



Innovate
UK

Chips JU – 2024 Non-initiative call UK Scope & Eligibility

Craig Sharp, National Contact Point for Digital in Horizon Europe



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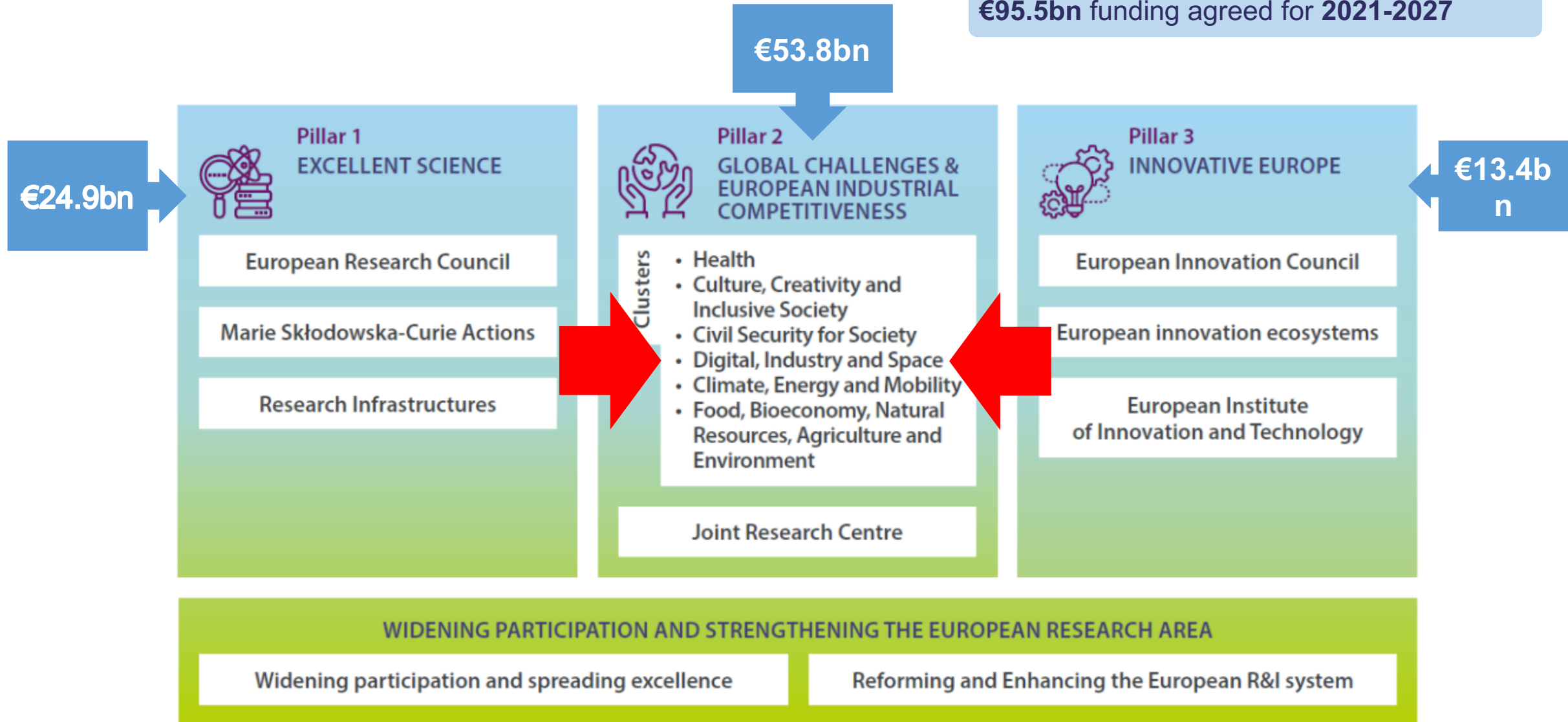
Support – National Contact Points

- National Contact Points are publicly funded and offer an accessible, free and confidential service for organisations interested participating in Horizon Europe. They provide impartial advice, tailored to each individual business and organisation – scope fit, help finding partners,
- Detailed knowledge of the Work Programme and how it aligns with the UK research and innovation priorities - www.ukri.org/HorizonEU
- UK National Contact Point list - <https://www.gov.uk/business-finance-support/horizon-europe-funding>
- [International NCP network](#) – support in Member States, Associated Countries and Third Countries
- Depth of understanding of European Commission processes including ‘non-standard’ issues such as JUs (some of the “partnerships”), EIC, ETPs, and other TLAs
- Help with navigating ‘[The \(Funding & Tenders\) Portal](#)’ – the EC publishes everything you could ever want to know, however, finding it can (occasionally) be a problem

If in doubt – ask your National Contact Point, their role is to support applicant organisations

Horizon Europe

€95.5bn funding agreed for 2021-2027



Digital, Industry & Space (Cluster 4)

Destinations 1 & 2

Industry

- Circular Industries, Waste
- Clean Steel, Construction
- Resource & Energy efficiency
- Digital Mfg. & Automation
- Sustainability by design
- Light weight structures, Plastics
- Smart, Multi-functional materials (incl. Composites, Nano & bio)
- Adv. Materials for Energy storage (incl. Hydrogen & Electrification)

Destinations 3,4,6

Digital

- AI, Data & Computing
- Photonics & Electronics
- Smart Networks & Connectivity
- Robotics
- Quantum
- Graphene/2D materials
- Digital Economy, standards, NGI, XR, Human factors, Industry 5.0
- *plus separate calls on 5/6G, **Key Digital Technologies/Chips JU – electronic systems, components, semiconductors**

Destinations 5

Space

- Satellite technology
- Access to space
- Space data
- Space science
- Space robotics

NCP Industry: Anshumaan Krishnan Ayyangar

NCP Digital: Craig Sharp

NCP Space: Catherine Holt

Chips Joint Undertaking

Public-private partnership (PPP)

Partnerships between public authorities and industry intend to bring project results closer to the market and improve the link between research and societal growth. The PPPs are based on long term contracts that can take many different legal forms, from contractual partnerships to specific legal entities.

Joint undertaking (JU)

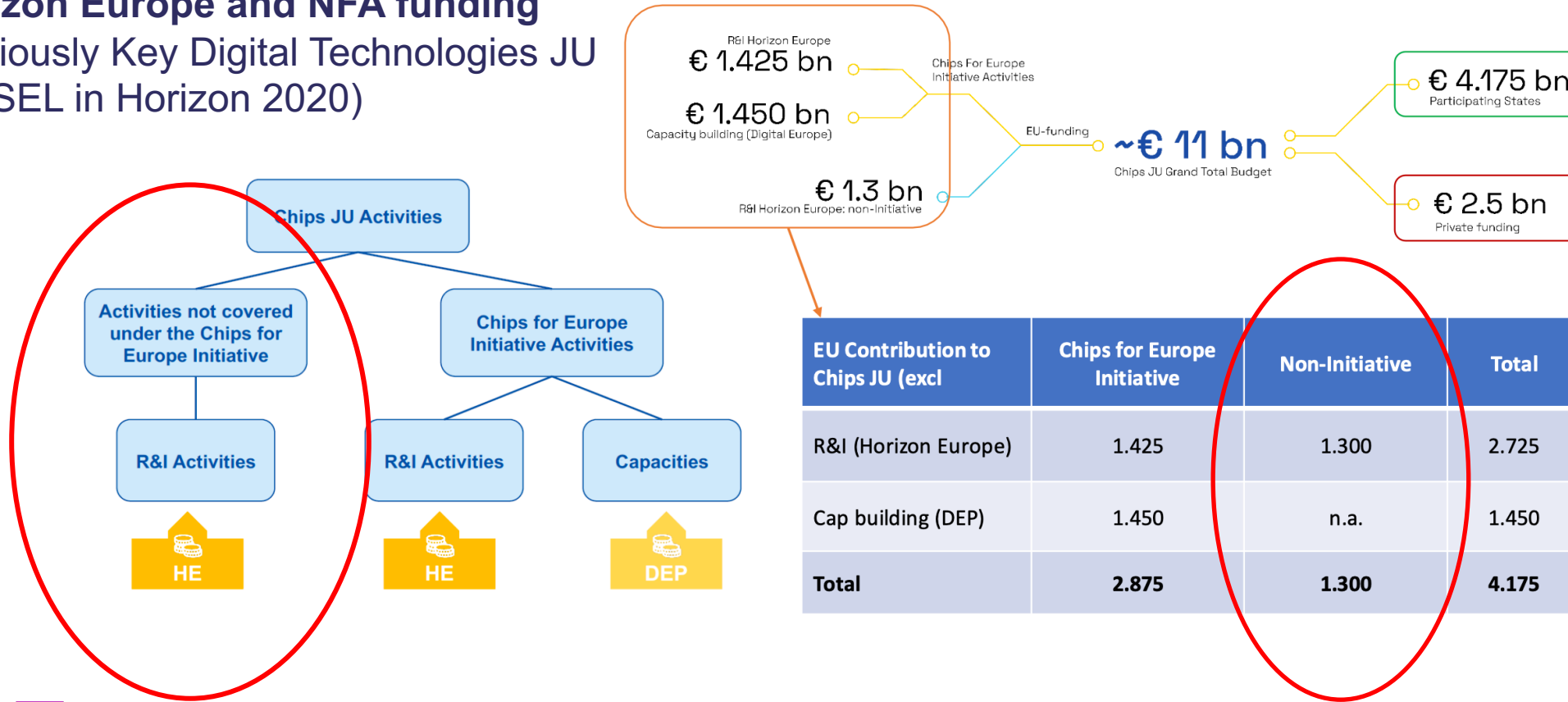
A Joint Undertaking is an institutionalized PPP with its own legal identity, with its own governance, budget etc.. In most cases, like for the Chips JU, the JUs are established by an EU regulation called the Single Basic Act which defines what the JU has to do and how it must do it. Most of the rules governing the JUs are very similar to those of the European Commission.

Chips JU

Chips JU was established in September, 2023, in an amendment to the Single Basic Act to implement the first pillar of the Chips Act and to continue the activities of its predecessors in the field of electronic components and systems (ECS). The Chips JU is a tri-partite partnership between the EC, the participating states and European industries; most of our actions are funded jointly and equally by these actors.

Chips JU - activities and funding

Non-initiative calls
Horizon Europe and NFA funding
previously Key Digital Technologies JU
(ECSEL in Horizon 2020)



Chips JU (non-initiative call)

Non-initiative

KDT General Objectives

- a) Reinforce EU strategic autonomy in electronic components and systems
- b) Establish EU scientific excellence and innovation leadership
- c) Ensure that components and systems technologies address Europe's societal and environmental challenges

Initiative

From KDT to Chips JU

- d) Pilot lines
- e) Design platform
- f) Competence centers
- g) Quantum chips technology

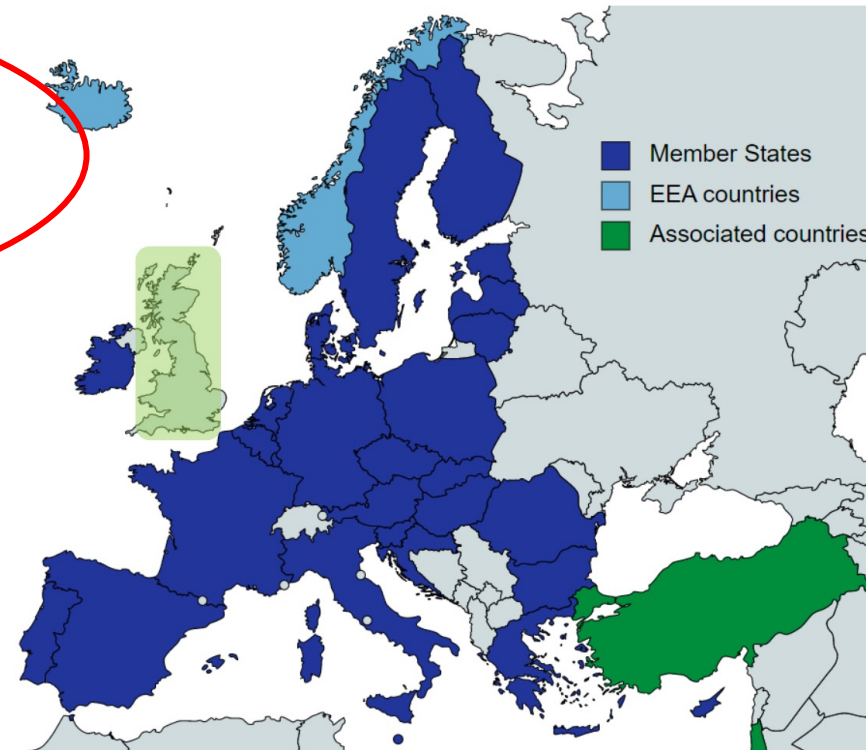
Digital Europe Programme in addition to Horizon Europe

- **Disclaimer: we know that the WP2023-2027 will need to be updated/amended in the spring and some details on the following pages may change:**

<https://www.chips-ju.europa.eu/Library/>

- How to participate:

<https://www.chips-ju.europa.eu/Participate/>



Chips JU - General info (collaborative R&D)

- **Eligibility:** Must be a consortium of minimum 3 independent legal entities, each established in a different EU Member State (MS) or Associated countries, with at least 1 of them established in a MS.
- UK has associated to Horizon Europe from 1/1/24 – so “2024” (and later) calls. Funded (and monitored) by EC, sign Grant Agreements, UK can coordinate

Award Criteria

- **Excellence**
- **Impact**
- **Quality** and **Efficiency** of implementation

Chips JU – non-initiative Main Types of Actions*

- **RIA** – Research and Innovation Actions – centre of gravity at **TRL 3-4**
- **IA** – Innovation Actions – centre of gravity at the **TRL 5-8**
- **CSA** – *Coordination and Support Actions*

Chips JU call non-initiative funding comes from a mix of Horizon Europe and National Funding Agency

UK Joins the Chips Joint Undertaking

- [Announced by Technology Minister Saqib Bhatti](#) 13th March 2024 at the global semiconductor conference in London
- Semiconductor sector to benefit from up to £35 million, plus European funds, in a boost to British leadership in research of cutting-edge chip technology
- UK joins European initiative to access €1.3 billion Horizon Europe funding pot for collaborative semiconductor research projects
- Boost to help push boundary of semiconductor design, improving tech used in all digital devices and advances the government's plan to secure long term growth
- £5m UK co-funding for 2024 Chips JU 'non-initiative' call.
- An additional £30 million is due to support UK participation in further research between 2025 and 2027.
- Chips JU Info session 19/3/24 (recorded)

Chips JU Non initiative 2024 topics

Action	Title	Maximum JU Funding (M€)
HORIZON-Chips 2024-1-IA-T1	Global IA call according to SRIA 2024	103.00
HORIZON-Chips 2024-1-IA-T2	Focus topic on “High Performance RISC-V Automotive Processors supporting SDV”	20.00
HORIZON-Chips 2024-1-IA-T3	Focus topic on “Service Oriented Framework for the Software Defined Vehicle of the future”	20.00
HORIZON- Chips 2024-2-RIA-T1	Global RIA call according to SRIA 2023	52.00
HORIZON- Chips 2024-2-RIA-T2	Focus topic on “Sustainable and greener manufacturing”	15.00
HORIZON- Chips 2024-3-RIA	Joint call with Korea on Heterogeneous integration and neuromorphic computing technologies for future semiconductor components and systems	6.00
		216.00

<https://www.chips-ju.europa.eu/noninitiative/>



Funding shown in the table is the Horizon Europe (Korea joint call 100% HE funded). National Funding Agency funding provides co-funding for the others.

Global calls (RIA and IA) – ECS Strategic Roadmap

- The Global RIA (€54m HE) and IA (€102m HE) topics both refer to the ECS SRIA (2024)
- List of headline applications that are in scope (in SRIA) in each of the Global topics (RIA and IA)

This topic is the IA-part of the bottom-up programming. The topic will be open to the following major challenges:

Topics and Major Challenges	Open/ Closed
1.1 - Process technology, equipment, materials and manufacturing	
Major Challenge 1: Advanced computing, memory and in-memory computing concepts	Open
Major Challenge 2: Novel devices and circuits that enable advanced functionality	Open
Major Challenge 3: Advanced heterogeneous integration and packaging solutions	Open
Major Challenge 4: World-leading and sustainable semiconductor manufacturing equipment and technologies	Open
1.2 - Components, modules and systems integration	
Major Challenge 1: Enabling new functionalities in components with More-than-Moore technologies.	Open
Major Challenge 2: Integration technologies, processes and manufacturing.	Open
Major Challenge 3: Sustainability	Open
1.3 - Embedded software and beyond	
Major Challenge 1: Efficient engineering of embedded software	Open
Major Challenge 2: Continuous integration and deployment	Open

Major Challenge 3: Lifecycle management	Open
Major Challenge 4: Embedding data analytics and Artificial Intelligence	Open
Major Challenge 5: Support for Sustainability by embedded software	Open
Major Challenge 6: Software reliability and trust	Open
Major Challenge 7: Hardware virtualization for efficient SW engineering	Open
1.4 - System of Systems	
Major Challenge 1: SoS architecture and open integration platforms	Open
Major challenge 2: SoS interoperability	Open
Major Challenge 3: Evolvability of SoS composed of embedded and cyber-physical systems	Open
Major Challenge 4: SoS integration along the life cycle	Open
Major Challenge 5: Control in SoS composed of embedded and cyber-physical systems	Open
Major Challenge 6: SoS monitoring and management	Open
2.1 - Edge Computing and Embedded Artificial Intelligence	
Major Challenge 1: Increasing the energy efficiency	Open
Major Challenge 2: Managing the increasing complexity of systems	Open
Major Challenge 3: Supporting the increasing lifespan of devices and systems	Open
Major Challenge 4: Ensuring European sustainability in AI	Open

Focus topic on High Performance RISC-V Automotive Processors Supporting SDV (IA, 20m HE funding)

- RISC-V still requires important extensions and add-ons in order to support *high-performance automotive quality processing* needs. To close this gap and facilitate the development of top-level automotive RISC-V processor cores, efforts should be focussed on the development of an **automotive RISC-V reference hardware platform, subject of this focus topic**.
- This **focus topic** concerns an **open-source RISC-V based hardware** system implementation of the **SDV Hardware Layer** compatible with one or multiple widely-agreed-upon **Hardware**
- **Abstraction Layers** of the vehicle of the future, **addressing the hardware development** part of an **overall system approach** for HW-SW co-design, more in particular **RISC-V based processor solutions** which are **optimized for SDV** implementations.
- The expected RISC-V reference platform shall be targeted for **commercial use** and should comply with **industry standards** with respect to quality and safety. It should contain all assets and collaterals needed to enable and accelerate the development and adoption of RISC-V cores throughout the European automotive ecosystem.

<https://www.chips-ju.europa.eu/noninitiative/>

Focus topic on Software-define vehicle middleware and API framework for the vehicle of the future (IA, 20m HE funding)

- Europe needs to join forces in the automotive industrial domain by cooperating in an ecosystem-based technology initiative in order to lead on the Software Defined Vehicle technology and to capitalize on the expected gains on efficiency and development cost, complexity- reduction, and fulfilment of changing customer expectations.
- The SDV software stack (often also called Car OS) is extended by a **Middleware and Application Programming Interface (API) Framework** which supports different technologies. This framework abstracts the low-level technical details of the entire SDV SW stack towards the *SDV application layer*. It exposes the hardware functionalities directly as APIs or services also using a datacentric design in an OS independent, standardized & interoperable, safe, secure, efficient and easily accessible way.
- This call has a focus on the third layer, the *SDV Middleware and API Layer*.
- ***Modular (open-source) building blocks and open architectures*** of the ***SDV middleware and API framework*** for the ***vehicle of the future***.
- ***Holistic engineering framework***

<https://www.chips-ju.europa.eu/noninitiative/>

Focus Topic Sustainable and Greener Manufacturing (RIA, 15m HE funding)

- This focus topic concerns the development of a sustainable and greener semiconductor manufacturing through the reduction of its environmental footprint with a focus on materials. The results of the project are expected to contribute to the following outcomes:
- Increase the use of environmentally friendly materials, chemicals and solvents.
- Minimization of waste and emissions during production and processing
- Prevention of a future scarcity of some critical materials, metals for SC processing through a more efficient and cost-effective products and electronic waste recycling in process., including chips and PCBs.

<https://www.chips-ju.europa.eu/noninitiative/>

Joint call with Korea (100% Horizon Europe funded – €6m RIA, single stage)

- This joint call for proposals between the Republic of Korea and the EU addresses the topics related to Heterogeneous integration and neuromorphic computing technologies for future semiconductor components and systems and intends to set a framework:
- To strengthen the relation between R&I players in both jurisdictions
- To undertake joint R&I for EU and Korean R&I teams by cooperating in pre-competitive projects on areas which are in the interest of both jurisdictions.
- To build trust for further cooperation.
- This joint call topic will be co-funded by South Korea (KR) and the European Union (EU)
- See call text in the work programme for specific conditions

<https://www.chips-ju.europa.eu/noninitiative/>

Areas of particular UK interest

Aligning with recent UK strategies and the ECS SRIA 2024 - we would particularly welcome proposals covering

- Semiconductor Processing & Manufacture
- Semiconductor design & IP
- Compound Semiconductors
- Advanced Packaging – Hybrid & Heterogeneous Integration
- Advanced & Emerging Materials
- Power electronics / Photonics / AI
- Net Zero / Environmental
- Electric Vehicles / Energy resilience
- Circular Economy / Critical Minerals
- Healthcare

<https://www.chips-ju.europa.eu/noninitiative/>

Key conditions

- We have allocated up to £5,000,000 to co-fund UK participants in innovation projects in this 2024 call.
- Maximum UK grant in a single project - £750,000
- All types of UK registered organisations can apply for funding
- Your project:
 - must contain at least one UK registered business of any size
 - be or involve at least one grant claiming [micro, small or medium-sized enterprise](#) (SME)
 - can collaborate with other UK registered organisations
- If your total UK grant is greater than £750,000, then you must provide justification by email to support@iuk.ukri.org as soon as possible before you start your application and at least 10 working days before the competition closes, where we will decide whether to approve your request.
- [Further guidance](#) available on our Funding rules page.
- All UK participants are advised to contact the Innovate UK contact point before committing to participate in any proposal.

2024 Chips non-initiative topics – Horizon Europe funding

Action	Topic	Large	SME	RTO/ Uni
HORIZON-Chips 2024-1-IA T1	Global call according to SRIA 2024 (IA)	20%	30%	35%
HORIZON- Chips 2024-1-IA T2	Focus topic on “High Performance RISC-V Automotive Processors supporting SDV”	25%	30%	35%
HORIZON- Chips 2024-1-IA T3	Focus topic on “Service Oriented Framework for the Software Defined Vehicle of the future”	25%	30%	35%
HORIZON- Chips 2024-2-RIA-T1	Global call according to SRIA 2024 (RIA)	25%	35%	35%
HORIZON- Chips 2024-2-RIA T2	Focus topic on “Sustainable and greener manufacturing”	25%	35%	35%
HORIZON- Chips 2024-3-RIA	Joint call with Korea on Heterogeneous integration and neuromorphic computing technologies for future semiconductor components and systems	100%	100%	100%

2024 Chips non-initiative topics – UK co-funding

Action	Topic	Large	Medium	Small	RTO/ Uni
HORIZON-Chips 2024-1-IA T1	Global call according to SRIA 2024 (IA)	30%	30%	40%	65%
HORIZON-Chips 2024-1-IA T2	Focus topic on “High Performance RISC-V Automotive Processors supporting SDV”	25%	30%	40%	65%
HORIZON-Chips 2024-1-IA T3	Focus topic on “Service Oriented Framework for the Software Defined Vehicle of the future”	25%	30%	40%	65%
HORIZON-Chips 2024-2-RIA-T1	Global call according to SRIA 2024 (RIA)	25%	25%	35%	65%
HORIZON-Chips 2024-2-RIA T2	Focus topic on “Sustainable and greener manufacturing”	25%	25%	35%	65%

UK Funding - additional information

- UK registered research organisations in your consortium can share up to 30% of the UK total eligible project costs. If your consortium contains more than one UK research organisation, this maximum will be shared between them.
 - Of that 30% you could get funding for your eligible project costs of up to: 80% of full economic costs (FEC) if you are a Je-s registered institution such as an academic
- Subcontractors are allowed in this competition but they must not account for more than 20% of the UK partners' total eligible costs.

In the event that the UK receives more successfully approved projects from Chips JU, then Innovate UK reserves the right to take a portfolio approach.

Schedule

Calls 2024-1 and 2024-2	Two stage Call with submission of Project Outline (PO) and Full Proposal (FPP)
Publication date	06 February 2024
Deadline PO Phase	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 September 2024 at 17:00 Brussels Time
PAB selection	November 2024
Grant preparation	December 2024 to April 2025
Start of the projects	around May 2025

Korea joint call – single stage (14 May 2024)

Links/further information

- Chips JU non-initiative calls (zip download – contains details of the call, applicant guidance, etc.) – note this is updated from time to time - <https://www.chips-ju.europa.eu/noninitiative/>
- [European Commission Funding Tenders Portal link to Chips JU topics](#)
- [ECS SRIA 2024](#) (~600p) – the 2 (RIA and IA) Global topics also contain 4+ pages of SRIA subheadings
- [ECS2024 brokerage event](#) – this has slides from the non-initiative brokerage session, pitches, etc.
- [ECS collaboration tool](#) (need to register) – recent project ideas, requests posted – filter by ECS 2024
- *Chips JU Info Event (19/3/24) recording*
- [Cordis KDT projects](#) to date



UK Research
and Innovation

Thank you

Horizon Europe - Digital NCP

Craig Sharp - Digital NCP-Digital@iuk.ukri.org

Newsletter Subscription: <https://eufunding.ukri.org/subscribe>



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www.ukri.org/HorizonEU

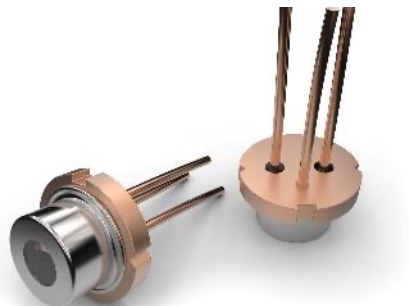


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The UK Semiconductor Strategy- InnovateUK Domestic & Global Opportunities

Dr. Iain S Mauchline
Innovation Lead – Electronics, Sensors & Photonics

March 2024



Outline

- Who is Innovate UK?
- UK Semiconductor Strategy
- How are Innovate UK working with the strategy?
- Global Opportunities
- Summary

Who are Innovate UK and EPSRC within UKRI?

- We are the UK's Research & Innovation agency
- A key delivery body of HMG's R&I policies and strategies
- We support academic research and business-led innovation in all sectors, technologies and UK regions

Innovate UK mission

To help UK businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive, and easy to navigate

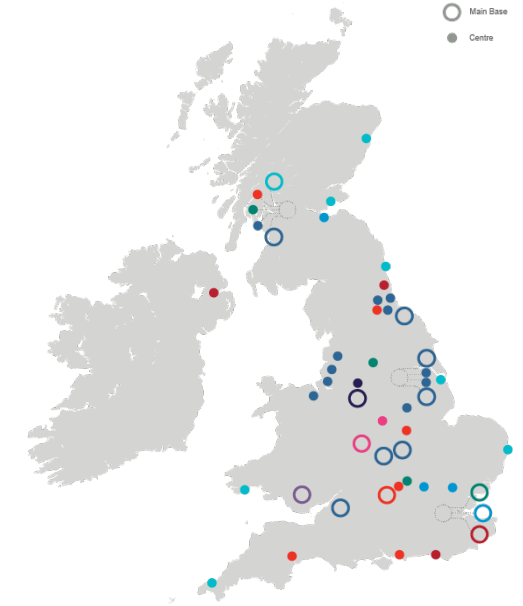


EPSRC mission

To support new ideas and transformative technologies which are the foundations of innovations that improve our economy, environment and society, by investing in world-leading research and skills

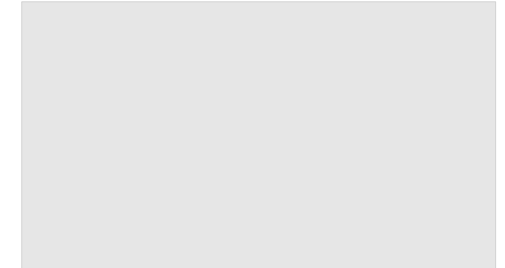



 Department for
 Science, Innovation
 & Technology



UK Semiconductor Strategy

- Semiconductors are 1 of the 5 technologies of tomorrow. They are critical to the UK's economic and national security and to the strategic advantage that the UK will secure on the global stage.
- The recently published (19th May 2023) UK semiconductor strategy has the stated vision.



Our vision

Over the next 20 years, the UK will secure areas of world leading strength in the semiconductor technologies of the future by focusing on our strengths in R&D, design and IP, and compound semiconductors. This will facilitate technological innovation, boost growth and job creation, bolster our international position in order to improve supply chain resilience, and protect our security.

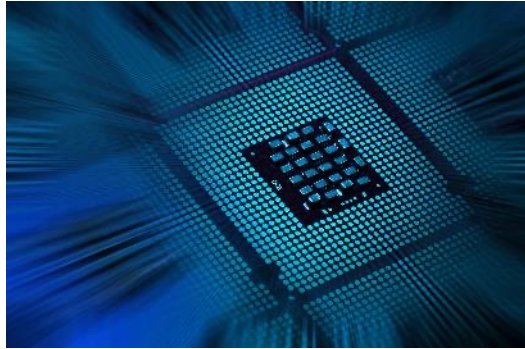
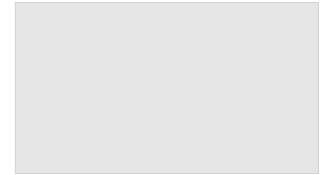
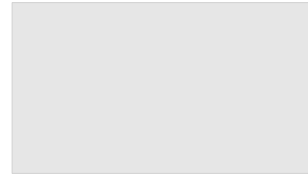
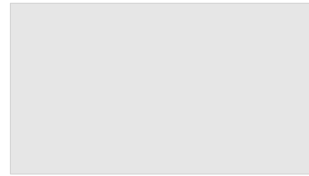
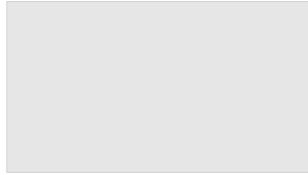
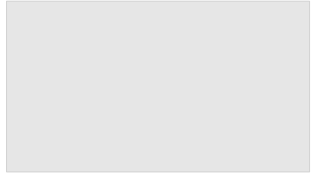
Key Themes

- Technological innovation in UK strengths
 - Growth & job creation in domestic landscape
 - International collaborations with aligned countries
- The government plans to invest up to £1 billion over the next decade.
 - And in the recent Autumn Statement - *“The Chancellor has recently clarified the government’s priorities for the UK Infrastructure Bank to ensure the Bank is able to invest in critical supply chains where it meets the Bank’s strategic objectives, including semiconductor manufacturing and critical minerals.”*

UK Semiconductor Strategy – In progress

- [UKSII Feasibility Study](#) – With results due in Early 2024, this DSIT commissioned study is to understand the technical and economic feasibility of developing specific capabilities to support commercial R&D, grow the UK semiconductor sector and contribute to supply chain resilience. With five key capabilities under evaluation:
 - Silicon prototyping and low volume piloting
 - Advanced packaging
 - Compound semiconductor open-access foundry
 - Access to EDA tools and design IP
 - An institutional framework that would provide strategic coordination for the sector.
- The [Semiconductor Advisory Panel](#) was established by the DSIT to enable the government to work closely with industry to deliver the goals of the [National Semiconductor Strategy](#) on growing the UK sector, ensuring a stable supply of chips and protecting the UK from national security risks associated with semiconductor technology.
- [ChipStart](#) is a two-year pilot programme backed by the government that will provide early-stage companies involved in the design of semiconductors with the technical and commercial help they need to help bring new products to market – and ultimately improve lives and livelihoods in the long-term.

What are the UK Strengths?

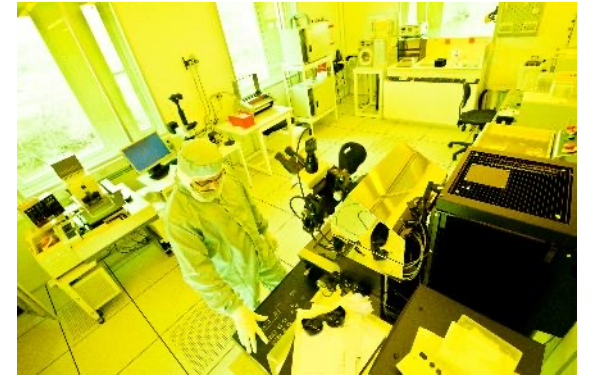


Semiconductor Design/IP

- **Over 100** semiconductor design/IP companies,
- **Global companies** in IP, AI, SoCs, IoT, graphics
- **World leading chip-design sector with clusters** including Cambridge, Bristol and Edinburgh

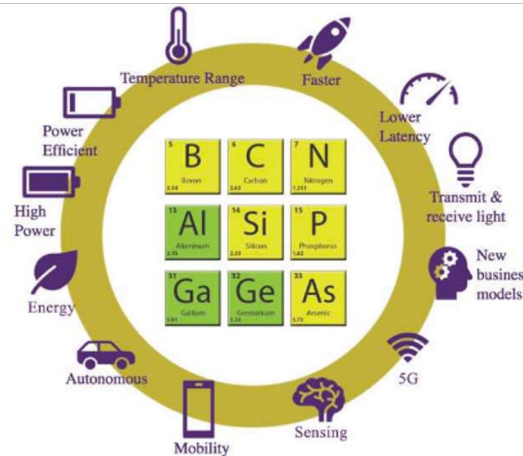
Compound & Novel Material Semiconductors

- 8% share of the global compound semiconductor market
- Compound Semiconductor Cluster – CSconnected in South Wales
- World-leading companies working with advanced materials



Research Strength

- Photonics / photonic systems integration
- Integrated circuit design
- Compound semiconductors
- Embedded security, on chip
- Polymer electronic materials
- New and advanced materials for devices (spintronics, magnonics, etc.)



Semiconductor-related activities by Innovate UK

- **Digital Security by Design (DSbD) £80m**
 - Transforming technology to create a more resilient and secure foundation for a safer digital future
- **Driving the Electric Revolution (DER) £80m**
 - Electrification technologies, including power electronics, machines and drives (PEMD) developing clean technology supply chains
- **Commercialising Quantum Technologies £174m**
 - Advancing commercialisation of new products and technologies based on advances in quantum science
- **Robots for a Safer World £112m**
 - Advancing robotics and autonomous systems in extreme and challenging environments
- **Manufacturing & Skills Innovation projects £18m**
 - Supporting skills development and manufacturing scale up for the semiconductors industry
- **Compound Semiconductor Applications Catapult £80m +**
 - Helping UK companies exploit advances in compound semiconductor technologies



Global Opportunities for UK Companies – IUK Global Team

- Innovate UK are working with key like-minded countries and territories across the semiconductors landscape – across Europe, Taiwan, South Korea, Japan, India, amongst others.
- Helping innovative UK businesses understand new markets and gain insights that will allow them to explore and exploit new opportunities (Global Expert Missions, Global Business Innovation Partnerships, Global Explorer
- Building an understanding of the culture, laws and legislation of your target market, to de-risk innovation and protect UK businesses when working overseas
- Work in association with DBT, who support companies on Trade Missions
- Supporting businesses to undertake leading edge R&D through bilateral and multilateral programmes, including Eureka network and Horizon Europe:
 - [German Bilateral](#) - UK registered organisations can apply for a share of up to £4 million for projects resulting in innovative solutions for emerging technologies, including quantum, AI and semiconductor applications.
 - [Swiss Bilateral](#) - Innovate UK, will invest up to £4 million with a minimum of 3 million CHF from Innosuisse in innovation projects for AI, quantum, semiconductor and life sciences.
 - [Eureka Xecs Call 3](#) - sustainable industrial innovation in the Electronics Components & Systems.
 - [Eureka Quantum collaborative R&D Multilateral 2024](#) - UK registered organisations can apply for a share of up to £2 million to develop quantum technologies with organisations from Eureka partner countries.
 - [UK-South Korea CR&D 2024](#) - UK registered businesses can apply for a share of up to £6 million for the purpose of developing innovative proposals with South Korea including AI, semiconductors and advanced manufacturing and materials.
 - [Horizon Europe: Chips JU](#) – This briefing



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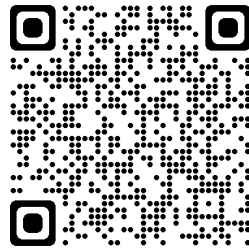
Boosting UK Participation in Horizon Europe

Stuart Russon - European Engagement Manager

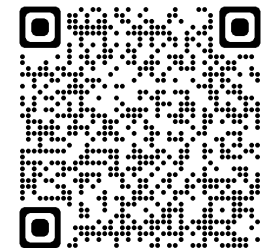
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Horizon Europe – Call to action

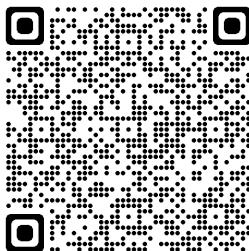
Visit the UK Horizon Europe hub



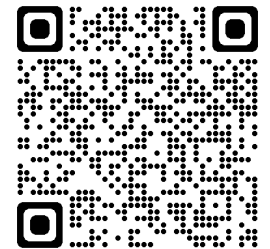
Horizon Europe Pump Priming Programme



Find your NCP



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Horizon Europe Pump Priming Programme

An Innovate UK initiative supporting individual UK small to medium sized companies seeking to explore and access Horizon Europe collaborative research and innovation opportunities.

Access to grant funding of up to £6,000 (including VAT)

Enabling individual UK SMEs to:

- Explore opportunities for collaborative research and innovation under Horizon Europe Pillar 2 Clusters, Missions and European Partnerships, and Pillar 3 EIC Pathfinder and Transition programmes or EIT grants that require an international consortium.
- Seek networking and partnership opportunities with European organisations, multipliers and networks, with the aim of developing a consortium and applying to Horizon Europe.
- Gain access to European Partnerships, Joint Undertakings and sector-relevant associations
- Contribute towards travel costs to meet with potential consortia and partners.

[Horizon Europe Pump Priming Programme | Innovate UK Business Growth \(ukri.org\)](https://ukri.org/business-growth/horizon-europe-pump-priming-programme)