ESA Issues Call to Demonstrate Positioning and Timing Capabilities of 5G Networks

ESA has launched a call for proposals to demonstrate the capabilities of new 5G cellular networks to support positioning and timing applications to complement satellite navigation, just as today's smartphones harness cellular data to support their positioning services.

It is well known that the coming of 5G will bring higher speed, larger traffic capacity and ultra low-latency (or signal delay) communications. But 5G will also usher in a range of new possibilities for positioning, navigation and timing (PNT). The various PNT 5G use cases will be presented during an information webinar on 21 October.

Urban canyons

The 5G networks will allow new types of measurements made possible by advanced antennas and by new positioning signals at higher frequencies, at both base stations and the user receivers. 5G networks will also bring enhanced connectivity to improve cloud-based positioning applications and value-added services.

While satellite navigation works optimally in outdoor environments with a wide view of the sky, 5G PNT has the potential to bring PNT to deep 'urban canyons' in high-rise city centres and even indoor warehouses, wherever 5G networks are deployed.

The combination of satellite navigation and 5G brings the promise of high performance, secure and resilient PNT services, as well as a seamless application of PNT applications from outdoor to indoor environments and from rural to urban areas.

Innovative navigation technology

With ESA's new call for ideas, the Agency is inviting proposals to implement pilot projects to demonstrate the viability of 5G PNT solutions in a number of use cases:

- Indoor PNT for 'Industry 4.0', as needed to support the operations of smart warehouses and factories or smart city applications requiring transition from indoor to outdoor environments

- Outdoor applications where a robust back-up to satellite navigation is essential to meet safety requirements, such as autonomous driving or drone navigation

- Applications where robust time and frequency synchronization is necessary, both in outdoor as well as indoor environments, like smart energy grids or the 5G networks themselves.

This call for ideas is supported through ESA's Navigation Innovation and Support Programme (NAVISP), working with European industry and academia to develop innovative navigation technology.

To support the call, an information webinar is being held on 21 October, in which the various PNT 5G use cases will be presented by key speakers from each sector. Details of the call and how to apply will also be presented by ESA.

A networking platform has also been established to allow webinar participants and general stakeholders interested in the call to get in touch and discuss possible cooperation. This platform will be kept open during the entire period of the call's duration.

For more information on the call and the agenda of the webinar visit ESA's NAVISP website.

To register for the webinar and the networking platform, click here.