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INFORMATION PAPER

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(NACC/WG/11)**

Guatemala City, Guatemala, September 21-25, 2026

Agenda Item 5: Modernization of Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM), Digital Transformation and Cybersecurity for Air Navigation Services (ANS)

Clarification on WAAS Signal Availability and Use Outside the United States

(Presented by the United States)

EXECUTIVE SUMMARY	
This Working Paper provides clarification regarding the Wide Area Augmentation System (WAAS) service addressing a misconception identified through discussions with several Air Navigation Service Providers (ANSPs). Specifically, it clarifies that the FAA does not restrict use of the WAAS signal outside the United States. The paper also describes how ANSPs may independently assess WAAS performance within their own airspace to determine appropriate operational applications.	
Action:	• Note the information provided in this information paper; and, • Discuss any relevant matters as appropriate.
<i>Strategic Objectives:</i>	• Every Flight is Safe and Secure • Aviation Delivers Seamless, Accessible, and Reliable Mobility for All
<i>References:</i>	• ICAO Annex 10, Volume I • FAA Wide Area Augmentation System (WAAS) Vertical Protection Level Coverage Information • ICAO Performance-Based Navigation (PBN) Manual (Doc 9613)

1. Background

1.1 During recent engagements, the Federal Aviation Administration (FAA) has come to understand that many Air Navigation Service Providers (ANSPs) believe that the United States (U.S.) Wide Area Augmentation System (WAAS) is restricted from use outside of the United States.

1.2 This misunderstanding may stem, in part, from the interpretation of information published on the FAA WAAS performance webpage, which only depicts areas where WAAS service provides a minimum level of availability (85%) or assessment of the identified WAAS service areas.

1.3 It is important to note that the published WAAS service areas should not be interpreted as defining the operational limits of the WAAS signal. The WAAS service areas provide an indication of regions and associated service levels that the WAAS system is designed to support. Use of these signals outside of those areas is not restricted but may not meet the operational need.

1.4 As the aviation community continues to expand the use of Global Navigation Satellite System (GNSS) augmentation services, it is important to clarify the distinction between FAA validation activities supporting U.S. operational approvals, the actual achieved level of WAAS performance, and the independent responsibilities of other States when evaluating navigation services within their own sovereign airspace.

2. Analysis

2.1 WAAS is a Satellite-Based Augmentation System (SBAS) that broadcasts augmentation corrections through geostationary satellites. WAAS satellites use a global beam antenna, meaning that the WAAS broadcast is available in much of the western hemisphere. While the broadcast may be received, WAAS is only able to provide satellite corrections for GPS satellites that are visible to the WAAS ground network. Additionally, WAAS is only able to provide ionospheric corrections in a much more limited area centred over North America. With these limitations, the availability of navigation using WAAS has limitations based on the user location and the satellite geometry of corrected satellites at that location. The use of WAAS is not geographically restricted by the FAA.

2.2 The FAA does not disable, block, or otherwise limit reception of the WAAS signal outside the United States.

2.3 During WAAS development and fielding, the FAA assesses the ability of WAAS to provide navigation in specific WAAS zones. These zones are identified in the WAAS Performance Specification. The FAA performs system validation to ensure that availability commitments are met in these service zones. The FAA reassesses the service when fielding WAAS updates. The FAA assesses integrity of the WAAS signal over the WAAS broadcast footprint as required by ICAO SARPS requirements in Annex 10.

2.4 The FAA provides real-time WAAS performance on the National Satellite Test Bed (NSTB) website (<https://www.nstb.tc.faa.gov>). The coverage information published on the NSTB, the FAA WAAS website, represents the current performance of WAAS. The website contains navigation availability graphics. One graphic depicts the en-route and terminal performance using the Klobuchar ionosphere model. The other graphic depicts the approach service performance using the WAAS ionosphere corrections. A future graphic will display the WAAS dual-frequency service.

2.5 The real-time WAAS Localizer Performance with Vertical Guidance (LPV) plot provides a contour plot of the current WAAS L1 service vertical protection levels. It also has contours in yellow where the Vertical Protection Level (VPL) meets the LPV criteria (50 meters) and in red where the VPL meets the LPV-200 criteria (35 meters). The WAAS Required Navigation Performance (RNP) plot provides a contour plot of the current WAAS L1 service horizontal protection levels (HPLs) and has boundaries indicated for RNP 0.3 and RNP 0.1 performance. The webpage also publishes daily 24-hour plots that provide the availability of the different service levels for the previous day.

2.6 The published maps identify the region over which the FAA verified that the system satisfied the performance and integrity requirements necessary to support approved operational procedures.

Note: This should not be interpreted as the maximum extent of signal availability nor as a limitation on where the WAAS signal may be received or safely used.

2.7 The maps provides a representation of the availability percentages at the varying latitudes and longitudes from the single frequency WAAS signal. Figure 1 illustrates the existing availability of the single frequency WAAS constellation achieving LPV200. Similarly, Figure 2 illustrates coverage availability for providing RNP 0.3.

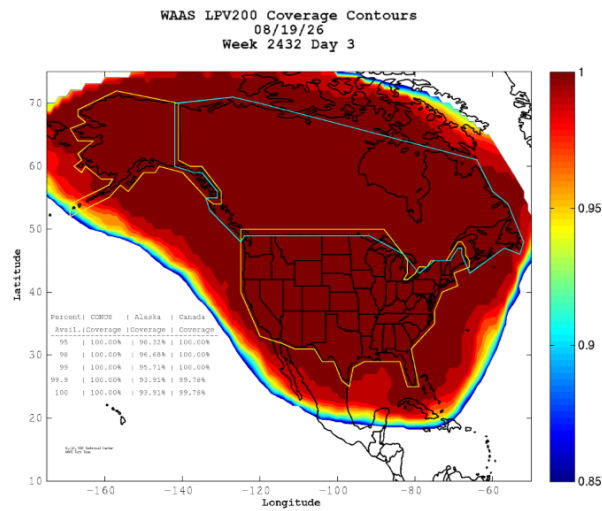


Figure 1: WAAS LPV200 Coverage

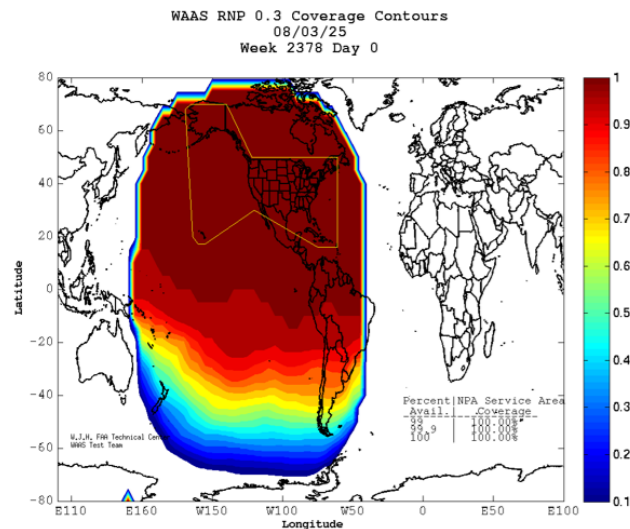


Figure 2: WAAS RNP 0.3 Coverage

2.8 Currently, States can leverage the existing constellation for Enroute services. States may be able to leverage LPV services within the limited WAAS L1 LPV service area. The LPV service area

supported by WAAS will expand when the Dual Frequency capability is certified, made operational, and the GPS constellation is populated with more L5 capable GPS satellites.

2.9 The U.S. is currently working to implement dual frequency (i.e., L1 and L5) signal capability and associated DF WAAS services. Initial WAAS operational capability is expected to be accomplished by 2029 with a final operational capability by approximately 2032.

Note: A minimum of 24 GPS satellites broadcasting the L1 and L5 signals are required to provide robust dual frequency service.

2.10 Figures 3 shows the prototype WAAS DF coverage, as of 26th April 2026, based on the existing 20 DF satellites that have been placed into orbit. Figure 4 shows the predicted DF coverage after final operational capability is achieved. However, the coverage may vary once the testing and validation is conducted.

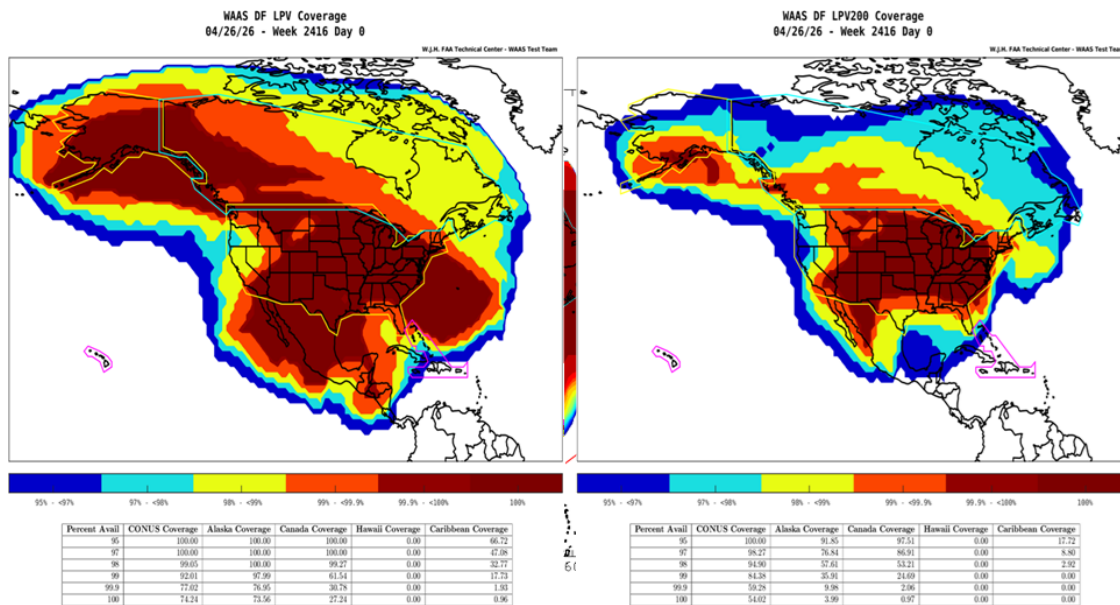


Figure 3: LPV/LPV200 Service with 20 DF Satellites

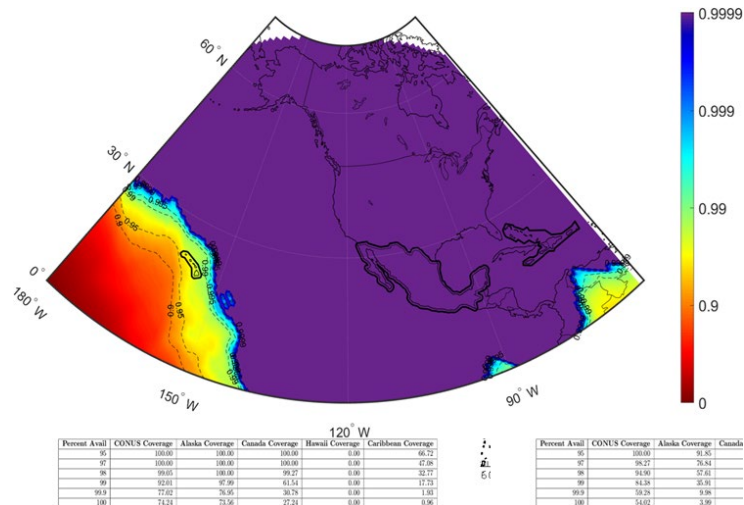


Figure 4: Estimated WAAS DF LPV Coverage with 24 L5-capable GPS satellites

2.11 Although States are not restricted or limited from using the WAAS signal, there is a need for those interested to enter into an agreement with the U.S. stating their intent to use WAAS.

2.12 The purpose of this step is to provide the FAA with insights on who is using the signal for operational purposes. This awareness allows the FAA to:

- a) Provide necessary information on upcoming changes to the constellation that may impact signal coverage.
- b) Take into consideration operational impacts based on potential changes, and if able, identify mitigations to minimize impacts to other users of the signal.

2.13 Consistent with ICAO principles, each Member State and its ANSP continues to remain responsible for determining whether navigation services satisfy national operational and safety requirements.

2.14 ANSPs may conduct their assessments, operational analysis, flight inspections, signal monitoring, and necessary validation activities to determine the level of performance achievable within their airspace. Based on those evaluations, an ANSP may determine whether WAAS supports specific operational applications (e.g., RNP 0.3, RNP 0.1, LPV200, etc.) in accordance with its regulatory framework.

2.15 The FAA neither certifies nor restricts these evaluations recognizing that each ANSP is best positioned to determine the suitability of WAAS for operations within its sovereign airspace based on locally validated performance.

3. Conclusion/Suggested actions

3.1 It is the intent of this information paper to clarify the distinction between signal availability and FAA operational validation to avoid the misconception that WAAS use outside the United States is prohibited.

3.2 The meeting is invited to:

- a) Note the information provided in this information paper; and,
- b) Discuss any relevant matters as appropriate.

— END —