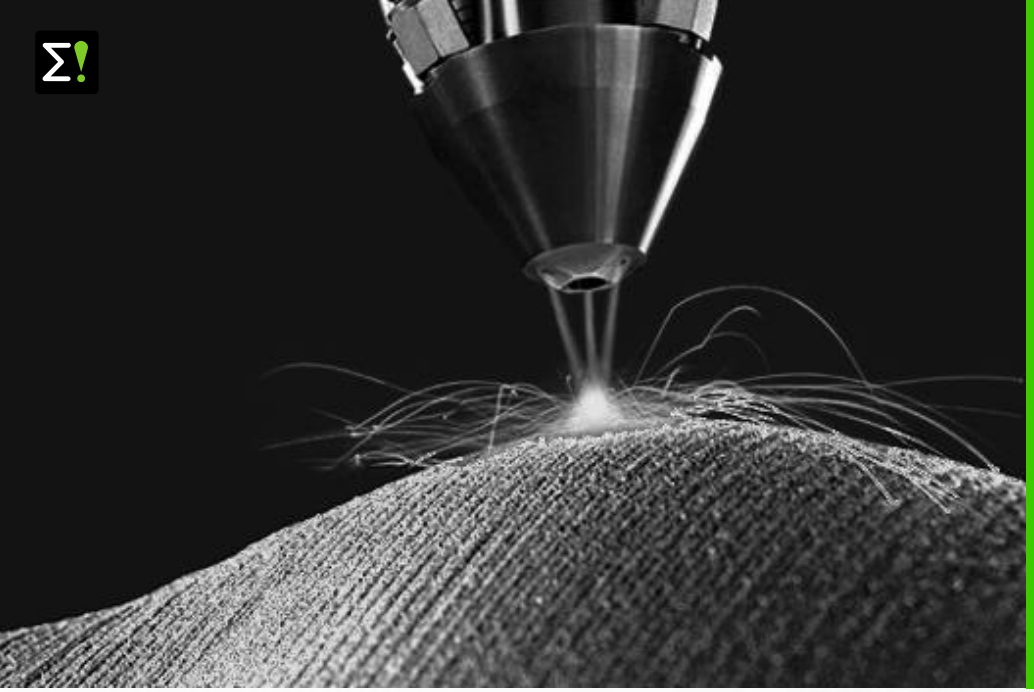

Focus area

New innovative applications with an industrial focus in the area of Advanced Materials and Manufacturing.

metallurgy europe

2014 – 2020

EUREKA Cluster METALLURGY EUROPE

www.metallurgy-europe.eu

Purpose

METALLURGY EUROPE undertakes initiatives to modernise the European Metallic Materials Technologies and industries through the innovation of new materials and technologies to stimulate a new forerunner position in the world economy for the European Metals Industry. METALLURGY EUROPE covers the spectrum from fundamental research, applied research and industrial innovation with focus on new smart-intelligent high quality structural and functional metals and composites.

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metallurgy europe

EUREKA Cluster
METALLURGY EUROPE

Board members

ArcelorMittal, COMTES FHT, Coşkunöz Holding, Culham Centre for Fusion Energy, ESI Group, European Powder Metallurgy Association, Tata Steel

Examples of Cluster projects

17 project proposals in Call 1 worth ca. 200 Mio. Euro in October 2015. Currently two projects:

- **Andromeda**: Additive manufacturing of very large AM metallic structures (1-5 m range)
- **Phoenix**: Multi-component alloys - Focus on metallic high entropy alloys (MHEA) for extreme industrial applications to generate knowledge on manufacturing, microstructure and properties (**Orion**: Search for funding in Germany)

Project Call process

One Call per year

Two-stage Call process with PO and FPP

Call information

Call calendar

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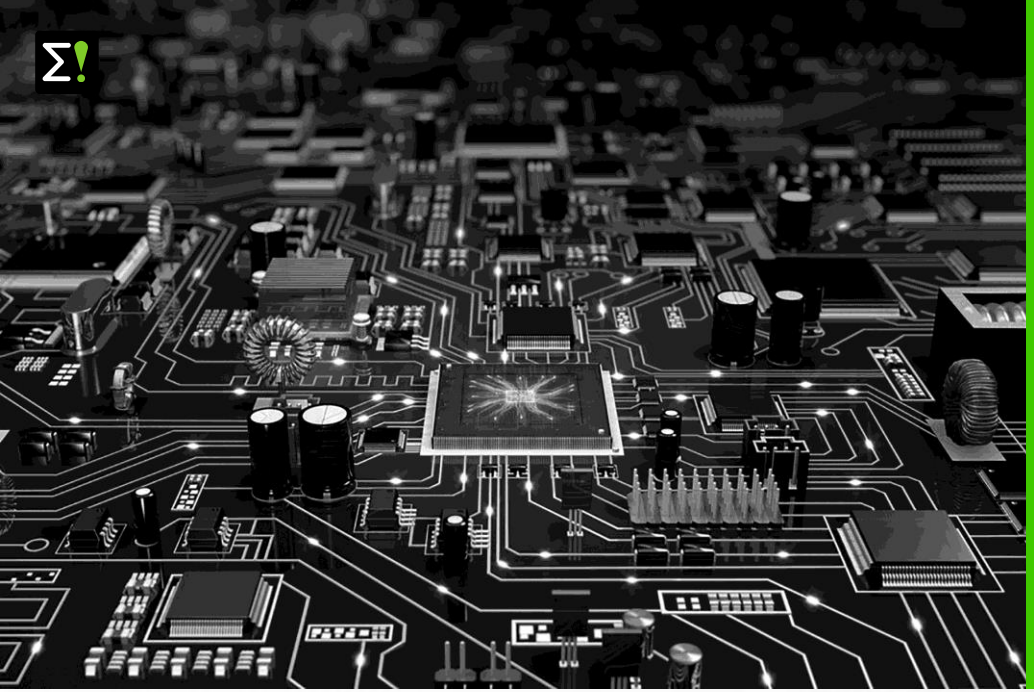

Focus area

Micro and nanoelectronics enabled systems and applications along the Electronic Components & Systems (ECS) value chain.

Penta

2016 – 2021

EUREKA Cluster
PENTA

www.penta-eureka.eu

Purpose

PENTA is designed to encourage, enable and support collaborative RD&I in micro and nanoelectronics enabled systems and applications. In many, but not all, cases projects are integrated along the whole value chain, from core technology to applications.

From 2008 to 2019, CATRENE, the predecessor to PENTA, stimulated 51 projects with a total cost of € 1736 M.

Total number of projects

10

Total project costs

€ 134 M

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Penta

EUREKA Cluster
PENTA

Board members

(AENEAS Supervisory Board)

ASML, Airbus, AlphaSiP, Audi, Bosch, CEA-LETI, Fraunhofer Institute, Gemalto, IBS, IMEC, Infineon, IU.NET, NXP, Philips, RECIF, Soitec, STMicroelectronics, LPE, Thales, Zeiss

Project Call process

One Call per year

Two-stage Call process with PO and FPP

Call information

Call calendar

Examples of Cluster projects

- **CosmoDU**: Direct integration of latest SiC power and IT electronics to produce unprecedented performance gains in smart drives
- **DISPERSE**: Electronic solutions for MRI scanning of patients with multiple implants
- **HADES**: Advanced test and monitoring infrastructure for dependability, security and performance enhancement of systems
- **Hyb-Man**: Integrating design and production into a single end-to-end process creating flexible manufacturing and a quicker response to market demands
- **MIRS**: Infrared-sensing platform will grow detection markets and drive smart applications in medical, lighting and automotive
- **SERENE_IoT**: High quality connected care services and diagnosis tools based on advanced Smart Health-Care IoT devices

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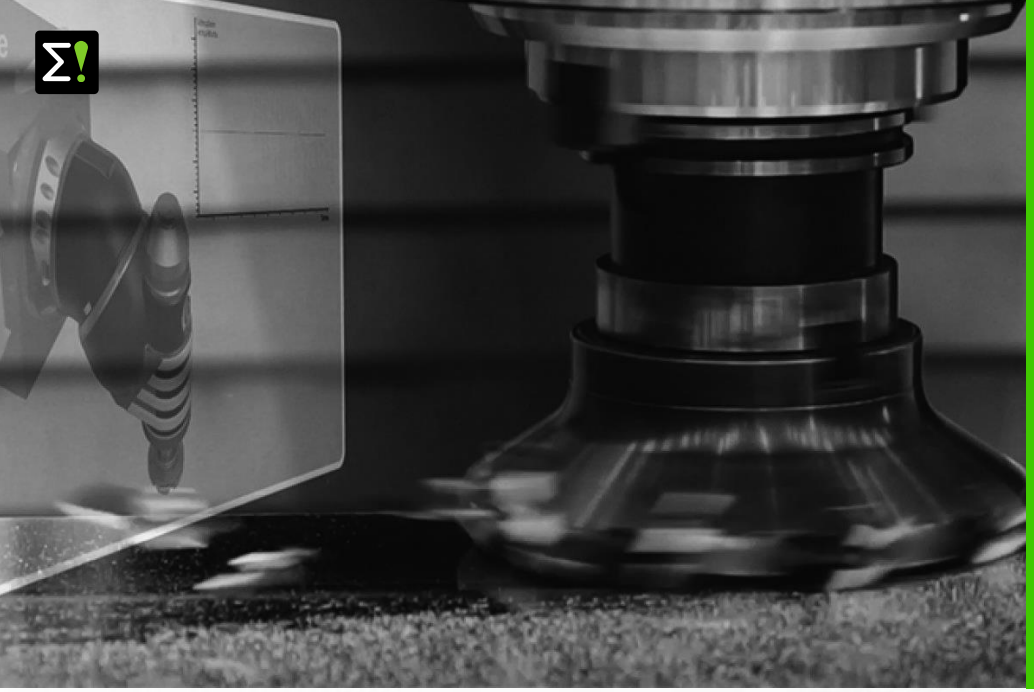

Focus area

SMART is focused on 6 Research and Innovation Domains: Advanced manufacturing processes, Intelligent and adaptive manufacturing systems, Digital, virtual and efficient industries, Person-machine collaboration, Sustainable manufacturing and Customer based production (value chain).

SMART advanced manufacturing

2017 – 2025

EUREKA Cluster SMART

www.smarteureka.com

Purpose

Boost the leadership and growth of European discrete manufacturing industries through the development and implementation of Advanced Manufacturing Technologies.

Total number of projects

2

Total project costs

€ 2,4 M

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SMART
advanced manufacturing

EUREKA Cluster
SMART

Board members

Airbus Operations, GKN Aerospace, Grupo Antolín, IK4 Research Alliance, Irish Manufacturing Research (IMR), MONDRAGON Corporation, S.V.U.M, Royo Group, Sirris, SWEREA

Examples of Cluster projects

- **NOVCOMP**: Advanced Production of Aerospace Composite
- **CAMBER**: Efficient Press-Tooling-Part system for controlled cambering in automotive stamping
- **AFMAC**: Advanced Framework for Distortion-Free Manufacturing of Aerospace Components
- **HANDLE-IT**: Robotic intralogistics for agile manufacturing
- **I-GRIND**: Grinding Operations for Dental Prosthesis through Modelling

Project Call process

One Call per year

Two-stage Call process with PO and FPP

Call information

Call calendar

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Thank you for listening

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