



ICAO

International Civil Aviation Organization

**Tenth Meeting of the Asia/Pacific Air Traffic Flow
Management Steering Group (ATFM/SG/10)**

Video Teleconference 04 – 08 May 2020

Agenda Item 5: Regional ATFM Framework and Guidance Material

WAY FORWARD TO PROGRESS WITH ATFM INTEROPERABILITY THROUGH THE ICAO ATFM/IR/SWG

(Presented by China, Hong Kong, China, Singapore Thailand, CANSO and IATA)

SUMMARY

This paper presents an update on the accomplishments of the ATFM/IR/SWG and propose the way forward to progress with the task of fulfilling the TOR of the ATFM/IR/SWG.

1. INTRODUCTION

1.1 The ATFM Information Requirement Small Working Group (ATFM/IR/SWG) was first established in 2015 under the purview of the ICAO ATFM Steering group (ATFM/SG). ATFM/IR/SWG Term of Reference (TOR) was then updated and endorsed by the ATFM/SG as per Decision ATFM/SG/9-1 in 2019.

1.2 At the time of the first Face-to-Face (F-2-F) meeting of the ATFM/IR/SWG in 2018, it was recognised that there are more than one sub-regional cross-border ATFM groups working towards implementation of ATFM in the Asia Pacific region. Emphasis was placed on generating discussions on interoperability to facilitate the realization of the TOR of the ATFM/IR/SWG. Since then, the ATFM/IR/SWG has held four F-2-F and five web based conference meetings. While, these meetings have provided better understanding of the effort undertaking by the various groups, the progress towards establishing a common understanding to move forward towards interoperability has been slow.

1.3 This paper discusses the opportunities for the way forward to progress with the task of fulfilling the TOR of the ATFM/IR/SWG.

2. DISCUSSION

Content and Participation

2.1 ATFM/IR/SWG held its first F-2-F meeting in August 2018 and it provides a useful platform for subject matter experts to share operational challenges faced in the implementation of ATFM and the need for interoperability between the various efforts to implement ATFM. The subsequent second and third meetings progressed with the development of a roadmap for Interoperability Concept of Operations (I-CONOPS).

2.2 At the fourth F-2-F meeting in November 2019, there were discussions on the proposal to deep dive into Concept of Operations (CONOPS) and technical details, while progress updates and issues related to operational area(s) can be discussed at other appropriate forums. The meeting also discussed the importance of having the appropriate representation by minimally having one operations expert and a technical expert from each States/Administrations/Organizations. This is so that the SWG can effectively discuss and progress with the tasks as per listed in the TOR.

2.3 As interoperability is one of the most crucial discussion topics it requires the active interaction between the members of the various ATFM groups and projects, it would be advantageous for the relevant States/Administrations/Organization to be present and appropriately represented at the meeting discussion to achieve a more expeditious decision making process.

Momentum of the ATFM/IR/SWG

2.4 While the region is moving forward to implement cross-border ATFM operation, ICAO and the Distributed Multi Nodal ATFM Network project group (DMN ATFM) recognised variation that were developing in terms of CONOPS and operational ideologies among sub regional ATFM groups. The DMN ATFM's CONOPS was built upon the regionally agreed ATFM concept in the Asia/Pacific Regional Framework for Collaborative ATFM. Particularly. The DMN ATFM's CONOPS focuses on the pre-tactical phase of ATFM operation by utilising Ground Delay Program as the main ATFM measure, distributing Calculated Take-Off Times (CTOTs) based on Calculated Landing Times (CLDTs) at the constrained arrival airports or Calculated Time Over (CTOs) locations in the constrained airspace to regulate air traffic flow, balancing foreseen air traffic demand and available capacity. Data exchange under this CONOPS is realized using the EUROCONTROL Slot Allocation Message (SAM) and its related messages distributed over Aeronautical Fixed Telecommunication Network (AFTN) and/or ATS Message Handling System (AMHS) in the interim before the implementation of ATFM-related data exchanges over SWIM.

2.5 On the other hand, other ATFM group focuses on prescribing the requirement for regularly updated trajectory information, e.g. estimated time over a waypoint, to be exchanged between member ANSPs. The required trajectory estimates serve the formulation of traffic sequence over the particular waypoint and provide the ability for active regulation of traffic flow by controlling the crossing time of a flight over the waypoint. This concept draws large similarity to the tactical ATC operations of aircraft sequencing while aiming towards trajectory-based operation, as opposed to simpler demand-capacity balancing. The platform of data exchanges between member ANSPs has also been prescribed to be on a specific platform that limits the ability for other States/Administration/Organization to develop their own interface solutions.

2.6 The DMN ATFM project group recognised these differences and have proactively reaching out and proposing strategies to achieve seamless cross-border ATFM operation for the region. The DMN ATFM project group also understands that the aim should not be to fully harmonise different ATFM CONOPS, but rather focus to ensure that interoperability can exist between the various ATFM groups.

2.7 The initial ATFM/IR/SWG roadmap, AFTN/AMHS-based Interface Control Document (ICD), and interoperability CONOPS (I-CONOPS) were proposed by the DMN ATFM for adoption by the ATFM/IR/SWG. The I-CONOPS is based on a methodology that would be implementable considering available technologies and tools, and could be catered to the differing level of ATFM maturity of States in the Asia/Pacific region.

2.8 Briefly, the I-CONOPS proposed for the regulation of flights between two sub-regional ATFM groups to take place at an ATS waypoint along the interface (FIR boundaries) between the members of the two groups, with the issuance of a controlled time to cross the waypoint prior to the flight's departure, addressing flow management at the pre-tactical phase. Built on the work done and aligned with the regional framework, automation in terms of ATFM-related data exchanges would be accomplished using SAM and its related messages distributed over AFTN/AMHS based on the accompanying ICD. This was discussed at the last ATFM/IR/SWG, but there were concerns that this I-CONOPS was considered to be a form of ATFM service that offers less predictability and less trajectory accuracy.

2.9 Despite the limitation of predictability and trajectory accuracy, there is opportunity for all parties to continue to work together to build up the I-CONOPS from ground up and taking into consideration the realistic timeline for initiatives that are implementable in the near future.

2.10 In this regard, the ICAO Secretariat have played a critical leadership role to bring together the various ATFM groups along with other States/Administrations. The ATFM/IR/SWG agreed on the proposed ATFM/IR/SWG Roadmap and AFTN/AMHS-based ICD. The roadmap of the ATFM/IR/SWG sets targets for;

- Phase 0: ADP exchanges
- Phase 1: ATFM information exchange using conventional protocol, with target implementation between 2019-2022.
- Phase 2: ATFM information exchange based on SWIM concept and technologies

2.11 The ATFM/IR/SWG managed to progress on Phase 0, agreeing on the ATFM Daily Plan (ADP) filename format and exchange means and some members had commenced with ADP exchanges. With regard to Phase 1, participation have been positive with various States/Administrations indicating commitment to achieve ATFM information exchange by 2022.

2.12 For the ATFM/IR/SWG to deliver the items on the TOR, participating States/Administration would need to adopt a collaborative effort and commit to the agreed timeline and items set forth in the ATFM/IR/SWG roadmap; the first item of which is to address the requirement for interoperable cross-border ATFM operations utilising conventional information exchange protocols and CONOPS supported by current technology. This would form the foundation to facilitate further discussion when SWIM capabilities facilitate more tangible operation at the tactical ATFM phase.

Consideration for Future Meetings

2.13 With the reduced traffic volume due to COVID-19 pandemic, it inevitably brings about travel restrictions, new challenges, and possibly two outlooks for the ATFM/IR/SWG. First, it may be the case that inter-sub-regional conflicting ATFM restrictions are less likely to occur and thus a deferral of ATFM/IR/SWG discussions is possible. Second, the reduction of air traffic movement provides a “breather” for ANSPs amidst the ever growing air traffic demand, and ATFM/IR/SWG members could use this opportunity to progress with the agenda of the SWG in preparation for the rebound of air traffic demand.

2.14 Additionally, F-2-F meetings were usually hosted by Member States. To date, the hosting of the meetings was split between Japan, Singapore and Thailand with ICAO hosting the inaugural meeting at ICAO APAC RSO. With the hosting of meetings, considerable budgetary contributions and workload were invested, requiring notable results to be reported to justify the continued contribution. Given the current outlook on the aviation sector, there will be a need for an alternative means to collaborate and progress with the various tasks for the SWG given the more resource constraint States could be facing in the near future to travel and participate in F-2-F meetings. Despite these challenges, we should continue to forge ahead to progress as much as we can to be able to have interoperable ATFM in the Asia Pacific region, so that we are better prepared when the industry recovers and air traffic volume picks up again.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) urge Member States/Administrations/Organizations to nominate appropriate representation, and to scope discussion with the aim to further items listed on the TOR of the ATFM/IR/SWG
- c) urge Member States/Administrations/Organizations to contribute to the ATFM/IR/SWG and work towards achieving the tasks in the agreed ATFM/IR/SWG Roadmap
- d) seek Member States/Administrations/Organizations views on the conduct of future meetings of the ATFM/IR/SWG
- e) discuss any relevant matters as appropriate.

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