



# **SEYCHELLES TECHNICAL STANDARDS**

## **STS-PANS OPS**

**Procedures for Air Navigation Services  
Aircraft Operations Standards**

# **Seychelles Technical Standards**

## **STS-PANS OPS**

**Procedures for Air Navigation Services  
Aircraft Operations Standards**

Issue 01

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## FOREWORD

- 1 STS-PANS OPS addresses the Standards and Recommended Practices of ICAO Annex 4, 6, 11 and 15 as they pertain to the provision of flight procedure design services. It is intended by these set of requirements that both international and domestic provision of flight procedure design services follow a common standard.
- 2 The basic organisation of STS-PANS OPS (Subparts and rules numbers) follows strict conformance with that adopted for other European standards promulgated by ~~JAA~~ and EASA (~~see JAR-11~~).
- 3 STS-PANS OPS will only be distributed electronically by the Authority as a complete document and as such a list of effective pages is not considered necessary. Amendment to the initial issue will be distributed as a complete amending document with deleted text indicated by a strikethrough and new text highlighted in grey, until a subsequent amended issue is published. Each page will also indicate the amendment number and amendment date. For clarity and simplification, all pages of the respective section will have the same amendment status upon amendment of one or more standard. The Amendment Records page will detail each amendment.

## AMENDMENT RECORDS

Amendment No.	Subject	Source	Section affected	Entered by (Date)	Effective Date
-	Initial issue				01 July 2017
01	Definition of terms	ICAO Doc 8168, Vol II, 6 <sup>th</sup> Edition of 2014; ICAO Doc 9905, 2 <sup>nd</sup> Edition of 2016	Section 1, Subpart A	Joseph G. Lajoie (03 Jul 2019)	01 Nov 2019
	Approval of flight procedure design	ICAO Doc 8168, Vol II, 6 <sup>th</sup> Edition of 2014; ICAO Doc 9906, Vol I, 1 <sup>st</sup> Edition of 2009	Section 2	-	-

**SPECIFIC REQUIREMENTS FOR THE PROVISION OF FLIGHT PROCEDURE DESIGN SERVICES****SECTION 1 GENERAL REQUIREMENTS****SUBPART A – APPLICABILITY AND DEFINITIONS OF TERMS****PANS OPS.1001 Applicability**

STS-PANS OPS prescribes specific requirements applicable to providers of flight procedure design services for the design, continuous maintenance and periodic review of instrument flight procedures both for national and international air navigation.

**PANS OPS.1005 Definitions of terms**

The definitions of terms contained in ICAO Document 8168, Vol. II – Procedures for Air Navigation-Aircraft Operations and Document 9905 – Required Navigation Performance-Authorisation Required shall be applicable to this STS.





**SUBPART B – APPROVAL OF FLIGHT PROCEDURE DESIGN SERVICES****PANS OPS.1010 Application for approval**

- (a) Flight procedure design services may be provided by either an organisation or an individual approved by the Authority to provide such services.
- (b) Application for flight procedure design services shall be submitted to the Authority in accordance with the procedures established by the Authority.
- (c) An applicant for flight procedure design services shall demonstrate by evidence to the Authority, that it meets the organisational, staffing, equipment, knowledge, experience, competence and skill requirements to design flight procedures that are safe for use by aircraft in the Seychelles airspace.
- (d) A provider of flight procedure design services shall provide such evidence and reports as are required by the Authority and grant access to any person authorised by the Authority to the relevant premises and to examine the relevant records, data, procedures and any other material relevant to the execution of the tasks of the Authority.
- (e) A provider of flight procedure design services shall not design, maintain, review, amend, adapt or publish flight procedures for use in the Seychelles airspace unless approved by the Authority.



**SECTION 2 TECHNICAL REQUIREMENTS****SUBPART A – QUALITY OF SERVICES****PANS OPS.2001 Design criteria**

- (a) A provider of flight procedure design services shall ensure that the design of flight procedures are in accordance with:
  - (1) applicable criteria and procedures contained in the ICAO Document 8168, Volume II – Procedures for Air Navigation-Aircraft Operations and Document 9905 – Require Navigation Performance-Authorisation Required; and
  - (2) standards as set out in this STS.
- (b) Published flight procedures shall be subject to periodic review by the provider of flight procedure design services to ensure that they continue to comply with any change in applicable design criteria and meet user requirements. The interval for periodic review of flight procedures shall not exceed five years.

**PANS OPS.2005 Quality assurance**

- (a) A provider of flight procedure design services shall ensure that the quality of the procedure design products are assured through a quality assurance process in accordance with the methodology described in ICAO Document 8168 Vol. II and guidance contained in ICAO Document 9906 – Quality Assurance Manual for Flight Procedure Design, Volume I.
- (b) Within the quality assurance process, a provider of flight procedure design services shall:
  - (1) make provisions for new or revised flight procedure design to be verified independently by a qualified flight procedure designer other than the one who designed the flight procedure to ensure compliance with applicable criteria;
  - (2) ensure that flight validation including simulator evaluation is conducted by a qualified and experienced flight validation pilot certified or approved by the Authority and in accordance with guidance contained in the ICAO Document 9906, Volume 5 - Validation of Instrument Flight Procedures.

**PANS OPS.2010 Data acquisition, verification and validation**

- (a) A provider of flight procedure design services shall ensure that acquired data quality characteristics are known and adequate or that, in the case where the data quality characteristics are unknown or inadequate (invalid), that appropriate data verification is carried out prior to use.
- (b) In the data verification and mitigation, a flight procedure designer shall include the following:
  - (1) analysis against other data of known quality characteristics such as control points;
  - (2) imposition of appropriate buffers based on the actual procedure;
  - (3) a determination of negligible effect on the actual procedure; or
  - (4) flight validation.
- (c) The procedure design data and information acquisition shall be coordinated with all relevant stakeholders and integrated into Seychelles' airspace design process, taking into account air traffic flows, separation standards, airspace user requirements, infrastructure and environmental considerations.

**PANS OPS.2015 Documentation**

A provider of flight procedure design services ensure that all assumptions made and methods used in the design, implementation and modification of flight procedures are documented in a uniform manner. The documentation shall include:

- (a) documentation required for publication in the Seychelles AIP;
- (b) documentation required to maintain transparency concerning the details and assumptions used by the flight procedure designer, which should include supporting data and information used in the design as follows:
  - (1) controlling obstacle for each segment of the procedure;
  - (2) effect of environmental considerations on the design of the procedure;
  - (3) infrastructure assessment;

- (4) airspace constraints;
  - (5) the results of the periodic review and, for modifications or amendments to existing procedures, the reasons for any changes;
  - (6) for any deviation from existing standards, the reasons for such a deviation and details of the mitigations applied to assure continued safe operations; and
  - (7) the results of the final verification for accuracy and completeness (quality assurance checks) prior to validation and then prior to publication;
  - (8) additional documentation required to facilitate ground and flight validation of the procedure and the results of the ground and flight validation.
- (c) All documentation shall be retained in accordance with established procedures to assist in recreating the procedure in the future in the case of incidents and for periodic review and maintenance. The period of retention shall not be less than the operational lifetime of the procedure. The documentation shall, when no longer required and as far as practicable, be retained in an archive form for later consultation.

**SUBPART B – APPROVAL OF FLIGHT PROCEDURE DESIGN****PANS OPS.2020 Application for approval**

- (a) Flight procedure design for new procedures or for relevant changes to existing procedures shall require approval by the Authority prior to publication in the Seychelles AIP.
- (b) Application for flight procedure design approval shall be submitted to the Authority in accordance with the procedures established by the Authority. The approval process must ensure that all the appropriate steps within the flight procedure design process have been completed, documented and signed off by the Authority.
- (c) The Authority will only accept flight procedure design from approved flight procedure design services.



**SUBPART C – FLIGHT PROCEDURE DESIGN ORGANISATION****PANS OPS.2025 Facilities and equipment**

A provider of flight procedure design services shall provide facilities, equipment and software packages appropriate for the design, design verification, flight validation and maintenance of flight procedures in accordance with these regulations.

**PANS OPS.2030 Data and documentation accessibility**

- (a) A provider of flight procedure design services shall ensure that:
  - (1) flight procedure designers have accessibility to relevant and current data including, but not limited to:
    - (i) aeronautical data;
    - (ii) terrain and obstacle data;
    - (iii) accurate aerodrome reference point and threshold data;
    - (iv) accurate and current navigational aids coordinate data;
  - (2) flight procedure designers have access to relevant documentation comprising technical standards, practices, and instructions and any other documentation that may be necessary for the design, design verification, flight validation and maintenance of the types of flight procedures.
- (b) The data and documentation referred to in regulation (a) above shall be controlled, current, traceable, and meet the required level of accuracy and integrity for the design, design verification, flight validation, and maintenance of flight procedures.





**SUBPART D – FLIGHT VALIDATION PILOT QUALIFICATIONS, TRAINING AND COMPETENCE****PANS OPS.2035 Qualification**

- (a) Flight validation pilot qualifications shall include at least a commercial pilot licence with instrument rating, knowledge and skill requirements for issue of the commercial pilot licence and instrument rating in the aircraft category appropriate for the flight procedure to be validated. In addition, flight validation pilots shall meet all the experience requirements for the airline transport pilot licence in the relevant category of aircraft as stipulated in Part-FCL or equivalent requirements.
- (b) Should a flight validation pilot not be the pilot-in-command of the flight validation aircraft, then the provisions of (a) above shall also apply to the pilot-in-command of the flight validation aircraft.

**PANS OPS.2040 Competency and training**

In order to achieve the safety and quality assurance objectives of the flight validation, flight validation pilots shall have acquired and maintain the required competency level through formal ground training, supervised on-the-job training and recurrent training in accordance with ICAO Document 9906, Volume 6 - Flight Validation Pilot Training and Evaluation.



**SUBPART E – FLIGHT PROCEDURE DESIGNER TRAINING AND COMPETENCE****PANS OPS.2045 Training**

- (a) A provider of flight procedure services shall develop a training programme for instrument flight procedure designers which shall include initial, advanced, on-the-job, recurrent and specialized training in accordance with ICAO Document 9906, Volume 2 – Flight Procedure Designer Training.
- (b) A provider of instrument flight procedure services shall ensure that a flight procedure designer is able to demonstrate a basic level of competency through initial training which includes at least the following elements:
  - (1) knowledge of information contained in the ICAO Document 8168, Volumes I and II and Document 9905 and other related ICAO provisions relevant to instrument flight procedure design;
  - (2) skills in the design of flight procedures; and
- (c) A provider of instrument flight procedure services shall ensure that an instrument flight procedure designer is able to demonstrate a basic level of competency through recurrent training that includes at least the following elements:
  - (1) knowledge about updates in ICAO provisions and other provisions pertaining to flight procedure design; and
  - (2) maintenance and enhancement of knowledge and skills in flight procedure design.
- (d) The provider of instrument flight procedure services that flight procedure designers have undergone an adequate on-the-job training under the supervision of a qualified flight procedure designer.
- (e) The provider of instrument flight procedure services shall maintain training records for their instrument flight procedure designers.

**PANS OPS.2050 Competency**

A provider of flight procedure design services shall ensure that a flight procedure designer:

- (a) demonstrates the required competency level for flight procedure design;
- (b) has a high level of aviation experience gained from different domains (air traffic management, aeronautical telecommunication engineering, piloting or any other equivalent profession); and
- (c) is evaluated for competence at regular intervals.



## ACCEPTABLE MEANS OF COMPLIANCE AND INTERPRETATIVE/EXPLANATORY MATERIAL (AMC & IEM)

### 1 GENERAL

1.1 This Section contains Acceptable Means of Compliance and Interpretative/Explanatory Material that has been agreed for inclusion in STS-PANS OPS.

1.2 Where a particular STS paragraph does not have an Acceptable Means of Compliance or any Interpretative/Explanatory Material, it is considered that no supplementary material is required.

### 2 PRESENTATION

2.1 The Acceptable Means of Compliance and Interpretative/Explanatory Material are presented in full page width on loose pages, each page being identified by the date of issue and/or the Amendment number under which it is amended or reissued.

2.2 A numbering system has been used in which the Acceptable Means of Compliance or Interpretative/Explanatory Material uses the same number as the STS paragraph to which it refers. The number is introduced by the letters AMC or IEM to distinguish the material from the STS itself.

2.3 The acronyms AMC and IEM also indicate the nature of the material and for this purpose the two types of material are defined as follows:

*Acceptable Means of Compliance (AMC)* illustrates a means, or several alternative means, but not necessarily the only possible means by which a requirement can be met. It should however be noted that where a new AMC is developed, any such AMC which may be additional to an existing AMC will be amended into the document following consultation under the NPA procedure.

*Interpretative/Explanatory Material (IEM)* helps to illustrate the meaning of a requirement.

2.4 Explanatory Notes not forming part of the AMC or IEM text appear in a smaller type face.

2.5 New, amended or corrected text is enclosed within heavy brackets.

ACJ/AMC/IEM A – Reserved

ACJ/AMC/IEM B – Reserved