# First test signal of the third-generation EGNOS system effectively broadcast



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A group from IEEC and the Universitat Autònoma de Barcelona (UAB) has established the algorithm to guide the signals sentout from ground to the EGNOS satellites and broadcast back to EGNOS users.

The business Airbus and Indra, together with the Universitat Autònoma de Barcelona (UAB), the European Union Agency for the Space Program (EUSPA), the European Space Agency (ESA) and

https://news-wire.com/first-test-signal-of-the-third-generation-egnos-system-successfully-broadcast/

Eutelsat, have effectively finished the veryfirst test signal broadcast of the third-generation (V3) EGNOS system (acronym which stands for "European Geostationary Navigation Overlay Service').

EGNOS supplies corrections and stability info for Global Positioning System (the widelyknown GPS) signals gotten by users and it is the system utilized, for circumstances, by airplanes for GPS-assisted automated landings. The brand-new EGNOS V3 will enhance and enhance both GPS and GALILEO efficiencies in some of the signal frequencies for civilian usage (more particularly, in the L1/L5 and E1/E5 bands), hence offering satellite-positioning services to the most safety-critical applications, with airplane navigation in the spotlight.

ESA granted the advancement of EGNOS V3 to a consortium led by Airbus together with Indra, with the involvement of scientists from the Institute of Space Studies of Catalonia (IEEC—Institut d'Estudis Espacials de Catalunya) at the Center of Space Studies and Research (CERES, IEEC—UAB). The group is formed by Dr. Sergi Locubiche-Serra and Professors Gonzalo Seco-Granados and José A. López-Salcedo, scientists of the UAB's Department of Telecommunications and Systems Engineering and IEEC members.

The scientists have established the algorithm executed in the "Navigation Land Earth Station' (NLES) that guides the signals sentout from the ground to the EGNOS satellites and from these to the users. This algorithm, an vital part of the EGNOS system, enables seeing the gotten signal as if it hadactually been created on the satellite and not on ground as it infact is, and endsupbeing one of the essential parts for the operation of the EGNOS system and, in this case, the upcoming EGNOS V3 system.

Experimental tests of this algorithm were brought out in November 2021 throughout the veryfirst EGNOS V3 on-site proof-of-concept occasion where the algorithm was executed on a genuine NLES station and transmission with a genuine satellite was carriedout. The tests were finished effectively and the algorithm worked perfectly on the veryfirst effort.

Therefore, this veryfirst combination concluded to verify that the algorithm developed by the IEEC group effectively guarantees that each signal is properly guided at the satellite output by adjusting in genuine time the uplink transmitted signal from ground NLES stations.

**EGNOS V3**

The 3rd generation of EGNOS will run on a multi-frequency and multi-constellation basis (GPS, GALILEO), embedding security security versus cyber-attacks.

The EGNOS-V3 test-signal project included the brand-new variation of the EGNOS V3's NLES, established by Indra as well as the Eutelsat E5WB's dual-frequency SBAS payload established by Airbus.

EGNOS and its developments are handled by the EU Agency for the Space Program under the governance of the European Commission Directorate-General for Defense, Industry and Space (DG-DEFIS). The systems are created and established by ESA.

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