ฉบับรับฟังความคิดเห็น

ระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทย
ว่าด้วยคู่มือมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ
ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ
พ.ศ. ๒๕๖๙

อาศัยอำนาจตามข้อ ๓ ของข้อบังคับของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ ๑๖ ว่าด้วยมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ ที่กำหนดให้มาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ ให้เป็นไปตามคู่มือมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ (Manual of Standards – Air Traffic Management Services: Air Traffic Flow Management) ตามระเบียบที่ผู้อำนวยการกำหนด ผู้อำนวยการสำนักงานการบินพลเรือนแห่งประเทศไทยจึงออกระเบียบไว้ ดังต่อไปนี้

ข้อ ๑ ระเบียบนี้เรียกว่า “ระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทยว่าด้วยคู่มือมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ พ.ศ. ๒๕๖๙”

ข้อ ๒ ระเบียบนี้ให้ใช้บังคับตั้งแต่วันถัดจากวันประกาศเป็นต้นไป

ข้อ ๓ ให้ยกเลิกระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทยว่าด้วยคู่มือมาตรฐานการบริการการจัดการจราจรทางอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ พ.ศ. ๒๕๖๓ ประกาศ ณ วันที่ ๑๐ กันยายน พ.ศ. ๒๕๖๓

ข้อ ๔ มาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ ให้เป็นไปตามที่กำหนดไว้ในคู่มือมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ (Manual of Standards – Air Traffic Management Services: Air Traffic Flow Management) แนบท้ายระเบียบนี้

ประกาศ ณ วันที่ พ.ศ. ๒๕๖๙

พลอากาศเอก
(มนัท ชวนะประยูร)
ผู้อำนวยการสำนักงานการบินพลเรือนแห่งประเทศไทย

สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

Manual of Standards –

Air Traffic Management Services:

Air Traffic Flow Management

CAAT-ANS-MOSATFM

Issue: 01

Revision: 01

Date: DD.MM.YYYY

Approved By

Air Chief Marshal _____

Manat Chavanaprayoon

Director General

The Civil Aviation Authority of Thailand

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Foreword

The General Director of Civil Aviation Authority of Thailand is responsible under Section 15/17(2) of the Air Navigation Act B.E.2497 amended by the Air Navigation Act (No. 14) B.E. 2562 for issuing CAAT regulation on Air Navigation Services for Air Traffic Management: Air Traffic Flow Management Standards to stipulate qualifications, rules, procedures, conditions, standards and practical guidance for the following matters to ensure conformity with current and timely International Standards.

The Manual of Standards (hereinafter 'MOS') is the means CAAT uses to meet its responsibilities under Section 15/17 (2) of the Air Navigation Act B.E.2497 amended by the Air Navigation Act (No. 14) B.E. 2562, CAAT regulation No.16 on Air Navigation Services for Air Traffic Management: Air Traffic Flow Management Standards and CAAT rule on Manual of Standards - Air Traffic Management: Air Traffic Flow Management for promulgating standards for Air Traffic Flow Management. The MOS prescribes the detailed technical material (aviation safety standards) that is determined to be necessary for the safety of air navigation.

The MOS is referenced in the particular regulation. You should refer to the applicable provisions of the Air Navigation Act B.E.2497 amended by the Air Navigation Act (No. 14) B.E. 2562 and CAAT Regulation, Requirement and Rules together with this MOS, to ascertain the requirements of, and the obligations imposed by or under the civil aviation legislation.

Readers should forward advice of errors, inconsistencies or suggestions for improvement to this manual to the Manager, Air Navigation Services Standards Department (please see in subsection 1.1.6.3).

The MOS is issued and amended under the authority of the Director General of Civil Aviation Authority of Thailand.

Air Chief Marshal Manat Chavanaprayoon

Director General

The Civil Aviation Authority of Thailand

Record of Revision

Issue Number	Revision Number	Effective Date	Revised By	Section Affected
01	00	10 Sep 2020	ANS (TM)	Initial Issue
01	01	XX XXX 2026	ANS (TM)	Revise information as following sections ; 1.1.2.1, 1.2, 2.1.2.1, 2.1.4, 4.1.1.7, 7.1, 11.1.1 and 11.3.2

List of Effective Pages

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1-1	01	30 Jun 2026
1-2	00	10 Sep 2020
1-3	00	10 Sep 2020
1-4	00	10 Sep 2020
1-5	01	30 Jun 2026
1-6	01	30 Jun 2026
2-1	00	10 Sep 2020
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11-1	01	30 Jun 2026
11-2	01	30 Jun 2026
12-1	00	10 Sep 2020
13-1	00	10 Sep 2020
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Chapter 1 Introduction

1.1 General

1.1.1 Background

1.1.1.1 This MOS is made under the Air Navigation Act B. E. 2497 amended by the Air Navigation Act (No. 14) B.E. 2562. CAAT Regulation, Requirement and Rules refer to the standards and methods to be used in regulating:

a.) the requirements and standards for compliance, include:

1.) The Operations Manual;

2.) the provider' s organization, facilities and equipment, personnel, and check and training system, interface arrangements, safety management system and records;

b.) what is required to accompany an application for an Air Traffic Flow Management Provider's (hereinafter 'ATFM provider') certificate; and

c.) discontinuance of the service.

1.1.2 Document set

1.1.2.1 The document hierarchy consists of:

a.) The Air Navigation Act B.E.2497 amended by the Air Navigation Act (No. 14) B.E. 2562 (the Act) and the Civil Aviation Emergency Decree B.E.2558 (the Decree)[1]; and

b.) The Civil Aviation Authority of Thailand Regulation, Requirement and Rules[2] (The CAAT Regulation, Requirement and Rules); and

c.) Manual of Standards (MOS); and

d.) Advisory Circulars (ACs).

- [1]พระราชบัญญัติการเดินอากาศ พ.ศ. 2497 แก้ไขโดย พระราชบัญญัติการเดินอากาศ (ฉบับที่ 14) พ.ศ.2562
- [2]พระราชกำหนดการบินพลเรือนแห่งประเทศไทย พ.ศ.2558
- ข้อบังคับของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ 16 ว่าด้วยมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ
- ข้อกำหนดของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ 25 ว่าด้วยการขอและออกใบรับรองบริการการเดินอากาศ
- ประกาศสำนักงานการบินพลเรือนแห่งประเทศไทย เรื่องการกำหนดประเภทนิติบุคคล อายุใบรับรอง และหน้าที่อื่นของผู้ได้รับใบรับรองบริการการเดินอากาศ
- ระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทย ว่าด้วยการจัดทำรายงานของผู้ได้รับใบรับรองบริการการเดินอากาศ
- ระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทย ว่าด้วยคู่มือมาตรฐานการบริการการเดินอากาศ ด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ
- ระเบียบสำนักงานการบินพลเรือนแห่งประเทศไทย ว่าด้วยคู่มือการดำเนินงานด้านการจัดการจราจรทางอากาศ ประเภทการจัดการความคล่องตัวของการจราจรทางอากาศ

1.1.2.2 The Decree establishes the Civil Aviation Authority of Thailand (CAAT) with functions relating to civil aviation, in particular the safety of civil aviation, and related purposes.

1.1.2.3 The CAAT regulation and requirement establish the regulatory framework (Regulations) within which all service providers shall operate.

1.1.2.4 The MOS comprises specifications (Standards) prescribed by CAAT, of the detailed technical provisions that contains standards, procedures, and instruction which are intended to form the basis of air traffic flow management. The ATFM provider in Thailand is required to comply with the provisions contained in this MOS. The ATFM provider shall document local procedures in their own operations manuals, to ensure the maintenance of and compliance with standards.

1.1.2.5 Readers should understand that in the circumstance of any perceived disparity of meaning between MOS and the CAAT regulations/ requirements, the primacy of intent rests with the regulations/ requirements. Where there is any inconsistency between the regulations/ requirements and the MOS, regulations/ requirements prevail.

1.1.2.6 An ATFM provider shall ensure that any air traffic flow management that it provides is provided in accordance with:

a.) the standards set out in the Manual of Standards (MOS); and

b.) the standards set out or referred to in ICAO Annex 11, ICAO Doc 4444; as varied by Gen 1.7 of Part General and En-route of the AIP-Thailand.

c.) If a regional supplementary procedure set out in ICAO Doc 7030 relates to an air traffic flow management that the provider provides, the provider shall also ensure that the service is provided in accordance with that procedure.

1.1.2.7 ACs are intended to provide recommendations and guidance to illustrate a means, but not necessarily the only means of complying with the regulation and requirement. ACs may explain certain regulatory requirements by providing interpretive and explanatory materials. It is expected that service providers will document internal actions in their own operational manuals, to put into effect those, or similarly adequate, practices.

1.1.2.8 Where the ATFM provider is unable to comply with any provision in any of this MOS, the ATFM provider shall inform the CAAT within a reasonable period of time and in writing. The ATFM provider shall explain the basis for its non-compliance and propose alternative steps to ensure that an equivalent level of safety is established. The CAAT will review the ATFM provider's proposal in a timely fashion and approve the proposal, subject to such other conditions it may impose. The ATFM provider is required to follow-up diligently and thereafter report to CAAT within a reasonable period.

1.1.2.9 Where the CAAT has approved the ATFM provider's proposal in subsection 1.1.2.8, the ATFM provider shall record the approved alternative steps to be taken in the ATFM provider's operations manuals. The operations manuals shall also contain the details of and rationale for the alternative steps, and any result limitations or conditions imposed.

1.1.3 Editorial Practices

1.1.3.1 To avoid any misunderstanding within the MOS, the words 'shall' as used within the requirements indicate the compliance is compulsory' while 'should' means that it is strongly advisable that an instruction is carried out; it is recommended or discretionary.

1.1.4 Differences Between ICAO Standards and those in MOS

1.1.4.1 Notwithstanding the above, where there is a difference between a standard prescribed in ICAO documents and the Manual of Standards (MOS), the MOS standard shall prevail.

1.1.5 Differences Published in AIP

1.1.5.1 Differences from ICAO Standards, Recommended Practices and Procedures are published in AIP GEN 1.7.

1.1.6 MOS Documentation Change Management

1.1.6.1 The Air Navigation Services Standards Department (ANS) has responsibility for the technical content of this MOS.

1.1.6.2 This MOS is issued, and may only be amended, under the authority of the DGCA.

1.1.6.3 Suggested changes to this MOS may be provided to the Manager of Air Navigation Services Standards Department of CAAT by:

Email: ans@caat.or.th

1.1.6.4 Requests for any change to the content of this MOS may come from:

a.) technical areas within CAAT; or

b.) aviation industry service providers or operators; or

c.) individuals or authorisation holders.

1.1.6.5 The need to change standards in this MOS may arise for any of the following reasons:

a.) to ensure safety;

b.) to ensure standardisation;

c.) to respond to changed CAAT standards;

d.) to respond to ICAO prescription;

e.) to accommodate proposed initiatives or new technologies.

1.1.6.6 CAAT may approve trials of new procedures or technologies to develop appropriate standards

1.1.7 Related document

1.1.7.1 These standards should be read in conjunction with:

a.) Civil Aviation Authority of Thailand Regulation and Requirement;

b.) ICAO Annex 11 – Air Traffic Services;

c.) ICAO Annex 15 – Aeronautical Information Services;

d.) ICAO Annex 19 – Safety Management;

e.) ICAO Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) (Doc 4444);

f.) ICAO Manual on Collaborative Air Traffic Flow Management (ATFM) (Doc 9971);

g.) ICAO Global Air Traffic Management Operational Concept (Doc 9854);

h.) ICAO Asia/Pacific Framework for Collaborative Air Traffic Flow Management;

i.) ICAO Safety Management Manual (Doc 9859);

j.) ICAO Regional Supplementary Procedures (Doc 7030); and

k.) AIP-Thailand.

1.2 Definitions and abbreviations

1.2.1 Definitions

For the purpose of this MOS, the definition as contained in the ICAO annex and ICAO document, as amended from time to time, shall apply unless as otherwise indicated in AIP or as follow:

Definition	Meaning
Aeronautical fixed service (AFS)	A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.
Air traffic flow management (ATFM)	A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.
Air Traffic Management (ATM)	The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.
Air traffic management system	A system that provides ATM through the collaborative integration of humans, information, technology, facilities and services, supported by air and ground- and/ or space-based communications, navigation and surveillance.
Capacity	The maximum number of aircraft that can be accommodated in a given time period by the system or one of its components (throughput).

Definition	Meaning
Declared capacity	A measure of the ability of the Air traffic control system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, Air traffic control unit configuration, staff and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace.
Demand	The number of aircraft requesting to use the ATM system in a given time period.
Estimated elapsed time	The estimated time required to proceed from one significant point to another.
Estimated off-block time	The estimated time at which the aircraft will commence movement associated with departure.

Chapter 2 Operations Manual

2.1 General

2.1.1 Introduction

2.1.1.1 An Operations Manual shows how and where an ATFM provider provides, or proposes to provide, air traffic flow management. The ATFM provider shall provide, for compliance by its personnel, an operation manual or system of manuals for the services listed in its operations manual. The operations manual also serves as a reference document for CAAT with respect to the standards and conditions for air traffic flow management.

2.1.2 Content of the Operations Manual

2.1.2.1 An operations manual shall contain:

a.) a table of contents based on the items in the manual, indicating the page number on which each item begins;

b.) a description of the provider's organisational structure and a statement setting out the functions that the provider performs, or proposes to perform;

c.) a description of the chain of command established, or proposed to be established, by the provider and a statement of the duties and responsibilities of any staff positions within the organizational structure;

d.) a statement showing how the provider determines the number of operational staff required including the number of operational staff;

e.) an objective and scope or propose to provide including the hours of operation;

f.) a statement that identifies the location from where the service is provided, or proposed to be provided;

g.) a statement of the job description of each operating position;

h.) a description of the arrangements made or proposed to be made by the provider to ensure that it has, and will continue to receive, on a daily basis, the information necessary for providing the service.

i.) a description of the arrangements made or proposed to be made by the provider to ensure that it has, and will continue to be able to provide, information in connection with its air traffic flow management to another person whose functions reasonably require that information;

j.) a description of the provider's document and record keeping system;

k.) a copy of any agreement entered into by the provider in relation to the provision of the air traffic flow management;

l.) a copy of the document that sets out the provider's safety management (changed management);

m.) a description of the provider's quality management system;

n.) a copy of the provider's contingency plan;

o.) a copy of the provider's security program;

p.) a description of the processes and documentation used to present to staff the relevant standards, rules and procedures contained in Manual of Standard, ICAO Annexes 11, ICAO PANS-ATM, Doc 9971, Doc 9854, ICAO Regional Supplementary Procedures, and any of the provider's site-specific instructions for the provision of air traffic flow management;

q.) a description of the processes and documentation used to provide operational instructions to staff;

r.) a description of the procedures to be followed to ensure all operational staff are familiar with any operational changes that have been issued since they last performed operational duties;

s.) a description of the provider's training and checking program.

t.) the procedures to be followed for revising the operations manual.

2.1.3 The operations manual is an important document and shall be issued under the authority of the ATFM provider. The ATFM provider shall control the distribution of the operations manual and ensure that it is amended whenever necessary to maintain the accuracy of the information in the operations manual and to keep its contents up to date.

2.1.4 ATFM provider shall develop a user's manual framing the roles of the respective facilities in facilitating and complying to the ATFM process. This user's manual shall also contain procedures to be followed by Airspace Users, Airport Operators and ATS Units. It shall be available to the public and published following CDM processes. The manual should include provisions to:

a.) coordinate and disseminate information related to the implementation of ATFM solutions through specified means such as telephone calls, aeronautical messages, web pages, or any other suitable method;

b.) disseminate information resulting from the constant monitoring and adjustment of ATFM measures; and

c.) disseminate information resulting from the timely cancellation of ATFM measures.

Chapter 3 General Provisions for Air Traffic Flow Management (ATFM)

3.1 General

3.1.1 ATFM provider shall establish the ATM planning and ATFM phases to balance demand and capacity in order to minimize the effects of ATM system constraints.

3.1.2 ATFM provider shall ensure that the ATFM is implemented for airspace (or aerodrome) where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned.

3.2 Air traffic flow management objective and principles

3.2.1 The objective of ATFM consist of:

a.) enhancing the safety of the ATM system by ensuring the delivery of safe traffic densities and minimizing traffic surges;

b.) ensuring an optimum flow of air traffic throughout all phases of the operation of a flight by balancing demand and capacity;

c.) facilitating collaboration among system stakeholders to achieve an efficient flow of air traffic through multiple volumes of airspace in a timely and flexible manner that supports the achievement of the business or mission objectives of AUs and provides optimum operational choices;

d.) balancing the legitimate but sometimes conflicting requirements of all AUs, thus promoting equitable treatment;

e.) reconciling ATM system resource constraints with economic and environmental priorities;

f.) facilitating, by collaborating with all stakeholders, the management of constraints, inefficiencies, and unforeseen events that affect system capacity in order to minimize negative impacts of disruptions and changing conditions; and

g.) facilitating the achievement of a seamless and harmonized ATM system while ensuring compatibility with international developments.

3.2.2 The principles of ATFM consist of:

a.) optimizing available airport and airspace capacity without compromising safety;

b.) maximizing operational benefits and global efficiency while maintaining agreed safety levels;

c.) promoting timely and effective coordination and collaboration with all affected stakeholders;

d.) fostering international collaboration leading to an optimal, seamless ATM environment;

e.) recognizing that airspace is a common resource for all users and ensuring equity and transparency, while taking into account security and defence needs;

f.) supporting the introduction of new technologies and procedures that enhance system capacity and efficiency;

g.) enhancing predictability, for ANSPs as well as AUs;

h.) helping to maximize aviation economic efficiencies and returns, and support other economic sectors such as business, tourism and cargo; and

i.) constantly evolving to support the ever-changing aviation environment.

3.2.3 Operational needs of an ATFM service

The ATFM provider shall determine a level of ATFM service which relied on number of supporting systems, processes and operational data in order to function effectively by considering the certain element as follow; systems and processes will determine the level of ATFM service that is established.

a.) ATM resources including airspace and airports' capacities;

b.) traffic demand: a timely, accurate depiction of predicted flight activity for all flights utilizing an ATM resource (aerodrome, en-route sector, etc.). Data should be aggregated from all available operational data sources (e. g. , airline schedules, flight plan data, airport slot management information, ATM operational systems, and AU intentions);

c.) the tactical, dynamic traffic situation: accurate data derived from surveillance, departure planning and flight information to increase the accuracy of short- to medium-term prediction;

d.) the forecast and dynamic meteorological situation: the integration and display of a variety of meteorological data for ATFM planning and operational execution;

e.) the airspace status and the availability of restricted or reserved airspace resources that affect the flows of air traffic;

f.) shared ATFM tools and data interoperability: tools that enable common situational awareness through the sharing of data and operational information among stakeholders. ATFM tools that accurately display meteorological and air traffic information; and

g.) institutional arrangements: formalized organizational structures and agreements between all ATFM stakeholders in the relevant area and appropriate arrangements with adjacent ATFM units.

3.3 ATFM Role and Responsibilities

The roles and responsibilities of ATFM:

a.) optimizes the overall performance effects on the ATM network through planning, coordination and implementation of ATFM measures;

b.) consults with all stakeholder on the definition of ATFM measures;

c.) ensures the effective implementation of ATFM measures;

d.) In coordination with ATS units and stakeholders, identifies alternative solutions for flights to avoid constrained or congested areas without incurring large delays, taking into account the overall performance effects on the ATM network;

e.) communicate to airspace users the solutions available per (d);

f.) provides information on ATFM in a timely manner to operators and ATS units, including:

i. planned ATFM measures;

ii. impact of ATFM measures on take-off time and flight profile of individual flights;

g.) monitors the occurrences of missing flight plans and multiple flight plans that are filed;

h.) monitors the number of exemptions granted in accordance with this document in chapter 13 section 13.2.4.

Chapter 4 Human Resources Management

4.1 Human Resource Management

4.1.1 This chapter sets out the standards for human resources management to ensure that human resources are adequately managed in the provision of air traffic flow management.

4.1.1.1 The ATFM provider shall document the structure and internal organization with a level of detail according to the size and complexity of the organization. This document shall identify the key personnel responsible for the safe conduct of the ATFM services, in particular of the management of personnel in charge of safety, quality, security and human resources-related functions as applicable. Their positions, responsibilities, functions, accountabilities and authorities are to be clearly defined. The ATFM provider shall also develop job descriptions for ATFM staffs and other technical staffs. Organization chart indicating the specific responsibilities and accountabilities should be provided.

Note: Reference may also be made to Asia/Pacific Framework for Collaborative ATFM.

4.1.1.2 The ATFM provider shall document and define the method of determining staffing levels to ensure safe and efficient ATFM operations.

4.1.1.3 The ATFM provider shall plan the level of staffing requirements taking into account the following factors:

a.) Training requirements;

b.) Rest days or rest periods between shifts;

c.) Leave requirements;

d.) Sick leave reserve;

4.1.1.4 The ATFM provider shall deploy a sufficient number of personnel to provide air traffic flow management services at the air traffic flow management units.

4.1.1.5 The ATFM provider shall ensure, at all times, enough suitably qualified and trained personnel who are able to provide air traffic flow management.

4.1.1.6 The ATFM provider shall ensure that adequate operation and support staffs are trained and maintained to fill established positions of the organization so as to fulfill the necessary functions by providing them with adequate training and that their proficiency should be checked on a recurrent basis.

4.1.1.7 The ATFM provider shall develop policies and procedures to enable recruitment and retention of adequate ATFM staff.

Chapter 5 Personnel

5.1 General

5.1.1 This Chapter sets out the standards, requirements and procedures pertaining to the air traffic flow management personnel and training.

5.1.2 An ATFM provider shall ensure that it has enough suitably qualified and trained personnel

5.1.3 An ATFM provider shall ensure that personnel involved in ATFM activities are:

a.) made duly aware of the provisions of this regulation

b.) adequately trained and competent for their job function

5.1.4 The ATFM personnel shall be required with sufficient knowledge and understanding of the ATM system in the area of responsibility as well as an ATM operations in adjacent ACCs and factors influencing aircraft operations in so far as they may affect ATFM.

Chapter 6 Training and Checking Program

6.1 General

6.1.1 Introduction

6.1.1.1 This Chapter sets out the standards for a Training and Checking program.

6.1.1.2 The ATFM provider shall document its policies and procedures on training and checking of its air traffic flow management personnel in an appropriate manual.

6.1.1.3 The ATFM provider should establish and implement a mechanism to monitor the operational performance of its air traffic flow management personnel.

6.1.2 Program

6.1.2.1 A Training and Checking program shall ensure that an individual performing a function in conjunction with any air traffic flow management is competent to perform that function.

6.1.2.2 Processes which address the integrity of staff training shall be defined, documented and maintained.

6.1.3 Training Courses

6.1.3.1 The term 'training course' has wide application and includes all training for a particular competency required for the provision of an air traffic flow management and includes training on new equipment.

6.1.3.2 The training programs shall be comprehensive and facilitate achievement of training goals through a syllabus which reflects required competencies. The syllabus shall ensure compliance with relevant national and international requirements.

6.1.3.3 The ATFM provider shall establish training plans to ensure that ATFM staff are properly trained.

6.2 Training Phases

6.2.1 The training of ATFM staffs can be divided into the following phases:

a.) Ab initio training;

b.) Basic training;

c.) On-the-job training (OJT);

d.) Advanced training; and

e.) Recurrent/Refresher training

The ATFM provider shall ensure that ATFM personnel update his or her competencies in accordance with the latest operational requirements, and new methodology/ technologies applied. Regular recurrent training shall be planned including ATFM techniques that are applied only in very rare situations (contingency, exceptional events).

Note: Reference may also be made to Asia/Pacific Framework for Collaborative ATFM.

6.3 Checking

The purpose of checking is to ensure that the individual subject to the check meets the competency standards specified in CAAT regulations/ requirements, and the ATFM provider's own standards where these are additional to CAAT regulations/requirements.

6.4 Qualifications of Trainers and Assessor

Persons carrying out training and/ or checking functions shall be appropriately qualified for the functions.

6.5 Training Record

6.5.1 The ATFM provider shall establish a system for record-keeping of training, qualification and authorization of staff.

Chapter 7 ATFM Facilities and Equipment

7.1 Introduction

7.1.1 General

7.1.1.1 An ATFM provider shall have the facilities and equipment that are necessary for providing ATFM services, including appropriate premises and equipment to allow operational personnel to perform their duties.

7.1.1.2 The equipment required shall have a level of reliability, availability, and redundancy, that minimises the possibility of failure, non-availability, or significant degradation of performance.

Chapter 8 Management System

8.1 General

8.1.1 Introduction

8.1.1.1 This Chapter sets out the standards for Safety Management and Quality Management.

8.2 Safety Management

8.2.1 ATFM provider shall ensure that a safety assessment, including hazard identification, risk assessment and mitigation, is conducted, before any significant changes to ATFM systems and procedures are introduced, including an assessment of a safety management process addressing the complete lifecycle of the air traffic management system.

8.3 Quality Management

8.3.1 The ATFM provider shall implement the quality management according to the following principles.

8.3.2 The quality management shall:

a.) define the quality policy in such a way as to meet the needs of different users as closely as possible.

b.) set up a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with applicable requirements, standards and procedures.

c.) provide evidence of the functioning of the quality management by means of manuals and monitoring documents.

d.) appoint management representatives to monitor compliance with, and adequacy of, procedures to ensure safe and efficient operational practices.

e.) perform reviews of the quality management in place and take remedial actions, as appropriate

Chapter 9 Contingency Plans

9.1 General

9.1.1 This Chapter sets out the standards for contingency plans in the provision of air traffic flow management.

9.1.2 Contingency arrangements shall be established in the event of an ATFM system unavailability or a temporary and unexpected degradation or significant discontinuity of the service provided. Such contingency plans normally consist of predetermined procedures defining reduced capacities on major traffic flows to be applied via local ATFM measures in the event of such outages.

9.1.3 ATFM contingency plans shall be published in a secure but easily accessible manner for all those responsible for the application of ATFM contingency measures.

Note: Reference may also be made to the EUROPEAN Network Manager ATFCM Procedural Contingency Plan

9.1.4 A contingency plan shall describe in detail the actions that operational staffs are to follow to maintain safety in the event of the failure or non-availability of staffs, facilities or equipment. The plan shall also cover procedures for the safe and orderly transition back to full-service provision

9.2 Coordination

9.2.1 ATFM provider shall take the necessary measures as soon as possible, to notify of the application of contingency measures to users of the affected services, as well as the rest of the air navigation service providers and other aviation stakeholders that could be affected according to the formal arrangements in place.

Chapter 10 Security Program

10.1 General

10.1.1 This Chapter sets out the standards for Security Program.

10.2 Security Plan

10.2.1 The ATFM provider shall develop the security plan covering the following information:

a.) the procedure to be used for preventing and detecting intentional or unintentional damage to any system, equipment, software or data used for providing services;

b.) the procedure to be used for responding to a threat of intentional damage to a system, equipment, software or data;

c.) the procedure to be used for preventing unauthorized people from having access to working space, working area, any system, equipment, software or data used by the ATFM provider in providing services.

Chapter 11 Documents and Records

11.1 General

11.1.1 The ATFM provider shall establish a document and record control system organized to ensure document traceability.

11.2 Document control system

11.2.1 The ATFM provider shall hold and keep the amended documents that are necessary as basic references for their services. The documents that are essential for the provision of services are:

a.) the manual of standard (MOS) – Air Traffic Flow Management

b.) the ATFM provider's operations manual and ATFM user's manual;

c.) the ICAO Annex 11, Doc 4444, Doc 9971, Doc 9854, Doc 9882 and relevant ICAO Documents;

d.) the other necessary work instructions and procedures;

11.2.2 The documents in 11.2.1 shall be made available to the technical personnel at their workplace.

11.2.3 ATFM provider shall establish a process to control the authorization, publication, distribution and amendment of all documents in 11.2.1

11.3 Record control system

11.3.1 The ATFM provider shall ensure that an archive of ATFM data and other relevant records listed below is created and maintained

a.) record of ATFM daily plan;

b.) record of NOTAM related to ATFM;

c.) records of job description, training programme and plan of each staff;

d.) records of flight plans;

e.) records of operational logs and relevant contextual data;

f.) records of availability of airspace and route structures;

g.) records of ATS unit sector configurations and activations;

h.) records of aerodrome taxi times;

i.) records of air traffic control sector and airport capacities;

j.) records of route availability including availability through application of flexible use of airspace;

k.) records of updated flight positions;

l.) records of airspace availability including availability through application of flexible use of airspace; and

m.) records of actual flight take-off times.

11.3.2 The data referred to in the first subparagraph shall be retained for 2 years from their submission, for the purposes of post-operational analysis and verification of compliance with air traffic flow management requirements.

Note: The necessary data should be made available to ATS units and operators, including airport operators, to support their regular assessment of the declared capacity.

Chapter 12 Capacity Determination

12.1 General

The Capacity Determination shall be in accordance with ICAO Doc 9971, Manual on Collaborative Air Traffic Flow Management (ATFM)

12.1.1 ATFM services require knowledge of declared and operational capacities for airspace and aerodromes. Operational capacity is the expected capacity associated with the tactical situation at the airport or airspace. Dynamic factors, including meteorological conditions, CNS status, fleet mix and staffing may result in an operational capacity different from the declared capacity. ATFM solutions are based on the expected dynamic operational capacity.

12.1.2 The ATFM provider shall develop capacity measurement and calculation methodologies according to the requirements and conditions of their operational environment.

Chapter 13 Air Traffic Flow Management operation

13.1 General

The Air Traffic Flow Management Operation shall be in accordance with ICAO Doc 9971, Manual on Collaborative Air Traffic Flow Management (ATFM)

13.1.1 The ATFM provider shall establish an ATFM strategy to appropriately manage traffic flows to ensure safety and enhance the overall efficiency of the ATM system.

13.1.2 Establishment of collaborative decision-making (CDM) in the context of ATFM

13.1.2.1 The ATFM provider shall establish CDM process to ensure that stakeholders can discuss demand and capacity issues through regular interactions and formulate plans that consider all pertinent aspects and points of view and allow sharing of all relevant information among decision makers and supporting an ongoing dialogue between the various stakeholders throughout all phases of flight.

Note: Stakeholders should include ATFM and ATS units, Airspace Users, meteorological service, military authorities and aerodrome authorities

13.1.2.2 The ATFM provider shall establish ATFM daily plan (ADP) complete with subsequent updates. The ADP shall be a proposed set of ATFM solutions prepared by the ATFM provider, with input from all stakeholders. It should align with the solutions established during the strategic phase and be kept under review, periodically updated and republished as required.

13.1.3 Establishing ATFM operation

13.1.3.1 The ATFM provider shall establish the ATM planning. Measures taken in this step include:

a.) reviewing airspace design (route structure and ATS sectors) and airspace utilization policies to look for potential capacity improvements;

b.) reviewing the technical infrastructure to assess the possibility of improving capacity. This is typically accomplished by upgrading various ATM support tools or enabling navigation, communication or surveillance infrastructure;

c.) reviewing and updating ATM procedures induced by changes to airspace design and technical infrastructure;

d.) reviewing staffing practices to evaluate the potential for matching staffing resources with workload and the eventual need for adjustments in staffing levels; and

e.) reviewing the training that has been developed and delivered to ATFM stakeholders.

13.1.3.2 The ATFM provider shall establish Strategic phase which include creating a plan, taken more than one week in advance listing hypotheses, resulting capacity forecasts and contingency measures.

13.1.3.3 The ATFM provider shall establish Pre-tactical phase in the length of one day to one week prior to operations and conduct the ATFM daily plan (ADP) which describes the capacity resources and the measures to manage the traffic as disseminated by using an ATFM message. The ADP shall be developed collaboratively and aims to optimize the efficiency of the ATM system.

13.1.3.4 The ATFM provider shall establish Tactical phase on a day of operation with solutions and measures that taken during the strategic and pre-tactical phases, are adopted to address the demand/ capacity imbalances. The original ADP can be adjusted to mitigate disturbances from any unexpected opportunity.

13.1.3.5 The ATFM provider shall establish the post-operation analysis - process to measure, investigate and report on operational processes and activities by closed coordination and collaboration with ATFM stakeholders. The post-operations analysis shall be accomplished by evaluating the ADP and its results. Reported issues and operational statistics shall be evaluated and analyzed in order to learn from experience and to make appropriate adjustments and improvements in the future.

13.2 ATFM Solution and Measure

13.2.1 The ATFM provider shall establish efficient ATFM solutions, in part of strategy phase, to collaborate with ATFM stakeholder in the identification and selection process of the most appropriate and acceptable types of ATFM solutions applicable to any given area. The ATFM solutions is the combination of capacity optimization and ATFM measures.

Note: ATFM operation manuals are often used to list the ATFM solutions used in a given airspace and aerodrome. This information can also be published in national AIPs and/or regional supplementary procedures.

13.2.2 The ATFM provider shall conduct capacity optimization process to identify additional capacity to address a demand/capacity imbalance.

13.2.3 The ATFM provider shall establish ATFM measures which implemented and used when necessary to maintain the safety and efficiency of the ATM system. ATFM measures should not apply on a routine basis. When ATFM measures are requested on a regular basis, post-operations analysis shall be conducted for timely evaluation of when such application of ATFM measures can be discontinued.

Note: ATFM measures should only apply during periods when demand exceeds capacity. The frequent application of ATFM measures suggests an imbalance between ATM capacity and traffic demand, which should be addressed in a more strategic fashion.

13.2.4 The ATFM provider shall ensure that the ATFM measures

a.) prevent excessive air traffic demand compared with declared air traffic control (ATC) capacity of sectors and airports under normal circumstances;

b.) optimise the efficiency of the airspace and minimise adverse effects on operators;

c.) support the management of critical events;

13.2.5 The ATFM provider shall have an exempt or prioritize certain classes of flight from ATFM measure are required as:

a.) flights experiencing an emergency, including aircraft subjected to unlawful interference;

b.) flights on search and rescue (SAR) or rescue and firefighting (RFF) missions;

c.) urgent medical evacuation flights specifically declared by medical authorities where flight delays would put the life of the patients at risk;

d.) flights with "Head of State" status; and

e.) other flights specifically identified by State authorities.

Note: After medical flights have completed their mission they should be subject to applicable ATFM measures. Scheduled patient transfer flights are by nature non-urgent and should not be given priority under a normal operational situation. Notwithstanding any exemption from ATFM measures, exempted aircraft are included in the airport/airspace demand estimation.

13.2.6 The ATFM provider shall establish a monitoring of compliance to ATFM measures.

13.2.7 The ATFM provider shall produce annual report to indicate the quality of the ATFM that include at least detail of:

a.) causes of ATFM measures;

b.) impact of ATFM measures;

c.) adherence to ATFM measures;

d.) contributions by all stakeholder to the optimization of the overall network effect.

Chapter 14 Information exchange and communication

14.1 General

The Information exchange and communication shall be in accordance with ICAO Doc 9971, Manual on Collaborative Air Traffic Flow Management (ATFM)

14.1.1 The ATFM provider shall establish an appropriate procedure to exchange data and information with all stakeholder in an ATFM service.

14.1.2 The ATFM provider shall establish an appropriate ATFM data communications system to exchange ATFM information (the ADP and ATFM measure information).

14.1.3 The ATFM provider shall ensure that operational data from ATFM actors and services (e. g. , flight data information, capacity information, ATFM measure information, meteorological information) are available for exchange not only within their ICAO regions, but also across ICAO regional boundaries, in order to achieve more efficient traffic flow management.

14.1.4 The ATFM provider shall establish the data exchange policy that consists of provision, retention and distribution of ATFM data. The ATFM data policy shall define as:

a.) the duration and backup arrangements of data storage for investigation and post-operational purposes;

b.) the restrictions on the release of data to the general public and to commercial organizations;

c.) the provisions for the release of data to State, judicial and authorized investigative agencies;

d.) the restrictions on the use of ATFM data for other than operational ATM purposes;

e.) the restrictions regarding the provision of data on military and other special status flights

14.2 Air Traffic Flow Management Communications

14.2.1 General

14.2.1.1 The ATFM provider shall establish the communication method and exchange of operational information among stakeholders on a real-time basis with a standard format to exchange to increase stakeholder situational awareness, improve operational decision-making, and enhance the efficiency of the ATM system.

Note: As a basis for the exchange of information, notices to airmen (NOTAMs) and AIP supplements could initially be that used to distribute instructions relating to the application of ATFM measures.

14.2.1.2 The ATFM provider shall oversees the dissemination of ATFM information as well as its measures, and is responsible for monitoring, collecting and disseminating the information. The ATFM provider shall ensure that applicable information is disseminated in a timely and efficient manner.

14.2.1.3 The ATFM provider shall ensure that the ATFM terminology and phraseology for the exchange of ATFM voice and automated messages to be used by ATFM personnel is in line with ICAO Doc 9971, Manual on Collaborative Air Traffic Flow Management (ATFM)

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