

Validation of RNP AR procedures – guideline on the Norwegian requirements

Introduction

Validation of RNP AR APCH procedures requires a specific approval from CAA-Norway. This guideline will describe how a flight validation organization can achieve such an approval.

In Doc 9906 the general process for validation of RNAV and RNP procedures are described. For RNP AR APCH procedures, Doc 9906 requires a simulator evaluation in addition to the Flight evaluation (ref. Doc 9906 chapter 2.3.1.4). Flight validation of RNP AR APCH procedures shall be carried out in compliance with the process described in Doc 9906.

A flight validation organisation shall describe in their Flight Inspection Manual (FIM) how to carry out an RNP AR validation. The flight validation organisation shall also describe in their FIM how the organisation assures that the Flight Validation Pilot (FVP) and the Flight Inspector (FI) have the required RNP AR competence. The CAA approval will be given based on these descriptions in the FIM.

Competence

Flight Validation Pilots shall be familiar with the RNP AR APCH design criteria in Doc 9613 Volume II Part C Chapter 6 and the operational requirements in EASA AMC 20-26.

Flight Inspectors shall be familiar with the differences between the requirements for a RNP AR APCH procedure and other RNP procedures.

Aircraft

Validation of RNP AR APCH procedures shall be done with a RNP AR APCH certified aircraft. An aircraft certified for flight inspection and flight validation will rarely be RNP AR APCH certified. Recording equipment and equipment for measurement of interference will be difficult to install in a commercial aircraft. Accomplishing flight validation and detecting unintentional interference whilst recording data with a RNP AR APCH certified aircraft may pose some challenges. Based on this fact, CAA- Norway will accept that the validation mission is split in two phases.

Interference check can be done with the flight validation organisation aircraft. Flyability and verification that navigation data to be published are correct shall be done with a RNP AR APCH certified aircraft. The remaining parts of the flight evaluation requirements in Doc 9906 can be done by either of the aircrafts.

The recording requirement may be solved by logging data from a GPS receiver or the FMS in the RNP AR APCH certified aircraft.

Recording

Maximum observed HDOP and VDOP shall be recorded in addition to the minimum recording requirements listed in Doc 9906 Volume 5 Chapter 2.4.7.2:

Interference

Flight Inspectors shall measure interference (ref. Doc 8071 Volume II, Attachment 3 to Chapter 1, Chapter 4.5). It is important to identify any unintentional interference that has the potential to disrupt RNP AR APCH operations. The primary aim is to detect the interference.