Le opportunità in Horizon Europe

Cluster 4 – Digital, Industry and Space

ECSEL ITALY
19 Maggio 2021

Marta Calderaro, HE CL4 NCP
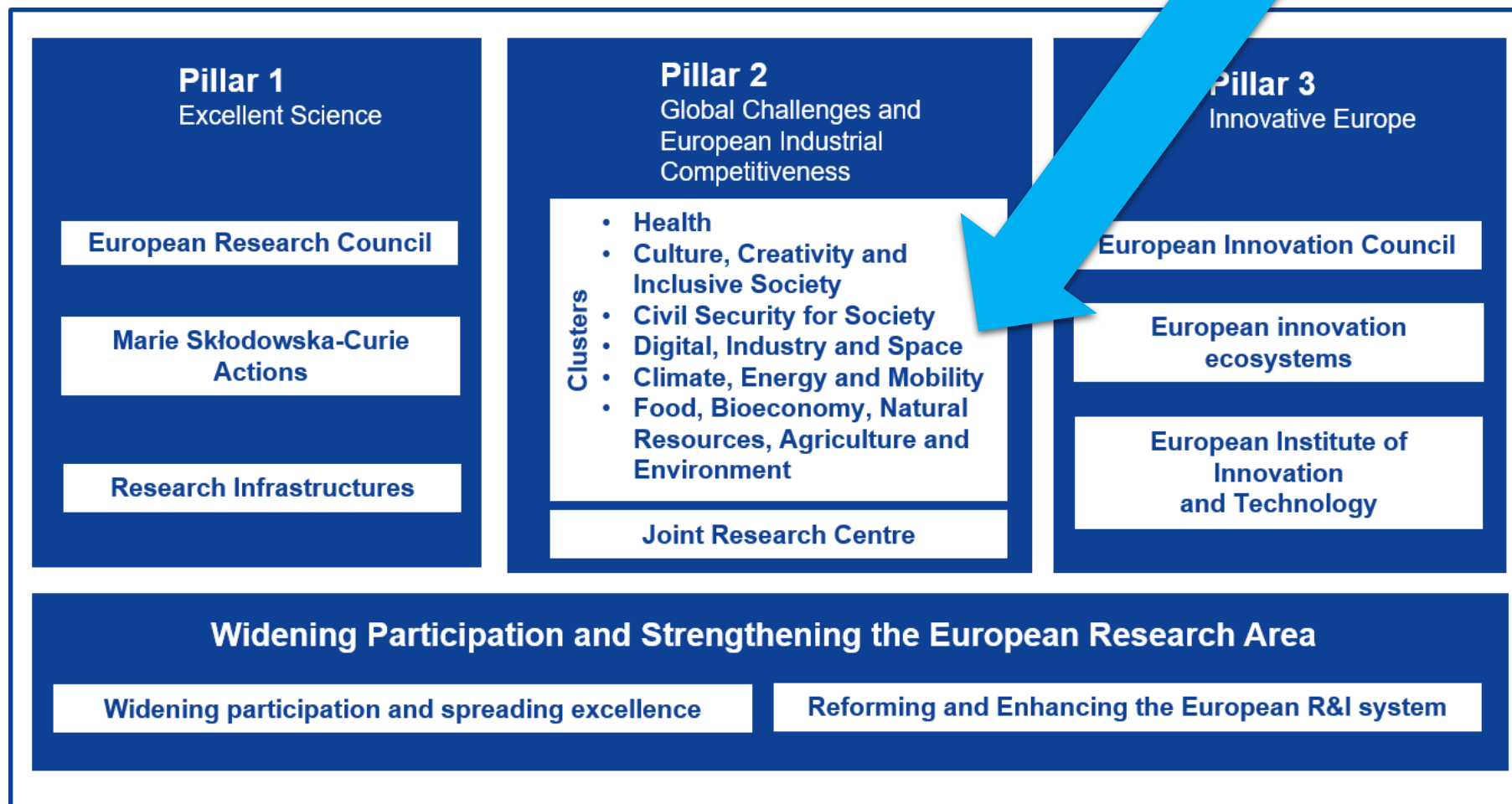**APRE- Agency for the Promotion of European Research**

"Europe must lead the transition to a healthy planet and a new digital world. But it can only do so by bringing people together and upgrading our unique social market economy to fit today's new ambitions."

European Commission

Digital, Industry and Space

15,358 B €

16,7% di HEU

Pillar 1
Excellent Science

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures

Pillar 2
Global Challenges and European Industrial Competitiveness

Clusters
- **Health**
- **Culture, Creativity and Inclusive Society**
- **Civil Security for Society**
- **Digital, Industry and Space**
- **Climate, Energy and Mobility**
- **Food, Bioeconomy, Natural Resources, Agriculture and Environment**

Joint Research Centre

Pillar 3
Innovative Europe

European Innovation Council

European innovation ecosystems

European Institute of Innovation and Technology

Partnerships & Missions

Widening Participation and Strengthening the European Research Area

Widening participation and spreading excellence

Reforming and Enhancing the European R&I system

Cluster 4 - Political Priorities

Recovery plan for Europe

GREEN DEAL

A EUROPE FIT FOR THE DIGITAL AGE

European Industrial Strategy

The European Green Deal — A New Circular Economy Action Plan

THE EU TAXONOMY

Action Plan on Critical Raw Materials

#EUGreenDeal
#EUIndustrialStrategy

2030 DIGITAL COMPASS

THE EUROPEAN WAY FOR THE DIGITAL DECADE

#DigitalEU

AI ARTIFICIAL INTELLIGENCE

EXCELLENCE & TRUST

EU Cyber Security Strategy

SPACE STRATEGY FOR EUROPE

#EUSpaceStrategy

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CLUSTER 4 – AREAS OF INTERVENTION   2021-2027

DIGITAL	INDUSTRY	SPACE

DIGITAL
- Key Digital Technologies
- AI and Robotics
- NGI
- Advanced Computing and Big Data

INDUSTRY
- Manufacturing
- Advanced materials
- Circular industry
- Low carbon and clean industry

SPACE
- A globally competitive Space sector
- New services from Space

Emerging enabling technologies: Graphene, Quantum Technologies, spintronics, smart materials

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Four key strategic orientations for greater impact

Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations

Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment

Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems

Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

Cluster 4 &
Key Strategic
Orientation

Strategic Plan 2021-2024

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Cluster 4 Destinations

2021-22

1 Climate neutral, circular and digitised production

2 A digitised, resource-efficient and resilient industry

3 World leading data and computing technologies

4 Digital and emerging technologies for competitiveness and fit for the green deal

5 Strategic autonomy in developing, deploying and using global space-based infrastructures

6 A human-centred and ethical development of digital and industrial technologies

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- Ultra-low power processors
- European Innovation Leadership in Electronics
- European Innovation Leadership in Photonics
- 6G and foundational connectivity technologies
- Innovation in AI, data and robotics
- Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted
- European leadership in Emerging Enabling Technologies
- Flagship on Quantum Technologies: a Paradigm Shift
- Graphene: Europe in the lead

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DRAFT

KDT in Destination 4

⌐ HORIZON-CL4-2021-DIGITAL-EMERGING-01-01: Ultra-low-power, secure processors for edge computing (RIA)

⌐ HORIZON-CL4-2021-DIGITAL-EMERGING-01-05: Open Source Hardware for ultra-low-power, secure processors (CSA)

⌐ HORIZON-CL4-2021-DIGITAL-EMERGING-01-31: Functional electronics for green and circular economy (RIA)

⌐ HORIZON-CL4-2021-DIGITAL-EMERGING-01-06: Advanced optical communication components (IA)

⌐ HORIZON-CL4-2021-DIGITAL-EMERGING-01-07: Advanced Photonic Integrated Circuits (RIA)

⌐ HORIZON-CL4-2022-DIGITAL-EMERGING-01-26: Open source for cloud-based services (RIA)

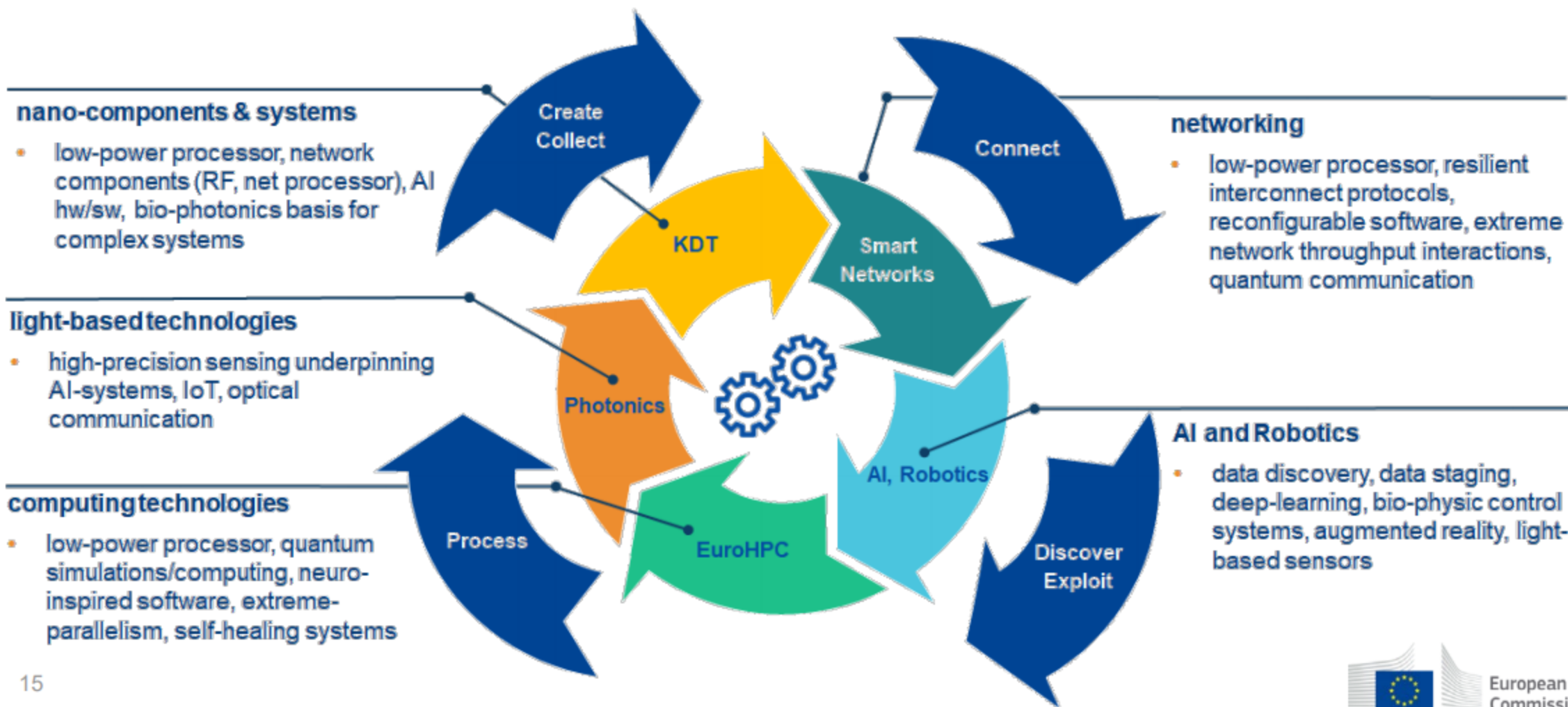⌐ HORIZON-CL4-2022-DIGITAL-EMERGING-01-03: Advanced multi-sensing systems (RIA)

Cluster 4 'Digital, Industry and Space'
European Partnerships
Synergies

Legend:
- **Green**: Both mentioned
- **Yellow**: Only left column Partnership indicates coherence
- **Grey**: Suggested by COM services
- **x**: Priority
- **o**: Inform

Cluster 4	HPC	KDT	SNS	AI, data, robotics	Photonics	Clean Steel	Metrology	Made in Europe	Processes4Planet	Space
HPC	■	X	X	X	O		O	X		
KDT	X	■	X	X	X		O	X		X
SNS	X	X	■	X	X		O		O	X
AI, data, robotics	X	X	X	■	X		O	X		X
Photonics	O	X	X	X	■		O	X		X
Clean Steel						■	O	X	X	
Metrology	O	O	O	O	O	O	■	O	O	O
Made in Europe	X	X		X	X	X	O	■	X	X
Processes4Planet			O			X	O	X	■	
Space		X	X	X	X		O	X		■

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https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe_en#synergies

European Commission

nano-components & systems
- low-power processor, network components (RF, net processor), AI hw/sw, bio-photonics basis for complex systems

light-based technologies
- high-precision sensing underpinning AI-systems, IoT, optical communication

computing technologies
- low-power processor, quantum simulations/computing, neuro-inspired software, extreme-parallelism, self-healing systems

networking
- low-power processor, resilient interconnect protocols, reconfigurable software, extreme network throughput interactions, quantum communication

AI and Robotics
- data discovery, data staging, deep-learning, bio-physic control systems, augmented reality, light-based sensors

Create Collect · KDT · Smart Networks · Connect · Photonics · AI, Robotics · Process · EuroHPC · Discover Exploit

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https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe_en#synergies

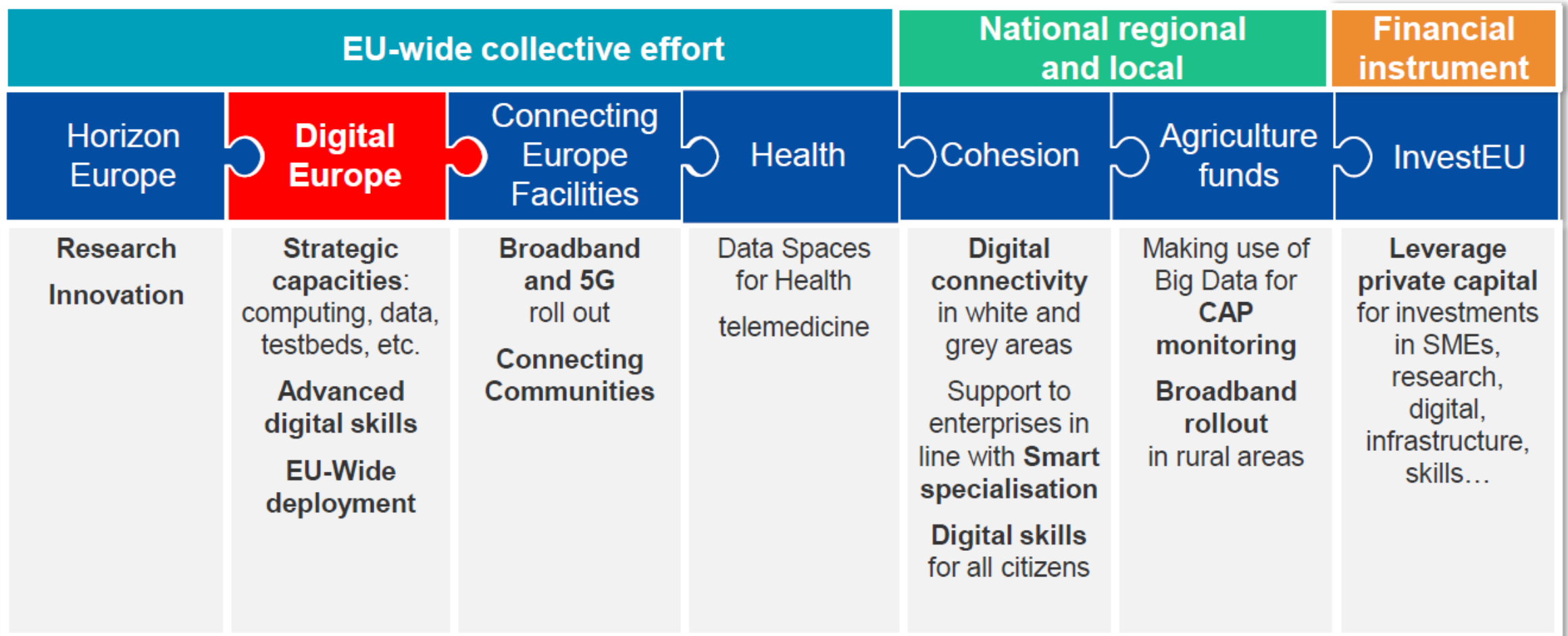# Cluster 4 & International Cooperation

OPEN TO THE WORLD
Research & innovation across borders

To enhance exchange of know-how, access to international value chains, with consideration to the technological sovereignty/autonomy, and by promoting EU climate-neutral, clean and circular technologies.

Art. 22.5 Technological Sovereignty: Participation can be allowed to specific countries or geographical areas (e.g. processing value chains, Space or Quantum Technologies)

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Programmes are complementary

EU-wide collective effort				National regional and local		Financial instrument
Horizon Europe	**Digital Europe**	Connecting Europe Facilities	Health	Cohesion	Agriculture funds	InvestEU
Research **Innovation**	**Strategic capacities:** computing, data, testbeds, etc. **Advanced digital skills** **EU-Wide deployment**	**Broadband and 5G** roll out **Connecting Communities**	Data Spaces for Health telemedicine	**Digital connectivity** in white and grey areas Support to enterprises in line with **Smart specialisation** **Digital skills** for all citizens	Making use of Big Data for **CAP** monitoring **Broadband rollout** in rural areas	**Leverage private capital** for investments in SMEs, research, digital, infrastructure, skills…

European Commission

LEADING THE DIGITAL DECADE - 2021

Day 1

- The starting point of the first day's debate is the Communication 2030 Digital Compass: the European way for the Digital Decade. Its vision is clear: everyone in Europe can and should benefit from digital.

Day 2

- The second day will be dedicated to the launch of the Digital Europe Programme, the first financial instrument of the EU to specifically finance European projects on digital. The Digital Europe Programme will accelerate the economic recovery and shape the digital transformation of Europe benefiting citizens and businesses.

Get Registered at: https://digital-strategy.ec.europa.eu/en/policies/leading-digital-decade

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References

- Key Digital Technologies: https://digital-strategy.ec.europa.eu/en/library/key-digital-technologies-keys-our-digital-future-brochure

- Horizon Europe: https://ec.europa.eu/info/horizon-europe_en

- Digital Europe Programme: https://digital-strategy.ec.europa.eu/en/activities/digital-programme

- European partnerships in Horizon Europe: https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe_en

- A Europe fit for the digital age: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en

- Digital Compass 2030: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

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2021 2027

HORIZON EUROPE

WWW.HORIZONEUROPE.IT >> Info, aggiornamenti e materiali sul nuovo Programma Quadro

GIORNATE HORIZON EUROPE >> Eventi sul Programma Quadro e le sue dimensioni

GUIDA A HORIZON EUROPE >> Passo, passo dentro il nuovo Programma Quadro

APRE BRIEF >> I factsheet sui temi e gli aspetti salienti di Horizon Europe

AGENDA HORIZON EUROPE >> I principali appuntamenti nazionali ed europei sul Programma Quadro
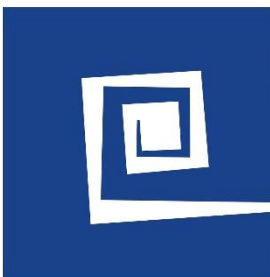
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www.2021horizoneurope.info

#2021horizoneurope

#HorizonEU

Email: calderaro@apre.it
cluster4@apre.it

Tel. +39 06 48 93 9993

www.apre.it