# EUREKA CELTIC Cluster (Spring Call)

# Innovate UK CELTIC Competition 2019 (Collaborative R&D)

# Scope (Advance Notice)

## Introduction

The document provides guidance on the scope of the planned Innovate UK CELTIC collaborative R&D competition. The aim of this competition is to stimulate the development of 5G and support the participation of UK organisations to the [EUREKA CELTIC Cluster Call](#) that is due to close on 8th April 2019.

EUREKA is an intergovernmental organisation for pan-European research and development funding and coordination. EUREKA's clusters are long-term strategic industrial initiatives, CELTIC is the cluster dealing with telecommunications and CELTIC-NEXT is the programme of the CELTIC cluster for the next eight years (2019-2026).[1]

Businesses intending to make CELTIC-NEXT proposals and apply for Innovate UK funding through the planned competition must ensure that their CELTIC proposals are in line with the scope outlined in this document.

Further details on the planned Innovate UK CELTIC competition will be published in March 2019, and an opportunity to present and discuss CELTIC proposals and form consortia will be at the CELTIC Proposers Day in London on 5th February 2019.

## Background

The fifth generation mobile communication system (5G) is a set of mobile and wireless communication technologies underpinning the digital economy of the 2020's and beyond. 5G is often described as a network of networks that seamlessly integrates terrestrial and satellite, as well as fixed and mobile communications.

To offer users communication speeds measured in Giga bits per seconds and latencies rated in single digit milliseconds, as well as offering massive scale access, 5G will increasingly disaggregate software and hardware, and the network fabric will make extensive use of virtualisation and edge clouds to deliver features such as network slicing to provide multiple virtual networks from a single physical infrastructure. This level of complexity will require a completely different approach to provisioning and monitoring the network, with AI and automation performing a critical role in its management.

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[1] The scope of the Celtic-Next programme can be downloaded at URL
[https://bscw.celticplus.eu/pub/bscw.cgi/d27676/Celtic-Next-Scope-and-Research-Area.pdf](https://bscw.celticplus.eu/pub/bscw.cgi/d27676/Celtic-Next-Scope-and-Research-Area.pdf)

## Scope of the competition

We are seeking proposals to develop:

1. Innovative 5G infrastructure technologies, and in particular technologies that focus on:

   - AI in network operation (cognitive/zero touch operation, intent-based networking, automated service instantiation, agile provisioning/scaling, auto-resiliency and automated customer service)

   - Multi-access Edge Computing (content distribution, location services, neutral hosting, analytics…)

2. Applications and services that leverage 5G networks to offer novel or improved user experience in vertical sectors, as well as the development of 5G features in satellite networks or 5G applications and services integrating satellites. These projects will also be expected to consider the security aspects of such applications and services. We are particularly interested in projects related to:

   - Internet of Things – narrow to broadband cellular IoT dealing with the massive deployment of connected objects or their deployment in rural areas and industrial settings

   - Tactile Internet - haptic feedback across a wide area network, for instance in industrial applications or the health sector

   - Mission-critical applications that require a high level of reliability and resilience

   - Infotainment mobile services – use of advanced media mobile streaming and broadcast services (4K/8K, 360, 3D, holographic/volumetric transmission…)

   - Immersive content in industrial environments – AR/VR/MR applications for factories or warehouses, or field services

The scope of this competition is deliberately broad to ensure industry-wide interest in this competition. If you would like to submit a proposal under a theme not identified in this document (but that is within the wider scope of the CELTIC-NEXT call, you should contact us for advice prior to applying to this competition

Projects will be expected to be classified as either industrial research or experimental development.

**Out of scope**

In this competition we will not be funding projects that deal with Connected and Autonomous Vehicles (CAV). By that, we mean road vehicles. In other words, we are not excluding rail or other forms of transport.

**Portfolio approach**

We reserve the right to take a portfolio approach when selecting eligible applications in order to spread funding across several topics.