



สำนักงานการบินพลเรือนแห่งประเทศไทย  
The Civil Aviation Authority of Thailand

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# Guidance Material for Establishment of Letter of Agreement between Air Traffic Control Unit and Aerodrome Operator

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CAAT-GM-ANS-AGREE

Revision: 01

Date: 29 December 2021

Approved by

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Suttipong Kongpool

Director General of the Civil Aviation Authority of Thailand

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## Table of Contents

Table of Contents .....	1
Abbreviations .....	2
1. Introduction.....	3
1.1 Background.....	3
1.2 Purpose.....	3
1.3 Applicability .....	4
1.4 Reference.....	4
1.5 Editorial Practices .....	4
1.6 Definitions.....	5
2. Guidelines on the Use of Common Requirement LoA .....	6
2.1 General .....	6
3. Common Requirement for Air Traffic Control Unit and Aerodrome Operator .....	9
3.1 Area of Responsibility Including the Maintenance of the Area of Responsibility .....	9
3.2 The Coordination or Reporting of the Information on Aerodrome Conditions of the Movement Area, Including the Existence of Temporary Hazards, and the Operational Status of Any Associated Facilities at the Aerodromes).....	9
3.3 Safety Measures .....	10
4. Specific Requirement for Air Traffic Control Unit and Aerodrome Operator.....	12
4.1 Security Measures - Control of Access of Persons and Vehicles.....	12
4.2 Aerodrome Emergency Planning .....	12
4.3 Rescue and Firefighting (Changes in Level of Protection Normally Available at Aerodrome).....	13
4.4 Apron Management Services.....	13
4.5 Control of Persons and Vehicles at Aerodromes.....	15
4.6 Lighting Systems .....	16
4.7 Inspection and Reporting .....	17
4.8 Reporting Procedure .....	18
4.9 Coordination for Low Visibility Operations.....	18
4.10 Coordination for the Aerodrome Manual.....	20
4.11 Aerodrome Operational Services, Equipment and Installations .....	20
4.12 Reporting of Interference with the Aircraft by Firearms, Fireworks, Flying Kites, Laser Illumination, High Powered Lights, Lasers, Remotely Piloted Aircraft Systems, Model Aircraft or by Similar Means.....	21

## Abbreviations

Abbreviations	Meaning
A-SMGCS	<i>Advanced Surface Movement Guidance and Control Systems</i>
AD	<i>Aerodrome</i>
AIP	<i>Aeronautical Information Publication</i>
AIREP	<i>Air-report</i>
ATC	<i>Air Traffic Control</i>
ATIS	<i>Automatic Terminal Information Service</i>
ATS	<i>Air Traffic Service</i>
ATSP	<i>Air Traffic Service Provider</i>
CAAT	<i>The Civil Aviation Authority of Thailand</i>
LoA	<i>Letters of Agreement</i>
LVO	<i>Low Visibility Operation</i>
LVP	<i>Low Visibility Procedure</i>
NOTAM	<i>Notice to Airmen</i>
R2CAAT	<i>Requirement of The Civil Aviation Authority of Thailand</i>
R3CAAT	<i>Rule of The Civil Aviation Authority of Thailand</i>
RCAAT	<i>Regulation of The Civil Aviation Authority of Thailand</i>
RCC	<i>Rescue Coordination Centre</i>
RFF	<i>Rescue and Firefighting</i>
RTF	<i>Radiotelephony</i>
RVR	<i>Runway Visual Range</i>
RWYCC	<i>Runway Condition Code</i>
SMGCS	<i>Surface Movement Guidance and Control Systems</i>
SMR	<i>Surface Movement Radar</i>
SMS	<i>Safety Management System</i>
SOP	<i>Standard Operating Procedure</i>
TWR	<i>Air Traffic Control Tower</i>

## 1. Introduction

### 1.1 Background

Thailand, as a contracting State to the Convention of International Civil Aviation, has an obligation to the international community to ensure that the Civil Aviation activities under its jurisdiction comply with the Standards and Recommended Practices (SARPs) contained in the Annexes to the Convention.

In accordance with the Air Navigation Act B.E.2497 (Amendment No. 14) B.E.2562, the Civil Aviation Authority of Thailand (hereinafter 'CAAT') has been appointed to carry out tasks aimed at ensuring the safe and efficient operation of Service Providers in Thailand. More specifically, the Requirement of the Civil Aviation Authority of Thailand No. 25 (R2CAAT No. 25) on the Application for and Issuance of Air Navigation Services Certificate, Air Navigation Service unit are required to obtain Certification in order to provide air navigation services in Thailand. The ATSP shall establish the written agreement with other air navigation services providers and relevant units to ensure that any risks effect to the safety in aviation have been identified, evaluate, manage and prevent as appropriate which are able to provide the service in line with the scope specified in the air navigation service certificate. The requirement of agreement between Air Traffic Control unit and aerodrome operator is The Rule of the Civil Aviation Authority of Thailand (R3CAAT) on Guidance for Establishment of Letter of Agreement between Air Traffic Control unit and Aerodrome Operator.

This Guidance Material contains guidelines concerning Air Traffic Control unit to meet the requirements and standards set forth in R2CAAT No.25, Manual of standard (CAAT-ANS-MOSATS) and R3CAAT-Guidance for Establishment of Letter of Agreement between Air Traffic Control unit and Aerodrome Operator.

The Guidance Material, is not legal advice, is not a substitute for individual advice, and may not be applicable to everyone's situation.

Amendments to this Guidance Material will be notified through [www.caat.or.th](http://www.caat.or.th).

### 1.2 Purpose

The Guidance Material has been developed to assist the Air Traffic Control unit and Aerodrome Operator in drafting their operational Letters of Agreement (LoA) to maintain their own safety of operations.

Although the Guidance Material are intended to be as encompassing as possible, it should be noted that very specific local requirements, remain the subject to negotiation and agreement of the units concerned. However, it is expected that such agreements will be performed along the guidelines provided by this Guidance Material.

It should be clearly understood that this document has no legal status. It is intended to provide recommendations and guidance to illustrate a means but not necessarily the only means of complying with the regulations, or to explain certain regulatory requirements by providing interpretative and explanatory material applicability (is subjected to).

### 1.3 Applicability

This Guidance Material is applicable to the applicants for the provision of Air Traffic Service whose certification corresponds to the CAAT in accordance with section 15 chapter 1/2 of the Air Navigation Act B.E. 2497 (Amendment No. 14) B.E.2562 and the applicants for the provision of Aerodrome, Requirement of Civil Aviation Authority of Thailand No. 25 (R2CAAT No. 25) on the Application for and Issuance of Air Navigation Services Certificate, Rule of CAAT on Manual of Standard ATM:ATS B.E.2563 with Manual of Standard Air Traffic Management Services: Air Traffic Services (CAAT-ANS-MOSATS), Requirement of The Civil Aviation Authority of Thailand No.14 on Aerodrome Standards B.E. 2562, Rule of The Civil Aviation Authority of Thailand on Standards for Public Aerodrome Manuals B.E.2562, Rule of Department of Civil Aviation on Standards of Aerodrome Operating Procedures B.E. 2557 and The Rule of CAAT on Guidance for Establishment of Letter of Agreement between Air Traffic Control unit and Aerodrome Operator.

### 1.4 Reference

- 1.4.1 Civil Aviation Authority of Thailand Emergency Decree B.E.2558
  - Chapter 1, Part 1, Section 7 and 8, CAAT's functions;
  - Chapter 1, Part 2, Section 37, CAAT's oversight obligations;
- 1.4.2 Air Navigation Act B.E. 2497 Amendment No. 14 B.E.2562 Chapter 1/1 and Chapter 1/2;
- 1.4.3 Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards B.E. 2562 (R2CAAT No. 14);
- 1.4.4 Requirement of CAAT No.25 on the Application for and Issuance of Air Navigation Services Certificate (R2CAAT No. 25);
- 1.4.5 Notification of CAAT on the Specification of the Juristic Person, Validity and Other Duties of the Air Navigation Service Certification Holder;
- 1.4.6 Rule of CAAT on Manual of Standard ATM: ATS B.E.2563 with Manual of Standard Air Traffic Management Services: Air Traffic Services (CAAT-ANS-MOSATS);
- 1.4.7 Rule of CAAT on Guidance for Establishment of Letter of Agreement between Air Traffic Control unit and Aerodrome Operator B.E. 2562
- 1.4.8 Rule of The Civil Aviation Authority of Thailand on Standards for Public Aerodrome Manuals B.E.2562
- 1.4.9 Rule of Department of Civil Aviation on Standards of Aerodrome Operating Procedures B.E. 2557

### 1.5 Editorial Practices

In order to classify the strength of the operational requirements and principles laid down in the agreement, the following conventions are used:

- The word "shall" as used within the requirements indicate the compliance is compulsory
- The word "should" means that it is strongly advisable that an instruction is carried out;  
it is recommended or discretionary
- The word "may" denotes an option
- The word "will" denotes a statement of intent

## 1.6 Definitions

<b>Term</b>	<b>Definition</b>
<i>Aerodrome</i>	A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
<i>Aerodrome Control Tower</i>	A unit established to provide air traffic control service to aerodrome traffic.
<i>Air Traffic Control unit</i>	A generic term meaning variously, area control center, approach Control unit or aerodrome control tower.
<i>Air Traffic Service</i>	A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).
<i>Manoeuvring Area</i>	That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons
<i>Movement Area</i>	That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).
<i>Rescue Coordination Centre</i>	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.

## 2. Guidelines on the Use of Common Requirement LoA

The aim of LoA is to:

- Establish a framework for key operational service standards and performance measurement to meet users' needs.
- Deliver consistent levels of service and promote continuous improvement.
- Establish a clear link between Air Traffic Control Unit and Aerodrome Operator.

### 2.1 General

When drafting a Letter of Agreement between Air Traffic Control unit and Aerodrome Operator, the Rule of CAAT on Guidance for Establishment of Letter of Agreement between Air Traffic Control Unit and Aerodrome Operator B.E. 2562 shall be used to the extent possible to achieve a high level of uniformity in respect of operational requirements. In order to discuss the coordination between Air Traffic Control Unit and Aerodrome Operator, it is necessary to provide adequate background information concerning the organization and information to be provided.

Normally, a LoA should be signed by the head or authorised representatives of the Air Traffic Control Unit and Aerodrome Operator concerned.

When deemed necessary by the signatories, the content of the present LoA should be reviewed at regular intervals to assess the need for revisions of the LoA.

LoA shall be supported by a standard operating procedure (SOP) to provide guidance to technical personnel on how to accomplish their specific functions and activities. Air Traffic Control Unit and Aerodrome Operator shall ensure that functions and activities are carried out in an effective and standardized manner, and the SOP is customized as needed. Procedures may be supplemented, as appropriate, by checklists and/or test methods. The checklist should focus on specific aspects related to verification and each result or document to be obtained.

In general, procedures for a specific task or activity should address the following question:

Who does, what, how, when and in coordination with whom?

*NOTE. — This list is indicative and not exhaustive.*

*WHO:*

- a) Define, as clearly as possible, the entities (e.g. department or job position concerned) in charge of each task.*
- b) Define who has the authority to decide, particularly with respect to enforcement aspects.*
- c) Define who has the authority to approve the results, reports or to sign letters, etc.*



**WHAT:**

- a) Define each step of the process and each task to be performed.
- b) Indicate the expected result (report, etc.).
- c) When applicable, indicate (and attach to the procedure) the template to be used or the format of the result.
- d) As necessary, establish the link with other procedures.

**HOW:**

- a) Provide the necessary practical details and methodology, as applicable, for each task.
- b) Indicate the sequence of actions.
- c) Indicate the type of documents to be reviewed and how.
- d) Describe ways and means to ensure the traceability of the activity (including the documents, often copies thereof, to be retained).
- e) Refer to applicable checklists or forms used for the conduct of the activity at the points in the procedure where they are to be used.

**WHEN:**

- a) If the procedure is part of a process, the step of the process at which the said procedure takes place.
- b) For repetitive action, the periodicity and the maximum interval between two actions.
- c) The maximum time period for completion of each task or the deadline for completion of each step.

**IN COORDINATION WITH WHOM** — If external entities participate in the activity, they need to be identified as clearly as possible.

**Structure of the LoA:**

2.1.1 For quick and easy reference to specific part in the LoA, the following shall apply:

- a) The LoA shall have separate page numberings.
- b) Revisions shall result in the revision of the entire relevant part.
- c) Each page of the LoA shall include the respective effective dates.

2.1.2 LoA Format should be followed:

- a) General
  - i. The purpose
  - ii. The subject of the agreement
  - iii. The Definitions and Abbreviation
- b) Areas and Delegation of the Responsibility
- c) Common and Specific Requirements
- d) List of local procedures (e.g. Aerodrome Emergency plan, Aerodrome Manual, etc.)
- e) Means of Communications
  - i. Equipment
  - ii. Fall-Back Procedures for Coordination, in case of failure of the direct lines or radio telephone, coordination may be effected via public telephone
  - iii. The LoA should ensure that contractors have made available a point-of-contact including outside normal working hours.

f) Revisions and Deviations

- i. Any change to this LoA, including its cancellation or replacement, requires the consent both of the Air Traffic Control Unit and Aerodrome Operator concerned. This applies to the substance of the change as well as to its date of applicability. Any change shall be made either in the context of a meeting between the two units with acknowledgement by all signatories
- ii. The revision of the present LoA, requires the mutual written consent of the signatories.
- iii. When necessary, the representative of Air Traffic Control Unit and Aerodrome Operator may introduce, by mutual agreement and for a specified time period, temporary modifications to the procedures laid down in the Appendix to the present LoA.
- iv. In the event any of the parties deems it advisable to review it before that period, a meeting will be held between the parties to analyze the changes and then, if agreed, to include them in a new LoA to be signed by both parties that shall supersede the existing one.
- v. LoA and operations letters shall be reviewed frequently and amended or replaced as necessary to ensure conformity with current operational requirements, directives and policy. Amendments should be prepared and processed in the same manner as the original agreement. Each agreement and all amendments thereto should be retained for a specified period of time after their cancellation.
- vi. Coordinate revisions to a LoA in the same manner and degree as for the original LoA.

g) Cancellation

- i. Agreements that are no longer applicable should be cancelled and all agencies that were provided copies of an agreement should be informed of its cancellation.
- ii. Cancellation of the present LoA by mutual written agreement of the respective Approving Authorities may take place at any time.

h) Interpretation and settlement of disputes

- i. Should any doubt or diverging views arise regarding the interpretation of any provision of the present LoA or in case of a dispute regarding its application, the parties shall endeavor to reach a solution accepted.
- ii. Should no agreement be reached, each of the parties shall refer to a higher level of regulation, to which the dispute shall be submitted for settlement.

i) Validity

### **3. Common Requirement for Air Traffic Control Unit and Aerodrome Operator**

#### **3.1 Area of Responsibility Including the Maintenance of the Area of Responsibility**

3.1.1 The responsibilities and hours of operation of the Air Traffic Control unit and Aerodrome Operator are clearly described.

3.1.2 The LoA shall clearly describe responsibilities and procedure of maintenance of each area (including emergency maintenance), repair and service instructions, troubleshooting, inspection procedures of facilities and installations.

3.1.3 When so doing, those responsible to draft such agreements should ensure that only the relevant provisions are addressed in the LoA. Reference shall be made to the applicable AIP(s).

#### **3.2 The Coordination or Reporting of the Information on Aerodrome Conditions of the Movement Area, Including the Existence of Temporary Hazards, and the Operational Status of Any Associated Facilities at the Aerodrome(s)**

3.2.1 LoA should be place the procedures for the day-to-day coordination (day- and night-time) between the aerodrome operator and the ATC unit, including wildlife management, airside work interaction, etc. as appropriate.

3.2.2 Information on the condition of the movement area and the operational status of related facilities, aerodrome operator shall be provided the Air Traffic Control Units, to enable those units to provide the necessary information to arriving and departing aircraft. The information shall be kept up to date and changes in conditions reported without delay.

3.2.3 The condition of the movement area and the operational status of related facilities, Aerodrome operator shall be monitored, and reports on matters of operational significance affecting aircraft and aerodrome operations shall be provided in order to take appropriate action.

3.2.4 Essential information on aerodrome conditions is information necessary to safety in the operation of aircraft, which pertains to the movement area or any facilities usually associated therewith. For example, construction work on a taxi strip not connected to the runway-in-use would not be essential information to any aircraft except one that might be taxied in the vicinity of the construction work. As another example, if all traffic must be confined to runways, that fact should be considered as essential aerodrome information to any aircraft not familiar with the aerodrome.

3.2.5 Essential information on aerodrome conditions shall include information relating to the following:

- a) construction or maintenance work on, or immediately adjacent to the movement area;
- b) rough or broken surfaces on a runway, a taxiway or an apron, whether marked or not;
- c) water, snow, slush, ice or frost on a runway, a taxiway or an apron
- d) anti-icing or de-icing liquid chemicals or other contaminant on a runway, taxiway or apron
- e) snow banks or drifts adjacent to a runway, a taxiway or an apron;
- f) other temporary hazards, including parked aircraft and birds on the ground or in the air;
- g) failure or irregular operation of part or all of the aerodrome lighting system;
- h) any other pertinent information

3.2.6 When receiving special air-reports by voice communications concerning braking action encountered that is not as good as that reported, Air Traffic Control Unit shall forward them without delay to the appropriate aerodrome operator. This is a prerequisite for using the AIREP for downgrading purposes when assessing the runway condition code (RWYCC).

3.2.7 Any significant change in surface conditions that they have observed or have been provided knowledge of, including a pilot reported (PIREP) braking action of GOOD, GOOD TO MEDIUM, MEDIUM, MEDIUM TO POOR, POOR and LESS THAN POOR. When receiving an AIREP, Air Traffic Control Unit should consider that these terms rarely apply to the full length of the runway and are limited to the specific sections of the runway surface in which sufficient wheel braking is applied. As AIREPs are subjective and contaminated runways may affect the performance of different aeroplane types in different ways, the reported braking action may not be directly transferrable to another aeroplane.

*NOTE. – Runway braking action as the following specifications apply*

<i>Good</i>	<i>Braking deceleration is normal for the wheel braking effort applied and directional control is normal.</i>
<i>Good to medium</i>	<i>Braking deceleration or directional control is between Good and Medium.</i>
<i>Medium</i>	<i>Braking deceleration is noticeably reduced for the wheel braking effort applied or directional control is noticeably reduced.</i>
<i>Medium to poor</i>	<i>Braking deceleration or directional control is between Medium and Poor.</i>
<i>Poor</i>	<i>Braking deceleration is significantly reduced for the wheel braking effort applied or directional control is significantly reduced.</i>
<i>Less than poor</i>	<i>Braking deceleration is minimal to non-existent for the wheel braking effort applied or directional control is uncertain.</i>

3.2.8 LoA should be place the procedures for initiating a NOTAM declaring the aerodrome closed in the event of failure of facilities, installations and equipment enabling and supporting the Air Traffic Control Unit.

### **3.3 Safety Measures**

3.3.1 Aerodrome operator shall coordinate with Air Traffic Control Unit to ensure the safety of operations and should be place the procedures for the participation of ATS personnel in the aerodrome's safety committees, including the Local Runway Safety Team, and the implementation of the local safety program, including joint training and aerodrome familiarisation with other relevant personnel.

3.3.2 The Aerodrome Operator should ensure Air Traffic Control Unit comply with the safety requirements of the Aerodrome Operator. The aerodrome operator monitors such compliance.

### **Runway Safety**

3.3.3 Runway safety is a key priority for Aerodrome Operators, Aircraft Operators, and Air Traffic Services Provider. The prevention of both runway incursions and excursions should be an important part of their program and activities for improving runway safety. The Air Traffic Control Unit and Aerodrome Operator cannot solely bring about improvements or positively manage runway safety without the coordination and cooperation of other stakeholders.

3.3.4 The establishment of a runway safety team at an aerodrome, the identification of hazards related to runway safety, the development and implementation of action plans, collection of data and the promulgation of safety information.

3.3.5 Information that could enhance runway safety, including identified hot spots and specific local procedures shall be communicated to the relevant users.

*NOTE. – The Manual on the Prevention of Runway Incursion (Doc 9870) presents the Establishing a Runway Incursion Prevention Programme.*

### **SMS Interface**

3.3.6 LoA should describe on interfaces in relation to its business activities. The identification of these external interfaces should be detailed in the system description that sets out the scope of the SMS.

3.3.7 The Interface safety impact assessment is also important to recognize that each organization involved is responsible for identifying and managing any identified hazards that affect its organization.

3.3.8 Air Traffic Control Unit should concentrate on interfaces in relation to its business activities. The identification of these interfaces should be detailed in the system description that sets out the scope of the SMS and should include internal and external interfaces.

3.3.9 Air Traffic Control Unit could review the different organizations it interacts with to identify any SMS interfaces. The objective of review for identify any SMS interfaces is to produce a comprehensive list of all interfaces. There may be interfaces where there are no formal agreements in place, such as with the power supply or building maintenance companies.

3.3.10 Air Traffic Control Unit and Aerodrome Operator should also identify hazards related to their safety management interfaces. This should, where possible, be carried out as a joint exercise with the interfacing organizations. The hazard identification should consider the operational environment and the various organizational capabilities (people, processes, technologies) which could contribute to the safe delivery of the service or product's availability, functionality or performance.

*NOTE. – The Safety Management Manual (Doc 9859) presents the SMS interfaces.*

## 4. Specific Requirement for Air Traffic Control Unit and Aerodrome Operator

### 4.1 Security Measures - Control of Access of Persons and Vehicles

4.1.1 Coordination between Aerodrome Operator and Air Traffic Control Unit shall designated security measures, to ensure safe aircraft operations.

4.1.2 Air Traffic Control Unit are an integral part of an aerodrome's operation; their security measure shall be coordinated with that of aerodromes.

4.1.3 Control of access to the aerodrome and its operational areas, including the location of notice boards, and the control of vehicles in the operational areas.

4.1.4 LoA should be place the procedures for safeguarding such facilities, installations and equipment against acts of unlawful interference.

### 4.2 Aerodrome Emergency Planning

4.2.1 LoA shall clearly describe the emergency situation measures, procedures and related local procedures as Aerodrome Emergency Plan.

4.2.2 The Aerodrome Emergency Plan shall provide for the coordination of the actions to be taken in an emergency occurring at an aerodrome or in its vicinity.

*NOTE 1. — Examples of emergencies are: aircraft emergencies, sabotage including bomb threats, unlawfully seized aircraft, dangerous goods occurrences, building fires, natural disaster, public health emergencies, Disabled aircraft removal, Towing aircraft and Fuel spill/Fuel leak.*

*NOTE 2. — Examples of public health emergencies are increased risk of travellers or cargo spreading a serious communicable disease internationally through air transport and severe outbreak of a communicable disease potentially affecting a large proportion of aerodrome staff.*

4.2.3 When an occurrence of unlawful interference with an aircraft takes place or is suspected, Air Traffic Control unit immediately and exchange necessary information with the Aerodrome Operator or its designated representative.

4.2.4 The aerodrome emergency plan shall coordinate the response or participation of Air Traffic Control unit which, could be of assistance in responding to an emergency.

4.2.5 The LoA shall clearly describe the communication and alerting systems. Adequate communication systems linking the command post and the emergency operations centre with each other and with the participating agencies should be provided in accordance with the plan and consistent with the particular requirements of the aerodrome.

4.2.6 The RFF vehicles shall be provided with communication equipment capable of communicating directly with an aircraft in an emergency situation using an aeronautical radio frequency. The aeronautical radio frequency permits the RFF service and the aircraft to communicate with each other directly allowing the RFF crew to issue critical information regarding the exact nature of, and the hazards associated with, an emergency in progress along with recommendations for actions. Where provided, the aeronautical radio frequency may be selected by air traffic control and notified to the aircraft and the RFF service. The requirements and responsibilities for the utilization of a radio frequency between the RFF service and the flight crew of an aircraft in an emergency situation should be detailed in a procedure agreed to between the air traffic services and the airport operator.

4.2.7 Procedures concerning the alerting of the rescue and firefighting services shall be contained. Such instructions shall specify the type of information to be provided to the rescue and firefighting services, including type of aircraft and type of emergency and, when available, number of persons on board, and any dangerous goods carried on the aircraft.

4.2.8 Additionally, the aerodrome emergency plan may specify that Air Traffic Control Unit should initiate the calling of the local fire departments and appropriate organizations in accordance with the procedures laid down in the plan. The initial call should provide the grid map reference, rendezvous point and, where necessary, the aerodrome entrances to be used.

4.2.9 Coordinated instructions should be drawn up detailing the responsibilities and the action to be taken in dealing with emergencies.

4.2.10 The telephone/telex number(s) of the office of the aerodrome coordinator of operations any case shall be made available.

4.2.11 LoA shall contain periodic testing of the adequacy of the plan and for reviewing the results in order to improve its effectiveness.

4.2.12 An isolated aircraft parking position shall be designated or the Air Traffic Control Unit shall be advised of an area or areas suitable for the parking of an aircraft which is known or believed to be the subject of unlawful interference, or which for other reasons needs isolation from normal aerodrome activities.

4.2.13 A grid map of the aerodrome and its immediate vicinity shall be provided for Air Traffic Control Unit. This map should be conspicuously posted in the Air Traffic Control Unit required to respond to an aircraft accident or incident. Copies should also be distributed to public protective agencies as desirable.

#### **4.3 Rescue and Firefighting (Changes in Level of Protection Normally Available at Aerodrome)**

4.3.1 LoA shall describe the coordination between the rescue and firefighting service at an aerodrome and ATC unit for assistance in dealing with an aircraft accident.

4.3.2 Information concerning the level of protection provided at an aerodrome for aircraft rescue and firefighting purposes shall be made available.

4.3.3 Changes in the level of protection normally available at an aerodrome for rescue and firefighting shall be notified to the appropriate Air Traffic Control unit and Aeronautical Information Services Units to enable those units to provide the necessary information to arriving and departing aircraft. When such a change has been corrected, the above units shall be advised accordingly.

#### **4.4 Apron Management Services**

4.4.1 The Arrangements between Air Traffic Control unit, the Aerodrome Operator and the Apron Management unit shall be provided.

4.4.2 If a special agency performs apron management service it must, however, be ensured that specific agreements are concluded between the ATS unit in question and the aerodrome operator which define, in detail, the respective areas of responsibility on the aerodrome, as well as the procedures to be employed for serving ground traffic.

4.4.3 The responsibilities of the Air Traffic Control unit and Aerodrome Operator in the apron are clearly described. An apron management service shall be provided with radiotelephony communications facilities.

*NOTE. —When the Air Traffic Control Unit does not participate in the apron management service, procedures should be established to facilitate the orderly transition of aircraft between the apron management unit and the Air Traffic Control Unit.*

4.4.4 Information that could enhance apron safety shall be communicated by the aerodrome operator to the relevant apron users.

4.4.5 A communications system should be established by the aerodrome operator, or the aircraft operators, in order to provide rapid response of the emergency equipment to accidents and incidents occurring in the terminal areas. Apron accidents include aircraft cabin fires, refueling spills and fires, aircraft and vehicle collisions and medical emergencies.



#### 4.5 Control of Persons and Vehicles at Aerodromes

4.5.1 Aerodrome operator shall establish the procedures of airside driver permit scheme and vehicle/equipment safety requirements, including detailed personnel training. The driver of a radio-equipped vehicle shall establish satisfactory two-way radio communication with the Air Traffic Control Unit before entering the manoeuvring area and with the appropriate designated authority before entering the apron. The driver shall maintain a continuous listening watch on the assigned frequency when on the movement area.

4.5.2 At controlled aerodromes all vehicles employed on the manoeuvring area shall be capable of maintaining two-way radio communication with the Air Traffic Control Unit, except when the vehicle is only occasionally used on the manoeuvring area and is:

- a) accompanied by a vehicle with the required communications capability; or
- b) employed in accordance with a pre-arranged plan established with the Air Traffic Control Unit.

4.5.3 The movement of persons or vehicles including towed aircraft on the manoeuvring area of an aerodrome shall be controlled by the Air Traffic Control Unit as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off.

4.5.4 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.

4.5.5 The Air Traffic controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by vehicle drivers and shall take immediate action to correct any discrepancies revealed by the read-back.

4.5.6 The Air Traffic Control unit and Aerodrome Operator shall be made aware of all radio call signs used at the aerodrome, whether or not they are used for communication with Air Traffic Control Unit.

4.5.7 Aerodrome operators shall restrict the operation of personnel and vehicles on an apron during low visibility operations.

*NOTE.— In the absence of visual observation of all or part of the manoeuvring area or to supplement visual observation, surface movement radar (SMR) provided in accordance with the provisions of Annex 14, Volume I*

4.5.8 When communications by a system of visual signals is deemed to be adequate, or in the case of radio communication failure, the signals shall be used.

*NOTE.— The Air Traffic Management (Doc 4444 PANS-ATM) presents the signals.*

## 4.6 Lighting Systems

(such as Road-holding position light, inspection of lighting)

4.6.1 Where lighting systems are used for aircraft control purposes, such systems shall be monitored automatically so as to provide an indication of any fault which may affect the control functions. This information shall be automatically relayed to the Air Traffic Control unit.

4.6.2 Faults in the lighting systems will normally be detected via monitoring. Monitoring by visual display on the lighting control panel in the Air Traffic Control unit will enable detection of circuit failures and verification that brilliancy selection by Air Traffic Control unit is providing the desired light output. Monitoring by visual inspection also enables the detection of failed lamps and the contamination of fittings by dirt and rubber deposits or misalignment.

4.6.3 Air Traffic Control unit shall be informed when the inspection is complete in order to turn off any lights not required for regular operations.

4.6.4 If a major failure is discovered during the inspection, Air Traffic Control unit and Aerodrome Maintenance shall be informed immediately.

4.6.5 The system of preventive maintenance employed for lighting system in aerodrome as a stop bar, taxiway, precision approach runway category I-III and runway meant for take-off.

4.6.6 The system of preventive maintenance of visual aids shall be employed to ensure lighting and marking system reliability.

4.6.7 The system of preventive maintenance employed for a precision approach runway category II or III should include at least the following checks:

- a) visual inspection and in-field measurement of the intensity, beam spread and orientation of lights included in the approach and runway lighting systems;
- b) control and measurement of the electrical characteristics of each circuitry included in the approach and runway lighting systems; and
- c) control of the correct functioning of light intensity settings used by air traffic control.

*NOTE.* – *Guidance on air traffic control interface and visual aids monitoring is included in the Aerodrome Design Manual (Doc 9157), Part 5.*

#### 4.7 Inspection and Reporting

such as Inspection of the movement area

4.7.1 The inspection of aerodrome movement areas (including runways, taxiways and aprons, and their lighting systems, markings, signs, etc.) is required to ensure that hazards to aircraft are minimized and to create a safe and efficient operation.

4.7.2 The arrangements and means of communication between the inspection team and air traffic control unit during an inspection shall be established.

4.7.3 LoA shall contain the frequency of inspection.

4.7.4 Movement area inspections providing periodic, timely and accurate updates on the condition of the movement area and the operational status of related facilities, to be reported to Air Traffic Control unit.

4.7.5 Inspection of the movement area

- a) a procedure to ensure there is coordination with Air Traffic Control Unit for the inspection of the movement area;
- b) describe the inspections, if performed by the aerodrome operator, including:
  - i. frequency and scope;
  - ii. reporting, transmission and filing;
  - iii. actions to be taken and their monitoring;
- c) assess, measure and report runway surface characteristics when the runway is wet or contaminated and their subsequent promulgation to ATS;

4.7.6 Inspection of the manoeuvring area

- a) Procedures for the access to runways and taxiway shall be established with the appropriate Air Traffic Control Unit. Prior to any runway or taxiway inspection, radio contact shall be established with Air Traffic Control Unit and permission to begin the inspection shall be obtained and acknowledged by the inspection team
- b) If a dangerous unserviceability is discovered during a runway inspection (e.g. damaged pit covers or broken lights), it shall be immediately reported to Air Traffic Control unit by radiotelephony (RTF) for appropriate Air Traffic Control unit action to be considered. The entity in charge of aerodrome operations should also be informed.
- c) If unserviceability is found during an inspection, but which does not affect the use of the runway, it should be reported to the entity in charge of aerodrome maintenance.

4.7.7 Inspection of the apron

- a) Inspections of the apron area should be undertaken at defined frequencies. Considering the level of operations undertaken at each aerodrome, the frequency may be adjusted in accordance with the level of risk identified by the aerodrome SMS.
- b) Inspections may be undertaken in segments to account for the size and complexity of the operation.

4.7.8 Inspection of the visual aids

- a) A routine ground inspection of all aerodrome ground lighting systems should be made daily or before use.
- b) Approach lighting systems should be inspected at adequate, defined frequencies. They may also be inspected upon request from Aerodrome operations or Air Traffic Control unit.
- c) The inspecting team shall inform Air Traffic Control unit before commencing the approach lighting system inspection.

- d) Air Traffic Control unit shall be informed when the inspection is complete in order to turn off any lights not required for regular operations.
- e) If a major failure is discovered during the inspection, Air Traffic Control unit and Aerodrome Maintenance shall be informed immediately.

#### 4.8 Reporting Procedure

4.8.1 Aerodrome operators and Air Traffic Control Unit are required to report safety occurrences at their aerodromes to their State in accordance with the CAAT Requirement No.22 on Reporting of Civil Aviation Occurrences (R2CAAT No.22) and detected adverse trends in number and types of incidents.

4.8.2 Safety-related reports concerning the operation of air traffic control unit, including air traffic incident reports, shall be systematically reviewed by the ATSP in order to detect any adverse trend in the number and types of incidents which occur.

4.8.3 An aerodrome operator shall establish a runway safety team comprised of relevant organizations operating or providing services on the aerodrome.

#### 4.9 Coordination for Low Visibility Operations

4.9.1 Aerodrome operators shall establish low visibility conditions and procedures with all related that include Air Traffic Control unit.

4.9.2 The ATSP should establish provisions applicable to the start and continuation of low visibility operations (LVO).

4.9.3 Where low visibility procedures are in effect, persons and vehicles operating on an apron shall be restricted to the essential minimum.

*Recommendation. — During low visibility procedures the appropriate authority should restrict construction or maintenance activities in the proximity of aerodrome electrical systems*

4.9.4 The coordination between the Air Traffic Control unit and Aerodrome Operator should include awareness of the status of both low visibility procedures (LVP) and the deterioration of visual aids;

4.9.5 Procedure describing the actions to be taken when LVP is in process (vehicle control, visual range measurement if necessary).

4.9.6 Air Traffic Controller should co-operate with the aerodrome operator to ensure that LVP are fully implemented.

*NOTE 1. — When LVP are implemented, the aerodrome operator is required to complete all operator preparations relevant to LVP to commence, and confirm to ATC that these preparations are complete.*

*NOTE 2. — When A-SMGCS is available, it can be utilized as a supporting means to the proposed solutions especially in low visibility conditions.*

*NOTE 3. — Guidance on low visibility operations on an aerodrome is contained in the Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476), and Manual of All-Weather Operations (Doc 9365), Manual of Surface Movement Guidance and Control Systems (DOC 9476), and European Guidance Material On All Weather Operations at Aerodromes (EUR DOC 013)*

4.9.7 Low visibility operations should include the followings;

- a) Obtaining and disseminating meteorological information, including runway visual range (RVR) and surface visibility.
- b) Protection of runways during LVP if such operations are permitted.
- c) The arrangement and rules before, during and after low visibility operations, including applicable rules for vehicles and personnel operating in the movement area.

4.9.8 Low Visibility Procedures refer to specific procedures applied at an aerodrome to support precision approach CAT II/III operations as well as departure operations in RVR conditions less than a value of 550 m specifically referred to as Low Visibility Departure Operations. In addition, the PANS-ATM have introduced the requirement for procedures for low visibility operations whenever conditions are such that all or part of the manoeuvring area cannot be visually monitored from the control tower.

4.9.9 In addition to the infrastructure, equipment, rules and procedures established to support aerodrome ground operations, special provisions, called Low Visibility Procedures (LVP), are established to support the following aircraft flight operations:

- a) Departure operations in RVR conditions less than a value of 550 m;
- b) CAT II and III approach and landing operations;
- c) Other Than Standard CAT II approach and landing operations;
- d) Lower Than Standard CAT I approach and landing operations.

4.9.10 The ATSP should also establish procedures for All-Weather Operations at the aerodrome, including procedures to support departure operations in RVR conditions less than a value of 550 m as well as approach and landing operations in RVR less than 550 m and/or DH less than 200 ft. Such provisions relate mainly to aerodrome traffic and include, for example, procedures for control of traffic on the manoeuvring area as well as applicable spacing between successive approaching aircraft. LVP are also required where runways are used for departure operations in RVR conditions less than a value of 550 m, even if the runway does not support approach and landing operations in RVR less than 550 m and/or DH 200 ft.

4.9.11 Any special provisions that are to apply when all or part of the manoeuvring area cannot be visually monitored from the control tower are initiated by or through the Air Traffic Control Unit.

4.9.12 ATC is responsible for advising the aerodrome operator that the activation of LVPs is likely to become necessary and for initiating the LVP procedure.

4.9.13 While LVP are in force ATC is also responsible for monitoring the status of specified facilities and equipment (unless this is delegated to an appropriate responsible authority) Whenever any of the specified facilities or equipment do not meet a defined minimum performance level or becomes unserviceable, ATC shall advise aircraft including the provision of information to aircraft via the ATIS and/or RTF.

#### 4.10 Coordination for the Aerodrome Manual

4.10.1 The Aerodrome Operator must document the process for review and revision of the Aerodrome Manual, including how to amend it to respond to changing situations at the aerodrome. Using the WHO, WHAT, HOW, and WHEN guidelines will help ensure that all necessary elements are addressed with clarity. The Aerodrome Operator should make sure that Air Traffic Control unit involved in the review and revision of the Aerodrome Manual is aware of this process.

4.10.2 Aerodrome manual should clearly define, for each of these items, which coordination and procedures have been put into place in the case of responsible of Air Traffic Control unit.

4.10.3 The aerodrome operator is responsible for developing and maintaining the aerodrome manual, as well as providing appropriate personnel access to it.

*Note.* – Contents of an aerodrome manual are available in Rule of The Civil Aviation Authority of Thailand on Standards for Public Aerodrome Manuals B.E.2562 and the PANS-Aerodromes (Doc 9981).

#### 4.11 Aerodrome Operational Services, Equipment and Installations

Ex. Surface Movement Guidance and Control Systems (SMGCS), Advanced Surface Movement Guidance and Control Systems (A-SMGCS), Autonomous Runway Incursion Warning System (ARIWS), etc.

4.11.1 LoA should be place:

- a) the procedures and measures for the protection of facilities, installations and equipment enabling and supporting the Air Traffic Control unit, control of activities, and ground maintenance in the vicinity of these installations.
- b) the procedures to identify the cause and impact of the failure of any of the facilities, installations and equipment enabling and supporting the Air Traffic Control unit, and to timely notify this information via NOTAMs as necessary.

4.11.2 The aerodrome operator shall coordinate the actions to be taken for establishing or maintain aerodrome operational services, equipment and installations.

##### **Installations and Maintenance of Runway Incursion Prevention Technology**

4.11.3 The runway incursion prevention is a comprehensive system, which can effectively prevent runway incursion by applying various technical means from the perspective of controllers, pilots and vehicle drivers to enhance their awareness situation. Aerodrome operators and Air Traffic Control Unit should develop the plan or roadmap of the appropriate systems suitable for the aerodrome operations and traffic density.

4.11.4 The main technical means of preventing runway incursion include improving the situation awareness ability of all parties, using but not limited to Advanced-Surface Movement Guidance and Control Systems (A-SMGCS), stop bars, and runway incursion warning systems (ARIWS) and Surface surveillance system.

*NOTE.* – Guidance material is contained in the Manual on the Prevention of Runway Incursions (Doc 9870) and Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476).

#### **4.12 Reporting of Interference with the Aircraft by Firearms, Fireworks, Flying Kites, Laser Illumination, High Powered Lights, Lasers, Remotely Piloted Aircraft Systems, Model Aircraft or by Similar Means**

4.12.1 Aerodrome operators and Air Traffic Control unit are required to report safety occurrences at their aerodromes to their State in accordance with the CAAT Requirement No.22 on Reporting of Civil Aviation Occurrences (R2CAAT No.22).

4.12.2 The LoA should describe coordination between Aerodrome operators and Air Traffic Control unit.

4.12.3 Sponsors of Laser Notifications may be directed to Air Traffic Control unit, such that the appropriate Air Navigation Service provider can consider any Aerodrome Safeguarding concerns as part of the consultation process.