



RNAV 1 AND RNAV 2 OPERATIONS APPLICATION AND JOB AID

1. Introduction

This Job Aid was developed to provide operators and inspectors with guidance on the process to be followed by an operator in order to obtain an RNAV 1 and/or RNAV 2 approval. It shall be used for application by the operator and as an aid for the approval process by the inspector. Reference should be made to advisory pamphlets FSS-AOC-AP 120 and FSS-AOC-AP 123. The applicant may also use the ICAO PBN Manual (DOC9613) for guidance as required.

Purpose of the Job Aid

- 2.1 To give operators and inspectors information on the main RNAV 1 and RNAV 2 reference documents.
- 2.2 To provide tables showing the contents of the application, the associated reference paragraphs, the place in the application of the operator where RNAV 1 and RNAV 2 elements are mentioned and columns for inspector comments and follow-up on the status of various RNAV 1 and RNAV 2 elements.

2. Actions recommended for the inspector and operator

Some recommendations for use of the Job Aid follow:

- 3.1 At the pre-application meeting with the operator, the inspector reviews the “basic events of the RNAV 1 and RNAV 2 approval process” described in Part 1 of this Job Aid, in order to provide an overview of the approval process events.
- 3.2 The inspector reviews this Job Aid with the operator in order to establish the form and content of the RNAV 1 and RNAV 2 approval application.
- 3.3 The operator uses this Job Aid as a guide to collect the documents/annexes of the RNAV 1 and RNAV 2 application.
- 3.4 The operator inserts in the Job Aid references showing in what part of its documents are the RNAV 1 and RNAV 2 programme elements located.
- 3.5 The operator submits the Job Aid and the application to the inspector (documents/annexes).
- 3.6 The inspector indicates in the Job Aid whether an item is in compliance or needs corrective action.
- 3.7 The inspector informs the operator as soon as possible when a corrective action by the operator is required.
- 3.8 The operator provides the inspector with the revised material when so requested.
- 3.9 The Authority provides the operator with the operational specifications (OpSpecs) or a letter of authorisation (LOA), as applicable, once the tasks and documents have been completed.

3. Main reference documents

Reference document	Title
Namibia DCA-005/2014	Operational Directive – Performance Based Navigation for Air Operators

Namibia FSS-AOC-AP 120	PBN Approval General Information
Namibia FSS-AOC-AP 123	RNAV 1 and RNAV 2 Operations Approval Process
Other Documents	
ICAO Doc 9613	Performance-based navigation (PBN) manual
EASA TGL 10	Airworthiness and operational approval for precision RNAV operations in designated European airspace
EASA AMC 20-5	Acceptable means of compliance for airworthiness approval and operational criteria for the use of the NAVSTAR Global positioning system (GPS)
FAA AC 90-100A	U.S. Terminal and en route area navigation (RNAV) operations
FAA AC 90-96A	Approval of U.S. operators and aircraft to operate under instrument flight rules (IFR) in European airspace designated for basic area navigation (B-RNAV) and precision area navigation (P-RNAV)
TSO-C145, TSO-C146 and TSO-C129	Global Positioning System TSOs

PART 2: INFORMATION ON THE IDENTIFICATION OF AIRCRAFT AND OPERATORS

NAME OF THE OPERATOR: _____ is applying for RNAV 1 and 2 approval

Aircraft manufacturer, model, and series	Registration numbers	Aircraft Serial numbers	Area navigation system and manufacturer,	Model serial number

DATE OF PRE-APPLICATION MEETING _____

DATE APPLICATION WAS RECEIVED _____

DATE OPERATOR INTENDS TO BEGIN RNAV 1 AND 2 OPERATIONS _____

SIGNATURE BY RESPONSIBLE POST HOLDER _____

NAME OF RESPONSIBLE POST HOLDER _____

CAA: NOTIFICATION DATE APPROPRIATE? YES _____ NO _____

PART 3 – OPERATOR APPLICATION (ITEMS AND DOCUMENTS)

Item	Title of Annex/document	Indication of inclusion by the operator	Comments by the inspector
1.	Operator request for RNAV 1 and RNAV 2 authorization		
2.	Airworthiness documents showing aircraft eligibility for RNAV 1 and RNAV 2 AFM, AFM revision, AFM supplement, or Type certificate data sheet (TCDS) showing that RNAV systems are eligible for RNAV 1 and RNAV 2 or RNP 1 or above; or Statement by the manufacturer.		
3.	Aircraft modified to meet RNAV 1 and RNAV 2 standards. Documentation on aircraft inspection and/or modification, if applicable.		
4.	Maintenance programme <ul style="list-style-type: none"> • For aircraft with established RNAV 1 and RNAV 2 system maintenance practices, the list of references of the document or programme. • For recently installed RNAV 1 and RNAV 2 systems, the maintenance practices for their review. 		
5.	Minimum equipment list (MEL) (for operators conducting operations based on a MEL): MEL showing provisions for RNAV 1 and RNAV 2.		
6.	Training <ol style="list-style-type: none"> 1. PART 91 operators or equivalent: course completion records. 2. PART 121 and/or 135 operators or equivalent: Training programmes (training curriculums) for flight crews, flight dispatchers, and maintenance personnel. 		
7.	Operating policies and procedures <ol style="list-style-type: none"> 1. PART 91 operators or equivalent: Operations manual (OM) or sections to be attached to the application, corresponding to RNAV 1 and RNAV 2 operating procedures and policies. 2. PART 121 and/or 135 operators or equivalent: Operations manual and 		

	checklists.		
8.	Navigation database Details of the navigation data validation programme.		
9.	Withdrawal of RNAV 1 and RNAV 2 approval Indication of the need to follow up on navigation error reports submitted and the possibility of withdrawal of RNAV 1 and RNAV 2 approval.		
10.	Validation flight plan: Only if required by the Authority.		

CONTENTS OF THE APPLICATION TO BE SUBMITTED BY THE OPERATOR

Documentation showing rnav 1 and rnav 2 compliance by aircraft/navigation systems

Operating procedures and policies

Sections of the maintenance manual related to rnav systems (if not previously reviewed)

Note 1: Documents may be grouped in a single folder or may be sent as individual documents.

PART 4 – GUIDE TO DETERMINE RNAV 1 AND RNAV 2 AIRCRAFT ELIGIBILITY

Item No.	Requirement Topic	Reference paragraphs FSS-AOC-AP 123	Operator's reference Insert N/A where not applicable	Comments and/or recommendations by the inspector	Follow-up by the inspector: status & date
1	<p>RNAV system requirement</p> <p>The RNAV system use inputs from the following types of sensors (not listed in a specific order of priority):</p>	8.1.1			
1a	GNSS according to TSO-C145, TSO-C146 and TSO-C129				
1b	DME/DME				
1c	DME/DME/IRU				
2	<p>Performance, monitoring and alerting requirements</p>	8.1.2			
3	<p>Aircraft eligibility</p> <p>a) Aircraft approved under TGL-10 and AC 90-100A.</p> <p>b) Aircraft with a statement by the manufacturer.</p> <p>c) Information to be included in the AFM, POH or avionics operating manual</p>	8.2			
4	<p>Criteria for RNAV 1 and RNAV 2 systems</p>	8.3			
4a	GNSS RNAV				
4b	DME/DME RNAV				
4c	Confirmation of the performance of RNAV systems that use DME				
4d	DME/DME/IRU RNAV				

Item No.	Requirement Topic	Reference paragraphs FSS-AOC-AP 123	Operator's reference Insert N/A where not applicable	Comments and/or recommendations by the inspector	Follow-up by the inspector: status & date
5	Functional requirements and their explanation	8.4 Appendix 3			
6	Maintenance requirements	8.5			
7	Navigation database Details of the navigation data validation programme.	12			

PART 5 - APPLICATION FOR RNAV 1 AND 2 OPERATIONS

Item	Operating Procedures	Reference FSS-AOC-AP 123	Operator's documents reference Insert N/A where not applicable	Comments by the Inspector
	Flight Planning	10.1 a)		
1.	Verification that aircraft has been approved for RNAV 1 and 2 operations.			
2.	Verification of RAIM availability (GNSS only) for the intended routing and times.			
3.	Verification of the availability of NAVAIDS (non –GNSS).			
4.	Verification navigation database is current and appropriate for the region.			
5.	Verification requirement to insert the letter “R” in item 10 and PBN/C1 to D4 as appropriate in item 18 of the ICAO flight plan.			
6.	Verification of any operational restriction related to RNAV 1 and 2 approval as appropriate.			
	General Operating Procedures	10.1 b)		
7.	Reviewing of maintenance logs/status and MEL dispatchability (for operators approved to dispatch flights under an MEL).			
8.	Confirming that the navigation database is up to date (if appropriate).			
9.	Cross-checking of charts with the RNAV system display.			
10.	Cross-checking with conventional NAVAIDS to monitor for navigational reasonableness.			
11.	Ensuring flight plan is not modified during ATC heading assignments until clearance is received to re-join the route or a new clearance is			

Item	Operating Procedures	Reference FSS-AOC-AP 123	Operator's documents reference Insert N/A where not applicable	Comments by the Inspector
	confirmed.			
12.	Using of appropriate displays and scaling.			
13.	Operator procedures for use of a lateral deviation indicator, an FD or an AP in lateral navigation mode.			
14.	Operator procedures for limiting FTE to +/- ½ navigation accuracy			
15.	Not modifying the flight plan in the RNAV system after ATC heading assignment until a clearance is received to re-join the route or a new clearance is confirmed.			
16.	Requirement/procedures for advising ATC if unable to comply to instructions.			
	RNAV SID requirements	10.1 c)		
17.	Prior to take off checking the RNAV system aerodrome and procedure loaded and the displayed position.			
18.	Engaging LNAV no later than 5 feet above aerodrome elevation.			
19.	If DME/DME only, not using RNAV until within DME coverage			
20.	If DME/DME/IRU confirming navigation position within 0.17NM at the start of take-off roll.			
21.	If GNSS, acquiring of signal before start of take-off.			
	RNAV STAR requirements	10.1 d)		
22.	Verify that the correct STAR is loaded and displayed			
23.	Arrival procedures modification in response to ATC instructions			
24.	Observing of speed and altitude restrictions			

Item	Operating Procedures	Reference FSS-AOC-AP 123	Operator's documents reference Insert N/A where not applicable	Comments by the Inspector
	Contingency Procedures			
25.	For stand-alone GPS installations, in the event of failure, crew reversion to an alternative means of navigation.			
26.	Notification to ATC of any degradation or failure of the navigation equipment below the navigation performance requirements.			
27.	Advising ATC if unable to comply with the requirements for RNAV 1 or RNAV 2 as applicable.			
28.	Air-ground communication failure requirements			
	Training Programme			
29.	Sufficient Training for flight crews and flight dispatchers that met the RNAV 1 and 2 requirements.	Para 11		

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Recommendation/observation (FOPS):

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AIR Inspector's Name & ASI Stamp	Signature	Date
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FOPS Inspector's Name & ASI Stamp	Signature	Date
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SUBDIVISION CHIEF'S REMARKS:

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The above requirements have been evaluated against the operator submissions and is hereby **approved / not approved** for RNAV 5 operations.

Chief Inspector's Name & ASI Stamp	Signature	Date
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