



Flight Operations Standards Directorate
Commercial Air Transport Section - Special Approvals - PBN Approvals / RNP 2
RNP 2 Approval Application Attachment Compliance List

• Operator Name			
• Inspector Name			
• Airplane Type(s)			
• AOC Applicant/Holder Focal Point	Name	Phone No.	E-mail

No	RNP 2 Operational Approval Application Attachments	ICAO Doc 9613	OMD	YES	NO	NA	Remarks
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A	Operations Manual Part D - Training Program						
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1	Flight Crew Training Program. The training program should provide sufficient training (e.g. simulator, training device, or aircraft) on the aircraft's RNP system to the extent that the pilots are familiar with the following:						
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a	The meaning and proper use of aircraft equipment/navigation suffixes	2.3.5					
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b	Route and airspace characteristics as determined from chart depiction and textual description	2.3.5					
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c	Required navigation equipment on RNP 2 operations	2.3.5					
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d	RNP system-specific information:	2.3.5					
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(1)	Levels of automation, mode annunciations, changes, alerts, interactions, reversions, and degradation	2.3.5					
(2)	Functional integration with other aircraft systems	2.3.5					
(3)	The meaning and appropriateness of route discontinuities as well as related flight crew procedures	2.3.5					
(4)	Pilot procedures consistent with the operation	2.3.5					
(5)	Types of navigation sensors utilized by the RNP system and associated system prioritization/ weighting/logic/limitations	2.3.5					
(6)	Turn anticipation with consideration to speed and altitude effects	2.3.5					
(7)	Interpretation of electronic displays and symbols used to conduct an RNP 2 operation; and	2.3.5					
(8)	Understanding of the aircraft configuration and operational conditions required to support RNP 2 operations, e.g. appropriate selection of CDI scaling (lateral deviation display scaling)	2.3.5					



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e	RNP system operating procedures, as applicable, including how to perform the following actions	2.3.5					
(1)	Verify currency and integrity of the aircraft navigation data	2.3.5					
(2)	Verify the successful completion of RNP system self-tests	2.3.5					
(3)	Initialize navigation system position	2.3.5					
(4)	Retrieve/manually enter and fly an RNP 2 route	2.3.5					
(5)	Adhere to speed and/or altitude constraints associated with an RNP 2 route	2.3.5					
(6)	Verify waypoints and flight plan programming	2.3.5					
(7)	Fly direct to a waypoint	2.3.5					
(8)	Fly a course/track to a waypoint	2.3.5					
(9)	Intercept a course/track (flying assigned vectors and rejoining an RNP 2 route from "heading" mode);	2.3.5					
(10)	Determine cross-track error/deviation. More specifically, the maximum deviations allowed to support RNP 2 must be understood and respected	2.3.5					
(11)	Resolve route discontinuities	2.3.5					
(12)	Remove and reselect navigation sensor input; and	2.3.5					
(13)	Perform parallel offset function during RNP 2 operations if capability exists. Pilots should know how offsets are applied, the functionality of their particular RNP system and the need to advise ATC if this functionality is not available	2.3.5					
f	Operator-recommended levels of automation for phase of flight and workload, including methods to minimize cross-track error to maintain route centre line	2.3.5					
g	R/T phraseology for RNP applications; and	2.3.5					
h	Contingency procedures for RNP failures	2.3.5					
2	Flight Dispatcher Training Program.						
a	Specific equipments	AC NO 13					
b	Flight plan	AC NO 13					
c	MEL requirements	AC NO 13					
d	Normal procedures	AC NO 13					
e	Contingency procedures	AC NO 13					



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B Operations Manuals							
1 Operations Manuals Part A							
a	OMs and checklists for commercial operators must address information/guidance on the SOP detailed in 2.3.4. The appropriate manuals should contain navigation operating instructions and contingency procedures, where specified. The operator must submit their manuals and checklists for review as part of the application process	2.3.2.3.3.1					
b Preflight planning							
(1)	Operators and pilots intending to conduct operations on RNP 2 routes must file the appropriate flight plan suffixes	2.3.4.2.1					
(2)	The on-board navigation data must be current and include appropriate procedures. Navigation databases should be current for the duration of the flight. If the AIRAC cycle is due to change during flight, operators and pilots should establish procedures to ensure the accuracy of the navigation data, including the suitability of navigation facilities defining the routes and procedures for flight	2.3.4.2.2					
(3)	The operator must confirm the availability of the NAVAID infrastructure, required for the intended routes, including those for use in a non-GNSS contingency, for the period of intended operations using all available information. Since Annex 10 requires GNSS integrity (RAIM or SBAS signal), the procedures should determine the availability of these services and functions as appropriate. For aircraft navigating with SBAS capability (all TSO-C145()/C146()), operators should check appropriate GNSS RAIM availability in areas where the SBAS signal is unavailable	2.3.4.2.3					
c ABAS availability							
(1)	Operators can verify the availability of RAIM to support RNP 2 operations via NOTAMs (where available) or through GNSS prediction services. Operators should be familiar with the prediction information available for the intended route	2.3.4.3.1					



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(2)	RAIM availability prediction should take into account the latest GNSS constellation NOTAMs and avionics model (when available). The ANSP, avionics manufacturer, or the RNP system may provide this service	2.3.4.3.2					
(3)	In the event of a predicted, continuous loss of appropriate level of fault detection of more than five (5) minutes for any part of the RNP 2 operation, the operator should revise the flight plan (e.g. delay the departure or plan a different route)	2.3.4.3.3					
(4)	RAIM availability prediction software does not guarantee the service; rather, RAIM prediction tools assess the expected capability to meet the RNP. Because of unplanned failure of some GNSS elements, pilots and ANSPs must realize that RAIM or GNSS navigation may be lost while airborne, and this may require reversion to an alternative means of navigation. Therefore, pilots should prepare to assess their capability to navigate (potentially to an alternate destination) in case of failure of GNSS navigation	2.3.4.3.4					

d	General operating procedures
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(1)	The pilot should comply with any instructions or procedures the manufacturer of the aircraft or avionics identifies as necessary to comply with the RNP 2 performance requirements. Pilots must adhere to any AFM limitations or operating procedures the manufacturer requires to maintain RNP 2 performance	2.3.4.4.1					
(2)	Operators and pilots should not request or file for RNP 2 routes unless they satisfy all the criteria in the relevant State documents. If an aircraft does not meet these criteria and receives a clearance from ATC to operate on an RNP 2 route, the pilot must advise ATC that they are unable to accept the clearance and must request an alternate clearance	2.3.4.4.2					
(3)	At system initialization, pilots must confirm the navigation database is current and verify proper aircraft position. Pilots must also verify proper entry of their ATC assigned route upon initial clearance and any subsequent change of route. Pilots must then ensure that the waypoint sequence depicted by their navigation system matches the route depicted on the appropriate chart(s) and their assigned route	2.3.4.4.3					



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(4)	Pilots must not fly a published RNP 2 route unless they can retrieve the route by name from the on-board navigation database and confirm it matches the charted route. However, pilots may subsequently modify the route through the insertion or deletion of specific waypoints in response to ATC requests and clearances. Pilots must not make manual entries or create new waypoints by manual entry of latitude and longitude or rho/theta values for fixed, published routes. Additionally, pilots must not change any route database waypoint type from a fly-by to a fly-over or vice versa. For flexible route structures, entry of latitude and longitude may also be permitted provided the potential for entry error by pilots is accounted for during associated safety analyses	2.3.4.4.4					
(5)	The pilot need not cross-check the lateral navigation guidance with conventional NAVAIDS, as the absence of an integrity alert is sufficient to meet the integrity requirements	2.3.4.4.5					
(6)	For RNP 2 routes, pilots must use a lateral deviation indicator, flight director, or autopilot in lateral navigation mode. Pilots of aircraft with a lateral deviation display must ensure that the lateral deviation scaling is suitable for the navigation accuracy associated with the route (e.g. full-scale deflection: ± 2 NM for RNP 2 or ± 5 NM in the case of some TSO-C129a equipment) and know their allowable lateral deviation limits	2.3.4.4.6					
(7)	All pilots must maintain a centre line, as depicted by on-board lateral deviation indicators and/or flight guidance during all RNP 2 operations described in this manual, unless authorized to deviate by ATC or under emergency conditions. For normal operations, cross-track error/deviation (the difference between the system computed path and the aircraft position relative to the path, i.e. FTE) should be limited to $\pm \frac{1}{2}$ the navigation accuracy associated with the route (i.e. 1 NM for RNP 2). Brief deviations from this standard (e.g. overshoots or undershoots) during and immediately after turns, up to a maximum of one times the navigation accuracy (i.e. 2 NM for RNP 2) are allowable. Some aircraft do not display or compute a path during turns, therefore, pilots of these aircraft may not be able to confirm adherence to the $\pm \frac{1}{2}$ lateral navigation accuracy during turns, but must satisfy the standard during intercepts following turns and on straight segments	2.3.4.4.7					
(8)	Manually selecting or use of default aircraft bank limiting functions may reduce the aircraft's ability to maintain desired track and the pilot should not use these functions. Pilots should understand manually selecting aircraft bank-limiting functions may reduce their ability to satisfy ATC path expectations, especially when executing large angle turns. However, pilots should not deviate from AFM procedures and should limit the use of such functions within accepted procedures that meet the requirements for operation on an RNP 2 route	2.3.4.4.8					



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(9)	If ATC issues a heading assignment that takes an aircraft off a route, the pilot should not modify the flight plan in the RNP system until they receive a clearance to rejoin the route or the controller confirms a new route clearance. When the aircraft is not on the RNP 2 route, the RNP 2 performance requirements do not apply	2.3.4.4.9					
(10)	Pilots of aircraft with RNP input selection capability should select a navigation accuracy value of 2 NM, or lower. The selection of the navigation accuracy value should ensure the RNP system offers appropriate lateral deviation scaling permitting the pilot to monitor lateral deviation and meet the requirements of the RNP 2 operation	2.3.4.4.10					
e	Contingency procedures. The pilot must notify ATC of any loss of the RNP 2 capability (integrity alerts or loss of navigation). If unable to comply with the requirements of an RNP 2 route for any reason, pilots must advise ATC as soon as possible. The loss of RNP 2 capability includes any failure or event causing the aircraft to no longer satisfy the RNP 2 requirements	2.3.4.5					

No	A-RNP Operational Approval Application Attachments	ICAO Doc 9613	MEL	YES	NO	NA	Remarks
2	Minimum Equipment List (MEL)						
a	MEL revisions necessary to address RNP 2 provisions must be approved. Operators must adjust the MEL, or equivalent, and specify the required dispatch conditions	2.3.2.3.4					

• Assessment Result	
<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory

