



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

CDM GUIDANCE FOR REGIONAL ATFM FRAMEWORK

(Presented by INDIA)

SUMMARY

This paper presents a draft guidance for Collaborative Decision making (CDM) process needed for a regional ATFM framework. The CDM Guidance captures the essential characteristics of an evolutionary CDM environment as appropriate to the emerging concept of cross border ATFM. The CDM guidance is aligned to the concepts of CDM as described in Doc 9971 Part I.

1. INTRODUCTION

1.1 During the ATFM/SG/4 meeting India presented a working paper on the requirements for CDM for regional ATFM. The ATFM/SG then requested India to provide a draft guidance in CDM processes for inclusion in the regional framework for cross border ATFM.

1.2 India is implementing a Central ATFM system with CDM as an integral part in stages. The implementation process is planned to take place in a gradual evolutionary manner, making sure that the stakeholders are involved at each stage. As part of the implementation process, AAI has conducted a series of stakeholders meetings to familiarize the concepts of ATFM with CDM.

1.3 The IATA study presented in ATFM/SG/4 meeting has highlighted the present ATFM implementation efforts in the APAC region. As seen from the report most of the ATFM process implementation being undertaken by APAC States are concentrated at addressing national demand and capacity problems.

1.4 The “multi-nodal cross border ATFM” project and the initiation of coordination for ATFM such as NARAHG are looking to address balancing the demand and capacity at constrained airports/airspace over a pan-national horizon. This concept requires new levels of collaborative decision making among multi-national stakeholders.

1.5 The essential core of Collaborative Decision Making (CDM) process requires CDM partners (or Stakeholders) to share information and work together more efficiently and transparently with the common goal of improved overall performance.

1.6 However the infrastructure required for a real time sharing of ATFM data as conceptualized in SWIM will take time. In the ensuing time it is desirable that the regional ATFM Framework document provides initial guidance on the process of CDM. The paragraphs below describe the initial concepts of CDM process for developing cross border ATFM. **Attachment A** to this paper provides some flowcharts to illustrate the process.

1.7 The ATFM Capability and Performance Improvement Plan (presented by the Secretariat in ATFM/SG 4) envisages a phase wise development in the capabilities of States and other Stakeholders for a gradual roll out of ATFM capabilities in the Region. The CDM capabilities that are required for a cross border ATFM across the APAC region may be synchronized in a similar manner.

2. DISCUSSION

CDM concepts-Doc 9971 Part I:

2.1 CDM is defined in as the “process focused on how to decide on a course of action articulated between two or more community members. Through [which], ATM community members share information [...] and agree on and apply the decision-making approach and principles. The overall objective of the process is to improve the performance of the ATM system as a whole while balancing the needs of individual ATM community members.

2.2 Chapter 2 of the Doc 9971 Part I describes the CDM Process. Para 2.3.6. and 2.3.7 identify the following concept components requiring collaboration and CDM in the “tactical” timeframe;

- aerodrome operations;
- demand and capacity balancing;
- traffic synchronization; and
- ATM service delivery management

2.3 The ATFM systems being deployed at various States in the APAC region are in different stages of implementation and maturity. The need for CDM and effect of ATFM measures being applied at this time are expected to be more oriented towards local or national DCB. As the ATFM systems mature and begin expanding over a wider region , as envisaged in the evolution of multi modal virtual network system with different CDM partners participating at various levels of decision making , the logical step is towards developing into a CDM environment of ‘**multilateral decision making with complimentary individual goals**’ . The essential characteristics of such a CDM are described in para 2.4.

Main Characteristics of a Regional ATFM/CDM system.

2.4 To be efficient and reach the required objectives, CDM for Cross border ATFM should have the following characteristics:

- An Inclusive process – Participation by States and other Stakeholders is the key;
- A Transparent process – Simple business rules to ensure compliance and build trust will be necessary;

- Allows Sharing of information between all partners through a common platform to improved efficiency and operational decision making – This process will take some time ; and
- Achieving Common Situational Awareness for all partners- This may be more easily achieved in a local/national ATFM set up. For a cross border ATFM setup we need to take into account the data sharing capability between the stakeholders.

2.5 Cross border ATFM CDM should provide opportunities for:

- Efficient exchange of operational and strategic information for all stakeholders
- Ensuring Strategic cooperation among States and Stakeholders towards achieving the objectives of “Seamless ATM”
- Optimization of traffic flows across the Region

2.6 Challenges – for regional ATFM framework:

- Establish procedures that are transparent, easily understood and flexible
- Abide by the procedures – Compliance of CDM partners to agreed procedures
- Ensure Participation of CDM Partners
- How to change attitudes and methods through proven benefits

2.7 Suggested CDM Partners and Stakeholders - (For Regional ATFM) – The organizations participate in the overall CDM process with different objectives and roles. They may be as below:

- States – For ensuring compliance of CDM business rules
- ANSPs – Through ATFM Organizations or Otherwise
- International Agencies (as representative partners) – IATA, CANSO, ACI, IFATCA....
- International ATFM Organizations (to share tactical flight data through FUM) – Euro control, FAA
- Individual airports when they are not part of national ATFM – Through A-CDM whenever possible
- The Participation of Stakeholders at different levels of needs and capabilities is depicted in **Attachment A** to this WP.

2.8 CDM Process – Concepts and Levels of Participation of ANSPs

- Participating ANSPs will develop their individual ATFM capabilities according to their needs and requirements
- Individual ANSPs operating an independent, virtual ATFM/CDM node
- Complimentary Goal is “Seamless ATM “across APAC region.

- Participation in the regional Virtual Mode ATFM CDM is envisaged to happen at various levels.
- They could be as below: (a broad model based capabilities of individual ATFM nodes)
 - a. No Ability for exchange of relevant tactical flight data – No ATFM requirement
 - b. Ability for exchange of relevant tactical flight data – Though ACCs , No ATFM capability or requirement – Facilitators
 - c. Ability for exchange of relevant tactical flight data – Through ATFM centers. - Passive participation
 - d. Ability for exchange of relevant tactical flight data and ATFM Capacity information– Through ATFM centers , active participation
 - e. Ability for exchange of relevant strategic and tactical flight data, participation in ATFM measures implementation (both at airport phase or en-route phase or both)– Though ATFM centers , Active CDM Partners
 - f. Ability for exchange of relevant strategic and tactical flight data , ATFM capacity, Participation in CDM Process – Though ATFM Centers , Full CDM Partners
- We will need to define levels of engagement, roles and responsibilities, participation process, obligations and compliance, etc., depending on the levels of participation.

Conclusion

2.9 The APAC regional ATFM framework is contemplating a radically revolutionary concept of collaborative regional ATFM. The concept calls for participation of stakeholders in various capacities in the CDM process with an overall network optimization objective. As the concept grows in maturity and the partners equip themselves with better ATFM capabilities, the process of collaborative engagement will also evolve to a greater participation.

3. ACTION BY THE MEETING

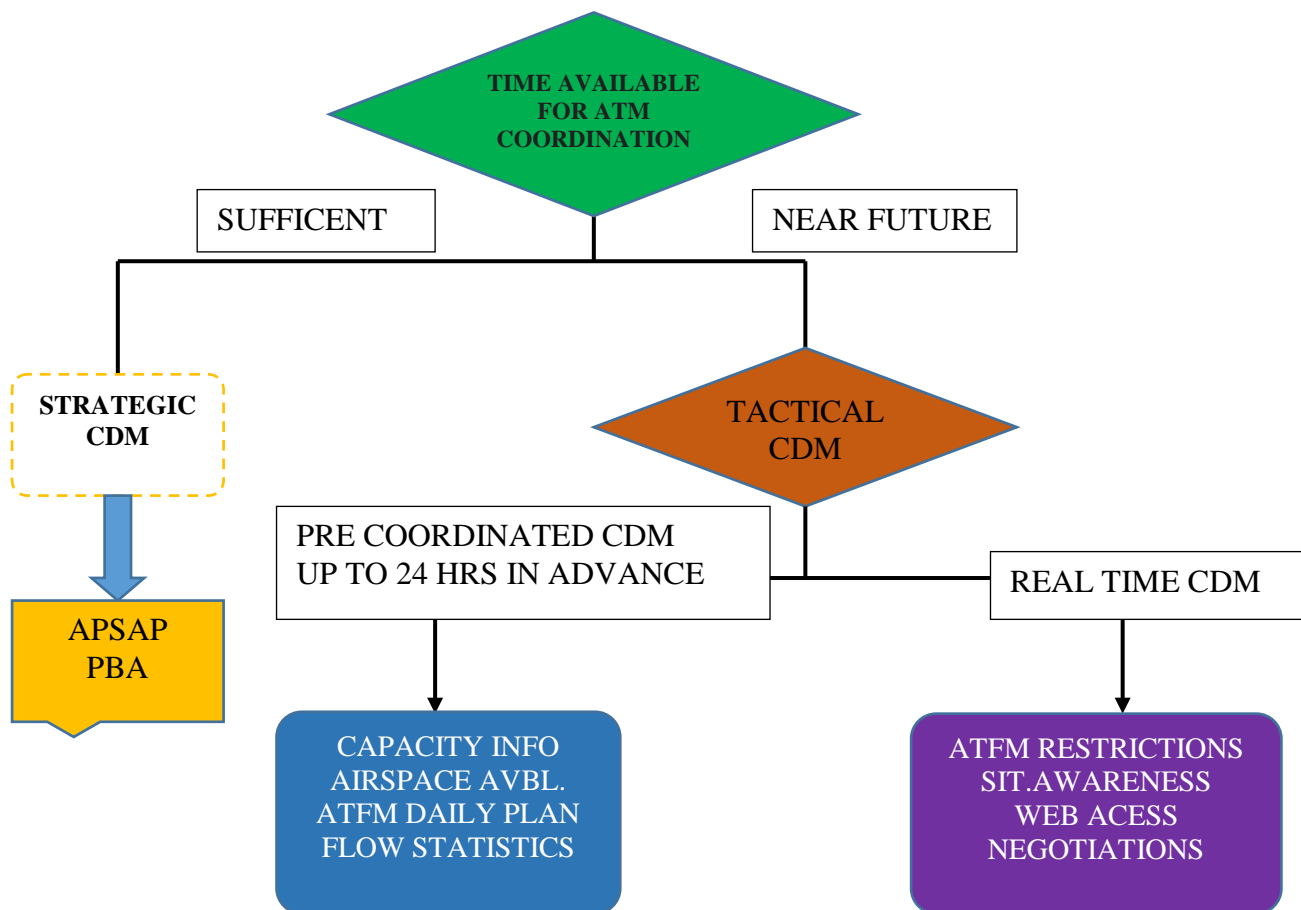
3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) consider the proposed CDM mechanism for discussion and inclusion in the Draft Regional ATFM Framework document; and
- c) discuss any relevant matters as appropriate

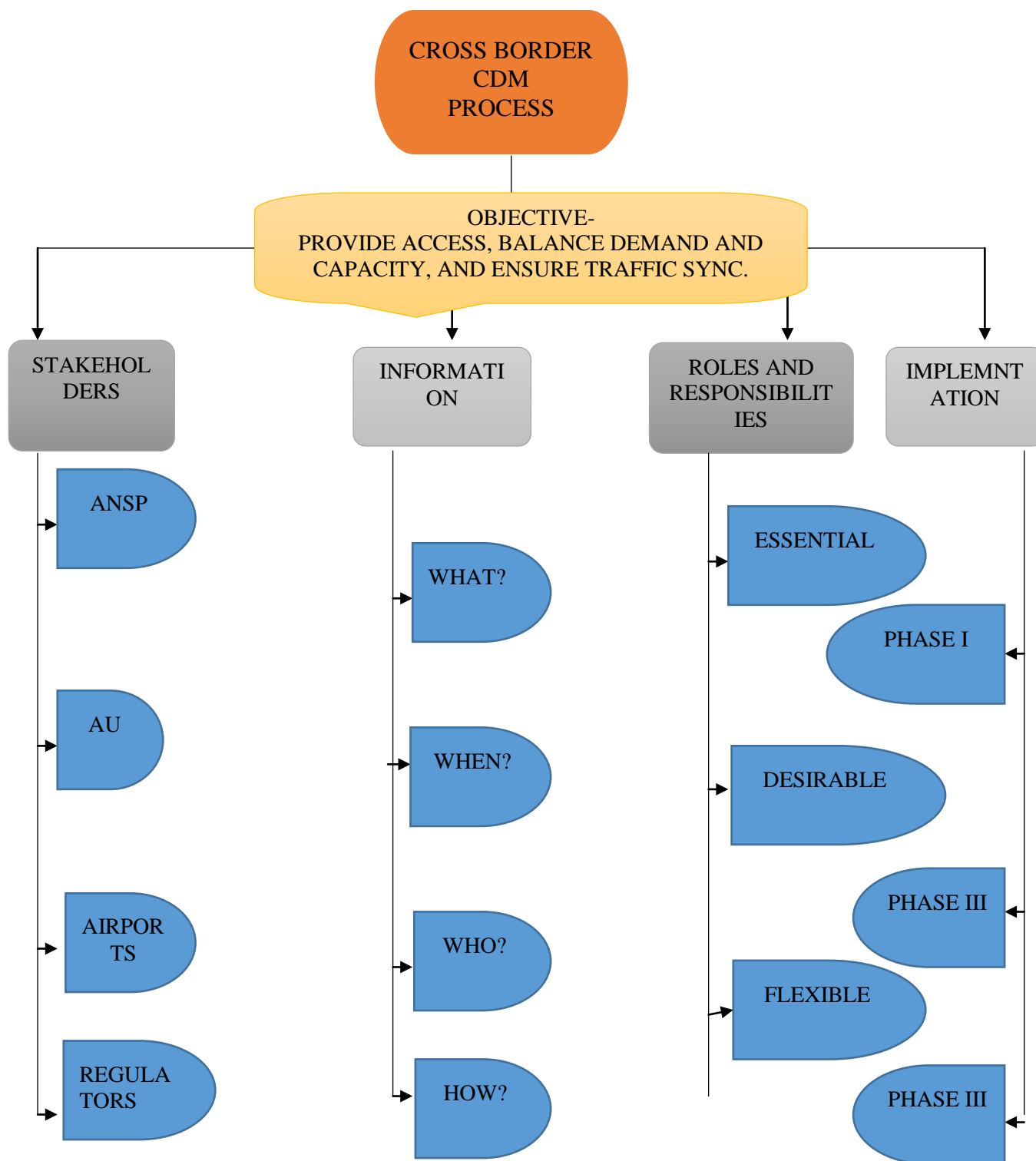
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ATTACHMENT A

I. MULTILATERAL CDM FOR ATFM



II. CROSS BORDER CDM PROCESS



III CDM PARTNERS

