

Checklist RNP AR APCH approval

Operator⁽¹⁾		
Aircraft type/variant		
Ref.		
Inspectors	(Name/signature)⁽²⁾	Date
FOD Manager		
Flight Operations Inspector (FOI)		
Airworthiness Operations Inspector (AWI)		

⁽²⁾ By signing this checklist, I hereby confirm that, at the time of performing this activity, I did not have any conflict of interest to declare regarding the above-mentioned operator ⁽¹⁾.

No	Ref Non-compliance	Non-compliances

List of remarks	
Ref remarks	Remarks

Additional notes/comments:

NA = Not Applicable; C = Compliant; NC = Not Compliant; R = Remark; N/R = Not Reviewed

Reference	Requirement	Specific requirements/expectations	Eval. operator	Eval. CA	Description
General					
SPA.PBN.105	<u>Content of the RNP AR APCH application:</u> - Airworthiness documents related to the RNP AR APCH certification of the aircraft - Methodology used for the determination if a procedure meets the applicable ICAO design criteria. - FOSA - Description of the aircraft equipment - Operating procedures - MEL - Navigation database management - RNP AR APCH monitoring programme - List of reportable events - Training programmes - Continuing airworthiness programme/procedures	- Confirm receipt of the application form from the operator. - Check that the application contains all the required elements.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
ORO.GEN.200(a)(3)	<u>Management of changes / safety risk management</u>	- Check that the hazard identification process of the operator captured the risks associated with the new type of operations (RNP AR APCH). - Check the adequate subsequent risk analysis and definition of mitigations. - Check that this was completed in the frame of the operator's management of change process. - Check that RNP AR APCH operations are in the scope of the CMF		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Aircraft eligibility					
SPA.PBN.105(a)	<u>Airworthiness approval</u>	- Check that the aircraft hold an RNP AR APCH airworthiness approval (evidence of that via AFM or AFM supplement).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Specific requirements/expectations	Eval. operator	Eval. CA	Description
Generic approval/ Procedure specific approval					
SPA.PBN.100	Determination of the need of a procedure specific approval	- Check that the operator has verified if the AIP is requiring a procedure specific approval. <u>Note:</u> In principle, public RNP AR APCH procedures do not require a special authorisation. Non-public procedures are procedures either not compliant with ICAO Doc 9905 or procedures not approved for public use by the local authority due to its characteristics. In both cases, a special authorization is necessary, and this will be indicated in the AIP (if published in the AIP as most states do not have the obligation to publish non-public procedures in the AIP).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Flight operational safety assessment (FOSA)					
SPA.PBN.105(c)	<u>FOSA:</u> For each RNP AR APCH procedure, the operator should conduct a flight operational safety assessment (FOSA) proportionate to the complexity of the procedure	- Check that the operator has conducted a FOSA for each RNP AR APCH procedure used. - Check that the following has been considered in the FOSA for each approach: ○ restrictions and recommendations published in AIPs (including deviations from ICAO Doc 9905 (if applicable)); ○ the flyability check; ○ an assessment of the operational environment; ○ the demonstrated navigation performance of the aircraft; and ○ the operational aircraft performance.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Flight Crew composition, qualification and experience/ training					
SPA.PBN.105(d)(2)	Flight crew composition, qualification and experience	- Check that the operator has defined in its procedures FC composition for RNP AR APCH operations and the minimum required qualification of experience of each individual FC.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Specific requirements/expectations	Eval. operator	Eval. CA	Description
SPA.PBN.105(b)	<u>General:</u>	- Check that if the operator has foreseen reduced training in the case of: - FC with RNP AR APCH experience with another EU operator: - Abbreviated ground and/or FSTD training course - Reduction of the number of approaches/landings - FC with RNP AR APCH experience with the operator: - Abbreviated course and difference/familiarisation course See AMC1 SPA.PBN.105(b) for detailed criteria.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(b)	<u>RNP AR APCH operations with different variants of aircraft within the type or class rating</u>	- Check that the operator has provided a justification of these operations taking into account at least: - the level of technology, including the: - FGS and associated displays and controls; - FMS and its integration or not with the FGS; and - on-board performance monitoring and alerting (OBPMA) system; - operating procedures, including: - navigation performance monitoring; - approach interruption and missed approach including while in turn along an RF leg; - abnormal procedures in case of loss of system redundancy affecting the guidance or the navigation; and - abnormal and contingency procedures in case of total loss of RNP capability; and - handling characteristics, including: - manual approach with RF leg; - manual landing from automatic guided approach; and - manual missed approach procedure from automatic approach.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(b)	<u>Ground training:</u>	- Check that the initial ground training covers at least the following: - General concepts of RNP AR APCH operation - ATC communication and coordination for use of RNP AR APCH - RNP AR APCH equipment components, controls, displays, and alerts - AFM information and operating procedures - MEL operating provisions See AMC1 SPA.PBN.105(b) for detailed criteria		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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SPA.PBN.105(b)	<u>Initial FSTD training:</u>	- Check that initial FSTD training covers the following: - o RNP AR APCH procedures and limitations; - o standardisation of the set-up of the cockpit's electronic displays during an RNP AR APCH operation; - o recognition of the aural advisories, alerts and other annunciations that can impact on compliance with an RNP AR APCH procedure; and - o the timely and correct responses to loss of RNP AR APCH capability in a variety of scenarios embracing the breadth of the RNP AR APCH procedures the operator plans to complete. - Check that it addresses the following: - o procedures for verifying that each FC's altimeter has the current setting before commencing the final approach - o use of aircraft RADAR, TAWS or other avionics systems - o concise and complete FC briefings - o importance of aircraft configuration - o potentially detrimental effect of reducing the flap setting, reducing the bank angle or increasing airspeeds - o programming and/or operating the FMC, autopilot, auto throttles, RADAR, GNSS, INS, EFIS (including the moving map), and TAWS - o handling of TOGA to LNAV transition - o monitoring of flight technical error and related go-around operation - o handling of loss of GNSS signals - o handling of engine failure during the approach operation - o contingency procedures for a loss of RNP capability during a missed approach - o two RNP approach procedures (one with RNP missed approach) for each duty position (PF/PM) that employ the unique RNP AR APCH characteristics of the operator's RNP AR APCH procedures (e.g. RF legs, missed approach). See AMC1 SPA.PBN.105(b) for more details.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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SPA.PBN.105(b)	<u>Conversion training (change to a new type of class):</u>	- Check that the ground training include at least the following: - o programming and display of RNP and aircraft specific displays, e.g. actual navigation performance; - o methods to enable and disable the navigation updating modes related to RNP; - o the RNP values appropriate for different phases of flight and RNP AR APCH instrument procedures and how to select, if necessary; - o use of GNSS RAIM (or equivalent) forecasts and the effects of RAIM 'holes' on RNP AR APCH procedures availability; - o when and how to terminate RNP navigation and transfer to conventional navigation due to loss of RNP and/or required equipment; - o method to determine if the navigation database is current and contains required navigational data; - o relationship between RNP and the appropriate approach minima line on an approved published RNP AR APCH procedure and any operational limitations; - o understanding alerts that may occur from the loading and use of improper RNP values for a desired segment of an RNP AR APCH procedure; - o understanding the performance requirement to couple the autopilot/flight director to the navigation system's lateral guidance on RNP AR APCH procedures requiring an RNP of less than RNP 0.3; - o the events that trigger a missed approach when using the aircraft's RNP capability to complete an RNP AR APCH procedure; - o any bank angle restrictions or limitations on RNP AR APCH procedures; - o ensuring FC understand the performance issues associated with reversion to radio updating, know any limitations on the use of DME and VOR updating; - o ATC communication and coordination for use of RNP AR APCH - o RNP AR APCH equipment components, controls, displays, and alerts - o AFM information and operating procedures - o MEL operating provisions - Check that FSTD training is defined taking into account the		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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		operator's policy for FC with previous experience (see above)			
SPA.PBN.105(b)	<u>Training on RNP AR APCH procedures requiring a procedure-specific approval:</u>	- Check that the operator foresees additional ground and FSTD training for RNP AR APCH procedures for which a procedure-specific approval is required, including at least: - o FSTD initial training, as appropriate and customised to the intended operations - o the crew training recommendations and mitigations stated in the procedure FOSA; - o specific training and operational provision published in the AIP, where applicable <u>Note 1:</u> FC with previous experience on these RNP AR procedures may receive credit provided that the operator's procedures are similar and require no new pilot skills to be trained in an FSTD. <u>Note 2:</u> Training and checking of RNP AR APCH knowledge may be combined and conducted by the same person		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(b)	<u>Checking of RNP AR APCH knowledge:</u> The operator should check flight crew members' knowledge of RNP AR APCH procedures prior to employing RNP AR APCH operations.	- Check that the initial knowledge check includes one of the following means: - o A check by an examiner using an FSTD. - o A check by a TRE, CRE, SFE or a commander nominated by the operator during LPCs, OPCs or line flights. - o Line-oriented flight training (LOFT)/line-oriented evaluation (LOE). - Check that the checks address the elements listed in AMC1 SPA.PBN.105(b).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(b)	<u>Recurrent training:</u> The operator should incorporate recurrent training that employs the unique RNP AR APCH characteristics of the operator's RNP AR APCH procedures as part of the overall training programme.	- Check that the operator has defined a recurrent training programme which includes: - o A minimum of two RNP AR APCH flown by each FC, one for each duty position (PF/PM), with one culminating in a landing and one culminating in a missed approach (may be substituted for any required 3D approach operation). - o In case of several procedure-specific RNP AR APCH approvals, a focus on the most demanding RNP AR APCH procedures giving credit on the less demanding ones. - o		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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Training for personnel involved in the flight preparation					
SPA.PBN.105(b)	Flight dispatchers/flight operations officers training	- Check that the FD/FOO training includes at least the following: - o the different types of RNP AR APCH procedures; - o the importance of specific navigation equipment and other equipment during RNP AR APCH operations and related RNP AR APCH requirements and operating procedures; - o the operator's RNP AR APCH approvals; - o MEL requirements; - o aircraft performance, and navigation signal availability, e.g. GNSS RAIM/predictive RNP capability tool, for destination and alternate aerodromes.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Navigation database management					
SPA.PBN.105(d)(4)	<u>Navigation database:</u> The operator should validate every RNP AR APCH procedure before using the procedure in instrument meteorological conditions (IMC).	- check that the operator has validated beforehand each RNP AR APCH procedure and the validation included at least: - o A comparison between the navigation data for the procedure(s) to be loaded into the FMS and the published procedure. - o A validation of the loaded navigation data for the procedure, either in an FSTD or in the actual aircraft in VMC: ▪ Comparison between map display and the published procedure ▪ The entire procedure should be flown. - o Retention of a copy of the validated navigation data after its validation for comparison with subsequent data updates. <u>Note:</u> For published procedures, where FOSA demonstrated that the procedure is not in a challenging operational environment, the flight or FSTD validation may be credited from already validated equivalent RNP AR APCH procedures.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)(4)	<u>Modification of a system required for RNP AR APCH:</u>	- Check that the operator has established a procedure for the validation of the RNP AR APCH procedures with the navigation database following a modification to an aircraft system required for RNP AR APCH. <u>Note:</u> No direct evaluation is necessary if the manufacturer has verified that it is no effect (evidence of this is needed).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Specific requirements/expectations	Eval. operator	Eval. CA	Description
SPA.PBN.105(d)(4)	<u>Distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.</u>	- Check the operator's procedure to ensure a timely distribution and insertion of current and unaltered navigation data to all aircraft. - Verify the effectiveness of this procedure.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
MEL					
SPA.PBN.105(d)	<u>MEL:</u> The operator's MEL should be developed/revised to address the equipment provisions for RNP AR APCH operations.	- Check that the MEL has been revised to address RNP AR APCH operations. - In particular, check the requirement for TAWS class A to be operative in all cases and AP/FD to be operative for RNP AR APCH operations with RNP values of less than RNP 0.3 or with RF legs.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Operational procedures					
SPA.PBN.105(d)	<u>Pre-flight RNP assessment:</u> The operator should have a predictive performance capability accounting for known and predicted outages of GNSS satellites or other impacts on the navigation system's sensors.	- Check the system and procedures put in place by the operator to determine if the specified RNP will be available at the time and location of a desired RNP operation. - Check that the operator's procedures mandate the use of this capability as both a pre-flight preparation tool and as a flight following tool.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>NAVAID exclusion</u>	- Check that the operator has established procedures to exclude NAVAID facilities in accordance with NOTAMs (e.g. DMEs, VORs, localisers).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Navigation database currency</u>	- Check that the operator's procedures require the FC to check the validity of the navigation database during the system initialisation to ensure it is current for the duration of the flight. - Check (if applicable) that the operator has defined a procedure in		☐ N/A ☐ C ☐ NC	

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		case of change of the AIRAC cycle during a flight.		☐ R ☐ N/R	
In-flight procedures					
SPA.PBN.105(d)	<u>Modification of flight plan</u>	- Check the operator's policy regarding the possible modification of the navigation database by the pilot, is limited to the 2 below cases: - o accepting a clearance to go direct to a fix in the approach procedure that is before the FAF and that does not immediately precede an RF leg; - o change altitude and/or airspeed waypoint constraints on the initial, intermediate, or missed approach segments flight plan fixes (e.g. to apply temperature corrections or comply with an ATC clearance/instruction).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Mandatory equipment</u>	- Check that the operator has established a list in the OM of all the equipment which shall be operative for RNP AR APCH operations. - Check that this list is consistent with the MEL.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>RNP management</u>	- Check that the procedures are adequate to ensure that - o the navigation system uses the appropriate RNP values throughout the approach operation; - o If the navigation system does not extract and set the navigation accuracy from the on-board navigation database for each segment of the procedure, then the smallest navigation accuracy required to complete the approach or the missed approach is selected before initiating the approach operation.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Loss of RNP</u>	- Check that the procedures states that: - o no loss of RNP annunciation should be received prior to commencing an RNP AR APCH operation; - o if a loss of RNP annunciation is received during the approach, the FC should abandon the RNP AR APCH operation unless the pilot has in sight the visual references required to continue the approach operation.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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SPA.PBN.105(d)	<u>Radio updating</u> The flight crew should comply with the operator's procedures for inhibiting specific facilities.			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Approach procedure confirmation</u>	- Check that the procedures require the FC to confirm that the correct procedure has been selected, including confirmation of: - the waypoint sequence, - the reasonableness of track angles and distances, and any other parameters that can be altered by the FC, such as altitude or speed constraints.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Track deviation monitoring:</u> The flight crew should use a lateral deviation indicator, flight director and/or autopilot in lateral navigation mode on RNP AR APCH operations.	- Check that the procedures foresee the following: - The FC is expected to maintain procedure centrelines, as depicted by on-board lateral deviation indicators and/or flight guidance during the entire RNP AR APCH operations unless authorised to deviate by ATC or demanded under emergency conditions. - Vertical deviation is to be monitored above and below the glide-path (the vertical deviation should be within ± 75 ft of the glide-path during the final approach segment) - The FC is to execute a missed approach operation if: - the lateral deviation exceeds one time the RNP value; or - the deviation below the vertical path exceeds 75 ft or half-scale deflection where angular deviation is indicated, at any time; or (iii) the deviation above the vertical path exceeds 75 ft or half-scale deflection where angular deviation is indicated; at or below 1 000 ft above aerodrome level; unless the pilot has in sight the visual references required to continue the approach operation. - For <u>aircraft with a lateral deviation indicator</u> , check that the procedure foresees that: - the FC ensure that lateral deviation indicator scaling (full-scale deflection) is suitable for the navigation		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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		accuracy associated with the various segments of the RNP AR APCH procedure - For aircraft with a course deviation indicator (CDI) for lateral path tracking, check that: - the AFM states which navigation accuracy and operations the aircraft supports and the operational effects on the CDI scale. - The FC know the CDI full-scale deflection value - If the FC manually selects the CDI scale, the operator has procedures and training in place to assure the selected CDI scale is appropriate for the intended RNP operation; - The deviation limit is readily apparent given the scale (e.g. full-scale deflection). When a moving map, low-resolution vertical deviation indicator (VDI), or numeric display of deviations are to be used: - Check that the operator has demonstrated the effectiveness of these displays (e.g. demonstration of the procedure with trained FC and inclusion of this monitoring procedure in the recurrent RNP AR APCH training programme.			
SPA.PBN.105(d)	<u>System cross-check</u> The flight crew should ensure the lateral and vertical guidance provided by the navigation system is consistent.			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Procedures with RF legs</u>	- Check that the operator's procedures cover the following: - importance of maintaining the published path as closely as possible. when initiating a missed approach operation during or shortly after the RF leg - Operating procedures for aircraft that do not stay in LNAV when a missed approach is initiated to ensure the RNP AR APCH ground track is maintained. - The FC should not exceed the maximum airspeed values shown in Table 1 of AMC2 SPA.PBN.105(d) throughout the RF.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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SPA.PBN.105(d)	<u>Temperature compensation</u>	- Check that, for aircraft with temperature compensation capabilities, if the operator's procedure foresees that the FC may disregard the temperature limits on RNP procedures, the operator provides pilot training on the use of the temperature compensation function. <u>Note:</u> a temperature compensation by the system is applicable to the VNAV guidance and is not a substitute for the FC compensating for temperature effects on minimum altitudes or DA/H.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Altimeter setting</u>	- Check that the operator's procedures foresee that the FC verifies that the most current aerodrome altimeter is set prior to the FAF.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Altimeter cross-check</u>	- Check that then operator's procedures foresee that the FC completes an altimetry cross-check to ensure that both pilots' altimeters agree within +/- 100 ft prior to the FAF but no earlier than when the altimeters are set for the aerodrome of intended landing. <u>Note 1:</u> If the altimetry cross-check fails, then the approach operation should not be continued. <u>Note 2:</u> This operational cross-check should not be necessary if the aircraft systems automatically compare the altitudes to within 75 ft.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.PBN.105(d)	<u>Missed approach operation</u>	- Check that for aircraft which, when activating TOGA, disengage the AP and FD from LNAV guidance, and have the FD revert to track-hold derived from the inertial system, the procedure foresees that LNAV guidance to the AP and FD are re-engaged as quickly as possible. - Check that FC procedures and training address the impact on navigation capability and flight guidance if the pilot initiates a missed approach while the aircraft is in a turn. - Check that the procedures foresee that, when initiating an early missed approach operation, the FC follows the rest of the approach track and missed approach track unless a different clearance has been issued by ATC.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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		<u>Note:</u> The flight crew should be aware that RF legs are designed based on the maximum true airspeed at normal altitudes and that initiating an early missed approach operation will reduce the manoeuvrability margin and potentially even make holding the turn impractical at missed approach speeds.			
SPA.PBN.105(d)	<u>Contingency procedures</u>	- Check that the operator's contingency procedures address the following cases: • Failure while on route <u>Note:</u> In such case, the FC should be able to assess the impact of GNSS equipment failure on the anticipated RNP AR APCH operation and take appropriate action. • Failure on approach ○ failure of the area navigation system components, including those affecting lateral and vertical deviation performance (e.g. failures of a GPS sensor, the flight director or autopilot); ○ loss of navigation signal-in-space (loss or degradation of external signal).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
RNP monitoring programme					
SPA.PBN.105(f)	<u>RNP monitoring programme</u>	- Check that the operator's monitoring programme continuously collects at least the following information: ○ Total number of RNP AR APCH operations conducted; ○ Number of approach operations by aircraft/system which were completed as planned without any navigation or guidance system anomalies; ○ Reasons for unsatisfactory approaches, such as: ▪ UNABLE REQ NAV PERF, NAV ACCUR DOWNGRAD, or other RNP messages during approaches; ▪ excessive lateral or vertical deviation; ▪ TAWS warning; ▪ autopilot system disconnect; ▪ navigation data errors; or ▪ flight crew reports of any anomaly; ○ Flight crew comments. <u>Note:</u> during the first 90 days, the operator should provide a report every 30 days.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

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Events to be reported					
SPA.PBN.105(e)	Reportable events of PBN operations	- Check that the operator's list of events to be reported for PBN operations includes the following: - significant navigation errors attributed to incorrect data or a database coding error; - unexpected deviations in lateral/vertical flight path not caused by flight crew input or erroneous operation of equipment; - significant misleading information without a failure warning; - total loss or multiple navigation equipment failure; and - loss of integrity, e.g. RAIM function, whereas integrity was predicted to be available during pre-flight planning. - Check that the operator has a system in place for investigating a reportable event to determine if it is due to an improperly coded procedure or a navigation database error. Check its implementation.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	