INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE FOURTH MEETING OF THE MIDANPIRG ATM SUB-GROUP

ATM SG/4

(Amman, Jordan, 29 April – 2 May 2018)

The views expressed in this Report should be taken as those of the MIDANPIRG ATM Sub-Group and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

Approved by the Meeting
and published by authority of the Secretary General

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PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Fourth meeting of the MIDANPIRG ATM Sub-Group (ATM SG/4) was hosted by the Civil Aviation Regulatory Commission (CARC) - Jordan at the Regency Palace Hotel, Amman, Jordan from 29 April to 2 May 2018.

2. OPENING

2.1 The meeting was opened by His Excellency Captain Haitham Misto, Chief Commissioner of Civil Aviation Regulatory Commission (CARC) – Jordan, who thanked ICAO for organizing this important meeting in Jordan and extended a warm welcome to all participants and wished them pleasant stay in Amman. Capt. Misto highlighted that Jordan realizes the importance of these activities in support of traffic growth as a result of sustainability through continuous improvement of safety, security, efficiency and environmental footprint and collaborative effort and cooperation at national, regional and global levels particularly in terms of ICAO compliancy.

2.2 Capt. Misto indicated that the air navigation operations in MID Region have been affected by contingency measures since 2013, which imposed a massive economic impact on the aviation industry. With the prevailing situation in the Region all operators were forced to utilize less than optimum ATS routes.

2.3 Capt. Misto wished the participants a fruitful meeting where collective efforts would come out with collaborative decisions and conclusions that best mitigate and reduce both operating costs and environmental impact while maintaining the acceptable level of safety.

2.4 In his opening address, Mr. Mohamed Khalifa Rahma, Regional Director, ICAO Middle East Office, Cairo, welcomed all the participants to Amman. He expressed his gratitude and appreciation to His Excellency, Captain Haitham Misto, Chief Commissioner of CARC-Jordan for hosting the ACCM/4, ATM SG/4 and AIRARD TF/3 meetings in Amman. Mr. Rahma extended special thanks to the air navigation team for the preparation and facilitation of these meetings and for the excellent hospitality extended to the ICAO staff and all participants. He highlighted that CARC's support to the ICAO MID Regional Office activities is an evidence of its active role and reflects Jordan's commitment to enhance the overall safety and efficiency of air navigation in the Region.

2.5 Mr. Rahma provided the meeting with an overview of the subjects that will be addressed during the meeting and highlighted the main expected outcomes of the meeting. Mr. Rahma indicated that the Agenda of the meeting includes the inter-regional issues related to ATS routes and contingency planning. In this respect, he thanked India and United States of America for their active participation. Mr. Rahma also thanked Mr. Chris Dalton, Chief Airspace Management and Optimization (AMO) Section at ICAO Headquarters Montreal, Canada, Mr. Leonard Wicks, Regional Officer, Air Traffic Management Search and Rescue (ATM/SAR), ICAO Bangkok Office and Mr. Sven Halle, Regional Officer/ANS (ATM) Implementation, ICAO Paris Office, for their attendance, and support. Finally, Mr. Rahma thanked AACO, CANSO, EUROCONTROL and IATA for their contribution to the meeting with working papers and presentations.

2.6 In closing, Mr. Rahma thanked all the participants for their presence and wished the meeting every success in its deliberations.

3. ATTENDANCE

3.1 The meeting was attended by a total of fifty-two (52) participants from thirteen (13) States (Bahrain, Egypt, India, Iraq, Iran, Jordan, Oman, Qatar, Saudi Arabia, Sudan, UAE, United States of America and Yemen) and seven (7) Organizations/Industries (AACO, CANSO, EUROCONTROL, IATA, IFALPA, IFATCA and MIDRMA). The list of participants is at **Attachment A**.

4. OFFICERS AND SECRETARIAT

4.1 The meeting was chaired by Mr. Saleem Mohamed Hassan, Director Air Traffic Management, Civil Aviation Affairs, Bahrain.

4.2 Mr. Elie El Khoury RO/ATM/SAR was the Secretary of the meeting supported by Mr. Mohamed Smaoui, Deputy Regional Director, ICAO Middle East Office.

5. LANGUAGE

5.1 Discussions were conducted in English and documentation was issued in English.

6. AGENDA

6.1 The following Agenda was adopted:

Agenda Item 1: Adoption of the Provisional Agenda

Agenda Item 2: Follow-up on MIDANPIRG/16 and ATM SG/3 Conclusions and Decisions

Agenda Item 3: Global and Regional Developments related to ATM

The meeting will be apprised of the global and regional activities related to ATM and SAR.

Agenda Item 4: MID Region ATS Route Network

- States will present an update on the implemented/planned changes related to their ATS route network. The benefits accrued from the implementation of the ATS routes improvements such as saving in time and/or distance, reduction in CO_2 emission, would be highlighted. The challenges that might delay the implementation of the planned routes would also be addressed.
- IATA will present the updated version of the MID Route Catalogue.
- The meeting will review and update, as deemed necessary, the MID Region ATM Contingency Plan.

Agenda Item 5: Airspace Management Issues

- Review and update, as deemed necessary, the MID Region PBN implementation Plan Parts related to en-route.

- Civil/Military Cooperation and Flexible Use of Airspace.
- Air Traffic Flow Management.
- SIDs and STARs new phraseology.
- AIDC/OLDI implementation.
- Radar Longitudinal Separation.
- Review and update of the MID Region's High Level Airspace Concept.
- Review and propose amendments to the MID Region Air Navigation Strategy Parts related to ATM.
- Review and propose amendments to the MID Air Navigation Plan Parts related to ATM.

Agenda Item 6: ATM Safety Matters

- RVSM implementation.
- Call Sign Confusion.
- SMS implementation for ATS.
- English Language Proficiency for ATCOs and SAR experts;
- Remotely Piloted Aircraft System

Agenda Item 7: SAR Issues

- Review and update the status of SAR in the MID Region
- Review the MID SAR Plan developed by the MID SAR Action Group
- Review and propose amendments to the MID Air Navigation Plan Parts related to SAR

Agenda Item 8: Review of Air Navigation Deficiencies in the ATM and SAR Fields

The meeting will review and update the list of air navigation deficiencies in the ATM and SAR fields, which have been identified in the MID Region, and propose actions, as appropriate.

Agenda Item 9: Future Work Programme

The meeting will review and update, as deemed necessary, the Terms of Reference of the ATM Sub-Group. The meeting will agree on the dates and venue of the ATM SG/5 meeting.

Agenda Item 10: Any other Business

7. CONCLUSIONS AND DECISIONS – DEFINITION

7.1 The MIDANPIRG records its actions in the form of Conclusions and Decisions with the following significance:

a) **Conclusions** deal with matters that, according to the Group's terms of reference, merit directly the attention of States, or on which further action will be initiated by the Secretary in accordance with established procedures; and

b) **Decisions** relate solely to matters dealing with the internal working arrangements of the Group and its Sub-Groups.

8. LIST OF DRAFT CONCLUSIONS AND DECISIONS

DRAFT CONCLUSION 4/1:	*REVISED VERSION OF THE MID REGION PBN IMPLEMENTATION PLAN (MID DOC 007)*
DRAFT CONCLUSION 4/2:	*REMOVAL OF PREFIX "U" WITH ROUTE DESIGNATORS*
DRAFT CONCLUSION 4/3:	*MID ANP TABLE II-MID-1*
DRAFT CONCLUSION 4/4:	*MID REGION ATS ROUTE CATALOGUE*
DRAFT CONCLUSION 4/5:	*MID REGION GUIDANCE MATERIAL ON CIVIL/MILITARY COOPERATION AND IMPLEMENTATION OF FUA CONCEPT*
DRAFT DECISION 4/6:	*TERMS OF REFERENCE OF THE WORLD CUP 2022 TASK FORCE*
DRAFT DECISION 4/7:	*NEAR MID AIR COLLISION (NMAC) ACTION GROUP*
DRAFT CONCLUSION 4/8:	*MID REGION SEARCH AND RESCUE PLAN*
DRAFT CONCLUSION 4/9:	*DEFICIENCIES RELATED TO THE NON-SIGNATURE OF CONTINGENCY AGREEMENTS WITH STATES AT THE INTERFACE WITH ICAO MID REGION*

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA

1.1 The meeting reviewed and adopted the Provisional Agenda as at paragraph 6 of the History of the Meeting.

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/16 CONCLUSIONS AND DECISIONS

2.1 The meeting noted the status of the MIDANPIRG/16 Conclusions and Decisions and the follow-up actions taken by States, the Secretariat and other parties concerned as at **Appendix 2A**. The meeting agreed also to review the Conclusions and Decisions, which are still current, under the associated Agenda Items with a view to propose to MIDANPIRG/17 appropriate follow-up actions.

REPORT ON AGENDA ITEM 3: GLOBAL AND REGIONAL DEVELOPMENTS RELATED TO ATM AND SAR

Global and Regional Developments related to ATM and SAR

3.1 The subject was addressed in PPT/1 presented by the Secretariat. The meeting was apprised of the ICAO global events relevant to ATM and SAR conducted/planned in 2017-2018. The meeting was updated on the new ICAO Documents that had been published to support States in implementing ICAO's provisions, as well as on the provisions that will applicable in 2018-2020 related to ATM and SAR.

MID Air Navigation Strategy and Air Navigation Report-2017

3.2 The subject was addressed in PPT/2 presented by the Secretariat. The meeting was apprised of the latest version of the MID Air Navigation Strategy (MID Doc 002). The meeting reviewed the parts related to ATM based on the discussions of B0-FRTO, B0-NOPS and B0-SNET. The meeting agreed that the Secretariat consolidate the draft revised version for presentation to the ANSIG/3 meeting.

Air Navigation Report-2017

3.3 The subject was addressed in PPT/2 presented by the Secretariat. The meeting recalled that the MID Region Air Navigation Report 2016 was endorsed by MIDANPIRG/16. The objective of the report was to provide an overview of the implementation progress for the Priority 1 ASBU Block 0 Modules (with the associated elements) within the ICAO MID Region for the 2016 reference period. Furthermore, for planning purpose, the Report consolidated the outlook of the Block 0 Modules implementation in the MID States, by 2020. The meeting noted that the development of the MID Air Navigation Report – 2017 is in progress. Accordingly, the meeting urged States to implement the provisions of MIDANPIRG Conclusion16/18:

a) develop/update their National ASBU Implementation Plan, ensuring the alignment with and support to the MID Region Air Navigation Strategy (MID Doc 002); and

b) provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report-2017, which will be presented to the ANSIG/3 meeting (Cairo, Egypt, 2-4 July 2018).

MID Region No Country Left Behind Strategy (NCLB)

3.4 The subject was addressed in WP/3 presented by the Secretariat. The meeting was apprised of the MID Region NCLB Strategy that was endorsed by the DGCA-MID/4 meeting (Muscat, Oman, 17-19 October 2017) through Muscat Declaration on NCLB. The meeting invited States to coordinate with the ICAO MID Office the development/finalization of their NCLB Plan of Actions and encouraged States and Stakeholders to:

a) coordinate with the ICAO MID Office for the provision of required assistance, in support to the MID Region NCLB Strategy;

b) provide voluntary contributions to support the MID Region NCLB activities; and

c) support the implementation of the MID Region NCLB Strategy.

MID Region PBN Implementation Plan

3.5 The subject was addressed in WP/4 presented by the Secretariat. The meeting was apprised of the PBN SG/3 and CNS SG/8 meetings outcomes related to the update of the MID Region PBN Plan (MID Doc 007).

3.6 The meeting reviewed and updated the MID Region PBN Implementation Plan parts related to En-route as at **Appendix 3A**. The meeting agreed that the revised plan should be circulated to States for their review and inputs before **15 June 2018** in order for the Secretariat to present a consolidated version to the ANSIG/3 meeting. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/1: REVISED VERSION OF THE MID REGION PBN IMPLEMENTATION PLAN (MID DOC 007)

That,

*a) States be invited to provide the ICAO MID Office with their inputs related to the Revised Version of the MID Region PBN Implementation Plan at **Appendix 3A** before **15 June 2018**; and*

b) a consolidated version of the MID Region PBN Implementation Plan be presented to the ANSIG/3 meeting.

Draft MID Region Surveillance Plan

3.7 The subject was addressed in WP/29 presented by the Secretariat. The meeting reviewed the Draft MID Region Surveillance Plan developed by the CNS SG/8 meeting in particular part 6 related to Operational Requirements.

3.8 Based on the feedback received from States, the meeting emphasized that ADS-B OUT would be used in the MID Region either to fill the gaps where radar coverage is not available or to be used as back up to the surveillance system in place.

Asia/Pacific Air Traffic Management Perspectives

3.9 The subject was addressed in PPT/4 presented by the ICAO APAC Regional Office. Topics of mutual interest to both APAC and MID Regions related to ATM and SAR were highlighted. The meeting appreciated the contributions of the ICAO APAC Regional Office and India to the ATM SG/4 meeting and recognized that more coordination is required to ensure harmonization between the two (2) Regions.

REPORT ON AGENDA ITEM 4: MID REGION ATS ROUTE NETWORK

ATS Route Network

4.1 The subject was addressed in WP/4 presented by the Secretariat. The meeting commended States and stakeholders for the excellent cooperation and their commitment to improve the ATS route network in the MID Region.

4.2 The meeting urged Egypt, Iran, Saudi Arabia and Sudan to implement the Top 4 Routes relevant to their FIRs. The meeting invited ICAO to facilitate the coordination with Cyprus and Pakistan regarding TPR 4 and TPR 3, respectively.

4.3 It was highlighted that in respect to TPR/2 (HIL-PASAM – Westbound), Egypt agreed on the establishment of the segment PASAM-HGD and Saudi Arabia had been studying the establishment of the segment HIL-PASAM. The envisaged implementation date is 19 July 2018. The meeting noted with appreciation that segment NWB-DATOK will be available for use soon.

4.4 The meeting noted that Egypt and Sudan are still working together on the improvement of the ATS route structure at the interface between Cairo and Khartoum FIRs, as a follow-up to the Special Coordination Meeting that was held at the ICAO MID Office, Cairo, Egypt, 29-30 March 2017. The meeting was informed that the proposed ATS route improvements will be considered during the planning process of the Airspace Structure Project for Cairo FIR. Meanwhile, both States agreed to the implementation of 30NM radar longitudinal separation to be further reduced to 20NM.

4.5 It was noted that Jordan is coordinating with Saudi Arabia the improvement of the ATS Route Network at the South-East part of Amman FIR to split the traffic flows through Guriat (GRY) on two parallel unidirectional routes.

4.6 Oman and Yemen agreed to the realignment of UB403 to ensure smooth traffic flows between Muscat-Mogadishu through Sana'a FIR. The implementation date is planned for (date TBD).

4.7 The realignment of ATS routes UM860 and UM688 within Bagdad FIR with the introduction of new Entry/Exit Point (RATVO) between Ankara and Bagdad FIRs, implemented on 27 April 2017, had met its objective and currently the aligned routes are heavily used, mainly for the traffic to/from the Gulf States.

4.8 The meeting congratulated UAE and Sudan for the successful implementation of the new airspace restructuring project on 7 December 2017 within Emirates FIR and 26 April 2018 within Khartoum FIR.

4.9 The meeting noted with appreciation that new ATS route structure over the Empty Quarter had been successfully implemented on 26 April 2018 by Oman and Saudi Arabia. Continuous coordination with UAE is ongoing for further enhancement of ATM operations in that airspace.

4.10 The meeting recalled that the ATM SG/3 meeting recognized that the prefix "U" (Routes in Upper Airspace) has been misused, which is leading to confusion. In most cases, the limits of Upper ATS Routes are beyond the limits of the upper Airspaces, which are not clearly defined by some States.

4.11 Based on the discussions and the European experience, the meeting agreed that the prefix "U" be removed from route designators providing that the limits of the ATS routes be clearly published in the AIPs. The meeting recognized the need for the optimization of the route designators

in the MID Region. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/2: REMOVAL OF PREFIX "U" WITH ROUTE DESIGNATORS

That,

a) States take necessary measures to remove the prefix "U" from the route designators published in their AIPs; and

b) support the MID Office to optimize the use of route designators in the MID Region.

4.12 Taking into consideration the significant changes to the MID Region ATS Route Network, the meeting agreed that a comprehensive review of the Table II-MID-1 of the MID eANP should be carried out. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/3: MID ANP TABLE II-MID-1

That,

*a) States provide the ICAO MID Office with their inputs to the Table II-MID-1 at **Appendix 4A** before **15 June 2018**; and*

*b) the Secretariat consolidate the inputs and process a proposal for amendment to the MID ANP Volume II, by **15 July 2018**.*

MID Route Development Working Group (RDWG) Activities

4.13 The Subject was addressed in WP/6 presented by AACO and IATA. The meeting recalled that MIDANPIRG/16, through Decision 16/17, established the MID RDWG whose Terms of Reference (ToRs) were developed by the ATM SG/3 meeting.

4.14 The meeting was apprised of the RDWG activities aiming to improve the ATS Route Network. The meeting commended the work of the RDWG in particular related to the development of the new MID Region ATS Route Catalogue, which was reviewed and endorsed by the meeting. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/4: MID REGION ATS ROUTE CATALOGUE

That,

*a) the MID Region ATS Route Catalogue at **Appendix 4B** is endorsed and to be published on the ICAO MID and IATA MENA websites; and*

b) IATA is responsible to maintain the Catalogue up-to-date through the agreed process and the MID RDWG framework.

4.15 Taking into consideration that several efforts are taking place to improve the ATS Route Network at national and cross-border levels, the meeting invited States to use the MID RDWG as a platform to facilitate coordination.

Free Route Airspace (FRA) Concept

4.16 The Subject was addressed in PPT/11 presented by EUROCONTROL, which provided information on the European FRA Design Procedures, focusing on the main principles of the FRA concept and requirements for Aeronautical Information Publication (AIP) publication.

4.17 The meeting thanked EUROCONTROL for sharing their experience and for their contribution. It was emphasized that the implementation of FRA in the MID Region would be a long-term objective. However, some States might initiate the planning for FRA concept; coordination with the ICAO MID Office would be required.

Contingency Planning

4.18 The subject was addressed in PPT/3, Flimsy/1 and WP/7 presented by the Secretariat and IATA, respectively. The meeting was apprised of the activities related to contingency planning in the MID Region and the status of the various Contingency Coordination Teams (CCTs). In this respect, the meeting commended States and Stakeholders for their commitment and excellent cooperation that ensured the success of the CCT framework. The following challenges were highlighted:

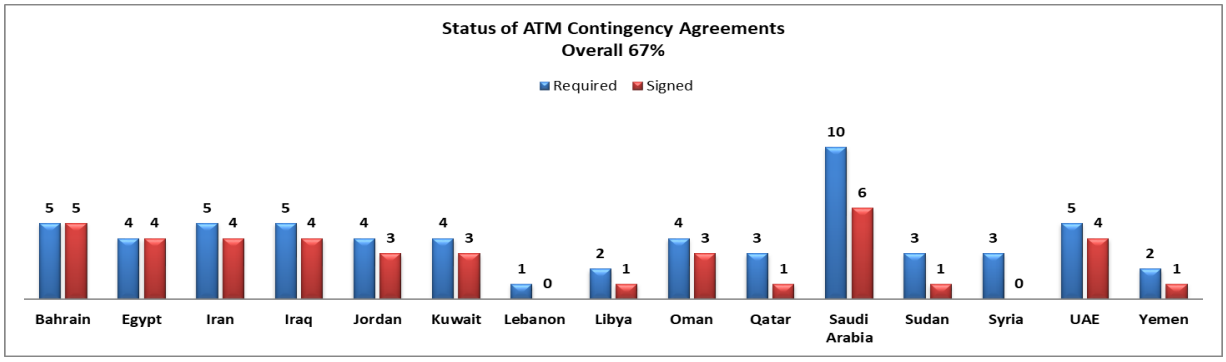
- the MID Region ATM Contingency Plan was developed and has been implemented with very limited resources;
- coordination and sharing of information are carried out through emails, teleconferences, phone calls; etc.; an online tool/platform would be required; and
- budget and time constraints do not allow for required face-to-face meetings and in particular for the unplanned ones.

4.19 The meeting noted that some of the world's largest carriers along with many international carriers operating within close proximity to each other at international hubs in the MID Region, during periods of disruption, including weather or ATC capacity limitations often lead to significant delays, diversion and unprecedented levels of airborne holding. This would require the development of a Demand Versus Capacity management program during periods of disruption to be published by States, as applicable.

4.20 The meeting recalled the ATM SG/3 meeting Draft Decision 3/4 related to the establishment of MID ATM Contingency Plan Action Group to carry out a comprehensive review of the MID Region ATM Contingency Plan (MID Doc 003), taking into consideration the experience gained, the latest developments, and to include in the revised version measures and procedures enabling the CCTs to deal with airports and airspace disruptions due to weather or other factors in a timely and effective manner.

4.21 The meeting agreed that the Action Group be composed of the ATM SG Chairpersons (Bahrain and Qatar), experts from Iran, Iraq, Kuwait, Saudi Arabia, UAE, AACO, IATA and ICAO.

4.22 The meeting reviewed the status of signed contingency agreements between adjacent ACCs as at **Appendix 4C** and as reflected in the **Graph** below:



REPORT ON AGENDA ITEM 5: AIRSPACE MANAGEMENT ISSUES

Update from States

5.1 The meeting received update related to ATM and SAR from Bahrain, Iran, Iraq, Jordan, Qatar, Sudan, UAE and Yemen through PPT/5, PPT/16, PPT/17, PPT/6, PPT/7, PPT/8, PPT/9 and PPT/18, respectively. The meeting thanked the States for sharing their experience and encouraged them to provide the ICAO MID Office with their success stories before **1 June 2018**, for inclusion in the MID Air Navigation Report 2017. The presentations are available on the ICAO MID Website: https://www.icao.int/MID/Pages/2018/ATM%20SG4.aspx

Civil/Military Cooperation and Flexible Use of Airspace

5.2 The subject was addressed in PPT/10, PPT/12 and WP/18 presented by ICAO EUR/NAT, EUROCONTROL and the Secretariat, respectively. The meeting was apprised of the latest developments in the European Region related to civil/military cooperation and the implementation of the Flexible Use of Airspace (FUA) Concept. An overview was provided of the Baltic Sea Project Team and the ICAO EUR Doc 032 (Interim Guidance material on Civil/Military Cooperation in ATM) in particular the guidance related to FUA over the high seas and the example for State aircraft operations under Due-Regard.

5.3 The meeting noted that a project had been initiated in Europe for the re-categorization of Conditional Routes (CDRs) and publication of a single category (CDR1). It is expected that the project be completed in 18 months.

5.4 The meeting was apprised of the outcome of the ACAC/ICAO Civil/Military Workshop (Algiers, Algeria, 26-28 March 2018) organized jointly by ACAC and ICAO (EUR/NAT and MID Regional Offices). The meeting encouraged States to implement the recommendations at **Appendix 5A** emanating from the Workshop. The Workshop documentation are available on the ICAO MID Website: https://www.icao.int/MID/Pages/2018/ACAC-ICAO%20Civ-Mil%20WS.aspx

5.5 The meeting agreed to the development of MID Guidance Material related to Civil/Military cooperation and implementation of FUA Concept, including State aircraft operations under Due Regard in particular over the high seas, based on the EUR Doc 032. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/5: MID REGION GUIDANCE MATERIAL ON CIVIL/MILITARY COOPERATION AND IMPLEMENTATION OF FUA CONCEPT

That, the ICAO MID Office develop draft guidance material related to Civil/Military Cooperation and implementation of FUA Concept, including State aircraft operations under Due Regard in particular over the high seas, to be coordinated with States before presentation to MIDANPIRG for endorsement.

5.6 The meeting noted that ICAO in collaboration with all Stakeholders upgraded the CIR 330 to a new ICAO Manual on Civil/Military Cooperation to provide more guidance on the implementation of civil/military corporation and FUA Concept. The FUA in accordance with the ICAO provisions should be implemented into three Levels:

- Strategic level – Level 1
- Pre-tactical level – Level 2
- Tactical level – Level 3

5.7 Based on the above, the meeting reviewed and agreed to a revised version of the ASBU B0-FRTO as at **Appendix 5A** to include elements addressing the three (3) Levels of FUA with their associated indicators and targets.

5.8 In the same vein, the meeting agreed to the Monitoring Table at **Appendix 5A** to be used for the monitoring of the status of implementation of the B0-FRTO, which should be included in the MID eANP Volume III.

Air Traffic Flow Management

5.9 The subject was addressed in WP/9 presented by the Secretariat. The meeting reviewed and updated the list of ATFM Focal Points as at **Appendix 5B**.

5.10 The meeting recalled that the ATM SG/3 agreed to the ToRs of the MID ATFM Task Force established by MIDANPIRG/16 through Decision 16/16 to develop an ATFM Concept of Operations for the MID Region.

5.11 The meeting reviewed and agreed to a revised version of the ASBU B0-NOPS as at **Appendix 5C** to include an element related to ATFM Structure with its associated indicator and target. The meeting also agreed to the Monitoring Table at **Appendix 5C** to be used for the monitoring of the status of implementation of the B0-NOPS, which should be included in the MID eANP Volume III.

World Cup 2022 Task Force

5.12 The subject was addressed in WP/11 presented by Qatar. The meeting recalled that MIDANPIRG/16 through Decision 16/18 established the World Cup 2022 Task Force to develop and follow-up the implementation of a collaborative action plan to accommodate the expected high increase in traffic, in a safe and efficient manner, taking into consideration similar experiences. The MIDNAPIRG/16 meeting agreed that the Task Force would also address other major events such as the EXPO 2020.

5.13 The ATM SG/3 meeting through Draft Decision 3/7 established an Action Group composed of the ATM SG Chairpersons, Qatar (Champion), UAE, AACO, IATA and ICAO to develop the ToRs of the World Cup 2022 Task Force before 15 September 2017.

5.14 The meeting reviewed and agreed to the ToRs of the World Cup 2022 Task Force as at **Appendix 5D**. Accordingly, the meeting agreed to the following Draft Decision:

DRAFT DECISION 4/6: TERMS OF REFERENCE OF THE WORLD CUP 2022 TASK FORCE

*That, the Terms of Reference of the World Cup 2022 Task Force at **Appendix 5D** are endorsed.*

5.15 The meeting noted that the ATFM TF/1 meeting will be hosted by Oman in Muscat back-to-back with the World Cup 2022 TF/1 meeting tentatively from 23 to 27 September 2018. Accordingly, the meeting encouraged States and Stakeholders to actively participate in both meetings.

CANSO ATFM Data Exchange Network for the Americas (CADENA)

5.16 The subject was addressed in WP/10 and PPT/13 presented by CANSO and FAA, respectively. The meeting was apprised of the CANSO ATFM Data Exchange Network for the Americas (CADENA) initiative and noted that CANSO is supporting the global implementation of ATFM/CDM and is expanding on the work being conducted by ICAO NACC and SAM Regions.

5.17 The meeting noted that CANSO's CADENA initiative offers a regional, cross-border

ATM communications protocol and a seamless operational atmosphere that incorporates operational procedures and practices. Implementing regional, networked ATFM requires the establishment of CDM practices among Members and regional and international stakeholders. These practices shall be inclusive and transparent and provide the opportunity for exchanging operational information to facilitate a shared situational awareness and promote sound strategic and tactical planning in a CDM environment of multilateral decision-making.

5.18 The meeting thanked CANSO and FAA for sharing the experience of ICAO NACC and SAM Regions related to CADENA.

AIDC/OLDI

5.19 The subject was addressed in WP/12, WP/28 and WP/17 presented by the Secretariat, Bahrain and UAE, respectively. The meeting encouraged States to use the guidance provided in the MID Doc 006 available on the ICAO MID Website.

5.20 The meeting reviewed the status of implementation of AIDC/OLDI in the MID Region as at **Appendix 5E** and noted with concern that the level of implementation is still far beyond the acceptable level.

5.21 The meeting requested ICAO MID Office to circulate the AIDC/OLDI Questionnaire related to AIDC/OLDI to the ATM points of contact.

5.22 It was recognized that the implementation of AIDC/OLDI would improve significantly the coordination process and would reduce the amount of coordination failures between ACCs, which has been identified as a major long-standing issue by the MIDRMA Board. Consequently, the implementation of AIDC/OLDI would enhance safety and reduce ATC workload.

5.23 The meeting noted with appreciation that Bahrain and UAE implemented OLDI on 2 July 2017 and Muscat and UAE on 12 March 2018. Bahrain and UAE shared their experience highlighting the advantages and the benefits gained from the OLDI connections. UAE informed the meeting that a reduction in coordination failures by 60% between 2010 and 2017 was achieved which directly contributes to the enhancement of safety.

5.24 The meeting urged States to initiate communication for AIDC/OLDI connections taking into consideration other States' experiences.

5.25 Based on the above, the meeting discussed the Secretariat's proposal to mandate the implementation of AIDC/OLDI through the inclusion of the requirement in the MID ANP Volume II Part IV-ATM under Specific Regional Requirements, based on a phased approach taking into consideration the situation in some States (Applicability area should be defined). Moreover, the meeting agreed in principal with the proposal to amend the Indicator and Supporting Metric of the ASBU B0-FICE related to AIDC/OLDI. Accordingly, the meeting requested the Secretariat in consultation with the ATM SG Chairpersons to present the required changes to the ANSIG/3 meeting (Cairo, Egypt, 3-5 July 2018).

B0-SNET

5.26 The subject was addressed in WP/13 presented by the Secretariat. The meeting emphasized that B0-SNET (Safety Nets) enables the monitoring of flights while airborne to provide timely alerts to air traffic controllers of potential risks to flight safety. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centered.

5.27 The meeting reviewed and updated the status of implementation of the ASBU B0-SNET and agreed to the Monitoring Table at **Appendix 5F** to be used for the monitoring of the status of implementation of the B0-SNET, which should be included in the MID eANP Volume III.

Radar Longitudinal Separation

5.28 The subject was addressed in WP/16 presented by the Secretariat. The meeting recalled MIDANPIRG/16 Conclusion 16/19 and urged States to implement its provisions:

> *CONCLUSION 16/19: IMPLEMENTATION OF REDUCED RADAR LONGITUDINAL SEPARATION*
>
> *That,*
>
> *a) States, that have not yet done so:*
>
> *i) be urged to implement 20 NM radar longitudinal separation; and*
>
> *ii) be encouraged to further reduce the radar longitudinal separation within the MID Region to 10 NM; and*
>
> *b) the ATM SG monitor the status of implementation and take appropriate actions to foster the implementation.*

5.29 The meeting reviewed and updated the implementation status of radar longitudinal separation in the MID Region as at **Appendix 5G**. The meeting urged States to take necessary measures to expedite the implementation of 20 NM radar longitudinal separation to be further reduced to 10 NM and provide feedback to the ICAO MID Office.

SIDs and STARs New Phraseologies

5.30 The subject was addressed in WP/14 and WP/15 presented by the Secretariat and UAE, respectively. The meeting noted that the amendment to phraseology related to SIDs and STARs has been included in the latest version of ICAO Doc 4444 (PANS-ATM) with applicability date 10 November 2016. In this respect, the meeting urged States to take necessary measures for the implementation of the SIDs and STARs new phraseologies, using the guidance material available on the ICAO website: http://www.icao.int/airnavigation/sidstar/pages/changes-to-sid_star-phraseologies.aspx.

5.31 The meeting reviewed and updated the status of implementation of SIDs and STARs new phraseologies as at **Appendix 5H**.

5.32 The meeting reiterated MIDANPIRG Conclusion 16/20 and urged States, if not yet done so, to implement the provisions of amendment 7 to ICAO Doc 4444, in particular those related to the SIDs and STARs new phraseologies; and provide the ICAO MID Office with their implementation plan by **1 June 2018**.

5.33 The meeting was apprised of UAE's experience related to the implementation of SIDs and STARs new phraseologies within Emirates FIR. The UAE successfully implemented the new phraseologies on 1 February 2018 following a successful nation-wide route restructure in December 2017. There have been no major issues identified with the implementation of the new phraseology.

5.34 The meeting recognized that the new phraseologies have particular benefit as mitigation for inconsistent compliance with vertical profiles on SID/STAR and also supports effective and efficient use of PBN airspace and support the CCO/CDO concepts. Moreover, the continued global implementation would support further harmonization and ease transition for States.

REPORT ON AGENDA ITEM 6: ATM SAFETY MATTERS

MIDRMA Activities and Tools

6.1 The subject was addressed in WP/18, WP/19 and PPT/8 presented by the Secretariat and the MIDRMA, respectively. The meeting reviewed the outcome of the MIDRMA Board/15 meeting.

6.2 The meeting underlined that several FIRs with high volume of traffic continue to report NIL or very few LHDs, which have a negative effect on the computed Targets Level of Safety (i.e.: not representative/realistic). In this respect, the meeting urged States to take necessary measures to encourage the reporting of LHDs by air traffic controllers such as inclusion of the reporting of LHDs as part of their reporting system (SMS).

6.3 The meeting reiterated MIDANPIRG Conclusion 15/6, and encouraged States to develop a simplified LHD Template containing the minimum data necessary to trigger the process of reporting LHDs by the air traffic controllers.

6.4 The meeting urged States to verify their LHDs prior to submission through the online LHD Reporting Tool to avoid the efforts spent on the analysis of false reports by concerned ATS Units.

6.5 The meeting noted with concern the high level of LHDs reports at the interface between Iraq and Kuwait as well as Muscat with Mumbai and Karachi. The meeting noted that a Safety Protocol has been opened for the case of Muscat/Mumbai and that the MIDRMA and ICAO MID Office are in close coordination with concerned States, MAAR and ICAO APAC Office to resolve the issue. The MIDRMA Board/15 meeting agreed that a Special Coordination Meeting between Iran, India, Oman and Pakistan with the presence of MAAR, MIDRMA and ICAO APAC and MID Regional Offices, to be conducted during the ATM SG/4 (02 May 2018) to agree on clear action plan to mitigate the risk associated with the high level of coordination failures at the interfaces between the above mentioned States.

6.6 With a view to address the LHDs in an effective manner with the ATS Units concerned and to analyze the LHDs prior to presentation to the MIDRMA Board or ATM SG meetings for validation, the MIDRMA Board/15 meeting agreed through Draft Conclusion 15/1 that the MIDRMA should conduct bilateral teleconferences with the adjacent ATS Units to analyze the relevant LHDs and present a consolidated report to the MIDRMA Board or the ATM SG meetings for validation in order to finalize the SMR for endorsement by MIDANPIRG.

6.7 The meeting reviewed and agreed to the procedure at **Appendix 6A** for the follow-up with the States and the issuance of warning related to RVSM approved aircraft without valid height-keeping performance monitoring results.

6.8 The MIDRMA managed to conduct GMU monitoring for 181 aircraft registered in the Middle East Region in the last 20 months reflecting a decrease in the percentage of the monitored aircraft registered in the MID Region to 89% with known height monitoring results and 6% less than the performance target for height monitoring set by MIDRMA Board. However, this percentage is expected to increase to more than 98% especially after the US Department of Treasury - Office of Foreign Assets Control (OFAC) granted the MIDRMA a license for using the EGMU and the Altimetry System Error software to analyze the monitoring data for the Iranian RVSM approved aircraft, which is keeping the ICAO MID Region free from any height monitoring restrictions.

6.9 The MIDRMA Board/15 meeting recalled that the SMRs had been issued once every 18 months (MIDANPIRG cycle). Taking into consideration the continuous traffic growth and the changes of the airspace structures in the Region, the meeting agreed to change the frequency of issuance of SMRs to be issued once every year.

6.10 The meeting reviewed the initial results of the MID RVSM SMR 2017 presented by the MIDRMA and noted that, according to the data and methods used, the key safety objectives as set out by MIDANPIRG, through Conclusion 12/16, continue to be met.

6.11 Taking into consideration the situation in Libya, the meeting agreed to exclude Tripoli temporary from the RVSM safety analysis for 2017.

6.12 The MIDRMA Board/15 meeting agreed that for the development of the MID RVSM SMR 2018, the Flight Plan/Traffic Data will be collected for the period **1 – 31 August 2018**.

6.13 The MIDRMA Board/15 meeting was apprised of the advantages and the challenges related to the use of ADS-B for height-keeping performance monitoring. The MIDRMA Board/15 meeting supported in principle the concept. However, the meeting requested the MIDRMA to conduct further studies and analysis and present them along with a draft roadmap to the MIDRMA Board/16 for appropriate action. In this respect, the meeting encouraged States, that have already implemented ADS-B, to share their ADS-B data for height monitoring purposes, which would foster the testing process.

6.14 The meeting was apprised of the MIDRMA Visualization and Simulation of Air Traffic Tool (MIDRMA VSAT). The main objective of the tool is the visualization of the traffic flow in the MID Region to understand the major congestion areas and gain a better understanding of the airspace usage.

6.15 The MIDRMA presented a simulation on the Airspace Collision Risk Hot-spot Analysis Software, which is used to identify bottlenecks/hot-spots in the MID Region, to ensure that the risk of collision is maintained at an acceptable level of safety under certain traffic conditions. The software could be used for pre and post implementation analysis for any airspace. The software has the capability to analyze the data for a certain period of time, type of crossing and within flight levels blocks. The meeting noted that by end of 2018 the simulation and 4D visualization features would be completed, and this would mark the end of Phase 3 of the MID Risk Analysis Software (MIDRAS).

6.16 The meeting supported all the Draft Conclusions emanating from the MIDRMA Board/15 meeting.

Call Sign Similarity and Confusion

6.17 The subject was addressed in WP/20 and WP/21 presented by IATA and UAE, respectively. The meeting was provided with a progress report on the implementation of the MAEP Call Sign Confusion (CSC) Initiative. The meeting noted with appreciation the progress achieved and commended the work and efforts of the CSC Initiative Team and the support provided by EUROCONTROL.

6.18 The meeting noted that Mrs. Bettina Kohler has left Etihad Airways. In this respect, the meeting thanked Mrs. Kohler for her efforts as the former project leader and Etihad Airways for the great support provided to ensure the success of the CSC Initiative. The meeting wished best of luck to Mr. Rafal Marczewski from Qatar Airways, who has been nominated as the project lead for the CSC Initiative.

6.19 The Meeting noted that airlines had been experiencing challenges when filing flight plans with alphanumeric call signs even for those that had been previously approved. In case one State or airport reject a flight plan with alphanumeric call sign the airline will not be able to use the alphanumeric call sign for the entire flight. Accordingly, the meeting urged States to coordinate with their relevant authorities/departments providing flight plan approval/permissions on the acceptance of alphanumeric call signs.

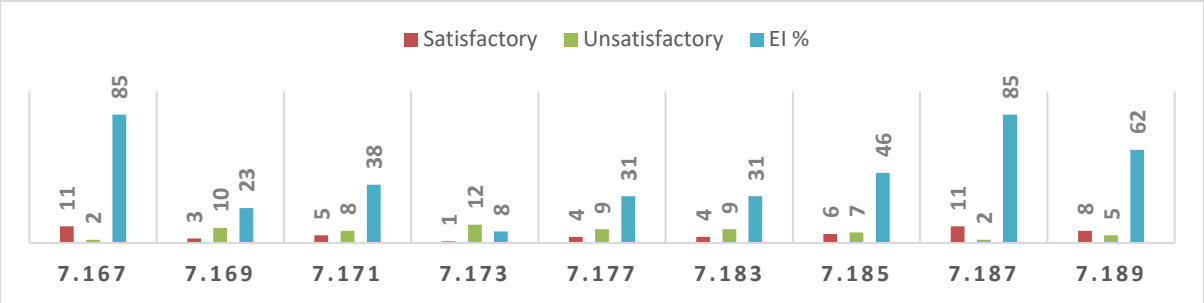
6.20 The meeting reviewed the results of airports testing in the MID Region at **Appendix 6B.** The meeting noted that testing is expected to be completed by end of 2018. Accordingly,

the meeting encouraged States to support the CSC initiative ensuring effective cooperation during the testing and implementation phase. Moreover, the meeting urged States to report call sing similarity to the following email addresses: MIDCSC@icao.int and MENACSSU@iata.org, using the format at **Appendix 6C.**

6.21 UAE presented the current status of the usage of alphanumeric ATC call signs within Emirates FIR in compliance with MIDANPIRG15 Conclusion 15/2 - *Call Sign Similarity Provisions and Guidelines*. The meeting noted with appreciation that an important decrease in the number of incidents related to call sign similarity/conflict was observed in the Emirates FIR (around 40% decrease). The meeting noted that with the increased use of alphanumeric call signs, call sign conflicts/similarities would continue to exist and ANSPs should place increased emphasis on the detection/alerting of call sign conflicts before they occur. The meeting encouraged States/ANSPs to develop unified procedures if/when potential exists and to consider that their future ATM systems should provide a 'built-in' detection and alerting tool to Air Traffic Controllers.

SMS Implementation for ATM

6.22 The subject was addressed in WP/22 presented by the Secretariat. The meeting noted that the SSP/SMS is addressed under the framework of RASG-MID. However, the MIDANPIRG ATM SG is the responsible body to follow-up on the implementation of SMS for ATS. The meeting noted with concern that the regional level of Effective Implementation (EI) of the ICAO USOAP CMA Protocol Questions (PQs) related to SMS with reference mainly to Doc 4444 and Doc 9859 as reflected in **Graph 1** is far below expectation:



Graph 1

6.23 The meeting noted that the CANSO Middle East SMS Training Workshop for ATS was gratefully hosted by the Public Authority of Civil Aviation –PACA in Muscat, Oman from 27 to 29 November 2017. The Workshop was organized by CANSO in coordination with ICAO MID Office and supported by NAV CANADA. The Workshop was attended by twenty-eight (28) participants from Oman, Qatar, Saudi Arabia, Sudan and UAE.

ELP for ATCOs and SAR Experts

6.24 The subject was addressed in WP/22 presented by the Secretariat. The meeting noted that in accordance with the the following Safety Enhancement Initiative (SEI), the ELP Questionnaire would be circulated to States by June 2018:

SEI: Improve implementation of ELP requirements in the MID Region	
Actions	**Champion**
Develop a questionnaire to be used as the basis of a survey to assess the implementation of ELP requirements.	UAE in coordination with the ICAO MID Office
Disseminate the questionnaire to the MID States.	ICAO
Analyse the survey results and agree on next course of actions.	MID-SST in coordination with the ATM SG

GNSS Vulnerabilities

6.25 The subject was addressed in WP/22 and PPT/15 presented by the Secretariat. The meeting was apprised of the outcome of the ACAC/ICAO Joint Workshop on GNSS (Rabat, Morocco, 7-8 November 2017) related mainly to GNSS vulnerabilities. The meeting encouraged States to implement the recommendations emanating from the Workshop.

6.26 The meeting noted that RASG-MID/6 meeting (Bahrain, 26-28 September 2017) agreed that IATA and ICAO MID Office to develop a RASG-MID Safety Advisory (RSA) on GNSS vulnerabilities taking into consideration the outcome of the ACAC/ICAO Workshop.

Air Safety Reports

6.27 The subject was addressed in WP/22 presented by the Secretariat. The meeting recalled that the subject was addressed by the Fifth Meeting of the RASG-MID Steering Committee (RSC/5, Amman, Jordan, 23-25 January 2017), which urged States to:

a) publish in their AIPs (GEN 1.1) the contact details of the entity responsible for ASRs investigation, including the email addresses; and

b) expedite the investigation process and the provision of feedback to IATA in a timely manner.

6.28 Based on the above, the meeting urged States to provide feedback to IATA in a timely manner regarding the reported ASRs.

Remotely Piloted Aircraft (RPAS)

6.29 The subject was addressed in WP/22 presented by the Secretariat. The meeting encouraged States to use the guidance material related to RPAS provided in the ICAO Doc 10019 and the information available on the RPAS webpage: https://www4.icao.int/rpas

6.30 The MIDANPIRG/16 meeting encouraged States to consider the developments related to RPAS, and take necessary measures for the amendment of the relevant civil aviation regulations and procedures in a timely manner, in order to ensure safe integration of the RPA into the non-segregated airspace. In accordance with the RASG-MID Conclusion 5/18, the meeting urged States to report any safety occurrence related to RPA operations to the ICAO MID Regional Office on regular basis.

6.31 The meeting noted that the ICAO MID Remotely Piloted Aircraft Systems (RPAS) Workshop was held at the Sheraton Dubai Creek Hotel and Towers, Dubai, UAE, from 20 to 22 November 2017. The Workshop was jointly organized by ICAO and the World Food Programme (WFP), sponsored by the Middle East Business Aviation Association (MEBAA) and supported by the General Civil Aviation Authority-UAE. The Workshop was attended by twenty-three (23) participants from 3 States (Algeria, Kuwait and UAE) and 2 Organizations (CANSO and IATA).

6.32 The RPAS Workshop provided States, international organizations, operators and stakeholders with first-hand information on RPAS provisions and guidance material. This would assist States' regulatory and administrative personnel involved in the development and implementation of RPAS regulations as well as the certification and oversight of such activities.

Accident and Incident Analysis

6.33 The subject was addressed in WP/23 presented by the Secretariat. The meeting noted that the RASG-MID Annual Safety Report Team (ASRT) was established by the RASG-MID/1 meeting in 2011, to be in charge of collecting and analysing safety information, identification of the safety Focus Areas (FAs) and Emerging Risks in the MID Region and the production of the RASG-MID Annual Safety Report (ASR).

6.34 The meeting noted that based on the analysis of the reactive safety information for the period 2012-2016, and in accordance with the agreed matrix used for the assessment of the different accident categories (frequency X severity), the Focus Areas in the MID Region are:

1) Runway Safety (RS)- (mainly RE and ARC during landing);
2) System Component Failure- Power Plant - (SCF-PP); and
3) Loss of Control Inflight - (LOC-I).

6.35 New emerging risks have been identified, as follows:

1) Fire/Smoke (non-impact) – F-NI;
2) Turbulence Encounter (TURB); and
3) Medical (MED)

6.36 The meeting recalled that the following are the emerging risks endorsed by the RASG-MID (more details are available at **Appendix 6D**):

1) Controlled Flight Into Terrain (CFIT);
2) Near MIDAIR Collision (NMAC);
3) Laser attacks,
4) RPAS/Drones;
5) Wildlife and FOD; and
6) Bird strike.

6.37 The ASRT/2 meeting agreed:

- to consolidate the list of Emerging Risks using the ADREP Taxonomy based on the previously identified emerging risks, the new emerging risks identified in the Sixth MID-ASR and the top 5 areas of concern endorsed by the RASG-MID/6 meeting;
- that the State of Occurrence Data will be used at this stage;
- that States provide the ICAO MID Office by end of March 2018 with the number of accidents, serious incidents and incidents related to each category for the past 3 years (2015 – 2017), using the template in **Appendix 6E**;
- the ICAO MID Office, in coordination with the MID-ASRT Rapporteur review the data provided and classify the different risk categories in terms of frequency; and
- the top (X) Emerging Risks will be then communicated to States in order to share with the MID-ASRT their data analysis and safety recommendations.

6.38 The meeting urged States to provide the ICAO MID Office by 31 May 2018, if not yet done so, with the number of accidents, serious incidents and incidents related to each category for the past 3 years (2015–2017), using the template in **Appendix 6E.**

6.39 The meeting reviewed the consolidated inputs received by the ICAO MID Office from six (6) States as reflected in the **Table 1**:

#	Occurrence Category	2015			2016			2017		
		# Accident	# Serious incidents	# Incidents	# Accident	# Serious incidents	# Incidents	# Accident	# Serious incidents	# Incidents
1	CFIT			**5**			**1**			**5**
2	Mid Air Collision (MAC)		**35**	**66**		**20**	**66**		**16**	**102**
3	Fire/Smoke (F-NI)		**8**	**26**		**2**	**42**		**8**	**30**
4	Runway Incursion-(RI)		**5**	**15**		**2**	**19**		**9**	**17**
5	SCF-NP		**14**	**122**		**9**	**267**		**9**	**257**
6	Turbulence Encounter (TURB)	**2**		**326**			**351**		**1**	**325**
7	BIRD			**119**			**198**			**297**
8	Wildlife (Wild)			**3**			**7**			**3**

6.40 Based on the above, the meeting agreed that in respect to Turbulence Encounter (TURB), it would be beneficial if the analysis would be breakdown (at the level of the ATM SG) to the monitoring of the component related to Wake Turbulence (VORTEX).

6.41 The meeting noted with concern the significant increase in the MAC occurrences (Near Mid Air Collisions) and agreed on the establishment of an Action Group composed of the ATM SG Chairpersons and Secretariat and experts from Saudi Arabia, UAE and IATA to carry out further analysis of the reported occurrences, based on the safety analyses and recommendations emanating from the SMSs of concerned States, and provide feedback to the ASRT. Accordingly, the meeting agreed to the following Draft Decision:

DRAFT DECISION 4/7: NEAR MID AIR COLLISION (NMAC) ACTION GROUP

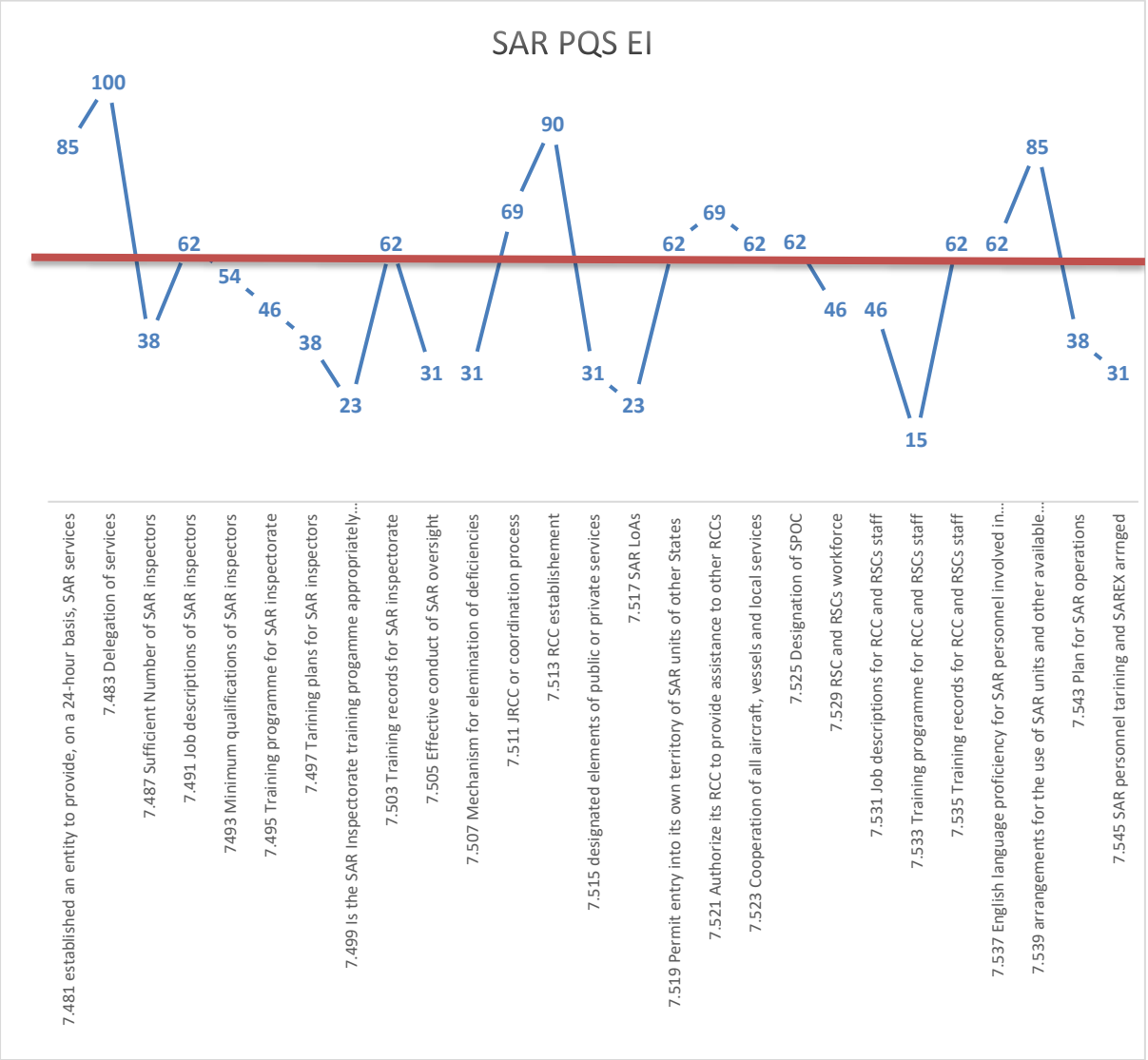
That, the NMAC Action Group be established to carry out further analyses of the reported MAC incidents and provide feedback to the ASRT.

REPORT ON AGENDA ITEM 7: SEARCH AND RESCUE ISSUES

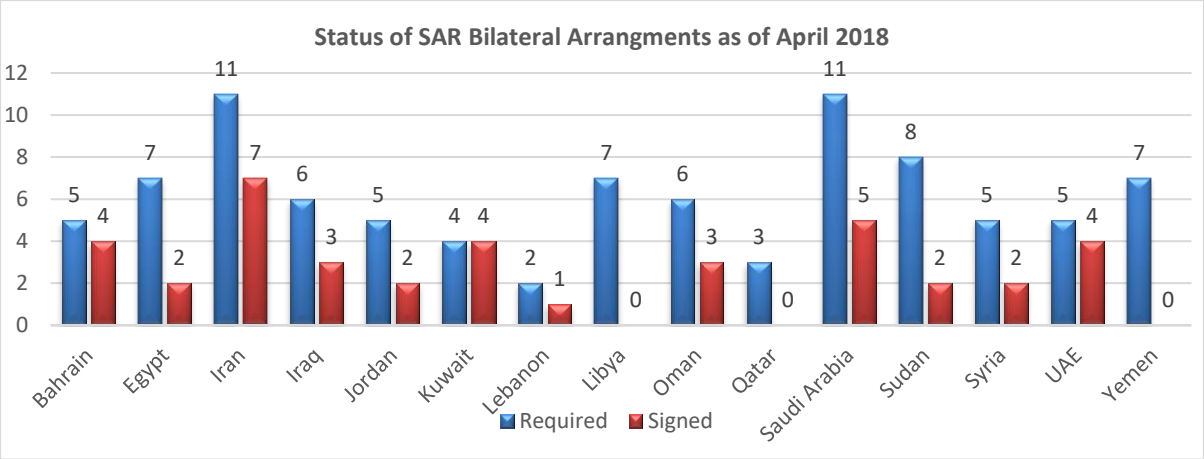
7.1 The subject was addressed in WP/24 presented by the Secretariat. The meeting noted that the main USOAP CMA SAR findings in the MID Region are related to lack of:

- effective SAR oversight activities;
- English language proficiency for RCC radio operators;
- appropriate training programmes/plans of SAR experts;
- signature of SAR agreements;
- plans of operations for the conduct of SAR operations and SAR exercises;
- provision of required SAR services; and
- non-compliance with the carriage of Emergency Locator Transmitter (ELT) requirements.

7.2 The SAR EIs in the MID Region per Protocol Question (PQ) as of April 2018 are reflected in **Graph 1**:



7.3 The meeting reviewed and updated the status of SAR bilateral Arrangements as at **Appendix 7A**, and as reflected in **Graph 2.** The meeting noted with appreciation that the level of signed SAR bilateral arrangements is improving.



Graph 2

7.4 The meeting reviewed the Draft MID SAR Implementation Plan developed by the MID SAR Action Group (SAR AG) as at **Appendix 7B**, which includes guidance material to support States to comply with global and regional requirements for SAR provision. The Plan includes also the Matrix that will be used for the analysis of the SAR status of implementation in the MID Region and Templates related to the conduct of SAREX.

7.5 The meeting commended the work of the Action Group and agreed that the Plan to be presented to MIDANPIRG/17 meeting for endorsement. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/8: MID REGION SEARCH AND RESCUE PLAN

*That, the MID Region Search and Rescue Plan at **Appendix 7B** be presented to MIDANPIRG/17 meeting for endorsement as MID Doc XXX.*

7.6 The meeting urged States to keep up-to-date their SAR Point of Contact (SPOC) contact details in their AIPs (GEN 3.6) and on the COSPAS-SARSAT website: http://www.cospas-sarsat.int/en/contact-lists-mccs-and-spocs

7.7 The meeting reviewed and updated the SAR Focal Points contact details as at **Appendix 7C**.

7.8 The meeting recalled that MIDANPIRG/16 urged States to implement the relevant recommendations emanating from the ICAO AFI/APAC/MID Inter-regional SAR Workshop (Mahe, Seychelles, 19 - 22 July 2016). Based on the success and outcome of the Seychelles Workshop, the meeting agreed that a SAR Inter-regional Workshop between the 4 ICAO Regions be organized on regular basis (each 2 to 3 years) and on rotation basis between the regions. In this respect, the meeting noted that the ICAO MID Office initiated coordination for the conduct of an Inter-regional SAR Workshop in the MID Region in 2019; the dates and venue will be communicated in due time.

REPORT ON AGENDA ITEM 8: REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE ATM AND SAR FIELDS

Non-receipt of FPLs - Need for Expediting AMHS Implementation

8.1 The subject was addressed in WP/25 presented by UAE. The meeting noted the challenges associated with the non-receipt of flight plans by the ATS Units in a timely manner. The unavailability of ATS message delays flights from receiving ATC clearances on time for critical phases of a flight, such as: pushback, obtaining optimum flight levels, allocating preferred routes etc.; despite of the fact that the concerned ATS Reporting Office (ARO) and/or the Airline Operation Centres has filed the ATS message in the appropriate time.

8.2 The AFTN/CIDIN circuit interruptions are one of the major hindrances for the smooth and timely transmission and reception of ATS Messages. The outages in the links between the inter-regional messages Centres are of concern. In some cases, they are as frequent as once a month. These outages result in the loss of FPLs.

8.3 Based on the above, the meeting reiterated MIDANPIRG/15 Conclusion 15/30: *AFTN/CIDIN AFS Connectivity and AMHS Implementation* and agreed that the CNS SG to take necessary measures to reflect the mandate for AMHS implementation in the MID ANP.

ATM and SAR Deficiencies

8.4 The subject was addressed in WP/26 presented by the Secretariat. The meeting noted with concern that the use of the MID Air Navigation Deficiency Database (MANDD) is still far below expectation. Accordingly, the meeting urged States to use the MANDD for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies.

8.5 It was highlighted that in the ATM field, most of the deficiencies are related to the non-implementation of regional ATS Routes, uncompleted signature of contingency agreements and unsatisfactory reporting of Large Height Deviations (LHD) to the MIDRMA. In the SAR field, the deficiencies are related mainly to the lack of implementation of SAR provisions and non-compliance with the carriage of Emergency Locator Transmitter (ELT) requirements.

8.6 Taking into consideration that the signature of contingency agreements is a regional requirement in the MID Region and it is not mandated in the adjacent Regions, the meeting agreed that the signature of the contingency agreements with ACCs of the States at the interfaces with the ICAO MID Region be considered as "recommended" and not mandatory. Therefore, the meeting agreed that the deficiencies reported against the States at the interfaces for non-signature of contingency agreements should be removed. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 4/9: DEFICIENCIES RELATED TO THE NON-SIGNATURE OF CONTINGENCY AGREEMENTS WITH STATES AT THE INTERFACE WITH ICAO MID REGION

That, the deficiencies related to the non-signature of contingency agreements with the States at the interfaces with the ICAO MID Region be removed.

8.7 The meeting reviewed and updated the list of deficiencies in the ATM and SAR fields as at **Appendices 8A** and **8B**; respectively, and urged States to take necessary measures to implement the provisions of the MIDANPIRG/15 Conclusion 15/35, in particular the submission of a specific Corrective Action Plan (CAP) for each deficiency.

REPORT ON AGENDA ITEM 9: FUTRUE WORK PROGRAMME

9.1 The meeting reviewed the Terms of Reference (TOR) of the ATM Sub-Group at **Appendix 9A** and agreed that they are still valid and current.

9.2 Taking into consideration the planned ICAO MID Regional upcoming events which are of relevance to the activity of the ATM Sub-Group, in particular the ANSIG/3 and MIDANPIRG/17, the meeting agreed that the ATM SG/5 meeting be held during the second quarter of 2019. The venue will be the ICAO MID Regional Office in Cairo, unless a State is willing to host the meeting.

REPORT ON AGENDA ITEM 10: ANY OTHER BUSINESS

10.1 Nothing has been discussed under this Agenda Item.

APPENDICES

FOLLOW-UP ACTION PLAN ON MIDANPIRG/16 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	STATUS/REMARKS
CONCLUSION 16/1: MID RVSM SAFETY MONITORING REPORT (SMR) 2015 That, the MID RVSM Safety Monitoring Report (SMR) 2015 is endorsed.	MIDANPIRG/16	MID RVSM SMR 2016	Feb. 2017	**Completed**
CONCLUSION 16/2: MID RVSM SMR 2017 That, States be urged to: a) The FPL/traffic data for the period **1 – 30 September 2017** be used for the development of the MID RVSM Safety Monitoring Report (SMR 2017); b) only the appropriate Flight Data form available on the MIDRMA website (www.midrma.com) should be used for the provision of FPL/traffic data to the MIDRMA; and c) the final version of the MID RVSM SMR 2017 be ready for presentation to and endorsement by MIDANPIRG/17.	ICAO State	State Letter Traffic Data	Aug. 2017 Oct. 2017	**Actioned** SL Ref: AN 6/5.10.15A-17/240 dated 31 Aug 2017 Data provided by most of the States Draft Version presented to the MIDRMA Board/15
CONCLUSION 16/3: MID REGION AIR NAVIGATION STRATEGY That, the revised MID Region Air Navigation Strategy (MID Doc 002, Edition February 2017) at Appendix 5.1A is endorsed.	MIDANPIRG/16	MID AN Strategy (MID Doc 002)	Feb. 2017	**Completed**
CONCLUSION 16/4: APPROVAL OF THE AMENDMENT TO THE MID eANP VOLUME III That, the amendment to the MID eANP Volume III at Appendix 5.1B is approved**.**	MIDANPIRG/16 ICAO	Amendment Notification of amendment	Feb. 2017 May 2017	**Ongoing** Amendment was approved by MIDANPIRG/16

CONCLUSIONS AND DECISIONS	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	STATUS/REMARKS
CONCLUSION 16/5: ASSESSMENT OF PBN IMPLEMENTATION That, States be invited to: a) explore means and ways to assess the benefit accrued from the implementation of PBN; and b) report on annual basis (by 1 November), the environmental benefits accrued from PBN implementation to the ICAO MID Office in order to be included in the MID Region Air Navigation Report.	 ICAO States	 State Letter Benefits accrued form PBN Implementation	 Apr. 2017 Nov. 2017 (annual basis)	**Actioned** SL Ref.: AN 6/28 – 17/120 dated 12 April 2017
CONCLUSION 16/7: MID REGION AIR NAVIGATION REPORT-2016 That, the MID Region Air Navigation Report-2016 is endorsed.	 MIDANPIRG/16	 MID AN Report	 Feb. 2017	**Completed**
CONCLUSION 16/8: MID REGION AIR NAVIGATION REPORT-2017 That, MID States be urged to: a) develop/update their National ASBU Implementation Plan, ensuring the alignment with and support to the MID Region Air Navigation Strategy (MID Doc 002); and b) provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report-2017, by 1 November 2017.	 ICAO States States	 State Letter National ASBU Implementation Plan Data for AN Report 2017	 Sep. 2017 Nov. 2017 Nov. 2017	**Actioned** SL Ref.: AN 1/7 – 17/188 dated 2 July 2017 ATM SG/4 urged States to implement the Provision of the Conclusion
DECISION 16/13: DISSOLUTION OF THE MPCT That, the MAEP Projects Coordination Team (MPCT) is dissolved and its duties and responsibilities be taken over by the MAEP Board.	 MIDANPIRG/16	 Dissolution of MPCT	 Feb. 2017	**Completed**
DECISION 16/14: MAEP BOARD TERMS OF REFERENCE That, the MAEP Board Terms of Reference be endorsed as at **Appendix 5.2.2E.**	 MIDANPIRG/16	 MAEP Board ToR	 Feb. 2017	**Completed**

CONCLUSIONS AND DECISIONS	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	STATUS/REMARKS
DECISION 16/16: ATFM TASK FORCE That,				**Actioned**
a) an ATFM Task Force be established to develop an ATFM Concept of Operations for the MID Region;	MIDANPIRG/16	Establishment of ATFM TF	Feb. 2017	Completed
b) the ATM SG/3 meeting develop the terms of reference of the ATFM Task Force; and	ATFM TF	ATFM Concept of Operations	Sep. 2017	
c) States support the ATFM Task Force through:	ICAO	State Letter	Apr. 2017	SL Ref.: AN 6/5.5 – 17/121 dated 12 Apr. 2017
i. assignment of ATFM Focal Point to contribute to the work of the Task Force; and	States	Assign ATFM FP	May 2017	Completed
ii. provision of required data in timely manner, and in particular to the survey that will be carried out related to the airspace and sectors capacity, hot-spots, ATFM measures/system, etc.		Support ATFM TF and provide required data	Jan. 2018	Ongoing ATFM TF/1 meeting (Muscat, 23-27 Sep 2018)
DECISION 16/17: MID ROUTE DEVELOPMENT WORKING GROUP (MID RDWG) That,				**To be closed**
a) a MID Route Development Working Group be established to support the route development within the MID Region and at the interfaces with ICAO AFI, APAC and EUR Regions; and	MIDANPIRG/16	Establishment of RDWG	Feb. 2017	Completed
b) the ATM SG develop the terms of reference of the MID RDWG.	ATM SG	RDWG ToR	May 2017	Completed ATM SG/3 Draft Decision 3/3
DECISION 16/18: WORLD CUP 2022 TASK FORCE That,				**To be closed**
a) a World Cup 2022 Task Force be established to develop and follow-up the implementation of a collaborative action plan to accommodate the expected high increase in traffic, in a safe and efficient manner, taking into consideration similar experiences;	MIDANPIRG/16	Establishment of World Cup 2022	Feb. 2017	Completed

CONCLUSIONS AND DECISIONS	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	STATUS/REMARKS
b) the Task Force address other major events such as the EXPO 2020; and c) the ATM SG develop the terms of reference of the Task Force.	ATM SG	TF ToR	May 2017	Completed ATM SG/4 Draft Decision 4/6
CONCLUSION 16/19: IMPLEMENTATION OF REDUCED RADAR LONGITUDINAL SEPARATION IN THE MID REGION That, a) States, that have not yet done so; i) be urged to implement 20 NM radar longitudinal separation; and ii) be encouraged to further reduce the radar longitudinal separation within the MID Region to 10 NM; b) the ATM SG monitor the status of implementation and take appropriate actions to foster the implementation., metrics and targets, for which the necessary data is available**.**	ICAO	State Letter	Apr. 2017 Continuous	**To be closed** SL Ref.: AN 6/5.5 – 17/122 dated 12 Apr. 2017
CONCLUSION 16/20: SIDS AND STARS NEW PHRASEOLOGIES That, States be urged to: a) implement the provisions of amendment 7 to ICAO Doc 4444, in particular those related to the SIDs and STARs new phraseologies; and b) provide the ICAO MID Office with their implementation plan by 1 May 2017.	ICAO States	State Letter Implementation plans for the new SIDs and STARs phraseologies	Apr. 2017 May 2017	**To be Closed** SL Ref.: AN 6/5.5 – 17/123 dated 12 Apr. 2017 Completed

CONCLUSIONS AND DECISIONS	TO BE INITIATED BY	DELIVERABLE	TARGET DATE	STATUS/REMARKS
DECISION 16/21: SAR LONGSTANDING DEFICIENCIES That**,** the ATM SG explore ways and means to support States in the elimination of the longstanding SAR deficiencies.	ATM SG	Means to support States with SAR deficiencies	May 2017	**To be closed** ATM SG/3 meeting agreed to include guidance in the MID Region SAR Plan
DECISION 16/26: ATM DATA SECURITY ACTION GROUP That, the ATM Data Security Action Group (ADSAG) be:				**Ongoing**
a) established to develop the MID Region ATM Data Security Plan, to be presented to the CNS SG/8.	ICAO	State Letter	Jun. 2017	Action Group established and The plan will be presented to ANISG/3 meeting
b) composed of members from Bahrain, Iran, Kuwait, Oman, Saudi Arabia, UAE (Rapporteur), ICAO and IFAIMA.	ADSAG members	MID Region ATM Data Security Plan	Q1-2018	
DECISION 16/30: DISSOLUTION OF THE ATM PERFORMANCE MEASUREMENT TASK FORCE (APM TF) That,				**Completed**
a) the APM TF is dissolved; and	MIDANPIRG/16	APM TF dissolution	Feb. 2017	Completed
b) the MIDANPIRG Organizational Structure contained in the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.	ICAO	MID Doc 001 updated	May 2017	Completed
DECISION 16/32: REVISED ANSIG TERMS OF REFERENCE That,				**Completed**
a) the ANSIG Terms of Reference (TORs) be updated as at **Appendix 7A**; and	MIDANPIRG/16	Updated TORs	Feb. 2017	Completed
b) the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.	ICAO	MID Doc 001 updated	May 2017	Completed

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MID Doc 007

INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (MIDANPIRG)

MID REGION PERFORMANCE BASED NAVIGATION IMPLEMENTATION PLAN

EDITION MAY~~APRIL~~, 2016~~8~~

AMENDMENTS

The MID Region PBN Implementation Plan should be reviewed and updated by the PBN and/or the ATM Sub-Groups and presented to MIDANPIRG for endorsement.
Stakeholders shall submit their proposal for amendment to the Plan to the ICAO MID Regional Office at least three months prior the PBN or the ATM Sub-Groups meetings in order to ensure adequate time for appropriate coordination. The table below provides a means to record all amendments.
An up to date electronic version of the Plan will be available on the ICAO MID Regional Office website.

Amendment Number	Effective Date	Initiated by	Impacted pages	Remarks
1	April 2016	MSG/5		Based on PBN SG/2 outcome
2	November 2018	MSG/6		Based on PBN SG/3, CNS SG/8 and ATM SG/4 meetings

EXECUTIVE SUMMARY

The MID Region Performance Based Navigation (PBN) Implementation Plan has been developed to harmonize PBN implementation in the MID Region and to addresses the strategic objectives of PBN based on clearly established operational requirements, avoiding equipage of multiple on-board or ground based equipment, avoidance of multiple airworthiness and operational approvals and explains in detail contents relating to potential navigation applications.

The Plan was prepared in accordance with ICAO provisions related to PBN, the Global Air Navigation Plan, Aviation System Block Upgrades (ASBU) methodology, MID Region Air Navigation Plan and the MID Region Air Navigation Strategy. In addition to the Assembly Resolutions and the twelfth Air Navigation Conference (AN-Conf/12) Recommendations related to PBN.

The plan envisages pre- and post-implementation safety assessments and continued availability of conventional air navigation procedures during transition. The plan discusses issues related to implementation which include traffic forecasts, aircraft fleet readiness, adequacy of ground-based CNS infrastructure etc. Implementation targets for various categories of airspace for the short term (2013 – ~~2017~~2018) and for the medium term (~~2018~~ 2019 – ~~2022~~2025) have been projected in tabular forms to facilitate easy reference. For the long term (~~2023~~ 2026 and beyond) it has been envisaged that GNSS and its augmentation system would become the primary navigation infrastructure

This Document consolidates, updates and supersedes all previous MID Region PBN and GNSS Strategies/Plans.

The parts related to PBN implementation for En-route will be reviewed and updated by the ATM Sub-Group and those related to terminal and approach will be reviewed and updated by the PBN Sub-Group.

Explanation of Terms

The drafting and explanation of this document is based on the understanding of some particular terms and expressions that are described below:

MID Region PBN Implementation Plan - A document offering appropriate guidance for air navigation service providers, airspace operators and users, regulating agencies, and international organizations, on the evolution of navigation, as one of the key systems supporting air traffic management, and which describes the RNAV and RNP navigation applications that should be implemented in the short, medium and long term in the MID Region.

Performance Based Navigation - Performance based navigation specifies RNAV and RNP system performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in an airspace.

Performance requirements - Performance requirements are defined in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept. Performance requirements are identified in navigation specifications which also identify which navigation sensors and equipment may be used to meet the performance requirement.

REFERENCE DOCUMENTS

The below ICAO Documents provide Guidance related to the PBN implementation:

- PANS-ATM (Doc 4444)
- PANS-Ops (Doc 8168)
- PBN Manual (Doc 9613)
- GNSS Manual (Doc 9849)
- RNP AR Procedure Design Manual (Doc 9905)
- CDO Manual (Doc 9931)
- Manual on Use of PBN in Airspace Design (Doc 9992)
- CCO Manual (Doc 9993)
- Procedure QA Manual (Doc 9906)
- PBN Ops Approval Manual (Doc 9997)

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ACRONYMS

The acronyms used in this document along with their expansions are given in the following List:

AACO	Arab Air Carrier Association
ABAS	Aircraft-Based Augmentation System
ACAC	Arab Civil Aviation Commission
AIS	Aeronautical Information System
APAC	Asia and Pacific Regions
APCH	Approach
APV	Approach Procedures with Vertical Guidance
AOC	Air operator certificate
ATC	Air Traffic Control
ASBU	Aviation System Block Upgrades
Baro VNAV	Barometric Vertical Navigation
CCO	Continuous Climb Operations
CDO	Continuous Decent Operations
CNS/ATM	Communication Navigation Surveillance/Air Traffic Management
CPDLC	Controller Pilot Data Link Communications
DME	Distance Measuring Equipment
FIR	Flight Information Region
FMS	Flight Management System
GBAS	Ground-Based Augmentation System
GNSS	Global Navigation Satellite System
GLS	GBAS Landing System
IATA	International Air Transport Association
IFALPA	International Federation of Air Line Pilots' Associations
IFATCA	International Federation of Air Traffic Controllers' Associations
IFF	Identification Friend or Foe
INS	Inertial Navigation System
IRU	Inertial Reference Unit
MEL	Minimum equipment list
MID eANP	MID Region Air Navigation Plan
MIDANPIRG	Middle East Air Navigation Planning and Implementation Regional Group
MIDRMA	Middle East Regional Monitoring Agency
MLAT	Multilateration
PANS	Procedures for Air Navigation Services
PBN	Performance Based Navigation
PIRG	Planning and Implementation Regional Group
RCP	Required Communication Performance
RNAV	Area Navigation
RNP	Required Navigation Performance
SARP	Standards and Recommended Practices
SBAS	Satellite-Based Augmentation System
SID	Standard Instrument Departure
SOP	Standard operating procedure
STAR	Standard Instrument Arrival
TAWS	Terrain awareness warning system
TMA	Terminal Control Area
VOR	VHF Omni-directional Radio-range
WGS	World Geodetic System

CHAPTER 1

PERFORMANCE BASED NAVIGATION

1. INTRODUCTION

1.1 The Performance Based Navigation (PBN) concept specifies aircraft RNAV system performance requirements in terms of accuracy, integrity, availability, continuity and functionality needed for the proposed operations in the context of a particular airspace concept, when supported by the appropriate navigation infrastructure. In this context, the PBN concept represents a shift from sensor-based to performance based navigation.

1.2 The main tool for optimizing the airspace structure is the implementation of PBN, which will foster the necessary conditions for the utilization of RNAV and RNP capabilities by a significant portion of airspace users in the MID Region.

1.3 The MID Regional PBN Implementation Plan will serve as guidance for regional projects for the implementation of air navigation infrastructure, as well as for the development of national implementation plans.

1.4 The PBN Manual (Doc 9613) provides guidance on PBN navigation specifications and encompasses two types of approvals: airworthiness, exclusively relating to the approval of aircraft, and operational, dealing with the operational aspects of the operator. PBN approval will be granted to operators that comply with these two types of approval.

1.5 After the implementation of PBN as part of the airspace concept, the total system needs to be monitored to ensure that safety of the system is maintained. A system safety assessment shall be conducted during and after implementation and evidence collected to ensure that the safety of the system is assured.

2. BENEFITS OF PERFORMANCE BASED NAVIGATION

a) *Access and Equity*: Increased aerodrome accessibility.

b) *Capacity*: In contrast with ILS, the GNSS based approaches do not require the definition and management of sensitive and critical areas resulting in potentially increased runway capacity.

c) *Efficiency*: Cost savings related to the benefits of lower approach minima: fewer diversions, overflights, cancellations and delays. Cost savings related to higher airport capacity in certain circumstances (e.g. closely spaced parallels) by taking advantage of the flexibility to offset approaches and define displaced thresholds.

d) *Environment*: Environmental benefits through reduced fuel burn.

e) *Safety*: Stabilized approach paths.

f) *Cost Benefit Analysis*: Aircraft operators and air navigation service providers (ANSPs) can quantify the benefits of lower minima by using historical aerodrome weather observations and modeling airport accessibility with existing and new minima. Each aircraft operator can then assess benefits against the cost of any required avionics upgrade. Until there are GBAS (CAT II/III) Standards, GLS cannot be considered as a candidate to globally replace ILS. The GLS business case needs to consider the cost of retaining ILS or MLS to allow continued operations during an interference event

3. GOALS AND OBJECTIVES OF PBN IMPLEMENTATION

3.1. The MID Region PBN Implementation Plan has the following strategic objectives:

a) ensure that implementation of the navigation element of the MID CNS/ATM system is based on clearly established operational requirements;

b) avoid unnecessarily imposing the mandate for multiple equipment on board or multiple systems on ground;

c) avoid the need for multiple airworthiness and operational approvals for intra and inter-regional operations; and

d) avoid an eclipsing of ATM operational requirements by commercial interests, generating unnecessary costs to States, organizations, and airspace users.

3.2. Furthermore, the Plan will provide a high-level strategy for the evolution of the navigation applications to be implemented in the MID Region in the short term (2013-2018), medium term (2019-2025).

3.3. The plan is intended to assist the main stakeholders of the aviation community to plan the future transition and their investment strategies. For example, Operators can use this Regional Plan to plan future equipage and additional navigation capability investment; Air Navigation Service Providers can plan a gradual transition for the evolving ground infrastructure, Regulating Agencies will be able to anticipate and plan for the criteria that will be needed in the future.

4. PLANNING PRINCIPLES

4.1. The implementation of PBN in the MID Region shall be based on the following principles:

a) implementation of PBN specification and granting PBN operational approvals should be in compliance with ICAO provisions;

b) States conduct pre- and post–implementation safety assessments to ensure the application and maintenance of the established target level of safety;

c) continued application of conventional air navigation procedures during the transition period, to guarantee the operation by users that are not PBN capable;

d) Users/operational requirements should be taken into consideration while planning for PBN implementation;

e) States should provide the ICAO MID Regional Office with their updated PBN implementation Plan on annual basis (before December);

~~f) the implementation of Advanced-RNP should start by January 2015;~~

~~g) implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and/or augmented GNSS), including LNAV only minima, for all runway ends at international Aerodromes, either as the primary approach or as a back-up for precision approaches by 2017 with intermediate milestones as follows: 50 percent by 2015 and 70 per cent by 2016;~~

~~h) implementation of straight in LNAV only procedures, as an exception to g) above, for instrument runways at aerodromes where there is no local altimeter setting available and where there are no aircraft suitably equipped for APV operations with a maximum certificated take-off mass of 5 700 kg or more; and~~

~~i)~~f) States should assess the benefit accrued from the implementation of PBN procedures and ATS Routes, and to report the environmental benefits to the ICAO MID

Regional Office.

5. PBN Operational Requirements and Implementation Strategy

5.1. Introduction of PBN should be consistent with the Global Air Navigation Plan. Moreover, PBN Implementation shall be in full compliance with ICAO SARPs and PANS.

5.2. Continuous Climb and Descent Operations (CCO and CDO) ~~are two of several tools available to aircraft operators and ANSPs, through collaboration between stakeholders,~~ would enhance efficiency, flight predictability, while reducing fuel burn, emissions and controller-pilot communications, thereby enhancing safety.

En-route

5.3. Considering the traffic characteristic and CNS/ATM capability of the Region, the en-route operations can be classified as oceanic, remote continental, continental, and local/domestic. In principle, each classification of the en-route operations should adopt, but not be limited to single PBN navigation specification. This implementation strategy will be applied by the States and international organizations themselves, as coordinated at regional level to ensure harmonization.

5.4. In areas where operational benefits can be achieved and appropriate CNS/ATM capability exists or can be provided for a more accurate navigation specification, States are encouraged to introduce more accurate navigation specification on the basis of coordination with stakeholders and affected neighbouring States.

Terminal

5.5. Terminal operations have their own characteristics, taking into account the applicable separation minima between aircraft and between aircraft and obstacles. It also involves the diversity of aircraft, including low-performance aircraft flying in the lower airspace and conducting arrival and departure procedures on the same path or close to the paths of high-performance aircraft.

5.6. In this context, the States should develop their own national plans for the implementation of PBN in Terminal Control Areas (TMAs), based on the MID Region PBN Implementation Plan, seeking the harmonization of the application of PBN and avoiding the need for multiple operational approvals for intra- and inter-regional operations, and the applicable aircraft separation criteria.

Approach

5.7. ATC workload should be taken into account while developing PBN Approach Procedures. One possible way to accomplish this would be by co-locating the Initial Approach Waypoint (IAW) for PBN with the Initial Approach Fix (IAF) of the conventional approaches. States should phase-out conventional non-precision approach procedures at a certain point when deemed operationally suitable and taking in consideration GNSS integrity requirements.

5.8. MID States are encouraged to include implementation of CCO and CDO, where appropriate, as part of their PBN implementation plans, in compliance with the provisions of ICAO Documents 9931 and 9993, and in accordance with the MID Region Air Navigation Strategy.

5.9. Sates are encouraged to plan for the implementation of RNP AR procedures, which can provide significant operational and safety advantages over other area navigation (RNAV) procedures by incorporating additional navigational accuracy, integrity and functional capabilities to permit operations using reduced obstacle clearance tolerances that enable approach and departure procedures to be implemented in circumstances where other types of approach and departure procedures are not operationally possible or satisfactory. Procedures implemented in accordance with RNP AR Procedure

Design Manual (Doc 9905) allow the exploitation of high-quality, managed lateral and vertical navigation (VNAV) capabilities that provide improvements in operational safety and reduced un-stabilized approaches and Controlled Flight Into Terrain (CFIT) risks.

CHAPTER 2

CNS INFRASTRUCTURE

1. NAVIGATION INFRASTRUCTURE

Global Navigation Satellite System (GNSS)

1.1. Global Navigation Satellite System (GNSS) is a satellite-based navigation system utilizing satellite signals, such as Global Positioning System (GPS), and GLONASS for providing accurate and reliable position, navigation, and time services to airspace users. In 1996, the International Civil Aviation Organization (ICAO) endorsed the development and use of GNSS as a primary source of future navigation for civil aviation. ICAO noted the increased flight safety, route flexibility and operational efficiencies that could be realized from the move to space-based navigation.

1.2. GNSS supports both RNAV and RNP operations. Through the use of appropriate GNSS augmentations. GNSS navigation provides sufficient accuracy, integrity, availability and continuity to support en-route, terminal area, and approach operations. Approval of RNP operations with appropriate certified avionics provides on-board performance monitoring and alerting capability enhancing the integrity of aircraft navigation.

1.3. GNSS augmentations include Aircraft-Based Augmentation System (ABAS), Satellite-Based Augmentation System (SBAS) and Ground-Based Augmentation System (GBAS). More information about GNSS can be found in the Guidance on GNSS Implementation in the MID Region (MID DOC XXX).

~~1.4. For GNSS implementation States need to provide effective spectrum management and protection of GNSS frequencies by enforcing strong regulatory framework governing the use of GNSS repeaters, and jammers. States need to assess the likelihood and effects of GNSS vulnerabilities in their airspace and apply, as necessary, recognized and available mitigation methods.~~

~~1.5. During transition to GNSS, sufficient ground infrastructure for current navigation systems must remain available. Before existing ground infrastructure is considered for removal, users should be consulted and given reasonable transition time to allow them to equip accordingly.~~

~~1.6. GNSS implementation should take advantage of the improved robustness and availability made possible by the existence of multiple global navigation satellite system constellations and associated augmentation systems.~~

~~1.7. Operators consider equipage with GNSS receivers able to process more than one constellation in order to gain the benefits associated with the support of more demanding operations. States allow for realization of the full advantages of on-board mitigation techniques.~~

2. OTHER NAVIGATION INFRASTRUCTURE SUPPORTING PBN

2.1. Other navigation infrastructure that supports PBN applications includes INS, VOR/DME, DME/DME, and DME/DME/IRU. These navigation infrastructures may satisfy the requirements of RNAV navigation specifications, but not those of RNP.

2.2. INS may be used to support PBN en-route operations with RNAV-10 and RNAV 5 navigation specifications.

2.3. VOR/DME may be used to support PBN en-route operations based on RNAV 5 navigation specification.

2.4. DME/DME and DME/DME/IRU may support PBN en-route and terminal area operations based on RNAV 5, and RNAV 1 navigation specifications. Validation of DME/DME coverage area and appropriate DME/DME geometry should be conducted to identify possible DME/DME gaps, including identification of critical DMEs, and to ensure proper DME/DME service coverage.

Note.- The conventional Navaid infrastructure should be maintained to support non-equipped aircraft during a transition period.

3. SURVEILLANCE INFRASTRUCTURE

3.1. For RNAV operations, States should ensure that sufficient surveillance coverage is provided to assure the safety of the operations. Because of the on-board performance monitoring and alerting requirements for RNP operations, surveillance coverage may not be required. Details on the surveillance requirements for PBN implementation can be found in the ICAO PBN Manual (Doc 9613) and ICAO PANS-ATM (Doc 4444), and information on the current surveillance infrastructure in the MID can be found in ~~the~~ MID eANP and in the MID Region Surveillance Plan~~.~~

~~3.2. Multilateration (MLAT) employs a number of ground stations, which are placed in strategic locations around an airport, its local terminal area or a wider area that covers the larger surrounding airspace. Multilateration requires no additional avionics equipment, as it uses replies from Mode A, C and S transponders, as well as military IFF and ADS-B transponders.~~

4. COMMUNICATION INFRASTRUCTURE

4.1. Implementation of RNAV and RNP routes includes communication requirements. Details on the communication requirements for PBN implementation can be found in ICAO PANS-ATM (Doc 4444), ICAO RCP Manual (Doc 9869), and ICAO Annex 10. Information on the current communication infrastructure in the MID can also be found in MID eANP.~~.~~

CHAPTER 3

IMPLEMENTATION OF PBN

1. ATM OPERATIONAL REQUIREMENTS

1.1. The Global ATM Operational Concept (Doc 9854) makes it necessary to adopt an airspace concept able to provide an operational scenario that includes route networks, minimum separation standards, assessment of obstacle clearance, and a CNS infrastructure that satisfies specific strategic objectives, including safety, access, capacity, efficiency, and environment.

1.2. During the planning phase of any implementation of PBN, States should gather inputs from all aviation stakeholders to obtain operational needs and requirements. These needs and requirements should then be used to derive airspace concepts and to select appropriate PBN navigation specification

1.3. In this regard, the following should be taken into consideration:

a) Traffic and cost benefit analyses
b) Necessary updates on automation
c) Operational simulations in different scenarios
d) ATC personnel training
e) Flight plan processing
f) Flight procedure design training to include PBN concepts and ARINC-424 coding standard
g) Enhanced electronic data and processes to ensure appropriate level of AIS data accuracy, integrity and timeliness
h) WGS-84 implementation in accordance with ICAO Annex 15 provisions
i) Uniform classification of adjacent and regional airspaces, where practicable
j) RNAV/RNP applications for SIDs and STARs
k) Coordinated RNAV/RNP routes implementation
l) RNP approach with vertical guidance
m) Establish PBN approval database

1.4. Table ~~2~~3-1 shows the navigation specifications published in PBN Manual (Doc 9613), Volume II. It demonstrates, for example, that navigation specifications extend over various phases of flight. It also contains the Navaids/Sensor associated with each PBN specification.

1.5. The implementation of PBN additional functionalities/path terminator should be considered while planning/designing new procedures such as:

- the Radius to Fix (RF) for approach;
- Fixed Radius Transition (FRT) for En-route; and
- Time of Arrival Control (TOAC).

Table 3-1. Application of navigation specification by flight phase

Navigation Specification	FLIGHT PHASE								NAVAIDS/SENSORS				
	En-route oceanic/ remote	En-route continental	Arrival	Approach				DEP	~~GNSS~~	~~IRU~~	~~DME/ DME~~	~~DME/ DME/ IRU~~	~~VOR/ DME~~
				Initial	Intermediate	Final	Missed[1]						
RNAV 10	10	N/A		N/A				N/A	One or combination of ~~-~~GNSS, INS, IRS FMS,				
RNAV 5[2]	N/A	5	5						One or combination of GNSS, VOR/DME, DME/DME, INS, IRS				
RNAV 2		2	2					2	One or combination of GNSS, DME/DME, DME/DME/IRU				
RNAV 1		1	1	1	1	N/A	1	1					
RNP 4	4	N/A		N/A				N/A	GNSS				
RNP 2	2	2	N/A						GNSS				
RNP 1[3]	N/A		1	1	1	N/A	1	1	*DME/DME or DME/DME/IRU could be used with GNSS based on ANSP assessments/requirements*				
Advanced RNP (A-RNP)[4]	2	2 or 1	1	1	1	0.3	1	1					
RNP APCH[6]	N/A			1	1	0.3[7]	1	N/A	GNSS				
RNP AR APCH				1-0.1	1-0.1	0.3-0.1	1-0.1		GNSS				
RNP APCH APV				1	1	0.3	1		GNSS				
RNP 0.3[8]	N/A		0.3	0.3	0.3	0.3	0.3	0.3	GNSS				

~~O: Optional; M: Mandatory; SR: Subject ANSP Requirements~~

1. *Only applies once 50 m (40 m, Cat H) obstacle clearance has been achieved after the start of climb.*
2. *RNAV 5 is an en-route navigation specification which may be used for the initial part of a STAR outside 30 NM and above MSA.*
3. *The RNP 1 specification is limited to use on STARs, SIDs, the initial and intermediate segments of IAPs and the missed approach after the initial climb phase. Beyond 30 NM from the ARP, the accuracy value for alerting becomes 2 NM.*
4. *A-RNP also permits a range of scalable RNP lateral navigation accuracies*
5. *PBN manual contains two sections related to the RNP APCH specification: Section A is enabled by GNSS and Baro-VNAV, Section B is enabled by SBAS.*
6. *RNP 0.3 is applicable to RNP APCH Section A. Different angular performance requirements are applicable to RNP APCH Section B only.*
7. *The RNP 0.3 specification is primarily intended for helicopter operations***.**

2. IMPLEMENTATION PHASES:

En-route

Short Term:

2.1. The current application of RNAV 10 will continue for Oceanic and Remote continental routes.

2.2. For Continental RNAV 5 specifications should be completed by December 2017. Before the PBN concept, the MID Region adopted the Regional implementation of RNP 5. Further to application of the PBN concept, RNP 5 routes have been changed into RNAV 5 routes. Based on operational requirements, States may choose to implement RNAV 1 routes to enhance efficiency of airspace usages and support closer route spacing, noting that appropriate communication and surveillance coverage is provided. Details of these requirements are provided in the PBN manual (Doc 9613) and PANS-ATM (Doc 4444).

Medium Term:

2.3. RNP 4 and/or RNP 2 routes would be considered for implementation for the en-route oceanic/remote operations.

2.4. RNP 2 or RNAV 1 would be considered for implementation for en-route continental/local domestic operations.

Long Term

A-RNP would be considered for implementation beyond 2026 as a regional requirement based on the PBN SG and ATM SG decisions.

Terminal

Short Term:

2.5. In a non-surveillance environment and/or in an environment without adequate ground navigation infrastructure, the SID/STAR application of RNP 1 is expected in selected TMAs with exclusive application of GNSS.

2.6. CCO and CDO should be implemented at the defined TMAs, in accordance with the State PBN implementation Plans, the MID Region Air Navigation Strategy and the MID ANP.

Medium Term:

2.7. RNAV 1, A-RNP 1 will be implemented in all TMAs, ~~expected target will be 70 % by~~ the end of this term.

Approach

Short Term:

2.8. Implementation of PBN approaches with vertical guidance (LNAV/VNAV minima) ~~(APV)~~ for runway ends at the international aerodromes listed in the MID ANP ~~should be completed by December 2017~~, including LNAV only minima.

2.9. The application of RNP AR APCH procedures would be limited to selected airports, where obvious operational benefits can be obtained due to the existence of significant obstacles.

Medium Term:

2.10. The extended application of RNP AR APCH should continue for airports where there are operational benefits.

2.11. To progress further with the universal implementation of PBN approaches. GLS procedures should be implemented for the defined runway ends to enhance the reliability and predictability of approaches to runways increasing safety, accessibility, and efficiency.

2.12. Table 3-2 summarizes the implementation targets of each PBN navigation specification in the MID Region:

Table 3-2. SUMMARY TABLE AND IMPLEMENTATION TARGETS

Airspace	Short term ~~2013-2018~~ Up to 2020		Medium term ~~2019~~2021-2025	
	Navigation Specification Preferred	**Targets**	**Navigation Specification Acceptable**	**Targets**
En-route – Oceanic	RNAV 10 RNP 4*	100 % by 2016 50% by 2020	RNP 4* ~~RNP 2*~~ ~~Defined airspace (A-RNP)~~	~~TBD~~ 100% by 2025
En-route - Remote continental	RNAV 5 ~~RNAV 10~~	~~W/A~~ 100% by 2016	RNP 4* ~~RNP 2*~~ ~~Defined airspace (A-RNP)~~	50% by 2023 100% by 2025 ~~TBD~~
En-route – Continental	RNAV 5 RNAV 1	100 % by 2017 W/A[1]	~~RNP 2*~~ ~~Defined airspace (A-RNP)~~	~~TBD~~
En-route - Local / Domestic	RNAV 5 RNAV 1	100 % by 2017 W/A	~~RNP 2~~ ~~Defined airspace (A-RNP)~~	~~TBD~~
TMA – Arrival	RNAV 1 (surveillance environment) or RNP 1 (non-surveillance environment)	50% by December 2016 100% by ~~2018~~2020	~~RNP 1 and RNP 2 beyond 30 NM from ARP (A-RNP)~~	~~TBD~~
TMA – Departure	RNAV 1 (surveillance environment) or RNP 1 (non-surveillance environment)	50% by 2016 100% by ~~2018~~2020	~~RNP 1 and RNP 2 beyond 30 NM from ARP (A-RNP)~~	~~TBD~~
Approach	LNAV: for all RWY Ends at International Aerodromes LNAV/VNAV: for all RWY Ends at International Aerodromes	80 % by 2014. 100% by ~~2016~~2020 70% by 2016 100% by ~~2018~~2020	GLS (GBAS) For the defined RWY Ends Based on operational needs and CBA	TBD
CCO and CDO	W/A	~~100~~50% by ~~2018~~ 2020	W/A	~~TBD~~ 100 % by 2025

– *W/A: where applicable/defined Airspace, in accordance with State PBN implementation Plans, the MID Region Air ~~navigation~~Navigation Strategy and the MID ANP.*
– ** would be considered for implementation at the identified Airspace/TMAs*
– *When no month is specified (e.g. by 2017) means by the end of the year (December 2017).*

Long Term (202~~5~~6 and Beyond)

2.13. In this phase, GNSS augmentation is expected to be a primary navigation infrastructure for PBN implementation. States should work co-operatively on a multinational basis to implement GNSS in order to facilitate seamless and inter-operable systems and undertake coordinated Research and Development (R&D) programs on GNSS implementation and operation.

2.14. Moreover, during this phase, States are encouraged to consider segregating traffic according to navigation capability and granting preferred routes to aircraft with better navigation performance.

2.15. The required PBN navigation specifications and their associated targets to be implemented for the Long term will be defined in due course.

CHAPTER 4

SAFETY ASSESSMENT AND MONITORING

1. NEED FOR SAFETY ASSESSMENT

1.1. To ensure that the introduction of PBN en-route applications within the MID Region is undertaken in a safe manner and in accordance with relevant ICAO provisions, implementation shall only take place following conduct of a safety assessment that has demonstrated that an acceptable level of safety will be met. This assessment may also need to demonstrate levels of risk associated with specific PBN en-route implementation. Additionally, ongoing periodic safety reviews shall be undertaken where required in order to establish that operations continue to meet the target levels of safety

2. ROLES AND RESPONSIBILITIES

2.1. To demonstrate that the system is safe, it will be necessary that the implementing agency – a State or group of States - ensures that a safety assessment and, where required, ongoing monitoring of the PBN en-route implementation are undertaken.

2.2. In undertaking a safety assessment to enable en-route implementation of PBN, a State or the implementing agency shall:

a) establish and maintain a ~~database~~ registry of PBN approvals;

b) monitor aircraft horizontal-plane navigation performance and the occurrence of large navigation errors and report results;

c) conduct safety and readiness assessments;

d) monitor operator compliance with State approval requirements after PBN implementation; and

e) initiate necessary remedial actions if PBN requirements are not met.

CHAPTER 5
OPERATIONAL APPROVAL

1. OPERATIONAL APPROVAL REQUIREMENTS

1.2. Operational approval is usually the responsibility of the regulatory authority of the State of the Operator for commercial air transport operations and the State of Registry for general Aviation (GA) operations. For certain operations, GA operators may not be required to follow the same authorization model as commercial operators.

1.3. The operational approval assessment must take account of the following:

a) aircraft eligibility and airworthiness compliance;

b) operating procedures for the navigation systems used;

c) control of operating procedures (documented in the OM);

d) flight crew initial training and competency requirements and continuing competency requirements;

e) dispatch training requirements; and

f) control of navigation database procedures. Where a navigation database is required, operators need to have documented procedures for the management of such databases. These procedures will define the sourcing of navigation data from approved suppliers, data validation procedures for navigation databases and the installation of updates to databases into aircraft so that the databases remain current with the AIRAC cycle. (For RNP AR applications, the control of the terrain database used by TAWS must also be addressed.)

Aircraft eligibility

1.4. An aircraft is eligible for a particular PBN application provided there is clear statement in:

a) the Type Certificate (TC); or
b) the Supplement Type Certificate (STC); or
c) the associated documentation — Aircraft Flight manual (AFM) or equivalent document; or
d) a compliance statement from the manufacturer that has been approved by the State of Design and accepted by the State of Registry or the State of the Operator, if different.

1.5. The operator must have a configuration list detailing the pertinent hardware and software components and equipment used for the PBN operation.

1.6. The TC is the approved standard for the production of a specified type/series of aircraft. The aircraft specification for that type/series, as part of the TC, will generally include a navigation standard. The aircraft documentation for that type/series will define the system use, operational limitations, equipment fitted and the maintenance practices and procedures. No changes (modifications) are permitted to an aircraft unless the CAA of the State of Registry either approves such changes through a modification approval process, STC or accepts technical data defining a design change that has been approved by another State.

1.7. For recently manufactured aircraft, where the PBN capability is approved under the TC, there may be a statement in the AFM limitations section identifying the operations for which the aircraft

is approved. There is also usually a statement that the stated approval does not itself constitute an approval for an operator to conduct those operations. Alternate methods of achieving the airworthiness approval of the aircraft for PBN operations is for the aircraft to be modified in accordance with approved data. (e.g. STC, minor modification, etc.)

1.8. One means of modifying an aircraft is the approved Service Bulletin (SB) issued by the aircraft manufacturer. The SB is a document approved by the State of Design to enable changes to the specified aircraft type and the modification then becomes part of the type design of the aircraft. Its applicability will normally be restricted by the airframe serial number. The SB describes the intention of the change and the work to be done to the aircraft. Any deviations from the SB require a design change approval; any deviations not approved will invalidate the SB approval. The State of Registry accepts the application of an SB and changes to the maintenance programme, while the State of the Operator accepts changes to the maintenance programme and approves changes to the MEL, training programmes and Operations specifications. An Original Equipment Manufacturer (OEM) SB may be obtained for current production or out of production aircraft.

1.9. In respect of PBN, in many cases for legacy aircraft, while the aircraft is capable of meeting all the airworthiness requirements, there may be no clear statement in the applicable TC or STC or associated documents (AFM or equivalent document). In such cases, the aircraft manufacturer may elect to issue an SB with appropriate AFM update or instead may publish a compliance statement in the form of a letter, for simple changes, or a detailed aircraft type specific document for more complex changes. The State of Registry may determine that an AFM change is not required if it accepts the OEM documentation. **Table 5-1** lists the possible scenarios facing an operator who wishes to obtain approval for a PBN application, together with the appropriate courses of action.

Table 5-1

Scenario	Aircraft certification status	Actions by operator/owner
1	Aircraft designed and type certificated for PBN application. Documented in AFM, TC or the STC	No action required, aircraft eligible for PBN application
2	Aircraft equipped for PBN application but not certified. No statement in AFM. SB available from the aircraft manufacturer	Obtain SB (and associated amendment pages to the AFM) from the aircraft manufacturer
3	Aircraft equipped for PBN application. No statement in AFM. SB not available. Statement of compliance available from the aircraft manufacturer	Establish whether the statement of compliance is acceptable to the regulatory authority of the State of Registry of the aircraft
4	Aircraft equipped for PBN application. No statement in AFM. SB not available. Statement of compliance from the aircraft manufacturer not available	Develop detailed submission to State of Registry showing how the existing aircraft equipment meets the PBN application requirements
5	Aircraft not equipped for PBN application	Modify aircraft in accordance with the aircraft manufacturer's SB or develop a major modification in conjunction with an approved design organization in order to obtain an approval from the State of Registry (STC).

Operating procedures

1.10. The Standard operating procedure (SOP) must be developed to cover both normal and non-normal (contingency) procedures for the systems used in the PBN operation. The SOP must address:

a) preflight planning requirements including the MEL and, where appropriate, RNP/RAIM prediction;
b) actions to be taken prior to commencing the PBN operation;
c) actions to be taken during the PBN operation; and
d) actions to be taken in the event of a contingency, including the reporting of significant incidents

GA pilots must ensure that they have suitable procedures/checklists covering all these areas

Control of operating procedures

1.11. The SOP must be adequately documented in the OM and checklists

Flight crew and dispatch training

1.12. A flight crew and dispatch training programme for the PBN operation must cover all the tasks associated with the operation and provide sufficient background to ensure a comprehensive understanding of all aspects of the operation. The operator must have adequate records of course completion for flight crew, flight dispatchers and maintenance personnel.

Control of navigation database procedures

1.13. If a navigation database is required, the procedures for maintaining currency, checking for errors and reporting errors to the navigation database supplier must be documented in the maintenance manual by commercial operators

2. DOCUMENTATION OF OPERATIONAL APPROVAL

2.1. Operational approval may be documented as an endorsement of the Air operator certificate (AOC) through:

a) Operations specification, associated with the AOC; or
b) amendment to the OM; or
c) LOA.

2.2. During the validity of the operational approval, the CAA should consider any anomaly reports received from the operator or other interested party. Repeated navigation error occurrences attributed to a specific piece of navigation equipment may result in restrictions on use or cancelation of the approval for use of that equipment. Information that indicates the potential for repeated errors may require modification of an operator's training programme. Information that attributes multiple errors to a particular pilot or crew may necessitate remedial training and checking or a review of the operational approval.

2.3. The State may determine that a GA aircraft may operate on a PBN route/procedure provided that the operator has ensured that the aircraft has suitably approved equipment (is eligible), the navigation database is valid, the pilot is suitably qualified and current with respect to the equipment, and adequate procedures (checklists) are in place.

3. STATE REGULATORY MATERIAL

3.1. Individual States must develop national regulatory material which addresses the PBN applications relevant to their airspace or relevant to operations conducted in another State by the State's operators or by aircraft registered in that State. The regulations may be categorized by operation, flight phase, area of operation and/or navigation specification. Approvals for commercial operations should require specific authorization.

4. APPROVAL PROCESS

General

4.2. Since each operation may differ significantly in complexity and scope, the project manager and the operational approval team need considerable latitude in taking decisions and making recommendations during the approval process. The ultimate recommendation by the project manager and decision by the DGCA regarding operational approval should be based on the determination of whether or not the applicant:

a) meets the requirements established by the State in its air navigation regulations;
b) is adequately equipped; and
c) is capable of conducting the proposed operation in a safe and efficient manner.

4.3. The complexity of the approval process is based on the inspector's assessment of the applicant's proposed operation. For simple approvals, some steps can be condensed or eliminated. Some applicants may lack a basic understanding of what is required for approval. Other applicants may propose a complex operation, but may be well prepared and knowledgeable. Because of the variety in proposed operations and differences in an applicant's knowledge, the process must be thorough enough and flexible enough to apply to all possibilities.

Phases of the approval process

Step 1 — Pre-application phase

4.4. The operator initiates the approval process by reviewing the requirements; establishing that the aircraft, the operating procedures, the maintenance procedures and the training meet the requirements; and developing a written proposal to the regulator. A number of regulators have published "job aids" to assist the operator in gathering the necessary evidence to support the approval application. At this stage a pre-application meeting with the regulator can also be very beneficial. If the proposed application is complex, the operator may need to obtain advice and assistance from OEMs or other design organizations, training establishments, data providers, etc.

Step 2 — Formal application phase

4.5. The operator submits a formal, written application for approval to the CAA, which appoints a project manager either for the specific approval or generally for PBN approvals.

Step 3 — Document evaluation phase

4.6. The CAA project manager evaluates the formal, written application for approval to determine whether all the requirements are being met. If the proposed application is complex, the project manager may need to obtain advice and assistance from other organizations such as regional agencies or experts in other States.

Step 4 — Demonstration and inspection phase

4.7. During a formal inspection by the project manager (assisted as necessary by a CAA team), the operator demonstrates how the requirements are being met.

Step 5 — Approval phase

4.8. Following a successful formal inspection by the CAA, approval is given through:

a) Operations specification, associated with the AOC; or
b) amendment to the OM; or
c) LOA.

Some PBN applications may not require formal approval for GA operations — this will be determined by the State of Registry.

Note.— The approval procedure described above consists of a simplified process of the certification guidance contained in Part III of the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335).*

5. FOREIGN OPERATIONS

5.1. A State undertakes, in accordance with Article 12 to the Convention, to ensure that every aircraft flying over or maneuvering within its territory shall comply with the rules and regulations relating to the flight and maneuver of aircraft there in force. Article 33 to the Convention provides that certificates of airworthiness and certificates of competency and licenses issued, or rendered valid, by the State in which an aircraft is registered, shall be recognized by other States, provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established by ICAO. This requirement for recognition is now extended by Annex 6, Part I and Part III, Section II, such that Contracting States shall recognize as valid an AOC issued by another Contracting State, provided that the requirements under which the certificate was issued are at least equal to the applicable Standards specified in Annex 6, Part I and Part III.

5.2. States should establish procedures to facilitate the application by foreign operators for approval to operate into their territory. States should be careful in their requirements for applications, to request only details relevant to the evaluation of the safety of the operations under consideration and their future surveillance. When evaluating an application by an operator from another State to operate within its territory a State will examine both the safety oversight capabilities and record of the State of the Operator and, if different, the State of Registry, as well as the operational procedures and practices of the operator. This is necessary in order for the State, in the terms of Article 33 to the Convention, to have confidence in the validity of the certificates and licenses associated with the operator, its personnel and aircraft, in the operational capabilities of the operator and in the level of certification and oversight applied to the activities of the operator by the State of the Operator.

5.3. The operator will need to make applications to each State into or over which it is intended to operate. The operator will also need to keep its own CAA, as the authority of the State of the Operator, informed of all applications to operate in other States. Applications should be made direct to the CAAs of the States into which it is intended to operate. In some cases it will be possible to download information and instructions for making an application and the necessary forms from a website maintained by the CAA in question.

5.4. States should promote the implementation and operational approval of Advanced RNP (A-RNP) navigation specifications, which serves all the flight phases as follows:

- En-Route Oceanic, Remote: RNP 2;
- En-Route Continental: RNP 2 or RNP 1;
- Arrival and Departures: RNP 1;
- Initial, intermediate and missed approach phases: RNP 1; and
- Final Approach Phase: RNP 0.3.

5.5. Because functional and performance requirements are defined for each navigation specification, an aircraft approved for an RNP specification is not automatically approved for all RNAV specifications. Similarly, an aircraft approved for an RNP or RNAV specification having a stringent accuracy requirement (e.g. RNP 0.3 specification) is not automatically approved for a navigation specification having a less stringent accuracy requirement (e.g. RNP 4).

CHAPTER 6

PBN CHARTING

1. INTRODUCTION

6.1 Charting of PBN Instrument Approach Procedures in the MID Region should follow the criteria included in Annex 4 and the PANS OPS (DOC 8168).

2. TRANSITION PLAN FOR RNAV TO RNP INSTRUMENT APPROACH CHART DEPICTION

6.2 For a harmonized implementation of the Amendment 6 to the PANS OPS related to RNAV to RNP Approach Chart Depiction, the following transition plan should apply in the MID Region:

- MID States, that have not yet done so, should implement RNAV to RNP Chart naming convention for their current PBN Approach Procedures published in their AIPs, starting from 29 March 2019 up to 8 September 2022.

- New PBN Approach Procedures, planned to be published before 29 March 2019, should be published using the new naming convention, if practicable.

- If a PBN Approach Procedure published in the National AIP is amended and re-published before 29 March 2019 (for any reason), the new naming convention should be used, if practicable.

6.3 States are required to provide the ICAO MID Office with their action plan for the implementation of RNAV to RNP Chart naming convention, and keep the MID Office apprised of the status of implementation.

TABLE ATM II-MID-1 MID REGION ATS ROUTE NETWORK

EXPLANATION OF THE TABLE

Column

1 *Designator of ATS route and Type (Conventional, RNAV5 or RNAV1 etc.)*

2 *MIGNMficant points defining the ATS routes. Only prominent locations have been listed. Additional points where facilities are provided to complete navigational guidance along a route, but not otherwise marking significant characteristics of the route (change of heading of centre line, intersection with other routes, etc.) have normally not been included. Locations shown in parentheses indicate significant points outside the Region.*

Note 1. *Not representing the operator's requirements. Operator's required route and/or navaids are shown in square brackets ([ ]).*

Note 2. *Subject to further study. Including the associated navigation aid coverage.*

Note 3 *Subject to military agreement.*

Note 4. *Not acceptable at present.*

Note 5. *At present, implementation possible only during specific periods (e.g. weekends, nights, etc., as published).*

Note 6. *At present, implementation of the RNAV route only possible above FL 300, or as published.*

Note 7. *Unidirectional use.*

Note 8. *For ATS route or part thereof is RNAV 1*

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
A1	METRU 340000N 0250900E	UA1	METRU 340000N 0250900E
	SOKAL 323601N 0273706E		SOKAL 323601N 0273706E
	KATEX 320701N 0282436E		KATEX 320701N 0282436E
	BOPED 312939N 0292655E		BOPED 312939N 0292655E
	ALEXANDRIA (NOZ) 311113N 0295701E		ALEXANDRIA (NOZ) 311113N 0295701E
	MENKU 310531N 0301806E		MENKU 310531N 0301806E
	CAIRO (CVO) 300532N 0312318E		CAIRO (CVO) 300532N 0312318E
A16	RASDA 330600N 0305700E	UA16	RASDA 330600N 0305700E
	MELDO 320201N 03104406E		MELDO 320201N 03104406E
	BALTIM (BLT) 313144N 0311035E		BALTIM (BLT) 313144N 0311035E
	DEGDI 311429N 0311035E		DEGDI 311429N 0311035E
	CAIRO (CVO) 300532N 0312318E		CAIRO (CVO) 300532N 0312318E
A408	(ADDIS ABABA) GWZ 090622N 0384612E	UA408	(ADDIS ABABA) GWZ 090622N 0384612E
	SALEH 140000N 0420000E		SALEH 140000N 0420000E
	ORNIS 1416.215N0423657.9E		ORNIS 1416.215N0423657.9E
	HODEIDAH (HDH)1446.4N 04259.2E 144622N 0425911E		HODEIDAH (HDH)1446.4N 04259.2E 144622N 0425911E
A411	BENINA (BNA) 3207.28N 0201513E	UA411	BENINA (BNA) 3207.28N 0201513E
	NASER 3151.12N 0235518.3E		NASER 3151.12N 0235518.3E
	LOSUL 314100N 250800E		LOSUL 314100N 250800E
	SIDI BARANI (BRN) 313455 32N 0260020E		SIDI BARANI (BRN) 313455 32N 0260020E
A412	TANF (TAN) 332857N 0383915E	UA412	TANF (TAN) 332857N 0383915E
	ZELAF 325656N 0371121E		ZELAF 325656N 0371121E
	DAXEN 324444N 0374105E		DAXEN 324444N 0374105E
	ASLON 321211N 0365111E		ASLON 321211N 0365111E
	NADEK 322728N 0371429E		NADEK 322728N 0371429E
	KUPRI 320825N 0364530E		KUPRI 320825N 0364530E
	LUDAN 320256N 0363713E		LUDAN 320256N 0363713E
	QUEEN ALIA (QAA) 314423N 0360926E		QUEEN ALIA (QAA) 314423N 0360926E
A416	TABRIZ (TBZ) 380853N 0461247E	UA416	TABRIZ (TBZ) 380853N 0461247E
	ARDABIL (ARB) 381856N 0482605E		ARDABIL (ARB) 381856N 0482605E
	RASHT (RST) 371935N 0493657E		RASHT (RST) 371935N 0493657E
	RAMSAR (RSR) 365412N 0504050E		RAMSAR (RSR) 365412N 0504050E
	NOSHAHR (NSR) 363935N 0512805E		NOSHAHR (NSR) 363935N 0512805E
	DASHTE NAZ (DNZ) 363855N 0531120E		DASHTE NAZ (DNZ) 363855N 0531120E
	SABZEVAR (SBZ) 361011N 0573415E		SABZEVAR (SBZ) 361011N 0573415E
	MASHHAD (MSD) 361352N 0593901E		MASHHAD (MSD) 361352N 0593901E
	SOKAM 331316N 0603754E		SOKAM 331316N 0603754E
A418	KUMUN 254000N 0551515E	UA418	KUMUN 254000N 0551515E
	PAPAR 264000N 0542700E		PAPAR 264000N 0542700E
	* Note 7 (OI and OM)		* Note 7 (OI and OM)
	Segment KUMUN-PAPAR		Segment KUMUN-PAPAR
	SHIRAZ (SYZ) 293224N 0523520E		SHIRAZ (SYZ) 293224N 0523520E
A422	UROMIYEH (UMH) 374001N 0450343E	UA422	UROMIYEH (UMH374001N 0450343E
	SETNA 375615.3N 0455522.4E		SETNA 375615.3N 0455522.4E
	TABRIZ (TBZ) 380853N 0461247E		TABRIZ (TBZ) 380853N 0461247E
	PARSABAD (PAD) 393443N 0475803E		PARSABAD (PAD) 393443N 0475803E

4A-3

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	PARSU 39374.8N 048044.8E		PARSU 39374.8N 048044.8E
	KARAD 401818~~14.3~~N 0500356 ~~04929.5~~E		KARAD 401818~~14.3~~N 0500356 ~~04929.5~~E
	~~(BAKU)~~		~~(BAKU)~~
A424	LOVEK 322208N 0444001E	UA424	LOVEK 322208N 0444001E
	LOTAN 29594~~2.7~~N 04338.~~4~~8E		LOTAN 29594~~2.7~~N 04338.~~4~~8E
	RAFHA (RAF) 293718N 0432953E		RAFHA (RAF) 293718N 0432953E
	HAIL (HIL) 272530N 0414058E		HAIL (HIL) 272530N 0414058E
	MADINAH (PMA) 243251N 0394219E		MADINAH (PMA) 243251N 0394219E
	ASTOL 2255~~.~~00N 03935~~.~~12E		ASTOL 2255~~.~~00N 03935~~.~~12E
	KING ABDULAZIZ (JDW) 214244N 0390723E		KING ABDULAZIZ (JDW) 214244N 0390723E
A453	PIRAN 2934076N 0612809~~6~~E	UA453	PIRAN 2934076N 0612809~~6~~E
	ZAHEDAN (ZDN) 292912N 0605406E		ZAHEDAN (ZDN) 292912N 0605406E
	BANDAR ABBAS (BND) 271149N 0562200E		BANDAR ABBAS (BND) 271149N 0562200E
	GHESHM (KHM) 264547N 0555428E		GHESHM (KHM) 264547N 0555428E
	*Note 7 (KHM, BAH)		*Note 7 (KHM, BAH)
	BANDAR LENGEH (LEN) 263210N 0545104E		BANDAR LENGEH (LEN) 263210N 0545104E
	KISH (KIS) 263131N 0535745E		KISH (KIS) 263131N 0535745E
	MIDSI 26414~~2.7~~N0515442.~~5~~E		MIDSI 26414~~2.7~~N0515442.~~5~~E
	BOTOB 263350N 0514505E		BOTOB 263350N 0514505E
	ALMOK 262832N 0513840E		ALMOK 262832N 0513840E
	SOLOB 262241N 0513132E		SOLOB 262241N 0513132E
	TOBLI 262134N0512301E		TOBLI 262134N0512301E
	SOGAT 262029N 0511443E		SOGAT 262029N 0511443E
	ASTAD 261811N 0505646E		ASTAD 261811N 0505646E
	BAHRAIN (BAH) 261551N 0503856E		BAHRAIN (BAH) 261551N 0503856E
	~~* Note 7 (OB, OI)~~		~~* Note 7 (OB, OI)~~
	ELOSO 262409N 0503550E		ELOSO 262409N 0503550E
	EGMOR 264210N 0502906E		EGMOR 264210N 0502906E
	LOTOR 264854N 0502200E		LOTOR 264854N 0502200E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	ORNAK 272853N 0493248E		ORNAK 272853N 0493248E
	SOLEM 275229N 0491136E		SOLEM 275229N 0491136E
	KUMBO 281705N 0495526E		KUMBO 281705N 0495526E
	AWADI 283430N 0484354E		AWADI 283430N 0484354E
	DEBTI 284406N 0482924E		DEBTI 284406N 0482924E
	KUWAIT (KUA) 291306N 0475903~~6~~E		KUWAIT (KUA) 291306N 0475903~~6~~E
A454	KARACHI (KC) 24544~~3.6~~N 0671054.~~6~~E	UA454	KARACHI (KC) 24544~~3.6~~N 0671054.~~6~~E
	*Note 7 (KC-PASOV)		*Note 7 (KC-PASOV)
	BEGIM 2443~~.~~02N 06700~~.~~01E		BEGIM 2443~~.~~02N 06700~~.~~01E
	~~* Note 7 (OO, OP)~~		~~* Note 7 (OO, OP)~~
	MELOM 250334~~5.0~~N 0663134~~2.0~~E		MELOM 250334~~5.0~~N 0663134~~2.0~~E
	PUNEL 2518352~~0.0~~N 0652245~~3.0~~E		PUNEL 2518352~~0.0~~N 0652245~~3.0~~E
	PARET 252518~~7.2~~N 064510~~2.5~~E		PARET 252518~~7.2~~N 064510~~2.5~~E
	TAPDO 242400N 0612000E		TAPDO 242400N 0612000E
	VUSET 235540N 0590812E		VUSET 235540N 0590812E
	PASOV 243841N 0565037E		PASOV 243841N 0565037E
A727	~~(~~PAXIS 33570~~6.1~~N 02720~~.~~00E	UA727	~~(~~PAXIS 33570~~6.1~~N 02720~~.~~00E
	OTIKO 31342~~1.3~~N 0293~~6.~~36E		OTIKO 31342~~1.3~~N 0293~~6.~~36E
	ALEXANDRIA (NOZ) 311115N 0295703E		ALEXANDRIA (NOZ) 311115N 0295703E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	MENKU 310531.5N 0301806.1E		MENKU 310531.5N 0301806.1E
	CAIRO (CVO) 300532N 0312318E		CAIRO (CVO) 300532N 0312318E
	LUXOR (LXR) 254458N 0324607E		LUXOR (LXR) 254458N 0324607E
	ABU SIMBLE (SML) 222118N 0313719E		ABU SIMBLE (SML) 222118N 0313719E
	NUBAR 220000N 031+3806.1E		NUBAR 220000N 031+3806.1E
	MEROWE (MRW) 182659N 0314907E		MEROWE (MRW) 182659N 0314907E
	KHARTOUM (KTM) 153358N 0323312E		KHARTOUM (KTM) 153358N 0323312E
	KENANA (KNA) 130141N 0325423E		KENANA (KNA) 130141N 0325423E
	LODWAR (LOV) 030627N 0353646E		LODWAR (LOV) 030627N 0353646E
	NAKURU (NAK) 001817S 0360919E		NAKURU (NAK) 001817N 0360919E
	NAIROBI (NV) 011800S 0365715E		NAIROBI (NV) 011800S 0365715E
	KILIMANJARO (KV) 032540S 0370624E		KILIMANJARO (KV) 032540S 0370624E
		UA775	REXOD 211230N 0613830E
			TUMET 222307N 0595702E
			IMDEK 224647N 0592217E
			OBTIN 230216N 0585920E
			KUSRA 231726N 0585102E
A777	TONVO 250500N 0563200E		
	BUBAS 245938N 0570003E		
	* Note 7 (OO)		
	NADSO 244957N 0574926E		
	MUNGA 242516N 0584533E		
	MIXOL 240618N 0592739E		
	VAXIM 231900N 0611100E		
A788	HALAIFAH (HLF) 262603N 0391609E	UA788	HALAIFAH (HLF) 262603N 0391609E
	HAIL (HIL) 272530N 0414058E		HAIL (HIL) 272530N 0414058E
	HAFR AL BATIN (HFR) 281950N 0460746E		HAFR AL BATIN (HFR) 281950N 0460746E
	*Note 7 (HFR-PATIR)		*Note 7 (HFR-PATIR)
	WAFRA *(KFR) 283715.3N 0475729.5E		WAFRA (KFR) 283715.3N 0475729.5E
	PATIR 285606N 0492923E		PATIR 285606N 0492923E
	KHARK (KHG) 291550N 0501901E		KHARK (KHG) 291550N 0501901E
	SHIRAZ (SYZ) 293225N 0523520E		SHIRAZ (SYZ) 293225N 0523520E
B12	TANSA 340000N 0264900E	UB12	TANSA 340000N 0264900E
	SOKAL 323601N 0273706E		SOKAL 323601N 0273706E
	EL DABA (DBA) 310041N 0282801E		EL DABA (DBA) 310041N 0282801E
	KATAB 292501N 0290506E		KATAB 292501N 0290506E
	BOPOS 264318N 0300722E		BOPOS 264318N 0300722E
	DEPNO 262438N 0301413E		DEPNO 262438N 0301413E
	EL KHARGA (KHG) 252654N 0303527E		EL KHARGA (KHG) 252654N 0303527E
	ABU SIMBEL (SML) 222118N 0313719E		ABU SIMBEL (SML) 222118N 0313719E
B121	RUDESHUR (RUS) 352644N 0505419E	UB121	RUDESHUR (RUS) 352644N 0505419E
	RASHT (RST) 371935N 0493657E		RASHT (RST) 371935N 0493657E
	MAGRI 385408N 0462300E		MAGRI 385408N 0462300E
B400	MUSCAT (MCT) 233528N 0581536E	UB400	MUSCAT (MCT) 233528N 0581536E
	ITURA 232351N 0580720E		ITURA 232351N 0580720E
	IZKI (IZK) 225319N 0574543E		IZKI (IZK) 225319N 0574543E
	HAIMA (HAI) 195813N 0561651E		HAIMA (HAI) 195813N 0561651E
	ASTUN 180832N0551040E		ASTUN 180832N0551040E

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	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	DAXAM 171612N 0544715E		DAXAM 171612N 0544715E
	MUTVA 165325N 0543201E		MUTVA 165325N 0543201E
	IMKAD 155245N 0535147E		IMKAD 155245N 0535147E
	NODMA 152603N 0533358E		NODMA 152603N 0533358E
	RIGAM 143932N 0530414E		RIGAM 143932N 0530414E
	RAPDO 132317N 0521532E		RAPDO 132317N 0521532E
	VEDET 120134N 0512410E		VEDET 120134N 0512410E
	~~(MOGADISHU)~~ MOGDU 020024N 0451736E		~~(MOGADISHU)~~ MOGDU 020024N 0451736E
		UB403	MANDERA (MAV) 035625N 0415151E
			BOMIX 121002N 0502757E
			ODBEN 123747N 0505648E
			KAVAN 133250N 0515431E
			RIGAM 143932N 0530414E
B404	HARGA ~~(HARGEISA)~~ 093112N 0440530E	UB404	HARGA ~~(HARGEISA)~~ 093112N 0440530E
	DEMGO 120258N 0483040E		DEMGO 120258N 0483040E
	PURKA 131208N 0503042E		PURKA 131208N 0503042E
	GESIX 134440N 0512823E		GESIX 134440N 0512823E
	RIGAM 143932N 0530414E		RIGAM 143932N 0530414E
B407	KING ABDULAZIZ (JDW) 214244N 0390723E	UB407	KING ABDULAZIZ (JDW) 214244N 0390723E
	KAROX 205717N 0381547E		KAROX 205717N 0381547E
	MAHDI 2026~~.~~00N 0373918~~.3~~E		MAHDI 2026~~.~~00N 0373918~~.3~~E
	~~(~~PORT SUDAN~~)~~ (PSD) 192404N 0371430E		~~(~~PORT SUDAN~~)~~ (PSD) 192404N 0371430E
B411	~~ROVAR 292438N0345711E~~	UB411	~~ROVAR 292438N0345711E~~
	TAKSU 293625N 0343623E		TAKSU 293625N 0343623E
	*Note 7 (TAKSU-ULINA)		*Note 7 (TAKSU-ULINA)
	KARIK 292733N 0344641E		KARIK 292733N 0344641E
	ULINA 292451N 0345817E		ULINA 292451N 0345817E
	ELETA 293201N 0352900E		ELETA 293201N 0352900E
	LORIK 293640N 0354840E		LORIK 293640N 0354840E
	LORIK 293640N 0354840E		LORIK 293640N 0354840E
	AL SHIGAR (ASH) 300722N 0384753E		AL SHIGAR (ASH) 300722N 0384753E
	ARAR (AAR) 305429N 0410832E		ARAR (AAR) 305429N 0410832E
	MURIB 311337N 0415136E		MURIB 311337N 0415136E
	LOVEK 322208~~.1~~N 0444001~~.0~~E		LOVEK 322208~~.1~~N 0444001~~.0~~E
	NOLDO 324932~~.5~~N 0452129~~.5~~E		NOLDO 324932~~.5~~N 0452129~~.5~~E
	PAXAT 332056N 0460519E		PAXAT 332056N 0460519E
	ILAM (ILM) 333442N 0462455E		ILAM (ILM) 333442N 0462455E
	KERMANSHAH (KMS) 342023N 0471009E		KERMANSHAH (KMS) 342023N 0471009E
	SAVEH (SAV) 350107N 0502217E		SAVEH (SAV) 350107N 0502217E
	[TEHRAN] (TRN) 354149N 0511702E		[TEHRAN] (TRN) 354149N 0511702E
	~~* Note 1~~		~~* Note 1~~
	DEHNAMAK (DHN) 351514N 0524313E		DEHNAMAK (DHN) 351514N 0524313E
	SABZEVAR (SBZ) 361011N 0573415E		SABZEVAR (SBZ) 361011N 0573415E
	MASHHAD (MSD) 361352N 0593902E		MASHHAD (MSD) 361352N 0593902E
B412	HALAIFA (HLF) 262603N 0391609E	UB412	HALAIFA (HLF) 262603N 0391609E
	RABIGH (RBG) 224731N 0390550E		RABIGH (RBG) 224731N 0390550E
	[KING ABDULAZIZ] (JDW) 214244N 0390723E		[KING ABDULAZIZ] (JDW) 214244N 0390723E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
B413	LADEN 185342.7N 0380506.1E	UB413	LADEN 185342.7N 0380506.1E
	DANAK 1608.00N 04129.00E		1608.00N 04129.00E
	HODEIDAH (HDH) 144622N 0425911E		HODEIDAH (HDH) 144622N 0425911E
	TAIZ (TAZ) 134150N 0440819E		TAIZ (TAZ) 134150N 0440819E
	ADEN (KRA) 124952N 0450125E		ADEN (KRA) 124952N 0450125E
	ZIZAN 1151.36N 04539.12E		ZIZAN 1151.36N 04539.12E
	AVIMO 033252.9N 0505239.6E		AVIMO 033252.9N 0505239.6E
B415	DOHA HAMAD INTL (DOH) 251500N 0513635E	UB415	DOHA HAMAD INTL (DOH) 251500N 0513635E
	*Note 8 (DOH-BUNDU)		*Note 8 (DOH-BUNDU)
	KUPSA 250445N 0521151E		KUPSA 250445N 0521151E
	BUNDU 250024N 0522924E		BUNDU 250024N 0522924E
	*Note 7 (BUNDU-ADV)		*Note 7 (BUNDU-ADV)
	LAGMI 245709N 0524148E		LAGMI 245709N 0524148E
	GADVO 2441264N 0534300E		GADVO 2441264N 0534300E
	KUNGU 243754N 05356.274E		KUNGU 243754N 05356.274E
	ABU DHABI		ABU DHABI
	ADV 242508N 0544024E		ADV 242508N 0544024E
B416	KUWAIT (KUA) 291306N 0475803E	UB416	KUWAIT (KUA) 291306N 0475803E
	AMBIK 283222N 0492025E		AMBIK 283222N 0492025E
	*Note 8 (AMBIK-KUVER)		*Note 8 (AMBIK-KUVER)
	TESSO 282852N0492723E		TESSO 282852N0492723E
	GEVAL 282101N 0494300E		GEVAL 282101N 0494300E
	GOGMA 281421N 0495612E		GOGMA 281421N 0495612E
	KUVER 280924N 0500600E		KUVER 280924N 0500600E
	IMDAT 274100N 0511100E		IMDAT 274100N 0511100E
	ORSAR 260430N 0535730E		ORSAR 260430N 0535730E
	PEBAT 255153N 0542357E		PEBAT 255153N 0542357E
	DESDI 253603N 0544230E		DESDI 253603N 0544230E
B417	MAHSHAHR (MAH) 303323N 0490858E	UB417	MAHSHAHR (MAH) 303323N 0490858E
	TULAX 2938 53N 04903 01E		TULAX 2938 53N 04903 01E
	DESLU 2928.00N 0490150.8E		DESLU 2928.00N 0490150.8E
	ALVIX 2919.318N04824.12E		ALVIX 2919.318N04824.12E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E
	*See Note 3		*See Note 3
	HAFR AL BATIN (HFR) 281950N 0460746E		HAFR AL BATIN (HFR) 281950N 0460746E
	KING SAUD AB (KMC) 275250N 0453320E		KING SAUD AB (KMC) 275250N 0453320E
	GASSIM (GAS) 261753N 0434647E		GASSIM (GAS) 261753N 0434647E
	BIR DARB (BDB) 241951N 0414928E		BIR DARB (BDB) 241951N 0414928E
	ASVIV 235458N 0412321E		ASVIV 235458N 0412321E
	~~TAGNA 231652N 0403851E~~		~~TAGNA 231652N 0403851E~~
	KING ABDULAZIZ (JDW) 214244N 0390723E		KING ABDULAZIZ (JDW) 214244N 0390723E
B419	DHAHRAN (DHA) 261538N 0500824E	UB419	DHAHRAN (DHA) 261538N 0500824E
	* Note 8 (DHA-RAMSI)		* Note 8 (DHA-RAMSI)
	KING FAHD (KFA) 262153N 0494910E		KING FAHD (KFA) 262153N 0494910E
	* Note 7 (KFA-RAMSI)		* Note 7 (KFA-RAMSI)
	METLA 265645N 0500432E		METLA 265645N 0500432E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
B424	ITOLI 152825N 0450927E	UB424	ITOLI 152825N 0450927E
	SABEL 185158~~200~~N 0520339.7E		SABEL 185158~~200~~N 0520339.7E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	OTISA 201000N 0554556E		OTISA 201000N 0554556E
	GISKA 213503N 0574014E		GISKA 213503N 0574014E
B441	MASHHAD (MSD) 361352N 0593901E	UB441	MASHHAD (MSD) 361352N 0593901E
	OTRUZ 363108N 0610956E		OTRUZ 363108N 0610956E
	MARAD 363730.6N 06127.48E		MARAD 363730.6N 06127.48E
B451	DEHNAMAK (DHN) 351514N 0524313E	UB451	DEHNAMAK (DHN) 351514N 0524313E
	BOJNORD (BRD) 372943N 0571923E		BOJNORD (BRD) 372943N 0571923E
	DOLOS 375006N 0580200E		DOLOS 375006N 0580200E
	(ASHGABAT) (ASB) 380011N 0582008E		(ASHGABAT) (ASB) 380011N 0582008E
B457	NARMI 261802N 0501939E	UB457	NARMI 261802N 0501939E
	BAHRAIN (BAH) 261551N 0503855E		BAHRAIN (BAH) 261551N 0503855E
	DENVO 260452N 0510509E		DENVO 260452N 0510509E
	PATOM 255822N 0511836E		PATOM 255822N 0511836E
	EMISA 254658N 0514206E		EMISA 254658N 0514206E
B505	LALDO 251806N 0563600E *		
	Note 7/8 (OO)		
	NADSO 244957N 0574926E		
	ITLOB 244325N 0590701E		
	EGTAL 2434 58N 06037 24E		
	APELO 243455.9N 0612000E		
	PASNI (PI) 251717.3N 0632055.9E		
B524	NADSO 244957N 0574926E		
	* Note 7		
	DAMUM 243236N 0591307E		
	VEKAN 241235N 0604454E		
	ALPOR 240442N 0612000E		
B526	(ASMARA) (ASM) 151704N 0385403E	UB526	(ASMARA) (ASM) 151704N 0385403E
	HODEIDAH (HDH) 144622N 0425911E		HODEIDAH (HDH) 144622N 0425911E
	MUKALLA (RIN) 144015N 0492329E		MUKALLA (RIN) 144015N 0492329E
	RIGAM 143932N 0530414E		RIGAM 143932N 0530414E
B535	(DJIBOUTI) (DTI) 113255N 0430537E	UB535	(DJIBOUTI) (DTI) 113255N 0430537E
	ADEN (KRA) 124952N 0450125E		ADEN (KRA) 124952N 0450125E
	MUKALLA (RIN) 144015N 0492329E		MUKALLA (RIN) 144015N 0492329E
	KAPET 1633 22N 0530614E		KAPET 1633 22N 0530614E
	SALALAH (SLL) 170259N 0540657E		SALALAH (SLL) 170259N 0540657E
	ASTUN 180832N0551040E		ASTUN 180832N0551040E
B538	ALEPPO (ALE) 361047N 0371234E	UB538	ALEPPO (ALE) 361047N 0371234E
	KARIATAIN (KTN) 341248N 0371551E		KARIATAIN (KTN) 341248N 0371551E
B540	GERAR 240600N 0573616		
	PASOV 243841N 0565037E		
	KUPMA 245148N 0562648E		
	BUBIN 245742N 0560642E		

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
B544	~~(~~GAZIANTEP~~)~~ (GAZ) 365705N 0372823E	UB544	~~(~~GAZIANTEP~~)~~ (GAZ) 365705N 0372823E
	ALEPPO (ALE) 361047N 0371234E		ALEPPO (ALE) 361047N 0371234E
	TANF (TAN) 332857N 0383915E		TANF (TAN) 332857N 0383915E
	NAMBO 331826N0383939E		NAMBO 331826N0383939E
	SODAR 315532N0384317E		SODAR 315532N0384317E
	TURAIF (TRF) 314136N 0384405E		TURAIF (TRF) 314136N 0384405E
	AL SHIGAR (ASH) 300722N 0384753E		AL SHIGAR (ASH) 300722N 0384753E
	HALAIFA (HLF) 262603N 0391609E		HALAIFA (HLF) 262603N 0391609E
	MADINAH (PMA) 243251N 0394219E		MADINAH (PMA) 243251N 0394219E
	RABIGH (RBG) 224731N 0390550E		RABIGH (RBG) 224731N 0390550E
	KING ABDULAZIZ (JDW) 214244N 0390723E		KING ABDULAZIZ (JDW) 214244N 0390723E
	QUNFIDAH (QUN) 192211N 0410429E		QUNFIDAH (QUN) 192211N 0410429E
	ABHA (ABH) 181431N 0423925E		ABHA (ABH) 181431N 0423925E
	NOBSU 171554N 0431318E		NOBSU 171554N 0431318E
	ADEN (KRA) 124952N 0450125E		ADEN (KRA) 124952N 0450125E
B549	THAMUD 171700N 0495500E	UB549	THAMUD 171700N 0495500E
	ITELI 171310N 0502605E		ITELI 171310N 0502605E
	GOGRI 170752N 0510857E		GOGRI 170752N 0510857E
	TONRO 165850N 0522235E		TONRO 165850N 0522235E
	PUTRA 165432N 0525631E		PUTRA 165432N 0525631E
	LADAR 165324N 0534655E		LADAR 165324N 0534655E
	MUTVA 165325N 0543201E		MUTVA 165325N 0543201E
	KIVEL 165306N 0553633E		KIVEL 165306N 0553633E
G183	~~(~~KAROL 3252~~.~~00N 03229~~.~~00E~~)~~		
	PASOS 311300N 0330600E		
	EL ARISH (ARH) 310423N 0334955E		
	TABA (TBA) 293624N 0344751E		
G202	~~(~~VELOX 3349~~.~~00N 03405~~.~~00E~~)~~	UG202	~~(~~VELOX 3349~~.~~00N 03405~~.~~00E~~)~~
	~~SILKO 3347.9N 03435.0E~~ ELIKA 334455N 0343500E		~~SILKO 3347.9N 03435.0E~~ ELIKA 334455N 0343500E
	K~~H~~ALDE~~H~~ (KAD) 334827N 0352910E		K~~H~~ALDE~~H~~ (KAD) 334827N 0352910E
	* Note 4 (OS)		* Note 4 (OS)
	DAKWE 3338~~.~~957N 0355459~~5.0E~~		DAKWE 3338~~.~~957N 0355459~~5.0E~~
	DAMASCUS (DAM) 332154N 0362807E		DAMASCUS (DAM) 332154N 0362807E
	TANF (TAN) 332857N 0383915E		TANF (TAN) 332857N 0383915E
	MODIK 332806~~.1~~N 03901~~.~~00E		MODIK 332806~~.1~~N 03901~~.~~00E
	RAPLU 3323~~.~~00N 0414530~~.5~~E		RAPLU 3323~~.~~00N 0414530~~.5~~E
	PUSTO 3321~~.~~00N 04245~~.~~00E		PUSTO 3321~~.~~00N 04245~~.~~00E
	DELMI 331918~~.31~~N 0431328~~7.59~~E		DELMI 331918~~.31~~N 0431328~~7.59~~E
	LAGLO 331538N 0441457E		LAGLO 331538N 0441457E
	ITOVA 331950~~.9~~1N 044412~~8.97~~E		ITOVA 331950~~.9~~1N 044412~~8.97~~E
	RAGET 3330~~.~~48N 04553~~.~~48E		RAGET 3330~~.~~48N 04553~~.~~48E
	ILAM (ILM) 333442N 0462455E		ILAM (ILM) 333442N 0462455E
	KHORAM ABAD (KRD) 332603N 0481731E		KHORAM ABAD (KRD) 332603N 0481731E
	ESFAHAN (ISN) 334449N 0514941E		ESFAHAN (ISN) 334449N 0514941E
	NODLA 325330N 0545850E		NODLA 325330N 0545850E
	BIRJAND (BJD) 325821N 0591200E		BIRJAND (BJD) 325821N 0591200E
	~~(~~KAMAR 3239~~.~~00N 06044~~.~~00E~~)~~		~~(~~KAMAR 3239~~.~~00N 06044~~.~~00E~~)~~

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
G208	~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E		
	KEBUD 273552~~.9~~N 06250~~.2~~4E		
	ZAHEDAN (ZDN) 292912N 0605406E		
	DARBAND (DAR) 314659N 0565940E		
	NODLA 325330N 0545850E		
	ANARAK (ANK) 333215N 0534347E		
	TEHRAN (TRN) 354149N 0511702E		
	ZANJAN (ZAJ) 364647N 0482112E		
	UROMIYEH (UMH) 374001N 0450343E		
	ALRAM 37423~~.~~0N 0443736~~.0~~E		
	~~(SIRT)~~		
G216	LAKLU 232235N 0570401E	UG216	LAKLU 232235N 0570401E
	*Note 7 ~~(OO/OP)~~ (MCT-KC)		*Note 7 ~~(OO/OP)~~ (MCT-KC)
	MUSCAT (MCT) 233528N 0581536E		MUSCAT (MCT) 233528N 0581536E
	ITILA 234055N 0584817E		ITILA 234055N 0584817E
	SODEB 234747N 0593023E		SODEB 234747N 0593023E
	DORAB 235033N 0594746E		DORAB 235033N 0594746E
	ALPOR 240441N 0612000E		ALPOR 240441N 0612000E
	LATEM 243144N 0644944E		LATEM 243144N 0644944E
	KARACHI (KC) 245443N 0671054E		KARACHI (KC) 245443N 0671054E
G452	SHIRAZ (SYZ) 293224N 0523520E	UG452	SHIRAZ (SYZ) 293224N 0523520E
	KERMAN (KER) 301706N 0465637E		KERMAN (KER) 301706N 0465637E
	ZAHEDAN (ZDN) 292912N 0605406E		ZAHEDAN (ZDN) 292912N 0605406E
	DERBO 292542~~.7~~N 06117~~.~~01E		DERBO 292542~~.7~~N 06117~~.~~01E
	~~(~~RAHIM YAR KHAN~~)~~ (RK) 282156N 0701623E		~~(~~RAHIM YAR KHAN~~)~~ (RK) 282156N 0701623E
G462	ROVOS 241825N 0552143E	UG462	ROVOS 241825N 0552143E
	Note 7~~-to~~ (ROVOS-ITROK)		Note 7~~-to~~ (ROVOS-ITROK)
	NIBAX 245748N 0541437E		NIBAX 245748N 0541437E
	RAGTA 250850N 0535840E		RAGTA 250850N 0535840E
	ALSOK 252607N 0533904E		ALSOK 252607N 0533904E
	ITROK 253557N 0532751E		ITROK 253557N 0532751E
	TUMAK 255031N 0531108E		TUMAK 255031N 0531108E
G650	KING ABDULAZIZ (JDW) 214244N 0390723E	UG650	KING ABDULAZIZ (JDW) 214244N 0390723E
	RASKA 190732N 0390329E		RASKA 190732N 0390329E
	ASMARA (ASM) 151704N 0385403E		ASMARA (ASM) 151704N 0385403E
G652	ADEN (KRA) 124952N 0450125E	UG652	ADEN (KRA) 124952N 0450125E
	IMPOS 183136N 0511848E		IMPOS 183136N 0511848E
	DUDRI 190000N 0520000E		DUDRI 190000N 0520000E
	*Note 8 (DUDRI-TOKRA)		*Note 8 (DUDRI-TOKRA)
	TOKRA 220925N 0553350E		TOKRA 220925N 0553350E
	TAPDO 242400N 0612000E		TAPDO 242400N 0612000E
G660	~~(~~PORT SUDAN~~)~~ (PSD) 192404N 0371430E	UG660	~~(~~PORT SUDAN~~)~~ (PSD) 192404N 0371430E
	BOGUM 2006~~.~~36N 03803~~.~~00E		BOGUM 2006~~.~~36N 03803~~.~~00E
	MIPOL 203322N 0382145E		MIPOL 203322N 0382145E
	KING ABDULAZIZ (JDW) 214244N 0390723E		KING ABDULAZIZ (JDW) 214244N 0390723E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
G662	BUSRA 322000N 0363700E	UG662	BUSRA 322000N 0363700E
	KUPRI 320826~~5.87~~N 0364530~~.21~~E		KUPRI 320826~~5.87~~N 0364530~~.21~~E
	ALKOT 313254~~.22~~N 037112~~21.51~~E		ALKOT 313254~~.22~~N 037112~~21.51~~E
	GURIAT (GRY) 312445~~.8~~N 03717~~.1~~2E		GRY 312445~~.8~~N 03717~~.1~~2E
	AL SHIGAR (ASH) 300722N 0384753E		AL SHIGAR (ASH) 300722N 0384753E
	HAIL (HIL) 272530N 0414058E		HAIL (HIL) 272530N 0414058E
	GASSIM (GAS) 261753N 0434647E		GASSIM (GAS) 261753N 0434647E
	KING KHALID (KIA) 245310N 0464534E		KING KHALID (KIA) 245310N 0464534E
G663	KING KHALID (KIA) 245310N 0464534E	UG663	KING KHALID (KIA) 245310N 0464534E
	SILNO 264024N 0475742E		SILNO 264024N 0475742E
	*Note 7 (KIA-KFA)		*Note 7 (KIA-KFA)
	GIBUS 255724N 0472829E		GIBUS 255724N 0472829E
	*Note 8 (GIBUS-ALSER)		*Note 8 (GIBUS-ALSER)
	KING FAHD (KFA) 262153N 0494910E		KING FAHD (KFA) 262153N 0494910E
	ULADA 264526N 0501623E		ULADA 264526N 0501623E
	LOTOR 264854N 0502200E		LOTOR 264854N 0502200E
	RAKAK 265221N 0502618E		RAKAK 265221N 0502618E
	TOLMO 265504N 0502927E		TOLMO 265504N 0502927E
	KOBOK 265839N 0503349E		KOBOK 265839N 0503349E
	ITIXA 270141N 0503735E		ITIXA 270141N 0503735E
	GETAL 270409N 0504039E		GETAL 270409N 0504039E
	VEDOR 270855N 0504630E		VEDOR 270855N 0504630E
	ALSER 271100N 0504900E		ALSER 271100N 0504900E
	SHIRAZ (SYZ) 293224N 0523520E		SHIRAZ (SYZ) 293224N 0523520E
	YAZD (YZD) 315352N 0541658E		YAZD (YZD) 315352N 0541658E
	NODLA 325318N 0545848E		NODLA 325318N 0545848E
	TABAS (TBS) 334021N 0565331E		TABAS (TBS) 334021N 0565331E
	MASHAD (MSD) 361352N 0593901E		MASHAD (MSD) 361352N 0593901E
G665	ARAR (AAR) 305429N 0410832E	UG665	ARAR (AAR) 305429N 0410832E
	ABADAN (ABD) 302216N 0481342E		ABADAN (ABD) 302216N 0481342E
	SHIRAZ (SYZ) 293224N 0523520E		SHIRAZ (SYZ) 293224N 0523520E
	* Note 5 (OI)		* Note 5 (OI)
	NABOX~~D~~ 281630~~.1~~N 0582501~~.8~~E		NABOX~~D~~ 281630~~.1~~N 0582501~~.8~~E
	LOXOL 274556~~.9~~N 0604538~~.6~~E		LOXOL 274556~~.9~~N 0604538~~.6~~E
	ASVIB 265724N 0631812E		ASVIB 265724N 0631812E
	~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E		~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E
G666	SHIRAZ (SYZ) 293224N 0523520E	UG666	SHIRAZ (SYZ) 293224N 0523520E
	LAMERD (LAM) 272222N 0531102E		LAMERD (LAM) 272222N 0531102E
	LAVAN (LVA) 264843N 0532121E		LAVAN (LVA) 264843N 0532121E
	* Note 7 (OI)		* Note 7 (OI)
	ORSAR 260430~~.5~~N 0535730~~.5~~E		ORSAR 260430~~.5~~N 0535730~~.5~~E
	ITITA 254410N 0541839E		ITITA 254410N 0541839E
	SINBI 250842N 0543741E		SINBI 250842N 0543741E
	ABU DHABI (ADV) 242508N 0544024E		ABU DHABI (ADV) 242508N 0544024E
G667	PUTMA 3748~~.~~00N 05157~~.~~36E	UG667	PUTMA 3748~~.~~00N 05157~~.~~36E
	NOSHAHR (NSR) 363935N 0512805E		NOSHAHR (NSR) 363935N 0512805E
	TEHRAN (TRN) 354149N 0511702E		TEHRAN (TRN) 354149N 0511702E
	SAVEH (SAV) 350107N 0502217E		SAVEH (SAV) 350107N 0502217E
	~~MIS~~ ARAK (ARK) 340814N 0495114E		~~MIS~~ ARAK (ARK) 340814N 0495114E
	AHWAZ (AWZ) 312015N 0484552E		AHWAZ (AWZ) 312015N 0484552E

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	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	ABADAN (ABD) 302216N 0481342E		ABADAN (ABD) 302216N 0481342E
	ALSAN 295707N 0481456E		ALSAN 295707N 0481456E
	~~F~~RALKA 292611N 0481819E		~~F~~RALKA 292611N 0481819E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E
	WAFRA (KFR) 283715N 0475729E		WAFRA (KFR) 283715N 0475729E
	*Note 7 (KFR-MGA)		*Note 7 (KFR-MGA)
	COPPI 275033N 0474359E		COPPI 275033N 0474359E
	*Note 8 (COPPI-AVOBO)		*Note 8 (COPPI-AVOBO)
	EMENI 273232N 0473849E		EMENI 273232N 0473849E
	MUSKO 272640N 0473708E		MUSKO 272640N 0473708E
	ALSAT 270611N 0473118E		ALSAT 270611N 0473118E
	LUGAL 264533N 0472528E		LUGAL 264533N 0472528E
	MAGALA (MGA) 261720N 0471225E		MAGALA (MGA) 261720N 0471225E
	AVOBO 260334N 0470719E		AVOBO 260334N 0470719E
	KING KHALID (KIA) 245310N 0464534E		KING KHALID (KIA) 245310N 0464534E
	WADI ALDAWASIR (WDR) 203019N 0451219E		WADI ALDAWASIR (WDR) 203019N 0451219E
	NEJRAN (NEJ) 173625N 0442456E		NEJRAN (NEJ) 173625N 0442456E
	SANA~~'~~A (SAA) 153000N 0441311E		SANA~~'~~A (SAA) 153000N 0441311E
	PARIM 123142~~.7~~N 0432712E		PARIM 123142~~.7~~N 0432712E
	DJIBOUTI (DTI) 113255N 0430537E		DJIBOUTI (DTI) 113255N 0430537E
G669	AL SHIGAR (ASH) 300722N 0384753E	UG669	AL SHIGAR (ASH) 300722N 0384753E
	AL JOU (AJF) 294722N 0400418E		AL JOU (AJF) 294722N 0400418E
	RAFHA (RAF) 293713N 0432953E		RAFHA (RAF) 293713N 0432953E
	NISER 293030~~.5~~N 0441825~~.4~~E		NISER 293030~~.5~~N 0441825~~.4~~E
	*Note 3 (OK)		*Note 3 (OK)
	SOLAT 290942N 0463810E		SOLAT 290942N 0463810E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E
	SESRA 290803N 0485453E		SESRA 290803N 0485453E
	NANPI 290457N 0493157E		NANPI 290457N 0493157E
	KHARK(KHG) 291550N 0501901E		KHARK(KHG) 291550N 0501901E
	SHIRAZ (SYZ) 293224N 0523520E		SHIRAZ (SYZ) 293224N 0523520E
G670	RASHT (RST) 371935N 0493657E	UG670	RASHT (RST) 371935N 0493657E
	LALDA 381615~~7.1~~N 0494511~~3.0~~E		LALDA 3817.1N 04943.0E
	~~(BAKU) GYD~~		~~(BAKU) GYD~~
G674	MADINAH (PMA) 243251N 0394219E	UG674	MADINAH (PMA) 243251N 0394219E
	GASSIM (GAS) 261753~~.9~~N 0434647~~.8~~E		GASSIM (GAS) 261753~~.9~~N 0434647~~.8~~E
	BOPAN (BPN) 270314N 0452643E		BOPAN (BPN) 270314N 0452643E
G775	~~(~~ASHGHABAT~~)~~ (ASB) 380011N 0582008E	UG775	~~(~~ASHGHABAT~~)~~ (ASB) 380011N 0582008E
	ORPAB 374200N 0583430~~.5~~E		ORPAB 374200N 0583430~~.5~~E
	MASHHAD (MSD) 361352N 0593901E		MASHHAD (MSD) 361352N 0593901E
	[BIRJAND] (BJD) 325821N 0591200E		[BIRJAND] (BJD) 325821N 0591200E
	* Note 1		* Note 1
	ZAHEDAN (ZDN) 292912N 0605406E		ZAHEDAN (ZDN) 292912N 0605406E
G781	~~(VAN)~~	UG781	~~(VAN)~~
	BONAM 380256~~.9~~N 0441759~~8.0~~E		BONAM 380256~~.9~~N 0441759~~8.0~~E
	UROMIYEH (UMH) 374001N 0450343E		UROMIYEH (UMH) 374001N 0450343E
	ROVON 371601N 0455322E		ROVON 371601N 0455322E
	ZANJAN (ZAJ) 364647N 0482112E		ZANJAN (ZAJ) 364647N 0482112E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	NOSHAHR(NSR) 363935N 0512805E		NOSHAHR(NSR) 363935N 0512805E
G782	KING ABDULAZIZ (JDW) 214244N 0390723E	UG782	KING ABDULAZIZ (JDW) 214244N 0390723E
	DAFINAH (DFN) 231658N 0414310E		DAFINAH (DFN) 231658N 0414310E
	RAGA~~L~~HBA (RGB) 235533N 0443547E		RAGA~~L~~HBA (RGB) 235533N 0443547E
	KING KHALID (KIA) 245310N 0464534E		KING KHALID (KIA) 245310N 0464534E
	MAGALA (MGA) 261720N 0471225E		MAGALA (MGA) 261720N 0471225E
	*Note 7 (MGA-KFR)		*Note 7 (MGA-KFR)
	LUGAL 264533N 0472528E		LUGAL 264533N 0472528E
	WAFRA (KFR) 283715N 0475729E		WAFRA (KFR) 283715N 0475729E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E
G783	PURDA 210805N 0510329E	UG783	PURDA 210805N 0510329E
	TANSU 224136N 0542828E		TANSU 224136N 0542828E
	RIGIL 230146N 0551430E		RIGIL 230146N 0551430E
	ELUDA 235107N 0552905E		ELUDA 235107N 0552905E
	ALN 241535N 0553623E		ALN 241535N 0553623E
	GIDIS 243600N 0555600E		GIDIS 243600N 0555600E
	BUBIN 245742N 0560642E		BUBIN 245742N 0560642E
G792	~~BODKA 3939.0N 05130.0E~~	UG792	~~BODKA 3939.0N 05130.0E~~
	GIRUN 3806~~.~~12N 0562018~~.~~3E		GIRUN 3806~~.~~12N 0562018~~.~~3E
	BOJNORD (BRD) 372943N 0571923E		BOJNORD (BRD) 372943N 0571923E
	MASHAD (MSD) 361352N 0593901E		MASHAD (MSD) 361352N 0593901E
G795	~~F~~RALKA 292611N 0481819E	UG795	~~F~~RALKA 292611N 0481819E
	TASMI 300120N 0475505E		TASMI 300120N 0475505E
	BSR 303132~~.4~~N 0472112E		BSR 303132~~.4~~N 0472112E
	RAFHA (RAF) 293713N 0432953E		RAFHA (RAF) 293713N 0432953E
G799	MADINAH (PMA) 243251N 0394219E	UG799	MADINAH (PMA) 243251N 0394219E
	DAFINAH (DFN) 231658N 0414310E		DAFINAH (DFN) 231658N 0414310E
		UL124	~~(VAN)~~
			BONAM 380256~~.9~~N 0441759~~8.0~~E
			URUMIYEH (UMH) 374001N 0450343E
			ZANJAN (ZAJ) 364647N 0482112E
			SAVEH (SAV) 350107N 0502217E
			DISEL 332904N 0510118E
			YAZD (YZD) ~~(R654)~~ 315352N 0541658E
			KERMAN (KER) 301706N 0465637E
			KEBUD 273558N 0625028E
			~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E
		UL125	DULAV 385700N 0453800~~7.9~~E
			TABRIZ (TBZ) 380853N 0461247E
			ZANJAN (ZAJ) 364647N 0482112E
			PAROT 360940N 0495756E
			TEHRAN (TRN) 354149N 0511702E
			ANARAK (ANK) 333215N 0534347E
			DARBAND (DAR) 314659N 0565940E
			ZAHEDAN (ZDN) 292912N 0605406E
			DANIB 290706N 0611717E
			KEBUD 273558N 0625028E

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	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
L126	PUSTO 3321~~.~~00N 04245~~.~~00E	UL126	PUSTO 3321~~.~~00N 04245~~.~~00E
	SOGUM 3412~~.~~12N 0435454~~.~~9E		SOGUM 3412~~.~~12N 0435454~~.~~9E
	SIGNI 340006~~.~~1N 0444200~~.~~2E		SIGNI 340006~~.~~1N 0444200~~.~~2E
	MIGMI 334554~~.~~9N 0452724~~.~~4E		MIGMI 334554~~.~~9N 0452724~~.~~4E
	ILAM (ILM) 333442N 0462455E		ILAM (ILM) 333442N 0462455E
L200	LOXER 320256N 362500E	UL200	LOXER 320256N 362500E
	LUDAN 320256N 0363713 E		LUDAN 320256N 0363713 E
	KUPRI 320825N 0364530 E		KUPRI 320825N 0364530 E
	ASLON 321211N 0365111E		ASLON 321211N 0365111E
	NADEK 322728N 0371429E		NADEK 322728N 0371429E
	DAXEN 324444N 0374105E		DAXEN 324444N 0374105E
	ORNAL 324755N0375153E		ORNAL 324755N0375153E
	KAREM 325110N 0380324 E		KAREM 325110N 0380324 E
	KUMLO 325811N 0382807 E		KUMLO 325811N 0382807 E
	DAPUK 330139N 0384026 E		DAPUK 330139N 0384026 E
	PASIP 330600N 0385600E		PASIP 330600N 0385600E
	GIBUX 330715N 0411625E		GIBUX 330715N 0411625E
	SIGBI 330200N 0422000E		SIGBI 330200N 0422000E
	SILBO 325900N 0432900E		SILBO 325900N 0432900E
L223	SIRRI (SIR) 255452N 0543206E	UL223	DASIS 385431~~0~~N 044122930E
	* Note 7 (~~OI OM OO~~ SIR-LAKLU)		UROMIYEH (UMH) 374001N 0450343E
	NALTA 250242N 0553955E		SANANDAJ (SNJ) 351420N 0470028E
	TARDI 243418N 0560915E		KHORAM ABAD (KRD) 332603N 0481731E
	LAKLU 232235N 05704 01E		MESVI 312920N 0495701E
			LAMERD (LAM) 272222N 0531102E
			SIRRI (SIR) 255452N 0543206E
			* Note 7 (~~OI OM OO~~ SIR-LAKLU)
			NALTA 250242N 0553955E
			TARDI 243418N 0560915E
			LAKLU 232235N 05704 01E
L300	LUXOR (LXR) 254458N 0324607E	UL300	LUXOR (LXR) 254458N 0324607E
	MEMPO 252518N 0335457E		MEMPO 252518N 0335457E
	GIBAL 243713~~.2~~N0363443~~.7~~E		GIBAL 243713~~.2~~N0363443~~.7~~E
	YENBO (YEN) 2408~~.~~58N 0380219~~3.9~~E		YENBO (YEN) 2408~~.~~58N 0380219~~3.9~~E
L301	RASKI 230330N 0635200E	UL301	AURANGABAD (AAU) 19514053N 0752419~~338.6~~E
	VAXIM 231900N 0611100E		NOBAT 210903~~2.5~~N 0688~~8~~0000~~.1~~E
	RAGMA 232301N 0603846E		LADOT 220502N 0660001
			RASKI 230330N 0635200E
			VAXIM 231900N 0611100E
			RAGMA 232301N 0603846E
L305	DOHA HAMAD INTL (DOH) 251500N 0513635E	UL305	DOHA HAMAD INTL (DOH) 251500N 0513635E
	*Note 7 (DOH-ITITA)		*Note 7 (DOH-ITITA)
	*Note 8 (DOH-ASTOG)		*Note 8 (DOH-ASTOG)
	ORMAL 252304N 0522201E		ORMAL 252304N 0522201E
	ENANO 252348N 0522559E		ENANO 252348N 0522559E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	ALSEM 252703N 0524322E		ALSEM 252703N 0524322E
	ASTOG 252822N 0525025E		ASTOG 252822N 0525025E
	ITITA 54410N 0541839E		ITITA 254410N 0541839E
L306	TOKRA 220925N 0553350E	UL306	TOKRA 220925N 0553350E
	* Note- 7 (OO)		* Note- 7 (OO)
	DEMKI 224941N 0562308E		DEMKI 224941N 0562308E
	LAKLU 232235N 0570401E		LAKLU 232235N 0570401E
L308	EGNOV 270301N 0474713E	UL308	EGNOV 270301N 0474713E
	*Note 7 (EGNOV- SERSA)		*Note 7 (EGNOV- SERSA)
	*Note 8 (EGNOV- OBNET)		*Note 8 (EGNOV- OBNET)
	JUBAIL (JBL) 270220N 04924267E		JUBAIL (JBL) 270220N 04924267E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	GASSI 270257.9N 0502229.5E		GASSI 270257.9N 0502229.5E
	TOSDA 270005N 0505629E		TOSDA 270005N 0505629E
	TORBO 265223N 0511024E		TORBO 265223N 0511024E
	SOGAN 263915N 0515408E		SOGAN 263915N 0515408E
	DEGSO 261054N 0531946E		DEGSO 261054N 0531946E
	OBNET 260032N 0534514E		OBNET 260032N 0534514E
	ITITA 254410N 0541839E		ITITA 254410N 0541839E
	DESDI 253603N 0544230E		DESDI 253603N 0544230E
	RAGOL 252743N 0550739E		RAGOL 252743N 0550739E
	SERSA 251945N 0553118E		SERSA 251945N 0553118E
	TUKLA 251936N 0554010E		TUKLA 251936N 0554010E
	NADNI 251915N 0555658E		NADNI 251915N 0555658E
	LALDO 251806N 0563600E		LALDO 251806N 0563600E
	IMLOT 251708.1N 0570804.1E		IMLOT 251708.1N 0570804.1E
	KATUS 251600 5.9N 05747.00E		KATUS 251600 5.9N 05747.00E
	~~DIVAB 2510.7N 05952.1E~~		~~DIVAB 2510.7N 05952.1E~~
	~~EGPIC 2508.6N 06029.5E~~		~~EGPIC 2508.6N 06029.5E~~
	~~(~~JIWANI~~)~~ (JI) 250350N 0614744E		~~(~~JIWANI~~)~~ (JI) 250350N 0614744E
	LATEM 243144.7N 0644944.7E		LATEM 243144.7N 0644944.7E
L310	BOXAK 244536N 0540032E	UL310	BOXAK 244536N 0540032E
	*Note 7 & 8 to LALDO		*Note 7 & 8 to LALDO
	SIGBO 245526.4N 0545653.9E		SIGBO 245526.4N 0545653.9E
	NALTA 250242.7N 0553955.8E		NALTA 250242.7N 0553955.8E
	AVAMI 250554.9N 0555647.8E		AVAMI 250554.9N 0555647.8E
	LALDO 251806N 0563600E		LALDO 251806N 0563600E
L314	NABAN 163124N 0430148E	UL314	NABAN 163124N 0430148E
	GOMRI 131816N 0443224E		GOMRI 131816N 0443224E
L315	CAIRO(CVO) 300532N 0312318E	UL315	CAIRO(CVO) 300532N 0312318E
	HURGHADA (HGD) 271040N 0334747E		HURGHADA (HGD) 271040N 0334747E
	GIBAL 243713.2N0363443.7E		GIBAL 243713.2N0363443.7E
L319	BAHRAIN (BAH) 261551N 0503855E	UL319	BAHRAIN (BAH) 261551N 0503855E
	DAVRI 264936N 0505731E		DAVRI 264936N 0505731E
	OBTAR 265934N 0510309E		OBTAR 265934N 0510309E
L321	KATAB 292501N 0290506E	UL321	KATAB 292501N 0290506E
	KUNKI 290726N 0291949E		KUNKI 290726N 0291949E

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	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	KUNAK 252745.7N 03041.12E		KUNAK 252745.7N 03041.12E
	LUGAV 224205N 0313722E		LUGAV 224205N 0313722E
	ABU SIMBEL (SML) 222118N 0313719E		ABU SIMBEL (SML) 222118N 0313719E
		~~UL322~~	~~MUMBAI (BBB) 190511N 0725229E~~
			~~* Note 7&1~~
			~~SUGID 193303.1N 06921.00E~~
			~~BOLIS 203333.5N 06500.02E~~
			~~REXOD 211230.5N 0613830.5E~~
		UL333	DASIS 385431N 0441229E
			TABRIZ (TBZ) 380853N 0461247E
			RASHT (RST) 371935N 0493657E
			GIBAB 353213~~7.0~~N 0543656~~0.9~~E
			~~ALRAS 3511.3N 05541.6E~~
			TASLU 342632N 0574234E
			SOKAM 331316N 0603752E
L417	VUSEB 361637N 0434800E	UL417	VUSEB 361637N 0434800E
	UMESA 351741N 0434307E		UMESA 351741N 0434307E
	MUTAG 343003N 0433834 E		MUTAG 343003N 0433834 E
	LAGLO 33~~5~~1538.~~6~~ 0441457.~~0~~E		LAGLO 33~~5~~1538.~~6~~ 0441457.~~0~~E
	ELOSI 330800N 0441800E		ELOSI 330800N 0441800E
	LOVEK 32220~~8.1~~N 04440.01E		LOVEK 32220~~8.1~~N 04440.01E
	ELIBA 320915N 0444645E		ELIBA 320915N 0444645E
	NADOX 310505N 0451851E		NADOX 310505N 0451851E
		UL425	KING ABDULAZIZ (JDW) 214244N 0390723E
			TONBO 205502N 0394911E
			AL BAHA (BHA) 201733N 0413745E
			BISHA (BSH) 195840N 0423728E
			WADI ALDAWASIR (WDR) 203019N 0451219E
			EGREN 202236N 0464422E
			ASTIN 200410N 0495320E
			DIRAS 195235N 0513704E
			GOBRO 193622N 0534741E
			NOVNO 193313N 0535858E
			ITUVO 190315N 0554328E
			DEDSO 185811N 0560041E
			BOVOS 182230N 0575844E
			ASPUX 174406N 0600006E
			~~(~~TRIVANDRUM~~)~~ (TVM) 082831N 0765531E
L430	VAXIM 231900N 0611100E	UL430	VAXIM 231900N 0611100E
	MESPO 244936N 0593411E		MESPO 244936N 0593411E
	MELMI 264625N 0572300E		MELMI 264625N 0572300E
	TAVNO 281112N 0563252E		TAVNO 281112N 0563252E
	ASMET 284827N 0560806E		ASMET 284827N 0560806E
	SIRJAN (SRJ) 293323.~~4~~N 0553923.~~6~~E		SIRJAN (SRJ) 293323.~~4~~N 0553923.~~6~~E
L438	LONOS 283027N 0491713E	UL438	LONOS 283027N 0491713E
	LOPOL 281849N 0492845E		LOPOL 281849N 0492845E
	ATBAG 280842N 0493844E		ATBAG 280842N 0493844E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	GODRI 280256N 0494307E		GODRI 280256N 0494307E
	RAKSO 275326N 0495032E		RAKSO 275326N 0495032E
	GOGRA 274918N 0495344E		GOGRA 274918N 0495344E
	OBNAX 272650N 0501103E		OBNAX 272650N 0501103E
	DEKTA 271605N 0501946E		DEKTA 271605N 0501946E
	VELOG 270215N 0503055E		VELOG 270215N 0503055E
	KOBOK 265839N 0503349E		KOBOK 265839N 0503349E
	MOGAS 264759N 0503909E		MOGAS 264759N 0503909E
	TOSTA 262746N 0504912E		TOSTA 262746N 0504912E
	ASTAD 261811N 0505646E		ASTAD 261811N 0505646E
L440	KANIP 241040.~~7~~N 05520.7E	UL440	KANIP 241040.~~7~~N 05520.7E
	*Note 7		*Note 7
	RETAS 235754N 0553423E		RETAS 235754N 0553423E
L443	RABAP 283625N 0492722	UL443	RABAP 283625N 0492722
	TESSO 282852N 0492723E		TESSO 282852N 0492723E
	LOPOL 281849N 0492845E		LOPOL 281849N 0492845E
	ENAVI 275552N 0493151E		ENAVI 275552N 0493151E
	GIRSI 274126N 0493310E		GIRSI 274126N 0493310E
	ORDAN 271706N 0495442E		ORDAN 271706N 0495442E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	GASSI 270257N 0502229E		GASSI 270257N 0502229E
L444	KIPOL 230410N 0612903E	UL444	KIPOL 230410N 0612903E
	*Note 7 (OO)		*Note 7 (OO)
	VUSIN 225940N 0605510E		VUSIN 225940N 0605510E
	MIBSA 225400N 0601338E		MIBSA 225400N 0601338E
	KAXEM 225103N 0595243E		KAXEM 225103N 0595243E
	IMDEK 224647N 0592217E		IMDEK 224647N 0592217E
	TOLDA 224008N 0583624E		TOLDA 224008N 0583624E
L513	MURAK 345600~~9.4~~N 036420~~0.1~~E	UL513	MURAK 345600~~9.4~~N 036420~~0.1~~E
	LEBOR 341556.~~9~~N 036345~~9~~5.~~0~~E		LEBOR 341556.~~9~~N 036345~~9~~5.~~0~~E
	DAMASCUS (DAM) 332154N 0362807E		DAMASCUS (DAM) 332154N 0362807E
	* Note 3 (OS)		* Note 3 (OS)
	BUSRA 3220.~~0~~0 N 03637.~~0~~0 E		BUSRA 3220.~~0~~0 N 03637.~~0~~0 E
	QUEEN ALIA (QAA) 314423N 0360926E		QUEEN ALIA (QAA) 314423N 0360926E
	QATRANEH (QTR) 311454N 0360334E		QATRANEH (QTR) 311454N 0360334E
	MUNRA ~~MAZAR~~ 3049~~448.0~~N 036083~~510.0~~E		MUNRA ~~MAZAR~~ 3049~~448.0~~N 036083~~510.0~~E
		UL516	KITAL 2003.~~0~~0N 06018.~~0~~0E
			ELKEL 0149.~~0~~8N 06911.~~0~~0E
			DIEGO GARCIA (~~NDG~~ NKW) 071900S 0722442E
L519	ABU DHABI (ADV)	UL519	ABU DHABI (ADV)
	*Note 7 (OM)		*Note 7 (OM)
	NAMSI 243731.~~5~~N 05456.~~4~~8E		NAMSI 243731.~~5~~N 05456.~~4~~8E
	EMERU 244829N 0550303		EMERU 244829N 0550303
	LUDER 245733.~~5~~N 055051~~1.2~~E		LUDER 245733.~~5~~N 055051~~1.2~~E
		UL550	WAFRA (KFR) 283715N 0475729E
			NIDAP 283850N 0473656E
			BOSID 284227.~~4~~N 046540~~12.6~~E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
			VATIM 2851~~.~~36N 0444443~~.7~~E
			RASMO 285713~~2~~N 0433119~~.3~~E
			ORSAL290235~~.8~~N 0421107~~0.8~~E
			NIMAR 290635~~.6~~N 0395425~~.4~~E
			KITOT 290205~~.1~~N 0345050~~.8~~E
			NUWEIBAA (NWB) 290156N 0344016E
			~~TABA (TBA)~~
			~~EL ARISH (ARH)~~
			KARIK 292733N 0344641E
			TAKSU 293625N 0343623E
			DATOK 293624N 0341400E
			SERMA 312200N 0330834E
			PASOS 321300N 0330600E
			~~(KAROL 3252.0N 03229.0E)~~
L551	ANTAR 334800N 0281600E	UL551	ANTAR 334800N 0281600E
	EL DABA (DBA) 310041N 0282801E		EL DABA (DBA) 310041N 0282801E
L555	TOTOX 215030N 0622230E	UL555	TOTOX 215030N 0622230E
	TUMET 222307N 0595702E		TUMET 222307N 0595702E
	TOLDA 224008N 0583624E		TOLDA 224008N 0583624E
		UL556	EGREN 202236N 0464422E
			NONGA 205048N 0492014E
			PURDA 210805N 0510329E
			Note:- 7 (OO, OB)
			IMDAM 202416N 0550801E
			OTISA 201000N 0554556E
			HAIMA (HAI) 195813N 0561651E
			GIVNO 195011N 0563059E
			KUTVI 184306N 0582642E
		UL560	ARDABIL (ARB) 3818569~~.9~~N 04826054~~.9~~E
			* Note 3&4 (OI)
			SEVAN ~~(SVN)~~ 4032~~.03~~N 0445717~~6.9~~E
L564	DOHA~~/~~ HAMAD INTL	UL564	DOHA~~/~~ HAMAD INTL
	(DOH) 251500N 0513635E		(DOH) 251500N 0513635E
	LADEM 245545N 0513714E		LADEM 245545N 0513714E
	DATRI 244239N 0513407E		DATRI 244239N 0513407E
	DENSI 242519N 0512959E		DENSI 242519N 0512959E
	*Note 8 (DOH-PURDA)		*Note 8 (DOH-PURDA)
	BATHA (BAT) 241257N 0512707E		BATHA (BAT) 241257N 0512707E
	MIGMA 225035N 0512749E		MIGMA 225035N 0512749E
	LOTOS 220000N 0503912E		LOTOS 220000N 0503912E
	ALNUG 213009N 0500453E		ALNUG 213009N 0500453E
	NONGA 205048N 0492012E		NONGA 205048N 0492012E
	DENKU 201123N 0484331E		DENKU 201123N 0484331E
	GERUG 185530N 0473402E		GERUG 185530N 0473402E
	ASKET 181905N 0470113E		ASKET 181905N 0470113E
	PATOG 180241N 0464631E		PATOG 180241N 0464631E
	VUVOD 173941N 0463200E		VUVOD 173941N 0463200E
	TULIS 173033N 0462616E		TULIS 173033N 0462616E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	ULBON 171425N 0461515E		ULBON 171425N 0461515E
	RAGNI 163454N 0454815E		RAGNI 163454N 0454815E
	LOPAD 161651N 0453738E		LOPAD 161651N 0453738E
	ITOLI 152825N 0450927E		ITOLI 152825N 0450927E
	OBNAM 144541N 0444448E		OBNAM 144541N 0444448E
	GEVEL 141229N 0442547E		GEVEL 141229N 0442547E
	NOPVO 135436N 0441536E		NOPVO 135436N 0441536E
	TAZ 134150N 0440819E		TAZ 134150N 0440819E
	PARIM 123142N 0432712E		PARIM 123142N 0432712E
		UL566	ASMAK 162327N 0524634E
			UKNEN 160542N 0522012E
			PURUG 151204N 0510142E
			KUSOL 144009N 0501534E
			NOTBO 142609N 0495530E
			EMABI 141627N 0494139E
			SOKEM 134235N 0485329E
			DATEG 123549N 0471627E
		UL572	~~KAMISHLY (KML)~~
			LESRI 370420.3N 0411349.8E
			KAMISHLY (KML) 370100N 0411106E
			HASSAKEH (HAS) 3629N 04045.3E
			DIER ZZOR (DRZ) 351731N 0400914E
			TANF (TAN) 332857N 0383915E
		UL573	DAFINAH (DFN) 231658N 0414310E
			MADINAH (PMA) 243251N 0394219E
			WEJH (WEJ) 261045N 0362917E
		UL601	BAGLUM (BAG) 04004.12 0324838.6)
			* Note 7 (BAG-KTN)
			ADANA (ADA) 365626.4N 0351237.6E ~~(ADA)~~
			TUNLA 3553.00N 0360200E~~)~~
			KARIATAIN 3412.48N 0371551.9E
L602	TUMAK 255031N 0531108E	UL602	TUMAK 255031N 0531108E
	VEDOM 260109N 0524456E		VEDOM 260109N 0524456E
	VELAK 261307N 0521821E		VELAK 261307N 0521821E
	LABOP 261907N 0520429E		LABOP 261907N 0520429E
	ALTOM 262230N 0515639E		ALTOM 262230N 0515639E
	DASOS 262429N 0515043E		DASOS 262429N 0515043E
	ALMOK 262832N 0513840E		ALMOK 262832N 0513840E
	VEDOS 264105N 0510044E		VEDOS 264105N 0510044E
	NABOS 264354N 0505145E		NABOS 264354N 0505145E
	MEMKO 264611N 0504427E		MEMKO 264611N 0504427E
	MOGAS 264759N 0503909E		MOGAS 264759N 0503909E
	TOLMO 265504N 0502927E		TOLMO 265504N 0502927E
	EGLIT 270255N 0502005E		EGLIT 270255N 0502005E
	TOKMA 270938N 0501159E		TOKMA 270938N 0501159E
	ORSOL 272135N 0500207E		ORSOL 272135N 0500207E
	ITNAS 274643N 0493957E		ITNAS 274643N 0493957E
	ENAVI 275552N 0493151E		ENAVI 275552N 0493151E
	DAMUR 280137N 0492637E		DAMUR 280137N 0492637E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	DAVUS 282346N 0490622E		DAVUS 282346N 0490622E
			DARVA 284814N 0484734E
			ALVIX 291918N0482412E
			~~F~~RALKA 292611N 0481819E
			TASMI 300120N 0475505E
			LOVEK3222086N 04440010E
			DELMI331911N 0431731E
			ELEXI 344237N 0411054E
			DRZ 351731~~24~~N 0400914112~~4~~E
			KUKSI 364508N 0374910E
			GAZIANTEP (GAZ) 365705~~1~~N 0372823~~4~~E
L604	PLH 351339N 0234051E	UL604	PALEOCHORA (PLH) 351339N 0234051E
	SALUN 340000N 0242700E		SALUN 340000N 0242700E
	SIDI BARANI (BRN) 313432~~0~~N 0260020~~18~~E		SIDI BARANI (BRN) 313432~~0~~N 0260020~~18~~E
	EL KHARGA (KHG) 252654N 0303527~~4~~E		EL KHARGA (KHG) 252654N 0303527~~4~~E
	LUXOR (LXR) 254458 N 0324607E		LUXOR (LXR) 254458 N 0324607E
	IMRAD 260506N 0354444E		IMRAD 260506N 0354444E
	WEJH(WEJ) 261048N 0362918E		WEJH(WEJ) 261048N 0362918E
	HALAIFA (HLF) 262603~~0~~N 03916.0~~9~~6E		HALAIFA (HLF) 262603~~0~~N 03916.0~~9~~6E
	GASSIM (GAS) 261754N 0434648E		GASSIM (GAS) 261754N 0434648E
	*Note 7 (GAS-KFA)		*Note 7 (GAS-KFA)
	PUSLA 261758N 0461706E		PUSLA 261758N 0461706E
	*Note 8 to TOSNA		*Note 8 to TOSNA
	MAGALA (MGA) 26172~~0~~18N 0471225.4~~-~~E		MAGALA (MGA) 26172~~0~~18N 0471225.4~~-~~E
	ALMAL 261554N 0482106E		ALMAL 261554N 0482106E
	KING FAHD (KFA) 262153~~4~~N 0494910~~2~~E		KING FAHD (KFA) 262153~~4~~N 0494910~~2~~E
	NARMI 261802N 0501939E		NARMI 261802N 0501939E
	BAHRAIN (BAH) 261551N 0503855E		BAHRAIN (BAH) 261551N 0503855E
	DENVO 260452N 0510509E		DENVO 260452N 0510509E
	PATOM 255821N 0511836E		PATOM 255821N 0511836E
	EMISA 254658N 0514207E		EMISA 254658N 0514207E
	KAPAX 254218N 0515118E		KAPAX 254218N 0515118E
	ORSIS 252801N 0521636E		ORSIS 252801N 0521636E
	ENANO 252348N 0522559E		ENANO 252348N 0522559E
	TOSNA 251612N 0524116E		TOSNA 251612N 0524116E
		UL607	SITIA (SIT) 350406N 0261121E
			* Note 7
			PAXIS 33570~~6~~.1N02720.00E
			OTIKO 313421.~~3~~N 02936.36E
			ALEXANDRIA (NOZ) 311113N 0295701E
L612	KUMBI 334250N 0284500E LABNA 321956N 0301612E BALTIM (BLT) 313144N 0310721E	UL612	KUMBI 334250N 0284500E LABNA 321956N 0301612E BALTIM (BLT) 313144N 0310721E
		UL613	EL – DABA (DBA)
			* Note 7
			SOKAL 3236.01N 027370620.0E
			TANSA 3400.00N 02649.00E
L617	ALEXANDRIA NOZ 311113N 0295701E	UL617	ALEXANDRIA NOZ 311113N 0295701E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	IMRUT 313259N 0293346E		IMRUT 313259N 0293346E
	ASNIR 323849N 0282144E		ASNIR 323849N 0282144E
	TANSA 340000N 0264900E		TANSA 340000N 0264900E
L620	BALMA 342856N 0350302E	UL620	BALMA 342856N 0350302E
	KALDE (KAD) 334827N 0352910E		KALDE (KAD) 334827N 0352910E
L631	TOTOX 215030N0622230E	UL631	TOTOX 215030N0622230E
	IVOMA 223408N 0605430E		IVOMA 223408N 0605430E
	* Note 7 (OO)		* Note 7 (OO)
	MIBSA 225400N 0601338E		MIBSA 225400N 0601338E
	AMBOS 230324N 0595405E		AMBOS 230324N 0595405E
	ELIGO 232458N 0590848E		ELIGO 232458N 0590848E
	KARAR 233042N 0585438E		KARAR 233042N 0585438E
	MUSCAT (MCT) 233528~~.01~~N 0581536E~~.47~~		MUSCAT (MCT) 233528~~.01~~N 0581536E~~.47~~
L677	CAIRO (CV~~AIR~~O) 300532~~.5~~N 0312318~~.3~~E MENLI 2947~~.~~00N 0315206~~.1~~E ~~KAPIT 2917.0N 03236.1E~~ SHARM EL SHEIKH (SHM) 275953N 0342448E PASAM 273045~~.8~~N 0345542~~.7~~E *Note 7(OE) WEJH (WEJ) 261046~~.8~~N 0362917~~.3~~E MUVAT 253755~~.9~~N 0365446~~.8~~E YENBO (YEN) 2408~~.~~58N 03802193~~.9~~E KING ABDULAZIZ (JDW) 214244N 0390723E QUNFIDAH (QUN) 192211~~.2~~N 0410429~~.5~~E TALIB 183854~~.9~~N 0413114~~.2~~E JAZAN (GIZ) 165428~~.5~~N 0423439~~.7~~E NABAN 163124~~.4~~N 043014~~.8~~E IMSIL 1557.6N 04313.2E SANAA (SAA) 1530~~.~~00N 0441311~~.2~~E	UL677	CAIRO (CV~~AIR~~O) 300532~~.5~~N 0312318~~.3~~E MENLI 2947~~.~~00N 0315206~~.1~~E ~~KAPIT 2917.0N 03236.1E~~ SHARM EL SHEIKH (SHM) 275953N 0342448E PASAM 273045~~.8~~N 0345542~~.7~~E *Note 7(OE) WEJH (WEJ) 261046~~.8~~N 0362917~~.3~~E MUVAT 253755~~.9~~N 0365446~~.8~~E YENBO (YEN) 2408~~.~~58N 03802193~~.9~~E KING ABDULAZIZ (JDW) 214244N 0390723E QUNFIDAH (QUN) 192211~~.2~~N 0410429~~.5~~E TALIB 183854~~.9~~N 0413114~~.2~~E JAZAN (GIZ) 165428~~.5~~N 0423439~~.7~~E NABAN 163124~~.4~~N 043014~~.8~~E IMSIL 155738~~.6~~N 04313~~.~~12E SANAA (SAA) 1530~~.~~00N 0441311~~.2~~E
L681	EGNOV 270301N 0474713E	UL681	EGNOV 270301N 0474713E
	* Note 5 & 7 & 8 ~~to~~ (EGNOV-SALWA)		* Note 5 & 7 & 8 ~~to~~ (EGNOV-SALWA)
	GEPAK 2633~~.~~00N 0484328~~.5~~E		GEPAK 2633~~.~~00N 0484328~~.5~~E
	~~RADMA 2623.0N 04857.5E~~		~~RADMA 2623.0N 04857.5E~~
	~~DELMU 2618.9N 04903.4E~~		~~DELMU 2618.9N 04903.4E~~
	~~ROSEM 2607.7N 04919.0E~~		~~ROSEM 2607.7N 04919.0E~~
	SALWA 251538N 0503048E		SALWA 251538N 0503048E
L695	PAROK 231030N 0590245E	UL695	PAROK 231030N 0590245E
	*Note 7 (OO)		*Note 7 (OO)
	ITURA 232351N 0580720E		ITURA 232351N 0580720E
L764	MUSCAT (MCT) 233528N 0581536E	UL764	MUSCAT (MCT) 233528N 0581536E
	ALMOG 233524N 0574940E		ALMOG 233524N 0574940E
	IVETO 233520N 0570704E		IVETO 233520N 0570704E
	PAXIM 240245N 0561631E		PAXIM 240245N 0561631E
L768	ALPOB 254218N 0530055E	UL768	ALPOB 254218N 0530055E
	* Note 7 to FIRAS		* Note 7 to FIRAS
	* Note 8 (ALPOB-COPPI)		* Note 8 (ALPOB-COPPI)
	ROTAG 255353N 0523621E		ROTAG 255353N 0523621E
	SOLEG 260159N 0521756E		SOLEG 260159N 0521756E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	MODOG 261012N 0515935E		MODOG 261012N 0515935E
	RAMKI 261138N 0515625E		RAMKI 261138N 0515625E
	RABLA 261506N 0514834E		RABLA 261506N 0514834E
	SOLOB 262241N 0513132E		SOLOB 262241N 0513132E
	MEDMA 263421N 0505454E		MEDMA 263421N 0505454E
	TOTLA 263806N 0504301E		TOTLA 263806N 0504301E
	EGMOR 264211N 0502907E		EGMOR 264211N 0502907E
	ULADA 264527N 0501624E		ULADA 264527N 0501624E
	JUBAIL (JBL) 270222N 0492426E		JUBAIL (JBL) 270222N 0492426E
	COPPI 275033N 0474359E		COPPI 275033N 0474359E
			HFR 281950N 0460746E
			VATIM 285136N 04444432E
			RAFHA (RAF) 281950N 0460746E
			ARAR (AAR) 305429N 0410832E
			OVANO 314801N 0390951E
			OTILA 320131N 0390153E
			MODAD 323542N 0384136E
			SOKAN 330806N 0382206E
			RAFIF 331248N 0381918E
			SULAF 332718N 0381024E
			FIRAS 335218N 0375512E
		UL883	REXOD 211230N 0613830E
			GADMA 211439N 0600938E
			TAVKO 211519N 0593147E
			UMILA 211555N 0584738E
			MEVLI 211632N 0565606E
			KUROV 211627N 0561853E
			ALNUN 211625N 0561041E
			SITOL 211604N 0552514E
			PURDA 210805N 0510329E
			ALRIK 220631N 0482535E
			UMRAN 231508.1N 0452023.4E
			TUKVU 234626.4N 0435319.3E
			BIR DARB (BDB)
			MADINAH (PMA) 243251N 0394219E
		~~UL894~~	~~KITAL 2003.00N 060180.0E~~
			~~(MALE (MLE) 041223N 0733139E~~
			~~(SUNAN 0028.7N 07800.0E)~~
			~~(DADAR 0200.0S 07927.1E)~~
			~~(PERTH (PH)~~
M203	PUSTO 3321.00N 04245.00E	UM203	PUSTO 3321.00N 04245.00E
	LOVEK 322208.1N 04440.01E		LOVEK 322208.1N 04440.01E
	ILMAP 312133N 0465702E		ILMAP 312133N 0465702E
M300	LOTAV 203700N 0605700E	UM300	(CALICUT) CLC 110806N 0755717E
	EMURU 221535N 0584950E		LOTAV 203700N 0605700E
			EMURU 221535N 0584950E
M301	PURAD 145500N 0415354E	M301	PURAD 145500N 0415354E
	SANAA (SAA) 153000N 0441311E		SANAA (SAA) 153000N 0441311E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	ITOLI 152825N 0450927E		ITOLI 152825N 0450927E
	ASMAK162327N 0524634E		ASMAK162327N 0524634E
M303	MUSCAT (MCT) 233528~~.01~~N 0581536E~~.47~~	UM303	MUSCAT (MCT) 233528~~.01~~N 0581536E~~.47~~
	*Note 7 (OO)		*Note 7 (OO)
	SEVLA 233321N 0591122E		SEVLA 233321N 0591122E
	KIPOL230410N 0612903E		KIPOL230410N 0612903E
M305	SIDI BARANI (BRN) 313432~~.5~~N 0260020~~.3~~E	UM305	SIDI BARANI (BRN) 313432~~.5~~N 0260020~~.3~~E
	ATMUL 200000N 290527~~.4~~E		ATMUL 200000N 290527~~.4~~E
	*Note 3		*Note 3
		UM309	KING~~D~~ KHALED (KIA) 245310N 0464534E
			*Note 1 (KIA-VEMEM)
			RAGHBA (RGB) 235533N 0443547E
			VEMEM 221554N 0400118E
			~~RABTO 221608N 0400326E~~
M312	EL DABA (DBA) 310041~~.7~~N 0282801~~.0~~E	UM312	EL DABA (DBA) 310041~~.7~~N 0282801~~.0~~E
	AMIBO 345640~~.7~~N 213627~~.4~~E		AMIBO 345640~~.7~~N 213627~~.4~~E
	*Note 3 (HE)		*Note 3 (HE)
M316	KANAS 251552N 0574700E	UM316	KANAS 251552N 0574700E
	GOKSO 265542N 0604012E		GOKSO 265542N 0604012E
M318	GABKO 260404N 0554755E	UM318	
	GITSA 254132N 0553926E		
	*Note 7 (SERSA-GABKO) Eastbound		
	SERSA 251945N 0553118E		
	MIADA 245112N 0545736E		
	ABU DHABI (ADV) 242508N 0544024E		
	ATUDO 241708N 0543532E		
	MUSEN 241429N 0543336E		
	GOLGU 231051N 0523109E		
	MUXIT 230229N 0523024E		
	KITAP 224928N 0522923E		KITAP 224928N 0522923E
	PURDA 210805N 0510329E		PURDA 210805N 0510329E
	SHARURAH (SHA) 172813N 0470802E		SHARURAH (SHA) 172813N 0470802E
	NADKI 171418N 0464706E		NADKI 171418N 0464706E
	SANAA (SAA) 153100N 0441311E		SANAA (SAA) 153100N 0441311E
	HODEIDAH (HDH) 144622N 0425911E		HODEIDAH (HDH) 144622N 0425911E
M319	ULINA 292451N 0345817E	UM319	ULINA 292451N 0345817E
	SESMO 293458N 0351159E		SESMO 293458N 0351159E
	LOXUS 301301N 0352601E		LOXUS 301301N 0352601E
	LOSIL 304951N 0354841E		LOSIL 304951N 0354841E
	QATRANEH (QTR) 311454N 0360334E		QATRANEH (QTR) 311454N 0360334E
M320	KING FAHD (KFA) 262153N 0494910E	UM320	KING FAHD (KFA) 262153N 0494910E
	~~KODAG 2703.3N 04920.4E~~ JUBAIL (JBL) 270222N 0492426E		~~KODAG 2703.3N 04920.4E~~ JUBAIL (JBL) 270222N 0492426E
	RAS MISHAB (RAS) 280441N 0483653E		RAS MISHAB (RAS) 280441N 0483653E
	ASVIR 283220N 0482220E		ASVIR 283220N 0482220E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
M321	HALAIFA (HLF) 262602N 0391609E ~~(HLF)~~	UM321	HALAIFA (HLF) 262602N 0391609E ~~(HLF)~~
	ROSUL 253945.~~7~~N 0421519.~~3~~E		ROSUL 253945.~~7~~N 0421519.~~3~~E
	OVEKU 250955.~~9~~ 04457.01E		OVEKU 250955.~~9~~ 04457.01E
	KING KHALED (KIA) 245310N 0464534E RESAL 240649N 0470427E AMBAG 230529N 0474611E ALRIK 220631N 0482525E NONGA 205048N 0492014E ASTIN 200410N 0495320E SILPA 184953N 0510158E IMPOS 183136N 0511848E LOTEL 180926N 0514103E PUTRA 165432N 0525631E		KING KHALED (KIA) 245310N 0464534E RESAL 240649N 0470427E AMBAG 230529N 0474611E ALRIK 220631N 0482525E NONGA 205048N 0492014E ASTIN 200410N 0495320E SILPA 184953N 0510158E IMPOS 183136N 0511848E LOTEL 180926N 0514103E PUTRA 165432N 0525631E
M425	~~SILKO~~ ELIKA 334955~~7.9~~N 03435.00E	UM425	~~SILKO~~ ELIKA 334955~~7.9~~N 03435.00E
	CHEKA (CAK) 341802N 0354200E		CHEKA (CAK) 341802N 0354200E
M428	RIKET 251859N 0560200E	UM428	RIKET 251859N 0560200E
	*Note 7/8 (OO/OM)		*Note 7/8 (OO/OM)
	GOMTA 251115N 0563447E		GOMTA 251115N 0563447E
	TARBO 244351N 0574637E		TARBO 244351N 0574637E
	MUNGA 242516N 0584533E		MUNGA 242516N 0584533E
M430	*Note 5 (KIA-DOH)	UM430	*Note 5 (KIA-DOH)
	KING KHALID (KIA) 245310N 0464534E		KING KHALID (KIA) 245310N 0464534E
	KOBOX 250716N 0475046E		KOBOX 250716N 0475046E
	KIREN 251447N 0490724E		KIREN 251447N 0490724E
	*Note 8 (KIREN-TOSNA)		*Note 8 (KIREN-TOSNA)
	AL AHSA (HAS) 251645N 0492903E		AL AHSA (HAS) 251645N 0492903E
	SALWA 251538N 0503048E		SALWA 251538N 0503048E
	ULIKA 251545N 0503849E		ULIKA 251545N 0503849E
	GINTO 251606N 0510416E		GINTO 251606N 0510416E
	LAGNO 251613N 0511518E		LAGNO 251613N 0511518E
	DOHA HAMAD INTL (DOH) 251500N 0513635E		DOHA HAMAD INTL (DOH) 251500N 0513635E
	BOVIP 251555N 0523135E		BOVIP 251555N 0523135E
	TOSNA 251612N 0524116E		TOSNA 251612N 0524116E
	*Note 7 (DOH-KISAG)		*Note 7 (DOH-KISAG)
	KISAG 251834N 0541408E		KISAG 251834N 0541408E
M434	UMESA 351741N 0434307E OTALO 351700N 0441900E IVANO 351724N 0451235E BOXIX 351724N 0460921E ALSAX 351607N 0463118E SANANDAJ (SNJ) 351420N 0470028E HAMDAN(HAM) 345201N 0483301E SAVEH(SAV) 350107N 0502217E	UM434	UMESA 351741N 0434307E OTALO 351700N 0441900E IVANO 351724N 0451235E BOXIX 351724N 0460921E ALSAX 351607N 0463118E SANANDAJ (SNJ) 351420N 0470028E HAMDAN(HAM) 345201N 0483301E SAVEH(SAV) 350107N 0502217E
		UM440	KING KHALED (KIA) 245310N 0464534E
			OTAMA 235148N 0494707E
			KUTNA 231341N 0512730E
			KITAP 224928N 0522923E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
			TOKRA 220925N 0553350E
M444	DOHA~~/~~ HAMAD INTL	UM444	DOHA~~/~~ HAMAD INTL
	(DOH) 251500N0513635E		(DOH) 251500N0513635E
	EMISA 254658N 0514207E		EMISA 254658N 0514207E
	PATOM 255821N 0511836E		PATOM 255821N 0511836E
	DENVO 260452N 0510509E		DENVO 260452N 0510509E
	BAHRAIN (BAH) 261551N 0503855E		BAHRAIN (BAH) 261551N 0503855E
	ELOSO 262409N 0503550E		ELOSO 262409N 0503550E
	EGMOR 264210N 0502906E		EGMOR 264210N 0502906E
	LOTOR 264854N 0502200E		LOTOR 264854N 0502200E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	ORDAN 271706N 0495442E		ORDAN 271706N 0495442E
	GIRSI 274126N 0493310E		GIRSI 274126N 0493310E
	ENASO 275706N 0491911E		ENASO 275706N 0491911E
	DAVUS 282346N 0490622E		DAVUS 282346N 0490622E
M449	BUSRA 322000N 0363700E	UM449	BUSRA 322000N 0363700E
	MUNRA ~~MAZAR~~ 304944~~8.0~~N 0360835~~10.0~~E		MUNRA ~~MAZAR~~ 304944~~8.0~~N 0360835~~10.0~~E
	GIBET 29262~~0.3~~N 03625~~.0~~1E		GIBET 29262~~0.3~~N 03625~~.0~~1E
	TABUK (TBK) 282153N 0363637E		TABUK (TBK) 282153N 0363637E
	WEJH (WEJ) 261046N 0362918E		WEJH (WEJ) 261046N 0362918E
M550	GOLGU 231051N 0523109E	UM550	GOLGU 231051N 0523109E
	RIBOT 230844N 0522428E		RIBOT 230844N 0522428E
	BOPEK 230059N 0520007E		BOPEK 230059N 0520007E
	MIGMA 225035N 0512749E		MIGMA 225035N 0512749E
	MEVDO 223205N 0494616E		MEVDO 223205N 0494616E
M551	KIVEL 165306N 0553633E	UM551	DONSA143518~~.3~~N0651136344.0E
	DAXAM 171612N 0544715E		ANGAL161404~~.1~~N 0600004~~.1~~E
			OTOTO 164004N 0570435E
			KIVEL 165306N 0553633E
			DAXAM 171612N 0544715E
M557	ATBOR 251007N 0551947E	UM557	ATBOR 251007N 0551947E
	*Note7 & 8 (ATBOR-VUVOK) ~~to MIDSI~~		*Note7 & 8 (ATBOR-VUVOK) ~~to MIDSI~~
	NADIL 252252N 0544717E		NADIL 252252N 0544717E
	NABOP 252607N 0540405E		NABOP 252607N 0540405E
	EMAGO 253456N 0535751E		EMAGO 253456N 0535751E
	VUVOK 254408N 0533024E		VUVOK 254408N 0533024E
M559	LABNI 165620N 0410921E	UM559	LABNI 165620N 0410921E
	NISMI 162415N 0421838E		NISMI 162415N 0421838E
	ITOLI 152825N 0450927E		ITOLI 152825N 0450927E
	MUKALLA (RIN) 144015N 0492329E		MUKALLA (RIN) 144015N 0492329E
	VEDET 120134N 0512410E		VEDET 120134N 0512410E
M561	KISH (KIS) 263131N 0535745E	UM561	KISH (KIS) 263131N 0535745E
	MOBET 2645.3N 05609.8E		MOBET 2645.3N 05609.8E
	ASVIB 265724N 0631812E		ASVIB 265724N 0631812E
	~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E		~~(~~PANJGUR~~)~~ (PG) 265710N 0640813E
		UM573	TEHERAN (TRN) 354149N 0511702E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
			TABRIZ (TBZ) 3808~~.~~53N 04612473~~.~~9E
		UM574	MALE~~)~~ (MLE) 041223N 0733139E
			~~(~~POPET~~)~~ 071343~~.~~7N06813~~.~~36E
			NABIL 1222~~.~~00E0600~~.~~006E
			RIGAM 143932N 0530414E
			NOBSU 171554N 0431318E
M600	RANBI 251908N 0544500E	UM600	RANBI 251908N 0544500E
	KISAG 251834N 0541408E		KISAG 251834N 0541408E
	TUMAK 255031N 0531108E		TUMAK 255031N 0531108E
	VEDOM 260109N 0524456E		VEDOM 260109N 0524456E
	VELAK 261307N 0521821E		VELAK 261307N 0521821E
	LABOP 261907N 0520429E		LABOP 261907N 0520429E
	ALTOM 262230N 0515639E		ALTOM 262230N 0515639E
	DASOS 262429N 0515043E		DASOS 262429N 0515043E
	ALMOK 262832N 0513840E		ALMOK 262832N 0513840E
	VEDOS 264105N 0510044E		VEDOS 264105N 0510044E
	NABOS 264354N 0505145E		NABOS 264354N 0505145E
	MOGAS 264759N 0503909E		MOGAS 264759N 0503909E
	RAKAK 265221N 0502618E		RAKAK 265221N 0502618E
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	ORNAK 272853N 0493248E		ORNAK 272853N 0493248E
	SOLEM 275229N 0491136E		SOLEM 275229N 0491136E
	KUMBO 281705N 0485526E		KUMBO 281705N 0485526E
M628	LUDID 230227N 0551800E	UM628	DAFINAH (DFN) 231700N 0414312E
	LABSA 230153N 0555505E		KIPOM 225316N 0501518E
	EGVAN 230127N 0561907E		MIGMA 225035N 0512749E
	TULBU 230005N 0571827E		KITAP 224928N 0522923E
	IZIKI (IZK) 225319~~8.60~~8.60N 0574543~~2.73~~2.73E		ALPEK 224648N 0535942E
	TOLDA 224008N 0583624E		LUDID 230227N 0551800E
	LOXOP 223722N 0594548E		LABSA 230153N 0555505E
	~~LADAP~~ LOSIM 223513N 0603238E		EGVAN 230127N 0561907E
	IVOMA 223408N 0605430E		TULBU 230005N 0571827E
	PARAR 222630N 0630700E		IZIKI (IZK) 225319~~8.60~~8.60N 0574543~~2.73~~2.73E
			TOLDA 224008N 0583624E
			LOXOP 223722N 0594548E
			LOSIM 223513N 0603238E
			IVOMA 223408N 0605430E
			PARAR 222630N 0630700E
M634	ANGAL 1614046~~46~~N 0600004~~46~~6E	UM634	ANGAL 1614046~~46~~N 0600004~~46~~6E
	VEDET 120134N 0512410E		VEDET 120134N 0512410E
	DAROT 0911.4N 04721.2E		DAROT 0911.4N 04721.2E
M651	ATBOT 171418N 0464706E	UM651	ATBOT 171418N 0464706E
	ADEN (KRA) 124952N 0450125E		ADEN (KRA) 124952N 0450125E
	~~(HARGEISA)~~ HARGA 093112N 0440530E		~~(HARGEISA)~~ HARGA 093112N 0440530E
M677	SESRA 290800N 0485454E	UM677	SESRA 290800N 0485454E
	RABAP 283625N 0492722E		RABAP 283625N 0492722E
	PASAK 282459N 0494846E		PASAK 282459N 0494846E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	GOGMA 281421N 0495612E		GOGMA 281421N 0495612E
	IVIVI 273734N 0502437E		IVIVI 273734N 0502437E
	VEDOR 270855N 0504630E		VEDOR 270855N 0504630E
	TOSDA 270004N 0505629E		TOSDA 270004N 0505629E
	TORBO 265222N 0511024E		TORBO 265222N 0511024E
	SOGAN 263915N 0515408E		SOGAN 263915N 0515408E
	DEGSO 261054N 0531946E		DEGSO 261054N 0531946E
	OBNET 260032N 0534514E		OBNET 260032N 0534514E
	ITITA 254410N 0541839E		ITITA 254410N 0541839E
	SERSA 251945N 0553118E		SERSA 251945N 0553118E
	LALDO 251806N 0563600E		LALDO 251806N 0563600E
M681	TARBO 244351N 0574637E	UM681	TARBO 244351N 0574637E
	*Note 7/8 (OO)		*Note 7/8 (OO)
	DAMUM 243236N 0591307E		DAMUM 243236N 0591307E
M686	LUXOR (LXR) 254458N 0324607E	UM686	LUXOR (LXR) 254458N 0324607E
	MEMPO 252518N 0335457E		MEMPO 252518N 0335457E
	GIBAL 243713~~2~~N 0363443~~2~~E		GIBAL 243713~~2~~N 0363443~~2~~E
	KING ABDULAZIZ (JDW) 214244N 0390723E		KING ABDULAZIZ (JDW) 214244N 0390723E
		UM688	CARSAMBA (CRM) 411556N 0363256E
			GULRA 402247N 0381646E
			ERZINCAN (ERN) 394230N 0393145E
			EVSAS 391929N 0401119E
			BAYIR 383541N 0412414 E
			ULTED 382102N 0414934E
			OTKEP 375133N 0423936E
			NINVA 372100N 0431300E
			ROXOP 364917N 0433100E
			VUSEB 361637N E0434800E
			OTALO 351700N 0441900E
			RIDIP 343012N 0444027E
			UKMUG 334300N 0450329E
			VAXEN 3318 00N 0451500E
			PAPUS 325334N 0452706E
			KATUT 323737N 0453439E
			DENKI 322228~~.46~~N 0455122~~1.58~~E
			ILMAP 312133N 0465702E
			PEBAD 305023~~.09~~N 0472958~~.49~~E
			SIDAD 295231N 0482944E
		UM690	ZELAF 325656N 0371121E
			ORNAL 324755N0375153E
			KODER 323300N 0373800E
			DESLI 3149~~21~~00N 0365901~~9~~E
			ELOXI 313401~~359~~N 0364534~~6~~E
			KULDI 311847N 0363214E
			MUNRA ~~MAZAR~~ 3049~~44~~8.0N 0360835~~10.0~~E
			~~ROVAR 292438N0345711E~~
			LONOL 300801N 0353500E
			SESMO 293458N 0351159E
			ULINA 292451N 0345817E
			NUWEIBAA (NWB) 290156N 0344016E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
M691	~~DEDAS 2630.2N 05014.4E~~ LADNA 262749N 0502245E	UM691	~~DEDAS 2630.2N 05014.4E~~ LADNA 262749N 0502245E
	KING FAH~~A~~D 262153N 0494910E		KING FAH~~A~~D 262153N 0494910E
	KUSAR 264741N 0490218E		KUSAR 264741N 0490218E
	KEDAT 2721.8N 04759.0E		KEDAT 27214~~9.8~~N 04759~~.~~01E
	ITIXI 275031N 0470435E		ITIXI 275031N 0470435E
M762	REXOD 211230N 0613830E		
	SUR 223159N 0592829E		
	ITURA 232351N 0580720E		
	ALMOG 233524N0574940E		
	TAPRA 242607N 0563803E		
	VAXAS 244308N 0561807E		
	* Note 7 (OM, OO)		
	BUBIN 245742N 0560642E		
M860	KUGOS 42465~~0.8~~N 034051~~6.3~~E	UM860	KUGOS 42465~~0.8~~N 034051~~6.3~~E
	SINOP (SIN) 420120N 0350436E		SINOP (SIN) 420120N 0350436E
	CARSAMBA (CRM) 411556N 0363256E		CARSAMBA (CRM) 411556N 0363256E
	SIIRT (SRT) 37543~~8.6~~N 041525~~5.9~~E		SIIRT (SRT) 37543~~8.6~~N 041525~~5.9~~E
	KABAN N371456N 0423859E		KABAN N371456N 0423859E
	EMIDO 364411~~.33~~N 0425600E		EMIDO 364411~~.33~~N 0425600E
	SEVKU 360548~~.02~~N 043171~~65.84~~E		SEVKU 360548~~.02~~N 043171~~65.84~~E
	UMESA 351741~~.49~~N 043430~~76.89~~E		UMESA 351741~~.49~~N 043430~~76.89~~E
	TAGRU 34295~~8.95~~N 044081~~6.67~~E		TAGRU 34295~~8.95~~N 044081~~6.67~~E
	PUTSI 333200N E044 3700E		PUTSI 333200N E0443700E
	ITOVA 33195~~0.9~~1N 0444 2~~8.97~~E		ITOVA 33195~~0.9~~1N 0444 2~~8.97~~E
	SEPTU 331300N 0444400E		SEPTU 331300N 0444400E
	LONOR 32383~~8.63~~N 045045~~8.48~~E		LONOR 32383~~8.63~~N 045045~~8.48~~E
	ULIMA 321500N 0451600E		ULIMA 321500N 0451600E
	ITBIT 31473~~5.20~~N 045 291~~6.5~~7E		ITBIT 31473~~5.20~~N 045 291~~6.5~~7E
	RUGIR 30321~~9.06~~N 046061~~8.20~~E		RUGIR 30321~~9.06~~N 046061~~8.20~~E
	MOBIS 29510~~98.84~~N 047045~~7.39~~E		MOBIS 29510~~98.84~~N 047045~~7.39~~E
		UM861	ELEXI 34423~~71.5~~N 041105~~49.0~~E
			DIER-ZZOR (DRZ) 351731N 0400914E
			ALEPPO (ALE) 361047N 0371234E
			NISAP 364724N 0363830E
M863	KING ABDULAZIZ (JDW) 21424~~437~~N 039072~~3948~~E	UM863	KING ABDULAZIZ (JDW) 21424~~437~~N 039072~~3948~~E
	GIBAP 212218N 0380931E		GIBAP 212218N 0380931E
	TOMRU 204411N 0361950E		TOMRU 204411N 0361950E
	ASKOL 15485~~4.9~~N 024000~~5.1~~E		ASKOL 15485~~4.9~~N 024000~~5.1~~E
	KITOB 15214~~3.7~~N 022584~~5.8~~E		KITOB 15214~~3.7~~N 022584~~5.8~~E
	IPONO 150621 N 0222436 E		IPONO 150621 N 0222436 E
	N'DJAMENA (FL) 12083~~0.5~~N 015021~~8.3~~E		N'DJAMENA (FL) 12083~~0.5~~N 015021~~8.3~~E
M872	PALEOCHORA (PLH) 35133~~9.7~~N 023405~~1.9~~E	UM872	PALEOCHORA (PLH) 35133~~9.7~~N 023405~~1.9~~E
	*Note 7 (PLH- SEMRU ~~DBA~~)		*Note 7 (PLH- SEMRU ~~DBA~~)
	METRU 340000N 0250900E		METRU 340000N 0250900E
	KANAR 322727N 0265330E		KANAR 322727N 0265330E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	EL DABA (DBA) 310041N 0282801E		EL DABA (DBA) 310041N 0282801E
	FAYOUM (FYM) 292351.8N 0302335.6E		FAYOUM (FYM) 292351.8N 0302335.6E
	~~*Note 7 (FYM-SEMRU)~~		~~*Note 7 (FYM-SEMRU)~~
	SEMRU 280200N 0320306E		SEMRU 280200N 0320306E
	HURGHADA (HGD) 271040N 0334747E		HURGHADA (HGD) 271040N 0334747E
	SILKA 263400N 0352900E		SILKA 263400N 0352900E
	WEJH (WEJ) 261046N 0362917E		WEJH (WEJ) 261046N 0362917E
	KODIN 251753.9N 03836.12E		KODIN 251753.9N 03836.12E
	MADINAH (PMA) 243251N 0394219E		MADINAH (PMA) 243251N 0394219E
	*Note 7 (PMA-MIDSI)		*Note 7 (PMA-MIDSI)
	BIR DARB (BDB) 241951N 0414928E		BIR DARB (BDB) 241951N 0414928E
	AL DAWADMI (DAW) 242656N 0440709E		AL DAWADMI (DAW) 242656N 0440709E
	KING KHALID (KIA) 245310N 0464534E		KING KHALID (KIA) 245310N 0464534E
	AKRAM 255036N 0475133E		AKRAM 255036N 0475133E
	*Note 8 (OB) ~~to MIDSI~~		*Note 8 (OB) ~~to MIDSI~~
	ALMAL 261553N 0482108E		ALMAL 261553N 0482108E
	DAVRI 264936N 0505732E		DAVRI 264936N 0505732E
	MIDSI 264142N0515442E		MIDSI 264142N0515442E
		UM877	VUSET 235540N 0590812E
			ITILA 234015N 0584817E
			KUSRA 232426N 0582611E
M999	SARIR (GS) 273900N 0223000E	UM999	SARIR (GS) 273900N 0223000E
	DITAR 265903N 0250000E		DITAR 265903N 0250000E
	EL KHARGA (KHG) 252654N 0303527E		EL KHARGA (KHG) 252654N 0303527E
	KUNAK 252745N 0304112E		KUNAK 252745N 0304112E
	~~(~~LUXOR~~)~~ (LXR) 254458N 0324607E		~~(~~LUXOR~~)~~ (LXR) 254458N 0324607E
	DEDLI 224232N 0373719E		DEDLI 224232N 0373719E
	IMLER 221706N 0381653E		IMLER 221706N 0381653E
	KING ABDULAZIZ (JDW) 214244N 0390723E TOKTO 194421N 00395945E DANAK 1608.00N 04129.00E (ASSAB) SB		KING ABDULAZIZ (JDW) 214244N 0390723E TOKTO 194421N 00395945E DANAK 1608.00N 04129.00E ~~(~~ASSAB~~)~~ ~~(~~SB) 130400N 0423800E
N300	DOHA~~-~~ HAMAD INTL	UN300	DOHA HAMAD INTL ~~2514.0N 05134.6E~~
	(DOH) 251500N0513635E		(DOH) 251500N0513635E
	*Note 7 & 8 ~~to~~ (DOH-TONVO)		*Note 7 & 8 ~~to~~ (DOH-TONVO)
	ELOBI 250753N 0521722E		ELOBI 250753N 0521722E
	NAMLA 250532N 0523318E		NAMLA 250532N 0523318E
	BOXAK 244536N 0540032E		BOXAK 244536N 0540032E
	MIADA 245112N 0545736E		MIADA 245112N 0545736E
	TONVO 250500N 0563200E		TONVO 250500N 0563200E
N302	SIDAD 295231N 0482944E	UN302	SIDAD 295231N 0482944E
	ALVIX 291915N 0482944E		ALVIX 291915N 0482944E
N303	~~(HARGEISA)~~ HARGA 093112N 0440530E	UN303	~~(HARGEISA)~~ HARGA 093112N 0440530E
	PARIM 123142.7N 04327.12E		PARIM 123142.7N 04327.12E
	RIBOK154700N 0415230.5E		RIBOK154700N 0415230.5E
	LABNI 165620.3N 0410921.4E		LABNI 165620.3N 0410921.4E
N307	MELDO 320201N 0310406E	UN307	MELDO 320201N 0310406E
	LAKTO 323800N 0320500E		LAKTO 323800N 0320500E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
N310	BALMA 342856N 0350302E	UN310	BALMA 342856N 0350302E
	CHEKA (CAK) 341802N 0354200E		CHEKA (CAK) 341802N 0354200E
	LATEB 340154.9N 0362404.1E		LATEB 340154.9N 0362404.1E
	BASEM 333337.6N 0373907.1E		BASEM 333337.6N 0373907.1E
		UN315	ASPUX 174406N 0600006E
			KUTVI 184306N 0582642E
			Note:- 7 (OO/OB)
			SITOL 211604N 0552514E
			LOTOS 220000N 0503912E
			RAPMA 232256N 0482028E
			RESAL 240649N 0470427E
			KING KHALED (KIA) 245310N 0464534E
		UN316	HALAIFA (HLF) 262603N 0391609E
			PASAM 273045N 0345542E
N318	QUEEN ALIA (QAA) 314423N 0360926E	UN318	QUEEN ALIA (QAA) 314423N 0360926E
	ALNOR 313955N 0362507E		ALNOR 313955N 0362507E
	KINUR 313626N 0363714E		KINUR 313626N 0363714E
	ELOXI 313359N 0364536E		ELOXI 313359N 0364536E
	GENEX 312935N 370052E		GENEX 312935N 370052E
	GURIAT (GRY) 312445N 0371712E		GURIAT (GRY) 312445N 0371712E
	ORKAS 3047254N 0384617 E		ORKAS 3047254N 0384617E
	NEVOL 302446N 0393841E		NEVOL 302446N 0393841E
	VELAL 294602N 04038214E		VELAL 294602N 04038214E
	TAMRO 283838N 0424047E		TAMRO 283838N 0424047E
	* Note7 (OE, OB, OM, OO)		* Note7 (OE, OB, OM, OO)
	MOGON 273848N 0444554E		MOGON 273848N 0444554E
	TAGSO 272744N 0454510E		TAGSO 272744N 0454510E
	*Note 8 (OB, OO)		*Note 8 (OB, OO)
	EGNOV 270301N 0474713E		EGNOV 270301N 0474713E
	KUSAR 264741N 0490218E		KUSAR 264741N 0490218E
	ASPAN 263255N 0494903E		ASPAN 263255N 0494903E
	DEDAS 263011N 0501427E		DEDAS 263011N 0501427E
	LADNA 262749N 0502245E		LADNA 262749N 0502245E
	ELOSO 262409N 0503551E		ELOSO 262409N 0503551E
	DAVOV 262255N 0504013E		DAVOV 262255N 0504013E
	GOLKO 262149N 0504404E		GOLKO 262149N 0504404E
	ASTAD 261812N 0505646E		ASTAD 261812N 0505646E
	TOTIS 261119N 0511027E		TOTIS 261119N 0511027E
	RASDI 260425N 0512407E		RASDI 260425N 0512407E
	VELAM 255426N 0514347E		VELAM 255426N 0514347E
	VUTAN 255016N 0515218E		VUTAN 255016N 0515218E
	RESAR 253707N 0522328E		RESAR 253707N 0522328E
	ALSEM 252703N 0524322E		ALSEM 252703N 0524322E
	OVONA 252443N 0524739E		OVONA 252443N 0524739E
	~~(LOXAT REXOD)~~		~~(LOXAT REXOD)~~
	KATIK 251709N 0531515E		KATIK 251709N 0531515E
	KANIP 241040 2N 0552042E		KANIP 241040 2N 0552042E
	LABRI 240344N 0553842E		LABRI 240344N 0553842E
	EGROK 235253N 0560126E		EGROK 235253N 0560126E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	LAKLU 232235N 0570401E		LAKLU 232235N 0570401E
	GEVED 230105N 0575111E		GEVED 230105N 0575111E
	TOLDA 223720N 0583503E		TOLDA 223720N 0583503E
	REXOD211230N 0613830E		REXOD211230N 0613830E
		UN319	ZAHEDAN (ZDN) 292912N 0605406E
			TABAS (TBS) 334021N 0565331E
			DASHT-E-NAZ (DNZ) 363855N 0531120E
			ULDUS- 3800.00N 05101.00E
			LUSAL 4035.00N 04757.00E
			ADEKI 4117.48N 04645..00E
			TBILIS (TBS) 414014N 0445649E
			~~MUKHARANI (DF) 415500N 0443356E~~
			~~ALI (BT)~~
			~~LOBIN 42042810.9N 04300156.4E~~
			~~IBERI 4209.6N 04143.3E~~
N324	PURDA 210805N 0510329E	UN324	PURDA 210805N 0510329E
	GOBRO 193622N 0534741E		GOBRO 193622N 0534741E
	ASTUN 180832N 0551040E		ASTUN 180832N 0551040E
N430	TARBO 244351N 0574637E	UN430	TARBO 244351N 0574637E
	*Note 7/8 (OO)		*Note 7/8 (OO)
	ITLOB 244325N 0590701E		ITLOB 244325N 0590701E
N438	LITAN 333456N 0343758E	UN438	LITAN 333456N 0343758E
	KALDE (KAD) 334827N 0352910E		KALDE (KAD)334827N 0352910E
	CHEKA (CAK) 341802N 0354200E		CHEKA (CAK) 341802N 0354200E
	KLEYATE (RA)343510N 0360010E		KLEYATE (RA) 343510N 0360010E
N440	MOBON 274414N 0552513E	UN440	MOBON 274414N 0552513E
	DARAX 260916N 0555307E		DARAX 260916N 0555307E
		UN555	~~BELGAUM (BBM)~~
			BISET 182321.4N 0691807.1E
			KATBI 193133.6N 06500.02E
			LOTAV 2037.00N 06057.00E
N563	REXOD 211230N 0613830E	UN563	~~(BANGALORE) BBG~~
	*Note 8 (OB, OM)		*Note 8 (OB, OM)
	*Note 7 (OB, OO, OM)		REXOD 211230N 0613830E
	EMURU 221357N 0585338E		*Note 7 (OB, OO,OM)
	TULBU 230005N 0571827E		EMURU 221357N 0585338E
	MEKNA 223309N 0560815E		TULBU 230005N 0571827E
	SODEX 234954N 0553202E		MEKNA 223309N 0560815E
	NOBTO 235525N 0551840E		SODEX 234954N 0553202E
	~~ADV~~		NOBTO 235525N 0551840E
	MEMBI 243705N 0542631E		MEMBI 243705N 0542631E
	ATBEX 250739N 0535019E		ATBEX 250739N 0535019E
	ITROK 253557N 0532751E		ITROK 253557N 0532751E
	ALPOB 254218N 0530055E		ALPOB 254218N 0530055E
	ROTAG 255353N 0523621E		ROTAG 255353N 0523621E
	SOLEG 260159N 0521756E		SOLEG 260159N 0521756E
	SOLOB 262241N 0513132E		SOLOB 262241N 0513132E

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	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	MEDMA 263412N 0505454E		MEDMA 263412N 0505454E
	TOTLA 263806N 0504301E		TOTLA 263806N 0504301E
	RULEX 264529N 0501745E		RULEX 264529N 0501745E
	SILNO 264026N 0475745E		SILNO 264026N 0475745E
	GIBUS 255724N 0472829E		GIBUS 255724N 0472829E
		UN569	~~BONUM 221252N 0393805E~~
			~~RABTO 221608N 0400326E~~
			VEMEM 221554N 0400118E
			LOTOS 220000N 0503912E
			*Note:- 7 (LOTOS-GOLNI)
			TOKRA 220925N 0553350E
			TOPSO 215653N 0562043E
			MOGOK 215057N 0564236E
			KEBAS 214330N 0570948E
			GISKA 213503N 0574014E
			UMILA 211555N 0584738E
			GOLNI 210014N 0594130E
			LOTAV 203700N 0605700E
N571	PARAR 222630~~.5~~ N 0630700E	UN571	~~(~~GUNIP 042954~~.9~~N 09931~~.~~48E~~)~~
	*Note 7 & 8 (OB, OM, OO)		~~(~~VAMPI 061056~~.9~~N 0973508~~.~~1E~~)~~
	KIPOL 230410N 0612903E		~~(~~MEKAR 063014~~.2~~N 0692928~~.5~~E~~)~~
	RAGMA 230600N 0610539E		~~(~~SUGID- 193303~~.1~~N 06921~~.~~00E~~)~~
	SODEB 234747N 0593023E		PARAR 222630~~.5~~ N 0630700E
	VUSET 235540N 0590812E		*Note 7 & 8 (OB, OM, OO)
	KIROP 243000N 0574700E		KIPOL 230410N 0612903E
	MENSA 245750N 0563249E		RAGMA 230600N 0610539E
	AVAMI 250554N 0555647E		SODEB 234747N 0593023E
	ATBOR 251007N 0551947E		VUSET 235540N 0590812E
	MUVLA 251716N 0544500E		KIROP 243000N 0574700E
	SENTO 251908N 0544500E		MENSA 245750N 0563249E
	ELUKU 252910N 0535610E		AVAMI 250554N 0555647E
	ITROK 253557N 0532751E		ATBOR 251007N 0551947E
	ALPOB 254218N 0530055E		MUVLA 251716N 0544500E
	SOLOB 262241N 0513132E		SENTO 251908N 0544500E
	MEDMA 263412N 0505454E		ELUKU 252910N 0535610E
	TOTLA 263806N 0504301E		ITROK 253557N 0532751E
	RULEX 264529N 0501745E		ALPOB 254218N 0530055E
	SILNO 264026N 0475745E		SOLOB 262241N 0513132E
	KUTEM 264359N 0473521E		MEDMA 263412N 0505454E
	BOPAN (BPN) 270314N 0452642E		TOTLA 263806N 0504301E
			RULEX 264529N 0501745E
			SILNO 264026N 0475745E
			KUTEM 264359N 0473521E
			BOPAN (BPN) 270314N 0452642E
N629	TARDI 243418N 0560915E	UN629	TARDI 243418N 0560915E
	*Note 7 (OO)		*Note 7 (OO)
	NOSMI 241757N 0563002E		NOSMI 241757N 0563002E
	MUSUK 234320N 0572148E		MUSUK 234320N 0572148E
	GEPOT 231446N 0580053E		GEPOT 231446N 0580053E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	GIDAN 230104N 0582232E		GIDAN 230104N 0582232E
	TOTOX 215030N 0622230E		TOTOX 215030N 0622230E
N638	KING KHALED (KIA) 245310N 0464534E	UN638	KING KHALED (KIA) 245310N 0464534E
	OVEKU 250955N 0445701E		OVEKU 250955N 0445701E
	MADINAH (PMA) 243251N 0394219E		MADINAH (PMA) 243251N 0394219E
N685	TAGSO 272744N 0454510E	UN685	TAGSO 272744N 0454510E
	*Note 7 (TAGSO-KUSAR)		*Note 7 (TAGSO-KUSAR)
	*Note 8 (TAGSO-TOSNA)		*Note 8 (TAGSO-TOSNA)
	DEBOL 272116N 0461843E		DEBOL 272116N 0461843E
	TORTA 271906N 0462911E		TORTA 271906N 0462911E
	ALSAT 270611N 0473118E		ALSAT 270611N 0473118E
	EGNOV 270301N 0474713E		EGNOV 270301N 0474713E
	KUSAR 264741N 0490218E		KUSAR 264741N 0490218E
	KING FAH~~A~~D (KFA) 262153N 0494910E		KING FAH~~A~~D (KFA) 262153N 0494910E
	NARMI 261802N 0501939E		NARMI 261802N 0501939E
	BAHRAIN (BAH) 261551N 0503856E		BAHRAIN (BAH) 261551N 0503856E
	DENVO 260452N 0510509E		DENVO 260452N 0510509E
	PATOM 255821N 0511836E		PATOM 255821N 0511836E
	EMISA 254658N 0514207E		EMISA 254658N 0514207E
	*Note 7 to LAKLU		*Note 7 to LAKLU
	KAPAX 254218N 0515118E		KAPAX 254218N 0515118E
	ORSIS 252801N 0521636E		ORSIS 252801N 0521636E
	ENANO 252348N 0522559E		ENANO 252348N 0522559E
	TOSNA 251612N 0524116E		TOSNA 251612N 0524116E
	TOPSI 250910N 0531200E		TOPSI 250910N 0531200E
	BOXAK 244536N 0540032E		BOXAK 244536N 0540032E
	ABU DHABI (ADV)242508N 0544024		ABU DHABI (ADV) 242508N 0544024
	RETAS 235754N 0553423E		RETAS 235754N 0553423E
	*Note 8 (OO)		*Note 8 (OO)
	PUTSO 232037N 0565322E		PUTSO 232037N 0565322E
	LAKLU 232235N 0570401E		LAKLU 232235N 0570401E
N687	KING KHALID (KIA) 245310N 0464534E	UN687	KING KHALID (KIA) 245310N 0464534E
	KINIB 254108N 0482317E		KINIB 254108N 0482317E
	*Note 5 & 7 & 8		*Note 5 & 7 & 8
	KING FAHAD (KFA) 262153N 0494910E		KING FAHAD (KFA) 262153N 0494910E
	EMOLO 263559N 0500526E		EMOLO 263559N 0500526E
	ROTEL 264015N 0502149E		ROTEL 264015N 0502149E
	EGMOR 264210N 0502906E		EGMOR 264210N 0502906E
	DAVRI 264936N 0505732E		DAVRI 264936N 0505732E
	TORBO 265223N 0511024E		TORBO 265223N 0511024E
N694	KING KHALD (KIA) 245310N 0464534E	UN694	KING KHALD (KIA) 245310N 0464534E
	TORKI 261400N 0463103E		TORKI 261400N 0463103E
	SIBLI 265459N 0462334E		SIBLI 265459N 0462334E
	AKODI 275012N 0461320E		AKODI 275012N 0461320E
	HAFR AL BATIN 281949N 0460746E (HFR)		HAFR AL BATIN 281949N 0460746E (HFR)
N697	MENLI 294700N 0315206E	UN687	MENLI 294700N 0315206E
	SISIK 293600N 0324100E		SISIK 293600N 0324100E
	NUWEIBAA		NUWEIBAA
	* Note 7 (NWB-KITOT above FL350)		* Note 7 (NWB-KITOT above FL350)

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	KITOT 290205N 0345050E		KITOT 290205N 0345050E
	SOBAS 275600N 0390454E		SOBAS 275600N 0390454E
	HAIL (HIL) 272530N 0414058E		HAIL (HIL) 272530N 0414058E
	*Note 7 (HIL–KFA)		*Note 7 (HIL–KFA)
	BPN 270312N 0452642E		BPN 270312N 0452642E
	*Note 8 (BPN-TORBO)		*Note 8 (BPN-TORBO)
	KING FAHD (KFA) 262153N 0494910E		KING FAHD (KFA) 262153N 0494910E
	NARMI 261802N 0501939E		NARMI 261802N 0501939E
	BAHRAIN (BAH) 261551N 0503855E		BAHRAIN (BAH) 261551N 0503855E
	*Note 7		*Note 7
	GOLKO 262149N 0504404E		GOLKO 262149N 0504404E
	TOSTA 262746N 0504912E		TOSTA 262746N 0504912E
	MEDMA 263421N 0505454E		MEDMA 263421N 0505454E
	VEDOS 264105N 0510044E		VEDOS 264105N 0510044E
	SODAK 264634N 0510530E		SODAK 264634N 0510530E
	TORBO 265223N 0511024E		TORBO 265223N 0511024E
N764	NOBSU 171554N 0431318E	UN764	NOBSU 171554N 0431318E
	MUKALLAH (RIN) 144015N 0492329E		MUKALLAH (RIN) 144015N 0492329E
	SOCOTRA (SOC) 123749N 0535429E		SOCOTRA (SOC) 123749N 0535429E
	SUHIL 120000N 0550000E		SUHIL 120000N 0550000E
	NABAM 101112N 0581424E		NABAM 101112N 0581424E
N767	PARAR 222630N 0630700E	UN767	PARAR 222630N 0630700E
	VUSIN 225940N 0605510E		VUSIN 225940N 0605510E
	* Note 7 (OO)		* Note 7 (OO)
	ATBED 230352N 0603752E		ATBED 230352N 0603752E
	ELIGO 232458N 0590848		ELIGO 232458N 0590848
		UN881	RASKI 230330N 0635200E
			SETSI 230412N 0614410E
			KIPOL 230410N 0612903E
			ATBED 230352N 0603752E
			AMBOS 230324N 0595405
			MUSRU 230256N 0592223E
			*Note 7 (OO)
			OBTIN 230216N 0585920E
			GIDAN 230104N 0582232E
			GEVED 230105N 0575111E
			TULBU 230005N 0571827E
N929	DASLO 254537N 0523029E	UN929	DASLO 254537N 0523029E
	*Note 7 & 8 ~~to~~ (DASLO-GIBUS)		*Note 7 & 8 ~~to~~ (DASLO-GIBUS)
	NAGOG 255214N 0521615E		NAGOG 255214N 0521615E
	BONAN 260201N 0515505E		BONAN 260201N 0515505E
	VEDED 260558N 0514628E		VEDED 260558N 0514628E
	SOGAT 262029N 0511443E		SOGAT 262029N 0511443E
	TOSTA 262746N 0504913E		TOSTA 262746N 0504913E
	DANAG 264438N 0494856E		DANAG 264438N 0494856E
	NADNA 264245N 0485309E		NADNA 264245N 0485309E
	SILNO 264026N 0475745E		SILNO 264026N 0475745E
	ASKOK 262623N 0474809E		ASKOK 262623N 0474809E
	MUSRI 261647~~.0~~N 0474137~~.0~~E		MUSRI 261647~~.0~~N 0474137~~.0~~E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	GIBUS 255724.0N 0472829.0E		GIBUS 255724.0N 0472829.0E
		UP146	RASHT (RST) 371935N 0493657E
			AGINA 3919.24N 04405.12E
			(AGRI) (ARI) 393845N 0430137E
			(YAVUZ 4002.7N 04226.0E)
			(TRABZON (TBN)
P300	KALDE (KAD) 334827N 0352910E	UP300	KALDE (KAD) 334827N 0352910E
	LATEB 340154.9N 0362404.1E		LATEB 340154.9N 0362404.1E
P304	EGROK 235253N 0560126E *Note 7 (OO) MEKNA 233309N 0560815E EGVAN 230127N 0561907E DEMKI 224941N 0562308E NAMVA 223309N 0562223E TOPSO 215653N 0562043E KUROV 211627N 0561853E VELIK 203322N 0561656E	UP304	EGROK 235253N 0560126E *Note 7 (OO) MEKNA 233309N 0560815E EGVAN 230127N 0561907E DEMKI 224941N 0562308E NAMVA 223309N 0562223E TOPSO 215653N 0562043E KUROV 211627N 0561853E VELIK 203322N 0561656E
P307	SHARJAH (SHJ) 251945 4.9N 0553118.1E	UP307	SHARJAH (SHJ) 251945 4.9N 0553118.1E
	Note 7 (OM,OO)		Note 7 (OM,OO)
	TONVO 250500N 0563200E		TONVO 250500N 0563200E
	PURNI 243804N 0574354E		PURNI 243804N 0574354E
	*Note 8 (OO)		*Note 8 (OO)
	KUNUS 241927N 0583226E		KUNUS 241927N 0583226E
	ALSAS 240054N 0591955E		ALSAS 240054N 0591955E
	DERTO 235033N 0594746E		DERTO 235033N 0594746E
	VAXIM 231900N 0611100E		VAXIM 231900N 0611100E
	SETSI 230412N 0614410E		SETSI 230412N 0614410E
	PARAR 222630N 0630700E		PARAR 222630N 0630700E
P312	MUKALLA (RIN) 144015N 0492329E	UP312	MUKALLA (RIN) 144015N 0492329E
	PAKER 1155.00N0463500E		PAKER 1155.00N0463500E
	(HARGEISA) HARGA 093112N 0440530E		(HARGEISA) HARGA 093112N 0440530E
P316	SALALLAH (SLL) 170259N 0540657E	UP316	SALALLAH (SLL) 170259N 0540657E
	* Note 7 (OO)		* Note 7 (OO)
	DAXAM 171612N 0544715E		DAXAM 171612N 0544715E
	GAGLA 180505N 0552410E		GAGLA 180505N 0552410E
	GIVNO 195011N 0563059E		GIVNO 195011N 0563059E
	MOBAB 201032N 0564415E		MOBAB 201032N 0564415E
	GISKA 213503N 0574014E		GISKA 213503N 0574014E
	RADAX 220809N 0580230E		RADAX 220809N 0580230E
	MUSCAT (MCT) 233528N 0581536E		MUSCAT (MCT) 233528N 0581536E
		UP323	DONSA143518.3N0651136344.0E
			GIDAS 142004N0600000E
			NODMA 1526.00N05334.00E
			THAMD 1717.00N 04955.00E
			WADI ALDAWASIR (WDR) 203019N 0451219E
P425	DAHRAN (DHA) 261538N 0500824E	UP425	DAHRAN (DHA) 261538N 0500824E
	*Note 8 to ALSER		*Note 8 to ALSER

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	BAHRAIN (BAH) 261551N 0503855E		BAHRAIN (BAH) 261551N 0503855E
	DAVOV 262255N 0504012E		DAVOV 262255N 0504012E
	DATGO 262957N 0504130E		DATGO 262957N 0504130E
	TOTLA 263806N 0504301E		TOTLA 263806N 0504301E
	MEMKO 264611N 0504427E		MEMKO 264611N 0504427E
	BOXOG 265403N 0504553E		BOXOG 265403N 0504553E
	ALSER 271100N 0504900E		ALSER 271100N 0504900E
P430	DOHA~~/~~ HAMAD INTL	UP430	DOHA~~/~~ HAMAD INTL
	(DOH) 251500N 0513635E		(DOH) 251500N 0513635E
	*Note 7 & 8 (DOH-ALTOM) ~~to MIDSI~~		*Note 7 & 8 (DOH-ALTOM) ~~to MIDSI~~
	BAYAN 252926N 0514849E		BAYAN 252926N 0514849E
	~~*Note 7 to MIDSI~~		~~*Note 7 to MIDSI~~
	KAPAX 254218N 0515118E		KAPAX 254218N 0515118E
	VUTAN 255016N 0515218E		VUTAN 255016N 0515218E
	ALVEN 255418N 0515315E		ALVEN 255418N 0515315E
	BONAN 260201N 0515505E		BONAN 260201N 0515505E
	RAMKI 261138N 0515625E		RAMKI 261138N 0515625E
	ALTOM 262230N 0515639E		ALTOM 262230N 0515639E
P513	BUBAS 245938N 0570003E		
	GERAR 240600N 0573616E		
	MIXAM 234139N 0575523E		
	* Note 7 (OO)		
	MUSCAT (MCT) 233528N 0581536E		
		UP517	WAFRA (KFR) 283715N 0475729E
			GOVAL 281211N 0472908E
			KING SAUD AB (KMC) 275250N 0453320E
		UP552	DATEG 123549N 0471627E
			ULAXI 141524N 0482317E
			GINBO 160349N 0494017E
			IMPOS 183137N 0511848E
P557	NUBAR 220000N 0313806E	UP557	NUBAR 220000N 0313806E
	*~~See~~ Note 6&7		*~~See~~ Note 6&7
	MISUK 290507N 0290621E		MISUK 290507N 0290621E
	KATAB 292501N0290506E		KATAB 292501N0290506E
P559	RASLI 315424N 0383648E	UP559	RASLI 315424N 0383648E
	TURAIF (TRF) 314136N 0384405E		TURAIF (TRF) 314136N 0384405E
	*Note 7 ~~to~~ (TRF-DESDI)		*Note 7 ~~to~~ (TRF-DESDI)
	KAVID 303552N 0401147E		KAVID 303552N 0401147E
	TOKLU 294213N 04202204E		TOKLU 294213N 04202204E
	RASMO 285713N 0433119E		RASMO 285713N 0433119E
	KING SAUD AB (KMC) 275250N 0453321E		KING SAUD AB (KMC) 275250N 0453321E
	ULOVO 274830N 0455420E		ULOVO 274830N 0455420E
	*Note 8 (ULOVO-NAPLO)		*Note 8 (ULOVO-NAPLO)
	MUSKO 272640N 0473708E		MUSKO 272640N 0473708E
	KEDAT 272149N 0475901E		KEDAT 272149N 0475901E
	JUBAIL (JBL) 270222N 0492426E		JUBAIL (JBL) 270222N 0492426E
	DAROR 270244N 0495815E		DAROR 270244N 0495815E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	RAMSI 270249N 0500714E		RAMSI 270249N 0500714E
	GASSI 270257.9N 0502229.5E		GASSI 270257.9N 0502229.5E
	KOBOK 265839N 0503349E		KOBOK 265839N 0503349E
	BOXOG 265403N 0504553E		BOXOG 265403N 0504553E
	DAVRI 264936N 0505731E		DAVRI 264936N 0505731E
	SODAK 264634N 0510530E		SODAK 264634N 0510530E
	DANOB 263946N 0512640E		DANOB 263946N 0512640E
	BOTOB 263350N 0514505E		BOTOB 263350N 0514505E
	ROSAN 263129N 0515220E		ROSAN 263129N 0515220E
	KUMLA 262609N 0520822E		KUMLA 262609N 0520822E
	ASPAK 262115N 0522257E		ASPAK 262115N 0522257E
	TOMSO 260611N 0530214E		TOMSO 260611N 0530214E
	NALPO 255602N 0532945E		NALPO 255602N 0532945E
	RAPSA 253700N 0541700E		RAPSA 253700N 0541700E
	DESDI 253603N 0544230E		DESDI 253603N 0544230E
P560	PORT SUDAN (PSD) 311743N 0321416E	UP560	PORT SUDAN (PSD) 311743N 0321416E
	BOGUM 200736N 0380360E		BOGUM 200736N 0380360E
	AL BAHA (BHA) 201783 3N 041378 45E		AL BAHA (BHA) 201783 3N 041378 45E
	KITAP 224928N 0522923E		KITAP 224928N 0522923E
	PORT SUDAN (PSD) 311743N 0321416E		PORT SUDAN (PSD) 311743N 0321416E
P561	BENINA (BNA) 320728N 0201513E	UP561	BENINA (BNA) 320728N 0201513E
	KATAB 292501N 0290506E		KATAB 292501N 0290506E
P562	DEESA 294509N 0364102E	UP562	DEESA 294509N 0364102E
	ENABI 290739N 0385650E		ENABI 290739N 0385650E
	TAMRO 283938N 0424147E		TAMRO 283938N 0424147E
	LOTOK 280857N 0450512E		LOTOK 280857N 0450512E
P563	HAIL (HIL) 272630N 0414158E	UP563	HAIL (HIL) 272630N 0414158E
	PASAM 273145N 0345642E		PASAM 273145N 0345642E
	HURGHADA (HGD) 271140N 0334847E		HURGHADA (HGD) 271140N 0334847E
		UP567	BIRJAND (BJD) 325821N 0591200E
			ODKAT 3540.6N 05457.2E
			DASHT-E-NAZ (DNZ) 363855.7N 0531120.4E
			(ULDUS -3800.00N 05101.00E)
			NETON 394542.7N 0481142.7E
			BARUS 415414.2N 0425030.5E
P570	KITAL 2003.00N 06018.00E	UP570	TRIVENDRUM (TVM) 082831N 0765531E
	MIXAM 234139N 0575523E		POMAN 115605.1N 0715958200.0E
			LATEB 171704.1N 06422.02E
			KITAL 2003.00N 06018.00E
			MIXAM 234139N 0575523E
		UP574	~~(BELGAUM) BBM~~
			~~(BISET 1823.4N 06918.1E)~~
			TOTOX 215030N 0622230E
			* Note 7 (OM, OO)
			KUSRA 231726N 0585102E
			MIXAM 234138N 0575525E
			SOLUD 243223N 0564421E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
			GISMO 244743N 0562236E
			BUBIN 245742N 0560642E
			TUKLA 2519.36N 0554010.2E
			KUMUN 254000N 0551512E
			PAPAR 264000N 0542700E
			SHIRAZ (SYZ) 293224N 0523520E
			SAVEH (SAV) 350107N 0502217E
			ULDUS 380000N 0510100E
		UP634	LALDO 251806N 0563600E
			*Note 7
			ATBOR 251007N 0551947E
		UP693	AL AHSA (HSA) 251644N 0492902E
			*Note 8 to BUNDU
			BATHA (BAT) 241257N 0512707E
			BUNDU 250024N 0522924E
P699	ATBOR 251007N 0551947E	UP699	ATBOR 251007N 0551947E
	*Note 7 (ATBOR-BAH)		*Note 7 (ATBOR-BAH)
	SITAT 251105N 0544500E		SITAT 251105N 0544500E
	KISAG 251834N 0541408E		KISAG 251834N 0541408E
	ITMUS 252322N 0535429E		ITMUS 252322N 0535429E
	ALSOK 252607N 0533904E		ALSOK 252607N 0533904E
	RUBAL 252957N 0531723E		RUBAL 252957N 0531723E
	ORMID 253354N 0525434E		ORMID 253354N 0525434E
	*Note 8 (ORMID-KFA)		*Note 8 (ORMID-KFA)
	DASLO 254537N 0523029E		DASLO 254537N 0523029E
	NAGOG 255214N 0521614E		NAGOG 255214N 0521614E
	BONAN 260200N 0515505E		BONAN 260200N 0515505E
	VEDED 260558N 0514627E		VEDED 260558N 0514627E
	KUNDO 261631N 0512325E		KUNDO 261631N 0512325E
	SOGAT 262029N 0511443E		SOGAT 262029N 0511443E
	ASTAD 261812N 0505646E		ASTAD 261812N 0505646E
	BAHRAIN (BAH) 261551N 0503856E		BAHRAIN (BAH) 261551N 0503856E
	NARMI 261802N 0501939E		NARMI 261802N 0501939E
	KING FHAD (KFA) 262153N 0494910E		KING FHAD (KFA) 262153N 0494910E
P751	AMIBO 3456.7N 2136.4E	UP751	AMIBO 3456.7N 2136.4E
	SIDI BARANI (BRN) 313432.5N 0260020.3E		SIDI BARANI (BRN) 313432.5N 0260020.3E
	KATAB 2925.01N 290506.1E		KATAB 2925.01N 290506.1E
	ASYUT (AST) 270152.9N 0310157.9E		ASYUT (AST) 270152.9N 0310157.9E
	LUXOR (LXR) 254458N 0324607E		LUXOR (LXR) 254458N 0324607E
	ALEBA 2200.00N 03527.00E		ALEBA 2200.00N 03527.00E
	PORT SUDAN (PSD) 192404N 0371430E		PORT SUDAN (PSD) 192404N 0371430E
	[ASMARA] * Note 1 151704N 0385403E		[ASMARA] * Note 1 151704N 0385403E
	TOKAR 180624304.0N 0374812 4238.8E		TOKAR 180624304.0N 0374812 4238.8E
	PARIM 123142.7N 04327.12E		PARIM 123142.7N 04327.12E
	ADEN (KRA) 124952N 0450125E		ADEN (KRA) 124952N 0450125E
	ANGAL 161404.1N 0600004.1E		ANGAL 161404.1N 0600004.1E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	MUMBAI (BBB) 190511N 0725229E		MUMBAI (BBB) 190511N 0725229E
P891	MAGALA (MGA) 261720N 0471225E	UP891	MAGALA (MGA) 261720N 0471225E
	*Note 7 to KUA		*Note 7 to KUA
	KUTEM 264359N 0473521E		KUTEM 264359N 0473521E
	EGNOV 270301N 0474713E		EGNOV 270301N 0474713E
	EMILU275031N 0475943E		EMILU 275031N 0475943E
	KUNRU 283220N 0481050E		KUNRU 283220N 0481050E
	KUWAIT (KUA) 291306N 0475803E		KUWAIT (KUA) 291306N 0475803E
P899	MIXAM 234139N 0575523E	UP899	MIXAM 234139N 0575523E
	*Note 7 to KUPSA		*Note 7 to KUPSA
	PAXIM 240245N 05617631E		PAXIM 240245N 05617631E
	ITRAX 241248N 0554749E		ITRAX 241248N 0554749E
	AL AIN (ALN) 241535N 0553623E		AL AIN (ALN) 241535N 0553623E
	ABU DHABI (ADV) 242508N 0544024E		ABU DHABI (ADV) 242508N 0544024E
	DASLA N243747N.8 E0533248E.8		DASLA N243747N.8 E0533248E.8
	VEBAT N244830N.5 E05251.00E		VEBAT N244830N.5 E05251.00E
	MEKMA N245430 E0522506		MEKMA N245430N E0522506E
	*Note 8 (OB)		*Note 8 (OB)
	KUPSA N250445 E0521151		KUPSA N250445N E0521151E
		UP975	(ELAZIG) EZS 384230N 0391327E
			*Note7
			DIYARBAKIR (DYB) 384225N 0391328E
			LESRI 370420N 0411348E
			SIDNA 363584.0N 0414159.0E
			TUBEN 351724N 0425434E
			MUTAG 343003N 0433834E
			SOGUM 341212N 0435454E
			SINKA 332137N 0444753E
P975	NOLDO 324932N 0452129E		NOLDO 324932N 0452129E
	*Note 7		*Note 7
	KATUT 323737N 0453439E		KATUT 323737N 0453439E
	DENKI 322228N 0455122E		DENKI 322228N 0455122E
	ILMAP 312133N 0465702E		ILMAP 312133N 0465702E
	PEBAD 305023N 0472958E		PEBAD 305023N 0472958E
	SIDAD 295231N 0482944E		SIDAD 295231N 0482944E
	LOVAR 292424N 0484606E		LOVAR 292424N 0484606E
	SESRA 290800N 00485454E		SESRA 290800N 00485454E
	DANAL 285130N 0490448E		DANAL 285130N 0490448E
	IMDOX 283454N 0491436E		IMDOX 283454N 0491436E
	LONOS 283027N 0491713E		LONOS 283027N 0491713E
	ORGEL 281312N 0494614E		ORGEL 281312N 0494614E
	DATEN 273118N 0501832E		DATEN 273118N 0501832E
	REVAX 272026N 0502651E		REVAX 272026N 0502651E
	GETAL 270409N 0504039E		GETAL 270409N 0504039E
	LOSIS 270118N 0504208E		LOSIS 270118N 0504208E
	BOXOG 265403N 0504553E		BOXOG 265403N 0504553E
	NABOS 264354N 0505145E		NABOS 264354N 0505145E
	TOTIS 261119N 0511026E		TOTIS 261119N 0511026E
R2	ATMUL 220000N 0290527E	UR2	ATMUL 220000N 0290527E
	TULOP 252209N 0262226E		TULOP 252209N 0262226E

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	DITAR 265903N 0250000E		DITAR 265903N 0250000E
R205	ANARAK (ANK) 333215N 0534347E	UR205	ANARAK (ANK) 333215N 0534347E
	BIRJAND (BJD) 325821N 0591200E		BIRJAND (BJD) 325821N 0591200E
R219	KUKLA 341438.6N 0344447.8E	UR219	KUKLA 341438.6N 0344447.8E
	KALDE (KAD) 334827N 0352910E		KALDE (KAD) 334827N 0352910E
R401	AMPEX 08 1000N 055 0000E	UR401	AMPEX 08 1000N 055 0000E
	SUHIL 120000N 0550000E		SUHIL 120000N 0550000E
	DAPAP 151115N 0552354E		DAPAP 151115N 0552354E
	KIVEL 165306N 0553633E		KIVEL 165306N 0553633E
	ERDAX 175903N 0554458E		ERDAX 175903N 0554458E
	HAIMA (HAI) 195813N 0561651E		HAIMA (HAI) 195813N 0561651E
	DEMKI 224941N 0562308E		DEMKI 224941N 0562308E
	MUSAP 241754N 0555245E		MUSAP 241754N 0555245E
	GIDIS 243600N 0555600E		GIDIS 243600N 0555600E
	ANVIX 244655N 0555616E		ANVIX 244655N 0555616E
	AVAMI 250554N 0555647E		AVAMI 250554N 0555647E
	ULUSA 254925N 0555010E		ULUSA 254925N 0555010E
	SOGUR 255221N 0554943E		SOGUR 255221N 0554943E
	*Note7 ~~Eastbound~~ (SOGUR-KHM)		*Note7 ~~Eastbound~~ (SOGUR-KHM)
	GABKO 260404N 0554755E		GABKO 260404N 0554755E
	GHESHM (KHM) 264547N 0555428E		GHESHM (KHM) 264547N 0555428E
R402	LAKLU 232235N 0570401E	UR402	LAKLU 232235N 0570401E
	*Note 7 (OO)		*Note 7 (OO)
	HAIMA (HAI) 195813N 0561651E		HAIMA (HAI) 195813N 0561651E
R462	~~(~~JIWANI~~)~~ (JI) 250350N 0614744E	UR462	~~(~~JIWANI~~)~~ (JI) 250350N 0614744E
	DENDA 244230.5N 0605451.8E		DENDA 244230.5N 0605451.8E
	VUSET 235540N 0590812E		VUSET 235540N 0590812E
	*Note 7 (OO)		*Note 7 (OO)
	MIXAM 234139N 0575523E		MIXAM 234139N 0575523E
R650	ASRAB 254726.4N 0330619.3E	UR650	ASRAB 254726.4N 0330619.3E
	HURGHADA (HGD) 271040N 0334747E		HURGHADA (HGD) 271040N 0334747E
	SHARM EL SHEIKH (SHM)		SHARM EL SHEIKH (SHM)
	NUWEIBAA (NWB) 290156N 0344016E		NUWEIBAA (NWB) 290156N 0344016E
	NALSO 2932.10N 0345250 3.0E		NALSO 2932.10N 0345250 3.0E
R652	~~ROVAR 292438N0345711E~~	~~UR652~~	~~ROVAR 292438N0345711E~~
	QATRANEH (QTR) 311454N 0360334E		~~QATRANEH (QTR)~~
	KIPAS 312320N 0370641E		~~KIPAS 312320N 0370641E~~
	GURIAT (GRY) 312445N 371712E		~~GURIAT (GRY)~~
	*Note 7(OE)		~~*Note 7(OE)~~
	TURAIF (TRF) 314136N 0384405E		~~TURAIF (TRF)~~
	OVANO 3148.01N 0390951.8E		~~OVANO 3148.01N 0390951.8E~~
	DAXAN 320512N 0393719E		
	GIBUX 330500N 0411100E		
	RAPLU 332300N 0414530E		
	GEPAP 334906N 0422851E		
	MUTAG 343003N 0433834E		

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
	~~IVANO~~ DAVAS 351724N 0451235E		
R654	ZANJAN (ZAJ) 364647N 0482112E	UR654	MAGRI 385408N 0462300E
	SAVEH (SAV) 350107N 0502217E		ZANJAN (ZAJ) 364647N 0482112E
	ESFAHAN (ISN) 334449N 0514941E		SAVEH (SAV) 350107N 0502217E
	YAZD (YZD) 315352N 0541658E		ESFAHAN (ISN) 334449N 0514941E
	KERMAN (KER) 301706N 0465637E		YAZD (YZD) 315352N 0541658E
	~~NABOD 2816.1N 05825.3E~~		~~KERMAN (KER) 301706N 0465637E~~
	~~CHAH BAHAR (CBH)~~		~~NABOD 2816.1N 05825.3E~~
	~~EGPIC 2508.6N 06029.5E~~		~~CHAH BAHAR (CBH)~~ ~~EGPIC 2508.6N 06029.5E~~
	DENDA DENDA 244230N 0605451E		DENDA DENDA 244230N 0605451E
R655	~~(~~LARNACA~~)~~ (LCA) 345222N 0333732E	UR655	~~(~~LARNACA~~)~~ (LCA) 345222N 0333732E
	CHEKA (CAK) 341802N 0354200E		CHEKA (CAK) 341802N 0354200E
	KARIATAIN (KTN) 341248N 0371551E		KARIATAIN (KTN) 341248N 0371551E
R659	TEHRAN(TRN) 354149N 0511702E	UR659	TEHRAN(TRN) 354149N 0511702E
	*Note 7 (ISN-TRN)		*Note 7 (ISN-TRN)
	BOXAM 343749N 0515147E		BOXAM 343749N 0515147E
	DAPOG 333744N 0522331E		DAPOG 333744N 0522331E
	*Note 3 (DAPOG-SYZ)		*Note 3 (DAPOG-SYZ)
	SHIRAZ (SYZ) 293224N 0523520E		SHIRAZ (SYZ) 293224N 0523520E
	MIDSI 264142N 0515442E		MIDSI 264142N 0515442E
	*Note 8 (MIDSI-DOH)		*Note 8 (MIDSI-DOH)
	*Note 7 (MIDSI-VELAM)		*Note 7 (MIDSI-VELAM)
	SOGAN 263915N 0515408E		SOGAN 263915N 0515408E
	ROSAN 263129N 0515220E		ROSAN 263129N 0515220E
	DASOS 262430N 0515043E		DASOS 262430N 0515043E
	RABLA 261506N 0514834E		RABLA 261506N 0514834E
	VEDED 260558N 0514628E		VEDED 260558N 0514628E
	VELAM 255426N 0514347E		VELAM 255426N 0514347E
	EMISA 254658N 0514207E		EMISA 254658N 0514207E
	DOHA HAMAD INTL (DOH) 251500N 0513635E		DOHA HAMAD INTL (DOH) 251500N 0513635E
R660	(ERZURUM) (ERZ) 395724N 0411226E	UR660	(ERZURUM) (ERZ) 395724N 0411226E
	DASIS 385431.~~5~~N 0441229.~~5~~E		RASHT (RST) 371935N 0493657E
	TABRIZ (TBZ) 380853N 0461247E		TEHRAN (TRN) 354149N 0511702E
	RASHT (RST) 371935N 0493657E		
	TEHRAN (TRN) 354149N 0511702E		
R661	DULAV 3857.0N 04537.9E	UR661	DULAV 3857.0N 04537.9E
	TABRIZ (TBZ) 380853N 0461247E		TABRIZ (TBZ) 380853N 0461247E
	ZANJAN (ZAJ) 364647N 0482112E		ZANJAN (ZAJ) 364647N 0482112E
	RUDESHUR (RUS) 352644N 0505419E		RUDESHUR (RUS) 352644N 0505419E
	VARAMIN (VR) 352034N 0513814E		VARAMIN (VR) 352034N 0513814E
	DEHNAMAK (DHN) 351514N 0524313E		DEHNAMAK (DHN) 351514N 0524313E
		UR674	SABEL 185158N 0520339E
			LOTEL 180926N 0514103E
			PASUL 180341N 0513803E
			GOGRI 170752N 0510857E
			OBTAS 164633N 0505756E

4A-41

	LOWER AIRSPACE		**UPPER AIRSPACE**
Designator	Significant Points	Designator	Significant Points
1	2	1	2
			RARBA 161021N 0503920E
			UKORA 152407N 0501547E
			NAKAD 150056N 0500402E
			DANAN 144010N 0495334E
			XABIL 142924N 0494809E
			EMABI 141627N 0494139E
			PAXED 135027N 0492759E
			DEMGO 120258N 0483040E
R777	DANAK 1608-00N 04129-00E	UR777	DANAK 1608-00N 04129-00E
	SANA'A (SAA) 153000N 0441311E		SANA'A (SAA) 153000N 0441311E
	TAIZ (TAZ) 134150N 0440819E		TAIZ (TAZ) 134150N 0440819E
	ARABO 123852-.8N 04404-01E		ARABO 123852-.8N 04404-01E
	TORBA 1210-36N 0440206-.1E		TORBA 1210-36N 0440206-.1E
R784	SHARJAH (SHJ) 251945N 0553118E	UR784	SHARJAH (SHJ) 251945N 0553118E
	ORSAR 260430-.5N 0535730-.5E		ORSAR 260430-.5N 0535730-.5E
	*Note 8 (OM)		*Note 8 (OM)
	DURSI 271219-.3N 0520144-.7 E		DURSI 271219-.3N 0520144-.7 E
	IMDAT 27410-.0N 0511100-3.0E		IMDAT 27410-.0N 0511100-3.0E
	ALNIN 283305-40.9N 050103601-.6E		ALNIN 283305-40.9N 050103601-.6E
	NANPI 290457N 0493157E		NANPI 290457N 0493157E
	SIDAD 295231N 0482944E		SIDAD 295231N 0482944E
R785	TURAIF (TRF)	UR785	TURAIF (TRF)
	ZELAF 325656-7.0N 0371121-800.0E		ZELAF 325656-7.0N 0371121-800.0E
	KARIATAIN (KTN) 341248N 0371551E		KARIATAIN (KTN) 341248N 0371551E
	BANIAS (BAN) 351342N 0355729E		BANIAS (BAN) 351342N 0355729E
	NIKAS 3511-.36N 03543-.00E		NIKAS 3511-.36N 03543-.00E
R794	ULDUS 3800-.00N 05101-.00E	UR794	ULDUS 3800-.00N 05101-.00E
	NOSHAHR (NSR) 363935N 0512805E		NOSHAHR (NSR) 363935N 0512805E
	DEHNAMAK (DHN) 351514N 0524313E		DEHNAMAK (DHN) 351514N 0524313E
	TABAS (TBS) 334021N 0565331E		TABAS (TBS) 334021N 0565331E
	BIRJAND (BJD) 325821N 0591200E		BIRJAND (BJD) 325821N 0591200E
	* Note 5 (OI)		* Note 5 (OI)
R799	IMPOS 183136N 0511848 E	UR799	IMPOS 183136N 0511848 E
	PASUL 180341N 0513803E		PASUL 180341N 0513803E
	TONRO 165850N 0522235E		TONRO 165850N 0522235E
	ASMAK 162327N 0524634E		ASMAK 162327N 0524634E
	ENADO 153333N 0532015E		ENADO 153333N 0532015E

International Civil Aviation Organization
Middle East Region

Route Catalogue

Edition May 2018

I. Introduction

1. The Middle East Route Catalogue was approved by MIDANPIRG/11 meeting (Cairo, Egypt 9-13 February 2009) developed within the context of the ARN TF, as an ATS route development/planning tool. It was agreed that the Catalogue should contain a list of ATS route proposals that have been agreed within the framework of the ATM SG that did not reach a level of maturity to be moved to the MID Air Navigation Plan.

2. The sixteenth meeting of the MID Air Navigation Planning and Implementation Regional Group (MIDANPIRG/16, Kuwait, 13-16 February 2016), under decision 16/17, established the ICAO MID ATS Route Development Working Group (RDWG) under the ICAO ATM Sub-Group. The RDWG mandate is to be a platform for all stakeholders to discuss and implement enhancements to the MID ATS Route Network.

3. Recognizing the value of a consolidated reference document for the regional ATS routes, the RDWG decided to maintain the Middle East Route Catalogue as the primary repository for proposals emanating from States and/or airspace users. The Route Catalogue will be maintained by IATA MENA in close collaboration with the RDWG Core Team.

4. Any State or airspace user which identifies a need for a new route requirement to be included in the catalogue or to change an existing route contained in the catalogue, may submit respectively an amendment proposal to the ICAO MID Office or IATA MENA. The RDWG will periodically survey concerned stakeholders for new/amended requirements to be added/amended in the Route Catalogue.

5. IATA MENA, will keep the Route Catalogue up-to date as proposals are added or amended. The Route Catalogue will be posted on IATA MENA and ICAO MID websites and presented to the ATM SG meeting or other relevant meetings.

II. Structure

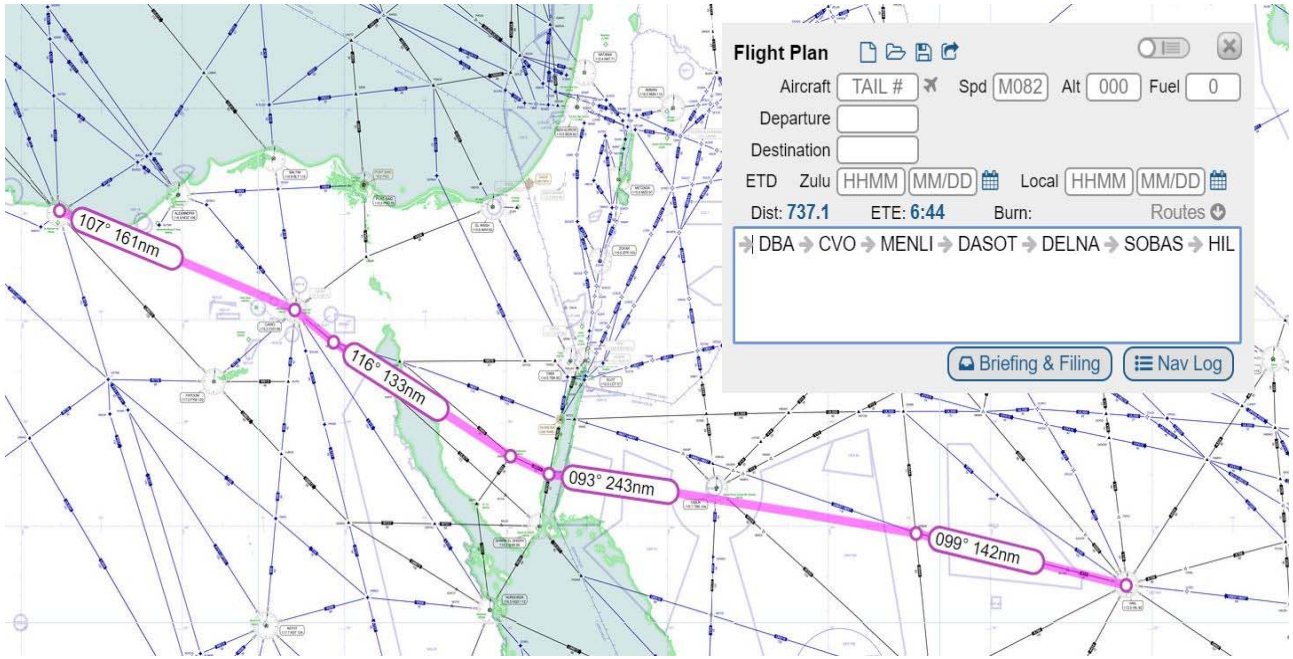
6. The Catalogue is divided into 2 elements:
    1. Current proposals for implementation
    2. Proposals on hold due to regional limitations on implementation

III. Processes

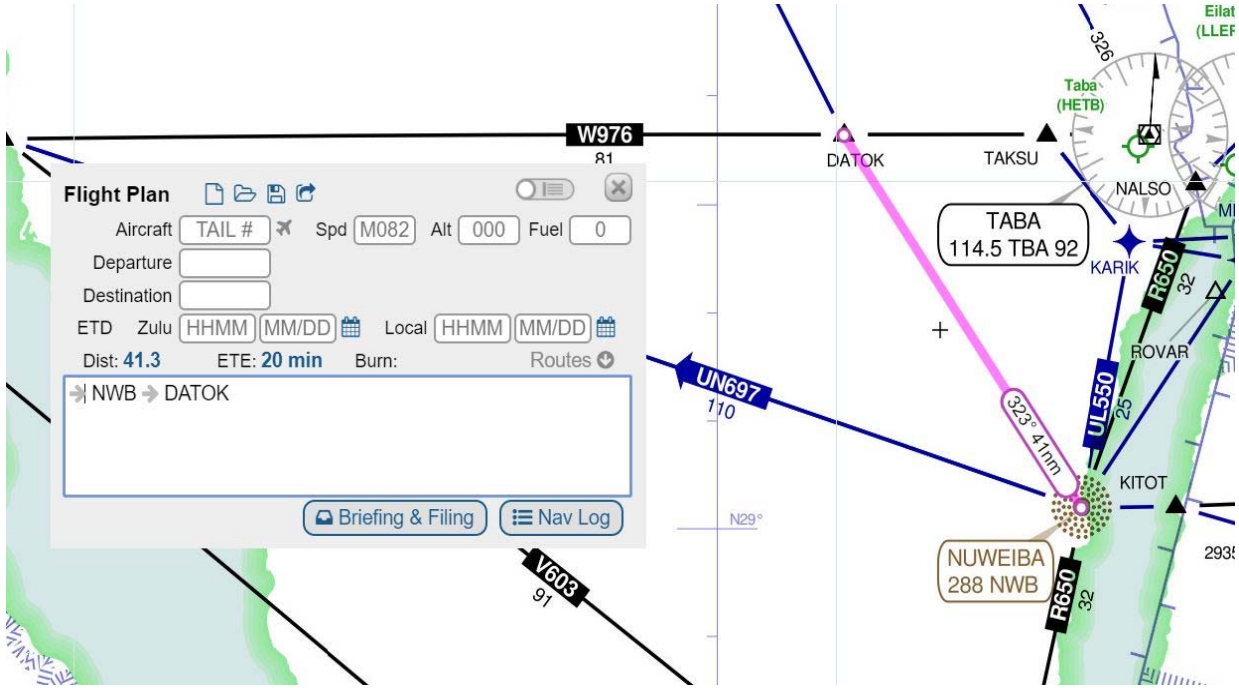
7. ICAO MID Office will send proposals included in the Catalogue to concerned States for their input:

- If a proposal is accepted by all concerned States, it shall be moved to the MID ANP for implementation through the processing of Proposal for Amendment.
- If any State has any comment on the proposal, a conference call or meeting (depending on the comments received) will be held with the concerned States and airspace users to reach a consensus on the proposal:
- If a compromise is reached, the amended proposal will be moved to the ANP for implementation.
- If a compromise was not possible, the proposal is returned to its originator for further study and removed from the Route Catalogue. The originator would then be able to review the proposal and submit a new one taking into consideration the limitations restricting the proposal from being implemented.

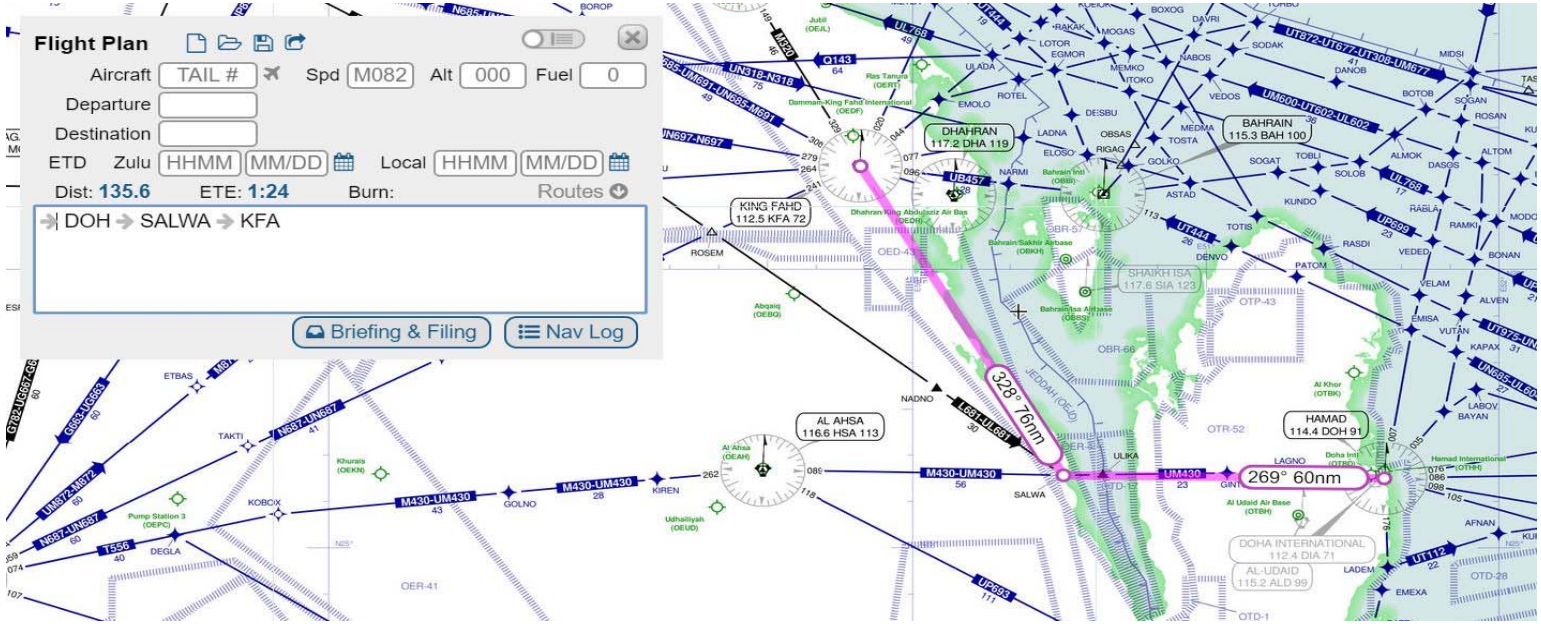
<table>
<tr><td>MID/RC-1</td><td>ATS Route Name:
New Route</td><td>Inter-Regional Cross Reference if any</td><td>N/A</td><td>Users Priority</td><td>High</td><td>Originator/Date</td><td>RDWG/1</td><td>Last updated</td><td>New Proposal</td></tr>
<tr><td colspan="3">Route Description</td><td>States Concerned</td><td colspan="2">Implementation Status</td><td colspan="2">MID ANP Status</td><td colspan="2">Action Taken / Required</td><td>Expected time frame for each Action</td></tr>
<tr><td colspan="3">DBA-CVO-MENLI-DASOT-DELNA-SOBAS
Flight Level Band: Eastbound</td><td>Egypt
Saudi Arabia</td><td colspan="2">Not Implemented</td><td colspan="2">Not in the Plan</td><td colspan="2" rowspan="4">To be addressed with Egypt and Saudi Arabia</td><td rowspan="4">- Quarter 4-2017</td></tr>
<tr><td colspan="3">Potential traffic flow: North Africa and South Europe to MID Region and beyond</td><td colspan="4"></td></tr>
<tr><td>Justification</td><td colspan="7"></td></tr>
<tr><td>Benefits</td><td colspan="7"></td></tr>
<tr><td>Remarks</td><td colspan="7"></td></tr>
</table>



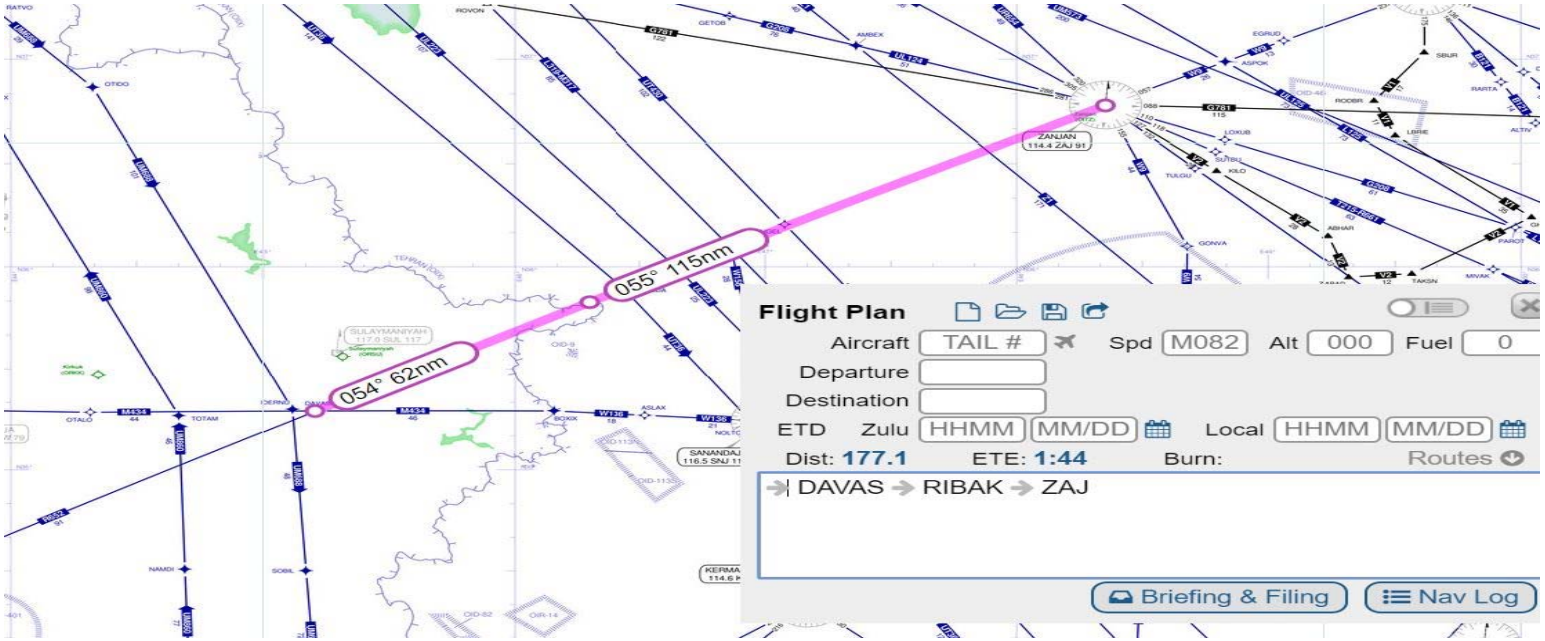
MID/RC-2	ATS Route Name: New Route	Inter-Regional Cross Reference if any	N/A	Users Priority	High	Originator/Date	RDWG/1	Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**	**MID ANP Status**		**Action Taken / Required**			**Expected time frame for each Action**
NWB-DATOK **Flight Level Band:** Westbound **Potential traffic flow**: Asia and Middle East traffic to Europe		Egypt	Not Implemented	Not in the Plan		To be addressed with Egypt			- Quarter 4-2017
Justification									
Benefits									
Remarks									



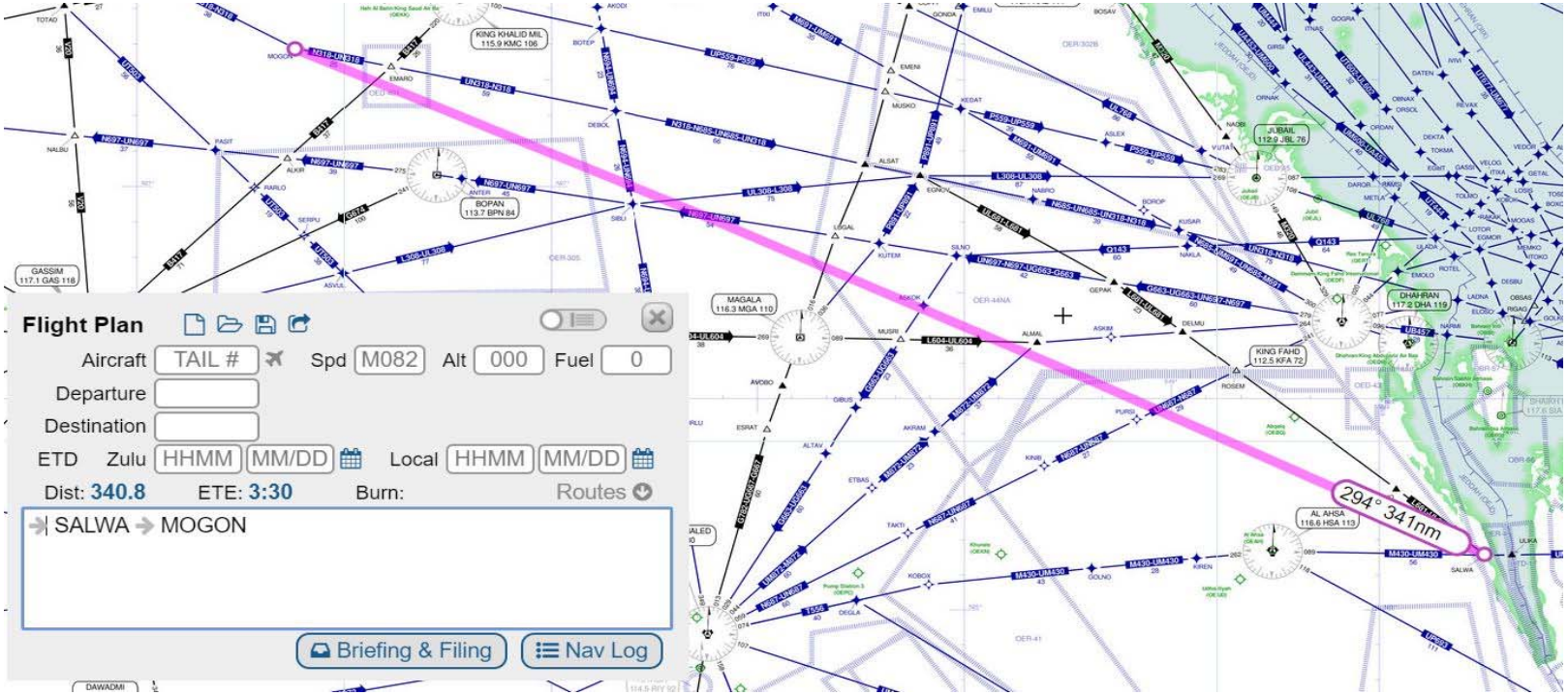
MID/RC-3	ATS Route Name: New Route	Inter-Regional Cross Reference if any	N/A	Users Priority	High	Originator/Date	RDWG/1	Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**	**MID ANP Status**		**Action Taken / Required**			**Expected time frame for each Action**
DOH-SALWA (M430)-KFA **Flight Level Band:** Westbound **Potential traffic flow**: Doha Departures to North Africa and West Europe		Bahrain Qatar Saudi Arabia	Not Implemented	Not in the Plan		To be addressed with Bahrain, Qatar and Saudi Arabia			- Quarter 4-2017
Justification									
Benefits									
Remarks	**ON HOLD**								



MID/RC-4	ATS Route Name: New Route	Inter-Regional Cross Reference if any	N/A	Users Priority	High	Originator/Date	RDWG/1	Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**	**MID ANP Status**		**Action Taken / Required**			**Expected time frame for each Action**
DAVAS-RIBAK-ZANJAN (ZAJ) extension to R652 **Flight Level Band:** Westbound **Potential traffic flow**: traffic to/from Tehran FIR through Amman and Baghdad FIRs		Iran Iraq	Not Implemented	Not in the Plan		To be addressed with Iran and Iraq			- Quarter 4-2017
Justification									
Benefits									
Remarks									



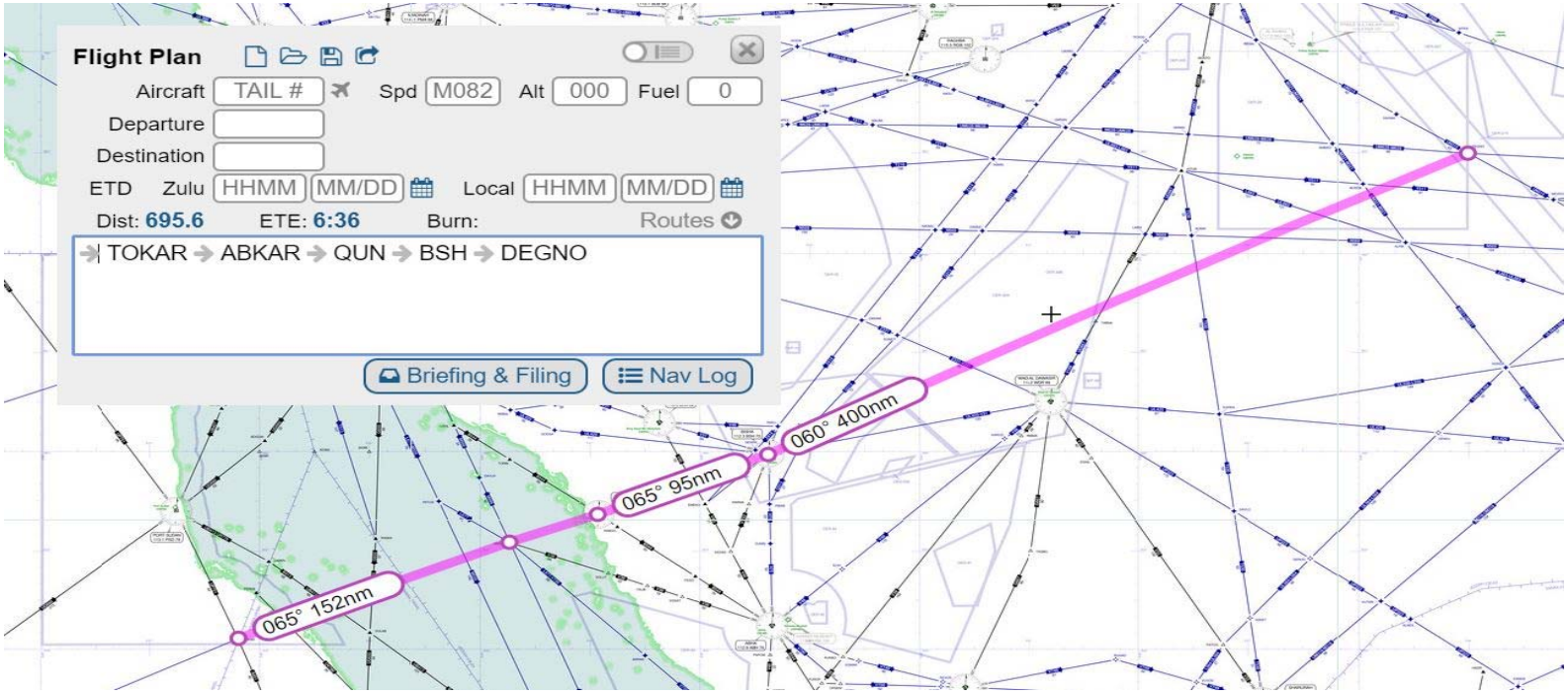
MID/RC-5	ATS Route Name: New Route	Inter-Regional Cross Reference if any	N/A	Users Priority	High	Originator/Date	RDWG/1	Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**	**MID ANP Status**		**Action Taken / Required**		**Expected time frame for each Action**	
SALWA-MOGON **Flight Level Band:** Westbound **Potential traffic flow**:		Bahrain Qatar Saudi Arabia	Not Implemented	Not in the Plan		To be addressed with Bahrain, Qatar and Saudi Arabia		- Quarter 4-2017	
Justification									
Benefits									
Remarks	**ON HOLD**								



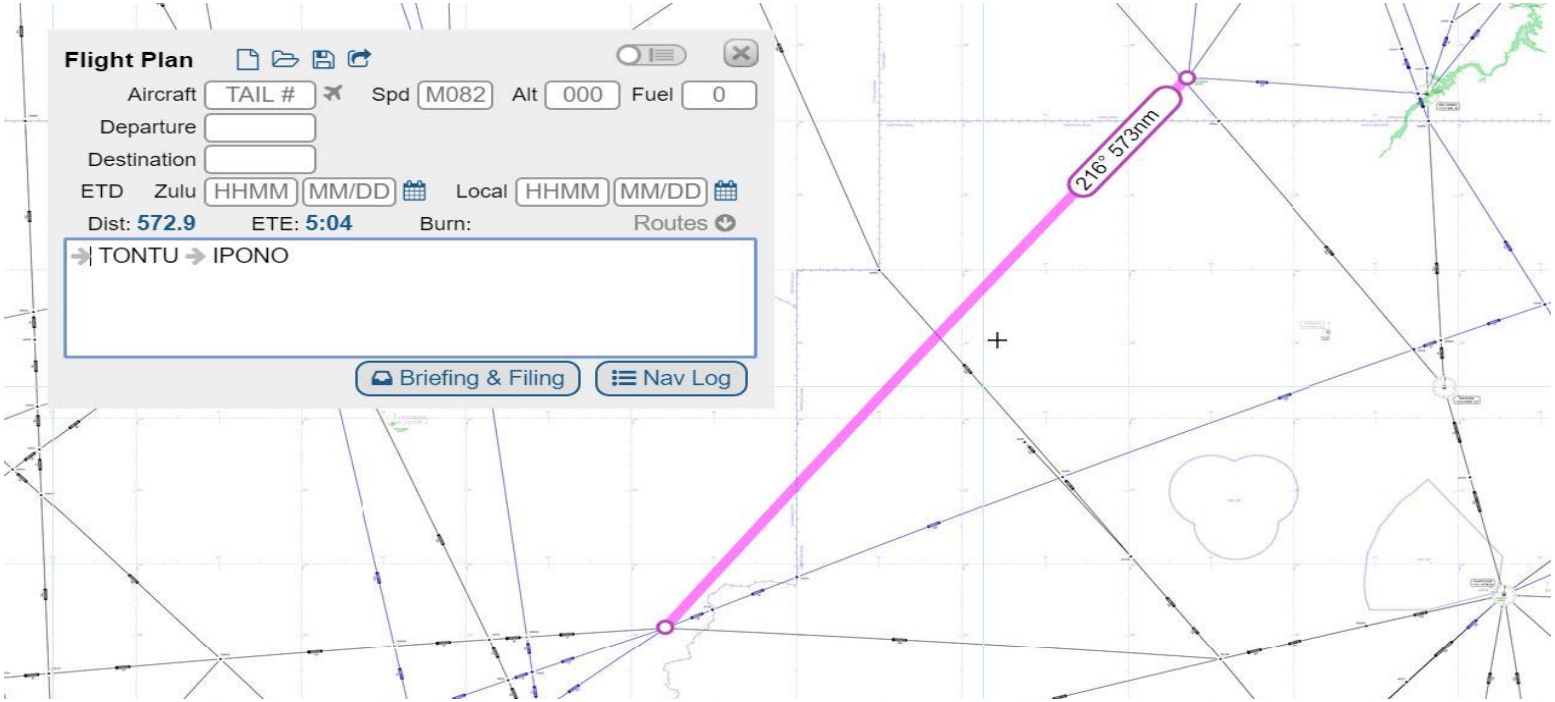
MID/RC-6	**ATS Route Name: New Route**	**Inter-Regional Cross Reference if any**	N/A	**Users Priority**	High	**Originator/Date**	RDWG/1	**Last updated**	New Proposal

Route Description	**States Concerned**	**Implementation Status**	**MID ANP Status**	**Action Taken / Required**	**Expected time frame for each Action**
TOKAR-ABKAR-QUN-BSH-DEGNO **Flight Level Band:** Bidirectional **Potential traffic flow**:	Eretria Saudi Arabia	Not Implemented	Not in the Plan	To be addressed with Eretria and Saudi Arabia	- Quarter 4-2017

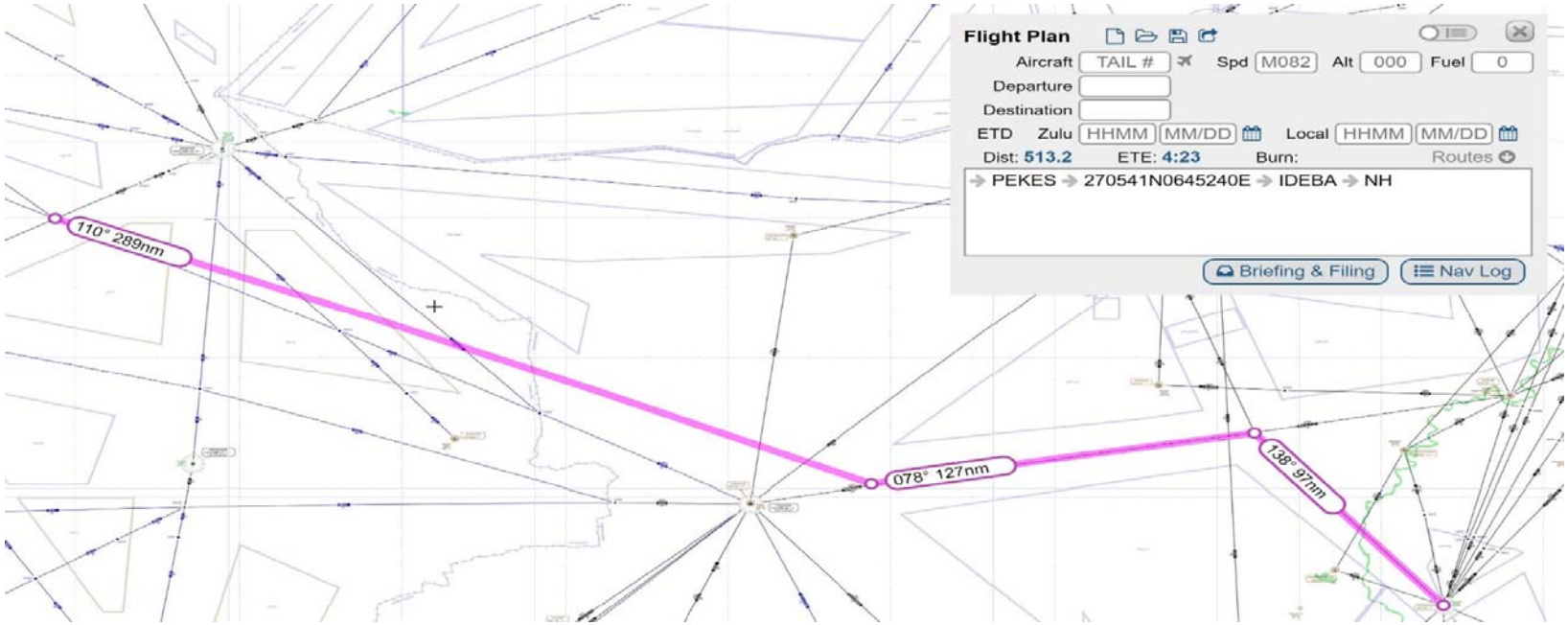
Justification	
Benefits	
Remarks	



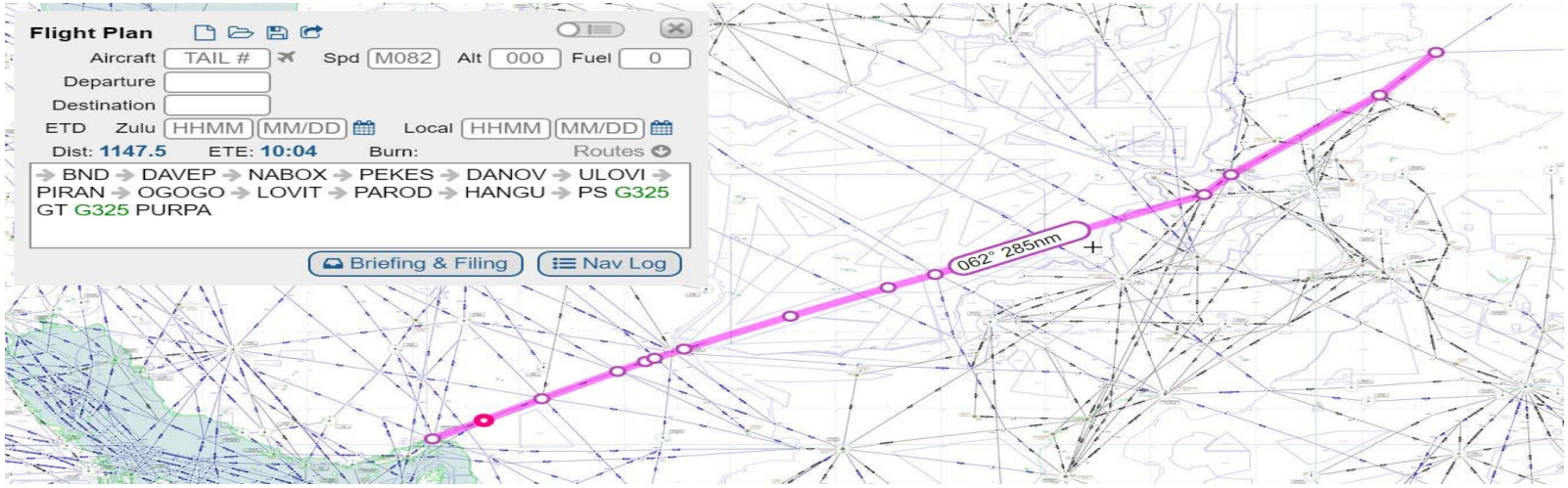
MID/RC-7	**ATS Route Name: New Route**	**Inter-Regional Cross Reference if any**	N/A	**Users Priority**	High	**Originator/Date**	RDWG/1	**Last updated**	New Proposal
Route Description		**States Concerned**	**Implementation Status**		**MID ANP Status**		**Action Taken / Required**		**Expected time frame for each Action**
TONTU-IPONO **Flight Level Band:** Bidirectional		Egypt Sudan	Not Implemented		Not in the Plan		To be addressed with Egypt and Sudan		- Quarter 4-2017
Potential traffic flow: from Egypt, Jordan and Lebanon, etc. to Chad and west/south Africa									
Justification									
Benefits									
Remarks									



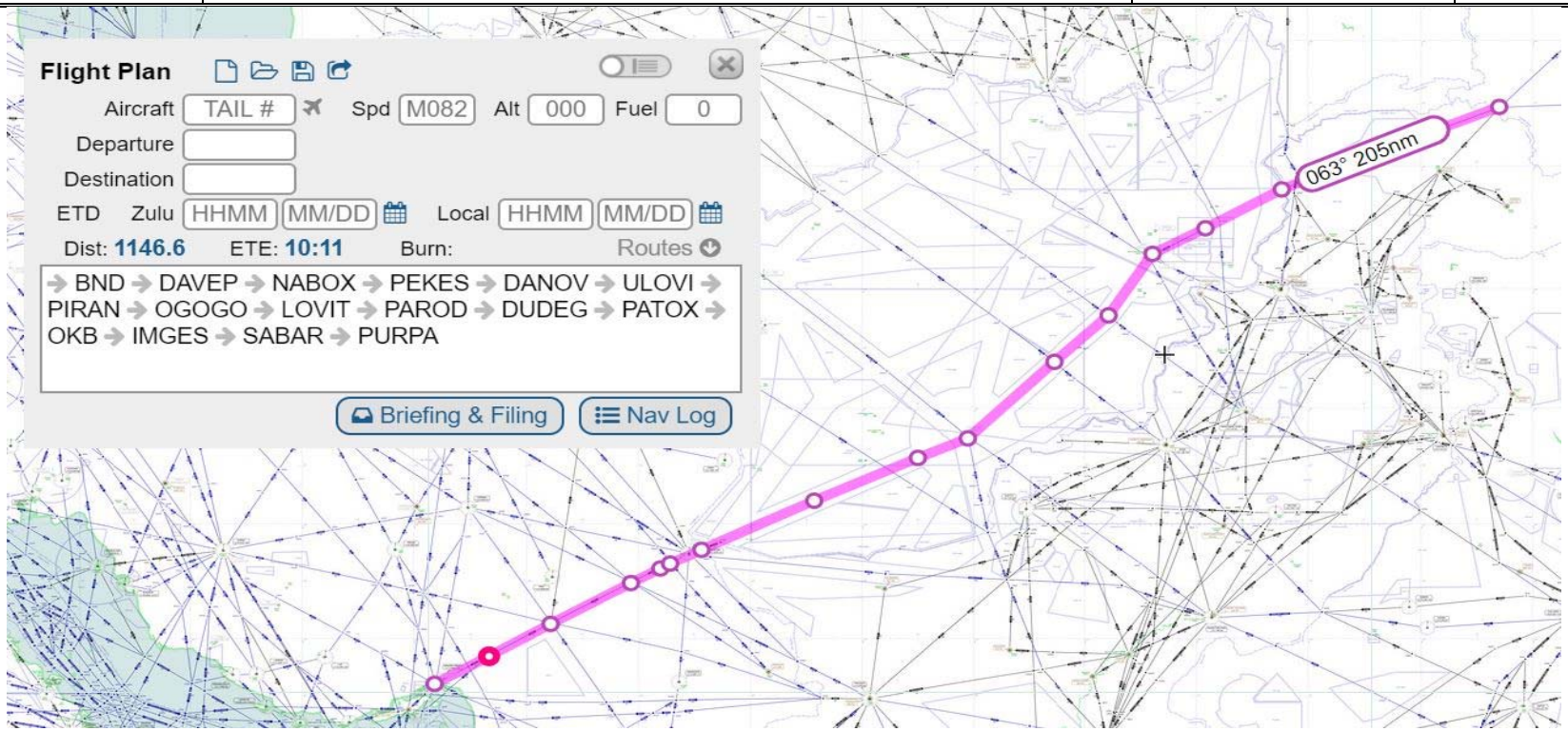
MID/RC-8	ATS Route Name: New Route	Inter-Regional Cross Reference if any	APAC	Users Priority	High	Originator/Date	RDWG/1	Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**		**MID ANP Status**		**Action Taken / Required**		**Expected time frame for each Action**
PEKES-NH **Flight Level Band:** Bidirectional **Potential traffic flow**: Europe to East through Tehran FIR.		Iran Pakistan	Not Implemented		Not in the Plan		To be addressed with Iran and Pakistan To be addressed ta the AIRARD TF/2 meeting		- Quarter 4-2017
Justification	Agreed upon during the Afghanistan Contingency Coordination meeting								
Benefits									
Remarks									



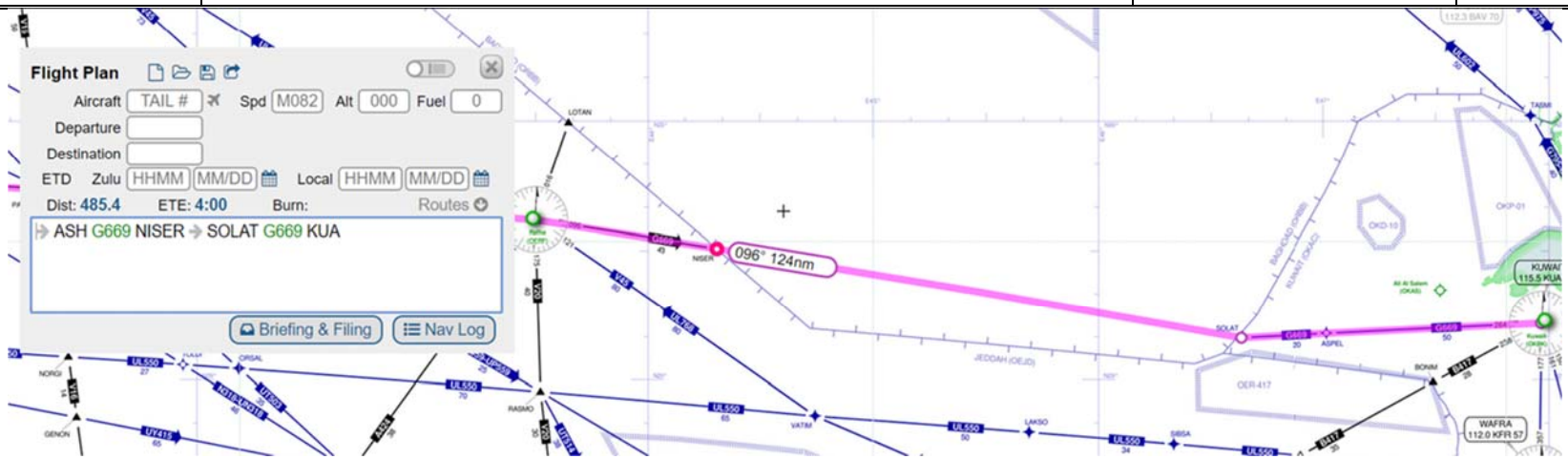
MID/RC-9a	**ATS Route Name: New Route**	**Inter-Regional Cross Reference if any**	APAC	**Users Priority**	High	**Originator/Date**	RDWG/1	**Last updated**	New Proposal
Route Description		**States Concerned**	**Implementation Status**		**MID ANP Status**		**Action Taken / Required**		**Expected time frame for each Action**
A453-PAROD-HANGU-G325-PURPA **Flight Level Band:** FLAS TBD **Potential traffic flow**: Gulf Traffic from/to Fareast		Afghanistan	Not Implemented		Not in the Plan		To be addressed with Afghanistan. To be addressed to AIRARD TF/2 meeting		- Quarter 4-2017
Justification									
Benefits									
Remarks	**9a and 9b are high priority. However, in case only one option could be implemented 9a has preference**								



MID/RC-9b	**ATS Route Name: New Route**	**Inter-Regional Cross Reference if any**	APAC	**Users Priority**	High	**Originator/Date**	RDWG/1	**Last updated**	New Proposal
Route Description		**States Concerned**	**Implementation Status**		**MID ANP Status**		**Action Taken / Required**		**Expected time frame for each Action**
A453-PAROD-DUDEG-PATOX-OKB-IMGES-SABAR then G206 to PURPA **Flight Level Band:** FLAS TBD **Potential traffic flow**: Gulf Traffic from/to Fareast		Afghanistan	Not Implemented		Not in the Plan		To be addressed with Afghanistan. To be addressed to the AIRARD TF/2 meeting		- Quarter 4-2017
Justification									
Benefits									
Remarks									



MID/RC-11	ATS Route Name: G669 New Route	Inter-Regional Cross Reference if any		Users Priority	MID	Originator/Date		Last updated	New Proposal
Route Description		**States Concerned**	**Implementation Status**	**MID ANP Status**		**Action Taken / Required**			**Expected time frame for each Action**
G669 between NISER and SOLAT **Flight Level Band:** FLAS TBD		Saudi Arabia Iraq and Kuwait	Not Implemented	Not in the Plan		To be addressed with Saudi, Iraq and Kuwait			- Quarter 2-2018
Potential traffic flow: Levant to/from North Gulf Levant to/from Iran/Far East									
Justification	Re-instate G669 as it used to be active for certain flows in certain periods of the year								
Benefits	Reduce track miles and air miles due to avoidance of seasonal jet-stream Enable optimum descents in Kuwait								
Remarks									



<table>
<tr><td>MID/RC-xx</td><td>ATS Route Name:
New Route</td><td>Inter-Regional Cross Reference if any</td><td>APAC</td><td>Users Priority</td><td>High</td><td>Originator/Date</td><td>RDWG/1</td><td>Last updated</td><td>New Proposal</td></tr>
<tr><td colspan="2">Route Description</td><td>States Concerned</td><td colspan="2">Implementation Status</td><td colspan="2">MID ANP Status</td><td colspan="2">Action Taken / Required</td><td>Expected time frame for each Action</td></tr>
<tr><td colspan="2">
Flight Level Band: FLAS TBD
Potential traffic flow: Gulf Traffic from/to Fareast</td><td></td><td colspan="2">Not Implemented</td><td colspan="2">Not in the Plan</td><td colspan="2" rowspan="4">To be addressed with</td><td rowspan="4">- Quarter 4-2017</td></tr>
<tr><td>Justification</td><td colspan="7"></td></tr>
<tr><td>Benefits</td><td colspan="7"></td></tr>
<tr><td>Remarks</td><td colspan="7"></td></tr>
</table>

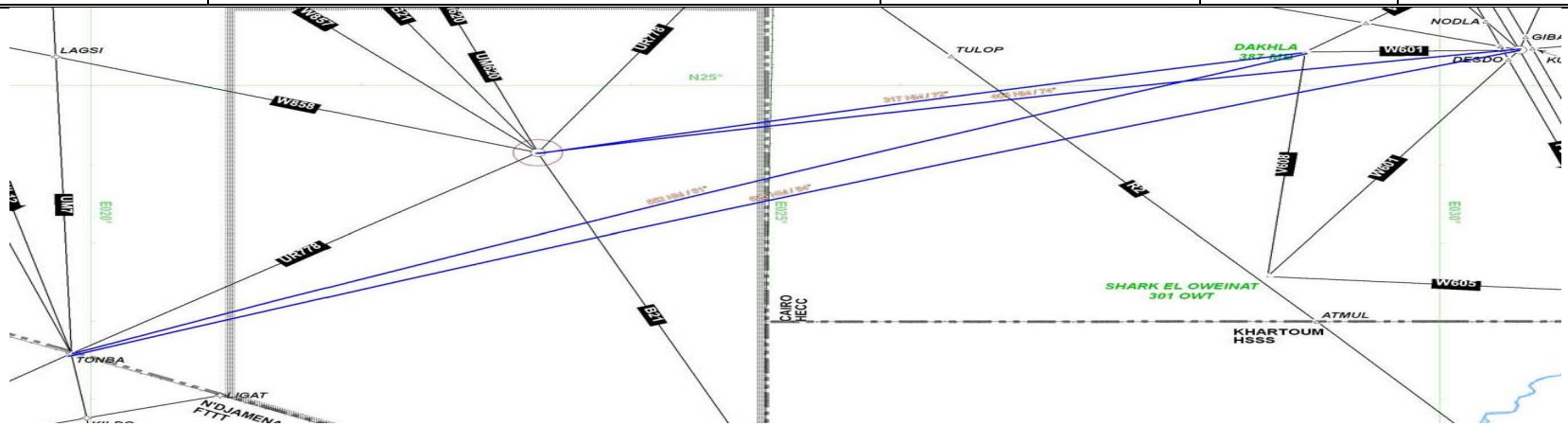
ATS Route proposals on hold

MID ATS ROUTES CATALOGUE

MID/RC-002 ***(Option1,2 ,3)***	**ATS Route Name:** New AWY Proposed between TONBA-KHG and KFR to MB (Dakhla) Or KHG	**Entry-Exit:** TONBA to KHG (Dakhla) Libya to Egypt FIR	**Inter-Regional Cross Reference if any**		**Users Priority**	Hold	**Originator of Proposal**	IATA
							Date of Proposal	ARN TF/1

Route Description	**States Concerned**	**Expected Impl. date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
(Opt 1) TONBA N2135.3 E01951.2 **KHG (N2526.9 E03035.4)** **(Opt 2) TONBA (N21 35.3 E 0-19 51.2) MB (N25 25.2 E029 00.1)** **(Opt 3) KFR (N24 09.2 E023 18.5)** **MB (N25 25.2 E029 00.1) Or** **KHG (N25 26.9 E030 35.4)**	Libya Egypt		No Progress reported.		- Egypt highlighted that UM999 already exists and is used by 3 to 5 flights a day also that communication is being upgraded with a new station at Dakhla. - To be considered with and similarly to Proposal 2 & 4. - Egypt unable to accept route due to safety issues. - Differed for the future	TBD
Flight Level Band: FL290 – FL410						
Potential City Pairs: West Africa airports-Doha						
Expect 50 eastbound wkly flights, saving 91000Kg of fuel and 282T of CO2 wkly. The number may double if used westbound.						

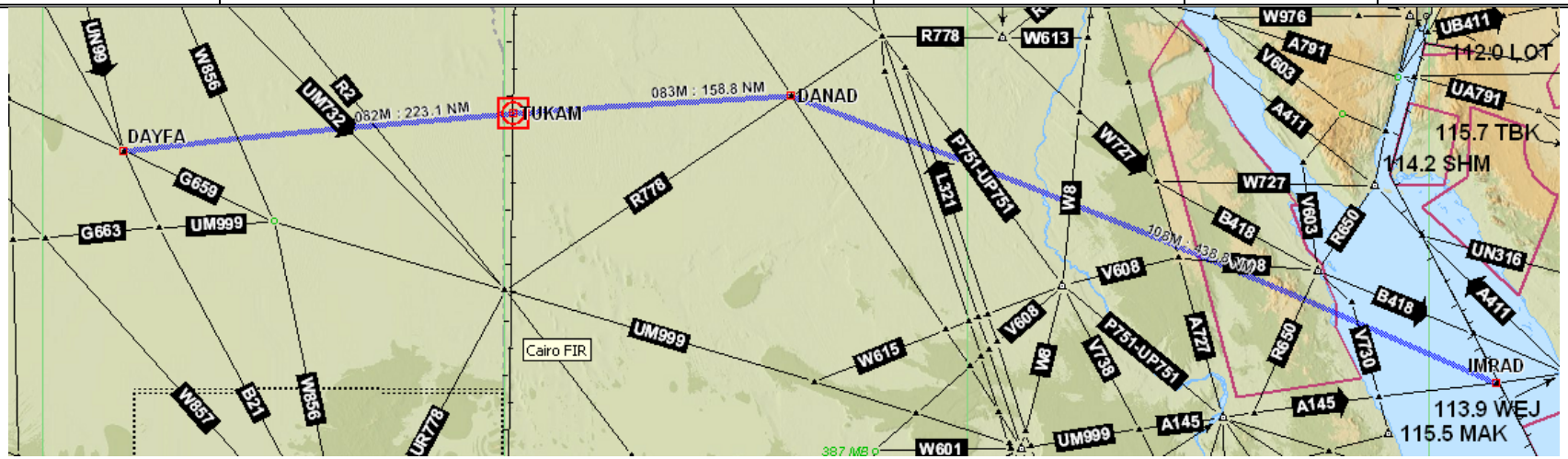
Conclusions/Remarks	**ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014



MID/RC-081	ATS Route Name: New Route UQ596	Entry-Exit: DAYFA – DANAD – IMRAD then A145 Eastbound Only	Inter-Regional Cross Reference if any		Users Priority	High	Originator of Proposal	IATA iFLEX Proposal
							Date of Proposal	17 May 2011

Route Description	States Concerned	Expected Impl. date	Implementation Status	ANP Status	Action Taken/Required	Deadline for each Action
SEB HORUJ DAYFA DANAD IMRAD ALMAL	Libya Egypt Saudi Arabia		No progress reported	Not in the ANP	Needs to be discussed with Libya Needs to be discussed with Egypt Needs to be discussed with Jeddah FIR if A145 can be bidirectional East of LXR Implement if possible Priority Routes	TBD
Flight Level Band:						
Potential City Pairs: Dakar FIR, Algiers FIR, Tripoli FIR, Cairo FIR, Jeddah FIR						

Conclusions/Remarks	Proposals agreed to by some State during the iFLEX workshop Dubai **ON HOLD-RDWG-1**		Last updated	ATM SG/1 June 2014

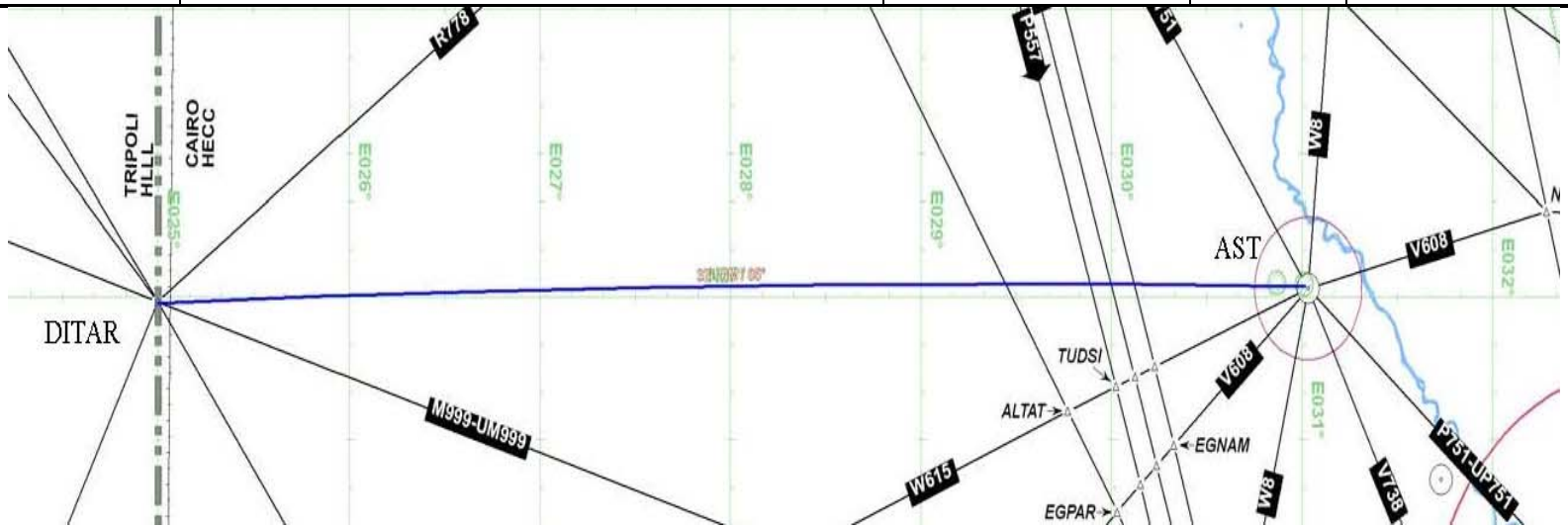


3. MID/RC-081-on hold

ID/RC-083	ATS Route Name: New Route UQ598 Westbound	Entry-Exit: DITAR – AST	Inter-Regional Cross Reference if any	TOP TEN	Users Priority	High	Originator of Proposal	IATA iFLEX Proposal
							Date of Proposal	17 May 2011

Route Description		States Concerned	Expected Impl. date	Implementation Status	ANP Status	Action Taken/Required	Deadline for each Action
AST DITAR 26 59 03N 025 00 00E	Libya Egypt					Important Segment HGD-PASAM move d to ANP Egypt advised that DITAR-AST not possible currently.	TBD
Flight Level Band:							
Potential City Pairs:							

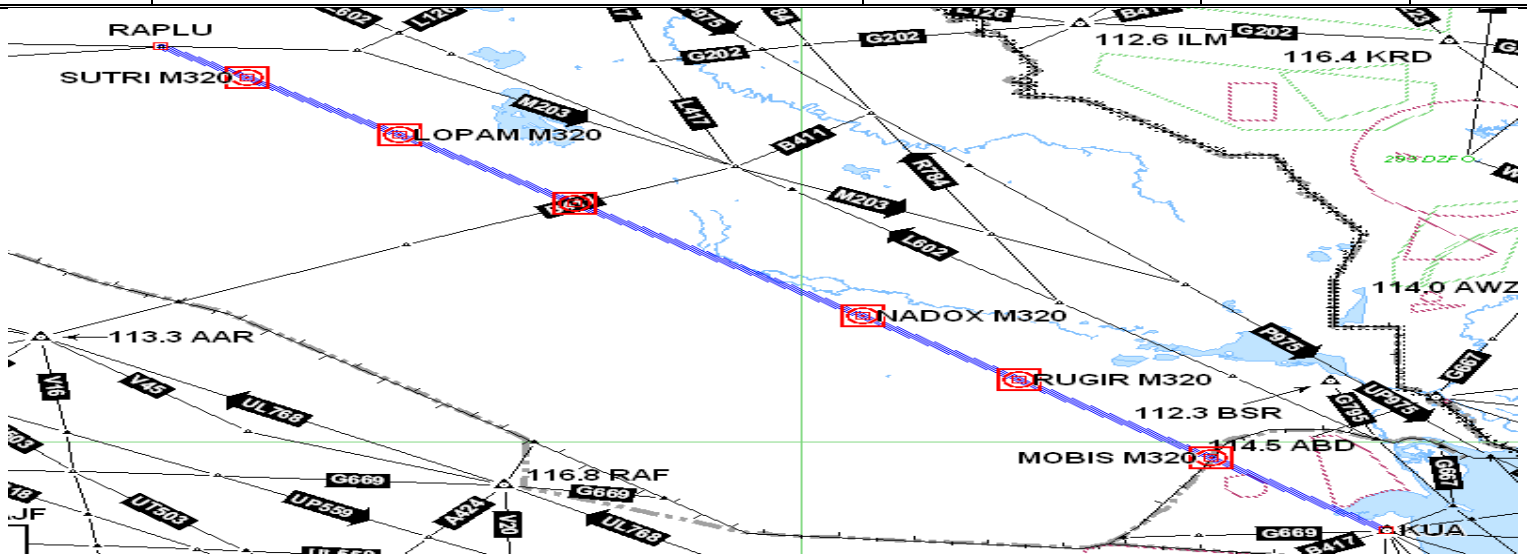
Conclusions/Remarks	ON HOLD-RDWG-1		Last updated	ATM SG/1 June 2014



MID/RC-027	ATS Route Name: M320	Entry-Exit: KUA-RAPLU	Inter-Regional Cross Reference if any		Users Priority	URGENT	Originator of Proposal	Iraq
							Date of Proposal	RDGE/11 (Oct 2009)

Route Description	States Concerned	Expected Impl. date	Implementation Status	ANP Status	Action Taken / Required	Deadline for each Action
KUA **MOBIS 295109N 0470457E** **RUGIR 303219N 0460618E** **NADOX 310505N 0451851E** **ELODI 320256N 0435126E** **LOPAM 323757N 0425806E** **SUTRI 330701N 0421128E** **RAPLU 332300N 0414530E**	Kuwait Iraq		1. Existing RNAV designator M320 from Kuwait proposed). 2. Points highlighted in yellow are new. 3. Coordination with Kuwait required of continuation of route within their airspace.	Available in ATS.1 Table In Kuwait FIR	Not supported by Kuwait at present. Needs further studies. differed for the future KUA – RAPLU needs to be implemented	March 2010
Flight Level Band: FL200-FL410						
Potential City Pairs:						

Conclusions/Remarks	**ON HOLD-RDWG-1**		Last updated	ATM SG/1 June 2014



4. **MID/RC-027-hold**

MID/RC-028	ATS Route Name: J222	Entry-Exit: BASEM-KMS	Inter-Regional Cross Reference if any		Users Priority	URGENT	Originator of Proposal	Iraq
							Date of Proposal	RDGE/11 (Oct 2009)

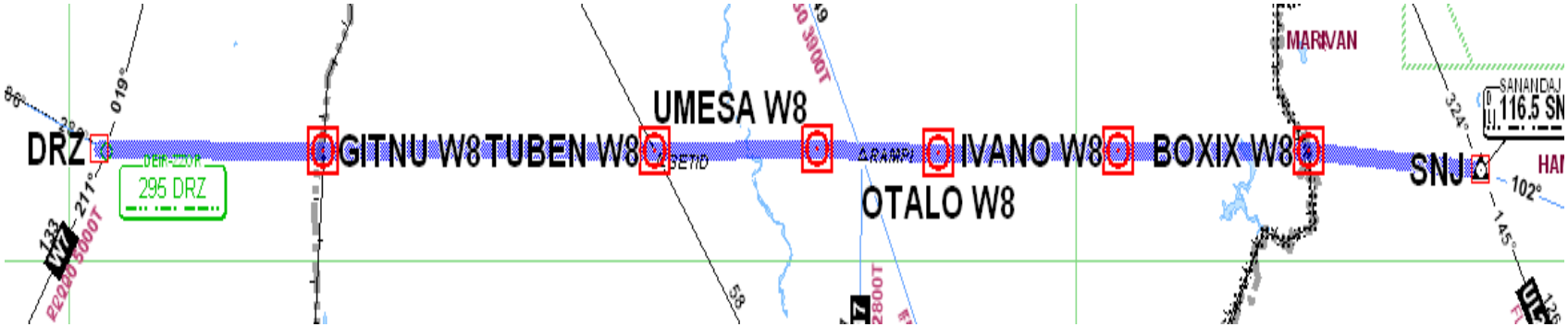
Route Description	States Concerned	Expected Impl, date	Implementation Status	ANP Status	Action Taken / Required	Deadline for each Action
BASEM 333318N 0373906E **ALSOX 333700N 0392000N** **GEPAP 334906N 0422851E** **SOKAD 341051N 0453226E** **KMS KERMANSHAH**	Syria Iraq Iran		1. Points highlighted in yellow are new. 2. Coordination with Syria and Iran required for the continuation of route within their airspace. 3. New route in the Baghdad (FIR)	Not available in ATS.1 Table. Implemented in Syria Change of Route Designator Required	Points highlighted in yellow are new. - Not supported by Syria - ATS route J222 is in close proximity with ATS route UR785 that would cause traffic conflict - Iraq was asked to reconsider to join the ATS route with G202 and change the route designator. - Syria to review the proposal and will inform ICAO.	TBD
Flight Level Band: FL200-FL410			No progress reported			
Potential City Pairs:						

Conclusions/Remarks	ON HOLD-RDWG-1		Last updated	ATM SG/1 June 2014

MID/RC-029	ATS Route Name: W8	Entry-Exit: GITNU-HAB	Inter-Regional Cross Reference if any		Users Priority	URGENT	Originator of Proposal	Iraq
							Date of Proposal	RDGE/11 (Oct 2009)

Route Description	States Concerned	Expected Impl. date	Implementation Status	ANP Status	Action Taken / Required	Deadline for each Action
DRZ **GITNU 351724N 0411553E** **TUBEN 351724N 0425434E** **UMESA 351741N 0434307E** **OTALO 351700N 0441900E** **DAVAS 351724N 0451235E** **BOXIX 351724N 0460921E** **SNJ**	Syria Iraq Iran		1. Change route designator to regional RNAV route designator (**L, M, N or P requested**). 2. Points highlighted in yellow are new. 3. Coordination with Syria and Iran required for the continuation of route within their airspace. 4. New route in the Baghdad (FIR)		Points highlighted in yellow are new. - Syria requested additional time to examine the proposal for the establishment of the ATS route.	TBD
Flight Level Band: FL200-FL410			No progress reported			
Potential City Pairs:						

Conclusions/Remarks	ON HOLD-RDWG-1		Last updated	ATM SG/1 June 2014

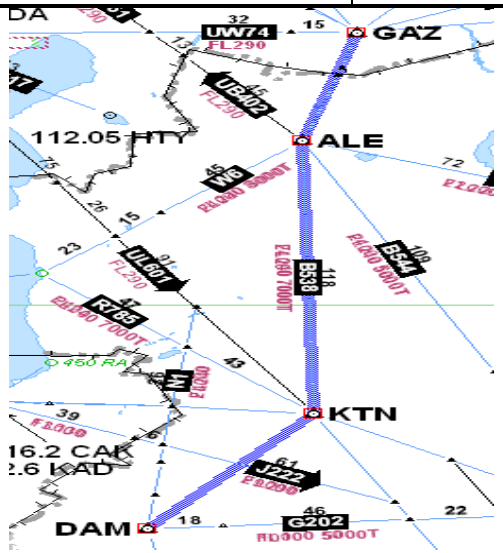


5.

MID/RC-062 ***(ex B538)***	**ATS Route Name:** New Route	**Entry-Exit:** GAZIANTEP DAMASCUS	**Inter-Regional Cross Reference if any**		**Users Priority**	High	**Originator of Proposal**	IATA
							Date of Proposal	MIDANPIRG/10

Route Description		**States Concerned**	**Expected Implementation date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
(GAZIANTEP) ALEPPO KARIATAIN DAMASCUS		Syria		GAZIANTEP – ALEPPO Established as (B544) ALEPPO – KARIATAIN Established as (B538) KARIATAIN – DAMASCUS not established		No updates	
Flight Level Band:				No progress reported			
Potential City Pairs:							

Conclusions/Remarks	Segment GAZIANTEP-ALEPPO implemented (B544) **ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014

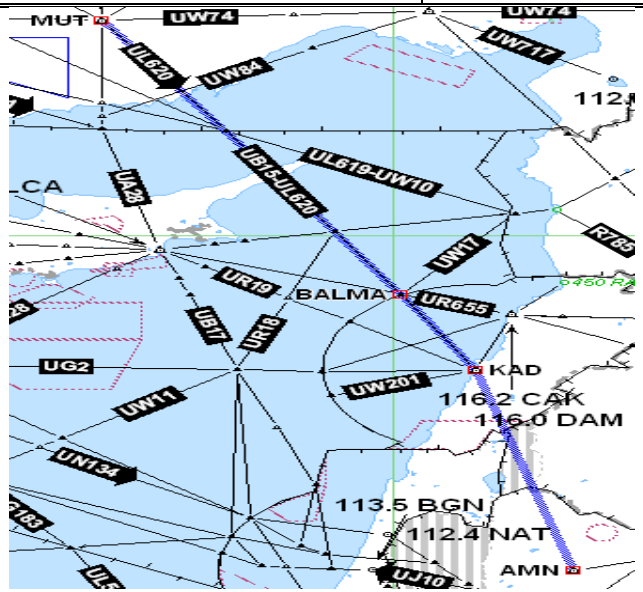


6.

MID/RC-063 *(ex B545)*	**ATS Route Name:** New Route	**Entry-Exit:** BALMA-AMMAN	**Inter-Regional Cross Reference if any**		**Users Priority**	High	**Originator of Proposal**	IATA
							Date of Proposal	MIDANPIRG/10

Route Description	**States Concerned**	**Expected Impl. date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
KHALDEH AMMAN	Jordan Lebanon Syria		MUT – BALMA – KAHLDE Implemented as **(UB15/UL620)** KHALDE – AMMAN not implemented		Not feasible currently	
Flight Level Band:			No progress reported			
Potential City Pairs:						

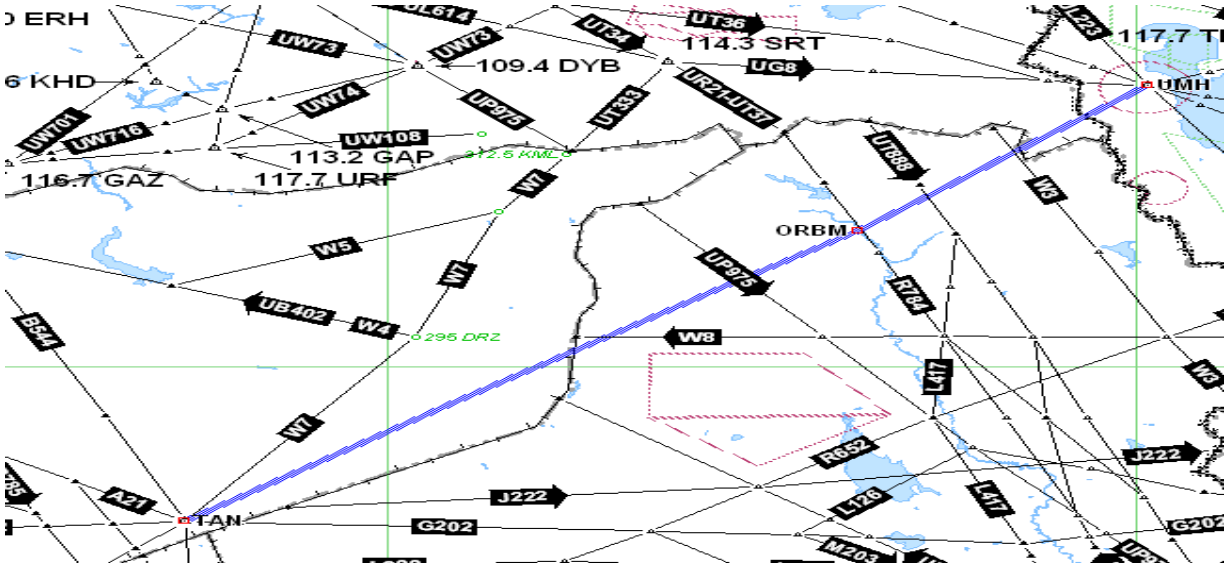
Conclusions/Remarks	**ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014



MID/RC-067 *(ex G671)*	ATS Route Name:	Entry-Exit: TANF-UMH	Inter-Regional Cross Reference if any		Users Priority	High	Originator of Proposal	IATA
							Date of Proposal	MIDANPIRG/10

Route Description		States Concerned	Expected Impl. date	Implementation Status	ANP Status	Action Taken/Required	Deadline for each Action
TANF **MOSUL** **UMH**		Syria Iraq Iran		No progress reported		No update	
Flight Level Band:							
Potential City Pairs:							

Conclusions/Remarks	**ON HOLD-RDWG-1**		Last updated	ATM SG/1 June 2014



MID/RC-077	**ATS Route Name:** New route	**Entry-Exit:** BINKO - RASNO - LOSUL	**Inter-Regional Cross Reference if any**		**Users Priority**	High	**Originator of Proposal**	IATA
							Date of Proposal	ARN TF/2

Route Description	**States Concerned**	**Expected Impl. date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
BINKO **RASNO** **LOSUL**	Egypt Lybia Malta				Egypt has no objection to establish the route as Uni-directional	
Flight Level Band: Upper Airspace			No progress reported			
Potential City Pairs:						

Conclusions/Remarks	**ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014

MID/RC-080	ATS Route Name: New Route	Entry-Exit: BUSRA - KTN	Inter-Regional Cross Reference if any		Users Priority	High	Originator of Proposal	ICAO EUR/NAT
							Date of Proposal	17 May 2011

Route Description	States Concerned	Expected Implementation date	Implementation Status	ANP Status	Action Taken/Required	Deadline for each Action
BUSRA 322000N 0363700E KARIATAIN (KTN)	Syria		No progress reported	Not in ANP	State letter to be sent to Syria for input. Awaiting final approval for implementation	
Flight Level Band:						
Potential City Pairs: HEGN - UUDD						

Conclusions/Remarks	Shortens the distance by 85NM. **ON HOLD-RDWG-1**		Last updated	ATM SG/1 June 2014

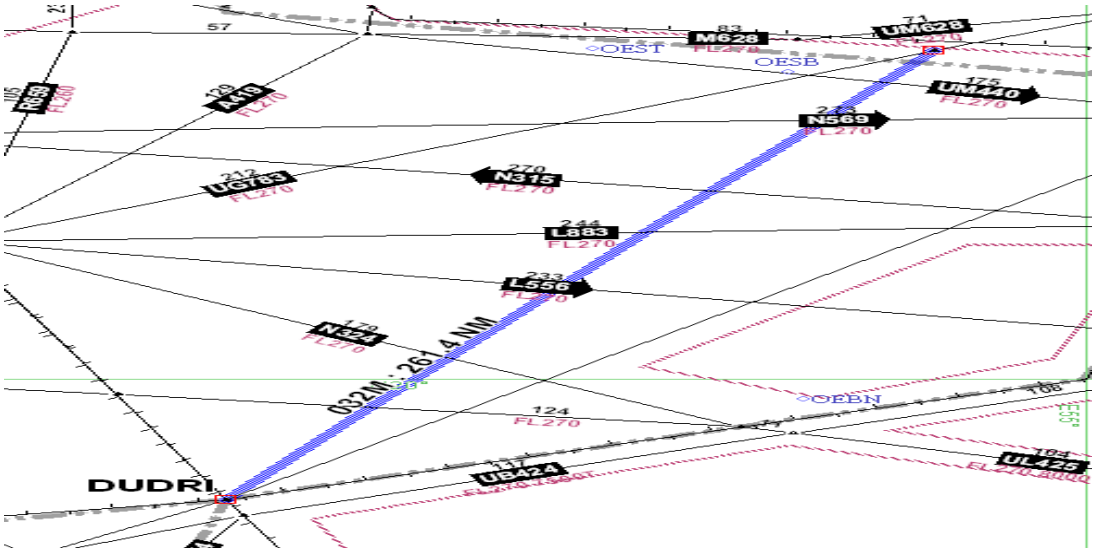
7.

8.

MID/RC-096	**ATS Route Name:** New Route UQ578; Bidirectional	**Entry-Exit:** DUDRI - TANSU	**Inter-Regional Cross Reference if any**		**Users Priority**	High	**Originator of Proposal**	IATA iFLEX Proposal
							Date of Proposal	17 May 2011

Route Description		**States Concerned**	**Expected Impl. date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
DUDRI 190000N 0520000E TANSU 224136N 0542828E	Bahrain UAE			No progress reported		Level Restriction FL300/320	TBD
Flight Level Band:							
Potential City Pairs:							

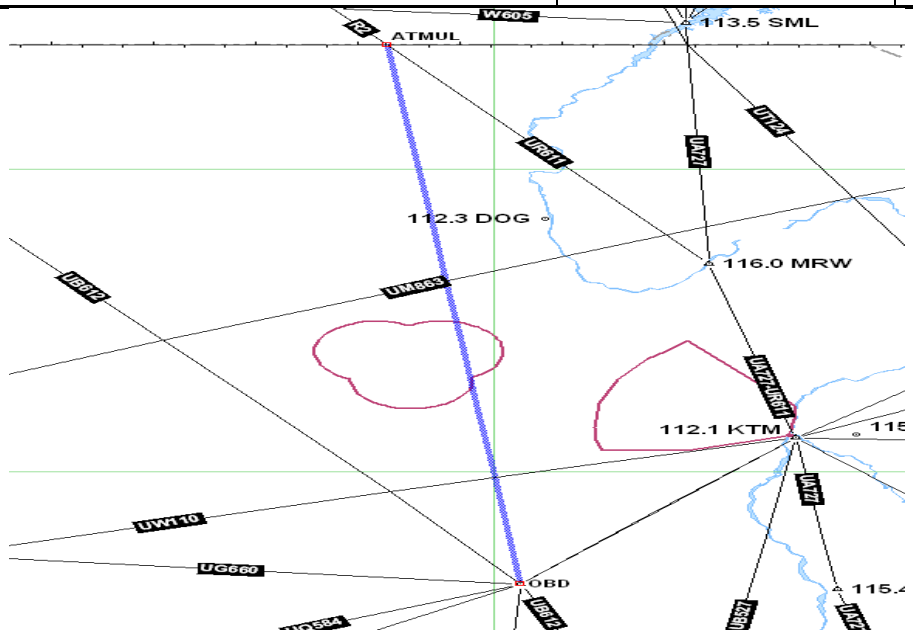
Conclusions/Remarks	**ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014



MID/RC-099	**ATS Route Name:** New Route ATMUL-OBD	**Entry-Exit:** ATMUL-OBD	**Inter-Regional Cross Reference if any**		**Users Priority**	High	**Originator of Proposal**	IATA
							Date of Proposal	

Route Description		**States Concerned**	**Expected Implementation date**	**Implementation Status**	**ANP Status**	**Action Taken/Required**	**Deadline for each Action**
ATMUL **OBD**	Egypt Sudan			No progress reported		ATS Route Segment from point ATMUL to OBD in the Khartoum FIR Sudan has no objection	TBD
Flight Level Band:							
Potential City Pairs:							

Conclusions/Remarks	**ON HOLD-RDWG-1**		**Last updated**	ATM SG/1 June 2014



9.

STATUS OF CONTINGENCY AGREEMENTS IN THE MID REGION
As of May 2018

STATE	CORRESPONDING STATES			Status
BAHRAIN	☒ Iran ☒ Kuwait	☒ Qatar ☒ Saudi Arabia	☒ UAE	Completed
EGYPT	☒ Jordan ☒ Libya	☒ Saudi Arabia ☒ Sudan	☒ Cyprus (Recommended) ☒ Greece (Recommended) ☐ Israel (Recommended)	Completed
IRAN	☒ Bahrain ☒ Iraq	☐ Kuwait ☒ Oman	☒ UAE	4/5
	☒ Armenia ☐ Afghanistan	☐ Azerbaijan ☐ Turkmenistan	☒ Pakistan ☒ Turkey	Recommended
IRAQ	☒ Iran ☒ Jordan	☒ Kuwait ☒ Saudi Arabia	☐ Syria ☒Turkey (Recommended)	4/5
JORDAN	☒ Egypt ☒ Iraq	☒ Saudi Arabia ☐ Syria	☐ Israel (Recommended)	3/4
KUWAIT	☒ Bahrain ☐ Iran	☒ Iraq	☒ Saudi Arabia	3/4
LEBANON	☐ SYRIA	☐ CYPRUS (Recommended)		0/1
LIBYA	☒ Egypt ☐ Sudan	(Recommended) ☐ Algeria ☐ Chad	☐ Tunis ☐ Niger ☐ Malta	1/2
OMAN	☒ Iran ☐ Saudi Arabia	☒ UAE ☒ Yemen	☐ India (Recommended) ☐ Pakistan (Recommended)	3/4
QATAR	☒ BAHRAIN	☐ SAUDI ARABIA	☐ UAE	1/3
SAUDI ARABIA	☒ Bahrain ☒ Egypt ☒ Iraq ☒ Jordan	☒ Kuwait ☐ Oman ☐ Qatar ☐ Sudan	☒ UAE ☐ Yemen ☐ Eritrea(Recommended)	6/10
SUDAN	☒ Egypt ☐ Libya ☐ Saudi Arabia	(Recommended) ☐ Central African ☐ Chad	☐ Eritrea ☐ Ethiopia ☐ South Sudan	1/3
SYRIA	☐ Iraq ☐ Jordan	☐ Lebanon	☐ Cyprus (Recommended) ☐ Turkey (Recommended)	0/3
UAE	☒ Bahrain ☒Iran	☒ Oman ☐ Qatar	☒ Saudi Arabia	4/5
YEMEN	☒ Oman ☐ Saudi Arabia	(Recommended) ☐ India ☐ Djibouti	☐ Eritrea ☐ Ethiopia ☐ Somalia	1/2

☒ Agreement Signed ☐ Agreement NOT Signed Signed Agreements / Total No. of required Agreements

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B0 – FRTO: Improved Operations through Enhanced En-Route Trajectories					
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**	**Status**	**Remarks**
Flexible Use of Airspace (FUA) Level **1** Strategic	All States	Indicator: % of States that have implemented FUA Level 1 Supporting metric*: number of States that have implemented FUA Level 1	50% by Dec. 2019		
FUA Level **2** Pre-tactical	All States	Indicator: % of States that have implemented FUA Level 2 Supporting metric*: number of States that have implemented FUA Level 1	60% by Dec. 2020		
FUA Level **3** Tactical	All States	Indicator: % of States that have implemented FUA Level 2 Supporting metric*: number of States that have implemented FUA Level 2	60% by Dec. 2022		

Table B0-FRTO

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Status of implementation of Flexible Use of Airspace (FUA) Level 1-Strategic.

3 Status of implementation of Flexible Use of Airspace (FUA) Level 2-Pre-tactical

4 Status of implementation of Flexible Use of Airspace (FUA) Level 3-Tactical

Implementation should be based on the published aeronautical information:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

5 Remarks

Applicability State	FUA Level 1	FUA Level 2	FUA Level 3	Remarks
1	2	3	4	5
Bahrain				
Egypt				
Iran				
Iraq				
Jordan				
Lebanon				
Libya				
Kuwait				
Oman				
Qatar				
Saudi Arabia				
Sudan				
Syria				
Unite Arab Emirates				
Yemen				
Total				
Percentage				

LIST OF ATFM FOCAL POINTS

STATE	NAME	TITLE	ADDRESS	E-MAIL	FAX	TELEPHONE	MOBILE
BAHRAIN	Mr. Ahmed Bucheeri	Head Air Traffic Operation	Civil Aviation Affairs (CAA)	a.ali@mtt.gov.bh	-	+973 17 321158	+973 395 22696
EGYPT	Nav. Tayseer Abdelkareem	General Manager of ATS	Egyptian Civil Aviation Authority (ECAA)	tayseer.mohamed@civilaviation.gov.eg tayseerkasem73@gmail.com	-	-	+201005228675
INDIA	Mr. Sylvester Israel	Executive Director ATFM/R&D	Airports Authority of India- New Delhi	edatfm@aai.aero		+91 1124610776	
IRAN	Mr. Masoud Nikbakht	General Director of ATM	Iran Airports and Air Navigation Company	nikbakht@airport.ir		+98 2144544102	
IRAQ	Mr. Fadel Gatea	Director ATS	Iraq Civil Aviation Authority (ICAA)	atc@iraqcaa.com		+9647716440448	+9647828844998
JORDAN	Mr. Fawaz Abdallah	Director of ANS-Queen Alia International Airport	Civil Aviation Regulatory Commission (CARC)	dans-qa@carc.gov.jo	+96264451619	+96264451666	+962 798545053
KUWAIT	Mr. Ahmed Alkhalaf						
	Mr. Tariq Al-ghareeb						
LEBANON	Mr. Kamal Nassereddine	Chief of Air Navigation Department	Directorate General of Civil Aviation (DGCA)	atm@beirutairport.gov.lb		+961 1 628178	
LIBYA							

STATE	NAME	TITLE	ADDRESS	E-MAIL	FAX	TELEPHONE	MOBILE
OMAN	Mr. Mubarak Al-Gheilani	Director Air Traffic Control Services -	Public Authority for Civil Aviation (PACA)	m.alghelani@paca.gov.om	-	+968 2435 4867	+968 9507 6157
QATAR	Mr. Ahmed Al-Eshaq	Director of Air Navigation Department	Qatar Civil Aviation Authority (QCAA)	ahmed@caa.gov.qa	+97444705300	+974 4470 5555	
SAUDI ARABIA							
SUDAN	Mr. Sabri Hassan	Manager Area Control Centre	Sudan Civil Aviation Authority (SCAA)	sabrimohamed@scaa.gov.sd sabri_662000@yahoo.com			+249 123 288098
SYRIA							
UAE	Mr. Hamad Al Belushi	Director of Air Traffic Management	ANS Sheikh Zayed Air Navigation Centre | GCAA	hbelushi@szc.gcaa.ae	+97125996836	+971 25996836	+971 506164350
USA	Mr. Darryel Adams	Deputy Director, ATO International Office	Federal Aviation Administration (FAA)	darryel.d.adams@faa.gov		+1 202-267-0950	
	Mr. Greg Hebert	Manager, Europe/Africa/ Middle East (Acting)	Federal Aviation Administration (FAA)	gregory.hebert@faa.gov	-	+1 202 267 1189	
YEMEN							
AACO	Mr. Rashad Karaky	Director - Technical Department	Arab Air Carriers Organization (AACO)	etm@aaco.org rkaraky@aaco.org	+961 1 863 168	+961 1 861297/8/9	+961 3 163 318

STATE	NAME	TITLE	ADDRESS	E-MAIL	FAX	TELEPHONE	MOBILE
ACAO	Mr. Mohamed Rejeb	Air Navigation & Air Safety Expert	Arab Civil Aviation Commission (ACAC)	mohamed.rejeb@planet.tn mohamed.rejeb65@gmail.com	-	+212 537 658 323/40	+212 639174697
AEROTHAI	Mr. Piyawut Tantimekabut (Toon)	Air Traffic Management Network Manager	Network Operations ATM Centre - Aeronautical Radio of Thailand Ltd	piyawut@aerothai.co.th piyawut@gmail.com	+66 2 287 8375	+66 2 287 8616	+66 8 9697 5859
CANSO	Mr. Rafael Quezada	Programme Manager, CANSO Ops Standing Committee	Washington DC, USA	rafael.quezada@canso.org	-	+1 202 267 5190	
EUROCONTROL	Mr. Brian Flynn	Head Performance, Forecasts and Relations, Network Manager Directorate	EUROCONTROL	brian.flynn@eurocontrol.int	-	+32 2729 9805	+32 4999 43721
IATA	Mr. George Rhodes	Assistant Director Infrastructure, Middle East & North Africa	IATA MENA	rhodesg@iata.org	+962 (6) 593 9912	+96 26 580 4200 Ext 1215	+962 (79) 944 4252
	Mr. Dan Vaca	Head, Global ATM Harmonization & Policy	IATA HQ	vacad@iata.org	-	+1 514 874 0202	

B0 – NOPS: Improved Flow Performance through Planning based on a Network-Wide view

Description and purpose:

Air Traffic Flow Management (ATFM) is used to manage the flow of traffic in a way that minimizes delay and maximizes the use of the entire airspace. ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or Flight Information Region (FIR)/sector boundaries and re-route traffic to avoid saturated areas. ATFM may also be used to address system disruptions including crisis caused by human or natural phenomena.

Experience clearly shows the benefits related to managing flows consistently and collaboratively over an area of a sufficient geographical size to take into account sufficiently well the network effects. The concept for ATFM and demand and capacity balancing (DCB) should be further exploited wherever possible. System improvements are also about better procedures in these domains, and creating instruments to allow collaboration among the different actors**.**

Guidance on the implementation of ATFM service are provided in the ICAO Doc 9971– Manual on Collaborative
Air Traffic Flow Management

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
Y	Y	Y	Y	N/A

Applicability consideration:

Applicable to en-route and terminal airspace. Benefits can start locally. The larger the size of the concerned airspace the greater the benefits. Application will naturally span over a long period as traffic develops.

B0 – NOPS: Improved Flow Performance through Planning based on a Network-Wide view			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
ATFM Measures implemented in collaborative manner	All States	Indicator: % of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision Supporting metric: number of States that have established a mechanism for the implementation of ATFM Measures based on collaborative decision	100% by Dec. 2018
ATFM Structure	All States	Indicator: % of States that have established an ATFM Structure Supporting metric: number of States that have established an ATFM Structure	100 % by 2019

Table B0-NOPS

EXPLANATION OF THE TABLE

Column

1 Name of the State

2 Mechanism for the implementation of ATFM Measures based on collaborative decision.

3 Reference to documentation related to the established mechanism for the implementation of ATFM Measures based on collaborative decision

4 Status of the establishment of ATFM Structure

5 Reference to documentation reflecting the establishment of the ATFM Structure

6 Remarks

Applicability State	Mechanism for the implementation of ATFM Measures based on collaborative decision	Reference	ATFM Structure	Reference	Remarks
1	2	3	4	5	6
Bahrain					
Egypt					
Iran					
Iraq					
Jordan					
Lebanon					
Libya					
Kuwait					
Oman					
Qatar					
Saudi Arabia					
Sudan					
Syria					
UAE					
Yemen					
Total					
Percentage					

DRAFT WORLD CUP 2022 TASK FORCE

TERMS OF REFERENCE

1. OBJECTIVES AND SCOPE

1.1 The Task Force will be expected to apply the performance-based approach through a collaborative manner to address the most strategic decisions to reach the following:

a) A sufficient coordination between the Air Navigation Service Providers (ANSPs), airports, airspace users and regulators;

b) A sufficient coordination at local, regional and inter-regional levels to accommodate safely and efficiently the expected significant increase of traffic; and

c) A defragmented approach from an operational perspective to achieve (gate-to-gate, city pairs, and an oriented track system) which leads to more than optimum flight and airport operations efficiency.

1.2 The Task Force shall support the MID Region ATFM System once established.

2. TERMS OF REFERENCE OF THE TASKFORCE

2.1 Develop and follow-up the implementation of an action plan to accommodate the expected high increase of traffic, in a safe and efficient manner, taking into consideration similar experiences from other regions.

2.2 Address other major events such as the EXPO 2020 an develop action plan(s) to accommodate the changes in traffic flows as required.

2.3 Define explicit and implicit strategic objectives (e.g. improved safety, increased air traffic capacity, improved efficiency, and mitigation of airspace congestion impact).

2.4 Identify operational and technical requirements including proposals for airspace management changes and amendment to the MID ATS Route Network to accommodate the air traffic through the establishment of temporary routes as required.

2.5 Develop the concept of collaborative decision-making at the strategic, tactical and pre-tactical levels, which would be implemented before and during the World Cup event.

2.6 Suggest methods for increased interaction between airspace providers in order to make sure that the network effects of any trajectory selection are properly incorporated in the decisions.

2.7 Develop a regional ground delay program (RGDP) which would be implemented for departures from airports in the region.

2.8 Asses the operational performance of the ATM network by its capability to accommodate demand through realistically modeled network nodes, i.e. airports and airspace volumes.

3. COMPOSITION

3.1 The World Cup 2022 Task Force is composed of experts from:

a) MIDANPIRG Member States;

b) AACO, EUROCONTROL and IATA; and

c) other representatives from States, Organizations and Industry may be invited on ad hoc basis, when required.

3.2 ICAO MID Office will act as the Secretary of the Task Force.

4. WORKING PROCEDURES

4.1 Qatar shall act as the Chairman of the Task Force.

4.2 In order to effectively perform its tasks and responsibilities, the Task Force will meet as required in order to achieve its objectives.

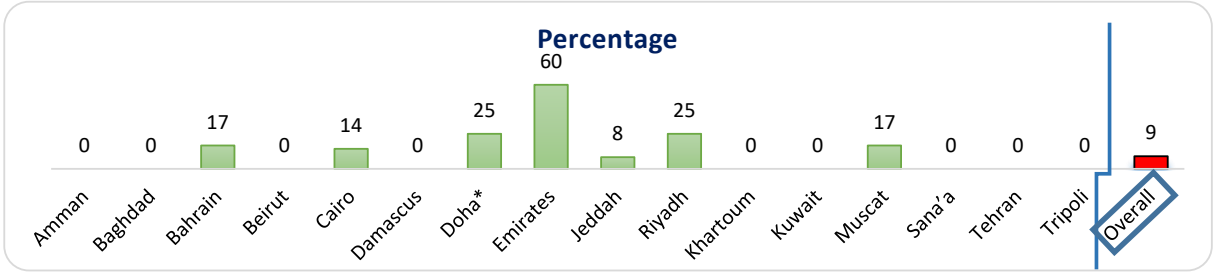
4.3 Coordination will be carried out among the Task Force members and with concerned State(s) through correspondence and teleconferences and, if required, face-to-face meetings with stakeholders on case-by-case basis.

4.4 A Core Team might be established to follow-up with the concerned State(s) and air operators the conduct of safety and operational assessments and provide support as appropriate.

MID REGION Status of AIDC/OLDI Implementation

As of April 2018

ACC	Adjacent ACCs						
Amman	Cairo (N)	Bagdad (N)	Damascus (N)	Jeddah (N)	Tel Aviv (N)		
Baghdad	Amman (N)	Ankara (N)	Damascus (N)	Jeddah (N)	Tehran (N)	Kuwait (N)	
Bahrain	Doha (N)	Emirates **(Y)** OLDI Jun 17	Jeddah (N)	Kuwait (N)	Riyadh (N)	Tehran (N)	
Beirut	Damascus (N)		Nicosia (N)				
Cairo	Amman (N)	Athena (Y) OLDI	Jeddah (N)	Khartoum (N)	Nicosia (N)	Tel Aviv (N)	Tripoli (N)
Damascus	Amman (N)	Ankara (N)	Bagdad (N)	Beirut (N)	Nicosia (N)		
Doha*	Bahrain (N)	Emirates **(Y)** OLDI	Jeddah (N)	Riyadh (N)			
Emirates	Bahrain **(Y)** OLDI Jun 17	Doha **(Y)** OLDI	Jeddah (N)	Muscat **(Y)** OLDI Mar 18	Tehran (N) AFTN MSG		
Jeddah	Amman (N)	Asmara (N)	Bagdad (N)	Bahrain (N)	Cairo (N)	Doha (N)	Emirates (N)
	Khartoum (N)	Kuwait (N)	Muscat (N)	Riyadh **(Y)**		Sana'a (N)	
Riyadh	Bahrain (N)	Doha (N)	Kuwait (N)	Jeddah **(Y)**			
Khartoum	Addis (N)	Asmara (N)	Brazzaville (N)	Cairo (N)	Entebbe (N)	Jeddah (N)	Kinshasa (N)
	N'Djamena (N)		Nairobi (N)	Tripoli (N)			
Kuwait	Bagdad (N)	Bahrain (N)	Jeddah (N)	Tehran (N)			
Muscat	Emirates **(Y)** OLDI Mar.18	Jeddah (N)	Karachi (N)	Mumbai (N)	Sana'a (N)	Tehran (N)	
Sana'a	Djibouti (Addis Ababa) (N)	Asmara (N)	Jeddah (N)	Mogadishu (N)	Mumbai (N)	Muscat (N)	
Tehran	Ankara (N)	Ashgabat (N)	Bagdad (N)	Bahrain (N)	Baku (N)	Emirates (N) AFTN MSG	Kabul (N)
	Karachi (N)	Kuwait (N)	Muscat (N)	Yerevan (N)			
Tripoli	Algiers (N)	Cairo (N)	Khartoum (N)	Malta (N)	N'Djamena (N)	Niamey (N)	Tunis (N)



B0 – SNET: Increased Effectiveness of Ground-based Safety Nets

Description and purpose:

To enable monitoring of flights while airborne to provide timely alerts to air traffic controllers of potential risks to flight safety. Alerts from short-term conflict alert (STCA), area proximity warnings (APW) and minimum safe altitude warnings (MSAW) are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centered.

Main performance impact:

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N/A	N/A	Y	N/A	Y

Applicability consideration:

Benefits increase as traffic density and complexity increase. Not all ground-based safety nets are relevant for each environment. Deployment of this Module should be accelerated.

B0 – SNET: Increased Effectiveness of Ground-based Safety Nets			
Elements	**Applicability**	**Performance Indicators/Supporting Metrics**	**Targets**
Short-term conflict alert (STCA)	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 % by 2018
Minimum safe altitude warning (MSAW)	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 % by 2018

TABLE B0-SNET

EXPLANATION OF THE TABLE

Column

1 Name of the State and ATS Units within a State providing Enroute and Approach services

2 Enroute and Approach ATS Units providing Radar services "R"

3 Enroute and Approach ATS Units providing Procedural services "P"

4 Enroute and Approach ATS Units within a State providing radar services where Short-Term Conflict Alert (STCA) was implemented

5 Enroute and Approach ATS Units within a State providing radar services where Minimum Safe Altitude Warning (MSAW)was implemented

6 Action Plan for the implementation of STCA and MSAW

7 Status of implementation of STCA and MSAW (reference to column 2)

State/ ATS Units (ENR & APP)	ATS		STCA	MSAW	Action Plan	Status
	R	P				
1	*2*	*3*	*4*	*5*	*6*	*7*
Bahrain	**2**	**0**	**2**	**2**		**STCA 100%**
Bahrain ACC	R		Y	Y		**MSAW 100%**
Bahrain APP	R		Y	Y		
Egypt	**7**	**1**				
Cairo ACC	R		Y	Y		
Alex APP	R		Y	Y		
Aswan APP	R		Y	Y		**STCA 100%**
Cairo APP	R		Y	Y		
Luxor APP	R		Y	Y		**MSAW 100%**
Hurghada APP	R		Y	Y		
Marsa APP		P	N/A	N/A		
Sharm APP	R		Y	Y		
Iran	**5**	**2**				
Tehran ACC	R		Y	Y		
Bandar Abbas APP		P	N/A	N/A		
Esfahan APP	R		Y	Y		**STCA 100%**
Mashhad APP	R		Y	Y		
Mehrabad APP	R		Y	Y		**MSAW 100%**
Shiraz APP	R		Y	Y		
Tabriz APP		P	N/A	N/A		
Iraq	**2**	**0**				**STCA 100%**
Baghdad ACC	R		Y	Y		
Baghdad APP	R		Y	Y		**MSAW 100%**

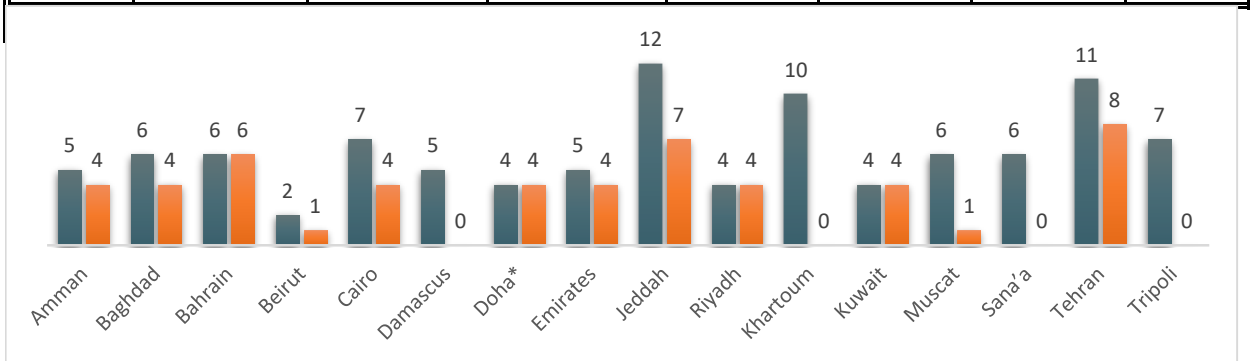
State/ ATS Units (ENR & APP)	ATS		STCA	MSAW	Action Plan	Status
	R	P				
1	*2*	*3*	*4*	*5*	*6*	*7*
Jordan	**2**	**1**				
Amman ACC	R		Y	Y		**STCA 100%**
Amman APP	R		Y	Y		**MSAW 100%**
Aqaba APP		P	N/A	N/A		
Kuwait	**2**	**0**				**STCA 100%**
Kuwait ACC	R		Y	Y		
Kuwait APP	R		Y	Y		**MSAW 100%**
Lebanon	**2**	**0**				**STCA 100%**
Beirut ACC	R		Y	Y		
Beirut APP	R		Y	Y		**MSAW 100%**
Libya	**0**	**4**				
Tripoli ACC		P	N/A	N/A		**STCA 0%**
Tripoli APP		P	N/A	N/A		
Benghazi Centre		P	N/A	N/A		**MSAW 0%**
Benghazi APP		P	N/A	N/A		
Oman	**3**	**0**				
Muscat ACC	R		Y	Y		**STCA 100%**
Seeb APP	R		Y	Y		**MSAW 100%**
Salalah APP	R		Y	Y		
Qatar	**1**	**0**				**STCA 100%**
Doha Radar	R		Y	Y		**MSAW 100%**
Saudi Arabia	**6**	**0**				
Jeddah ACC	R		Y	Y		
Riyadh ACC	R		Y	Y		**STCA 100%**
Jeddah APP	R		Y	Y		
Riyadh APP	R		Y	Y		**MSAW 100%**
Madina APP	R		Y	Y		
Damam APP	R		Y	Y		
Sudan	**2**	**3**				
Khartoum ACC	R		Y	Y		**STCA 100%**
Khartoum APP	R		Y	Y		**MSAW 100%**
Elobeid APP		P	N/A	N/A		

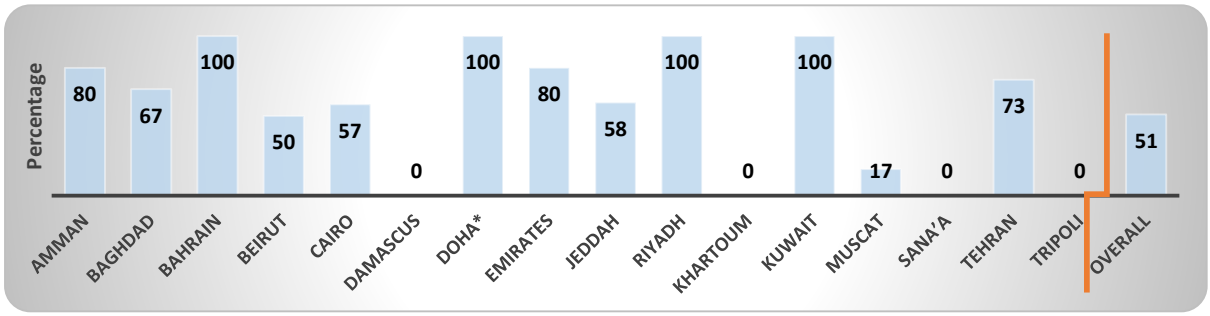
State/ ATS Units (ENR & APP)	ATS		STCA	MSAW	Action Plan	Status
	R	P				
1	*2*	*3*	*4*	*5*	*6*	*7*
Nyala APP		P	N/A	N/A		
Port Sudan APP		P	N/A	N/A		
Syria	**0**	**4**				
Damascus ACC		P				**STCA 0%**
Damascus ACC		P				
Aleppo APP		P				**MSAW 0%**
Latakia APP		P				
UAE	**7**	**0**	**6**	**6**		
SZC	R		Y	Y		
Al Ain APP	R		Y	Y		
Abu Dhabi Radar	R		Y	Y		**STCA 86%**
Al Maktoum APP	R		Y	Y		**MSAW 86%**
Dubai Radar	R		Y	Y		
Fujairah APP	R		Y	Y		
RAS AL KHAIMAH	R		N	N		
Yemen		**3**				
Sana'a ACC		P	N/A	N/A		**STCA 0%**
Aden APP		P	N/A	N/A		**MSAW 0%**
Sana'a APP		P	N/A	N/A		
Total	**41**	**18**	**40 Y**	**40 Y**		**STCA 97%**
Percentage			**18 N/A**	**18 N/A**		**MSAW 97%**

MID REGION Status of 20 NM Longitudinal Separation Implementation

As of April 2018

ACC	Adjacent ACCs (Longitudinal Separation in (NM) or Minutes "mn")						
Amman	Cairo (20)	Bagdad 10mn	Damascus (20)	Jeddah (20)	Tel Aviv (10)		
Baghdad	Amman 10mn	Ankara (20)	Damascus 10mn	Jeddah (20)	Tehran (20)	Kuwait (20)	
Bahrain	Doha (10)	Emirates (10)	Jeddah (10)	Kuwait (10)	Riyadh (10)	Tehran (20)	
Beirut	Damascus 10mn		Nicosia (20)				
Cairo	Amman (20)	Athena (20)	Jeddah (20) DEDLI 10mn	Khartoum 10mn	Nicosia (30)	Tel Aviv (20)	Tripoli 10&15mn
Damascus	Amman 10mn	Ankara 10mn	Bagdad 10mn	Beirut 10mn	Nicosia 10mn		
Doha*	Bahrain (10)	Emirates (10)	Jeddah (10)	Riyadh (10)			
Emirates	Bahrain (10)	Doha (10)	Jeddah 30mn	Muscat (10)	Tehran (20)		
Jeddah	Amman (20)	Asmara 10mn	Bagdad (20)	Bahrain (10)	Cairo (20) DEDLI 10mn	Doha (10)	Emirates 30mn
	Khartoum 10mn	20 Kuwait	Muscat 5mn	Riyadh (10)		Sana'a 10mn	
Riyadh	Bahrain (10)	Doha (10)	Kuwait (20)	Jeddah (10)			
Khartoum	Addis Ababa 10mn	Asmara 10mn	Brazzaville 10mn	Cairo 10mn	Entebbe 10mn	Jeddah 10mn	Kinshasa 10mn
	N'Djamena 10mn		Nairobi 10mn	Tripoli 10mn			
Kuwait	Bagdad (20)	Bahrain (10)	Jeddah (20)	Tehran (20)			
Muscat	Emirates (10)	Jeddah 5mn	Karachi 5mn	Mumbai 10mn	Sana'a 10mn	Tehran (50)	
Sana'a	Djibouti (Addis Ababa) 10mn	Asmara 10mn	Jeddah 10mn	Mogadishu 10mn	Mumbai 10mn	Muscat 10mn	
Tehran	Ankara (20)	Ashgabat (50)	Bagdad (20)	Bahrain (20)	Baku (20)	Emirates (20) URSAL&MIDSI (10)	Kabul (50) bl FL290 10mn
	Karachi (50)	Kuwait (20)	Muscat (50)	Yerevan (20)			
Tripoli	Algiers 10mn	Cairo 10 & 15mn	Khartoum 10mn	Malta 10mn	N'Djamena 10mn	Niamey 10mn	Tunis 10mn





Status of SIDs and STARs New Phraseology Implementation in the MID Region

As of May 2018

State	Implementation date	Planned Implementation Date	Remarks
Bahrain	16 Mar. 2017		
Egypt	23 May 2017		
Iran		Nov. 2018	
Iraq		June 2018	
Jordan	1 Aug. 2017		
Kuwait			
Lebanon			
Libya			
Oman		11 October 2018	AIC will be issued to raise ATC/Pilot awareness
Qatar	1 Dec. 2017		
Saudi Arabia	Jul 2017		
Sudan	Jul 2017		
Syria			
UAE	Feb. 2018		
Yemen		Dec 2018	
Status	**7/15 = 47%**		

MIDRMA Procedure to Ensure the Compliance of RVSM Approved Aircraft Registered in the ICAO Middle East Region for Height Monitoring:

a) The MIDRMA will notify the States concerned every 3 months about their aircraft non-compliance with ICAO RVSM Height Monitoring requirements;

b) States should take remedial actions to rectify the situation and ensure that their relevant aircraft are complying with ICAO RVSM Height Monitoring requirements in a timely manner, and notify the MIDRMA about their corrective action plans;

c) States should develop corrective action plans in coordination with the airlines concerned and MIDRMA, which includes a time frame to allow the concerned airline operator rectify this violation as early as possible, this period should not exceed **90 days** to perform the height monitoring;

d) If **no** height monitoring would be conducted during the **90 days**, the concerned States must withdraw the RVSM approval of the aircraft concerned and inform the MIDRMA;

e) The MIDRMA should issue a warning to all MID States and RMAs related to non-compliance aircraft registered in the MID Region;

f) The MIDRMA in coordination with the ICAO MID Office will continue working closely with the States concerned to resolve the issue; and

g) Once the issue would be resolved, a notification should be issued by MIDRMA to all MID States and RMAs.

AIRPORTS TESTING RESULTS

Country	Overflight Approved and OK	Destination	Destination Approved and tested	Remarks	Country Status
BAHRAIN	✓	OBBI BAHRAIN/Bahrain Intl	✓	**Tested by EY**	
EGYPT	✓	HEAX ALEXANDRIA/Alexandria Intl			
		HEBA ALEXANDRIA /Borg El-Arab Intl			
		HESN ASWAN/Aswan Intl			
		HEAT ASYUT/Asyut Intl			
		HEAZ CAIRO/Almaza Intl			
		HECA CAIRO/Cairo Intl	✓	**Tested by EY**	
		HEAR EL-ARISH/El-Arish Intl			
		HEGN HURGADA/Hurghada Intl			
		HELX LUXOR/Luxor Intl			
		HEMA MARSA ALAM/Marsa Alam Intl			
		HEPS PORT-SAID/ Port- Said Intl			
		HEOW SHARK EL OWEINAT/ Shark El Oweinat Intl			
		HESH SHARM EL-SHEIKH/ Sharm El Sheikh Intl			
		HESC ST.CATHERINE/St. Catherine Intl			
		HETB TABA/Taba Intl			
IRAN	✓	OIKB BANDAR ABBAS/Bandar Abbas Intl			
		OIFM ESFAHAN/Shahid Beheshti Intl			
		OIMM MASHHAD/Shahid Hashemi Nejad Intl	✓	**Tested by QR**	
		OISS SHIRAZ/Shiraz Intl	✓	**Tested by QR**	
		OITT TABRIZ/Tabriz Intl			
		OIIE TEHRAN/Emam Khomaini Intl	✓	**Tested by EY and QR**	
		OIII TEHRAN/Mehrabad Intl			
		ZAHEDAN/Zaheda n Intl			
IRAQ	✓	ORBI BAGHDAD/Baghdad Intl	✓	**Tested by QR**	
		ORMM BASRAH/Basrah Intl	✓	**Tested by QR**	

		ORER ERBIL/Erbil Intl	✓	**Tested by QR**	
		ORSU SULYMANIYAH/ Sulaymaniyah Intl	✓	**Tested by QR**	
		ORNI Al Najaf/Al Najaf Intl	✓	**Tested by QR**	
JORDAN	✓	OJAI AMMAN/Queen Alia Intl	✓	**Tested by EY**	
		OJAQ AQABA/ King Hussein Intl			
KUWAIT	✓	OKBK KUWAIT/Kuwait Intl	✓	**Tested by EY**	
LEBANON	✓	OLBA BEIRUT/R. B. H - Beirut Intl	✓	**Tested by EY and QR**	
OMAN	✓	OOMS MUSCAT/Muscat Intl	✓	**Tested by EY**	
		OOSH SOHAR			
		OOSA SALALAH/Salalah			
QATAR	✓	OTBD DOHA/Doha Intl	✓	**Tested by EY and QR**	
SAUDI ARABIA	✓	OEDF DAMMAM/Kind Fahid Intl	✓	**Tested by EY**	
		OEJN JEDDAH/King Abdulaziz Intl	✓	**Tested by EY**	
		OEMA MADINAH/Prince Mohammad Bin Abdulaziz Intl	✓	**Tested by EY**	
		OERK RIYADH/King Khalid Intl	✓	**Tested by EY**	
SUDAN	✓	HSKA KASSALA/Kassala			
		HSSS KHARTOUM/Khartoum	✓	**Tested by EY**	
		HSPN PORT SUDAN/Port Sudan Intl			
UNITED ARAB EMIRATES	✓	OMAA ABU DHABI/Abu Dhabi Intl	✓	**Tested by EY and QR**	
		OMAL AL AIN/Al Ain Intl	✓	**Tested by EY**	
		OMDB DUBAI/Dubai Intl			
		OMFJ FUJAIRAH/Fujairah Intl			
		OMRK RAS AL KHAIMAH/Ras Al Khaimah Intl			
		OMSJ SHARJAH/Sharjah Intl			
		OMDW DUBI, Al Maktoum Int'l			

Call Sign Similarity/Confusion Reporting Template

Case	**Reporting ANSP or AO**	**Place of occurrence** (Airport, sector, etc)	**Date of occurrence** (26/04/2013)	**Time** (UTC)	**Call signs** (one line for each)	**Departure airport** (ICAO 4-letter code)	**Arrival airport** (ICAO 4-letter code)	**Type of aircraft** (ICAO type desig)	**Aircraft Operator** (ICAO 3-letter code)	**Type of Occurrence** (CSS or CSC)	**AO using CSST** (YES or NO)
1											
2											
3											
4											
1											
2											

LIST OF EMERGING RISKS

Scope: State of Occurrence

The data to be collected be based on scheduled commercial operations involving aircraft having a Maximum Take-off Weight (MTOW) above 5700 kg.

Occurrence Category	ADREP/CICTT taxonomy	Remarks
CFIT	Inflight collision or near collision with terrain, water, or obstacles without indication of loss of control.	
MID Air Collision (MAC)	Airprox/TCAS Alerts, Loss of separation as well as NMAC or collisions between aircraft inflight.	(including, RPAS/Drones, Call Sign Confusion)
Fire/Smoke (F-NI)	Fire or smoke in or on the aircraft, in flight, or on the ground, which is not the result of impact.	
Runway Incursion (RI)	Any occurrence at aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for landing and takeoff of aircraft.	
SCF-NP	Failure or malfunction of an aircraft system or component other than the power plant.	
Turbulence Encounter (TURB)	In-flight turbulence encounter.	
BIRD	Occurrences involving collisions/near collisions with bird(s).	
Wildlife (WILD)	Collision with, risk of collision or evasive action by an aircraft to avoid wild life on the movement area of an aerodrome.	

NB: States may share any other national safety concern.

TEMPLATE FOR THE COLLECTION OF

ACCIDENT, SERIOUS INCIDENT AND INCIDENT DATA

Name of State: …….

Traffic: Nb. of Departures per year [2015: ……] [2016: ……] [2017: ……]

#	Occurrence Category	2015			2016			2017		
		# Accidents	# Serious incidents	# Incidents	# Accidents	# Serious incidents	# Incidents	# Accidents	# Serious incidents	# Incidents
1	CFIT									
2	Mid Air collision (MAC)									
3	Fire/Smoke (F-NI)									
4	Runway Incursion- (RI)									
5	SCF-NP									
6	Turbulence Encounter (TURB)									
7	BIRD									
8	Wildlife (Wild)									

States should provide the number of accident, serious incidents, and incidents related to each category mentioned in the template above for the past three years (2015-2017)

Scope: State of Occurrence

MID REGION SAR AGREEMENT STATUS BETWEEN ANSPS/ACCS
April 2018

STATE	CORRESPONDING STATES			REMARKS
BAHRAIN	☒ IRAN ☒ SAUDI ARABIA	☒ KUWAIT ☒ UAE	☐ QATAR	4/5
EGYPT	☒ CYPRUS ☐ JORDAN ☐ SUDAN	☐ GREECE ☒ LYBIA	☐ Israel ☐ SAUDI ARABIA	2/7
IRAN	☒ ARMENIA ☒ BAHRAIN ☒ OMAN ☐ TURKMANISTAN	☒ AZERBAIJAN ☐ IRAQ ☐ PAKISTAN ☒ UAE	☐ AFGHANISTAN ☒ KUWAIT ☐ TURKEY	6/11
IRAQ	☐ IRAN ☒ JORDAN	☐ KUWAIT ☐ SAUDI ARABIA	☐ SYRIA ☐ TURKEY	1/6
JORDAN	☐ EGYPT ☒ IRAQ	☐ ISRAEL ☒ SAUDI ARABIA	☐ SYRIA	2/5
KUWAIT	☒ BAHRAIN ☒ IRAN	☐ IRAQ	☒ SAUDI ARABIA	3/4
LEBANON	☒ CYPRUS	☐ SYRIA		1/2
LIBYA	☐ ALGERIA ☐ CHAD ☐ EGYPT	☐ MALTA ☐ NIGER	☐ SUDAN ☐ TUNIS	0/7
OMAN	☐ INDIA ☒IRAN	☒ SAUDI ARABIA ☐ PAKISTAN	☐ UAE ☐ YEMEN	2/6
QATAR	☐ BAHRAIN	☐ SAUDI ARABIA	☐ UAE	0/3
SAUDI ARABIA	☒ BAHRAIN ☐ IRAQ ☒ OMAN ☐ UAE	☐ EGYPT ☒ JORDAN ☐ Qatar ☐ YEMEN	☐ ERITREA ☒ KUWAIT ☐ SUDAN	4/11
SUDAN	☐ CENTRAL AFRICAN ☐ CHAD ☐ EGYPT	☒ ERITREA ☒ ETHIOPIA ☐ LIBYA	☐ SAUDI ARABIA ☐ SOUTH SUDAN	2/8
SYRIA	☐ IRAQ ☐ JORDAN	☐ LEBANON ☒ CYPRUS	☒ TURKEY	2/5
UAE	☒ BAHRAIN ☒ IRAN	☐ OMAN ☐ SAUDI ARABIA	☐ QATAR	2/5
YEMEN	☐ DJIBOUTI ☐ ERITREA ☐ ETHIOPIA	☐ INDIA ☐ OMAN ☐ SAUDI ARABIA	☐ SOMALIA	0/7

☒ Agreement Signed ☐ Agreement NOT Signed Signed Agreements / Total No. of required Agreements

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MID Doc 0XX

INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (MIDANPIRG)

MID REGION

SEARCH AND RESCUE (SAR) IMPLEMENTATION PLAN

DRAFT 0.2 MAY 2018

CONTENTS

Contents

ABBREVIATIONS AND ACRONYMS

ADS-B	Automatic Dependent Surveillance-Broadcast
ADS-C	Automatic Dependent Surveillance-Contract
ANRF	Air Navigation Reporting Form
ANSP	Air Navigation Service Provider
ARCC	Aeronautical Rescue Coordination Centre
ARSC	Aeronautical Rescue Sub-Centre
A/SMC	Assistant SMC
ASPOCS	Administrative Single Point of Contact for SAR
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
CONOPS	Concept of Operations
COSPAS-SARSAT	**Co**smicheskaya **S**istema **P**oiska **A**variynyh **S**udov-Search and Rescue Satellite-Aided Tracking
EI	Effective Implementation
ELT	Emergency Locator Transmitters
GADSS	Global Aeronautical Distress and Safety System
GANP	Global Air Navigation Plan
GASP	Global Aviation Safety Plan
GLONASS	GLObal NAvigation Satellite System
GPS	Global Positioning System
IAMSAR	International Aeronautical and Maritime SAR (Manual)
IMO	International Maritime Organization
iSTARS	Integrated Safety Trend Analysis and Reporting System
JRCC	Joint (aeronautical and maritime) Rescue Coordination Centre
JRSC	Joint Rescue Sub-Centre
JWG	ICAO/IMO Joint Working Group on the Harmonisation of Aeronautical and Maritime Search and Rescue
LoA	Letter of Agreement
MCC	Mission Control Centres
MEOSAR	Medium-altitude Earth Orbit Search and Rescue
MRCC	Maritime Rescue Coordination Centre
MRO	Mass Rescue Operations
MRSC	Maritime Rescue Sub-Centre
OJT	On-the-Job Training
PQs	Protocol Questions
PSCS	Preferred SAR Capability Specifications
RANP	Regional Air Navigation Plan
RCC	Rescue Coordination Centre
RPK	Revenue Passenger Kilometres
RPAS	Remotely Piloted Aircraft Systems
SAR	Search and Rescue
SARPs	Standards and Recommended Practices
SAREX	SAR Exercises
SC	Search and Rescue Coordinator

SCC	Search and Rescue Coordinating Committee
SMC	Search and Rescue Mission Coordinator
SMS	Safety Management System
SOLAS	International Convention for the Safety of Life at Sea
SPOC	SAR Point of Contact
SRR	Search and Rescue Region
SRU	Search and Rescue Unit
SWIM	System Wide Information Management
UNCLOS	United Nations Convention on the Law of the Sea
USOAP-CMA	Universal Safety Oversight Audit Programme – Continuous Monitoring Approach
VSP	Variable Set Parameter

SCOPE OF THE PLAN

Plan Structure

1.1 The MID Search and Rescue (SAR) Implementation Plan (hereinafter referred to as the 'Plan') references different levels. At the higher level are global requirements established by the ICAO Annex 12 to the ICAO Convention on International Civil Aviation (ICAO Doc 7300). Global guidance material is provided by the International Maritime Organization (IMO) and ICAO's joint publication, the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual. Beneath this is regional planning guidance primarily provided by this Plan and other regional guidance material, in order to enable States to define the goals and means of meeting objectives for State planning towards improving State SAR System capability, such as Regional Air Navigation Plan (MID ANP, ICAO Doc 9708) objectives.

1.2 The global air navigation perspective is guided mainly by the *Global Air Navigation Plan* (GANP, Doc 9750), the *Global ATM Operational Concept* (Doc 9854) and the *Global Aviation Safety Plan* (GASP).

1.3 The scope of the Plan is to:

- determine the current status of SAR in MID Region States; and
- identify recommendations for SAR planning and preparedness enhancements, in terms of compliance with Annex 12 of the ICAO Convention, IAMSAR Manual guidance, and accepted best international practice.

Plan Review

1.4 As an iterative process, the Plan requires regular updating to keep current with changes in ICAO Annexes and guidance material, the IAMSAR manual, regional aviation activity, developments in the Air Traffic Management (ATM) system, new technology, political considerations, human performance and lessons learned from actual SAR responses. Plan updates should also focus on the SAR system being an important component of an integrated regional and global air navigation system. It is intended that MIDANPIRG and its contributory bodies conduct a complete review every three years of the Plan to align with the review cycle of the GANP and the IAMSAR Manual. The review should be guided by a consultative process involving States and relevant International Organizations such as the IMO and other technical bodies.

OBJECTIVES

Introduction

2.1 MID States who are signatories to the Chicago Convention accept the responsibility for the provision of SAR services per the requirements of its Annex 12 - Search and Rescue. Increases in both aviation and maritime traffic throughout the MID Region places additional importance on the ability for States to be adequately prepared for potentially increased demand for aeronautical and maritime SAR services.

2.2 States need to be adequately prepared for the provision of efficient and effective SAR services. To assist in achieving this, it is essential for States to cooperate, collaborate and in some cases assist with resources to neighboring and sub-regional RCCs.

2.3 ICAO Regional Office maintains a record of the status of State's SAR compliance against Annex 12 requirements. There are significant variations in the level of State SAR capability across the Region with significant gaps requiring urgent action. A number of States have not reported their status at all to ICAO. The ICAO Universal Safety Oversight Audit Programme – Continuous Monitoring Approach (USOAP-CMA) also provides a useful tool to States to self-assess their individual SAR system status.

2.4 There is a high risk of negative consequences to a State that does not provide an adequate SAR response to an aircraft or vessel in distress. The primary concern is the higher probability for loss of lives that may have been saved. The ability for news to spread rapidly in today's technologically connected world also provides the opportunity for a poor or ineffective SAR response to quickly reach a global audience resulting in damage to that State's reputation internationally and potential economic loss to sensitive State industries such as tourism and transport. However, the benefits of an effective and reliable SAR service to States offers many advantages. Besides reduction of loss of life and human suffering, other advantages include the following aspects:

a) Safer and more secure environment for aviation and maritime related industries, commerce, recreation and travel. Increased safety may promote use and enjoyment of aviation and maritime environments, tourism and economic development. This is especially true when the SAR system is associated with programmes aimed at preventing or reducing the effects of mishaps, sometimes referred to as "Preventative SAR."

b) Availability of SAR resources often provides the initial response and relief capabilities critical to saving lives in the early stages of natural and man-made disasters. SAR services offer an integral part of local, national and regional emergency management systems.

c) Well performed SAR operations can provide positive publicity about situations, which may otherwise be viewed negatively. This can lead to improved public confidence in that State's reputation and commitment to providing a safe environment, leading to increased confidence to conduct activities beneficial to that State's economy.

d) As SAR is a relatively non-controversial and humanitarian mission, it provides an excellent opportunity to enhance cooperation and communication in general between States and organizations, not only for SAR. It can also foster better working relationships between States and organizations at the local, national and international levels, including civil/military cooperation.

2.5 In 2014 Malaysia Airlines flight MH370, a Boeing 777 with 239 persons on board, disappeared when flying from Kuala Lumpur, Malaysia to Beijing, China, and Air Asia QZ8501 was lost on a flight from Surabaya to Singapore. The MH370 event resulted in probably the largest and most expensive search response for a missing aircraft in human history. Together with Air France flight AF447, which crashed into the Atlantic Ocean in 2009, these tragedies have highlighted vulnerabilities in the current air navigation system, including the SAR system, which have hampered timely identification and localization of aircraft in distress, hindering effective response efforts. ICAO is taking measures to assist with addressing these vulnerabilities through the Global Aeronautical Distress and Safety System (GADSS) concept; however, this also requires improvements in global SAR capability.

2.6 The Plan is designed to address both civil and military SAR authorities and has been developed in consultation with MID States, SAR administrations and relevant International Organizations. States should consult with stakeholders nationally, regionally and internationally as appropriate and determine actions in order to commit to achieving the objectives of this Plan in order to meet the minimum SAR service requirements in accordance with ICAO Annex 12. It is noted that where a State is unable to meet minimum SAR Standards and Recommended Practices (SARPs) of ICAO Annex 12, Article 38 to the ICAO Convention requires notification to ICAO of the differences between its own practice and that established by the international standards.

2.7 States should aim to meet their obligations progressively in a strategically structured and planned manner with improvement goals set for short term, medium term and long term implementation. It may be more productive to make gains in small steps commencing with measures that are more easily achievable in the short term and have a minimal cost, progressing to measures, which will take longer to implement over the medium to long term. Short term measures that may be implemented relatively easily include the establishment of a national SAR Committee and ensuring SAR Agreements are in place with neighboring States allowing for seamless cross-border transit of search assets engaged in SAR activity.

2.8 All States are encouraged to use the guidance provided within this Plan as a way forward, thus ensuring a timely, well-coordinated response to any SAR incident within their area of responsibility, or during cooperative responses involving more than one Search and Rescue Region (SRR).

Plan Objective

2.9 The objective of this SAR Plan is to provide a framework to assist MID States to meet their SAR needs and obligations accepted under the Convention on International Civil Aviation and for the harmonized and interoperable delivery of both aeronautical and maritime SAR services within the Region, and across other ICAO Regional boundaries, where practicable.

2.10 The Plan is to be consistent with the SARPs of ICAO Annex 12 - Search and Rescue, and aligned where appropriate with the SAR technical and operational standards and guidance of the IMO.

2.11 The Plan recognizes that ICAO serves as the forum for the implementation of practical and achievable measures to improve SAR services for international civil aviation. The Plan also recognizes that the IMO provides a similar forum for SAR services to maritime shipping.

2.12 Both ICAO and IMO share the same goal of ensuring that SAR services are available globally wherever people sail or fly. The SAR services that ICAO and IMO promote are complementary and offer tangible opportunities to derive mutually beneficial efficiencies for both the aviation and maritime transportation SAR systems globally, regionally and nationally. The objective of this Plan includes encouraging States to take advantage of such efficiencies. States should, where practicable, align their SAR systems with the guidance provided by the IAMSAR Manual, which also

provides the benefit for standardized SAR coordination between RCCs and across SRR lines of delineation.

2.13 State SAR plans describe how SAR services will be provided, organized and supported in order for States to meet their obligations under the relevant Conventions. Search and Rescue Coordinators (SC) and SAR managers oversee and implement these plans. National SAR plans should be signed by all Government agencies, which can provide or support SAR services. These agencies should all be represented on the State's Search and Rescue Coordinating Committee (SCC), which oversees these plans.

Note: The SC should not be confused with the operational nature of the SAR Mission Coordinator (SMC). The primary purpose of the national SC is to enable a whole-of-government approach to make efficient and effective use of a State's capabilities for SAR.

SAR System Funding

2.14 The level of funding provided for effective SAR systems is a matter of concern for all senior decision-makers. The resources should be sufficient to develop and/or maintain the required SAR service per their obligations as signatories to the relevant aeronautical and maritime SAR conventions. This may require the development of business cases to governments outlining where additional funding is required.

2.15 Business cases should include consideration of amendments to existing State SAR arrangements which may provide more efficient delivery of the SAR service by better utilization of existing resources (for example by establishing Joint RCCs (JRCCs), or additional funding sources where required (for example charging a levy to aircraft operators for providing the SAR service or seeking company sponsorship for SRUs).

Joint Rescue Coordination Centres (JRCCs)

2.16 Where practicable, States are encouraged to examine the potential benefits that may be derived by the establishment of JRCCs to incorporate the aeronautical and maritime SAR activities and/or facilities of ARCCs/ARSCs and MRCC/MRSCs. JRCCs have the potential to not only provide a more effective SAR service to both the aeronautical and maritime industries, but also offer potential financial efficiencies by releasing funds for improvements in other SAR areas.

Note: Where JRCCs are not practicable, development of facilities and procedures which provide and/or enhance effective SAR coordination and collaboration between the ARCCs and MRCCs in support of each other, to provide an efficient and integrated State SAR system for both aeronautical and maritime SAR incident response.

2.17 Where practicable, the JRCC evaluation may consider consolidation of two or more different State RCCs into single sub-regional JRCCs.-

Note: a single sub-regional JRCC may be established in partnership with a group of States and serve as a 24 hour nodal JRCC supported by Joint Rescue Sub-Centres (JRSCs) of the other partner States which may not necessarily need to be manned 24 hours but could be activated when required

Plan Development

2.18 The Plan is expected to provide guidelines and recommendations for MID States to consider for the enhancement and improvement of national, sub-regional and regional SAR capability including:

a) compliance with Annex 12 SARPs;

b) identification and addressing of deficiencies in SAR capability;

c) continuous and coherent development of SAR capability;

d) harmonization of aeronautical and maritime SAR services;

e) civil/military cooperation and coordination (including SAR response, information sharing and use of airspace);

f) remote SAR response capability, including provision for Mass Rescue Operations (MRO);

g) establishment and review of arrangements between neighboring States to expeditiously facilitate SAR coordination, operations and cooperation across regional boundaries including contingency procedures;

h) facilitation of the implementation of SAR systems and services including the establishment of JRCCs where suitable and practicable;

i) supporting the sharing of SAR information, data and expertise;

j) integration with ATM systems and future ATS developments, where appropriate;

k) monitoring of outcomes from MIDANPIRG Sub-Groups, other ICAO Region SAR groups, ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime SAR (JWG) and related forums for issues that may affect the Plan;

l) facilitation of a continuous reporting mechanism of State SAR capability, Annex 12 compliance and SAR performance data to the MID Regional Office through the MIDANPIRG Air Traffic Management Sub-Group (ATM SG);

m) implementation of a SAR System Improvement and Assessment measures, including Safety Management System, Quality Assurance programme and risk assessment;

n) coordinating the introduction of new technology affecting the regional SAR system;

o) sharing future research and development concepts;

p) seeking efficiencies, through the coordination and facilitation of concurrent regional SAR meetings, seminars, workshops and exercises, including joint ICAO and IMO, and sub-regional forums where practicable; and

q) conducting efficient SAR Exercises (SAREXs) that identify improvements and latent problems.

BACKGROUND INFORMATION

Improvement Drivers

5.1 The ICAO USOAP-CMA focuses on a State's capability in providing safety oversight by assessing whether the State has effectively and consistently implemented the critical elements of a safety oversight system and determining the State's level of implementation of ICAO's safety –related SARPs, including Annex 12 Search and Rescue, and associated procedures and guidance material.

5.2 ICAO MID Regional Office maintains MIDANPIRG Air Navigation Deficiencies Database (MANDD). The MANDD is based on the uniform methodology for identification, assessment and reporting of such deficiencies. By identifying and addressing specific deficiencies, MIDANPIRG and its Sub-groups facilitate the development and implementation of corrective action plans by States to resolve identified deficiencies, where necessary.

Recent ICAO SAR Initiatives

5.3 The tragedies of Malaysia Airlines flight MH370 in 2014 and Air France flight AF447 in 2009 had highlighted vulnerabilities in the current air navigation system, which had hampered timely identification and location of aircraft in distress, particularly remote oceanic areas. This had significantly hindered effective SAR efforts and recovery operations.

5.4 As part of the response to the Conclusions and Recommendations from the ICAO Multi-disciplinary Meeting on Global Tracking, ICAO developed a Concept of Operations (CONOPS) for a GADSS. The implementation of this target concept will have implications for the provision of services such as air traffic control, SAR and accident investigation. It contained a large number of measures targeting improvements in SAR system response integrated within the wider ATM and aircraft/airline operations systems.

5.5 The CONOPS noted that the effectiveness of the current alerting and SAR services should be increased by addressing a number of key improvement areas. The ICAO GADSS CONOPS also included aspects that potentially involve use of different distress systems, including for example 406 MHz Emergency Locator Transmitters (ELTs) and the COSPAS-SARSAT system as part of the proposed GADSS solution.

COSPAS-SARSAT System

5.6 COSPAS-SARSAT had been developing two major enhancements to its distress-alerting System of value to all System users, including the aviation industry. One is the introduction over the period of approximately 2016 to 2018, and beyond, of a new space-segment architecture based primarily on Medium-altitude Earth Orbit Search and Rescue (MEOSAR) payloads aboard the European Commission's Galileo system, the Russian Federation's GLObal Navigation Satellite System (GLONASS) and the United States' Global Positioning System (GPS) satellites.

5.7 This architecture would permit determination of a distress incident location (independent of any location data transmitted in the beacon message) beginning with the first burst from the distress beacon. This could mean near real-time and very frequent delivery of distress alerts.

5.8 The SAR/Galileo space segment would also provide a Return Link Service (RLS) that, among other possible future uses, would provide an acknowledgment back to the beacon to confirm when the distress message has been received.

5.9 The other major development was the completion in the next couple of years of specifications for the next generation of 406 MHz distress beacons, including ELTs. This new generation of beacons should further improve speed and accuracy in locating an activated distress beacon. The period from beacon activation to first transmission was expected to be reduced from 50 seconds to three seconds. The specification would consider in-flight activation of ELTs when certain flight parameters were exceeded. The RLS was also being considered as part of the GADSS Concept, being a means of remotely activating an ELT in the case of an unresponsive or uncooperative cockpit.

5.10 States should ensure that aviators were aware that 121.5 MHz beacons cannot be detected by the global COSPAS-SARSAT System and were only intended as a final homing signal for 406 MHz beacons.

5.11 States also need to ensure the critical requirement to provide for a suitable, clear and simple means for aircraft owners to register and keep updated their 406 MHz distress beacon details.

Note: information on beacon registration is at: http://www.cospas-sarsat.int/en/beacons-pro/beacon-regulations-pro/ibrd-user-information-for-professionals).

5.12 Entries in the beacon register should be available to both aeronautical and maritime RCCs on a 24-hour basis (Annex 12 – *Search and Rescue* refers, although Annex 10 establishes the registration requirement). States should note that Annex 12 should be read in conjunction with elements of the following ICAO Annexes:

Annex 6 – *Operation of Aircraft*;

Annex 10 – *Aeronautical Telecommunications*;

Annex 11 – *Air Traffic Services;* and

Annex 14 – *Aerodromes*.

CURRENT SITUATION

Global Situation

6.1 The Report on ICAO USOAP CMA Results (2013-2015) indicated that, at the global level , about 70% of the States have not established and implemented an effective system to conduct surveillance of their Rescue Coordination Centres (RCCs) and Rescue Sub-Centres (RSCs), if any. In many States, SAR services are provided by military authorities, and thus coordination between these military authorities and the State's CAA is essential. In practice the coordination (e.g. on the basis of a Memorandum of Understanding) is often limited to the operational aspect of SAR and does not clearly address the conduct of surveillance activities. Common factors preventing the effective surveillance of the RCCs are the lack of sufficiently qualified inspectorate staff and the absence of a formal surveillance programme. The global Effective Implementation (EI) of SAR is 61%

MID SAR Analysis

6.2 Based on the USOAP CMA results analysis, it appeared that the major areas of weakness is in coordination with adjacent States, effective SAR oversight, and training of SAR staff that provide the SAR services. Therefore, a focus on the minimization of barriers associated with the efficient cross-border coordination of SRU (such as pre-arranged approval) and other coordination mechanisms, including updates of SAR agreements (whatever their form) was vital. Finally, there was a need for improved systemic approaches to training for both SAR inspectors and personnel responsible for the provision of SAR services, including the regular organization of effective SAR exercises that test systems and personnel. It should be noted that the training of SAR inspectors did not require SAR-specific technical training, but was more focused on effective audit and inspection techniques, etc.

Challenges

6.3 The following potential challenges should be considered to ensure they do not become barriers to the achievement of the expected SAR capability:

a) absence of established appropriate legal framework designating, recognizing, supporting and giving authority to national SAR authorities, RCCs and SMCs;

b) lack of legislation ensuring effective oversight by the CAAs over the SAR service providers;

c) low number of qualified SAR regulators/inspectors in the MID Region;

d) inadequate funding and equipping of SAR authorities and in particular, resourcing of RCCs;

e) absence of an appropriate SAR organizational framework;

f) absence of a national SAR committee;

g) lack of clarity of responsibilities for each component of the SAR system;

h) absence of bilateral/multi-lateral/international SAR Agreements;

i) inadequate civil/military cooperation; and

j) complacency about, or lack of recognition of, the importance or priority given to SAR.

6.4 The provision of sufficient resources was critical in a number of areas, including:

a) Financial-

- funding for 24 hour RCC facility and staff;

- funding for use/hire of search and rescue units; and
- Provision of a suitable administrative process enabling financial support including the ability for SAR authorities to quickly authorise payments required for emergency response aircraft, vessels and supporting logistics such as fuel.

b) RCC personnel: suitable number of trained and skilled staff, supplemented by a pool of trained RCC support staff where appropriate;

c) RCC facilities-

- appropriate RCC facility space;
- minimum RCC tools (such as current charts, plotting equipment, documentation, etc.);
- identify and task available SRUs;
- Aircraft and vessel tracking information including ADS-B, Automatic Identification System, etc.;
- reliable and rapid H24 communications, and a suitable means to-
  - receive and communicate distress alerts
  - communicate with ATS units, other RCCs/RSCs, Coast Radio Stations, COSPAS-SARSAT Mission Control Centres (MCCs), military units, medical services, meteorological offices, etc.;
- information technology-
  - RCC workstation computers;
  - Software including basic databases, drift modelling, incident management, etc.;

d) Contingency: back-up RCC facility, or arrangement with another RCC as a contingency against inability to operate from the primary RCC due to the need to evacuate or loss of systems, etc.;

e) Search and Rescue Units (SRUs):

- available and suitable SAR aircraft and crews;
- funding arrangements/agreements for hiring/payment/sharing of SRUs to permit rapid deployment; and
- Available and suitable SAR survival equipment for delivery by aircraft to survivors and to assist SAR coordination efforts (e.g.: SAR Datum Buoys, droppable life rafts and survival supplies, etc.);

f) Training support:

- RCC staff – basic and ongoing;
- SRU crews – pilots, air crew and air observers; and
- RCC support staff – basic and refresher.

PERFORMANCE IMPROVEMENT PLAN

Preferred SAR Capability Specifications (PSCS)

Note: PSCS are the non-mandatory expectations on all MID States to enhance SAR systems in order to meet a minimum level of SAR capability, with a high degree of interoperability and harmonization, and interoperability with other ATM components such as Air Navigation Service Providers (ANSPs) and aerodrome operators. PSCS were not expected to contravene existing Annex 12 standards.

PSCS (expected implementation by 07 November 2020)

Note: Guidance Material for the implementation and monitoring of PSCS is expected to be developed by MIDANPIRG.

7.1 *Legal Framework and Structure Planning*: All States should develop statutes and related provisions that establish or enhance the legal foundation for a State SAR organization and its framework, resources, policies and procedures to, where appropriate to:

a) ensure that it is party to, and/or aligned with the following Conventions, as applicable –

   i. Convention on International Civil Aviation 1944;

   ii. International Convention on Maritime Search and Rescue, 1979;

   iii. International Convention for the Safety of Life at Sea (SOLAS), 1974;

   iv. Convention on the High Seas, 1958; and

   v. United Nations Convention on the Law of the Sea (UNCLOS), 1982;

b) establish a SAR inspectorate within the CAA to regulate SAR and carry effective oversight activities over the SAR service providers;

c) unless delegated by written agreement, establish an entity that provides, on a 24-hour basis, SAR services within its territories and designated area of responsibility/SRR;

d) establish a national SAR committee consisting of civil and where appropriate, military members to enable a whole-of-government approach;

e) empower SAR Mission Coordinators with the authority to adequately carry out their responsibilities;

f) establish an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters, such details to be submitted to the ICAO Regional Office;

g) conduct studies to check the feasibility for, and develop an implementation plan if practicable, the integration of aviation and maritime SAR activities, and as far as practicable, civil and military activities, including joint training and familiarization of staff and review of documentation to ensure harmonization of procedures, and joint exercises;

h) conduct studies to align, as far as practicable, aeronautical and maritime Search and Rescue Regions (SRRs); and SRRs and Flight Information Regions (FIRs); and

i) establish a single State SAR Plan that:

   i. designates the responsible RCC(s), RSC(s) and 24-hour SPOC/ASPOC;

   ii. describes the relevant SRRs, including the coordinates and geographical chart depiction of the SRR and neighboring SRRs;

iii. details the National SAR Committee;

iv. details the governmental and non-governmental agencies with authority and responsibility for SAR coordination within its territories and designated area of responsibility;

v. details required and available SAR facilities, personnel, and equipment;

vi. details the SAR manuals, plans and procedures for national and regional cooperative SAR response arrangements;

vii. details the SAR personnel training and competency programme, qualification standards, SAR certification if applicable and SAR cooperation training;

viii. details the SAR agreements required;

ix. is electronic and accessible on the Internet, such details to be submitted to the ICAO MID Regional Office; and

x. is monitored by quality assurance processes.

7.2 *SAR Standards and Procedures*: All States should:

i) establish aerodrome emergency plans that provide for co-operation and co-ordination with RCCs;

j) establish SAR agreements with States having adjoining SRRS or FIRs, including trans-regional neighbors (the agreements should include clear responsibilities for overlapping or non-adjoining aeronautical and maritime SRRs);

k) provide up to date cross-border information on SAR capability (this should be included in bilateral SAR agreements);

l) pre-arrange procedures for cross-border SAR responses (this should be included in bilateral SAR agreements);

m) establish contingency procedures for delegation of SAR responsibility where such service is not able to be provided, or in contingency (temporary) circumstances;

n) establish a program for regular SAREX, which may be a desktop communications exercise, with each alternate SAREX being a full exercise (this expectation may be fulfilled by participating in a sub-regional SAREX that tests the State's SAR system; and

o) establish RCC plans for response to Mass Rescue Operations (MROs) integrated with national disaster plans;

p) establish SAR Operations Plans to include:

i. procedures for cooperation and deployment of foreign SRUs;

ii. provision for translators/liaison Officers/Embassy Officers for the daily tasking of the SRUs at the RCC;

iii. provision of information for logistic and administrative support (hotels, fuel, security passes, food, medicine, etc.);

iv. instructions on communication (ops normal reports, sightings, etc.) for search planning, command and control to foreign SRUs;

v. daily end of day report by SRUs to the RCC (via mobile, email, fax, etc.); and

q) establish SAR Alerting procedures which:

i. are tested and fully integrated with RCC procedures so that RCCs are rapidly notified of any SAR event 24 hours a day;

ii. include procedures for joint aeronautical and maritime distress alert notification, including reliable delivery and acknowledgement of COSPAS-SARSAT distress alerts, support and response to both aviation and maritime SAR incidents; and

iii. where applicable, include protocols for civil and military support and sharing of information.

SAR Facilities and Resources

7.3 *RCC Facility*: All States should ensure that RCCs are of sufficient size with adequate provision for operational positions designed in accordance with human factors principles (such as human machine interface) for a major search involving civil and military assets where applicable, and facilities such as:

a) Workstations, telephones (with international access), plotting tables, wall notice/status boards, computer, and communications equipment and systems, briefing/debriefing areas room for storage including incident records and recorders, RCC staff break and rest facilities;

b) computer resources which may provide support to RCCs with incident management, plotting, search planning, mapping, contact databases, web-based information, etc.;

c) charts, electronic or paper, which:

i. apply to SAR (aeronautical, nautical, topographic and hydrographic);

ii. depict SRR, neighboring SRRs, FIR(s), SAR resources and made available for all relevant aeronautical and maritime RCCs, ATS units, aircraft operators; and

iii. provide a means of plotting;

d) ability to reliably receive and acknowledge distress alerts 24 hours a day;

e) maritime broadcast facilities;

f) a means of recording, playback and archiving of communications;

g) shipping/vessel communications and maritime broadcast facilities such as Coast Radio Stations, RCC radio and satellite communications, marine radio networks;

h) aircraft communications via ATS units, aircraft operators, satellite communications or direct between RCC and aircraft;

i) access to aircraft and ship tracking data, e.g. ADS-B, Automatic Identification System and Long Range Identification and Tracking of Ships (LRIT) allowing rapid identification of potential aircraft and vessels that may divert to assist;

j) a means of obtaining meteorological information – forecast, present and historical data;

k) if applicable drift modelling software;

l) if applicable, ocean data including sea temperature, currents, winds, tides, etc.;

m) if applicable, SAR Datum Buoys, preferably with satellite tracking capability; and

n) RCC documentation and reference material such as plans of operation, procedures manuals, guidance material, ICAO and IMO references, SAR agreements; and

o) COSPAS-SARSAT equipment and reference material.

7.4 *Personnel and Training*,

a) All States shall Staff the SAR inspectorate the sufficient number of qualified SAR inspectors and provide them with adequate trainings necessary to perform their duties;

All State should maintain a 24 hour service:

b) provide adequate ATC resources (either an ATS supervisor or other staff) that can provide relief within Area Control Centres (ACCs) to allow timely SAR alerts and information to RCCs;

c) provide sufficient RCC staffing;

d) provide a sufficient number of trained specialist RCC officers including SMCs and Assistant SMCs (A/SMCs);

e) provide availability of a pool of RCC support staff who are familiar with RCC operations, but not trained as coordinators, that can assist with the functioning of the RCC during SAR incident response;

f) develop SAR personnel position descriptions that detail responsibilities and eligibility criteria for recruitment of operational staff;

g) develop a comprehensive training programme that includes SAR training for:

   i. RCC SAR Coordinators (SCs) based on a competency-based assessment approach to ensure technical and English language proficiency, cyclical (periodic) instruction that provides continuous training to ensure competency is maintained, and a system for maintaining training records; and

   ii. SRU staff, including military personnel.

h) facilitate RCC staff to be proficient in the English language; and

i) facilitate a programme of regular liaison visits between relevant RCCs, ATC units and airline operating Centres in order to understand those organizations, facilities and capabilities (reference Annex 12, paragraph 3.1.9).

7.5 *Search and Rescue Units*: All States should establish capabilities enabling:

a) availability and deployment of suitably crewed, trained and equipped SRUs (including a pool of air search observers trained in visual search techniques), public and/or private, civil and military, for rapid SAR response;

b) availability and deployment of SRU craft that may be in use for another primary purpose but made available to RCCs for SAR purposes on an as needed emergency basis (vessels, aircraft and land units);

c) protocols for civil SAR authorities to request the assistance of military assets, and similarly military SAR authorities to request civil assets;

d) a communication means and information protocols between the State's Aeronautical and Maritime SAR Authorities;

e) cooperative use and/or sharing of SAR assets with protocols incorporated within National SAR Plans and bilateral SAR Agreements;

f) pre-arranged government authority for funding of costs associated with hiring of SRUs, and payment for critical supporting logistics such as fuel, to avoid any delays in response availability;

g) aircraft with the ability and regulatory approval to safely conduct SAR missions.

Note: guidance material on SAR aircraft capability is found in the IAMSAR.

7.6 *Distress Beacons*: All States should :

a) where separate ARCCs and MRCCs exist with responsibility for coincident aviation and maritime SRRs, coordinate distress beacon alert procedures to ensure both RCCs are aware of any distress beacon activations within their areas to avoid duplication of response. For example, MRCCs should ensure their procedures alert ARCCs and ATS units to any EPIRB activations;

b) have a reliable distress beacon registration system that:

i) provides a readily-accessible mechanism (preferably one that is available by Internet as well as other conventional means) to enable distress beacon owners to fulfil their obligation to register ELTs, EPIRBs and PLBs, and update the registration data as information changes (e.g., change in ownership);

ii) is available to RCCs 24 hours a day and includes up-to-date registration details for all national civil and military ELTs, EPIRBs and PLBs;

c) take steps (including education) required to prepare for, and to implement changes related to, the introduction of next generation beacons (e.g.: update beacon registration systems to be compatible with new beacon hexadecimal identifications) and the transition to the MEOSAR satellite architecture (e.g.: update local user terminals and mission control centres to properly receive and manage MEOSAR data), in accordance with COSPAS-SARSAT specification documents (http://www.cospas-sarsat.int/en/documents-pro/system-documents); and

d) establish an appropriate nationwide means of disposal for old distress beacons.

Note 1: Information on beacon registration is at:

http://www.cospas- sarsat.int/en/beacons-pro/beacon-regulations-pro/ibrd-user-information-for- professionals.)

Note 2: Incorrect disposal of distress beacons often causes the deployment of scarce and often expensive SAR resources only to have the beacon located as a non-distress event in a rubbish dump or similar location. This also creates the risk of SAR resources being diverted away from a real emergency should it arise at the time. Beacon batteries are hazardous items, which should be disposed of in an environmentally friendly manner.

7.7 *Contingency Facilities*: All States should ensure there are established contingency facilities, or when a SAR service is not able to be provided, procedures in place for the temporary delegation of the SAR responsibility to another appropriate national body or State. All States should test their contingency arrangements periodically, but not less than once every six months.

SAR Information

7.8 *Provision of Information*: All States should ensure the:

a) establishment of a centralized information source publishing all MID State Aeronautical Information Publication (AIP) information as required by ICAO Annex 15 Appendix 1, page APP 1-8 including:

i. The agency responsible for providing SAR services;

ii. The area of SAR responsibility where SAR services are provided;

iii. The type of SAR services and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft;

iv. SAR agreements;

v. The conditions of SAR facility and service availability; and

vi. SAR procedures and signals used;

b) establishment of an Internet-based SAR information sharing system (with security protocols as required and in accordance with the emerging System Wide Information Management – SWIM concept as applicable) to share SAR activity with States and key stakeholders participating in a SAR activity (the information sharing system should include a means of handling media and next of kin enquiries, and recognize the need to avoid premature media statements); and

c) maximum practicable cooperation between State entities in the provision of accurate and timely information when required, including from military sources except where national security could be adversely affected.

7.9 *SAR Facilities and Equipment Lists*: All States should develop and maintain a current, comprehensive electronic list of State SAR Facilities, SAR Equipment, and SAR Units (SRUs), including joint or shared facilities and equipment, and provide the Internet link to that list to the ICAO Asia/Pacific Regional Office.

7.10 *SAR Library*: All States should:

a) establish a web-based SAR Library, or cooperate by contributing to an Internet-based MID resource (such as *http://www.uscg.mil/hq/cg5/cg534/NSARC.asp)*; and

b) ensure that each RCC and SAR Authority has ready access to a current copy (either electronic or hard copy) of the following reference documents at a minimum:

i. ICAO Annex 12;

ii. IAMSAR Manual Volumes I, II and III;

iii. International Convention on Maritime SAR (SAR Convention);

iv. MID SAR Plan

v. MID Air Navigation Plan; and

vi. relevant regional, national and agency SAR documents.

Note: The US Coast Guard contains a list of documents that may be held by RCCs and JRCCs as appropriate. In addition, a list of documents would be available on the IMO website at: (http://www.imo.org/en/OurWork/Safety/RadioCommunicationsAndSearchAndRescue/SearchAndRescue/Pages/Default.aspx).

SAR Improvement

7.11 *Search and Rescue Exercises (SAREX)*: All States should conduct regular SAREX (at least once every two years) to test and evaluate existing coordination procedures, data and information sharing and SAR response arrangements involving:

a) both aeronautical and maritime SAR authorities including both civil and military agencies as applicable, and related bodies such as Air Navigation Service Providers (ANSPs) and Airline Operations Centres (AOCs);

b) where appropriate, cross-aeronautical SRR coordination (SAREX should routinely involve SAR authorities of adjacent SRRs, especially if the SAREX area concerned is within 50NM of the adjoining SRR); and

c) SAREX effectiveness through a post-SAREX review and written report, completed to ensure that deficient areas or latent problems are identified and remedied.

*Note 1: a SAREX template is provided at **Appendix 1**.*

Note 2: SAREX should test the SAR system, including unannounced alerts that allow an actual search (whether it is a desktop or a physical operation), to be conducted which will indicate weaknesses in the system. SAREX should not be confused with, or take the form of, simulated crash fire exercises such as for Aerodrome Emergency Procedures that do not have a search component.

Note 3: Real SAR incident responses which include an adequate post-response review and evaluation with lessons learned may replace the need for a SAREX.

7.12 *SAR Quality Assurance*: All States should implement SAR System Improvement and Assessment measures, including Safety Management and Quality Assurance systems, that:

a) provide performance and safety indicators, including post-incident/accident lessons learned and management reviews (RCC and SAR System Continuous Improvement process), and feedback from RCC staff, SAR system users or SAR stakeholders;

b) identifies risk and corrective and preventive actions that prevent or minimize risk and the possibility of substandard SAR performance;

c) establishes an internal quality assurance programme, which includes regular internal audits of the RCC, SAR operations, SAR facilities and procedures that are conducted by trained auditors;

d) ensures the person responsible for internal quality assurance within the entity responsible for SAR services has direct access to report to the Head of the entity responsible for SAR services on matters of quality assurance; and

e) where appropriate, provides submissions to the JWG to share lessons learned and experiences with other global States for the continuous improvement of the worldwide SAR system.

Note 1: Resourcing of SAR system audit arrangements could be mitigated by States entering cooperative arrangements, including sub-regional regulation, between States for auditing of each other's SAR systems to share expertise and costs.

Note 2: Provisions of Annex 19 for a Safety Management System (SMS) may apply where a SAR service is provided under the authority of an ATS provider (Annex 19, Chapter 3, 3.1.3 e refers).

Note 3: Peer review, either external or internal, may provide a useful internal quality assurance tool.

7.13 *SAR Management Review*: All States should conduct an annual or more frequent analysis of their current State SAR system to identify specific gaps in capability against the minimum requirements of Annex 12 and the guidelines of the IAMSAR Manual to:

a) enable the ICAO MID SAR data to be updated to accurately reflect the State's capability;

b) be informed regarding the availability and capability of SAR services in neighboring States;

c) identify SAR research and development programmes, especially those which could be conducted if possible in cooperation with other States;

d) establish a common set of basic SAR system statistics, which include-

i. number of SAR incidents per year;

ii. number of lives at risk versus number of lives saved;

iii. time from first alert to tasking the SRU;

iv. time from first alert to arrival on scene of first SRU; and

v. time from first alert to rescue.

e) plan for any necessary improvements to gradually build and improve capability over time, which would be detailed in the State SAR Plan; and

f) regularly review and update SAR agreements as appropriate.

Note 1: The National Self-Assessment found in IAMSAR Manual Vol I Appendix H and the ICAO USOAP-CMA Protocol Questions for SAR may assist States with their reviews.

Note 2: The number of incidents should identify the type (e.g. COSPAS-SARSAT alert, ATS alerts, etc.) and outcome of SAR incidents.

7.14 *SAR Promotion*: All States should conduct SAR promotional programs (e.g. Seminars, Workshops and public safety campaigns) to:

a) encourage higher SAR preparedness by persons that may require SAR services through public safety campaigns aimed at preventing persons getting into distress situations (i.e.: 'preventative SAR');

b) ensure the support of government decision-makers for SAR facilities and improvements, in particular adequate funding availability;

c) assist media to understand SAR operations in order to minimize the need for explanations during SAR responses;

d) recognize improvement in State SAR systems;

e) enhance cooperation between SAR services and –

i. civil, military and police agencies;

ii. ANSPs;

iii. aerodrome and port operators;

iv. aircraft and shipping operators;

v. meteorological agencies;

vi. accident investigation agencies;

vii. government and non-government agencies affected by SAR operations, in particular large scale national and international responses involving whole of government agencies and

viii. other States.

Note: social media may be an effective means of SAR promotion that reduces the workload of SAR staff during major SAR responses.

RESEARCH AND FUTURE DEVELOPMENT

Research and Development

8.1 To develop the tools and systems required to meet foreseeable long-term requirements, there is a need for States to undertake planning and co-operation on SAR matters. This includes major efforts to define concepts, to extend knowledge and invent new solutions to future SAR challenges so these new concepts are selected and applied in an appropriate timely manner. Such efforts could be forged through collaborative partnerships between, States, ANSPs, International Organizations, institutes of higher learning and specialized technical agencies. This concept may manifest itself in joint projects such as:

- ICAO and/or IMO regional SAR training opportunities where provided to assist States that are unable to provide their own SAR training;
- Bilateral or Joint Sub-regional cooperation that brings together civil and military SAR experts and provides a single SAR facility that is cost-effective and has a level of resources and facilities that would be difficult for all States to maintain by themselves; and
- Regional online eLearning packages.

Note: Appendix 3 provides a summary of benefits to the SAR System of States assisting other States.

8.2 With the end goal of a globally interoperable SAR system in mind, the region will have to consider planning for a long term supporting concept and infrastructure. The following are possible areas that should be considered for future SAR research and development, in order to promote the maximum possible harmonization and interoperability of SAR systems:

a) data sharing such as aircraft and ship tracking information;

b) automated data link communication to RCCs when an aircraft or ship exceeds a Variable Set Parameter (VSP) in terms of its operating envelope, or activation of an emergency status (could be displayed as a symbol, and the data could include certain operating parameters such as acceleration and altitude for an aircraft) – note the ICAO GADSS includes this concept;

c) regional Remotely Piloted Aircraft Systems (RPAS) SAR capability;

d) inclusion of the SAR system and RCC access as a component of the new ICAO SWIM concept of operation and implementation;

e) on-going development of standardized SAR training objectives and advanced training systems, including the use of high fidelity simulators; and

f) enhanced technology oriented systems to improve SAR system effectiveness.

MILESTONES, TIMELINES, PRIORITIES AND ACTIONS

Milestones

9.1 Section 7 (*Performance Improvement Plan*) provides a scheme for the implementation of a collective set of enhancements for a number of elements in the PSCS, effective 07 November 2020.

9.2 States should commence planning for the various PSCS elements from the approval date of this Plan, to ensure a smooth transition by 08 November 2018, and should include consideration of issues such as:

- safety/operational analysis and assessment;
- cost-effectiveness;
- budgetary issues;
- development of operational procedures; and
- training.

9.3 Section 8 (*Research and Future Development*) provides, subject to future agreement by concerned parties, possible SAR improvements beyond 2019 until 2028.

Priorities

9.4 It is a matter for each State to determine priorities in accordance with its own economic, environmental, safety and administrative drivers.

Actions

9.5 This Plan necessitates a number of implementation actions. It is expected that each MID State report progress on each applicable element to ICAO MID Office. All States should note the importance of SAR status monitoring.

9.6 Section 6 (*Current Situation*) provides analysis and major concerns in the region, which should be considered in the formulation of specific State Plan.

MID SAR Coordination Forums

9.7 The MID Region will benefit from the cooperation and coordination of States and International Organizations involved in SAR. The establishment of permanent joint ICAO/IMO Regional SAR Forums to enable collaboration and cooperation on SAR matters should be considered.

Gap analysis and MID SAR Plan Montoring

9.8 The matrix at **Appendix 1** will be used to identify the capabilities of the States related to SAR, and a set of KPIs should be recommended to MIODNPIRG for endorsement. The MIDANPIRG ATM SG is responsible to monitor the implementation of the Plan.

MID SAR Support Team

9.9 A MID SAR Support Team composed of SAR Aeronautical and Maritime experts would be established to support States met their SAR obligations and implement the provisions of the MID SAR Plan.

SAREX

9.10 A programme is expected to be established for an annual SAREX, with every second year being a desktop communications exercise, and alternate years being a full exercise. The SAREX outcomes and lessons learned should be reported to MIDANPIRG through the ATM Sub-Group. A sample for SAREX Work plan is at **Appendix 2**.

APPENDIX 1.
SAR Capability Matrix

–	Legislation	Oversight	SAR Committee	Training	Alerting	SAR Agreements	Relationships	Communications	Quality Control	Civil Military	Resources	SAREX	Library	Computerization	SAR Programme	Supply Dropping	Special Equipment	SAR aircraft	Navigation	ELTs	COSPAS-SARSAT Alerts
Bahrain																					
Egypt																					
Iran																					
Iraq																					
Jordan																					
Kuwait																					
Lebanon																					
Libya																					
Oman																					
Qatar																					
Saudi Arabia																					
Sudan																					
Syria																					
UAE																					
Yemen																					

A = Fully meets Annex 12 requirements
B = Meets Annex 12 requirements in most areas
C = Meets Annex 12 requirements in some areas
D = Initial implementation
E = Not implemented
Blank = No response

SAR Matrix Element Descriptions

Training: The appropriate level and type of training for SAR coordinator, SAR mission coordinator, on-scene coordinator, and operational facilities. (IAMSAR Manual Vol. 1, Chapter 3)
Oversight: the effectiveness of the States' oversight activities conducted over the RCC and RSCs
Alerting: Fast and reliable means for the rescue coordination center to receive distress alerts. (IAMSAR Manual Vol. 1, Chapter 2)
Legislative: Statutes and related provisions that establish a legal foundation for establishing a SAR organization and its resources, policies, and procedures. (IAMSAR Manual Vol. I, Chapter 1)
SAR committee: Typically established under a national SAR plan, the SAR coordinating committee is comprised of SAR system stakeholders. (IAMSAR Manual Vol. 1, Chapter 6 and Appendix J)
Agreements : States should enter into agreements with neighboring States to strengthen SAR cooperation and coordination. (Chapter 3 – *Cooperation*, in both Annex 12 – Search and Rescue, and the International Convention on Maritime SAR)
Relationships: Close cooperation between services and organizations which may contribute to improving SAR service in areas such as operations, planning, training, exercises and research and development.
Communications: Communication capability for receipt of distress alerts and operational coordination among the SAR mission coordinator, the on-scene coordinator and SAR facilities. (IAMSAR Manual Vol. 1, Chapter 3)
Quality Control: Procedures to focus on improving the quality of SAR services so as to improve results and reduce costs. (IAMSAR Manual Vol. 1, Chapter 6)
Civil/Military: Close cooperation between the various civilian and military organizations.
Resources: The primary operational facilities made available to the national SAR system by various authorities and arrangements with others. (IAMSAR Manual Vol. 1, Chapter 5 and Appendix C)
SAR Exercise: Exercise to test and improve operational plans, provide learning experience and improve liaison and coordination skills. (IAMSAR Manual Vol. 1, Chapter 3; Annex 12, and Annex 14 regarding Airport Emergency Plan)
Library: Quick access to the applicable international, national, and agency SAR publications that provide standards, policy, procedures and guidance.
Computerization: Use of or access to output of various computer resources including databases, computer aids for SAR system management, search planning software, etc. (IAMSAR Manual Vol. 1, Chapter 2)
SAR programme: National structure to establish, manage and support the provision and coordination of SAR services. (IAMSAR Manual Vol. 1, Chapter 1)
Supply dropping: Supplies and survival equipment carried by air and maritime SAR facilities to aid survivors and facilitate their rescue, as appropriate. (IAMSAR Manual Vol. 1, Chapter 2 and Appendix B)
Special equipment: Equipment created for specific rescue scenarios (such as mountain or desert rescue) and equipment typically carried on designated SAR units to support coordination and locating functions as well as special supplies and survival equipment to aid survivors and facilitate their rescue. (IAMSAR Manual Vol. 1, Chapter 2 and 4)
SAR aircraft: An aircraft provided with specialized equipment suitable for the efficient conduct of SAR missions (Annex 12, Chapter 2 - *Organization*)
Navigation: Suitable means provided within the SAR region to determine position, and the responding SAR facilities have the appropriate equipment on board to determine their position in the SAR region they are likely to operate. (IAMSAR Manual Vol. 1, Chapter 2)
ELT: National regulations for carriage of ELTs, and arrangements for registration of the 406 MHz beacon and rapid access to the beacon registration database. (Annex 6 – Operation of Aircraft and Annex 10 - Aeronautical Telecommunications; and IAMSAR Manual Vol. 1, Chapter 4)
Cospas-Sarsat Distress Alerts : A SAR Point of Contact (SPOC) designated for receipt of Cospas-Sarsat distress data, and arrangements for efficient routing of the distress data to the appropriate SAR authority (the aeronautical emergency locator transmitter ELT), maritime emergency position-indicating beacon (EPIRB), and personal locator beacon (PLB)). (Annex 12, paragraph 3.2.5 and Section 2.4; and, IAMSAR Manual Vol. 1, Chapter 4)

APPENDIX 2: WORK PLAN FOR THE [[JOINT]] SAREX COORDINATION MEETING

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1. OBJECTIVES

State the objectives of the [joint] SAREX and what are to be achieved out of the SAREX by all participants.

1.1 The objectives of the [joint] SAREX are:

a) To provide continuation of SAR exercise and improve cooperation between …… (participating agencies or State RCC) and …….. (participating agencies or State RCC).

b) To provide continuation training for personnel of SAR organizations from both …… (participating agencies or State RCC) and ……. (participating agencies or State RCC)

c) To test the communication facilities and procedures between ……..…. (participating agencies or State RCC) and …… (participating agencies or State RCC); and

d) To test and determine the effectiveness of the Search and Rescue Units of …… (participating agencies or State RCC) and …… (participating agencies or State RCC).

2 DATE AND TIMING OF SAREX

State the agreed date, time and year for the [joint] SAREX. Have alternate or contingency plan in the event that the full scale SAREX cannot be conducted due to weather or any unforeseen circumstances. It is recommended that a pre-SAREX brief be conducted to ensure all participants understand their roles and the required actions to be taken. State the agreed time for a pre-SAREX brief to be carried out for all participants and States may conduct simultaneous pre-SAREX brief at their own location for their local participants. For standardization and to avoid confusion, it is recommended that all timing and dates used should be in UTC as there may be difference in time and day for different States. After the SAREX, it is also recommended to conduct a de-brief for all participants.

For example:

2.1 Table Top SAREX or A Full Scale Exercise will be held between …….. (participating agencies or States) and …… (participating agencies or State) on …….(date/month/year according to UTC) ……..(day of the week according to UTC) from …… (time in UTC) to ……. (time in UTC).

2.2 In the event of bad weather, the Full Scale SAREX will be converted into a Table Top SAREX. The cut off time will be at …….. (time in UTC).

2.3 A Pre-SAREX brief will be held on …… (day/month/year according to UTC) ……. (day of the week according to UTC) in ……. (location of the pre- SAREX brief) at …….. (time in UTC).

2.4 De-Brief will be held on …… (day/month/year according to UTC) …….. (day of the week according to UTC) in ……. (location of the de-brief) at …….. (time in UTC).

3 SCENARIO

Discussion and development of exercise scenario with participating State or States and agencies involved. Scenario created should be as realistic as possible to simulate close to a real incident. A fictitious flight plan can be included to provide additional information pertaining to the distressed aircraft as required by the RCCs. Using fictitious call signs or airlines for distressed aircraft will avoid complication or confusion especially if it involves the social media.

For example:

3.1 At …… (time in UTC), a chartered …….(type of aircraft) …… (call sign of distressed aircraft) departed from ……. (point of departure) to ……. (destination) with ……. (POB). At ……. (time in UTC), aircraft declared **"MAY DAY"** due to …… (nature of emergency) at …….. (location in Lat and Long or with reference to a prominent location known to all). ……..

3.2 Other information like Pilot-in-command …..... equipment carried on board ……, color of aircraft fuselage or tail.

4 PARTICIPATING ORGANISATIONS OR UNITS

Identify and list all participating agencies or agencies from both States. Agencies should include both government and private. ANSP, Aircraft Investigation Bureau, Airlines etc. should be involved in a SAREX as they are directly involved in any real air incident

For example:

4.1 From …….. (participating local agencies or States)

1) Civil Aviation Authority of ……
2) Local Air Force
3) Local Navy
4) …….
5) …….

From …….. (the other participating local or States):

1) Civil Aviation Authority of ……..
2) Local Air Force
3) Local Navy
5) ……
6) …….

5 DEPLOYMENT OF EXERCISE SAR UNITS (SRUs) AND CALLSIGNS

State all the SAR assets that will take part in the SAREX. It is recommended that the call signs of the SRUs should be pre-fixed with the word "SAREX" to indicate that it is an exercise aircraft or surface vessel. This will not create any confusion between a SAREX and a real incident. Call sign assigned to a particular SAR asset should not be changed and to be used throughout the exercise. Different SAR asset should be assigned with an individual flight number.

5.1 SRUs from …… (participating State) and their call signs are as follows:

Type of SRUs	Call sign	Remarks
Fokker 50	SAREX 01	Search
C130	SAREX 02	Search
Dolphin Helicopter	SAREX 03	Search and Rescue
……	SAREX……..	……..
……	SAREX……..	……..
……	SAREX……..	……..

5.2 SRUs from …… (the other participating State) and their call signs are as follows:

Type of SRUs	Call sign	Remarks
Helicopter	SAREX 04	Search and Rescue
Ship	SAREX 05	Search and rescue
…….	SAREX….	……..

6 COMMUNICATIONS

State the agreed radio frequencies to be used in the SAREX. Make communication arrangements between the two RCCs as well as between the RCCs and the SRUs. It is recommended that a communication check be conducted between all parties before the SAREX to ensure serviceability of communication equipment. A standby day may be necessary if the communication check is found not satisfactory or unsuccessful.

6.1 The communications arrangement will be as follows:

a) Between ……. (participating agency or State RCC) and ……. (the other agencies or participating State RCC)

Primary communication - …….KHz or …..Mhz or landlines

Secondary communication - …….KHz or …..Mhz or landlines

Standby communication - …….KHz or …..Mhz or landlines

b) Between …….(participating agencies or State RCC) and SRUs)

Primary communication - ……. KHz or …….MHz

Secondary communication - ……. KHz or …….MHz

Standby communication - ……KHz or ….....MHz

6.2 A communication test between …… (participating agency or State RCC) and …… (the other participating agencies or State RCC) will be conducted prior to the SAREX. The date for the test is on ……. (date/month/year according to UTC) between …… (time in UTC) to ……..….. (time in UTC).

6.3 In the case of unsatisfactory communication test, another test will be conducted on ……. (date/month/year according to UTC) between …… (time in UTC) to ……..….. (time in UTC). .

6.4 All messages pertaining to the exercise shall be prefixed with the words "SAREX SAREX SAREX"

7 SEARCH OBJECT

In a Full Scale SAREX, States can consider the deployment of a search object to add realism to the exercise. This will enable participating SRUs to practice visual search from air as well as on from the surface of the sea. If the homing capability of the SRUs is desired, a beacon can be placed on the search object for electronic search. Arrangement can be made for the search object to be deployed at the proposed distress location at the activation time of the SAREX. A search object with some significant marking or markings on it will enable easier visual sighting of search target on land or on water.

7.1 The search object will be provided by …… (one of the participating agency or State RCC) and will be deployed at ……. (time in UTC) on ……..(date of the SAREX according to UTC) at the position in which the distressed aircraft is assumed to have crashed.

7.2 Search target is marked with.…… (bright color or with the words "SAREX" or some significant marking).

8 ALERTING AND ACTIVATION

State clearly on the alert and activation processes for the SAREX. Decide on which agency or State would initiate the distress phase and notify the other participating agencies or State or States so that [joint] SAR effort can be carried out. In a joint SAREX, if the distressed location is within the area of responsibility of a particular State, the State concern should carry out the alerting and activation phase. The other participating State or States should be notified and [joint] SAR operations can be carried out.

8.1 Since the crash will occur in …… (location or name the State FIR) or area of responsibility, …… (State concern) RCC will notify …….. (participating State) . Both RCCs will coordinate the SAR Operations.

9 SEARCH AREA

Discuss on how to determine the search area or which State should determine the search area. In a joint SAR effort, the two RCCs can determine their own search areas and agree on a common search area.

9.1 The respective Search Mission Coordinators (SMCs) will work out a search area upon receipt of the distress location or crash report.

9.2 The two SMCs shall discuss with each other and agree on a common search area.

9.3 If there is a great difference between the two search areas, the controlling RCC shall decide on the most probable area and take the necessary action to promulgate the area as a restricted area for SAR operations accordingly.

10 DIPLOMATIC CLEARANCE

In a joint SAREX, make necessary arrangement for the application of Diplomatic Clearance required if State assets may or are required to enter into another State's territorial airspace or waters. The process for application should be made known or if there is an agreement in place between the two States, then the agreed procedure should be followed. Provide information regarding the SRUs and particulars of the personnel on board. It is recommended that particulars of the SRUs be provided to the State concern prior to the SAREX. This will assist in the Diplomatic Clearance process.

10.1 …… (State) SMC will request to …… (State) for diplomatic clearance to allow …… (State's) SRUs to enter ……. (State's) territorial airspace and waters.

10.2 To obtain diplomatic clearance for …….. (State's) SRU, …….. (State) SMC shall provide the following particulars:

a) Registration of SRU

b) Type of aircraft or vessel

c) Name of Captain/Pilot in Command

d) Names of crew on board (not required for sea asset)

e) Area of operation

f) Date and time of operation

10.3 The details of the ……. (State's) SRU shall be provided to …….. (State) one or two weeks before the exercise. Application for diplomatic clearances through the normal channel via the …… (agency for the process of the Diplomatic Clearance) is advised in order to accelerate the diplomatic clearance process.

11 SEARCH OPERATIONS

Note: Ensure the safe conduct of the SAREX especially with the air assets. It is recommended that there should be one controlling RCC providing instructions to search aircraft prior to entering the search area. It is also recommended that an Air Coordinator be deployed to provide instructions to search aircraft during transit to and fro from the search area as well as within the search area if the RCC personnel have no knowledge of Air Traffic Control.

11.1 All SRUs shall report to the controlling RCC or On Scene Coordinator (OSC) prior to entering the Search Area and while conducting search in the Search Area to ensure safety and efficiency in the [joint] SAR effort. All air search assets must observe and adhered to ATC instructions.

11.2 Non exercise aircraft shall keep clear of the search area unless clearance has been obtained for these aircraft to transit through.

12 RESCUE OPERATIONS

Note: Discuss on how the rescue operation is to be executed. Agency or States can decide on a simulated rescue operation by taking photographs of the search object once sighted or if actual personnel are deployed at the distressed location as survivors, actual rescue operations can be conducted. Actual rescue operation will provide training for the rescue of survivors from sea or land to hospitals or landing sites. If possible, recover the search object from the land or sea after the exercise, this will help to avoid the search object becoming an obstacle to others on land or sea. If recovering is not possible, make a general broadcast to warn others of the objects.

12.1 When the search object is sighted, the SRU shall inform the …… (State) RCC. The …… (State) RCC will disseminate the information to all other SRUs.

12.2 The SRUs to take photographs of the search object to simulate the rescue of the survivors.

12.3 Recovery of the search object will be by …….. (agency that is recovering the search object).

12.4 If the search object is unable to be recovered due to sea state or weather, an Urgent Marine Information Broadcast is provided by …….. (maritime agency responsible for the area).

13 EMERGENCY LANDING OF SEARCH AIRCRAFT

Note: In a joint SAREX, make arrangement for search aircraft to land in airport or airfield of another State in the event of an emergency encountered by the search aircraft where immediate landing is required.

13.1 …… (State's) search aircraft will be given permission to land in …….. (name of airport or airfield) if an emergency landing is required.

14 TERMINATION OF SAREX

Note: State the requirements or under what circumstances that will terminate the SAREX. Make arrangement in the event of a real incident that might occur during the SAREX. Consideration can be given to have a code word or words which are understood by all participating agencies and SRUs in the event of a real incident. Once the code word is broadcast to all concern, it will be understood by all participants and the SAREX will be converted into real SAR operations.

14.1 The SAREX will be terminated under any one of the following circumstances:

a) When the all the SRUs have returned to base.

b) When the time for the SAREX has expired and no search object is sighted.

c) When there is an actual emergency.

14.2 In the case of a real emergency, the exercise will be converted into a real SAR Operations. The code word **"NO DUFF NO DUFF"** will be broadcast and all agencies to terminate the exercise immediately and prepare and convert it into a real SAR Operations.

15 SAREX De-brief

Note: Conduct of a SAREX de-brief is important as this is where the evaluation process of the exercise is presented by evaluation experts who observed the exercise and observations by people who actually participated in the exercise scenarios. This is the final step to identify weaknesses and development of recommendations for improvement. Agree on a date and venue to conduct a SAREX de-brief to all participants from both States.

15.1 SAREX Debrief will be held in on …….. (date/month/year) at ……... (time in UTC).

15.2 The venue for the SAREX De-brief will be at ……. (name the venue).

16 SAREX CONTROLLERS/EVALUTORS/OBSERVERS

Note: Name the personnel who will be involved in the SAREX as observers, evaluators and controllers. As for evaluators and controllers, they must have expertise in the areas of SAR as they will understand what is to be evaluated and how to control the exercise to maximize the training value.

16.1 Personnel involved in the SAREX will be as follows:

From SAREX Controllers/Evaluators/Observers

……. (Agency or State) …….. (name of personnel and their role)

17 INVITATION TO FOREIGN OBSERVERS

Note: Agency or States may consider inviting observers from other agencies or foreign countries or international organizations to attend and observe the SAREX. These personnel can provide valuable feedbacks for improvement to the system. Arrangement to be made as to which State will do the invitation and who should be invited to attend.

17.1 Invitation to foreign observers to observe the SAREX at …… (indicate the venue for the observation of the SAREX) will be provided …… (State that is providing the invitation) on behalf of ……. (the other State).

17.2 The following countries and organizations will be invited to attend:

a) ……. (name of country or organization)

b) ……. (name of country or organization)

c) ……. (name of country or organization)

d) ……. (name of country or organization)

18 PRESS COVERAGE

Note: If there provision for any press coverage for the SAREX, made the arrangement for drafting of press release.

18.1 If there is a requirement for a [joint] press release on the SAREX to be issued, ……...(Agency or State that will produce the draft) will draft the press release and forward to …… (the other participating agencies or State) for concurrence.

19 SAREX REPORT

Note: SAREX Report is important as it serve as a permanent record of the exercise. Each element of the exercise is recorded and lesson learnt during the exercise is captured. Make arrangement on who should produce the SAREX Report for dissemination to all participating agencies as well as others who may be interested.

19.1 ……. (Agency or State) will produce the SAREX Report with assistance from ……. (the other participating agencies or State). Photographs will be made available for the SAREX Report.

19.2 A copy of the report will be sent to each of the following countries and International Organizations.

a) ……..... (agency or country or International Organization)

b) ……..... (agency or country or International Organization)

20 VENUE FOR THE NEXT SAREX

Note: It will be good to plan for an annual [joint] SAREX with relevant agencies or neighbouring State or States. State the tentative date and venue if possible for the next SAREX coordination meeting and SAREX.

20.1 The next SAREX Coordination Meeting will be held at ……. (venue) on …….. (date/month/year).

20.2 The next Full Scale SAREX will be held on …… (date/month/year).

APPENDIX 3: BENEFITS TO THE SAR SYSTEM OF STATES ASSISTING OTHER STATES

MID States Face Demanding SAR Responsibilities with Few Resources

2.1 Many MID States have the challenging responsibility of providing SAR services over vast and remote land and oceanic areas and several have few resources available to meet Annex 12 requirements.

Taking A Regional Approach Improves Effectiveness and Efficiency

2.2 To provide an effective and efficient SAR service in the region it is important that States focus not only on meeting their own national obligations, but also take the broader view that their State SAR system is only one part of the wider regional SAR system. States therefore need to cooperate, collaborate and share resources and technical expertise with their neighboring and regional RCCs.

When Developed SAR States Support Less Developed Neighbors, Everyone Wins

2.3 Sometimes simple measures can reduce the incidence of SAR operations in a State's Area of Responsibility.

2.4 An example of this is where New Zealand has been regularly requested to send resources to Kiribati, which is not in New Zealand's SRR, to conduct aerial searches for people missing in small vessels at sea. New Zealand recognized that with the provision of basic aids, the number of people going missing at sea could be reduced. The work was completed through an aid program and the benefit was immediate and twofold. There has been a large reduction in the number of people going missing at sea and New Zealand has reduced costs through less aerial searches being required.

2.5 Another example is where Australia has recognized that increasing aircraft and vessel traffic in the north and western areas of its SRR in the Indian Ocean region comes with increased likelihood of more frequent SAR responses in that region. As a result, Australia has commenced a new project in partnership with the Maldives, Mauritius and Sri Lanka to fund and provide technical assistance to improve the SAR capabilities of those countries that will also assist Australia's SAR response obligations in that area of its SRR. Similarly, since 2008 Australia has been providing funding and development assistance to Indonesia to improve SAR capability and cooperation.

2.6 States who aren't compliant with Annex 12 SARPs and who are unable to meet the minimum SAR service requirements could consult and seek assistance from 'champion' States who are compliant and have well developed SAR systems in place.

2.7 Examples of assistance that could be provided by States, International Organizations (such as IMO/ICAO) or multi-lateral initiatives include:

a) conduct of a SAR Gap Analysis;

b) advice on the establishment of a SAR organizational framework;

c) advice for the establishment of a National SAR Committee;

d) technical assistance in the development of a National SAR Plan;

e) providing copies of relevant SAR documents to be used as templates;

f) technical assistance on the establishment of SAR agreements;

g) technical assistance in the development of RCC position descriptions;

h) training of SAR personnel;

i) provision of SRU where appropriate and training of SRU crews;

j) provision/sharing of computerized SAR tools including incident management systems, databases, maritime drift modelling software, etc.;

k) establishing data and information sharing agreements between RCCs;

l) the provision of operational search plan data;

m) provide advice on how to conduct a SAREX and post-SAREX analysis; and

n) set up of SAR system publicity and safety awareness campaigns.

MID REGION SAR FOCAL POINTS CONTACT DETAILS

STATE	NAME	TITLE	ADDRESS	EMAIL	FAX	TEL	MOBILE
Bahrain	Mr. Fareed Ibrahim	Head of Search and Rescue	Bahrain CAA P.O. Box – 586 Kingdom Of Bahrain	fbucheery@caa.gov.bh	+973 17 329 949	+973 17 329 969	
Egypt	Mr. Khaled Abdelraouf Kamel	General Director of Operations Centers & Crisis Management	Ministry of Civil Aviation Cairo - EGYPT	Operation-center-ecaa@hotmail.com Operation-center-ecaa@yahoo.com	+202 22681371	+202 22688387 +202 22678535	+2 011 47710035 +2 0100 1112375
Iran	Mr. Faramarz Faramarzpor	SAR Expert in charge Iran Airports Company		faramarzpor@airport.ir		(98-21) 4454 4107	
Iraq	Mr. Fadel Gatea	Director ATS	Iraq Civil Aviation Authority (ICAA)	atc@iraqcaa.com		+964 7716440448	+964 7828844998
Jordan	Mr. Ahmad Al Heders	Chief Amman ACC	Queen Alia Airport	Ahmad.al-hederes@carc.gov.jo			+962 796664328
Kuwait							
Lebanon	Mr. Kamal Nassereddine	Chief of Air Navigation Department	Directorate General of Civil Aviation (DGCA)	atm@beirutairport.gov.lb		+961 1 628178	
Libya							
Oman	RCC HQ RAFO		P.O. Box 722 Muscat P.C. 111, Oman	Hq.rafo.@rafo.gov.om AFS:- OOMSYCYX	+968 24334776	+968 24334211 +968 24334212	

STATE	NAME	TITLE	ADDRESS	EMAIL	FAX	TEL	MOBILE
Qatar	Mr. Nasser Al-Khalaf	Senior Air Traffic Controller and SAR Coordinator	Hamad Int'l Airport-Doha	nasser.alkhalaf@caa.gov.qa			
Saudi Arabia	Mr. Fahad Saud Alharbi	Manager SAR Head of SAMCC	Saudi Air Navigation Services	fasalharbi@sans.com.sa	+966126402855	+966126717717/ 1840	+966 505329284
Sudan	Hashim Mohamed Ahmed	RCC Head	Sudan CAA PO BOX 165	BEGER124@gmail.com	+249 18352 8323	+249 183528323	+249 12327797 +249 912382433
Syria	Mr. Monif Abdulla	Head of S.A.R. Department Syrian Civil Aviation Authority	Damascus Airport	monif77@hotmail.com	+963-11 540 0312	+963-11 540 0312	+963 932 710351
UAE	Mr. Waleed Al Riyami	SAR Inspector	Air Navigation & Aerodrome Department GCAA- Abu Dhabi	walriyami@gcaa.gov.ae	+971 2 405406	+971 2 4054214	
Yemen	Mr. Mohamed Abdulrab Ali	SAR Director	CAMA Yemen			+967 777214088	

DEFICIENCIES IN THE ATM FIELD

EGYPT

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
~~1~~	~~MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK~~	~~-~~	~~ATS routes M305/UM305 not implemented~~	~~Apr, 2013~~	~~Segment BRN-ATMUL not implemented.~~	~~S~~	~~step 1 Dated 2/2015:~~ ~~held meeting with ECAA , NANSC and Military to study the proposed Routes~~ ~~step 2 Dated 14/5/2015:~~ ~~send letter for approval of the proposed routes to the military side~~ ~~step 3 Dated 23/6/2015:~~ ~~Receiving rejection letter from military side for the proposed routes~~ ~~step 4 : Dated 25/6/2015 :~~ ~~notify NANSC ANSP company to study the proposed Routes~~ ~~step 5 Dated 4/2017:~~ ~~Egypt will present a working paper in the third meeting of the MIDANPIRG ATM Sub-group (ATM-SG 3) to address the subject~~	~~Egypt~~	~~Dec, 2018~~	~~B~~

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
~~2~~	~~MID ANP Table ATM II MID 1 MID REGION ATS ROUTE NETWORK~~	~~-~~	~~ATS routes M312/UM312 not implemented~~	~~Apr, 2013~~	~~Segment DBA-AMIBO not implemented.~~	~~S~~	~~step 1 Dated 2/2015:~~ ~~held meeting with ECAA , NANSC and Military to study the proposed Routes~~ ~~step 2 Dated 14/5/2015:~~ ~~send letter for approval of the proposed routes to the military side~~ ~~step 3 Dated 23/6/2015:~~ ~~Receiving rejection letter from military side for the proposed routes~~ ~~step 4 : Dated 25/6/2015 :~~ ~~notify NANSC ANSP company to study the proposed Routes~~ ~~step 5 Dated 4/2017:~~ ~~egypt will present a working paper in the third meeting of the MIDANPIRG ATM Sub-group (ATM-SG 3) to address the subject~~	~~Egypt~~	~~Dec, 2018~~	~~B~~

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

IRAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	Still to sign with Kuwait~~Signed with all neighboring States except Afghanistan, Azerbaijan, Kuwait and Turkmenistan~~	H	Corrective Action Plan has not been formally provided by the State	Iran	Dec, 2018	A
2	MID ANP TABLE ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS routes A418/UP574 not implemented	Dec, 2006	KUMUN-PAPAR segment not implemented.	S O	Corrective Action Plan has not been formally provided by the State	Iran- UAE	Dec, 2018	B
3	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS Route G202 is restricted to certain defined airspace users	~~Jun, 2014~~ Jun, 2014	Not all Operators are authorized to fly G202	O	Corrective Action Plan has not been formally provided by the State	Iran	Dec, 2018	B

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

IRAQ

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS route G667 not implemented	Sep, 2006	Segment ALSAN-ABD not implemented	S	Corrective Action Plan has not been formally provided by the State	Iraq- Iran-Kuwait	Dec, 2018	B
2	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	~~Contingency Agreement signed only with Iran~~ Contingency Agreement to be signed with Syria	S	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	A
3	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS route G795 not implemented	May, 2008	RAF-BSR segment not implemented	S	Corrective Action Plan has not been formally provided by the State	Iraq- Saudi Arabia	Dec, 2018	B

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
4	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS route A424 not implemented	May, 2008	LOTAN-LOVEK segment not implemented	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	B
5	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	ATS route	ATS Route G669 not implemented	May, 2008	segment RAF - SOLAT not implemented	S	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	B

[(1)] Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

JORDAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	~~Contingency agreements not signed with Iraq, Israel and Syria.~~ Contingency agreements not signed with ~~Israel and~~ Syria.	H	Corrective Action Plan has not been formally provided by the State. State comment: due to political impact in the region Jordan is not able to complete the signature of contingency agreements with all adjacent States	Jordan	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

KUWAIT

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	~~Contingency Plans with Iraq and Iran are still to be signed.~~ Contingency Plan to be signed with Iran	S	Corrective Action Plan has not been formally provided by the State	Kuwait	Dec, 2018	A

[(1)] Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

LEBANON

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	Contingency agreements not signed with ~~Cyprus and~~ Syria	S	Corrective Action Plan has not been formally provided by the State	Lebanon	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

Libya

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs	Dec, 2014	Agreement signed only with Egypt	S O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2018	A
2	Annex 11 Para 3.3.5.1	-	Not reporting the required data to the MIDRMA in a timely manner.	Dec, 2013	-	H O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

OMAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	~~Contingency Agreements to be signed with India and Pakistan .~~ Contingency agreements not signed with Saudi Arabia and UAE.	S	Corrective Action Plan has not been formally provided by the State	Oman	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

QATAR

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	~~Contingency agreements not signed with Saudi Arabia.~~ Contingency agreements not signed with Saudi Arabia and UAE.	S	Corrective Action Plan has not been formally provided by the State	Qatar-Bahrain	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

SAUDI ARABIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	Contingency Agreements not signed with ~~Eritrea~~, Iraq, Qatar, Sudan and Yemen.	S	Corrective Action Plan has not been formally provided by the State	Saudi Arabia	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

Sudan

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Dec, 2014	Contingency Agreement signed only with Egypt	H S O	Corrective Action Plan has not been formally provided by the State	Sudan	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

SYRIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS route G202 not implemented	Dec, 1997	Segment DAKWE - Damascus not implemented	S	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	B
2	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS route UL602 not implemented	Dec, 2003	Segments ELEXI-DRZ-GAZ not implemented.	S	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	B
3	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	No signed agreement yet	H O	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
4	Annex 11 Para 3.3.5.1	-	Reporting unsatisfactory LHDs to MIDRMA	Oct, 2013	Syria to coordinate with MIDRMA.	H	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	A

[(1)] Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

UAE

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs.	Nov, 2006	Plan completed and Agreements signed with Bahrain, Iran, Oman and Saudi Arabia. The plan next is to sign with Qatar after the finalisation of the LoA.	O	Corrective Action Plan has not been formally provided by the State	UAE	Dec, 2018	A
2	MID ANP Table ATM II-MID-1 MID REGION ATS ROUTE NETWORK	-	ATS routes A418/UP574 not implemented	Dec, 2006	KUMUN-PAPAR segment not implemented.	S	Corrective Action Plan has not been formally provided by the State	Iran- UAE	Dec, 2018	B

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the ATM Field

YEMEN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 11 Para. 2.30	-	Development of contingency plan for implementation in the event of disruption or potential disruption of ATS and related supporting services. The Plan should also address natural disasters and public health emergencies. Contingency agreements should be signed with all adjacent ACCs	Nov, 2006	Contingency Agreement signed only with Oman.	H O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2018	A
2	Annex 11 Para 3.3.5.1	-	Granting RVSM approvals for aircraft without known hight-keeping monitoring results	Dec, 2012	-	H O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2018	A
3	Annex 11 Para 3.3.5.1	-	Reporting Unsatisfactory LHDs to MIDRMA	Oct, 2013	Yemen to coordinate with MIDRMA.	H	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2018	A

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(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

DEFICIENCIES IN THE SAR FIELD

IRAQ

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	**Facilities/ Services**	**Description**	**Date First Reported**	**Remarks/ Rationale for Non-elimination**		**Description**	**Executing Body**	**Date of Completion**	**Priority for Action**
1	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	A
2	Annex 6 Part I, Chap.6 and Part II Chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	ELT	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

KUWAIT

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 6 Part I chap. 6 and Part II chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	ELT	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Kuwait	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

LEBANON

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Lebanon	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

Libya

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 6 Part I chap. 6 and Part II chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	-	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Dec, 2014	-	H S O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2018	A
2	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Dec, 2014	-	H S O	Corrective Action Plan has not been formally provided by the State	Libya	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

QATAR

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Qatar	Dec, 2018	A
2	Annex 6 Part I chap. 6 and Part II chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	ELT	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Qatar	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

SYRIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	A
2	Annex 6 Part I chap. 6 and Part II chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	-	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Deficiencies in the SAR Field

YEMEN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 12 Para. 2.1	-	Lack of provision of required SAR services	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2018	A
2	Annex 6 Part I chap. 6 and Part II chap. 2 Annex 10, Vol III, Chap. 5 Annex 12 para. 2.6.4	-	Non-compliance with carriage of Emergency Locator Transmitter (ELT) requirements	Apr, 2012	-	O	Corrective Action Plan has not been formally provided by the State	Yemen	Dec, 2018	A

(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

Note:* Priority for action to remedy a deficiency is based on the following safety assessments:

'U' priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

'A' priority = Top priority requirements necessary for air navigation safety.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

'B' priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

Definition:

A deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

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(1) Rationale for non-elimination: "F"= Financial "H"= Human Resources "S"= State (Military/political) "O"= Other unknown causes

TERMS OF REFERENCE (TOR) OF AIR TRAFFIC MANAGEMENT SUB-GROUP (ATM SG)

1. TERMS OF REFERENCE

1.1 **The Terms of Reference of the ATM Sub-Group are:**

a) ensure that the planning and implementation of ATM in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) methodology and the MID Region Air Navigation Strategy;

b) monitor the status of implementation of the MID Region ATM-related ASBU Modules included in the MID Region Air Navigation Strategy as well as other required ATM facilities and services, identify the associated difficulties and deficiencies and provide progress reports, as required;

c) keep under review the MID Region ATM performance objectives/priorities, develop action plans to achieve the agreed performance targets and propose changes to the MID Region ATM plans/priorities, through the ANSIG;

d) seek to achieve common understanding and support from all stakeholders involved in or affected by the ATM developments/activities in the MID Region;

e) provide a platform for harmonization of developments and deployments in the ATM domain;

f) based on the airspace user needs and in coordination with stakeholders (States, International Organizations, user representative organizations and other ICAO Regions), identify requirements and improvements for achieving and maintaining an efficient route network in the MID Region;

g) foster and initiate actions aimed at improving civil/military cooperation and Flexible Use of Airspace (FUA) implementation;

h) keep under review the adequacy of requirements in Search and Rescue field, taking into account, *inter alia*, changes to aircraft operations and new operational requirements or technological developments;

i) ensure the effectiveness of the SSR code allocation system in the MID Region;

j) identify, State by State, those specific deficiencies that constitute major obstacles to the provision of efficient air traffic management and recommend specific measures to eliminate them;

k) develop the MID Region ATM Contingency Plan and ensure that its maintained up to date;

l) monitor the implementation of the MID Region ASBU Modules included in the MID Region Air Navigation Strategy related to the ATM, provide expert inputs for ATM related issues; and propose solutions for meeting ATM operational requirements;

m) monitor and review the latest developments in the area of ATM;

n) provide regular progress reports to the ANSIG Group and MIDANPIRG concerning its work programme; and

o) review periodically its Terms of Reference and propose amendments as necessary.

1.2 **In order to meet the Terms of Reference, the ATM Sub-Group shall**:

a) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU methodology;

b) provide necessary inputs to the MID Air Navigation Strategy through the monitoring of the agreed Key Performance Indicators related to ATM;

c) review the MID ATS Routes Network in order to assess its capacity and constraints;

d) identify requirements and improvements for achieving and maintaining an efficient ATS route network in the MID Region;

e) propose a strategy and prioritized plan for development of improvements to the route network, highlighting:

- areas that require immediate attention
- interface issues with adjacent ICAO Regions

f) develop a working depository for route proposals that will be used as a dynamic reference document for ongoing discussions on routes under development/ modification. In this respect, the Task Force should explore the utility that can be realized from the route catalogue concept/ATS routes database;

g) engage the necessary parties regarding routes under consideration, especially the Military Authorities;

h) promote civil/military cooperation and the implementation of the concepts of Flexible Use of Airspace (FUA), free flight, flexible tracks;

i) facilitate effective civil/military cooperation and joint use of airspace in the MID Region;

j) in coordination with the MIDRMA, carry out safety assessment of the proposed changes to the ATS Routes Network;

k) submit completed route proposals for amendment of the Basic ANP Table ATS-1, to the ICAO MID Regional Office for processing;

l) monitor the RVSM operations and support the continued safe use of RVSM in the MID Region;

m) review and maintain the MID Region SSR Code Allocation Plan and monitor the implementation of the SSR codes allocation procedures in the Region;

n) assist States in the development and co-ordination of contingency plans and ensure that the Regional contingency plan is maintained up-to-date;

o) assess the effectiveness of the agreed Contingency measures/procedures and propose mitigation measures, as appropriate;

p) address ATM and SAR interface issues with other regions and make specific recommendations to achieve seamlessness and harmonization;

q) review the requirements and monitor the status of implementation of ATM and SAR services;

r) analyse, review and monitor deficiencies in the ATM and SAR fields;

s) develop proposals for the updating of relevant ICAO documentation, including the amendment of relevant parts of the MID ANP, as deemed necessary;

t) establish and monitor ATM performance objectives for the MID Region; and

u) taking into account human factors studies and available guidance material, make operational recommendations related to ATM personnel in the changing technological environment.

2. COMPOSITION

2.1 The Sub-Group is composed of:

a) MIDANPIRG Member States;

b) experts nominated by Middle East Provider States from both Civil Aviation Authority and Military Authority;

c) concerned International and Regional Organizations as observers; and

d) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

ATTACHMENT A

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