



**Public Authority for Civil Aviation**

# **Standard of Aeronautical Telecommunication Service Provider Manual**

Manual Number: 1.3.6

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**DOCUMENT CONTROL SHEET**

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## FOREWORD

- (1) In order to ensure the safety of aeronautical telecommunication service and as a guidance for aeronautical telecommunication service providers (ANSPs) to establish, implement, evaluate and improve on an ongoing basis Operation Manual of Aeronautical Telecommunication Service Provider, then the drafting of the Operation Manual must be in accordance with technical standards as mandated by CAR 171 (Aeronautical Telecommunication Service Provider).
- (2) CAR-171 has been used as the basis for this manual.
- (3) The editing practices used in this document are as follows:
  - (a) 'Shall' is used to indicate a mandatory requirement and may appear in this manual.
  - (b) 'Should' is used to indicate a recommendation
  - (c) 'May' is used to indicate discretion by the AUTHORITY the industry or the applicant, as appropriate.
  - (d) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority

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**TABLE A. REVISION TO STANDARD OF ATSP MANUAL**

Revision	Subject	Applicable
01	-	10 October 2018
02	<p>This revision incorporated new subchapter related to :</p> <ul style="list-style-type: none"><li>(1) Development of Job Description, in term of issuance a new Job Description and amending existing Job Description</li><li>(2) Job Description content, including task details, Job Description general objective or role summary, detailed main responsibility and Qualification of ATSP personnel</li></ul>	30 <sup>th</sup> April 2020

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## 1. INTRODUCTION

### 1.1. PURPOSE

This manual provides guidance for aeronautical telecommunication service providers (ANSPs) to establish, implement, evaluate, maintain and improve on an ongoing basis Operation Manual of Aeronautical Telecommunication Service Provider.

### 1.2. SCOPE

Procedures for establishing the Operations Manual of Aeronautical Telecommunication Service Providers as set forth in this manual are minimum conditions and service provider is required to improve it according to conditions in the field.

### 1.3. DEFINITIONS

Applicable to this manual:

**Operation Manual of Aeronautical Telecommunication Service Provider.** A document consisting of data and technical information of Aeronautical Telecommunications Facilities, Standard Operating Procedure (SOP), Organization, Technical Personnel of Aeronautical Telecommunications and Safety Management Systems, including latest information regarding the Implementation of Aeronautical Telecommunication Services.

**Director General.** Director General of Civil Aviation Regulation.

**Director.** Director of Air Navigation Safety Department.

**Aeronautical Telecommunications Facilities.** Electronic facilities used as a means of organizing flight safety that includes Aeronautical communication, navigation radio and Surveillance

**Air Navigation.** The process of directing the motion of an aircraft from one point to another point safely and smoothly to avoid danger and / or flight obstacles.

**Aeronautical Telecommunications Services.** Ground and satellite-based telecommunications services as stated in Annex 10 of the Chicago Convention and other related documents.

**Aeronautical Telecommunication Service Provider.** Service providers which provides air navigation services in the space area air of The Sultanate of Oman.

**Air Traffic Service Electronic Personnel.** Person who is directly related with the implementation of operations and / or maintenance and / or inspection aviation telecommunications facilities.

**Aeronautical Telecommunication Service Provider Certificate.** A proof fulfillment of aviation safety requirements in Aeronautical Telecommunications services, issued by the Director General of Civil Aviation Regulation based on Civil Aviation Safety Regulations (CAR) 171.

**Job Description.** Complete list of duties, tasks, responsibilities, skills, and qualifications required to fill the job and perform its duties in accordance with the job grade and title determined for it and the competency required to fill it.

**Job Qualification.** A written statement of educational qualifications, specific qualities, level of experience, physical, emotional, technical and communication skills required to perform a job, responsibilities involved in a job and other unusual sensory demands

## **2. CONTENT OF OPERATION MANUAL**

### **2.1. Operation Manual Outline**

The order of ATSP Operation Manual is as follows:

- (1) Cover**
- (2) Approval Page (Document Control)**
- (3) List of Effective Page**
- (4) Table of Content**
- (5) List of Tables**
- (6) List of Drawing**
- (7) List of Attachment**
- (8) Foreword**
- (9) Chapter 1: General**
  - 1.1 Legal Reference
  - 1.2 ATSP Profile
    - 1.2.1 Vision and Mission
    - 1.2.2 General Information
    - 1.2.3 Service Provided
    - 1.2.4 Service Hours
- (10) Chapter 2: Structure Organization**
  - 2.1 Structure Organization
  - 2.2 Job Description
  - 2.3 ATSP Personnel
    - 2.3.1 List of Key Personnel
    - 2.3.2 List of Technical Personnel
    - 2.3.3 Technical Personnel Equipment Training Record
    - 2.3.4 Technical Personnel Training Plan
    - 2.3.5 Assessment of Technical Personnel
    - 2.3.6 Technical Personnel Needs Analysis
- (11) Chapter 3: Aeronautical Telecommunication Facilities**
  - 3.1 List of Facilities Details
    - 3.1.1 Radio Navigation Aids
    - 3.1.2 Communication Facilities
    - 3.1.3 Surveillance Facilities
    - 3.1.4 ATM Facilities
  - 3.2 The Value of Facilities Service Performance
  - 3.3 Aeronautical Telecommunication Facility security program

**(12) Chapter 4: Standard of Service**

- 4.1 Purpose and objective of Standard Procedure (SP)
- 4.2 Scope of SP
  - 4.2.1 Facilities SP
    - 4.2.1.1 Facilities Standard Operating Procedure
    - 4.2.1.2 Flight Calibration Procedure
    - 4.2.1.3 Preventive Maintenance Procedure
    - 4.2.1.4 Corrective Maintenance Procedure
    - 4.2.1.5 Facility Reports.
  - 4.2.2 Safe Operation Procedure
    - 4.2.2.1 Design, install and commissioning Facility Procedure
    - 4.2.2.2 Change in Service procedure
    - 4.2.2.3 Facility service Performance monitor procedure
    - 4.2.2.4 Facility information flow procedure
    - 4.2.2.5 Facility malfunction Procedure
    - 4.2.2.6 Facility check after accident or incident procedure
    - 4.2.2.7 Facility temporary test procedure
  - 4.2.3 Coordination Procedure
  - 4.2.4 Documentation Procedure
  - 4.2.5 Record Procedure

**(13) Chapter 5: Safety Management System**

- 5.1 Safety Policy
- 5.2 Safety Management of service
- 5.3 Reporting of Safety data
  - 5.4.1 Continuous Monitoring Mechanism
  - 5.4.2 Investigating Safety Occurrence

**(14) Chapter 6: Quality Management System**

- 6.1 Inspection Policy
- 6.2 Inspection procedure
- 6.3 Quality Control procedure
  - 6.4.1 Corrective action procedure
  - 6.4.2 Preventive action procedure

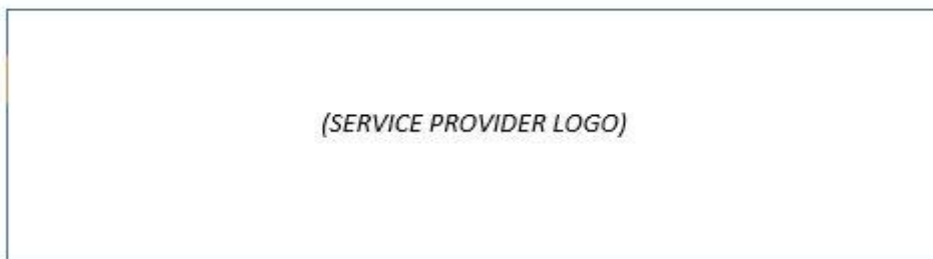
**(15) Attachments.**

A. Legal Statement

B. Layout Coordinate of Facility

**2.2. DESCRIPTION OF OPERATION MANUAL OUTLINE****2.2.1. Cover**

- (1) The cover should clearly mention the title of document.
- (2) Clearly mention the location service provider.
- (3) Logo of the organization



# OPERATION MANUAL

**AERONAUTICAL TELECOMMUNICATION  
SERVICE PROVIDER**

*(SERVICE LOCATION)*

Figure 1. Sample of ATSP Operation Manual cover



**2.2.2. Approval Page**

In accordance with Organization 's Document Control System

**2.2.3. List of Effective Page**

In accordance with Organization 's Document Control System

**2.2.4. Table of Content**

Self-Explanatory

**2.2.5. List of Tables**

Self-Explanatory

**2.2.6. List of Drawing**

Self-Explanatory

**2.2.7. List of Attachment**

Self-Explanatory

**2.2.8. Foreword**

Self-Explanatory

**2.2.9. Chapter 1: General****2.2.9.1. Legal Reference**

Legal reference in conducting Aeronautical Telecommunication service

**2.2.9.2. ATSP Profile**

*Vision and Mission.*

Vision and Mission of Organization in conducting Aeronautical Telecommunication service.

(1) General Information:

*Name of Organization*

*Address*

*Tel./Fax*

*Email Address*

*AFTN Address*

*Airspace Served*

*Coordinate Location*

(2) Service Provided

Information on telecommunications services provided is set out in the form of the following table:

SR	Type of Service	Equipment used			Location of Equipment	Service Area (AFIS/ADC/APP/ACC)
		Frequency	Brand	Qty		
1	Aeronautical Broadcasting Service					
	ATIS	*****	****		*****	*****
	*****					
	etc...					
2	Aeronautical Fixed Service					
	AFTN	*****	****		*****	*****
	AMHS					
	VSAT					
	VDL					
	*****					
	etc....					
3	Aeronautical Mobile Service					
	VHF A/G	*****	****		*****	*****
	*****					
	etc.....					
4	Aeronautical Radio Navigation Service					
	VOR	*****	****		*****	*****
	DME					
	etc.....					
5	Surveillance					
	PSR					
	SSR					
	*****					
	etc.....					
	ATC Processing Data and Display					
6	Other service					
	Recorder					
	*****					
	etc.....					

Table 1. Sample of List of Service Provided.

- (3) Service Hour  
Self-Explanatory

## **2.2.10. Chapter 2: Structure Organization**

### **2.2.10.1. Structure Organization**

Structure Organization based on applicable legislation/regulation

### **2.2.10.2. Job Description**

Job Description based on applicable regulation/ approved document, for:

Director/General Manager

Deputy Director/Deputy General Manager (if applicable)

Manager/Chief of Section

Supervisor

Engineer

Technician

#### **2.2.10.2.1. Development of Job Description**

Job description is needed when the service provider needs to update a new role whether to issue a new job description or when there is a change acquires issuing a new job description or a change in the current role requires add/change/omit.

Some of the specified tasks and responsibilities require either amending an existing job description as shown below:

1. Issuing a new job description:

Representing in procedures related to job description development for the new and approved jobs within the budget and organizational structures of the organization/ entity by several steps: development, review, evaluation and final approval where new positions are added to the organizational unit bearing in mind that position consists of two main elements: job belonged to and organizational unit followed.

2. Amending existing job description:

Reviewing the approved job description and adding necessary amendments to separate, merge or change job tasks and responsibilities whether by increase or decrease based on restructure or passing an administrative decision to create a new functional role.

Below the most important conditions in developing job description:

1. Focusing on the main tasks, responsibilities and objectives of the role and job requirements (in terms of achievement priorities) within the current needs of the organization/ entity and its long term objectives regardless "post holder".
2. Considering the actuality of tasks and responsibilities mentioned in the job description within the

required role.

3. Determining the minimum required qualifications of the role in addition to any other additional qualifications.
4. Determining required qualification/skills for a certain job in a manner consistent with performance appraisal of organization's employees.
5. Mentioning necessary specialized/technical skills of the role.
6. Writing tasks and duties in verb phrases to facilitate performance appraisal, accuracy and to avoid generality.
7. Using accurate phrases with clear wording.
8. An existing job description is to be amended by an official request with surrounding reasons.

#### **2.2.10.2.2. Job Description Contents**

The Job Description sheet should cover minimum for the following elements:

##### **1. Tasks details.**

As the following:

- (a) Job title : refers to a certain role in the evaluated job on a certain level in the organizational structure of the organization/ entity such as: Director, Manager, Chief of Section, Supervisor, Engineer, technician .... etc.
- (b) Job category : a group of jobs with the same major and type lies under one job within an approved job family.  
Example for a job category for the following job titles:

Job title	Job category
Engineer	Operation & Maintenance
Director secretary	Administrative support
Director	Executive administration

- (c) Job grade : Job approved grade in the organization/ entity after evaluation according to organization mechanism of evaluation the job grade.  
Example: job grade of "Director" position could be between special grade (A), (B) or 1 and 2
- (d) Post Holder / Report to : the person who directly responsible for tasks entitled to post holder specified in the approved organizational structure of the organization/ entity.
- (e) Department : the organizational unit in the approved organizational structure of the organization/entity which level may not be amended except by a Board.  
Example: IT department – HR department – Finance Department, Technical Department .... Etc.

## 2. Job general objective or Role Summary

A general brief of the main role of the job regardless tasks and responsibilities details of the post holder.

Example: the general objective of “Chief of CNS Section” is to responsible for the Operation & Maintenance of CNS equipment's/ facilities at Muscat International airport and remote (regional) sites belonging to Muscat International airport.

## 3. Detailed Roles Main responsibilities.

Representing in the following:

- (a) Key tasks: directly related to the functional role of the post holder as the first responsible for these tasks: administrative, executive and supervisory tasks; detailed tasks show the difficulty of the role and the amount of responsibility.

Example: the main tasks of “Chief of CNS Section” are:

- Controlling the implementation of maintenance activities in accordance with the approved SOP and filling in the maintenance LOG BOOK as evidence for carrying out CNS maintenance activities.
- Develop a routine maintenance schedule for each equipment in accordance with DGCA Manual 1.3.3 Maintenance and Reporting Procedure for Aeronautical telecommunication facilities (H, M, B, 3B, 6B, T)
- Coordinate and carry out preventive and corrective maintenance equipment maintenance up to level IV

- (b) Main work indicators of the role:

Includes the most important and general indicators of the role (if found) by which we can evaluate performance level of the post holder in a comparison with the main responsibilities of the job. These indicators can be measured in numbers or percentage.

Example: performance indicators of “Engineer” are:

- number of periodic inspections, observations, tests and checks for any system abnormality as scheduled by section Supervisor.
- Number of system's modification to manufactures specifications whenever required as well as assisting in establishing spare stocks for the section.
- Number of with daily activities and submit written or verbal reports to the Section Supervisors whenever corrective action is necessary for resolution of problems.

## 4. Qualifications

The qualification shall cover for minimum the following:

- (a) The minimum group of knowledge, academic and professional certificates and practical trainings necessary for the job.

Example : Bsc/Master/PhD certificates in any fields whether (admin, technical, Eng, medical... etc) or equivalent from the approved university.

- (b) Proficiency with certain software programs.

- (c) Specific industry knowledge.

- (d) Ability to perform certain tasks such as lifting, standing or extreme temperatures.

**2.2.10.3. ATSP Personnel****(1) List of Key personnel**

Information on ATSP key personnel is set out in the form of the following table:

SR	Name	Title	Office tel.	Mobile No.	Email Address
1.		Dir/GM			
2		DD/Deputy GM			
3		Manager/Chief of Section.....			
4		Supervisor....			
5		Any other contact person for emergency			

Table 2. Sample of List of Key Personnel

**(2) List of Technical Personnel**

Information on ATSP key personnel is set out in the form of the following table:

SR	NAME / STAFF NUMBER	ENTITLE	EDUCATION					
			FORMAL	YEAR	LOCATION	NON FORMAL	YEAR	LOCATION
1								
2								
3								

Table 3. Sample of List of Technical Personnel

## (3) Technical Personnel Equipment Training Record

Information on Technical Personnel Equipment Training Record is set out in the form of the following table:

SR	NAME / STAFF NUMBER	ENTITLE	TRAINING		
			EQUIPMENT/COURSE	YEAR	LOCATION
1					
2.					

Table 4. Sample of List of Technical Personnel Equipment Training Record

## (4) Technical Personnel Equipment Training Plan

ATSP Technical Personnel Training Plan (initial and refreshing) based on applicable regulation/ approved document, is set out in the form of the following table:

SR	NAME / STAFF NUMBER	ENTITLE	TRAINING PLAN (3 years)		
			20....	20.....	20.....
			Course Title & Location	Course Title & Location	Course Title & Location
1					
2					

Table 5. Sample of List of Technical Personnel Equipment Training Plan (Initial and Refreshing)

## (5) Assessment of Technical Personnel

The methodology to assess the competency and qualification of ATSP technical personnel in accordance with applicable standard and regulation.

## (6) Technical Personnel Needs Analysis.

In determining the number of ATSP Technical Personnel in one of ATSP service unit are based on 2(two) variables, i.e. effective working hours of individual and Allotment hours of Equipment.

In accordance with the number of equipment used for the service, it can be calculated the Equipment Allotment Hours for each year. The Calculation of allotment hours can be obtained and calculated referring to DGCAR Maintenance and Reporting Procedure for



Aeronautical Telecommunication Facilities document (Manual No.: 1.3.3.) of the daily, weekly, monthly, semester and annual maintenance for each equipment.

(a) The number of effective working hours per year, i.e.:

1 (one) week	= ... hours	x .... days	= .... hours,
1 (one) year	= .... hours	x 52 weeks	= .....hours

---

Total hours A: =.....hours

Deduction in one year, that is:

..... weeks of annual leave	= ... hours
..... days public holidays	= .... hours
..... days due to illness	= ... hours
Training courses	= ... hours
Preparation time is 10 minutes / day	= ... hours
Rest 60 minutes (lunch +pray) / day	= .... hours

---

Total hours B = ..... hours

**So, the effective working hours of individuals / years =**

**Total Hours A – Total Hours B**

(b) The Allotment hours of equipment

Total time (hours) needed to carry out the maintenance of each equipment in a year.

e.g :

VHF A/G ADC	= 2 unit x 60 hrs/yr	= 120 hours
VHF A/G ACC	= 4 unit x 60 hrs/yr	= 240 hours
Recorder	= 1 unit x 40 hrs/yr	= 40 hours

etc.....

---

**Total..... = 400 hours**

**Total Allotment Hours divided by the number of effective working individuals per year is equal with a number of personnel for maintenance.**

In case of airport operating hours is 24 hours, then shift cycle system shall be applied for the maintenance personnel. The shift cycle will be 3 shifts in a day. The number of personnel for maintenance will be multiplied by 3, plus 1 shift for standby shift. One supervisor shall be assigned for each shift.



**2.2.12.2. Scope of Standard Procedure****2.2.12.2.1. Facility SP****(1) Facilities Standard Operating Procedure**

SOPs are made in according to the available brand and type of equipment, which refers to equipment manual book and to be used as a reference for technical personnel in carrying out their responsibilities.

The Equipment SOP shall cover:

- (a) the critical performance parameters;
- (b) the test equipment required for the measurement of those parameters
- (c) How to turn on equipment; and
- (d) How to turn off equipment.
- (e) Trouble shooting procedures in accordance with manufacture's equipment manual.

**(2) Flight Calibration Procedure**

The Flight Calibration procedure includes the coordination procedure between Service Providers, Flight Calibration service provider and DGCAR as Authority. Besides, it also includes matters that must be prepared before, during and after conducting of Flight calibration.

Flight calibration procedure shall cover:

- (a) Flight calibration preparation, includes:
  - (i) Coordination;
  - (ii) Prepare supporting equipment;
  - (iii) Preparation of supporting data; and
  - (iv) Prepare equipment that will be calibrated.
- (b) Flight Calibration Implementation, in the form of:
  - (i) Advanced coordination meeting;
  - (ii) Recording equipment parameter readings before FC
  - (iii) Recording of measurement results after FC; and
  - (iv) Monitoring Adjustment/ Calibration.
- (c) Equipment parameter setting procedure  
In accordance with Equipment Manual Book.
- (d) Flight Calibration Report.

**(3) Preventive Maintenance Procedure**

The SP contains procedures that must be carried out in routine maintenance of Aeronautical Telecommunication Facility. Referred to Maintenance and Reporting procedure for Aeronautical Telecommunication Facilities Manual Number 1.3.3, maintenance SP Checklist includes the following matters:

- (a) Equipment maintenance plan preparation;
- (b) Preparation of maintenance support equipment;

- (c) Daily Maintenance check list for each facility;
- (d) Weekly Maintenance check list for each facility;
- (e) Monthly Maintenance Check list for each facility;
- (f) Quarterly Maintenance Check list for each facility;
- (g) Semester Maintenance Check list for each facility; and
- (h) Annual Maintenance Checklist for each facility.

(4) Corrective Maintenance Procedure

The SP contains procedures that must be carried out in repairing facilities.

The SP Equipment Repair Checklist includes:

- (a) Corrective maintenance preparation;
- (b) coordination;
- (c) implementation of corrective maintenance
- (d) reporting on the corrective maintenance results.

(5) Facility Report Procedure

The SP includes procedures for reporting results of operations, maintenance and repair of aeronautical telecommunications facilities.

In accordance with Manual Number 1.3.3, facility report shall consist of:

- (a) Periodic Report (monthly and annual)
- (b) failure and corrective maintenance report

#### **2.2.12.2.2. Safe Operation Procedure**

(1) Design, install and commissioning Facility Procedure

The SP includes matters that must be prepared before, during and after design, install and commissioning of facility.

The procedure shall contain about:

- (a) Assignment of the technician or engineer who responsible for designing, assisting in the installation and participating in the commissioning of the facility.
- (b) Preparation of technical documents proposal for design, installation and commissioning of facility.
- (c) Coordination procedure for technical document approval by Authority.
- (d) Coordination procedure between all related department (internal and external of service provider) in the implementation of design, installation and commissioning.

(2) Change in Service procedure

This SP is a procedure performed if the service provider will make changes in services and / or changes in aeronautical telecommunications facilities including the application of new services or facilities.

In accordance with CAR-171.075 paragraph (2), change in service SPs include matters such as preparation of draft amendments, personnel, facilities, reporting changes, document delivery, document merging, socialization and implementation of changes in service.

(3) Facility service Performance monitor procedure

This SP contain the procedure to be used to monitor the performance of each service and facility, and to compare the results with the appropriate technical specification.

(4) Facility information flow procedure

In accordance with CAR-171.150

(5) Facility malfunction Procedure

In accordance with CAR-171.155

(6) Facility check after accident or incident procedure

In accordance with CAR-171.160

(7) Facility temporary test procedure

In accordance with CAR-171.165

**2.2.12.2.3. Coordination Procedure**

In accordance with CAR-171.170

**2.2.12.2.4. Documentation Procedure**

In accordance with CAR-171.175

**2.2.12.2.5. Record Procedure**

In accordance with CAR-171.180

**2.2.13. Chapter 5: Safety Management System**

**2.2.13.1. Safety Policy**

Contain about the service provider safety policy.

**2.2.13.2. Safety Management**

- (1) Contains a special unit that has responsibility for handling safety issues related to aeronautical telecommunications service;
- (2) Contains the structure of the safety unit includes the name of the person and position in the unit; and
- (3) Description of the main tasks and functions of the structure the safety unit.

**2.2.13.3. Reporting of Safety data**

Safety data report shall provide data regarding safety issues to the Safety Manager and other related personnel in service provider

The report consists of the following:

- (1) Hazard Report (Hazard);
- (2) Reporting Mechanism;
- (3) Occurrence investigation report.

(The format of reports must be listed in the operation manual)

**2.2.13.4. Continuous Monitoring Mechanism**

The Continuous monitoring mechanism maybe consists of the followings:

- (1) Safety Monitoring Plan
- (2) Safety monitoring form
- (3) Audit
  - (a) Independent internal audit; and/or
  - (b) Auditing by regulator.

**2.2.13.5. Investigating Safety Occurrence**

Contains of the procedure and coordination pattern in conducting investigation during an accident related to Aeronautical Telecommunication service

**2.2.14. Chapter 6: Quality Management System****2.2.14.1. Inspection Policy**

Contain about the service provider Inspection policy.

**2.2.14.2. Inspection procedure**

Contain the inspection procedures that are understood, implemented, and maintained at all levels of the organization

**2.2.14.3. Quality Control procedure**

Contain the procedure to quality control indicators, including maintenance records, defect, interference and incident reports, and personnel and customer feedback, are monitored to implement required performance standards and to identify existing problems or potential causes of problems within the system.

**2.2.14.4. Corrective action procedure**

Contain the procedure in accordance with Maintenance and reporting procedure for Aeronautical Telecommunication Facility, Manual number 1.3.3.

**2.2.14.5. Preventive action procedure**

Contain the procedure in accordance with Maintenance and reporting procedure for Aeronautical Telecommunication Facility, Manual number 1.3.3.

END