

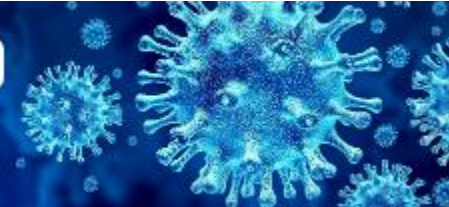


ICAO MID

# Sixth Meeting of the MIDANPIRG Air Traffic Management Sub-Group (ATM SG/6)

(9 - 12 November 2020)





## ATM SG/6 Meeting

### Agenda Item 4: ATM Planning and Implementation Issues:

- Follow-up on ATM SG/5 Draft Conclusions and Decisions
- **Revised MID Air Navigation Strategy**
- RVSM Implementation
- Review of the Outcomes of ATFM TF/4 Meeting
- Review of the Outcomes of FWC2022 TF/4 Meeting
- Other ATM Issues
- Air Navigation Deficiencies related to ATM and SAR



## Revised MID Air Navigation Strategy

- MSG/7 Virtual meeting (1 - 3 September 2020) reviewed the draft of the revised MID Air Navigation Strategy.
- The strategy identified the ASBU Threads/Elements that might be classified as priority 1; along with associated proposed monitoring elements (applicability area, performance indicators/supporting metric, and timeline).
- The meeting agreed also that the MIDANPIRG Sub-Groups should conduct virtual meetings in the Q4-2020 to review the GANP 6<sup>th</sup> edition and identify ASBU priority 1 Threads/Elements and associated monitoring elements, considering the Secretariat proposal and States' and stakeholders' inputs.
- MID ASBU Webinar (13 – 15 October 2020) was conducted familiarized the participants with the GANP 6<sup>th</sup> Edition and showcase the different ASBU Threads through online demonstration using the GANP Portal, for harmonization purpose and an increased efficiency of the MIDANPIRG Sub-Groups during the discussion of the subject.
- The Webinar reviewed the initial draft of the MID Region Air Navigation Strategy. and agreed on ASBU Threads and Elements prioritization. Monitoring elements (indicators/metrics, applicability areas, targets and timelines), that should be discussed during the MIDANPIRG Sub-Groups virtual meetings.
- The Webinar agreed on an initial list of Key Performance Indicators to be used for performance monitoring at National and Regional levels. Further discussion/ refinement by the MIDANPIRG Sub-Groups.



## Revised MID Air Navigation Strategy

ICAO MID State Letter Ref. AN 1/5 – 20/178 issued 1 October 2020 on Follow-up to MSG/7 Conclusion 7/6 related to the Update of the MID Region Air Navigation Strategy.

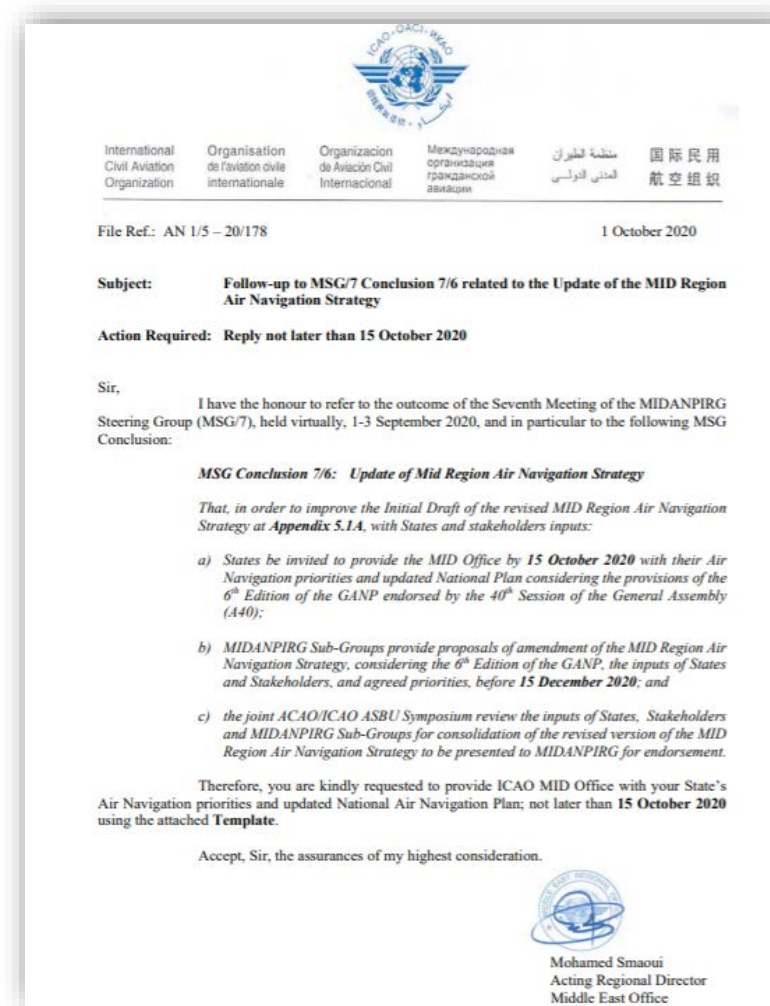
- Updates received: Bahrain, Iran, Jordan, Qatar and UAE.
- ATM related elements: APTA, FRTO, NOPS, SNET, FICE, GADS, RSEQ, ACAS, ASUR and SURF



Prioritization Table



Monitoring Table





## KPAs: The eleven KPAs of the GANP

A way of categorizing performance subjects related to high-level ambitions and expectations. ICAO has defined 11 KPAs:

Safety, Security, Environmental Impact, Cost Effectiveness, **Capacity**, Flight **Efficiency**, Flexibility, **Predictability**, Access And Equity, Participation By The ATM Community And Global Interoperability.

The screenshot shows the ICAO GANP Portal interface. At the top, it features the ICAO logo and the text 'ICAO GANP PORTAL'. There are social media icons (Facebook, Twitter, LinkedIn, YouTube, Instagram) and a search bar labeled 'Search ICAO'. Below this is a navigation bar with 'Back to Portal', 'ASBUs', 'Performance Framework', and a 'Logout' button. The main heading is 'PERFORMANCE OBJECTIVE CATALOGUE' with a 'GENERATE PDF' button. A list of performance objectives is displayed, each with a right-pointing arrow: Efficiency, Capacity, Predictability, Safety, Security, Environment, Cost effectiveness, Interoperability, Access and equity, Participation by the ATM community, and Flexibility. The footer contains the ICAO logo and three columns of links: 'Help' (Terms & Conditions, Site Index, Links), 'Contact Us' (ICAO Headquarters, Headquarters, Regional Offices), and 'Regional Offices' (Asia and Pacific (APAC) Office, Bangkok; Eastern and Southern African (ESA) Office, Nairobi; European and North Atlantic (EUR/NAT) Office, Paris).



## KPIs: The nineteen KPIs of the GANP

- A set of performance indicators is used that allows for monitoring of current operations.
- ICAO recommends that States utilize a focused set of Key Performance Indicators (KPIs) that provide the means of identifying shortfalls and prioritizing investments.
- This approach will allow all stakeholders to analyze the current and future performance of the Air Navigation system and to take actions, if needed, to fill the gap between the current performance and the expected one.
- It is proposed to work on a set of KPIs, according to needs and capabilities.
- To start with a simple set of indicators (Core KPIs) matching States needs, and to complete them later with more complex ones (Additional KPIs).
- This would be further reviewed/discussed by the ASBU Symposium (19-20 January 2021) before presentation to MIDANPIRG/18 for final decision.



MID KPIs



# KPIs

KPI01	Departure punctuality		
KPI02	Taxi-out additional time		
KPI03	ATFM slot adherence		
KPI04	Filed flight plan en-route extension		
KPI05	Actual en-route extension		
KPI06	En-route airspace capacity		
KPI07	En-route ATFM delay		
KPI08	Additional time in terminal airspace		
KPI09	Airport peak capacity		

KPI10	Airport peak throughput		
KPI11	Airport throughput efficiency		
KPI12	Airport/Terminal ATFM delay		
KPI13	Taxi-in additional time		
KPI14	Arrival punctuality		
KPI15	Flight time variability		
KPI16	Additional fuel burn		
KPI17	Level-off during climb		
KPI18	Level capping during cruise		
KPI19	Level-off during descent		



# KPIs

Data Source

How to collect?  
(Process, manual – Automated)

Measurement  
(Formula, variant )

Time frame  
(Sample, Frequency, Phases)

**Presentation**  
(national level)

**Consolidation**  
(Regional level)





# MID Air Navigation Report 2020

ICAO MID State Letter Ref: AN 1/7 – 20/176 Dated 28 September 2020 to follow-up to MSG/7 Conclusion 7/8 related to **Air Navigation Report 2020**.

Replies received: Lebanon, Saudi Arabia and UAE.

Attachment  
September 2020

THE MID AIR

ICAO - OACI - ICAO  
International Civil Aviation Organization / Organisation de l'aviation civile internationale / Organización de Aviación Civil Internacional / Международная организация гражданской авиации / منظمة الطيران المدني الدولي / 国际民用航空组织

File Ref: AN 1/7 – 20/176 28 September 2020

**Subject:** Follow-up to MSG/7 Conclusion 7/8 related to the MID Region Air Navigation Report -2020

**Action Required:** Reply not later than 1 December 2020

Sir,

I have the honour to refer to the outcome of the Seventh Meeting of the MIDANPIRG Steering Group (MSG/7), held virtually, 1-3 September 2020, and in particular to the following MSG Conclusion:

**MSG CONCLUSION 7/8: MID REGION AIR NAVIGATION REPORT - 2020**

That,

a) States be urged to provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report - 2020, by **1 December 2020**; and

b) the MID Region Air Navigation Report-2020 be presented to the MIDANPIRG/18 for endorsement.

Therefore, you are kindly requested to provide your feedback about your State's National Air Navigation Plan (ASBU Implementation Plan); and send your ASBU implementation status data to the ICAO MID Office not later than **1 December 2020**, for the development of the MID Air Navigation Report - 2020, using the attached **Template**.

Accept, Sir, the assurances of my highest consideration.

Mohamed Smaoui  
Acting Regional Director  
Middle East Office

**Attachment**

Ministry of Civil Aviation Complex  
Cairo Airport Road  
P.O.Box 95,  
Airport Post Office  
Cairo 11776 A.R.E

Tel: +2 (02) 22674840/1/5/6  
Fax:+2 (02) 22674843

E-mail: [icamid@icao.int](mailto:icamid@icao.int)  
<http://www.icao.int/mid>

Remarks  
id details on the due elements, appropriate]

Remarks  
id details on the due elements, appropriate]

Remarks  
id details on the due elements, appropriate]

## Action by the Meeting:

The meeting is invited to encourage States to:

1. participate actively in the ACAO/ICAO ASBU symposium planned for 19 – 20 January 2021;
2. identify ASBU Threads/elements which provides operational improvements at National level;
3. review the draft revised Strategy developed by the Secretariat and provide feedback/comments to the SL: AN 1/5 – 20/178 issued 1 October 2020;
4. agree on the selected set of KPIs to be monitored under ATM SG for 1 month of data sample per year (starting by June 2021); and
5. survey to States to review the ASBU Threads/elements related to ATM Priority 1 elements and the KPIs including details variant and applicability.



ICAO

UNITING AVIATION



ICAO

North American  
Central American  
and Caribbean  
(INACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU

**APPENDIX A**

**MID REGION ASBU Threads & Elements (Block 0 & 1) Prioritization Table**

**Priority 1:** Elements that have the highest contribution to the improvement of air navigation safety, capacity and/or efficiency in the MID Region. These elements should be implemented where applicable and will be used for the purpose of regional air navigation monitoring and reporting.

**Priority 2:** Elements recommended for implementation based on identified operational needs and benefits.

**Priority 1 Thread:** Any thread with at least 1 priority 1 element.

Thread	Element code	Title	Priority	Start Date	Monitoring		Remarks
					Main	Supporting	
<i>Technology Threads</i>							
ASUR	B0/1	ADS-B	1	2020	CNS SG	ATM SG ASPIG	
	B0/2	MLAT	1	2020	CNS SG	ATM SG ASPIG	
	B0/3	SSR-DAPS	1	2020	CNS SG	ATM SG ASPIG	
	B1/1	SB ADS-B	2				
NAVS	B0/1	Ground Based Augmentation Systems (GBAS)	2				
	B0/2	Satellite Based Augmentation Systems (SBAS)	2				
	B0/3	Aircraft Based Augmentation Systems (ABAS)	1	2020	CNS SG	PBN SG ATM SG AIM SG	
	B0/4	Navigation Minimal Operating Networks (Nav. MON)	1	2020	CNS SG	PBN SG	
	B1/1	Extended GBAS	2				
COMI	B0/1	Aircraft Communication Addressing and Reporting System (ACARS)	2				

	<b>B0/2</b>	Aeronautical Telecommunication Network/Open System Interconnection (ATN/OSI)	2				
	<b>B0/3</b>	VHF Data Link (VDL) Mode 0/A	2				
	<b>B0/4</b>	VHF Data Link (VDL) Mode 2 Basic	2				
	<b>B0/5</b>	Satellite communications (SATCOM) Class C Data	2				
	<b>B0/6</b>	High Frequency Data Link (HFDL)	2				
	<b>B0/7</b>	AMHS	1	2014	CNS SG		
	<b>B1/1</b>	Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)	1	2020	CNS SG		
	<b>B1/2</b>	VHF Data Link (VDL) Mode 2 Multi-Frequency	2				
	<b>B1/3</b>	SATCOM Class B Voice and Data	2				
	<b>B1/4</b>	Aeronautical Mobile Airport Communication System (AeroMACS) Ground-Ground	2				
	<b>Information Threads</b>						
<b>DAIM</b>	<b>B1/1</b>	Provision of quality-assured aeronautical data and information	1	2020	AIM SG		It was B0, monitored earlier
	<b>B1/2</b>	Provision of digital Aeronautical Information Publication (AIP) data sets	2				
	<b>B1/3</b>	Provision of digital terrain data sets	1	2020	AIM SG		It was B0, monitored earlier
	<b>B1/4</b>	Provision of digital obstacle data sets	1	2020	AIM SG		It was B0, monitored earlier

	<b>B1/5</b>	Provision of digital aerodrome mapping data sets	2				
	<b>B1/6</b>	Provision of digital instrument flight procedure data sets	2				
	<b>B1/7</b>	NOTAM improvements	2				
<b>FICE</b>	<b>B0/1</b>	Automated basic inter facility data exchange (AIDC)	1	2014	CNS SG ATM SG		
<b>AMET</b>	<b>B0/1</b>	Meteorological observations products	1	2014	MET SG		
	<b>B0/2</b>	Meteorological forecast and warning products	1	2014	MET SG		
	<b>B0/3</b>	Climatological and historical meteorological products	1	2014	MET SG		
	<b>B0/4</b>	Dissemination of meteorological products	1	2014	MET SG	CNS SG	
	<b>B1/1</b>	Meteorological observations information	2				
	<b>B1/2</b>	Meteorological forecast and warning information	2				
	<b>B1/3</b>	Climatological and historical meteorological information	2				
	<b>B1/4</b>	Dissemination of meteorological information	2				
<b>Operational Threads</b>							
<b>APTA</b>	<b>B0/1</b>	PBN Approaches (with basic capabilities)	1	2014	PBN SG	ATM SG AIM SG CNS SG	

	<b>B0/2</b>	PBN SID and STAR procedures (with basic capabilities)	1	2014	PBN SG	ATM SG AIM SG	
	<b>B0/3</b>	SBAS/GBAS CAT I precision approach procedures	2				
	<b>B0/4</b>	CDO (Basic)	1	2014	PBN SG	ATM SG	
	<b>B0/5</b>	CCO (Basic)	1	2014	PBN SG	ATM SG	
	<b>B0/6</b>	PBN Helicopter Point in Space (PinS) Operations	2				
	<b>B0/7</b>	Performance based aerodrome operating minima – Advanced aircraft	1	2020	ATM SG PBN SG	AIM SG	
	<b>B0/8</b>	Performance based aerodrome operating minima – Basic aircraft	2				
	<b>B1/1</b>	PBN Approaches (with advanced capabilities)	2				
	<b>B1/2</b>	PBN SID and STAR procedures (with advanced capabilities)	2				
	<b>B1/3</b>	Performance based aerodrome operating minima – Advanced aircraft with SVGS	2				
	<b>B1/4</b>	CDO (Advanced)	2				
	<b>B1/5</b>	CCO (Advanced)	2				
	<b>B0-FRTO</b>	<b>B0/1</b>	Direct routing (DCT)	2			

	<b>B0/2</b>	Airspace planning and Flexible Use of Airspace (FUA)	1	2014	ATM SG	AIM SG	
		Level 1 Strategic	1	2014	ATM SG	AIM SG	
		Airspace planning and Flexible Use of Airspace (FUA) Level 2	1	2014	ATM SG	AIM SG	
	<b>B0/3</b>	Pre-validated and coordinated ATS routes to support flight and flow	2				
	<b>B0/4</b>	Basic conflict detection and conformance monitoring	1	2014	ATM SG	CNS SG	
	<b>B1/1</b>	Free Route Airspace (FRA)	2				
	<b>B1/2</b>	Required Navigation Performance (RNP) routes	2				
	<b>B1/3</b>	Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	2				
	<b>B1/4</b>	Dynamic sectorization	2				
	<b>B1/5</b>	Enhanced Conflict Detection Tools and Conformance Monitoring	2				
	<b>B1/6</b>	Multi-Sector Planning	2				
	<b>B1/7</b>	Trajectory Options Set (TOS)	2				
	<b>NOPS</b>	<b>B0/1</b>	Initial integration of collaborative airspace management with air traffic flow management	1	2015	ATM SG	



	<b>B0/2</b>	Collaborative Network Flight Updates	2				
	<b>B0/3</b>	Network Operation Planning basic features	2				
	<b>B0/4</b>	Initial Airport/ATFM slots and A-CDM Network Interface	2				
	<b>B0/5</b>	Dynamic ATFM slot allocation	2				
	<b>B1/1</b>	Short Term ATFM measures	2				
	<b>B1/2</b>	Enhanced Network Operations Planning	2				
	<b>B1/3</b>	Enhanced integration of Airport operations planning with network operations planning	2				
	<b>B1/4</b>	Dynamic Traffic Complexity Management	2				
	<b>B1/5</b>	Full integration of airspace management with air traffic flow management	2				
	<b>B1/6</b>	Initial Dynamic Airspace configurations	2				
	<b>B1/7</b>	Enhanced ATFM slot swapping	2				
	<b>B1/8</b>	Extended Arrival Management supported by the ATM Network function	2				

	<b>B1/9</b>	Target Times for ATFM purposes	2				
	<b>B1/10</b>	Collaborative Trajectory Options Program (CTOP)	2				
<b>ACAS</b>	<b>B1/1</b>	ACAS Improvements	1	2014	ATM SG CNS SG		It was B0, monitored earlier
<b>SNET</b>	<b>B0/1</b>	Short Term Conflict Alert (STCA)	1	2017	ATM SG	CNS SG	
	<b>B0/2</b>	Minimum Safe Altitude Warning (MSAW)	1	2017	ATM SG	CNS SG	
	<b>B0/3</b>	Area Proximity Warning (APW)	1	2020	ATM SG	CNS SG	
	<b>B0/4</b>	Approach Path Monitoring (APM)	2				
	<b>B1/1</b>	Enhanced STCA with aircraft parameters	2				
	<b>B1/2</b>	Enhanced STCA in complex TMA	2				
<b>SURF</b>	<b>B0/1</b>	Basic ATCO tools to manage traffic during ground operations	1	2014	ASPIG	ATM SG CNS SG	
	<b>B0/2</b>	Comprehensive situational awareness of surface operations	1	2014	ASPIG	ATM SG CNS SG	
	<b>B0/3</b>	Initial ATCO alerting service for surface operations	1	2020	ASPIG	ATM SG CNS SG	
	<b>B1/1</b>	Advanced features using visual aids to support traffic	2		ASPIG	ATM SG CNS SG	

		management during ground operations					
	<b>B1/2</b>	Comprehensive pilot situational awareness on the airport surface	2		ASPIG	ATM SG CNS SG	
	<b>B1/3</b>	Enhanced ATCO alerting service for surface operations	2		ASPIG	ATM SG CNS SG	
	<b>B1/4</b>	Routing service to support ATCO surface operations management	2		ASPIG	ATM SG CNS SG	
	<b>B1/5</b>	Enhanced vision systems for taxi operations	2		ASPIG	ATM SG CNS SG	
<b>ACDM</b>	<b>B0/1</b>	Airport CDM Information Sharing (ACIS)	1	2014	ASPIG	CNS SG, AIM SG, ATM SG	
	<b>B0/2</b>	Integration with ATM Network function	1	2014	ASPIG	CNS SG, AIM SG, ATM SG	
	<b>B1/1</b>	Airport Operations Plan (AOP)	1	2020	ASPIG	CNS SG, AIM SG, ATM SG	
	<b>B1/2</b>	Airport Operations Centre (APOC)	2		ASPIG	CNS SG, AIM SG, ATM SG	
<b>GADS</b>	<b>B1/1</b>	Aircraft Tracking	2				
	<b>B1/2</b>	Contact directory service	1	2020	CNS ATM		
<b>RSEQ</b>	<b>B0/1</b>	Arrival Management	1	2020	ASPIG ATM	CNS SG	
	<b>B0/2</b>	Departure Management	2				
	<b>B0/3</b>	Point merge	2				

A-9

	<b>B1/1</b>	Extended arrival metering	2				
--	-------------	---------------------------	---	--	--	--	--

-----

|

**MID REGION ASBU Threads & Elements (Block 0 & 1) Monitoring Table**

**Priority 1:** Elements that have the highest contribution to the improvement of air navigation safety, capacity and/or efficiency in the MID Region. These elements should be implemented where applicable and will be used for the purpose of regional air navigation monitoring and reporting.

**Priority 2:** Elements recommended for implementation based on identified operational needs and benefits.

**Priority 1 Thread:** Any thread with at least 1 priority 1 element.

THREAD	Element code	Title	Priority	Applicability	Performance Indicators/Supporting Metrics	Targets	Timelines
APTA	B0/1	PBN Approaches (with basic capabilities)	1	All RWYs ENDS at International Aerodromes	Indicator: % of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)  Supporting metric: Number of runways ends at international aerodromes provided with Baro-VNAV approach procedures (LNAV/VNAV)	100%	Dec. 2017
	B0/2	PBN SID and STAR procedures (with basic capabilities)	1	All RWYs ENDS at International Aerodromes	Indicator: % of runway ends at international aerodromes provided with PBN SID and STAR (basic capabilities).  Supporting Metric: Number of runways ends at international aerodromes provided with PBN SIDs and STAR (basic capabilities).	70%	Dec. 2022
	B0/4	CDO (Basic)	1	OBBI, HESH, HEMA, HEGN, OIIE, OIKB, OIFM, OJAI, OJAQ, OKBK, OLBA, OOMS, OTHH, OEJN, OEMA, OEDF, OERK, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ	Indicator: % of International Aerodromes with CDO implemented as required.  Supporting Metric: Number of International Aerodromes with CDO implemented as required.	100% (for the identified AD/TMAs)	Dec. 2018
	B0/5	CCO (Basic)	1	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OIKB, OIFM, ORER,	Indicator: % of International Aerodromes with CCO implemented as required.	100% (for the	Dec. 2018

				ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNM, HSOB, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ	Supporting Metric: Number of International Aerodromes with CCO implemented as required.	identified Aerodromes/ TMAs)	
	<b>B0/7</b>	Performance based aerodrome operating minima – Advanced aircraft	1	All States	Indicator: % of States authorizing Performance-based Aerodrome Operating Minima for <u>Air operators operating Advanced aircraft</u> .  Supporting Metric: Number of States authorizing Performance-based Aerodrome Operating Minima for <u>Air operators operating Advanced aircraft</u> .	50%	Dec. 2021
<b>FRTO</b>	<b>B0/2</b>	Airspace planning and Flexible Use of Airspace (FUA)	1	All ACCs in the region	Indicator: % of ACCs/APPs <u>using and implementing appropriate means (procedures and tools (automation)) using Automation</u> to support Airspace planning and FUA and improved Data exchange between Civil and military to improve efficiency of Airspace.  Supporting metric: Number of <u>ACCs/APPs using and implementing appropriate means (procedures and tools (automation))</u> to support Airspace planning and FUA and improved Data exchange between Civil and military to improve efficiency of Airspace.	50%	Dec 2022
	<b>B0/4</b>	Basic conflict detection and conformance monitoring	1	<u>Oman, Saudi Arabia, Jordan, Egypt, UAE, Bahrain</u>	Indicator: % <u>States</u> that implemented MTCD and MONA, <u>for ACCs, as</u> required.  Supporting metric*: The number of <u>States</u> that implemented MTCD and MONA <u>for ACCs, as</u> required.	50%	Dec. 2022
<b>NOPS</b>	<b>B0/1</b>	Initial integration of collaborative airspace management with air traffic flow management	1	<u>Bahrain, Saudi Arabia, Egypt, UAE, All States (except Syria, Libya)</u>	Indicator: % of <u>States</u> implementing ASM/ATFM techniques, procedures and tools for the initial establishment of an integrated collaborative airspace management and air traffic flow and capacity management process  Supporting metric*: <u>number of States</u> implementing ASM/ATFM techniques, procedures and tools for the initial	50%	Dec 2022

					establishment of an integrated collaborative airspace management and air traffic flow and capacity management process		
SNET	B0/1	Short Term Conflict Alert (STCA)	1	All States	Indicator: % of States that have implemented Short-term conflict alert (STCA)  Supporting metric*: number of States that have implemented Short-term conflict alert (STCA)	80 %	Dec. 2018
	B0/2	Minimum Safe Altitude Warning (MSAW)	1	All States	Indicator: % of States that have implemented Minimum safe altitude warning (MSAW)  Supporting metric*: number of States that have implemented Minimum safe altitude warning (MSAW)	80 %	Dec. 2018
	B0/3	Area Proximity Warning (APW)	1	<a href="#">Jordan, Oman, Bahrain, UAE, Iran, Kuwait, Iraq, Egypt, Saudi Arabia</a>	Indicator: % of <a href="#">States</a> that have implemented Area Proximity Warning (APW) <a href="#">for ACCs/APPs, as required</a>  Supporting metric*: number of <a href="#">States ACCs/APPs</a> that have Implemented Area Proximity Warning (APW) <a href="#">for ACCs/APPs, as required</a>	70%	Dec 2021
FICE	B0/1	Automated basic interfacility data exchange (AIDC)	1	According to the MID Region AIDC/OLDI Applicability Area*	<a href="#">Indicator: % of priority 1 AIDC/OLDI Interconnection have been implemented</a>  <a href="#">Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs</a>	As it was	As it was
GADS	B1/2	Contact directory service		All States	Indicator: % of States that provided Point of Contact PoC information  Supporting Metric: Number of States that provided Point of Contact information  ICAO MID: create online GADSS POC repository	100%	Dec 2021
RSEQ	B0/1	Arrival Management	1	OTBD, OBBI, HECA, OMDB	Indicator: % of Aerodromes that have implemented arrival manager, where required (applicable)	80%	Dec 2021

					Supporting Metric: Number of Aerodrome that have implemented arrival manager, where required (applicable)		
<b>ACAS</b>	<b>B1/1</b>	ACAS Improvements	1	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.	100%	Dec. 2017
<b>ASUR</b>	<b>B0/1</b>	Automatic Dependent Surveillance – Broadcast (ADS-B)	1	HECC, OMAA, OKAC, OEJD.	TBD by CNS SG	TBD by CNS SG	TBD by CNS SG
	<b>B0/2</b>	Multi-lateration cooperative surveillance systems (M-LAT)	1		TBD by CNS SG	TBD by CNS SG	TBD by CNS SG
	<b>B0/3</b>	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	1		TBD by CNS SG	TBD by CNS SG	TBD by CNS SG

-----



**INITIAL LIST OF MID REGION Air Navigation KPIs**

KPI	Title	Definition	Measurement Units	Variants	Parameters	Objects Characterized	Data Requirement	Formula / Algorithm	Timeframe	Data Feed Providers
01	Departure punctuality	Percentage of flights departing from the gate on-time (compared to schedule).	% of scheduled flights	<p><del>Variant 1A – % of departures within ± 5 minutes of STD</del></p> <p><del>Variant 1B – % of departures delayed ≤ 5 minutes versus schedule</del></p> <p>Variant 2A – % of departures within ± 15 minutes of scheduled time of departure</p> <p><del>Variant 2B – % of departures delayed ≤ 15 minutes versus schedule</del></p>	<p>On-time threshold (maximum positive or negative deviation from scheduled departure time) which defines whether a flight is counted as on-time or not.</p> <p><del>Recommended values: 5 minutes &amp; 15 minutes.</del></p>	<p>The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).</p>	<p>For each departing scheduled flight:</p> <ul style="list-style-type: none"> <li>- Scheduled time of departure (STD) or Scheduled off-block time (SOBT)</li> <li>- Actual off-block time (AOBT)</li> </ul>	<p><b>At the level of individual flights:</b></p> <ol style="list-style-type: none"> <li>1. Exclude non-scheduled departures</li> <li>2. Categorize each scheduled departure as on-time or not</li> </ol> <p><b>At aggregated level:</b></p> <ol style="list-style-type: none"> <li>3. Compute the KPI: number of on-time departures divided by total number of scheduled departures</li> </ol>	<u>1 month</u>	Schedule database(s), airports, airlines and/or ANSPs

<p><b>02</b></p>	<p>Taxi-out additional time</p>	<p>Actual taxi-out time compared to an unimpeded/reference taxi-out time.</p>	<p>Minutes/flight</p>	<p><b>Variant 1</b> – basic (computed without departure gate and runway data)</p> <p><del>Variant 2 – advanced (computed with departure gate and runway data)</del></p>	<p>Unimpeded/reference taxi-out time:</p> <p><b>Recommended approach for the basic variant of the KPI:</b> a single value at airport level, e.g. the 20th percentile of actual taxi times recorded at an airport, sorted from the shortest to the longest.</p> <p><b>Recommended approach for the advanced variant of the KPI:</b> a separate value for each gate/runway combination, e.g. the average actual taxi-out time recorded during periods of non-congestion (needs to be periodically reassessed).</p>	<p>The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).</p>	<p>For each departing flight:</p> <ul style="list-style-type: none"> <li>- Actual off-block time (AOBT)</li> <li>- Actual take-off time (ATOT)</li> </ul> <p>In addition, for the advanced KPI variant:</p> <ul style="list-style-type: none"> <li>- Departure gate ID</li> <li>- Take-off runway ID</li> </ul>	<p><b>At the level of individual flights:</b></p> <ol style="list-style-type: none"> <li>1. Select departing flights, exclude helicopters</li> <li>2. Compute actual taxi-out duration: ATOT minus AOBT</li> <li>3. Compute additional taxi-out time: actual taxi-out duration minus unimpeded taxi-out time</li> </ol> <p><b>At aggregated level:</b></p> <ol style="list-style-type: none"> <li>4. Compute the KPI: sum of additional taxi-out times divided by number of IFR departures</li> </ol>	<p><u>1 month</u></p>	<p>Airports (airport operations, A-CDM), airlines (OOOI data), ADS-B data providers and/or ANSPs</p>
------------------	---------------------------------	---	-----------------------	---	--	--	---	---	-----------------------	--

<p><b>13</b></p>	<p>Taxi-in additional time</p>	<p>Actual taxi-in time compared to an unimpeded/reference taxi-in time</p>	<p>Minutes/flight</p>	<p><b>Variant 1</b> – basic (computed without landing runway and arrival gate data)</p> <p><del><b>Variant 2</b>—advanced (computed with landing runway and arrival gate data)</del></p>	<p>Unimpeded/reference taxi-in time:</p> <p><b>Recommended approach for the basic variant of the KPI:</b> a single value at airport level, e.g. the 20th percentile of actual taxi times recorded at an airport, sorted from the shortest to the longest</p> <p><b>Recommended approach for the advanced variant of the KPI:</b> a separate value for each runway/gate combination, e.g. the average actual taxi-in time recorded during periods of non-congestion (needs to be periodically reassessed)</p>	<p>The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).</p>	<p>For each arriving flight:                  Actual landing time (ALDT)                  Actual in-block time (AIBT)                  In addition, for the advanced KPI variant:                  Landing runway ID                  Arrival gate ID</p>	<p><b>At the level of individual flights:</b></p> <ol style="list-style-type: none"> <li>1. Select arriving flights, exclude helicopters</li> <li>2. Compute actual taxi-in duration: AIBT minus ALDT</li> <li>3. Compute additional taxi-in time: actual taxi-in duration minus unimpeded taxi-in time</li> </ol> <p><b>At aggregated level:</b></p> <ol style="list-style-type: none"> <li>4. Compute the KPI: sum of additional taxi-in times divided by number of IFR arrivals</li> </ol>	<p><u>1 month</u></p>	<p>Airports (airport operations), airlines (OOOI data), ADS-B data providers and/or ANSPs</p>
------------------	--------------------------------	--	-----------------------	--	--	--	---	---	-----------------------	---

<p><b>14</b></p>	<p>Arrival punctuality</p>	<p>Percentage of flights arriving at the gate on-time (compared to schedule)</p>	<p>% of scheduled flights</p>	<p><del>Variant 1A – % of arrivals within ± 5 minutes of scheduled time of arrival</del></p> <p><del>Variant 1B – % of arrivals delayed ≤ 5 minutes versus schedule</del></p> <p>Variant 2A – % of arrivals within ± 15 minutes of scheduled time of arrival</p> <p><del>Variant 2B – % of arrivals delayed ≤ 15 minutes versus schedule</del></p>	<p>On-time threshold (maximum positive or negative deviation from scheduled arrival time) which defines whether a flight is counted as on-time or not.</p> <p><del>Recommended values: 5 minutes and 15 minutes.</del></p>	<p>The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).</p>	<p>For each arriving scheduled flight:</p> <ul style="list-style-type: none"> <li>- Scheduled time of arrival (STA) or Scheduled in-block time (SIBT)</li> <li>- Actual in-block time (AIBT)</li> </ul>	<p><b>At the level of individual flights:</b></p> <ol style="list-style-type: none"> <li>1. Exclude non-scheduled arrivals</li> <li>2. Categorize each scheduled arrival as on-time or not</li> </ol> <p><b>At aggregated level:</b></p> <ol style="list-style-type: none"> <li>3. Compute the KPI: number of on-time arrivals divided by total number of scheduled arrivals</li> </ol>	<p><u>1 month</u></p>	<p>Schedule database(s), airports, airlines and/or ANSPs</p>
------------------	----------------------------	--	-------------------------------	--	--	---	---	---	-----------------------	--