## An introduction to CELTIC-NEXT, the Eureka lot cluster for a secure, trusted, and sustainable digital society



The ICT \( \Section \) eureka cluster for next-generation communications is celebrating 22 years of successful innovative projects!

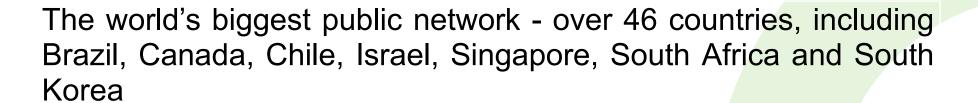




Spring Call 2026, Online Launch Event, 01 Dec 2025

Xavier Priem, CELTIC-NEXT Director

## **Eureka**



International RD&I collaboration enables Eureka countries to tackle global challenge and increase competitiveness

A transnational network facilitating the coordination of national priorities on innovation and providing access to national funding

More on: www.eurekanetwork.org/

## Since 1985 (40 years!):

- 0 48.4+ billion euro publicprivate investment
- 7,000+ R&D projects
- 35,000+ organisations
  supported





## Eureka programmes







supports research and business ventures in new markets



drives companies towards private investment or strategic partnerships



eases access to the EIC Accelerator







→ Connects innovators with thematic industry-led communities



offers flexibility for international R&D projects



⇒ offers flexibility for international R&D projects with non-Eureka countries



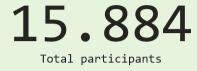


### **Overview**: Eureka funding programmes

Call-based projects cohort: 2015-2024



#### Participants by Programme and by Country of origin

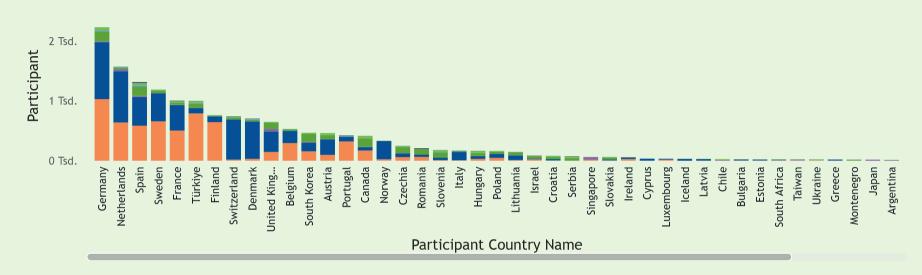


3.466
Total projects

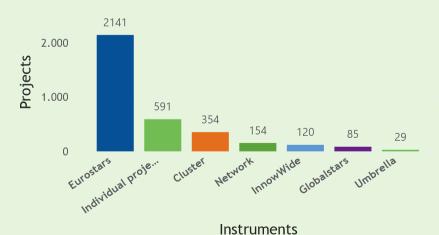
6.894

Total public-private invested (mio Eur)

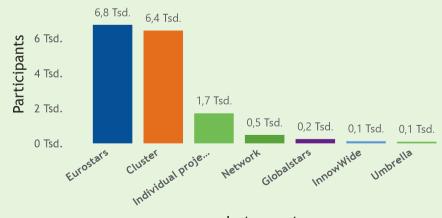
50
Total countries



#### **Projects by Programme**



#### Participants by Programme

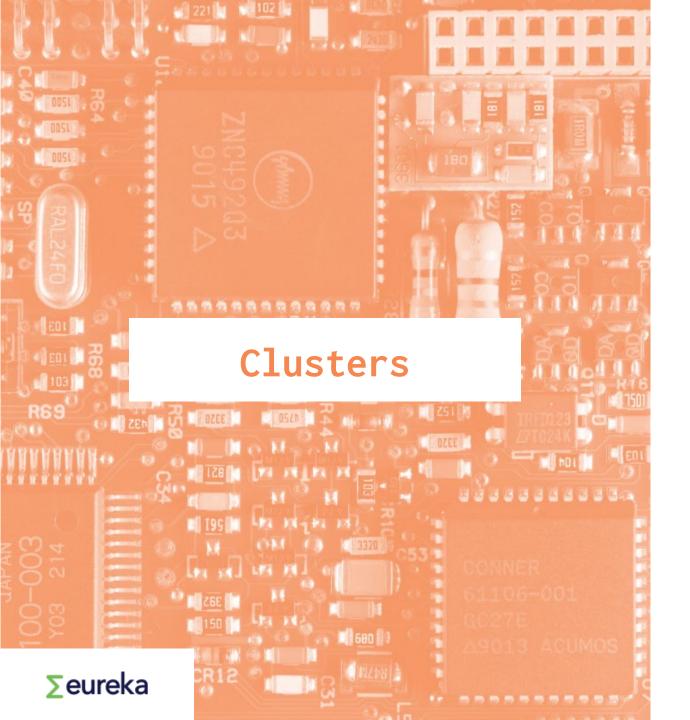


Instruments









- Industry-led communities
   consisting of leading companies,
   knowledge institutes and enduser organisations
- Strategic technology areas
- Market-oriented, aiming to solve economic, technological and societal challenges
- Large mid-sized projects



## Who is CELTIC-NEXT?





CELTIC-NEXT is the world industry-driven ECP\* ICT\*\* not-for-profit **cluster** involving all the major ICT\*\* industry players, service providers, many SMEs, and research institutions & academia to enable a secure, trusted, and sustainable digital society.

\*Eureka Clusters Program, launched on 17/6/2021, CELTIC-NEXT was launched earlier in 2003

<sup>\*\*</sup> Information & Communications Technologies 8



**CELTIC-NEXT** in the European Funding

Landscape

European Community **Programmes** 



Clusters Programme Trans-national **Programmes** 

> following **National Priorities**

C > CELTIC-NEXT

Seureka Cluster

**National P**rogrammes Develop & Maintain **Critical Mass &** 





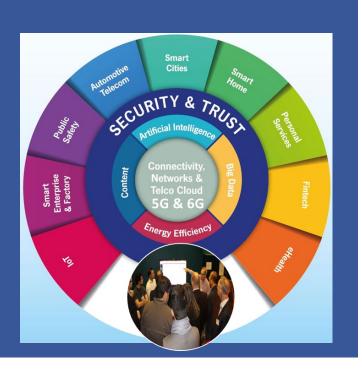


Differentiation





# Overview, mission & vision



#### About CELTIC-NEXT since 2003:

- <u>The ICT Cluster under ΣEUREKA (since 2003 and member of ECP since 2021), focused on Next-Generation Communications for the Digital Society</u>
- Community of 1250+ private/public entities, including industry leaders, SMEs, and research institutions
- Organizes biannual project calls (Spring/Autumn) and larger Flagship Calls
- Supported by public and private funding for transnational RD&I cooperation
- Open to any organization contributing to European/global ICT research initiatives.

#### The mission & vision of CELTIC-NEXT is to:

- Foster ∑EUREKA collaborative RD&I program for the ICT community
- Accelerate the deployment and uptake of advanced ICT services
- Employ the new network concepts of 5G and beyond, and lead to the innovation ownership and implementation of 6G in ΣEUREKA countries

www.celticnext.eu



### Key Numbers (2024):

#### **CELTIC-NEXT IN FEW FIGURES**

	€	<b>~</b> i	<u>ku</u>				<₽	4		m
194	1358	14142	1250	43	750	55	1600	1500	1800	5800
PERFORMED PROJECTS	INVESTED BUDGET (M€)	EXPECTED EFFORT (PY)	COMPANIES & INSTITUTIONS	COUNTRIES	PATENTS DIRECTLY GENERATED	— % OF SME	PRODUCTS & SERVICES ON THE MARKET	PROTOTYPES TRIALS	PHDs & MScs	SCIENTIFIC PUBLICATIONS

## Achievements Key last events:

Berlin, 2/07/2024:
CELTIC-NEXT Awards
Ceremony fat the
6G Berlin Conference





Berlin, 2/07/2024: CELTIC-NEXT 21<sup>st</sup> Anniversary Celebration the 6G Berlin Conference 2024



Porto, 22/11/2021.:
Eureka, CELTIC-NEXT & ESA signed a
Memorandum of Intent for Connecting
Terrestrial ICT with Space ICT



Paris, 17/03/2023: CELTIC-NEXT Proposers' Brokerage Day at BPIFrance Le Hub



London, 18/09/2024: CELTIC-NEXT Proposers' Brokerage Day at Digital Catapult



A recognised success and a renewed trust from the EUREKA Nations



CELTIC-NEXT, is pleased to announce the renewal of its license for another seven years under the **Eureka Clusters** Programme (ECP). The decision was formalised during the third Eureka Network Meeting, 10-13 July 2025, CA/Montréal, held under the Canadian-German Co-Presidency. where 31 countries voiced their support for CELTIC-**NEXT's mission and** achievements.





## What CELTIC-NEXT does ...

CELTIC-NEXT manages an international Quality Label that enables international consortia to apply more successfully to National Funding schemes and assemble them to fund international cooperative innovation.

- CELTIC Bottom-up calls
- CELTIC Flagship projects & open calls
- EUREKA ECP Joint Calls



## **CELTIC-NEXT offers...**



Opportunities to fund transnational RD&I consortia



Access to the best companies and knowledge institutes



Projects initiated by industry in line with national priorities



Global and trusted cooperation in the communities



• Support of experts with an industrial viewpoint

"Are you looking to collaborate on an international and industry-driven RD&I project that covers a whole value chain?"



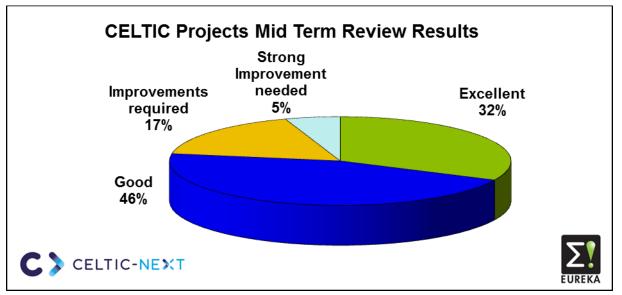


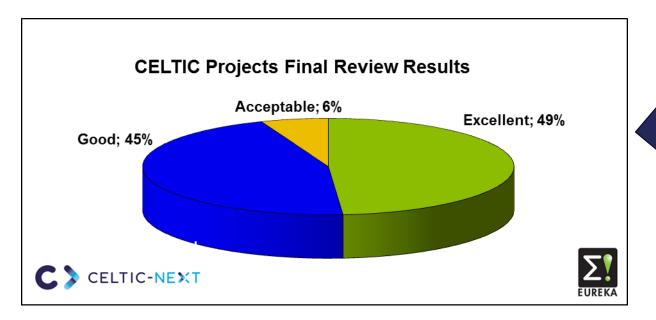
Recommendations

from Experts

## **CELTIC NEXT**

The value of the CELTIC-**NEXT Programme lies** not only in the administrative management of Calls and Projects but also in the high-quality expertise and recommendations provided by its Experts and Reviewers.







# CELTIC-NEXT Services & Fees

- Hosted as a not-for-profit Division of EURESCOM GmbH, member of the Core Group, Heidelberg, Germany
- Major Expenses:
  - Office Staff costs (including travel) and daily operational management
  - Travel costs for Experts
  - Calls, Events, Marketing & Dissemination
  - IT tooling & hosting
- Costs are exclusively balanced through projects' fees, as
   1.5% of the eligible budget!
  - see "Fees" website page:

https://www.celticnext.eu/celtic-next-fee-invoicing-and-payment-procedure/

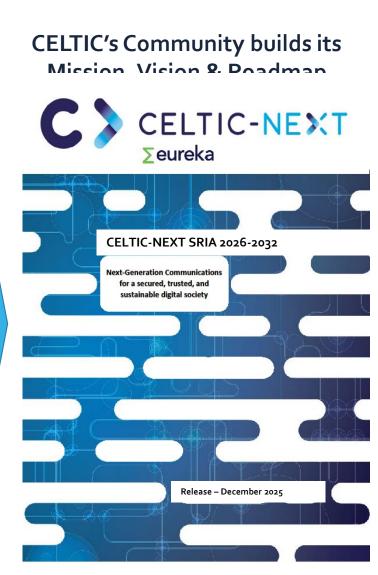


## CELTIC's Community





with over 1250 community members across 43 countries (Europe & beyond)





Collaboration and Complementarity are vital.

Innovation drives progress.

Impact is our measure of success.





Memorandum of Understanding with 6G-IA signed CELTIC-NEXT

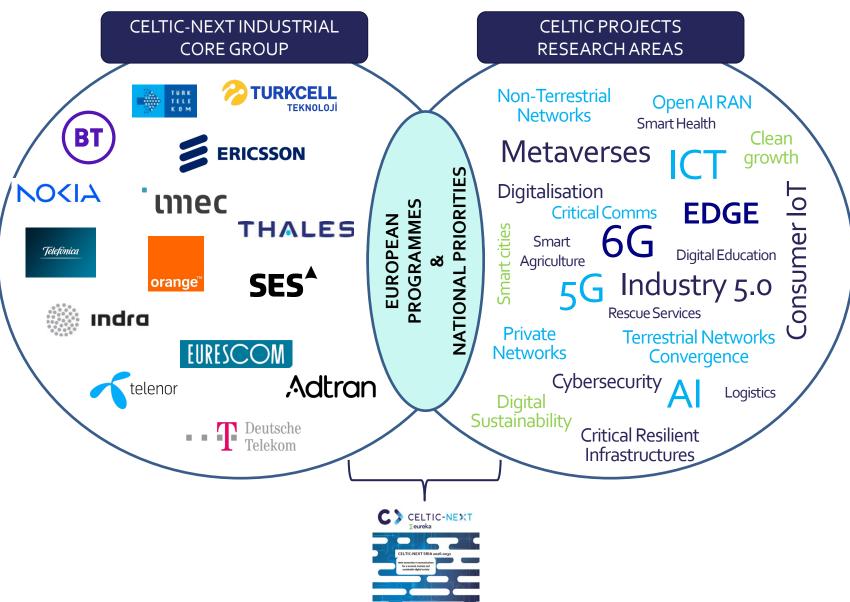




Knowledge exchange & SRIAs cross-contributions Leveraging funding schemes across **TRLs & topics** Calls timing alignment Easier pipelining of proposals From Research to Market (TRL **७**, early adopters, testbeds...) Offering innovative entities the full panel between top-down programs and bottomup spaces for their collaborative projects



Strategic Roadmap & Key research Areas



## **CELTIC-NEXT's DNA**

**Bottom-up** 

Proposers are free to define their project proposal according to their own research interests

Close to the market

So far projects have led to more than 1500 new or improved products and services

**High Success Rate** 

High-quality proposals have a good chance of receiving funding. Average success rate 60 %

**Flexibility** 

Project focus can be adjusted to new technological developments in the field

## FOR YOUR SUCCESS (C. )



> eureka Cluster

By participating, you will get

Expectable benefits for you

Your opportunities are

- The award of a Globally **Recognised Label**
- Professional coaching and mentoring
- Easy access for SMEs
- Access to SMEs for Large industry & vice-versa
- Access to partners from more than 45 countries
- Access to national funding (while having international co-innovation)
- Transnational RD&I cooperation





- Boosting your competitiveness
- Accelerating your growth
- · Shortening time to market
- Accessing new markets
- Increasing your international visibility
- Exposing your know-how to the eco-system
- Receiving guidance, coaching and monitoring of your project by the CELTIC Office.
- flexible project coaching process where you can adapt your project plan, consortium and other aspects, in agile way, using **CELTIC's Project Change** Requests



- Immerge yourself into a rich ecosystem covering the technology and business whole value chains (Large Industry, SMEs, Startups, RTOs, Academia, end-users)
- Build RD&I consortia during brokerage and other events
- Lead or be part of an industry-led project
- Create and foster collaborative innovation
- Stimulate disruptive and/or sustainable ideas
- Run and manage your collaborative project with the Office's support
- Adapt to internal and external circumstances
- Generate high economic impact
- Grow and collaborate beyond borders
- Deliver high social and economic impacts
- Support U.N. SDGs



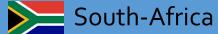














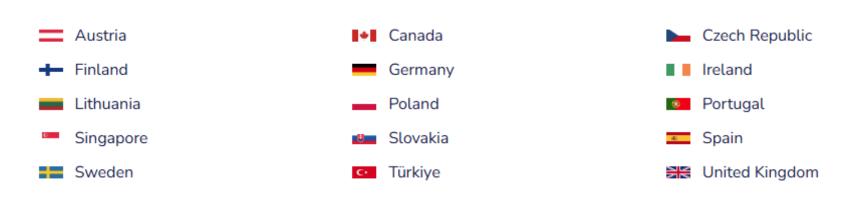


and potentially more countries in the future...





## Spring Call 2026 supporting countries\*

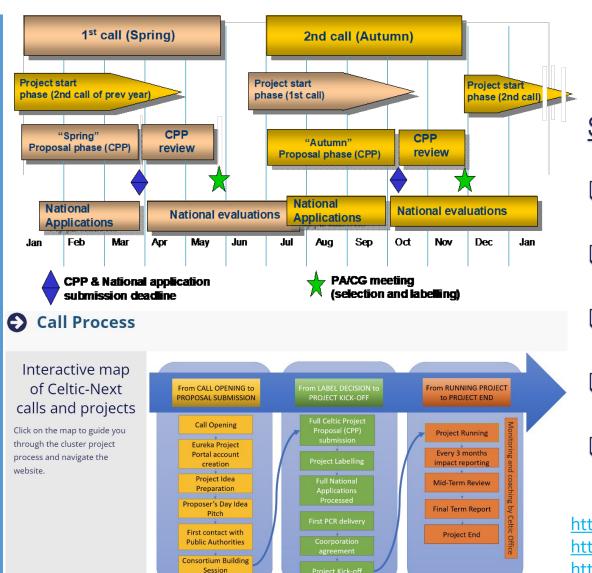


\* In addition to those, Chile is supporting this call. Some other countries may also assist, but on a case-by-case basis. This needs to be checked before the application is submitted to CELTIC-NEXT. Contact details are available on our website.



## Call process and timelines

CELTIC offers 2 bottom-up calls per year and additional flagship calls



### Spring Call 2026 dates:

- Opening Opening
- 01 December 2025
- Launch Event
  - 01 December 2025
- Proposers Brokerage Day
  - 30 January 2026, Vienna
- Deadline for proposals
  - 24 April 2026
- Label notification
  June 2026

https://www.celticnext.eu/call-information/ https://www.celticnext.eu/proposers-days/ https://www.celticnext.eu/call-calendar/ https://www.celticnext.eu/brokerage-tool/

## **CELTIC-NEXT Autumn Call 2024**





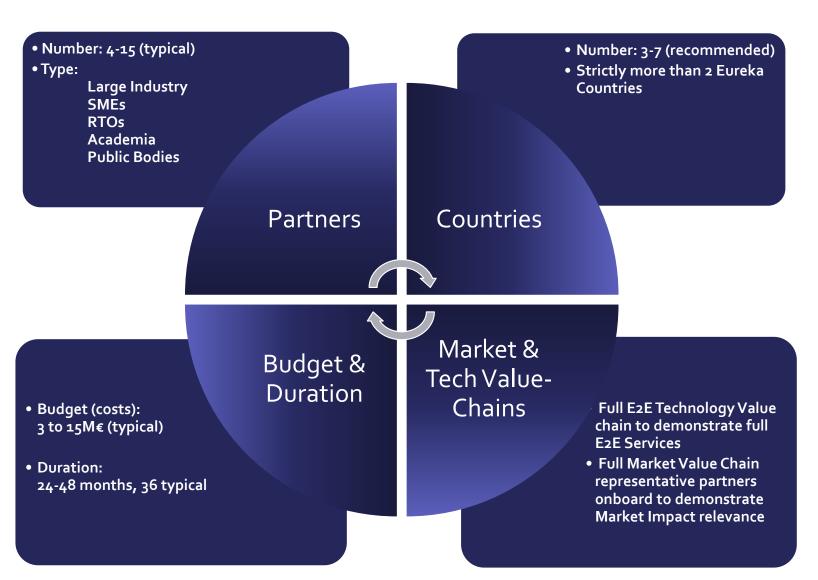
Important: please contact the Public Authorities before Projects submission:

https://www.celticnext.eu/national-public-contacts-funding-schemes/

Receiving their opinion early can avoid mistakes in your proposal, and will improve your chances to get the label by aligning with National Priorities and Schemes



CELTIC-NEXT's typical BOTTOM-UP call projects





CELTIC-NEXT's SRIA 2026-2032 sets out a comprehensive roadmap for **EUREKA** Countries' leadership in ICT, beyond 6G itself, expanding to vertical industry sectors.

The CELTIC-NEXT SRIA 2026—2032 builds on CELTIC-NEXT's holistic, bottom-up approach, considering the European 6G Vision (6G-IA), the SNS-JU SRIA, and vendor perspectives, in a topical and, over time, TRL & MRL-staged manner.

#### Key messages:

- AI-native networks must be designed from inception. Networks shall use AI, but also provide services to other industries' AI applications, in a mutually beneficial collaboration.
- Sustainability and energy efficiency must be both system intrinsic properties and societal enablers.
- ➤ Beyond communication services (sensing, positioning, computing) will define 6G, supporting the always increasing convergence of digital, physical and biological worlds.
- Eureka Countries' sovereignty in ICT value chains is critical.
- Societal responsibility (ethics, privacy, inclusion, trust) must be embedded.



# CELTIC-NEXT Perspectives for 2026-2032

- **►** End-to-End Connectivity and Networks
- **➤** Digital Transformation of Vertical Sectors
- **►** Advanced ICT Technologies
- **>** Sustainability and Societal Impact
- **►**Innovation Ecosystem



## Zooming on Advanced ICT Technologies

- Spectrum and Wireless Technologies:
  - Exploration and harmonisation of new spectrum bands, including sub-THz and optical frequencies.
  - Development of advanced radio technologies for ultra-high capacity and reliability.
- Al-Native Networks:
  - Integration of AI and machine learning at every layer of the network stack for adaptive, self-optimising systems.
  - Research into explainable and trustworthy AI in network management and orchestration.
- Network Architecture and Edge Computing:
  - Design of decentralised, cloud-native architectures with seamless edge-to-core integration.
  - Support for ultra-dense networks and multi-access edge computing.
- Security, Privacy, and Trust:
  - Development of end-to-end security frameworks, zero-trust models, and quantum-resistant cryptography.
  - Privacy-preserving mechanisms for data and Al-driven applications.
- Sustainability and Energy Efficiency:
  - Innovative approaches to reduce network energy consumption and enable circular economy principles.
  - Research into the combination of materials, hardware, and software for green communications.
- Integration with Vertical Industries:
  - Tailored solutions for sectors such as healthcare, manufacturing, transportation, and agriculture.
  - Co-design of network capabilities with industry-specific requirements.



Future needs of the end users:
High level fields of applications

#### Human Centred Technologies and Services, for an Augmented Life Experience

- Digital divide elimination
- Digital support for Inclusive Education (incl. Remote)
- Smart Regions/Cities/Buildings/Homes
- Smart Transportation
- Smart Tourism
- Sustainability & Efficiency of Smart Energy Grids
- Public Safety & Crowd Control
- E-Health & Care
- Users in Control and Trust of offered services
- Digital (Media, Gaming, Sports, Culture and Entertainment)
- Remote and Nomadic Working (Digital Nomads)

## Full industrial digitization and support of vertical industries

- Digital Enterprises
- Private Networks for Smart Manufacturing (Indus. 5.0)
- Smart Logistics (geolocation IOT networks)
- Smart Agriculture
- Future Financial and Fin-Tech
- ICT support to third party Al based applications
- Connectivity Grid / Telecom Infra as 4<sup>th</sup> Utility, like Energy

## Sustainable, Sovereign, Secure Futuristic use cases

- Holographic "Teleportation"
- "World" Real-time Synchronous Digital Twin



Future needs of the end users: Main technical areas of research

#### Dynamic capacity following Ubiquity / Pervasiveness people seamless mobility •Urban, sub-urban down to •In "normality" rural •In "crisis" (pandemics, •Into the home for education

and remote working

experience

Multi-Tenant

Domains

Infrastructures

Smart

mes

Stationary and in move

One Identity for seamless

Regions/Cities/Buildings/Ho

Dynamic, Composable, and

Integration of All Network

- major climate events)
- Highly Precise Positioning
- Edge Computing
- Open-RAN / vRAN
- Slicing
- Deep virtualization
- •Integration of All Network Domains

#### Automation, Reliability, Transparency: Cognitive operations

- •AI-native Networks, incl. AI-
- •ICT supporting large and intense Ai/ML deployment for verticals (connectivity, processing, data storage...)
- Extensive Monitoring
- Big Data Analytics
- Artificial Intelligence
- Transparency or the Imperceptible latency
- Deterministic Networking
- Programmability and Controllability
- Advanced Governance and Service Customisation
- •Integration of All Network **Domains**

#### Sustainability, Protection and Trust

- Cyber-security (incl. Post-Quantum)
- •Identity management
- System Sustainability and Efficiency

#### Holographic "transportation" & Real-time Synchronous Digital Twin

- Holographic media teleport
- Multi-sense networks
- •Time engineered applications
- Integrated Sensing and Communications (ISAC)



## Enabling technologies that have to be mastered

#### 5G, B5G, 6G

#### Wired and Wireless Industrial ICT

#### **ICT Critical Infrastructure** as a Utility, The Critical **Connectivity Grid**

#### Space dimension enabled 5G/B5G/6G

#### Distributed & Smarter Networks

- · Enhanced overall architectures to support needed enablers
- End-to-end Horizontal and Vertical Network Convergence
- AI/ML for Digital Infrastructures
- End-to-end Network Automation
- Autonomous Systems and Networks
- Connectivity as a Shared Critical Utility
- Wireless and Wired Tera-Broadband technology:
- Wireless (electromagnetic and visual light waves):
- Larger massive MIMO systems
- No "Cell" Radio Networks with distributed smart mMIMO systems
- TeraHertz Communications
- Wired optical:
- Photonics
- Optical smart networks
- Optical spectrum: Sliceable Optics, shared lambdas
- Increasing Bandwidth in Optical Network: use of additional bands. Higher modulation schemas
- Quantum-based communications
- Advanced QKD Networking
- Entanglement
- Integrated Sensing and Communications (ISAC)
- Native integration of diverse ICT resources, including AI/ML capabilities, at both infrastructure and platform
- Service function chaining
- Intent-based orchestration frameworks allow tenants to specify high-level intents (e.g., performance, security, sustainability goals)
- Core Network Evolution

#### •Industrial features of 5G and beyond

- •Time Sensitive Networks
- Precision Positioning incl. ISAC
- Private Networks
- •More Indoor techs like Terahertz, Visible Light Coms,
- •Non-3GPP convergence (like Wi-Fi, Industrial Networks Standards...
- Tera scale Internet of Things (IoT)

#### Macro/Micro Grids' concepts related technologies adapted to ICT as it exists for Energy

- Full end-to-end Slicing of physical networks and infrastructures (see Smarter Networks)
- Cyber-security
- Quantum QKD
- AI/ML & Big Data Real Time Analytics based Security
- Reinforcement of Sovereignty
- Cvber-attack-based Disaster recovery
- Trust enablers
- Security
- Auditability
- Transparency

#### • SAT enabled 5G/B5G/6G

- Moving ICT to SAT
- RAN in SAT (D2D/Space-RAN)
- CORE in SAT (Space-CORE?)
- MBH in SAT (Space-Mobile
- Value Added Services in SAT
- Earth Meshed Network (including) Oceans)
- SAT to Ground
- SAT to Sea

- Combining Observation modalities with Network info
- Avionics communications
- Air to Ground

- MEC in SAT (Space-Edge Dc?)
- Backhaul?)

- SAT to Air Objects & IOTs
- SAT to SAT
- => SAT to All
- Multimodal SATs
- Combining GPS info with Network info
- Air to Air
- Drones / HAPS
- Balloons?

- Deeper "edge-ification" for Distributed, collaborative and hierarchical AI/ML
- Al-native Networks
- Distributed AI/ML
- Consuming
- Producina Supporting
- More Multi-Purpose Adaptable Networks:
- Universal adaptive core
- Programmable network Operating System
- Advanced very large-scale monitoring (for AI, ML, Dl...)
- Intelligent and Automated Dynamic Spectrum Management:
- Electro-magnetic Spectrum: Horizontal & Vertical Flexible Sharing CBRS, DSS, LSA, LAA, MultiFire, new enablers...
- Optical spectrum: Sliceable Optics, shared lambdas
- Full Slicing
- Real End-to-End leading to:
- Multi-layered multi-tenancy
- Full neutral hosting
- Multi-Dimensions sliceable (incl. Spectrum and Time)
- Thanks to: Deeper Network Programmability



## Conclusion

Join the CELTIC-NEXT Community and apply to trans-national funding for your next steps of development of your innovations, technologies and products & services, and:

- Get a recognised international label to your innovations
- Don't be restraint to specific limits to your innovation project (bottom-up vs top-down)
- Get a larger visibility for collaboration
- Gain commercialisation channels (mixing Large Industry with SMEs and RTOs) in near-to-market innovation collaborations
- Accelerate your Time-To-Market by increasing your TRLs in a near to market funding scheme
- Collaborate easily outside of Europe (Eureka Network of Countries) with the proven EUREKA Clusters mechanism, extending again your visibility and commercialisation channels



## Thank you for your attention!

#### **Xavier Priem**

**CELTIC-NEXT – Director** 

Mobile: +49 1515 796 2180

Fax: +49 6221 989 209

Email: office@celticnext.eu

Web: <a href="https://www.celticnext.eu">https://www.celticnext.eu</a>





CelticNextEurekaCluster





**CELTIC-NEXT Video Channel** 





## Events to prepare impactful projects:

## **CELTIC-NEXT's**

- Launch Days
- Proposers Days
- Annual Events
- Brokerage platform



## Autumn Call 2025 dates:

- Opening
  01 December 2025
- Launch Event
  01 December 2025
- Proposers Brokerage Day 30 January 2026, Vienna
- Deadline for proposals24 April 2026
- Label notification
  June 2026

https://www.celticnext.eu/proposers-days/ https://www.celticnext.eu/call-calendar/ https://www.celticnext.eu/brokerage-tool/





## 2026 Proposers' Brokerage Days: 3 important moments during those days











https://www.celticnext.eu/proposers-brokerage-day-30-january-2026-in-vienna/



## Spring Call 2026 – Proposers' Brokerage Day



# International collaborative ICT R&D&I instrument

## Why CELTIC-NEXT?

- Fastest responding international collaborative ∑EUREKA ICT R&D&I program
- Allows topical and timely "bottom-up" proposals to reflect industry needs
- Matches Industry needs with National Priorities
- Can orchestrate large-scale initiatives like flagships (comparable to IPCEIs) when needed
- Provides brokerage service and events to help find projects and partners
- Provides project management tools, reviews, and help with promotion

### Brokerage Tools:

