



International Civil Aviation Organization

## ELECTRONIC BULLETIN

For information only

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**STANDARDS AND RECOMMENDED PRACTICES (SARPS)  
FOR DUAL FREQUENCY, MULTI-CONSTELLATION (DFMC)  
SATELLITE-BASED AUGMENTATION SYSTEM (SBAS):  
BASELINE DRAFT VERSION FOR VALIDATION**

The ICAO Navigation Systems Panel (NSP) has recently completed a draft version of a proposed set of new Standards and Recommended Practices (SARPs) for the global navigation satellite system (GNSS) satellite-based augmentation system (SBAS) operating in a dual-frequency, multi-constellation (DFMC) environment (DFMC SBAS). This version has been accepted by the panel as the “baseline” to finalize the technical validation of the SARPs.

Compared to the existing SBAS, DFMC SBAS will support improved availability, continuity and accuracy by using ranging sources with two frequencies from more than one constellation. DFMC SBAS users directly measure ionosphere delay; this feature adds robustness against ionosphere storms that impact single-frequency SBAS and extends the area in which SBAS can support precision approach. Existing SBAS services and avionics will continue to be supported in a DFMC SBAS environment.

The finalization of the technical validation will be carried out over the next two years with a view to achieving approval by the NSP of the validated material in 2020. The ANC, at the eighth meeting of its 210th Session, agreed that the baseline material be made available to States for information, and for the purpose of enabling interested States to contribute to the validation effort.

The baseline material, together with a document that illustrates the key concepts underlying the technical approach followed in the development of the SARPs, can be accessed at <https://www.icao.int/airnavigation/Pages/DFMC-SBAS.aspx>. The NSP will serve as the forum for coordination of the validation efforts. States interested in supporting the validation can provide relevant technical contributions to the NSP, either directly or through the ICAO Secretariat.

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