



DEFENCE AVIATION SAFETY AUTHORITY

NOTICE OF PROPOSED AMENDMENT FOR DASR CHANGE PROPOSAL 2022-018 Revision 0

DASR SPA.50

DEFENCE NAVIGATION APPROVALS

References:

- A. DASA Newsbreak: Deliberate Review of Aviation Operations-Related Implementing Regulations – Aug 21, update of 20 Aug 21 ([BP19171323](#))
- B. Decision Brief for DG DASA: *New Regulation Concept – DASR SPA.50 Defence navigation approvals*, of 12 Jul 23 ([BP33738766](#))
- C. DASA AC 001/2022: *Defence Navigation Authorisations*, Rev 1.0, of 1 Jul 22 ([BP17874544](#))

INTRODUCTION

Applicability

- 1. This proposal is applicable to Military Air Operators (MAOs) who choose to conduct operations involving Performance Based Navigation (PBN), Reduced Vertical Separation Minima (RVSM), or North Atlantic High Level Airspace (NAT HLA).

Purpose

- 2. The purpose of this NPA is to enable community input into the development of DASR SPA.50, ahead of its formal release in Feb 2024, to address the principles of Ref A.

Background

- 3. DASA conducted a review of Defence regulation related to operations involving PBN, RVSM and NAT HLA. The review included benchmarking against Civil Aviation Authority (CAA) and Military Aviation Authority (MAA) regulations. The review concluded that Defence had insufficient regulation for the effective management of PBN, RVSM and NAT HLA related aviation safety hazards.¹ At Ref B, DG DASA endorsed the creation of a new DASR SPA.50 *Defence navigation approvals*.²
- 4. This NPA forms part of the stakeholder consultation process.

Scope of proposed changes

- 5. This NPA proposes the addition of Defence navigation approvals regulation—consistent with best practice as applied by DASA-recognised CAAs and MAAs. The proposal incorporates relevant requirements of Ref C and the following additional DASR hazard controls:

¹ The collective term for PBN, RVSM and NAT HLA is 'navigation approvals'.

² And approved the cancellation of Ref C.



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- a. clarification of MAO accountabilities when requesting and maintaining Defence navigation approvals
 - b. related to hazards arising from ineffective Defence navigation approvals, including integration with the MAO's:
 - (i) Flying Management System (FMS)
 - (ii) Safety Management System (SMS).
6. The proposal incorporates the principles of Ref A by:
- a. defining terms specific to the regulation
 - b. providing a standard structure to the Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

Benefits of proposed changes

7. The benefits of this proposal include:
- a. improved aviation safety controls to the hazards arising from ineffective Defence navigation approvals
 - b. alignment to DASA-recognised CAA and MAA navigation approval regulation benchmarks
 - c. improved safety in Defence aviation operations.

Effects of proposed changes

8. The proposed regulation increases regulated community compliance obligations via the implementation of Defence navigation approval-specific Part controls as follows:
- a. implementation of specific navigation equipment and management, monitoring and alerting controls
 - b. training and Currency controls.
9. For Defence navigation approvals already listed on MAO Operations Specifications (OpSpecs), the proposed regulation does not impose a requirement on MAOs to re-apply to DASA.

Proposed regulation

10. The proposed regulation is in Enc 1.

Implementation strategy

11. DASA will release the proposed regulation in Feb 24. DASA proposes a transition³ timeframe of 12 months from DASR release.

³ During transition DASA will not enforce compliance with the new regulation—allowing organisations time to implement new requirements.



HOW TO SUBMIT COMMENTS ON THIS NPA

Format

12. Record responses to this NPA on the NPA Response Sheet included in Annex A. Submit responses by email to [DASA](#). Hardcopies are not required.

13. The source documents for DASR SPA.50 provided GM are listed in Annex B.

Timing

14. Please forward comments on NPA 2022-018 to DASA by close of business 13 Sep 23.

Additional information

15. Additional information on this NPA is available from WGCDR Malcolm Walker, DD FLTOPS (DAVNOPS-DASA), at malcolm.walker@defence.gov.au or (02) 5130 7959.

DISPOSITION OF RESPONSES RECEIVED

16. A Comment Response Document will be prepared and published on the [DASA Website](#). DASA will not individually acknowledge or respond to comments or submissions.

C Pouncey

GPCAPT
DAVNOPS
Defence Aviation Safety Authority
Tel: (03) 5169 8204

Aug 23

Annexes:

- A. NPA 2022-018 Revision 0 – DASR SPA.50 Response Sheet.
- B. DASR SPA.50 – References for provided GM.

Enclosure:

- 1. NPA 2022-018 Revision 0 – Proposed DASR SPA.50.



NPA FOR DCP 2022-018 Revision 0 Response Sheet

DASR SPA.50

DEFENCE NAVIGATION APPROVALS

Please forward this sheet as an email attachment to [DASA](#) by 13 Sep 23. Response sheets in MS Excel (preferred) and MS Word formats can be found at Obj No: [BP34901852](#) and [BO3960659](#) respectively, or alternatively contact [DASA](#).

Please indicate your acceptance or otherwise of this proposal by ticking the appropriate box below. Additional comments, suggested amendments or alternative action are welcome and may be provided on this response sheet or by separate correspondence.

- [] The proposal is **acceptable without change**.
- [] The proposal is **acceptable but would be improved if the following changes were made:**
- [] The proposal is **not acceptable but would be acceptable if the following changes were made:**

| LSN | NPA Reference: (i.e Regulation number, NPA paragraph etc) | Comment or suggested change | Explanation |
|-----|--|-----------------------------|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

RESOURCE IMPLICATIONS

Please provide specific comment on any significant resource implications that this proposal may have for your organisation, for both its implementation and ongoing compliance. Your comments should address both financial and human resource considerations.

| | |
|---|--|
| Resource implications – Proposal implementation | |
| Resource implications – Proposal sustainment | |



RESPONDENT DETAILS

| | |
|---|--|
| Your name: | |
| Submission date: | |
| Your organisation: | |
| Email address: | |
| Postal address: | |
| Phone: | |
| Whose views are represented in your response? i.e. Is your response the authoritative response from your organisation? | Responding on behalf of : Individual [] Regulated Military entity [] Regulated Commercial entity [] Wing HQ [] Group HQ [] ADF Regulatory, Technical or Logistics policy agency [] Other commercial entity [], Other [] Please describe: |
| Do you consent to your name being published as an NPA respondent within the NPA Summary of Responses: | YES [] NO [] |



DASR GM SPA.50 – REFERENCES FOR PROVIDED GM

| Term/Item | Definition/Explanation | Source |
|------------------------------------|---|--|
| Calendar Day | A 24-hour period from midnight to midnight based on either UTC or local time, as selected by the MAO. All calendar days are considered to run consecutively. | EASA CS MMEL.105 <i>Definitions</i> Issue 2, 23 Jul 20 |
| Conventional routes and procedures | Published navigation routes and instrument procedures defined by ground-based navigation aids. | ICAO Annex 10 Vol 1 and Doc 9992 ICAO Doc 9613-ATT A, 2.1 |
| Fixed Radius Transition (FRT) | In an FRT, a fixed radius value is associated with a waypoint, and the area navigation system is required to fly by that waypoint using the same turn radius regardless of the Aircraft ground speed. | ICAO Doc 9997 2ed 2015 Appendix A Para 4.4 |
| Navigation specification | A set of Aircraft and Aircrew requirements needed to support PBN Operations within a defined Airspace, being either of: 1. RNAV specification. A navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, designated by the prefix RNAV (e.g. RNAV 5, RNAV 1) 2. RNP specification. A navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, designated by the prefix RNP (e.g. RNP 4, RNP APCH). | CASA AC 91-05 Dec 2021-1.2 <i>Definitions</i> |
| Radius to Fix (RF) | A constant radius circular path around a defined turn centre that terminates at a fix. | FAA AIP ENR 1.17 PBN & RNAV para 1.2.2.2 d |
| Time of Arrival Control (TOAC) | TOAC is a system capability that determines the necessary and available adjustments to Aircraft speed and vertical profile necessary to satisfy a required time of arrival at a fix. | FAA AC No: 20-138D, 7 Apr 2016 ICAO Doc 9613 PBN Manual yet to develop Appendix 3 to Part C - TOAC |
| Table GM SPA.50(a)-1 | Table 1 lists typical navigation Operations and their corresponding Defence navigation approvals. | CASA AC 91.U-01 v1.0 May 2015 <i>Navigation Authorisations – Table 1</i> |



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NPA 2022-018 REVISION 0
PROPOSED DASR SPA.50
‘DEFENCE NAVIGATION APPROVALS’

Contents

- Section 1:** Additions to the DASP Glossary and Acronyms List
- Section 2:** New DASR SPA.50 DASR Part only
- Section 3:** New DASR SPA.50 DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM)

SECTION 1: ADDITIONS TO THE DASP GLOSSARY AND ACRONYMS LIST

1. The following **new** definitions are proposed for the DASP Glossary.

Area Navigation (RNAV) (from ICAO Annex 6, Part I, 12th Ed Jul 2022)

Method of navigation that permits aircraft operation on any desired flight path within the coverage of ground-based or spaced-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note: Area navigation includes PBN as well as other operations that do not meet the definition of PBN.

Performance Based Navigation (PBN) (from ICAO Annex 6 Part I, 12th Ed Jul 2022)

Area navigation based on performance requirements for aircraft operating along an Air Traffic Services (ATS) route, on an instrument approach procedure or in a designated airspace.

Note: Performance requirements are expressed in navigation specifications (ie RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.

Reduced Vertical Separation Minima (RVSM) (from ICAO Doc 9574, 3rd Ed 2012)

Reduced vertical separation minimum of 300 m (1,000ft) between FL 290 and FL 410 inclusive.

Required Navigation Performance (RNP) (from ICAO Doc 4444 Amendment No.11, 3 Nov 22)

A statement of the navigation performance necessary for operation within a defined airspace.

Note: Navigation performance and requirements are defined for a particular RNP type or application.

2. The following **new** acronyms are proposed for the DASP Acronyms List.

| ACRONYM | EXPANSION |
|----------|--|
| CAA | Civil Aviation Authority |
| EUROCAE | European Organisation for Civil Aviation Equipment |
| FLTAUTH | Flight Authorisation |
| FLTAUTHO | Flight Authorisation Officer |
| GNSS | Global Navigation Satellite System |
| OCS | Operations Compliance Statement |
| PBN | Performance Based Navigation |
| RNP | Required Navigation Performance |
| RNAV | Area Navigation |

| | |
|------|--|
| RTCA | Radio Technical Commission for Aeronautics |
| RVSM | Reduced Vertical Separation Minima |

DRAFT

SECTION 2: NEW DASR SPA.50 PART ONLY

The following is a new DASR SPA.50 Part in toto.

DASR SPA – Specific Purpose Approval

DASR SPA.50 – Defence navigation approvals (AUS)

► GM

- (a) The MAO must obtain DASA approval IAW [DASR ARO.100](#) for the following Defence navigation Operations: ► GM ► AMC
 - 1. Performance Based Navigation (PBN)
 - 2. Reduced Vertical Separation Minima (RVSM)
 - 3. North Atlantic High-Level Airspace (NAT HLA).
- (b) The MAO must utilise navigation equipment and management, monitoring and alerting controls for Defence navigation Operations defined at DASR SPA.50(a), that: ► AMC
 - 1. meet specified initial Airworthiness and Aircraft eligibility requirements
 - 2. ensure installed Aircraft systems comply with navigation equipment requirements
 - 3. ensure Aircraft systems will continue to comply with approved Type Design requirements
 - 4. ensure Operations will not compromise Suitability For Flight. ► GM1 ► GM2 ► AMC1 ► AMC2
- (c) The MAO must utilise defined training and Currency requirements for all DASA-approved Defence navigation Operations IAW [DASR AIRCREW.10](#). ► GM

SECTION 3: NEW DASR SPA.50 PART, AMC and GM

The following is new DASR SPA.50 Part, AMC and GM. **AMC** in purple text. **GM** in brown text.

DASR SPA – Specific Purpose Approval

DASR SPA.50 – Defence navigation approvals (AUS)

▼ GM

GM SPA.50 – Defence navigation approvals (AUS)

- a. **Purpose. (Context)** CAAs have introduced Performance Based Navigation (PBN), Reduced Vertical Separation Minima (RVSM) and North Atlantic High Level Airspace (NAT HLA) requirements to deliver global improvements in air navigation safety, capacity and efficiency. Defence can utilise PBN, RVSM and NAT HLA when operating in national and international Airspace, for improved operational effectiveness. **(Hazard)** Suitability For Flight can be compromised by inadequate compliance with PBN, RVSM and NAT HLA requirements—causing reductions in minimum separation from obstacles below safe minima, or with other Aircraft. **(Defence)** This regulation requires MAOs that choose to utilise PBN, RVSM and NAT HLA capabilities to implement defined controls to ensure Suitability For Flight.
- b. The following The following DASR SPA.50—specific acronyms and terms apply:

| Acronym | Description |
|-----------|--|
| ADS-C | Automatic Dependent Surveillance-Contract |
| APCH | Approach |
| APV | Approach Procedure with Vertical guidance |
| AR | Authorisation Required |
| A-RNP | Advanced-Required Navigation Performance |
| B-RNAV | Basic-Area Navigation |
| CPDLC | Controller-Pilot Data Link Communications |
| FL | Flight Level |
| FRT | Fixed Radius Transition |
| LNAV | Lateral Navigation |
| LNAV/VNAV | Lateral Navigation with Vertical Navigation |
| LP | Localiser Performance |
| LPV | Localiser Performance with Vertical Guidance |
| NAT HLA | North Atlantic High Level Airspace |
| P-RNAV | Precision-Area Navigation |
| RF | Radius to Fix |
| RNP | Required Navigation Performance |

| | |
|-------------|--------------------------------------|
| RNP APCH | RNP Approach |
| RNP AR | RNP Authorisation Required |
| RNP AR APCH | RNP Authorisation Required Approach |
| RNP AR DEP | RNP Authorisation Required Departure |
| SBAS | Satellite Based Augmentation System |
| TOAC | Time of Arrival Control |
| UTC | Universal Coordinated Time |
| VNAV | Vertical Navigation |

| Term | Definition |
|------|------------|
|------|------------|

| | |
|------------------------------------|---|
| Calendar day | A 24-hour period from midnight to midnight based on either UTC or local time, as selected by the MAO. All calendar days are considered to run consecutively. |
| Conventional routes and procedures | Published navigation routes and instrument procedures defined by ground-based navigation aids. |
| Fixed Radius Transition (FRT) | In an FRT, a fixed radius value is associated with a waypoint, and the area navigation system is required to fly by that waypoint using the same turn radius regardless of the Aircraft ground speed. |
| Navigation specification | A set of Aircraft and Aircrew requirements needed to support PBN Operations within a defined Airspace, being either of: <ol style="list-style-type: none"> 1. RNAV specification. A navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, designated by the prefix RNAV (e.g. RNAV 5, RNAV 1). 2. RNP specification. A navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, designated by the prefix RNP (e.g. RNP 4, RNP APCH). |
| Radius to Fix (RF) | A constant radius circular path around a defined turn centre that terminates at a fix. |
| Time of Arrival Control (TOAC) | TOAC is a system capability that determines the necessary and available adjustments to Aircraft speed and vertical profile necessary to satisfy a required time of arrival at a fix. |

- (a) The MAO must obtain DASA approval IAW [DASR ARO.100](#) for the following Defence navigation Operations: ▼ **GM** ▼ **AMC**

AMC SPA.50(a) –OpSpec variations for PBN, RVSM and NAT HLA (AUS)

- The MAO should use [DASR Form 139a](#) to request an OpSpec variation.
- The MAO should use [DASR Form 1307](#) and an updated OCS to request new or revised navigation approvals in the OpSpec for the following:

- i. PBN navigation specifications:
 - (a) RNAV 10 / RNP 10
 - (b) RNAV 5
 - (c) RNAV 2
 - (d) RNAV 1
 - (e) RNP 4
 - (f) RNP 2
 - (g) RNP 1
 - (h) A-RNP
 - (i) RNP 0.3 (Helicopter)
 - (j) RNP APCH, including:
 - (i) LNAV
 - (ii) LNAV / VNAV
 - (iii) LP
 - (iv) LPV
 - (k) RNP AR (RNP AR APCH and RNP AR DEP Operations may include One Engine Inoperative (OEI) procedures), including:
 - (i) RNP AR APCH
 - (ii) RNP AR DEP
- ii. PBN supplementary capabilities:
 - (a) APV / Baro-VNAV
 - (b) Radius to Fix (RF)
 - (c) Fixed Radius Transition (FRT)
 - (d) Time of Arrival Control (TOAC)
 - (e) use of suitable area navigation systems on conventional routes and procedures (both en-route and terminal)
- iii. RVSM
- iv. NAT HLA.

GM SPA.50(a) – Defence navigation approvals in context (AUS)

- a. Table GM SPA.50(a)-1 lists typical navigation Operations and their corresponding navigation approvals.

| LSN | Typical Navigation Operations | Applicable Navigation Approvals |
|-----|---|---|
| 1 | Australian continental Operations not entering oceanic Airspace that include en route, terminal and RNAV (GNSS) approach. | <ul style="list-style-type: none"> • RNP 2 • RNP 1 • A-RNP • RNP APCH (LNAV) |
| 2 | Australian continental Operations not entering oceanic Airspace that include en route, terminal and RNAV (GNSS) approach with Baro-VNAV. | <ul style="list-style-type: none"> • RNP 2 • RNP 1 • A-RNP • RNP 0.3 (Helicopter) • RNP APCH (LNAV) • RNP APCH (LNAV/VNAV) • RNP AR APCH |
| 3 | Operations entering oceanic Airspace as well as continental Operations that include en route, terminal and RNAV (GNSS) approach. | <ul style="list-style-type: none"> • RNP 10 (RNAV 10) • RNP 2 • RNP 1 • A-RNP • RNP APCH (LNAV) |
| 4 | Operations entering oceanic Airspace as well as continental Operations that include en route, terminal and RNAV (GNSS) approach that will also be operating in Airspace with the service volume of a Space Based Augmentations System (SBAS) system. | <ul style="list-style-type: none"> • RNP 10 (RNAV 10) • RNP 2 • RNP 1 • A-RNP • RNP APCH (LP) • RNP APCH (LPV) |
| 5 | Operations entering oceanic Airspace with reduced separation (30 NM lateral and longitudinal separation) as well as continental Operations that include en route, terminal and RNAV (GNSS) approach. Note: There are likely to be additional requirements for Aircraft to be equipped with Controller-Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance – C (ADS-C) to support reduced separation Operations in oceanic Airspace. | <ul style="list-style-type: none"> • RNP 10 (RNAV 10) • RNP 4 • RNP 2 • RNP 1 • A-RNP • RNP APCH (LNAV) |
| 6 | Aircraft that operate in B-RNAV airspace in Europe. | <ul style="list-style-type: none"> • RNAV 5 |
| 7 | Aircraft that operate in European P-RNAV airspace or US RNAV Type A or Type B Airspace. | <ul style="list-style-type: none"> • RNAV 1 • RNAV 2 |
| 8 | Aircraft that operate in RVSM Airspace (FL290 to FL410) | <ul style="list-style-type: none"> • RVSM |
| 9 | Aircraft that operate in North Atlantic High Level Airspace between FL285 and FL420 | <ul style="list-style-type: none"> • NAT HLA |

Table GM SPA.50(a)-1 – Typical navigation Operations and corresponding navigation approvals

- b. Note, an RVSM approval is valid globally provided that the MAO prescribes any operating procedures specific to a given region in OIP.
1. Performance Based Navigation (PBN)
 2. Reduced Vertical Separation Minima (RVSM)
 3. North Atlantic High-Level Airspace (NAT HLA).
- (b) The MAO must utilise navigation equipment and management, monitoring and alerting controls for Defence navigation Operations defined at DASR SPA.50(a), that: ▼ **AMC**

AMC SPA.50(b) – Navigation equipment and management, monitoring and alerting controls (AUS)

The MAO must utilise the navigation equipment and management, monitoring and alerting controls defined in DASA Form 1307 for the relevant navigation approvals.

1. meet specified initial Airworthiness and Aircraft eligibility requirements
2. ensure installed Aircraft systems comply with navigation equipment requirements
3. ensure Aircraft systems will continue to comply with approved Type Design requirements
4. ensure Operations will not compromise Suitability For Flight ▼ **GM1 ▼ GM2 ▼ AMC1 ▼ AMC2**

AMC1 SPA.50(b)4 – Suitability For Flight (AUS)

- a. MAO controls for Defence navigation Operations should include:
- i. OIP that address navigation Operations, inclusive of:
 - (a) Airspace entry and exit criteria
 - (b) procedures where navigation Operations are not able to sustain promulgated navigation management, monitoring and alerting requirements
 - (c) consideration of:
 - (i) oceanic and remote continental region Operations
 - (ii) Minimum Equipment List (MEL) requirements, or equivalents
 - (iii) degraded navigation Operations
 - (iv) GNSS integrity availability scenarios during Flight Planning
 - (v) navigational error management pre-Flight and in-Flight
 - (vi) use of suitable area navigation systems on conventional routes and

procedures (both en-route and terminal)

- ii. risk assessments in accordance with [DASR SMS](#), inclusive of:
 - (a) consideration of the scope of Operations for the requested navigation approvals
 - (b) circumstances where exit from the affected Airspace is warranted.

AMC2 SPA.50(b)4 – Navigation database integrity (AUS)

- a. MAO controls to ensure the integrity of the navigation Operations database should include:
 - i. evidence that navigation data received by the MAO will satisfy prescribed requirements for required navigation approvals and routes
 - ii. OIP for the management of navigation data integrity for navigation approvals and routes flown, including:
 - (a) descriptions of MAO interfaces to, and product from, applicable commercial navigation database providers and the Aeronautical Information Service–Air Force (AIS-AF)
 - (b) in circumstances where blended commercial and AIS-AF navigation database products are necessary, the corresponding database integrity controls
 - (c) management, maintenance and verification of navigation databases
 - (d) the identification, management and closure of navigation database discrepancies with the database provider
 - (e) Aircrew procedures for:
 - (i) checking navigation database validity
 - (ii) loading or selecting a new navigation database
 - (iii) verifying the navigation database required for the specific PBN Operation includes the routes and procedures required for the Flight
 - (iv) navigation database expiry contingencies
 - iii. that where the navigation database has expired:
 - (a) an Aircraft that is operated IAW a MEL (or equivalent) that includes navigation database relief may operate for up to three calendar days after the database expires
 - (b) an Aircraft that is not operated with a MEL (or equivalent) may operate for a period of not more than 72 hours from the time that the database expires.

- b. Navigation data should satisfy the requirements of RTCA DO-200 / EUROCAE ED-76 (latest revisions) for the requested navigation approvals and routes, and be compatible with the intended function of the Aircraft equipment used.

GM1 SPA.50(b)4 – Flight Authorisation (FLTAUTH) (AUS)

A Flight Authorisation Officer (FLTAUTHO) who has experience in the navigation Operation being authorised, may support improved hazard identification through a better appreciation of factors affecting such operations, including degraded or failed navigation equipment or aircraft instruments. FLTAUTHOs should self-assess whether they hold the competency to conduct the FLTAUTH for the navigation Operations being authorised, inclusive of potential abnormal or alternate procedures required.

GM2 SPA.50(b)4 – Navigation database integrity and discrepancies (AUS)

Additional navigation database integrity and discrepancy guidance is available from CASA [Civil Aviation Order 20.91](#) (*Instructions and directions for Performance Based Navigation Instrument 14, of 2 Nov 2018*).

- (c) The MAO must utilise defined training and Currency requirements for all DASA-approved Defence navigation Operations IAW [DASR AIRCREW.10](#). ▼ GM

GM SPA.50(c) – Navigation Operations training and Currency requirements (AUS)

PBN, RVSM and NAT HLA Operations training development supporting material is accessible from the *Aviation Operations Supporting Material* webpage of the [DASA website](#).