



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Small Airplane Directorate  
Wichita Aircraft Certification Office  
1801 Airport Road, Room 100  
Wichita, Kansas 67209

**JAN 18 2017**

Reply to: L115W-17-27

Mr. Robert C. Godsy  
GARMIN International Inc.  
1200 East 151st Street  
Olathe, KS 66062

Subject: RNP AR Procedure Data Validation Approval

Reference: (1) Garmin's Request for revision of Garmin's RNP AR Procedure Data Validation Approval letter dated November 10, 2016 to Wichita ACO  
(2) RNP AR Procedure Data Validation Approval (L115-13-812) dated December 5 2013

Dear Mr. Godsy,

This is in reply to the letters referenced above; requesting an update to our letter dated December 5, 2013. We understand that your processes have been modified to take into account the accuracy checks for navigation database validation specified by Advisory Circular (AC) 90-101A, *Approval Guidance for RNP Procedures with AR* for the "ADB2" navigation database format.

We have reviewed your revised procedures and the ADB2VFY tool qualification data relating to Required Navigation Performance (RNP) Authorization Required (AR) procedures. Specifically reviewed items include:

1. G2CD Verification Plan and Procedure (005-00210-19)
2. ADB2VFY Verification Requirements (005-00210-25)
3. ADB2VFY Tool Qualification Accomplishment Summary (005-00210-26)

We audited your tool qualification processes in accordance with Order 8110.49 CHG 1, *Software Approval Guidelines*. During this audit, you demonstrated compliance with the tool qualification objectives applicable to a verification tool as specified by RTCA/DO-178B, *Software Considerations in Airborne Systems and Equipment Certification*. You also demonstrated acceptable integration of this tool into your existing Type 2 Letter of Acceptance (LOA) navigation data processing procedures.

Garmin's Type 2 LOA navigation data processing procedures produce equipment-compatible binary database files from an ARINC 424 source file received from Jeppesen Sanderson. We have found that Garmin's procedures satisfactorily verify that the RNP AR data contained in the equipment-compatible binary database files match the corresponding

data contained in the ARINC 424 source file within the applicable tolerance requirements specified by AC 90-101A, Appendix 3, paragraph 3.a. To ensure aeronautical data chain integrity, FAA's finding that Garmin's procedures satisfactorily verify the equipment-compatible binary database RNP AR data is predicated on the ARINC 424 file being produced in accordance with Jeppesen Sanderson's FAA-approved RNP AR ARINC 424 data validation and comparison service.

Aircraft operators that obtain binary databases produced under the processes referenced in this letter and used within Garmin avionics systems approved for RNP AR operations are relieved of the responsibility to check the accuracy of included RNP AR data as specified in AC 90-101A, Appendix 3, paragraph 3.a.

Garmin's RNP AR procedure data validation process does not include the flyability check specified by AC 90-101A, Appendix 3, paragraph 3.b. An initial flyability check is required for all 14 CFR non-part 97 U.S. RNP AR procedures, as well as all foreign RNP AR procedures the operator is authorized to fly.

If you have any questions on this matter, please feel free to contact your project engineer, Paul Rau, at 316-946-4149, or by e-mail at [paul.rau@faa.gov](mailto:paul.rau@faa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Hilton', with a stylized flourish at the end.

Daniel S. Hilton  
Branch Manager,  
Electrical Systems and Avionics  
Wichita Aircraft Certification Office

Cc: AIR-130, Brad Miller