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AIC - International
08/13
27 August

PROCEDURES

PROCEDURES FOR CHANGES TO PHYSICAL CHARACTERISTICS AT AERODROMES

1. Authority

This advisory circular is issued by the Chairman Of The Board and CEO of the Institute of Civil Aviation of Mozambique (IACM) in pursuance of powers vested in him under Article 31 of Law 21/2009 of 21 September and Article 12 of Resolution 19/2011 of 30 November.

2. Purpose

The purpose of this AIC is to provide guidance to aerodrome operators on the procedures to be used to notify the Institute of Civil Aviation of Mozambique (IACM) of developments on the aerodrome and other changes to the physical Characteristics of an aerodrome. Additionally, it includes guidance to help ensure that changes comply with certification/licensing criteria and are managed safely.

3. References

- MOZCAR part 139
- ICAO Annex 14, Doc 9157, 9184, 9859

4. Legislative Requirements

The Mozambique Civil Aviation Regulations Part 139 (MOZ-CAR Part 139) specifies requirements for physical characteristics of an aerodrome and associated facilities. The Mozambique Civil Aviation Technical Standards Part 139 (MOZ-CATS Part 139) has adopted the ICAO standard requirements for aerodrome facilities. Any changes to the physical characteristics of aerodrome

facilities impact on aerodrome operations and may have significant effect on the conditions of an aerodrome license or certificate issued under Parts III and IV of the MOZ-CAR Part 139.

5. Introduction

Projects that involve changes to the aerodrome physical characteristics fall into 3 categories:

5.1. Development

Where new or upgraded infrastructure is to be provided: Examples include new or extensions to buildings, aerodrome infrastructure (such as taxiways and aprons), visual aids and navigation aids. Developments are classified as major or minor, details of which are provided in Chapter 3.

5.2. Changes

Where existing aerodrome infrastructure or physical characteristics are being changed: for example reconfiguration of stands, changes to the runway or declared distances. Changes include projects that involve removing or amending existing aerodrome certificate/licence variations.

5.3. Maintenance

Where existing infrastructure is being repaired, refurbished or replaced: i.e. to ensure continuance but without changing the characteristics of the piece of infrastructure. Examples are given in Section 9.

6. Aerodrome Certification/Licensing

6.1. The grant of an aerodrome certificate/licence is governed by the Aerodrome regulations, which requires the IACM to grant a certificate/licence in respect of any aerodrome in Mozambique if it is satisfied that the aerodrome is safe for use by aircraft, having regard in particular to the physical characteristics of the aerodrome and of its surroundings. When an aerodrome receives its certificate/licence, it is granted on the basis that it meets aerodrome certification/licensing criteria, unless variations to these criteria have been agreed by the IACM.

6.1.1 An aerodrome certificate/licence condition requires that changes in the physical characteristics of the aerodrome, including the erection of new buildings and alterations to existing buildings or the visual aids, shall not be made without prior approval of the IACM. The purpose of this is to ensure that the IACM is satisfied that changes in the physical characteristics meet licensing criteria and do not present a safety hazard. Failure to notify the IACM of changes may leave the aerodrome vulnerable to costly remedial action or operational restrictions.

6.1.2 Project proposals should comply with the criteria contained in MOZ-CAR Part 139. Additionally, some proposals provide an opportunity to review existing variations to licensing criteria, with the intention of removal, where possible. Where a variation cannot be removed, a supporting hazard analysis should be carried out, taking into account current and foreseeable operations, and the outcome of the analysis acted upon accordingly. However, there may be circumstances where the proposal does not comply with licensing criteria, but would enhance safety. In such cases additional safety assurance will be required to assist the IACM in examining its feasibility.

6.2 Engagement with the IACM

6.2.1 Whenever possible, aerodrome certificate/licence holders should inform the IACM of forthcoming projects and changes in good time prior to the process described in subsequent This AC. This will enable the IACM to identify the level of specialist resources required to meet their objectives, to plan and to manage the work involved. Typically, developments involving navigation aids, instrument flight procedure changes, ATC facilities and aeronautical ground lighting might require a lead-time of 6 months.

6.2.2 Projects that involve changes to the aerodrome's infrastructure will require prior approval and should be submitted to the IACM using the submission process in SUBPART II of MOZ-CAR Part 139.

6.2.3 Projects that involve the construction of new facilities, extensions or enhancements are classed as development, and will also require prior approval from the IACM.

6.2.4 Submissions and other communications should be sent also to the IACM hard copy

6.2.5. The IACM will assess the proposal, identify whether the project is minor or major, using the criteria shown in Section 6 and inform the aerodrome accordingly. When necessary, the IACM will seek involvement of external specialists.

6.2.6. For maintenance projects see SUBPART II of MOZ-CAR Part 139.

6.3 Development Meetings

6.3.1 An Initial Development Meeting (IDM) may be required to brief the IACM on the project when the IACM deems it necessary. Where possible, all aspects of the development should be covered at the IDM and a presentation, given by the aerodrome certificate/licence holder, often proves the most successful way to brief all participants. Notes of the meeting should be produced by the aerodrome certificate/licence holder and agreed by all parties.

6.3.2 Ideally, outline plans and drawings should be made available to the IACM before the IDM, in sufficient time to ensure that the IDM achieves the maximum benefit. Further development meetings can be expected both whilst preparing for and during the development. It may also be necessary for some meetings to take place at the aerodrome.

6.3.3 The IACM will deal directly with the aerodrome certificate/licence holder or his appointed representative who will be expected to attend each meeting, although consultants may also attend.

7. Aerodrome Development Project Charges

7.1 Aerodrome developments are classified as major or minor as described in this AC. In accordance with the IACM AIC on aviation charges, when an application is made to obtain approval from the IACM of a major development project at an aerodrome, the aerodrome shall be charged. The purpose of this is to enable the IACM to recover those costs for projects, which are deemed to be over and above those incurred during normal regulatory oversight.

7.2 A IACM assessment team will evaluate each development proposal in detail and classify it as major or minor depending on the level of regulatory oversight expected to see the project to a satisfactory conclusion. The team will ensure all development proposals are evaluated consistently, will explain the reasons for the decision reached, and may also involve the aerodrome certificate/licence holder in assisting with the evaluation process. The IACM will inform the aerodrome in writing of the outcome of the evaluation process and the rationale for the decision.

7.3 The criteria used to determine whether a development is deemed to be major or minor may include the following, although this list is not exhaustive:

- The complexity of the development;
- The number of site visits required;
- The impact on aerodrome operations (level of disruption to normal operations);
- Changes required to aerodrome operations resulting from the new facility;
- Changes required to the Aerodrome Manual;
- Whether the development would create a new certificate/licence variation that would require detailed evaluation;
- The need for a IACM Flight Lighting Check (for AGL projects);
- The level of internal IACM liaison required – Air Traffic Services, Flight Operations, Airspace/Instrument Flight Procedures

7.4 Typically, the projects listed in Table 1 below are those that may qualify as a major development.

When an application is made to obtain approval from the IACM of a major development project at an aerodrome, the applicant shall pay a charge as may be approved.

Table 1: Developments that might be classed as “major” This list is indicative only and projects may be excluded or included, dependent upon the complexity of the proposal and regulatory oversight required.	
Project	description
New Runway	A development resulting in the construction of a “new” runway (<i>e.g. new construction or the change of an existing grass to hard surface</i>)
Runway Extension	A runway extension resulting in an amendment to declared distances or the provision of extra RESA.
Threshold Relocation (Instrument Status)	A development involving relocation of the instrument runway threshold, or relocation of non-instrument runway threshold in preparation for instrument status.
AGL Installation, Instrument Status Runways	A new lighting installation or upgrade intended to facilitate additional operations (<i>e.g. to accommodate low visibility operations and/or night operations</i>).
New Building/Structures	A proposal involving a new terminal or terminal extension, hangars or any other structure that may affect aircraft operations.
Installation of Aids to Navigation	An installation of ILS or MLS, glide path or associated equipment, radar, or other navigation equipment.
Taxiway Development	A new taxiway or significant change to the existing taxiway system.
Apron Development	A new apron development resulting in a substantial increase in area.
Innovative Development	A proposal not covered by licensing criteria contained in MOZCAR Part 139 Licensing of Aerodromes, that requires the development of safety requirements by the IACM.
New or Replacement Visual Control Tower (VCR)	Introduction of a new or replacement VCR
Any other development which materially affects the basis upon which the aerodrome licence has been granted.	

8. Project Planning and Preparation

8.1 Projects require extensive planning, and the following areas will need to be considered. However, it is stressed that this list is neither mandatory nor exhaustive and it is recognised that these elements may not be available or fully developed at the planning stage:

- Aeronautical Ground Lighting;
- Aerodrome Manual changes;
- Air traffic procedures during and post-development;

- ATC line of sight requirements;
- Bird Hazard implications;
- Building Induced Turbulence;
- Changes to the existing aerodrome operating procedures;
- Changes to Magnetic Field Density as a result of development;
- Emergency Procedures;
- Environmental impact;
- Instrument Approach and Departure Procedures and Minima;
- Project Safety Management Procedures (outline);
- Proposed timescale;
- Revised Low Visibility Procedures
- Removal of certificate/licence variations;
- Revised runway incursion prevention measures;
- Signage;
- Site access plan.

8.2 Whenever a project is proposed, it is essential to establish whether it will result in a change to the established operating procedures at the aerodrome. It is therefore imperative that the management of any change is fully integrated into the aerodrome's safety management system and that the aerodrome operators safety documentation covers this aspect.

8.3 When considering a project it is important that, at an early stage, aerodrome certificate/licence holders undertake a hazard appraisal and risk assessment to identify the potential hazards and associated risks surrounding any proposed changes. The ICAO Safety Management Manual (Doc 9859) provides guidance on hazard and risk assessment.

8.4 The level of detail required should be commensurate to the size and complexity of the project and the aerodrome, as well as to the safety hazard and change presented.

9. Project Submission Process

9.1 Introduction

9.1.1 For development projects and changes a 3-stage process will apply to assist aerodromes and ensure that aerodrome certificate/licence holders meet their obligations under the licensing process. This Section details the information required for each of the 3 stages and the process to be followed.

9.1.2 This process must be used for development projects and changes, but may also be used for significant maintenance projects should the aerodrome certificate/licence holder or the IACM deem it necessary. Additionally, the process and/or elements of it can be used whatever the project type or size as determined within the aerodrome SMS. The documentation submitted may be proportionate to the size of the project. For smaller projects it is acceptable to submit Parts 1 and 2 together.

9.1.3 The three stage process consists of 3 separate parts as follows:

- Part 1: Compliance
- Part 2: Control
- Part 3: Completion

9.2 A compliance (Part 1)

9.2.1 Each development proposal should be accompanied by documentation that provides clear evidence that the proposal conforms to certification/licensing requirements detailed in Aerodromes Regulations and other applicable IACM circulars/orders. It will enable the IACM to assess the proposal as described in Chapter 3 Part 1 and should include:

- Project Overview.
- Notification Form.
- Compliance Matrix (to demonstrate that the project design meets licensing requirements).
- Scaled Drawings.
- An example Notification Form is attached at Appendix 2 and Compliance Matrix at Appendix

9.2.2 When Part 1 has been completed to the satisfaction of the IACM, confirmation that the project is compliant with certification/licensing requirements will be given. However, if any changes are proposed to the design or build, the modified information shall be notified to IACM.

9.3 Control (Part 2)

9.3.1 Following completion and acceptance of development design, the aerodrome certificate/licence holder must demonstrate to the IACM that the project will be managed safely. Accordingly, the IACM will expect aerodrome certificate/licence holders to develop safety assurance documentation that describes how the aerodrome will manage the construction works, and operating procedures, to ensure that aerodrome operations can continue safely during the project. Aerodrome certificate/licence holders should develop and implement a formal system for the strict control, safety management, and safeguarding and safety coordination of all airside works. Safety Assurance Documentation can take many forms but should be proportionate to the size of the project.

9.3.2 The aerodrome certificate/licence holder must ensure that systems for control and safe management extend to contractors working at the aerodrome.

9.3.3 All members of the project management team should have clearly defined responsibilities and accountabilities in the project programme. During construction on an aerodrome, safety levels and standards of conduct must be maintained. These are essential to promoting safety, preventing accidents and meeting the aerodrome certificate/licence requirements.

9.3.4 It is important that accurate, up to date information is made available to all stakeholders involved in the project, including the IACM, both as part of the project planning and during the work itself. Therefore, the safety assurance and project management documentation may include any or all of the following information:

- A clear statement of the supervision structure for the safety management and monitoring of works, including contact details of key duty personnel concerned, for both project and aerodrome management. This should include clear responsibilities, including the person with overall accountability for the development;
- Airfield Operating Procedures during the development, including contingencies such as low visibility procedures;
- Arrangements for liaison meetings/briefings between the aerodrome management and the contractors;
- Appropriate plans and diagrams relating to the contraction process;
- Control of contractors;
- Day and night start, control and completion of work procedures;

- Communications procedures between the aerodrome operating units (e.g. ATC, Airfield Operations) and construction teams;
- Emergency procedures;
- Method of working;
- Plans of site and diagrams of works;
- Points of contact - aerodrome management and contractor, including identification of manager with overall responsibility;
- Site access plan;
- Site safeguarding and marking;
- Weather minima that will affect the works;
- The general layout of the aerodrome including airside access points;
- The location and limits of works areas;
- The specific security access points to be used and the location and marking of the access routes to be used to reach airside sites;
- Methods of control and access for works sites within the Apron and Manoeuvring Area including arrangements for crossing taxiways and runways (if applicable);
- The methods and equipment to be used for protecting, marking and lighting the boundaries of works sites and for protecting normal aerodrome operations in the vicinity of the site. Also the requirement to control site lighting to prevent distraction of aircraft crews, drivers and ATC;
- The strict timing for the setting up of work sites, the start of work, daily permitted working hours at the site and procedures to be followed for starting and stopping work;
- Aerodrome emergency procedures, including response times during periods of WIP, should not be compromised. This extends to ensuring compensatory arrangements are in place to cover depletions of fire main or fire hydrants when the fire main has been deactivated due to work in progress;
- Vehicle and equipment requirements, operating rules and the requirements for staff discipline;
- Calculating and communicating amended runway declared distances;
- Maintaining appropriate pavement friction characteristics;
- Information on special safety requirements for aircraft operations in the vicinity of works and the methods of control available on the Manoeuvring Area, including radio telecommunication procedures if appropriate;
- Arrangements for the special control of 'hot works';
- Requirements for the operation of cranes and other tall structures;
- Arrangements for the receipt and movement of heavy or bulky loads;
- Requirements for vehicle and area cleanliness, also the implications of Foreign Object Debris (FOD) and loose material hazards for aircraft operations;
- Arrangements for the disposal of waste;

- Information on the safety implications for the site and staff of special aircraft hazards including blast, vibration, fumes and noise;
- Information on the effects of strong winds at the aerodrome;
- Site safety, including personnel protection.

9.3.5 Guidance on Safety at Aerodromes during Construction Works is given in Advisory Circular No IACM-AC-AGA008.

9.3.6 Aerodrome certificate/licence holders should ensure that all stakeholders are notified of aerodrome projects in a timely manner. These communications should continue through the project and may include Safety Instructions, Aerodrome Information Circulars, NOTAMs or other local procedures.

9.3.7 Before contractors start work at any aerodrome/airside location, aerodrome certificate/licence holders should provide a comprehensive safety briefing including the results of ongoing hazard analyses, to ensure all information needed to achieve the safe completion of any works or activity is clearly understood and agreed. Additionally, aerodrome certificate/licence holders should hold regular progress meetings to ensure project safety and operational objectives continue to be met. There should be close monitoring of the safety of aerodrome/airside operations while the project work is in progress and, when reaching decisions, project priorities should be subordinate to the maintenance of safety standards.

9.3.8 When the IACM has been assured that the aerodrome can continue to operate safely during the project, approval will be given to commence work.

9.4 Completion (Part 3)

9.4.1 Transition into service is a critical phase of the project and can present complex challenges. Careful planning and robust procedures need to be established to ensure that the change is introduced safely and efficiently. This may be demonstrated by undertaking a process of operational readiness, which may include simulations, testing, audits or sample inspections, involving appropriate key stakeholders.

9.4.2. On completion of the development, but prior to operational use, the aerodrome certificate/licence holder should confirm to the IACM that the project meets the agreed design criteria and is fit for purpose. The IACM will confirm that the new facility is accepted and may be brought into operation.

9.4.3 Safety performance monitoring should be a key process of an aerodrome's SMS, to ensure that the introduction of the new facility continues to maintain safety standards at the aerodrome.

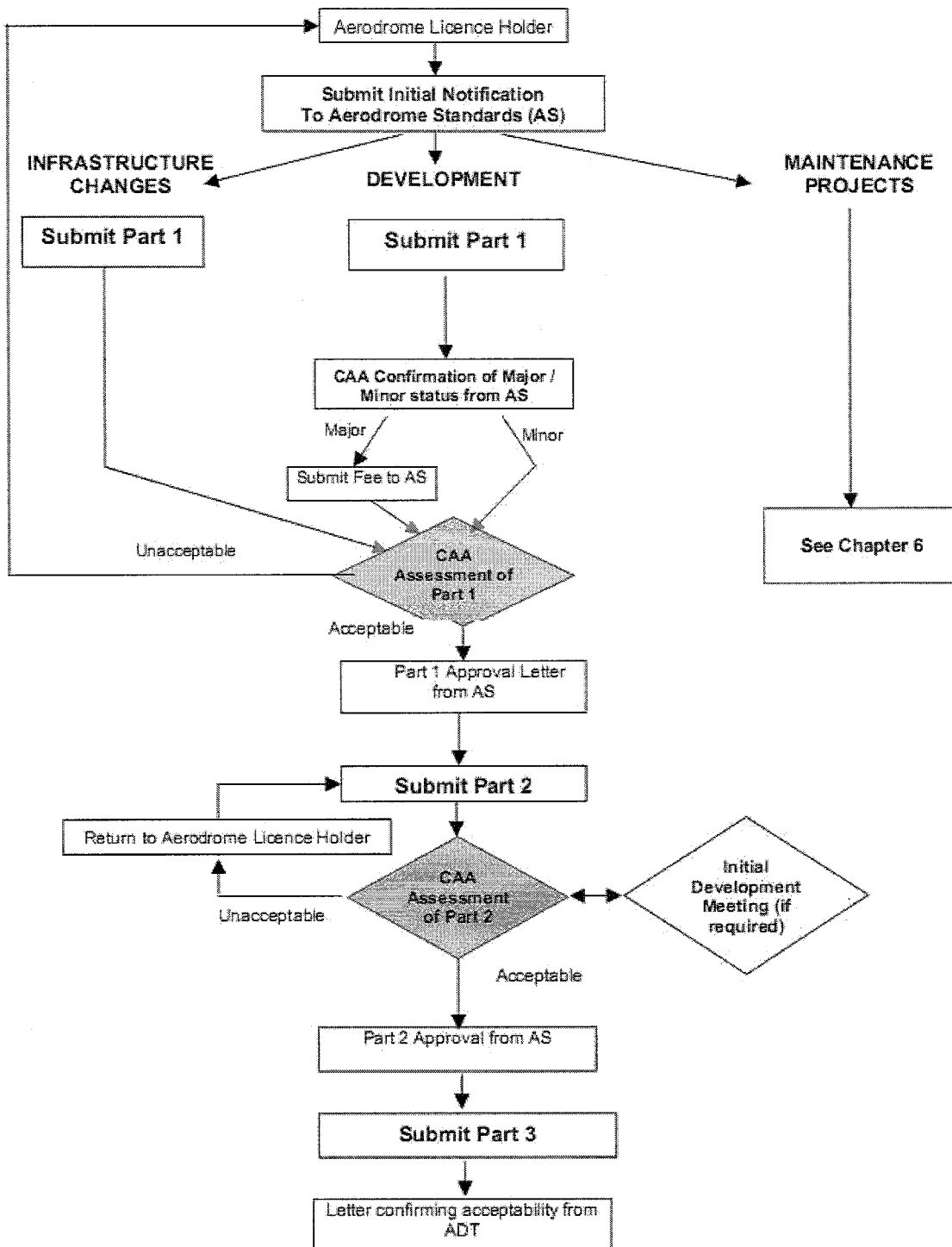
10. Maintenance Projects

- 10.1** Maintenance projects can vary enormously in size. Much maintenance work involves short-term minor works, such as painting, planned periodic replacements (e.g. light cleaning in accordance with a preventative maintenance schedule), refinements to systems/infrastructure and small repairs to aerodrome infrastructure, which can be completed in short timescales and with limited disruption. Smaller planned or routine maintenance works need not be notified to the IACM, although the Aerodrome Inspector would expect to be kept informed of some of these activities.
- 10.2** However, maintenance may also involve large, longer-term projects (weeks/months), which may involve many key stakeholders, and which may have significant impacts on operations and so test the aerodrome's safety management system. Examples of major maintenance would include runway rehabilitation and replacement of aerodrome ground lighting systems. Major maintenance projects such as these should be notified directly to the Aerodrome Inspector, who will advise on the approval required and maintain regulatory oversight of the project.
- 10.3** In certain circumstances, however, the Inspector might conclude that the project qualifies for the submission process described in this document. In such cases the guidance in preceding chapters should be followed.

APPENDIX 1

SUBMISSION PROCEDURE FLOWCHART

REPLACE ADT WITH IACM



APPENDIX 2

NOTIFICATION OF CHANGES TO THE PHYSICAL CHARACTERISTICS

This form shall be signed and submitted as instructed.

IMPORTANT – PLEASE READ THE FOLLOWING CAREFULLY BEFORE COMPLETING THE FORM

Dear Applicant

An aerodrome certificate/licence condition states that any change in the physical characteristics of an aerodrome, including the erection of new buildings and alterations to existing buildings or to visual aids, shall not be made without prior approval of the IACM.

In order to consider your proposal fully, please complete this questionnaire and return to the IACM.

If you have difficulty completing the form, please do not hesitate to contact us at Institute of Civil Aviation of Mozambique

Yours sincerely
IACM

APPENDIX 2 (QUESTIONNAIRE)

NOTIFICATION OF CHANGES TO THE PHYSICAL CHARACTERISTICS

1. AERODROME DETAILS

Aerodrome Name:

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Aerodrome Address:

.....

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Accountable Manager:

Name:.....

Tel:.....

Email:

Project Manager:

Name:.....
.....

Tel:.....
.....

Email:
.....

2. PROJECT DETAILS

Title of
Project:.....
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Reason for Change:
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Brief Description:
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Planned Commencement Date:
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Planned Duration of Work:
.....
.....

Estimated Completion Date:
.....
.....

Aerodrome closed during Work in Progress? YES / NO (Delete as applicable)

Hours of Work:

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3. SUPPORTING DOCUMENTS ATTACHED

List of Enclosed Documents:

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4. IMPACT ON OBSTACLE LIMITATION SURFACES (OLS)

WGS 84 coordinates in degrees, minutes, seconds of Structure:

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Ground height at site location:

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Maximum height of Structure:

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Height of relevant OLS at Site Location:

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5. STRIP CLEARANCES

Structure(s) outside Runway & Taxiway Strip: YES / NO (Delete as applicable)

Structure(s) outside Runway Cleared & Graded Area: YES / NO (Delete as applicable)

If 'No', please provide details below:

.....
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.....
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.....
.....

6. FOR RUNWAY EXTENSIONS, DETAILS OF DECLARED DISTANCES

6.1 TODA: TORA: LDA: ASDA:

7. RUNWAY STATUS

7.1 Existing: Non-Instrument/Instrument* (Delete as applicable)

Proposed: Non-Instrument/Instrument* (Delete as applicable)

(* For example, ILS / MLS)

APPENDIX 3

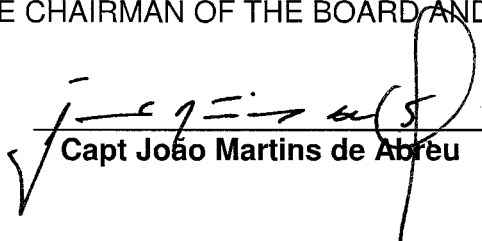
AERODROME COMPLIANCE MATRIX

AERODROME COMPLIANCE MATRIX	
NAME OF AERODROME.....	PROPOSED START DATE.....
PROPOSED CHANGE.....	
COMPLETION DATE.....	

DESCRIPTION	CAP Reference	COMPLIANCE STATEMENT <i>(include reference documents where appropriate)</i>	PROJECT MANAGER

INSTITUTE OF CIVIL AVIATION OF MOZAMBIQUE

THE CHAIRMAN OF THE BOARD AND CEO


Capt João Martins de Abreu