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HORIZONTE
EUROPA
@HorizonteEuropa



Horizonte Europa Clúster 4 / Digital

Fernando Martín Galende

Salamanca, 8 de febrero de 2023

Index



Horizon Europe
Clúster 4



Digital



Soporte NCPs

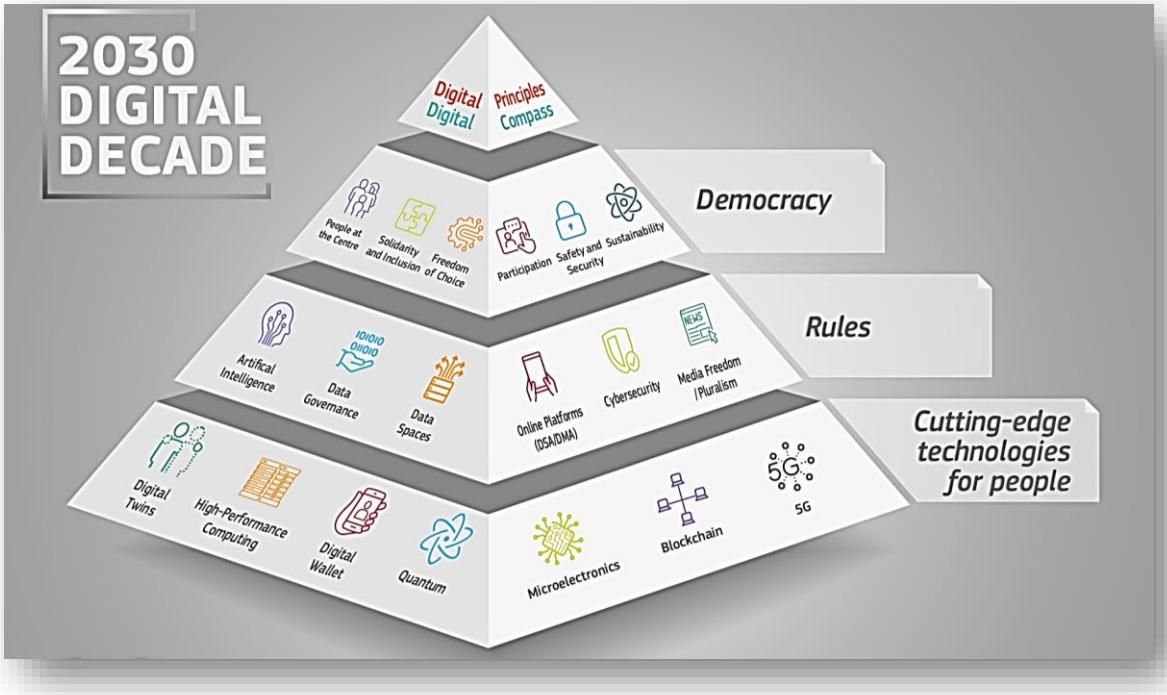
#HorizonEU



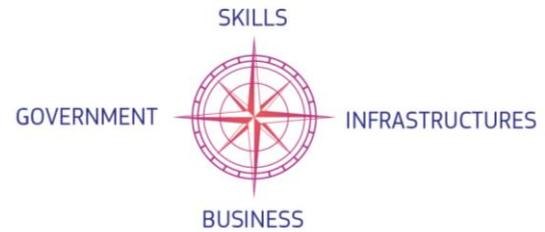
HORIZON EUROPE

THE EU RESEARCH &
INNOVATION PROGRAMME

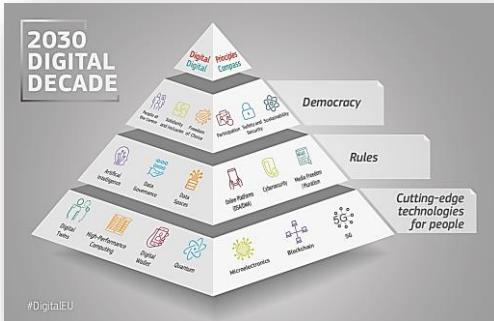
Political Strategy



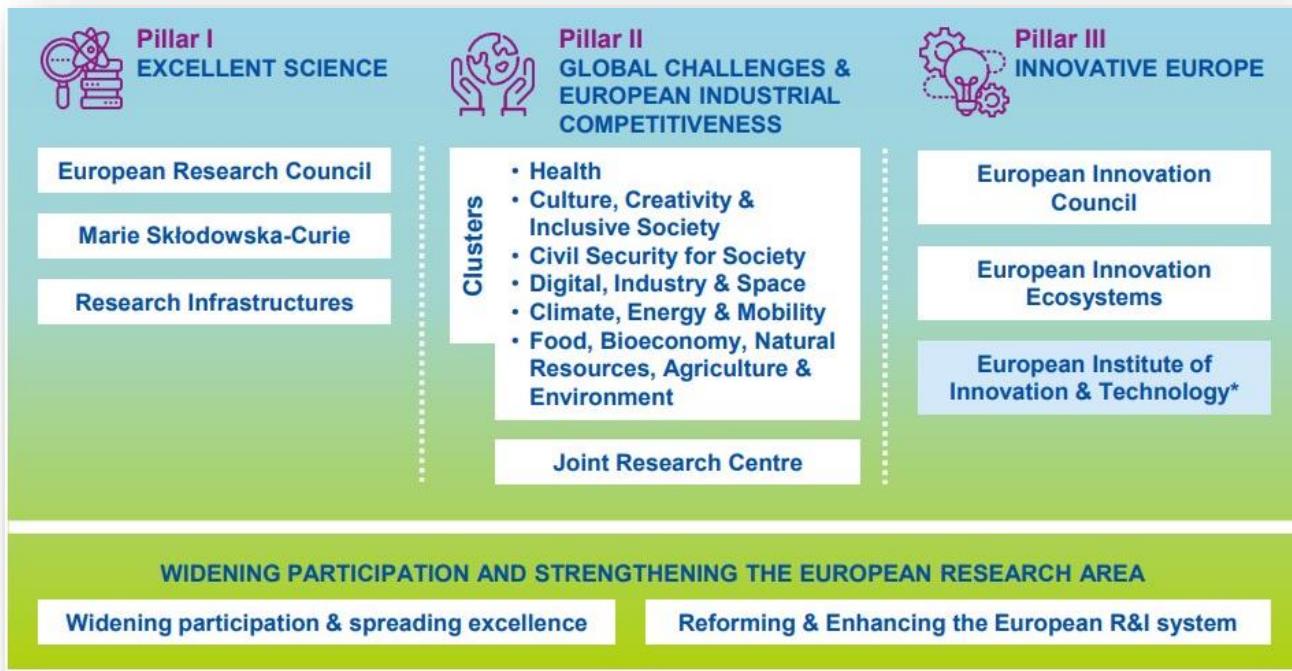
Brújula Digital



Political Strategy



Horizon Europe



95.500 M€
2021-2027

/ Pillars
/ Clusters
/ Destinations
/ Topics

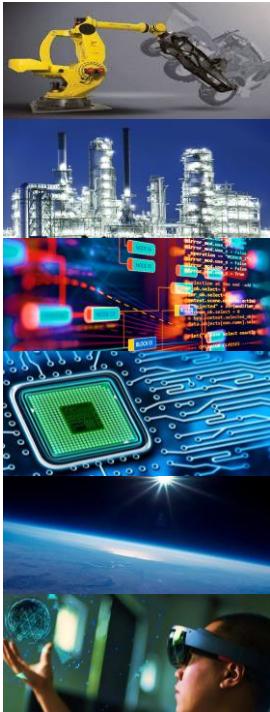
+3 Countries

- Research (**RIA**)
- Innovation (**IA**)
- Coordination (**CSA**)

Horizon Europe / cluster 4



Cluster 4 - Destinations



CLIMATE NEUTRAL, CIRCULAR AND DIGITISED **PRODUCTION**

INCREASED AUTONOMY IN KEY STRATEGIC VALUE CHAINS FOR **RESILIENT** INDUSTRY

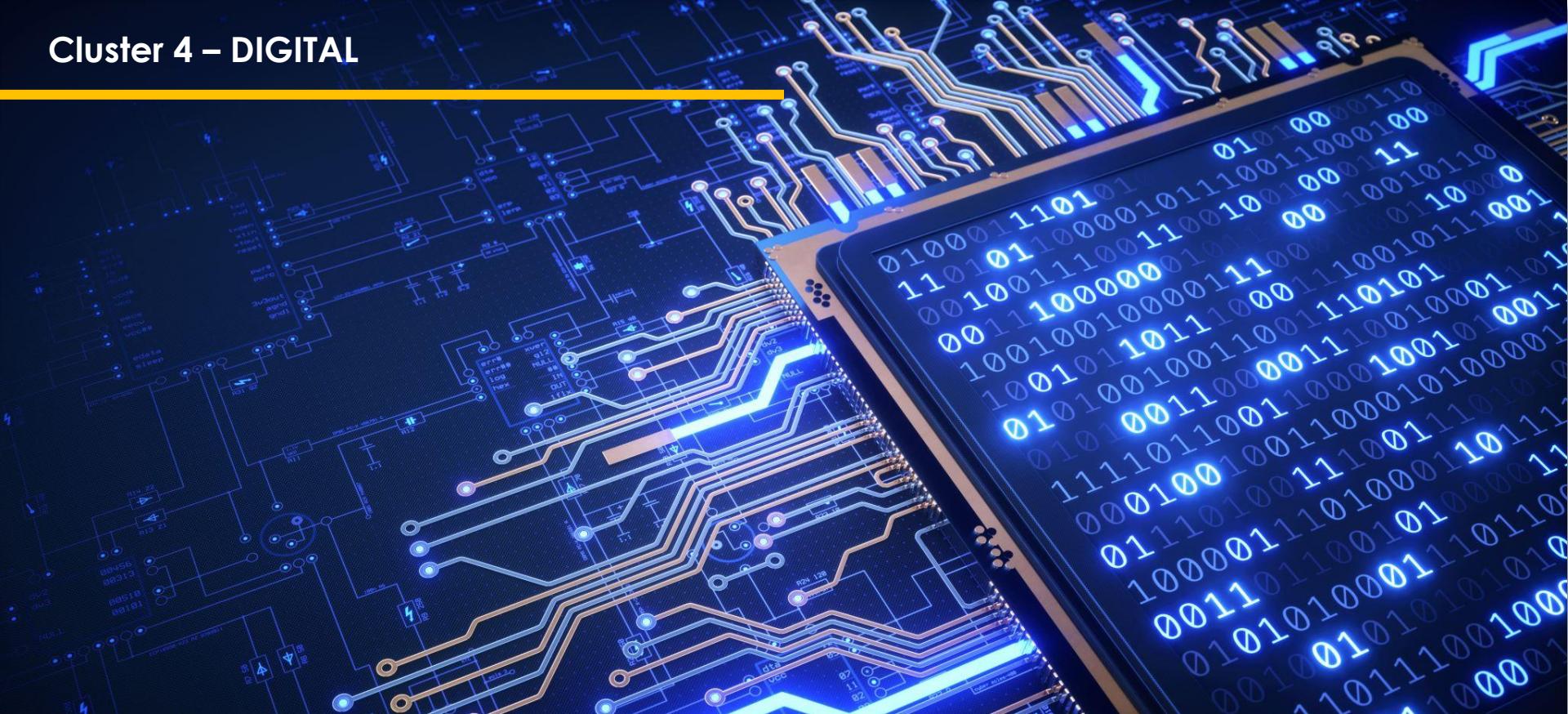
WORLD LEADING **DATA** AND COMPUTING TECHNOLOGIES

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

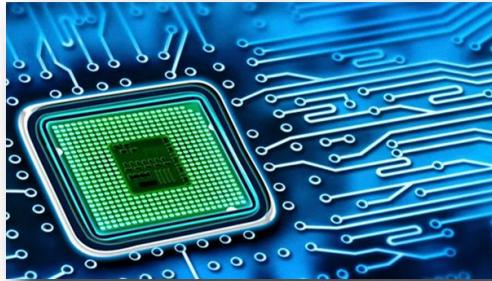
Cluster 4 – DIGITAL



Destinations



Data



Emerging



Human

C4 - DIGITAL / Partnerships

Institutionalised



- High Performance Computing (**EuroHPC**)



- Key Digital Technologies (**KDT**) (**Future Chips JU**)



- Smart Networks and Services (**SNS**)

Co-programmed



- AI / Data / Robotics



- Photonics

Cluster 4 / Data / Impact



Improved European leadership in the global
data economy



Maximised **social and economic** benefits
from the wider and more effective use of
data



Reinforced Europe's ability to manage
urgent **societal challenges** (e.g. data for
crisis management, digital for clean
energy).



MINISTERIO
DE CIENCIA
E INNOVACIÓN



Cluster 4/Data

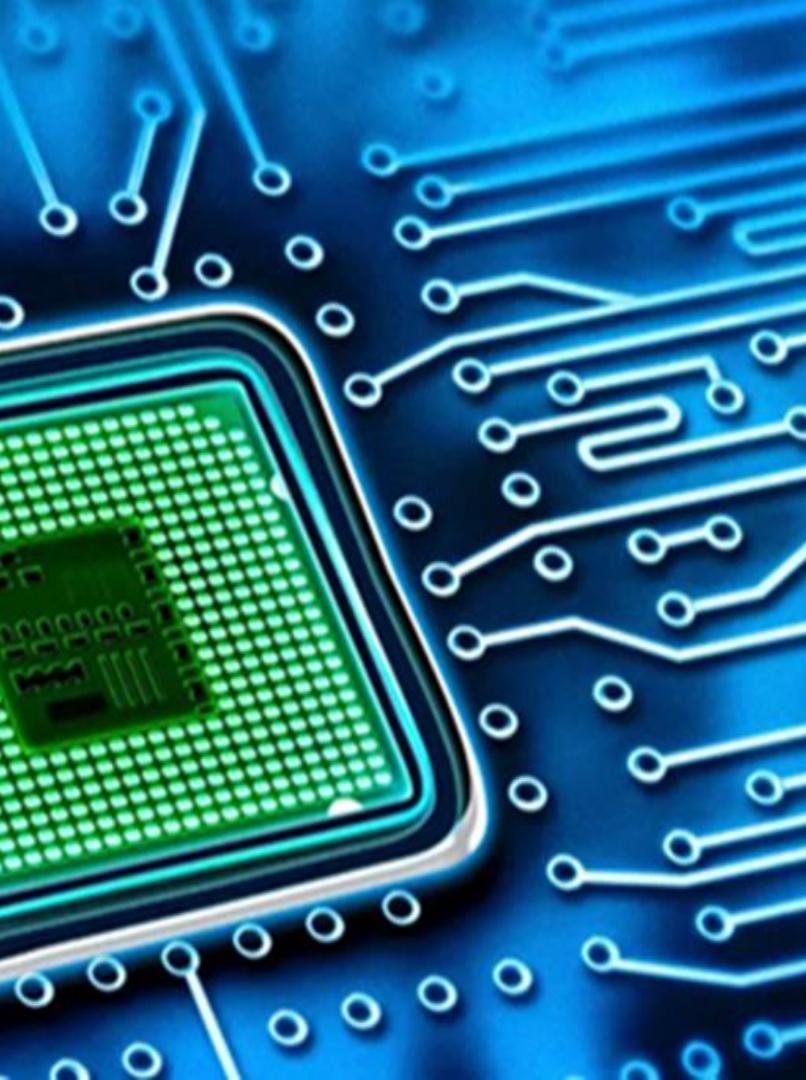


IOIO
IOIO

- Data sharing and analytics capacity



- From Cloud to Edge to IoT for European Data



Cluster 4 / Digital Emerging / Impact



Europe's open **strategic autonomy** by sustaining first-mover advantages in strategic areas including AI, data, robotics, quantum computing, and graphene, and by investing early in emerging enabling technologies.



Reinforced **European industry leadership** across the digital supply chain.



Robust European **industrial** and **technology presence** in all key parts of a greener digital supply chain, from low-power components to advanced systems, future networks, new data technologies and platforms.

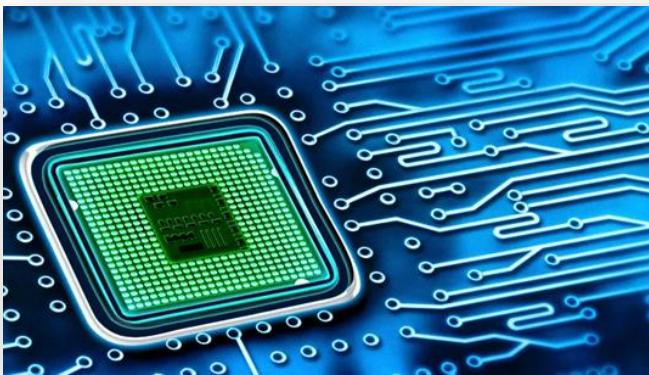


GOBIERNO
DE ESPAÑA

MINISTERIO
DE CIENCIA
E INNOVACIÓN



Cluster 4/Digital Emerging



- AI, Data and Robotics



- European Leadership in Emerging and Enabling Technologies



- Graphene and 2D Materials



- Flagship on Quantum Technologies



- European Innov. Leadership in Photonics



- Open SW for Cloud/Edge & SW Engineering



Cluster 4 / Human / Impact



Increased inclusiveness, by supporting a **human-centred approach to technology development** that is aligned with European social and ethical values, as well as sustainability



Sustainable, **high-quality jobs** by targeting skills mismatches, the need to empower workers, and ethical considerations relating to technological progress

Cluster 4/ Human



- Leadership in AI based on trust



- An Internet of Trust



- eXtended Reality



- Uptake of Tech & Innovation



- Research and Innovation for Industry 5.0



- European standards



- Digital Humanism



- Intl. Cooperation (+Latinoamerica)

HORIZON-CL4-2022 (Digital): Budget

	29/3/2023	19/3/2024
DATA-2023	76M€	
DATA-2024		85M€
DIGITAL-EMERGING-2023	237M€	
DIGITAL-EMERGING-2024		224,5M€
HUMAN-2023	256,5M€	
HUMAN-2024		61M€
	569,5M€	370,5M€

Horizon Europe: Other clusters

Clúster 1: Salud digital

Clúster 2: Patrimonio cultural y aspectos sociales

Clúster 3: Ciberseguridad

Clúster 5: Aplicaciones para gestión energética, transporte, etc.

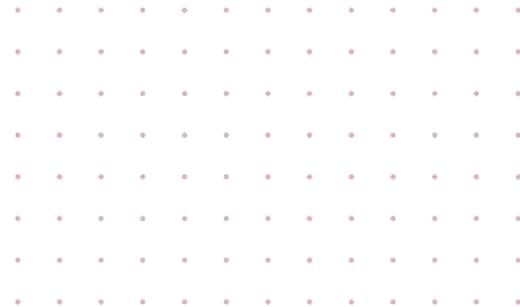
Clúster 6: Aplicaciones para agricultura, alimentación, etc.

P-III: European Innovation Council

Digital Programs



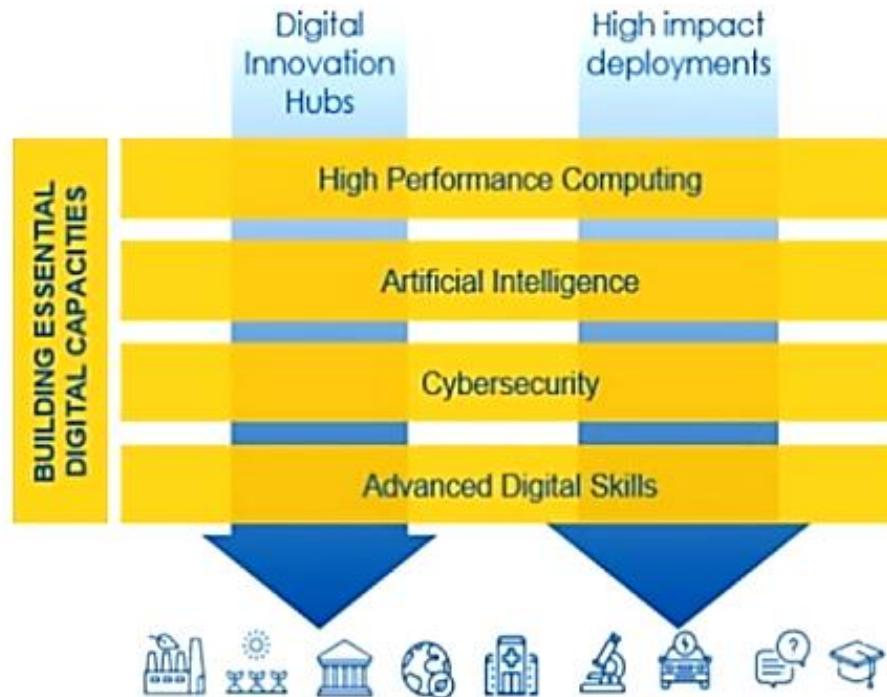
DIGITAL EUROPE PROGRAM



Digital Europe Programme



DIGITAL EUROPE PROGRAM



Resultados de H2020-ICT vs HE-C4-Digital

Proyectos	Líderes	Participaciones	Financiación	% Éxito
672 de 4.744 14,2%	177 de 1.245 14,2%	1.697 de 10.596 16,0%	596,2 M€ de 4.085,3 M€ 14,6%	14,2%

Proyectos	Líderes	Participaciones	Financiación	% Éxito
181 de 804 22,5%	36 de 162 22,2%	434 de 1.869 23,2%	163,1 M€ de 778,6 M€ 20,9%	22,5%

44,7% Empresa
22,8% Universidad
11,3% CPI
10,4% CCTT
8,8% Centros Inv

36,3% Cataluña
30,3% Madrid
11,5% Com. Valenciana
9,3% País Vasco
4,1% Andalucía

Telefónica I+D (TID)
Barcelona Supercomputing Center (BSC)
Universidad Politécnica de Valencia (UPV)
Universidad Politécnica de Cataluña (UPC)
Fundación Privada i2Cat
Atos IT Solutions
Centro Tecnológico de Comunicaciones de Cataluña (CTTC)
Instituto de Ciencias Fotónicas (ICFO)
Centro Superior de Investigaciones Científicas (CSIC)
Universidad Politécnica de Madrid (UPM)

Resultados de Castilla y León en HE-C4-Digital

Proyectos	Líderes	Participaciones	Financiación	% Éxito
3	0	3	0,8 M€	15,0%
de 20	de 1	de 25	de 7,76 M€	
15%	0%	12%	10,3%	

Proyectos	Líderes	Participaciones	Financiación	% Éxito
181	36	434	163,1 M€	22,5%
de 804	de 162	de 1.869	de 778,6 M€	
22,5%	22,2%	23,2%	20,9%	

68,2% Empresa
31,8% CCTT

Tecnosylva SL
Fundación Cartif
ASTI Mobile Robotics SA

Participación: Ayuda CDTI



National Contact Points - DIGITAL

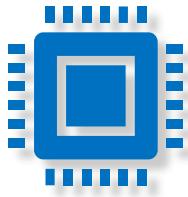


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Conclusiones



Technology
Development

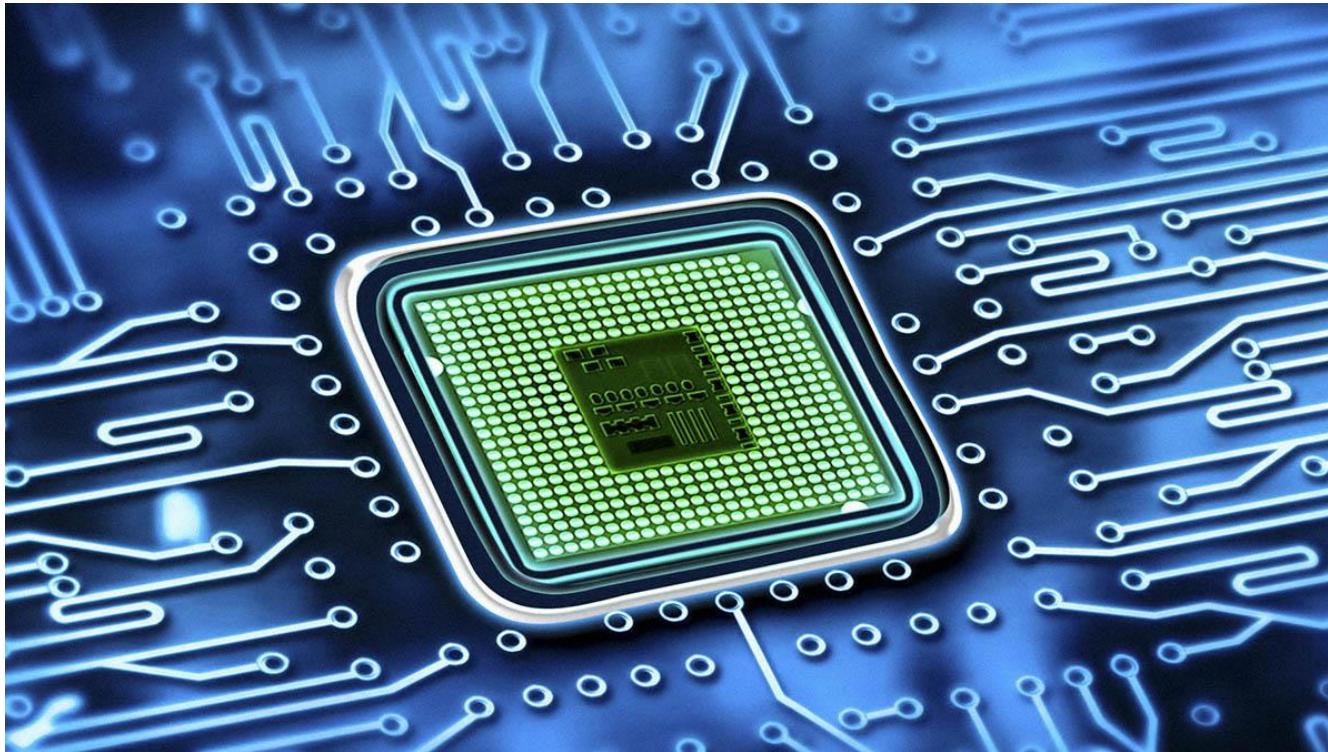


Partnerships

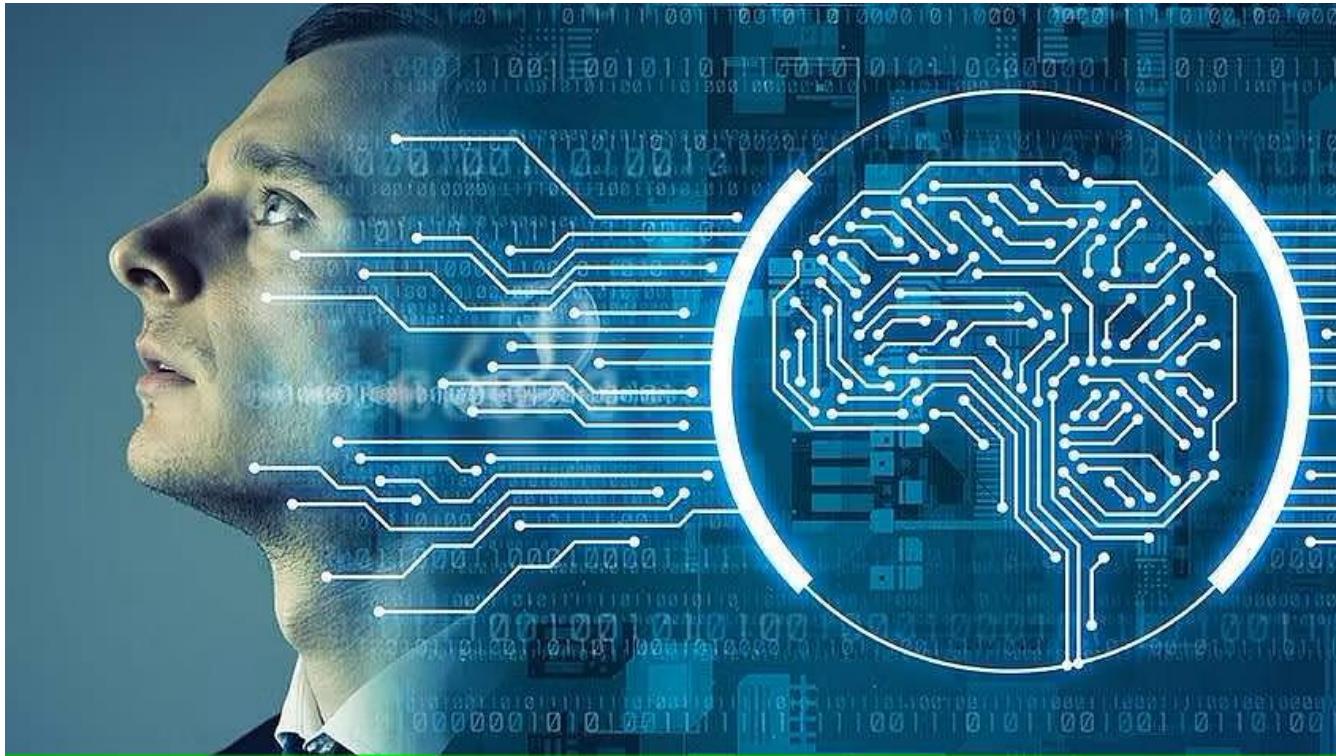


NCPs

Conclusiones



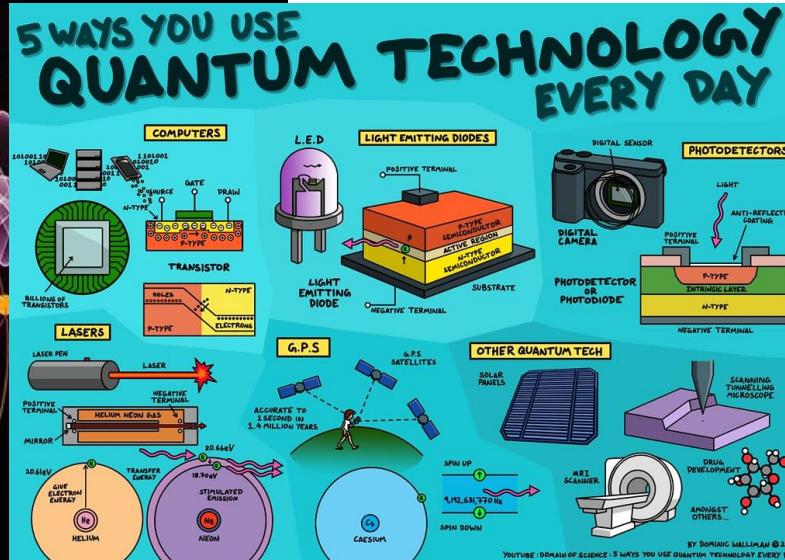
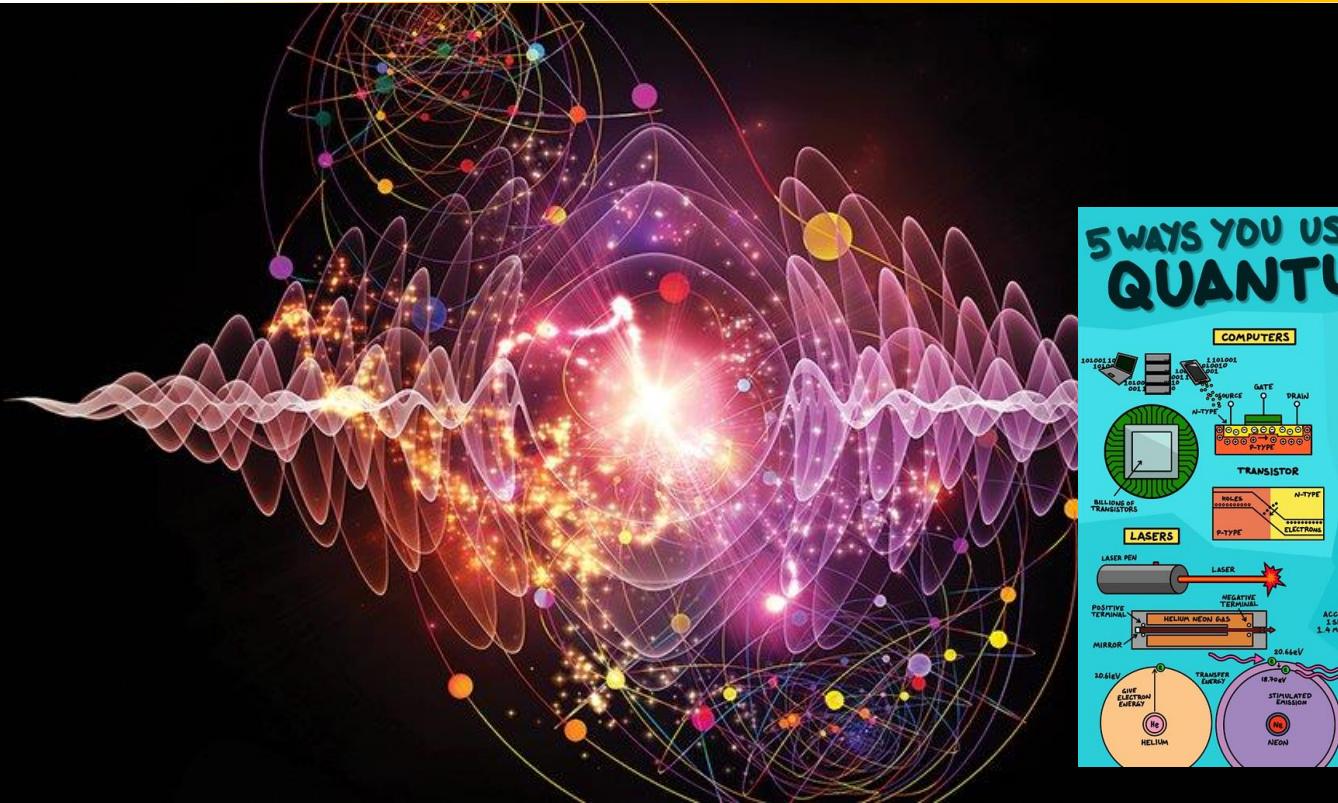
Conclusiones



Conclusiones



Conclusiones



Conclusiones



¿ Preguntas?

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CONVOCATORIAS 2023-24



- * **HORIZON-CL4-2023-DATA-01-02:** Integration of data life cycle, architectures and standards for complex data cycles and/or human factors, language (AI, Data and Robotics Partnership) (RIA) **45M€**
- * **HORIZON-CL4-2023-DATA-01-04:** Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (AI, data and robotics partnership) (RIA) **28M€**
- * **HORIZON-CL4-2023-DATA-01-06:** Coordination and Support of Cognitive Computing Continuum research and policy (CSA) **2M€**
- * **HORIZON-CL4-2023-DATA-01-07:** Collaboration with NSF on fundamental research on new concepts for distributed computing and swarm intelligence (CSA) **1M€**

- * **HORIZON-CL4-2024-DATA-01-01:** AI-driven data operations and compliance technologies (AI, data and robotics partnership) (IA) **38M€**
- * **HORIZON-CL4-2024-DATA-01-03:** Piloting emerging Smart IoT Platforms and decentralized intelligence (IA) **45M€**
- * **HORIZON-CL4-2024-DATA-01-05:** Platform Building, standardisation and Up-scaling of the ‘Cloud-Edge-IoT’ Solutions (CSA) **2M€**

HORIZON-CL4-2023-DIGITAL-EMERGING-01

Deadline 29/03/23

- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-01:** Novel paradigms and approaches, towards AI-driven autonomous robots (AI, data and robotics partnership) (RIA) **30M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-12:** Adaptive multi-scale modelling and characterisation suites from lab to production (RIA) **22M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-51:** Pervasive photonics - multi-technology integration for digital infrastructure, sensors and internet of things (Photonics partnership) (RIA) **18M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-53:** Versatile light sources and systems as tools for manufacturing and medical application (Photonics Partnership) (RIA) **18M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-57:** Advanced imaging and sensing technologies (Photonics Partnership) (IA) **20M€**

HORIZON-CL4-2023-DIGITAL-EMERGING-01-CNECT

Deadline 29/03/23

- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-02:** Industrial leadership in AI, Data and Robotics – advanced human robot interaction (AI Data and Robotics Partnership) (IA)
30M€
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-11:** Low TRL research in micro-electronics and integration technologies for industrial solutions (RIA) **35M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-32:** Sustainable safe-by-design 2D materials technology (RIA) **6M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-33:** 2D materials of tomorrow (RIA) **12M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-40:** Quantum Photonic Integrated Circuit technologies (RIA) **12M€**

HORIZON-CL4-2023-DIGITAL-EMERGING-01-CNECT

Deadline 29/03/23

- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-41:** Investing in alternative quantum computation and simulation platform technologies (RIA) **20M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-43:** Framework Partnership Agreement for developing large-scale quantum Computing platform technologies (FPA) **0M€**
(SGA in the second quarter of 2024 with budget of 25M€)
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-50:** Next generation quantum sensing and metrology technologies (RIA) **10M€**
- * **HORIZON-CL4-2023-DIGITAL-EMERGING-01-56:** Photonic Strategies and Skills Development (Photonics Partnership) (CSA) **4M€**

HORIZON-CL4-2024-DIGITAL-EMERGING-01

Deadline 19/03/24

- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-03:** Novel paradigms and approaches, towards AI-powered robots— step change in functionality (AI, data and robotics partnership) (RIA) **30M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-04:** Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition (AI Data and Robotics Partnership) (IA) **60M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-22:** Fundamentals of Software Engineering (RIA) **13,5M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-54:** Smart photonics for joint communication & sensing and access everywhere (Photonics Partnership) (RIA) **18M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-55:** Photonics Innovation Factory for Europe (Photonics Partnership) (IA) **15M€**

HORIZON-CL4-2024-DIGITAL-EMERGING-01-CNECT

Deadline 19/03/24

- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-21:** Open Source for Cloud/Edge to support European Digital Autonomy (RIA) **20M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-23:** Public recognition scheme for Open Source (CSA) **2M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-31:** Pilot line(s) for 2D materials-based devices (RIA) **33M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-34:** Synergy with national and regional initiatives in Europe (CSA) **3M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-42:** Stimulating transnational research and development of next generation quantum technologies, including basic theories and components (RIA with FSTP) **15M€**
- * **HORIZON-CL4-2024-DIGITAL-EMERGING-01-45:** Quantum sensing and metrology for market uptake (IA) **15M€**

HORIZON-CL4-2023-HUMAN-01

Deadline 29/03/23

- * **HORIZON-CL4-2023-HUMAN-01-31:** Toolbox for efficient IP licensing for market uptake and societal value creation (CSA) **2M€**
- * **HORIZON-CL4-2023-HUMAN-01-32:** Piloting communities of expert facilitators to improve industry-academia-public sector co-creation (CSA) **2M€**
- * **HORIZON-CL4-2023-HUMAN-01-33:** Fostering knowledge valorisation through societal and cultural interactions (CSA) **5M€**
- * **HORIZON-CL4-2023-HUMAN-01-51:** Pilots for an innovative human-centric industry (RIA) **10M€**
- * **HORIZON-CL4-2023-HUMAN-01-52:** Drivers and success factors for progress towards Industry 5.0 (RIA) **4M€**
- * **HORIZON-CL4-2023-HUMAN-01-53:** Localised and Urban Manufacturing, supporting creativity and the New European Bauhaus (RIA using FSTP) **10M€**

HORIZON-CL4-2023-HUMAN-01

Deadline 29/03/23

- * **HORIZON-CL4-2023-HUMAN-01-54:** Green and digital skills and training needs for a just transition (CSA) **2,5M€**
- * **HORIZON-CL4-2023-HUMAN-01-62:** Boosting industrial symbiosis by standardisation (CSA) **2M€**
- * **HORIZON-CL4-2023-HUMAN-01-63:** Provide for a strong and sustainable pool of experts for European Standardisation: attract the students of university/HEI (CSA) **3M€**
- * **HORIZON-CL4-2023-HUMAN-01-64:** Pre-normative research and standardisation in industrial ecosystems (CSA) **8M€**
- * **HORIZON-CL4-2023-HUMAN-01-91:** International Hub for Digital Partnerships in the Indo-Pacific (CSA) **2,5M€**
- * **HORIZON-CL4-2023-HUMAN-01-92:** R&I cooperation with Sub-Saharan Africa (CSA) **2M€**
- * **HORIZON-CL4-2023-HUMAN-01-93:** R&I cooperation with Latin America (Mexico, Brazil, Argentina and other countries in the BELLA network)

HORIZON-CL4-2023-HUMAN-01-CNET

Deadline 29/03/23

- * **HORIZON-CL4-2023-HUMAN-01-01:** Efficient trustworthy AI - making the best of data (AI, Data and Robotics Partnership) (RIA) **35M€**
- * **HORIZON-CL4-2023-HUMAN-01-02:** Large Scale pilots on trustworthy AI data and robotics addressing key societal challenges (AI Data and Robotics Partnership) (IA) **24M€**
- * **HORIZON-CL4-2023-HUMAN-01-03:** Natural Language Understanding and Interaction in Advanced Language Technologies (AI Data and Robotics Partnership) (RIA) **20M€**
- * **HORIZON-CL4-2023-HUMAN-01-04:** Open innovation: Addressing Grand challenges in AI (AI Data and Robotics Partnership) (CSA) **4M€**
- * **HORIZON-CL4-2023-HUMAN-01-05:** Through AI from Disinformation to Trust (IA) **10M€**
- * **HORIZON-CL4-2023-HUMAN-01-11:** Next Generation Internet Fund (RIA) **27M€**
- * **HORIZON-CL4-2023-HUMAN-01-12:** Pilots for the Next Generation Internet) (IA) **14M€**
- * **HORIZON-CL4-2023-HUMAN-01-13:** Next Generation Internet International Collaboration - USA (RIA) **4M€**

HORIZON-CL4-2023-HUMAN-01-CNET

Deadline 29/03/23

* **HORIZON-CL4-2023-HUMAN-01-14**: Next Generation Internet Commons Policy (CSA) **2M€**

* **HORIZON-CL4-2023-HUMAN-01-21**: Next Generation eXtended Reality (RIA) **26M€**

* **HORIZON-CL4-2023-HUMAN-01-22**: eXtended Reality for Industry 5.0 (IA) **25M€**

* **HORIZON-CL4-2023-HUMAN-01-23**: Supporting the emergence of an open human-centric Metaverse (CSA) **2M€**

* **HORIZON-CL4-2023-HUMAN-01-65**: Support facility for digital standardisation and international cooperation in digital partnerships (CSA) **1,5M€**

* **HORIZON-CL4-2023-HUMAN-01-66**: Promoting EU standards globally (CSA) **2,5M€**

* **HORIZON-CL4-2023-HUMAN-01-81**: Digital Humanism - Putting people at the centre of the digital transformation (CSA) **1,5M€**

* **HORIZON-CL4-2023-HUMAN-01-82**: Art-driven digital innovation: Towards human compatible and ecologically conscious technology (CSA) **3M€**

HORIZON-CL4-2024-HUMAN-01

Deadline 19/03/24

- * **HORIZON-CL4-2024-HUMAN-01-06:** Explainable and Robust AI (AI Data and Robotics Partnership) (RIA) **30M€**
- * **HORIZON-CL4-2024-HUMAN-01-07:** Collaborative intelligence – combining the best of machine and human (AI Data and Robotics Partnership) (RIA) **20M€**
- * **HORIZON-CL4-2024-HUMAN-01-34:** Support for transnational activities of National Contact Points in the thematic areas of Digital, Industry and Space (CSA) **5M€**
- * **HORIZON-CL4-2024-HUMAN-01-61:** Facilitate the engagement in global ICT standardisation development (CSA) **6M€**