

3GPP Release 19 (2025) bringing enhancements to NTN with a new band for Broadcast over GEO satellite (BOG) services

3GPP Release 19 (2025) bringing enhancements to Non-Terrestrial Network with a new band for Broadcast over Geosynchronous satellite (BOG) services

SINGAPORE, November 26, 2025 /EINPresswire.com/ -- During the 109th Technical Specification Group (TSG) plenary meeting of the 3GPP (the 3rd Generation Partnership Project) in Beijing, in the working group for 5G NTN, two new Technical Specifications proposed by Astrum Mobile and partners were accepted and approved during the plenary session.

Supported and endorsed by both 3GPP members & industry partners, including (alphabetically) A*STAR (Agency for Science, Technology & Research, Singapore), ABS (Academy of Broadcasting Science, China), Astrum Mobile, , Austrian Broadcasting Corporation (ORS), European Broadcasting Union (EBU), Huawei, OPPO, Qualcomm, Rohde & Schwarz (R&S), Singapore University of Technology & Design (SUTD), Thales, Xiaomi and ZTE, the aforementioned technical specifications were drafted by Qualcomm, Huawei, ZTE and Astrum Mobile.

Technical specification 3GPP Release 19, version 19.1.0 in TS 36.102[1] and TS 36.108[2] designates a new operating band 246 (1467-1492 MHz) for geosynchronous satellite operations in Region 3, Asia Pacific. This completes the harmonization of the existing BSS (broadcasting satellite service) defined in ITU regulatory framework with the 3GPP technical implementation, representing a significant milestone in the vision of advancing the global implementation of anytime, anywhere mobile services.

BOG, defined as 5G Broadcast over Geosynchronous Satellite, officially becomes a new member of the 3GPP NTN (Non-Terrestrial Networks) family. By expanding the 3GPP NTN portfolio to NTN-BOG, NTN-NR and NTN-IoT, not only will NTN services be significantly enriched, but it will also encompass the upcoming 6G integrated air-land-sea-space network transformation.

The acceptance of this technical standard was built upon the successful effort of industry partners in completing the world's first 5G NTN broadcasting over geosynchronous satellite in October 2024 in Singapore[3]. This pilot proof-of-concept received strong support from leading industry and research organizations, including the Astrum Mobile, Qualcomm, 5G-MAG (Media Action Group) ORS, Bitstream, SUTD, and A*STAR.

The technical trial successfully demonstrated multiple NTN service scenarios — including rich media and infotainment services, live television, gaming, OTT data-casting, and emergency alert notifications — across wide-area usage environments such as mobility and in-vehicle, maritime, rural areas, inclement and heavy tropical rain situations reception.

As a global standard, 3GPP brings the global partnerships from service providers, mobile network infrastructure, devices manufacturers, integrated telecom networks, application providers, content originators and end-user who depend on this global standardisation for the access to daily communication needs, including emergency communications. 3GPP Release 19 continues on this vision of seamless ubiquitous connectivity across all locations and conditions.

“Thanks to the collaborative efforts by our partners, this swift harmonization of ITU BSS and the 3GPP NTN band paves the way for ubiquitous rich media content delivery directly from satellite-to-device (S2D),” said Dr. Hui Liu, President and Chief Technology Officer of Astrum Mobile.

“5G NTN technologies, standards and frequency resources are receiving growing attention from governments and international technical organization worldwide. As a component of 5G Non-Terrestrial Networks, 3GPP BOG will markedly boost the efficiency of mass public-information transmission. Its low cost, convenience and wide coverage promise to benefit the billions of people across the Asia-Pacific region, especially for government emergency broadcasting and universal education. It will also give governments a powerful tool for bridging the digital divide among information-poor populations in remote areas, on islands and at sea, advancing social equity,” said Mr. CP Lim, Chief Advisor of Astrum Mobile.

References:

[1] 3GPP, "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception for satellite access (Release 19)," 3GPP TS 36.102, V19.1.0, Sep. 2025. [Online]. Available: https://www.3gpp.org/ftp/Specs/archive/36_series/36.102/36102-j10.zip

[2] 3GPP, "Evolved Universal Terrestrial Radio Access (E-UTRA); Satellite Access Node radio transmission and reception (Release 19)," 3GPP TS 36.108, V19.1.0, Sep. 2025. [Online]. Available: https://www.3gpp.org/ftp/Specs/archive/36_series/36.108/36108-j10.zip

[3] Broadband TV News "Astrum Mobile and Qualcomm trial 5G Broadcast on GEO satellite" November 30, 2024. [Online]. Available: <https://www.broadbandtvnews.com/2024/11/30/astrum-mobile-and-qualcomm-trial-5g-broadcast-on-geo-satellite/> , Jorn Krieger, 2024

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