



# **SEYCHELLES TECHNICAL STANDARDS**

## **STS-ANS**

**Air Navigation Standards**

# **Seychelles Technical Standards**

## **STS-ANS**

### **Air Navigation Standards**

Issue 02

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## FOREWORD

- 1 STS-ANS is derived from ANNEXES II and III of **Commission Implementing Regulation (EU) 2017/373 of 1<sup>st</sup> March 2017, laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight**, as amended, of the European Aviation Safety Agency. It lays down the general requirements to be met by air navigation services providers in Seychelles.
- 2 The basic organisation of STS-ANS (Subparts and rules numbers) follows strict conformance with that adopted for other European standards promulgated by EASA.
- 3 STS-ANS will only be distributed electronically by the Authority as a complete document and as such a list of effective pages is not considered necessary.
- 4 Amendments to STS-ANS will be in accordance with Chapter 2, 2.4 and 2.5 of the Manual for processing ICAO State Letters and Other Correspondences and Chapter 2, 2.3, 2.4, 2.5 and 2.6 of TP ANS 02, ANS Safety Oversight Manual. Each amendment 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 date and amendment number. For clarity and simplification, all pages of the respective section will have the same amendment status upon amendment of one or more rules. The amendment records page will detail each amendment.
- 5 Requirements, acceptable means of compliance and interpretative/explanatory material are colour-coded and can be identified according to the illustration below:

**Requirements****ANS.XXXX****Acceptable means of compliance****AMC ANS.XXXX or AMCX ANS.XXXX****Interpretative/explanatory material****IEM ANS.XXXX or IEMX to AMCX ANS.XXXX**

## AMENDMENT RECORDS

Amendment No.	Subject	Source	Section affected	Entered by (Date)	Effective Date
-	Initial issue				01 July 2017
01	Occurrence reporting	Air Navigation Services Provider; DIRECTIVE 2003/42/EC	ANS.1035	Joseph G. Lajoie (30 Oct 2020)	01 Nov 2020
02	Verification and demonstration of compliance Enforcement measures Immediate reaction to an unsafe condition Occurrence reporting Requirements for Certification	Commission Implementing Regulation (EU) 2017/373, ANNEX II; ICAO Doc 9734, Part A	ANS.1010; ANS.1025; ANS.1030; SUBPART C; APPENDIX 1; ACM/IEM A	Joseph G. Lajoie (01 Feb 2022)	01 July 2022          01 Jan 2023

**COMMON REQUIREMENTS FOR AIR NAVIGATION SERVICES****SECTION 1 – GENERAL REQUIREMENTS****SUBPART A – APPLICABILITY AND DEFINITION OF TERMS****ANS.1001 Applicability**

- (i) STS-ANS prescribes the common requirements applicable for the provision of air navigation services which shall include:
  - (1) Air Traffic Services;
  - (2) Aviation Meteorological Services;
  - (3) Aeronautical Information Services;
  - (4) Communication, Navigation and/or Surveillance Services;
  - (5) PANS OPS Services;
  - (6) Aeronautical Chart Services; and
  - (7) Search and Rescue Services
- (ii) Air navigation services for general air traffic within the scope of national aviation legislation shall only be provided by designated air navigation service providers in accordance this STS.
- (iii) STS-ANS does not apply to:
  - (1) activities other than the provision of air navigation services by a provider; nor
  - (2) resources allocated to activities outside the provisions of air navigation services.

**ANS.1005 Definition of terms**

- (a) The following terms apply to all Subparts of this STS:
  - (1) **‘acceptable means of compliance (AMC)’** means non-binding standards adopted by the Authority to illustrate means to establish compliance with Civil Aviation (Safety) Regulations, 2017 and the implementing regulations.
  - (2) **‘aerial work’** means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue or aerial advertisement.
  - (3) **‘aircraft’** means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface.
  - (4) **‘air navigation services’** means services provided to air traffic during all phases of operations including air traffic management (ATM), communication, navigation and surveillance (CNS), meteorological services for air navigation (MET), aeronautical information services (AIS), flight procedure design services (PANS OPS), aeronautical charts services (ACS) and civil search and rescue (SAR).
  - (5) **‘air navigation service provider’** shall mean any organisation providing air traffic, aviation meteorology, aeronautical information, communication, navigation and/or surveillance, flight procedures design, aeronautical chart and civil search and rescue services.
  - (6) **‘argument’** means a claim that is supported via inferences by a body of evidence.
  - (7) **‘audit’** means a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements are complied with.
  - (8) **‘Authority’** shall mean the Safety Regulation Division (SRD) designated the responsibility of providing safety oversight.
  - (9) **‘aviation undertaking’** means an entity, person or organisation, other than the service providers regulated by this STS that is affected by or affects a service delivered by a service provider.
  - (10) **‘certificate’** means an approval, licence or other document issued as a result of certification.
  - (11) **‘certification’** means any form of recognition that a product, a part or appliance, organisation or person complies with applicable requirements including the provisions of regulations set out in Civil Aviation (Safety) Regulation, 2017, as amended.
  - (12) **‘commercial air transport’** means any aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.



- (13) **'functional system'** means a combination of procedures, human resources and equipment, including hardware and software, organised to perform a function within the context of ATM/ANS and other ATM network functions.
- (14) **'general aviation'** means any civil aircraft operation other than aerial work or commercial air transport.
- (15) **'hazard'** means any condition or object with the potential of causing injuries to person, damage to equipment or structure, loss of material or reduction of the ability to perform prescribed function.
- (16) **'risk'** means the assessment, expressed in terms of predicted probability and severity, of the consequence(s) of a hazard taking as reference the worst foreseeable situation.
- (17) **'safety directive (SD)'** means a document issued or adopted by the Authority which mandates actions to be performed on a functional system or sets restrictions to its operational use to restore safety when evidence shows that aviation safety may otherwise be compromised.
- (18) **'services'** shall mean either an air navigation service or a bundle of air navigation services.

**SUBPART B – REQUIREMENTS FOR SAFETY OVERSIGHT PURPOSES****ANS.1010 Verification and demonstration of compliance**

- (a) In accordance with regulation Part 21 of the Civil Aviation (Safety) Regulation, 2017, the Authority shall establish a safety oversight programme, including procedures in order to verify an air navigation service provider's compliance with the general requirements set out in this STS and the applicable specific requirements.
- (b) An air navigation service provider shall provide all the relevant evidence to the Authority to demonstrate compliance with the general requirements set out in this STS and the applicable specific requirements.

**ANS.1015 Changes to functional systems**

- (a) An air navigation service provider planning a change to its functional system or a change that affects the functional system shall:
  - (1) notify the Authority of the change;
  - (2) provide the Authority, if requested, with any additional information that allows the Authority to decide whether or not to review the argument for the change; and
  - (3) inform other air navigation service providers and, where feasible, aviation undertakings affected by the planned change.
- (b) Having notified a change, the air navigation service provider shall inform the Authority whenever the information provided in accordance with requirements (a) (1) and (2) is materially modified, and the relevant air navigation service providers and aviation undertakings whenever the information provided in accordance with point (a) (3) is materially modified.
- (c) An air navigation service provider shall only allow the parts of the change, for which the activities required by the procedures referred to in [ANS.1055](#) have been completed, to enter into operational service.
- (d) If the change is subject to Authority review, the air navigation service provider shall only allow the parts of the change for which the Authority has accepted the argument to enter into operational service.
- (e) When a change affects other service providers and/or aviation undertakings, as identified in point (a) (3), the air navigation service provider and these other service providers, in coordination, shall determine:
  - (1) the dependencies with each other and, where feasible, with the affected aviation undertakings; and
  - (2) the assumptions and risk mitigations that relate to more than one service provider or aviation undertaking.
- (f) Those service providers affected by the assumptions and risk mitigations referred to in requirement (e) (2) shall only use, in their argument for the change, agreed and aligned assumptions and risk mitigations with each other and, where feasible, with aviation undertakings.

**ANS.1020 Facilitation and cooperation**

An air navigation service provider shall facilitate inspections and audits by the Authority or by a qualified entity acting on its behalf and it shall cooperate as necessary for the efficient and effective exercise of the powers of the Authority referred to in regulation 93 of Civil Aviation (Safety) Regulations, 2017.

**ANS.1025 Findings, corrective actions and enforcement measures**

- (a) The Authority shall have a system to analyse findings for their safety significance and decide on enforcement measures on the basis of the safety risk posed by the air navigation service provider's non-compliance. In circumstances where no or very low additional safety risk would be present with immediate appropriate mitigation measures, the Authority may accept the provision of services to ensure continuity of service whilst corrective actions are being implemented.
- (b) A 'Level 1' finding shall be raised by the Authority when a serious non-compliance is detected with:
  - (1) PART 16 of the Civil Aviation (Safety) Regulation, 2017, as applicable in light of the services that the applicant provides or plans to provide;
  - (2) the general requirements set out in this STS;
  - (3) the specific requirements set out in STS-ATS, STS-CNS, STS-MET, STS-AIS/ACS, STS-PANS OPS and STS-SAR, as applicable in light of the services that the applicant provides or plans to provide;
  - (4) the air navigation service provider's operations manuals;
  - (5) the conditions of air navigation service provider certificate issued;
  - (6) the content of air navigation service provider declaration which poses a significant risk to flight safety

or otherwise calls into question the air navigation service provider's capability to continue providing its services.

- (c) 'Level 1' findings shall include, but are not be limited to:
  - (1) promulgating operational procedures and/or providing an air navigation service in a way which introduces a significant risk to flight safety;
  - (2) obtaining or maintaining the validity of the service provider's certificate by falsification of submitted documentary evidence;
  - (3) evidence of malpractice or fraudulent use of the service provider's certificate;
  - (4) the lack of an accountable manager.
- (d) A 'Level 2' finding shall be raised by the Authority when any other non-compliance is detected with requirements set out in [ANS.1025 \(b\) \(1\) to \(6\)](#).
- (e) In accordance with regulation 106 (2) (c) set out in the Civil Aviation (Safety) Regulation, 2017, the Authority shall communicate the findings raised to the air navigation service provider in the form established and require corrective action plans to be submitted for acceptance, to address the non-compliances.
- (f) Where a 'Level 1' finding is raised, the Authority shall take immediate and appropriate action in accordance with the requirements set out in [ANS.1030](#). The measure taken shall depend upon the extent of the finding and shall remain until successful corrective action has been taken by the air navigation service provider.
- (g) Where a 'Level 2' finding is raised, the air navigation service provider shall implement the corrective action process established by the Authority. Where the air navigation service provider fails to submit a corrective action plan that is acceptable to the Authority or where the air navigation service provider fails to perform a corrective action within the timeframe accepted or extended by the Authority, the finding may be raised to a 'Level 1' finding, and action taken as set out in (f).
- (h) For those cases not qualifying as 'Level 1' and 'Level 2' findings, the Authority shall issue observations.

#### **ANS.1030 Immediate reaction to an unsafe condition**

- (a) The Authority shall issue a safety directive when it has determined the existence of an unsafe condition in a functional system of an air navigation service provider requiring immediate action. In case of a 'Level 1' finding, the Authority may, if appropriate, limit, suspend or revoke in whole or in part the air navigation service certificate while ensuring the continuity of services provided that safety is not compromised.
- (b) The safety directive shall be forwarded to the air navigation service provider concerned and contain, as a minimum, the following information:
  - (1) the identification of the unsafe condition(s);
  - (2) the identification of the affected functional system;
  - (3) guidance relating to corrective actions as required and their rationale;
  - (4) the time limit for completing the corrective actions required;
  - (5) its date of entry into force.
- (c) An air navigation service provider shall implement corrective action(s) to address the unsafe condition(s) notified to the Authority in the safety directive.
- (d) The Authority shall verify the compliance of the air navigation service provider with the applicable safety directives and shall monitor the corrective action(s) implemented.

#### **ANS.1035 Occurrence reporting**

- (a) As part of its management system, an air navigation service provider shall establish and maintain an occurrence-reporting system, including mandatory and voluntary reporting. The air navigation service provider shall ensure that the system complies with Part 20 of the Civil Aviation (Safety) Regulations, 2017.
- (b) The air navigation service provider shall report to the Authority and to any other organisation required to be informed by the Authority, any safety-related event or condition that endangers or, if not corrected or addressed, could endanger an aircraft, its occupants or any other person, and in particular any accident or serious incident.
- (c) Without prejudice to requirement (b), the air navigation service provider shall report to the Authority and to the organisation responsible for the design of system and constituents, if different from the air navigation service provider, any malfunction, technical defect, exceeding of technical limitations, occurrence, or other irregular circumstance that has or may have endangered the safety of services and that has not resulted in an accident or serious incident. [Appendix 2](#) of this STS provides a list of air navigation services related occurrences to be reported.

- (d) Without prejudice to Part 20 of the Civil Aviation (Safety) Regulations, 2017, the reports referred to in requirements (a) and (b) shall be made in a form and manner established by the Authority and contain all the pertinent information about the event known to the air navigation service provider.
- (e) Reports shall be made as soon as possible and in any case within 72 hours of the service provider identifying the details of the event to which the report relates unless exceptional circumstances prevent this.
- (f) Without prejudice to Part 20 of the Civil Aviation (Safety) Regulations, 2017, where relevant, the air navigation service provider shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified. This report shall be produced in a form and manner established by the Authority.

**SUBPART C – REQUIREMENTS FOR CERTIFICATION**

*(Applicable as from 01<sup>st</sup> January 2023)*

**ANS.1036 Application for air navigation service provider certificate**

- (a) Application for an air navigation service provider certificate or amendment to an existing certificate shall be made in the form and manner established by the Authority.
- (b) In order to be issued the certificate, the air navigation service provider shall satisfactorily comply with:
  - (1) PART 16 of the Civil Aviation (Safety) Regulation, 2017, as applicable in light of the services that the applicant provides or plans to provide;
  - (2) the general requirements set out in this STS;
  - (3) the specific requirements set out in STS-ATS, STS-CNS, STS-MET, STS-AIS/ACS, STS-PANS OPS and STS-SAR, as applicable in light of the services that the applicant provides or plans to provide.

**ANS.1037 Issue of air navigation service provider certificate**

- (a) Upon receiving an application for the issuance of air navigation service provider certificate, the Authority shall verify the air navigation service provider's compliance as set out in ANS.1036 (b) (1) (2) (3), in accordance with procedures established by the Authority under its safety oversight system.
- (b) The certificate issued shall be in accordance with [Appendix 1](#) of this Section. The scope of services and function under the privileges of the certificate shall be specified in the service provision conditions attached to the certificate.
- (c) The certificate shall not be issued where a 'Level 1' finding remains open. Finding(s), other than 'Level 1', shall be assessed and mitigated as necessary by the air navigation service provider and a corrective action plan for closing the finding(s) shall be accepted by the Authority prior to the certificate being issued.

**ANS.1038 Validity of air navigation service provider certificate**

- (a) An air navigation service provider certificate shall be valid for a period of two years, subject to:
  - (1) the air navigation service provider remaining in compliance with the requirements set out in ANS.1037 (b), including those concerning facilitation and cooperation for the purposes of the exercising of the powers of the Authority and those concerning the handling of findings as set out in [ANS.1020](#) and [ANS.1025](#) respectively;
  - (2) the certificate not having been surrendered, suspended or revoked.
- (b) Upon surrender, suspension or revocation, the certificate shall be returned to the Authority without delay.
- (c) Upon request by the certificate holder, three months in advance to the expiry date of the validity of the certificate, the Authority shall issue a new certificate equivalent to the one held by the holder, provided that on-going safety oversight activities do not reveal any unsafe condition, a serious non-compliance or a lack of commitment to comply with the common requirements and applicable specific requirements.
- (d) The introduction of changes to an air navigation service provider shall not modify the validity period whenever a certificate has been issued unless the change requires a full initial safety oversight leading to the issue of a new certificate.

**SUBPART D – MANAGEMENT****ANS.1040 Technical and operational competence and capability**

An air navigation service provider shall ensure that it is able to provide its services in a safe, efficient, continuous and sustainable manner, consistent with any foreseen level of overall demand for a given airspace. To this end, it shall maintain adequate technical and operational capacity and expertise.

**ANS.1045 Open and transparent provision of service**

- (a) Air navigation service providers shall provide their services in an open and transparent manner. They shall publish the conditions of access to their services and establish a formal consultation process with the users of their services on a regular basis, either individually or collectively, and at least once a year.
- (b) Air navigation service providers shall not discriminate on grounds of nationality or identity of the user or the class of users in accordance with applicable law.

**ANS.1050 Management system**

- (a) An air navigation service provider shall implement and maintain a management system which is acceptable to the Authority, that includes:
  - (1) clearly defined lines of responsibility and accountability throughout its organisation, including a direct accountability of the accountable manager;
  - (2) a description of the overall philosophies and principles of the service provider with regard to safety, quality, and security of its services, collectively constituting a policy, signed by the accountable manager;
  - (3) the means to verify the performance of the service provider's organisation in light of the performance indicators and performance targets of the management system;
  - (4) a process to identify changes within the service provider's organisation and the context in which it operates, which may affect established processes, procedures and services and, where necessary, change the management system and/or the functional system to accommodate those changes;
  - (5) a process to review the management system, identify the causes of substandard performance of the management system, determine the implications of such substandard performance, and eliminate or mitigate such causes;
  - (6) a process to ensure that the personnel of the service provider are trained and competent to perform their duties in a safe, efficient, continuous and sustainable manner. In this context, the service provider shall establish policies for the recruitments and training of its personnel; and
  - (7) a formal means for communication that ensures that all personnel of the service provider are fully aware of the management system, that allows critical information to be conveyed and that makes it possible to explain why particular actions are taken and why procedures are introduced or changed.
- (b) An air navigation service provider shall document all management system key processes, including a process for making personnel aware of their responsibilities, and the procedure for the amendment of those processes.
- (c) An air navigation service provider shall establish a function to monitor compliance of its organisation with the applicable requirements and the adequacy of the procedures. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary.
- (d) An air navigation service provider shall monitor the behaviour of its functional system and, where underperformance is identified, it shall establish its causes and eliminate them or, after having determined the implication of the underperformance, mitigate its effects.
- (e) The management system shall be proportionate to the size of the air navigation service provider and the complexity of its activities, taking into account the hazards and associated risks inherent in those activities.
- (f) Within its management system, the air navigation service provider shall establish formal interfaces with the relevant service providers and aviation undertakings in order to:
  - (1) ensure that the aviation safety hazards entailed by its activities are identified and evaluated, and the associated risks are managed and mitigated as appropriate; and
  - (2) ensure that it provides its services in accordance with the requirements of this STS.

**ANS.1055 Change management procedures**

- (a) An air navigation service provider shall use procedures to manage, assess and, if necessary, mitigate the impact of changes to its functional systems in accordance with [ANS.1015](#), [ANS.1100](#), ATS.1020 and ATS.1025, as applicable.
- (b) The procedures referred to in point (a) or any material modification to those procedures shall:
  - (1) be submitted, for acceptance, by the service provider to the Authority; and
  - (2) not be used until accepted by the Authority.
- (c) When the accepted procedures referred to in requirement (b) are not suitable for a particular change, the air navigation service provider shall:
  - (1) make a request to the Authority for an exemption to deviate from the accepted procedures;
  - (2) provide the details of the deviation and the justification for its use to the Authority; and
  - (3) not use the deviation before being accepted by the Authority.

**ANS.1060 Contracted activities**

- (a) Contracted activities include all the activities within the scope of the air navigation service provider's operations, in accordance with the terms of the certificate, that are performed by other organisations either themselves certified to carry out such activity or if not certified, working under the service provider's oversight. An air navigation service provider shall ensure that when contracting or purchasing any part of its activities to external organisations, the contracted or purchased activity, system or constituent conforms to the applicable requirements.
- (b) When an air navigation service provider contracts any part of its activities to an organisation that is not itself certified in accordance with this STS to carry out such activity, it shall ensure that the contracted organisation works under its oversight. The service provider shall ensure that the Authority is given access to the contracted organisation to determine continued compliance with the applicable requirements under this STS.

**ANS.1065 Personnel requirements**

- (a) An air navigation service provider shall appoint an accountable manager, who has the authority over ensuring that all activities can be financed and carried out in accordance with the applicable requirements. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) An air navigation service provider shall define the authority, positions, responsibilities and functions of the key post holders, in particular of the management personnel in charge of safety, quality, security, finance and human resources-related functions as applicable. The air navigation service provider shall also define the positions, responsibilities and functions of its operational and technical staff.
- (c) An air navigation service provider shall establish policies and procedures for the adequate recruitment and training and retention of personnel to ensure safe and efficient delivery of its services.

**ANS.1070 Facilities requirements**

An air navigation service provider shall ensure that there are adequate and appropriate facilities to perform and manage all tasks and activities in accordance with the applicable requirements.

**ANS.1075 Record-keeping**

- (a) An air navigation service provider shall establish a system of record keeping that allows adequate storage and reliable traceability of all its activities, covering in particular all the elements indicated in [ANS.1050](#).
- (b) The format and the retention period of the records referred to in point (a) shall be specified in the air navigation service provider's management system procedures.
- (c) Records shall be stored in a manner that ensures protection against damage, alteration and theft.

**ANS.1080 Operations manuals**

- (a) An air navigation service provider shall provide and keep up to date its operations manuals relating to the provision of its services for the use and guidance of operations personnel.
- (b) The air navigation service provider shall ensure that:
  - (1) operations manuals contain the instructions and information required by the operations personnel to perform their duties;

- (2) relevant parts of the operations manuals are accessible to the personnel concerned; and
- (3) the operations personnel are informed of amendments to the operations manual applying to their duties in a manner that enables their application as of their entry into force.

**ANS.1085 Security management**

- (a) An air navigation service provider shall, as an integral part of its management system, as required by [ANS.1050](#), establish a security management system to ensure:
  - (1) the security of its facilities and personnel so as to prevent unlawful interference with the provision of services; and
  - (2) the security of operational data it receives or produces or otherwise employs, so that access to it is restricted only to those authorised.
- (b) An air navigation service provider shall take the necessary measures to protect its system, constituents in use and data and prevent compromising the network against information and cyber security threats which may have an unlawful interference with the provision of its service.
- (c) The security management system shall define:
  - (1) the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;
  - (2) the means designed to detect security breaches and to alert personnel with appropriate security warnings; and
  - (3) the means of controlling the effects of security breaches and to identify recovery action and mitigation procedures to prevent re-occurrence.

**ANS.1090 Security clearance of personnel**

- (a) An air navigation service provider shall ensure the security clearance of its personnel, if appropriate, and coordinate with the relevant civil and military authorities to ensure the security of its facilities, personnel and data.

**ANS.1095 Contingency plans**

An air navigation service provider shall have in place contingency plans for all the services it provides in the case of events which result in significant degradation or interruption of its operations.



**SUBPART E – SPECIFIC ORGANISATIONAL REQUIREMENTS FOR SERVICE PROVIDERS OTHER THAN THE AIR TRAFFIC SERVICES PROVIDER****ANS.1100 Safety support assessment and assurance of changes to the functional system**

- (a) For any change notified in accordance with [ANS.1015 \(a\) \(1\)](#), the service provider other than the air traffic services provider shall:
  - (1) ensure that a safety support assessment is carried out covering the scope of the change which is:
    - (i) the equipment, procedural and human elements being changed;
    - (ii) interfaces and interactions between the elements being changed and the remainder of the functional system;
    - (iii) interfaces and interactions between the elements being changed and the context in which it is intended to operate;
    - (iv) the life cycle of the change from definition to operations including transition into service; and
    - (v) planned degraded modes; and
  - (2) provide assurance, with sufficient confidence, via a complete, documented and valid argument that the service will behave and will continue to behave only as specified in the specified context.
- (b) A service provider other than an air traffic services provider shall ensure that the safety support assessment referred to in point (a) comprises:
  - (1) verification that:
    - (i) the assessment corresponds to the scope of the change as defined in requirement (a) (1);
    - (ii) the service behaves only as specified in the specified context; and
    - (iii) the way the service behaves complies with and does not contradict any applicable requirements of this STS placed on the services provided by the changed functional system; and
  - (2) specification of the monitoring criteria necessary to demonstrate that the service delivered by the changed functional system will continue to behave only as specified in the specified context.

## APPENDIX 1

*(Applicable as of 01<sup>st</sup> January 2023)*

## AIR NAVIGATION SERVICE PROVIDER CERTIFICATE



## AIR NAVIGATION SERVICE PROVIDER CERTIFICATE

Certificate Number: **SCAA ANS/XX/XX**Issue: **XX**

**Pursuant to SECTION 1, SUBPART C of STS-ANS and subject to the conditions specified below,  
the Seychelles Civil Aviation Authority hereby certifies**

**[NAME OF THE SERVICE PROVIDER]  
[ADDRESS OF THE SERVICE PROVIDER]**

**as an air navigation service provider with the privileges to provide air navigation services as listed  
in the attached service provision conditions.**

## TERMS OF THE CERTIFICATION

- a. This certificate is issued subject to the conditions and the scope of providing services and functions as listed in the attached service provision conditions.
- b. This certificate is valid whilst the certified air navigation service provider remains in compliance with the general requirements of STS-ANS, with the specific requirements of the applicable STS and with the procedures in the air navigation service provider's documentation.
- c. Subject to compliance with the foregoing terms, this certificate shall remain valid unless the certificate has been surrendered, limited, suspended or revoked.

**Date of issue:****Signed:**

[Authority]

## AIR NAVIGATION SERVICE PROVIDER CERTIFICATE

### SERVICE PROVISION CONDITIONS

Attachment to Air Navigation Service Provider Certificate Number: **SCAA/ANS/XX/XX**

[NAME OF THE AIR NAVIGATION SERVICE PROVIDER]

has obtained the privileges to provide the following scope of services and functions:  
(Select boxes as appropriate)

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Air Traffic Services (ATS)	<input type="checkbox"/> Air traffic control (ATC)	<input type="checkbox"/> Area Control Service	
		<input type="checkbox"/> Approach Control Service	
		<input type="checkbox"/> Aerodrome Control Service	
	<input type="checkbox"/> Flight information service (FIS)	<input type="checkbox"/> Automatic Terminal Information Service (ATIS)	
	<input type="checkbox"/> Alerting service	n/a	
	<input type="checkbox"/> Advisory service	n/a	
<input type="checkbox"/> Air Traffic Flow Management (ATFM)	<input type="checkbox"/> ATFM	<input type="checkbox"/> Provision of the local ATFM	
Conditions <sup>2</sup>			

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Communication, Navigation or Surveillance Services (CNSS)	<input type="checkbox"/> Communications (C)	<input type="checkbox"/> Aeronautical Mobile Service (Air-ground communication)	
		<input type="checkbox"/> Aeronautical Fixed Service (Ground-ground communications)	
		<input type="checkbox"/> Aeronautical Mobile Satellite Service (AMSS)	
	<input type="checkbox"/> Navigation (N)	<input type="checkbox"/> Provision of VOR signal in space	
		<input type="checkbox"/> Provision of DME signal in space	
		<input type="checkbox"/> Provision of ILS signal in space	
		<input type="checkbox"/> Provision of GNSS signal in space	
	<input type="checkbox"/> Surveillance (S)	<input type="checkbox"/> Provision of data from primary surveillance (PS)	
		<input type="checkbox"/> Provision of data from secondary surveillance (SS)	
		<input type="checkbox"/> Provision of automatic dependent surveillance (ADS) Data	
Conditions <sup>2</sup>			

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Aeronautical Information Services (AIS)	<input type="checkbox"/> AIS	<input type="checkbox"/> Provision of the whole AIS <input type="checkbox"/> Provision of Aeronautical Charts	
Conditions <sup>2</sup>			

## SECTION 1

STS-ANS

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Meteorological Services (MET)	<input type="checkbox"/> MET	<input type="checkbox"/> Meteorological Watch Office	
		<input type="checkbox"/> Aerodrome Meteorological Office	
		<input type="checkbox"/> Aeronautical Meteorological Stations	
		<input type="checkbox"/> VAAC	
		<input type="checkbox"/> WAFC	
<input type="checkbox"/> TCAC			
Conditions <sup>2</sup>	Services are provided under a Memorandum of Understanding		
Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Aeronautical Charts Service (ACS)	<input type="checkbox"/> ACS	<input type="checkbox"/> Aeronautical charts development	
		<input type="checkbox"/> Aeronautical charts maintenance and review	
		<input type="checkbox"/> Aeronautical charts AIP integration	
Conditions <sup>2</sup>	Services are provided under Consulting Services Agreement		
Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Procedures for Air Navigation Services – Flight Operations (PANS-OPS)	<input type="checkbox"/> PANS OPS Services	<input type="checkbox"/> Flight Procedure Design (FPD)	
		<input type="checkbox"/> FPD maintenance and review	
		<input type="checkbox"/> FPD AIP integration	
		<input type="checkbox"/> New obstacle information & air operator requirements	
<input type="checkbox"/> Provision and maintenance of Electronic Terrain & Obstacle Database (ETOD)			
Conditions <sup>2</sup>	Services are provided under Consulting Services Agreement		
Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations <sup>1</sup>
<input type="checkbox"/> Search & Rescue Service (SAR)	<input type="checkbox"/> SAR Services	<input type="checkbox"/> SAR services within Seychelles territory	
		<input type="checkbox"/> SAR services over high seas	
Conditions <sup>2</sup>			

<sup>1</sup> As prescribed by the Authority.<sup>2</sup> Where necessary.

## APPENDIX 2

## LIST OF AIR NAVIGATION SERVICES REPORTABLE OCCURRENCES

*Note 1: Although this appendix lists the majority of reportable occurrences, it cannot be completely comprehensive. Other occurrences, that are judged by those involved to meet the criteria, should also be reported.*

*Note 2: This appendix does not include accidents and serious incidents. Requirements covering the notification of accidents and serious incidents are promulgated in national accident and serious incident regulations.*

*Note 3: This appendix includes air navigation services-related occurrences which pose an actual or potential threat to flight safety, or can compromise the provision of safe air navigation services.*

*Note 4: The contents of this appendix shall not preclude the reporting of any occurrence, situation or condition which, if repeated in different, but likely circumstances or allowed to continue uncorrected, could create a hazard to flight safety.*

- (a) Near collision incidents (encompassing specific situations where one aircraft and another aircraft/the ground/a vehicle/person or object are perceived to be too close to each other):
  - (1) separation minima infringement;
  - (2) inadequate separation;
  - (3) near-controlled flight into terrain (near CFIT);
  - (4) runway incursion where avoiding action was necessary.
- (b) Potential for collision or near collision (encompassing specific situations having the potential to be an accident or a near collision, if another aircraft is in the vicinity):
  - (1) runway incursion where no avoiding action is necessary;
  - (2) runway excursion;
  - (3) aircraft deviation from ATC clearance;
  - (4) aircraft deviation from applicable air traffic management (ATM) regulation:
    - (i) aircraft deviation from applicable published ATM procedures;
    - (ii) unauthorised penetration of airspace;
    - (iii) deviation from aircraft ATM-related equipment carriage and operations, as mandated by applicable
    - (iv) regulation(s).
- (c) ATM-specific occurrences (encompassing those situations where the ability to provide safe ATM services is affected, including situations where, by chance, the safe operation of aircraft has not been jeopardised). This shall include the following occurrences:
  - (1) inability to provide ATM services:
    - (i) inability to provide air traffic services;
    - (ii) inability to provide airspace management services;
    - (iii) inability to provide air traffic flow management services;
  - (2) failure of communication function:
    - (i) failure of surveillance function;
    - (ii) failure of data processing and distribution function;
    - (iii) failure of navigation function;
    - (iv) ATM system security.

The following subparagraphs give examples of reportable ATM and ATM-related occurrences resulting from the application of the general criteria listed in paragraph (c) above.

- (i) Provision of significantly incorrect, inadequate or misleading information from ground sources, e.g. air traffic control (ATC), automatic terminal information service (ATIS), meteorological services, navigation databases, maps, charts, manuals, etc.;

- (ii) Provision of less than prescribed terrain clearance;
- (iii) Provision of incorrect pressure reference data (i.e. altimeter setting);
- (iv) Incorrect transmission, receipt or interpretation of significant messages when this results in a hazardous situation;
- (v) Separation minima infringement;
- (vi) Unauthorised penetration of airspace;
- (vii) Unlawful radio communication transmission;
- (viii) Failure of ANS ground or satellite facilities;
- (ix) Major ATC/ATM failure or significant deterioration of aerodrome infrastructure;
- (x) Aerodrome movement areas obstructed by aircraft, vehicles, animals or foreign objects, resulting in a hazardous or potentially hazardous situation;
- (xi) Errors or inadequacies in marking of obstructions or hazards on aerodrome movement areas resulting in a hazardous situation;
- (xii) Failure, significant malfunction or unavailability of airfield lighting.

## SECTION 2 – 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-ANS.
- 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 or an AMC to a requirement.
- 2.4 Explanatory notes not forming part of the AMC or IEM text appear in a smaller typeface.
- 2.5 New, amended or corrected text conforms to paragraph 4 of the Foreword page, regarding amendments.

**AMC/IEM****IEM ANS.1040 Technical and operational competence and capability**

## TECHNICAL AND OPERATIONAL CAPACITY

Technical and operational capacity should include a sufficient number of personnel to perform its tasks and discharge its responsibilities.

**IEM1 ANS 1050 Management system**

## DEFINITIONS AND CONCEPT OF MANAGEMENT SYSTEM

- (b) ISO 9001:2015 defines a management system as 'a set of interrelated or interacting elements of an organization to establish policies and objectives, and processes to achieve those objectives.'
- (c) Another available definition of management system is the following: 'The structure, processes and resources needed to establish an organisation's policy and objectives and to achieve those objectives.'
- (d) Traditionally, separate management systems were developed to address issues such as safety, quality, environment, health and safety, finance, human resources, information technology and data protection. However, it is foreseen that more and more the air navigation service providers will establish integrated management systems following the harmonised set of requirements in this STS.
- (e) The requirements set out in this STS do not require that the different management systems are integrated but it facilitates their integration.

**IEM2 ANS 1050 Management system**

## RELATIONSHIP BETWEEN THE TYPE OF SERVICE AND SAFETY MANAGEMENT - QUALITY MANAGEMENT

- (a) All air navigation service providers are required to establish and maintain a management system. However, only the air traffic services provider can have managerial control over functions directly affecting the safety of the flight (e.g. the ATCO to separate aircraft from each other). Hence, the management system requirements set out in this STS, which apply to all air navigation service providers, are more broadly associated with the quality of the service rather than the safety of the service. STS-ATS has specific safety management requirements for the provision of air traffic services. Therefore, only the air traffic services provider (that providing air traffic control, alerting service, air traffic advisory service or flight information service) is required to have a safety management system and undertake safety assessment of changes to the functional system.
- (b) Air navigation service providers other than the air traffic services provider can still affect the safety of the flight through functions or services they provide, but this will always be influenced by the way in which the air traffic services provider or airspace user are using those functions or services. Therefore, air navigation service providers other than air traffic services providers have a management system which manages the performance of service rather than the safe use of their services for flight navigation and the control which is beyond the managerial control of the service provider. This performance of the service refers to such properties of the service provided such as accuracy, reliability, integrity, availability, timeliness, etc.
- (c) It is quite likely that the air traffic services provider has arrangements in place with other air navigation service providers (e.g. CNS), whose services they use, specifying the required performance and requiring the service provider to inform, in a timely manner, the air traffic services provider of any impact on the performance of services supplied.
- (d) When an air navigation service provider other than an air traffic services provider provides services or functions directly to a flight (e.g. MET) without involving air traffic services, then the safe use of those services is the responsibility of the users of those services.
- (e) When the air traffic services provider also provides other services, it may choose to combine the necessary performance and safety management activities into an integrated management system covering all services.

**AMC1 ANS.1050 (a) Management system**

## GENERAL

An ISO 9001 certificate, issued by an appropriately accredited organisation, addressing the quality management elements required in this Subpart should be considered a sufficient means of compliance for the service provider. In this case, the service provider should accept the disclosure of the documentation related to the certification to the Authority upon the latter's request.



**IEM1 to AMC1 ANS.1050 (a) Management system**

## GENERAL

An ISO 9001 certificate covers the quality management elements of the management system. Other elements required by this STS in reference to the management system that are not covered by the ISO 9001 certificate issued by an appropriately accredited organisation should be subject to oversight by the Authority.

**IEM2 to AMC1 ANS.1050 (a) Management system**

## GENERAL FOR THE AIR TRAFFIC SERVICES PROVIDER

An ISO 9001 certificate may not give the presumption of compliance with the provisions of ATS.1015 Safety management system set out in STS-ATS.

**AMC2 ANS.1050 (a) Management system**

## GENERAL FOR NON-COMPLEX AIR NAVIGATION SERVICE PROVIDERS

- (a) The policy should include a commitment to improve towards the highest standards, comply with all the applicable legal requirements, meet all the applicable standards, consider the best practices, and provide the appropriate resources.
- (b) The compliance monitoring task may be exercised by the accountable manager, provided that he/she has demonstrated having the relevant knowledge, background and appropriate experience related to the activities of the air navigation service provider, including knowledge and experience in compliance monitoring.
- (c) Risk management may be performed using hazard checklists or similar risk management tools or processes, which are integrated into the activities of the air navigation service provider.
- (d) An air navigation service provider should manage associated risks related to changes, as applicable. Management of changes should be a documented process to identify external and internal changes.
- (e) An air navigation service provider should identify persons who fulfil the role of managers and who are responsible with regard to safety, quality and security of its services, as applicable. These persons may be accountable managers or individuals with an operational role in the air navigation service provider.

**IEM ANS.1050 (a) (1) Management system**

## RESPONSIBILITIES AND ACCOUNTABILITIES

- (a) Senior management should ensure that responsibilities and accountabilities are defined and communicated within the air navigation service provider and documented within the management system. In the context of this requirement, 'responsibilities' refers to obligations that can be delegated and 'accountabilities' refers to obligations that cannot be delegated.
- (b) The appointment of an accountable manager who is given the required authorities and responsibilities, requires that the individual has the necessary attributes to fulfil the role. The accountable manager may have more than one function in the organisation. Nonetheless, the accountable manager's role is to ensure that the management system is properly implemented and maintained through the allocation of resources and tasks.

**AMC ANS.1050 (a) (2) Management system**

## POLICY

- (f) The policy should:
  - (1) be signed by the accountable manager;
  - (2) reflect organisational commitments regarding performance of its services and safety, where applicable, and its proactive and systematic management;
  - (3) include reporting principles; and
  - (4) include a commitment to:
    - (i) improve towards the highest performance standards so as to support the achievement of the highest level of safety;
    - (ii) comply with all applicable legislation and requirements, meet all applicable standards and consider best practices;
    - (iii) continually improve the effectiveness of the management system;
    - (iv) provide appropriate resources;
    - (v) enforce the performance of the service required to support the achievement of the highest level of safety in the airspace where the service is provided as one primary responsibility of all managers; and

- (vi) ensure that the purpose of reporting is for improvement and not to apportion blame to individuals.
- (g) Senior management should:
  - (1) ensure that the policy:
    - (i) is appropriate to the purpose of air navigation service provider;
    - (ii) provides a framework for establishing and reviewing objectives in relation to the provision of the service;
    - (iii) is communicated and understood within the air navigation service provider; and
    - (iv) is reviewed for continuing suitability;
  - (2) continually promote the policy to all personnel and demonstrate their commitment to it;
  - (3) provide necessary and appropriate human and financial resources for its implementation; and
  - (4) establish objectives in relation to the provision of the services and performance standards.

### **IEM1 to AMC ANS.1050 (a) (2) Management system**

#### **POLICY FOR THE AIR TRAFFIC SERVICES PROVIDER V/S POLICY FOR ALL OTHER AIR NAVIGATION SERVICE PROVIDERS**

If an air navigation service provider provides a service other than air traffic services, then the policy will be recognisable more as a quality policy that is concerned with the performance of the service and conformance to the service provision requirements supporting the achievement of the highest level of safety in the airspace where the service is provided. Should other air navigation services fall under the authority of the air traffic services, then ATS.1015 Safety management system set out in STS-ATS also applies and the policy will need to be expanded to include both the safety and the quality of the service.

### **IEM2 to AMC ANS.1050 (a) (2) Management system**

#### **POLICY FOR A NON-COMPLEX AIR NAVIGATION SERVICES PROVIDER**

The policy is the means whereby the air navigation service provider states its intention to maintain and, where practicable, improve performance levels in all their activities and to minimise their contribution to the risk of an aircraft accident as far as is reasonably practicable.

### **IEM3 to AMC ANS.1050 (a) (2) Management system**

#### **SAFETY CULTURE**

The policy should actively encourage effective safety reporting and by defining the line between acceptable performance (often unintended errors) and unacceptable performance such as negligence, recklessness, violations or sabotage, provide fair protection to reporters. A safety or just culture may not, however, preclude the 'criminalisation of error', which is legally, ethically and morally within the sovereign rights of Seychelles, provided that established international agreements are observed. A judicial investigation and consequences of some form, may be expected following an accident or serious incident especially if a system failure resulted in lives lost or property damaged, even if no negligence or ill intent existed. A potential issue could, therefore exist if voluntary hazard reports, which relate to latent deficiencies of a system or its performance are treated in the same way as those concerning accident and serious incident investigations. The intent of protecting hazard reports should not challenge the legitimacy of a judicial investigation or demand undue immunity.

### **AMC1 ANS.1050 (a) (3) Management system**

#### **MANAGEMENT OF METEOROLOGICAL SERVICES PERFORMANCE**

- (a) The management system of the meteorological service provider should provide users with assurance that the meteorological information supplied complies with the stated requirements in terms of geographical and spatial coverage, format and content, time and frequency of issuance and period of validity, as well as the accuracy of measurements, observations and forecasts.
- (b) When the management system indicates that the meteorological information to be supplied to users does not comply with the stated requirements and automatic error correction procedures are not appropriate, such information should not be supplied to users unless it is validated with the originator.
- (c) In regard to the exchange of meteorological information for operational purposes, the management system should include verification and validation procedures and resources for monitoring adherence to the prescribed transmission schedules for individual messages and/or bulletins required to be exchanged as well as the times of their filing for transmission. The management system should be capable of detecting excessive transit times of messages and bulletins received.

**AMC2 ANS.1050 (a) (3) Management system**

## SAFETY PERFORMANCE MONITORING AND MEASUREMENT FOR THE AIR TRAFFIC SERVICES PROVIDER

- (a) Safety performance monitoring and measurement should be the process by which the safety performance of the air traffic services providers is verified in comparison to the safety policy and the safety objectives established by the air traffic services provider.
- (b) This process should include:
  - (1) safety reporting;
  - (2) safety studies encompassing broad safety concerns;
  - (3) safety reviews including trends reviews, which would be conducted during introduction and deployment of new technologies, change or implementation of procedures, or in situations of structural change in operations;
  - (4) safety audits focusing on the integrity of the air traffic services provider's management system, and periodically assessing the status of safety risk controls; and
  - (5) safety surveys, examining particular elements or procedures of a specific operation, such as problem areas or bottlenecks in daily operations, perceptions and opinions of operational personnel, and areas of dissent or confusion.

**IEM to AMC2 ANS.1050 (a) (3) Management system**

## SAFETY SURVEYS FOR THE AIR TRAFFIC SERVICES PROVIDER

- (a) An air traffic services provider should:
  - (1) initiate safety surveys and ensure that all safety-related activities within its scope are addressed periodically;
  - (2) appoint an appropriate survey leader and survey team whose expertise is in accordance with the particular requirements of the intended survey, taking due account of the desirability of including staff from outside areas where relevant, and being mindful of the opportunity such an activity provides for staff development and engagement;
  - (3) define an annual safety survey plan;
  - (4) take immediate remedial action as soon as any safety-related shortcomings are identified;
  - (5) ensure that the actions identified in the action plans are carried out within the specified timescales; and
  - (6) ensure that examples of lesson learning and good practice arising from safety surveys are disseminated and acted upon.
- (b) The survey leader should:
  - (1) carry out the survey;
  - (2) record the results;
  - (3) make recommendations; and
  - (4) agree actions with the relevant operational management.
- (c) The survey team should assist the survey leader in fulfilling their responsibilities as determined by the survey leader.
- (d) Safety surveys may be initiated by a number of means such as voluntary reports, occurrence reports, safety performance, suggestions from members of staff, etc.
- (e) Safety surveys may be documented in a safety survey report which should also contain the specific actions that will be taken to address the recommendations. The actions should specify those responsible for completion and the target dates. The actions should be tracked to closure through an action plan. This action plan may be implemented as part of an existing locally or centrally managed action tracker.
- (f) A typical safety survey report would require the following content:
  - (1) Front sheet:
    - (i) reference number;
    - (ii) title;
    - (iii) survey period;
    - (iv) team members and team leader; and
    - (v) survey initiator;

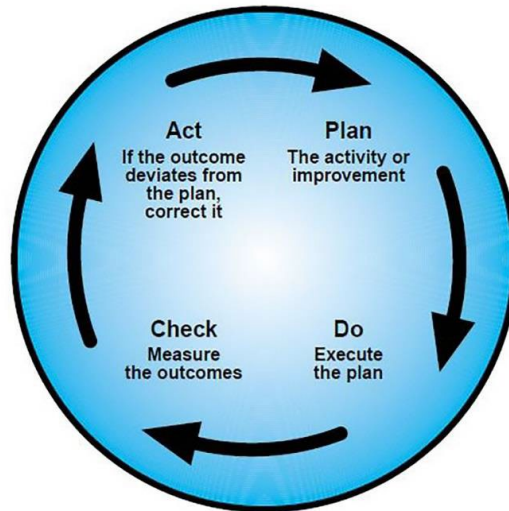
- (2) Survey description:
  - (i) introduction;
  - (ii) objective;
  - (iii) scope;
  - (iv) record of results;
  - (v) conclusions; and
  - (vi) recommendations and actions.
- (g) The survey leader should be adequately trained and competent for the subject of the survey. Where this is not possible, at least one member of the survey team should be competent in the subject of the survey.
- (h) It is advantageous for the survey team to be multi-disciplined and, where possible, be drawn from differing parts of the air traffic services provider's organisation.

### **IEM1 ANS.1050 (a) (3) Management system**

#### **SAFETY PERFORMANCE MONITORING AND MEASUREMENT FOR THE AIR TRAFFIC SERVICES PROVIDER**

- (i) The means to monitor performance is often through one or more leading or lagging indicators.
- (ii) Indicators and performance measures provide feedback on what is happening so that the air traffic services provider can take appropriate actions to respond to changing circumstances. The indicators provide information on:
  - (1) what is happening around the air traffic services provider;
  - (2) how well the air traffic services provider is doing;
  - (3) what has happened so far; and
  - (4) warning of impending problems or dangers that the air traffic services provider may need to take action to avoid.
- (iii) Although 'lagging' performance indicators that measure the final outcomes resulting from the air traffic services provider's activities are often considered as the most interesting, lagging indicators themselves may not provide enough information to guide the air traffic services provider's actions and ensure success.
- (iv) By measuring the inputs to a process, leading performance indicators can complement the use of lagging indicators and compensate for some of their shortcomings. Leading indicators can be used to monitor the effectiveness of control systems and give advance warning of any developing weaknesses before problems occur. One purpose of leading performance indicators is, therefore, to show the condition of systems before accidents, incidents, harm, damage or failure occurs. In this way, they can help to control risks and prevent mishaps.
- (v) There is good evidence that when leading performance indicators are used correctly, they are effective in improving performance. However, there is also good evidence that they can be misused.
- (vi) For leading performance indicators to play an effective role in the improvement process, there should be an association between the inputs that the leading performance indicators measure and the desired lagging outputs. There needs to be a reasonable belief that the actions taken to improve leading performance indicators will be followed by an improvement in the associated lagging output indicators.
- (vii) The process for effective use of leading performance indicators can be summarised as:
  - (1) Identify where there are potential weaknesses or opportunities for improvement;
  - (2) Identify what can be done to counter weaknesses or deliver improvement;
  - (3) Set performance standards for the actions identified;
  - (4) Monitor performance against the standards;
  - (5) Take corrective actions to improve performance; and
  - (6) Repeat the process by using the continuous improvement model on the next page:
- (viii) For any performance indicator to be effective, it is important that it is:
  - (1) objective and easy to measure and collect;
  - (2) relevant to the air traffic services provider whose performance is being measured;
  - (3) capable of providing immediate and reliable indications of the level of performance;
  - (4) cost-efficient in terms of the equipment, personnel and additional technology required to gather the information;

- (5) understood and owned by the air traffic services provider whose performance is being measured;
- (6) related to activities considered to be important for future performance;
- (7) amenable to intervention/influence by the air traffic services provider whose performance is being measured;
- (8) related to something where there is scope to improve; and
- (9) a clear indication of a means to improve performance.



**Continuous improvement model**

### **IEM2 ANS.1050 (a) (3) Management system**

#### PERFORMANCE MONITORING AND MEASUREMENT FOR AIR NAVIGATION SERVICE PROVIDER OTHER THAN THE AIR TRAFFIC SERVICES PROVIDER

A performance indicator is a type of performance measurement. An organisation may use performance indicators to evaluate its success, or to evaluate the success of a particular activity in which it is engaged. Sometimes success is defined in terms of making progress towards strategic goals, but often success is simply the repeated, periodic achievement of some level of operational goal (e.g. zero defects). Accordingly, choosing the right performance indicators relies upon a good understanding of what is important to the organisation. Since there is a need to understand well what is important, various techniques to assess the present state of the business, and its key activities, are associated with the selection of performance indicators. These assessments often lead to the identification of potential improvements, so performance indicators are routinely associated with 'performance improvement' initiatives. When performance indicators have performance targets associated with them, they are known as key performance indicators.

### **IEM ANS.1050 (a) (4) Management system**

#### IDENTIFICATION OF CHANGES TO FUNCTIONAL SYSTEMS

This process is used by the air navigation service provider to correctly identify proposed changes. The changes dealt with in this IEM are the proposed changes to the functional system. These can be triggered internally by changing circumstances that are related to the air navigation service provider of concern or externally by changing circumstances that are related to others or to the context in which the service operates, i.e. in situations where the air navigation service provider does not have managerial control over them. The triggers are called change drivers.

##### *(a) Identification of internal circumstances*

- (1) The procedure to identify changes needs to be embedded in all parts of the organisation that can modify the functional system, i.e. the operational system used to support the services provided. Examples of proposed changes to the functional system as a response to changing circumstances under the control of the organisation, therefore, include:
  - (i) changes to the way the components of the functional system are used;
  - (ii) changes to equipment, either hardware or software;
  - (iii) changes to roles and responsibilities of operational personnel;
  - (iv) changes to operating procedures;
  - (v) changes to system configuration, excluding changes during maintenance, repair and alternative operations that are already part of the accepted operational envelope;
  - (vi) changes that are necessary as a result of changing circumstances to the operational context under the managerial control of the provider that can impact the service, e.g. provision of service under new

conditions;

(vii) changes that are necessary as a result of changing circumstances to the local physical (operational) environment of the functional system; and

(viii) changes to the working hours and/or shift patterns of key personnel which could impact on the safe delivery of services.

(2) These changes are often identified by the air navigation service provider using business processes, which will be used to identify changes planned for the medium and long term. Such processes can include:

(i) annual business plans;

(ii) strategic safety boards;

(iii) equipment replacement projects;

(iv) airspace reorganization plans;

(v) introduction of new operational concepts, e.g. Free Flight;

(vi) accident and incident investigation reports; and

(vii) safety monitoring and safety surveys.

(b) *Identification of external circumstances*

The air navigation service provider should have processes in place to react appropriately to notifications received from those service providers that supply services to them. In addition, changes to the context that can impact on the service provided and are not under the managerial control of the air navigation service provider should be identified and treated as potential triggers. Furthermore, the service provider should negotiate contracts with unregulated service providers in accordance with [ANS.1060](#) that place a responsibility on such organisations to inform them of planned changes to their services.

### **AMC ANS.1050 (a) (5) Management system**

#### ASSESSMENT OF THE MANAGEMENT SYSTEM

(a) Senior management should assess the air navigation service provider's management system at planned intervals to ensure its continuing suitability, adequacy and effectiveness.

(b) The assessment should include assessing opportunities for improvement and the need for changes to the management system, including the policy and objectives.

(c) Records from management assessments should be maintained.

### **AMC ANS.1050 (a) (6) Management system**

#### TRAINING AND COMPETENCY

An air navigation service provider should:

(a) determine the necessary competence for personnel performing activities supporting services provision;

(b) where applicable, provide training or take other actions to achieve the necessary competence;

(c) evaluate the effectiveness of the actions taken;

(d) ensure that personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the objectives; and

(e) maintain appropriate records of education, training, skills and experience.

### **AMC ANS.1050 (a) (7) Management system**

#### COMMUNICATION RESPONSIBILITIES

The senior management should ensure that appropriate communication processes are established within the air navigation service provider and that communication takes place regarding the effectiveness of the management system.

### **AMC ANS.1050 (b) Management system**

#### SERVICE PROVIDER'S MANAGEMENT SYSTEM DOCUMENTATION

An air navigation service provider's management system documentation should at least include the following information:

- (a) a statement signed by the accountable manager to confirm that the air navigation service provider will continuously work in accordance with the applicable requirements and the air navigation service provider's documentation as required by this STS and other applicable STS;
- (b) the air navigation service provider's scope of activities;
- (c) the titles and names of nominated postholders referred to in [ANS.1065 \(b\)](#);
- (d) the air navigation service provider's chart showing the lines of responsibility between the persons referred to in [ANS.1065 \(b\)](#);
- (e) a general description and location of the facilities referred to in [ANS.1070](#);
- (f) procedures describing the function and specifying how the air navigation service provider monitors and ensures compliance with the applicable requirements referred to in [ANS.1050 \(c\)](#); and
- (g) the amendment procedure for the air navigation service provider's management system documentation.

### **IEM ANS.1050 (b) Management system**

#### AIR NAVIGATION SERVICE PROVIDER'S MANAGEMENT SYSTEM DOCUMENTATION

- (a) It is not required to duplicate information in several manuals. The information may be contained in the air navigation service provider's manuals (e.g. operations manual, training manual), which may also be combined.
- (b) An air navigation service provider may also choose to document some of the information required to be documented in separate documents (e.g. procedures). In this case, it should ensure that manuals contain adequate references to any document kept separately. Any such documents are then to be considered an integral part of the air navigation service provider's management system documentation.
- (c) An air navigation service provider's management system documentation may be included in a separate manual or in one of the manuals as required by the applicable subparts. A cross reference should be included.

### **AMC ANS.1050 (c) Management system**

#### COMPLIANCE MONITORING

##### *Implementation and use*

- (a) The implementation and use of a compliance monitoring function should enable the air navigation service provider to monitor compliance with the relevant requirements of this STS and other applicable STSs.
  - (1) An air navigation service provider should specify the basic structure of the compliance monitoring function applicable to the activities conducted.
  - (2) The compliance monitoring function should be structured according to the size of the service provider and the complexity of the activities to be monitored, including those which have been subcontracted.

##### *Performance*

- (a) An air navigation service provider should monitor compliance with the procedures it has designed to ensure that services are provided with the required safety levels and quality, as applicable. In doing so, they should as a minimum, and where appropriate, monitor:
  - (1) manuals, logs, and records;
  - (2) training standards; and
  - (3) management system procedures.

##### *Organisational set-up*

- (a) A person should be responsible for compliance monitoring to ensure that the air navigation service provider continues to meet the requirements of this STS and other applicable STSs. The accountable manager should ensure that sufficient resources are allocated for compliance monitoring.
- (b) Personnel involved in the compliance monitoring should have access to all areas of the air navigation service provider and, as necessary, any contracted organisation.
- (c) In the case the person responsible for compliance monitoring acts also as safety manager, the accountable manager, with regard to his/her direct accountability for safety, should ensure that sufficient resources are allocated to both functions, taking into account the size of the air navigation service provider and the nature and complexity of its activities.
- (d) The independence of the compliance monitoring function should be established by ensuring that audits and

inspections are carried out by personnel not directly involved in the activity being audited.

#### *Documentation*

- (a) Relevant documentation should include relevant parts of the air navigation service provider's management system documentation.
- (b) In addition, relevant documentation should also include:
  - (1) terminology;
  - (2) specified activity standards;
  - (3) a description of the air navigation service provider;
  - (4) allocation of duties and responsibilities;
  - (5) procedures to ensure compliance;
  - (6) the compliance monitoring programme, reflecting:
    - (i) the schedule of the monitoring programme;
    - (ii) audit procedures;
    - (iii) reporting procedures;
    - (iv) follow-up and corrective action procedures; and
    - (v) the record-keeping system;
  - (7) the training syllabus referred to in (e)(2); and
  - (8) document control.

#### *Training*

- (a) Correct and thorough training is essential to optimise compliance in every air navigation service provider. In order to achieve significant outcomes of such training, the service provider should ensure that all personnel understand the objectives as laid down in the air navigation service provider's management system documentation.
- (b) Those responsible for managing the compliance monitoring function should receive training on this task. Such training should cover the requirements of compliance monitoring, manuals and procedures related to the task, audit techniques, reporting and recording.
- (c) Time should be provided to train all personnel involved in compliance management and for briefing the remainder of the personnel.
- (d) The allocation of time and resources should be governed by the volume and complexity of the activities concerned.

### **IEM ANS.1050 (c) Management system**

#### COMPLIANCE MONITORING ORGANISATIONAL SET-UP

- (a) The role of the compliance monitoring may be performed by a compliance monitoring manager to ensure that the activities of the air navigation service provider are monitored for compliance with the applicable regulatory requirements and any operational requirements established by the air navigation service provider, and that these activities are being carried out properly under the supervision of other relevant nominated postholders and line managers.
- (b) The compliance monitoring manager should:
  - (1) be responsible for ensuring that the compliance monitoring programme is properly implemented, maintained, and continually reviewed and improved;
  - (2) have direct access to the accountable manager;
  - (3) not be one of the line managers; and
  - (4) be able to demonstrate relevant knowledge, background and appropriate experience related to the activities of the air navigation service provider, including knowledge and experience in compliance monitoring.
- (c) The compliance monitoring manager may perform all internal audits and inspections himself/herself or appoint one or more auditors by choosing personnel having the related competence as defined in (b) (4), either from within or outside the air navigation service provider.
- (d) Regardless of the option chosen, it needs to be ensured that the independence of the audit function is not affected, in particular in cases where those performing the audit or inspection are also responsible for other activities within



the air navigation service provider.

- (e) In case external personnel are used to perform compliance internal audits or inspections:
  - (1) any such audits or inspections are performed under the responsibility of the compliance monitoring manager; and
  - (2) the compliance monitoring manager remains responsible for ensuring that the external personnel has relevant knowledge, background and experience as appropriate to the activities being audited or inspected, including knowledge and experience in compliance monitoring.
- (f) An air navigation service provider retains the ultimate responsibility for the effectiveness of the compliance monitoring function, in particular for the effective implementation and follow-up of all corrective actions.

### AMC ANS.1050 (d) Management system

#### REACTION TO UNDERPERFORMANCE OF FUNCTIONAL SYSTEMS

If the cause of the underperformance is found to be:

- (a) a flaw in the functional system, the air navigation service provider should initiate a change to the functional system either to remove the flaw or mitigate its effects;
- (b) a flawed argument associated with a change to that functional system, the air navigation service provider should either:
  - (1) provide a valid argument; or
  - (2) where the air navigation service provider considers it more feasible, initiate a change to the functional system.

### IEM1 ANS.1050 (f) Management system

#### GENERAL

Within the scope of this STS, only the air traffic services provider can identify hazards, assess the associated risks and mitigate or propose mitigating measures where necessary. This requirement implies that all air navigation service providers (air traffic services and non-air traffic services) establish formal interfaces (e.g. service level agreements, memorandum of understanding, memorandum of cooperation) between ~~the~~ themselves, as relevant, or between the service providers and other aviation undertakings, e.g. the aerodrome operator, so as to ensure that hazards associated with the use of the services they provide are identified and the risks assessed and whenever needed mitigated. It does not imply that this has to be done by the air navigation service providers themselves as only the air traffic services provider can, but they need to establish the interfaces with the air traffic services provider who is able to do so. The formal interfaces could address the mitigation means put on the different providers.

### IEM2 ANS.1050 (f) Management system

#### LOCAL RUNWAY SAFETY TEAM

The air navigation service provider should participate in the local runway safety team established by the aerodrome operator.

### AMC1 ANS.1055 (a) Change management procedures

#### GENERAL

- (a) The procedures, and the change of the procedures, used by an air navigation service provider to manage changes should cover the complete lifecycle of a change.
- (b) The air navigation service provider should show that the procedures address all the actions and all the evidence needed in order to comply with the requirements set out in ANS.1015, ATS.1020, ATS.1025, and ANS.1100, as appropriate. For that purpose, the air navigation service provider should use a compliance matrix, which shows:
  - (1) which part of a procedure addresses which part of the requirements; and
  - (2) the rationale explaining how the procedures demonstrate compliance with the requirements.
- (c) The air navigation service provider should ensure that the roles and responsibilities for the change management processes are identified in the procedures.
- (d) Procedures should be submitted in a manner agreed between the air navigation service provider and the Authority. Until an agreement is reached, the Authority will prescribe the means of submission.
- (e) The procedure that defines the notification process for changes includes:
  - (1) the focal point of the notification of changes, e.g. person, or part of the organisation and the role;

- (2) the means used for notification, e.g. fax, email, mail, use of database or others.
- (f) The management of change procedures should include a change identification procedure. This procedure, which is a precursor of the change notification process, should seek out potential changes, confirm that there is a real intent to implement them (propose the change) and, if so, initiate the notification process.

### AMC2 ANS.1055 (a) Change management procedures

#### GENERAL

- (a) As part of the change management procedures, the air navigation service provider should keep a register of the records of all notified changes. The register should include:
  - (1) the status of the implementation of the change, i.e. planned, under review, under implementation, implemented, or cancelled;
  - (2) the notification;
  - (3) (a link to) the location of the actual record, including a reference to all information passed to the Authority in accordance with [ANS.1015 \(a\) \(2\)](#).
- (b) In addition, when the changes are selected for review, the register should also include:
  - (1) the review decision from the Authority; and
  - (2) a link to records of the change approval by the Authority.

### IEM ANS.1055 (a) Change management procedures

#### GENERAL

- (a) The change management procedures for changes to functional systems should include:
  - (1) the identification and notification of proposed changes;
  - (2) the identification of the scope of the change, i.e. the identification of what parts of the functional system are to be changed or are affected by the change;
  - (3) the assessment and assurance of the change;
  - (4) the approval of the change; and
  - (5) the establishment of the monitoring criteria to ensure that the change will remain acceptable as long as it is in operation, i.e. acceptably safe for the air traffic services provider or acceptably trustworthy for other air navigation service providers. The monitoring of the changed system is part of the activities related to the management system of the air navigation service provider. It is not covered by the change management procedures themselves.
- (b) The procedures that manage changes to functional systems do not include the processes to identify the circumstances that will trigger the change. These should be part of the management system(s) as set out in [ANS.1050](#) and/or ATS.1015 Safety Management System, as applicable.
- (c) The change management procedures should address the following:
  - (1) procedural-oriented content, which details:
    - (i) the roles and activities with regard to change management, safety assessment and safety support assessment;
    - (ii) the identification of the parts of the functional system affected by the proposed change;
    - (iii) the type of safety assessment or safety support assessment that has to be used for the identified type of changes;
    - (iv) the competence of the persons performing change management, safety assessments and safety support assessments;
    - (v) the identified triggers for performing a safety assessment and a safety support assessment;
    - (vi) the method of change notification;
    - (vii) the method of identifying any organisations or aviation undertakings using the service that are potentially affected by the change; and
    - (viii) the method of informing those identified in (vii).
  - (2) Method-oriented content, which details description of the safety assessments and safety support assessments methods and mitigation methods used by the air navigation service provider.

- (d) For each change management procedure or part of a change management procedure approved, the agreement on notification of any change over them should be documented and formalised. In any case, the air navigation service provider should keep records of these changes.

### **AMC1 ANS.1060 Contracted activities**

#### RESPONSIBILITY WHEN CONTRACTING ACTIVITIES

- (a) A contract should exist between the air navigation service provider and the contracted organisation clearly defining the contracted activities and the applicable requirements, including training and competences requirements for air traffic safety electronics personnel (ATSEP) employed by the contracted organisation, where applicable.
- (b) The contracted activities, performed by an organisation that is not itself certified in accordance with this Regulation to carry out such activity, should be included in the service provider's oversight process. In this context, where the contracted activity requires the ATSEP employed by contracted organisation to undertake any aspect of this activity, the service provider should ensure that those ATSEP have received the applicable training and competences in accordance with established ATSEP training programme.
- (c) An air navigation service provider should ensure that the contracted organisation has the necessary authorisation, declaration or approval when required, and commands the resources and competence to undertake the task.

### **IEM to AMC1 to ANS.1060 Contracted activities**

#### RESPONSIBILITY WHEN CONTRACTING ACTIVITIES

The applicable requirements may include the necessary elements from the training requirements and competence assessment of ATSEP in order to ensure equivalent level of safety and level playing field for the maintenance of systems and equipment regardless of whether such services are provided internally in the air navigation service provider or outsourced.

### **AMC2 ANS.1060 Contracted activities**

#### RESPONSIBILITY WHEN CONTRACTING ACTIVITIES

- (a) When the contracted organisation is itself certified in accordance with this STS to carry out the contracted activities, the air navigation service provider's compliance monitoring should at least check that the approval effectively covers the contracted activities and that it is still valid.
- (b) When the air navigation service provider is not certified itself to provide the service, it should only contract or purchase services from a certified organisation when so required by this STS.

### **AMC3 ANS.1060 Contracted activities**

#### SAFETY: ATS PROVIDER

The air traffic services provider should ensure adequate justification of the safety of the externally provided and supplied services, having regard to their safety significance within the provision of its services.

### **IEM1 ANS.1060 Contracted activities**

#### GENERAL

- (a) An air navigation service provider may contract certain activities to external organisations. 'Contracted activities' means those activities within the service provision conditions attached to the air navigation service provider's certificate that are performed by other organisations either themselves certified to carry out such an activity or if not certified, working under the air navigation service provider's safety oversight. The scope of the air navigation service provider's safety oversight covers the contracted activities performed by the external organisation that is not itself certified in accordance with this STS.
- (b) In the case of activities contracted, the air navigation service provider should define relevant management responsibilities within its own organisation.
- (c) The ultimate responsibility for the services provided by contracted organisations should always remain with the contracting air navigation service provider.

### **IEM2 ANS.1060 Contracted activities**

#### RESPONSIBILITY WHEN CONTRACTING ACTIVITIES

- (a) A contract could take the form of a written agreement, letter of agreement, service letter agreement, memorandum of understanding, etc. as appropriate for the contracted activities.
- (b) An air navigation service provider's assurance process could be included into the service provider's management system and compliance monitoring programmes.
- (c) In order to ensure that the contracted organisation is able to perform the contracted activities, the air navigation

service provider may conduct a prior audit of the contracted party.

- (d) Regardless of the approval status of the contracted organisation, the air navigation service provider is responsible for ensuring that all contracted activities are subject to compliance monitoring as required by ANS.1050 (c), and in the case of air traffic services provider, also to hazard identification and risk management as required by ATS.1015 (a) (2).
- (e) If an air navigation service provider requires a contracted organisation to conduct an activity which exceeds the privileges of the contracted organisation's certificate, this will be considered as the contracted organisation working under the approval and oversight of the contracting air navigation service provider.
- (f) The table below illustrates the responsibilities when contracting.

	Contracted activity subject to certification; and the contracting service provider certified for that activity	Contracted activity subject to certification; and contracting service provider NOT certified for that activity
Contracted external organisation certified to provide the activity	A contracting service provider undertakes compliance monitoring of the contracted external organisation and should at least check that the certificate effectively covers the contracted activities and that it is valid.	A contracting service provider undertakes compliance monitoring of the contracted external organisation and should at least check that the certificate effectively covers the contracted activities and that it is valid.
Contracted external organisation NOT certified to provide the activity	The contracted external organisation works under the oversight of the contracting service provider.	The activity cannot be contracted to the external organisation.

### AMC ANS.1065 Personnel requirements

- (a) An air navigation service provider shall appoint an accountable manager, who has the authority over ensuring that all activities can be financed and carried out in accordance with the applicable requirements. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) An air navigation service provider shall define the authority, duties and responsibilities of the nominated post holders, in particular of the management personnel in charge of safety, quality, security, finance and human resources-related functions as applicable.

### AMC ANS.1065 (b) Personnel requirements

#### GENERAL

- (a) Senior management should appoint a member of the air navigation service provider's management who, irrespective of other responsibilities, should have responsibility and authority that includes:
  - (1) ensuring that processes needed for the management system are established, implemented and maintained;
  - (2) reporting to senior management on the performance of the management system and any need for improvement; and
  - (3) ensuring the promotion of awareness of performance and service requirements throughout the air navigation service provider and of the impact it has on safety.

### IEM ANS.1065(b) Personnel requirements

#### COMBINATION OF NOMINATED POSTHOLDERS RESPONSIBILITIES

- (a) The acceptability of a single person holding more than one post, possibly in combination with being the accountable manager, should depend upon the air navigation service provider's organisation and the complexity of its activities. The two main areas of concern should be competence and an individual's capacity to meet his/her responsibilities.
- (b) As regards competence in different areas of responsibility, there should not be any difference from the requirements applicable to persons holding only one post.

*Note: The capacity of an individual to meet his/her responsibilities should primarily be dependent upon the complexity of the air navigation service provider's organisation and its activities. However, the complexity of the air navigation service provider's organisation or of its activities may prevent or limit the combination of posts.*

### AMC ANS.1075 Record-keeping

#### GENERAL

- (a) The record-keeping system should ensure that all the records required in [ANS.1075 \(a\)](#) are accessible whenever

needed. These records should be organised in a way that ensures traceability and retrieval throughout the retention period.

- (b) Records should be kept in paper form or in electronic format or a combination of both. The records should remain legible throughout the required retention period. The retention period starts when a record has been created or last amended.
- (c) Paper systems should use robust material which can withstand normal handling and filing.
- (d) Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer systems should include safeguards against the probability of unauthorised personnel altering the data.
- (e) All computer hardware used to ensure data backup should be stored in a different location from that containing the working data and in an environment that ensures they remain in good condition. When hardware or software changes take place, special care should be taken that all necessary data continues to be accessible at least through the full retention period.

### **IEM ANS.1075 Record-keeping**

#### **GENERAL**

The record-keeping provision is intended to address the management system records rather than operational data which is covered by other record-keeping applicable requirements.

### **AMC ANS.1075 (b) Record-keeping**

#### **RETENTION PERIOD**

Unless otherwise specified by the requirements, the records should be kept for a minimum period of at least 5 years.