Seventh Meeting of MIDANPIRG Steering Group (MSG/7)

1-3 September 2020
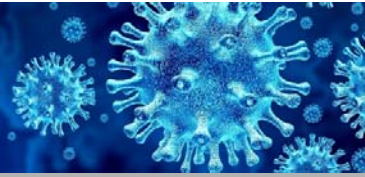
Agenda Item 5.1
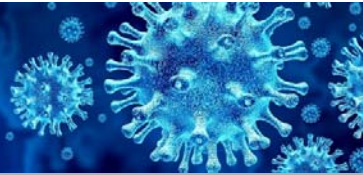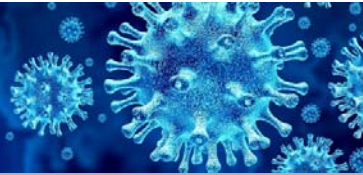## Air Navigation Planning and Implementation

MID Region Air Navigation Priorities and Targets

- The ASBUs included in the Global Air Navigation Plan (GANP, Doc 9750) provides the strategic direction for the global air navigation, however priorities, targets and applicability of the Modules are to be defined by PIRGs (at regional level) and States (at national level).

- The meeting may wish to recall that the MIDANPIRG/16 meeting, through Conclusion 16/3, updated and endorsed the MID Region Air Navigation Strategy (MID Doc 002).

- The revised sixth edition of the GANP was presented at the 13th Air Navigation Conference in 2018 and had been endorsed at the 40th ICAO Assembly in September 2019

MID Region Air Navigation Priorities and Targets

- ANC recommendation 4.3/1 encouraged the PIRGs to embrace a performance-based approach for implementation and adopt the six-step performance management process, as described in the Manual on Global Performance of the Air Navigation System (Doc 9883), by reflecting the process in Volume III of all regional air navigation plans

- GANP Performance Framework https://www4.icao.int/ganpportal/ASBU/KPI

- Although the GANP has a worldwide perspective, it is not intended that all Block Modules be required to be applied in every State and Region.

- Many of the Block Upgrade Modules contained in the GANP are specialised packages that should be applied only where the specific operational requirement exists or corresponding benefits can be realistically projected. New threads are included in the GANP new edition.
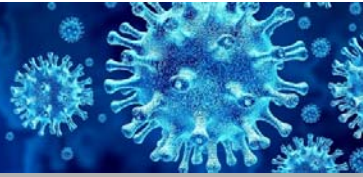
## MID Region Air Navigation Priorities and Targets

- The Secretariat reviewed the GANP 6th edition and drafted a strategy for the MID Region, identifying priority 1 threads, and their applicability area and performance indicators/supporting metric.

- The Joint ACAO/ICAO MID ASBU Symposium was scheduled from 16 to 19 March 2020. due to COVID-19 crisis, the symposium has been rescheduled to 2021.

ASBU Threads
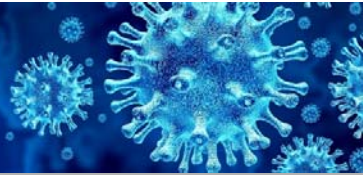
1) The meeting is invited to encourage States to:

    a) participate actively in the planned ACAO/ICAO ASBU symposium planned for Q1-2021;

    b) identify those ASBU Threads/elements which provide required operational improvements;

    c) start selection/agreement on few KPIs from the GANP, which could be measured/monitored at a first phase considering how they will be measured (agreement on the data to be collected and the metrics to be used); and

    d) review the draft revised Strategy developed by the Secretariat and provide feedback/comments.

DRAFT MID AIR NAVIGATION STRATEGY

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.

APTA		*Applicability*	*Priority*	Performance Indicators/Supporting Metrics	Targets	Timelines
APTA B0/1	PBN Approaches (with basic capabilities)	All RWYs ENDs at International Aerodromes	Priority 1	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)		
APTA B0/2	PBN SID and STAR procedures (with basic capabilities)	All RWYs ENDs at International Aerodromes	Priority 1	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).		
APTA B0/3	SBAS/GBAS CAT I precision approach procedures	AT the state discretion's	Priority 2			
APTA B0/4	CDO (Basic)	OBBI, HESH, HEMA, HEGN, OIIE, OIKB, OIFM, OJAI, OJAQ, OKBK, OLBA, OOMS, OTHH, OEJN, OEMA, OEDF, OERK, HSSS, HSPN, OMAA,	Priority 1	Indicator: % of International Aerodromes/TMA with CDO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CDO implemented as required.		

		OMDB, OMDW, OMSJ				
APTA B0/5	CCO (Basic)	OBBI, HESN, HESH, HEMA, HEGN, HELX, OIIE, OIKB, OIFM, ORER, ORNI, OJAM, OJAI, OJAQ, OKBK, OLBA, OOMS, OOSA, OTHH, OEJN, OEMA, OEDF, OERK, HSNN, HSOB, HSSS, HSPN, OMAA, OMDB, OMDW, OMSJ	Priority 1	Indicator: % of International Aerodromes/TMA with CCO implemented as required. Supporting Metric: Number of International Aerodromes/TMAs with CCO implemented as required.		
APTA B0/6	PBN Helicopter Point in Space (PinS) Operations	AT the state discretion's	Priority 2			
APTA B0/7	Performance based aerodrome operating minima – Advanced aircraft	TBD	New element Priority 1 with applicability area	Indicator: % of International Aerodromes with PB AOM implemented for Advanced aircraft as required. Supporting Metric: Number of International Aerodromes with PB AOM implemented for Advanced aircraft as required.		
APTA B0/8	Performance based aerodrome operating minima – Basic aircraft	AT the state discretion's	Priority 2			
APTA B1/1	PBN Approaches (with advanced capabilities)	AT the state discretion's	Priority 2			
APTA B1/2	PBN SID and STAR procedures (with advanced capabilities)	AT the state discretion's	Priority 2			

		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
APTA B1/3	Performance based aerodrome operating minima – Advanced aircraft with SVGS	AT the state discretion's	Priority 2			
APTA B1/4	CDO (Advanced)	AT the state discretion's	Priority 2			
APTA B1/5	CCO (Advanced)	AT the state discretion's	Priority 2			

FRTO		*Applicability*	*Priority*	**Performance Indicators/Supporting Metrics**	**Targets**	**Timelines**
FRTO B0/1	Direct routing (DCT)	AT the state discretion's	Priority 2			
FRTO B0/2	Airspace planning and Flexible Use of Airspace (FUA) Level 1 Strategic	All States	Priority 1	Indicator: % of States that have implemented FUA. Supporting metric*: number of States that have implemented FUA.		
	Airspace planning and Flexible Use of Airspace (FUA) Level 2 Pre-tactical	All States	Priority 1	Indicator: % of States that have implemented FUA Level 1 Supporting metric*: number of States that have implemented FUA Level 1		
	Airspace planning and Flexible Use of Airspace (FUA) Level 3 Tactical	All States	Priority 1	Indicator: % of States that have implemented FUA Level 2 Supporting metric*: number of States that have implemented FUA Level 2		
FRTO B0/3	Pre-validated and coordinated ATS routes to support flight and flow	AT the state discretion's	Priority 2	Indicator: % of States that have implemented FUA Level 3		

NOPS		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
				Supporting metric*: number of States that have implemented FUA Level 3		
FRTO B0/4	Basic conflict detection and conformance monitoring	In high traffic density areas	Priority 1	Indicator: % of States that have implemented conflict detection tools (Medium Term Conflict Detection Tool- MTCD) and conformance monitoring warnings. Supporting metric*: number of States that have implemented conflict detection tools (Medium Term Conflict Detection Tool- MTCD) and conformance monitoring warnings.		
FRTO B1/1	Free Route Airspace (FRA)	AT the state discretion's	Priority 2			
FRTO B1/2	Required Navigation Performance (RNP) routes	AT the state discretion's	Priority 2			
FRTO B1/3	Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	AT the state discretion's	Priority 2			
FRTO B1/4	Dynamic sectorization	AT the state discretion's	Priority 2			
FRTO B1/5	Enhanced Conflict Detection Tools and Conformance Monitoring	AT the state discretion's	Priority 2			
FRTO B1/6	Multi-Sector Planning	AT the state discretion's	Priority 2			
FRTO B1/7	Trajectory Options Set (TOS)	AT the state discretion's	Priority 2			

NOPS	Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines

NOPS B0/1	Initial integration of collaborative airspace management with air traffic flow management	All States	Priority 1	Indicator: % of States integrating collaborative airspace management with air traffic flow management Supporting metric: number of States that have integrated collaborative airspace management with air traffic flow management		
NOPS B0/2	Collaborative Network Flight Updates	AT the state discretion's	Priority 2			
NOPS B0/3	Network Operation Planning basic features	AT the state discretion's	Priority 2			
NOPS B0/4	Initial Airport/ATFM slots and A-CDM Network Interface	AT the state discretion's	Priority 2			
NOPS B0/5	Dynamic ATFM slot allocation	AT the state discretion's	Priority 2			
NOPS B1/1	Short Term ATFM measures	AT the state discretion's	Priority 2			
NOPS B1/2	Enhanced Network Operations Planning	AT the state discretion's	Priority 2			
NOPS B1/3	Enhanced integration of Airport operations planning with network operations planning	AT the state discretion's	Priority 2			
NOPS B1/4	Dynamic Traffic Complexity Management	AT the state discretion's	Priority 2			
NOPS B1/5	Full integration of airspace management with air traffic flow management	AT the state discretion's	Priority 2			
NOPS B1/6	Initial Dynamic Airspace configurations	AT the state discretion's	Priority 2			
NOPS B1/7	Enhanced ATFM slot swapping	AT the state discretion's	Priority 2			

NOPS B1/8	Extended Arrival Management supported by the ATM Network function	AT the state discretion's	Priority 2			
NOPS B1/9	Target Times for ATFM purposes	AT the state discretion's	Priority 2			
NOPS B1/10	Collaborative Trajectory Options Program (CTOP)	AT the state discretion's	Priority 2			

	DAIM	*Applicability*	*Priority*	Performance Indicators/Supporting Metrics	Targets	Timelines
DAIM B1/1	Provision of quality-assured aeronautical data and information	All States	Priority 1	Supporting Metrics: 1- Number of States that have implemented QMS for AIS/AIM 2- Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) and have implemented WGS-84 Geoid Undulation 3- Number of States that have implemented an AIXM-based AIS database (AIXM V5.1+) 4- Number of States that have established formal arrangements with at least 50% of their AIS data originators		
DAIM B1/2	Provision of digital Aeronautical Information Publication (AIP) data sets		Priority 2			
DAIM B1/3	Provision of digital terrain data sets	All States	Priority 1	Indicator: % of States that provide required Terrain digital datasets Supporting Metric: Number of States that provide required Terrain digital datasets		
DAIM B1/4	Provision of digital obstacle data sets	All States	Priority 1	Indicator: % of States that provide required Obstacle digital datasets		

				Supporting Metric: Number of States that provide required Obstacle digital datasets		
DAIM B1/5	Provision of digital aerodrome mapping data sets		Priority 2			
DAIM B1/6	Provision of digital instrument flight procedure data sets		Priority 2			
DAIM B1/7	NOTAM improvements		Priority 2			

FICE		*Applicability*	*Priority*	**Performance Indicators/Supporting Metrics**	**Targets**	**Timelines**
FICE B0/1	Automated basic inter facility data exchange (AIDC)	As per the AIDC/OLDI Applicability Table	Priority 1	Indicator: % of priority 1 AIDC/OLDI Interconnection have been implemented Supporting metric: Number of AIDC/OLDI interconnections implemented between adjacent ACCs.		

ASUR		*Applicability*	*Priority*	**Performance Indicators/Supporting Metrics**	**Targets**	**Timelines**
ASUR B0/1	Automatic Dependent Surveillance – Broadcast (ADS-B)		New element Priority 1 with applicability area	Indicator: % of States that have implemented ADS-B to supplement surveillance coverage *Supporting Metric: Number of applicable States that have implemented ADS-B		
ASUR B0/2	Multilateration cooperative surveillance systems (MLAT)		New element Priority 1 with	Indicator: % of States that have implemented Mulitlateration as required		

					Targets	Timelines
			applicability area	*Supporting Metric: Number of applicable States that have implemented Mulitlateration		
ASUR B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	All States	Priority 1	Indicator: % of States that have enabled the downlink of the aircraft parameter (DAPS) *Supporting Metric: Number of States enable ATM System to obtain DAPS from the cooperative surveillance radars		
ASUR B1/1	Reception of aircraft ADS-B signals from space (SB ADS-B)		Priority 2			

	SNET	Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
SNET B0/1	Short Term Conflict Alert (STCA)	All States	Priority 1	Indicator: % of States that have implemented Short-term conflict alert (STCA) Supporting metric*: number of States that have implemented Short-term conflict alert (STCA)		
SNET B0/2	Minimum Safe Altitude Warning (MSAW)	All States	Priority 1	Indicator: % of States that have implemented Minimum safe altitude warning (MSAW) Supporting metric*: number of States that have implemented Minimum safe altitude warning (MSAW)		
SNET B0/3	Area Proximity Warning (APW)	TBD	Priority 1	Indicator: % of States having implemented APW. Supporting metric*: number of States having implemented APW.		
SNET B0/4	Approach Path Monitoring (APM)	AT the state discretion's	Priority 2			
SNET B1/1	Enhanced STCA with aircraft parameters	AT the state discretion's	Priority 2			
SNET B1/2	Enhanced STCA in complex TMA	AT the state discretion's	Priority 2			

GADS		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
GADS B1/1	Aircraft Tracking		Priority 2			
GADS B1/2	Contact directory service	All states	Priority 1	Indicator: % of States provided Point of Contact information ICAO MID: create online GADSS POC repository		

AMET		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
AMET B0/1	Meteorological observations products	All states	Priority 1	Indicator: % of States that provides the following Meteorological observations products, as required: 1. Automatic Weather Observation System (AWOS) information (including real-time exchange of wind and RVR data) 2. Local reports (MET REPORT / SPECIAL) 3. Aerodrome reports (METAR / SPECI) 4. Lightning information 5. Ground-based weather radar information 6. Meteorological satellite imagery 7. Aircraft meteorological report (ie. ADS-B, AIREP, AMDAR etc.) 8. Vertical wind and temperature profiles 9. Volcano Observatory Notice for Aviation (VONA) 10. Wind shear alerts Supporting metric: number of States that provides the above Meteorological observations products, as required.		

AMET B0/2	Meteorological forecast and warning products	All states	Priority 1	Indicator: % of States that provides the following Meteorological forecast and warning products, as required. 1. World Area Forecast System (WAFS) gridded products 2. Significant Weather (SIGWX) 3. Low-level Area Forecast (GAMET) 4. Aerodrome Forecast (TAF) 5. Trend Forecast (TREND) 6. Take-off Forecast 7. Tropical Cyclone Advisory (TCA) 8. Volcanic Ash Advisory (VAA) 9. AIRMET 10. SIGMET 11. Aerodrome Warning 12. Wind Shear Warning Supporting metric: number of States that provides the above Meteorological forecast and warning products, as required.		
AMET B0/3	Climatological and historical meteorological products	All states	Priority 1	Indicator: % of States that provides Climatological and historical meteorological products, as required. Supporting metric: number of States that provide Climatological and historical meteorological products, as required.		
AMET B0/4	Dissemination of meteorological products	All states	Priority 1	Indicator: % of States that disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM) Supporting metric: number of States that disseminating Meteorological products using the above formats and means.		
AMET B1/1	Meteorological observations information		Priority 2			

AMET B1/2	Meteorological forecast and warning information		Priority 2			
AMET B1/3	Climatological and historical meteorological information		Priority 2			
AMET B1/4	Dissemination of meteorological information		Priority 2			

ACAS		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
ACAS B1/1	ACAS Improvements Operational	All States	Priority 1	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		

COMI		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
COMI B0/1	Aircraft Communication Addressing and Reporting System (ACARS)		Priority 2			
COMI B0/2	Aeronautical Telecommunication Network/Open System Interconnection (ATN/OSI)		Priority 2			
COMI B0/3	VHF Data Link (VDL) Mode 0/A		Priority 2			
COMI B0/4	VHF Data Link (VDL) Mode 2 Basic		Priority 2			

COMI B0/5	Satellite communications (SATCOM) Class C Data		Priority 2			
COMI B0/6	High Frequency Data Link (HFDL)		Priority 2			
COMI B0/7	ATS Message Handling System (AMHS)	All States	Priority 1	Indicator: % of States have implemented AMHS connections with all adjacent COM Centres as required Supporting metric: Number of required AMHS interconnections established in the COM Centre		
COMI B1/1	Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)	All States	Priority 1	Indicator1: % of States that established National IP Network for voice and data communication Supporting metric: Number of States that established National IP Network for voice and data communication Indicator 2: % of States that joined the MID IP Network		
COMI B1/2	VHF Data Link (VDL) Mode 2 Multi-Frequency		Priority 2			
COMI B1/3	SATCOM Class B Voice and Data		Priority 2			
COMI B1/4	Aeronautical Mobile Airport Communication System (AeroMACS) Ground-Ground		Priority 2			

	NAV	*Applicability*	*Priority*	Performance Indicators/Supporting Metrics	Targets	Timelines
NAVS B0/1	Ground Based Augmentation Systems (GBAS)	AT the state discretion's	Priority 2			

NAVS B0/2	Satellite Based Augmentation Systems (SBAS)	AT the state discretion's	Priority 2			
NAVS B0/3	Aircraft Based Augmentation Systems (ABAS)	All States	Priority 1	Indicator: % of States requiring aircrafts' equipage with the Aircraft Based Augmentation System (ABAS) to enable PBN Operations Supporting metric: Number of States requiring aircrafts' equipage with the Aircraft Based Augmentation System (ABAS) to enable PBN Operations		
NAVS B0/4	Navigation Minimal Operating Networks (Nav. MON)	All States	Priority 1	Indicator: % of States developed the plan of rationalized conventional navaids network to ensure the necessary levels of resilience for navigation Supporting metric: Number of States developed the plan of rationalized conventional navaids network to ensure the necessary levels of resilience for navigation		
NAVS B1/1	Extended GBAS	AT the state discretion's	Priority 2			

SURF		Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
SURF-B0/1	Basic ATCO tools to manage traffic during ground operations		Priority 1	Indicator: % of Airports having implemented Basic ATCO tools to manage traffic during ground operations Supporting metric*: Number of Airports having implemented Basic ATCO tools to manage traffic during ground operations		

SURF-B0/2	Comprehensive situational awareness of surface operations		Priority 1	Indicator: % of Airports having implemented the surveillance service of A-SMGCS Supporting metric*: Number of Airports having implemented the surveillance service of A-SMGCS		
SURF-B0/3	Initial ATCO alerting service for surface operations		Priority 1	Indicator: % of Airports having implemented the A-SMGCS alerting service. Supporting metric*: Number of Airports having implemented the A-SMGCS alerting service		
SURF-B1/1	Advanced features using visual aids to support traffic management during ground operations	AT the state discretion's	Priority 2			
SURF-B1/2	Comprehensive pilot situational awareness on the airport surface	AT the state discretion's	Priority 2			
SURF-B1/3	Enhanced ATCO alerting service for surface operations	AT the state discretion's	Priority 2			
SURF-B1/4	Routing service to support ATCO surface operations management	AT the state discretion's	Priority 2			
SURF-B1/5	Enhanced vision systems for taxi operations	AT the state discretion's	Priority 2			

	ACDM	Applicability	Priority	Performance Indicators/Supporting Metrics	Targets	Timelines
ACDM-B0/1	Airport CDM Information Sharing (ACIS)		Priority 1	Indicator: % of Airports having implemented ACIS Supporting metric*: number of Airports having implemented ACIS		
ACDM-B0/2	Integration with ATM Network function		Priority 1	Indicator: % of Airports having integrated ACDM with the ATM Network function.		

				Supporting metric*: Number of Airports having integrated ACDM with the ATM Network function		
ACDM-B1/1	Airport Operations Plan (AOP)		Priority 1	Indicator: % of Airports having implemented an Airport Operations Plan (AOP) Supporting metric*: having implemented an Airport Operations Plan (AOP)		
ACDM-B1/2	Airport Operations Centre (APOC)	AT the state discretion's	Priority 2			