# An introduction to CELTIC-NEXT, the Eureka ICT 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!

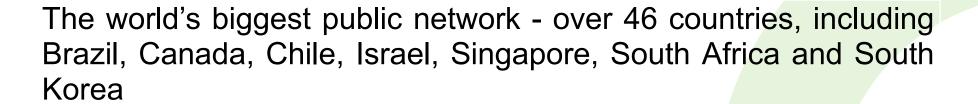




Autumn Call 2025, Online Launch Event, 17 July 2025

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: <a href="https://www.eurekanetwork.org/">www.eurekanetwork.org/</a>

## Since 1985 (40 years!):

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





## Eureka programmes





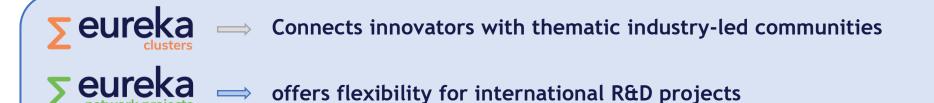
drives companies towards private investment or strategic partnerships



eases access to the EIC Accelerator











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

Call-based projects cohort: 2015-2024



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

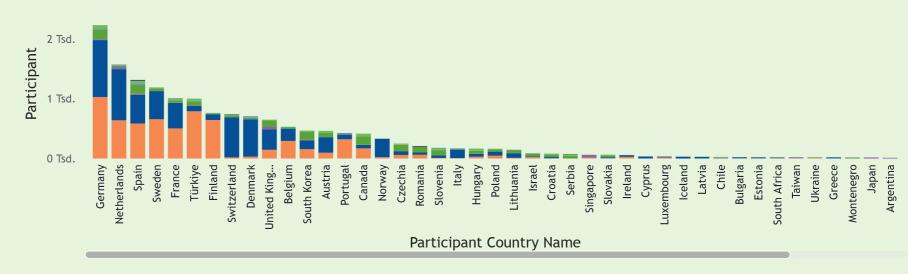
Instruments ● Cluster ● Eurostars ● Globalstars ● Individual projects ● InnowWide ● Network ● Umbrella

15.884 Total participants

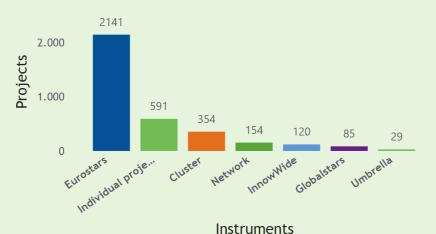
3.466 Total projects

Total public-private invested (mio Eur)

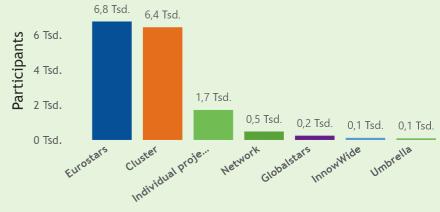
Total countries



#### **Projects by Programme**



#### Participants by Programme



Instruments

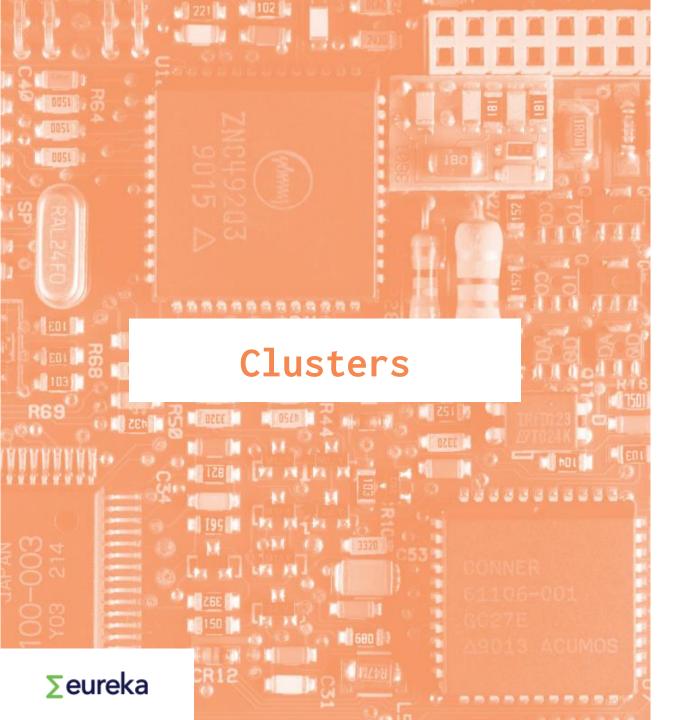












- Industry-led communities
   consisting of leading companies,
   knowledge institutes and end-user organisations
- Strategic technology areas
- Market-oriented, aiming to solve economic, technological and societal challenges
- Large mid-sized projects



## Who is CELTIC-NEXT?





**Seureka Cluster** 

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 joining efforts to enable a secured, trusted, and sustainable digital society.

\*Eureka Clusters Program, launched on 17/6/2021 and renewed 13/6/2025 for the 7 years, CELTIC-NEXT was launched earlier in 2003

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



in the European Funding

Landscape

European Community Programmes



National Programmes

Develop & Maintain Critical Mass & Differentiation

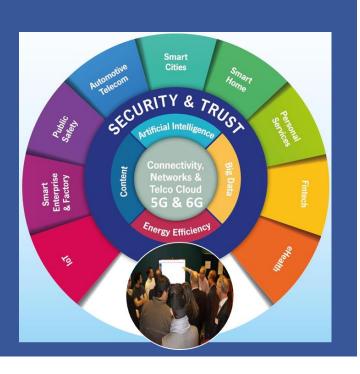








# Overview, mission & vision



#### About CELTIC-NEXT since 2003:

- <u>The ICT Cluster under ΣEUREKA</u> (since 2003 and member of ECP since 2021), focused on Next-Generation Communications for the <u>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 **10** 



#### Key Numbers (2024):

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

	€	<b>M</b>	444	•			€	4		ii\
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 since 2003

#### 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



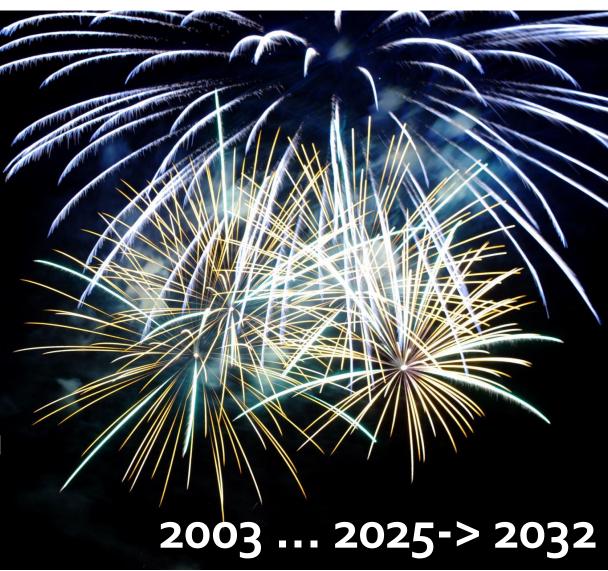
London, 18/09/2024: CELTIC-NEXT Proposers' Brokerage Day at Digital Catapult



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.

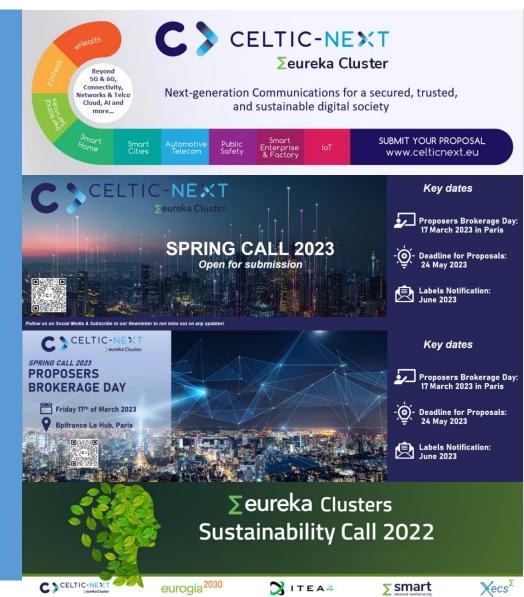




## What CELTIC-NEXT does ...

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?"





# CELTIC-NEXT Services & Fees

- O The CELTIC-NEXT Office is responsible for the day-to-day management of the CELTIC-NEXT cluster programme.
- It organises regular CELTIC-NEXT events and Proposers Brokerage Days, at least twice a year.
- O It organises the calls for project proposals, the proposals' evaluation, the labelling, and the project reviews.
- O It also provides professional guidance, coaching and mentoring to proposers, projects, and interested communities.
- O The Office provides a flexible project coaching process where participants can adapt their project plan, consortium and other aspects agilely, using CELTIC-NEXT's Project Change Requests mechanism. This enables consortia to adapt to internal and external circumstances.
- Finally, CELTIC-NEXT provides a panel of IT tools for project management, collaboration and dissemination.

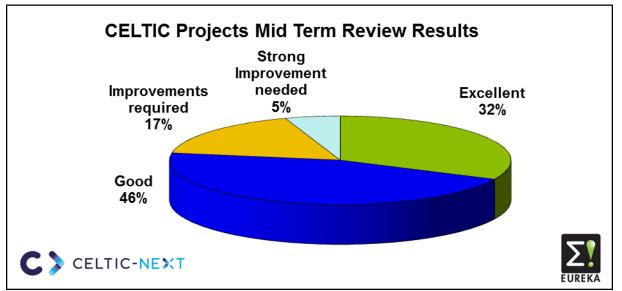


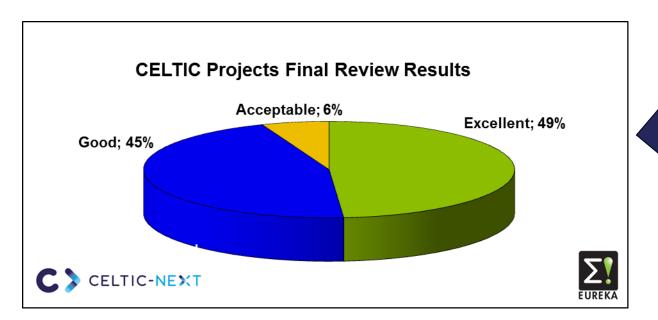
Recommendations

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.







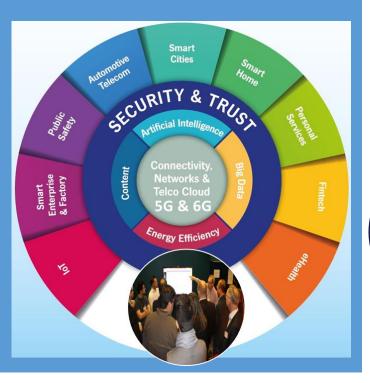
# CELTIC-NEXT Services & Fees

- 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.

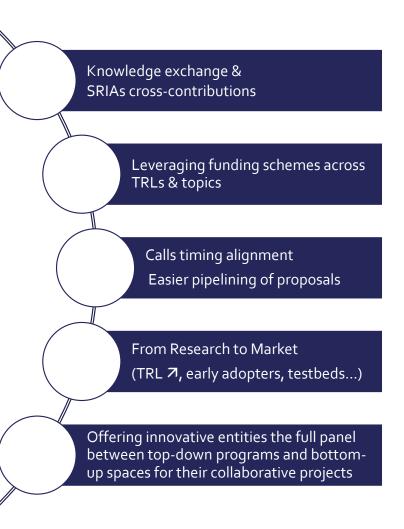
Innovation drives progress.

Impact is our measure of success.



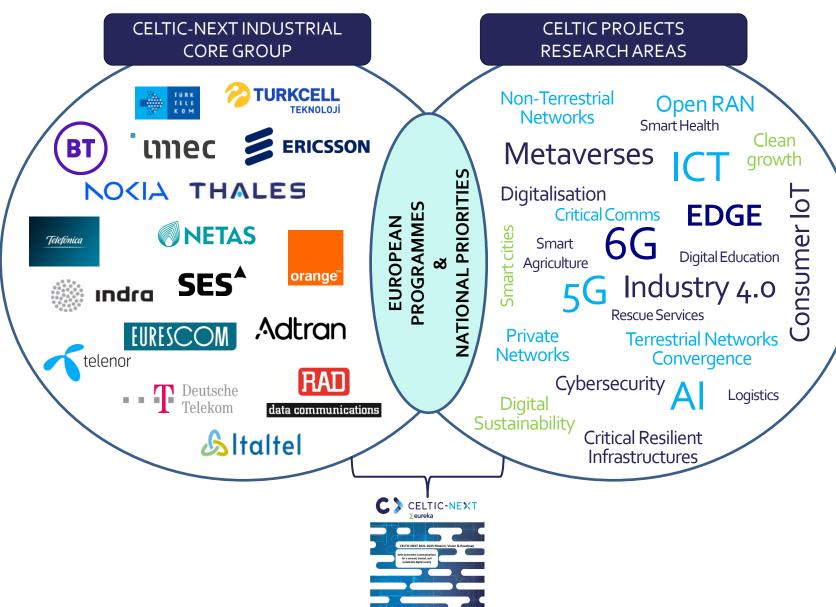








Collaborative
Strategic
Roadmap &
Innovation
Agenda



### **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

CELTIC-NEXT

- 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

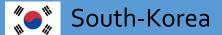


















and potentially more countries in the future...





## Autumn Call 2025 officially supporting countries\*

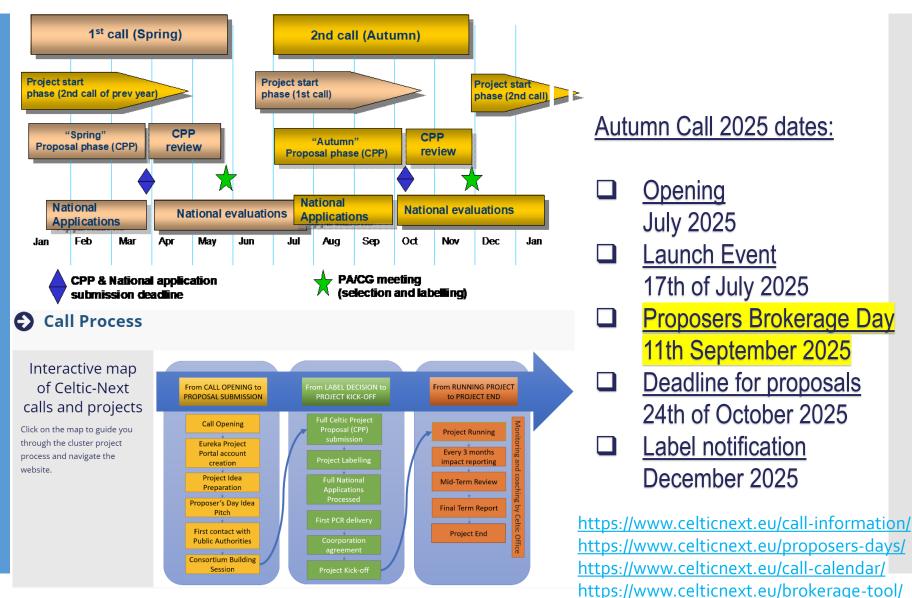


\* In addition to those, Chile is supporting this call. Some other countries may also assist, but on a case-by-case basis. This needs to be checked before the application is submitted to CELTIC-NEXT. Contact details are available on our website.



## Call process and timelines

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



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





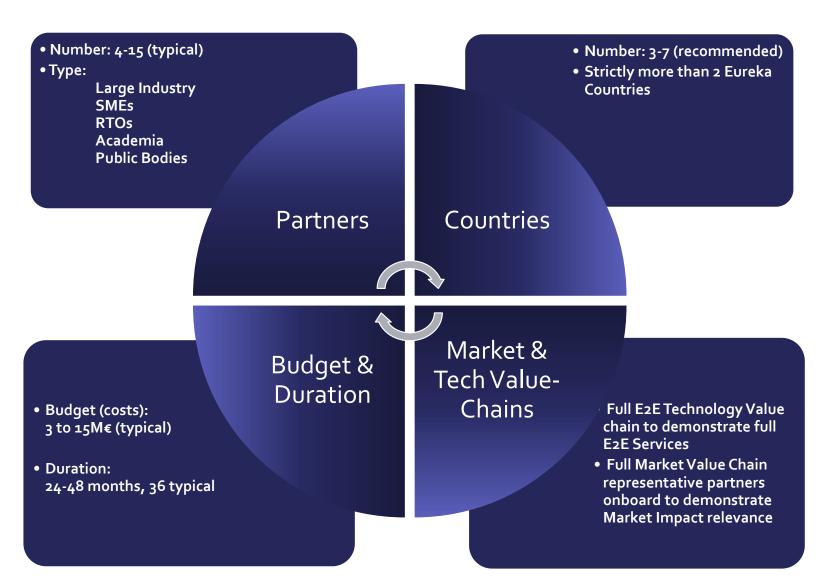
Important: please contact the Public Authorities before Projects submission:

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







As usual, Proposals that address any of the topics of the CELTIC Strategic Roadmap in this bottom-up call are welcomed



https://www.celticnext.eu/strategic-roadmap/



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

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

- Digital divide elimination
- 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 support for Education and Remote Education
- Digital (Media, Gaming, Sports, Culture and Entertainment)
- Remote working and Nomadic Working (Digital Nomads)

## Full industrial digitization and support of vertical industries

- Digital Enterprises
- Private Networks for Smart Manufacturing (Indus. 4.0)
- 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

#### 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 •Urban, sub-urban down to •In "normality"

- rural
- •Into the home for education and remote working
- One Identity for seamless experience
- Smart Regions/Cities/Buildings/Ho mes

## people seamless mobility

- •In "crisis" (pandemics, major climate events)
- Highly Precise Positioning
- Edge Computing
- Open-RAN / vRAN
- Slicing

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

- Extensive Monitoring
- Big Data Analytics
- Artificial Intelligence
- •ICT supporting large and intense Ai/ML deployment for verticals (connectivity, processing, data storage...)
- •Transparency or the Imperceptible latency

#### Protection and Trust

- Cyber-security
- Identity management

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

- Holographic media teleport
- Multi-sense networks
- •Time engineered applications



## Enabling technologies that have to be mastered

#### Beyond 5G, from 5G to 6G

- 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
- Advanced QKD Networking
- 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 communications
- QKD
- Entanglement

#### Wired and Wireless Industrial ICT

- •Industrial features of 5G and beyond
- •Time Sensitive Networks
- Precision Positionina
- Private Networks
- •More Indoor techs like Terahertz, Visible Light Coms,
- •Non-3GPP convergence (like Wi-Fi, Industry Net Standards...)

Tera scale Internet of Things (IoT)

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

- 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
- Cyber-attack based Disaster recovery
- Trust enablers
- Security
- Auditability
- Transparency

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

- SAT enabled 5G/B5G/6G
- Moving ICT to SAT
- RAN in SAT (Space-RAN?)
- CORE in SAT (Space-CORE?)
- MEC in SAT (Space-Edge Dc?)
- MBH in SAT (Space-Mobile Backhaul?)
- Value Added Services in SAT
- Earth Meshed Network (including) Oceans)
- SAT to Ground
- SAT to Sea
- SAT to Air Objects & IOTs
- SAT to SAT
- •=> SAT to All
- Multimodal SATs
- Combining GPS info with Network info
- Combining Observation modalities with Network info
- Avionics communications
- Air to Ground
- Air to Air
- Drones / HAPS
- Balloons?

## Distributed & Smarter

- Deeper "edge-ification" for Distributed, collaborative and hierarchical AI/ML

Networks

- More Multi-Purpose Adaptable Networks:
- Universal adaptive core
- Programmable network Operating System
- Advanced very large-scale monitoring (for AI, ML, Dl...)
- Distributed AI/ML
- Consuming
- Producing
- Supporting 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 .



## 2025 additional topics:



#### In addition to the SRIA large coverage, following topics are welcomed by PAs:

Digitalisation of the Economy thanks to Information & Communications Technologies

Clean Growth & Sustainability

Remote Health & Care

ICT for Industry 4.0 & 5.0 and Logistics

Consumer IoT, Industry IOT

**ICT Technologies for METAVERSES** 

Private Networks (including Industrial & leisure)

Critical Coms for Emergency & Rescue Services

Non-Terrestrial-Networks and Terrestrial Networks convergence

**Critical Resilient Infrastructures & Cybersecurity** 

Open RAN, AI-RAN, EDGE Computing,...

Al support to ICT & Networks, and, ICT & Networks support to Al applications,

and 5G Advanced and 6G topics (sensing, location, cloud continuum, Core evolution...)



## 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
  July 2025
- Launch Event 17th of July 2025
- Proposers Brokerage Day11th September 2025
- Deadline for proposals24th of October 2025
- Label notification
  December 2025

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





## 2025 Proposers' Brokerage Days: 3 important moments during those days



#### CONFERENCE

The Conference part organised in the morning will be the perfect occasion to learn more about the Public Authorities funding schemes and priorities, as well as the process of CELTIC Calls!

Keynote speakers will also present about innovative and cutting-edge ICT topics.









**CELTICNEXT.EU** 





<u>Proposers Brokerage Day on 11 September 2025 in Aveiro, Portugal – CELTIC-NEXT</u>



## Autumn Call 2025 – 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:

