

# An introduction to the ICT cluster for a secured digital society



The ICT Σ eureka cluster for **next-generation communications** is celebrating **21** years of **successful innovative projects!**



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# CELTIC-NEXT

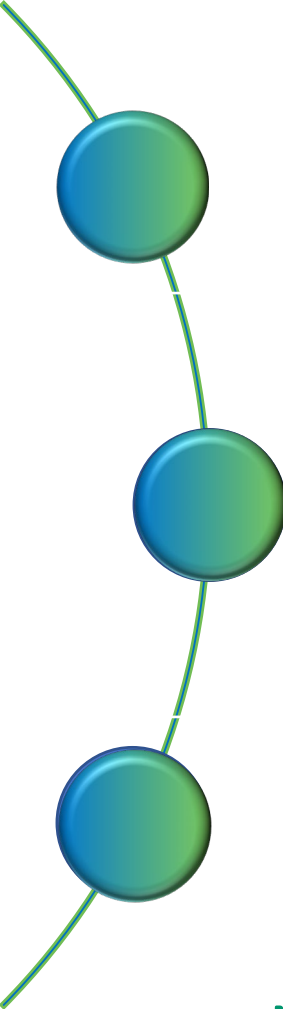
Σeureka Cluster

Spring Call 2025, Online Launch Event, 14 January 2025

Xavier Priem, CELTIC-NEXT Director



# Eureka



The world's biggest public network - over 45 countries also including Canada, Chile, Israel, Singapore, South Africa and South Korea

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/](http://www.eurekanetwork.org/)

## Since 1985:

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







# Clusters

- 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

## Who is CELTIC-NEXT?



[www.celticnext.eu](http://www.celticnext.eu)



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 secured, trusted, and sustainable digital society.

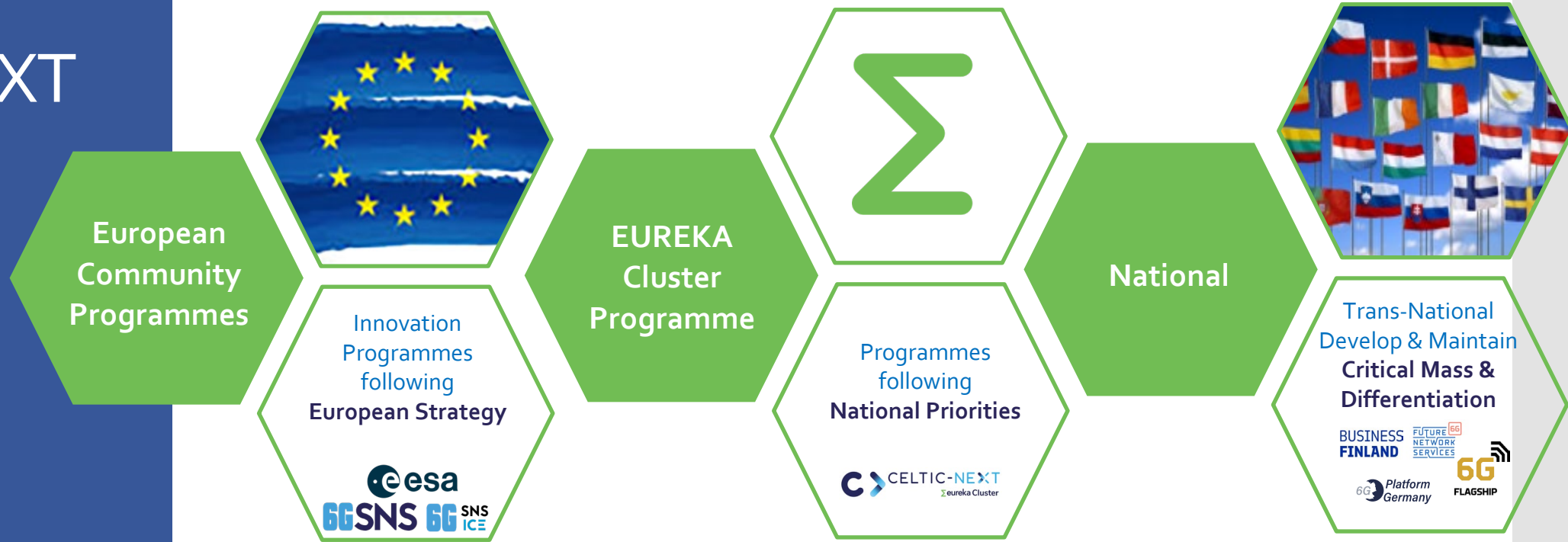
\*Eureka Clusters Program, launched on 17/6/2021, CELTIC-NEXT was launched earlier in 2003

\*Eureka Clusters Program, launched on 17/6/2021

\*\* Information & Communications Technologies

\*\*\* Research, Development & Innovation

# CELTIC-NEXT in the European Funding Landscape



# Overview, mission & vision



## About CELTIC-NEXT since 2003:

- The ICT Cluster under ΣEUREKA (since 2003 and member of ECP since 2021), focused on Next-Generation Communications for the **Digital Society**
- Community of **1150+ 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**.

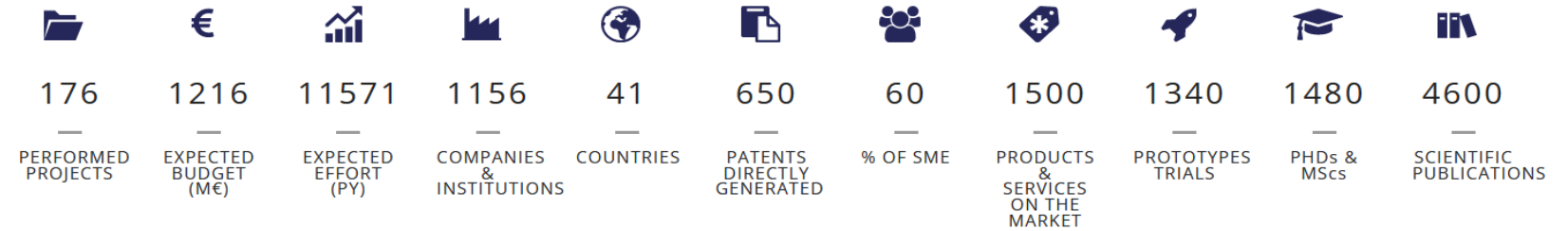
## The mission & vision of CELTIC-NEXT is to:

- Foster ΣEUREKA **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



# Achievements since 2003

## Key Numbers:



## Key last events:

Berlin, 4/07/2024:  
 CELTIC-NEXT Awards Ceremony at the 6G Berlin Conference



Berlin, 4/07/2024:  
 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, 17/03/2024:  
 CELTIC-NEXT Proposers' Brokerage Day at BPIFrance Le Hub



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

# 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**  
eureka Cluster

Next-generation Communications for a secured, trusted, and sustainable digital society

Beyond 5G & 6G, Connectivity, Networks & Telco Cloud, AI and more...

Personal services, FinTech, eHealth, Smart Home, Smart Cities, Automotive Telecom, Public Safety, Smart Enterprise & Factory, IoT

**SUBMIT YOUR PROPOSAL**  
www.celticnext.eu



**CELTIC-NEXT**  
eureka Cluster

**SPRING CALL 2023**  
Open for submission

Follow us on Social Media & Subscribe to our Newsletter to not miss out on any updates!

**Key dates**

- Proposers Brokerage Day: 17 March 2023 in Paris
- Deadline for Proposals: 24 May 2023
- Labels Notification: June 2023



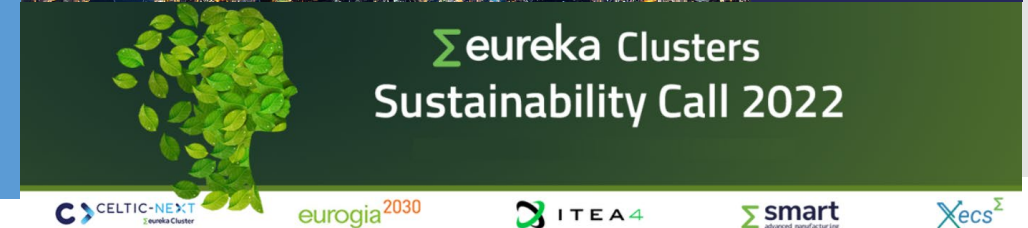
**CELTIC-NEXT**  
eureka Cluster

**SPRING CALL 2023 PROPOSERS BROKERAGE DAY**

Friday 17<sup>th</sup> of March 2023  
Bpifrance Le Hub, Paris

**Key dates**

- Proposers Brokerage Day: 17 March 2023 in Paris
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**eureka Clusters**  
Sustainability Call 2022

**CELTIC-NEXT** eureka Cluster | **eurogia 2030** | **ITEA 4** | **smart** alliance manufacturing | **Xecs**



# CELTIC's Community



with over 1150 community members across 41 countries (Europe & beyond)

CELTIC's Community builds its Mission, Vision & Roadmap



# Innovation Collaboration Impact



## Memorandum of Understanding with 6G-IA signed

**Σ eureka**

On 4th April 2022, Eureka Cluster CELTIC-NEXT and the 6G Smart Networks and Services Industry Association (6G-IA) signed a Memorandum of Understanding (MoU), which aims at establishing synergies and complementary activities in collaborative ICT research. The MoU will help foster economic growth and jobs through coordinated R&D&I activities and the operational exploitation of generated results. The collaboration aims to leverage the complementarity of 6G-IA and CELTIC-NEXT and build on synergies to maximise the return on investment and to support achieving the UN Sustainable Development Goals.

ICT has become, more than ever, a pillar of sovereignty and resiliency in the rapidly changing social, political and economic environment of today and to regional territories. The business opportunities as well as the measures against the COVID-19 pandemic have shown how critical it is to count on both terrestrial and non-terrestrial ICT services, as together they constitute one of the critical infrastructures of a country, especially considering the digitalisation of the society and the smart industries.

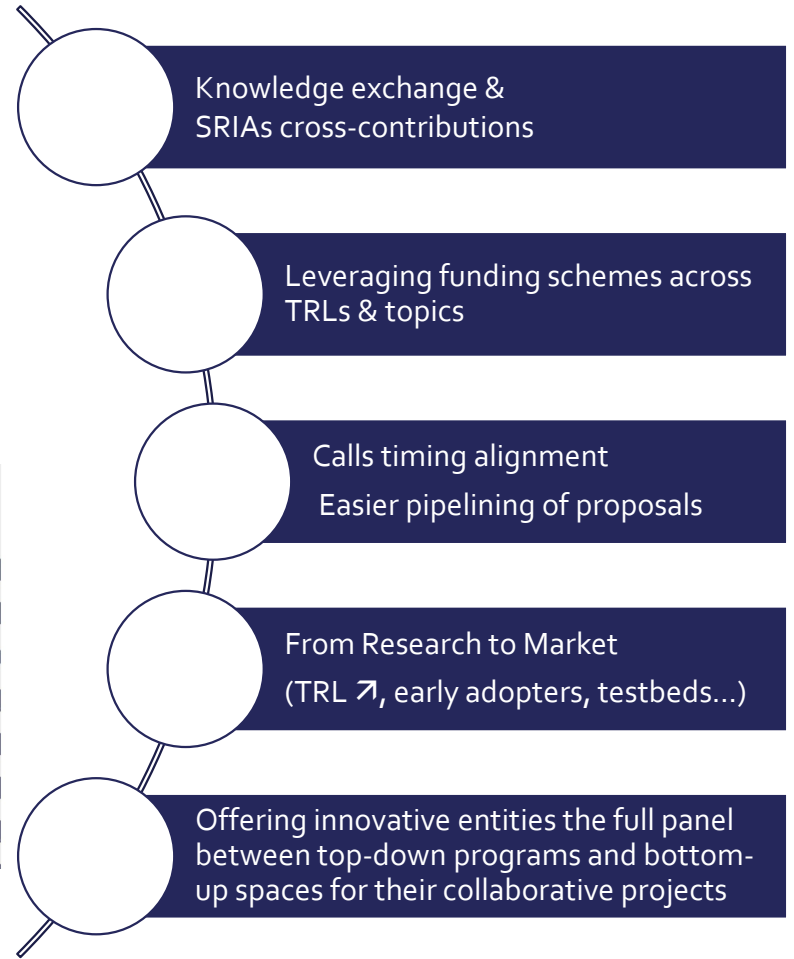
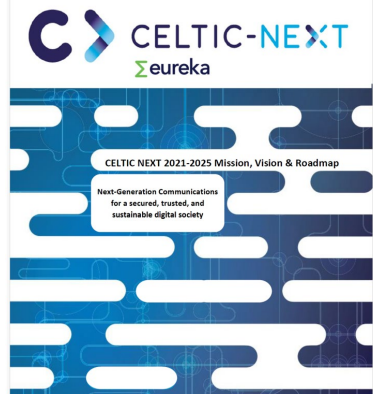
Therefore, it is mandatory to increase and leverage to its maximum the European and allied countries' funding to reach a critical mass of R&D&I and foster the market for the European countries and their other ICT industry.



**How the MoU will be implemented**

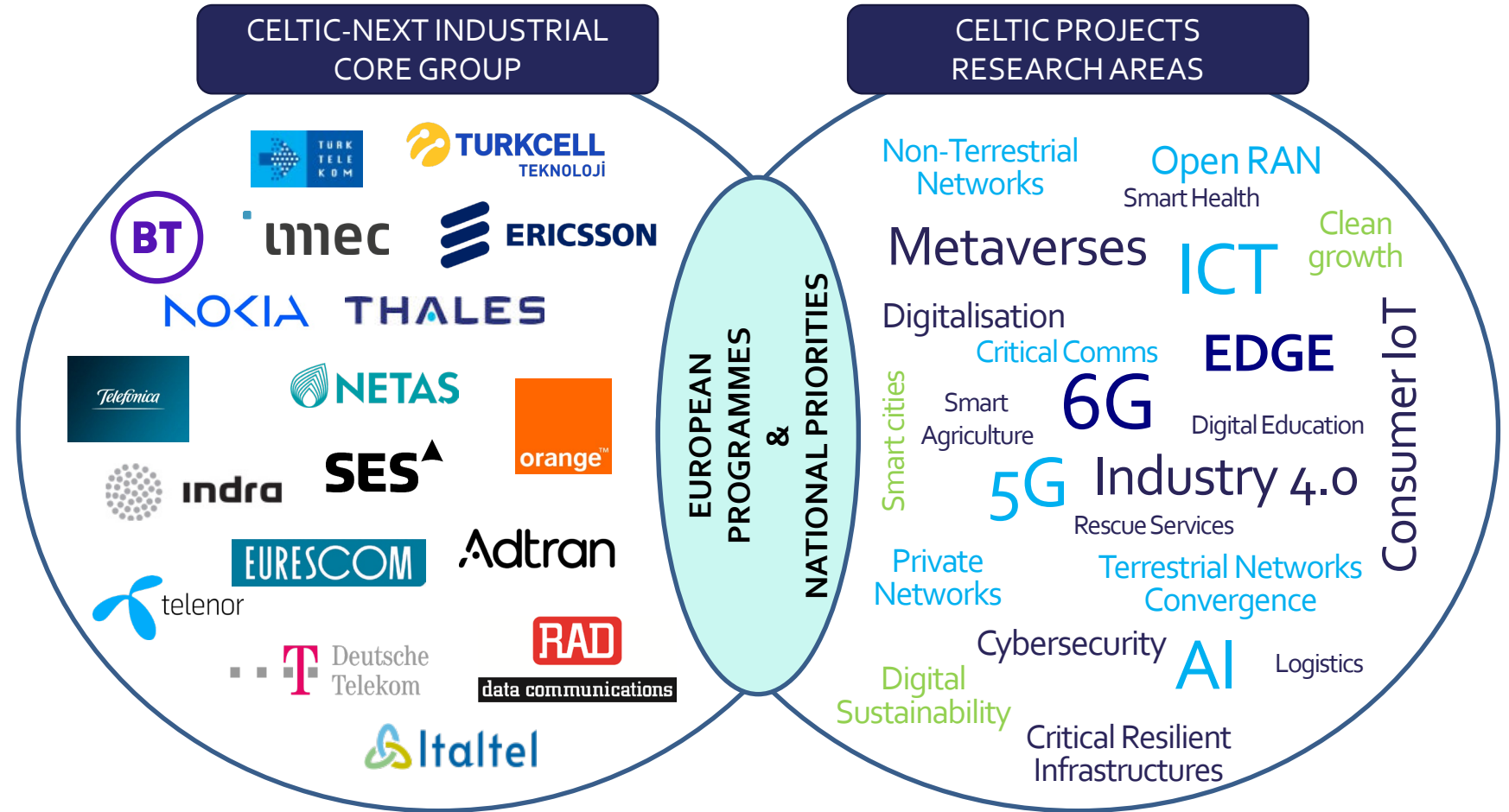
To support the achievement of their common objectives, the signatories intend to:

- >Create awareness and promote opportunities for collaboration within and across the respective communities
- >Consult internally on their STRAs
- >Collaborate on the organization and execution of activities with a view to reaching the common objectives identified
- >Participate in and support suitable events organized by the other signatory
- >Plan and manage joint activities in areas of common interest in line with the signatories' respective legal frameworks
- >Undertake joint communication, as appropriate.





# Strategic Roadmap & Key research Areas



# 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'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

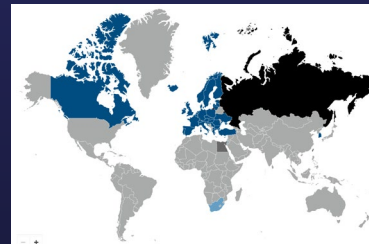
# FOR YOUR SUCCESS



CELTIC-NEXT  
Eureka Cluster

By participating, you will get

- The award of an 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



Expectable benefits for you

- 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



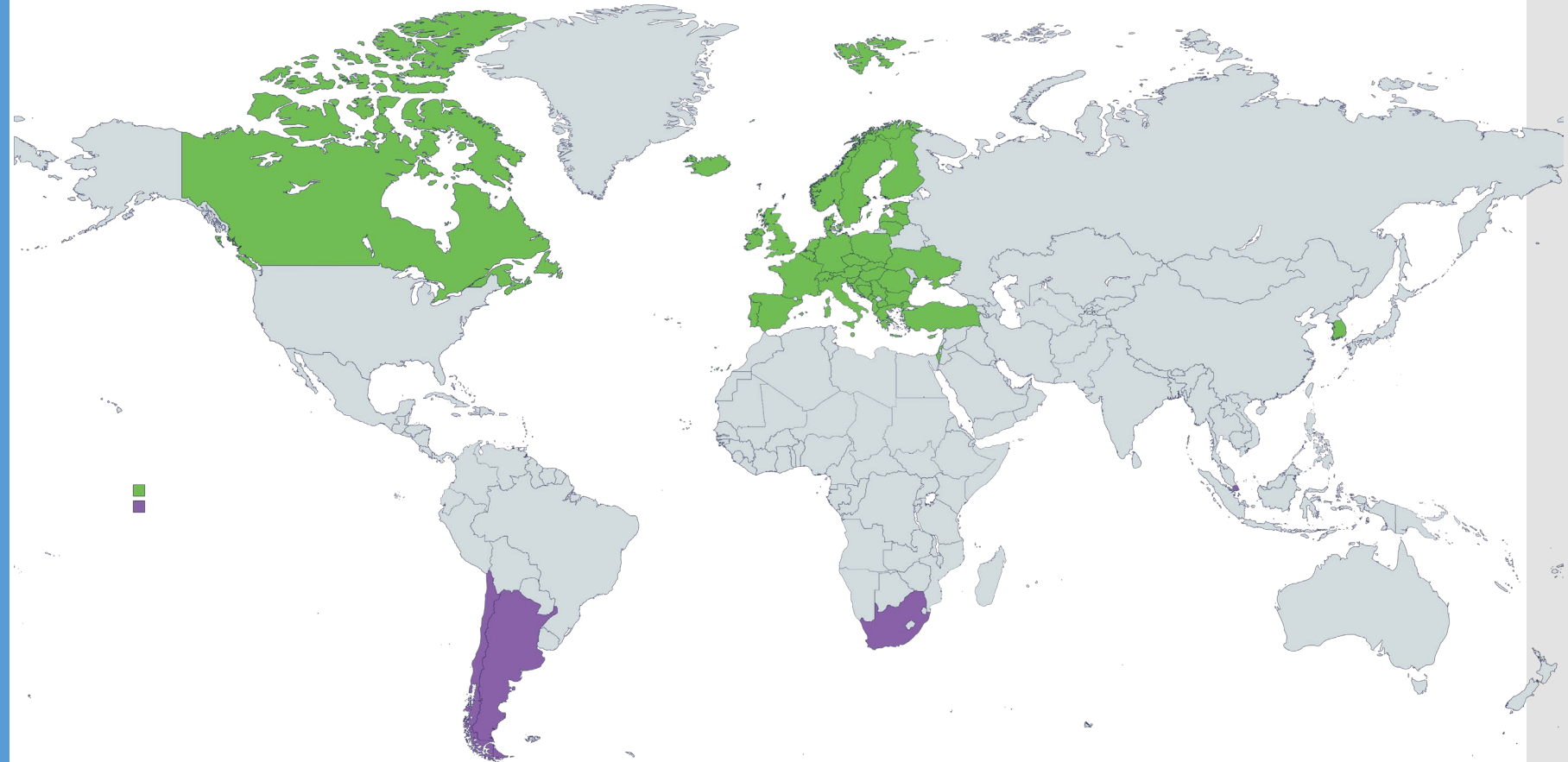
Your opportunities are

- 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 lead 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

# Opportunities to collaborate globally

-  Europe (large)
-  UK
-  Canada
-  Chile
-  South-Korea
-  South-Africa
-  Singapore
-  Brazil

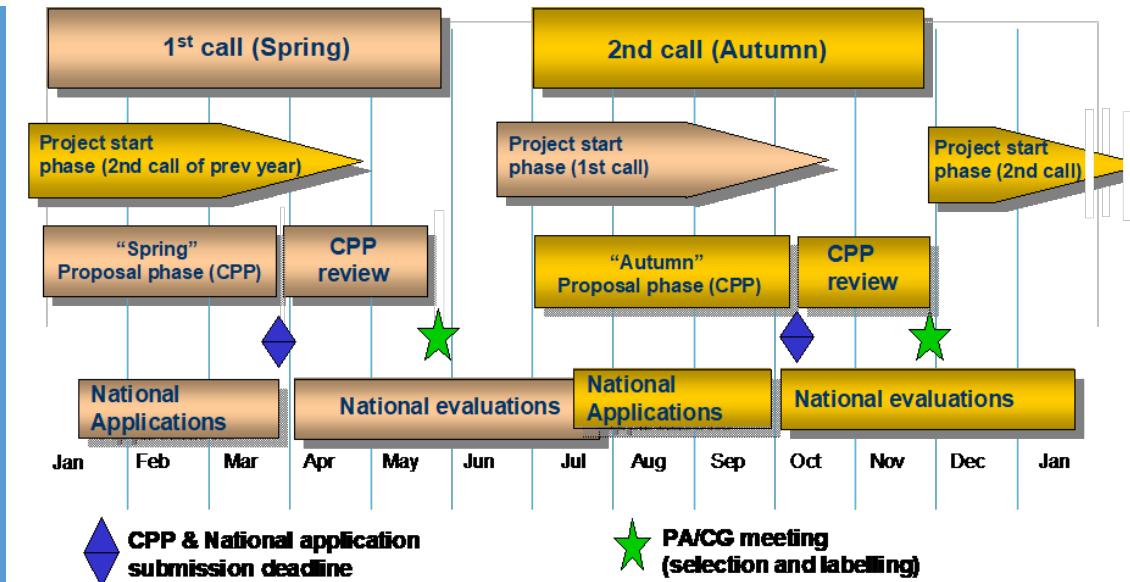
And potentially more countries in the future...





# Call process and timelines

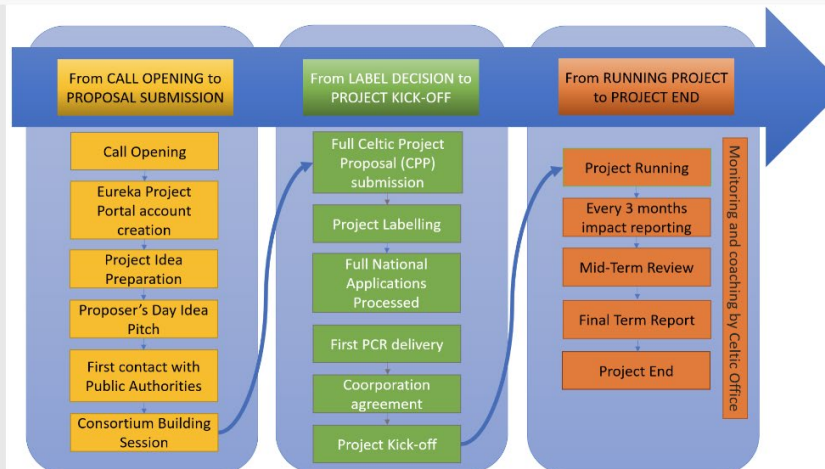
CELTIC offers 2 bottom-up calls per year and additional flagship calls



## Call Process

Interactive map of Celtic-Next calls and projects

Click on the map to guide you through the cluster project process and navigate the website.



## Spring Call 2025 dates:

- Opening  
January 2025
- Launch Event  
15th of January 2025
- Proposers Brokerage Day  
24th February 2025
- Deadline for proposals  
25th of April 2025
- Labels notification  
June 2025

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



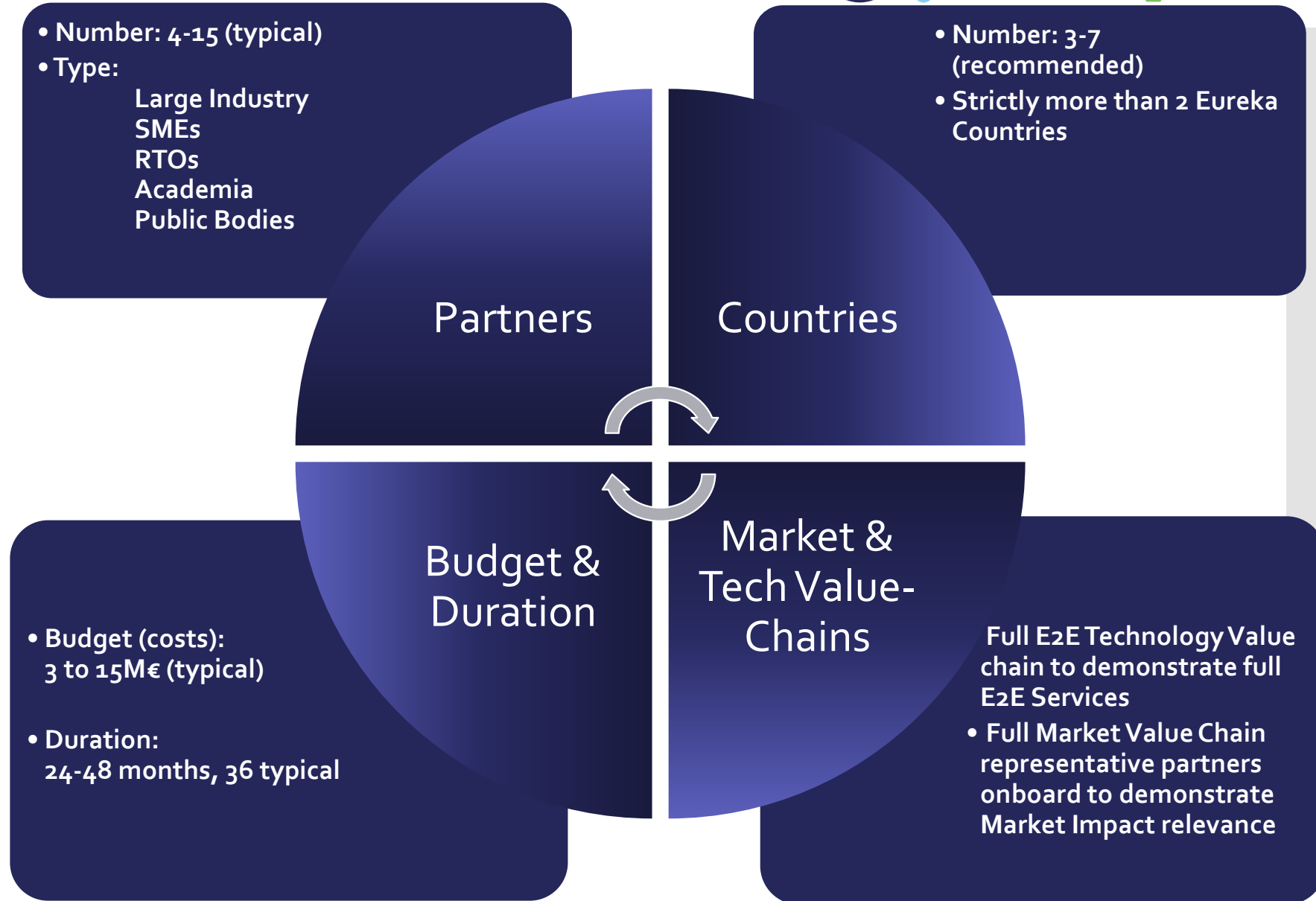
**Important: please contact the Public Authorities before Projects submission:**

<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**

<https://www.celticnext.eu/call-information/>

# 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 AI 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

Ubiquity / Pervasiveness	Dynamic capacity following people seamless mobility	Automation, Reliability, Transparency: Cognitive operations	Protection and Trust	Holographic "transportation" & Real-time Synchronous Digital Twin
<ul style="list-style-type: none"> <li>•Urban, sub-urban down to rural</li> <li>•Into the home for education and remote working</li> <li>•One Identity for seamless experience</li> <li>•Smart Regions/Cities/Buildings/Homes</li> </ul>	<ul style="list-style-type: none"> <li>•In "normality"</li> <li>•In "crisis" (pandemics, major climate events)</li> <li>•Highly Precise Positioning</li> <li>•Edge Computing</li> <li>•Open-RAN / vRAN</li> <li>•Slicing</li> </ul>	<ul style="list-style-type: none"> <li>•Extensive Monitoring</li> <li>•Big Data Analytics</li> <li>•Artificial Intelligence</li> <li>•ICT supporting large and intense Ai/ML deployment for verticals (connectivity, processing, data storage...)</li> <li>•Transparency or the Imperceptible latency</li> </ul>	<ul style="list-style-type: none"> <li>•Cyber-security</li> <li>•Identity management</li> </ul>	<ul style="list-style-type: none"> <li>•Holographic media teleport</li> <li>•Multi-sense networks</li> <li>•Time engineered applications</li> </ul>

# 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 Positioning
  - 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 Networks

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

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

**Digitalization of the Economy thanks to Information & Communications Technologies**

**Clean Growth & Sustainability**

**Remote Health & Care**

**ICT for Industry 4.0 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, EDGE Computing,**

**AI for ICT & Networks (including Radio Massive MIMO, Open-RAN RICs, AI-RAN...)**

**and 5G Advanced and 6G topics (sensing, location, ...)**

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



## 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 limit 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

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CelticNextEurekaCluster



@CelticNext



CELTIC-NEXT Video Channel



# Events to prepare impactful projects:

## CELTIC-NEXT's

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



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<https://www.celticnext.eu/brokerage-tool/>

Start informing yourselves,  
use the Brokerage Tool

Pitch your original idea,  
meet potential partners!

Pitch your matured idea,  
meet additional partners!





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



SPRING CALL 2023  
 PROPOSERS' BROKERAGE DAY

## 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.

Hybrid registration both open for FREE! - only 100 places in-person



Bpifrance Le Hub, Paris

Friday 17 March 2023

CELTICNEXT.EU



SPRING CALL 2023  
 PROPOSERS' BROKERAGE DAY

## PITCHING SESSION

The Pitching Session organised in the afternoon is the perfect opportunity to give your new project idea the best visibility to recruit additional consortium partners and to prepare a full project proposal for the upcoming CELTIC Calls!

Please send your new project idea pitch presentation using the given PPT template by the **6th of March** to [event@celticnext.eu](mailto:event@celticnext.eu).

Presentations can not exceed 6 minutes & have to be in-person.

Hybrid registration both open for FREE! - only 100 places in-person



Bpifrance Le Hub, Paris

Friday 17 March 2023

CELTICNEXT.EU



SPRING CALL 2023  
 PROPOSERS' BROKERAGE DAY

## BROKERAGE & NETWORKING FORUM

The brokerage and networking forum session organised in the afternoon will be the perfect occasion to discuss with public authorities, interested proposers, and to build your consortium and consolidate your preparations for applying to CELTIC Calls!

Proposal writing support will also be offered by the CELTIC Director and the office team.

Hybrid registration both open for FREE! - only 100 places in-person



Bpifrance Le Hub, Paris

Friday 17 March 2023

CELTICNEXT.EU



<https://www.celticnext.eu/celtic-brokerage-event-spring-call-2025/>



# International collaborative ICT R&D&I instrument

## Why CELTIC-NEXT?

- Fastest responding international collaborative **ΣEUREKA 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:

