International Civil Aviation Organization

The Fourth Meeting of ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/4)

Bangkok, Thailand, 1 – 5 December 2014

Agenda Item 5: Development of Regional ATFM Framework

ASBU BLOCK-0 APLICABILITY TO THE REGIONAL ATFM FRAMEWORK

(Presented by the Secretariat)

SUMMARY

This paper presents a summary of Aviation System Block Upgrade Block 0 modules applicable to the Regional Framework for Collaborative ATFM, together with the 10 Regional Priorities and Targets endorsed by APANPIRG/25.

1. INTRODUCTION

1.1 The Draft Regional Framework for Collaborative ATFM includes references to relevant Aviation System Block Upgrade (ASBU) Block-0 modules.

1.2 The 10 Asia/Pacific Regional Priorities and Targets developed by the Chairpersons of APANPIRG Sub-Groups and endorsed by APANPIRG/25 includes several ATFM-related ASBU modules. The paper also identifies other relevant ASBU Block-0 modules that should be considered for inclusion in the Framework

2. DISCUSSION

Asia/Pacific Regional Priorities and Targets

2.1 APANPIRG/25 adopted 10 regional priorities and targets including 8 *Priority 1* ASBU Block-0 modules that are mapped to the performance objectives of the Asia/Pacific Region Seamless ATM Plan. The regional priorities, targets and indicators (metrics) were summarized in **WP/02 Attachment A**.

2.2 In determining the regional priority of Seamless ATM Plan elements APANPIRG/25 also assigned an order of priority to a number of other ASBU Block-0 modules. Background information on the ATFM-relevance of 5 *Priority 1* ASBU modules, and other Priority 2 and 3 modules is provided in **Attachment A**.

2.3 It is intended that the background information provided in the attachments is included in the Regional Framework for Collaborative ATFM, and that the identified ASBU modules are mapped to the objectives identified in the performance improvement plan of the Framework.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) agree to the inclusion of the information in the Regional Framework for Collaborative ATFM, subject to any agreed amendment; and

c) discuss any relevant matters as appropriate.

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ATFM-Related ASBU Block-0 Modules

ATFM-Related Priority 1 ASBU Block-0 Modules (Regional Priorities and Targets)

B0-NOPS *Network Flow Management* ATFM: Inter-linked and networked cross-FIR ATFM capability both within and between ANSPs, and having harmonized interfaces with AMAN/DMAN and A-CDM systems using common reference points and information exchange, should be developed to serve various sub-regions.
(Refer Doc 9971 *Manual on Collaborative Air Traffic Flow Management)*

B0-FICE *Ground – Ground Integration and Interoperability*: ATS Inter-facility Data Communications (AIDC). AIDC application exchanges information between ATS units in support of critical ATC functions, including notification of flights approaching a Flight Information Region (FIR) boundary, coordination of boundary-crossing conditions, and transfer of control. AIDC application improves the overall safety of the ATM system, as well as increasing airspace capacity, as it permits the controller to simultaneously carry out other tasks. AIDC provides for the necessary improvements in the accuracy and update of aircraft position and estimate information that permit earlier inclusion in sequence planning and application of ATFM measures.

B0-FRTO *Enhanced En-route Trajectories*: Flexible Use Airspace (FUA), User Preferred Routes (UPR), Dynamic Airborne Re-route Planning (DARP) and CDM. These will allow the use of airspace which would otherwise be segregated, along with flexible routing adjusted for specific traffic patterns for greater routing possibilities, reducing flight time and fuel burn.

B0-ASUR *Ground-Based ATS Surveillance*: ADS-B, MLAT. Recognizing the principle that increasing capacity is central to the management of increased demand, this module provides States with the means to improve ATC capacity in en-route airspace sectors through the application of PANS/ATM-defined surveillance-based separation standards. ADS-B technology is an initial step in creating a more flexible, higher capacity air transportation system that will create seamless surveillance and shared situational awareness picture for both ground and air operations. ADS-B data may be readily shared between neighbouring ATSUs, enhancing safety, increasing capacity and efficiency and facilitating seamless ATM operations.

B0-TBO *En-route Data-link*: Automatic Dependent Surveillance-Contract (ADS-C), Controller Pilot Data-link Communications (CPDLC). Data-link application for ATC surveillance and communications supports flexible routing, optimized separation (and thus increased capacity) and improved safety in areas where technical constraint or cost-benefit analysis does not support the use of ground-based surveillance (SSR, ADS-B or MLAT). In these cases ADS-C and CPDLC provide for greater accuracy and update in aircraft position and estimate information for aircraft outside the coverage of ground-based surveillance systems than is provided in voice AIREP, and automated update of ATC information, hence permitting earlier inclusion in sequence planning and application of ATFM measures and the timely, reliable and accurate transmission of ATFM measure instructions to such aircraft.

Other ATFM-Related ASBU Block-0 Modules

B0-ACDM: (Priority 2) *Airport CDM*: The decision making process at the airport is enhanced by sharing up-to-date relevant information and by taking into account the preferences, available resources and the requirements of the stakeholders at the airport. Airport CDM improves the outcomes of collaborative ATFM by facilitating the timely positioning of aircraft in order to comply with DMAN-generated ATFM measures such as Calculated Take-Off Time (CTOT), and should be harmonized with ATFM and AMAN/DMAN systems using common reference points and information exchange.

B0-AMET: (Priority 2) *Meteorological Forecasts, Warnings and Alerts*: Global, regional and local meteorological information including aerodrome warnings, SIGMETs, and other operational meteorological (OPMET) information including METAR/SPECI and TAF, supporting flexible airspace management, improved situational awareness, collaborative decision-making and dynamically optimized flight trajectory planning.
Meteorological information other than the OPMET products currently defined in Annex 3 to the Convention are proposed elsewhere for inclusion in the draft Regional Framework for Collaborative ATFM.

B0-CCO: (Priority 2) *Flexible and Efficient Departure Profiles* Continuous Climb Operations (CCO), SID. These procedures improve ATFM outcomes by segregating departing/climbing traffic from inbound/descending traffic, and facilitating higher runway departure rates by segregating the departure routes of aircraft having different speed and climb performance characteristics.

B0-CDO: (Priority 2) *Improved Flexibility and Efficiency in Descent Profiles*: CDO and Standard Instrument Arrival (STAR). These arrival procedures allow aircraft to fly their optimum profile, taking into account airspace and traffic complexity, and permit the maximum use of aircraft capability to meet Calculated Times-Over (CTO) Arrival Fixes (AFIX) and Calculated Times of Arrival (CTA) during the descent and approach phases of flight.

B0-RSEQ: (Priority 2) *Runway Sequencing*: Arrival Manager (AMAN) and Departure Manager (DMAN) procedures and tools are designed to provide automation support for synchronisation of arrival sequencing, departure sequencing and surface information, and optimization of runway capacity. AMAN/DMAN systems and procedures should be harmonized with ATFM and A-CDM systems using common reference points and information exchange.

B0-SURF: (Priority 3) *Improved Runway Safety*: Advanced Surface Movements Guidance Control Systems (A-SMGCS), where warranted by weather conditions and capacity. While Implementation of A-SMGCS may not be a high priority in the Asia/Pacific except at high density aerodromes where the cost benefits of mandating this were positive, it would improve ATC capability to ensure the efficient positioning of aircraft to comply with ATFM measures and DMAN-generated departure sequencing, and improve the flow of aircraft to and from aprons and terminal gates under A-CDM.

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