EUREKA CLUSTERS
Driving industry-led innovation and collaboration
EUREKA is a pan-European network for market-oriented, industrial R&D&I. EUREKA Clusters are active in 38 countries.
European innovation landscape

- **National**
  - Develop & Maintain Critical Mass & Differentiation

- **EUREKA**
  - Trans-National Programmes following National Priorities

- **European**
  - Innovation Programmes following European Strategy

© 2019 EUREKA Association
EUREKA instruments

Network projects

Cluster projects

Eurostars projects

Globalstars projects

> 45 countries
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
Cluster projects are...

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

**Participants in running projects (2018)**

- SME: 42%
- Large company: 31%
- Research Organisation: 25%
- Other: 2%

**Collaboration in running projects (2018)**

- Collaborations between SMEs: 3166
- Collaborations between Research organisations: 3775
- Collaborations between Large Companies: 4195

---

**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.
Challenge
Smart health

- Platforms for wearables & implants
- Connecting healthcare systems and people
- Energy-efficient health technologies
- Software solutions supporting healthcare cycles
- Non-magnetic lightweight materials
- Chip-based solutions for intelligent healthcare
- Zero defects manufacturing of complex parts
Example Medical center

- **Cost efficient medical imaging solutions**
- **Remote diagnosis by enhanced imaging**
- **Networked & digital operating room**
- **Smart materials in the operating room**
- **MRI for patients with implants**
- **3D printing of customised prothesis**

**EUREKA**

*innovation across borders*
Challenge
Smart energy

- Sustainable power generation and energy conversion
- Communication systems for energy management
- Demand & supply management and energy storage
- Platforms & big data management for smart grids
- Lightweight materials for energy systems
- Energy efficiency along the electronics value chain
- Energy-efficient manufacturing systems
- Energy-efficient manufacturing systems
Example
Distribution network

- Smart grids enabling demand management
- Integration of controls & communication
- Power savings due to networking
- End-to-end monitor & control platform
- New highly conductive materials
- Low cost energy harvesting
- Mass production of energy storage systems
- Power savings due to networking

© 2019 EUREKA Association
Challenge
Smart industry

Integrating sensors for interoperable systems

Sustainable technologies for smart industry

Virtualisation and digital twins for manufacturing

Materials for low carbon emission

Nanoelectronics systems for digital industry

Smart communication for Industry 4.0

Rapid & flexible production with less scrap
Example
Production line

- Energy-efficient production lines
- Framework for physics-based 3D simulation
- IoT chips for connectivity in manufacturing
- Connectivity solutions to control product lifecycles
- Smart processes for collaborative manufacturing
- Low friction and low wear materials
- Intelligent drive units for manufacturing
- Energy-efficient production lines
Challenge

Smart mobility

- **EURIPIDES²**
  - Smart solutions for interaction between humans and vehicles
- **EUREKA**
  - Connected mobility for smart transportation
- **ITEA³**
  - Energy-efficient smart charging hubs
- **EUROGIA²⁰²⁰**
  - Software platforms for connected and automated mobility
- **Mettallurgy Europe**
  - Sustainable mobility solutions for transportation
- **Penta**
  - Advanced high strength and low density materials
- **SMART²¹**
  - Machines & processes for dissimilar materials
Example

Car

- Smart & stable charging services
- Standards for safe automotive applications
- Nanomaterials in car coatings
- Secure testing for safety critical systems
- Mass production of lightweight parts
- Highly integrated ADAS sensors
- Low latency communication for autonomous driving
- Standards for safe automotive applications
- Nanomaterials in car coatings
- Secure testing for safety critical systems
- Mass production of lightweight parts
- Highly integrated ADAS sensors
- Low latency communication for autonomous driving
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**
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
CLUSTERS

Basic info
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.

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.
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
EUREKA Cluster
EURIPIDES²
www.euripides-eureka.eu

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.

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
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
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.

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.
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](#)
Focus area

- Software innovation
- Digital transformation

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.
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

© 2019 EUREKA Association
EUREKA Cluster
METALLURGY EUROPE

www.metallurgy-europe.eu

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

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.
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
EUREKA Cluster
PENTA

www.penta-eureka.eu

Focus area

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

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.
EUREKA Cluster
PENTA

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

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

© 2019 EUREKA Association

© 2019 Penta
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).

Purpose

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

© 2019 EUREKA Association
Thank you for listening

www.eurekanetwork.org