



International Civil Aviation Organization

The Fifth Meeting of ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/5)

Bangkok, Thailand, 30 March – 3 April 2015

Agenda Item 5: Development of Regional ATFM Framework

Training of ATFM Personnel

(Presented by India)

SUMMARY

This paper presents a brief on training for ATFM Personnel as planned in the ATFM project implementation road map.

The Attachment with to this paper briefly describes the ATFM training plan with various training modules and their content. This information relates to the ATFM training requirements as presented by EU/AATIP in ATFM SG/4.

1. INTRODUCTION

1.1. India is implementing C-ATFM in India in phases. The first phase of implementation will be completed by September 2015, involving setting up of a Central Control and Command Center (CCC) at Delhi and Traffic Management Units (TMU) at Delhi, Mumbai, Chennai, Bangalore, Hyderabad and Kolkata.

1.2. The CCC and TMU will be manned by appropriately trained ATFM personnel. The following paragraphs describe the organization structure, roles and responsibilities of the ATFM personnel, selection process, skill set required and challenges that are foreseen during the process.

2. DISCUSSION

2.1 The following operational roles are envisaged at the CCC and TMUs.

2.2 **CCC and TMU ATFM Operations Supervisor:** The CCC (and TMU) ATFM Operational Supervisor acts as the top principal of ATFM operation management system to fully master and manage nationwide daily ATFM operations, direct daily operations of nationwide ATC facilities, coordinate air traffic operation problems, make final decisions on air traffic flow management initiative (ATFM initiatives), and have liability for the operability, effectiveness, and safety of decision makings.

2.3 The Flow Manager is responsible for planning the use of airspace and the execution of tasks related to flow management, such as slot allocation and re-routing. The presentation of current and future air situation in the console display, as well as view filters, are at the Flow Manager's disposal to assist in analysis and decision-making on specific issues.

2.4 The CCC ATFM Operational Supervisor is assisted in ATFM operations by appropriately trained ATFM personnel in the following areas of specialization.

- Operations Planning
- Airspace User Coordination:
- Capacity Analysis :
- ACC Monitoring:
- Special Flight handling;
- International Coordination:
- Weather:
- Large (Special) Event Coordinator:

2.5 **Flight Plan Information Management:** The Flight Plan Operator is responsible for maintaining the integrity of flight plan workflow.

2.6 **Aeronautical Information:** The Aeronautical Information Operator is ultimately responsible for the operational function of capacity management, assuming the following responsibilities:

- Reception and processing of conventional aeronautical messages in text format - NOTAM, making this information available to other operators in the center. With the aid of decision support tools, the operator interprets the NOTAM texts capturing the corresponding effects on the capacities of the regulated elements;
- Reception and processing of meteorological messages, such as, METAR, SPECI, TAF, SIGMET, AIRMET and wind forecast (GRIB), the latter used in the route extraction process of a flight plan and the correction of estimates;
- Acquisition and interpretation of meteorological images. With these data and with the aid of decision support tools, the Aeronautical Information Operator interprets the information received capturing the corresponding effects on the capacities of the regulated elements;
- Monitoring and maintenance of operational status of the aeronautical and airport infrastructure, capturing the corresponding effects on the capacities of the regulated elements;

- Establish operational priorities for maintenance and restoration of the technical equipment, following up the corrective actions.
- **Communication, Navigation and Surveillance (CNS)/ATM Equipment Monitoring:** Communicate with equipment monitoring systems on equipment operations, master equipment status such as periodic shutdown and repair, help the Capacity Position (CP) analyze the influence on system capacity due to abnormal equipment operation, etc.

2.7 The CCC is also equipped for conducting *post operations analysis and data mining*. The functions of the unit are: Collect and analyze various operational data, gather nationwide system operation logs, evaluate the safety, effectiveness, and operability of ATFM initiatives and plans already in the execution state or finishing execution, edit and release various statistical report forms and operation information.

2.8 **System Device Maintenance:** Maintain various equipment on the operation floor, ensure operation of equipment, and offer consultation services to operation and maintenance personnel in other units.

2.9 **System Software Maintenance:** Monitor software operations of ATFM operation systems, ensure safety and orderliness of various networks and databases, and offer consultation services to operation and maintenance staff in other units.

2.2. The CCC also makes provisions for having CDM partners and Stakeholders at the CCC. Some of the Positions are:

- Airlines Representative:
- Military Coordinator:

2.3. **Skills Required:**

- 5 -15 Years ATC experience at multiple sectors/multiple airports (Experience criteria depending on the TMU or at CCC)
- 3-5 years in leadership/supervisory position
- Customer oriented with excellent problem solving abilities
- Proven inter personal skills.
- Excellent communications, writing skills
- Adequate computer skills
- Exposure to advanced CNS / ATM Concepts will be an added advantage

2.4. **Selection Process:** The ATFM personnel will be selected within AAI. The ATFM directorate in coordination with ATM directorate will make a shortlist of eligible officers. The officers will be given a short orientation introduction to the concept of ATFM. The final selection of ATFM personnel will be done after interview of the shortlisted officers.

2.5. **Training Requirements:** Development of the training strategy is a key aspect of system planning which should begin early in the program. In other words, even though much of the training activity will take place after the advanced system is procured, planning should begin in the near term. For example, the functional analysis will help determine what staff will be performing advanced ATFM functions, and what gaps exist between their skills and the skills needed for the ATFMS. Stakeholder's interaction and ATFM sensitization programs need to be held in which the ATC community becomes better informed of what TFM is and how it operates. This is also carried out with other aviation partners such as the airlines and the military.

2.6. Personnel performing ATFM functions will require standardized and recurrent training in order to maintain their competency level in a constantly changing environment. A detailed ATFM training plan will ensure that personnel attain an optimized operational efficiency in their respective FMU/TMU. This will allow them to successfully face the important changes in their operational environments and provide the highest possible level of service.

2.7. All stakeholders involved in the ATFM system must be given the training required to allow for an efficient ATFM service. ATS personnel, as well as AUs, must have the knowledge required to carry out their respective responsibilities.

2.8. **Attachment A** gives a brief overview of the ATFM training planned as part of implementation program in India.

2.9. **Conclusion:** The selection of appropriate ATFM personnel and a properly structured training plan is the most crucial process for the success of ATFM implementation and operation. It is therefore necessary to begin the process simultaneously along with the implementation of the C-ATFM system.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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ATTACHMENT A: ATFM TRAINING PLAN

SCOPE

This Training Plan describes the planning of training activities to be held by the AAI's operators and by the stakeholders who will be responsible for interacting with the features of Central Air Traffic Flow Management (C-ATFM) System. The trainings being delivered will aim to enable students to exercise their operational and technical functions in the new system. Training will be provided as "Train the Trainer" to AAI identified trainers and these AAI trained personnel will then provide training to other AAI personnel and stakeholders

In the scope of this document, it is specified the training program to meet the following areas:

- a. **Operational** – this training aims to enable the following users in the interaction with the features provided by the system:
 - AAI User
 - Aircraft Operator
 - Airport User
- b. **Technical** - this training is designed to train the technical staff of AAI for the administration and maintenance of the system.

OPERATIONAL TRAINING

The Operational training is aimed at Specialist Operators and will provide them an in-depth view of the Graphical User Interface and application software functionalities. After the course the participants will be able to use the system's existing operational commands. At this point they will also be able to pass the information about the system. There will be demos and specific work in the system equipment, exercising the operational environment and system resources available.

The training will be conducted on the premises of the AAI, in which the instructor will develop challenging situations for the students according to the daily operations. The training will be delivered as detailed in the following items.

- a. ATFM Overview Training
- b. User Training
- c. Aircraft Operator User Training
- d. Airport User Training
- e. Technical Training

ATFM Overview Training

Through this module, participants will have an overview of ATFM in the context of air traffic Services, where the instructor will provide a focus on the concepts applied in the management of air traffic flow. Through this module, the instructor will spread knowledge among participants about the concepts of managing traffic flow and application of operational procedures for solving problems of imbalance between capacity and demand. This module provides an introduction to the system components, testing preparation, post-operation system performance analysis and problem identification and resolution. The ATFM Overview training consists of system overview, functionalities, system architecture and HMI training. The period of training will be three days.

User Training

The training focuses on end users of the system, which will consider the roles to be played in accordance with its responsibilities. Its content is divided into modules, each module will focus on the specific procedures on the roles of users, including airspace, the flight plan, flow management, time, database entry, system access and security, and operating the subsystems. The training aims to empower the end users of the system to perform their operational roles according to their responsibilities. Through this process of training the operators of AAI will be familiar with the following topics:

- Overview of ATFM system;
- Concepts of demand, capacity and flight information;
- Aerodrome Delay Program (ADP): Modeling, power run, viewing results, revisions, compression;
- Aerodrome Stop Program (ASP): when to issue, modeling, changing scope, transition to ADP, canceling;
- Airborne Holding analysis;
- CDM Process;
- Web-based CDM;
- Real-time and post analysis reporting;
- General usage (sorting, searching);
- Standard reports;
- Identifying issues and potential solutions.

The training period will be two weeks. Intended audience are the AAI officers who will be working as ATFM Specialists in CCC and TMUs.

Aircraft Operator User Training

Through this module, aircraft operators will undergo a training program which will be presented the characteristics of the ATFM system with focus directed to their area of responsibility, providing knowledge about how users access the system to allow access to an environment for collaborative decision making (CDM). The training aims to empower the aircraft operators to perform their operational roles according to their responsibilities. Through this process of training the aircraft operators will be familiar with the following topics:

- Overview of ATFM system;
- Concepts of demand, capacity and flight information;
- Aerodrome Delay Program (ADP): How it operates; roles and responsibilities
- Aerodrome Stop Program (ASP): How it operates; roles and responsibilities
- CDM Process;
- Web-based CDM;
- Real-time and post analysis reporting;
- General usage (sorting, searching);
- Standard reports;
- Identifying issues and potential solutions.

This module has been designed with focus turned to the aircraft operators. Through the features users consider the information provided by the system and apply suitable for managing the CDM procedures. The training period will be one week. The intended audience will be Aircraft Operators from operational background.

Airport User Training

Through this module, airport user will undergo a training program which will be presented the characteristics of the ATFM system with focus directed to their area of responsibility, providing knowledge about how users access the system to allow to interact with environment for collaborative decision making (CDM). The training aims to empower the airport operator to perform their operational roles according to their responsibilities. Through this process of training the aircraft operators will be familiar with the following topics:

- Overview of ATFM system;
- Concepts of demand, capacity and flight information;
- CDM Process;
- Web-based Application Usage;
- Real-time and post analysis reporting;
- General usage (sorting, searching);
- Standard reports;
- Identifying issues and potential solutions.

This module has been designed with focus turned to the airport user. Through the features users consider the information provided by the system and apply suitable for managing the CDM procedures. The period of training will be three days.

Technical Training

The aim of technical training is to prepare technicians to perform support activities necessary to keep the system operating state in the long term. These tasks include preventive and corrective maintenance, as well as the generation of SW and configuration. Maintenance training will also include physical system maintenance aspects of installation, configuration and maintenance of network equipment installed. This training will relate to operating system configuration, access and workstation installation, launch applications, configuration of stations, network topology and procedures for routine maintenance. The training will be delivered through specific modules, as detailed in the following items

- Adaptation Maintenance / Software Support Training – For two weeks
- System Administration and Maintenance Training – For two weeks

EVALUATION

At the end of each training component, an assessment of the trainees will be held in the form of examination (written and practical). The evaluation will aim to assess the knowledge level of the trainees in the following aspects:

- Mastery of the concepts applied in the different functionalities of the system;
- Execution of practical exercises according to the case studies to be presented in the application of evaluation.
- The grade for approval will be 70%.
