International Civil Aviation Organization

MIDANPIRG Communication Navigation and Surveillance Sub-Group (CNS SG)

Sixth Meeting
(Tehran, Iran, 09 – 11 September 2014)

Agenda Item 5: Performance Framework for CNS Implementation in the MID Region

REVIEW AND UPDATE OF THE DRAFT MID REGION AIR NAVIGATION STRATEGY PARTS RELATED TO CNS

(Presented by the Secretariat)

SUMMARY

The aim of this paper is to review and update the Draft MID Air Navigation Strategy Parts related to CNS. The meeting is expected to agree on the applicability area and elements of the Aviation System Block Upgrades (ASBU) Block 0 Modules for FICE, and TBO and their associated Targets.

Action by the meeting is at paragraph 3.

REFERENCES

- Draft MID Air Navigation Strategy
- MIDANPIRG/14 Report

1. INTRODUCTION

1.1 The Global Air Navigation Plan (GANP) established a framework for incremental implementations based on the specific operational profiles and traffic densities of each Region and State, which is accomplished through the evaluation of the Aviation System Block Upgrades (ASBU) modules to identify which of those modules best, provide the needed operational improvements.

1.2 MIDANPIRG/14 agreed that as first step, it would be necessary to agree on the prioritization of the ASBU Block 0 Modules. It was emphasized that the initial prioritization would not signify that the rest of the modules could not be assigned higher priority by specific States based on the local operational requirements. It would also not mean that the rest of the modules would be given lower importance by ICAO in pursuing standardization activities. In the same vein, it was highlighted that the ASBU Implementation Plan should be a living document to be reviewed and updated on regular basis. The future objectives would be to include all 18 Block 0 Modules and gradually Block 1 Modules, for regional planning, reporting and monitoring mechanisms, as part of the future revisions.

2. DISCUSSION

2.1 MIDANPIRG/14 endorsed the ASBU Block 0 Modules prioritization Table and the Draft MID Air Navigation Strategy and agreed to the following Conclusions:

CONCLUSION 14/5: MID REGION AIR NAVIGATION PRIORITIES

That,

a) the ASBU Block 0 Modules prioritization Table at Appendices 4.1E to the Report on Agenda Item 4.1 (Appendix A to this working paper) be endorsed as the initial version of the MID ASBU Implementation Plan; and

b) the ASBU Block 0 Modules prioritization Table be reviewed on regular basis and be extended to cover Block 1 Modules, as appropriate.

CONCLUSION 14/6: DRAFT MID REGION AIR NAVIGATION STRATEGY

That,

a) the Draft MID Region Air Navigation Strategy at Appendix 4.1F to the Report on Agenda Item 4.1 (Appendix B to this working paper) be:

i. endorsed as the initial version of the MID Region Air Navigation Strategy; and

ii. further reviewed and completed by the different MIDANPIRG subsidiary bodies

b) MID States be urged to:

i. develop their National Air Navigation Performance Framework, ensuring the alignment with and support to the MID Region Air Navigation Strategy;

ii. incorporate the agreed MID Region Performance Metrics into their National reporting and monitoring mechanisms; and

iii. provide the ICAO MID Regional Office, on annual basis, with relevant data necessary for Regional Air Navigation planning and monitoring.

2.2 The meeting may wish to note that ICAO MID Regional Office issued State Letter Ref.: AN 1/7–14/123 dated 5 May 2014 requesting States to implement the provisions of the above mentioned MIDANPIRG Conclusions and to:

a) take all necessary measures to develop/update their National Air Navigation Performance Framework and provide the ICAO MID Regional Office a copy, preferably not later than **30 June 2014**; and

b) provide the relevant data to the ICAO MID Regional Office on annual basis.

2.3 Based on the above the meeting may wish to note that the only fours States (Bahrain, Iran, Jordan Sudan and UAE) provided replies some with their national plans. Furthermore, Iran requested workshop which was conducted 7-8 September 2014.

2.4 In accordance with the above, the meeting is invited to review, discuss and agree to the applicability of the Aviation System Block Upgrades (ASBU) Block 0 Modules FICE, FRTO and TBO and their associated Targets. The Tables below are extracted from the Draft MID Air Navigation Strategy to be used by the meeting:

B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

Description and purpose

To improve coordination between Air Traffic Service Units (ATSUs) by using ATS Interfacility Data Communication (AIDC) defined by the ICAO *Manual of Air Traffic Services Data Link Applications* (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process particularly for oceanic ATSUs.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	Y	Y	N	Y

Applicability consideration:

Applicable to at least two Area Control Centres (ACCs) dealing with enroute and/or terminal control area (TMA) airspace. A greater number of consecutive participating ACCs will increase the benefits.

B0 – FICE: Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration				
Elements	***Applicability***	***Performance Indicators/Supporting Metrics***	***Targets***	***Remarks***
AMHS capability	*All States*	Indicator: % of States with AMHS capability Supporting metric: Number of States with AMHS capability	50 % of States with AMHS capability by December 2014	Final Targets to be agreed by the CNS SG/6 and MSG/*4*
AMHS implementation /interconnection	*All States*	Indicator: % of States with AMHS implemented (interconnected with other States AMHS) Supporting metric: Number of States with AMHS implemented (interconnections with other States AMHS)	4 States with AMHS interconnected December 2014	Final Targets to be agreed by the CNS SG/6 and MSG/*4*
Implementation of AIDC/OLDI between adjacent ACCs	*All ACCs*	Indicator: % of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC/OLDI with neighboring ACCs Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs	50% by December 2016	Final Targets to be agreed by the ATM SG/1, CNS SG/6 and MSG/*4*

B0 –TBO: Improved Safety and Efficiency through the initial application of Data Link En-Route

Description and purpose

To implement an initial set of data link applications for surveillance and communications in ATC, supporting flexible routing, reduced separation and improved safety.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	Y	N/A	N/A	Y

Applicability consideration:

Requires good synchronization of airborne and ground deployment to generate significant benefits, in particular to those equipped. Benefits increase with the proportion of equipped aircraft.

B0 –TBO: Improved Safety and Efficiency through the initial application of Data Link En-Route				
Elements	***Applicability***	***Performance Indicators/Supporting Metrics***	***Targets***	***Remarks***
ADS-C and CPDLC	TBD	Indicator: % of FIRs having implemented data link en-route, as and where required Supporting Metric: Number of FIRs having implemented data link en-route, as and where required	40% by December 2017	List of FIRs to be established through regional air navigation agreement. Targets to be agreed by MSG/4

B0 – ACAS: ACAS Improvements

Description and purpose

To provide short-term improvements to existing Airborne Collision Avoidance Systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	N/A	Y	N/A	Y

Applicability consideration:

Safety and operational benefits increase with the proportion of equipped aircraft.

B0 – ACAS: ACAS Improvements				
Elements	***Applicability***	***Performance Indicators/Supporting Metrics***	***Targets***	***Remarks***
Avionics	All States	Indicator: % of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons Supporting metric: Number of States requiring carriage of ACAS (TCAS v 7.1) for aircraft with a max certificated take-off mass greater than 5.7 tons	*80% by December 2015* *100% by December 2016*	Final Targets to be agreed by MSG/4

2.5 The meeting may wish to note that the above list does not contain the Module B0-SURF: Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2), follow-up since the elements are A-SMGCS Level 1 and A-SMGCS Level 2 which may need to be further itemized to include Surveillance (Multilateration, Secondary Surveillance Radar Mode S, and ADS-B) in order that the Sub-group provides the necessary support.

2.6 With respect to the above, the meeting may wish to note that A-SMGCS is described in the ASBU documents as: Basic A-SMGCS provides surveillance and alerting of movements of both aircraft and vehicles on the aerodrome thus improving runway/aerodrome safety. ADS-B information is used when available (ADS-B APT). It is obvious that A-SMGCS levels will provide the identification of aircraft in the movement area and transponder equipped vehicles in the maneuvering area via a Human Machine Interface (HMI) and in advance level alerting function to Air Traffic Controllers (ATCOs) in case of intrusion of aircraft or vehicles in a pre-defined protected area around the runway.

2.7 The meeting may wish to note that the MID Air Navigation Strategy will be further reviewed and updated by the MSG/4 meeting that will be held in Egypt, Cairo 24-26 November 2014 at the ICAO MID Regional Office.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review and update the tables related to the Aviation System Block Upgrades (ASBU) Block 0 Modules FICE, TBO and ACAS at para. 2.3;

b) consider updating the elements in the tables as necessary;

c) encourage States to consider the conduct of National SBU Implementation Workshops; and

d) urge States to:

i. take all necessary measures to develop/update their National Air Navigation Performance Framework and provide the ICAO MID Regional Office a copy; and

ii. provide the relevant data to the ICAO MID Regional Office on annual basis.

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