International Civil Aviation Organization

MIDANPIRG Air Traffic Management Sub-Group

Eleventh Meeting (ATM SG/11)
(Abu Dhabi, UAE, 19 – 23 October 2025)

Agenda Item 3: Planning and implementation issues related to ATM/SAR

REDUCTION OF LONGITUDINAL SEPARATION BETWEEN FIRS

(Presented by the Secretariat)

SUMMARY

This paper presents the progress of development of MID reduction of longitudinal separation action plan along with the associated monitoring indicators for successful implementation of ICAO initiative Project 30/10.

Action by the meeting is at paragraph 3.

REFERENCES

- AN-Conf/14 (26 August to 6 September 2024, Montréal, Canada)
- ICAO Annex 11
- ICAO PANS ATM; Doc 4444
- ICAO Doc 9689
- MIDANPIRG/22 & RASG-MID/12 meetings report (Doha, Qatar, 4 – 8 May 2025)

1. INTRODUCTION

1.1 Separation is the generic term used to describe action on the part of ATS to keep aircraft operating in the same general area at such distances from each other that the risk of collision is maintained below an acceptable safe level. Such separation can be applied horizontally and vertically. Separation in the horizontal plane can be achieved either longitudinally (by spacing aircraft behind each other at a specified distance, which may be expressed in flying time) or laterally (by spacing aircraft side by side at a specified distance from each other, or by specifying the width of the protected airspace on either side of an air route center line). Vertical separation is achieved by requiring aircraft using prescribed altimeter setting procedures to operate at different levels expressed in terms of flight levels or altitudes.

1.2 Annex 11 specifies that the minima established by ICAO are published in the PANS-ATM and minima established by Regional Agreement are published in Doc 7030, Regional Supplementary Procedures (SUPPS). This material forms the initial source of reference material from which airspace planners may directly derive appropriate minima.

1.3 The AN-Conf/14 agreed that while uniform application of separation minima would reduce bottlenecks and improve air navigation safety and efficiency, akin to the goals of Project 30/10,

modern ATM solutions should also be applied across large portions of airspace that have similar traffic flow characteristics. These included air traffic flow management (ATFM), flexible use of airspace (FUA), free route airspace (FRA) and civil-military cooperation (CMC). The Conference recognized that such initiatives should be based on the needs of a wide cross-section of the aviation community, which may entail sending out surveys, as necessary.

2. DISCUSSION

2.1 The meeting may wish to note that regarding implementation of reduction longitudinal separation between FIRs, the MIDANPIRG/22 meeting endorsed the following Decision and Conclusion (superseded Conclusion 13/5):

MIDANPIRG DECISION 22/10: PROJECT 30/10 ROADMAP

That, the ATM SG develop roadmap for the implementation of Project 30/10 in the MID Region, including the inter-regional aspects.

And

MIDANPIRG CONCLUSION 22/11: IMPLEMENTATION OF REDUCED LONGITUDINAL SEPARATION IN THE MID REGION

a) States, that have not yet done so:

i. be urged to implement reduction of longitudinal separation where appropriate:

- reduce longitudinal separation down to 10 NM; where ATS surveillance service provided; and

- reduce longitudinal separation down to 30 NM, where no ATS surveillance service provided.

ii. be invited to agree with their adjacent FIRs/States on the date of implementation and updating of the LoAs.

b) the ATM SG monitors the progress of implementation and undertakes necessary measures to promote its advancement.

2.2 Accordingly, the Secretariat, based on ICAO Doc 4444, Chapter 5, has extracted relevant longitudinal separation minima for aircraft operating on the same track and same level in non-surveillance environment and their corresponding requirements at **Appendix A**.

2.3 In addition, the current status of longitudinal separation between the MID FIRs as well as adjacent regions based on common FIR boundary points described at **Appendix B**.

2.4 In light on the above, in order to develop Action Plan for implementation of reducing longitudinal separation, it is required to prioritize actions based on the following factors:

a) if a common FIR boundary point in non-surveillance environment (at least on one side) is subject to longitudinal separation of 10 minutes (equivalent to 80 NM) or greater; or

b) if the large longitudinal separation over common FIR point imposes additional

workload to ATCOs and flight crew which may have an impact on safety of traffic operation; or

c) if the common FIR point carries the main flows in the MID region and/or at interface with adjacent region(s) in accordance with MIDRMA report; or

d) if the common FIR boundary point is utilized for unidirectional operation and amount of movement reaches 90,000 or more per year; or

e) if the common FIR boundary point is utilized for bidirectional operation and amount of movement reaches 50,000 or more per year; or

f) if traffic movement at the common FIR boundary point significantly increases during contingency situations; or

g) where decided by both concerned States.

2.5 Based on the above criteria and information provided in **Appendices A** and **B**, the ICAO MID Office developed the Draft Action Plan at **Appendix C** for implementation of reducing longitudinal separation in the MID region.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) review and assess longitudinal separation minima at **Appendix A** for implementation of reducing longitudinal separation in non-surveillance environment using a phased approach in accordance with action plan;

b) assess longitudinal separation minima in surveillance environment using a phased approach in accordance with action plan;

c) review the current status of longitudinal separation at FIR boundary points at **Appendix B** and provide required updated to ICAO MID for prioritization of implementing reduction of longitudinal separation in the action plan;

d) review and agree on criteria proposed in para 2.4 concerning the factors that must be taken into account for the prioritization of the project using a phased approach; and

e) review Draft Action Plan in **Appendix C** for additional comments and input.

Longitudinal Separation Minima and requirements in non-surveillance environments

Type of longitudinal separation	Minima	Requirements				
Based on Time	15 minutes	No NAVAID to permit frequent determination of position and speed			Communication: voice reports, CPDLC or ADS-C	
Based on Time	10 minutes	NAVAID permits frequent determination of position and speed			Communication: voice reports, CPDLC or ADS-C	
Based on Time	5 minutes	NAVAID permits frequent determination of position and speed		preceding ACFT maintain TAS 20^{+} kt faster than succeeding ACFT	Communication: voice reports, CPDLC or ADS-C	
Based on Time	3 minutes	NAVAID permits frequent determination of position and speed		preceding ACFT maintain TAS 40^{+} kt or faster than succeeding ACFT	Communication: voice reports, CPDLC or ADS-C	
Mach Number Technique Based on Time	10 minutes	True Mach number approved by ATC			Communication: voice reports, CPDLC or ADS-C	
Mach Number Technique Based on Time	9 to 5 minutes	Mach number difference (0.02 to 0.06) as explained in para 5.4.2.4.3			Communication: voice reports, CPDLC or ADS-C	
Mach Number Technique Based on Distance Using RNAV	80 NM	Separation established & maintain 80^{+} NM between ACFT positions by assigning Mach number		RNAV-equipped aircraft	Operating on designated RNAV routes or on ATS routes defined by VOR	Direct controller-pilot communications
Based on Distance Using RNAV where RNP 10	50 NM	Separation established & maintain 50^{+} NM between ACFT positions by using speed control techniques, including assigning Mach number		This separation was developed in accordance with a collision risk analysis, so implementation requires safety risk assessments. Refer para 5.4.2.6.3.1 and notes	Distance verification at least every 24 minutes as well as procedure in 5.4.2.6.3.2	Direct controller-pilot communications shall be voice or CPDLC
Performance-Based Longitudinal Separation	50 NM	RNP 10	RCP 240	RSP 180	Max ADS-C periodic reporting interval 27 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Performance-Based Longitudinal Separation	50 NM	RNP 4	RCP 240	RSP 180	Max ADS-C periodic reporting interval 32 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Performance-Based Longitudinal Separation	30 NM	RNP 2 or 4	RCP 240	RSP 180	Max ADS-C periodic reporting interval 12 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Performance-Based Longitudinal Separation	30 NM	RNP 2 or 4	RCP 240	RSP 180	Max ADS-C periodic reporting interval 12 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Performance-Based Longitudinal Separation	20 NM	RNP 2 or 4	RCP 240	RSP 180	Max ADS-C periodic reporting interval 3.2 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Performance-Based Longitudinal Separation	5 minutes	RNP 2 or 4 or 10	RCP 240	RSP 180	Max ADS-C periodic reporting interval 14 minutes considering para procedures in 5.4.2.9.6 & 5.4.2.9.7	
Based on Distance Using DME and/or GNSS	20 NM	ACFT positions report by reference to DME in conjunction with other appropriate navigation aids and/or GNSS			Direct controller-pilot VHF voice communication and frequent intervals to ensure that the minimum will not be infringed	
Based on Distance Using DME and/or GNSS	10 NM	ACFT positions report by reference to DME in conjunction with other appropriate navigation aids and/or GNSS as well as the leading ACFT maintains a TAS 20^{+} kt faster than the succeeding ACFT			Direct controller-pilot VHF voice communication and frequent intervals to ensure that the minimum will not be infringed	

Current status of longitudinal separation at common FIR boundaries

Bahrain	Iran				Kuwait					Qatar		Saudi Arabia						
	ROTOX	OBTAR	KUVER	ALSER	KUMBO	DAVUS	LONOS	RABAP	AMBIK	TULUB	LUBET	DAROR	METLA	ULADA	ROTEL	LADNA	NARMI	DEMTA
Separation	20	20	20	20	10	20	10	10	10	8	8	10	10	10	10	10	10	10
No Traffic per year																		

Egypt	Cyprus			Greece						Jordan	Libya		Saudi Arabia					Sudan				
	RASDA	LAKTO	PASOS	SALUN	METRU	TANSA	PAXIS	ANTAR	KUMBI	ULINA	LOSUL	DITAR	KITOT	PASAM	IMRAD	GIBAL	DEDLI	ALEBA	ENABU	ATMUL	NUBAR	SISID
Separation	20	20	20	20	20	20	20	20	20	15	80	80	20	15	15	40	40	80	80	80	80	80
No Traffic per year																						

Iran	Afghanistan				Armania	Azerbaijan					Iraq			Bahrain				Kuwait			Oman					Pakistan						Qatar				Turkey						Turkmenistan						UAE				
	PAMTU	RANRU	SOKAM	KAMAR	MAGRI	BATEV	ULDUS	LALDA	PARSU	DULAV	PAXAT	RAGET	BOXIX	ROTOX	OBTAR	KUVER	ALSER	TULAX	NANPI	PATIR	DENDA	IMLOT	MESPO	ULDUN	IVIVA	PIRAN	KEBUD	DERBO	ASVIB	EGRON	METBI	DASTU	MIDSI	RAGAS	ELIDU	AGINA	DASIS	TESVA	BONAM	ALRAM	LUMOM	GIRUN	RIKOP	ORPAB	NAZAR	OTRUZ	DEBER	GABKO	PATAT	ORSAR	SIR	DAPER
Separation	120	120	120	120	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	50	50	50	20	20	50	50	50	50	50	50	20	10	20	20	20	20	20	20	20	20	50	50	50	50	50	50	20	20	10	20	20
No Traffic per year																																																				

Iraq	Iran			Jordan	Kuwait		Saudi Arabia	Syria			Turkey		
	PAXAT	RAGET	BOXIX	PASIP	SIDAD	TASMI	MURIB	MODIK	SIDNA	ELEXI	NINVA	KABAN	RATOV
Separation	20	20	20	80	10	20	40	80	80	80	20	20	20
No Traffic per year													

Jordan	Egypt	Iraq	Israel		Saudi Arabia						Syria					
	ULINA	PASIP	OSAMA	MOUAB	TRF	DEESA	GIBET	TULEP	GENEX	OTILA	BUSRA	ZELAF	SOKAN	NAMBO	KAMEL	TAN
Separation	15	80	10	10	10	10	10	10	10	10	80	80	80	80	80	80
No Traffic per year																

Kuwait	Bahrain					Iran			Iraq		Saudi Arabia					
	KUMBO	DAVUS	LONOS	RABAP	AMBIK	TULAX	NANPI	PATIR	SIDAD	TASMI	BOSID	GOVAL	DERKO	COPPI	RAS	KOBOK
Separation	10	20	10	10	10	20	20	20	10	20	10	10	10	20	10	20
No Traffic per year																

Lebanon	Cyprus					Syria	
	LITAN	ELIKA	DIRRE	KUKLA	BALMA	LEBOR	LATEB
Separation	30	30	30	30	30	80	80
No Traffic per year							

Libya	Algeria	Chad				Egypt		Malta											Sudan	Tunis		
	IMN	DEKTU	TUMMO	GARIN	TONBA	LOSUL	DITAR	ABRAM	SARKI	VARIG	LUMED	LOTIN	ELIMO	INDOT	OLMAX	BONAR	EKLIS	RASNO	ORNAT	GASRI	TANLI	FARES
Separation	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
No Traffic per year																						

Oman	India							Iran					Pakistan			Saudi Arabia						UAE																	Yemen				
	RASKI	PARAR	TOTOX	REXOD	LOTAV	KITAL	ASPUX	DENDA	IMLOT	MESPO	ULDUN	IVIVA	APELO	TAPDO	ALPOR	MIDGU	TOKRA	DAPOL	SITOL	IMDAM	GOBRO	LALDO	GOMTA	TONVO	MENSA	PASOV	SOLUD	TAPRA	TARDI	MUSAP	ITRUX	LABRI	RETAS	SODEX	MEMTU	EGPEP	TONVO	LUDID	KIVEL	IMKAD	KAPET	PUTRA	SABEL
Separation	50	50	50	50	50	50	50	50	50	50	20	20	40	40	40	20	20	20	20	20	20	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10	10	8	80	80	80	80	80
No Traffic per year																																											

Qatar	Bahrain		Iran				Saudi Arabia				UAE										
	TULUB	LUBET	DASTU	MIDSI	RAGAS	ELIDU	ULIKA	ORLEK	LADBO	DENSI	BUNDU	KUPRO	TOSNA	OVONA	TOVOX	ALPOB	TUMAK	ORMID	ASTOG	NALPO	OBNET
Separation	8	8	20	10	20	20	10	10	10	10	8	8	8	8	10	8	8	8	8	8	8
No Traffic per year																					

Saudi Arabia	Bahrain							Egypt					Eritrea		Iraq	Jordan						Kuwait						Oman						Qatar				Sudan			UAE				Yemen													
	DAROR	METLA	ULADA	ROTEL	LADNA	NARMI	DEMTA	KITOT	PASAM	IMRAD	GIBAL	DEDLI	RASKA	KOBAS	MURIB	TRF	DEESA	GIBET	TULEP	GENEX	OTILA	BOSID	GOVAL	DERKO	COPPI	RAS	KOBOK	MIDGU	TOKRA	DAPOL	SITOL	IMDAM	GOBRO	ULIKA	ORLEK	LADBO	DENSI	MIPOL	KAROX	GIBAP	MUXIT	TANSU	RIBOT	PEKEM	DUDRI	SILPA	ALNES	PADUR	ALSIR	NADKI	ULBON	NETAS	NOBSU	NABAN	NISMI	LAKNA	RIBOK	APDOS
Separation	10	10	10	10	10	10	10	20	15	15	40	40	80	80	40	10	10	10	10	10	10	10	10	10	20	10	20	20	20	20	20	20	20	10	10	10	10	80	80	80	20	20	20	20	80	80	80	80	80	80	80	80	80	80	80	80	80	80
No Traffic per year																																																										

Sudan	Congo	Chad							Egypt					Eritrea			Ethiopia						Libya	Kenya	Uganda		
	ASKON	IPONO	GNA	ILBIB	KISAL	KURAM	MONAN	KAFIA	ALEBA	ENABU	ATMUL	NUBAR	SISID	TOKRA	FEREB	KSL	ALRAP	TIKAT	AVONO	DASTU	AXOTI	DAGAP	ORNAT	EPLAS	ATUGA	OVELA	KABLA
Separation	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
No Traffic per year																											

Syria	Cyprus	Iraq			Jordan						Syria		Turkey			
	NIKAS	MODIK	SIDNA	ELEXI	BUSRA	ZELAF	SOKAN	NAMBO	KAMEL	TAN	LEBOR	LATEB	TUSYR	TUNLA	NISAP	LESRI
Separation	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
No Traffic per year																

UAE	Iran					Oman																	Qatar											Saudi Arabia			
	GABKO	PATAT	ORSAR	SIR	DAPER	LALDO	GOMTA	TONVO	MENSA	PASOV	SOLUD	TAPRA	TARDI	MUSAP	ITRUX	LABRI	RETAS	SODEX	MEMTU	EGPEP	TONVO	LUDID	BUNDU	KUPRO	TOSNA	OVONA	TOVOX	ALPOB	TUMAK	ORMID	ASTOG	NALPO	OBNET	MUXIT	TANSU	RIBOT	PEKEM
Separation	20	20	10	20	20	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10	10	8	8	8	8	8	10	8	8	8	8	8	8	20	20	20	20
No Traffic per year																																					

Yemen	India			Eritrea		Ethiopia		Oman					Saudi Arabia														Somalya						
	GADIS	NABIL	ANGAL	SALEH	FARES	TORBA	PARIM	KIVEL	IMKAD	KAPET	PUTRA	SABEL	DUDRI	SILPA	ALNES	PADUR	ALSIR	NADKI	ULBON	NETAS	NOBSU	NABAN	NISMI	LAKNA	RIBOK	APDOS	OKTAB	ZIZAN	TIMAD	DEMGO	BOMIX	VEDET	SUHIL
Separation	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
No Traffic per year																																		

Action Plan for implementation of Project 30/10

Priority factors:

a) if a common FIR boundary point in non-surveillance environment (at least on one side) is subject to longitudinal separation of 10 minutes (equivalent to 80 NM) or greater; or
b) if the large longitudinal separation over common FIR point imposes additional workload to ATCOs and flight crew which may have an impact on safety of traffic operation; or
c) if the common FIR point carries the main flows in the MID region and/or at interface with adjacent region(s) in accordance with MIDRMA report; or
d) if the common FIR boundary point is utilized for unidirectional operation and amount of movement reaches 90,000 or more per year, or
e) if the common FIR boundary point is utilized for bidirectional operation and amount of movement reaches 50,000 or more per year, or
f) if traffic movement at the common FIR boundary point significantly increases during contingency situations. or
g) where decided by both concerned States.

Main action	Sub action		Target date	Deliverable	Champion	Reference	Status / RMK
	No.	Description					
Collection of data and Gap analysis	**1.1**	Develop template to collect data and information from States based on LoAs		Template for collection of data	ICAO MID	MIDANPIRG Conclusion 22/10	
	1.2	Follow up with States to submit required data and share with MID office		State Letter to MID States	ICAO MID		
	1.3	Consolidate States input and conduct Gap analysis		Draft Gap Analysis	MID States and ICAO MID		
	1.4	Prepare and present Gap analysis report to ATM SG for decision		Gap Analysis report	ICAO MID		
Prioritization of the project	**2.1**	Develop draft priority criteria		Draft list of priority criteria	ICAO MID	MIDANPIRG Conclusion 22/10	
	2.2	Review and approve priority criteria		list of priority criteria	ATM SG		
	2.3	Prioritize common FIR boundary points based on approved criteria in two phases		list of priority common FIR boundary points in two phases	ICAO MID		

Main action	Sub action		Target date	Deliverable	Champion	Reference	Status / RMK
	No.	Description					
Development of Roadmap	**3.1**	Develop comprehensive list of actions for each common FIR boundary point to identify requirements related to performance improvement area, target, timeline, safety assessment, training, amendment of Letter of Agreement, set effective date etc.		list of detailed actions for each common FIR boundary point	Concern States for each FIR boundary point. ICAO MID to facilitate coordination between States as well as adjacent region(s), if requested	MIDANPIRG Conclusion 22/10 MIDANPIRG Conclusion 22/11	
	3.2	Consolidate actions provided by States in coordinated manner to develop Draft Roadmap		Draft Roadmap	States and ICAO MID	MIDANPIRG Conclusion 22/10	
	3.3	Review Draft Roadmap by ATM SG		Mature Draft Roadmap	ATM SG	MIDANPIRG Conclusion 22/10	
	3.4	Present Mature Draft Roadmap to MIDANPIRG for review and endorsement		Approved Project Roadmap	MIDANPIRG	MIDANPIRG Conclusion 22/10	
Implementation of Phase One	**4.1**	Based on roadmap, focus on priority 1 common FIR boundary points for implementation of required actions and provide periodic feedback and progress report to ICAO MID		Progress report by States	MID States	Roadmap	
	4.2	Based on the feedback and request from States, provide required technical assistance and support.		ICAO Implementation Support initiative(s)	ICAO MID	Roadmap	
	4.3	Provide consolidated report as well as operational impact analysis to ATM SG and MIDANPIRG until successful implementation of Phase One.		Consolidated progress report with impact analysis	ICAO MID	Roadmap	

Main action	Sub action		Target date	Deliverable	Champion	Reference	Status / RMK
	No.	**Description**					
Implementation of Phase Two	**5.1**	Based on roadmap, focus on priority 2 common FIR boundary points for implementation of required actions and provide periodic feedback and progress report to ICAO MID		Progress report by States	MID States	Roadmap	
	5.2	Based on the feedback and request from States, provide required technical assistance and support.		ICAO Implementation Support initiative(s)	ICAO MID	Roadmap	
	5.3	Provide consolidated report as well as operational impact analysis to ATM SG and MIDANPIRG until successful implementation of Phase Two.		Consolidated progress report with impact analysis	ICAO MID	Roadmap	

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