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Agenda item 13

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Author(s) / Submitter(s) Finnish Transport Agency

Introductionary note to FEGNOS project report

# Summary

This paper introduces a Finnish EGNOS performance measurement campaign and its final report. The full measurement report has been submitted to ENAV20 as a separate document.

## Purpose of the document

The paper informs the members of IALA about the main results and findings of the EGNOS performance measurements carried out in Finland between November 2015 and October 2016.

## Related documents

ENAV20-13.18.1 “Finland's EGNOS Monitoring and Performance Evaluation (FEGNOS) - Project Report”; separate input document to ENAV20

# Background

The European Geostationary Navigation Overlay Service (EGNOS) is a regional Satellite-Based Augmentation System (SBAS) currently transmitting augmentation information for GPS in Europe. Finland is geographically located in the northeast corner of Europe and thus lies in the very borders of the EGNOS service coverage area. This has caused some concerns about the usability of EGNOS system for navigation in the Finnish territory.

To gain more information about the performance of EGNOS system in Finland a measurement campaign was launched in 2015. The GPS/EGNOS service performance was monitored continuously during the period of one year (November 2015-October 2016) in 20 locations distributed evenly across the Finnish territory. The following three different use cases were monitored:

* GPS-only solution without any EGNOS correction
* Applying EGNOS corrections from EDAS server
* Applying EGNOS corrections received from GEO satellites

The measurements were carried out by the Finnish Geospatial Research Institute (FGI) and financed by the Finnish Transport Agency.

# Discussion

The main findings of the EGNOS measurement campaign in Finland are summarized below:

* The use of EGNOS significantly improves the positioning performance as compared to GPS standalone
* The vertical accuracy improvement for EGNOS is higher than the horizontal improvement as compared to the GPS-only performance
* The performance of EGNOS with corrections received from GEO satellites is not as good as the performance obtained through EDAS provided EGNOS corrections
* The percentage of EGNOS OS requirement failure when analysed at a daily basis with GEO satellite corrections is significant. This is mostly due to the poor visibility of GEO satellites at north-eastern latitudes

Based on these results the measurement campaign report confirms that in the north-eastern part of Europe there is a need to have an alternative solution to broadcast EGNOS corrections (in addition to the current GEO satellites).

# Action requested of the Committee

The Committee is requested to note the information provided in this paper and in the related paper “Finland's EGNOS Monitoring and Performance Evaluation (FEGNOS) - Project Report”.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)