AccelerComm Selected for ESA-Funded Contract Advancing Regenerative 5G Satellite Networks

AccelerComm will support development of one of Europe's first regenerative 5G satellite base stations for Low Earth Orbit networks



ESA's Space for 5G/6G programme aims to integrate satellite and terrestrial networks for global connectivity.

SOUTHAMPTON, HAMPSHIRE, UNITED KINGDOM, September 14, 2026 /EINPresswire.com/ -- AccelerComm, a leading provider of high-performance physical layer solutions for 5G non-terrestrial networks (NTN), today announced its participation in a new European Space Agency (ESA)-funded programme focused on advancing regenerative 5G satellite architectures for Low Earth Orbit (LEO) constellations.

The new initiative is part of the Space for 5G/6G & Sustainable Connectivity programme, within ESA's ARTES (Advanced Research in Telecommunications Systems) programme, which aims to fund and develop innovative satellite technologies that benefit society as a whole. AccelerComm, together with Antwerp Space, will explore how full 5G base station functionality can be deployed directly onboard satellites, moving beyond traditional "bent-pipe" architectures that simply relay signals between users and ground infrastructure. The initiative aims to deliver a regenerative 5G NTN "gNodeB" demonstrator operating at Technology Readiness Level 5 (TRL 5), capable of supporting multiple simultaneous users under realistic satellite channel conditions.

> Regenerative 5G non-terrestrial networks represent one of the most important architectural transitions currently underway in satellite communications"
>
> *David Helfgott, CEO of AccelerComm*

AccelerComm will contribute its highly optimized physical layer (PHY) technology to the activity

“Processor Technology for Direct Satellite-to-Device, 5G/6G Communications”, providing the Layer 1 processing capabilities required to enable power-efficient, standards-aligned 5G connectivity in space-based environments.



A satellite in Low Earth Orbit. AccelerComm will help develop regenerative 5G base station technology.

“Regenerative NTN represents one of the most important architectural transitions currently underway in satellite communications,” said David Helfgott, CEO of AccelerComm. “Instead of satellites acting purely as transparent relays, the industry is moving towards networks that can process, manage, and optimize connectivity directly in orbit. That creates major advantages in efficiency, flexibility, latency, and scalability, but it also introduces significant technical challenges at the physical layer. ESA’s support for this regenerative satellite demonstrator reflects the growing momentum behind intelligent, fully integrated, standards-based 5G NTN networks.”

The demonstration will incorporate advanced features including dynamic user behaviour, beam hopping, and intelligent power allocation strategies designed to optimize transmission performance across LEO satellite networks. The project is also expected to align with some of the latest 3GPP NTN specifications, supporting the broader industry push toward interoperable satellite and terrestrial 5G infrastructure.

The ESA contract also follows a period of significant momentum for AccelerComm more broadly. In April 2026, the company announced the grant of its 56th international patent, strengthening one of the industry’s most specialized IP portfolios in 5G channel coding and physical layer acceleration technologies for terrestrial and non-terrestrial networks. AccelerComm’s technology is already deployed across more than 300 commercial satellites and integrated into next-generation silicon platforms supporting advanced 5G connectivity.

“This award is an important step for the wider European NTN ecosystem,” said Rodrigo Moraes, Technology Lead and Systems Engineer at Antwerp Space. “ESA is helping accelerate the transition toward regenerative 5G satellite networks that are fully aligned with the future direction of global telecommunications standards. AccelerComm’s expertise in highly efficient physical layer processing makes them a key partner in helping deliver that vision.”

The companies believe the programme could help open the door to future commercial deployments and additional European initiatives involving regenerative NTN, including next-generation sovereign connectivity and defence-related programmes.

About AccelerComm
AccelerComm is a leading provider of high-performance physical layer solutions for 5G Non-Terrestrial Networks (NTN). Experts in specialized Radio Access Networks (RAN) applications, AccelerComm delivers solutions with cutting-edge performance and power efficiency to meet the unique demands of satellite-based 5G networks. The company's portfolio ranges from complete physical layer solutions to customizable signal processing components, implemented on a wide range of next generation silicon, AI Engines, FPGA, SoC and ASIC-ready IP cores including space hardened platforms. AccelerComm's modular approach allows seamless integration based on O-RAN, SCF and 3GPP standards. For more information visit www.accelercomm.com.

About ESA's Space for 5G/6G & Sustainable Connectivity programme
The European Space Agency (ESA) is Europe's gateway to space, coordinating the financial and intellectual resources of its Member States to conduct space programmes and activities. ESA's 'Space for 5G/6G & Sustainable Connectivity' strategic programme line is advancing 5G and 6G technologies to support the digital transformation of Europe by integrating satellite and ground networks. This fusion of terrestrial (TN) and non-terrestrial networks (NTN) will revolutionise how we live, work and communicate in terms of smart mobility, global coverage, security and network resilience. The programme aims to promote the standardisation of seamless global connectivity for various industries and applications, including telemedicine, tele-education, and autonomous vehicles, airplanes and ships.

The flagship ECSAT 5G/6G Hub (UK), developed by CGI with the UK Space Agency, is a centre for innovation and demonstration, tailored to meet the growing demands of stakeholders such as operators, technology and service providers, and applications developers. The ESTEC Telecom 5G/6G Lab (Netherlands) features a variety of testing facilities for TN/NTN and offers a collaborative space for our industry partners. This programme is part of ESA's Advanced Research in Telecommunications Systems (ARTES). Learn more at: Space for 5G/6G & Sustainable Connectivity

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