International Civil Aviation Organization

MIDANPIRG Communication, Navigation and Surveillance Sub-Group

Ninth Meeting (CNS SG/9)
(Cairo, Egypt, 19 – 21 March 2019)

Agenda Item 4: CNS Planning and Implementation in the MID Region

ASBU ALTERNATIVE SURVEILLANCE THREAD (B0-ASUR)

(Presented by Egypt)

SUMMARY

This paper presents the monitoring of Surveillance related ASBU Block 0 modules incorporated in the MID Surveillance Plan, for review and update by CNS SG.

Action by the meeting is at paragraph 3.

REFERENCES

- CNS SG/8 Report
- MIDANPIRG/16 Report
- MSG/6 Report

1. INTRODUCTION

1.1 The meeting may recall that MIDANPIRG/16, through Decision 16/23, agreed that a MID Region Surveillance Plan should be developed by the CNS SG in coordination with ATM SG, taking into consideration the Users' and States' operational needs and requirements.

DECISION 16/ 23: MID REGION SURVEILLANCE PLAN

That, the MID Region Surveillance Plan be developed by the CNS SG, based on the operational needs identified by the ATM SG.

2. DISCUSSION

2.1 The meeting may wish to recall that the MSG/6 meeting considered the progress related to ADS-B and MLAT implementation in the MID Region, the CNS SG/8 meeting proposed to change the B0-ASUR from priority 2 to priority 1. However, the ANSIG/3 meeting decided that the CNS SG should prepare a complete proposal including the elements, applicability area, performance indicators/supporting metrics and their associated targets.

2.2 The timeline of the Draft MID Region Surveillance plan is as follow:

Surveillance Plan	Airspace		
	En-route	*Terminal /Approach*	*Ground / Surface*
	Sensors		
Short Term 2018-2020	SSR Mode-S Capability		SMR / MLAT (A-SMGCS Levels 1 and 2)
	ADS-B for Non radar Coverage		
Mid Term 2021-2024	ADS-B / WAM		Cameras
	Sharing Radar/ADS-B data		
Long Term 2025 Onward	Future ADS-B In/Out System		

2.3 The ASBU methodology for monitoring implementation of Surveillance related ASBU modules to be incorporated in the MID surveillance plan is at **Appendix A**.

2.4 Proposal for the elements, applicability area and performance indicators/supporting metrics for B0-ASUR Module to be incorporated in the MID Air Navigation Strategy is at **Appendix B**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review and provide comment/input, as necessary, the added part comprises monitoring implementation of Surveillance related ASBU modules at **Appendix A**;

b) review and update, as necessary, the MID Air Navigation Strategy B0-ASUR elements and targets, at **Appendix B**; and

c) discuss and endorse, as appropriate, the proposed changes.

MID Region Surveillance Plan

Version 0.X

X/X/2019

Developed by

COMMUNICATION, NAVIGATION AND SURVEILLANCE
SUB-GROUP (CNS SG)

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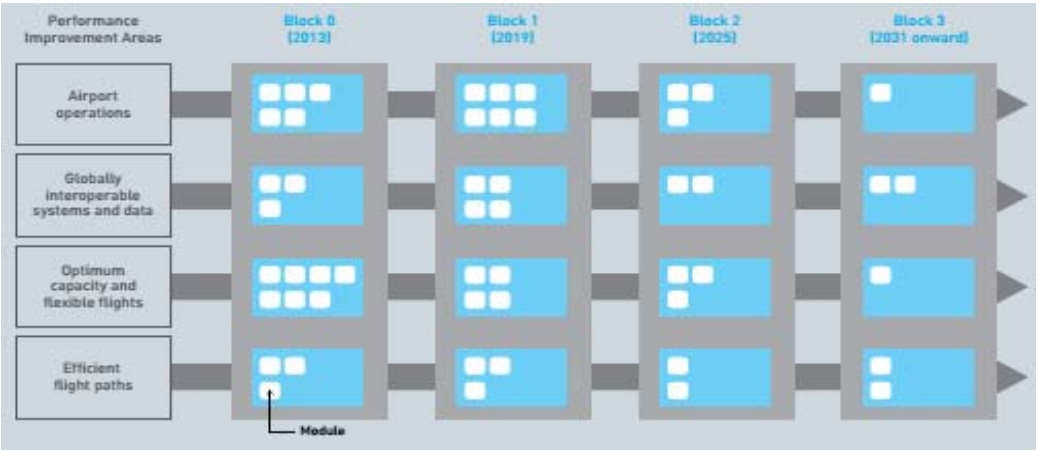
9-ASBU Methodology and the MID Region Air Navigation Strategy (Surveillance Related ASBU Modules)

ASBU Methodology

9.1 ICAO introduced the Aviation System Block Upgrades (ASBU) methodology in the fourth edition of the Doc 9750 (Global Air Navigation Plan), endorsed by the ICAO Assembly in 2013 (further revised by Assembly 39 in 2016), as a systemic manner to achieve a harmonized implementation of the air navigation services. An ASBU designates a set of improvements that can be implemented globally from a defined point in time to enhance the performance of the ATM system.

9.2 The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. The Block Upgrades are organized in six-year time increments starting in 2013 and continuing through 2031 and beyond

9.3 ASBU methodology defines improvements, through modules, over four blocks in four performance improvements areas:



MID Region Air Navigation Strategy

9.4 Revised MID Region Air Navigation Strategy (MID Doc 002) was endorsed by the MIDANPIRG/16 meeting to introduce Block 0 ASBU Modules implementation priorities, elements, indicators and targets for the MID Region. It recognizes 13 (out of 18) Block 0 Modules as priority 1 in the MID Region (for more information refer to the MID Doc 002 in the ICAO Secure Portal at: https://portal.icao.int/RO_MID/Pages/MIDDocs.aspx)

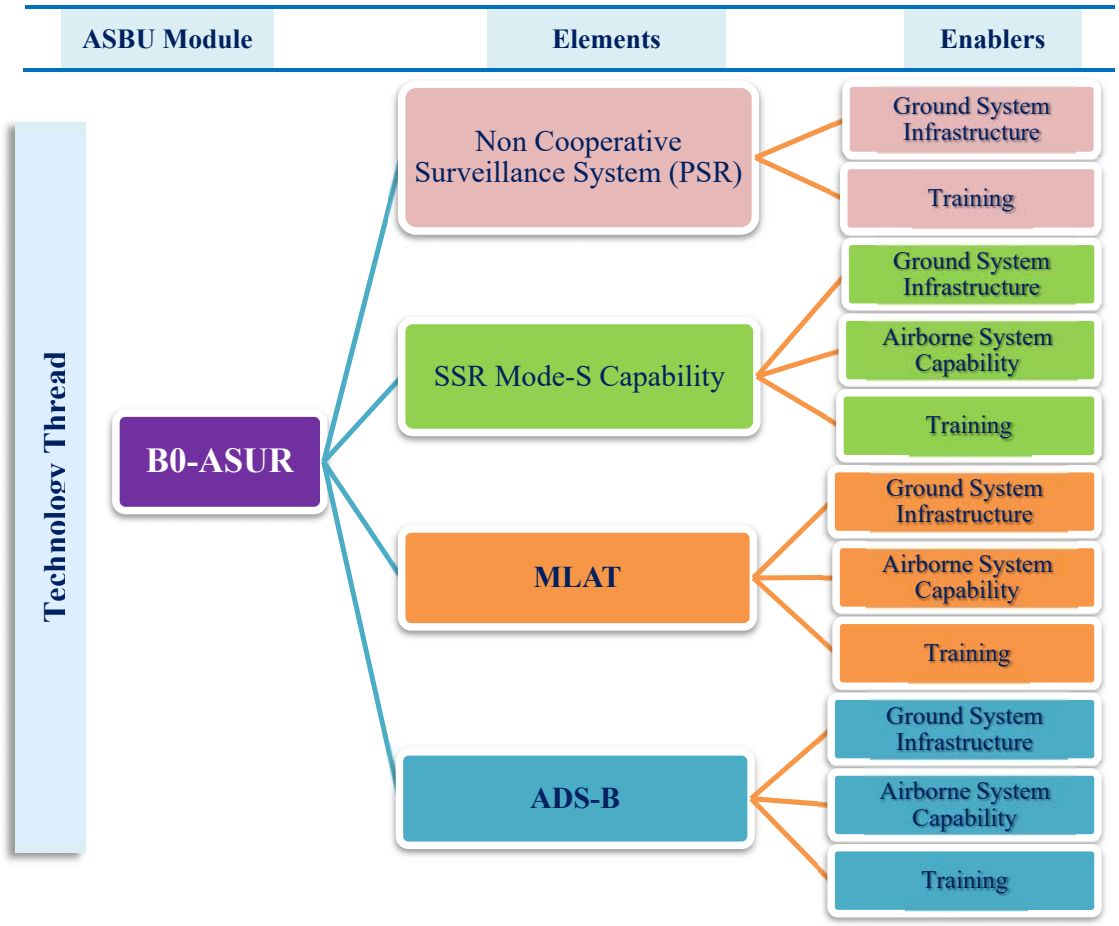
Block 0 Surveillance related Modules

B0-ASUR Implementation

9.5 B0-ASUR is a priority 1 ASBU Module in accordance with the MID Region Air Navigation Strategy (MID Doc 002). MID Doc 002 defines B0- ASUR as follows:

Description and purpose

Ground-based surveillance supported by new technologies such as ADS-B OUT and/or wide area multilateration (MLAT) systems will improve safety, especially search and rescue and capacity through separation reductions. This capability will be expressed in various ATM services, e.g. traffic information, search and rescue and separation provision.



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:

This capability is characterized by being dependent/cooperative (ADS-B OUT) and independent/cooperative (MLAT). The overall performance of ADS-B is affected by avionics performance and compliant equipage rate.

Surveillance Implementation Table
B0-ASUR

ATS Units Served	Surveillance Gaps	Multi-Surveillance Data Processing Capability	Surveillance Sensor Used					Level of A-SMGCS Implemented	Action Plan	Remarks
			PSR	SSR Mode A/C	SSR Mode S	MLAT	ADS-B			
1	2	3	4					5	6	7
EGYPT International Airports										
HECA										
ACC										
APP										
TWR										
HEBA										
APP										
TWR										
HEGN										
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B0-ASUR: Initial capability for ground surveillance

Description and purpose

Ground-based surveillance supported by new technologies such as ADS-B OUT and/or wide area multilateration (MLAT) systems will improve safety, especially search and rescue and capacity through separation reductions. This capability will be expressed in various ATM services, e.g. traffic information, search and rescue and separation provision.

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:

This capability is characterized by being dependent/cooperative (ADS-B OUT) and independent/cooperative (MLAT). The overall performance of ADS-B is affected by avionics performance and compliant equipage rate.

B0-ASUR: Initial capability for ground surveillance				
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**	**Remarks**
ADS-B/MLAT Implementation Plan	All States	Indicator: % of States that have National ADS-B /MLAT Implementation Plan. Supporting Metric: Number of States that have National ADS-B/MLAT Implementation Plan.	100 % by Dec 2019	
Cooperative Surveillance System for GAP	All States	Indicator: % of States that have implemented Cooperative Surveillance System for GAP Areas *Supporting Metric: Number of States that have implemented Cooperative Surveillance System for GAP	100 % by Dec 2020	SSR / Mode S / MLAT / ADS-B (No Radar Coverage)
Cooperative Surveillance System for Radar routes	ALL FIRs	Indicator: % of FIRs where dual Cooperative Surveillance Sources are implemented for the provision of surveillance services in radar separated area. *Supporting Metric: Number of FIRs that have implemented dual Cooperative Surveillance Sources for the provision of surveillance services in radar separated area.	100 % by Dec 2020	

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