International Civil Aviation Organization

Thirteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/13)

Bangkok, Thailand, 03 – 07 April 2023

Agenda Item 7: Any Other Business

LONG RANGE AIR TRAFFIC FLOW MANAGEMENT CONCEPT

(Presented by CANSO)

SUMMARY

This paper presents the White Paper published by the CANSO ATFM/A-CDM Workgroup on developments in Long-Range Air Traffic Flow Management (LR-ATFM). This White Paper proposes a definition for LR-ATFM, while at the same time tracing its history, origins, and evolutions through early initiatives. A "perfect world" scenario is also presented.

1. INTRODUCTION

1.1 The concept of Long-Range Air Traffic Flow Management (LR-ATFM) has been in discussion for many years. Despite this, the actual nature of the concept has long eluded an agreed definition. Developed by Air Traffic Flow Management (ATFM) experts through the CANSO ATFM/A-CDM Workgroup, the White Paper proposes such a definition, while at the same time tracing its history, origins, and evolutions through early initiatives such as AEROTHAI's Bay of Bengal Cooperative ATFM System (BOBCAT) and NATS' Extended Arrival Management as well as ongoing trials from States such as Australia, Japan, and Singapore.

1.2 In the proposed definition, LR-ATFM is classified as a sub-element of the ATFM concept. In preparing the White Paper, the CANSO ATFM/A-CDM Workgroup has explored this sub-element in detail, drawing on the experiences of its members, many of whom have designed and implemented instances of LR-ATFM.

2. DISCUSSION

2.1 As no clear definition exists on LR-ATFM, the group has proposed the following definition: *"The integration of ATFM solutions to deliver a collaboratively balanced flow of long-haul and short haul aircraft to an ATM resource (airport, waypoint, or a sector of an airspace)."*

2.2 The document lists various LR-ATFM approaches and trials. While LR-ATFM is relatively new, a few approaches exist today that can be categorized as the basis for early LR-ATFM.

2.3 The benefits of LR-ATFM are identified and described in the document. These include predictability, equity in delay distribution among domestic, short-haul regional, and long-haul trans-regional flights, environmental efficiency, reduced fuel costs, enhanced safety, reduced ATC and pilot workload, flight planning flexibility, and dynamic use of the airspace. This is not an exhaustive list as many more benefits are anticipated.

2.4 A perfect LR-ATFM scenario is discussed showing how, in an ideal situation, the LR-ATFM concept can be implemented. In essence, short-haul traffic are issued a Calculated Take-Off Time (CTOT) prior to being airborne while long-haul traffic already airborne may be issued a Calculated Time Over (CTO) for a downstream waypoint or boundary. An equitable distribution of delay between short-haul and long-haul flights will lead to reduced airborne holding, radar vectoring, speed control and facilitate continuous descent operations.

Conceptual Considerations

2.5 The White Paper (or The document) also provides several considerations when implementing the LR-ATFM concept in real-world operations. The main points from these considerations are:

a) LR-ATFM should lead to a holistic ATFM solution rather than isolated ATFM measures

b) All efforts should be made to increase the capacity of the constrained resource prior to implementing an ATFM measure.

c) LR-ATFM should only be considered as one of the many ATFM solutions available

d) The extent of an ATFM delay assigned to an aircraft as part of an LRATFM solution should correspond to the time that the aircraft can efficiently absorb in the remaining cruise phase of the flight.

e) LR-ATFM should be issued as a CTO at a specific fix/boundary/waypoint rather than as a speed advisory.

f) If the LR-ATFM and arrival manager (AMAN) area overlap, the integration of LR-ATFM and AMAN is desirable.

g) As with any ATFM implementation strategy all affected stakeholders should be part of the planning and implementation

h) The trials have revealed that accurate demand predictability for all flights but particularly the long haul flights is critical to the success of LR-ATFM.

i) Decision support tools are required to systematically assist the flow managers in implementing the appropriate ATFM measure.

2.6 The document concludes with a discussion how the LR-ATFM concept proposed can be implemented in the various regions of the world.

3. ACTION BY THE MEETING

3.1 The meeting is invited to

a) note the information contained in this paper and the Power Point Presentation;

b) understand that LR-ATFM is in its infancy, and it will develop in an evolutionary manner;

c) consider the proposals outlined in the document when implementing or extending ATFM capabilities;

d) obtain the CANSO Long-Range ATFM Concept White Paper through CANSO website at https://canso.org/publication/long-range-air-traffic-flow-management-concept/; and

e) discuss any relevant matters as appropriate.

…….