The ADS-B Webinar

ICAO
MID & EUR/NAT

MID Region Surveillance Plan (ICAO MID DOC 013)

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SUR Plan Development

- The MID Region Surveillance Plan (ICAO MID DOC 013) has been developed by the CNS SG in coordination with the ATM SG.

- MIDANPIRG/17 meeting (April 2019) endorsed the first edition of ICAO MID DOC 013.

- Revised version was endorsed by MIDANPIRG/18 (February 2021)

SUR Plan Contents

- Background
- Introduction
- Surveillance in Global Air Navigation Plan
- Surveillance Technologies
- Comparison between Surveillance Technologies
- Operational Requirements
- Surveillance Implementation Timeline

The Operational Requirements

The ATM SG agreed that the MID States need to increase the availability of Surveillance services and to cover the gap areas "non covered Radars Areas" in the MID Region

Current ADS-B implementation in the MID Region

- ADS-B has been implemented at some States as backup and complementary means to the MSSR in Egypt, Iraq, Jordan, Sudan and UAE.
- Bahrain has implemented ADS-B for Vehicle Tracking purpose
- UAE issued ADS-B/Out carriage Mandate as of 01 January 2020, ADS-B IN capability shall not be carried unless approved by the GCAA.
- Saudi Arabia issued ADS-B/Out carriage Mandate as of 01 January 2023 for all airspace users flying in Class A, B, C, D and E
- Several ADS-B mandates worldwide may accelerate the ADS-B equipage. However, Regional Airline, General flights and Military aircraft impeding the ADS-B implementation in the MID Region.

MID Region AN Strategy (MID DOC 002)

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
Technology Threads							
ASUR							
ASUR	**B0/1**	ADS-B	1	2021	CNS SG	ATM SG ASPIG	
	B0/2	MLAT	1	2021	CNS SG	ATM SG ASPIG	
	B0/3	SSR-DAPS	1	2021	CNS SG	ATM SG ASPIG	
	B1/1	SB ADS-B	2				

Element		Applicability	Performance Indicators/ Supporting Metrics	Targets	Timelines
ASUR B0/1	Automatic Dependent Surveillance – Broadcast (ADS-B)	(Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, Qatar, Sudan, UAE)	Indicator*: % of States that have implemented ADS-B to improve surveillance coverage/capabilities Supporting Metric: Number of States that have implemented ADS-B to improve surveillance coverage/capabilities * As per the applicability area	80%	Dec 2022
ASUR B0/2	Multilateration cooperative surveillance systems (MLAT)	Bahrain, Egypt, Jordan, Kuwait, Oman, Saudi Arabia, Qatar, UAE	Indicator*: % of States that have implemented Multi-lateration (M-LAT) Supporting Metric: Number of States that have implemented Multi-lateration (M-LAT) * As per the applicability area	80%	Dec 2022
ASUR B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	Bahrain, Egypt, Iran, Iraq, Kuwait, Lebanon, Jordan, Oman, Qatar, Saudi Arabia, Sudan and UAE	Indicator*: % of States that have implemented Downlink of Aircraft Parameters (SSR-DAPS) Supporting Metric: Number of States that have implemented Downlink of Aircraft Parameters (SSR-DAPS) * As per the applicability area	80%	Dec 2021

Surveillance Implementation Plan

1) Short Term (2020-2024)

- Non-cooperative Surveillance radars maybe retained for Airports and approach services based on States operational needs (detection drones with large Radar Cross Section (RCS), detection of non-equipped vehicle,…,etc).

- States to consider emerging dependent Surveillance technologies (ADS-B and MLAT) in their National Surveillance Plans.

Surveillance Implementation Plan

1) Short Term (2020-2024)

➢ ADS-B/Out Implementation:

1- Prioritize ADS-B/Out implementation in areas where there is no radar coverage surveillance.

2- State shall conduct safety assessment for ADS-B/ MLAT implementation as per Reference [6]

3- The proportions of equipped aircraft are critical for the ADS-B deployment. Therefore, States should involve early in their joint planning and decision-making process. Subsequently, States should effectively communicate the change, the rationale and the impact

4- States are encouraged to use INCENTIVE strategy with stakeholders to accelerate ADS-B equipage; incentive approach might be financial or operational incentive or combined (e.g. Most Capable Best Served principle, waive fees).

Surveillance Implementation Plan

1) Short Term (2020-2024)

- States to share SSR/ADS-B data to improve boundary coverage and enhance the surveillance availability services.

- Space based ADS-B can be used where installation of ground based surveillance sensor is not possible due to geography and other security reasons.

Surveillance Implementation Plan

2) MID Term (2025-2030)

- ADS-B/Out Implementation (High proportion of ADS-B equipage is anticipated):

  1- ADS-B to be implemented for Area and approach Control Services, where implementation would bring capacity and operational efficiencies;

  2- Relocate, as appropriate, any existing MLAT Sensors to work as ADS-B receiver.

- Retain some SSR Mode S Radar as supplement/ backup to ADS-B. States should develop progressive rationalization plans base on consultations with aviation stakeholders.

Surveillance Implementation Plan

2) MID Term (2025-2030)

- The Introduction of Multi-constellation GNSS (GPS, Galileo, GLONASS, …, etc.) may reduce the likelihood of ADS-B outage linked to GNSS interference events. However, necessary ICAO standards will need to be completed before any avionics deployment can be expected. Any use of multi-constellation capability should follow natural avionics life-cycle and should not be mandatory.

- Implementation of Airborne Collision Avoidance System (ACAS X) adapted to trajectory-based operations with improved surveillance function supported by ADS-B aimed at reducing nuisance alerts and deviations (ACAS B2/1)

Surveillance Implementation Plan

3) Long Term (2031 Onward)

- ADS-B is foreseen to be main Surveillance technology. Globally harmonized avionics requirements and clear definition of roles, responsibilities, and liabilities of pilots and air traffic controllers should be developed in support of ADS-B IN applications. Subsequently, airlines and ATS providers should conduct a cost and benefit analysis for ADS-B IN to determine if a positive business case for airlines and ATS providers can be obtained.

THANK YOU