
**SUBJECT: APPROVAL TO CONDUCT OPERATIONS WITHIN THE NORTH ATLANTIC
MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS (NAT-MNPS)
AIRSPACE**

DATE: 24/07/2016

1. PURPOSE

This Instruction provides guidance to obtain approval to operate within a specific airspace over the North Atlantic designated as the North Atlantic (NAT) Minimum Navigation Performance Specifications (MNPS) airspace.

2. APPLICABILITY

- 2.1.1 All Cape Verde registered aircraft planning to operate within the North Atlantic (NAT) Region MNPS Airspace shall be required to obtain an approval from the AAC before the commencement of operations.
- 2.1.2 Since MNPS Airspace is now designated as RVSM (Reduced Vertical Minimum Separation) airspace at all levels (i.e. FL290-410 inclusive), **AAC RVSM Approval is also required to operate within MNPS Airspace.** RVSM Approvals prescribe both airworthiness requirements to ensure aircraft height-keeping performance in accordance with the RVSM Minimum Aircraft System Performance Specifications (MASPS), and also crew operating procedures.

3. REFERENCE

- CV CAR 7.D.105;
- CV CAR 7.D110;
- ICAO Consolidated Guidance Material NAT Region (6th Edition) (NAT Doc.001, T13.5 N);
- ICAO Annexes, PANS/RAC (Doc. 4444) ;
- ICAO Regional Supplementary Procedures (Doc. 7030);
- North Atlantic MNPS Airspace Operations Manual;
- Flight Safety International Minimum Navigation Performance Standards

4. BACKGROUND

4.1 General

- 4.1.1 The concept of the MNPS was proposed on a worldwide basis at the International Civil Aviation Organization (ICAO) 9th Air Navigation Conference. The objective of MNPS is to ensure safe separation of aircraft and enable operators to derive maximum economic benefit from the improvement in navigation performance demonstrated in recent years.

- 4.1.2 The MNPS concept is scheduled to be implemented on a regional basis, taking into account particular regional operating conditions. At the September 1976 Limited North Atlantic Regional Air Navigation Meeting, criteria for MNPS, and the introduction of these criteria within parts of the NAT Region, effective at 0001 GMT, December 29, 1977, were agreed upon. (This date corresponds to the initial decommissioning of Loran-A in the NAT Region.) The area concerned is designated as the "NAT-MNPS airspace."
- 4.1.3 Aircraft operating within MNPS Airspace are required to meet Minimum Navigation Performance Specifications (MNPS) in the horizontal plane through the mandatory carriage and proper use of a specified level of navigation equipment that has been approved by the State of Registry or State of the Operator for the purpose. Such approvals encompass all aspects affecting the expected navigation performance of the aircraft, including the designation of appropriate cockpit/flight deck operating procedures.
- 4.1.4 When establishing the MNPS concept, it was decided by ICAO that all operators desiring to use the MNPS airspace must show that navigation equipment and procedures to be used are capable of continuously complying with the specifications. In the case of operators certificated under Parts 8 and 9 of the CV CARs, it is the responsibility of the Civil Aviation Authority (AAC) to make this determination. Acceptable means of showing original compliance with the MNPS requirements are contained herein. Continued compliance is the responsibility of the operator.

4.2 NAT MNPS DEFINED AREA

4.2.1 NAT-MNPS airspace is defined as follows:

- (1) The North Atlantic Region is essentially divided into two distinct areas for flight operation, i.e. MNPS Airspace and non-MNPS airspace.
- (2) Operations within MNPS Airspace require the user to adhere to very specific operating protocols. The vertical dimension of MNPS Airspace is between FL285 and FL420 (i.e. in terms of normally used cruising levels, from FL290 to FL410 inclusive).
- (3) The lateral dimensions include the following Areas:
 - (a) Those portions of the NEW YORK OCEANIC East north of 27°N
 - (b) And all of the REYKJAVIK, SHANWICK, GANDER and SANTA MARIA OCEANIC Control Areas (CTAs), excluding the area west of 60°W and south of 38°30'N.

4.3 MNPS AIRSPACE ACCURACY REQUIREMENTS

- 4.3.1 There are two navigational equipment requirements for aircraft planning to operate in MNPS Airspace. One refers to the navigation performance that should be achieved, in terms of accuracy. The second refers to the need to carry standby equipment with comparable performance characteristics
- 4.3.2 In terms of accuracy, an aircraft which is approved for operations within NAT MNPS Airspace prior to January 2015 shall have a navigation performance capability such that:
- (1) the standard deviation of lateral track errors shall be less than 11.7 km (6.3 NM)
 - (2) the proportion of total flight time spent by the aircraft 56 km (30 NM) or more off the cleared track shall be less than 5.3×10^{-4} ;

(3) the proportion of total flight time spent by the aircraft between 93 and 130 km (50 and 70 NM) off the cleared track shall be less than 13×10^{-5} .

4.3.3 For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an aeroplane shall be provided with navigation equipment which:

(1) continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track; and

(2) has been authorized by the State of the Operator for the MNPS operations concerned.

4.3.4 The AAC should verify that the lateral navigation capability of approved aircraft meets the above requirements. It should, however, be noted that aircraft that have been approved by the State of Registry or the State of the Operator, as appropriate, for RNP 10 (PBN application of RNAV 10) or RNP 4 are considered to meet the requirements. Although when granting consequent approval for operations in MNPS airspace, AAC should take account of the RNP 10 time limits for aircraft equipped with dual INS or inertial reference unit (IRU) systems.

4.3.5 Furthermore, when granting approval for operations in MNPS airspace on such a basis, the AAC should ensure that in-flight operating drills are approved which include mandatory navigation cross-checking procedures aimed at identifying navigation errors in sufficient time to prevent the aircraft inadvertently deviating from the ATC-cleared route.

5. APPLICATION AND APPROVAL PROCESS

5.1 General

5.1.1 All flights within NAT MNPS Airspace must have the AAC approval. Aircraft operating in RVSM Airspace are required to be compliant with the altimetry Minimum Aircraft System Performance Specifications (MASPS) and hold an issued approval. Approval for MNPS operations will require the checking by the AAC, of various aspects affecting navigation performance. These aspects include: the navigation equipment used, together with its installation and maintenance procedures; plus the crew navigation procedures employed and the crew training requirements.

5.1.2 All Cape Verde registered aircraft, which plan to fly across the North Atlantic, require an approval by AAC, for flight in MNPS airspace. This approval is granted to the operator by a letter of approval and, for an AOC holder, the operations specifications will be amended to include MNPS as well, which must be carried in the aircraft library and produced on demand.

5.1.3 To process an application the AAC needs to be satisfied that;

(1) Operational issues are adequate. Flight crew training as well as operations manuals will be evaluated. Approval will be required for each operator and each aircraft group.

(2) Airworthiness issues are satisfactorily addressed. Approval will be required for each aircraft group, and non-group aircraft, to be used in MNPS operations.

5.1.4 Approval to operate within the NAT-MNPS airspace does not constitute approval to operate within any other MNPS airspace.

5.2 Procedures for MNPS approval

5.2.1 The applicant desiring approval to operate in NAT-MNPS airspace should contact the AAC, and submit the application package referred in section 8.2 B, at least 60 days prior to the intended start of MNPS operations.

- (1) Aircraft airworthiness approval to operate within the NAT-MNPS airspace by the use of any combination of navigation systems can be obtained based on the demonstration by the applicant that the proposed aircraft, in compliance with the type design or properly altered condition, is capable of meeting the navigation accuracy criteria defined in section 7 above.
- (2) The operational approval to conduct operations within the NAT-MNPS airspace can be obtained based on evidencing the airworthiness approval of the proposed aircraft. In addition, the applicant shall submit for the AAC evaluation the procedures for crew qualification and the operational navigational procedures as applicable to the installed equipment and the route area to be flown.
- (3) Before submitting the application, operators shall review all aircraft qualification requirements. Compliance with airworthiness requirements or the installation of the equipment alone does not constitute operational approval.

5.2.2 The application package should contain the following:

- (1) The AAC Form FS.DSV.44 - Application for MNPS approval
- (2) Airworthiness documents concerning aircraft eligibility. - The operator shall submit relevant documentation showing that the aircraft is equipped with long-range navigation systems (LRNS) that meets MNPS requirements Evidence that the type design of the aeroplane is approved for MNPS, normally reflected by a statement in the approved Aeroplane Flight Manual (AFM) or its supplement, embodied Supplemental type certificate, or Service Bulletin.
- (3) A description of the aircraft navigation equipment appropriate to operations in an MNPS environment (meeting the navigation accuracy criteria defined in section 7). The operator shall provide a configuration list with details of the relevant components and the equipment to be used. The list must include the manufacturer, model and version of each GNSS, INS/IRU equipment and software of the installed FMS. For unrestricted operation in MNPS airspace an aircraft should be equipped;
 - (a) at least two fully serviceable Long Range Navigation Systems (LRNSs). An LRNS may be one of the following:
 - (i) one Inertial Navigation System (INS);
 - (ii) one Global Navigation Satellite System (GNSS); or
 - (iii) one navigation system using the inputs from one or more Inertial Reference System (IRS) or any other sensor system complying with the MNPS requirement.
 - (b) each LRNS must be capable of providing to the flight crew a continuous indication of the aircraft position relative to desired track.
 - (c) it is also highly desirable that the navigation system employed for the provision of steering guidance is capable of being coupled to the autopilot.

Note: Some aircraft may carry two independent LRNS but only one FMCS. Such an arrangement may meet track keeping parameters but does not provide the required redundancy (in terms of continuous indication of position relative to track or of automatic steering guidance) should the FMCS fail; therefore, in order to obtain MNPS certification, dual FMCS is required to be carried. For example: a single INS is considered to be one LRNS; and an FMCS with inputs from one or more IRS/ISS is also considered to be a single LRNS.

- (4) Maintenance. The maintenance programme should be submitted for approval. The applicant should have an established Maintenance Program that contains all MNPS related maintenance requirements prescribed by the manufacturer or design organisation for each navigation system. The operator will provide a procedure to withdraw and then restore MNPS operational capability to an aircraft.
- (5) Maintenance personnel training programme. - The operators will submit the corresponding maintenance staff training curricula.
- (6) The Minimum Equipment List should be submitted for approval. The applicant should revise the relevant parts of the Minimum Equipment List to reflect system requirements (e.g. redundancy levels) appropriate to the intended MNPS operations.
- (7) Navigation Accuracy Records. As a guide all navigation equipment approved for RNP 12.6 nm or better would normally be acceptable to the AAC. The operator of an aircraft, for which there is not a specific RNP limitation or approval in the Aircraft Flight Manual, must compile navigation accuracy data (The NAT MNPS defines a requirement for the standard deviation of lateral track errors to be less than 6.3 nm. This effectively equates to an RNP value of 12.6 nm). This data will be scrutinised by the AAC to determine that the accuracy limits of RNP 12.6 nm are met.
- (8) Past performance. - The application will include the operating history of the operator. The applicant will include the events or incidents in relation to navigation errors in Class II airspace, which have been corrected through changes in the training programmes, procedures, maintenance or aircraft navigation systems used.
- (9) Training Programmes for flight crews and flight dispatchers (DV), procedures, and operating practices. All operators should submit training syllabus and other appropriate material to the AAC to show that the operating practices, procedures and training items related to MNPS operations are incorporated in training programmes. Guidance on the content of training programmes and operating practices and procedures is given in Sections 10 and 9. In broad terms, this covers flight planning, pre-flight procedures, aircraft procedures for entry, in-flight and contingency procedures, and flight crew training procedures.
- (10) Training. Once the amendments to manuals, programmes, and documents submitted have been accepted or approved, the operator will provide the required training to its personnel.
- (11) Operations Manuals and Checklists. The appropriate manuals and checklists should be revised to include information/guidance on standard operating procedures as detailed in Sections 10 and 9. The appropriate manuals must contain the operation instructions for navigation equipment and any other procedure established in order to operate in a given operations area (e.g., contingency procedures). Manuals and checklists should be submitted for review by the AAC as part of the application process.

- 5.2.3 **Authority Review and Evaluation of Applications.** Once the application has been submitted and the AAC Airworthiness Section is satisfied with the information provided, the AAC will continue with the approval process.
- 5.2.4 **Validation Flight(s).** The content of the MNPS application and programmes may be sufficient to validate the aircraft. However, the final step of the approval process may require a validation flight through MNPS airspace by an AAC Flight Operations Inspector to verify that all relevant procedures are applied effectively. Such validation can be performed on commercial flights. If the performance is satisfactory, operational approval for MNPS airspace may be granted. If the performance is not adequate, then approval will be delayed.
- 5.2.5 **Issuance of an authorisation to conduct MNPS operations.** Once the operator has successfully completed the operational approval process to operate in MNPS airspace, the AAC will granted the authorisation by the issuance of a Letter of Approval, and/or an amendment of the operations specifications issued by the AAC. Each aircraft for which the operator is granted authority will be listed in the Letter of Approval. (Refer to ANNEX 1 for sample letter).

5.3 **Conditions for Removal of MNPS Authority**

- 5.3.1 **Equipment Tolerances.** The incidence of track keeping errors that can be tolerated in an MNPS environment is small. It is incumbent upon each operator to take immediate action to rectify the conditions that cause an error. The operator should also report the event to the AAC within 72 hours, through the appropriate channels with initial analysis of causal factors and measures taken to prevent further events. The requirement for follow up reports will be determined by the AAC. Operators should be aware that the regulatory authorities of the UK, USA and Canada regularly check aircraft tracking accuracy.
- 5.3.2 **Operators Actions.** The operator should make an effective, timely response to each track keeping error. The AAC may consider removing MNPS operational approval if the operator response to a track keeping error is not effective or timely. The AAC will also consider the operator's past performance record in determining the action to be taken. If an operator shows a history of operational and/or airworthiness errors, then approval may be removed until the root causes of these errors are shown to be eliminated and MNPS programmes and procedures effective. The AAC will review each situation on a case-by-case basis.

6. **OPERATING PROCEDURES**

- 6.1.1 In order to meet the requirements for MNPS operations in oceanic areas, an operator must comply with the relevant requirements contained in Annex 2 – Rules of the Air, to the Convention on International Civil Aviation.

6.2 **Flight planning**

- 6.2.1 During flight planning the flight crew and flight dispatchers must pay particular attention to conditions that may affect operation in MNPS airspace or routes. These include, but may not be limited to:

- (1) verifying that the aircraft equipment is approved for MNPS operations.
- (2) verifying that two LRNS are operational;
- (3) reported and forecast weather on the route of flight

- (4) minimum equipment (MEL) requirements pertaining to track keeping systems;
- (5) If required for the specific aircraft group, accounting for any aircraft operating restriction related to MNPS airworthiness approval.
- (6) Verifying if the letter "X" has been inserted in Box 10 of the ICAO flight plan, this still indicate MNPS approval even after the introduction of RVSM and therefore, should continue to be used.

6.3 Pre-flight procedures

6.3.1 The following actions must be completed during pre-flight:

- (1) Review flight technical records (maintenance logs) to ascertain the conditions of the equipment required for flight in MNPS airspace or route. Ensure that maintenance actions have been taken to correct defects in the required equipment;
- (2) During the external inspection of the aircraft, check the condition of the navigation antennas and the condition of the fuselage skin around each of these antennas (this can be done by a competent and authorised person other than the pilot, like, for instance, an on-board mechanic or a maintenance person); and
- (3) Review the emergency procedures for operations in MNPS airspace or routes. These are not different from the normal oceanic emergency procedures, with one exception: crews must be capable of recognising, and the ATC must be notified, when the aircraft is no longer capable of flying at its capacity level according to the MNPS approval.

6.4 En-route procedures

6.4.1 The following must be observed:

- (1) at the oceanic point of entry, at least two LRNS must be capable of navigating in MNPS, otherwise, the crew will consider using an alternate route or initiating a deviation to repair the systems;
- (2) Before entering oceanic airspace, aircraft position must be checked as accurately as possible using external navigation aids. This may require DME/DME or VOR checks to identify navigation system errors by comparing displayed and actual positions. If it is necessary to update the system, the appropriate procedures must be followed with the assistance of a prepared checklist;
- (3) Operating procedures must include mandatory cross-check procedures in order to identify navigation errors in advance and prevent the aircraft from inadvertently deviating from the routes authorised by the ATC;
- (4) Crews must notify the ATC of any degradation or failure of the navigation equipment below the navigation performance requirements, or of any deviation required for a contingency procedure; and
- (5) Pilots must use a lateral deviation indicator, flight director, or autopilot in lateral navigation mode on MNPS operations. All pilots are expected to maintain route centrelines, as depicted by on-board lateral deviation indicators and/or flight guidance, during all MNPS operations, unless authorized to deviate by ATC or under emergency conditions.

6.5 Post flight procedures

The operator must create a mechanism whereby pilots log the navigation accuracy at the completion of a flight. In making technical entries for a malfunction or inaccuracy in a track keeping system, the pilot should provide sufficient detail to enable an effective and timely repair

6.6 Contingency procedures

6.6.1 Flight crews and flight dispatchers must become familiar with the following general provisions:

(1) If an aircraft cannot continue the flight in accordance with the current ATC authorisation or cannot maintain MNPS precision, it will not enter, or continue operations in MNPS airspace. In this case, the pilot will obtain a revised authorisation, whenever possible, before beginning any action.

(2) In all cases, the flight crew must follow the contingency procedures established for each region or area of operation and obtain an authorisation from the ATC as soon as possible.

6.6.2 Procedures for in-flight contingencies, deviations due to weather, and strategic lateral offset. The operator will develop procedures for in-flight contingencies, deviations due to weather conditions, and strategic lateral offset (SLOP), in accordance with Paragraph 15.2 of ICAO Doc 4444 – Special procedures for In-flight contingencies in oceanic airspace. These procedures are of general application in oceanic and remote continental areas of operations. As a minimum, the following aspects will be included:

(1) Special procedures for in-flight contingencies in oceanic airspace.

(2) Deviation procedures due to weather conditions.

(a) General.

(b) Measures to be adopted when establishing pilot-controller communications.

(c) Measures to be adopted if a revised ATC authorisation cannot be obtained.

(3) Strategic lateral offset procedure in oceanic and remote continental airspaces

7. TRAINING REQUIREMENTS

7.1 Introduction

7.1.1 All initial MNPS training courses must be approved by the AAC prior to use and the syllabus incorporated in the Operators Manuals. Recurrent training is required on at least once in two years.

7.1.2 The following aspects must to be standardised and included in the training programmes for flight crews and flight dispatchers. Some aspects may have already been duly standardised in the existing training programmes. The new technologies may also eliminate the need for certain actions by the flight crew. If this is the case, this paragraph can be deemed fulfilled.

7.2 Flight crew training

7.2.1 Flight crew and flight dispatchers must be trained on the following aspects:

(1) General

- (a) knowledge, understanding and compliance of standard ATC phraseology and track messages used in each area of operations;
- (b) MNPS procedures for NAT (and other areas when applicable)
- (c) Changes to charting and documents to reflect MNPS.
- (d) Navigation equipment required to be operational for flight in designated MNPS airspace, limitations associated with the RNAV equipment;
- (e) Impact of updating navigation systems.
- (f) Use of MEL


(2) Operational procedures

- (a) Flight planning requirements;
- (b) Entry, en-route and exit requirements and procedures;
- (c) Contingency procedures for system failures or navigation inaccuracies;
- (d) Position error log and notification requirements;
- (e) Operations Manual information and procedures; and
- (f) The information in this Technical circular

8. OVERSIGHT, INVESTIGATION OF NAVIGATION ERRORS AND WITHDRAWAL OF MNPS AUTHORISATION

- 8.1.1 The operator will establish a procedure to receive, analyse, and follow up on navigation error reports in order to determine appropriate corrective actions.
- 8.1.2 Information showing the potential of repeated errors may require changes to the training programme of the operator.
- 8.1.3 Information attributing multiple errors to a specific pilot may indicate that that pilot needs additional training or a revision of his/her license.
- 8.1.4 Repeated navigation errors attributed to a piece of equipment or a specific part of that piece of equipment or to operational procedures can entail the cancellation of an operational approval (withdrawal of MNPS authorisation from the OpSpecs or withdrawal of the LOA in the case of private operators).

Approval to conduct operations within the north atlantic minimum navigation performance specifications (NAT-MNPS) airspace



João dos Reis Monteiro
President of the Board

ANNEX A – APPLICATION FOR NORT ATLANTIC MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS (NAT-MNPS) APPROVAL

	APPLICATION FOR NORT ATLANTIC MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS (NAT-MNPS) APPROVAL	Reference:	FS.DSV.44
		Revision:	Revision 1
		Date:	21-07-2015

Applicability: MNPS Operations in accordance with Instruction on Approval to Conduct Operations within NAT MNPS Airspace, CV-CAR 8 , ICAO Doc 007 , Doc 7030/4 (NAT/RAC).

Completion of form: Please complete those fields that are relevant to your aircraft and operations.

Each relevant box should be completed with a tick (☐) or a (x). Items marked with an asterisk (*) to be completed only for first aircraft of each aircraft type / model in operator's fleet. Where form must be completed by referring to a document of applicant's documentation of system, add manual reference chapter and sub-chapter. Please ensure all applicable areas are completed.

Application Accuracy of information provided. All information will be used to assess MNPS compliance. An incomplete, poorly prepared or inaccurate application may:

- Result in rejection of the application
- Result in delays
- Add to the cost of the assessment
- Result in a refusal to issue the approval

Note: It is an offence to make a false declaration in this form.

Applications for MNPS approval shall be made using AAC Form FS.DSV.44. Submit the form and application package required by Instruction N° 08/DSV/2015 to:

AGÊNCIA DE AVIAÇÃO CIVIL (AAC)
Av. Cidade de Lisboa, N° 34 – Várzea
C.P. 371 – Praia, Cabo Verde

1. GENERAL		
General Information		
1. Applicant:		
2. Contact person:	Phone:	Email:
3. Aircraft Registration:		
4. Aircraft Manufacturer:		
5. Aircraft Type Designation / Model Designation:		
6. Serial No.:		
Scope of Application		Yes No
7. Application for NAT-MNPS approval?		☐ ☐
8. Initial request for MNPS approval for aircraft type referenced in 1.5?		☐ ☐

2. AIRWORTHINESS		
Type Design Approval for referenced Aircraft Type Designation		
1. The MNPS type design approval is reflected in: <input type="checkbox"/> AFM <input type="checkbox"/> AFM Supplements <input type="checkbox"/> Type Certification Data Sheet <input type="checkbox"/> Supplemental Type Certificate <input type="checkbox"/> other:		
2. Aircraft Flight Manual (AFM) or AFM Supplement refers to what airworthiness approval basis for MNPS navigation system installation: Specify what airworthiness approval (e.g FAA TSO, order, AC, JAA-JTSO, etc):.....		
3. Is aeroplane position automatically determined from independent (stand-alone) GPS systems?	Yes	No
	☐	☐
4. Is aeroplane position automatically determined from FMS / Multi sensor navigation systems	☐	☐
5. Is a single navigation system installed?	☐	☐
6. Are dual navigation systems installed?	☐	☐
7. Is a single long-range navigation systems installed?	☐	☐

8. Are dual independent long-range navigation systems installed?	<input type="checkbox"/>	<input type="checkbox"/>
9. Are triple independent long-range navigation systems installed?	<input type="checkbox"/>	<input type="checkbox"/>
10. Other: If "yes" specify:.....	<input type="checkbox"/>	<input type="checkbox"/>
11. Unless otherwise specified in the AFM (Supplement) INS/IRS system installations which do not have automatic navigation updating of INS/IRS position are limited to a maximum 6.2-hour time limit for operation in designated RNAV airspace. Limitation applicable?	<input type="checkbox"/>	<input type="checkbox"/>
12. If GPS serves as only one of the two required LRNSs, then it must be approved in accordance with FAA TSO-C129 as Class A1, A2, B1, B2, C1 or C2, or with equivalent national	<input type="checkbox"/>	<input type="checkbox"/>
13. If operations are based on stand-alone GPS navigation equipment, availability of GPS integrity should be confirmed and obtained from an approved dispatch fault detection and exclusion (FDE) availability prediction program.	<input type="checkbox"/>	<input type="checkbox"/>
Navigation System Eligibility for referenced Aircraft Serial Number		
14. Navigation system manufacturer/model installed (e.g Flight Management System (FMS): Make: Model: TSO- Make: Model: TSO- Make: Model: TSO-		
15. The approval of the MNPS systems installation is based on: <input type="checkbox"/> Type design <input type="checkbox"/> FAA STC <input type="checkbox"/> STC <input type="checkbox"/> Service Bulletin <input type="checkbox"/> JAA STC <input type="checkbox"/> Major Modification <input type="checkbox"/> other:		
Maintenance Program (*)	Yes	No
16. The applicant should have an established Maintenance Program that contains all MNPS related maintenance requirements prescribed by manufacturer or design organization. MNPS	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Equipment List (*)		
17. The applicant should revised parts of Minimum Equipment List(MEL) to reflect system requirements (e.g. redundancy levels) appropriate to the intended MNPS operations? Minimum	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance Training (*)		
18. The Applicant should revise Maintenance Training program (training of applicant's maintenance management staff, training of contractor's maintenance personnel, initial training, recurrent training, training syllabi, etc.) and provide training to the maintenance personnel involved on MNPS operations	<input type="checkbox"/>	<input type="checkbox"/>

3. OPERATION		
Operations Manual	Yes	No
1. Does the Operation Manual mention the MNPS in the introduction paragraph of the	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the Operation Manual describes the required qualification/competence for flight crew	<input type="checkbox"/>	<input type="checkbox"/>
Operating Practices and Procedures (*)		
The applicant must institute MNPS Operating Practices and Procedures. These practices and procedures should cover the following subjects:	<i>To be completed by applicant</i> MNPS Operating Practices and Procedures are described in (add manual reference, chapter and sub-	
3. Flight planning procedures for operations in MNPS airspace (MNPS approval of aircraft, reported and forecast weather, use of minimum equipment list (MEL), airframe or operating restrictions, description of		
4. Pre-flight procedures for each flight in MNPS airspace (review of technical log, external inspection, functional check of altitude measurement and control systems, etc.).		
a. Procedures for alignment of the inertial navigation systems must be described in detail, including Position Initialization Procedures and the use of a Satellite Navigation Availability Program.		
b. Procedure to check of the functionality and accuracy of 2 Long Range Navigation Systems (2 LRNS)		
c. Procedure for way point loading (Co-ordination of two persons)		
d. Procedure for checking the Flight Plan Data in the FMS		
e. Procedure for checking the Long Range Communication		

f. UTC-Check and synchronisation of the aircraft's Master clock in order to provide accurate time reference to the system for the calculation of accurate time-estimates at specific waypoints	
5. In-Flight procedures (cross checking procedures to identify navigation errors, use of INS/IRS navigation systems without automatic radio navigation updating, use of GPS, minimum navigation and communication systems when entering RNAV area, alternate routings, position check before entering RNAV	
a. Ground Nav-Aids should be used to verify performance of the LRNS to identify possible Map-shifts. A compass heading cross-check should be made recorded to determine the most accurate	
b. Oceanic Clearance: Two flight crew members shall listen to and record any clearance obtained from ATC in order to verify correct	
c. Verification of received ATC-clearance shall be crosschecked from the recorded data to the Flight plan as inserted in the FMS.	
d. Crossing of way-points within MNPS airspace	
e. Distance and track to the next waypoint shall be verified. When crossing the waypoint, it shall be verified that the new TO-Waypoint becomes active and the aircraft in turning in the correct	
6. Procedures with respect to flight crew response to abnormal situations (response to non-normal events, notification of ATC of navigation equipment problems, contingency procedures, selection of other navigation aids in case of loss of MNPS capability, etc.)	
7. Post-flight procedures (technical log entries, defects description, reporting of altitude deviations and altimetry system errors, etc. affecting MNPS –capability: e.g Position-Drift of each IRS, Residual	
9. Procedures to report within 72 hours after the occurrence, containing an initial analysis of causal factors and measurement taken to prevent repeat occurrence. (reporting events: total track Error of 25 NM or more, deviation from assigned altitude of ± 300 ft, loss of MNPS/RVSM-capability, the application of any contingency procedure)	
Flight Crew Training and Qualification (*)	
The applicant is required to establish the following (covering subjects under 3.1 to 3.10):	<i>To be completed by applicant</i> Description in (add manual reference, chapter and subchapter):
1. Flight crew and Flight dispatcher qualification requirements.	
2. Description of initial and recurrent training, checking-and training-	

4. APPLICATION PACKAGE		
Documentation to be submitted to the CCAA	Submitted?	
	Yes	No
1. Compliance statement which shows how the criteria of CT -30-004 have been satisfied (*).	<input type="checkbox"/>	<input type="checkbox"/>
2. Sections of the AFM or AFM Supplements that document MNPS airworthiness approval	<input type="checkbox"/>	<input type="checkbox"/>
3. Flight crew MNPS training programmes and syllabi for initial and recurrent training (*).	<input type="checkbox"/>	<input type="checkbox"/>
4. Flight crew MNPS training programmes and syllabi for initial and recurrent training (*).	<input type="checkbox"/>	<input type="checkbox"/>
5. Operation manuals and checklists that include MNPS operating practices and procedures (OM-A, OMB, OM-D, AOM, FCOM, Route Manuals, stand-alone MNPS manual, etc.) (*).	<input type="checkbox"/>	<input type="checkbox"/>
6. Minimum Equipment List (MEL) that include items pertinent to MNPS operations (*).	<input type="checkbox"/>	<input type="checkbox"/>
7. Maintenance program, practices & procedures or revision thereof that include items pertinent to MNPS equipment (*).	<input type="checkbox"/>	<input type="checkbox"/>
8. Service Bulletin, Supplemental Type Certificate (STC) or Major Modification Approval Documentation, if approval based on documents as detailed in 2.15 above (except if based on	<input type="checkbox"/>	<input type="checkbox"/>

5. APPLICANT'S STATEMENT
The undersigned certifies the above information to be correct and true and that aircraft system installation, continuing airworthiness of systems, minimum equipment for dispatch, operating procedures and flight crew training comply with the requirements of CV-CAR and CT-30-004

Name of Post Holder Maintenance:	Signature:	Date:
Name of Post Holder Operations:	Signature:	Date:
Name of Post Holder Training:	Signature:	Date:

FOR OFFICIAL USE ONLY				
Subject	Responsibl	Date	SRS N°	Signature
1. AAC Form FS.DSV.04 and package checked for completeness.	FOI			
2. Airworthiness Approval granted (ANNEX to Certificate of	AWI			
3. Operational Approval granted (AOC, Operations Specification and Letter of Authorisation).	FOI			
Withdrawal of MNPS Approval:				
<i>Reason:</i>				
Notification to NAT Central Monitoring Agency (CMA) by:				
<i>Name:</i>	<i>Date:</i>	<i>Signature:</i>		