EUROPEAN UNION

#HorizonEU

HORIZON
EUROPE

THE EU RESEARCH &
INNOVATION PROGRAMME

2021 - 2027

EU Programmes are complementary !

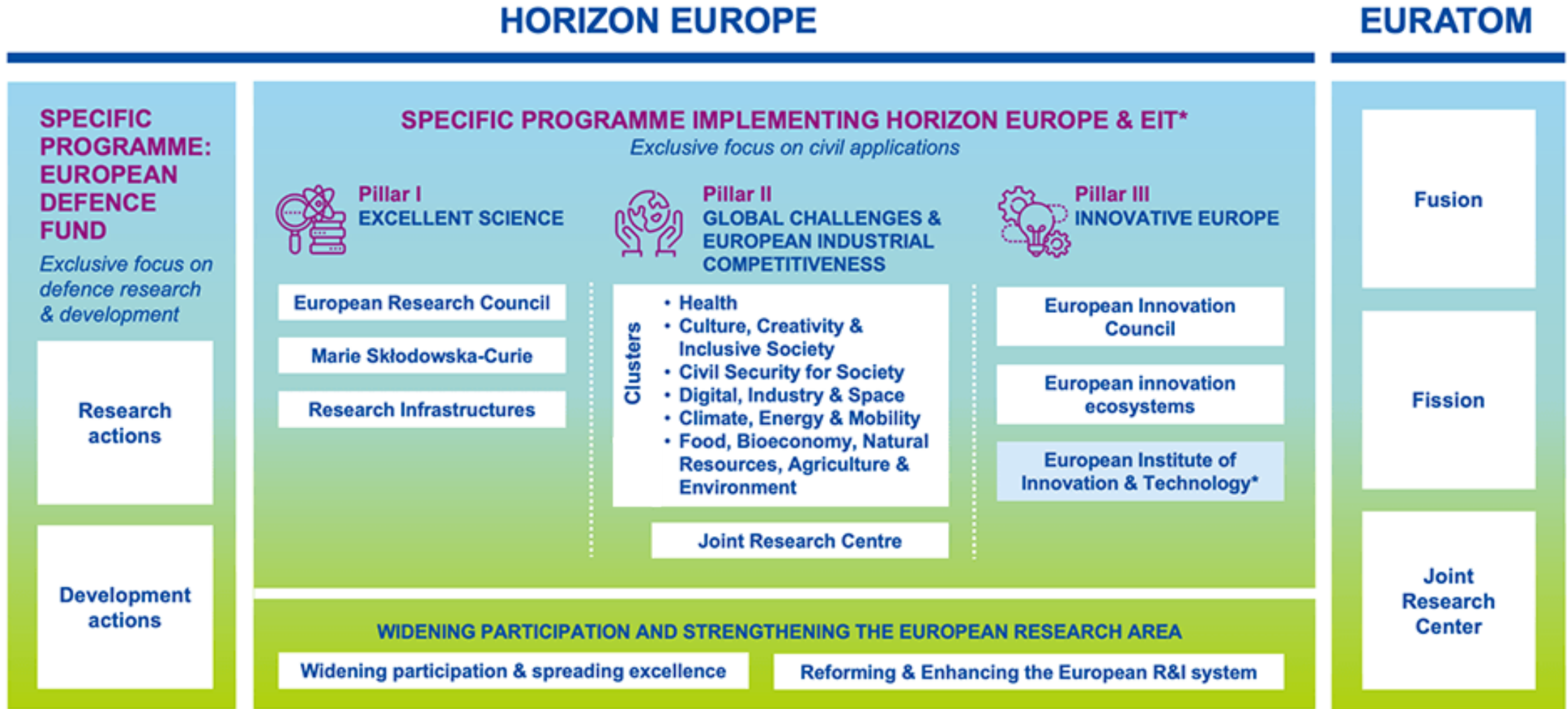| EU-wide collective effort				National regional and local		Financial instrument
Horizon Europe	Digital Europe	Connecting Europe Facilities	Health	Cohesion	Agriculture funds	InvestEU
Research Innovation	Strategic capacities: computing, data, testbeds, etc. Advanced digital skills EU-Wide deployment	Broadband and 5G roll out Connecting Communities	Data Spaces for Health Telemedicine eHDSI	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…

95.5 billion euros to support R&D&i

7,5 billion euros to support Digital deployment

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Horizon Europe (2021-2027)
Structure

HORIZON EUROPE

EURATOM

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

Exclusive focus on defence research & development

Research actions

Development actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*
Exclusive focus on civil applications

Pillar I
EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures

Pillar II
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

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

Joint Research Centre

Pillar III
INNOVATIVE EUROPE

European Innovation Council

European innovation ecosystems

European Institute of Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

Fission

Joint Research Center

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

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How and Why is it different?

EU and EC key policy priorities

Expected Impacts

Expected outcomes

**INNOVATION
WITH A PURPOSE**

Expected outputs

KEY POLICY PRIORITIES
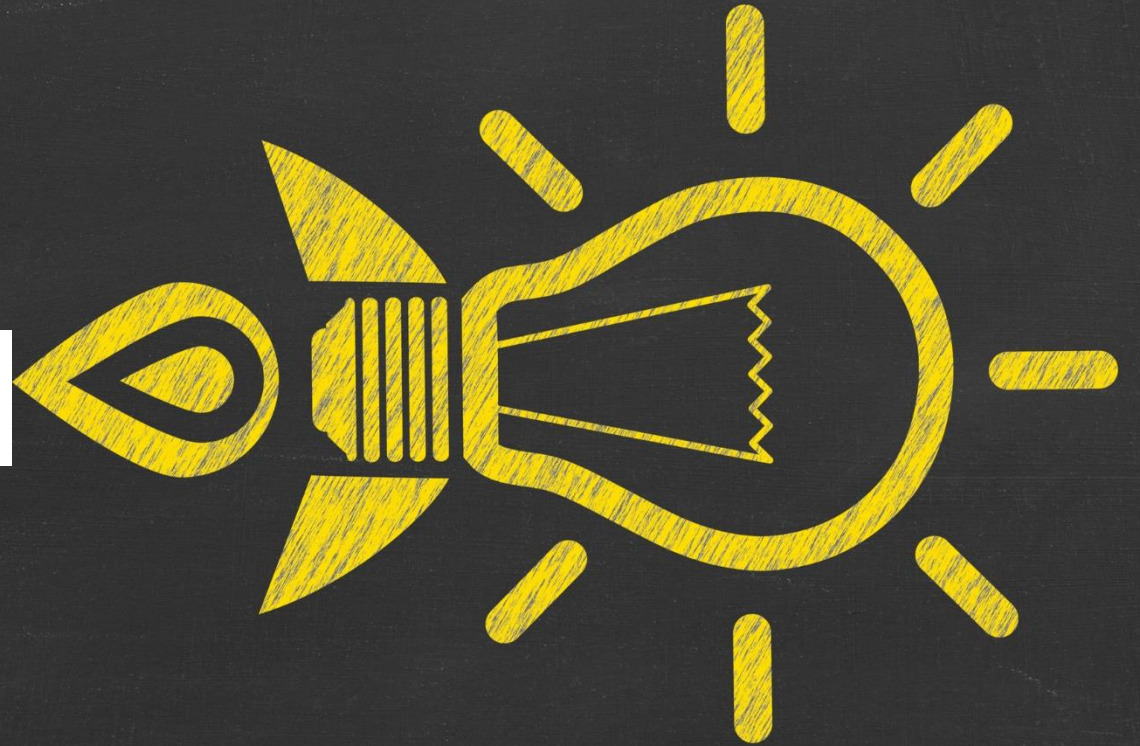
RESILIENT INDUSTRY

HUMAN CENTRIC

SUSTAINABLE INDUSTRY

From shareholder
to stakeholder value

INDUSTRY 5.0

human-centric, sustainable
and resilient

RESEARCH & INNOVATION
TO DRIVE THE
GREEN DEAL

#EUGreenDeal
#ResearchImpactEU

European
Commission

Shaping Digital Future

Digital Skills & Jobs

Artificial Intelligence, Cloud computing and Blockchain

High-Performance Computing and Quantum Technologies

5G and Internet Of Things

Cybersecurity

Digital Inclusion

Photonics and Electronics

Cluster Digital, Industry and Space
6 "destinations", 6 expected impacts

15,349 b€

• **DESTINATION 1**	• **DESTINATION 2**	• **DESTINATION 3**	• **DESTINATION 4**	• DESTINATION 5	• **DESTINATION 6**
Climate neutral, circular and digitised production	Increased autonomy in key strategic value chains for resilient industry	World leading data and computing technologies	Digital and emerging technologies for competitiveness and fit for the green deal	Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data	A human-centred and ethical development of digital and industrial technologies
Global leadership	Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials	Globally attractive, secure and dynamic data-agile economy	Sovereignty in digital technologies and in future emerging enabling technologies	Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data	A human-centred and ethical development of digital and industrial technologies

DESTINATION 1
- Green, flexible and advanced manufacturing
- Enabling circularity of resources in the process industries, including waste, water and CO_2/CO
- Advanced digital technologies for manufacturing
- Integration of renewables and electrification in process industry
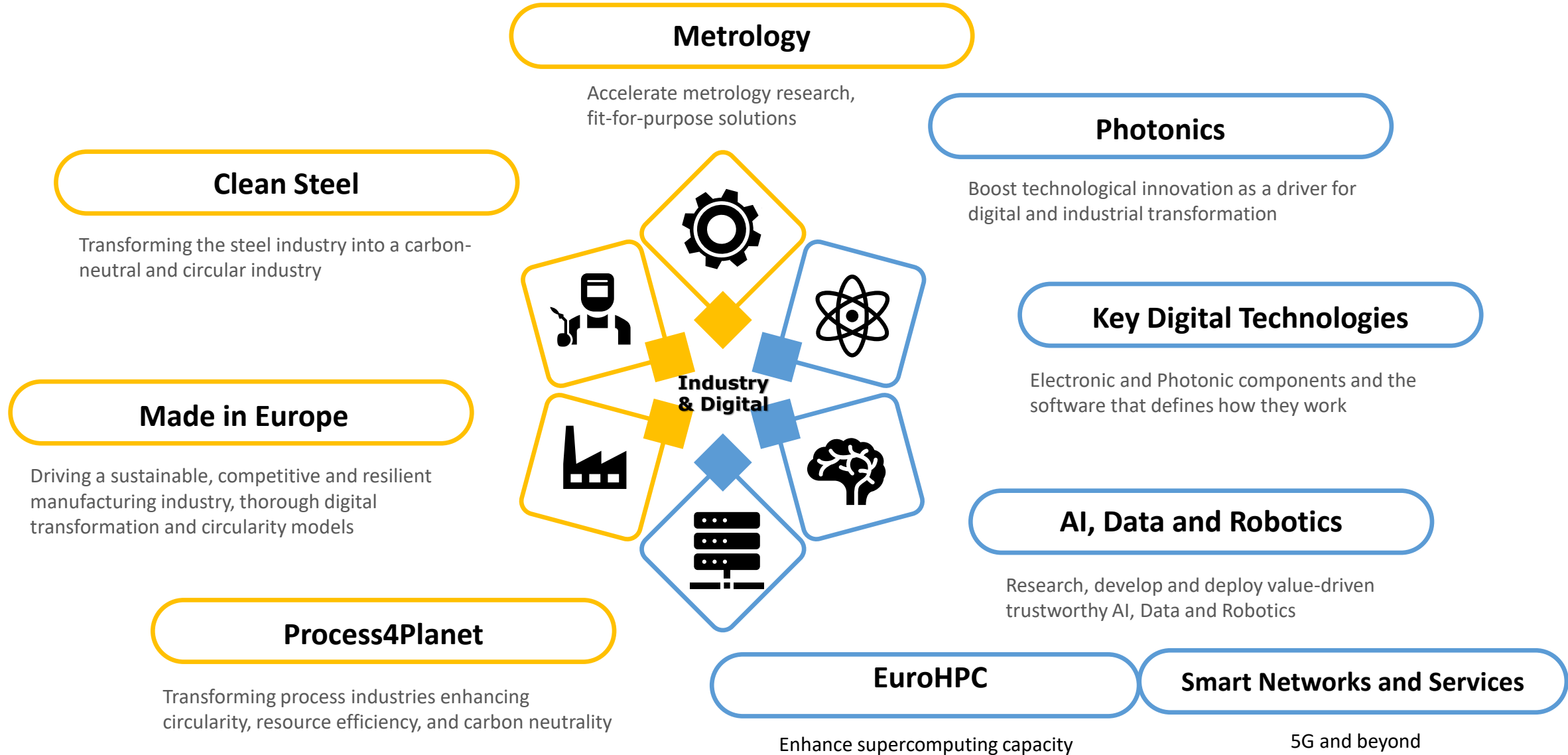- Increase productivity, efficiency

DESTINATION 2
- Resilient, sustainable and secure (critical) raw materials value chains
- Materials with enhanced functionalities and sustainable-by-design
- Materials solutions for clean, toxic/pollutant free environment
- Raw materials for transition to a climate-neutral and circular economy
- Advanced materials

DESTINATION 3
- Data sharing in the common European data spaces
- Strengthening Europe's data analytics capacity
- From Cloud to Edge to IoT for European Data

DESTINATION 4
- Ultra-low power processors
- Electronics
- Photonics
- 6G and foundational connectivity
- AI, data and robotics
- Quantum Technologies
- Graphene

DESTINATION 6
- Leadership in AI based on trust
- An Internet of Trust
- eXtended Reality (XR)
- Make the most of the technologies within society and industry

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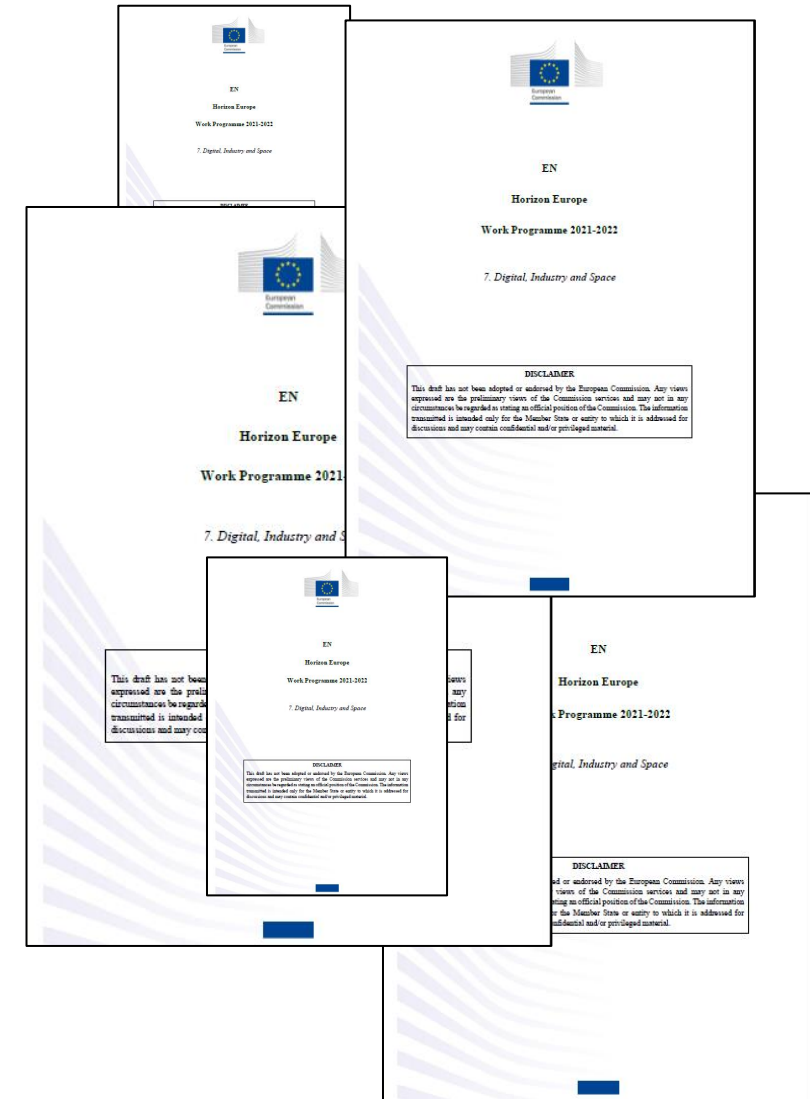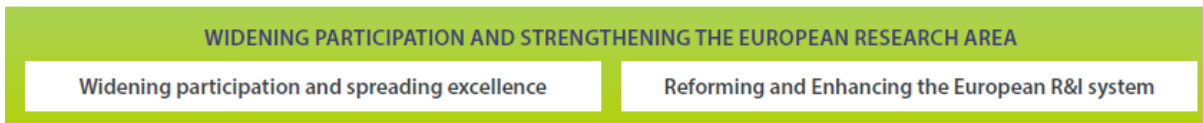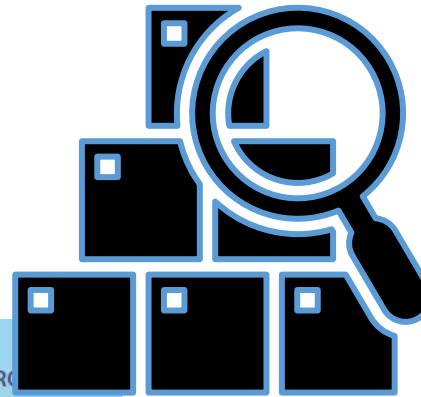
European Partnerships

Metrology

Accelerate metrology research, fit-for-purpose solutions

Photonics

Boost technological innovation as a driver for digital and industrial transformation

Clean Steel

Transforming the steel industry into a carbon-neutral and circular industry

Key Digital Technologies

Electronic and Photonic components and the software that defines how they work

Industry & Digital

Made in Europe

Driving a sustainable, competitive and resilient manufacturing industry, thorough digital transformation and circularity models

AI, Data and Robotics

Research, develop and deploy value-driven trustworthy AI, Data and Robotics

Process4Planet

Transforming process industries enhancing circularity, resource efficiency, and carbon neutrality

EuroHPC

Smart Networks and Services

Enhance supercomputing capacity

5G and beyond

**OK.
I am convinced.
but…**

PERIN — Portugal in Europe Research and Innovation Network

SUBMIT

05 Submission platform

04 Write the proposal !
Application form (Part A)
Project proposal – Technical description (Part B)

Build a consortium.
Collaborate, collaborate! **03**

02 Look for a project call.
Read the work programmes!

01 Ambitious & innovative idea. Concept.
Read stakeholders needs.
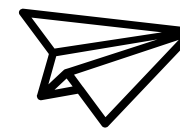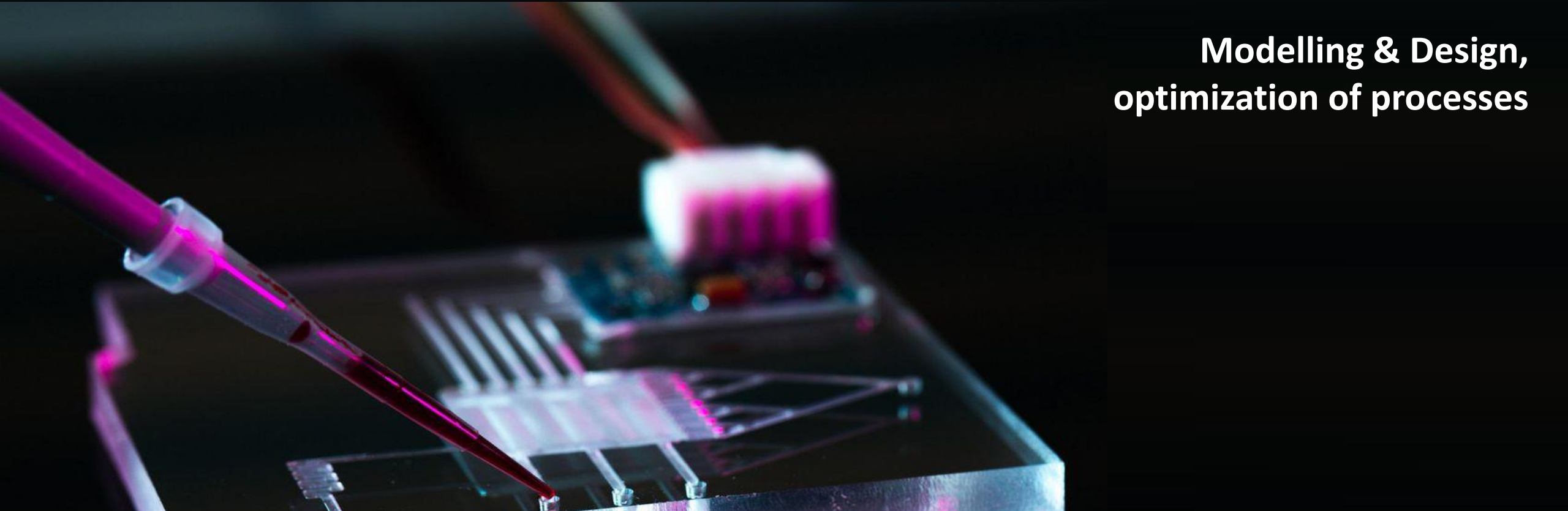
Industry 4.0 & smart manufacturing

HORIZON-CL4-2022-TWIN-TRANSITION-01-01: Rapid reconfigurable production process chains (Made in Europe Partnership) (IA)

HORIZON-CL4-2022-TWIN-TRANSITION-01-03: Excellence in distributed control and modular manufacturing (Made in Europe Partnership) (RIA)

HORIZON-CL4-2022-TWIN-TRANSITION-01-09: Demonstrate the use of Digital Logbook for buildings (IA)

Modelling & Design, optimization of processes

HORIZON-CL4-2022-RESILIENCE-01-05: Technological solutions for tracking raw material flows in complex supply chains (RIA)

HORIZON-CL4-2022-RESILIENCE-01-19: Advanced materials modelling and characterisation (RIA)

HORIZON-CL4-2022-RESILIENCE-01-25: Optimised Industrial Systems and Lines through digitalisation (IA)

Data, Algorithms, "Cloud"

HORIZON-CL4-2022-DATA-01-01: Methods for exploiting data and knowledge for extremely precise outcomes (analysis, prediction, decision support), reducing complexity and presenting insights in understandable way (RIA)

HORIZON-CL4-2022-DATA-01-02: Cognitive Cloud: AI-enabled computing continuum from Cloud to Edge (RIA)

HORIZON-CL4-2022-DATA-01-03: Programming tools for decentralised intelligence and swarms (RIA)
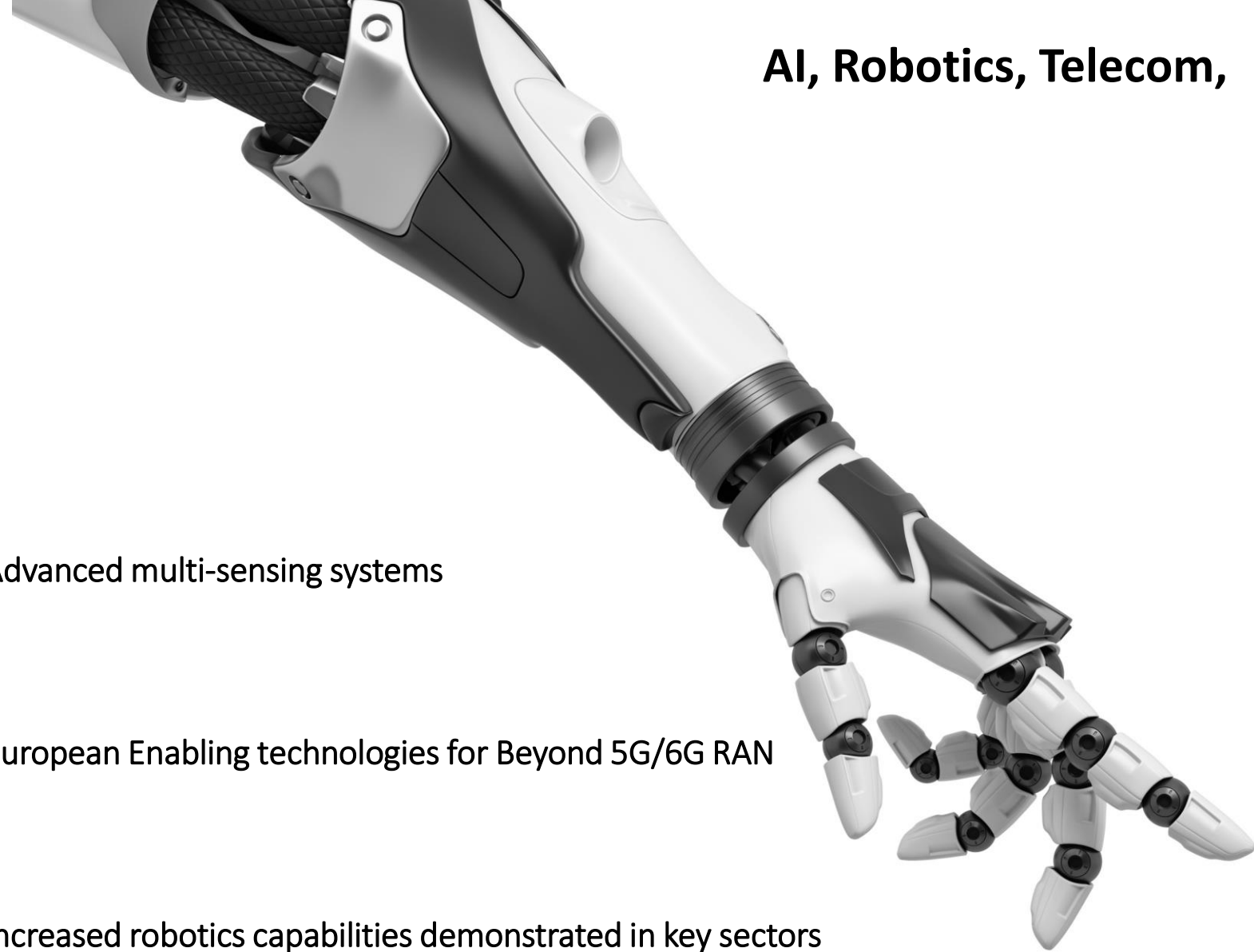
HORIZON-CL4-2022-DIGITAL-EMERGING-01-03: Advanced multi-sensing systems (Photonics Partnership) (RIA)

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

HORIZON-CL4-2022-DIGITAL-EMERGING-01-07: Increased robotics capabilities demonstrated in key sectors (AI, Data and Robotics Partnership) (IA)
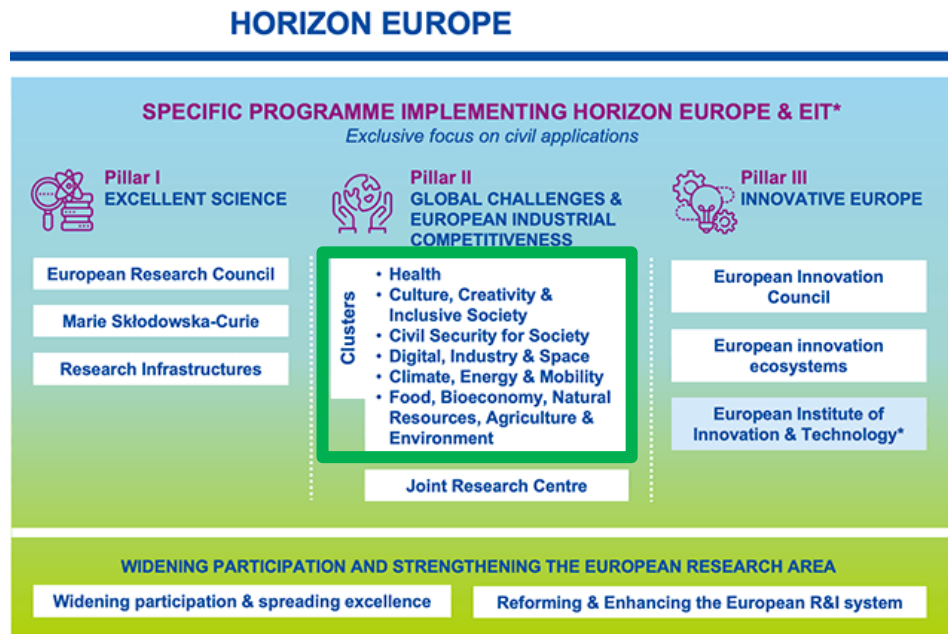
HORIZON-CL4-2022-HUMAN-01-01: **AI for human empowerment** (AI, Data and Robotics Partnership) (RIA)
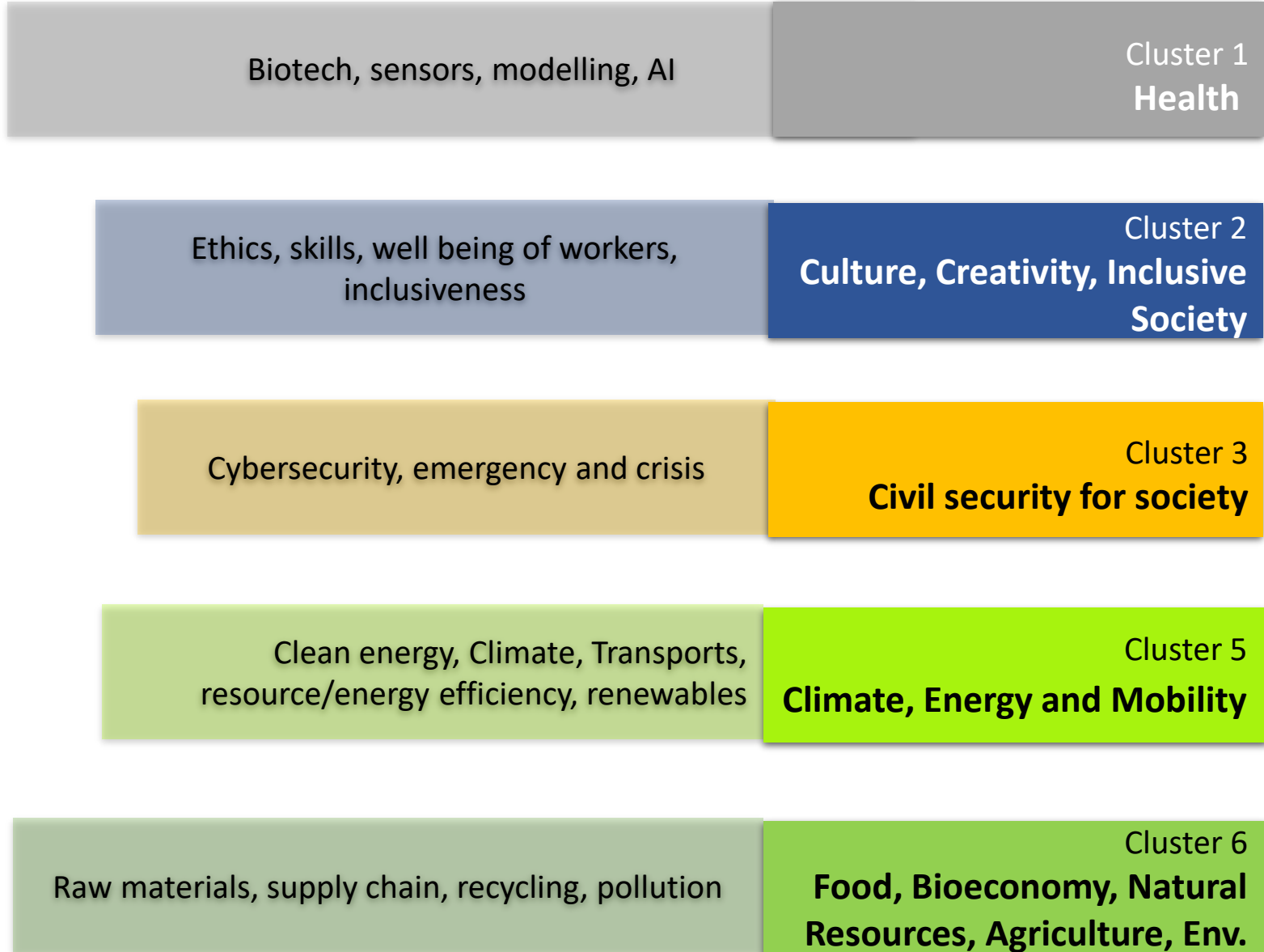
HORIZON-CL4-2022-HUMAN-01-05: **Next Generation Safer Internet: Technologies to identify digital Child Sexual Abuse Material** (CSAM) (RIA)

HORIZON-CL4-2022-HUMAN-01-14: **eXtended Reality Technologies** (RIA)
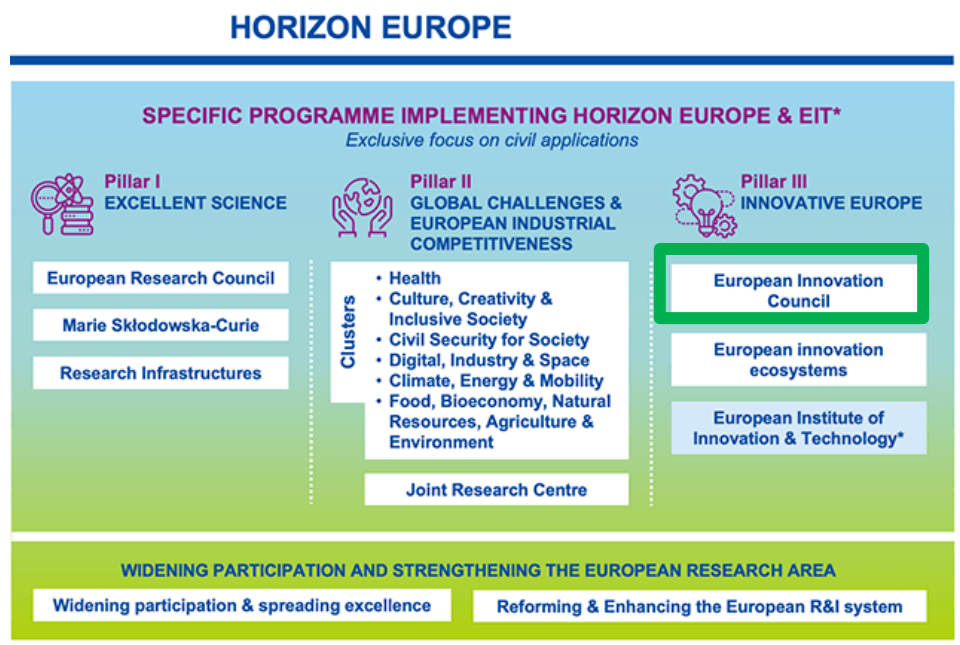
More digital oportunities – where?

HORIZON EUROPE

Biotech, sensors, modelling, AI	Cluster 1 **Health**
Ethics, skills, well being of workers, inclusiveness	Cluster 2 **Culture, Creativity, Inclusive Society**
Cybersecurity, emergency and crisis	Cluster 3 **Civil security for society**
Clean energy, Climate, Transports, resource/energy efficiency, renewables	Cluster 5 **Climate, Energy and Mobility**
Raw materials, supply chain, recycling, pollution	Cluster 6 **Food, Bioeconomy, Natural Resources, Agriculture, Env.**

More digital oportunities – where?

disruptive tech

scientific breakthrough

radically new technology

deep tech

Idea/Research   **Lab test**   **Prototype**   **Ready to market**
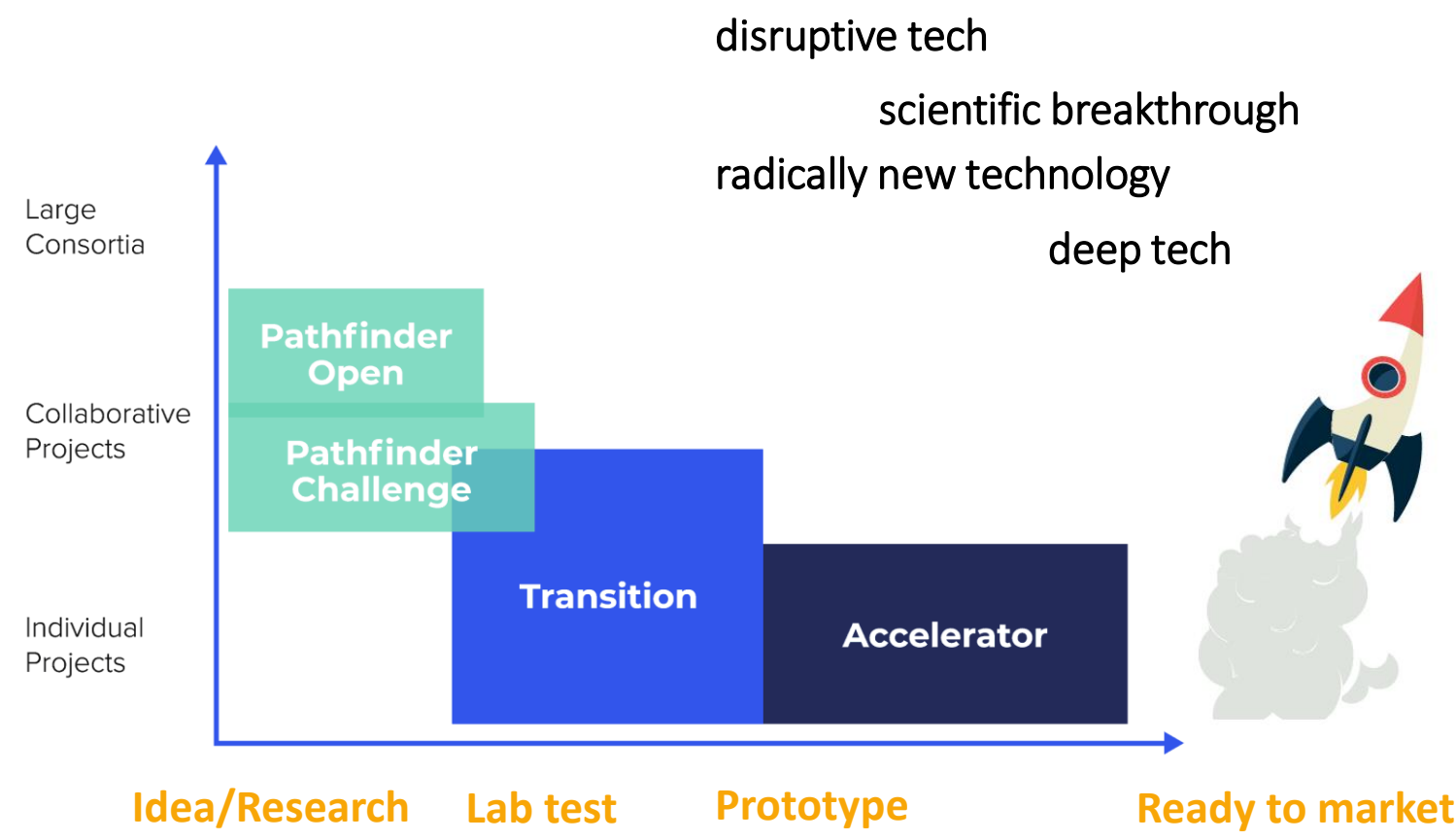
COURIOUS?

Cluster Digital, Industry and Space
Team

João Ribau
joao.ribau@ani.pt

Sofia Azevedo
sofia.azevedo@ani.pt

Cristiana Leandro
cristiana.leandro@ani.pt

João Nuno Ferreira
ferreira@fccn.pt

INDÚSTRIA

DIGITAL

Sandra Fernandes
sandra.fernandes@fct.pt

Daniel Ferreira
daniel.ferreira@fct.pt

Hugo Costa
hugo.costa@ptspace.pt

Joan Alabart
Joan.alabart@ptspace.pt

Marta Gonçalves
Marta.goncalves@ptspace.pt

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DIGITAL

ESPAÇO

GET involved and informed beforehand

Get involved in the R&I priorities discussion
Grupo Nacional de Discussão do Horizonte Europa Pilar II & Pilar III

Get informed of all the initiatives, calls and HE hot topics
Contact List

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