



SEYCHELLES TECHNICAL STANDARDS

STS-ATS

Air Traffic Standards

Seychelles Technical Standards

STS-ATS

Air Traffic Standards

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FOREWORD

- 1 STS-ATS is derived from Annex IV of Commission Implementing Regulation (EU) 2017/373 of 1st 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, of the European Aviation Safety Agency and the Standards and Recommended Practices of ICAO Annex 2, 10 and 11 as they pertain to the provision of air traffic services. It is intended by these set of requirements that both international and domestic provision of air traffic services follow a common standard.
- 2 The basic organisation of STS-ATS (Subparts and rules numbers) follows strict conformance with that adopted for other European standards promulgated by EASA.
- 3 STS-ATS 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-ATS 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 number and amendment date. For clarity and simplification, all pages of the respective section will have the same amendment status upon amendment of one or more standard. The Amendment Records page will detail each amendment.

AMENDMENT RECORDS

Amendment No.	Subject	Source	Section affected	Entered by (Date)	Effective Date
-	Initial issue				01 July 2017
01	<p>Quality requirements for aeronautical data used in the provision of air traffic services</p> <p>AIR TRAFFIC SERVICES REQUIREMENTS FOR COMMUNICATIONS: Aeronautical mobile service (air-ground communications)</p> <p>Runway safety programme</p>	<p>ICAO State letter AN 13/13.1-18/15: Adoption of Amendment 51 to Annex 11</p> <p>USOAP ICVM of April 2018</p>	<p>Contents page; SECTION 1, SUBPART A: ATS.1005; SECTION 2, SUBPART A: ATS.2080; ATS.2090; ATS.2120; Appendix 1; Appendix 5. SUBPART E, ATS.2225 (3).</p> <p>SECTION 1, SUBPART C: ATS.1015 (a) (2) (iii)</p>	Joseph Lajoie (21 Jun 2019)	01 Nov 2019
02	<p>Fatigue management;</p> <p>Fatigue Risk Management System (FRMS) Requirements;</p> <p>Coordination of activities potentially hazardous to civil aircraft;</p> <p>Read-back of clearances and safety-related information</p>	ICAO State letter AN 13/13.1-20/39: Adoption of Amendment 52 to Annex 11	<p>SECTION 1, SUBPART D: ATS.1050; APPENDIX 2;</p> <p>SECTION 2, SUBPART A: ATS.2075</p> <p>SUBPART B; ATS.2170</p>	Joseph Lajoie (17 Aug 2020)	01 Nov 2020

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES**SECTION 1 – GENERAL REQUIREMENTS****SUBPART A – APPLICABILITY AND DEFINITION OF TERMS****ATS.1001 Applicability**

STS-ATS prescribes technical standards applicable to the air traffic services provider, providing such services both for national and international air navigation.

ATS.1005 Definitions of terms

(a) The following terms shall apply to all Subparts of this STS:

- (1) **‘accepting unit’** means air traffic control unit next to take control of an aircraft.
- (2) **‘accident’** means an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

(i) a person is fatally or seriously injured as a result of:

- being in the aircraft, or
- direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
- direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

(ii) the aircraft sustains damage or structural failure which:

- adversely affects the structural strength, performance or flight characteristics of the aircraft, and
- would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

(iii) the aircraft is missing or is completely inaccessible.

- (3) **‘aeronautical fixed service (AFS)’** means a telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.
- (4) **‘aeronautical telecommunication station’** means a station in the aeronautical telecommunication service.
- (5) **‘air traffic controller schedule’** means a plan for allocating air traffic controller duty periods and non-duty periods over a period of time, otherwise referred to as a roster.
- (6) **‘air traffic flow management (ATFM)’**. A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.
- (7) **‘ALERFA’** is the code word used to designate an alert phase.
- (8) **‘alert phase’** means a situation wherein apprehension exists as to the safety of an aircraft and its occupants.
- (9) **‘appropriate ATS authority’** means the relevant authority designated by the Authority responsible for providing air traffic services in the airspace concerned.
- (10) **‘apron management service’** means a service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

- (11) **'area navigation route'** means an ATS route established for the use of aircraft capable of employing area navigation.
- (12) **'base turn'** means a turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.
- (13) **'break'** means a period of time within the duty period when an air traffic controller is not required to perform duties, for recuperation purposes;
- (14) **'calendar'** means discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19018)
- (15) **'conference communications'** means communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously.
- (16) **'cyclic redundancy check (CRC)'** means a mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.
- (17) **data accuracy.** A degree of conformance between the estimated or measured value and the true value.
- (18) **'data integrity (aeronautical data assurance level)'** means a degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.
- (19) **'data quality'** means a degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution, integrity (or equivalent assurance level), traceability, timeliness, completeness and format.
- (20) **'declared capacity'** means a measure of the ability of the ATC system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, ATC unit configuration, personnel and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace.
- (21) **'DETRESFA'** is the code word used to designate a distress phase.
- (22) **'distress phase'** means a situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.
- (23) **'duty'** means any task that an air traffic controller is required to perform by the air traffic control service provider;
- (24) **'duty period'** means a period which starts when an air traffic controller is required by the air traffic control service provider to report for or be available for or to commence duty and ends when the air traffic controller is free from duty;
- (25) **'duty roster system'** means the structure of duty and rest periods of air traffic controllers in accordance with legal and operational requirements;
- (26) **'emergency phase'**. is generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.
- (27) **'fatigue'** means a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase or workload (mental and/or physical activity) that can impair an individual's alertness and ability to safely perform his/her tasks;
- (28) **'fatigue risk management system'** means a data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles, knowledge and operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.
- (29) **'final approach'** means that part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,
 - (i) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
 - (ii) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:
 - a landing can be made; or
 - a missed approach procedure is initiated.
- (30) **'geodetic datum'** means minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

- (31) **‘gregorian calendar’** means Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108*).
- (32) **‘hazard’** shall mean any condition, event, or circumstance which could induce an accident;
- (33) **‘human factors principles’** means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.
- (34) **‘human performance’** means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.
- (35) **‘INCERFA’** is the code word used to designate an uncertainty phase.
- (36) **‘incident’** means an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.
- (37) **‘instrument flight procedure design service (IFPDS)’** means a service established for the design, documentation, validation, maintenance and periodic review of instrument flight procedures necessary for the safety, regularity and efficiency of air navigation.
- (38) **‘integrity classification (aeronautical data)’** means classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:
- (i) routine data: there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
 - (ii) essential data: there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
 - (iii) critical data: there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.
- (39) **‘International NOTAM office’** means an office designated by a State for the exchange of NOTAM internationally.
- (40) **‘meteorological office’** means an office designated to provide meteorological service for international air navigation.
- (41) **‘navigation specification’** means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:
- (42) **‘non-duty period’** means a continuous and defined period of time, subsequent to and/or prior to duty periods, during which the air traffic controller is free of all duties.
- (43) **‘NOTAM’** means notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
- (44) **‘obstacle’** means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:
- (i) are located on an area intended for the surface movement of aircraft; or
 - (ii) extend above a defined surface intended to protect aircraft in flight; or
 - (iii) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.
- (45) **‘operator’** means a person, organization or enterprise engaged in or offering to engage in an aircraft operation.
- (46) **‘performance-based communication (PBC)’** means communication based on performance specifications applied to the provision of air traffic services.
- (47) **‘performance-based navigation (PBN)’** means an area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.
- (48) **‘performance-based surveillance (PBS)’** means surveillance based on performance specifications applied to the provision of air traffic services.
- (49) **‘printed communications’** means communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.
- (50) **‘required communication performance (RCP) specification’** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

- (51) **‘required navigation performance (RNP) specification’** mean a navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.
- (52) **‘required surveillance performance (RSP) specification’** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.
- (53) **‘rescue coordination centre (RCC)’** means a unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.
- (54) **‘rest period’** means a continuous and defined period of time, subsequent to and/or prior to duty, during which an air traffic controller is free of all duties;
- (55) **‘risk’** shall mean the combination of the overall probability, or frequency of occurrence of a harmful effect induced by a hazard and the severity of that effect;
- (56) **‘safety’** means the state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level;
- (57) **‘safety assurance’** shall mean all planned and systematic actions necessary to afford adequate confidence that a product, a service, an organisation or a functional system achieves acceptable or tolerable safety;
- (58) **‘safety data’** shall mean a defined set of facts or set of safety values collected from various aviation-related sources, which is used to maintain or improve safety;
- (59) **‘safety management system (SMS)’** means a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.
- (60) **‘safety objective’** shall mean a qualitative or quantitative statement that defines the maximum frequency or probability at which a hazard can be expected to occur;
- (61) **‘safety performance’** shall mean a State or service provider’s safety achievement as defined by its safety performance targets and safety performance indicators;
- (62) **‘safety performance indicator’** means a databased parameter used for monitoring and assessing safety performance;
- (63) **‘safety performance target’** means a State or service provider’s planned or intend target for a safety performance indicator over a given period that aligns with the safety objectives;
- (64) **‘safety requirement’** shall mean a risk-mitigation means, defined from the risk-mitigation strategy that achieves a particular safety objective, including organisational, operational, procedural, functional, performance and interoperability requirements or environment characteristics;
- (65) **‘station declination’** means an alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated;
- (66) **‘stress’** means the outcomes experienced by an individual when faced with a potential cause (‘stressor’) of human performance modification. The experience of the stressor may impact the individual’s performance negatively (distress), neutrally or positively (eustress), based on the individual’s perception of his/her ability to manage the stressor;
- (67) **‘terminal control area’** means a control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.
- (68) **‘time-in-position’** means the period of time when an air traffic controller is exercising the privileges of the air traffic controller’s licence at an operational position.
- (69) **‘transferring unit’** means an air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight.
- (70) **‘uncertainty phase’** means a situation wherein uncertainty exists as to the safety of an aircraft and its occupants.
- (71) **‘waypoint’** means a specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:
- Fly-by waypoint.* A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or
- Flyover waypoint.* A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

SUBPART B – ORGANISATION REQUIREMENTS

ATS.1010 Conflict of interests

An air traffic services provider shall take all necessary measures to prevent any situation of conflict of interests that could compromise the impartial and objective provision of its services.

SUBPART C – SAFETY OF SERVICES**ATS.1015 Safety Management System**

- (a) An air traffic services provider shall, as an integral part of the management of its services, have in place a safety management system (SMS) which is acceptable to the Authority, that includes the following components:
- (1) SAFETY POLICY AND OBJECTIVES:
 - (i) Management commitment and responsibility regarding safety which shall be included in the safety policy;
 - (ii) Safety accountabilities regarding the implementation and maintenance of the SMS and the authority to make decisions regarding safety;
 - (iii) Appointment of a safety manager who is responsible for the implementation and maintenance of an effective SMS;
 - (iv) Coordination of an emergency response planning with other service providers and aviation undertakings that interface with the air traffic services provider during the provision of its services; and
 - (v) SMS documentation that describes all the elements of the SMS, the associated SMS processes and the SMS outputs.
 - (2) SAFETY RISK MANAGEMENT
 - (i) A process to identify hazards associated to its services which shall be based on a combination of reactive, proactive and predictive methods of safety data collection;
 - (ii) A process that ensures analysis, assessment and control of the safety risks associated with identified hazards; and
 - (iii) A process to ensure that their contribution to the risk of aircraft incidents and accidents are minimised as far as is reasonably practicable. This shall include the implementation of a runway safety programme in collaboration with the SIA aerodrome operator and all SIA airside users, in accordance with *ICAO Doc 9870 – Runway incursion prevention*, as amended.
 - (3) SAFETY ASSURANCE
 - (i) Safety performance monitoring and measurement means to verify the safety performance of the organisation and validate the effectiveness of the safety risk controls;
 - (ii) A process to identify changes which may affect the level of safety risk associated with its service and to identify and manage the safety risks that may arise from those changes; and
 - (iii) A process to monitor and assess the effectiveness of the SMS to enable the continuous improvement of the overall performance of the SMS.
 - (4) SAFETY PROMOTION
 - (i) Training programme that ensures that the personnel are trained and competent to perform their SMS duties; and
 - (ii) Safety communication that ensures that the personnel are aware of the SMS implementation.

ATS.1020 Safety assessment and assurance of changes to the functional system

- (a) For any change notified in accordance with ANS.1015 (a) (1), the air traffic services provider shall:
- (1) ensure that a safety 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 of operation of the functional system; and
 - (2) provide assurance, with sufficient confidence, via a complete, documented and valid argument that the safety criteria identified via the application of ATS.1025 are valid, will be satisfied and will remain satisfied.

- (b) An air traffic services provider shall ensure that the safety assessment referred to in (a) comprises:
- (1) the identification of hazards;
 - (2) the determination and justification of the safety criteria applicable to the change in accordance with ATS.1025;
 - (3) the risk analysis of the effects related to the change;
 - (4) the risk evaluation and, if required, risk mitigation for the change such that it can meet the applicable safety criteria;
 - (5) the verification that:
 - (i) the assessment corresponds to the scope of the change as defined in point (a) (1); and
 - (ii) the change meets the safety criteria; and
 - (6) the specification of the monitoring criteria necessary to demonstrate that the service delivered by the changed functional system will continue to meet the safety criteria.

ATS.1025 Safety criteria

- (a) An air traffic services provider shall determine the safety acceptability of a change to a functional system, based on the analysis of the risks posed by the introduction of the change, differentiated on basis of types of operations and stakeholder classes, as appropriate.
- (b) The safety acceptability of a change shall be assessed by using specific and verifiable safety criteria, where each criterion is expressed in terms of an explicit, quantitative level of safety risk or another measure that relates to safety risk.
- (c) An air traffic services provider shall ensure that the safety criteria:
- (1) are justified for the specific change, taking into account the type of change;
 - (2) when fulfilled, predict that the functional system after the change will be as safe as it was before the change or the air traffic services provider shall provide an argument justifying that:
 - (i) any temporary reduction in safety will be offset by future improvement in safety; or
 - (ii) any permanent reduction in safety has other beneficial consequences; and
 - (3) when taken collectively, ensure that the change does not create an unacceptable risk to the safety of the service; and
 - (4) support the improvement of safety whenever reasonably practicable.

ATS.1030 Licensing and medical certification requirements for air traffic controllers

An air traffic services provider shall ensure that air traffic controllers are properly licensed and hold a valid medical certificate, in accordance with requirements set out in CIR (EU) 2015/340, PART ATCO and PART ATCO.MED.

SUBPART D – SPECIFIC HUMAN FACTORS TECHNICAL STANDARDS FOR AIR TRAFFIC CONTROL SERVICE PROVIDERS

ATS.1035 Scope

This Subpart establishes the technical standards to be met by the air traffic control service provider with regard to human performance in order to:

- (a) prevent and mitigate the risk that air traffic control service is provided by air traffic controllers with problematic use of psychoactive substances;
- (b) prevent and mitigate the negative effects of stress on air traffic controllers to ensure the safety of air traffic; and
- (c) prevent and mitigate the negative effects of fatigue on air traffic controllers to ensure the safety of air traffic.

ATS.1040 Responsibilities with regard to the problematic use of psychoactive substances by air traffic controllers

- (a) An air traffic control service provider shall develop and implement a policy, with related procedures, in order to ensure that the problematic use of psychoactive substances does not affect the provision of air traffic control service.
- (b) Without prejudice to the applicable national legislation on testing of individuals, the air traffic control service provider shall develop and implement an objective, transparent and non-discriminatory procedure for the detection of cases of problematic use of psychoactive substances by air traffic controllers.
- (c) The procedure in point (b) shall be approved by the Authority.

ATS.1045 Stress

In accordance with ATS.1015, an air traffic control service provider shall:

- (a) develop and maintain a policy for the management of air traffic controllers' stress, including the implementation of a critical incident stress management programme; and
- (b) provide air traffic controllers with education and information programmes on the prevention of stress, including critical incident stress, complementing human factors training provided in accordance with A.2 of Appendix 2 to STS-ATCL.

ATS.1050 Fatigue management

Refer to ICAO Doc 9966 - Manual for the Oversight of Fatigue Management Approaches for guidance on the development and implementation of FRMS technical standards.

- (a) ~~In accordance with ATS.1015,~~ The air traffic control service provider shall:
 - (1) develop and implement a fatigue risk management system (FRMS), approved by the Authority, for the management of air traffic controllers' fatigue in accordance with Appendix 2 of this section;
 - (2) familiarize its personnel with the principles of fatigue management and its policies with regard to fatigue management. ~~provide air traffic controllers with information programmes on the prevention of fatigue, complementing human factors training provided in accordance with STS-ATCL, Appendix, 2, B and C.~~
- (b) The air traffic control service provider shall integrate the air traffic controller FRMS functions with safety management system functions.

ATS.1055 Air traffic controllers' duty roster system(s)

- (a) The air traffic control service provider shall develop, implement and monitor a duty roster system in order to manage the risks of occupational fatigue of air traffic controllers through a safe alternation of duty and rest periods. The duty roster system shall meet the limitations prescribed in Appendix 1, 2 - Scheme for Regulation of Air Traffic Controllers' Hours of this section.
- (b) The air traffic control service provider shall consult those air traffic controllers who will be subject to the duty roster system, or, as applicable, their representatives, during its development and its application, to identify and mitigate risks concerning fatigue which could be due to the duty roster system itself.
- (c) The air traffic control service provider shall plan the level of air traffic control staffing requirements in accordance with Appendix 1, 1 - Air Traffic Control Unit Staffing and Roster System of this section.

APPENDIX 1

HUMAN RESOURCES

1. AIR TRAFFIC CONTROL UNIT STAFFING AND ROSTER SYSTEM

1.1 Staffing requirements and duty hours

- 1.1.1 The number of operational positions, period of operation and limitation of duty hours dictate the minimum number of validated air traffic controllers required at an air traffic control unit.
- 1.1.2 The Authority must be satisfied that the unit maintains sufficient qualified air traffic controllers to provide safe air traffic control services. Consideration will be given to the regularity of the air traffic control service in determining whether a service is safe. There must be no possibility that users will be confused as to which service they are receiving because the type of service changes from day to day or hour to hour. Careful consideration will also be given to the provision of more than one service simultaneously before approving a unit.
- 1.1.3 Although conditions at different units may vary, an approximation for the calculation of the minimum number of air traffic controllers required is given using the following formula:

Total number of valid air traffic controllers $C = \frac{ND}{365 - R}$ rounded up to whole number, where:

'N' equals the number of air traffic controllers required to attend for duties, including a relief to give breaks, each day. This will depend on the number of operational positions and the period for which they are scheduled to open.

'D' equals the number of days the unit provides services in a year.

'R' equals the number of days an air traffic controller is not available for duty, i.e. rest days, annual leave, public holidays in lieu, allowance for sickness and training etc.

1.2 Duty rosters

- 1.2.1 The air traffic control service provider in meeting the duty roster limitations specified in the Scheme for the Regulation of Air Traffic Controllers' Hours shall notify the Authority of formal roster arrangements of a repetitive nature only once. However, details of the duty roster actually worked showing variations due to unforeseen circumstances may be required at the discretion of the Authority, particularly where there is a slight shortfall of staff and overtime is likely.
- 1.2.2 When unable to set a regular pattern of attendance for air traffic controllers, the air traffic control service provider shall supply to the Authority a copy of the prepared duty roster at least 30 days before it is due to come into force together with details of each month's or each four week period's duty roster actually worked.
- 1.2.3 Duty rosters supplied to the Authority shall indicate where they meet the various limitations specified in the Scheme for the Regulation of Air Traffic Controllers' Hours.

1.3 Ancillary Tasks

- 1.3.1 An ancillary task is any task in an operational control room which is not directly associated with the provision of an air traffic control service.
- 1.3.2 The air traffic control service provider shall not normally require air traffic controllers to carry out ancillary tasks while they are providing operational air traffic control services.
- 1.3.3 Exceptionally, where such ancillary duties are unavoidable, the Authority must be satisfied that air traffic controllers will not be distracted from their primary function or placed under undue pressure. These duties and the person responsible for discharging them must be clearly identified in the air traffic control unit's standing instruction.

1.4 Operational support staff

- 1.4.1 Air traffic controllers may delegate some of their responsibilities to adequately trained support staff, i.e. Air Traffic Control Assistants, provided they do not include duties for which an air traffic controller licence is required. These responsibilities fall into two categories:
- (i) Air Traffic Control related duties are those closely associated with the safety of aircraft (e.g. telephone messages concerning flight data and flight data processing). These duties and the person responsible for discharging them must be clearly identified in the air traffic control unit's standing instructions;
 - (ii) Other duties of an administrative nature.
- 1.4.2 Adequate support staff shall be provided. The number and disposition of support staff will depend on the

complexity of the air traffic control unit. The air traffic control service provider shall arrange appropriate training and shall be responsible for the continued competence of such staff. The Authority may request details of the training that support staff have received.

2. SCHEME FOR REGULATION OF CONTROLLERS' HOURS (SCRATCOH)

2.1 Purpose

2.1.1 The purpose of SRATCOH is to ensure, so far as is reasonably possible, that air traffic controller fatigue does not endanger aircraft and thereby to assist air traffic controllers to provide a safe and effective air traffic control service.

In all cases the management of air traffic controller duty roster should be sympathetic to this purpose and where there is any doubt as to the application of these regulations, guidance should be sought from the Authority.

2.1.2 The provisions of SRATCOH shall also be applied to student air traffic controllers undergoing on-the-job training as if they were watch-keeping air traffic controllers.

2.2 Definitions and associated limitations

2.2.1 *Period of duty*

The period between the actual commencement of and the actual end of a shift during which an air traffic controller whose licence contains a rating valid at the air traffic control unit exercises, or could be called upon to exercise, the privileges of the licence at that unit, and includes prescribed breaks, time spent on other duties such as training, airfield inspection, administration and any extension of duty.

2.2.2 *Maximum period of duty*

Except where other limits are defined within these regulations no period of duty shall exceed 10 hours. Within 720 consecutive hours (30 days) the aggregate of periods of duty and on call duties shall not exceed 300 hours provided that periods of duty do not exceed 200 hours.

2.2.3 *Intervals between periods of duty*

There shall be an interval of not less than 12 hours between the conclusion of one period of duty and the commencement of the next period of duty. This interval may only be reduced (and only by a maximum of 1 hour) with the approval of the air traffic controller concerned and in any individual case such a reduction will be permitted no more than once in a period of 720 consecutive hours (30 days).

2.2.4 *Limit on and interval following consecutive periods of duty*

2.2.4.1 Upon the conclusion of six consecutive periods of duty within 144 consecutive hours (6 days), or upon consecutive periods of duty within 144 consecutive hours (6 days) reaching a total of 50 hours, whichever is the earlier, there shall be an interval of a minimum of 60 hours before the commencement of the next period of duty. This interval may be reduced in accordance with paragraph 2.2.4.2.

2.2.4.2 Within 720 consecutive hours (30 days) there shall be not fewer than three intervals between the conclusion of one period of duty and the commencement of the next period of duty. These intervals shall total not less than 180 hours with the minimum interval being not less than 54 hours.

2.2.5 *Operational duty*

2.2.5.1 The period during which an air traffic controller is actually exercising the privileges of the air traffic controller's licence at an operational position.

2.2.5.2 No operational duty shall exceed a period of two hours without there being taken during, or at the end of, that period a break or breaks totaling not less than 30 minutes during which period an air traffic controller does not exercise the privileges of their licence.

2.2.5.3 Breaks shall include all measures necessary to ensure that air traffic controllers do not be suffer, to any extent as a consequence of their duties, mental or physical fatigue whilst exercising the privileges of their licence. Such measures are expected to include a certain detachment from the operation, e.g. rest areas, some of which shall afford the individual 'quiet space' and facilities for adequate refreshment.

2.2.5.4 At air traffic control units where workload for any part of the day is judged to be low and the activity is spasmodic rather than continuous, periods of operational duty, at these times, may be extended to a maximum of four hours, provided that the following break is taken pro-rata (e.g. 45 minutes after 3 hours or 60 minutes after 4 hours).

Note: Judgments on unit workload are to be made by the air traffic control unit manager.

2.2.6 *Night duty*

2.2.6.1 A period of duty wholly or partly within the period of 1500 and 0259 UTC.

2.2.6.2 Not more than two night duties may be worked in immediate succession. In all cases the maximum night duty period shall not exceed 9.5 hours and the night duty must conclude no later than 0730 hours.

2.2.6.3 Upon the conclusion of a single night duty, or two consecutive night duties, there shall be an interval of a minimum of 54 hours before the commencement of the next period of duty.

2.2.6.4 The air traffic control service provider may, in exceptional circumstances and with the approval of the air traffic controller concerned, offer the air traffic controller a 48-hour minimum interval between the end of a single night duty and the commencement of the next period of daytime duty. This allowance is not permitted when planning for, or as part of, the published air traffic control unit duty roster and is expected to be utilised only to cover short-notice staffing difficulties.

2.2.7 On-call duty

2.2.7.1 A period during which, by prior arrangement, an air traffic controller is required to be available to report at his/her place of work with the intention of providing an air traffic control service.

2.2.7.2 The maximum on-call period of duty, where an air traffic controller does not attend the place of work, shall be 20 hours. For the purpose of this particular limitation, all on-call duty time spent in attendance at the place of work shall count double. For example, if an air traffic controller attends the place of work 10 hours after commencing an on-call duty, the 20-hour maximum on-call period of duty will be reached when the air traffic controller completes five hours at the place of work [10 hours + (5 hours x 2 = 10 hours) = 20 hours].

2.2.7.3 Not more than two on-call duties shall be worked in a period of 144 hours (6 days).

2.2.7.4 Prior to commencing on-call duties air traffic controllers are to be rested in accordance with the scheme's regulations and, if called in, will be subject to the minimum interval between duty periods as specified in 2.2.3. An on-call duty air traffic controller who is not called in during an overnight on-call duty shall not be utilised before midday on the day the overnight on-call duty ends.

2.2.7.5 Normally only one attendance at the place of work per on-call duty shall be permitted. Air traffic control units needing to operate in exceptional circumstances outside these limitations may seek modification by the Authority in accordance with 2.4.1.

2.2.8 Early start

2.2.8.1 An early start is a period of duty that commences between 0130 and 0229 UTC.

2.2.8.2 Not more than two early starts shall be worked in a period of 144 hours. Consecutive early start duties shall not be permitted where both duties commence before 0200 UTC. An early start commencing before 0200 UTC shall count as two morning duties when considering the limitations on consecutive morning duties in paragraph 2.2.9.2.

2.2.8.3 The early start maximum duty period shall be 8 hours.

2.2.8.4 At air traffic control units where the two hour maximum duty period is reduced to 1.5 hours by enhanced relief, all operational duty periods for an air traffic controller on an early start commencing before 0200 UTC shall be limited to 1.5 hours on any operational position whether designated for enhanced relief, or not. For an air traffic controller on an early start commencing at or after 0200 UTC on any operational position whether designated for enhanced relief, or not, the first operational duty period shall be limited to 1.5 hours.

2.2.9 Morning duty

2.2.9.1 A morning duty is a period of duty that commences between 0300 and 0859 UTC.

2.2.9.2 A maximum of five consecutive morning duty periods shall be permitted. For the purpose of this calculation early starts shall be counted and those commencing before 0200 hours shall count double. The maximum morning duty period shall be 8.5 hours.

2.3 Additional limitations

2.3.1 Reduction of intervals for handover

2.3.1.1 In this scheme, where an interval of a minimum of 60 hours or 54 hours between periods of duty is stipulated, that interval may be reduced by up to 30 minutes solely for the purpose of orderly shift handover.

2.3.1.2 The time taken for orderly handover/takeover before a shift start, up to a maximum of 15 minutes, shall not be considered to form part of the oncoming air traffic controller's period of duty.

2.3.2 Holidays

During any calendar or leave year no fewer than 10 days of total leave entitlement shall be taken in periods of not less than five consecutive days of booked leave (excluding rostered days off).

2.3.3 Simulators

2.3.3.1 Operational and emergency continuation training on simulators and other simulator activity, which may affect an air traffic controller's licence, shall be counted the same as operational duty when considered for the purposes of the scheme.

2.3.3.2 Trial and evaluation simulations which take place within periods of duty, or in place of operational duties, may be conducted within the overall limitations of periods of duty. However, trial and evaluation simulations which take place within the normal 60-hour or 54-hour intervals between periods of duty shall have an interval of 48 hours between the end of the simulation and the commencement of the next period of duty, or alternatively an interval of 24 hours

shall immediately precede and immediately follow such periods of simulator duty.

Note: Simulations which are part of air traffic controller rating training at air traffic control training organisation are not subject to the requirements of this scheme.

2.4 Modification of limitations

2.4.1 By the Authority

2.4.1.1 The Authority may at its discretion modify any limitation through its ATS Inspector. Modifications may be made as a requirement of the Authority, or in exceptional or extraordinary circumstances, on the application of a air traffic control service provider. Application may be communicated in any manner to the Authority and must be confirmed in writing within 24 hours of the communication.

2.4.1.2 Modification may be made or granted upon such terms and for such duration as the Authority shall specify. It may be communicated in any manner and will be confirmed in writing with reasons within 48 hours of the communication.

2.4.1.3 In exercising its discretion to make or grant a modification, the Authority shall have regard to:

- (i) the amount, type and complexity of recent and anticipated traffic handled by the air traffic control unit and position concerned;
- (ii) the published operational hours of the unit;
- (iii) the pattern of shifts in operation at the time of any shift involved;
- (iv) the qualifications and availability of support and supervisory staff;
- (v) exceptional temporary staffing problems;
- (vi) the equipment in use at the unit;
- (vii) exceptional temporary equipment problems;
- (viii) the type of operating position at the unit;
- (ix) factors which may compensate for, or benefits which may arise from, any modification; and
- (x) such other matters as the Authority considers to be relevant.

2.4.2 By the air traffic control services provider

2.4.2.1 In exceptional circumstances the air traffic control services provider may in its discretion modify any limitation through persons exercising its authority. Such modifications may only be made to overcome short-term, temporary and unforeseen difficulties at an air traffic control unit and, having regard to SRATCOH, may only be made if the safety and effectiveness of air traffic control will be maintained.

2.4.2.2 Full details of the modification shall be notified in writing to the Authority, using form SR 1410, Report of Operational Duty in Excess of SRATCOH, available on the Authority website. The completed form should be submitted to the Authority within 24 hours of the modification taking effect.

2.4.3 Review of modifications

2.4.3.1 Should the air traffic control services provider object to the refusal or to the terms of modification of a limitation, by the Authority, it may request that the issue be decided by the Authority.

2.4.4 Notification of duty roster details

2.4.4.1 At the request of the Authority, the air traffic control services provider shall supply to the Authority:

- (i) not less than 30 days before it is due to come into force, a copy of any proposed duty roster and, without request as early as possible, details of any proposed change.
- (ii) not more than 30 days after receiving a request, details of a duty roster as actually worked including records of the periods of duty worked.

APPENDIX 2

FATIGUE RISK MANAGEMENT SYSTEM (FRMS) REQUIREMENTS

Refer to ICAO Doc 9966 - Manual for the Oversight of Fatigue Management Approaches for guidance on the development and implementation of FRMS regulations.

1. FRMS policy and documentation**1.1 FRMS policy**

1.1.1 The air traffic services provider shall define its FRMS policy, with all elements of the FRMS clearly identified.

1.1.2 The policy shall:

- (i) define the scope of FRMS operations;
- (ii) reflect the shared responsibility of management, air traffic controllers, and other involved personnel;
- (iii) clearly state the safety objectives of the FRMS;
- (iv) be signed by the accountable executive of the organization;
- (v) be communicated, with visible endorsement, to all the relevant areas and levels of the organization;
- (vi) declare management commitment to effective safety reporting;
- (vii) declare management commitment to the provision of adequate resources for the FRMS;
- (viii) declare management commitment to continuous improvement of the FRMS;
- (ix) require that clear lines of accountability for management, air traffic controllers, and all other involved personnel are identified; and
- (x) require periodic reviews to ensure it remains relevant and appropriate.

1.2 FRMS documentation

1.2.1 The air traffic services provider shall develop and keep current FRMS documentation that describes and records:

- (i) FRMS policy and objectives;
- (ii) FRMS processes and procedures;
- (iii) accountabilities, responsibilities and authorities for these processes and procedures;
- (iv) mechanisms for ongoing involvement of management, air traffic controllers, and all other involved personnel;
- (v) FRMS training programmes, training requirements and attendance records;
- (vi) scheduled and actual duty and non-duty periods and break periods between periods of time-in-position in a duty
- (vii) period with significant deviations and reasons for deviations noted; and
- (viii) FRMS outputs including findings from collected data, recommendations, and actions taken.

2. Fatigue risk management processes**2.1 Identification of fatigue-related hazards**

2.1.1 The air traffic services provider shall develop and maintain three fundamental and documented processes for fatigue hazard identification:

2.1.1.1 Predictive. The predictive process shall identify fatigue hazards by examining air traffic controller scheduling and considering factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include, but are not limited to:

- (i) air traffic services or industry operational experience and data collected on similar types of operations or from other industries with shift work;
- (ii) evidence-based scheduling practices; and
- (iii) bio-mathematical models.

2.1.1.2 Proactive. The proactive process shall identify fatigue hazards within current air traffic services operations. Methods of examination may include, but are not limited to:

- (i) self-reporting of fatigue risks;
- (ii) fatigue surveys;

- (iii) relevant air traffic controller performance data;
- (iv) available safety databases and scientific studies;
- (v) tracking and analysis of differences in planned and actual worked times; and
- (vi) observations during normal operations or special evaluations.

2.1.1.3 *Reactive*. The reactive process shall identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. At a minimum, the process may be triggered by any of the following:

- (i) fatigue reports;
- (ii) confidential reports;
- (iii) audit reports; and
- (iv) incidents.

2.2 *Fatigue-related risk assessment*

2.2.1 An air traffic services provider shall develop and implement risk assessment procedures that determine when the associated risks require mitigation.

2.2.2 The risk assessment procedures shall review identified fatigue hazards and link them to:

- (i) operational processes;
- (ii) their probability;
- (iii) possible consequences; and
- (iv) the effectiveness of existing preventive controls and recovery measures.

2.3 *Risk mitigation*

2.3.1 An air traffic services provider shall develop and implement fatigue risk mitigation procedures that:

- (i) select the appropriate mitigation strategies;
- (ii) implement the mitigation strategies; and
- (iii) monitor the strategies' implementation and effectiveness.

3. FRMS safety assurance processes

3.1 The air traffic services provider shall develop and maintain FRMS safety assurance processes to provide for continuous FRMS performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:

- (i) hazard reporting and investigations;
- (ii) audits and surveys; and
- (iii) reviews and fatigue studies (both internal and external).

3.2 The FRMS safety assurance processes shall provide a formal process for the management of change. This shall include, but is not limited to:

- (i) identification of changes in the operational environment that may affect the FRMS;
- (ii) identification of changes within the organization that may affect the FRMS; and
- (iii) consideration of available tools which could be used to maintain or improve FRMS performance prior to
- (iv) implementing changes.

3.3 The FRMS shall provide for the continuous improvement of the FRMS. This shall include, but is not limited to:

- (i) the elimination and/or modification of preventive controls and recovery measures that have had unintended consequences or that are no longer needed due to changes in the operational or organizational environment;
- (ii) routine evaluations of facilities, equipment, documentation and procedures; and
- (iii) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.

4. FRMS promotion processes

4.1 The air traffic services provider shall ensure that the FRMS promotion processes support the ongoing development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels.

The following shall be established and implemented as part of its FRMS:

- (i) training programmes to ensure competency commensurate with the roles and responsibilities of management, air traffic controllers, and all other involved personnel under the planned FRMS; and
- (ii) an effective FRMS communication plan that explains FRMS policies, procedures and responsibilities to all relevant stakeholders and describes communication channels used to gather and disseminate FRMS-related information.

SECTION 2 – TECHNICAL REQUIREMENTS**SUBPART A – AIR TRAFFIC SERVICES****ATS.2001 Responsibility for provision of air traffic services**

The Air Traffic Management Division, herein referred to as the air traffic services provider, of the Seychelles Civil Aviation Authority shall provide air traffic services in the Seychelles Flight Information Region (FIR), under the Seychelles Civil Aviation Authority Act 2005, as amended.

ATS.2005 Publication of the air traffic services

The air traffic services provider shall publish information as necessary in the Seychelles AIP to permit utilization of its services.

ATS.2010 Divisions of the air traffic services

- (a) Air traffic services shall comprise three services identified as follows.
 - (1) The air traffic control service, to accomplish objectives a), b) and c) of SERA.7001 of STS-RoA, this service being divided in three parts as follows:
 - (i) *Area control service*: the provision of air traffic control service for controlled flights, except for those parts of such flights described in ii) and iii) below, in order to accomplish objectives a) and c) of SERA.7001 of STS-RoA.
 - (ii) *Approach control service*: the provision of air traffic control service for those parts of controlled flights associated with arrival or departure, in order to accomplish objectives a) and c) of SERA.7001 of STS-RoA.
 - (iii) *Aerodrome control service*: the provision of air traffic control service for aerodrome traffic, except for those parts of flights described in ii) above, in order to accomplish objectives a), b) and c) of SERA.7001 of STS-RoA.
 - (b) The Flight information to accomplish objective d) of SERA.7001 of STS-RoA;
 - (c) The alerting service, to accomplish objective e) of SERA.7001 of STS-RoA.

ATS.2015 Determination of the need for air traffic services

- (a) The need for the provision of air traffic services shall be determined by consideration of the following:
 - (1) the density of air traffic;
 - (2) the meteorological conditions;
 - (3) such other factors as may be relevant.
- (b) The carriage of airborne collision avoidance systems (ACAS) by aircraft in a given area shall not be a factor in determining the need for air traffic services in that area.

ATS.2020 Designation of the portions of the airspace and controlled aerodromes where air traffic services will be provided

- (a) The air traffic services provider shall designate those portions of the airspace or those aerodromes to which air traffic services are to be provided.
- (b) The designation of the particular portions of the airspace or the particular aerodromes shall be as follows:
 - (1) *Flight Information Region (FIR)*
 - (i) Those portions of the airspace where it is determined that flight information service and alerting service will be provided shall be designated as FIR;
 - (2) *Control Areas and Control Zones*
 - (i) Those portions of the airspace where it is determined that air traffic control service will be provided to IFR flights shall be designated as control areas or control zones.
 - (ii) Those portions of controlled airspace wherein it is determined that air traffic control service will also be provided to VFR flights shall be designated as Classes B, C, or D airspace.
 - (iii) Where designated within the FIR, control areas and control zones shall form part of that FIR.

(3) *Controlled Aerodromes*

- (i) Those aerodromes where it is determined that air traffic control service will be provided to aerodrome traffic shall be designated as controlled aerodromes.

ATS.2025 Classification of airspaces

Refer to the technical standards set out in STS-RoA, Section 6 – Airspace Classification.

ATS.2030 Performance-Based Navigation operations

- (a) Navigation specifications shall be prescribed by the air traffic services provider in applying Performance-Based Navigation (PBN). When applicable, the navigation specification(s) for designated areas, tracks or air traffic services routes shall be prescribed on the basis of regional air navigation agreements. In designating a navigation specification, limitations may apply as a result of navigation infrastructure constraints or specific navigation functionality requirements.
- (b) The prescribed navigation specification shall be appropriate to the level of communications, navigation and air traffic services provided in the airspace concerned.

ATS.2035 Establishment and designation of the units providing air traffic services

Air traffic services shall be provided by air traffic control units established and designated to provide air traffic control service, flight information service and alerting service within the Seychelles FIR, control areas, control zones and at controlled aerodromes.

ATS.2040 Specifications for flight information region, control area and control zones

- (a) The air traffic services provider shall ensure that the delineation of airspace, wherein air traffic services are to be provided, shall be related to the nature of the route structure and the need for efficient service rather than to national boundaries.
- (b) FIR
 - (1) The FIR shall be delineated to cover the whole of the air route structure to be served by such region;
 - (2) The FIR shall include all airspace within its lateral limits.
- (c) CONTROL AREAS
 - (1) Control areas including, inter alia, airways and terminal control areas shall be delineated so as to encompass sufficient airspace to contain the flight paths of those IFR flights or portions thereof to which it is desired to provide the applicable parts of the air traffic control service, taking into account the capabilities of the navigation aids normally used in that area.
 - (2) A lower limit of a control area shall be established at a height above the ground or water of not less than 700ft (200m).
 - (3) An upper limit of a control area shall be established when the control area is situated below an upper control area, in which case the upper limit shall coincide with the lower limit of the upper control area. Such upper limit shall coincide with a VFR cruising level of the tables in Appendix 3 to STS-RoA.
- (d) CONTROL ZONE
 - (1) The lateral limits of the control zone shall encompass at least those portions of the airspace, which are not within control areas, containing the paths of IFR flights arriving at and departing from aerodromes to be used under Instrument Meteorological Conditions (IMC).
 - (2) The lateral limits of a control zone shall extend to at least 5NM from the centre of the aerodrome or concerned in the directions from which approaches may be made.
 - (3) A control zone located outside the lateral limits of a control area shall extend upwards from the mean sea level to at least the lower limit of the control area.

ATS.2045 Identification of air traffic services units and airspaces

- (a) The area control centre shall be identified by the name of the State.
- (b) An aerodrome control tower shall be identified by the name of the aerodrome at which it is located.
- (c) An approach control unit shall be identified by name of the State
- (d) A control zone, control area or flight information region should be identified by the name of the unit having jurisdiction over such airspace.

ATS.2050 Establishment and identification of air traffic services routes

- (a) The air traffic services provider shall ensure that where air traffic services routes are established, a protected airspace along each air traffic services route and a safe spacing between adjacent air traffic services routes is provided. Minimum flight altitudes shall be determined and promulgated for each air traffic services route as required in STS-AIS, Appendix 1. The minimum flight altitudes determined shall provide a minimum clearance above the controlling obstacle located within the areas concerned.
- (b) When warranted by density, complexity or nature of the traffic, special routes shall be established for use by low-level traffic. When determining the lateral spacing between such routes, account shall be taken of the navigational means available.
- (c) Air traffic services routes shall be identified by designators.
- (d) Designators for air traffic services routes other than standard departure and arrival routes shall be selected in accordance with the principles set forth in Appendix 1.
- (e) Standard departure and arrival routes and associated procedures shall be identified in accordance with the principles set forth in Appendix 3.

ATS.2055 Establishment and identification of significant points

The air traffic services provider shall ensure that significant points are established for the purpose of defining an air traffic services route or instrument approach procedure and/or in relation to the requirements of air traffic services for information regarding the progress of aircraft in flight. Significant points shall be identified by designators and shall be established and identified in accordance with the principles set forth in Appendix 2.

ATS.2060 Establishment and identification of standard routes for taxiing aircraft

- (a) Standard routes for taxiing aircraft shall be established on an aerodrome between runway, aprons and maintenance areas. Such routes shall be direct, simple and where practicable, designed to avoid traffic conflicts.
- (b) Standard routes for taxiing aircraft shall be identified by designators distinctively different from those of the runways and air traffic services routes.

ATS.2065 Coordination between the operator and the air traffic services provider

Refer to the technical standards set out in STS-RoA, Section 7 - Air Traffic Services, SERA.7005 (a).

ATS.2070 Coordination between military authority and the air traffic services provider

- (a) The air traffic service provider shall establish and maintain close cooperation with military authority responsible for activities that may affect flights of civil aircraft.
- (b) Coordination of activities potentially hazardous to civil aircraft shall be effected in accordance with ATS.2065.

ATS.2075 Coordination of activities potentially hazardous to civil aircraft

- (a) The arrangements for activities potentially hazardous to civil aircraft, over the Seychelles territory, shall be coordinated with the air traffic service provider. The coordination shall be effected early enough to permit timely promulgation of information regarding the activities in accordance with the provisions of STS-AIS.

(Refer to ICAO Doc 10066 – PANS AIM, Procedures for Air Navigation Services - Aeronautical Information Management.)

- (b) The objective of the coordination shall be to achieve the best arrangements which will avoid hazards to civil aircraft and minimize interference with the normal operations of such aircraft.
 - (1) In determining the arrangements above, the following should be applied:
 - (i) the locations or areas, times and durations for the activities should be selected to avoid closure or realignment of established ATS routes, blocking of the most economic flight levels, or delays of scheduled aircraft operations, unless no other options exist;
 - (ii) the size of the airspace designated for the conduct of the activities should be kept as small as possible;
 - (iii) direct communication between the appropriate air traffic services unit and the organization or unit conducting the activities should be provided for use in the event that civil aircraft emergencies or other unforeseen circumstances require discontinuation of the activities.
- (c) The air traffic service provider shall ensure that a safety risk assessment is conducted, as soon as practicable, for activities potentially hazardous to civil aircraft and that appropriate risk mitigation measures are implemented. Such risk mitigation measures may include, but would not be limited to, airspace restriction or temporary withdrawal of established ATS routes or portions thereof.

- (d) The air traffic services provider shall establish procedures to enable the organization or unit conducting or identifying activities potentially hazardous to civil aircraft to contribute to the safety risk assessment in order to facilitate consideration of all relevant safety-significant factors.

(Refer to ICAO Doc 9554 - Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations for guidance on collaborative decision making (CDM) processes for safety risk assessment and promulgation through NOTAM that could involve military authorities.)

- (e) The air traffic service provider shall be responsible for initiating the promulgation of information regarding the activities.
- (f) If activities potentially hazardous to civil aircraft take place on a regular or continuing basis, special committees should be established as required to ensure that the requirements of all parties concerned are adequately coordinated
- (g) Adequate steps shall be taken to prevent emission of laser beams from adversely affecting flight operations.

(Refer to ICAO Doc 9815 - Manual on Laser Emitters and Flight Safety for guidance material regarding the hazardous effects of laser emitters on flight operations.)

ATS.2080 Coordination between meteorological service provider and the air traffic services provider

- (a) To ensure that aircraft receive the most up-to-date meteorological information for aircraft operations, the air traffic services provider shall make arrangements with the meteorological service provider for air traffic services personnel:
- (1) in addition to using indicating instruments, to report, if observed by air traffic services personnel or communicated by aircraft, such meteorological elements as may be agreed upon;
 - (2) to report as soon as possible to the meteorological service provider meteorological phenomena of operational significance, if observed by air traffic services provider personnel or communicated by aircraft, which have not been included in the aerodrome meteorological report;
 - (3) to report as soon as possible to the meteorological service provider pertinent information concerning pre-eruption volcanic activity, volcanic eruptions and information concerning volcanic ash cloud. In addition, the area control centre shall report the information to the associated meteorological watch office and volcanic ash advisory centres (VAACs).
- (b) Close coordination shall be maintained between area control centre, and associated meteorological watch offices to ensure that information on volcanic ash included in NOTAM and SIGMET messages is consistent.

ATS.2085 Coordination between the aeronautical information service provider and the air traffic services provider

(Refer to ICAO Doc 10066 – PANS AIM, Chapter 6, for detailed specifications concerning the AIRAC system.)

- (a) To ensure that the aeronautical information service provider obtain information to enable it to provide up-to-date pre-flight information and to meet the need for in-flight information, the air traffic services provider shall report with a minimum of delay to the aeronautical information service provider:
- (1) information on aerodrome conditions;
 - (2) the operational status of associated facilities, services and navigation aids within their area of responsibility;
 - (3) any other information considered to be of operational significance.
- (b) Before introducing changes to the air navigation system, the air traffic services provider shall take due account for such changes of the time needed by the aeronautical information service provider for the preparation, production and issuance of relevant material for promulgation.
- (c) Of particular importance are changes to aeronautical information that affect charts and/or computer-based navigation systems which qualify to be notified by the aeronautical information regulation and control (AIRAC) system, as specified in STS-AIS, and Appendix 4 of this STS. The predetermined internationally agreed AIRAC effective dates in addition to 14 days' postage time shall be observed by the air traffic services provider when submitting the raw information/data to the aeronautical information service provider.
- (d) The air traffic services provider shall take into account accuracy and integrity requirements required to meet the needs of the end-user of aeronautical data.

ATS.2090 Aeronautical data

(Refer to ICAO Doc 10066 – PANS AIM for specifications concerning the accuracy and integrity classification of air traffic services-related aeronautical data and detailed specifications concerning digital data error detection techniques.)

- (a) The air traffic services provider shall ensure that determination and reporting of air traffic services-related aeronautical data are in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.
- (b) Digital data error detection techniques shall be used during the transmission and/or storage of aeronautical data and digital data sets.

ATS.2095 Minimum flight altitudes

Minimum flight altitudes shall be determined and promulgated by the air traffic services provider for each ATS route and control area within the Seychelles flight information region. The minimum flight altitudes determined shall provide a minimum clearance above the controlling obstacle located within the areas concerned.

ATS.2100 Service to aircraft in the event of an emergency

- (a) *Refer to the technical standards set out in STS-RoA, Section 11, SERA.11005*
- (b) In communications between air traffic services units and aircraft in the event of an emergency, Human Factors principles shall be observed.

ATS.2105 In-flight contingencies

Refer to the technical standards set out in STS-RoA, Section 11, SERA.11010 – In-flight contingencies and SERA.11015 – Interception.

ATS.2110 Time in air traffic services

- (a) Without prejudice to (b) and (c) below, time in air traffic services shall be in accordance with the technical standards set out in STS-RoA, Section 3, Chapter 4, SERA 3401.
- (b) Air traffic services units shall be equipped with clocks indicating the time in hours, minutes and seconds, clearly visible from each operating position in the unit concerned.
- (c) The air traffic services provider shall ensure that air traffic services unit clocks and other time-recording devices shall be checked as necessary to ensure correct time to within ± 30 seconds of UTC.
- (d) The correct time shall be obtained from a standard time station or, if not possible, from another unit which has obtained the correct time from such station.

ATS.2115 Common reference systems

- (a) HORIZONTAL REFERENCE SYSTEM
 - (1) World Geodetic System - 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for air navigation. Reported aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.
- (b) VERTICAL REFERENCE SYSTEM
 - (1) Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for air navigation.
- (c) TEMPORAL REFERENCE SYSTEM
 - (1) The Gregorian calendar and UTC shall be used as the temporal reference system for air navigation. When a different temporal reference system is used, this shall be indicated in GEN 2.1.2 of the Seychelles AIP.

ATS.2120 Language proficiency

Refer to the technical standards set out in ATCO.B.030 – Language proficiency endorsement of PART ATCO.

ATS.2125 Contingency arrangements

The air traffic services provider shall develop and promulgate contingency plans for implementation in the event of disruption or potential disruption of air traffic services and related supporting services in its airspace of responsibility. Such contingency plans shall be developed with the assistance of ICAO as necessary, in close coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned. Air traffic control contingency procedures for radio communications contingencies, emergency separation and if applicable, short-term conflict alert (STCA), minimum safe altitude warning (MSAW) and ACAS equipped aircraft shall also be established and implemented.

ATS.2130 Identification and delineation of prohibited, restricted and danger areas

- (a) Where prohibited, restricted or danger areas are established, they shall, upon initial establishment, be given an identification and full details shall be promulgated.
- (b) The identification so assigned shall be used to identify the area in all subsequent notifications pertaining to that area.

- (c) The identification shall be composed of a group of letters and figures as follows:
 - (1) nationality letters for location indicators assigned to the Authority or territory;
 - (2) a letter P for prohibited area, R for restricted area and D for danger area as appropriate; and
 - (3) a number, unduplicated within the Seychelles territory.
- (d) To avoid confusion, identification numbers shall not be reused for a period of at least one year after cancellation of the area to which they refer.
- (e) An established prohibited, restricted or danger area shall be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.

SUBPART B – AIR TRAFFIC CONTROL SERVICE**ATS.2135 Application**

Refer to the technical standards set out in STS-RoA, SERA.8001 – Application.

ATS.2140 Provision of air traffic control service

The parts of air traffic control service described in ATS.2005 (a) (1) shall be provided by the various units as follows:

- (a) Area control service, by an area control centre;
- (b) Approach control service, by an approach control unit; and
- (c) Aerodrome control service: by an aerodrome control tower.

ATS.2145 Operation of air traffic control service

- (a) *Refer to the technical standards set out in STS-RoA, SERA.8005 – Operation of air traffic control service, (a).*
- (b) Information on aircraft movements, together with a record of air traffic control clearances issued to such aircraft, shall be so displayed as to permit ready analysis in order to maintain an efficient flow of air traffic with adequate separation between aircraft.
- (c) Air traffic control units should be equipped with devices that record background communication and the aural environment at air traffic controller work stations, capable of retaining the information recorded during at least the last 24 hours of operation.
- (d) *Refer to the technical standards set out in STS-RoA, SERA.8005 – Operation of air traffic control service (b) for separation provided by clearances issued by air traffic control units.*
- (e) *Refer to the technical standards set out in STS-RoA, SERA.8005 – Operation of air traffic control service (c) for method of obtaining separation by air traffic control unit.*
- (f) For airspace where Reduced Vertical Separation Minimum (RVSM) of 300m (1000 ft) is applied between flight levels 290 and 410 inclusive, the air traffic services provider shall monitor, as part of a regional programme, height-keeping performance of aircraft operating at these levels, in order to ensure that the continued application of vertical separation minimum in the airspace meets the safety objectives.

ATS.2150 Separation minima

- (a) *Refer to the technical standards set out in STS-RoA, SERA.8010 for separation minima implementation.*
- (b) The air traffic services provider shall select separation minima from those prescribed by the provisions of the PANS-ATM (Doc 4444) and the *Regional Supplementary Procedures* as applicable under the prevailing circumstances.

ATS.2155 Responsibility for control

- (a) A controlled flight shall be under the control of only one air traffic control unit at any given time.
- (b) Responsibility for the control of all aircraft operating within a given block of airspace shall be vested in a single air traffic control unit.

ATS.2160 Transfer of responsibility for control

The responsibility for the control of an aircraft shall be transferred from one air traffic control unit to another as follows:

- (a) *Between two units providing area control service:* The responsibility for the control of an aircraft shall be transferred from a unit providing area control service in a control area to the unit providing area control service in an adjacent control area at the time of crossing the common control area boundary as estimated by the area control centre having control of the aircraft or at such other point or time as has been agreed between the two units.
- (b) *Between a unit providing area control service and a unit providing approach control service:* The responsibility for the control of an aircraft shall be transferred from a unit providing area control service to a unit providing approach control service, and vice versa, at a point or time agreed between the two units.
- (c) *Between a unit providing approach control service and an aerodrome control tower:*
 - (1) *Arriving aircraft:* The responsibility for the control of an arriving aircraft shall be transferred from the approach control unit to the aerodrome control tower, when the aircraft is in the vicinity of the aerodrome, and it is considered that approach and landing will be completed in visual reference to the ground, or it has reached uninterrupted visual meteorological conditions (VMC), or is at a prescribed point or level, as specified in letters of agreement or station standing instructions; or it has landed.

- (2) *Departing aircraft*: When VMC prevail in the vicinity of the aerodrome, the responsibility for control of a departing aircraft shall be transferred from the aerodrome control tower to the providing approach control unit, prior to the time the aircraft leaves the vicinity of the aerodrome or prior to the aircraft entering Instrument Meteorological Conditions (IMC) or at a prescribed point or level, as specified in letters of agreement or station standing instructions;
- (3) *Departing traffic*: When IMC prevail at the aerodrome, the responsibility for control of a departing aircraft shall be transferred from the aerodrome control tower to the providing approach control unit, immediately after the aircraft is airborne, or at a prescribed point or level, as specified in letters of agreement or station standing instructions.

ATS.2165 Coordination of transfer

- (a) Responsibility for control of an aircraft shall not be transferred from one air traffic control unit to another without the consent of the accepting control unit, which shall be obtained in accordance with (b) and (c).
- (b) The transferring control unit shall communicate to the accepting control unit the appropriate parts of the current flight plan and any control information pertinent to the transfer requested.
- (c) The accepting control unit shall:
 - (1) indicate its ability to accept control of the aircraft on the terms specified by the transferring control unit, unless by prior agreement between the two units concerned, the absence of any such indication is understood to signify acceptance of the terms specified, or indicate any necessary changes thereto; and
 - (2) specify any other information or clearance for a subsequent portion of the flight, which it requires the aircraft to have at the time of transfer.
- (d) The accepting control unit shall notify the transferring control unit when it has established two-way voice and/or data link communications with and assumed control of the aircraft concerned, unless otherwise specified by agreement between the two control units concerned.
- (e) Applicable coordination procedures, including transfer of control points, shall be specified in letters of agreement and station standing instructions as appropriate.

ATS.2170 Air traffic control clearances

- (a) *Refer to the technical standards set out in STS-RoA, SERA.8015 – Air traffic control clearances, for flight crew.*
- (b) Vehicle drivers operating or intending to operate on the manoeuvring area shall read back to the air traffic controller safety-related parts of instructions which are transmitted by voice, e.g. instructions to enter, hold short of, cross and operate on any operational runway or taxiway.
- (c) The air traffic controller shall listen to the read-back to ascertain that the instruction has been correctly acknowledged by the vehicle driver and shall take immediate action to correct any discrepancies revealed by the read-back.

ATS.2175 Air Traffic Flow Management (ATFM)

- (a) The air traffic services provider shall implement ATFM for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned.
- (b) The air traffic services provider shall implement ATFM on the basis of regional air navigation agreements or through multilateral agreements, as appropriate. Such agreements shall make provision for common procedures and common methods of capacity determination.
- (c) When it becomes apparent to an air traffic control unit that traffic additional to that already accepted cannot be accommodated within a given period of time at a particular location or in a particular area, or can only be accommodated at a given rate, that unit shall so advise the ATFM unit, when such is established, as well as, when appropriate, air traffic services units concerned. Flight crews of aircraft destined to the location or area in question, and operators concerned shall also be advised of the delays expected or the restrictions that will be applied.

ATS.2180 Control of persons and vehicles at aerodromes

Refer to the technical standards set out in STS-RoA, SERA.3210 – Right of way, (d) (4).

SUBPART C – FLIGHT INFORMATION SERVICE**ATS.2185 Application and scope**

- (a) *Without prejudice to (b), refer to the technical standards set out in STS-RoA, Section 9 – Flight Information Service. SERA.9001 and SERA.9005.*
- (b) Air traffic services units shall transmit, as soon as practicable, special air-reports to other aircraft concerned, to the meteorological office, and to other air traffic services units concerned. Transmissions to aircraft shall be continued for a period to be determined by agreement between the air traffic services provider and Seychelles Meteorological Authority.

ATS.2190 Voice-Automatic Terminal Information Service

- (a) *Without prejudice to the technical standards below, refer to the technical standards set out in STS-RoA, Section 9 – Flight Information Service. SERA.9010.*
- (b) The air traffic services provider shall establish agreement with the Seychelles Meteorological Authority for the aerodrome meteorological office to prepare and disseminate Voice-ATIS messages in the English language for Seychelles International Airport (SIA) only for the purpose of reducing communication load on the air traffic services VHF air-ground communication channels.
- (c) Voice-ATIS messages shall be continuous, repetitive and shall comprise:
 - (1) one broadcast serving arriving aircraft; or
 - (2) one broadcast serving departing aircraft; or
 - (3) one broadcast serving both arriving and departing aircraft; or
 - (4) two broadcasts serving arriving and departing aircraft respectively at those aerodromes where the length of a broadcast serving both arriving and departing aircraft would be excessively long.
- (d) A discrete VHF frequency shall be used for Voice-ATIS broadcasts and not the voice channel of the SIA ILS.
- (e) The information contained in the current Voice-ATIS broadcast shall immediately be made known to the approach control unit and aerodrome control tower.
- (f) The Voice-ATIS broadcast message shall be kept as brief as possible and not exceed 30 seconds. Care shall be taken that the readability of the Voice-ATIS message is not impaired by the speed of the transmission. Information additional to that specified in STS-RoA, Section 9, SERA.9010 (b) (c) and (d), for example information already available in Seychelles AIP and NOTAM, shall only be included when justified in exceptional circumstances.
- (g) The Voice-ATIS broadcast message shall take into consideration human performance.
- (h) The information communicated in Voice-ATIS provided shall be updated immediately a significant change occurs.
- (i) Individual Voice ATIS messages shall be identified by a designator in the form of a letter of the ICAO spelling alphabet and the designators assigned to consecutive ATIS messages shall be in alphabetical order.
- (j) The meteorological information for Voice-ATIS shall be extracted from the local meteorological routine or special report.
- (k) When rapidly changing meteorological conditions make it inadvisable to include a weather report in the Voice-ATIS, the messages shall indicate that the relevant weather information will be given on initial contact with the appropriate air traffic services unit.

SUBPART D – ALERTING SERVICE**ATS.2195 Application**

- (a) *Without prejudice to the technical standards of this subpart, refer to the technical standards set out in STS-RoA, Section 10 – Alerting Service.*
- (b) The area control centre shall serve as the central point for collecting all information relevant to the state of emergency of an aircraft operating within the Seychelles flight information region or control area concerned and for forwarding such information to the joint rescue coordination centre.
- (c) In the event of a state of emergency arising to an aircraft while it is under the control of an aerodrome control tower or approach control unit, such unit shall notify immediately the area control centre which shall in turn notify the joint rescue coordination centre, except that notification of the area control centre or joint rescue coordination centre shall not be required when the nature of the emergency is such that the notification would be superfluous.
- (d) Nevertheless, whenever the urgency of the situation so requires, the aerodrome control tower or approach control unit responsible shall first alert and take other necessary steps to set in motion all appropriate local rescue and emergency organizations which can give the immediate assistance required.

ATS.2200 Notification of the joint rescue coordination centre

- (a) Without prejudice to any other circumstances that may render such notification advisable, air traffic services units shall, except as prescribed in ATS.2200, notify the joint rescue coordination centre immediately an aircraft is considered to be in a state of emergency in accordance with the following:
 - (1) Uncertainty phase when:
 - (i) no communication has been received from an aircraft within a period of thirty minutes after the time a communication should have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier; or when
 - (ii) an aircraft fails to arrive within thirty minutes of the estimated time of arrival last notified to or estimated by air traffic services units, whichever is the later, except when no doubt exists as to the safety of the aircraft and its occupants.
 - (2) Alert phase when:
 - (i) following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft; or when
 - (ii) an aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft; or when
 - (iii) information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely,
except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants;
or when
 - (iv) an aircraft is known or believed to be the subject of unlawful interference.
 - (3) Distress phase when:
 - (i) following the alert phase, further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress; or when
 - (ii) the fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or when
 - (iii) information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or when
 - (iv) information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing,
except when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

- (b) The notification shall contain such of the following information as is available in the order listed:
- (1) INCERFA, ALERFA or DETRESFA, as appropriate to the phase of the emergency;
 - (2) agency and person calling;
 - (3) nature of the emergency;
 - (4) significant information from the flight plan;
 - (5) unit which made last contact, time and means used;
 - (6) last position report and how determined;
 - (7) colour and distinctive marks of aircraft;
 - (8) dangerous goods carried as cargo;
 - (9) any action taken by reporting office; and
 - (10) other pertinent remarks.
- (c) Such part of the information specified in (b), which is not available at the time notification is made to the joint rescue coordination centre, shall be sought by the air traffic services unit shall prior to the declaration of a distress phase, if there is reasonable certainty that this phase will eventuate.
- (e) Further to the notification in (a), air traffic services unit shall furnish, without delay, the joint rescue coordination centre with:
- (1) any useful additional information, especially on the development of the state of emergency through subsequent phases; or
 - (2) information that the emergency situation no longer exists.

ATS.2205 Use of communication facilities

Air traffic services units shall, as necessary, use all available communication facilities to endeavour to establish and maintain communication with an aircraft in a state of emergency, and to request news of the aircraft.

ATS.2210 Plotting aircraft in a state of emergency

When a state of emergency is considered to exist, the flight of the aircraft involved shall be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position. The flights of other aircraft known to be operating in the vicinity of the aircraft involved shall also be plotted in order to determine their probable future positions and maximum endurance.

ATS.2215 Information to the operator

- (a) When the area control centre decides that an aircraft is in the uncertainty or the alert phase, it shall, when practicable, advise the operator prior to notifying the joint rescue coordination centre.
- (b) All information notified to the joint rescue coordination centre by the area control centre shall, whenever practicable, also be communicated, without delay, to the operator.

ATS.2220 Information to aircraft operating in the vicinity of an aircraft in a state of emergency

- (a) When it has been established by an air traffic services unit that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved shall, except as provided in (b), be informed of the nature of the emergency as soon as practicable.
- (b) When an air traffic services unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall be made in air traffic services air-ground communications to the nature of the emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

SUBPART E – AIR TRAFFIC SERVICES REQUIREMENTS FOR COMMUNICATIONS**ATS.2225 Aeronautical mobile service (air-ground communications)**

(a) GENERAL

- (1) The air traffic services provider shall use radiotelephony or data link in air-ground communications for air traffic services purposes.
- (2) When direct pilot-controller two-way radio telephony or data link communications are used for the provision of air traffic control service, the air traffic services provider shall ensure that recording facilities are provided on all such air-ground communication channels.
- (3) Recordings of communications channels as required in (2) shall be retained for a period of at least ninety days.

(b) FOR FLIGHT INFORMATION SERVICE

- (1) The air traffic services provider shall ensure that air-ground communication facilities enable two-way communications to take place between a unit providing flight information service and appropriately equipped aircraft flying anywhere within the FIR.
- (2) Whenever practicable, air-ground communication facilities for flight information service shall permit direct, rapid, continuous and static-free two-way communications.

(c) FOR AREA CONTROL SERVICE

- (1) The air traffic services provider shall ensure that air-ground communication facilities enable two-way communications to take place between a unit providing area control service and appropriately equipped aircraft flying anywhere within the control area(s).
- (2) Whenever practicable, air-ground communication facilities for area control service shall permit direct, rapid, continuous and static-free two-way communications.

(d) FOR APPROACH CONTROL SERVICE

- (1) The air traffic services provider shall ensure that air-ground communication facilities enable direct, rapid, continuous and static-free two-way communications to take place between the unit providing approach control service and appropriately equipped aircraft under its control.
- (2) Where the unit providing approach control service functions as a separate unit, air-ground communications shall be conducted over communication channels provided for its exclusive use.

(f) FOR AERODROME CONTROL SERVICE

- (1) The air traffic services provider shall ensure that air-ground communication facilities enable direct, rapid, continuous and static-free two-way communications to take place between an aerodrome control tower and appropriately equipped aircraft operating at any distance within 25NM of the aerodrome concerned.
- (2) Where conditions warrant, separate communication channels shall be provided for the control of traffic operating on the manoeuvring area.

ATS.2230 Aeronautical fixed service (ground-ground communications)

(a) GENERAL

The air traffic services provider shall ensure that direct-speech are used in ground-ground communications for air traffic services purposes.

(b) COMMUNICATIONS WITH A FLIGHT INFORMATION REGIONS

- (1) Communications between air traffic services units.
 - (i) The area control centre serving also as the flight information centre, shall have facilities for communications with the approach control unit and aerodrome control towers, providing a service within its area of responsibility.
 - (ii) The approach control unit, in addition to being connected to the area control centre as prescribed in (i), shall have facilities for communications with the associated aerodrome control tower(s).
- (2) Communications between air traffic services units and other units.
 - (i) The area control centre shall have facilities for communications with the meteorological office serving the centre, aeronautical telecommunications station serving the centre, appropriate operator's offices, the joint rescue coordination centre and the international NOTAM office serving the centre, providing a service within their respective area of responsibility.

- (ii) The approach control unit and aerodrome control towers shall have facilities for communications with the rescue and emergency services (including ambulance, fire, etc.), meteorological office serving the unit, the aeronautical telecommunications station serving the unit, and the unit providing apron management services.

(c) DESCRIPTION OF COMMUNICATION FACILITIES

- (1) The air traffic services provider shall ensure that communication facilities required under (b), (2) (i) with the rescue and emergency services (including ambulance, fire, etc.), meteorological office, include provisions for:
 - (i) communications by direct speech alone and for other purposes the communications can normally be established within fifteen seconds; and
 - (ii) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.
 - (iii) In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording shall be provided.
 - (iv) The communication facilities required in accordance with (ii) and (iii) shall be supplemented, as and where necessary, by facilities for other forms of visual or audio communications, for example, closed circuit television or separate information processing systems.
 - (v) The communication facilities required under (b) (2) (ii) with the rescue and emergency services (including ambulance, fire, etc.), meteorological office shall include provisions for communications by direct speech arranged for conference communications.
 - (vi) The communication facilities required under (b) (2) (ii) with the aeronautical telecommunication service shall include provisions for communications by direct speech arranged for conference communications, whereby the communications can normally be established within fifteen seconds.
 - (vii) All facilities for direct-speech communications between air traffic services units and between air traffic services units and other units described under (2) (i) and (ii) shall be provided with automatic recording.
 - (viii) Recordings of communications as required in (iii) and (vi) shall be retained for a period of at least ninety days.

(d) COMMUNICATIONS BETWEEN FLIGHT INFORMATION REGIONS

- (1) The air traffic services provider shall ensure that the area control centre also serving as the flight information centre has facilities for communications with all adjacent flight information centres and area control centres.
 - (i) These communication facilities shall in all cases include provisions for messages in a form suitable for retention as a permanent record, and delivery in accordance with transit times specified by regional air navigation agreements.
 - (ii) When so required by agreement between the Seychelles and adjacent States concerned in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, facilities for communications between adjacent flight information centres or area control centres shall include provisions for direct speech alone. The communication facilities shall be provided with automatic recording and shall permit communications to be established normally within fifteen seconds.
- (2) In all cases where automatic exchange of data between air traffic services computers is required, suitable facilities for automatic recording shall be provided.
- (3) Recordings of data and communications as required in (2) shall be retained for a period of at least ninety days.

(e) PROCEDURES FOR DIRECT-SPEECH COMMUNICATIONS

The air traffic services provider shall develop appropriate procedures for direct-speech communications to permit immediate connections to be made for very urgent calls concerning the safety of aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.

ATS.2235 Surface movement control service

- (a) The air traffic services provider shall provide two-way radiotelephony communication facilities for aerodrome control service for the control of vehicles on the manoeuvring area, except where communication by a system of visual signals is deemed to be adequate.
- (b) Where conditions warrant, separate communication channels shall be provided for the control of vehicles on the

manoeuvring area. Automatic recording facilities shall be provided on all such channels.

- (c) Recordings of communications as required in (b) shall be retained for a period of at least ninety days.

ATS.2240 Aeronautical radio navigation service

Automatic recording of surveillance data

- (a) The air traffic services provider shall ensure that surveillance data from ADS-C, used as an aid to air traffic services, are automatically recorded for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.
- (b) Automatic recordings shall be retained for a period of at least ninety days to accommodate circumstances where the recordings are pertinent to accident and incident investigations.

SUBPART F – AIR TRAFFIC SERVICES REQUIREMENTS FOR INFORMATION**ATS.2245 Meteorological information**

- (a) GENERAL. The air traffic services provider shall ensure that:
- (1) air traffic services units are supplied with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of their respective functions. The information shall be supplied in such a form as to require a minimum of interpretation on the part of air traffic services personnel and with a frequency which satisfies the requirements of the air traffic services units concerned.
 - (2) air traffic services units are supplied with available detailed information on the location, vertical extent, direction and rate of movement of meteorological phenomena in the vicinity of the aerodrome, and particularly in the climb-out and approach areas, which could be hazardous to aircraft operations.
 - (3) when computer-processed upper air data are made available to air traffic services units in digital form for use by air traffic services computers, the contents, format and transmission arrangements are as agreed between the meteorological service provider and the air traffic services provider.
- (b) AREA CONTROL CENTRE. The air traffic services provider shall ensure that
- (1) the area control centre is supplied with meteorological information as described in STS-MET, Appendix 9, 1.3, with particular emphasis being given to the occurrence or expected occurrence of weather deterioration as soon as this can be determined. These reports and forecasts shall cover the flight information region or control area.
 - (2) the area control centre is provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.
- (c) APPROACH CONTROL UNIT. The air traffic services provider shall ensure that:
- (1) the approach control unit is supplied with meteorological information as described in STS-MET, Appendix 9, 1.2 for the airspace and the aerodromes with which they are concerned;
 - (2) special reports and amendments to forecasts are communicated to the approach control unit as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast;
 - (3) where multiple anemometers are used, indicators to which they are related are clearly marked to identify the runway and section of the runway monitored by each anemometer;
 - (4) the approach control unit is provided with current pressure data for setting altimeters, for locations specified by the approach control service;
 - (5) the approach control unit for final approach, landing and take-off is equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists;
 - (6) the approach control unit for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means is equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays shall be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists;
 - (7) the approach control unit for final approach, landing and take-off is supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach.
- (d) AERODROME CONTROL TOWERS. The air traffic services provider shall ensure that:
- (1) aerodrome control towers are supplied with meteorological information as described in STS-MET, Appendix 9, 1.1 for the aerodrome with which they are concerned. Special reports and amendments to forecasts shall be communicated to the aerodrome control towers as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast;
 - (2) aerodrome control towers are provided with current pressure data for setting altimeters for the aerodrome concerned.
 - (3) aerodrome control towers are equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists. Where multiple sensor(s) are used, the displays to which

they are related shall be clearly marked to identify the runway and section of the runway monitored by each sensor;

- (4) aerodrome control towers at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists;
- (5) aerodrome control towers shall be supplied with information on windshear which could adversely affect aircraft on the approach or take-off paths or during circling approach and aircraft on the runway during the landing roll or take-off run;
- (6) aerodrome control towers and/or other appropriate units shall be supplied with aerodrome warnings.

ATS.2250 Information on aerodrome conditions and the operational status of associated facilities

The air traffic services provider shall ensure that aerodrome control towers and the approach control unit are kept currently informed of the operationally significant conditions of the movement area, including the existence of temporary hazards, and the operational status of any associated facilities at the aerodrome(s) with which they are concerned.

ATS.2255 Information on the operational status of radio navigation services

- (a) The air traffic services provider shall ensure that air traffic services units are kept currently informed of the operational status of radio navigation services and visual aids essential for take-off, departure, approach and landing procedures within their area of responsibility and those radio navigation services and visual aids essential for surface movement.
- (b) The air traffic services provider shall ensure that information on the operational status, and any changes thereto, of radio navigation services and visual aids as referred to in (a) are received by the appropriate air traffic services unit(s) on a timely basis consistent with the use of the service(s) and aid(s) involved.

ATS 2260 Information on unmanned free balloons

Refer to the technical standards set out in STS-RoA, Section 3, Chapter 1 SERA.3140 – Unmanned free balloons and Appendix 2 – Unmanned free balloons.

ATS.2265 Information concerning volcanic activity

- (a) The air traffic services provider shall ensure that air traffic services units are informed, in accordance with local agreement, of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud which could affect used flights within the Seychelles flight information region.
- (b) The air traffic services provider shall ensure that the area control centre is provided with volcanic ash advisory information issued by the associated volcanic ash advisory centre.

ATS.2270 Information concerning radioactive materials and toxic chemical “clouds”

The air traffic services provider shall ensure that air traffic services units are informed, in accordance with local agreement, of the release into the atmosphere of radioactive materials or toxic chemicals which could affect airspace used by flights within their area of responsibility.

APPENDIX 1

PRINCIPLES GOVERNING THE IDENTIFICATION OF NAVIGATION SPECIFICATIONS AND THE IDENTIFICATION OF ATS ROUTES OTHER THAN STANDARD DEPARTURE AND ARRIVAL ROUTES

(ATS.2030 and ATS.2050 refer)

Note: See Appendix 3 concerning the identification of standard departure and arrival routes and associated procedures. Guidance material on the establishment of these routes and procedures is contained in the Air Traffic Services Planning Manual (Doc 9426).

1. Designators for ATS routes and navigation specifications

1.1 The purpose of a system of route designators and navigation specification(s) applicable to specified air traffic services route segment(s), route(s) or area is to allow both pilots and air traffic services, taking into account automation requirements:

- a) to make unambiguous reference to any ATS route without the need to resort to the use of geographical coordinates or other means in order to describe it;
- b) to relate an air traffic services route to a specific vertical structure of the airspace, as applicable;
- c) to indicate a required level of navigation performance accuracy, when operating along an ATS route or within a specified area; and
- d) to indicate that a route is used primarily or exclusively by certain types of aircraft.

Note 1: Specifications concerning the publication of navigation specifications are given in STS-AIS/ACS and ICAO Doc 10066 - PANS AIM, Appendix 2.

Note 2: In relation to this appendix and for flight planning purposes, a prescribed navigation specification is not considered an integral part of the ATS route designator.

1.2 In order to meet this purpose, the designation system shall:

- a) permit the identification of any ATS route in a simple and unique manner;
- b) avoid redundancy;
- c) be usable by both ground and airborne automation systems;
- d) permit utmost brevity in operational use; and
- e) provide sufficient possibility of extension to cater for any future requirements without the need for fundamental changes.

1.3 Controlled, advisory and uncontrolled ATS routes, with the exception of standard arrival and departure routes, shall therefore be identified as specified hereafter.

2. Composition of designator

2.1 The ATS route designator shall consist of a basic designator supplemented, if necessary, by:

- a) one prefix as prescribed in 2.3; and
- b) one additional letter as prescribed in 2.4.

2.1.1 The number of characters required to compose the designator shall not exceed six characters.

2.1.2 The number of characters required to compose the designator should, whenever possible, be kept to a maximum of five characters.

2.2 The basic designator shall consist of one letter of the alphabet followed by a number from 1 to 999.

2.2.1 Selection of the letter shall be made from those listed hereunder:

- a) A, B, G, R for routes which form part of the regional networks of ATS routes and are not area navigation routes;
- b) L, M, N, P for area navigation routes which form part of the regional networks of ATS routes;
- c) H, J, V, W for routes which do not form part of the regional networks of ATS routes and are not area navigation routes;
- d) Q, T, Y, Z for area navigation routes which do not form part of the regional networks of ATS routes.

2.3 Where applicable, one supplementary letter shall be added as a prefix to the basic designator in accordance with the following:

- a) K to indicate a low-level route established for use primarily by helicopters;
- b) U to indicate that the route or portion thereof is established in the upper airspace;
- c) S to indicate a route established exclusively for use by supersonic aircraft during acceleration, deceleration and while in supersonic flight.

2.4 When prescribed by the appropriate ATS authority or on the basis of regional air navigation agreements, a supplementary letter may be added after the basic designator of the ATS route in question in order to indicate the type of service provided in accordance with the following:

- a) the letter F to indicate that on the route or portion thereof advisory service only is provided;
- b) the letter G to indicate that on the route or portion thereof flight information service only is provided.

Note 1: Due to limitations in the display equipment on board aircraft, the supplementary letters “F” or “G” may not be displayed to the pilot.

Note 2: Implementation of a route or a portion thereof as controlled route, advisory route or flight information route is indicated in aeronautical charts and aeronautical information publications in accordance with the provisions in STS-AIS/ACS.

3. Assignment of basic designators

3.1 Basic ATS route designators shall be assigned in accordance with the following principles.

3.1.1 The same basic designator shall be assigned to a main trunk route throughout its entire length, irrespective of terminal control areas, States or regions traversed.

Note: This is of particular importance where automated ATS data processing and computerized airborne navigation equipment is used.

3.1.2 Where two or more trunk routes have a common segment, the segment in question shall be assigned each of the designators of the routes concerned, except where this would present difficulties in the provision of air traffic service, in which case, by common agreement, one designator only shall be assigned.

3.1.3 A basic designator assigned to one route shall not be assigned to any other route.

3.1.4 States' requirements for designators shall be notified to the Regional Offices of ICAO for coordination.

4. Use of designators in communications

4.1 In printed communications, the designator shall be expressed at all times by not less than two and not more than six characters.

4.2 In voice communications, the basic letter of a designator shall be spoken in accordance with the ICAO spelling alphabet.

4.3 Where the prefixes K, U or S specified in 2.3 are used, they shall, in voice communications, be spoken as follows:

- K — KOPTER
- U — UPPER
- S — SUPERSONIC

The word “kopter” shall be pronounced as in the word “helicopter” and the words “upper” and “supersonic” as in the English language.

4.4 Where the letters “F” or “G” specified in 2.4 are used, the flight crew should not be required to use them in voice communications.

APPENDIX 2

PRINCIPLES GOVERNING THE ESTABLISHMENT AND IDENTIFICATION OF SIGNIFICANT POINTS

(ATS.2055 refers)

1. Establishment of significant points

- 1.1 Significant points should, whenever possible, be established with reference to ground-based or space-based radio navigation aids, preferably VHF or higher frequency aids.
- 1.2 Where such ground-based or space-based radio navigation aids do not exist, significant points shall be established at locations which can be determined by self-contained airborne navigation aids, or, where navigation by visual reference to the ground is to be effected, by visual observation. Specific points may be designated as “transfer of control” points by agreement between adjacent air traffic control units or control positions concerned.

2. Designators for significant points marked by the site of a radio navigation aid**2.1 Plain language name for significant points marked by the site of a radio navigation aid**

2.1.1 Whenever practicable, significant points shall be named with reference to an identifiable and preferably prominent geographical location.

2.1.2 In selecting a name for the significant point, care shall be taken to ensure that the following conditions are met:

- a) the name shall not create difficulties in pronunciation for pilots or ATS personnel when speaking in the language used in ATS communications. Where the name of a geographical location in the national language selected for designating a significant point gives rise to difficulties in pronunciation, an abbreviated or contracted version of this name, which retains as much of its geographical significance as possible, shall be selected;

Example: FUERSTENFELDBRUCK = FURSTY

- b) the name shall be easily recognizable in voice communications and shall be free of ambiguity with those of other significant points in the same general area. In addition, the name shall not create confusion with respect to other communications exchanged between air traffic services and pilots;
- c) the name should, if possible, consist of at least six letters and form two syllables and preferably not more than three;
- d) the selected name shall be the same for both the significant point and the radio navigation aid marking it.

2.2 Composition of coded designators for significant points marked by the site of a radio navigation aid

2.2.1 The coded designator shall be the same as the radio identification of the radio navigation aid. It shall be so composed, if possible, as to facilitate association with the name of the point in plain language.

2.2.2 Coded designators shall not be duplicated within 1 100 km (600 NM) of the location of the radio navigation aid concerned, except as noted hereunder.

Note: When two radio navigation aids operating in different bands of the frequency spectrum are situated at the same location, their radio identifications are normally the same.

2.3 States' requirements for coded designators shall be notified to the Regional Offices of ICAO for coordination.

3. Designators for significant points not marked by the site of a radio navigation aid

3.1 Where a significant point is required at a position not marked by the site of a radio navigation aid, and is used for ATC purposes, it shall be designated by a unique five-letter pronounceable “name-code”. This name-code designator then serves as the name as well as the coded designator of the significant point.

Note: The principles governing the use of alphanumeric name-codes in support of RNAV SIDs, STARs and instrument approach procedures are detailed in the PANS-OPS (Doc 8168).

3.2 The name-code designator shall be selected so as to avoid any difficulties in pronunciation by pilots or ATS personnel when speaking in the language used in ATS communications.

Examples: ADOLA, KODAP

3.3 The name-code designator shall be easily recognizable in voice communications and shall be free of ambiguity with those used for other significant points in the same general area.

3.4 The unique five-letter pronounceable name-code designator assigned to a significant point shall not be assigned to any other significant point. When there is a need to relocate a significant point, a new name-code designator shall be chosen.

In cases when a State wishes to keep the allocation of specific name-codes for reuse at a different location, such name-codes shall not be used until after a period of at least six months.

3.5 Seychelles' requirements for unique five-letter pronounceable name-code designators shall be notified to the Regional Offices of ICAO for coordination.

3.6 In areas where no system of fixed routes is established or where the routes followed by aircraft vary depending on operational considerations, significant points shall be determined and reported in terms of World Geodetic System — 1984 (WGS-84) geographical coordinates, except that permanently established significant points serving as exit and/or entry points into such areas shall be designated in accordance with the applicable provisions in 2 or 3.

4. Use of designators in communications

4.1 Normally the name selected in accordance with 2 or 3 shall be used to refer to the significant point in voice communications. If the plain language name for a significant point marked by the site of a radio navigation aid selected in accordance with 2.1 is not used, it shall be replaced by the coded designator which, in voice communications, shall be spoken in accordance with the ICAO spelling alphabet.

4.2 In printed and coded communications, only the coded designator or the selected name-code shall be used to refer to a significant point.

5. Significant points used for reporting purposes

5.1 In order to permit ATS to obtain information regarding the progress of aircraft in flight, selected significant points may need to be designated as reporting points.

5.2 In establishing such points, consideration shall be given to the following factors:

- a) the type of air traffic services provided;
- b) the amount of traffic normally encountered;
- c) the accuracy with which aircraft are capable of adhering to the current flight plan;
- d) the speed of the aircraft;
- e) the separation minima applied;
- f) the complexity of the airspace structure;
- g) the control method(s) employed;
- h) the start or end of significant phases of a flight (climb, descent, change of direction, etc.);
- i) transfer of control procedures;
- j) safety and search and rescue aspects;
- k) the cockpit and air-ground communication workload.

5.3 Reporting points shall be established either as “compulsory” or as “on-request”.

5.4 In establishing “compulsory” reporting points, the following principles shall apply:

- a) compulsory reporting points shall be limited to the minimum necessary for the routine provision of information to air traffic services units on the progress of aircraft in flight, bearing in mind the need to keep cockpit and controller workload and air-ground communications load to a minimum;
- b) the availability of a radio navigation aid at a location should not necessarily determine its designation as a compulsory reporting point;
- c) compulsory reporting points should not necessarily be established at flight information region or control area boundaries.

5.5 “On-request” reporting points may be established in relation to the requirements of air traffic services for additional position reports when traffic conditions so demand.

5.6 The designation of compulsory and on-request reporting points shall be reviewed regularly with a view to keeping the requirements for routine position reporting to the minimum necessary to ensure efficient air traffic services.

5.7 Routine reporting over compulsory reporting points should not systematically be made mandatory for all flights in all circumstances. In applying this principle, particular attention shall be given to the following:

- a) high-speed, high-flying aircraft should not be required to make routine position reports over all reporting points established as compulsory for low-speed, low-flying aircraft;

- b) aircraft transiting through a terminal control area should not be required to make routine position reports as frequently as arriving and departing aircraft.

5.8 In areas where the above principles regarding the establishment of reporting points would not be practicable, a reporting system with reference to meridians of longitude or parallels of latitude expressed in whole degrees may be established.

APPENDIX 3

PRINCIPLES GOVERNING THE IDENTIFICATION OF STANDARD DEPARTURE AND ARRIVAL ROUTES AND ASSOCIATED PROCEDURES

(ATS.2050 refers)

Note: Material relating to the establishment of standard departure and arrival routes and associated procedures is contained in the Air Traffic Services Planning Manual (Doc 9426).

1. Designators for standard departure and arrival routes and associated procedures

Note: In the following text, the term “route” is used in the meaning of “route and associated procedures”.

1.1 The system of designators shall:

- a) permit the identification of each route in a simple and unambiguous manner;
- b) make a clear distinction between:
 - departure routes and arrival routes;
 - departure or arrival routes and other ATS routes;
 - routes requiring navigation by reference to ground-based radio aids or self-contained airborne aids, and routes requiring navigation by visual reference to the ground;
- c) be compatible with ATS and aircraft data processing and display requirements;
- d) be of utmost brevity in its operational application;
- e) avoid redundancy;
- f) provide sufficient possibility for extension to cater for any future requirements without the need for fundamental changes.

1.2 Each route shall be identified by a plain language designator and a corresponding coded designator.

1.3 The designators shall, in voice communications, be easily recognizable as relating to a standard departure or arrival route and shall not create any difficulties in pronunciation for pilots and ATS personnel.

2. Composition of designators**2.1 Plain language designator**

2.1.1 The plain language designator of a standard departure or arrival route shall consist of:

- a) a basic indicator; followed by
- b) a validity indicator; followed by
- c) a route indicator, where required; followed by
- d) the word “departure” or “arrival”; followed by
- e) the word “visual”, if the route has been established for use by aircraft operating in accordance with the visual flight rules (VFR).

2.1.2 The basic indicator shall be the name or name-code of the significant point where a standard departure route terminates or a standard arrival route begins.

2.1.3 The validity indicator shall be a number from 1 to 9.

2.1.4 The route indicator shall be one letter of the alphabet. The letters “I” and “O” shall not be used.

2.2 Coded designator

The coded designator of a standard departure or arrival route, instrument or visual, shall consist of:

- a) the coded designator or name-code of the significant point described in 2.1.1 a); followed by
- b) the validity indicator in 2.1.1 b); followed by
- c) the route indicator in 2.1.1 c), where required.

Note: Limitations in the display equipment on board aircraft may require shortening of the basic indicator, if that indicator is a five-letter name-code, e.g. KODAP. The manner in which such an indicator is shortened is left to the discretion of operators.

3. Assignment of designators

3.1 Each route shall be assigned a separate designator.

3.2 To distinguish between two or more routes which relate to the same significant point (and therefore are assigned the same basic indicator), a separate route indicator as described in 2.1.4 shall be assigned to each route.

4. Assignment of validity indicators

4.1 A validity indicator shall be assigned to each route to identify the route which is currently in effect.

4.2 The first validity indicator to be assigned shall be the number “1”.

4.3 Whenever a route is amended, a new validity indicator, consisting of the next higher number, shall be assigned.

The number “9” shall be followed by the number “1”.

5. Examples of plain language and coded designators

5.1 *Example 1:* Standard departure route - instrument:

- a) Plain language designator: BRECON ONE DEPARTURE
- b) Coded designator: BCN 1

5.1.1 *Meaning:* The designator identifies a standard instrument departure route which terminates at the significant point BRECON (basic indicator). BRECON is a radio navigation facility with the identification BCN (basic indicator of the coded designator). The validity indicator ONE (1 in the coded designator) signifies either that the original version of the route is still in effect or that a change has been made from the previous version NINE (9) to the now effective version ONE (1) (see 4.3). The absence of a route indicator (see 2.1.4 and 3.2) signifies that only one route, in this case a departure route, has been established with reference to BRECON.

5.2 *Example 2:* Standard arrival route - instrument:

- a) Plain language designator: KODAP TWO ALPHA ARRIVAL
- b) Coded designator: KODAP 2 A

5.2.1 *Meaning:* This designator identifies a standard instrument arrival route which begins at the significant point KODAP (basic indicator). KODAP is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator TWO (2) signifies that a change has been made from the previous version ONE (1) to the now effective version TWO (2). The route indicator ALPHA (A) identifies one of several routes established with reference to KODAP and is a specific character assigned to this route.

5.3 *Example 3:* Standard departure route - visual:

- a) Plain language designator: ADOLA FIVE BRAVO DEPARTURE VISUAL
- b) Coded designator: ADOLA 5 B

5.3.1 *Meaning:* This designator identifies a standard departure route for controlled VFR flights which terminates at ADOLA, a significant point not marked by the site of a radio navigation facility. The validity indicator FIVE (5) signifies that a change has been made from the previous version FOUR (4) to the now effective version FIVE (5). The route indicator BRAVO (B) identifies one of several routes established with reference to ADOLA.

6. Composition of designators for RNAV approach procedures

6.1 Plain language designator

6.1.1 The plain language designator of an RNAV approach procedure shall consist of:

- a) “RNAV”; followed by
- b) a basic indicator; followed by
- c) a validity indicator; followed by
- d) a route indicator; followed by
- e) the word “approach”; followed by
- f) the designator of the runway for which the procedure is designed.

6.1.2 The basic indicator shall be the name or name-code of the significant point where the approach procedure begins.

6.1.3 The validity indicator shall be a number from 1 to 9.

6.1.4 The route indicator shall be one letter of the alphabet. The letters “I” and “O” shall not be used.

6.1.5 The designator of the runway shall be in accordance with Annex 14, Volume I, 5.2.2.

6.2 Coded designator

6.2.1 The coded designator of an RNAV approach procedure shall consist of:

- a) “RNAV”; followed by
- b) the coded designator or name-code of the significant point described in 6.1.1 b); followed by
- c) the validity indicator in 6.1.1 c); followed by
- d) the route indicator in 6.1.1 d); followed by
- e) the runway designator in 6.1.1 f).

6.3 Assignment of designators

6.3.1 The assignment of designators for RNAV approach procedures shall be in accordance with paragraph 3. Procedures having identical tracks but different flight profiles shall be assigned separate route indicators.

6.3.2 The route indicator letter for RNAV approach procedures shall be assigned uniquely to all approaches at an airport until all the letters have been used. Only then shall the route indicator letter be repeated.

6.3.3 The assignment of validity indicator for approach procedures shall be in accordance with paragraph 4.

6.4 Example of plain language and coded designators

6.4.1 Example:

- a) Plain language designator: RNAV HAPPY ONE ALPHA APPROACH RUNWAY ONE EIGHT LEFT
- b) Coded designator: RNAV HAPPY 1 A 18L

6.4.2 *Meaning:* The designator identifies an RNAV approach procedure which begins at the significant point HAPPY (basic indicator). HAPPY is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator ONE (1) signifies that either the original version of the route is still in effect or a change has been made from the previous version NINE (9) to the now effective version ONE (1). The route indicator ALPHA (A) identifies one of several routes established with reference to HAPPY and is a specific character assigned to this route.

7. Use of designators in communications

7.1 In voice communications, only the plain language designator shall be used.

Note: For the purpose of identification of routes, the words “departure”, “arrival” and “visual” described in 2.1.1 d) and 2.1.1 e) are considered to be an integral element of the plain language designator.

7.2 In printed or coded communications, only the coded designator shall be used.

8. Display of routes and procedures to air traffic control

8.1 A detailed description of each currently effective standard departure and/or arrival route/approach procedure, including the plain language designator and the coded designator, shall be displayed at the working positions at which the routes/procedures are assigned to aircraft as part of an ATC clearance, or are otherwise of relevance in the provision of air traffic control services.

8.2 Whenever possible, a graphic portrayal of the routes/procedures shall also be displayed.

APPENDIX 4

ATS AIRSPACE CLASSES – SERVICES PROVIDED AND FLIGHT REQUIREMENTS

(Refer to ATS.2025 and SERA.6001)

SECTION 3 – ACCEPTABLE MEANS OF COMPLIANCE AND INTERPRETATIVE AND 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–ATS.

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

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

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

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

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

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

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

ACJ/AMC/IEM A

Reserved

ACJ/AMC/IEM B

Reserved