HORIZON EUROPE - 4. KLASZTER

DIGITÁLIS TECHNOLÓGIÁK

Németh Edina, Pivarcsiné Fekete Dóra
NKFIH Nemzetközi Főosztály

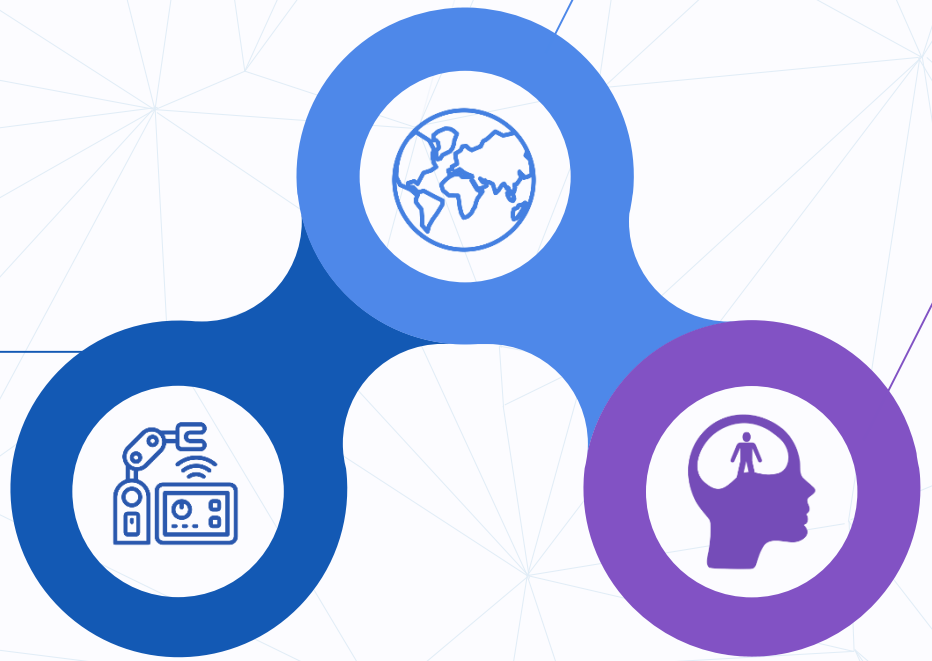
2023. november 17.

Nemzeti Kutatási, Fejlesztési
és Innovációs Hivatal

Cluster 4 - Vision

Competitive technologies respecting the boundaries of our planet, and reflecting human needs

Green and digital ‘twin’ transitions



Climate-neutral, circular and clean industry

Industrial and digital transformation

- mastering technologies
- deploying technologies and technology infrastructures
- securing autonomy in strategic value chains

Major contribution to inclusiveness and resilience

- human-centred and ethical developments
- engagement with users, workers, citizens
- social innovation

European Commission

Cluster 4 – Six Destinations

Destination 1: Climate neutral, circular, and digitised production

Destination 2: A digitised, resource-efficient and resilient industry

Destination 3: World leading data and computing technologies

Destination 4: Digital and emerging technologies for competitiveness and fit for the green deal

Destination 5: Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

Destination 6: A human-centred and ethical development and industrial technologies

European Commission

DIGITAL IN THE 2021-27 MFF: OVERVIEW

Digital Europe

1. High Performance Computing (HPC)
2. Artificial Intelligence (AI)
3. Cybersecurity
4. Advanced digital skills
5. Digital transformation and interoperability

~ 7.5 B €

Digital in Horizon Europe

1. Digital under "global challenges"
   - Digital and industry cluster
   - Digital in other clusters - health, mobility, energy, environment,..
2. FET Open under Open Innovation
3. Research Infra under Open Scienc

~ 12 B €

CEF - Digital

Connectivity

- Synergies with Transport /Energy
- WIFI/BB 4EU
- 5G roll out

~ 2 B €

MEDIA under Creative Europe within Cohesion and Values

- Distribution of works
- Creation

~ 1 B €

EUs IKT források – több csatornán

- **Digitális technológiák az EU 2021-27. többéves költségvetési keretében**

  Digital Europe | Horizon Europe | Connecting Europe Facility | Creative Europe / Media

- **Horizon Europe**
  - **2. Pillér: Digitális gazdaság, ipar és űrkutatás klaszter**
    (e.g. Kutatási és innovációs projektek, innovációs projektek, koordináció)
  - **2. Pillér: Globális kihívásokat célzó klaszterek**
    Globális társadalmi kihívások (egészségügy, kultúra, biztonság, közlekedés, környezet, energia, mezőgazdaság, élelmiszeripar, biogazdaság stb.)
  - **3. Pillér: Innovatív Európa** (Pathfinder (multidiszciplináris kutatás), Transition, Accelerator (KKV))
  - **1. Pillér: Kiváló tudomány** (ERC, MSCA nyitott felhívások + kutatási infrastruktúra)

- **Partnerségi konstrukciók** – KDT, HPC, SNS, ….
- **Harmadik feleknek szóló finanszírozások: kaszkád pályázatok**
  (pl. nagy pilotok, I4MS, IoT EU platformok, AI4EU platform,
  FET zászlóshajó programok, digitalis innovációs központok stb.) + kifutó ERA-NET felhívások

Impact

driven

HORIZON EUROPE IMPACT LOGIC

STRATEGIC PLAN

WORK PROGRAMME

EC POLICY PRIORITIES	**Political Guidelines for the European Commission 2019-2024** Cluster 4 focuses on Green Deal; Europe fit for a Digital Age; and Economy that Works for People
KEY STRATEGIC ORIENTATIONS	**10 strategic objectives** within the EC policy priorities, where R&I investments are expected to make a difference (shared by six Clusters)
EXPECTED IMPACTS = DESTINATIONS	**Wider, long-term effects on society, environment, economy and science,** enabled by the outcomes of R&I outcomes (6 impacts per Cluster) **Packages of actions** in Work Programmes to reach expected impacts.
TOPICS	**Outcomes**, i.e. medium-term effects of uptake of project results
PROJECTS	**Outputs**, i.e. what is produced in the short-term during the project implementation, such as innovative solutions, demonstrators, business models, recommendations etc.

KEY STRATEGIC ORIENTATIONS HIGHLIGHTED FOR CLUSTER 4

A. Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains

B. Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources

C. Making Europe the first digitally enabled circular, climate-neutral and sustainable economy

D. Creating a more resilient, inclusive and

Horizon Europe's Strategic Plan (2021-2024)

NEMZETI KUTATÁSI, FEJLESZTÉSI ÉS INNOVÁCIÓS HIVATAL

Partnerség

vezérelt program

https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/european-partnerships-horizon-europe_en

HORIZON 2020

NEMZETI KUTATÁSI, FEJLESZTÉSI ÉS INNOVÁCIÓS HIVATAL

Horizon Europe

Partnerships in other clusters / cross-cluster

- European Open Science Cloud
- Innovative Health
- Personalised Medicine
- Large-scale innovation & transformation of health systems
- Clean Aviation
- Safe & Automated Road transport
- Zero-emission Road Transport
- EIT Urban Mobility
- Sustainable, smart & inclusive cities & communities
- Clean Energy Transition
- Accelerating farming systems transition
- Safe & sustainable food system
- Innovative SMEs

Global competitive space system

High data transmission capacity

Critical electronic components

AI, data & robotics for in-orbit operations

Key enabler for Industry 4.0 (laser-based technologies)

Photonics

Integrated Circuit, high efficiency devices

Critical components and systems for NG high-speed information networks

Technologies & components for advanced network capacities

Smart networks & services

Connectivity and service platforms for IIoT'

Key Digital Technologies

Technologies and components for the 'Industrial Internet of Things'

EIT Digital

Converging agendas e.g. Neuromorphic architectures

Components (processors, accelerators) & embedded software

EuroHPC

Key technological elements - hardware components & software (e.g. for AI-optimised chips)

AI, data, robotics

Other partnerships in the same cluster

- Metrology
- Clean Steel
- Carbon neutral and circular industry
- EIT Manufacturing
- EIT Raw materials
- Made in Europe

Other EU initiatives

- CEF
- Digital Europe Programme
- ERDF

Candidate Institutionalised Partnerships | EIT KIC | Co-Programmed | Co-Funded | CP or CF

Partnerships in Horizon Europe

Co-programmed European Partnerships

These are partnerships between the Commission and private and/or public partners. They are based on memoranda of understanding and/or contractual arrangements.

Co-funded European Partnerships using a programme co-fund action

Partnerships involving EU countries, with research funders and other public authorities at the core of the consortium.

Institutionalised European Partnerships

These are partnerships where the EU participates in research and innovation funding programmes that are undertaken by EU countries.

Digital Centric Partnerships

- **Key Digital Technologies** (proposed as institutionalised) addressing the technological challenges and emerging opportunities for Europe on key digital technologies. This include microelectronics, embedded software and smart microsystems enlarged with elements of photonics, higher-layers of software and complex system integration

- **High Performance Computing** (proposed as institutionalised) to develop and deploy highly competitive and innovative HPC ecosystems in Europe. It will build on the experience gained in EuroHPC for achieving world-class exascal eand post-exascale (HPC) technologies in Europe, including their integration with Quantum computing

- **Smart Networks and Services** (proposed as institutionalised) to strengthen the position of the European industry in the global race on digital connectivity infrastructures including “5G and beyond” and later "6G" network systems and associated services

- **Artificial Intelligence, data and robotics** (proposed as co-programmed) with a strong socio-economic transformational potential with impact in sectors like health, manufacturing, ship-building, construction, service industries and farming, etc.

- **Photonics** (proposed as co-programmed) with a strong and growing impact on a broad variety of end user industries, developing next-generation photonics components and systems fostering

Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal

Digital Transformation Partnerships

- **Innovative Health Initiative**: collaborative platform bringing the pharmaceuticals, diagnostics, medical devices, imaging and digital sectors together for precompetitive R&I in areas of unmet public health need, to accelerate the development and uptake of people-centred health care innovations.
- **Large-scale innovation and transformation of health systems in a digital and ageing society**: improving health and care models in an ageing, data-driven and digital society, shifting to holistic health promotion and person-centred care approaches through health policy and health systems research.
- **Made in Europe**: Towards a competitive discrete manufacturing industry with a world-leading reduction of the environmental footprint whilst guaranteeing the highest level of well-being for workers, consumers and society.
- **Mobility and Safety for Automated Road Transport**: long-term framework to the strategic planning of research and pre-deployment programmes for connected and automated driving on roads at EU and national levels in a systemic approach (vehicle, interactions, infrastructure, technical and non-technical enablers and societal impact)
- **Batteries**: Towards a competitive European industrial battery value chain: development of a world-class European R&I system on batteries, with a view towards European industrial leadership. Develop a coherent strategic programme, in cooperation with industry and research community, substantially contributing to fulfilling the Paris Agreement, and enhance the competitiveness of current and emerging European industries along the battery value chain.
- **Clean Energy Transition**: respond to the call for decarbonisation in medium-and long-term in a

Other Cluster 4 related partnerships

- **European Partnership for Globally competitive Space Systems**: The vision is to support the competitiveness of the sector and reinforce EU capacity to access and use space. The main objectives for 2030 are to contribute to capturing 50% of the global accessible telecom satellite market, becoming the worldwide leader for Earth observation systems, reducing the cost/price of launch services by 50% by 2030, reaching a maturity of technology readiness level 6 in the fields of ecosystem for on-orbit operation, doubling the accessible new services in the space transportation market available to European industry
- **Processes4Planet – Transforming the European Process Industry for a sustainable society**: The partnership aims at circularity and an extensive decarbonisation of European process industries, with a strong focus on competitiveness. Within a cross-sectorial approach, it will develop and deploy the innovations needed for a profound transformation of process industries, e.g., cement, chemical, steel, to achieve the EU Green Deal targets by 2050.
- **European Partnership on Metrology:** The partnership will accelerate the global lead of Europe in metrology research. By 2030, it will create sustainable European metrology networks in highly competitive and emerging metrology areas able to compete with China and the US. Europe will have a world-class metrology system, offering fit-for-purpose solutions supporting and stimulating new innovative products, responding to society's challenges and enabling effective design and implementation of regulation and standards underpinning public policies.
- **European Partnership for Clean Steel - Low Carbon Steelmaking:** Aligned with the European Green Deal targets, the partnership supports EU leadership in transforming the steel industry into a carbon-neutral one, serving as a catalyser for other strategic sectors. By 2027 it will implement at least 2 demonstration projects leading to a 50% reduction in CO2 emissions and achieve technology readiness level 8 by 2030 in at least 12 areas funded by the partnership. The final ambition is to reduce CO2 emissions by 80-95% by 2050, ultimately achieving carbon neutrality

HORIZONT EURÓPA

ICT

ICT

ICT

ICT

ICT

ICT

ICT

Nyitott felhívások

Infokommunikációs technológia-orientált kutatások

Infokommunikációs technológiák alkalmazása

Tematikus és nyitott felhívások

HORIZONT EURÓPA

1. pillér
Kiváló tudomány

- Európai Kutatási Tanács
- Marie Skłodowska-Curie-cselekvések
- Kutatási infrastruktúrák

2. pillér
Globális kihívások és az európai ipar versenyképessége

Klaszterek

- Egészségügy
- Kultúra, kreativitás és befogadó társadalom
- A társadalmat szolgáló polgári biztonság
- Digitális gazdaság, ipar és világűr
- Éghajlat, energia és mobilitás
- Élelmiszerek, biogazdaság, természeti erőforrások és környezet

Közös Kutatóközpont

3. pillér
Innovatív Európa

- Európai Innovációs Tanács
- Európai innovációs ökoszisztémák
- Európai Innovációs és Technológiai Intézet

A részvétel bővítése és az Európai Kutatási Térség megerősítése

- A részvétel bővítése és a kiválóság terjesztése
- Az európai K+I-rendszer megreformálása és megerősítése

Hol találunk Horizon Europe IKT célzó felhívásokat?

Mindenhol !

A … Z

nkfih

4. klaszter

Digitális technológiák

HORIZONT EURÓPA | 4. KLASZTER | DESZTINÁCIÓK

2023-24

D1	Klímasemleges, körforgásos és digitális termelés	630 M €
D2	Digitális, erőforrás-hatékony és ellenálló ipar	599 M €
D3	Adat- és nagy teljesítményű számítástechnika a világ élvonalában	160 M €
D4	Digitális és áttörést jelentő technológiák a versenyképesség és az európai zöld megállapodás szolgálatában	497 M €
D5	Stratégiai autonómia globális űrinfrastruktúrák fejlesztésében bevezetésében és alkalmazásában	466 M €
D6	A digitalis és ipari technológiák emberközpontú és etikus fejlesztése	308 M €

Destination 3 - World-leading Data and Computing Technologies

European Commission

D3: World-leading Data and Computing Technologies

- HORIZON-CL4-2024-DATA-01-01
  AI-driven data operations and compliance technologies (AI, data and robotics partnership) (IA)

- HORIZON-CL4-2024-DATA-01-03
  Piloting emerging Smart IoT Platforms and decentralized intelligence (IA)

- HORIZON-CL4-2024-DATA-01-05
  Platform Building, standardisation and Up-scaling of the 'Cloud-Edge-IoT' Solutions (Horizontal Activities - CSA)

AI-driven data operations and compliance technologies (AI, data and robotics partnership) (IA)
HORIZON-CL4-2024-DATA-01-01

PROJECTS

- **IA**
- EU contribution/project: **8-10 million Euro**
- **4 projects**

BUDGET

- **38 million Euro**

TRL (TECHNOLOGY READINESS LEVEL)

- **From 4-5 to 6-7**
  by the end of the project

AI-driven data operations and compliance technologies (AI, data and robotics partnership) (IA)
HORIZON-CL4-2024-DATA-01-01

- Developing, piloting and integrating compliance tools and data economy enablers into compliant systems and solutions for creating value on data, especially in the AI context
- Addressing **compliance** in the broad sense (legal, ethical, environmental, fairness/trustworthiness)
- Addressing compliance in a **holistic** way – employing inherently compliant architectures and design principles ("compliance by design")

- Stand-alone or add-on compliance tools, not integrated in systems/solutions
- Low-maturity science-fiction (this a practical IA topic)
- Research-oriented proposals (this is an IA topic)
- Legal entities established in China are not eligible in **any capacity** (p. 178 of WP, p. 13 of General Annexes to WP)

Piloting emerging Smart IoT Platforms and decentralized intelligence (IA)
HORIZON-CL4-2024-DATA-01-03

PROJECTS

- **IA**
- EU contribution/project: **20-25 million Euro**
- **2 projects**

BUDGET

- **45 million Euro**
- Call in **2023**

TRL (TECHNOLOGY READINESS LEVEL)

- **From 3-4 to 6-7**
  by the end of the project

Piloting emerging Smart IoT Platforms and decentralized intelligence (IA)
HORIZON-CL4-2024-DATA-01-03

up-take and up-scaling of emerging EU-driven smart industrial internet of things and edge computing systems to perform under real life conditions.
→ *mature particular technologies like meta-operating systems for the IoT and the Edge, cognitive cloud technologies and tools for decentralized intelligence and swarm computing*

A**doption across key applications and sectors:**
***** *pilots should validate cross-domain interfaces and common standards and foster cross-sector industrial agreements and address cross-sector platforms in more than one application domain,*
such as renewable energy, buildings and electro-mobility, farming and/or industrial automation, including strategic aspects such as condition-monitoring/predictive maintenance and logistics, or other relevant application domains

- Pure technology push → need to consider validation in selected application context
- Low profile projects → looking for strategic projects to pave the way for a European Strategic Agenda
- Proprietary technology development → need to consider open interfaces and standards, where applicable build on open source projects
- Narrowly focused scope
  → need to connect different dots IoT, ADRA, cloud, ARTEMIS, KDT , SNS..
- Static work plan execution
  → build an open ecosystem and make strategic use of Cascading funds
- Simplistic dissemination activities: non-targeted, academic communication

Platform Building, standardisation and Up-scaling of the ‘Cloud-Edge-IoT’ Solutions (Horizontal Activities - CSA)
HORIZON-CL4-2024-DATA-01-05

PROJECTS

- **CSA**
- EU contribution/project: **2 million Euro**

BUDGET

- **2 million Euro**
- Call in **2023**

Platform Building, standardisation and Up-scaling of the ‘Cloud-Edge-IoT’ Solutions (Horizontal Activities - CSA)
HORIZON-CL4-2024-DATA-01-05

Support of programme implementation, focus on horizontal activities across projects and Cloud-Edge-IoT topics
→ especially foster consensus on interoperability and standards as well as ecosystem building in and across verticals, an environmental and green impact.

- **Among which are key activities:**
  - a forum to link to relevant European and national initiatives and partnerships like KDT JU, especially links to INSIDE and EPOSS.
  - A fertile communication strategy for broader stakeholder engagement
  - trend scouting, portfolio analysis, workshops, analysis of emerging business cases, accelerator of technology up-take and **promotion of open calls**, especially for SMEs and midcaps
  - Better international collaboration of European cloud/edge and software industry with trusted partner regions

No generic knowledge: → need Sector Knowledge, Business analytics

- Carrying out R&D, scientific papers as outcome // tons of deliverables
- Newcomers in CSA actions → track record in community buildings and stakeholder mobilisation
- Large consortia: → need of a powerful but lean consortium
- Simplistic, standard dissemination activities: need professional approach
- Closed club → need to open up target communities to interdisciplinary topics

Destination 4 - Digital & Emerging Technologies For Competitiveness And Fit For The Green Deal

European Commission

DIGITAL & EMERGING TECHNOLOGIES FOR COMPETITIVENESS AND FIT FOR THE GREEN DEAL

- AI, Data and Robotics
  - Novel paradigms and approaches, towards AI-powered robots– step change in functionality (AI, data and robotics partnership) (RIA) Link
  - Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition (AI Data and Robotics Partnership) (IA) Link
- Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy
  - Open Source for Cloud/Edge to support European Digital Autonomy (RIA) Link
  - Fundamentals of Software Engineering (RIA) Link
  - Public recognition scheme for Open Source (CSA) Link
- Graphene: Europe in the lead
  - Pilot line(s) for 2D materials-based devices (RIA) Link
  - ~~Synergy with national and regional initiatives in Europe (CSA) Link~~
- Flagship on Quantum Technologies: a Paradigm Shift
  - ~~Stimulating transnational research and development of next generation quantum technologies, including basic theories and components (Cascading grant with FSTP) Link~~
  - Quantum sensing and metrology for market uptake (IA) Link
- European Innovation Leadership in Photonics
  - Smart photonics for joint communication & sensing and access everywhere (Photonics Partnership) (RIA) Link
  - Photonics Innovation Factory for Europe (Photonics Partnership) (IA) Link

HORIZON-CL4-2024-DIGITAL-EMERGING-01-03

Novel paradigms and approaches, towards AI-powered robots– step change in functionality (AI, data and robotics partnership)

Research and Innovation Action| TRL 2-3 → TRL 4-5| 8 M EUR/project | 4 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Substantial next step in the ability of robots to perform non-repetitive functional tasks in realistic settings (e.g. guidance, navigation, manipulation, interaction, etc.), demonstrated in key high impact sectors to deliver significant economic and/or societal benefits.
- Step change in the enabling conditions for the diffusion of robots in various industries, sectors and services.
- Major advances in science and technology to maintain Europe's scientific excellence in robotics.
- Human interaction

- Proposals with limited ambition on AI-powered robotics delivering only incremental progress over the state of the art.
- Non-realistic settings disconnected from actual needs of key industries, sectors and services (end-users involvement is key)
- Focus on low impact sectors with little potential to deliver economic or societal benefits.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-04

Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition (AI Data and Robotics Partnership)

Innovation Action| TRL 3-5 → TRL 6-7| 10 M EUR/project | 5 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Large scale-pilots bringing major industries from key application sectors in Europe with the goal of **exploiting and integrating existing tools**, sub-systems and solutions that are **re-usable from other sectors**. No FSTP.

OR

- **Development of large-scale pilots addressing key applications on the green deal**. FSTP (40% of the budget) should be used to allow third parties (usually small companies) using pilots for developing, testing and validating innovative solutions

- Systems to address large scale challenges with significant impact on the objectives of the green deal using combined robotics, data and AI solutions OR using combined AI and data solutions

- Proposals loosely connected with the green transition.
- Academic exercises with limited potential for commercial exploitation of the results after the end of the project.
- Non-realistic settings disconnected from actual needs.
- Focus on low impact sectors or applications with little potential to deliver economic or societal benefits.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-21

Open Source for Cloud/Edge to support European Digital Autonomy

Research and Innovation Action| TRL 4 → TRL 6 | 4-6 M EUR/project | 4 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Emergence of a full **European Open Cloud and Edge Computing Architecture:** new alternative to increase efficiency
- Linkage to vertical computation of cloud to edge

- Prototypes of cloud and edge servers demonstrated in relevant centralised and distributed environments
- Full computing infrastructure deployments based on European processor technology
- A full Open Computing Architecture stack, which supports emerging processing architectures (e.g. RISC-V).
- Standards and best practices

- Developments at the upper layers of the cloud computing that do not take into account the underlying processor architecture
- Orchestration systems
- IaaS, PaaS, SaaS unless linked to emulation or design of Data servers.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-22

Fundamentals of Software Engineering

Research and Innovation Action| TRL 2 → TRL 5 | 4-6 M EUR/project | 4 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Methods, mechanisms and tools that **allow smart intelligent system specification**, **agile system and code development**, **advanced code analysis, fault prediction and location and self-repair** by using emerging techniques , in particular based on AI and data technologies
- Methods and tools for the development of **dynamic and resilient software for systems running on multiple processing architectures** including cross-compilation, run-time self- adaptation and multi-architecture executables

- Responsible software engineering methods and tools
- Best practices leveraging, among others, novel AI and data technologies to accelerate the development and maintenance of software
- Methods and tools for multi-architecture systems
- Efficient and agile modelling, verification and validation, vulnerability assessment and mitigation.

- Specific Application development → tools, methods
- Software for specific usage → at least three industrial or societal use cases

HORIZON-CL4-2024-DIGITAL-EMERGING-01-23

Public recognition scheme for Open Source

Coordination and Support Action| TRL -| 2 M EUR/project | 1 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Development of a scheme including a list of fields related to Open Source
- Elaboration of an adequate process to:
  - scrutinize different fields of action relevant to open source
  - select appropriate candidates for being recognized
  - implement adequate award ceremonies.

- Establishment of a system of European annual awards that acts as a spotlight stirring up contributions to Open Source Software and Hardware projects.
- Increased interest for the contribution to, integration of and exploitation of Open Source assets

- Coordination and Support actions to organize software projects
- Coordination of portfolio of projects
- Limitation to the research framework programme
- A world-wide impact is sought

HORIZON-CL4-2024-DIGITAL-EMERGING-01-31

Pilot line(s) for 2D materials- based devices

Research and Innovation Action| TRL 3-4 → TRL 5-6| 33 M EUR/project | 1 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- **(co-)integration of 2D materials** with established technologies such as CMOS integration and heterogeneous integration, including semiconductor technologies (CMOS, ASICs, planarized waveguides already adapted/optimized for 2DM co-integration)
  - Building the toolkit and design modules necessary for creating prototype devices and systems
  - Process characterization and monitoring to control and guarantee quality of relevant device parameters
  - Adaptation of standard semiconductor technologies
  - Reliability and packaging requirements
  - Implementing multiple wafer runs or other offering to best cover business opportunities
  - Defining a sustainable model of functioning beyond the project lifetime

- Broadly accessible pilot line(s) fostering the creation of electronic and photonic devices and systems (co)integrating two-Dimensional Materials (2DM).
- Significant progress towards the adoption of the 2DM in the silicon and semi-conductor arena by allowing the production of new (co-)integrated devices and systems in a quality controlled way.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-45

Quantum sensing and metrology for market uptake

Innovation Action| TRL 4-5 → TRL 6-7| 4-5 M EUR/project | 3 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- Address the **development of mature quantum sensing technologies and single or network-operating devices** that have the potential to find a broad range of new applications
  - Demonstrate advanced prototypes with unprecedented level of precision and stability
  - Target miniaturised, integrated, transportable sensors and plans for further industrialisation
  - Importance of targeted collaborations
- Participation limited to: MS, Iceland, Norway, Israel (Entities directly or indirectly controlled by a non-eligible country/country entity, may not participate (unless guarantees provided)

- Contribute to mature quantum sensing technologies and devices
- In a broad range of application sectors
- Goal to establish a reliable, efficient supply chain – first standardisation and calibration efforts

- Lack of industrialization focus
- Pure academic consortia
- Splitting competences, incoherent approaches
- Non-addressed supply-chain weaknesses

HORIZON-CL4-2024-DIGITAL-EMERGING-01-54

Smart photonics for joint communication & sensing and access everywhere (Photonics Partnership)

Research and Innovation Action| TRL 2 → TRL 5| 3-5 M EUR/project | 4 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- **Light-based solutions to let the communication network sense, while transporting data** (e.g enhance the security and resilience of the network, make network resources more energy efficient, warn and protect against natural disasters, earthquakes etc., monitor the infrastructure where the fibre is deployed (traffic, stress in bridges…))

AND/OR

- **Light-based solutions to bring internet everywhere, with the most relevant access technologies** (Fiber to the home, fiber to the antenna or fiber to the sky (satellite), for example with coherent passive optical networks, free space optics, Lifi or optical beamforming and steering, while enabling the integration of all access technologies in one system)

- Sensors/probes to monitor the quality of the communication network and of photonic signals transported in the communication network
- Methods to use the network as large-scale distributed sensor
- Development of foundational optical technologies, systems and networks that provide the future access infrastructure

HORIZON-CL4-2024-DIGITAL-EMERGING-01-55

Photonics Innovation Factory for Europe (Photonics Partnership)

Innovation Action| TRL 2-5 → TRL 4-7 | 15 M EUR/project | 1 to be funded | Opening: 15 Nov 2023| Deadline 19 March 2024 | Link to the topic: click here

- **Provide a virtual innovation platform with a flexible and open structure:** sustainable fully integrated European ecosystem, lowering the entry threshold to the use of photonics
- Offer a streamlined virtual access to a supply chain of photonic technologies
- Support through a network of competence centers acting as a single consortium
- Platform should target primarily first users and early adopters
- Provide strong linkages with established European industry and investment networks
- sustain its activities beyond the end of the project

- Substantially improved penetration of core photonics technologies into multiple end-user application domains and industry sectors
- Substantial contribution to the creation of a sustainable streamlined ecosystem for photonics innovation in Europe from TRL 2-7, providing European Cross-Border Added Value with a high leveraging effect on investments made at national and regional level in photonics.

- Geographic concentration of activities in one region
- Activities without connection to use in industry

Destination 6 - A human-centred and ethical development of digital and industrial technologies

European Commission

D6: A human-centred and ethical development of digital and industrial technologies

- ~~HORIZON-CL4-2024-HUMAN-01-06~~
  ~~**Explainable and Robust AI (AI Data and Robotics Partnership) (RIA)**~~

- ~~HORIZON-CL4-2024-HUMAN-01-07~~
  ~~**Collaborative intelligence – combining the best of machine and human (AI Data and Robotics Partnership) (RIA)**~~

- ~~HORIZON-CL4-2024-HUMAN-01-61~~
  ~~**Facilitate the engagement in global ICT standardisation development (CSA)**~~

D6: A human-centred and ethical development of digital and industrial technologies

- HORIZON-CL4-2024-HUMAN-03-01:
  Advancing Large AI Models: Integration of New Data Modalities and Expansion of Capabilities (AI, Data and Robotics Partnership) (RIA)

- HORIZON-CL4-2024-HUMAN-03-02:
  Explainable and Robust AI (AI Data and Robotics Partnership) (RIA)

- HORIZON-CL4-2024-HUMAN-03-03 (re-opening of previous topic)
  Digital Humanism - Putting people at the centre of the digital transformation (CSA)

HORIZONT EUROPA-5. KLASZTER –ENERGIA

2023 ŐSZI PÁLYÁZATI FELHÍVÁSOK

Dr. Józon Mónika
NKFIH – Nemzetközi Főosztály

2023. November. 17.

Nemzeti Kutatási, Fejlesztési
és Innovációs Hivatal

Felhívások (2023.szeptember 12. -2024. január 16.)

HORIZON –CL5-2024-D3-01-11: AI Testing and experimentation facility for the energy sector- bringing technology to the market

HORIZON –CL5-2024-D3-01-12: Energy Management System for flexibility services

HORIZON –CL5-2024-D3-01-13: DC and AC/DC hybird transmission and distribution systems

HORIZON –CL5-2024-D3-01-15: HVDA, HVDC and High Power cable systems

HORIZON –CL5-2024-D3-01-16: Demonstration of innovative pumped storage equipment and tools in combination with innovative storage managment systems

HORIZON –CL5-2024-D3-01-17: Development and integration of advanced software tools in SCADA Systems for High, Medium, Low voltage AC/DC hybrid systems

HORIZON-CL5-2024-D3-01-11:

AI Testing and Experimentation Facility (TEF) for the energy sector – bringing technology to the market

Innovation Action | TRL 6-8 | 16M EUR/project | 3 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

- Különleges kihívás, amit a felhívás megcéloz: **AI TEF technológiai infrastruktúra, amely az energia szektort valós körülmények között képes tesztelni.**

The TEF is a technology infrastructure that has specific expertise and experience with testing in real conditions in the energy sector. They should **build on existing infrastructures, facilities**.

The TEF has **the scope to then bridge the gap between lab and market due to lack of in-depth testing of AI technology in the real environment** to fully validate them before the deployment. **Energy AI TEF will aim at testing AI–based technologies and solutions that have already been tested in the labs and have to be tested in operational environments**.

Energy AI TEF will aim at optimising the deployment of AI-based solutions for a greener, smarter, more resilient, and more flexible energy system. For instance, it can investigate, how electricity grids respond to stimuli or shocks (e.g. RES integration, cyber-attacks, micro-grids development), making use of digital twins of the electricity grid at local level. Energy AI TEF can also target distribution grid optimisation, integrating both (decentralised) supply and demand-side, taking into account energy data coming from buildings, local storage, DER, electrical vehicles TEFs can also support regulatory sandboxes by setting up a dialogue with competent national authorities for supervised testing and experimentation under real or close to real conditions.

The TEF can also support the development of new standards and ontologies for AI-Software for energy sector and **common interoperability framework.** Energy AI TEF should give regions a further boost in attracting funding to upgrade its facilities and also attracting innovative players to collaborate with its own champions. In addition, TEF will contribute to more trustworthy AI made in Europe.

HORIZON-CL5-2024-D3-01-11:

AI Testing and Experimentation Facility (TEF) for the energy sector – bringing technology to the market

Innovation Action | TRL 6-8 | 16M EUR/project | 3 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

- **Expected Outcome:**

Project results are expected to contribute to **all of the following expected outcomes**:

 Large-scale reference testing and experimentation facilities (TEFs) will offer a combination of physical and virtual facilities, in which **technology providers can get support to test their latest AI-based software and hardware technologies in operational environments.**

 This will include **support for full integration, testing and experimentation of latest AI based technologies** to solve issues/improve solutions in the energy sector, at national as well as at local level, including validation and demonstration.

 The TEF is open to all the sites in Europe and equipped with the right equipment (Infrastructure, computing capacity & latest AI innovations).

 The TEF is a "long term investment". There should be a **business model to guarantee self-sustainability**.

HORIZON-CL5-2024-D3-01-12:

Energy Management Systems for flexibility services

Innovation Action | TRL 7-8 | 10M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | 16 Jan 2024

- Különleges kihívás, amit a felhívás megcéloz: **energia menedzsment rendszerek, amelyek biztosítani tudják a szolgáltatás rugalmasságát**

Scope: Projects are expected to: **Develop solutions** to aggregate flexibility from different (types of) energy consumers that use different energy management systems to develop interoperable solutions **to optimise the energy management systems and valorise its flexibility in wholesale markets and for balancing and/or congestion management services).** **Define and demonstrate the type of flexibility services that clusters of smart buildings and smart industrial sites** can provide. **Cooperate with** (one or more) TSOs and/or DSOs, preferably making use of day-to-day operational flexibility markets (i.e. not R&I projects or regulatory sandboxes). **Include at least 3 different energy management systems** in case of industry, **or 5 in case of buildings**, developed by different technology providers and that use different protocols/standards/proprietary solutions for the energy management system. **Involve at least 3 different energy system management service companies in case of industry**, or 5 in case of buildings. **Include at least 2 aggregators** to ensure that developed solutions are based on standards and to avoid proprietary solutions. **Include at least 1 home appliances producer in case of buildings**.

To ensure interoperability and integration into the grid, specific demonstrators will make use of operational end-to-end architectures, digital platforms and other data exchange infrastructure for the energy system being developed under ongoing Horizon 2020, Horizon Europe as well as under other EU programs such as the Digital Europe Program. Preferably semantically interoperable interactions, as enabled by the ETSI SAREF ontologies, are used. Design and demonstrate appropriate concepts for acquiring and activating flexibility (implicit and explicit) that allow to maximally benefit from the potential of these new services. **The project should demonstrate or recommend how the coordination and cooperation between TSO and DSO** has to be organized to adopt the different concepts for services, products and markets.

The selected projects are expected to contribute to the BRIDGE initiative 190 , actively participate to its activities and allocate up to 2% of their budgets to that end. Additional contributions to the 'Alliance for Internet of Things Innovation' (AIOTI) and other relevant 190 https://www.h2020-bridge.eu might be considered, when relevant

HORIZON-CL5-2024-D3-01-12:

Energy Management Systems for flexibility services

Innovation Action | TRL 7-8 | 10M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | 16 Jan 2024

Expected Outcome:

Project results are expected to contribute to all of the following expected outcomes:

- Contribute to the use of **smart buildings and smart industrial sites** for the integration of renewables in the energy system in an efficient way.
- **Demonstrate aggregation of multiple** (building or industrial) **energy management systems** to provide flexibility services (wholesale market price signals, demand response, flexible production, smart charging, balancing & frequency services, congestion management) to the electricity network.
- **Demonstrate interoperability** and **data exchange technologies** to aggregate data from different sources and in different formats through cooperation between aggregators and energy management system developers.
- **Piloting and demonstration** of flexibility pool operations **at the local and regional levels.**

The selected projects should propose recommendations how current products, markets and market processes for flexibility should be adapted to accommodate these new services and/or fully benefit from the potential these improved energy management services will bring.

HORIZON-CL5-2024-D3-01-13:

DC and AC/DC hybrid transmission and distribution systems

Research Innovation Action | TRL 4-5 | 13M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

Scope: Projects are expected to implement the activities in (1) and the practical demonstration in (2) as described below:

1. R&I, methodologies and tools involving the activities in the three subtopics (A, B and C) listed below. These can be developed/complemented with others pertinent to each subtopic. A) DC – AC / DC hybrid system Design & Planning a. Demonstration of software tools for transnational AC/DC hybrid power system planning and management to enable HVAC/HVDC/MVDC/LVDC hybrid systems, such as: integration of multi-terminal HVDC systems, both offshore and onshore and HVDC links embedded within the HVAC network as well as HVDC ties (inter-) connecting different control zones and synchronous areas (in full or in back-to-back schemes); representation and modelling of transmission and distribution grids as well as multienergy vector integration (sector coupling) for long-term and for transient and dynamic analysis. b. Demonstration of reliability and resilience methodologies to address security and adequacy issues and criteria via not only deterministic but also probabilistic (e.g., Monte-Carlo) methods. c. Demonstration of developed methodologies and requirements for interoperability among Multi Terminal, Multi-Vendor MVDC and LVDC systems. B) AC and DC Grid Forming Capability Functional requirements and demonstration of grid forming capability for hybrid HV AC/DC networks (e.g., offshore wind, HVDC transmission or multi-terminal HVDC grid, potentially associated with energy storage systems). Functional requirements and demonstration of grid forming capability for hybrid MV and LV AC/DC networks (grid connected and islanded operation with distributed energy sources). Functional requirements and validation procedure for testing grid-forming capabilities offered by HVDC, MVDC and LVDC systems. C) DC Distribution & microgrids Modelling (steady state and transient models) for systems including different typology of RES, EVs, storage and loads (system architecture, voltage level, control, stability, protection, and storage integration). Planning and design of MVDC distribution grids as the intermediate layer between the HVDC and the AC or DC Low Voltage local distribution grid and loads. Functional requirements for the AC-DC converters, DC-DC converters, switchgear (including protection equipment) and cables based on the different typologies and power rating applications
2. Demonstration, test and validation of the activities developed in (1) in at least three pilots – one for each sub-topic (A, B and C) – in different EU Member States/Associated Countries. International cooperation with countries of the Mediterranean Region is encouraged.

HORIZON-CL5-2024-D3-01-13:

DC and AC/DC hybrid transmission and distribution systems

Research Innovation Action | TRL 4-5 | 13M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

- **Expected Outcome:**

Project results are expected to contribute to all the following outcomes:

- Demonstrated top-down electricity system orchestration of future pan-European AC / DC hybrid system architecture - including offshore grid and energy islands - at different voltage levels (HVDC, MVDC, LVDC) down to DC microgrids.
- Developed methodologies for operational planning and design of DC and AC / DC hybrid systems, considering all possible sources, loads and storage, from high-voltage transmission level to distribution-connected assets. This includes a cost benefit analysis for stability management options.
- Developed methodologies and requirements for interoperability among Multi Terminal, Multi-Vendor MVDC and LVDC systems.
- Demonstrated technologies to be applied to the energy system to address the gradual loss of inertia caused by the increasing penetration of Power Electronics Interfaced Generators (i.e., RES such as PV, Wind, etc.).
- Demonstrated DC transmission and distribution systems and technologies.
- Components and systems for **smart substations.**
- Close collaboration among the key grid stakeholders (non-exhaustive list: software developers, system manufacturers, TSOs, third-party system integrators, wind turbine manufacturers, offshore wind farm developers, PV plants, storage systems, etc.).

HORIZON-CL5-2024-D3-01-15:

HVAC, HVDC and High-Power cable systems

Research Innovation Action | TRL 4-5 | 13M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

Link to the topic: click here

Scope: Projects are expected to implement at least three of the activities in (1) for one or more subtopics (A, B, C) or (2) for one or more subtopics (D, E, F) and the practical validation in (3) as described below: 1. R&I, methodologies and tools involving the activities listed below. These can be developed/complemented with others pertinent to the topic. A. Innovation in cable systems Development of new insulating materials for dry type accessories for high temperature and above 525 kV Optimisation of newly developed high electrical resistivity insulating materials for use above 525 kV in cable and/or accessories. Development of new network components with reduced environmental impact such as EHV/HV cables without lead, application of superconductors, AC, DC cables/gas insulated lines for voltages above 525 kV. Development of larger conductor cross sections. Development of smaller conductor cross sections and leveraging higher current superconductors - greater power density benefits. Increase of maximum insulation operating temperature, such as for high load urban areas where available space for power transfer is limited. Further improvement of different types of extruded insulation materials (e.g., AC, DCXLPE, Polypropylene) cables, and render recyclability of the materials feasible by refining the procedure of separation of the many components of the cable – insulation, wires, tapes, sheaths, etc. – from each other.

Establishment of procedures for recycling and related possible products. Feasibility study for use of superconducting cables for submarine connections to determine their environmental benefits e.g., extremely low heat emittance, since they do not emit any heat, zero magnetic field benefits to marine fauna, smaller cable corridors for higher power densities, smaller landfall space requirements, etc. Simulation and design of innovative dynamic cable systems to meet the needs of the growing floating offshore applications. B. Predictive models for cable system ageing (fraction-of-life lost, remaining life), life and reliability Modelling of space charge phenomena (as well as other relevant phenomena) in newly developed insulating materials, in full size cables and accessories. Modelling of its effects on cable system aging taking advantage of advanced experimental space charge measurement techniques. **AI methods for managing a cable fleet angle**. Impact of water absorption on ageing of lead-free wet-design HVDC or High-Power cables. Ageing of cable systems, including effect of contaminants, humidity and temperature, and its implications for space charge accumulation and lifetime estimations. Test methods to quantify ageing in a DC environment, such as voltage form for DC-specific breakdown testing

HORIZON-CL5-2024-D3-01-15:

HVAC, HVDC and High-Power cable systems

Research Innovation Action | TRL 4-5 | 13M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

B. Predictive models for cable system ageing (fraction-of-life lost, remaining life), life and reliability Modelling of space charge phenomena (as well as other relevant phenomena) in newly developed insulating materials, in full size cables and accessories. Modelling of its effects on cable system aging taking advantage of advanced experimental space charge measurement techniques. AI methods for managing a cable fleet angle. Impact of water absorption on ageing of lead-free wet-design HVDC or High-Power cables. Ageing of cable systems, including effect of contaminants, humidity and temperature, and its implications for space charge accumulation and lifetime estimations. Test methods to quantify ageing in a DC environment, such as voltage form for DC-specific breakdown testing. C. Monitoring and fault location systems Continuous temperature and acoustic monitoring of long cable system lengths. Accurate and instantaneous fault location systems for long cable system lengths. Further development and improvement of on- and off-line diagnostics and condition monitoring techniques for HVDC or High-Power cable systems such as PD and leakage current measurements for online and space charge and dielectric permittivity and loss factor measurements for offline. Innovative technological solutions such as fibre-based and/or robotic technologies for data collection and maintenance in in all type of location (easy-to-access and inhospitable Development of procedures for optimised maintenance and repair concepts of offshore stations using BIM and 3D-Models.

HORIZON-CL5-2024-D3-01-15:

HVAC, HVDC and High-Power cable systems

Research Innovation Action | TRL 4-5 | 13M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

2. Investigation and development of potential replacement of HVAC overhead lines with HVDC or High-Power cable solutions to increase capacity transfer without the need of building new infrastructures but reusing existing right of ways. D. Cost-Benefit Analysis for different options of HVAC OHL conversion Mapping of the potential use cases for replacement of HVAC with HVDC or HighPower solutions (buried or overhead) supported by a Cost-Benefit Analysis. Cost-Benefit Analysis for conversion of HVAC OHL to HVDC, High Power OHL or buried High-Power cable solutions. Resilience and reliability analysis of different HVAC OHL conversion options – underground cable, HVDC OHL and buried High-Power cable solutions. E. Technical innovations and design methodologies of hybrid HV AC/DC overhead lines Insulation coordination and clearances calculation methodologies, for HVDC and hybrid HV AC/DC overhead lines. Electrical field and ion current density calculation methodology under hybrid HV AC/DC OHLs ion flow field. Operation, control and protection of hybrid AC/DC overhead lines. Management of long-distance mixed cable and OHL HV corridors. F. Pan-European grid studies and unification of voltage level of the converted OHLs from HVAC to HVDC Proposal of a unified DC voltage level of the converted lines considering the standard towers and line designs of HVAC OHLs (220 kV, 400kV) in the European network to provide a general conversion approach, compatible with minimum operation downtime. Perform pan-European grid studies to propose a unified strategy toward an overlaying HVDC grid based on the converted HVAC OHLs and existing corridors with minimized environmental impact, link downtime and implementation time. Dynamic grid studies to demonstrate the impact of the HVAC OHL conversion to HVDC. Develop identification criteria for the candidate HVAC OHL corridors (to be converted in HVDC).

3. Test and validation of the activities developed in (1) consisting of at least one of the activities described in each subtopic A, B, C or (2) consisting of at least one of the activities described in each subtopic D, E, F in at least two validation tests in different EU Member States/Associated Countries.

HORIZON-CL5-2024-D3-01-16:

Demonstration of innovative pumped storage equipment and tools in combination with innovative storage management systems

Innovation Action | TRL 7-8 | 8M EUR/project | 1 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

- Különleges kihívás, amit a felhívás megcéloz: **innovatív tárolási módszerek demonstrálása- innovatív vízerőmű technológiák**

Scope:

Demonstration of innovative pumped storage equipment and digital tools linking the mechanical storage with innovative storage management systems. The latter may involve hybridisation with storage technologies to reap the full potential of pumped hydro storage under new market conditions Solutions should deliver innovative hydropower technologies adapted to unconventional storage schemes, including e.g. low-head locations or former coal mines and/or harsher operation conditions, e.g. using salt water, while minimising CAPEX, OPEX and improving life time and circularity of components. For the storage management system, **digital tools for strategic and operational management should address current developments for energy storage, considering markets, variable renewable production and effects of climate change, and including novel approaches to energy.** Demonstrated storage solutions should respond to the **highest standards of environmental sustainability** which is underpinned by a LCA and involve Citizens and Communities during all phases of the project activities, respectively. An analysis of innovative storage potential and impact should be performed. Proposals should provide information and assessment about the **economic feasibility** and **the potential of scaling-up** the **technology at commercial scale as appropriate.**

The exploitation plans should include **preliminary feasibility study and business plan** also indicating the possible funding sources to be potentially used (such as private equity, InvestEU, EU Catalyst Partnership and the Innovation Fund)

HORIZON-CL5-2024-D3-01-17:

Development and integration of advanced software tools in SCADA systems for High, Medium and Low voltage AC/DC hybrid systems

Innovation Action | TRL 6-8 | 12M EUR/project | 2 to be funded | Opening: 12 Sep 2023 | Deadline 16 Jan 2024

- Különleges kihívás, amit a felhívás megcéloz: **software fejlesztés és beépítés SCADA rendszerekbe magas, közepes és alacsony feszültségű AC/DC hibrid rendszereknél**

Scope: Projects are expected to implement the activities in (1), the practical demonstration (2) and the recommendations for grid codes (3) for a realistic use case, at one or two voltage levels or at system level including all three voltage levels as described below: 1. Development of methodologies, technologies, algorithms and software tools, involving at least three of the activities listed below. Development of innovative technologies, algorithms and analysis modules for multi terminal HVDC system – Software tools for analysing stability compatibility between DC and AC power system (e.g., Grid forming Vs. DC voltage stability) **Development of innovative algorithms** and software tools for analysing and controlling the system of mixed, hybrid AC/DC grids. Integration of these tools into the control room software. **Scalable and flexible software framework** for operation of hybrid AC/DC power systems supporting various vendor-dependent systems and component models, e.g., more accurate and wider representation of connected systems, power flow calculations. **Vendor independent hybrid DC/AC network SCADA/Energy** Management System and upper-level control of voltage source converters (multi-vendor, multi-terminal), including changing active power set points, voltage/reactive power control set points and changing controller parameters. **Development and management of small signal** and dynamic stability in a hybrid AC/DC power system with high penetration of inverter-based resources. Development of a robust online real-time estimation and calculation of the system state of the AC, DC and hybrid system. **Development of safety and reliability analysis of the system state**, analysis of possible failure situations as well as curative measures for the failure event, e.g., transient and dynamic stability, coordinated risk management. Development and integration of cyber secure resilient ICT platforms and communication for data exchange. **Development of a DC link** for firewalling the grid from cascading effects due to faults or cyberattacks. 2. **Demonstration, test and validation** of the activities developed in (1) for a fully automated decision support system for control centres in at least two pilots in different EU Member States/Associated Countries. 3. **Recommendations for changes in grid codes**, which can facilitate the deployment of the technology and ensure the full exploitation of the assets.

Kaszkád Finanszírozások

Digitális technológiák

Horizon Europe finanszírozás Harmadik felek felhívásai (más néven Kaszkád támogatások)

Munkaprogram / felhívás → **Projekt** → **3. fél felhívása** → **Kaszkád támogatás**

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

Horizon Europe finanszírozás Harmadik felek felhívásai (más néven Kaszkád támogatások)

Kaszkád finanszírozás a következő generációs internet kezdeményezésben (NGI)

- Az NGI Zero Entrust kutatók és innovátorok számára biztosít a 50-500.000 € (~~több~~ lépésben) projektfinanszírozást többek nyitott, megbízható internet és adat szuverenitás területén (határidő: dec. 1).
- Az NGI Zero Core kutatók és innovátoroknak biztosít 5-50.000 € finanszírozást a következő generációs biztonságos és megbízható internet architektúra alapjait biztosító technológiai elemekre, eszközökre (határidő: dec. 1).
- Az NGI Sargasso európai kutatóknak, vállalkozásoknak és egyéb szervezeteknek USA és/vagy kanadai együttműködésben megvalósuló projektekre kínál legfeljebb 100.000 € támogatást az alábbi témákban: megbízhatóság, adat szuverenitás, digitális azonosság, internet architektúra, decentralizált technológiák, interoperabilitás és szabványosítás, új internetes közvagyon (határidő: dec. 18).
- A pályázati források mellett az NGI Review ingyenes szolgáltatásokkal – pl. biztonsági audit, szabványosítás, csomagolás, nemzetköziesítés, szerzői jogok/licenszelés, akadálymentesítés - támogatja a következő generációs internetet célzó fejlesztéseket.

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

Horizon Europe finanszírozás Harmadik felek felhívásai (más néven Kaszkád támogatások)

Kaszkád finanszírozás az Intelligens hálózatok és szolgáltatások (SNS) területén

- A FIDAL felhívás 5G-n túlmutató felhasználási esetekre kínál 250.000 € támogatást media, szórakoztatóipar, vészhelyzeti szolgáltatások, időkritikus alkalmazások és szolgáltatások területén (határidő: dec.20).
- A TRIALSNET 5G kísérletekre és felhasználási esetekre kínál 2-300.000 € támogatást több területen (infrastruktúra, közlekedés, biztonság, egészségügy/vészhelyzetek, kultúra, turizmus és szórakoztatóipar) (határidő: jan.19).
- Hamarosan nyílik a TARGET-X új felhívása, amely 4 vertikális területen (gyártás, energia, járművek, építőipar) 60.000 € támogatást kínál felhasználási esetekre.
- Hamarosan nyílik a 6GBRICKS felhívása, legfeljebb 60.000 € támogatást kínál kísérletek végrehajtására (célzott területek: devices and components via O-RAN xAPPs, on compute continuum leveraging the UE Farms, and on novel XAI modules)(határidő 2024. január).

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

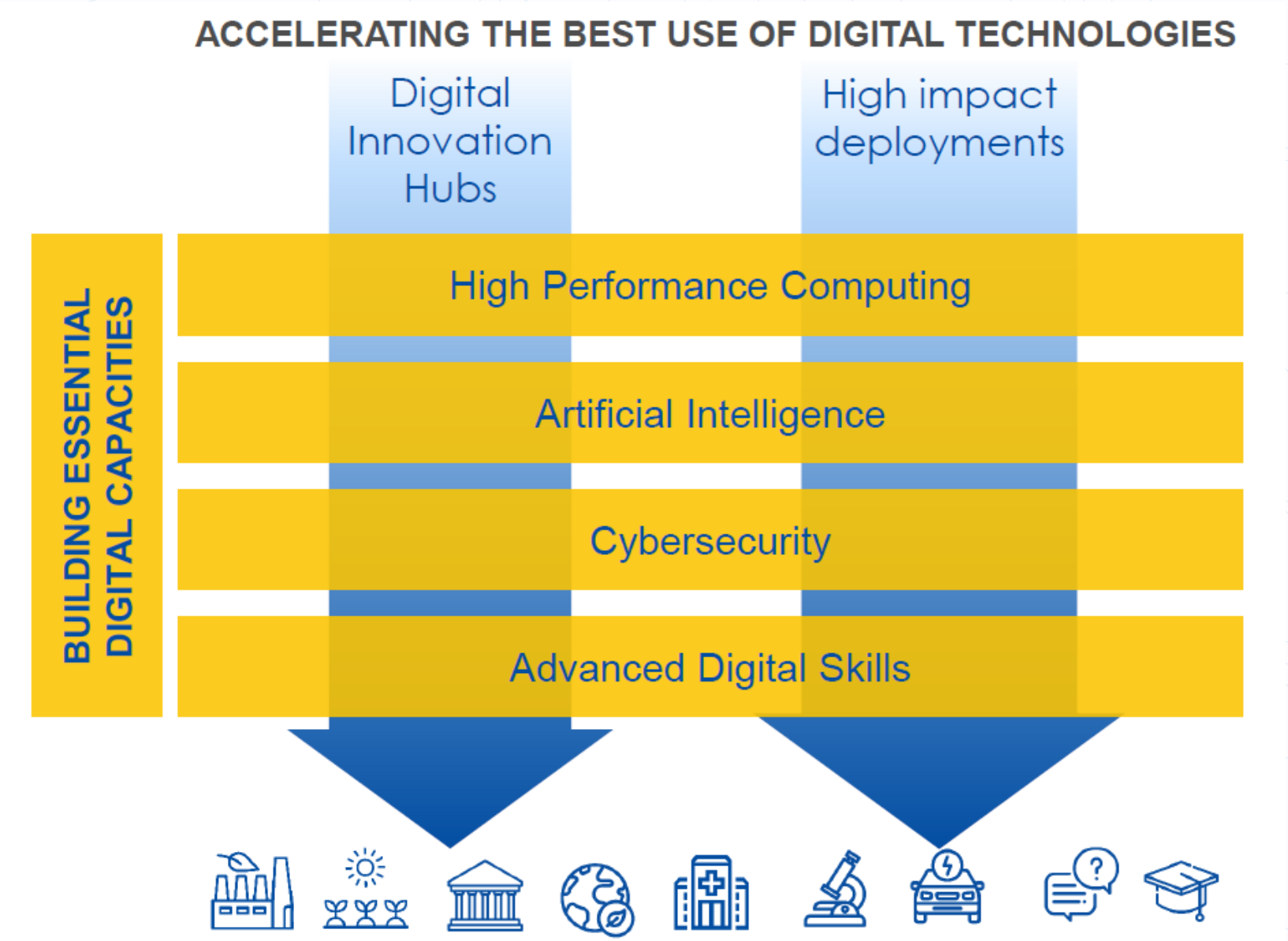
Horizon Europe finanszírozás Harmadik felek felhívásai (más néven Kaszkád támogatások)

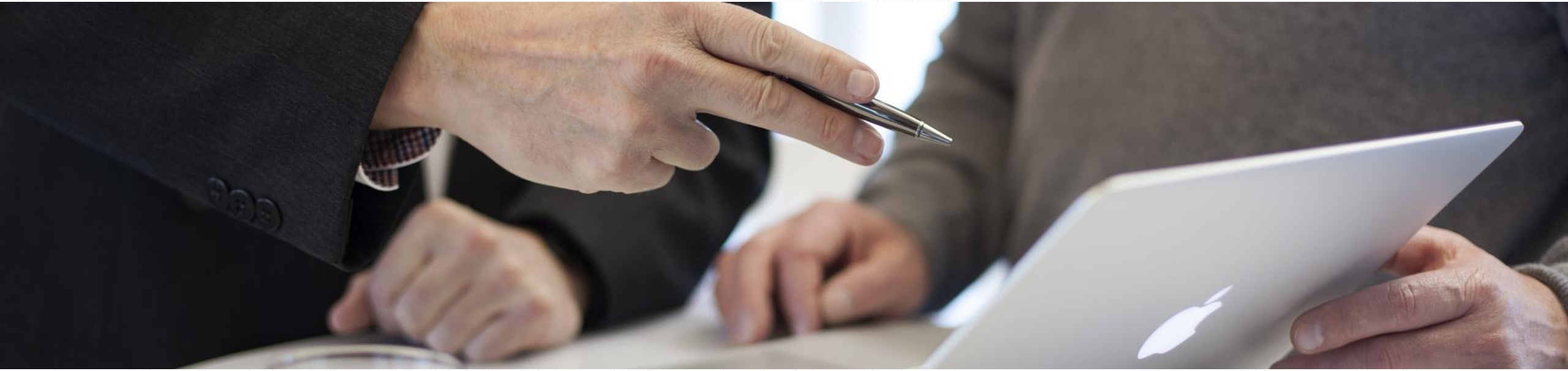
CORTEX², launched its **1st Open Call** to investigate, advance, and demonstrate the technical features offered by its **extended reality (XR) platform, aimed at facilitating remote collaboration** between workers across a wide range of industries and SMEs.
Open Call #1 beneficiaries will receive up to €200,000,

StandICT.eu 2026 has launched **the Programme's third Open Call, which will run until the 9th of January, 2024 (17:00 CEST)!**

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

Digital Europe program struktúra





NCP-szolgáltatások bemutatása

Többszintű szolgáltatási rendszer- nemzeti kapcsolattartók

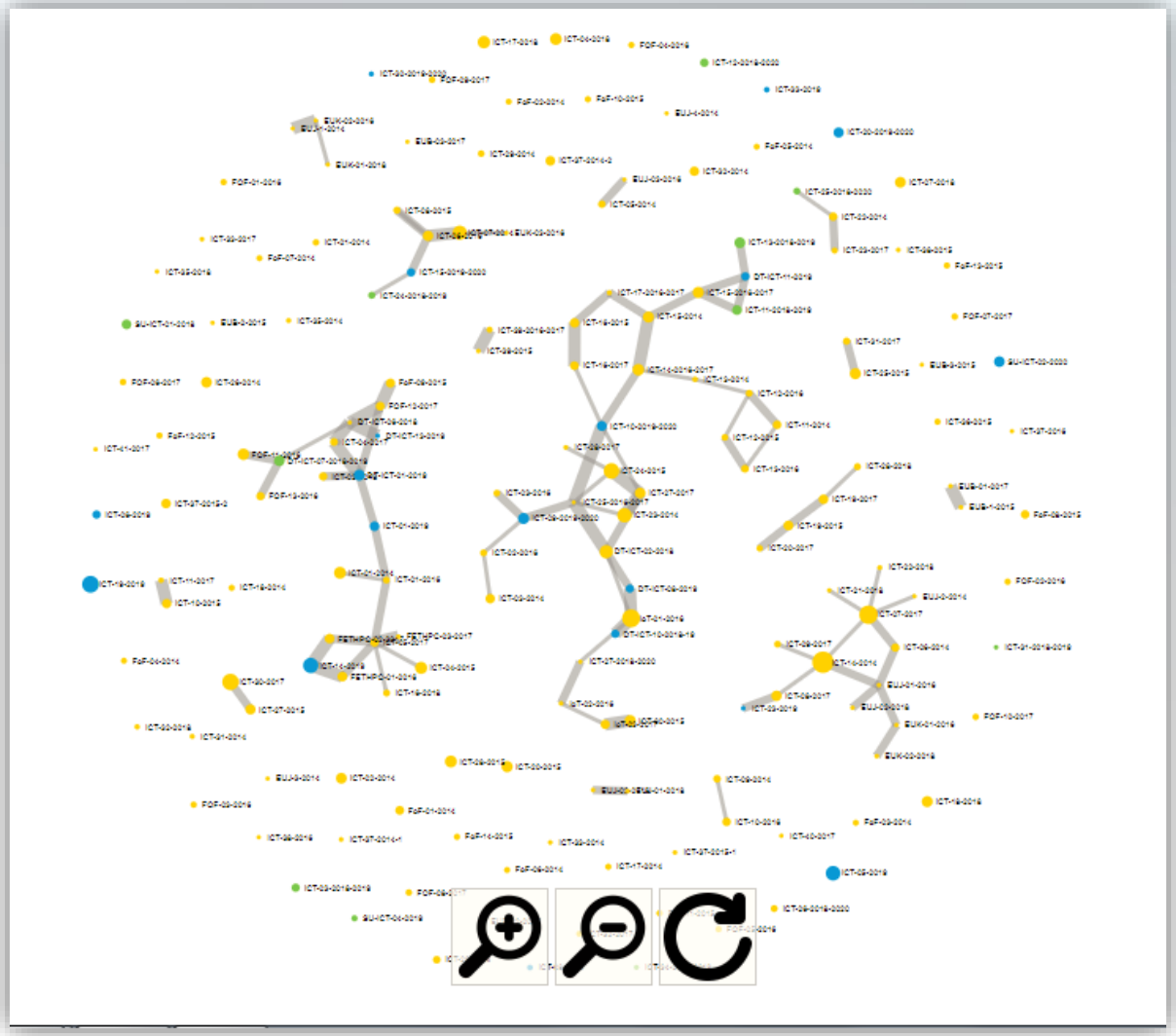
- tematikus információs napok, pályázati konzultációk az aktuális pályázati felhívásokat követve;
- alapozó képzés új belépőknek – a keretprogramban újonnan pályázók, vagy kevés tapasztalattal rendelkezők számára;
- jogi-pénzügyi ismeretek,
- pályázatírói és pályázatmenedzsment tréningek
- konzorciumépítési modellek és stratégiák bemutatása;
- személyre szabott pályázati tanácsadás;
- HE pályázatok elő-értékelése NCP-k és pályázat-értékelő szakértők bevonásával,
- KKV mentor program (innovatív KKV-k felkészítése pályázat-értékelők, és pályázatírók támogatásával a HE program pályázataira);
- horizonteuropa@nkfih.gov.hu

Topic Tree

How are call topics linked?

How have these areas evolved over the years?

What is the new focus this year?



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 645216

IDEAL-IST

Horizon Funding & Tenders Portal
Brokerage Events
Information days and Relevant Events
Digital Innovation Ecosystems
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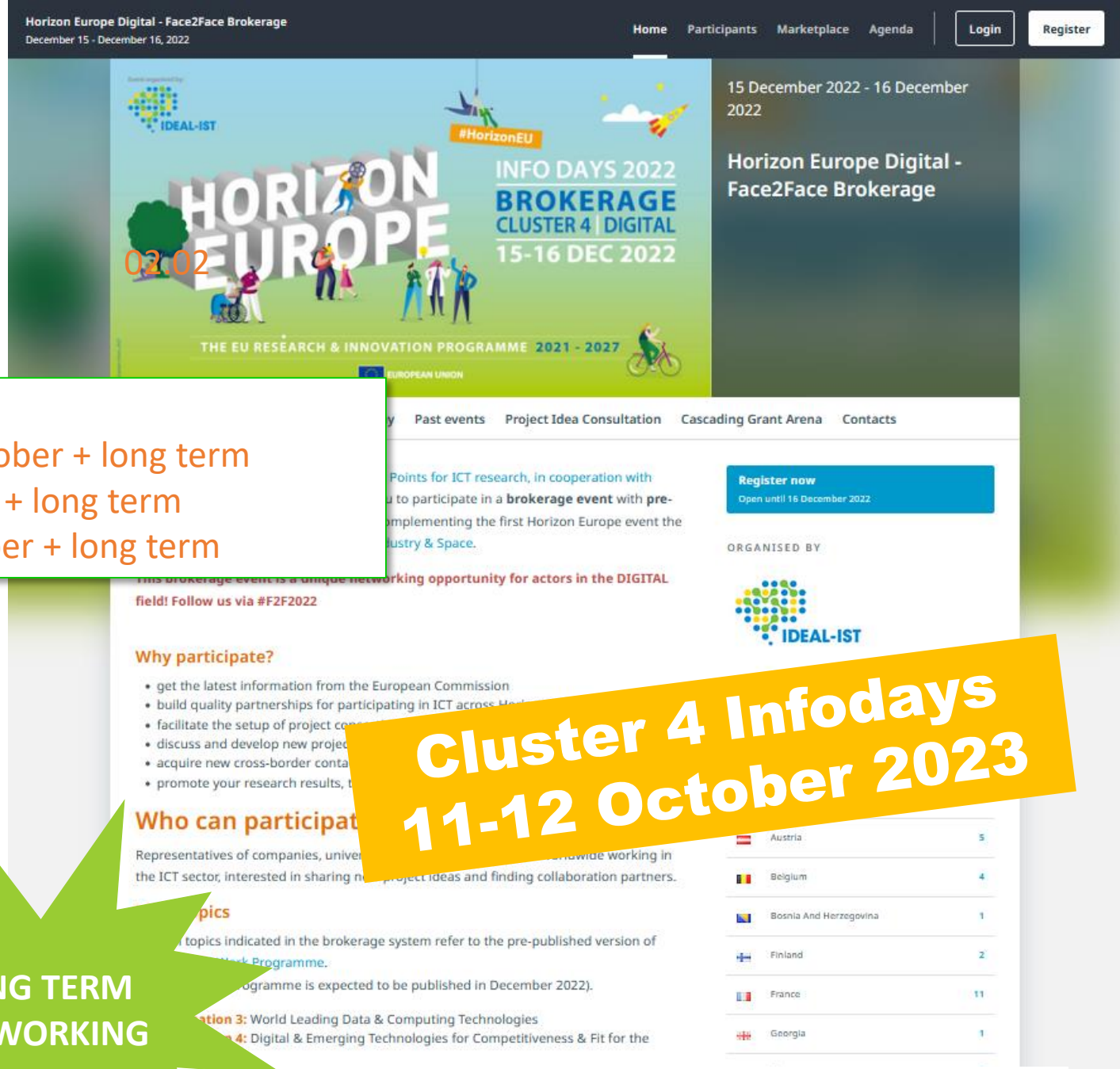
Digital Innovation Ecosystems
Are you looking for a faster and easier way to get involved in Horizon programmes and the European research and innovation ecosystem?
Many running projects offer funding opportunities for innovative ideas embedded in dynamic digital ecosystems. In addition, these initiatives offer access to facilities and competence centers to help you experiment with the latest digital technologies.
Find out more on our Other Funding Sources

VIRTUAL AGORA

- Register
- Create a profile
- Share cooperat
  - Project ideas
  - Expertise
  - Requests
- Find & contact partners

Proposed dates:
Digital: 16 -17 October + long term
Space: 18 October + long term
Industry: 19 October + long term



Cluster 4 Infodays
11-12 October 2023

LONG TERM NETWORKING

IDEAL-IST

A service offered by:
the network of ICT
National Contact Points

digital2023.ideal-ist.eu

Project Idea Check

Have a proposal idea? Get early feedback

from experienced National Contact Points @Digital2022

Ideal-ist National Contact Points (NCPs) are available at key events to review your project ideas. Discuss discretely with NCPs whether your idea fits the call topic you chose. Or get help to find another topic.

When: By appointment
Where: Online

Have an idea? for a project

Have a topic? where you think it will fit

Hear more about the topic! at the information session

Speak one-on-one with an NCP to discover if your idea fits

Ideal-ist

Full Proposal Check

Registration Open …

https://idealist.proposalcheck.eu

Research to Reality

Digital Solutions to European Challenges

A remarkable event that promises to shape the future of digitalization in Europe. It is organised under the Belgian presidency in cooperation with the European Commission.

Stay tuned

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Németh Edina

Programbizottsági tag, nemzeti kapcsolattartó
Horizon Europe, Digital, Industry & Space (Cluster 4)
Secure Societies – Cybersecurity (Cluster 3)
European Innovation Council (Pillar 3)

Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal

+36-70-221-0387 - edina.nemeth@ist.hu

Pivarcsiné Fekete Dóra

Programbizottsági tag, nemzeti kapcsolattartó
Horizon Europe, Digital, Industry & Space (Cluster 4)

Nemzeti Kutatási, Fejlesztési és Innovációs Hivatal

+36 1 896 3415- dora.fekete@nkfih.gov.hu