

Service Letter No. 2818

UASC FMS Compliance with RNP and RNAV Requirements

This service letter is intended to clear up confusion about the current Required Navigation Performance (RNP) and Area Navigation (RNAV) requirements in the United States.

The term “RNP” has several definitions. RNP can refer to RNAV procedures with containment, which is the requirement for a system to provide monitoring and alerting for both basic navigational accuracy and violation of containment limits. RNP can also be used to define the navigational performance necessary for operation within a defined airspace; not necessarily with containment parameters or alerting.

A commonly asked question is “What is the RNP level of my FMS?” RNP operations all specify aircraft equipment requirements of which the FMS is only a part. The only current U.S. RNP requirements are RNP-10 described in FAA order 8400.12a, RNP-4 described in FAA Order 8400.33, and RNAV (RNP) approaches spelled out in Advisory Circular (AC) 90-101. The RNP-10 and RNP-4 procedures are for oceanic airspace. The RNAV (RNP) procedures are for domestic operations and are Special Aircraft & Aircrew Authorization Requirements (SAAAR) procedures.

In order to be qualified for any RNP operations you first need a statement in your Aircraft Flight Manual Supplement (AFMS) or approval from your Principal Avionics Inspector (PAI) establishing that your aircraft meets the equipment requirements. The operator must meet both aircraft airworthiness requirements as well as operational requirements in order to receive FAA approval. Part 91 operators require an FAA Letter of Authorization (LOA) while Certificate holders will require Operations Specification (OpsSpec) approval.

There are two European RNP requirements, BRNAV which is RNP-5 and PRNAV which is RNP-1. These requirements are defined in AC 90-96A. Again, you need a statement in your AFMS or an LOA from the FAA.

AC90-100A defines U.S. RNAV requirements. A lot of confusion surrounds the RNAV SIDs, STARs, and enroute procedures described in this AC. The FAA re-titled the original Type A / Type B departures and arrivals in AC90-100 to RNAV 1 / RNAV 2 procedures in the “A” release. Note that AC90-100A describes RNAV procedures, not RNP procedures, and does not require an aircraft to have an RNP certification to fly an RNAV departure, enroute segment, or RNAV arrival. Currently the only domestic U.S. RNP procedures are RNAV (RNP) approaches.

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Almost all Universal Avionics FMS units with software version 601/701 and later are complaint with the requirements in AC90-100A. UNS-1M and UNS-1Msp are NOT COMPLIANT with the advisory circular for SIDs and STARs. FMS units with operating software prior to 601/701 are also NOT COMPLIANT.

AC90-100A requirements relative to Universal Avionics FMSs are discussed in Service Letter 2804.

Universal Avionics has also released the following Service Letters covering oceanic and European RNP requirements:

- RNP-10 (GPS Primary means for remote oceanic operations), SL 2758.
- BRNAV RNP-5, SL 2753.
- RNP-4 Western Atlantic, SL 2814.
- PRNAV RNP-1 EASA TGL-10, SL 2792

Beginning June 29 2008, the FAA requires that you use ICAO filing codes if you want recognition of your RNAV / RNP capabilities. Our recommendation for all FMSs with operating software versions 601/701 and later is to use NAV/RNVD1E2A1, which states that your Navigation system is RNAV capable to departure 1 mile, Enroute 2 miles, and Arrival 1 mile. Part of the requirement in AC90-100A is that RNAV procedures be called up from the FMS database by name (which is why the UNS-1M and UNS-1Msp are not compliant with AC90-100A for SIDs and STARs). Our recommended filing code for UNS-1M and UNS-1Msp is NAV/RNVE2. This is also our recommended filing code for all other FMSs with software versions earlier than 601/701.

Contact Universal Avionics for supporting documentation concerning compliance with all current RNP and RNAV requirements.

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