

No. 2841

EASA Safety Information Bulletin EGNOS Availability

To: Users of Universal Avionics SBAS-capable Flight Management Systems.

Subject: EGNOS Availability

Application

This Service Letter applies to the following Universal Avionics SBAS-capable Flight Management Systems (FMSs):

- UNS-1Ew, P/N 3017-XX-2X1
- UNS-1Espw, P/N 3019-XX-201
- UNS-1Fw, P/N 3192-X0-11110X
- UNS-1Lw, P/N 3116-32-111X and 3116-42-111X
- LP/LPV Monitor, P/N 3116-52-1110

Description

This Service Letter serves as a cover for European Aviation Safety Agency (EASA) Safety Information Bulletin (SIB) Number 2011-24 and is being distributed to Universal Avionics FMS operators for informational purposes. The bulletin describes an anomaly in the EGNOS satellite messaging that would cause an SBAS-capable GNSS receiver to reject the data thereby reducing the availability of EGNOS service.

Universal Avionics performed an analysis of its SBAS-capable FMSs to determine the impact, if any, of the EGNOS GEO satellite messaging errors on its system. The results indicate that this issue is not likely to have a significant adverse impact on the operation of the SBAS-capable FMSs in the EGNOS coverage area.

Contact Information

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Ref. Publications: ESSP EGNOS Service Notice 001, Revision 1.1
http://www.essp-sas.eu/download/service_notices/essp_com_r001_01_01_service_notice.pdf

Applicability: All aircraft certified for conducting RNAV/GNSS approaches to LPV minima, or LNAV/VNAV minima when guidance is based on SBAS/GNSS altitude, in European airspace.

Note:

RNAV = Area Navigation

GNSS = Global Navigation Satellite System

LPV = Localiser Performance with Vertical Guidance

LNAV = Lateral Navigation

VNAV = Vertical Navigation

SBAS = Satellite Based Augmentation System

Description: The European Geostationary Navigation Overlay Service (EGNOS) Safety of Life (SoL) service was declared operational on the 2nd of March 2011, enabling the use of EGNOS in critical phases of flight.

Sometime after the declaration was issued, it became apparent that EGNOS occasionally, but more frequently than anticipated at the time of SoL declaration, transmits incoherent data in the messages containing information for geo-ranging (i.e. the use of an EGNOS satellite for ranging, similar to the operation of a GPS satellite).

Although these messages are not required for position calculation, some SBAS compatible GNSS receivers use the data to assess the healthy state of the EGNOS satellite. When these messages contain incoherent data, these receivers may reject all data from one or both EGNOS satellites, resulting in a lower availability of the EGNOS SoL service.

EASA has no indications that the integrity and precision of the EGNOS signal are affected.

Notes:

- Not all receivers are equally affected by this problem.
- All SBAS compatible GNSS receivers which have received European Technical Standard Order (ETSO) approval from EASA will automatically revert to navigation based on pure GPS when EGNOS is not available.

Recommendation: The situation described in the section above may result in equipment not being able to acquire, or continuously track and process, data transmitted by EGNOS. Consequently, it may not be possible to perform or to continue an approach based on EGNOS data. The way in which the equipment is affected varies with the type and manufacturer of the equipment.

The EGNOS service provider, industry and authorities are actively developing solutions to this problem. Until the situation has been resolved, EASA recommends operators to consider:

- that the service may suddenly become unavailable while conducting an approach;
- that the unavailability of the service may last for longer periods (up to several hours);

Because these aspects may need to be mitigated by contingency procedures, operators should ensure availability of the required contingency procedures.

Note:

The EGNOS service provider supervisory authority has reminded the European airspace regulators of the ICAO recommendation to implement a contingency procedure for all SBAS approaches as long as EGNOS does not fully comply with the ICAO standards for continuity of service.

Contacts: For further information contact the Safety Information Section, Executive Directorate, EASA. E-mail ADs@easa.europa.eu.