



## INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY SIXTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION  
PLANNING AND IMPLEMENTATION REGIONAL GROUP  
(APANPIRG/26)**
*Bangkok, Thailand, 7 – 10 September 2015*
**Agenda Item 3: Performance Framework for Regional Air Navigation Planning and  
Implementation**
**3.2: ATM**
**CHINA DEDICATE TO PROMOTE CROSS-BORDER ATFM DEVELOPMENT**

(Presented by People's Republic of China)

**SUMMARY**

This paper mainly presents about the proposal of the construction of Cross-border ATFM in APAC in a systematic manner. With the increasing benefits of ATFM in APAC and process of Cross-border ATFM among all members, it is a common consensus that promoting the development of Cross-border ATFM actively in APAC. Systematic processing the research of the construction of ATFM in APAC, sufficient engaging in the development foundation of ATFM simultaneously, all these will be more conducive to promote the ATFM in APAC scientific and sustainable development. This paper will put forward to the suggestions and the ideas of supporting Cross-border ATFM in APAC scientific and sustainable development from Collaborative Decision-Making, ATFM business rules, ATFM information sharing, ATFM process, ATFM technique, ATFM concept, ATFM tools and collaborative and cooperation mechanism.

**1. INTRODUCTION**

1.1 In recent years, ICAO has made fruitful achievements in implementing the CDM/ATFM in APAC. The benefits of ATFM in APAC is increasingly revealed and now it is a wildly common consensus of promoting the Cross-border ATFM actively in APAC.

1.2 The lack of clear sense of the direction and synchronous development process not only reduce the degree of ATFM integration between different countries and regions, but also cause a waste of ATFM resources. Therefore, in the preliminary period of Cross-border ATFM, Systematic processing the research of the construction of ATFM in APAC, sufficiently laying the development foundation of ATFM, simultaneously, promoting the construction of ATFM in APAC, all these will be more conducive to promote the ATFM in APAC scientific and sustainable development.

1.3 The ATFM Steering Group (ATFM/SG), the ATFM Information Requirement Small Working Group (ATFM/IR/SWG) and the ATFM Operational Trial, which are promoted by ICAO, have a promotion for the cooperation and development of the ATFM in this region. On June 29, 2015, with the initiating of APAC Multi-nodal ATFM Operational Trial by Australia, China, Hong Kong China, Malaysia, Singapore, Thailand, and other 10 countries and regions, a brand new Cross-border ATFM has been coming in the first period of the rapid development.

## 2. DISCUSSION

### **Collaborative Decision-making Platform**

2.1 China has been committed to promote the Collaborative Decision-Making platform construction in APAC. In March 2014, at the ICAO ATFM Steering Group meeting, China firstly proposed to construct the APAC Collaborative Decision-Making platform. Meanwhile, a concrete scheme of the construction of the platform has been studied.

2.2 At the APAC distributed Multi-Nodal ATFM operational mode, every participant operates independently in each node, simultaneously, they need to have an information exchange and decision-making with external node. But now there is a lack of decision-making exchange mechanism and platform under the concept framework. The construction of ATFM collaborative decision-making platform will become a strong support and promote the sustainable development for the Cross-border ATFM.

### **ATFM Business Rules**

2.3 In APAC, when every countries and regions participate in Cross-border ATFM operation system, if all the parties join together, every party must known their responsibility and obligations very clearly. The construction of a reasonable procedure and CDM mechanism need a highly efficient business rules to support the whole system running smoothly.

2.4 At the APAC distributed Multi-Nodal ATFM Operational Trial, China along with other participants conducted the research of business rules which contribute to the development of Cross-Border ATFM. With the promotion of APAC Cross-border ATFM Operational Trial, a more simple, motivation, highly effective business rules become a common demand among all parties. Through practice, all members continuously verify and improve the Cross-border ATFM business rules, and promote the improvement and development of ATFM business rules.

### **ATFM Information Sharing and Interaction**

2.5 DCB (Demand/Capacity Balancing) as the core content of ATFM, each element of this concept needs plenty of data to support. Take the demand prediction as an example, delay flight's prediction problem is always one of the important and difficult matters to affect the quality of demand prediction. Through the data sharing, the participants can understand others' T (Targeted) time and C (Calculated) time, and the demand predictive accuracy would increase greatly, which lays an important foundation for DCB.

2.6 Under the advocacy of China, in 2015, at the ICAO ATFM steering group fifth meeting, the ICAO officially approved APAC ATFM information requirement working group, which is endorsed by China, Hong Kong China, India, Indonesia, Japan, Singapore, Thailand and other countries and regions. This working group will dedicate to the development of information sharing.

### **ATFM Process**

2.7 The APAC distributed Multi-Nodal ATFM operation mode provides a good running environment for the tactical phase ATFM, however, this concept framework provides a slightly support for the strategic and pre-tactical phase ATFM. Presently, the APAC Cross-border ATFM research and trial focused on the tactical phase, and as a breakthrough point in the early construction of APAC Cross-border ATFM, it has a strong feasibility to solve the main issues through the tactical phase ATFM.

2.8 From the perspective of long-term development of ATFM in APAC, the strategic, pre-tactical, tactical phases are an integrated part of overall ATFM process. With the implementation of the process of ATFM, a robust and mature Cross-Border ATFM system could be anticipated in the future.

### **ATFM Initiatives**

2.9 The focus of present APAC cross-border ATFM research and promotion is Ground Delay Program (GDP). Through the research and verification, GDP is almost the most important ATFM measures at this stage. However, the APAC is not only facing the airport or terminal congestion, and not all airports have the ability to implement the GDP. So, variety of ATFM measures is the basis of all states working together to participate in Cross-border ATFM.

2.10 With the efforts from China, the second phase of ATFM Operational Trial has been planning on the implementation AFP (Airspace Flow Program). Meanwhile, a consolidated and reasonable utilization of all kinds of ATFM measures such as airborne holding, ground stop and relatively simple MIT would be supportive for the whole Cross-border ATFM.

### **ATFM Concept**

2.11 Distributed Multi-Nodal ATFM concept provides an environment for every node participating in Cross-border ATFM equally, and it is the important concept foundation. At this stage, the APAC ATFM Operational Trial has a smooth implementation under the basic of this concept.

2.12 There are many ATFM group in APAC, for example multi-nodal group, NARAHG, BIMT. And now China actively participate in four Cross-border ATFM group, In the South is the multi-nodal group, in the northeast is the NARAHG group, in the west is ATM cooperation among China, Kazakhstan and Tajikistan, which is mainly about the ATFM, in the north China Russia and Mongolia will establish ATFM group which will be instructed and organized by ICAO sub-office.

2.13 With the gradually increase of APAC Cross-border ATFM participants, the Multi-nodal ATFM concept has the possibility to evolve to a more mature one. Therefore, CAAC provides a concept of Distributed Node-Group, which provides a further effective support for the whole APAC Cross-border ATFM long-term development.

2.14 “Distributed Node-Group” is to organize the ATFM nodes which have a more reliable relationship to be a Node-Group. According to the scale of ATFM initiatives, ATFM measures would be deployed within the single Node-Group when a relative lower requirement of ATFM measures is implemented. Meanwhile, when a large scale of Cross-border ATFM is needed, CDM among Node-Groups will be deployed to avoid disorder when a large amount of ATFM nodes working together. Therefore, Cross-border ATFM will be more systemic, layered and improvement with the usage of new concept - Distributed Node-Group.

### **ATFM Tools**

2.15 ATFM tools is an important way to improve the efficiency of DCB which is the core content of ATFM to support and realize the development of Cross-border ATFM.

2.16 ATFM tools should make a full consideration on both Cross-border and domestic. An interface between Cross-border and domestic should be reserved at the designation stage in other to the further development on the integration of a whole ATFM system.

### **CDM mechanism**

2.17 CDM play a key role of ATFM. Collaboration and cooperation among ANSPs, AOs and AUs become a broad consensus in the APAC Cross-border ATFM. Stakeholders cooperate collaboratively under the same situation and awareness. CDM is the foundation to improve the efficiency of ATFM and resources allocating.

2.18 The scope of CDM will gradually extend with the development of APAC cross-border ATFM. Take the present APAC ATFM Operational Trial as an example, meteorological departments don't directly participate in CDM. With the advancement of APAC cross-border ATFM process, it will be a development trend of all-round collaborative and cooperation that more and more departments participate in the ATFM.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a. Note the information mentioned in this paper.
- b. Invite all stakeholders participate in the construction of APAC ATFM Collaborative Decision-Making platform together with China.
- c. Positively join the research of ATFM Business Rules which has been appealed by China.
- d. Discuss the new ATFM concept of "Distributed Node-Group" which has been proposed by China.

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