



APPENDIX 3: ACTIVITIES LAUNCHED IN 2024 FOR THE NON-INITIATIVE PART



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1. WORK PROGRAMME 2024: NON-INITIATIVE PART

The part of the non-initiative programme WP2023-2027 foresees the launch of three calls for proposals with an estimated EU expenditure of EUR 216 million.

Other operational activities include:

the start of the projects selected under the KDT calls 2023,

the monitoring of the projects selected in KDT calls 2021 and calls 2022,

the monitoring of the ECSEL projects selected in the ECSEL JU Calls 2014-2020,

the preparation of work programme updates for years 2025 and beyond, in particular the focus topics,

various supporting activities to communication, administration & finance, preparation for the Chips JU.

2.1 Launch of Chips JU calls non-initiative part

The estimated maximum operational budget for the non-initiative part of the programme of the Chips JU is EUR 216 million for the calls, and an amount of EUR 1 million will be reserved for contracting experts involved in the evaluation of projects and monitoring of the project implementation.

In 2024, the Chips JU will launch three calls for proposals:

A first call for Innovation Actions (higher TRLs) and will consist of a global topic and 3 focus topics and run in 2 phases.

The second call for Research and Innovation Actions (lower TRLs) and will consist of a global topic and run in 2 phases.

A third call will include one topic for Research and Innovation Actions (RIA) that will be implemented as one phase call without national contribution but in cooperation with South Korea (ROK).

The two global topics focus on all chapters of the SRIA and aim at the reinforcement of the industrial competitiveness, stimulating industrial innovation and transfer of innovation from research environments (RTOs and Universities) to SMEs and Large Enterprises. Research and Innovation Actions (RIA) and Innovation Actions (IA) essentially differ by the Technology Readiness Level (TRL) and therefore by the reimbursement rates.



Projects selected should demonstrate high impact, Europe wide collaboration with a mixed participation of large enterprises, SMEs and academia.

Expected outputs are novel technologies and applications, pilot lines, large scale demonstrators, and platforms for innovative product developments.

Next to those global topics, the following focus topics are included in the IA call:

Topic 2 IA: Focus topic on “High Performance RISC-V Automotive Processors supporting the vehicle of the future”,

Topic 3 IA: Focus topic on “Software-define vehicle middleware and API framework for the vehicle of the future”,

And one focus topic included in the RIA call:

Topic 2 RIA: Focus topic on “Sustainable and greener manufacturing”,

2.2 EU estimated expenditure for the Chips JU Non-Initiative calls 2024

Action	Topic	Estimated EU Expenditure (M€)
HORIZON-Chips 2024-1-IA T1	Global call according to SRIA 2024 (IA)	103
HORIZON- Chips 2024-1-IA T2	Focus topic on “High Performance RISC-V Automotive Processors supporting SDV”	20
HORIZON- Chips 2024-1-IA T3	Focus topic on “Service Oriented Framework for the Software Defined Vehicle of the future”	20



HORIZON- Chips 2024-2-RIA-T1	Global call according to SRIA 2023 (RIA)	52
HORIZON- Chips 2024-2-RIA T2	Focus topic on “Sustainable and greener manufacturing”	15
HORIZON- Chips 2024-3-RIA	Joint call with Korea on Heterogeneous integration and neuromorphic computing technologies for future semiconductor components and systems	6
	Total	216 M€



2.3 National Budgets for the call 2024

Participati ng states	Chips 2024-1 IA T1	Chips 2024-1 IA T2	Chips 2024-1 IA T3	Chips 2024-2 RIA T1	Chips 2024-2 RIA T2	Total (M€)
AT	3.0	1.5	2.5	3.0		10.0
BE-FL						12.0
BE-BR						1.0
BE- WL						1.0
BG						
CY						
CZ	1.0	0.2	0.2	1.0	0.2	2.6
DE	10.0	4.0	4.0	10.0	4.0	32.0
DE TH						
DE SN						
DK						1.3
EE						0
EL						0
ES AEI						
ES MAET D						
FI						10.0



FR						10.0
HR						
HU						
IE						0
IL						0
IS						
IT MIMI T						
IT MUR		0.8	0.8	2.6	0.8	5.0
LT						
LV						0.6
LU						0
MT						
NL						30.0
NO						2.5
PL						2.24
PT						3.5
RO						
SE	1.7	0.4	0.4	1.7		4.2
SI						0.7
SK						
SL						



TR						
Total	15.7	6.9	7.9	18.3	5.0	128.6 4

2.4 Call HORIZON-Chips-2024-1-IA Topic 1: Global IA

Scope and objectives

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
2.2 - Connectivity		
	Major Challenge 1: Strengthening the EU connectivity technology portfolio to maintain leadership, secure sovereignty and offer an independent supply chain	Open
	Major Challenge 2: Investigate innovative connectivity technology (new spectrum or medium) and new approaches to improving existing connectivity technology to maintain the EU's long-term leadership	Open
	Major Challenge 3: Autonomous interoperability translation for communication protocol, data encoding, compression, security and information semantics	Open
	Major Challenge 4: Architectures and reference implementations of interoperable, secure, scalable, smart and evolvable IoT and SoS connectivity	Open
	Major Challenge 5: Network virtualisation enabling run-time engineering, deployment and management of edge and cloud network architectures	Open
2.3 - Architecture and design: methods and tools		
	Major Challenge 1: Extending development processes and frameworks (to handle connected, intelligent, autonomous, evolvable systems)	Open



	Major Challenge 2: Managing new functionality in safe, secure and trustworthy systems	Open
	Major Challenge 3: Managing complexity	Open
	Major Challenge 4: Managing diversity	Open
2.4 - Quality, reliability, safety and cybersecurity		
	Major Challenge 1: Ensuring HW quality and reliability	Open
	Major Challenge 2: Ensuring dependability in connected software	Open
	Major Challenge 3: Ensuring cyber-security and privacy	Open
	Major Challenge 4: Ensuring of safety and resilience	Open
	Major Challenge 5: Human systems integration	Open
3.1 - Mobility		
	Major Challenge 1: Enable CO2 neutral (electrified or sustainable alternative fuels based) mobility and required energy transformation	Open
	Major Challenge 2: Enable affordable, automated and connected mobility for passengers and freight on or off road, rail, air and water	Open
	Major Challenge 3: Modular, scalable, re-usable, flexible, cloud-based, safe&secure end-to-end software platform able to manage software-defined mobility of the future, sometimes labelled as “CAR-OS”	Open
	Major Challenge 4: Provide tools and methods for validation and certification of safety, security and comfort of embedded intelligence in mobility	Open



	Major Challenge 5: Achieve real-time data handling for multimodal mobility and related services	Open
3.2 - Energy		
	Major Challenge 1: Smart & Efficient - Managing Energy Generation, Conversion, and Storage Systems	Open
	Major Challenge 2: Energy Management from On-Site to Distribution Systems	Open
	Major Challenge 3: Future Transmission Grids	Open
	Major Challenge 4: Achieving Clean, Efficient & Resilient Urban/ Regional Energy Supply	Open
	Major Challenge 5: Cross-Sectional Tasks for Energy System Monitoring & Control	Open
3.3 - Digital Industry		
	Major challenge 1: Responsive and smart production	Open
	Major challenge 2: Sustainable production	Open
	Major challenge 3: Artificial Intelligence in digital industry	Open
	Major challenge 4: Industrial service business, lifecycles, remote operations and teleoperation	Open
	Major challenge 5: Digital twins, mixed or augmented reality, telepresence	Open
	Major challenge 6: Autonomous systems, robotics	Open
3.4 - Health and wellbeing		



	Major Challenge 1: Enable digital health platforms based upon P4 healthcare	Open
	Major Challenge 2: Enable the shift to value-based healthcare, enhancing access to 4P's game-changing technologies	Open
	Major Challenge 3: Support the development of the home as the central location of the patient, building a more integrated care delivery system	Open
	Major Challenge 4: Enhance access to personalised and participative treatment for chronic and lifestyle-related diseases	Open
	Major Challenge 5: Ensure more healthy life years for an ageing population	Open
3.5 - Agrifood and natural resources		
	Major Challenge 1: Food security	Open
	Major Challenge 2: Food safety	Open
	Major Challenge 3: Environmental protection and sustainable production	Open
	Major Challenge 4: Water resource management	Open
	Major Challenge 5: Biodiversity restoration for ecosystems resilience, conservation and preservation	Open
3.6 - Digital Society		
	Major Challenge 1: Facilitate individual self-fulfilment	Open
	Major Challenge 2: Facilitate empowerment and resilience	Open
	Major Challenge 3: Facilitate inclusion and collective safety	Open



	Major Challenge 4: Facilitate supportive infrastructure and a sustainable environment	Open
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Detailed descriptions can be found in the ECS SRIA2024.

Aspects of ECS value chain integration are important for the KDT programme and the whole European ECS sector, across applications and across capabilities. Consortia are encouraged to submit proposals that take this aspect into account.

Proposals that cut across disciplines, support platform building, interoperability, establishment of open standards are particularly encouraged; even outside the regular ECS sector.

Proposals shall encourage SMEs to participate in the developments, in particular paying attention to the needs of SMEs, involve SMEs in project execution, and develop solutions that can be taken up and/or exploited by SMEs

Proposals shall attempt to establish links with other projects and consortia from the Horizon Europe family (within cluster 4 or in other clusters) working on topics related to the proposal.

Note that National priorities may be applicable to specific topics (refer to Annex 4 “COUNTRY SPECIFIC ELIGIBILITY RULES”).

Type of Action	Innovation Action (IA)
Estimated EU Expenditure	103 M€
Mode	2 stage Call with submission of Project Outline (PO) and of Full Proposal (FPP)
Publication date	06 Feb 2024
Deadline PO	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 Sep 2024 at 17:00 Brussels Time



TRL	5 to 8
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In this call, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement. However, work packages concerning user interaction or sensing (e.g. of medical devices, consumer goods, cars with automatic driving features, ...) need to include (if relevant) considerations of how the gender dimension affects system design, and hence whether it affects the technical specifications.

Expected Outcomes

A Chips JU Innovation Action (IA) primarily consists of activities aiming at technology or method introduction, pilot lines, test beds, demonstrators, innovation pilots and zones of full-scale testing. These activities produce plans and arrangements or designs for new, altered, or improved products, processes, methods and tools or services. For this purpose, they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

A ‘technology or method introduction’ aims at the development, testing, and implementation of new technologies, tools or methods, which are a critical element of innovative products, which will be created in subsequent projects.

A ‘demonstration or pilot’ aims to validate the technical and economic viability of a new or improved technology, product, process, service or solution in an operational (or nearly operational) environment, whether industrial or otherwise, involving, where appropriate, a larger scale prototype or demonstrator.

A ‘market replication’ aims to support the first application/deployment in the market of an innovation that has already been demonstrated but not yet applied/deployed in the market due to market failures/barriers to uptake. ‘Market replication’ does not cover multiple applications in the market of an innovation that has already been applied successfully once in the market. ‘First’ means new at least to Europe or new at least to the application sector in question. Often such projects involve a validation of technical and economic performance at system level in real life operating conditions provided by the market.

The activities have their centre of gravity at the TRL 5-8. An IA proposal in Chips JU is characterized by one or more of the following:

Execution by an industrial consortium that may consist of large enterprises and SMEs but also including universities, institutes, public organizations



Using innovative technology

Establishment of a new and realistic innovation environment connected with an industrial environment, such as:

a pilot line facility capable of manufacturing

a zone of full-scale testing

a development of new processes or tools and their introduction in several domains

the development of frameworks or platforms together with the usage of these frameworks or platforms in innovative products.

Having a deployment plan leading to short to midterm economic value creation in Europe.

To maximize effective implementation of the Chips JU top-level objectives, the list of IA proposals to be retained for public funding should constitute a balanced portfolio of projects developing innovative technologies (as defined in the ECS SRIA 2024 in the functional technology layers and cross-sectional technologies sections) and applying them in different domains (as defined in the ECS SRIA 2024 in ECS key application areas section). The domains represent the demand side of technologies, and the development of new technologies represents the supply side of technologies.

The size of the proposal is not an evaluation criterion. Chips JU is looking at a balanced portfolio of small and large projects.

Specific Conditions

Admissibility conditions: The page limits as mentioned are applicable.

Chapter	PO Phase	FPP Phase
Excellence	60 pages	60 pages
Impact	60 pages	100 pages
Implementation	60 pages	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.



Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.

Eligibility conditions: Refer to Annex 1

Specific eligibility conditions:

Size limit	70 Participants
Max Contribution per partner (% of the total EU funding)	40 %

For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.

For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046).”

Evaluation criteria, scoring and threshold

The proposals will be evaluated along the following three evaluation criteria

Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	The following aspects will be taken into account, to	The following aspects will be taken into account, to the



	<p>the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches, appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.</p>
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p>



		Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.
Quality and efficiency of the implementation	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>extent to which the consortium as a whole brings together the necessary expertise.</p>	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise</p>

Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
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Excellence	0-5	1.0	3
Impact	0-5	1.5	3
Quality and efficiency of the implementation	0-5	0.7	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals

Financial capacity

Financial capacity: In line with the Financial Regulation and the Rules for Participation of Horizon Europe. At the full project proposal stage, coordinators will be invited to complete a self-assessment using an on-line tool.

Priority order for proposals with the same score

The following method will be applied. As part of the evaluation by independent experts, a panel review will recommend a ranked list for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget shown in the call conditions. If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. The following approach will be applied successively for every group of ex-aequo proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

Proposals that address aspects of the call that have not otherwise been covered by more highly ranked proposals will be considered to have the highest priority

The proposals identified under 1) (if any) will themselves be prioritised per the scores they have been awarded for the criterion “Impact”. When these scores are equal, priority will be based on scores for the criterion “Excellence”.

Further ex-aequo proposals are discussed by the panel of experts and scored on the merit of the proposal to fulfil the objectives of CHIPS JU considering elements such as the enhancement of the quality of the project portfolio through synergies between projects,



balance between the type of partners, SME participation, and gender balance. These factors will be documented in the report of the Panel.

This applies to all the topics under the IA Call.

Indicative timetable for evaluation and grant agreement

Information on the outcome of the evaluation	Maximum 5 months from the final date for submission
Indicative date for the signing of grant agreements	Maximum 8 months from the final date for submission

Consortium agreement

In line with the Rules for Participation of Horizon Europe and the CHIPS JU Model Grant Agreement, participants are required to conclude a consortium agreement.

Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE.

Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
Large Enterprise (for profit organization but not an SME)	20 %
SME (for profit SME)	30 %
University/Other (not for profit)	35 %

(*) beneficiaries may ask for a lower contribution



2.5 Call HORIZON-Chips-2024-1-IA Topic 2: Focus topic on High Performance RISC-V Automotive Processors supporting the vehicle of the future

Type of Action	Innovation Action (IA)
Estimated EU Expenditure	20 M€
Mode	2 stage Call with submission of Project Outline (PO) and Full Proposal (FPP)
Publication date	06 Feb 2024
Deadline PO Phase	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 Sep 2024 at 17:00 Brussels Time
TRL	The activities must have their centre of gravity at TRL 5-6 at the end of the project.

Context of the Topic

Both the automotive industry as well as the semiconductor industry are confronted with major transformations. From the automotive perspective, more technologies and applications are needed to realize intelligent functions, optimize vehicle performance, control and decision making for future electric, connected, autonomous and shared (ECAS) vehicles mobility scenarios at affordable costs. Automotive embedded systems are highly heterogeneous and contain processors that scale from 8-bit microcontrollers in legacy Embedded Control Units (ECU) all the way to high performance Central Processing Units (CPU) in autonomous driving applications. Because of the future needs of ECAS, there is a strong requirement towards new developments in terms of processor architectures, which are evolving more and more toward higher performances, while maintaining automotive requirements and very low power dissipation. These processors will be integrated in a networked mix of ECUs, domain controllers, gateways and high-performance computers (HPCs), performing several tasks, complemented by digital twins and augmented by specialized artificial intelligence processing units. In this context, the



automotive industry is increasingly following the Software Defined Vehicle (SDV) paradigm,

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.

Why open source hardware? From the semiconductor perspective, the automotive industry is still the fastest growing market, especially for European semiconductor companies. In order to remain competitive throughout the value chain, open source is strategic for providing Europe with an alternative to licensing IPs from non-EU third parties, thereby maintaining sovereignty in the long term. A key success criterion for this is for Europe to develop a fully blown open source ecosystem so that a European fork is possible (i.e., create a fully equivalent variant of a given technology), if necessary. The realization of such an ecosystem requires a radical change in working across the board with leadership and contribution from major European industrial and research players and other stakeholders in respective application value chain actors.

Why RISC-V? RISC-V, being an open and extensible Instruction Set Architecture (ISA), has gained a large momentum in a number of application markets. Custom extensions can be used to improve the performance per area and power in specific applications. Such extensions are expected to be key differentiators and create a competitive area among IP and semiconductor vendors that will ensure continuous innovation of the ISA. However, 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.

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.

In the context of the SDV paradigm, the proposed automotive RISC-V reference platform shall be considered as a specific pilot implementation of a prospective more general open and modular European reference hardware platform for the vehicle of the future. Thereby, it is very important that generic abstract SDV requirements can be mapped to the proposed RISC-V hardware architectures in order to enable complete and efficient system solutions. This is only possible in close cooperation between HW and SW developments, standardized interfaces and API's, which need to be agreed upon.



Since the software layers of the SDV are not within scope of this focus topic, the necessary link between the RISC-V hardware developers and any SDV software development team shall be realised via a HAL, determined largely outside the proposed action. Therefore, proposers should demonstrate convincing links and collaboration plans with other European actions or communities that can provide a widely-agreed-upon industry-grade HAL description to be used as a reference for the RISC-V hardware designs in the proposed action. With this respect, the KDT funded CSA FEDERATE must be considered as one of the the primary coordination links to other European actions in the field.

This focus topic addresses 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. Selected actions will be implemented as ‘linked actions’ with other EU-supported actions under ‘SDV’ and ‘RISC-V’ related topics in past calls, this call and future calls by (but not limited to) KDT JU and Chips JU. Examples of other relevant European partnerships are CCAM and 2ZERO. The notion of “linked actions” may as well be extended to nationally supported actions across the EU member states and associated states. Particular linked actions shall be clearly identified and justified in the proposals. Selected actions shall establish collaboration agreements with other relevant on-going projects and future projects. These collaboration agreements shall set out requirements for IP sharing, a common governance model, and conformity with specifications set by suitable industry bodies. Respective options under Article 3 and Article 7 of the Model Grant Agreement shall be used to this end.

Expected Outcomes

Proposal results are expected to contribute to a high-performance automotive RISC-V reference hardware platform, covering the following essential elements:

Instruction Set and Profile Definition: To address the specific needs of automotive workloads and non-functional requirements (e.g. safety & security), custom instruction set extensions and profiles shall be defined. These will improve the performance of critical hot spots in applications and provide industry leading capabilities in terms of low-latency interrupts and virtualization. A special scenario of a custom multi-party extension and profile is one that subsets an existing standard extension to tailor it to automotive needs and reduce the implementation cost. Furthermore, planning differentiating features in truly innovative areas is encouraged. The development of custom single supplier extensions could be proprietary to an individual party, but still needs interaction and conformity with the rest of the reference platform. Therefore, an open standard interface for ISA extensions should apply both for proprietary and open new instructions alike. Furthermore, related tools and solutions should be extendible with these custom extensions. At the same time, it is the expectation of customers of RISC-V solutions to receive a consistent support package including the vendor extensions.



Standardized Extension Interfaces: Standardized instruction set extension interfaces greatly improve the overall offering of RISC-V cores by facilitating the design and interoperability between cores and accelerators. Ideally, the extension interface should follow an existing definition. Examples of co-processor interfaces include ARM®'s Custom Datapath Extension (CDE), CV-X-IF (maintained by the OpenHW Group), and SCAIE-V. All mentioned interfaces can interface to general-purpose accelerators. Special purpose extension interfaces can provide a more efficient interfacing, but should be limited to few key accelerators.

Compliance Reference Model and Validation Suite: An accurate reference model capturing all platform requirements and validation suites are needed. The level of accuracy of the reference model depends on the granularity and level of detail of the requirements. A pragmatic trade-off should be found that allows implementers to make their own design choices while ensuring compatibility of applications with any platform. For critical parts of an operation, such as interrupts and context switching, the accuracy is assumed to be close to cycle accurate. In addition to the model itself, a validation suite should be developed to enable consistency check between any core and the reference model. Such validation of compliance is expected to be performed on intake of IP and SoCs.

Benchmarks: Benchmarks are intended to assess the automotive platform throughout all the phases of its development, which implies being able to run them in environments with varying degrees of maturity, ranging from simulation environments, to FPGA prototypes, test Chips, and finally, fully-fledged silicon products. Therefore, the span of environments requires incremental benchmarking covering different levels of abstraction. Diverse workloads shall be built and run combining items of potentially different levels, running concurrently – serialized and in parallel – mimicking relevant automotive workloads.

Operational hardware prototypes: at the end of the action, the proposals shall foresee operational hardware prototypes to justify the targeted TRL 4-6. These hardware prototypes may incorporate off-the-shelf components, reconfigurable hardware, as well as engineering silicon, designed and produced as part of the proposed action. The prototypes shall demonstrate the claimed advanced high-performance features of the developed automotive RISC-V hardware designs and their conformity with the HAL. Furthermore, efficient implementations of a set of SDV software specifications shall be also demonstrated.

Software and Tools: An ecosystem of software and tools is essential for the adoption of a HW platform. Domain-specific requirements like safety-qualification and the additional ISA extensions necessitate work on software and tools that goes beyond ongoing open-source community efforts. All deliverables should be extensible by third parties to facilitate the integration of vendor-specific extensions. An instruction accurate model is needed for software development in virtual prototypes. The long development cycles for



SoC based on modern silicon technologies and the focus by OEMs on SW platforms requires early development enablement. The instruction accurate model is expected to execute orders of magnitude faster than the compliance model. After start of production (SOP), it can be used in digital twins, supporting the vision of the software defined vehicle.

Scope

In automotive industry, being no exception from general CPS development trends, SW requirements and HW implementations change over time, which poses a need for an automated process to continuously evaluate different HW SoCs under changing SW requirements. The SDV paradigm provides an efficient mechanism to decouple HW from SW development while preserving system's integrity and ensuring the propagation of functional and non-functional specifications across system's abstraction layers. The key role for this decoupling of design concerns is attributed to the HAL in the SDV abstraction model. This focus topic assumes a collaborative agreement with representative European stakeholders on a reference HAL and targets an efficient hardware implementation of the latter based on RISC-V. Proposals need to particularly address but are not limited to the following hardware design aspects:

Sound tool-agnostic collaboration infrastructure based on joint APIs for automating the continuous assessment process and DSLs for iterating over different HW configurations. This infrastructure promotes and enables new flexible RISC-V based solutions for existing and new use-cases. The planned infrastructure will allow fast and seamless comparison to existing solutions in the different design phases.

Open high-performance RISC-V based automotive processor reference architecture, which can lead to customized instantiations towards specific automotive needs and control domains, including e.g. a superscalar architecture. It should also include a fast context switch with multi-threading support and fast deterministic interrupt/execution response.

Integrated vector unit(s) including custom extensions as e.g. DSP, AI, networking, etc. These should be scalable with chained registers and out-of-order execution.

Co-processor interface for special VPU and accelerators

Safety and security elements, extended to memory and interconnect. This should include spatial and temporal redundancy for temporary and permanent faults and ASIL certification. Security features should include secure enclave and potentially execution guard. Focus should also be on micro-architectural protection for side-channel attacks and SESIP certifications.



Exploration of different on-chip and off-chip interconnect solutions based on existing SotA (e.g. AMBA) or new developments (e.g. chiplets)

Virtualization support with Hypervisor.

Definition and adoption of standardised data formats, interfaces (APIs) and improved interoperability.

Mechanisms to capture and manage, from the software level, functional as well as non-functional characteristics of possible integration with SDV modules with particular focus on real-time operation, low power dissipation, handling of (precise) computational exceptions and interrupts.

Benchmarks and workloads for incremental hardware development. These must be usable on COTS HW, FPGA prototypes, simulators as well as emulators and must be also applicable for bare-metal and to top of full SW stacks, including hypervisors and RTOS. Multiple levels of incremental evaluations should be also supported. Finally, a trade-off between representativeness of the software and confidentiality constraints must be made.

Although the development of design software and tools is not a primary subject of this focus topic, efforts and resources needed to develop software enabling or facilitating the design of any of the essential elements of the hardware platform shall be eligible for funding

The consortium should be coordinated by a leading European industrial actor of the automotive industry value chain, or by a neutral organisation well established in the sector . The consortium must include:

a representative number of European semiconductor companies with headquarters in several Member States;

a representative number of European tier-1 automotive suppliers and technology companies with headquarters in several Member States;

a representative number of European OEMs of motorised vehicles (passenger cars, trucks, buses, motor cycles) with headquarters in several Member States;

innovative SMEs across the value chain;

universities and research and technology organisations bringing the newest advances in relevant digital and other technologies and/or acting act as neutral mediators.



Proposals are encouraged:

To allocate tasks to cohesion activities with the projects selected under the call HORIZON-KDT-JU-2023-3-CSA Topic 3 on Coordination of the European software-defined vehicle platform and the call HORIZON-KDT-JU-2023-2-RIA Topic 2 on Hardware abstraction layer for a European Vehicle Operating System.

To allocate tasks to cohesion activities with the projects selected under the previous calls HORIZON-KDT-JU-2021 and -2022 (TRISTAN & ISOLDE)

To allocate tasks to cohesion activities with the [call 2024 SDV].

To allocate tasks to cohesion activities with the [related CCAM and 2ZERO projects].

Specific conditions

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

Admissibility and Eligibility conditions

Admissibility conditions: The page limits as mentioned below are applicable

Chapter	PO Phase	FPP Phase
Excellence	60 pages	60 pages
Impact	60 pages	100 pages
Implementation	60 pages	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.

Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.

Eligibility conditions: Refer to Annex 1



Specific eligibility conditions:

Size limit	70 Participants
Max Contribution per partner (% of the total EU funding)	40 %

For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.

For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046)."

Evaluation criteria, scoring and threshold

Evaluation criteria

For PO and FPP phase, in the Excellence and Impact criteria, the proposed work corresponds to the topic description given under this topic.

The participation of OEMs in the consortium to ensure alignment of project results with 6G system requirements will be positively evaluated by the experts in the implementation criterion

The proposals will be evaluated along the following three evaluation criteria:



Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2023:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2023:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches, appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.</p>
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2023, and the likely</p>



	impacts specified in the ECS SRIA 2023, and the likely scale and significance of the contributions to the project.	<p>scale and significance of the contributions to the project.</p> <p>Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.</p>
Quality and efficiency of the implementation	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>extent to which the consortium as a whole brings together the necessary expertise.</p>	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise</p>

Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
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Excellence	0-5	1.0	3
Impact	0-5	1.5	3
Quality and efficiency of the implementation	0-5	0.7	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals

Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE.

Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
Large enterprise (for profit organization but not an SME)	25 %
SME (for profit SME)	30 %
University/Other (not for profit)	35 %

(*) beneficiaries may ask for a lower contribution



2.6 Call HORIZON-Chips-2024-1-IA Topic 3: Focus topic on Software-define vehicle middleware and API framework for the vehicle of the future

Type of Action	Innovation Action (IA)
Estimated EU Expenditure	20 M€
Mode	2 stage Call with submission of Project Outline (PO) and Full Proposal (FPP)
Publication date	06 Feb 2024
Deadline PO Phase	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 Sep 2024 at 17:00 Brussels Time
TRL	The activities must have their centre of gravity at TRL 5-6 at the end of the project.

Context of the Topic

The automotive industry is going through major and rapid transformations making vehicles' hardware and software increasingly important: mobility is rapidly evolving in the digital dimension as natural evolution of vehicles' propulsion. This evolution particularly relates to their environmental impact, their passive and especially active safety features, their inclusion in wider digital ecosystems, and the new services/functionalities they offer. This leads to the Software-defined Vehicle of the Future.

The automotive industry is a high-growth market for edge-to-cloud software stacks, complex software applications and the required semiconductor-based electronic hardware. The exponentially increasing complexity of the technology stacks is leading to a necessary transformation, away from many highly specialized single-task control units, towards a networked mix of fewer Embedded Control Units (ECU), domain controllers, gateways and high-performance computers (HPCs) performing multiple tasks. They are complemented by digital twins and augmented by specialized artificial intelligence processing units, as trustworthy artificial intelligence is necessary for most of the new software functions in the vehicle of the future.



In addition, the European automotive industry is strongly challenged by an increasing competition from China and the US who are coming up with electric vehicles and software defined vehicle concepts often offered on the European market at prices below competitive level in Europe. Thus, Europe needs to join forces in the automotive industrial domain by cooperating in an ecosystem-based technology initiative in order to keep staying in the lead with respect to Software Defined Vehicle technology and to capitalize on the potential gains expected from such approach on efficiency and development cost, complexity-reduction, and fulfilment of changing customer expectations, to respond to the increasing market pressure by competitors from abroad.

In this context, the automotive industry is increasingly following the Software Defined Vehicle paradigm, which is composed of the following main elements:

SDV Hardware Layer: new low power, highly secure, high-performance systems, based on a flexible and open integration of IP cores. The SDV hardware layer is implemented with interconnected electronic components such as mid-to-high performance processors, microcontrollers, and peripheral IP cores as well as sensors providing information about the surroundings of the vehicle (e.g. other traffic participants, road information, traffic signs, etc.). These electronic components are increasingly realised in Systems-on-Chip (SoC) technology to support the transition towards more hierarchical domain-centric and fully centralised electronic architectures for the vehicles of the future.

SDV Virtualization, Operating System, and Hardware Abstraction Layer (HAL) reassemble the (meta-) operating system (OS) layer, often called Car OS. It plays a key role in the SDV as the intermediary layer abstracting and virtualizing the hardware in the SDV Hardware Layer, facilitating integration, and decoupling this hardware from software through a specific HW Abstraction Layer Interface (HALI), which then connects the SDV Virtualization, OS and Hardware Abstraction Layer with the SDV Middleware and API Layer. It supports the use of the electronic components of the vehicle of the future to be shared across individual functions within a domain or even further centralised.

SDV Middleware and API Layer: The SDV software stack (often also called Car OS) is further extended by a Middleware and Application Programming Interface (API) Framework which supports different technologies. Promising candidates for these technologies are service oriented architecture (SoA) concepts, signal oriented frameworks and an data centric approaches. By including building blocks for virtual resource management, high-level system functionalities, onboard platform integration as well as cross-domain integration, and by using general concepts like encapsulation, data centric concepts, modular service-oriented and/or signal orientated approaches or any kind of combination, the SDV Middleware and API layer Framework abstracts the low-level technical details of the entire SDV SW stack towards the SDV application layer. Furthermore, it shall use the functionalities of the SDV Virtualization, OS and Hardware



Abstraction Layer as virtualization from the underlaying hardware, hypervisor management and OS management integration of all components.

The SDV Middleware and API layer framework is therefore an additional more abstract decoupling layer between the SDV hardware layer and 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 (through its APIs).

SDV Application Layer: this layer consists of modular building blocks which offer the functionality visible to the end-users as infotainment, ADAS functions, AD functionality, diagnostics, energy management, function-on-demands, cloud services such as traffic guidance, HD map updates, Over-the-air (OTI) updates during the operational as well as maintenance phase of the vehicle lifecycle, etc.

These elements constitute the main components of an open and modular European SDV platform for the vehicle of the future.

This platform offers the possibility to access the hardware resources and functionalities in a simple, protected, and efficient way thanks to a stack of software layers, standardised interfaces (APIs) and computing layers. It facilitates the design, development, certification, operation and maintenance of the final automotive applications, which do not end with the delivery of the vehicle but extend to its entire lifecycle. The layers themselves are composed of modular building blocks to allow easy integration with and adaptation to existing hardware and software components during the transitional phase from the existing architectures to the new, centralized architecture of the vehicles of the future.

The ecosystem of SDV building blocks must be supported by a holistic engineering framework (which includes methods, tools, and modular tool-chains) assisting the SDV across the entire lifecycle, enabling a mass market adoption and attracting the required industry investments. Among others, this engineering framework must include development process tools, test-, integration-, delivery and simulation tools, as well as maintenance- and upgrade services supporting the continuous integration and continuous delivery (CI/CD) models.

This focus topic is part of the SDV Vehicle of the Future Focus Area. Selected actions will be implemented as ‘linked actions’, i.e. they are linked with other actions selected under ‘SDV Vehicle of the Future’ topics in past calls, this call and future calls. In this context, for example, collaboration with the Software-Defined Vehicle Support and Coordination Project (FEDERATE), which started on 1 October 2023, and any project to be selected under HORIZON-KDT-JU-2023-2-RIA Topic 2 on the SDV Hardware abstraction layer for a European Vehicle Operating System are of particular importance. The notion of



“linked actions” may as well be extended to other EU-supported actions, e.g. automotive HW-related actions under the Chips JU or actions under the CCAM and 2ZERO partnerships. A collaboration agreement with other selected projects and future projects should be established, that sets out requirements for IP sharing, a common governance model, and conformity with specifications set by suitable industry bodies. Respective options under Article 3 and Article 7 of the Model Grant Agreement will be used to this end.

Expected Outcomes

This call has a focus on the third layer, the SDV Middleware and API Layer. Proposal results are expected to contribute to the third layer described above in the following areas:

Modular (open-source) building blocks and open architectures of the SDV middleware and API framework for the vehicle of the future.

Using adequate technologies as service-oriented design, signal oriented design and a data-centric approach, these architectures and building blocks shall hide and abstract the low-level hardware and software details of the technology stack up to the operating system (OS) to the extent possible, preparing for OS independent, interoperable and modular application solutions. Middleware and APIs layers created using these building blocks shall support agreed (and possibly later also standardised) interfaces (APIs), which are used to develop new high-level on-board and off-board functionalities for competitive applications of SDV vehicles of the future. This includes platform integration with a focus on open (and partly standardised) APIs to allow the development of automotive cross-domain applications and services. The interface of the building blocks shall be specified both syntactically and semantically - the semantic definition shall define the protocol contract between both sides of the interface. This represents a prerequisite for interoperability, reusability and exchangeability of (software) building blocks. It shall support reasoning (validation) and automated verification of functional safety and security.

The architecture shall support the engineering approaches based on high level system modelling (e.g for variant management), which must also be supported in the engineering framework.

Integration with higher-level cloud-based software applications to decouple the lower two SDV layers from specific applications connected to cloud platforms, simplifying the development of brand and vehicle independent edge to cloud applications and the integration with the cloud. The middleware and API framework shall also support the virtual validation of automotive applications in the cloud.



Holistic engineering framework

It shall support the entire SDV DEVOPS lifecycle (design, development, integration, maintenance and update process) including design, development, test and validation, and deployment toolsets, to support the evolution of open and modular SDV architecture scenarios and solutions of OEMs and Tiers.

The engineering framework must support an agile engineering process, which does not end with the delivery of vehicles to customers, but continues with analyses of the status and behaviour of the vehicles, identification of new unknown safety-critical situations and validated over-the-air software updates to address the identified safety risks.

Showcasing and evaluation of results (building blocks for SDV software stack and/or holistic engineering (tool-chain) framework)

It shall demonstrated the benefits in several of the engineering challenges: engineering costs, time-to-market, development costs, development agility, quality, inclusion of hardware and software legacy technology and solutions, resource optimization, service interoperability, availability, modularity, diversity, data/knowledge management.

As a minimum, one visionary use case should include (but not limited to) several of the following domains: (1) Chassis and powertrain, (2) electric energy management, (3) ADAS and AD, and (4) Cockpit.

Scope

Proposals need to particularly address the following aspects:

The open architectures and building blocks of the Software-define vehicle middleware and API framework developed under this project shall aim at exposing the vehicle's features and functionalities in the form of standard modular services and APIs, simplifying the development and certification of in-vehicle and edge-cloud applications, simplifying the access to vehicle data, functions and resources, making vehicle upgrades easier, simplifying the adoption of existing and new regulations, verification, validation and certification, and adding agility and speed to automotive engineering.

Layer-based solutions introducing a level of abstraction which allows the SDV middleware and API Layer framework to be independent from the automotive SDV Virtualization, OS and Hardware Abstraction Layer. The concept of hardware abstraction layers interface (HALI), which facilitates the integration and the decoupling of vehicle hardware from software, represents the foundation on which these solutions should be based. The reuse



of results from the project focusing on building blocks around the HAL from the call HORIZON-KDT-JU-2023-2-RIA Topic 2 is envisioned.

Modular platforms based on the concept of standardised, interoperable and non-differentiating “building blocks”, based on open source components as far as appropriate, enabling in-vehicle and cloud-based applications and ensuring the integration and support of existing frameworks such as ECPLISE SDV, AUTOSAR Adaptive, COVESA, SOAFEE, digital.auto, etc. Modularity is fundamental to promote the evolution of a European platform for the SDV Vehicle of the Future.

Support the evolution towards domain- or vehicle-centralised E/E architectures, consolidating vehicle functions at domain-level (e.g., powertrain, autonomous driving, cockpit, body, OTA update, maintenance, ...) with dedicated domain controllers, and simplifying the evolution toward zone- and vehicle-centralisation, with central control unit(s) running functions or services in and across different SW domains in a vehicle.

Ensure the coverage of safety and security, including secure access to on-board (and off-board) resources, features and services, and data provision, exploiting for example an increased use of virtualisation, software building blocks isolation, and defined (and possible also standardised) interfaces.

Building on the SDV Virtualization, OS and Hardware Abstraction Layer building blocks developed in related projects, development of reference implementations of the SDV Middleware and API framework for the SDV Vehicle of the Future in different scenarios of OEMs and TIERs. Reference implementations shall allow the concrete evaluation of the SDV platform with demonstrators.

Highly-automated engineering methods, tools and tool-chains using existing or developing missing engineering building blocks for toolsets, supporting the DEVOPS continuous approach and virtual engineering, including design, development, test, validation solutions to improve the efficiency, productivity, quality and trustability of the engineering process and keep it in the temporal constraints of the time to market of ADAS, AD, infotainment, sensing and control systems. Engineering process support should rely on existing solutions wherever possible, extended and/or complemented by newly developed methods, toolchains, and tools, when required (e.g. phases of the engineering process not covered, missing tools, improvement of existing tools, etc.). Building blocks are encouraged to be open-source wherever adequate.



The consortium should be coordinated by a leading European industrial actor of the automotive industry (OEM, tier-1), or by a neutral organisation well established in the automotive software sector. The consortium must include:

a large and representative number of European OEMs of motorised vehicles (passenger cars, trucks, buses, motor cycles, off-road) with headquarters in several Member States of the European Union and/or its associated countries;

a large and representative number of European tier-1 automotive suppliers and technology companies, including semiconductor companies and software engineering experts;

a representative number of tool providers specialized on the described engineering toolchains above;

innovative SMEs across the value chain;

leading universities and research and technology organisations bringing the newest advances in relevant digital and other technologies and/or acting act as neutral mediators.

actors from across a significant number of Participating States of the Chips-JU program with a strong focus on the automotive sector.

Proposals are encouraged:

To allocate tasks to cohesion activities with the projects selected under the call HORIZON-KDT-JU-2023-3-CSA Topic 3 on Coordination of the European software-defined vehicle platform on and the call HORIZON-KDT-JU-2023-2-RIA Topic 2 on Hardware abstraction layer for a European Vehicle Operating System.

To allocate tasks to cohesion activities with the [call 2024 automotive HW?].

To allocate tasks to cohesion activities with the [related CCAM and 2ZERO projects].

To allocate tasks to cohesion activities with the [related national SDV projects]

Specific conditions

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

Admissibility and Eligibility conditions



Admissibility conditions: The page limits as mentioned below are applicable

Chapter	PO Phase	FPP Phase
Excellence	60 pages	60 pages
Impact	60 pages	100 pages
Implementation	60 pages	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.

Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.

Eligibility conditions: Refer to Annex 1

Specific eligibility conditions:

Size limit	70 Participants
Max Contribution per partner (% of the total EU funding)	40 %

For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.

For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to



participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046).”

Evaluation criteria, scoring and threshold

Evaluation criteria

For PO and FPP phase, in the Excellence and Impact criteria, the proposed work corresponds to the topic description given under this topic.

The participation of OEMs in the consortium to ensure alignment of project results with 6G system requirements will be positively evaluated by the experts in the implementation criterion

The proposals will be evaluated along the following three evaluation criteria:

Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2023:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2023:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches, appropriate consideration of the gender dimension in research and</p>



		innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2023, and the likely scale and significance of the contributions to the project.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2023, and the likely scale and significance of the contributions to the project.</p> <p>Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.</p>
Quality and efficiency of the implementation	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p>	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p>



	extent to which the consortium as a whole brings together the necessary expertise.	Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise
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Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
Excellence	0-5	1.0	3
Impact	0-5	1.5	3
Quality and efficiency of the implementation	0-5	0.7	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals

Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE.

Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
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Large enterprise (for profit organization but not an SME)	25 %
SME (for profit SME)	30 %
University/Other (not for profit)	35 %

(*) beneficiaries may ask for a lower contribution



2.7 Call HORIZON-Chips-2024-2-RIA Topic 1: Global RIA call

Scope and objectives

This topic is the RIA 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 and recyclability	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 of computing systems	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	Open
2.2 - Connectivity		
	Major Challenge 1: Strengthening the EU connectivity technology portfolio to maintain leadership, secure sovereignty and offer an independent supply chain	Open
	Major Challenge 2: Investigate innovative connectivity technology (new spectrum or medium) and new approaches to improving existing connectivity technology to maintain the EU's long-term leadership	Open
	Major Challenge 3: Autonomous interoperability translation for communication protocol, data encoding, compression, security and information semantics	Open
	Major Challenge 4: Architectures and reference implementations of interoperable, secure, scalable, smart and evolvable IoT and SoS connectivity	Open
	Major Challenge 5: Network virtualisation enabling run-time engineering, deployment and management of edge and cloud network architectures	Open
2.3 - Architecture and design: methods and tools		
	Major Challenge 1: Extending development processes and frameworks (to handle connected, intelligent, autonomous, evolvable systems)	Open
	Major Challenge 2: Managing new functionality in safe, secure and trustworthy systems	Open
	Major Challenge 3: Managing complexity	Open



	Major Challenge 4: Managing diversity	Open
2.4 - Quality, reliability, safety and cybersecurity		
	Major Challenge 1: Ensuring HW quality and reliability	Open
	Major Challenge 2: Ensuring dependability in connected software	Open
	Major Challenge 3: Ensuring cyber-security and privacy	Open
	Major Challenge 4: Ensuring of safety and resilience	Open
	Major Challenge 5: Human systems integration	Open
3.1 - Mobility		
	Major Challenge 1: Enable CO2 neutral (electrified or sustainable alternative fuels based) mobility and required energy transformation	Open
	Major Challenge 2: Enable affordable, automated and connected mobility for passengers and freight on or off road, rail, air and water	Open
	Major Challenge 3: Modular, scalable, re-usable, flexible, cloud-based, safe&secure end-to-end software platform able to manage software-defined mobility of the future	Open
	Major Challenge 4: Provide tools and methods for validation and certification of safety, security and comfort of embedded intelligence in mobility	Open
	Major Challenge 5: Achieve real-time data handling for multimodal mobility and related services	Open
3.2 - Energy		



	Major Challenge 1: Smart & Efficient - Managing Energy Generation, Conversion, and Storage Systems	Open
	Major Challenge 2: Energy Management from On-Site to Distribution Systems	Open
	Major Challenge 3: Future Transmission Grids	Open
	Major Challenge 4: Achieving Clean, Efficient & Resilient Urban/Regional Energy Supply	Open
	Major Challenge 5: Cross-Sectional Tasks for Energy System Monitoring & Control	Open
3.3 - Digital Industry		
	Major challenge 1: Responsive and smart production	Open
	Major challenge 2: Sustainable production	Open
	Major challenge 3: Artificial Intelligence in digital industry	Open
	Major challenge 4: Industrial service business, lifecycles, remote operations and teleoperation	Open
	Major challenge 5: Digital twins, mixed or augmented reality, telepresence	Open
	Major challenge 6: Autonomous systems, robotics	Open
3.4 - Health and wellbeing		
	Major Challenge 1: Enable digital health platforms based upon P4 healthcare	Open
	Major Challenge 2: Enable the shift to value-based healthcare, enhancing access to 4P's game-changing technologies	Open



	Major Challenge 3: Support the development of the home as the central location of the patient, building a more integrated care delivery system	Open
	Major Challenge 4: Enhance access to personalised and participative treatment for chronic and lifestyle-related diseases	Open
	Major Challenge 5: Ensure more healthy life years for an ageing population	Open
3.5 - Agrifood and natural resources		
	Major Challenge 1: Food security	Open
	Major Challenge 2: Food safety	Open
	Major Challenge 3: Environmental protection and sustainable production	Open
	Major Challenge 4: Water resource management	Open
	Major Challenge 5: Biodiversity restoration for ecosystems resilience, conservation and preservation	Open
3.6 - Digital Society		
	Major Challenge 1: Facilitate individual self-fulfilment	Open
	Major Challenge 2: Facilitate empowerment and resilience	Open
	Major Challenge 3: Facilitate inclusion and collective safety	Open
	Major Challenge 4: Facilitate supportive infrastructure and a sustainable environment	Open



Detailed descriptions can be found in the ECS SRIA 2024

Aspects of ECS value chain integration are important for the KDT programme and the whole European ECS sector, across applications and across capabilities. Consortia are encouraged to submit proposals that take this aspect into account.

Proposals that cut across disciplines, support platform building, interoperability, establishment of open standards are particularly encouraged; even outside the regular ECS sector.

Proposals shall encourage SMEs to participate in the developments, in particular paying attention to the needs of SMEs, involve SMEs in project execution, and develop solutions that can be taken up and/or exploited by SMEs

Proposals shall attempt to establish links with other projects and consortia from the Horizon Europe family (within cluster 4 or in other clusters) working on topics related to the proposal.

Note that National priorities may be applicable to specific topics (refer to Annex 4 “COUNTRY SPECIFIC ELIGIBILITY RULES”).

Type of Action	Research and Innovation Action (RIA)
Budget: Estimated EU Expenditure	52 M€
Mode	2 stage Call with submission of Project Outline Phase (PO) and Full Proposal (FPP)
Publication date	6 Feb 2024
Deadline PO Phase	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 Sep 2024 at 17:00 Brussels Time
TRL	The activities must have their centre of gravity at TRL 3-4 at the end of the project.



In this call, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement. However, work packages concerning user interaction or sensing (e.g. of medical devices, consumer goods, cars with automatic driving features, ...) need to include (if relevant) considerations of how the gender dimension affects system design, and hence whether it affects the technical specifications.

Expected Outcomes:

A KDT Research and Innovation Action (RIA) primarily consists of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service, method, tool or solution. For this purpose they may include applied research, technology development and/or method/tool and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment. The activities have their centre of gravity at TRL 3-4.

A RIA proposal is characterised by:

Execution by a consortium that may consist of SMEs, large enterprises, universities, institutes, public organizations;

Developing innovative technologies and/or using them in innovative ways;

Targeting demonstration of the innovative approach in a relevant product, service or capability, clearly addressing the applications relevant for societal challenges;

Demonstrating value and potential in a realistic lab environment reproducing the targeted application;

Having a deployment plan showing the valorisation for the KDT ecosystem and the contribution to the KDT goals and objectives.

In order to maximize effective implementation of the KDT top-level objectives, the list of RIA proposals to be retained for public funding shall constitute a balanced portfolio of projects developing innovative technologies and applying them in different domains. The domains represent the demand side of technologies, and the development of new technologies represents the supply side of technologies.

Specific Conditions

Admissibility and Eligibility conditions:



Admissibility conditions: The page limits as mentioned below are applicable

Chapter	PO Phase	FPP Phase
Excellence	60 pages	60 pages
Impact	60 pages	100 pages
Implementation	60 pages	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.

Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.

Eligibility conditions: Refer to Annex 1.

Specific eligibility conditions:

Size limit	50 Participants
Max Contribution per partner (% of the total EU funding)	30 %

For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.

For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country, if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to



participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046).”

Evaluation criteria, scoring and threshold

The proposals will be evaluated along the following three evaluation criteria:

Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, interdisciplinary approaches, appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of</p>



		citizens, civil society and end users where appropriate.
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p> <p>Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.</p>
Quality and efficiency of the implementation	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p>	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p>



	extent to which the consortium as a whole brings together the necessary expertise.	Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise
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Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
Excellence	0-5	1.0	3
Impact	0-5	1.0	3
Quality and efficiency of the implementation	0-5	0.7	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals

Selection criteria

Financial capacity: In line with the Financial Regulation and the Rules for Participation of Horizon Europe. At the full project proposal stage, coordinators will be invited to complete a self-assessment using an on-line tool.

Priority order for proposals with the same score

The following method will be applied. As part of the evaluation by independent experts, a panel review will recommend a ranked list for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative



budget shown in the call conditions. If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. The following approach will be applied successively for every group of ex-aequo proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

Proposals that address aspects of the call that have not otherwise been covered by more highly ranked proposals will be considered to have the highest priority

The proposals identified under 1) (if any) will themselves be prioritised per the scores they have been awarded for the criterion “Excellence”. When these scores are equal, priority will be based on scores for the criterion “Impact”.

Further ex-aequo proposals are discussed by the panel of experts and scored on the merit of the proposal to fulfil the objectives of CHIPS JU considering elements such as the enhancement of the quality of the project portfolio through synergies between projects, balance between the type of partners, SME participation, and gender balance. These factors will be documented in the report of the Panel.

This applies to all the topics under the RIA Call.

Indicative timetable for evaluation and grant agreement

Information on the outcome of the evaluation	Maximum 5 months from the final date for submission
Indicative date for the signing of grant agreements	Maximum 8 months from the final date for submission

Consortium agreement

In line with the Rules for Participation of Horizon Europe and the CHIPS JU Model Grant Agreement, participants are required to conclude a consortium agreement.

Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE.

Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
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Large enterprise (for profit organization but not an SME)	25 %
SME (for profit SME)	35 %
University/Other (not for profit)	35 %

(*) beneficiaries may ask for a lower contribution

2.8 Call HORIZON-Chips-2024-2-RIA Topic 2: Focus topic on Sustainable and greener manufacturing

Type of Action	Research and Innovation Action (RIA)
Estimated EU Expenditure	15 M€
Mode	2 stage Call with submission of Project Outline (PO) and Full Proposal (FPP)
Publication date	06 Feb 2024
Deadline PO Phase	14 May 2024 at 17:00 Brussels Time
Deadline FPP Phase	17 Sep 2024 at 17:00 Brussels Time
TRL	The activities must have their centre of gravity at TRL 3-5 at the end of the project.

Context of the Topic

By 2030, the worldwide semiconductors (SC) industry manufacturing capacity should nearly double as of today. The European Commission proposes as EU's digital ambitions, between others, that the European chip production should reach 20% of the world chip manufacturing capacity. Since the current EU chip production only represents 6 to 8% of the worldwide capacity, this means that the European semiconductor industry should increase its capacity by a factor 4 to 5.

The environmental impact of the EU semiconductor industry is expected to increase accordingly. The manufacturing phase is responsible for the largest share of carbon footprint and environmental impact within the life cycle of most electronic products. In addition,



production relies on the use of a multitude of chemicals, solvents and materials. This includes both scarce materials and substances associated with risks to the environment and/or human health.

Hence, it is crucial to provide incentives for developing the means toward a better use of the resources during the Electronics components and systems (ECS) manufacturing and the reduction of the future ecological footprint of the EU chipmakers to cope with the Green Deal objectives.

Moreover, a 2023 EU Commission report¹ considers elements such as Ga, Ta, W, Li, Hf, In, Ge and some rare earths as critical raw materials (CRM) for digital technologies. The access of European stakeholders to these materials will be extremely competitive and it can harm the European technological sovereignty. To avoid wasting scarce mineral resources, it becomes urgent to look for processes that are more eco-friendly in the use of these materials, and still remaining economical.

The methods, processes and schemes for the production, assembly and testing of the various components with less scarce and more environmentally friendly materials, and their integration into modules and systems, need to be developed with appropriate quality, reliability and scalability, as well as sustainability and circularity. Focus should be on materials to boost the sustainability of the ECS production, including processes, materials and maintenance. The recyclability in the production phase must be considered to enable, in addition to the reduction of the usage of rare and materials and substances of concern, the recovery of components and materials used in the ECS manufacturing.

Expected Outcomes

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:

- a. Increase the use of environmentally friendly materials, chemicals and solvents.
- b. Minimization of waste and emissions during production and processing.

1

European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Grohol, M., Veeh, C., *Study on the critical raw materials for the EU 2023 – Final report*, Publications Office of the European Union, 2023, <https://data.europa.eu/doi/10.2873/725585>



- c. Prevention of a future scarcity of some critical materials for SC processing through a more efficient and cost-effective products and waste recycling in process.

In order to achieve these challenges, the projects shall focus on R&D for the following topics:

1. Innovative processes and equipment to **minimise the use, consumption and emission** of hazardous and scarce raw materials and substances of concern in ECS design and manufacturing, including processes.
2. Alternative and recycled materials.
As more diverse and complex materials are being integrated into the ECS substrates and devices manufacturing process, the use of new recyclable and non-fossil materials (or compostable/biodegradable materials), and non-hazardous chemicals, must be considered to **replace existing pollutant or hazardous materials, with low availability or recyclability in the near future.**

In addition, many chemical products are used during the manufacturing process in SC industry including for example fluorinated gases or hazardous chemicals. Therefore, **the safe and sustainable by design (SSbD) principles² should be considered in ECS manufacturing** to ensure that they will contribute not only to increase the sustainability and circularity of ECS, but also to decrease risks to human health and environment during their production.

Scope

Following the explanation of the expected outcomes, the proposals are expected to work at all levels of the manufacturing process, and must propose R&D solutions to cover at least one the following two areas:

1) Environmentally friendly materials:

The ECS industry must increase the use of more environmentally friendly materials to reduce the environmental footprint while minimizing the use, consumption and emission of materials and substances associated with risks to the environment and human health. For example, the proposed regulation on the use of Per- and polyfluoroalkyl substances (PFAS) challenges the European semiconductors manufacturers, including industry's supply and value chain. This will require the collaboration of the SC industry in **identifying**

² [Recommendation for safe and sustainable chemicals](#)



alternatives to PFAS, and other persistent and mobile substances or hazardous materials, in the semiconductors manufacturing process and further develop **capture technologies** to **minimise emissions** to the environment.

The proposals in this subtopic shall therefore include R&D actions on new materials development with a focus on manufacturing processes, such as:

- **Recycling** and/or **reuse** of materials during production.
- Use of non-fossil, recyclable, biodegradable and compostable materials in the production processes to avoid the release of persistent and mobile substances or **dangerous** materials or having other **negative impact** on environment.
- Replacement of materials to comply with Restriction of Hazardous Substances Directive (ROHS) regulations and **minimise critical raw materials (CRM) dependence**, including rare earths replacement for magnetics, inductors, and power integrity.
- Development of additive manufacturing (that reduces the materials and water consumption) using highly selective deposition techniques instead of etching.

In particular, for the PFAS subject, there are different challenges that can be addressed in this topic:

- Research for **replacement/alternatives** for PFAS in the SC manufacturing process at different levels:
 - from higher TRL solutions that prototyped or completed at system level and are closer to be implemented in real production,
 - down to R&D proposals that present activities on early stages with lower TRLs.
- To minimize **use and emissions** of PFAS and/or persistent and mobile substances or dangerous materials:
 - Innovative equipment or processes, as well as innovations in the operation and maintenance of the production lines
 - Development of **abatement systems** and **capture** technologies.
 - More precise **detection** of persistent and mobile substances or dangerous materials in waste water.

The projects must propose a significant R&D progress beyond the state of the art of the present technology, and not just a mere improvement of the manufacturing facilities and equipment of the stakeholders.

2) Materials scarcity:

At the present, there is an increasing concern with the potential scarcity of some materials that are necessary for producing ultra-pure materials for the high-volume manufacturing of substrates and devices, which might lead to interruption problems in the ECS supply chain



and the access to strategic materials. This situation will grow in the future if measures are not taken.

One approach for preventing the use of natural resources consists in strengthening the circularity, including recovering the materials by recycling from the electronic wastes. Nevertheless, since it is already covered by other calls and programmes, it is not in the scope of this Focus topic.

Another approach, which is the one pursued with this focus topic, consists in improving resource autonomy with replacement of scarce materials by other bio-based, carbon-based or abundant materials.

The proposals in this subtopic shall focus on R&D solutions to **improve the efficiency in the use of materials**, and/or solutions for the **reutilization, replacement or recycling** of these scarce materials and chemicals **in the semiconductors manufacturing process**.

The proposals must **quantify** as much as possible and in the clearest way according to the application, the impact of the reductions defined in their actions at either material, process or system level.

The R&D actions included in the proposals on any of the subtopics previously described, can be proposed either for **new manufacturing processes** or for **optimizing existing ones**.

Since the project topic is very ambitious and risky, and concerns R&D studies at different terms, it will be required an **efficient collaboration** between the partners, including EU chipmakers and equipment suppliers to adopt new manufacturing approaches for the long-term. A balanced consortium that covers the necessary participants along the value chain of the action in the proposal shall be presented.

Regulations for pushing industries towards a sustainable transformation can be expected to become stricter. Therefore, the topic remains very important for securing the competitiveness of the European semiconductor industry. In electronics manufacturing, introducing new materials or processes can take a long time, for that reason, increased R&D efforts on sustainable electronics manufacturing have to be reinforced now. **Key policies and legislations that impacts the ECS eco-system should be considered**. Further R&D will support industry to comply with future regulations and decrease dependencies on materials, and it will be positive that the proposals have the flexibility to address the possible changes in the regulations in their risk assessments and explain their prevention actions.



Specific conditions

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

Admissibility and Eligibility conditions

Admissibility conditions: The page limits as mentioned below are applicable

Chapter	PO Phase	FPP Phase
Excellence	60 pages	60 pages
Impact	60 pages	100 pages
Implementation	60 pages	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.

Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.

Eligibility conditions: Refer to Annex 1

Specific eligibility conditions:

Size limit	70 Participants
Max Contribution per partner (% of the total EU funding)	40 %

For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.

For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe



will be treated as entities established in an Associated Country if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046).”

Evaluation criteria, scoring and threshold

Evaluation criteria

For PO and FPP phase, in the Excellence and Impact criteria, the proposed work corresponds to the topic description given under this topic.

The participation of OEMs in the consortium to ensure alignment of project results with 6G system requirements will be positively evaluated by the experts in the implementation criterion

The proposals will be evaluated along the following three evaluation criteria:

Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is</p>	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project’s objectives, and the extent to which the proposed</p>



	<p>ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches, appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.</p>
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p> <p>Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.</p>
Quality and efficiency of	The following aspects will be taken into account:	The following aspects will be taken into account:



the implementation	<p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>extent to which the consortium as a whole brings together the necessary expertise.</p>	<p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.</p> <p>Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise</p>
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Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
Excellence	0-5	1.0	3
Impact	0-5	1.5	3
Quality and efficiency of the implementation	0-5	0.7	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals



Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE.

Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
Large enterprise (for profit organization but not an SME)	25 %
SME (for profit SME)	35 %
University/Other (not for profit)	35 %

(*) beneficiaries may ask for a lower contribution



2.9 Call HORIZON-Chips-2024-3-RIA: Joint call with Korea on Heterogeneous integration and neuromorphic computing technologies for future semiconductor components and systems

Type of Action	Research and Innovation Action (RIA)
Estimated Expenditure	6 M€
Mode	1 stage Call with submission of Full Proposal (FPP)
Publication date	06 Feb 2024
Deadline FPP Phase	14 May 2024 at 17:00 Brussels Time
TRL	The activities must have their centre of gravity at TRL 2-4 at the end of the project.

Introduction and Context:

The EU Chips Act which entered into force in September 2023 encourages European semiconductor actors to undertake international cooperation in order to ensure security of supply for semiconductor devices.

The Republic of Korea and the European Commission launched the Digital Partnership in June 2023 to strengthen the economic resilience and agreed on key outcomes to advance cooperation for an inclusive and resilient digital transformation. Both partners agreed to work on semiconductors, High Performance Computing (HPC) and Quantum technology, 5G and beyond, platform economy, artificial intelligence (AI) and cybersecurity. Joint research on semiconductors implemented in low TRL collaborative project emerged as a concrete action in the follow-up exchanges between the European Commission and the Korean government.

With this joint call for proposals, the Republic of Korea and the EU intend 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)

It is organized by the office of the Chips Joint Undertaking (Chips JU) and the National Research Foundation (NRF) of the Republic of Korea.

Outcome

Projects are expected to contribute to the following outcomes:

New materials, process, device, integration and design concepts for neuromorphic computing systems supporting very low energy consumption, connectivity and embedded functions for mobile applications.

Alternative manufacturing process technologies for semiconductor chips including frontend or backend for heterogeneous integration. The technologies should sustain in the mid- and long-term the fast paced evolution of device performance, miniaturisation and cost, while reducing the environmental footprint. This includes the process of integrating individually produced chip components into a single assembly level, as well as solutions to streamline and improve this process.

Advanced packaging solutions aiming at heterogeneous integration of multiple functions and materials for applications in AI, communication (RF, mmW or THz), sensing, actuating, power management and active/passive device integration.

Scope

Proposals should:

- Address research reaching TRL of 4 with high potential not yet demonstrated in the design, fabrication process and/or packaging segments of the micro-nano-electronics or photonics value chain and their related integration technologies
- Focus innovation on materials, physical concepts or device architecture building on neuromorphic or integration technologies.
- Provide a projection of the expected gains and main figures of merit of the proposed approaches.



- Multi-disciplinary research activities should address part of the semiconductor value chain from materials, processes, equipment, metrology, back-end processing to packaging, integration and tests.

Specific Conditions:

- Type of project: Research and Innovation Action under Horizon Europe programme with a Technology Readiness Level (TRL) from 2 to 4
- Typical EU contribution to an Action is expected to be EUR 1.5 million for the full duration. The RoK contribution is expected to be an approximately equal amount.
- Typical duration: 3 years
- Eligible applicants are consortia which should present one proposal for undertaking collaborative research
- The proposal describes the work of the whole consortium and the contributions of the individual research groups.

Targeted audience for EU and South Korea project partners: Universities, Research & Technology Organisations, SMEs (small and medium enterprises) and large companies able and interested to perform low TRL research. For the EU, project partners must be eligible for EU funding under Horizon Europe.

Joint research consortium should be composed of EU Horizon Europe consortium and KR consortium. The number of research groups participating in the EU and KR consortia should be approximately equal.

In addition, each EU and KR consortium must attach a letter of intent from the counterpart consortium when submitting proposals to the EU's Chips JU office (in case of EU consortium) and Korea's NRF (in case of KR consortium). The letter of intent should include the intention to enter into a 'joint research partnership' for common research goals of the EU-KR joint consortium.

The EU consortium and the KR consortium shall conduct research in accordance with their own union/country's R&D rules and are not dependent on the counterpart union/country's R&D program related to this joint research call.

Partners in EU consortia would sign the contract with Chips JU; Partners in KR consortia with KR agency (NRF).

Proposals must be submitted to the both IT system designated by Chips JU and NRF before the application deadline. Applications will not be accepted if electronic application is not completed.



EU partners must submit proposals to the Funding and Tender Portal designated by the JU, and KR partners (organizations representing KR partners included in one consortium) must submit proposals to the IT system specified by the NRF.

EU partners would receive EU Funding from Chips JU; KR partners from NRF.

The KR research groups would appear in the Part B of HE proposal as the document of 'joint research partnership agreement' (no EC money flow involved).

Maximum public funding per KR consortium would be KRW 700 million per year.

Selection

joint selection after separate screening, for the EU proposal the rules of Horizon Europe apply.

Chips JU and NRF separately review proposals for eligibility and jointly create a list of proposals to be evaluated. Proposals found to be inappropriate by either NRF or Chips JU are excluded from evaluation.

In HE, a proposal would be ineligible for example if

- It is out of scope
- Does not feature the minimum number of participating states. In other words the consortium must have at least 3 participants which are not affiliated to another partner and are based in three different participating states.

In NRF, a proposal would be ineligible for example if it overlaps with national R&D projects already undertaken in Korea. Redundancy review is conducted based on the database built by the National Science & Technology Information Service (NTIS) of Korea.

An expert group composed of EU and KR experts (3 from EU and 3 from KR) evaluates each proposal one by one using the common criteria (excellence, impact and quality of implementation) and attributes a score. No comparison with other proposals is made at this stage. Administrative remark: Typically this is done in a 2 hour online meeting.

After the individual assessments all experts meet in a panel, compare proposals with each other and adapt or confirm the ranking.

Selection of the proposals to be attributed funding is then done using the ranked list: best proposals get funding, till funding of one of the funding authorities (Chips JU or NRF) is exhausted.



Reviewing/Monitoring

This would be done by the Chips JU and NRF, respectively. The evaluation targets of Chips JU and NEF are limited to their domestic research institutes. Results of the review would be communicated to Chips JU and KR authorities (NRF).

EU: One review (remote) would be organized at mid-term of the project (typically 18 months) involving EU expert. A final review of the project would be done similarly.

KR: Final evaluation before the end of the assignment, conducted by a panel composed of Korean experts. Evaluation results will be shared between Chips JU and NRF.

Before the end of the project, all selected projects are encouraged to organize a common public workshop presenting and promoting the results. National authorities may be involved (i.e. KR and EU plus participating countries). The location for this workshop would be chosen at a later time. Provisions for the organization of this workshop would be foreseen in the joint proposal.

Specific Conditions to HE

The rules for HE apply except where noted below:

Admissibility and Eligibility conditions:

Admissibility conditions: Regarding page limits:

Chapter	FPP Phase
Excellence	60 pages
Impact	100 pages
Implementation	100 pages

The application of those page limits (font size etc) is further described in the Guide for Applicants. The selected proposals maybe required to submit further information regarding the IMPLEMENTATION after selection.

Proposals with more pages are admissible and will be evaluated but the pages in excess of those maxima will not be considered for the evaluation.



For the purposes of the eligibility conditions, applicants established in Horizon Europe Associated Countries or in other third countries negotiating association to Horizon Europe will be treated as entities established in an Associated Country, if the Horizon Europe association agreement with the third country concerned applies at the time of signature of the grant agreement.

Given the illegal invasion of Ukraine by Russia and the involvement of Belarus, there is currently no appropriate context allowing the implementation of the actions foreseen in this programme with legal entities established in Russia, Belarus, or in non-government controlled territories of Ukraine. Therefore, such legal entities are not eligible to participate in any capacity. Exceptions may be granted on a case-by-case basis for justified reasons. This criterion also applies in cases where the action involves financial support given by grant beneficiaries to third parties established in Russia, Belarus or in non-government controlled territories of Ukraine (in accordance with Article 204 of the Financial Regulation No 2018/1046)."

Evaluation criteria, scoring and threshold

The proposals will be evaluated along the following three evaluation criteria:

Evaluation Criteria	Project Outline phase	Full Project Proposal Phase
Excellence	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.</p> <p>Soundness of the proposed methodology.</p>	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the relevant work programme topic description in the ECS SRIA 2024:</p> <p>Clarity and pertinence of the project's objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art</p> <p>Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches,</p>



		appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.
Impact	<p>The extent to which the outputs of the project should contribute at the European and/or international level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Credibility of the pathways to achieve the expected outcomes and impacts specified in the ECS SRIA 2024, and the likely scale and significance of the contributions to the project.</p> <p>Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.</p>
Quality and efficiency of the implementation	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of</p>	<p>The following aspects will be taken into account:</p> <p>Quality and effectiveness of the work plan, assessment of risks, and appropriateness of</p>



	<p>the effort assigned to work packages, and the resources overall.</p> <p>extent to which the consortium as a whole brings together the necessary expertise.</p>	<p>the effort assigned to work packages, and the resources overall.</p> <p>Capacity and role of each participant, and the extent to which the consortium brings together the necessary expertise</p>
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Scoring

The scores will be given with a resolution of one decimal.

Criteria	Range	Weight (**)	Threshold (*)
Excellence	0-5	1.0	3
Impact	0-5	1.0	3
Quality and efficiency of the implementation	0-5	1.0	3
Total	0-15		10

(*) threshold applies to unweighted score

(**) the weight is only used to establish the ranking of the proposals

Selection criteria

Financial capacity: In line with the Financial Regulation and the Rules for Participation of Horizon Europe. At the full project proposal stage, coordinators will be invited to complete a self-assessment using an on-line tool.

Priority order for proposals with the same score



The following method will be applied. As part of the evaluation by independent experts, a panel review will recommend a ranked list for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget shown in the call conditions. If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. The following approach will be applied successively for every group of ex-aequo proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

Proposals that address aspects of the call that have not otherwise been covered by more highly ranked proposals will be considered to have the highest priority

The proposals identified under 1) (if any) will themselves be prioritised per the scores they have been awarded for the criterion “Excellence”. When these scores are equal, priority will be based on scores for the criterion “Impact”.

Further ex-aequo proposals are discussed by the panel of experts and scored on the merit of the proposal to fulfil the objectives of CHIPS JU considering elements such as the enhancement of the quality of the project portfolio through synergies between projects, balance between the type of partners, SME participation, and gender balance. These factors will be documented in the report of the Panel.

This applies to all the topics under the RIA Call.

Indicative timetable for evaluation and grant agreement

Information on the outcome of the evaluation	Maximum 5 months from the final date for submission
Indicative date for the signing of grant agreements	Maximum 8 months from the final date for submission

Consortium agreement

In line with the Rules for Participation of Horizon Europe and the Chips JU Model Grant Agreement, participants are required to conclude a consortium agreement.

Reimbursement rate for establishing the EU contribution

Reimbursement rates as percentages of the eligible cost according to HE



Type of beneficiary	EU Contribution as % of the Eligible Cost according to HE (*)
Large enterprise (for profit organization but not an SME)	100 %
SME (for profit SME)	100 %
University/Other (not for profit)	100 %

(*) beneficiaries may ask for a lower contribution



2. ANNEXES

List of annexes:

Annex 1 - General Annexes for Chips calls 2024

Annex 2 - Management of contributions from the participating states

Annex 3 - Key Performance Indicators

Annex 4 – Country specific eligibility rules



Annex 1: General Annexes for the KDT calls 2024

The “Horizon Europe 2021-2022 13.General Annexes (European Commission Decision C(2021)1940 of 31 March 2021)”³ apply with some exceptions specific to certain calls

A – Admissibility. The page limits as mentioned under the different call descriptions in the Chips JU Work Programme 2023 are applicable as well as in the Guide for Applicants regarding the format.

B – Eligibility. Where eligibility is limited to certain technology readiness levels (TRLs), the table below provides guidance for assessing the TRLs. The table emphasizes the differences between the different levels as well as the difference between hardware and software related actions.

	Definition in HE WP	Hardware description	Software description	Exit criteria
1	Basic principles observed and reported.	Scientific knowledge generated underpinning hardware technology concepts/applications.	Scientific knowledge generated underpinning basic properties of software architecture and mathematical formulation.	Peer reviewed publication of research underlying the proposed concept/application.
2	Technology concept formulated	Invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture.	Practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture. Basic properties of algorithms, representations and concepts defined. Basic principles coded. Experiments performed with synthetic data.	Documented description of the application/concept that addresses feasibility and benefit.
3	Experimental proof of concept	Analytical studies place the technology in an appropriate context and laboratory demonstrations, modelling and simulation validate analytical prediction.	Development of limited functionality to validate critical properties and predictions using non-integrated software components., modelling and simulation	Documented analytical/experimental results validating predictions of key parameters.
4	Technology validated in a lab	A low fidelity system/component breadboard is built and operated to demonstrate basic functionality and critical test environments, and associated performance predictions are defined relative to the final operating environment.	Key, functionally critical, software components are integrated, and functionally validated, to establish interoperability and begin architecture development. Relevant Environments defined and performance in this environment predicted.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of relevant environment.
5	Technology validated in relevant	A medium fidelity system is built and operated to demonstrate overall	End-to-end software elements implemented and interfaced with existing	Documented test performance demonstrating agreement

³ Refer to https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-13-general-annexes_horizon-2021-2022_en.pdf



	environment. (industrially relevant environment in the case of key enabling technologies)	performance in a simulated operational environment with realistic support elements that demonstrates overall performance in critical areas. Performance predictions are made for subsequent development phases.	systems/simulations conforming to target environment. End-to-end software system, tested in relevant environment, meeting predicted performance. Operational environment performance predicted. Prototype implementations developed.	with analytical predictions. Documented definition of scaling requirements.
6	Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)	A high fidelity system/component prototype that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate operations under critical environmental conditions.	Prototype implementations of the software demonstrated on full-scale realistic problems. Partially integrate with existing hardware/software systems. Limited documentation available. Engineering feasibility fully demonstrated.	Documented test performance demonstrating agreement with analytical predictions.
7	System prototype demonstration in an operational environment.	A high fidelity engineering unit that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate performance in the actual operational environment and platform.	Prototype software exists having all key functionality available for demonstration and test. Well integrated with operational hardware/software systems demonstrating operational feasibility. Most software bugs removed. Limited documentation available.	Documented test performance demonstrating agreement with analytical predictions.
8	System complete and qualified	The final product in its final configuration is successfully demonstrated through test and analysis for its intended operational environment and platform	All software has been thoroughly debugged and fully integrated with all operational hardware and software systems. All user documentation, training documentation, and maintenance documentation completed. All functionality successfully demonstrated in simulated operational scenarios. Verification and Validation (V&V) completed.	Documented test performance verifying analytical predictions.
9	Actual system proven in an operational environment (competitive manufacturing in the case of key enabling technologies, or in space)			

D – Award criteria

Scores and weighting factors are indicated in the calls/topics specific annexes

F - Procedure. Evaluation procedure and ranking.



The call specific annexes contain the rules applicable to the Chips JU call evaluations. The rules for evaluation and selection of proposals, as adopted by the GB (GB 2022.28), include the rules on conflicts of interest. This document is available in the calls pages in the Funding and tenders portal.

G – Legal and financial set-up of the grant agreement.

The call/topic descriptions contain the provisions and funding rates applicable to the calls.



Annex 2: Management of contributions from the participating states

In accordance with Article 12 SBA, Participating States shall conclude an administrative agreement with the joint undertaking laying down the coordination mechanism for the payment of and reporting on contributions to applicants.

Two administrative agreements are possible:

- Article 12(2): coordination with no entrustment,
- Article 12(3): entrustment of the joint undertaking by the participating state with the payment if its contribution to its beneficiaries.

For **Chips Calls 2024**, all participating states **have signed an administrative agreement based on Article 12(2)**.



Annex 3: Key Performance Indicators

The KPI for Chips JU will be developed in the frame of the Chips JU in 2024.



Annex 4: Country specific eligibility rules

The conditions and rules expressed in the next Participating State' sections apply only to the participants of that Participating State in particular as to their eligibility for national funding or as to the attribution of national funding.

Belgium

National contact person for KDT JU programme

Country	Name	First name	Tel	E-mail
BELGIUM				
Flanders	DEPREZ	Francis	+32 494 589672	francis.deprez@vlaio.be
	MONTE	Ann		ann.monte@vlaio.be
Brussels-Capital Region	MAAS	Stijn	+32 2 600 5067	smaas@innoviris.brussels
Wallonia	MORANA	Cedric	+32 81 33 45 37	cedric.morana@spw.wallonie.be

Funding authority websites: Flanders: www.vlaio.be
 Brussels: www.innoviris.brussels
 Wallonia : www.recherche.wallonie.be

Additional for KDT (Flanders):

- www.vlaio.be KDT specific pages
- www.vlaio.be/nl/subsidies-financiering/subsidies-voor-ooi-een-internationaal-consortium/networks KDT specific pages

Legal requirements for the eligibility of a partner or a project

Type or nature of participants

For Flanders:



The participant must be a company established in Belgium, with a sustainable economic activity in Flanders, based upon a sound business model.

Flemish Strategic Research Centres (SOC) can be independent legitimate participants.

Research centres and universities can only be legitimate participants in projects compliant to the Flemish O&O-subsidy conditions (Research Partner)

For Brussels:

Participants in KDT projects wishing to receive funding from Innoviris must be companies, universities or research organisations (in accordance with the definitions provided for by the General Block exemption Regulation for State Aid and the Brussels legislation regulating the action of Innoviris) established on the territory of the Brussels-Capital Region and performing RDI activities within the project.

Please note that no individual partner alone is allowed to support more than 70% of the project's cost.

For Wallonia:

Participants in KDT projects must be companies, universities/Colleges or accredited research centres established in the Walloon Region and performing RDI activities within the project.

Legal, administrative, and financial conditions

For Flanders:

Any double public funding of activities is prohibited.

In case of a multinational company, the application needs to be done by the Belgian legal entity or subsidiary.

For the independent project participation of a research centre or university, the legitimate status of Strategic Research Centre (SOC) is mandatory. A specific agreement with VLAIO is compulsory and Flemish governmental funding outside “Fonds voor Innoveren en Ondernemen” applies.

For enterprises “State Aid for Rescuing and Restructuring Firms in Difficulty” is applicable, according Europea definitions (holding level).

For Brussels:

For Brussels enterprises wishing to benefit from Innoviris funding, the financing conditions are as follows:

- develop all or some of its R&D activities within the territory covered by the Brussels-Capital Region



- present an innovative RDI project likely to have a favourable impact on employment and/or sustainable development of the Brussels-Capital Region
- show one's ability to finance one's share in the project
- the company is not in difficulty, in accordance with the European legislation
- have fulfilled its obligations in the context of previous support initiatives allocated by the Region.

No other public funding (except the European contribution provided by the JU) can be received by the beneficiaries for the activities performed within the project. Any other funding must be declared to Innoviris.

For Wallonia:

The Walloon decree on RDI support (25/06/2008) is the Walloon legal basis to determine the funding of the participants. Participants must be based in Wallonia and the Walloon company(ies) must have a business unit in Wallonia.

The companies must present an innovative RDI project with a favourable impact on the Walloon economy and/or in terms of employment in alignment with the Walloon S3, as well on sustainable development in Wallonia.

The participants cannot benefit from any other public funding for the same activities.

The participants have fulfilled their obligations in the context of previous support allocated by the Region.

The companies in difficulty, in accordance with the European legislation, cannot not be funded.

Consortium configuration

For Flanders:

Project application is done by either an enterprise with a legal entity in Belgium and effective operations in Flanders or a legitimate Strategic Research Centre.

Project participation needs to be primarily executed to the benefit of the applying entities.

Participation of research organisations is only possible as research partner (legal subcontracting) to the participation of an enterprise with co-funding by the enterprise.

Applications compliant to the status of Strategic Research Centre need to be done independently.

For Brussels:

Participants in KDT projects wishing to receive funding from Innoviris must be a company or a research organisation.

For Wallonia:



The Walloon partners of the consortium must include at least one company and the research budget of the Walloon partner company(ies) must correspond to at least 40% of the total budget of all Walloon partners.

Other conditions

For Flanders:

Enterprises need to prove adequate (financial) means to execute the project and a potential to use the results.

The project should yield socio-economic effects which can be quantified by activities or investments after the completion of the project, by exploitation in Flanders based entities, in accordance with the ruling detailed in the document (except for project applications by Strategic Research Centres). Conditions are compliant to the impact conditions of O&O, detailed on:

www.vlaio.be/nl/subsidies-financiering/onderzoeksproject/voorwaarden-om-aanmerking-te-komen-voor-de-subsidie (RIA-projects)

www.vlaio.be/nl/subsidies-financiering/ontwikkelingsproject/wie-komt-aanmerking-en-onder-welke-voorwaarden (IA-projects)

Project qualification ‘research’ or ‘development’ will follow KDT call rationale (IA, RIA or additional calls).

In case of potential military applications (including dual use), funding can be restricted.

For Brussels:

Exploitation and valorisation conditions:

Brussels-based participants must demonstrate their capability to carry out the tasks assigned to them in the project, exploit the results of the latter and the project's likelihood to have a positive impact on the Brussels-Capital Region from a social, environmental and the regional ecosystem perspective 's (economy, employment, and/or sustainable development, inequalities, working conditions, well-being, ...).

In case of potential military applications (including dual use), funding can be restricted.

For Wallonia:

The participants must demonstrate their capability to carry out the tasks assigned to them in the project, exploit the results of the latter and have positive impacts on Wallonia from a socio-economic and sustainable development perspective.

Projects must be targeted at civilian technologies, products, processes and services only.

5) Eligibility of costs

For Flanders



Eligibility of costs is in accordance with the ruling of the O&O bedrijfssteun of Flanders, detailed in the documents available on:

<https://www.vlaio.be/nl/subsidies-financiering/onderzoeksproject/welk-bedrag-kan-je-krijgen-de-subsidie-onderzoeksproject>
www.vlaio.be/nl/subsidies-financiering/ontwikkelingsproject/financiele-steun-voor-een-ontwikkelingsproject

Eligible cost calculation will be done on the costs formulated in the KDT application. The cost model applicable is the KDT eligible cost system (Horizon Europe)

In case of stand-alone Strategic Research Centre projects, KDT eligible cost system (Horizon Europe) is applicable for both KDT and SOC funding.

For Brussels

For KDT projects, the Brussels-Capital Region will align on the JU and will therefore not apply additional rules, such as the regional rules applicable for individual RDI projects, on the eligibility of costs. The eligible costs will therefore be those retained by the JU for the European contributions in accordance with the Horizon Europe Rules for Participation.

For Wallonia:

The eligibility of costs is in accordance with the guidelines issued by the Public Service of Wallonia available on:

[Guide-des-dépenses-admissibles_aides.pdf](#)

Funding rates

For Flanders

<div> <div>Type of Organisation</div> <div>Type of activity</div> </div>	Percentage of the national subsidy to the beneficiaries			
	Large Enterprises, Groups and Associations of Enterprises	Medium Enterprises	Small Enterprises	Public Research Institutes and Universities (2) (3)
Industrial/Applied Research projects	65%-JU	70%-JU	70%-JU	= JU (1:1 ratio)



Experimental development projects	40%-JU	50%-JU	60%-JU	= JU (1:1 ratio)
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Notes:

1. These percentages are maxima and given under the constraints that the project proposal fulfils the KDT eligibility criteria and that no participant in the KDT project holds more than 70% of the total (international) KDT project budget.
2. The funding of stand-alone Strategic Research Centre contributions is determined by specific project related agreement with VLAIO. These projects have no specific funding limit. The eligible costs for these projects may be set equal to the KDT eligible costs.
3. The funding of public research institutes and universities in projects initiated by enterprises in Belgium, is determined by the general principles of O&O-bedrijfsprojecten as published on the websites
www.vlaio.be/nl/subsidies-financiering/onderzoeksproject/wat-houdt-de-subsidie-onderzoeksproject
www.vlaio.be/nl/subsidies-financiering/ontwikkelingsproject/wat-is-een-ontwikkelingsproject

In case of non-SOC RTO participation, the funding level of the participating (initiating) enterprise applies. The participating (initiating) enterprises are to cover the non-funded costs.

Except for stand-alone Strategic Research Centre projects, funding is limited to € 3M per project. Total funding for FIO funded projects (non SOC) may be limited to € 4M. Funding to enterprises may be limited if combined R&D funding (national and Joint Undertaking) to an enterprise exceeds VLAIO applicable ruling, part of the extended eligibility criteria.

For Brussels:

Type of Organisation Type of activity	Percentage of the national subsidy to the beneficiaries			
	Large Enterprises, Groups and Associations of Enterprises	Medium Enterprises	Small Enterprises	Public Research Institutes and Universities
Industrial/Applied Research projects	65%-JU%	75%-JU%	80%-JU%	100%-JU%



Experimental development projects	40%-JU%	50%-JU%	60%-JU%	100%-JU%
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Notes:

These percentages are maxima and given under the constraints that the project proposal fulfils the KDT eligibility criteria and that no participant in the KDT project holds more than 70% of the total (international) KDT project budget.

Project funding for Brussels may be limited to € 0,5M.

For Wallonia:

Type of Organisation Type of activity	Percentage of the regional subsidy to the beneficiaries				
	Large Enterprises, Groups and Associations of Enterprises	Medium Enterprises	Small Enterprises	Universities	Accredited Research Centers
Industrial/Applied Research projects	65%-JU%	75%-JU%	80%-JU%	100%-JU%	75%-JU%
Experimental development projects	40%-JU%	50%-JU%	60%-JU%	100%-JU%	75%-JU%

Notes:

1. These percentages are maxima and given under the constraints that the project proposal fulfils the KDT eligibility criteria and that no participant in the KDT project holds more than 70% of the total (international) KDT project budget. The proposed research activities will be qualified 'industrial research' or 'experimental development' according to the above-mentioned Walloon decree.
2. The funding of Experimental Development projects might be carried out by means of recoverable advances ([Taux de financement des projets internationaux_2021.pdf](#)).

Additional Information to be provided at submission and other conditions***For Flanders:***

Additional information is mandatory as of the FPP-phase. Application according the KDT application form www.vlaio.be/nl/media/739 is mandatory (endorsing the application



compulsory by KDT FPP closing date). European application format is requested. Starting the application procedure (without endorsement) is recommended as of the KDT PO phase.

For Brussels

The submission of a Part C containing additional information is compulsory for all Brussels partners. The Part C template is available on the INNOVIRIS website <https://innoviris.brussels/> (get-funded/ Collaboration/ECSEL).

For Wallonia:

The submission of a Part C containing additional information is compulsory for all Walloon partners. The Part C template is available on the website (www.recherche.wallonie.be).



Denmark – Innovation Fund Denmark (IFD)

National contact person for Chips JU program

Country	Last Name	First name	Telephone	E-mail
Denmark	G. Marques	Daniel	+45 61 90 50 06	daniel.g.marques@innofond.dk
	General contact		N/A	internationale@innofond.dk

Please find Innovation Fund Denmark's Guidelines for International Projects, templates for required documentation and additional supporting information [here](https://innovationsfonden.dk/en/p/international-collaborations) (full link below):

- <https://innovationsfonden.dk/en/p/international-collaborations>

Legal requirements for the eligibility of a partner or a project

Type or nature of participants

- All Danish organizations directly involved in activities in the projects are eligible as applicants to IFD.

Legal, administrative, and financial conditions

- Please refer to Innovation Fund Denmark's Guidelines for International Projects (link at the top).

Consortium configuration

- No national requirements regarding consortium configuration. Innovation Fund Denmark encourages Danish applicants to maximize impact in Denmark, as well as cross-sectoral collaborations.



Other conditions

- Usually 2-4 weeks after the central submission deadline, Danish applicants will receive a direct invitation to upload the international project proposal to the national e-grant system.
- Further documentation will be requested to non-public organisations via e-grant. The templates for the required documentation can be found under [Documents](#) (link also at the top).
- Danish applicants are required to submit a consortium agreement signed by all project participants before the start of the project according to our Guidelines.

Eligibility of the costs and funding

Eligibility of costs

- The eligibility of costs is regulated by the Innovation Fund Denmark's Guidelines for International Projects.
 - Eligible costs:
 - Salaries;
 - Equipment (equipment, materials, etc.);
 - Other project-related costs (events, transportation, travel, audit costs, etc.);
 - External services (consultancy costs, subcontracting or services);
 - Overhead (if applicable, maximum overhead rates according to IFD's Guidelines, see also below).

Funding rates

Both maximum funding amounts and maximum funding rates apply.

Maximum national funding amounts

Maximum national funding of 650.000 EUR per project (if there is more than one Danish partner) and maximum 300.000 EUR per Danish partner. This is a higher maximum amount per project than the standard indicated in the Guidelines for International Projects. EU co-funding is not included in the maximum national funding amounts.

Maximum national funding rates

The maximum national funding rates are regulated by the Guidelines for International projects.



Maximum national funding rates depend on the applicant's type of organisation. In addition, applicants may be eligible for EU co-funding according to the Chips JU criteria and maximum co-funding rates.

Maximum national funding rates are given in the table below in relation to the national eligible costs.

Maximum national funding rates ⁴				
Call	Large Enterprise*	SME*	GTS and other Research Institutes	Universities and other public entities
IA Calls (Experimental Development)	15 % ⁵	20 %	25 %	55 %
RIA Calls: Global RIA and RIA Focus Topic 2 (Industrial Research)	40 %	40 %	25 %	55 %

*All other organisations carrying out economic activities in the project are considered as enterprises.

National maximum funding rates are adjusted to Chips JU maximum EU co-funding rates according to state aid rules. The total maximum funding rates (national and EU co-funding) will as a consequence follow Innovation Fund Denmark's standard maximum funding rates according to the Guidelines for International Projects⁶.

Maximum share of national funding for indirect costs (overhead)

Applicable maximum overhead rates according to the Guidelines for International Projects. Costs with external services are not eligible for overhead.

⁴ Contact IFD for maximum national funding rates for Approved Danish National Cluster Organisations and organisations with the special status of Research and knowledge dissemination institutions, as defined in '[Vejledning om definitionen af en forsknings- og vidensformidlingsinstitution](#)', published (in Danish) by the Ministry of Food, Agriculture and Fisheries of Denmark, Danish Agricultural Agency Oct. 2, 2020.

⁵ For Global IA Call (HORIZON-Chips 2024-1-IA T1) the maximum national funding rate is 20% for large enterprises (Experimental Development).

⁶ National funding will be subject to conditions in current state aid rules (Commission Regulation (EU) No 651/2014). If other public funding, besides the EU funding, will be granted for the project, the listed maximum rates for national funding will be reduced if required to ensure that aid intensity limits in the state aid rules are respected. Beneficiaries must submit declarations regarding company size and financial situation.



Maximum share of national funding for overhead			
Universities and public research institutions	Public Hospitals	Approved Danish National Cluster Organisations	Others
44 %	3,1 %	20 %	0 %



Finland

National contact person for Chips JU programme

Country	Name	First	Phone	email
Finland	Ahola	Kimmo	+358 50 5577 756	kimmo.ahola@businessfinland.fi
	Leino	Kari	+358 50 5577 698	kari.leino@businessfinland.fi

Finland's national public funding authority is Innovation Funding Agency Business Finland. Business Finland funding principles can be found at:

www.businessfinland.fi/en (English)

www.businessfinland.fi (Finnish)

Legal requirements for the eligibility of a partner or a project

1) Type or nature of participants

- Companies (enterprises)
- Industry associations
- Universities and polytechnics
- Public research institutes and similar research organizations

2) Legal, administrative and financial conditions

- A company has considerable industrial or R&D&I activities in Finland.
- A company has a clear financial record and has the financial capability to cover its own expenses during the project (e.g., the company must show positive equity at decision taking)

3) Consortium configuration

- Research and Innovation Actions (RIA) projects: A public research institute, university or a polytechnic shall be accompanied in the project by at least three companies (Partner or Associated) in Finland. The project volume (costs) of public research institutes, universities and polytechnics from Finland combined shall not



exceed 70 % of the total volume (costs) of Finnish participants based on national (Business Finland) funding rules.

- Innovation Action (IA) projects: A public research institute, university or a polytechnic shall be accompanied in the project by at least two eligible (Partner) companies in Finland. The project volume (costs) of public research institutes, universities and polytechnics from Finland combined shall not exceed 30 % of the total volume (costs) of Finnish participants based on national (Business Finland) funding rules.

4) Other conditions

- The project participation must aim for significant business and export growth as well as have sufficient positive impact on the Finnish economy or society.
- Priority is given to the topics that are not covered by already funded projects.
- Priority is given to projects that implement strong cross-border industrial cooperation.

Eligibility of the costs and funding

1) Eligibility of costs

- Eligibility of the costs is in accordance with the national (Business Finland) funding rules.

2) National public funding

Type of activity	Large enterprise	SME	Public Research Institutes and Universities
Research and Innovation action	20 % grant	35 % grant	38 % grant
Innovation Action	20 % grant or Max. 50 % loan	35 % grant or Max. 50 % loan	38 % grant

Additional Information to be provided at submission and other conditions.

- Every participant in Finland must submit a separate Business Finland funding application within 14 days of call closure date.



France

National contact person for Chips JU program

Country	Name	First name	Tel	E-mail
France	RITOU	Arnaud	+33 1 53 18 36 16	arnaud.ritou@finances.gouv.fr
	BUIS	Jean-Noël	+33 1 53 18 35 84	jean-noel.buis@finances.gouv.fr

Website reference: <https://www.entreprises.gouv.fr/fr/numerique/enjeux/soutien-la-nanoelectronique>

Exigences légales pour l'éligibilité d'un partenaire ou d'un projet.

The items published in French in the following text are the official national eligibility criteria for funding. The following items published in English are a translation. The text in French takes precedence over the text in English.

La contribution indicative inscrite dans ce programme de travail, dans la partie *National Budgets for the call 2024*, n'est pas un budget à allouer aux candidats français à des appels à projets Chips JU, mais une estimation des aides pouvant être obtenues par les candidats français à travers les mécanismes de financements décrits ci-dessous.

Les porteurs français d'une proposition de projet pour un appel à projets Chips JU en 2024 doivent, pour être éligibles, avoir été retenus pour ce projet par un mécanisme de financement national, avant la sélection des projets Chips JU par le comité des autorités publiques de l'entreprise commune :

- au titre du **volet français** du PIEEC électronique et connectivité, s'ils en sont bénéficiaires et dans les conditions prévues par le programme ;
- au titre d'un appel à projets national ou régional, en respectant les conditions spécifiques à cet appel.

Les partenaires doivent impérativement contacter les correspondants nationaux indiqués au début de cette annexe avant le dépôt de la « Project Outline » (pour les appels en deux phases) ou de la proposition finale (pour les appels en une seule phase).

L'objectif de ce contact est d'orienter le demandeur vers le guichet le plus adapté, de préparer l'examen des critères d'éligibilité nationaux, et pour les chefs de file du PIEEC électronique et connectivité, de préciser les démarches à mener afin de déterminer la conformité du projet avec les axes stratégiques du programme.



I. Financement dans le cadre du volet français du PIIEC électronique et connectivité

Les critères suivants ne s'appliquent qu'aux porteurs de projets retenus au titre du programme national (sans nom à date) dans le cadre du volet français du PIIEC électronique et connectivité et ne préjugent pas de l'application des règles légales et réglementaires en vigueur concernant l'attribution de subventions par l'État français.

Pour les partenaires ayant déposé une demande de financement au titre d'un appel à projets national ou régional, ils doivent se référer au cahier des charges de l'appel à projets en question.

1) Type ou nature des participants

- Entreprises privées ou publiques de toutes tailles
- Universités
- Instituts de recherche

2) Conditions légales, administratives et financières

Les travaux ne doivent pas déjà avoir fait l'objet d'un soutien public (hors mesures fiscales génériques) ni être en redondance avec des travaux similaires financés par les autorités françaises, ni avoir été engagés avant la date de début du projet indiqué dans la « *Full Project Proposal* »

La situation financière de chaque partenaire privé doit être validée (structure financière, flux de trésorerie, compte d'exploitation) et jugée compatible (volume d'activité, moyens humains, moyens financiers) avec le montant et le contenu de l'assiette des dépenses ainsi qu'avec le montant de l'aide sollicitée et des aides publiques déjà accordées par ailleurs.

3) Cohérence avec le PIIEC électronique et connectivité et le plan France 2030

Les porteurs de projets doivent s'intégrer dans les objectifs globaux du PIIEC électronique et connectivité, et contribuer à lever un ou plusieurs verrous technologiques significatifs en vue de concevoir ou d'améliorer des produits, services ou procédés, ainsi que mettre en place les moyens de réalisation de ces produits et procédés. Ceux-ci doivent présenter pour eux des perspectives suffisantes de retombées sur le territoire de l'Union européenne, et notamment en France, en termes d'emplois, de compétitivité, de création de valeur et d'activité économique à court ou moyen terme.

Les propositions doivent comporter la participation d'au moins un chef de file français du PIIEC électronique et connectivité. Néanmoins, la coordination et le dépôt de la proposition peuvent être confiés à un autre partenaire du consortium.

Les travaux réalisés par les porteurs doivent être bien spécifiés et pouvoir être considérés comme « développement expérimental » ou « recherche industrielle » au sens de



l'encadrement des aides d'Etat à la RDI. Conformément à ce régime d'aide, l'aide à chaque entreprise doit avoir un effet d'incitation sur ses activités de RDI.

Les partenaires doivent remplir les conditions d'éligibilité propres aux partenaires du PIEEC électronique et connectivité :

- déposer un dossier complet, au format imposé, sous forme électronique via la plateforme de Bpifrance,
- dont les modalités d'accès seront précisés par le contact national indiqué en début de cette annexe ;
- Pour les partenaires du projet qui ne sont pas chefs de file du PIEEC électronique et connectivité, remplir les conditions relatives aux montants de dépenses en ressources humaines et « emplois nouveaux » :
 - Les partenaires devront présenter un niveau de dépenses en RH équivalent au moins à 40% du total des dépenses éligibles.
 - Parmi ces 40%, il est attendu que des emplois nouveaux (CDI, CDD, contrat d'apprentissages, ...) représentent un minimum de 20% des dépenses éligibles du projet.

Intégrant les priorités de France 2030, l'aspect « émergent » ou « en développement » est un point particulier de sélection des partenaires de projets dans la mesure où France 2030 vise à faire émerger de nouveaux acteurs économiques.

Ainsi, les projets intégrant des acteurs tels que des entreprises de moins de 12 ans ou des PME/ETI opérant un pivot stratégique radical, les amenant à développer de nouveaux produits très innovants en rupture ou qui concernent des marchés émergents, ou en très forte croissance, ou procédant à des opérations de *build-up* avec des entreprises de moins de 3 ans ou encore en consortium de R&D collaborative avec des start-ups seront privilégiés.

4) Coûts éligibles

Les coûts éligibles français seront basés sur le montant obtenu en remplissant les annexes financières disponible sur la plateforme de Bpifrance, pour chaque partenaire français.

5) Taux de soutien

Type d'entreprise Type de recherche	Grande entreprise (GE et ETI)	PME	Organisme de recherche en <u>coûts</u> <u>marginiaux</u>
Research and Innovative Action (RIA) & Innovative Action (IA)	20 %	30 %	100 % moins aide demandée à la JU

6) Informations nécessaires à la soumission



Pour les porteurs éligibles au programme national (sans nom à date) dans le cadre du volet français PEEC électronique et connectivité, et en complément du dossier de soumission du projet, transmis à l'entreprise commune, le responsable français de chaque projet doit adresser aux autorités françaises, un dossier sur la plateforme de Bpifrance consacrée dont le contact national lui précisera les modalités d'accès.

Le dossier soumis doit **présenter les éléments permettant aux autorités françaises d'apprécier et de justifier l'admissibilité de l'aide** demandée par le porteur et ses partenaires. En particulier, le dossier doit comprendre, outre les documents requis au titre de l'appel à projets de l'entreprise commune, les documents spécifiés sur la plateforme mentionnée précédemment.

II. Financement dans le cadre d'appels à projets nationaux ou régionaux

Les partenaires ayant déposé une demande de financement au titre d'un appel à projets national ou régional, doivent se référer au cahier des charges des dispositifs en question pour connaître leurs critères d'éligibilité et conditions de financements.

Des documents supplémentaires pourront être demandés, dans les conditions desdits appels à projets afin de permettre aux autorités décidant de l'octroi de l'aide, d'apprécier et de justifier l'admissibilité de l'aide demandée par le porteur et ses partenaires.

Les taux d'aide dépendront des conditions propres aux dispositifs dont les financements seront issus, et à la prise en compte par ces dispositifs de l'existence d'un cofinancement européen.

1) Précisions relatives aux dispositifs s'inscrivant dans le cadre de France 2030

Suivant les priorités du plan France 2030, l'aspect « émergent » ou « en développement » est un point particulier de sélection des partenaires, dans la mesure où France 2030 vise à faire émerger de nouveaux acteurs économiques.

Ainsi, les projets intégrant des acteurs tels que des entreprises de moins de 12 ans ou des PME/ETI opérant un pivot stratégique radical, les amenant à développer de nouveaux produits très innovants en rupture ou qui concernent des marchés émergents, ou en très forte croissance, ou procédant à des opérations de *build-up* avec des entreprises de moins de 3 ans ou encore en consortium de R&D collaborative avec des start-ups seront privilégiés.

Est notamment concerné, l'appel à projet I-Démo Europe.

À titre d'information, pour les projets dont le financement national serait obtenu au titre de l'appel à projets « I-Démo Europe », les taux prévus sont les suivants :

Type d'entreprise Type de recherche	Grande entreprise (GE et ETI)	PME	Organisme de recherche (coûts complets)	Organisme de recherche (coûts marginaux)
Research and Innovative Action (RIA)	25 %	35 %	25%	65%



Innovative Action (IA)	20 %	30 %		
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**Legal requirements for the eligibility of a partner or a project**

The items published in French in the following text are the official national eligibility criteria for funding. The items published in English are a translation. The text in French takes precedence over the text in English.

The indicative commitment previously indicated in this work programme, in the subpart *National Budgets for the call 2024*, is not a budget to allocate to French applicants to Chips JU calls, but an estimation of the ability of French partners to obtain national funding through mechanisms described below.

Consequently, **the French applicants of a Chips JU 2024 project proposal must, to be eligible, have been selected for this project to a national funding schemes, before the selection of Chips JU projects made by the Public Authorities Board of the JU:**

- through national program such as the French framework (successor of Nano 2022, not yet named) in the context of the upcoming IPCEI Microelectronics and Communication Technologies, if they are beneficiaries of it, and under the conditions of the program:.
- through a national or regional call, with respect to the specific conditions of this call.

Partners must contact the national correspondents before the Project Outline submission (for 2-stage calls) or before the final proposal submission (for single stage calls).

The aim of this contact is to direct the requestor to the most relevant financing mechanism, to prepare the national eligibility criteria examination, and for the French direct partner of the IPCEI ME-CT, to precise procedures to check the conformity of the project with the strategic lines of the program.

I. Funding through the French framework of the upcoming IPCEI Microelectronics and Communication Technologies

The following criteria are valid only for the applicants selected through the French framework (not yet named) in the context of the upcoming IPCEI Microelectronic and Communication Technologies and are without prejudice to the application of legal rules and regulations concerning the allocation of public funding by the French State.

For partners who have submitted an application for funding under a national or regional call for projects, they must refer to the terms of reference of this call.

1) Type or nature of participants

- Private and public companies of all sizes
- Universities
- Research Institutes

2) Legal, administrative and financial conditions



The work to be done by the partners must neither have already benefited from public funding (excluding generic fiscal aid) nor be redundant with similar projects already funded by French authorities, nor engaged before the start date of the project indicated in the Full Project Proposal. The financial situation of each private partner must be validated (financial structure, cash flow, operating accounts) and considered compatible (activity volume, workforce, financial capability) with the amount and the content of the eligible costs as well as with the amount of the demanded aid and of the already granted public aid.

3) Coherence with the IPCEI Microelectronics and Communication Technologies and the French investment plan FRANCE 2030

The applicants must contribute to the global objectives of the IPCEI Microelectronics and Communication Technologies and achieve one or several significant technological breakthroughs with the objective of designing or improving products, services or processes, and must set-up a capability to make these products or processes. These ones must have a sufficient potential impact on their activity in the European Union and in particular in France, in terms of employment, competitiveness, value creation and growth at short or medium-term.

The proposals shall include the participation of at least one direct partner of the IPCEI Microelectronics/Connectivity. Nevertheless, the coordination and the submission of the national proposal can be entrusted to another partner of the consortium.

The tasks assigned to applicants must be well specified and should consist in « experimental development » or « industrial research » as defined in the R&D&I framework. In accordance with the R&D&I framework, the aid to each company must have an incentive effect on its R&D&I activities.

Partners of the project have to fulfil the proper eligibility criteria of French partners of the IPCEI Microelectronics and Communication Technologies:

- Submit a complete file, in the required format, in electronic form via the Bpifrance platform. The terms of access to this platform will be provided by the national contact indicated in the beginning of this annex;
- For partners not being direct partners of the upcoming IPCEI ME/CT, fulfil conditions regarding the amount of expenses on human resources and “new jobs”:
 - Partners must present a level of human resources expenditures equivalent to at least 40% of the total eligible costs of the project.
 - Among these 40%, it is expected that new jobs (permanent, temporary, apprentices, etc.) represent at least 20% of the eligible costs of the project.

Following France 2030 support plan’s priorities, the “emerging” or “developing” aspect of the project’s partners is a key point of selectivity of the projects, France 2030 aiming at fostering new/emerging economic actors.



Project integrating companies less than 12 years old or project integrating companies operating a significant market or strategic reorientation towards new particularly innovative products or towards emerging markets, or experiencing an intense growth, or conducting external growth acquiring companies not older than 3 years on the relevant market or in a research and development consortium with start-ups, will be prioritized.

4) *Eligibility of costs*

The French eligible costs will be based on the amount obtained using the financial data sheets that can be found on the Bpifrance online platform, for each French partner.

5) *Funding rates*

Type of beneficiary Type de project	Large enterprises	SMEs	RTOs (Incremental costs)
Research and Innovative Action (RIA) & Innovative Action (IA)	20 %	30 %	100 % minus aid requested to the JU

6) *Additional information to be provided at submission*

Applicants eligible to the French framework (not named yet) in the context of the upcoming IPCEI Microelectronic and Communication Technologies and in parallel to the documents sent to the Chips JU, the French leader of each submitted project will have to send to the French public authorities a set of documents through the dedicated platform of Bpifrance. The French national contact will precise the terms of access of this platform to the French leader of the project.

The application submitted must **contain all elements which will allow French authorities to assess and justify the eligibility of the aid** asked by the applicants. In particular, the application must include, besides the documents required for application to the Joint Undertaking call, all documents listed on the dedicated platform of Bpifrance previously mentioned.

II. Funding through national or regional calls

Partners who have submitted an application for funding under a national or regional call for projects must refer to the terms of reference of this call to know their eligibility criteria and conditions for funding.

Additional documents may be asked, as per the conditions of the relevant program, in order to allow decisional bodies to assess and justify the eligibility of the aid asked by the applicants.

Rates for funding will depend on the conditions of these calls, who could also take into account the existence of a European co-funding.



1) Details regarding calls set up under the French investment plan France 2030

According to the priorities of the French investment plan France 2030, the “emerging” or “developing” aspect of the project’s partners is a key point of selectivity of the, France 2030 aiming at fostering new/emerging economic actors.

Project integrating companies less than 12 years old or project integrating companies operating a significant market or strategic reorientation towards new particularly innovative products or towards emerging markets, or experiencing an intense growth, or conducting external growth acquiring companies not older than 3 years on the relevant market or in a research and development consortium with start-ups, will be prioritized.

The I-Démo Europe call is particularly concerned.

For information, for projects whose national public funding originate from “I-Demo Europe” scheme, the support rates are as follows:

Type of beneficiary Type of project	Large enterprises	SMEs	RTO (Full costs)	RTO (Incremental costs)
Research and Innovative Action (RIA)	25 %	35 %	25%	65%
Innovative Action (IA)	20 %	30 %		



Italy

Ministry for Universities and Research (MUR)

National annex for the Non-Initiative calls 2024

National contact person for CHIPS JU programme

Country	Name	First name	Tel	E-mail
Italy (MUR)	Covello	Aldo	+39 375 510 2431	aldo.covello@mur.gov.it

Website: <http://www.ricercainternazionale.miur.it/era/european-partnership-2021-27/CHIPS-JU.aspx>

Legal requirements for the eligibility of a partner or a project

1) Type or nature of participants

According to art. 60 of the Decree-Law n. 83/2012 and to art. 5 of its implementing Ministerial decree 1314/2021, the following entities are eligible, providing that they have stable organization in Italy: enterprises, universities, research institutions, research organizations in accordance with EU Reg. n. 651/2014 of the European Commission - June 17, 2014.

2) Legal, administrative and financial conditions

The participant must not be defaulting with regard to other funding received by the Ministry. The participant must not have requested/got any other funding for the same project, apart from the KDT funding.

The participant must respect the Italian law "D.Lgs. n 159 del 6/09/2011 e successive modificazioni ed integrazioni".

The participant must not be subject to bankruptcy proceedings as of art. 5, comma 4, letter b) of DM 1314/2021 or must not be a company in difficulty according to the definition under number 18) of article 2 "Definitions" of Regulation (EU) no. 651/2014.

The participants must be in compliance with the obligations laid down in the contributory and social security regulations (DURC).

The judicial and pending records of the legal representative of the participant are negative

The participant must be registered at the "Anagrafe Nazionale della Ricerca". Partners not registered yet shall request to register after the end of the call.

For any private entity, the following financial criteria, calculated using the data reported in the last approved balance sheet, must be fulfilled



$$a) CN > (CP - I)/2$$

Where:

CN = net assets (Capitale netto)

CP = sum of the costs of all the projects for which public funding has been requested by the participant during the year

I = sum of the contributions received, approved or requested for the same projects

$$b) OF/F < 8\%$$

Where:

OF = financial charges (Oneri finanziari)

F = turnover (Fatturato)

3) Consortium configuration

No restrictions

4) Other conditions

Companies must have the financial means to execute the project and a potential to use the results.

The participant should foresee, after the end of the project, the exploitation of the results of the project so to guarantee the return of the investment.

The participants shall demonstrate the subsistence of the incentivisation effect as of art. 6 of GBER.

Calls supported, budget available and maximum funding per project

MUR committed a budget of 5 million euro as grant coming from the Fondo per gli Investimenti nella Ricerca Scientifica e Tecnologica (FIRST).

The calls supported by MUR, the budget tentatively allocated to each call and the maximum funding per project that can be requested by Italian participants are shown in the following table:

Call	Total budget for the call	Maximum funding per project
Chips-2024-1-IA-Topic-1	Not supported	N.A.
Chips-2024-1-IA-Topic-2	800,000	800,000
Chips-2024-1-IA-Topic-3	800,000	800,000
Chips-2024-2-RIA-Topic-1	2,600,000	650,000
Chips-2024-2-RIA-Topic-2	800,000	800,000



Cost Eligibility and funding rates

1) Eligibility of costs

All costs incurred during the lifetime of a project under the following categories are eligible: personnel, equipment, subcontracting, travels, consumables, and overheads. Overheads are calculated as 25% of the direct costs (personnel, equipment, travels and consumables). They include also coordination and dissemination expenses.

2) Funding rates

MUR will fund the Italian participants using the following funding rates:

	Chips-2024-1-IA-Topic-2 Chips-2024-1-IA-Topic-3	Chips-2024-2-RIA-Topic-1 Chips-2024-2-RIA-Topic-2
Type of partner	Grant	Grant
Large enterprise	25%	25%
SME	30%	35%
Universities, research centers and research organizations	35%	35%

On request of applicants a pre-payment may be done immediately after the signature of the national Grant agreement, equal to 80% of the total contribution.

The remaining part of the contribution will be paid at the end of the project.

For those beneficiaries who does not request the pre-payments, the contribute will be paid in instalments after each reporting period.

Italian participant may request a lower funding.

Additional Information to be provided to MUR and other conditions:

All Italian participants must submit a national application through the dedicated web platform <https://banditransnazionali-miur.cineca.it>. These documents must be submitted to MUR by the same deadline of the second step of the CHIPS JU calls. Any participant who does not send its national application by this deadline, will be considered ineligible.



Latvia

National contact person for Chips JU non initiative call 2024

Country	Name	First name	Tel	E-mail
LV	Julija	Asmuss	xxx	julija.asmuss@lzp.gov.lv
	Sarmite	Mickevica		sarmite.mickevica@izm.gov.lv

Legal requirements for the eligibility of a partner or a project

1) *Type or nature of participants*

Following legal persons (as defined under the Latvian law) are eligible for funding, except natural persons:

- enterprises, companies and/or industry associations, when they form part of consortia with R&D institutions;
- R&D institutions - research institutes, universities, higher education establishments, their institutes and research centres etc.

2) *Legal, administrative and financial conditions*

The co-financing for Latvian partners in successful projects will be provided in accordance with the Regulation of the Council of Ministers of the Republic of Latvia No 259⁷ on the Procedure for granting support for participation in International Cooperation programmes in the field of research and technology (adopted on 26 May 2015) and all amendments thereto.

R&D institution (research institute, university, higher education establishment, research centre etc.) must be listed in the Registry of Research Institutions operated by the Ministry of Education and Science of the Republic of Latvia.

Private entity must be registered in the Registry of Enterprises of the Republic of Latvia and must provide proof that it carries out most of its R&D&I activities in the territory of the Republic of Latvia.

The principle of forbidding double financing will be applied when granting National funding.

3) **Consortium configuration**

⁷ <https://likumi.lv/ta/id/274671-atbalsta-pieskirsanas-kartiba-dalibai-starptautiskas-sadarbibas-programmas-petniecibas-un-tehnologiju-joma>



Enterprises, companies and/or industry associations participate in the projects, when they form part of consortia with Latvian R&D institutions.

If there is no Latvian enterprise involved as a partner in the project, the industrial relevance of the involvement of a R&D institution must be justified by declaration from the Latvian Information and Communications Technology Association (LIKTA) or from the Latvian Electrical Engineering and Electronics Industry Association (LEtERA) confirming the relevance of the project outcomes to the national economy, which are included as a part C of the full project proposal. If there is no research organisation involved as a partner in the project, Enterprises and industry associations must provide declaration on the possible industrial impact and justify that they have the necessary means to exploit the project results which is included as a part C of the full project proposal.

Eligibility of the costs and funding.

1) *Eligibility of costs*

Direct costs:

- 1.1. Personnel costs – R&D related personnel costs should reach 80% of person/months,
- 1.2. Other direct costs such as consumables, equipment (only depreciation costs), materials and etc.,
- 1.3. Subcontracts (up to 25% of total participant's direct costs),
- 1.4. Travels costs (up to € 18,000 per participant per project),
- 1.5. Project management costs,
2. Indirect costs (can reach a maximum of 25% of the total direct costs).

2) *Funding rates**

Type of activity	Large Enterprises	Small and Medium Enterprises	Public Research Institutes and Universities
Research and Innovation action	up to 50%	up to 60% **	up to 100% ***
Innovation action	up to 35%	up to 50% **	up to 100% ***

* total public funding including National and EU contribution;

** may be increased by 20%, if it is approved by National Funding Authority prior the proposal submission to Chips JU Call;

*** the aid intensity for research and development activities carried out by Public Research Institutes and Universities might be at the level of 100% only if the organisation entirely



complies with the requirements set by the Commission Regulation (EU) No 651/2014 of 17 June 2014.

National funding for eligible Latvian partners is up to € 100 000 per partner, per year, per project.

Additional Information to be provided at submission and other conditions

The national funding committed for the Chips JU **non initiative Call 2024 is EUR 600 000** primarily for the Research and Innovation Actions



Netherlands

National contact persons for Chips JU programme

Country	Name	First name	Tel	E-mail
Netherlands	van der Bijl	Bob	+31 6 21839477	chipsju@rvo.nl
	de Boer	Jacob Jan	+31 6 23311252	

Background documents and other information can be downloaded from the website of Netherlands Enterprise Agency: <http://www.rvo.nl/chips-ju>. The Dutch text on this website takes precedence over the English text below.

Legal requirements for the eligibility of a partner or a project

1) Admission conditions

The Netherlands will support the Dutch partners in projects selected by the Chips Joint Undertaking Non-Initiative part when:

- the project concerns industrial research, experimental development or a combination of these;
- in the project one or more Dutch partners are involved which include minimal one industrial partner. In the case of only a single Dutch partner participating in a project, it has to be an SME;
- the industrial partners of the Dutch consortium provide the major contribution to the Dutch part of the project in such a way that the major part of the public funding (Chips + NL) involved goes to the industrial partners of the Dutch consortium;
- the objectives of the Dutch part of the project fit within the Innovation Contract High Tech Systems and Materials (HTSM) and its underlying Roadmaps (<https://hollandhightech.nl/innovatie/technologieen>);
- the project complies with the “Algemene wet bestuursrecht” and the “Kaderwet EZK-en LNV-subsidies”.

Dutch partners in a proposal must include in the Project Outline (PO) sent to the Joint Undertaking the following information:

- Explanation of the contribution to the objectives of the Innovation Contract High Tech Systems and Materials (HTSM) and its underlying Roadmaps (<https://hollandhightech.nl/innovatie/technologieen>)

Dutch partners in a proposal must include in the Full Project Proposal (FPP) sent to the Joint Undertaking the following information:



- Authorisation form;
- Explanation of the contribution to the objectives of the Innovation Contract High Tech Systems and Materials (HTSM) and its underlying Roadmaps (<https://hollandhightech.nl/innovatie/technologieen>)
- Model overview of the costs.

Note that in case that there are several Dutch partners in the proposal, the Dutch partner coordinating them (the so-called "Dutch coordinator") will be in charge of submitting the above information on their behalf. The information and forms will be submitted as the **National Part** of the FPP in a ZIP file through the Chips Proposal Submission system. There will be only one ZIP file for all Dutch participants in a given proposal.

The required forms can be downloaded from the website of Netherlands Enterprise Agency: <http://www.rvo.nl/chips-ju>.

2) *Rejection conditions*

An application for support of the share of Dutch participants of a project is rejected when:

- the partner that submits the application on behalf of all Dutch partners (the "Dutch coordinator") is not an enterprise;
- only a single Dutch partner is participating in a project that is not an SME;
- it is not credible that the Dutch partners can finance their share in the project;
- it is credible that the project without subsidy would have been finished without substantial delays;
- there is insufficient trust that Dutch partners have the necessary capacities to fulfil the project as submitted;
- the project has insufficient positive effects on the Dutch economy;
- the Dutch part of the project contributes insufficiently to the objectives of the Innovation Contract High Tech Systems and Materials (HTSM) and its underlying Roadmaps (<https://hollandhightech.nl/innovatie/technologieen>).

Eligibility of the costs and funding

1) *Eligibility of costs*

- The **eligible costs for subsidy** are in compliance with the R&D&I State Aid Rules, the "Algemene wet bestuursrecht" and the "Kaderwet EZK- en LNV-subsidies".
- The Dutch subsidy percentages are indicated below in the section Funding Rates.
- In case another Dutch administrative body has already granted a subsidy for the eligible costs of the Dutch part of an Chips project or part of such project, the contribution by the Ministry of Economic Affairs and Climate Policy will be granted so that the total



amount of subsidy will not exceed the before-mentioned Dutch subsidy percentages.

- In case that a contribution has been already granted for the eligible costs for subsidy to the Dutch part of an Chips project or part of it on the basis of a subsidy scheme of the Ministry of Economic Affairs and Climate Policy, no additional subsidy will be granted by the Ministry of Economic Affairs and Climate Policy for the already subsidized part.
- Per individual Dutch partner the subsidy percentages will be applied according to the activities. The project eligible costs per partner will be defined and the corresponding percentages will be applied.
- Per Chips project in which a Dutch consortium takes part a total national maximum of € 10.000.000 funding for the Dutch consortium will be initially applied in the case of IA projects and a total national maximum of € 5.000.000 funding for the Dutch consortium will be initially applied in the case of RIA projects.
- The Dutch budget for the Chips Calls 2024 is in total € 30.000.000 (subject to parliamentary approval).
- RVO (Netherlands Enterprise Agency) will be in charge of the project administration of all projects of the Chips Calls.

2) *Funding rates*

Large Enterprises, Groups and Associations of Enterprises	Small and Medium Enterprises	Public Research Institutes and Universities
20%	30%	25%

Rates apply to Call HORIZON-Chips-2024-1-IA Topic 1, Call HORIZON-Chips-2024-1-IA Topic 2, Call HORIZON-Chips-2024-1-IA Topic 3, Call HORIZON-Chips-2024-2-RIA Topic 1, Call HORIZON-Chips-2024-2-RIA Topic 2, Call HORIZON-Chips-2024-3-RIA.

In case the EU funding rates and/or conditions are modified the national funding rates may be amended.



Poland

Legal requirements for the eligibility of a partner or a project

1) Type or nature of participants

Following entities are eligible to apply:

- Research organizations;
- Micro, Small, Medium and Large Enterprises
- Industry organizations - only in the call with South Korea which is funded entirely by the European Commission and therefore Polish applicants do not submit a national application for funding or sign a national agreement with NCBR, and thus do not receive any funding from NCBR in this particular call.

Organization must be registered in Poland.

2) Legal, administrative and financial conditions

All proposals must be aligned with National regulations, inter alia:

- Act of 30 April 2010 on the National Centre for Research and Development (Journal of Laws item 2279, 2022);
- Act of 20 July 2018 on the Law of Higher Education and Science, (Journal of Laws item 574, 2022);
- Regulation of the Minister of Science and Higher Education of 17 September 2010 on the detailed mode of performance of tasks of the National Centre for Research and Development (Journal of Laws No 178 item 1200);
- Regulation of the Minister of Funds and Regional Policy of December 1, 2023 amending the regulation on granting state aid through the National Center for Research and Development (Journal of Laws item 2627, 2023)
- ~~Regulation of the Minister of Science and Higher Education of 19 August 2020 on granting state aid through the National Centre for Research and Development (Journal of Laws item 1456, 2020). NB. This act may change in Q1 2024 so will be in touch with you to ask for an update~~



National phase of application procedure

After international evaluation has been completed and the ranking list established, Polish participants from consortia recommended for funding will be invited to submit the National Application Form (NAF). All eligible entities invited to submit the NAF are obliged to use the rate of exchange of the European Central Bank of the day of call opening (i.e. 06 February 2024).



Slovenia

National contact person for Chips JU programme

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