

KDT JU – KEEPING EUROPE AT THE FOREFRONT OF TECHNOLOGY DEVELOPMENT

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Timisoara 11 April 2023



KDT JU

KEY DIGITAL
TECHNOLOGIES
JOINT UNDERTAKING



KDT JU – WHO WE ARE AND WHAT WE DO

KDT JU = Key Digital Technology Joint Undertaking

First generation JUs: ENIAC & ARTEMIS JU 2008-2014 (FP7)

- **full bottom-up**
- 2011-2013: **pilot lines**, building critical mass
- payments of EU funding part **linked to national cost recognition**
- start as first of its kind **tripartite** in the universe of European institutions

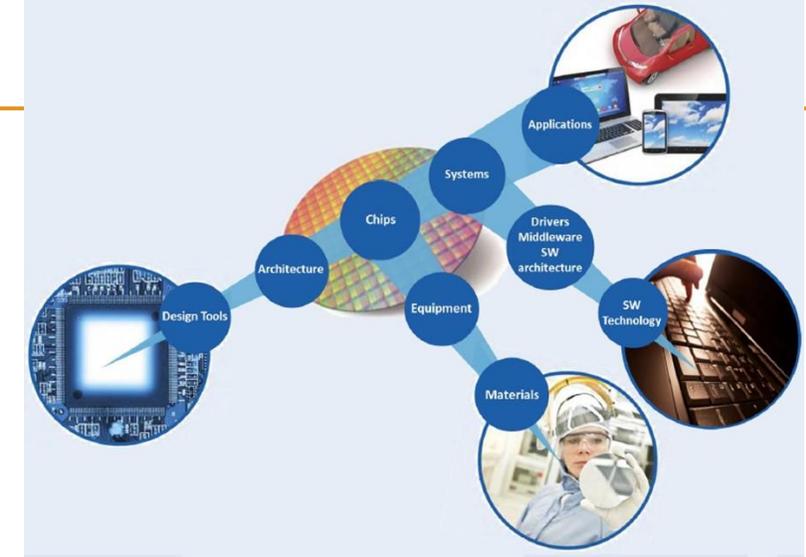


Second generation JU ECSEL JU 2014-2020 (H2020)

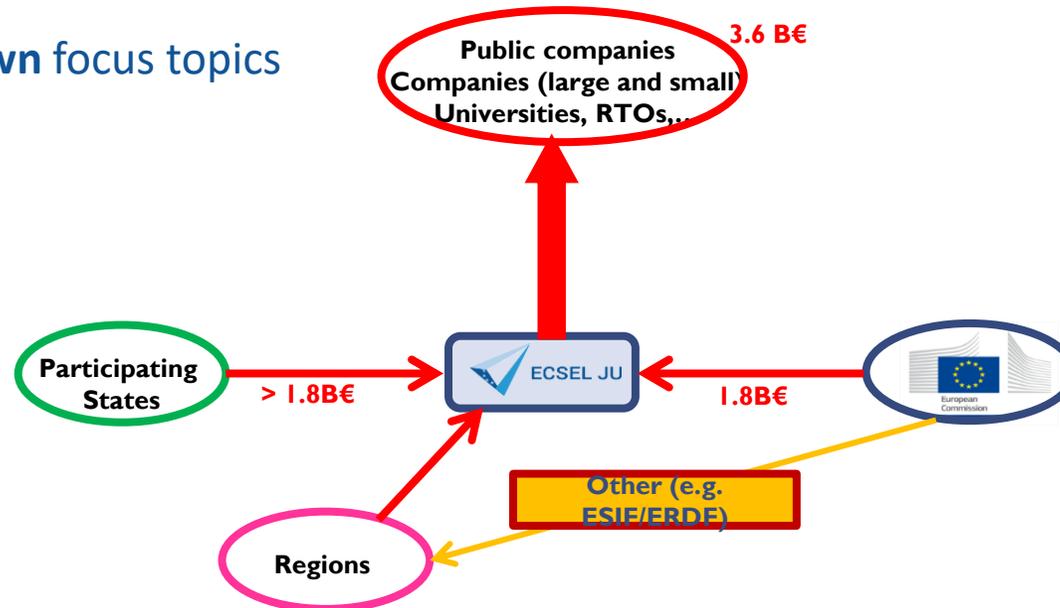
- along the **value chain**
- focussed on **industrial leadership** that promote synergies between commercial strategies and societal needs
- full bottom-up **with some special topics** that re-inforce/align national strategies and European priorities
- programme based on the **common agenda of Europe's ECS**
- **lighthouse initiatives**: Mobile.E, Industry4.E, Health.E
- payments of **EU funding based on H2020 rules**, national funding on national cost recognition (with few NA adopting the H2020 rules)
- start as merger of the first two joint undertakings: growing bigger



KDT JU 2021-2027



- Third generation JU (started 30/11/2021)
- KDT is the largest European programme in electronic components and systems.
- Tripartite: Commission - Participating states – Industry associations
- Associations: AENEAS, INSIDE, EPoSS
- Budget ambition : 7.2B€ funded by 1,8 B€ (EU)+1,8 B€ (national)
- Based on Horizon Europe
- **Bottom-up** programme with **top-down** focus topics
- “**Value chain**” approach
- **Pilot lines** (higher TRLs)
- **critical mass** approach
- focussed on **industrial leadership**
- **common agenda of Europe’s ECS**



<https://www.kdt-ju.europa.eu/>

PILOT LINE PROJECTS AND PROJECT SUITES

More Moore

The projects contribute directly to the European Strategic Roadmap for Micro- and Nano-Electronics Systems



Power components



Staatspreis Innovation 2013
des Bundesministeriums für Wirtschaft, Familie und Jugend



excellence in speed and reliability for More than Moore technologies : high volume production and quick introduction.

“Enhanced Power Pilot Line”: 2nd generation power semiconductor devices on 300mm wafer

“Enabling Power technologies on 300mm Wafers” project was based on the concept of a 1:1 transfer approach from 200 mm to 300 mm diameter silicon wafers.

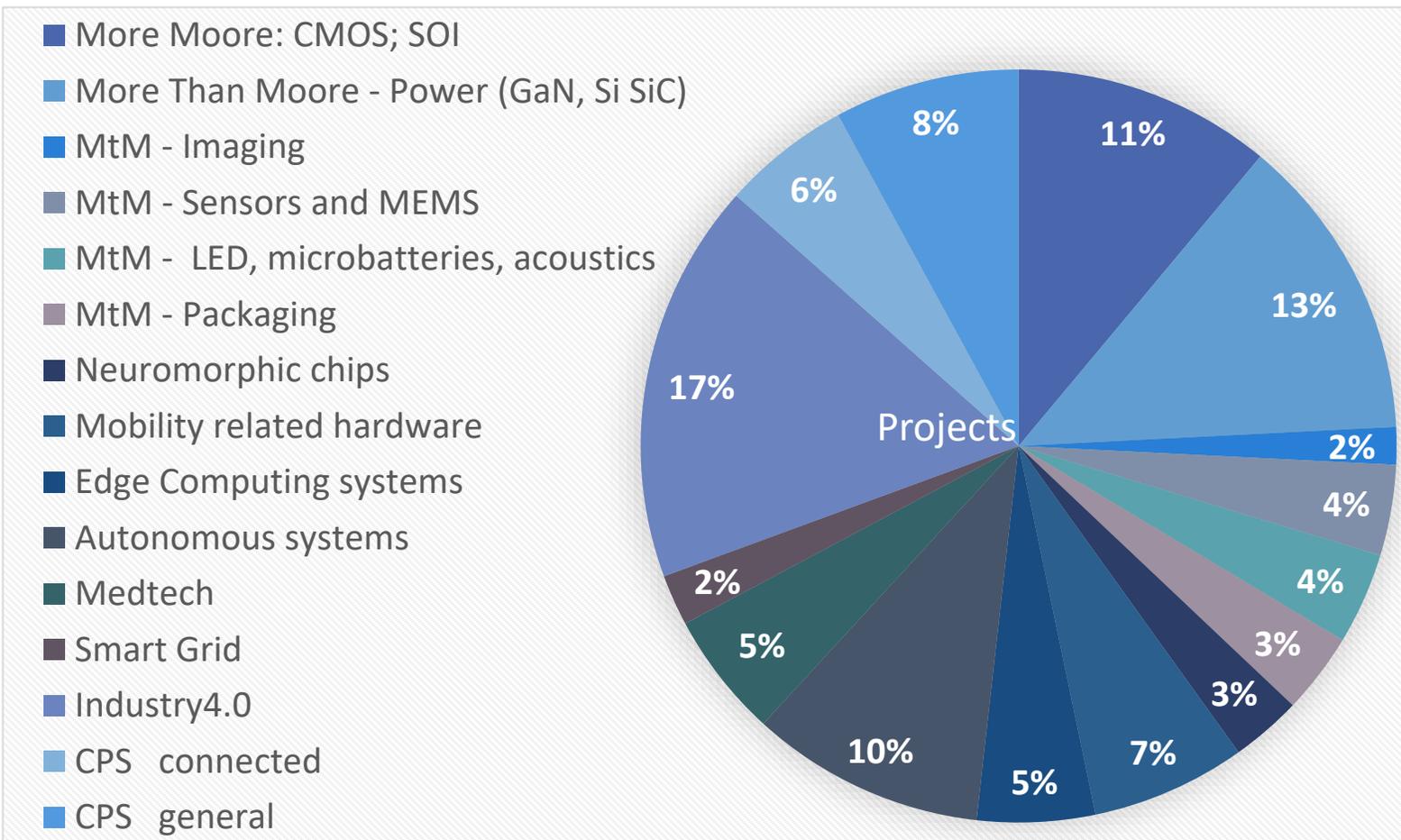
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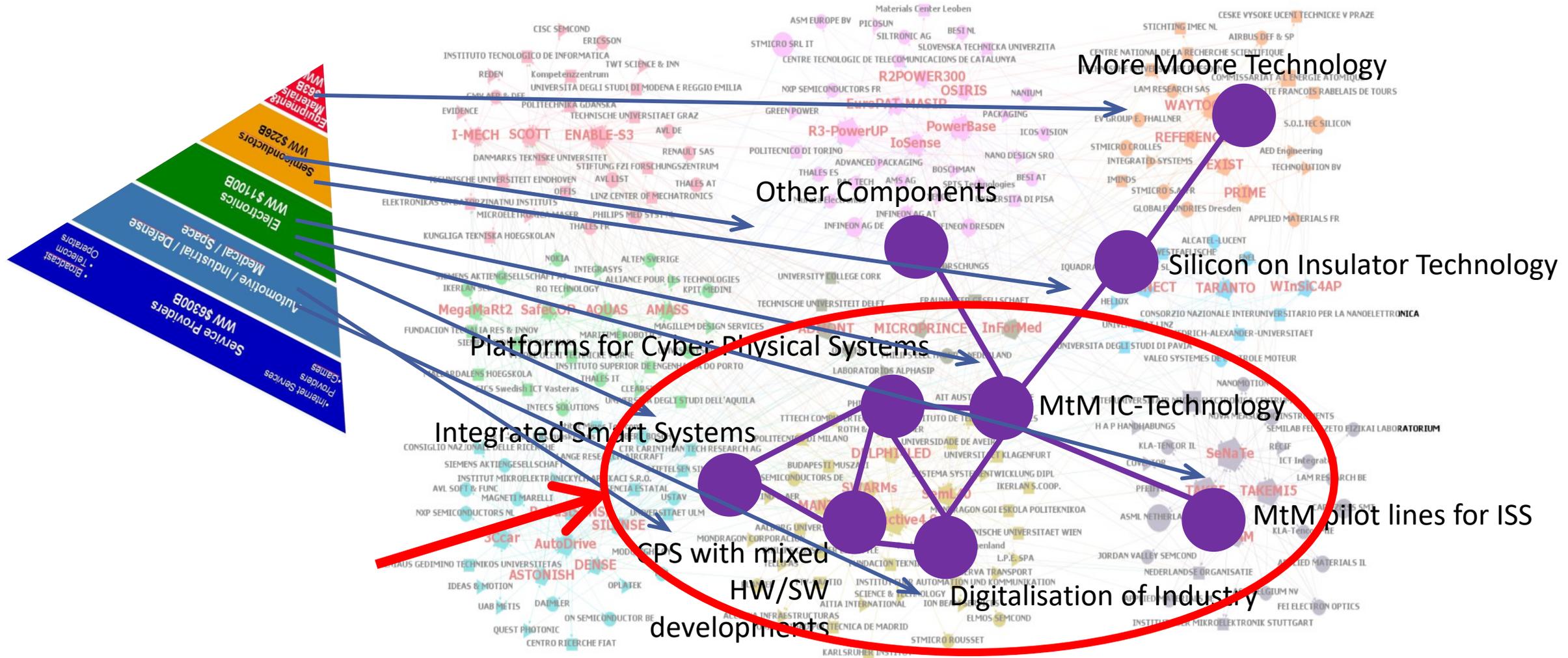


ECSEL JU 2014-2020

- 92 projects
- 3 220 beneficiaries
- 4 690 million Eur in total cost
- 2 280 million Eur in funding (EU+national)
- 408 500 persons-months
- 29 participating states



NETWORKS OF PARTNERS AND PROJECTS



ROMANIAN PARTICIPATION IN ECSEL JU

14 Projects (national funding – ESIF) – 16 Mil Euro

AutoDrive

R3-PowerUP

iDev40

REACTION

PRYSTINE

SECREDAS

OCEAN12

MADEin4

PIN3S

IT2

BEYOND5

Moore4Medical

IMOCO.4E

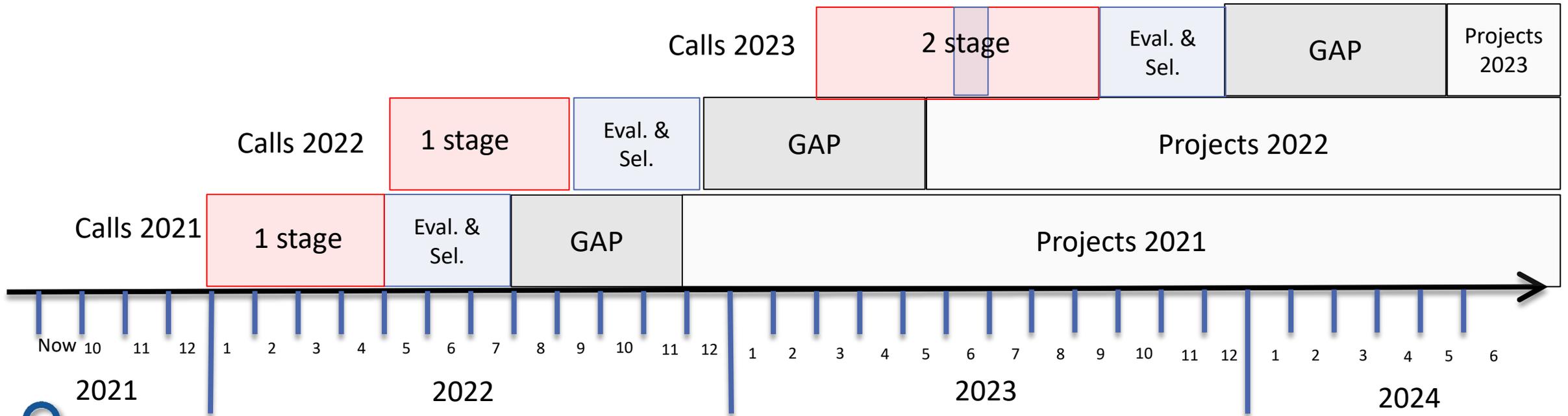
2 Projects (no national funding only EU funding): 3CCar & SWARMs

OPEN COMPETITION – CALLS FOR PROPOSALS

Calls 2023 – open for submission – 2 stages (Stage 1 closes 03 May 2023, stage 2 closes 19 September 2023), except Call 3 (CSA and IA actions) which is a one stage closing on 03 May 2023.

Call 3 only EU funding no national funding.

Romania has not communicated yet any budget for the calls 1 and 2.



KDT PROJECTS

Calls 2022: Grant Agreement in Preparation

- ❑ ***14 projects selected***
- ❑ ***Romanian participation in 5 projects; 1 project coordinated by a Romanian organization***

Calls 2021: Grant Agreements signed: projects started

- ❑ **15 projects funded**
- ❑ **Romanian participants in 3 projects (only 1 funded by the Romanian Funding Authorities)**

CALLS 2023 - CHECK WORK PLAN 2023

Check regularly our call website under the KDT website:

www.kdt-ju.europa.eu

Changes in National conditions are to be expected!

Contact email for inquiries (please use ONLY this email):

calls@kdt-ju.europa.eu

STRUCTURE, TOPICS, EU BUDGET

Action	Topic	Estimated EU Expenditure (M€)
Call 2023-1-IA T1	Global call according to SRIA 2023	153.0
Call 2023-1-IA T2	Focus topic 6G Integrated Radio Front-End for TeraHertz Communications	20.0
Call 2023-1-IA T3	Focus topic on Integration of trustworthy Edge AI technologies in complex heterogeneous components and systems	20.0
Call 2023-1-IA T4	Focus Topic on Electronic Control Systems (ECS) for management & control of decentralized energy supply & storage	20.0
Call 2023-2-RIA T1	Global call according to SRIA 2023	76.7
Call 2023-2-RIA T2	Focus Topic on Hardware abstraction layer for a European Vehicle Operating System	20.0
Call 2023-3-IA T1	Improving the global demand supply forecast of the semiconductor supply chain	5.0
Call 2023-3-CSA T2	Pan-European network for Advanced Packaging made in Europe	1.0
Call 2023-3-CSA T3	Coordination of the European software-defined vehicle platform	2.0
	Total	317.7 M€

NATIONAL BUDGETS

National funding shall be commensurate to the EU funding rates

Participating states	2023-1 T1	2023-1 T2	2023-1 T3	2023-1 T4	2023-2 T1	2023-2 T2	Total
AT	3.7	0	0.5	0	1.6	1.2	7.0
BE-FL							12.0
BE-BR							1.0
BE-WL							0.4
CY							3.0
CZ	1.1	0.2	0.2	0.2	1.1	0.2	3.0
DE		0.0					32.0
EE							0.75
EL							0
ES AEI							3.0
ES MAETD							5.0
FI							10.0
FR							30.0

Participating states	2023-1 T1	2023-1 T2	2023-1 T3	2023-1 T4	2023-2 T1	2023-2 T2	Total
HU							2.0
IE							2.0
IL							3.5
IT MIMIT							20.0
IT MUR							14.0
NL							30.0
NO							0.0
PL							1.5
PT							1.5
SE	1.9	0.4	0.2	0.0	1.9	0.0	4.4
SK							0.8
TR							6.0
Total							192.85

For DE: Total 16.0 for IA Calls T1, T3 and T4 plus total 16.0 for RIA Calls

2023-1-IA T1 GLOBAL CALL ACCORDING TO SRIA 2023 (153MEURO)

2023-2-RIA T1 GLOBAL CALL ACCORDING TO SRIA 2023 (76MEURO)

- Detailed descriptions can be found in the ECS SRIA2023.
- 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”).

2023-1-IA T2 FOCUS TOPIC 6G INTEGRATED RADIO FRONT-END FOR TERAHERTZ COMMUNICATIONS (20MEURO)

	KDT Call 2023-1	SNS-2023-STREAM-B-01-05
Expected TRL at end of project	5 to 6 (ready to be further integrated in a system-level prototype)	2 to 4
Frequency ranges	Sub-THz and THz range (100 GHz and above)	From sub-6GHz up to THz
Transmission chain coverage	Radio front-end (from baseband interface to antenna)	From baseband and mixed-signal processing to RF and antenna

Scope

- Investigate differentiated semiconductor technologies targeting THz connectivity (III-V on Si, FD SOI, RF SOI, advanced BiCMOS) and viable for a wide, cost-effective deployment, with **target for Ft and Fmax of 500 GHz and beyond**, and their optimal combination with CMOS.
- High power, high efficiency **heterogeneous integration of III-V and silicon MMICs** aiming for THz scalable large phased-arrays and communication systems
- Ultra-wideband and/or ultra-high-capacity **RF front-end**
- **Ultra-wideband baseband interfaces and processors**
- **Antennas and beamforming for sub-THz and THz** to overcome the high path loss of THz bands that can be integrated by 6G networks to meet the new demanding KPIs,
- **Architecture and design tools and methodologies for radio front-end modules for THz communications** and joint communications and sensing, including chip-package-antenna co-design, test, validation, and verification solutions.

2023-1-IA T3 FOCUS TOPIC ON INTEGRATION OF TRUSTWORTHY EDGE AI TECHNOLOGIES IN COMPLEX HETEROGENEOUS COMPONENTS AND SYSTEMS (20MEURO)

Scope

1. Interoperable and replicable edge AI hardware and software (HW/SW) solutions that facilitate the integration, rapid deployment and low maintenance in resource-constrained systems and collaborative edge AI architectures.

2. Efficient and standard engineering methods and tools for (HW/SW co-) design, validation, optimization (exploration/mapping), implementation, deployment, qualification/certif. of trustworthy edge AI solutions in complex/heterog. ECS.

3. Open & integrated platforms and ecosystems hosting edge AI solution toolkits and design frameworks that provide the necessary trust and transparency to facilitate seamless interoperability by using standards & open interfaces.

This call focuses on **large-scale integrated/integrable edge AI technologies** at **greater levels of energy efficiency, connectivity, collaboration, complexity and diversity**.

2023-1-IA T4 FOCUS TOPIC ON ELECTRONIC CONTROL SYSTEMS (ECS) FOR MANAGEMENT & CONTROL OF DECENTRALIZED ENERGY SUPPLY & STORAGE (20MEURO)

Challenges:

- Balance the fluctuations between the energy generation and consumption
- The distributed renewable energy systems require coordination and management improvement
- Energy storage must be integral part of distributed renewable energy systems DRES to mitigate imbalances in generation and demand
- Retrofittable and reconfigurable and interoperable with operational and maintenance systems.

Outcome: novel solutions in the form of electronic control systems, sensor technology and smart systems integration for the deployment and efficient and resilient operation of DRES.

Priorities:

- Study of use cases on building energy systems, HVAC, battery storage and hydrogen generation and storage.
- Evaluation of customer needs and requirements for these use cases
- Definition of solution concepts for the use cases: sensors and measurement devices, interoperability solutions, autonomous monitoring systems, predictive control, etc.

Collaboration for Hydrogen applications:

- Hydrogen can play an important role in the energy storage, which is an integral part of DRES to mitigate imbalances.
- Advances, in collaboration with Clean Hydrogen JU, on the operation conditions of electrolysers and fuel cells, as well as new generation of power electronics, sensors and monitoring devices for hydrogen applications.

2023-2-RIA T2 FOCUS TOPIC ON COMMON OPEN EUROPEAN SOFTWARE-DEFINED VEHICLE PLATFORM (20MEURO)

Scope:

- A reference architecture for a HW abstraction layer for software-defined vehicles meeting the safety, security and real-time requirements for motorised vehicles
- Engineering support for SW development and integration effort and costs, building on and linking major software initiatives in the area
- Demonstration of applicability through a proof-of-concept and open source reference implementation

It prepares the ground for the second level of decoupling (from the OS) and for the creation of the SOA, the Vehicle Service Framework.

One project

2023-3-IA T1 IMPROVING THE GLOBAL DEMAND SUPPLY FORECAST OF THE SEMICONDUCTOR SUPPLY CHAIN (5MEURO)

The project will deliver a **validated and secure platform** that, among others,

- Handle the collection of demand data in an anonymous way
- Delivers aggregated demand data with high granularity
- Transforms this coarse granularity information into fine granularity information, generating the effective demand information
- The fine granularity matches an ontology for the semiconductor supply chain such as under development in the SC3 project;
- The platform should also be secure in all its aspects/functions, and
- The infrastructure needed to house the platform should be scalable

One project

2023-3-CSA T2 PAN-EUROPEAN NETWORK FOR ADVANCED PACKAGING MADE IN EUROPE (1MEURO)

- Objectives of the CSA:
 - map the **current situation in Europe** (analysis of the European R&D strengths in this field);
 - **define a strategy** how RTOs, SMEs and LEs could commonly establish a Pan-European ecosystem for advanced packaging made in Europe.
- Scope:
 - **Recommendations** for **investments** (in the Chips JU) with regard to Advanced packaging pilot lines and R&D&I projects;
 - **Analysis** of **the value chains** for various applications and **recommendations** on prioritisation;
 - **Analysis** of **Skills** and **education** needs in Europe on the topic; **Recommendations** for future education & skills programmes in the Framework of the Chips Act.

CALL 2023-3-CSA T3 COMMON OPEN EUROPEAN SOFTWARE-DEFINED VEHICLE PLATFORM (2MEURO)

Scope

- to help stakeholders of the open SDV platform to come together and align;
- to support the development of a clear roadmap and ensure timely delivery.
- By fostering agreement on a common open reference architecture, it will ensure the coherence of the developed platform.
- Building a dynamic community is crucial to ensure solutions are rapidly brought to the market, scalable and economically profitable.

SCHEDULE

Call 2023-1-IA and Call 2023-2-RIA

- Mode: **2 stage call** with submission of Full Project Proposal (FPP)
- Publication date: **7 February 2023, TODAY**
- Deadline (Project Outline (PO) phase): at 17:00:00 Brussels time on **03 May 2023**
- Deadline (Full Project Proposal (FPP) phase): at 17:00:00 Brussels time on **19 September 2023**

Call 2023-3

- Mode: **1 stage call** with submission of Full Project Proposal (FPP)
- Publication date: **7 February 2023, TODAY**
- Deadline (Full Project Proposal (FPP) phase): at 17:00:00 Brussels time on **03 May 2023**
- **Please note: Call 2023-3 T1 is an IA BUT still in one phase!!!**

EU FUNDING RATES

Type of beneficiary	2023-1-IA	2023-1-IA Focus Topic	2023-2-RIA	2023-2-RIA Focus Topic	2023-3-IA	2023-3-CSA
Large Enterprise	20 %	25 %	25 %	25 %	70%	100%
SME	30 %	35 %	35 %	35 %	70%	100%
University/Other (not for profit)	35 %	35 %	35 %	35 %	100%	100%
National Funding*	YES	YES	YES	YES	NO	NO

* - Romania has not yet communicated any budget for the calls 2023

PAGE LIMITS

The number of pages below are maxima.

A good proposal will achieve concise and clear explanations in less pages!

Type of beneficiary	2023-1-IA	2023-2-RIA	2023-3-IA	2023-3-CSA
PO phase	60/60/60	60/60/60	na	na
FPP Phase	60/100/100	60/100/100	60/100/100	30/30/30

SPECIFIC ELIGIBILITY CONDITIONS

Important for the FPP phase!

2023-1-IA

- For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.
- Size limit: the maximum size of the project is **70 participants**.
- Capping: The **EU contribution per project is capped at 25M€** and the maximum contribution per partner in a project is limited to 30% of the total EU funding for the project.

2023-2-RIA

- For the partners of a Participating State that coordinates grants, specific rules may apply regarding the eligibility to national funding.
- Size limit: the maximum size of the project is **50 participants**.
- Capping: The **EU contribution per project is capped at 12M€** and the maximum contribution per partner in a project is limited to 40% of the total EU funding for the project. (not applicable to focus topic!)

KDT CALL 2023: OTHER CHARACTERISTICS

- Major challenges according to ECS SRIA 2022
- KDT encourages projects of all sizes! Small projects are certainly welcome.

HOW TO PARTICIPATE

USE the ECS COLLABORATION TOOL

<https://ecscollaborationtool.eu/>



ECS Collaboration Tool

A networking tool for project ideas and potential partners.

Inside and AENEAS have now merged their collaboration support tools into a single co-managed service: the ECS Collaboration Tool. AENEAS and Inside Industry Association wanted to create one tool to facilitate easy information exchange within the ECS community and allow the collection and management of all relevant data, ideas and project proposals in one place.



Create a project idea

Initiate a project idea in the ECS Collaboration Tool, invite partners and browse other project ideas.



Look for a partner

Use the partner search on ECS Collaboration Tool to look for possible partners based on their expertise and invite them to join your project idea.

Attend the brokerage events organized early by the 3 Industry Associations to get in contact with the community (they are also announced on our website)

MULTUMESC!