

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 1: Introduction and assessment of a global air traffic management (ATM) operational concept

1.2 Enabling concepts in support of the global ATM operational concept
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THE ESTABLISHMENT OF AIR TRAFFIC MANAGEMENT CENTER IN JAPAN

(Presented by Japan)

SUMMARY

This paper introduces the plan of air traffic management center (ATMC) in Japan. The ATMC will have the three components of air traffic management, which are air traffic flow management (ATFM), airspace management (ASM) and air traffic services (ATS). Other highlighted components of the ATMC are collaborative decision-making (CDM) with airspace users and civil-military cooperation.

Action by the conference is in paragraph 3.

1. INTRODUCTION

1.1 Facing the traffic growth in 1980s and the expected increase of traffic demand in 1990s, Japan decided to implement an air traffic flow management service and commenced its service by establishing the air traffic flow management center (ATFMC) in 1994. The ATFMC is responsible for the air traffic flow management in two flight information regions (FIRs), which are Tokyo FIR and Naha FIR.

1.2 The ICAO concept of air traffic management (ATM) consists of ATFM, airspace management (ASM) and air traffic services (ATS). Considering the present ATFMC function, Japan decided to realize the concept by adding the ASM function and some parts of ATS function to the present ATFMC.

1.3 The planned facility, provisionally named Air Traffic Management Center, is expected to commence its initial operation in 2005.

2. THE OUTLINE OF AIR TRAFFIC MANAGEMENT CENTER (ATMC)

2.1 Objectives

2.1.1 ***Airspace capacity enhancement.*** In the Asia Region, many countries opened new airports in the 1990s, or have plans to expand their airports or to inaugurate new airport operations. Even in Japan, a new international airport (Chubu International Airport) will be open in 2005, Tokyo International Airport (Haneda Airport, the busiest airport in Japan) will be expanded within ten years and there is a plan to extend the length of a runway of New Tokyo International Airport (Narita Airport). Considering these situations and the ICAO forecast for the traffic growth in the Asia/Pacific Region, airspace capacity enhancement is an immediate need for air traffic management.

2.1.2 ***Improvement of operational efficiency of airspace users.*** The demands of airspace users are diverse and the related ATS operations to cope with those demands should be considered from various viewpoints. Aircraft gate-to-gate operations should be considered, which includes airport operations, airspace use, emergency management and so on. Air traffic management should have the capability to deal with those requirements.

2.1.3 ***Efficient flow management service for international flights.*** The present ATFM focuses its air traffic flow management service mainly on the domestic flights in Japan. International flights are expected to increase worldwide, especially more than 5 per cent annually in the Asia/Pacific Region. Japanese FIRs are located in a position of critical importance in the Asia/Pacific Region for the traffic connecting Asian countries and the North American continent. ATMC will have a capability to provide efficient flow management service for the international flights.

2.1.4 ***Crisis management.*** Crisis management is one of the most important issues in air traffic management. The September 11 event in 2001 showed the world the importance of crisis management in air traffic services. The ATMC will be the central point to coordinate with the neighboring ACCs around Japan for the crisis management.

2.2 Main components

2.2.1 ***Collaborative decision-making (CDM).*** Collaborative decision-making plays an important role in future air traffic management. For the establishment of the ATMC, Japan has been discussing the role of the ATMC and the methods of air traffic management with airspace users. The discussion yielded a lot of ideas and among them there was a need to implement CDM tools between the airspace users and the ATMC. The airspace users will be able to see the present traffic situation and the forecast, and to coordinate with ATMC for their decision-making through the CDM tools.

2.2.2 ***Civil-Military cooperation.*** The airspace for civil aircraft and military training aircraft is completely separated. Facing the increase of traffic volume in recent years and the expected growth of traffic demand in the future, the flexible and efficient use of airspace has become one of the primary objectives of

ATS providers. Some military liaison officers will be stationed in ATMC for the prompt and efficient coordination for the harmonized airspace use between civil and military.

2.2.3 ***Air traffic flow management (ATFM)***. CDM will enable ATMC to provide enhanced ATFM methods. Main methods of present ATFM service are ground delay programme and re-routing. Taking advantage of CDM, some new methods will be introduced as airspace users can exchange the departure time slots assigned for their aircraft.

2.2.4 ***Airspace management (ASM)***. Comprehensive ASM will be provided by ATMC. Considering the traffic situation, ASM function will arrange the most efficient airspace use, such as by adjusting area control centre (ACC) sector boundaries, coordinating with military for the use of conditional routes which penetrate the military training airspace and so on.

2.2.5 ***Air traffic control service in oceanic controlled airspace (ATS)***. Air traffic control service in oceanic controlled airspace will be provided by ATMC. Presently two separate ACCs provide oceanic ATC service for Tokyo FIR and Naha FIR respectively. For more efficient ATFM service to international flights and for more efficient oceanic ATC service, Tokyo FIR and Naha FIR will be consolidated into a single FIR and the ATMC will take over the responsibility from the ACCs to provide the oceanic ATC service for the FIR. Data link applications, such as automatic dependent surveillance (ADS), controller-pilot data link communications (CPDLC) and ATS interfacility data communications (AIDC), will be utilized for the efficient use of the airspace.

3. ACTION BY THE CONFERENCE

3.1 The conference is invited to note the information in this paper.

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