



APRE

Agenzia per la Promozione
della Ricerca Europea

Cluster 4 – Digital, Industry and Space

5th ECSEL Italy Infoday & BE

26 Gennaio 2022

Marta Calderaro, HE CL4 NCP

APRE- Agency for the Promotion of European Research

“The *European Chips Act*, which will be proposed in early February, aims to increase microchip production across the continent in response to rising demand and to reduce dependency on suppliers from outside Europe.

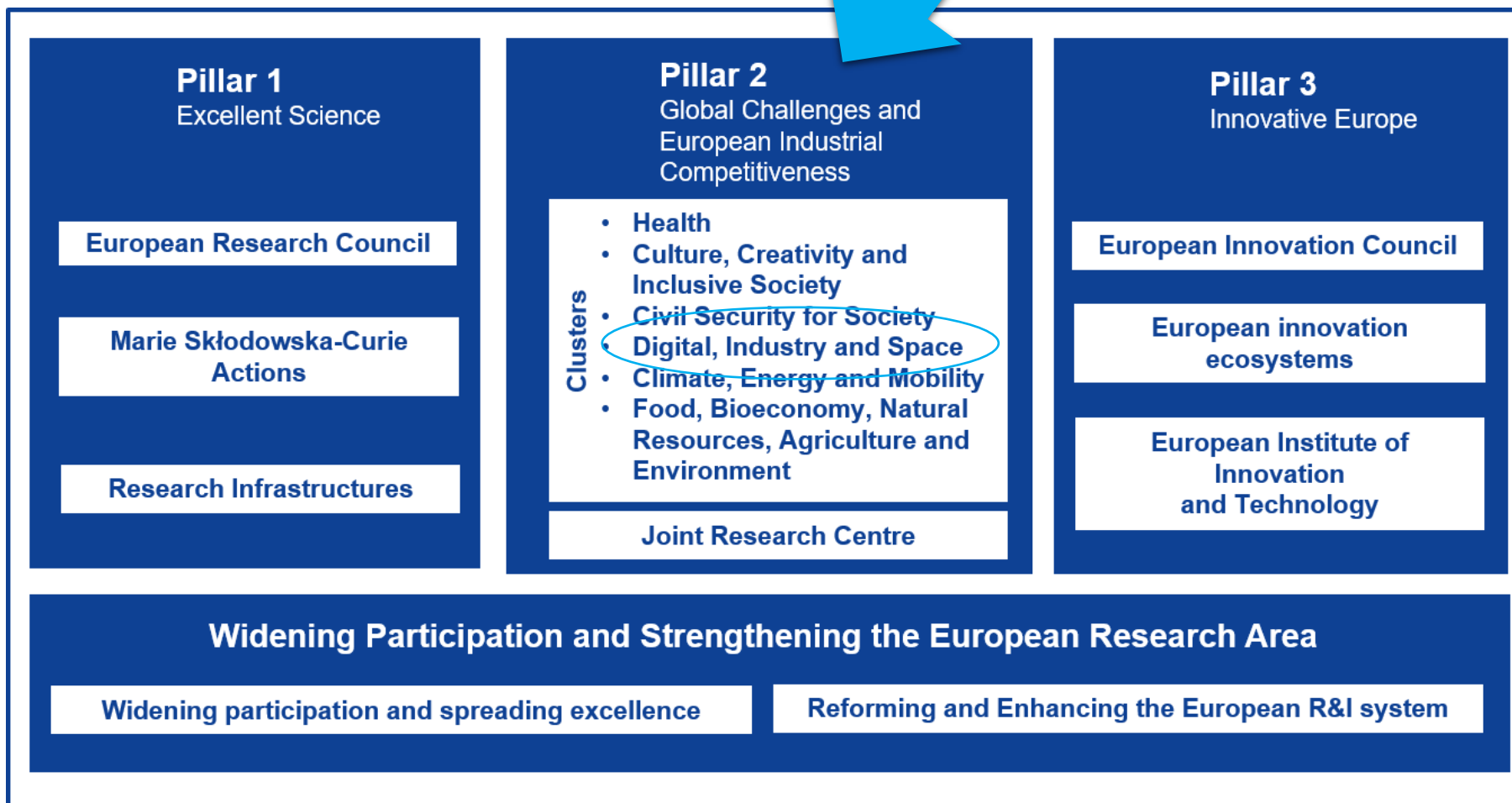
The European need for chips will double in the next decade, this is why we need to radically raise Europe's game on the development, production and use of this key technology.”

Ursula von der Leyen,
Davos Agenda 2022 - 20 Jan 2022





Digital, Industry and Space



Partnerships
&
Missions





Cluster 4 - Policy Framework



A major objective: to deal with technologies that respect European values (GD Objectives, security, energy efficiency, safety and data protection), enabled by qualified professionals and novel skills

Cluster 4 – Work Programme Overview



D1 - Climate neutral, circular and digitized production
TWIN-TRANSITION (KSO C)

Manufacturing

Circularity in Process Industries

Construction

D2 - Increased autonomy in key strategic value chains for resilient industry
RESILIENCE (KSO A)

Green and Sustainable Materials

Raw Materials

Resilience of EU businesses

D3 - World leading data and computing technologies
DATA (KSO A)

European data space

Data analytics capacity

From Cloud to Edge to IoT

D4 - Digital and emerging technologies for competitiveness and fir for the Green Deal
DIGITAL-EMERGING (KSO A)

Electronics, Processors and Photonics

AI, data and robotics

Connectivity technologies

Emerging Techs (Quantum, Graphene)

D5 - Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
SPACE (KSO A)

Competitiveness of space systems

Galileo, Egnos, Copernicus and SSA, GOVSATCOM

Space entrepreneurship ecosystems

D6 - A human-centred and ethical development of digital and industrial technologies
HUMAN (KSO D)

AI based on trust

Internet of Trust

Extended Reality

Digital learning technologies

Cross-cutting

European Innovation leadership in electronics and photonics



2021

DIGITAL-EMERGING-01-06



Advanced optical communication components (IA)

DIGITAL-EMERGING-01-07



Advanced Photonic Integrated Circuits (RIA)

DIGITAL-EMERGING-01-31



Functional electronics for green and circular economy (RIA)

DIGITAL-EMERGING-01-01



Ultra-low-power, secure processors for edge computing (RIA)

DIGITAL-EMERGING-01-05



Open Source Hardware for ultra-low-power, secure processors (CSA)

2022

DIGITAL-EMERGING-01-03

Advanced multi-sensing systems (RIA)

DIGITAL-EMERGING-01-38

International cooperation in Semiconductors (CSA)



KDT in HE: A Complementary effort



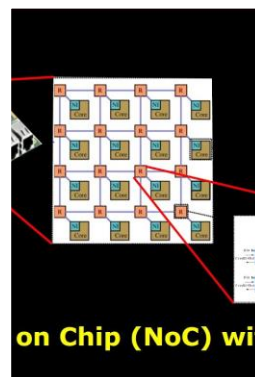
HORIZON-CL4-2022-DIGITAL-EMERGING-01-26:
Open source for cloud-based services (RIA)



HORIZON-CL4-2022-DIGITAL-EMERGING-02-17:
New generation of advanced electronic and photonic 2D materials-based devices, systems and sensors (RIA) connection with graphene

HORIZON-CL4-2022-DIGITAL-EMERGING-02-18:
2D materials-based devices and systems for energy storage and/or harvesting (RIA) connection with graphene

HORIZON-CL4-2022-DIGITAL-EMERGING-02-19:
2D materials-based devices and systems for biomedical applications (RIA) connection with graphene



HORIZON-CL4-2022-DIGITAL-EMERGING-01-30:
European Enabling technologies for Beyond 5G/6G RAN disaggregated architectures (RIA)

HORIZON-CL4-2022-DIGITAL-EMERGING-01-39:
Ultra low energy and secure networks (RIA)



Horizon Europe support in 2021- what we have to check

- ❏ HORIZON-CL4-2021-DATA-01-08: Roadmap for next generation computing and systems technologies (CSA)
- ❏ HORIZON-CL4-2021-DIGITAL-EMERGING-01-14: Advanced spintronics: Unleashing spin in the next generation ICs (RIA)
- ❏ HORIZON-CL4-2021-DIGITAL-EMERGING-01-30: Investing in new emerging quantum computing technologies (RIA)
- ❏ HORIZON-CL4-2021-HUMAN-01-01: Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (AI, Data and Robotics Partnership) (RIA)

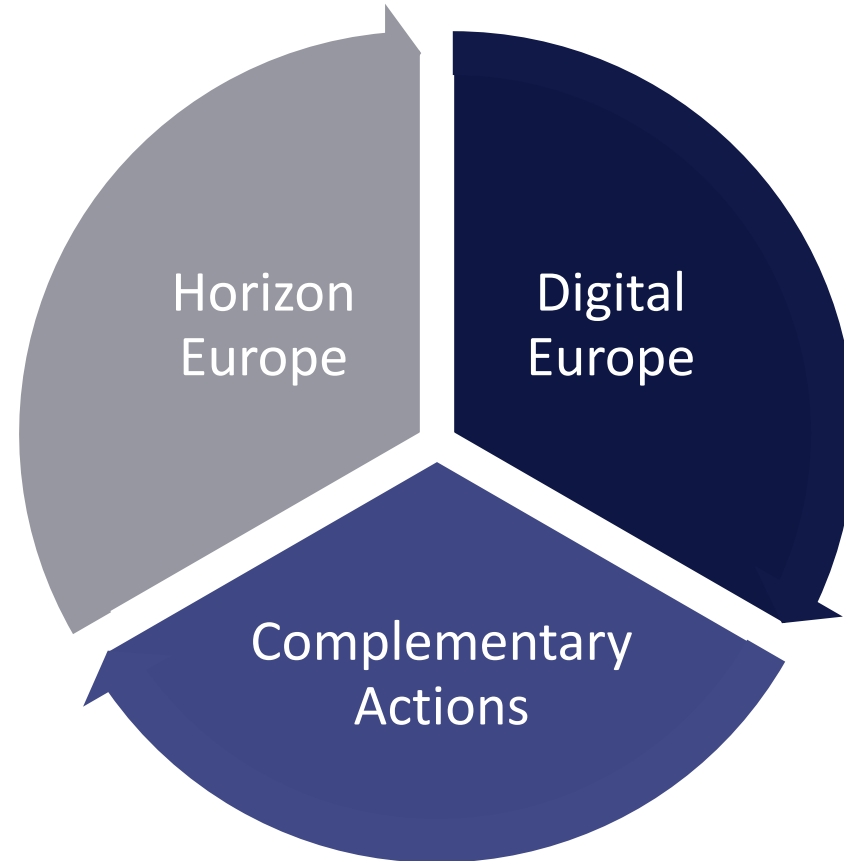
Strategic initiatives to check

2 Co-programmed partnerships (supported via HE)

AI, Data and Robotics
Photonics

2 Institutional partnerships (Art.187, Public-Private)

EuroHPC JU
Smart Networks and Services JU



2 Industrial Alliances

Secretariat for the Alliance on Processors and Semiconductor Technologies

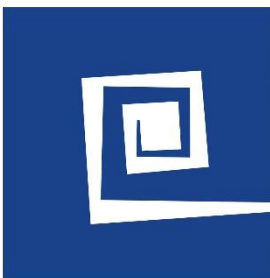
Secretariat for the Alliance on Industrial Data, Edge and Cloud

Advanced Digital Skills Objective

(Master Courses, Short term courses, Job Placements, Platform for Skills and Jobs)

EDIH – European Digital Innovation Hubs

MCP on Next generation of low power trusted processors via the IPCEI on Microelectronics



APRE

Agenzia per la Promozione
della Ricerca Europea

Email: cluster4@apre.it

Tel. +39 06 48 93 9993

www.apre.it

