Horizon Europe

Pillar 2

opportunities for experimental sciencies and engineering

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creative commons

Pillar II: focus on clusters 3, 4 and 5

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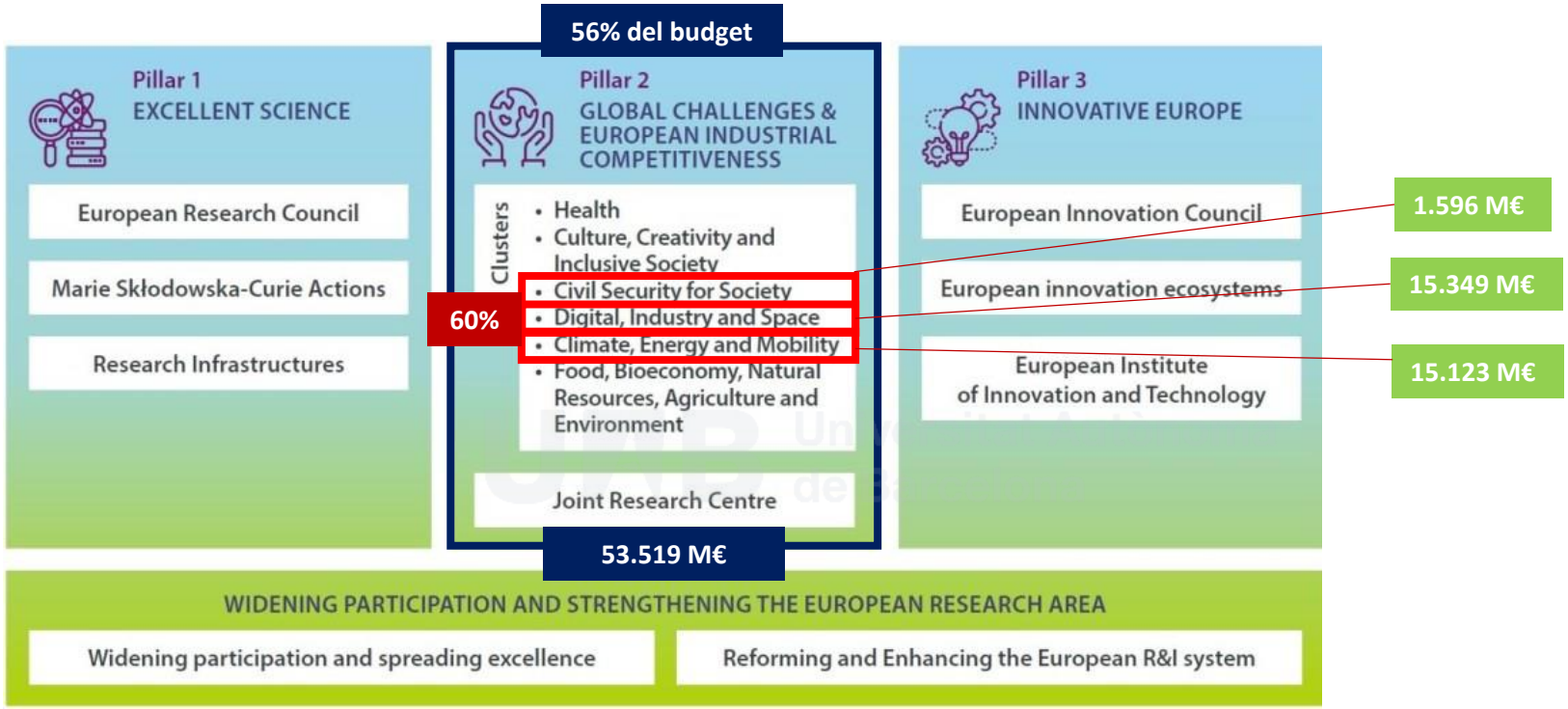
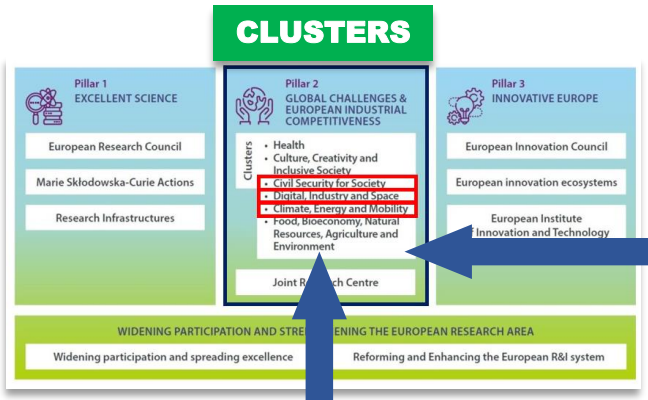
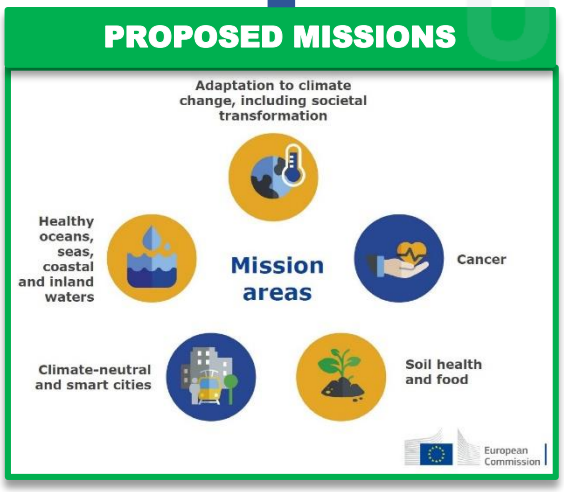


Clusters, missions, platforms





PLATFORMS RELATED

CO-PROGRAMMED

- C4-AI, data and robotics
- C4-Key digital technologies
- C4-photonics
- C4-Made in Europe
- C4-Processes4Planet
- C4-Globally competitive space systems
- C5-CCAM
- C5-batteries
- C5-Build4people
- C5-2Zero
- C3-Cybersecurity (not yet defined)

CO-FUNDED BY STATES

- C5-DUT
- C1-Personalised medicine

INSTITUTIONALISED

- C4-EIT Raw materials
- C4-EIT manufacturing
- C4-Smart networks and systems
- C4-key digital technologies
- C4-EuroHPC
- C4-Metrology
- C4-EIT digital
- C5-Intergrated ATM
- C5-Clean aviation
- C5-EIT urban mobility
- C1-Innovative health initiative
- C1-EIT Health
- C6-EIT food
- C2-KIC on cultural and creative industries

From EC plans and policies to proposals

EC policies for the Agenda 2019-2024

- A European Green Deal
- An economy that works for people
- A Europe fit for the digital age
- Promoting our European way of life
- A stronger Europe in the world
- A new push for European democracy

…and other policies: global (SDGs), regional…

Orientations
towards the first Strategic Plan
implementing the research and innovation
framework programme Horizon Europe

CO-DESIGN
VIA WEB OPEN CONSULTATION
Summer 2019

Horizon Europe Strategic Plan set out key strategic orientations (KSO) boarded at the work programmes of Horizon Europe.
Solutions will be boarded by our proposals.

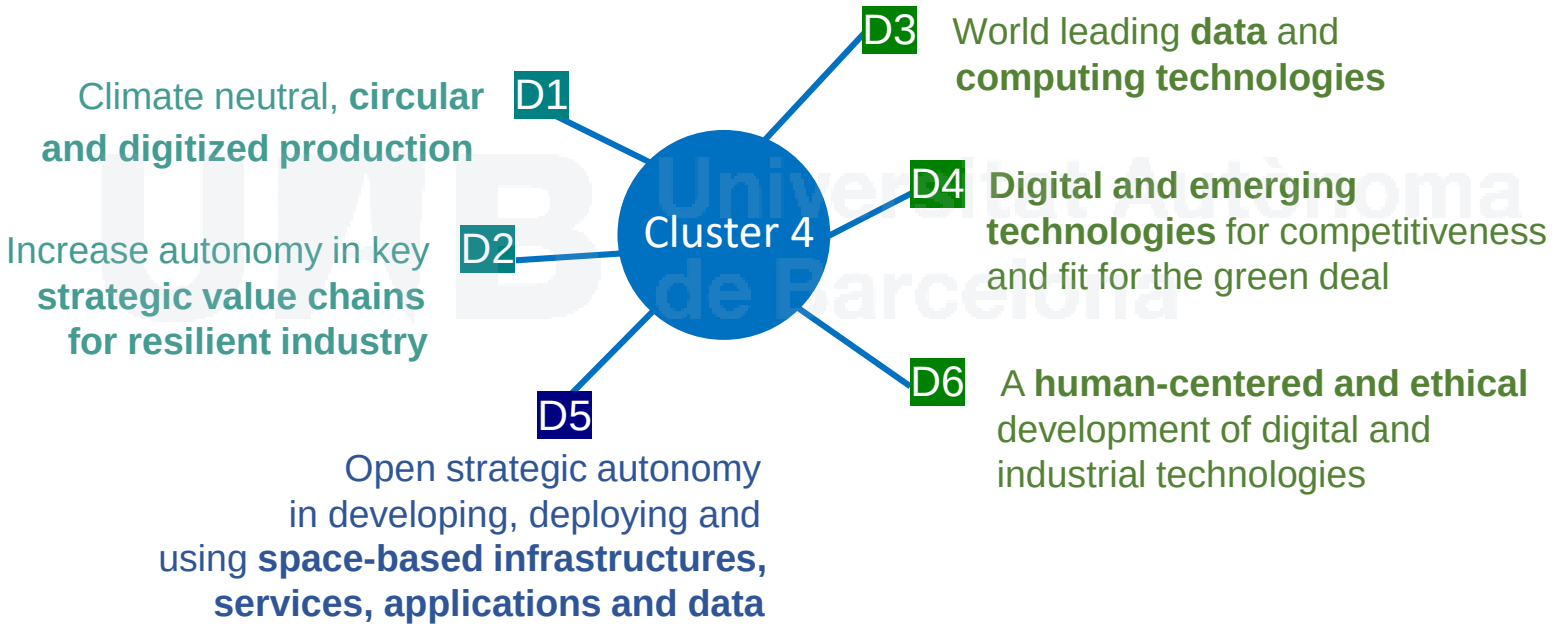
UAB Universitat Autònoma de Barcelona

Cluster 4

Digital, industry and space

Cluster 4 · Digital, industry and space

6 Destinations



15.349 M€

28,68% Pillar II

Cluster 4 · Digital, industry and space

data and computing technologies

D3

- **data analytics** (sensor network, IoT, ubiquity, AI, data analysis, methods, approach)
- **data** sharing, re-use and interoperability
- **cloud to Edge to IoT** (computing, connectivity, IoT, AI cybersecurity, AI enhanced performance)
- **data economy for hyper-distributed applications**

Platforms: 'Data, AI and robotics'
HPC: 'EuroHPC JU'

D4

digital and emerging technologies

- **ultra-low power processors**
- **digital electronic** (for all sectors)
- **photonics** technologies and applications
- **6G and connectivity technologies**
- **AI, Data and Robotics**
- **industrial robots**
- **quantum technologies flagship**
- **graphene and related 2D materials**

Platforms: 'AI, Data and Robotics'; **'Photonics'**;
'Key Digital Technologies' JU;
'Smart Networks and services' JU

human-centered and ethical development of technologies

D6

- **AI based on trust** (**personal data**, large-scale **cybersecurity** and data breaches, **online disinformation)**
- **NGI, extended Reality, interactive and learning** technologies

Platforms: 'AI, Data and Robotics'; KICs (EIT Digital Wellbeing and Digital Cities); EIT Digital and EIT Manufacturing

Cluster 4 · Digital, industry and space

climate neutral, **circular** and **digitized production**

D1

- **digital technologies** for **advanced manufacturing processes** (AI, data, robotics)
  and a new way to build (drones, data, simulation) for a disruptive change in construction
- **factories value chains,** enhance the durability, reparability and re-cycling of **products and components** and reduction of waste (digitisation, IA, data sharing, robotics and modularity)

Platforms: 'Made in Europe', 'Processes4Planet' and 'Clean Steel'; EIT (Manufacturing and Digital KICs); Digital Europe Programme (DEP); smart specialization platform

digital and emerging technologies

D2

- **advanced materials**
  engineered surfaces, metal coatings, storage, nanocoating
- **materials and data,** modelling and characterization
- **key digital and enabling technologies** in **industrial value chains**
- **strategic value chain**
  (e-mobility, batteries, renewable energies, pharmaceuticals, aerospace, defense and digital applications),
- **technological** and non-technological **business models and traceability** for circularity

Platforms: EIT Raw Materials and EIT Digital KICs

Cluster 4 · Digital, industry and space

open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

- **satellite communication, navigation and Earth observation sectors** (satellites, high-resolution sensors, radiation-hardened electronics, on-board and ground AI, optical communication, quantum technologies, advanced robotics)
- **space and ground infrastructures for Galileo/EGNOS** (navigation, …)
- **applications and services for Galileo, EGNOS and Copernicus**
- **advanced design and manufacturing methods** (including additive manufacturing) and “Digital Twins”, plug-and-play modularity, as well as model-based system engineering
- **capacity to access to space: new uses of space** (small satellites, larger constellations, payload recovery, payload quick deployment), **new services** (direct orbit injection, in-orbit servicing) and **in-space transportation**
- innovative space capabilities

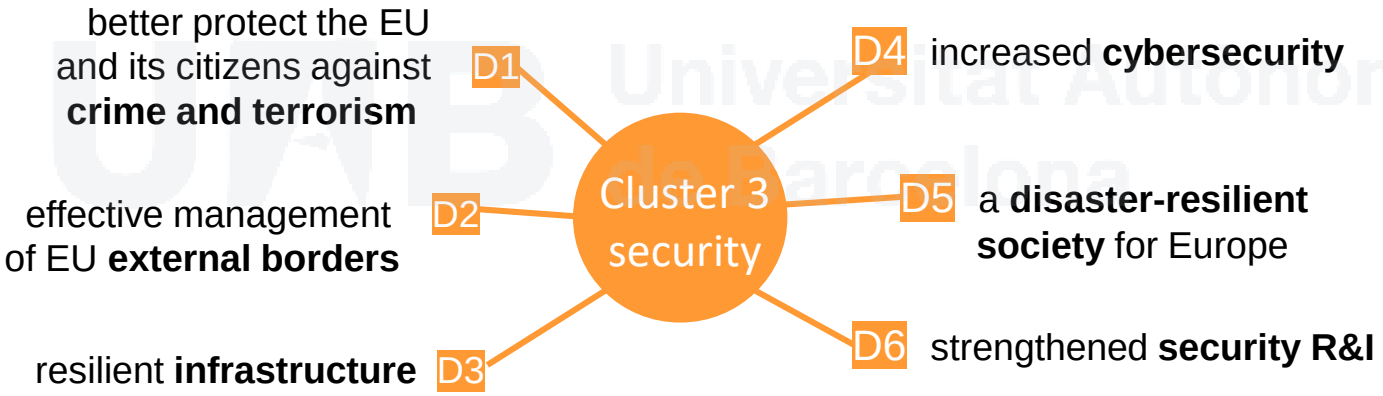
Platforms: ‘AI, Data and Robotics’; ‘Photonics’; ‘Key Digital Technologies’ JU; ‘Smart Networks and services’ JU

Cluster 3

Civil security for society

Cluster 3 · Civil security for society

6 destinations



1.596 M€

2,98% Pillar II

Cluster 3 · Civil security for society

better protect the EU and its citizens against **crime and terrorism** D1

- **prevention, detection and deterrence of crime and terrorism** (cybercrime, violence, radicalisation)
- **security of citizens in public spaces**
- support to security forces (**information analysis; intelligence picture; forensics**)

management of EU **external borders** D2

- **security of EU borders, infrastructures and activities** (accidents, natural disasters, trafficking, piracy, terrorist attacks, cyber and hybrid threats)
- **border crossing** (illegal movements of people and goods and protecting fundamental rights)
- **customs illegal activities or goods across EU external border** and trade flows

resilient **infrastructure** D3

- **large-scale interconnected systems infrastructures** (energy, water, communications, transport, finance etc) **resilience** (attacks, pandemics or disasters)
- resilient and **secure smart cities**
- autonomy of **EU infrastructures** resilience

D4 increased **cybersecurity**

- **EU cybersecurity capacities** in digital technologies
- **digital infrastructures, systems and processes**
- **software, hardware and supply chain security**
- **secured disruptive technologies**
- **EU smart and security** assurance and certification
- **cybersecurity management** and awareness

D5 a **disaster-resilient society** for EU

- **cross -sectoral -disciplines -border** coordination of the **disaster risk management cycle**
- awareness of **disaster-related risks** by citizens
- **standardisation crisis management**

D6 **strengthened Security R&I**

- **supply chain security** (sw, hw)
- **deployment of digital technologies,** infrastructures, systems and processes and disruptive technologies
- **security** assurance and certification

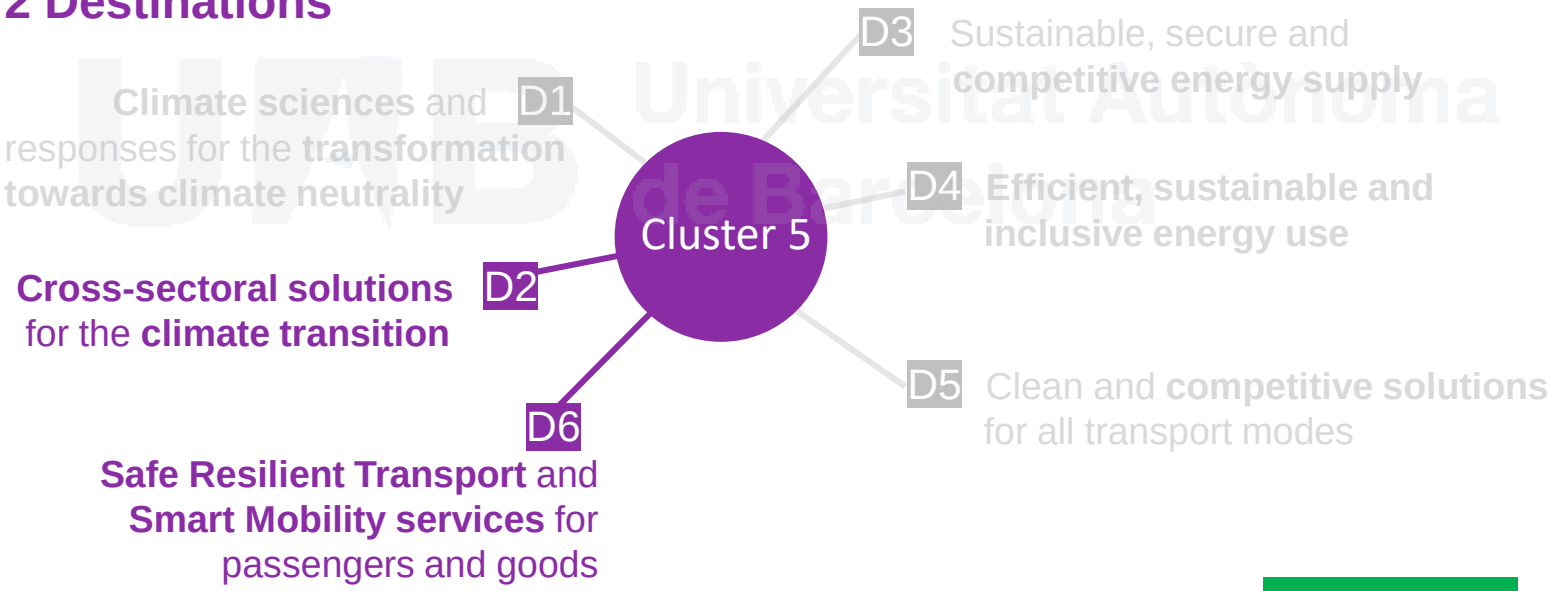
Cluster 5

Climate, energy and transport

Cluster 5 · Climate, energy and transport

Focus on technologies for smart cities and communities; batteries; safe and connected transport; logistics and security

2 Destinations



15.123 M€

28,25% Pillar II

Cluster 5 · Climate, energy and transport

safe resilient **transport and smart mobility services** for passengers and goods

cross-sectoral solutions for the climate transition

key and emerging technologies and **smart and sustainable transport**

- **connected, cooperative and automated mobility (CCAM)**
- **transport systems for passengers and goods** (digital infrastructure CAM; governance in urban mobility; logistics)
- **safety and resilience for any transport system**

- **emerging technologies for solutions**
- **batteries:** materials; electrified mobility (energy storage; life cycle of batteries); EU battery manufacturing industry
- **smart communities and cities (updated with missions 2021)**
- **engaging citizens and stakeholders,** STEM disciplines

Platforms: 'European Partnership on CCAM' in collaboration with **"Key digital technologies" (KDT), "Smart networks and services" (SNS) and "AI, data and robotics" (AI)**, "Towards zero emission road transport" (2ZERO), "Driving Urban Transitions" (DUT); integrated ATM

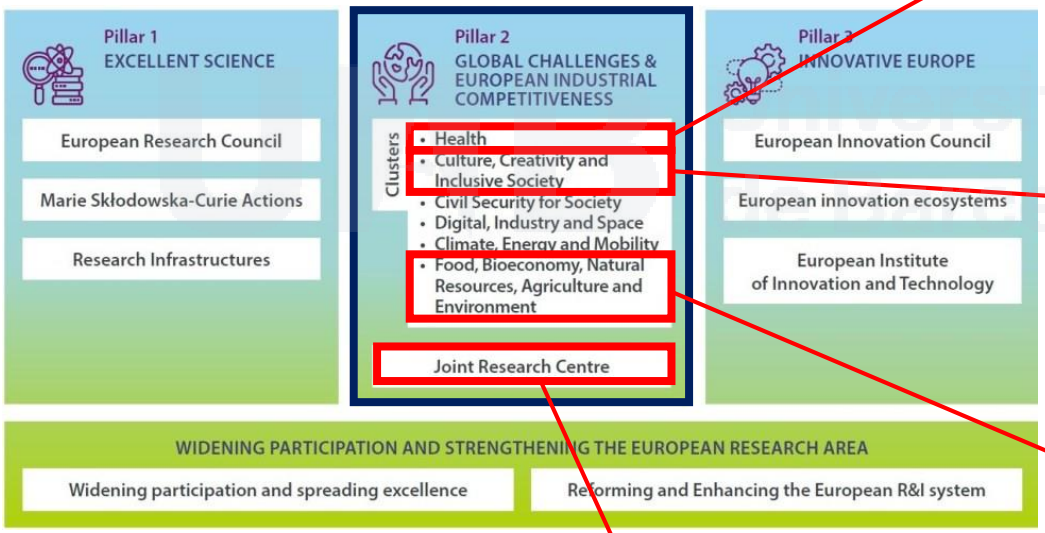
Platforms: "Batteries"

Missions: Smart cities and communities

other opportunities on pillar II

More opportunities on pillar 2

Digital, technological and other solutions for challenges, platforms and missions realted to the other clusters



Cluster 1: Health

Tools, technologies and digital solutions for health and care, **personalized medicine**; **Health care systems**; AI; Big data, **bioinformatics**…

Cluster 2: Culture, creativity and inclusive societies

Digital transformations, e-gov; solutions and technology for creative industries; cultural heritage experiences

Cluster 6: Food, agriculture, bioeconomy

Genomic tools, **bioinformatics**, big data, EO solutions and data…

Joint Research Center

Tools, solutions…

Thank you…

and have a good Horizon Europe!

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