



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**MIDDLE EAST OFFICE**

**SECOND MEETING OF THE MIDANPIRG AIR TRAFFIC FLOW MANAGEMENT  
TASK FORCE**

**(ATFM TF/2)**

*(Casablanca, Morocco, 19 – 20 March 2019)*

**SUMMARY OF DISCUSSIONS**

## **1. PLACE AND DURATION**

1.1 The Second Meeting of the Air Traffic Flow Management Task Force (ATFM TF/2) was successfully held in Casablanca, Morocco, 19 – 20 March 2019. The meeting was gratefully hosted by the Arab Civil Aviation Organization (ACAO).

## **2. OPENING**

2.1 The meeting was opened by Mr. Mohamed Smaoui, ICAO Deputy Regional Director, Middle East Office, who extended a warm welcome to all participants to the ATFM TF/2 meeting and wished them a successful meeting and a pleasant stay in Casablanca. Mr. Smaoui thanked ACAO for hosting the ATFM Workshop, ATFM TF/2 and FWC2022 TF/2 meetings, which demonstrates the high level of cooperation between ACAO and ICAO.

2.2 Mr. Smaoui highlighted that this meeting provides an opportunity for sharing experience and agreeing on the way forward related to the implementation of a collaborative ATFM in the MID Region, which could not be achieved without collaboration, support and contribution from all stakeholders.

2.3 Mr. Mohamed Rejeb, Safety and Air Navigation Expert at ACAO, welcomed the participants to Casablanca and re-assured ACAO commitment to work collaboratively with ICAO and all stakeholders for successful ATFM implementation in the MID Region.

2.4 The meeting was chaired by Mr. Hamad Rashid Al Belushi, Director Air Traffic Management, General Civil Aviation Authority, UAE, who extended appreciation to participants and in particular India, USA, CANSO, EUROCONTROL and IATA for being part of the ATFM Task Force and for accepting the invitation to actively participate in the meetings and share their experiences and views, which would support in achieving the ATFM and FIFA World Cup 2022 Task Forces' objectives.

## **3. ATTENDANCE**

3.1 The Meeting was attended by a total of forty-two (42) participants from twelve (12) States (Algeria, Brazil, Egypt, India, Iraq, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, UAE and USA) and six (6) International Organizations (ACAO, CANSO, EUROCONTROL, IATA, IFATCA and ICAO). The list of participants is at **Attachment A**.

## **4. OFFICERS AND SECRETARIAT**

4.1 Mr. Elie El Khoury, Regional Officer, Air Traffic Management/Search and Rescue (RO/ATM/SAR) was the Secretary of the meeting.

### **AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA.**

4.2 The meeting adopted the following Agenda:

- Agenda Item 1: Adoption of the Provisional Agenda
- Agenda Item 2: Regional ATFM Framework
- Agenda Item 3: Plan of Actions
- Agenda Item 4: Future Work Programme
- Agenda Item 5: Any other Business

4.3 The documentation, working papers and Presentations delivered during the Meeting are available at the ICAO MID Regional Website <https://www.icao.int/MID/Pages/2019/ATFM%20TF2.aspx>

## **AGENDA ITEM 2: REGIONAL ATFM FRAMEWORK**

### ***Outcome of the ATFM TF/1 meeting***

4.4 The subject was addressed in WP/2 presented by the Secretariat. The meeting reviewed the outcome of the ATFM TF/1 meeting (Muscat, Oman, 23 – 25 September 2018) at **Appendix A**. The meeting agreed that the Roadmap for the development of an ATFM Concept of Operations (CONOPS) for the ICAO MID Region should be replaced by a detailed Action Plan.

### ***Outcome of the ACAO/ICAO ATFM Workshop***

4.5 The subject was addressed in WP/3 and PPT/3 presented by the Secretariat. The meeting supported the recommendations emanating from the ACAO/ICAO ATFM Workshop (Casablanca, Morocco, 17 – 18 March 2019) at **Appendix B** and agreed that they should be considered during the development of the ATFM CONOPS.

### ***India Case Study toward Cross Border ATFM***

4.6 The subject was addressed in PPT/1 presented by India providing an overview of the implementation of Central Air Traffic Flow Management (C-ATFM), highlighting the objectives, the challenges and the lessons learned. It was noted that at the C-ATFM is being implemented into three (3) Phases.

4.7 The meeting noted that the Phase I and Phase II of the C-ATFM India applies to domestic traffic and starting from 2019, India would be ready to extend the system for cross border ATFM. The meeting noted with appreciation India's willingness to support the MID Region with implementation of ATFM to ensure inter-regional harmonization and optimization of the traffic flows at the interface between ICAO Asia Pacific (APAC) and MID Regions.

4.8 The meeting noted that the C-ATFM in India supported also the enhancement of the use of available airspace and distribution of traffic during the last contingency situation related to the closure of Pakistan Airspace.

### ***Outcome of the First ATFM Core Team Meeting***

4.9 The subject was addressed in WP/4 presented by the Secretariat. The meeting reviewed the outcome of the ATFM Core Team/1 meeting (Abu Dhabi, UAE, 22 – 24 January 2019) at **Appendix C**. The meeting commended the work carried out so far by the Core Team.

4.10 The meeting, based on the analysis of the carried out survey, recognized that the MID Region is still in the first steps related to the establishment of ATFM capabilities. Accordingly, the meeting agreed that raising awareness related to ATFM and qualifying ATFM Specialist should be given high priority.

4.11 The meeting reviewed the criteria used by the Core Team for the evaluation of the ATFM regional solutions.

4.12 The meeting emphasized that establishing a "Centralized ATFM" (1 Centre) would be the optimal solution followed by "2 Centres for 2 participating areas", then a centralized solution through a "Third Party" providing the ATFM service and the last one would be the "Multi-Nodal" concept. However, considering the challenges, feasibility and time and efforts required, the Multi Nodal achieved the highest Score.

4.13 Based on the above, the meeting agreed to recommend to MIDANPIRG/17 meeting (Cairo, Egypt, 15 – 18 April 2019) that the Multi-Nodal Concept should be applied for the MID Region as a first phase, which would be evolved to a centralized ATFM system in the future.

4.14 It was highlighted that for Asia Pacific Multi-Nodal project; three documents have been prepared and agreed upon by States: CONOPS, Regional Framework and Common Operating Procedures, which would be used as basis for the development of the MID Region ATFM Documentation.

4.15 The meeting agreed to the following high level outline to be considered during the development of the CONOPS as detailed in **Appendix C**:

Phase I- Building State's National ATFM Capabilities

Phase II – Establishment of Regional ATFM Framework

Phase III- Implementation of Cross border ATFM

### ***UAE Development related to ATFM***

4.16 The subject was addressed in WP/5 and PPT/2 presented by UAE. The meeting noted that UAE has taken multiple initiatives to increase and maximize the utilization of available capacities in order to accommodate the increase of demand within the UAE FIR. Implemented initiatives included the airspace restructure and multiple ATFM measures, which were agreed upon with adjacent air traffic service units as stipulated in the respective Letters of Agreement (LOA).

4.17 Ground Delay Program, Ground Stop and Level Capping are the ATFM measures currently implemented in Emirates FIR.

4.18 The meeting noted that UAE successfully implemented the SWIM Gateway on 25 September 2018. UAE highlighted that a request for proposal related to the implementation of an ATFM System in UAE will be disseminated in the coming three months.

### **AGENDA ITEM 3: PLAN OF ACTIONS**

4.19 The meeting agreed to the Action Plan at **Appendix D** for the implementation of ATFM in the MID Region that includes the following six (6) Key Activities:

Key Activity 1: Agreement on the ATFM Regional Framework

Key Activity 2: Development of Draft CONOPS

Key Activity 3: Development of ATFM Regional Framework and draft Common Operating Procedures based on the agreed CONOPS

Key Activity 4: Implementation of the MID ATFM Regional Framework and Common Operating Procedures

Key Activity 5: Post Implementation Review of the MID ATFM Regional Framework

Key Activity 6: Training and raising awareness related to ATFM

4.20 The meeting agreed that raising awareness, training and building States' capabilities related to ATFM should start the soonest possible and it is a continuous process.

4.21 The meeting emphasized that the agreed deadlines/timelines are very tight. However, they are crucial for the establishment of regional ATFM Framework in a timely manner. Accordingly, the meeting urged States and Organizations to maintain, to the extent possible, the same ATFM Focal Points and the designated Members of the ATFM Task Force to ensure continuity and effectiveness.

### **AGENDA ITEM 5: FUTURE WORK PROGRAMME**

4.22 The meeting agreed that the Terms of Reference of the ATFM TF as endorsed by MSG/6 meeting (Cairo, Egypt, 3 – 5 December 2018) are still valid.

4.23 The meeting agreed that the ATFM TF/3 meeting be held from 12 to 13 January 2020. The venue would be the ICAO MID Regional Office in Cairo, unless a State will be willing to host the meeting.

**AGENDA ITEM 6: ANY OTHER BUSINESS**

4.24 Nothing has been discussed under this Agenda Item.

**5. CLOSING**

5.1 In closing, Mr. Smaoui and Mr. Al Belushi thanked the participants for their presence and excellent cooperation and contribution to the meeting.

5.2 The participants thanked ICAO for organizing such a fruitful Meeting as well as ACAO for hosting, and commended the regional efforts exerted to make the ATFM/CDM regional project a success.

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## INTERNATIONAL CIVIL AVIATION ORGANIZATION

### MIDDLE EAST OFFICE

#### FIRST MEETING OF THE MIDANPIRG AIR TRAFFIC FLOW MANAGEMENT TASK FORCE

(ATFM TF/1)

*(Muscat, Oman, 23 – 25 September 2018)*

#### SUMMARY OF DISCUSSIONS

##### 1. PLACE AND DURATION

1.1 The First Meeting of the Air Traffic Flow Management Task Force (ATFM TF/1) was successfully held in Muscat, Oman, 23 - 25 September 2018. The meeting was gratefully hosted by the Public Authority for Civil Aviation (PACA), Oman.

##### 2. OPENING

1.2 The Meeting was attended by a total of forty one (41) participants from ten (10) States (Bahrain, Egypt, India, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, UAE and USA) and six (6) International Organizations/Industries (AEROTHAI, CANSO, EUROCONTROL, IATA, MAAR and MIDRMA). The list of participants is at **Attachment A**.

1.3 The meeting was opened by Mr. Anwar Al Raissi, Director General Civil Aviation Regulation, PACA, Oman, who extended a warm welcome to all participants to the ATFM TF/1 meeting and wished them a successful meeting and a pleasant stay in Muscat. Mr. Al Raissi thanked ICAO for organizing this meeting in Oman and re-stated Oman's commitment to support the ICAO MID Regional Office activities.

1.4 In his opening remarks, Mr. Elie El Khoury, Regional Officer, Air Traffic Management and Search and Rescue (RO/ATM/SAR), ICAO Middle East Office, Cairo, welcomed the participants to Muscat. On behalf of the ICAO Middle East Office, Mr. El Khoury expressed ICAO's gratitude and appreciation to H.E. Dr. Mohammed Ben Nasser Ben Ali Al Za'abi, Chief Executive Officer of Public Authority for Civil Aviation (PACA) – Oman for hosting the ATFM TF/1 and World Cup 2022 TF/1 meetings in Oman. He extended special thanks to all the team who participated in the preparation and facilitation of this meeting for their good cooperation and for the excellent hospitality extended to the ICAO staff and all participants. Mr. El Khoury highlighted that Oman continuous support to the ICAO MID Office activities is an evidence of its active role and reflects Oman's commitment to enhance the overall safety and efficiency of air navigation in the Region, and to ensure the success of the regional projects/initiatives.

1.5 Mr. El Khoury highlighted that this meeting provides an opportunity to share experience and agree on the way forward with the implementation of a collaborative ATFM in the Region, which could not be achieved without collaboration, support and contribution from all stakeholders.

1.6 Mr. El Khoury extended ICAO appreciation to India, Thailand (AEROTHAI), USA, ACAO, CANSO, EUROCONTROL, IATA for being part of the ATFM Task Force and for accepting the invitation to actively participate in the meetings and share their experiences and views, which would support the achievement of the ATFM and World Cup 2022 Task Forces' objectives.

1.7 In closing, Mr. Elie thanked the participants for their presence and wished the meeting every success in its deliberations.

### **3. OFFICERS AND SECRETARIAT**

1.8 Mr. Elie El Khoury, Regional Officer, Air Traffic Management/Search and Rescue (RO/ATM/SAR) was the Secretary of the meeting.

#### **AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA AND ELECTION OF CHAIRPERSON**

1.9 Mr. Hamad Rashid Al Belushi, Director Air Traffic Management, General Civil Aviation Authority, UAE, was unanimously elected as Chairman of the ATFM Task Force.

1.10 The meeting adopted the following Agenda:

- Agenda Item 1: Adoption of the Provisional Agenda and Election of Chairperson
- Agenda Item 2: Global and Regional Developments related to ATFM
- Agenda Item 3: Regional ATFM Framework
- Agenda Item 4: Plan of Actions
- Agenda Item 5: Future Work Programme
- Agenda Item 6: Any other Business

1.11 The documentation, working papers and Presentations delivered during the Meeting are available at the ICAO MID Regional Website: <https://www.icao.int/MID/Pages/2018/ATFM%201-W2022.aspx>.

#### **AGENDA ITEM 2: GLOBAL AND REGIONAL DEVELOPMENTS RELATED TO ATFM**

1.12 The subject was addressed in PPT/1 presented by ICAO, which provided an overview of the main objectives of the ATFM Task Force. The ATFM TF was established by MIDANPIRG/16 through Decisions 16/16 to develop a Concept of Operations (CONOPS) for the implementation of collaborative ATFM in the MID Region taking into consideration the existing initiatives and experiences from other regions. The ATFM Task Force would be the main collaborative platform to drive the implementation of ATFM in the MID Region.

1.13 The meeting was briefly apprised of the Third Edition -2018 of the ICAO Doc 9971 - *Manual on Collaborative Air Traffic Flow Management (ATFM)*, which would be use as the main guidance for the implementation of CDM/ATFM. The new Edition of the document is divided into three parts:

- Part I Collaborative Decision-Making (CDM)
- Part II ATFM
- Part III Airport Collaborative Decision-Making (A-CDM).

### **AGENDA ITEM 3: REGIONAL ATFM FRAMEWORK**

#### ***C-ATFM - India***

1.14 India provided an overview of the implementation of the Central Air Traffic Flow Management (C-ATFM), highlighting the objectives, the challenges and the lessons learned. It was noted that at the C-ATFM is being implemented into three (3) Phases:

Phase I (2015-2017):

- Airport (Ground Delay Program)
- Airport Arrival Constraints e.g. weather, runway outage
- Addressing constraints of Six Major Airports

Phase II (2017-2019):

- Ground Delay Program and Airspace Flow programs supporting Airspace Congestion & DCB at most airports across Country
- Interconnectivity among ATFM –ACDM systems
- Availability of WEB Services for all stakeholders

Phase III (2019-onwards):

- Ability to exchange information with adjacent ATFM Systems-communication Protocol
- Participation in Cross Border ATFM

1.15 The meeting noted that the Phase I and Phase II of the C-ATFM India applies to domestic traffic and starting from 2019, India would be ready to extend the system for cross border ATFM. It was noted with appreciation that India is willingness to support the MID Region with the implementation of ATFM to ensure inter-regional harmonization and optimization of the traffic flows at the interface between ICAO Asia Pacific (APAC) and MID Regions.

#### ***Distributed Multi-Nodal ATFM Project -AEROTHAI***

1.16 The meeting was apprised of the implementation of the Distributed Multi-Nodal ATFM Project in APAC Region that has been operational since 2015. The membership to the projects is Tiered Participation:

- Level 3 ATFM Nodes (Generate, Distribute, Comply to CTOT):  
China, Hong Kong-China, Singapore, Thailand, Cambodia
- Level 2 ATFM Nodes (Receive and Comply to CTOT Indonesia):  
Malaysia, Myanmar, Philippines
- Level 1 ATFM Nodes (Observers; soon to upgrade):  
Lao PDR, Viet Nam

1.17 The project is being implemented into three phases as follows:

Phase I (2015-2016): *Airport ATFM Programs*  
Distributed GDP for Constrained/Congested Arrival Airports

Phase II (2016-20xx): *Airspace ATFM Programs*  
Distributed GDP (+other measures) for Constrained/Congested Airspace Volume

Phase X:  
Globally-interconnected ATFM network, enabled by SWIM infrastructure



### ***CADENA-FAA***

1.18 FAA presented the Caribbean experiences with the implementation of the CANSO ATFM Data Exchange Network for the Americas (CADENA) initiative and noted that FAA and CANSO are supporting the global implementation of ATFM/CDM and have been expanding the work being conducted by ICAO NACC and SAM Regions.

1.19 The meeting noted that 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.

### ***Network Manager - EUROCONTROL***

1.20 The meeting was provided with a general overview of EUROCONTROL and the Network Manager (NM) activities. The NM main role is as follows:

- optimize European ATM Network's operations with ANSPs and airports;
- ensure that European ATM meets the performance targets set by European Community for Single European Sky.
- provide a consolidated and coordinated approach to all planning and operational activities of the Network
- enable and deliver added operational performance (capacity, delay reduction, environment, flight efficiency, minimum emissions, ops safety, cost-effectiveness)

### ***What is needed for ATFM - CANSO***

1.21 CANSO underlined what is needed for ATFM highlighting the key points to consider when planning for ATFM implementation. CANSO shared their experience and the support provided for the implementation of ATFM in AFI, APAC, NACC and SAM Regions. CANSO shared the questionnaire that was used in APAC and for CADENA for determining the State's capabilities related to ATFM.

1.22 The meeting reviewed and updated the questionnaire as at **Appendix A**. The main purpose of the survey is to solicit information and develop a regional baseline view of current ATFM initiatives within the MID Region. Additionally, the questionnaire will gather information on future ATFM planning activity and interoperability between ANSP's.

1.23 The meeting commended India, FAA and the Organizations for their willingness to support the MID Region with the implementation of a regional collaborative ATFM in the MID Region.

### ***SWIM Gateway-UAE***

1.24 The meeting noted that UAE ATM Community is collaboratively building a nationwide system architecture following the principles of System Wide Information Management (SWIM). As one of the first SWIM enabled services, the UAE SWIM Gateway will provide a major step towards a nationwide SWIM architecture. The UAE SWIM Gateway harmonises and consolidates in real-time flight related information originating from existing legacy systems and those of new SWIM enabled capabilities. The SWIM Gateway is prepared to become a core building block for ATFM services providing centralized flight plan validation and distribution service as well as a data exchange for all flight related information.

1.25 The meeting congratulated UAE for the start of operation of the SWIM Gateway on 25 September 2018.

1.26 Proposals for the way forward were presented by Qatar and UAE through WP/3 and WP/4, respectively.

1.27 Qatar proposed the implementation of ATFM in the Region on a phased approach basis. Starting with Multi-Nodal Concept that would be evolved to the establishment of a system-wide, centralized regional ATFM at later stage after the maturity of the multi-nodal ATFM concept.

1.28 UAE highlighted the importance of specified and aligned pre-requisites as basis for the implementation of a regional ATFM service. Such specified pre-requisites and a phased approach for the implementation of a regional Collaborative ATFM service are crucial for a successful implementation. UAE proposed the establishment of teams to support the implementation of each phase as follows:

Pre-requisites:

**Pre-requisite 1:** Common performance objectives for a regional ATFM service needs to be defined

**Pre-requisite 2:** A large percentage of traffic causing unbalanced demand and capacity is subject to the service

**Pre-requisite 3:** Uniformity of traffic flow characteristics of the managed flights

Phases

**Phase 1:** (Assessment and Evaluation Team) Perform a joint assessment and confirmation of the Pre-requisites for a regional ATFM

**Phase 2:** (Design and Implementation Team) Develop a Concept of Operations for a regional ATFM service

**Phase 3:** (Research and Technology Team) Design a Collaborative ATFM solution that facilitates the Concept of Operations of the regional ATFM service

**Phase 4:** (Research and Technology Team) Implementation and rollout of the ATFM system based on the consideration of the Concept of Operations.

**Phase 5:** (All Teams) Operational Phase that include constant performance assessments of the ATFM service together with continuous improvement planning

**AGENDA ITEM 4: PLAN OF ACTIONS**

1.29 Based on the discussions and the experience from other regions, the meeting agreed that it would not be feasible to define and develop a CONOPS for the implementation of ATFM during the meeting without assessment of the current ATM and ATFM States' capabilities. Accordingly, the meeting agreed to a set of actions to be undertaken till the ATFM TF/2 meeting, which are outlined in the Roadmap at Appendix B. With a view to facilitate the coordination and follow-up the implementation of the agreed actions, the meeting established the ATFM Core Team composed of volunteer experts from Bahrain, India, Oman, Qatar, Saudi Arabia, UAE (ATFM TF Chairman), USA, ACAO, AEROTHAI, CANSO, EUROCONTROL, IATA and ICAO. The Core Team ToRs are at **Appendix C**.

1.30 The ATFM Core Team would be supported by experts from States and Organizations as required in performing its tasks.

**AGENDA ITEM 5: FUTURE WORK PROGRAM**

1.31 The meeting reviewed and proposed an update to the ATFM TF Terms of Reference as at **Appendix D** and agreed that the next ATFM TF/2 meeting be held from 24 to 26 February 2019. The venue will be the ICAO MID Regional Office in Cairo, unless a State is willing to host the meeting.

1.32 Qatar offered to host the ATFM TF/2, which would be held back-to-back with the World Cup 2022 TF/2 meetings in Doha on the agreed dates.

1.33 UAE offered to host a face-to-face meeting at Sheikh Zayed Centre in Abu Dhabi from 22 to 24 January 2019 for the ATFM Core Team.

**AGENDA ITEM 6: ANY OTHER BUSINESS**

1.34 Nothing has been discussed under this Agenda Item.

**4. CLOSING**

1.35 In closing, Mr. Elie El Khoury thanked the participants for their presence and excellent cooperation and contribution to the meeting.

1.36 The participants thanked ICAO for organizing such a fruitful Meeting as well as PACA – Oman for hosting, and commended the regional efforts exerted to make the CDM/ATFM regional project a success.

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## INTERNATIONAL CIVIL AVIATION ORGANIZATION

### MIDDLE EAST OFFICE

### AIR TRAFFIC FLOW MANAGEMENT (ATFM)

#### Questionnaire

The purpose of this questionnaire is to carry out a survey to solicit information and develop a regional baseline view of current Air Traffic Flow Management (ATFM) initiatives within the MID Region as well for the collection of information on future ATFM planning activity and interoperability between States.

ICAO Doc 9971, Manual on Collaborative Air Traffic Flow Management has been used to assist in formulating the questionnaire questions.

The questionnaire consists of the following topic areas:

- Air Traffic Flow Management (ATFM) Structure and Organization
- ATFM - Capacity, Demand, Balance
- Interoperability

Please include with the survey response any pertinent documentation and/or information which may assist in the understanding and development of baseline and planned initiatives. Pertinent documents may include:

- Letters of Agreement
- Airport Arrival Rate (AAR), Airport Departure Rate (ADR) charts
- Website(s)
- Etc.

Please mark an "X" to the corresponding answer. Please include comments, if you deem pertinent.

Send copies of completed questionnaire response and electronic documents to:

[ekhoury@icao.int](mailto:ekhoury@icao.int) and [icaomid@icao.int](mailto:icaomid@icao.int)

if clarification or support is required please contact Mr. Elie El Khoury Regional Officer ATM and SAR, ICAO Middle East Office ([ekhoury@icao.int](mailto:ekhoury@icao.int)).

<b>State:</b>	<b><u>Point of Contact details</u></b>
<b>Date:</b>	<b>Name:</b> <b>Email:</b> <b>Telephone/mobile:</b>

**Air Traffic Flow Management (ATFM) Structure and Organization**

1. Does your State have a regulatory requirement for ATFM to be implemented in your Flight Information Region (FIR)?

Yes	No	Comments:

2. Does your State have an operational requirement (e.g. demand exceeding capacity) for ATFM in your FIR?

Yes	No	Comments:

3. Does your State have future plans or initiatives for ATFM in your FIR?

If yes, please include a copy of the Concept of Operations (CONOPS) or other documentation with the survey response.

Yes	No	Comments:

4. Does your State have an organizational structure including the following facilities and/or working positions? If future organizational structure is planned, please include date.

Current	Yes	No	Planned date	Comments
ATFM Services				
ATFM Operational Manager				
ATFM positions located in the following				
National ATFM center				

Area control center(s)				
Approach control(s)				
Control tower(s)				

5. If there is existing ATFM functions performed, are there dedicated resources for these ATFM functions/positions or are these functions provided by another operational position? If provided by another operational position, please identify in the comments section.

Dedicated resource	Another Operational Position	Comments

6. Does your State have Letters of Agreement (LOA) that include ATFM with any of the following stakeholders? If so, please provide a copy or relevant excerpt of the LOA(s) with the survey response:

Stakeholder	Yes	No	If yes, please list	LOA planned date
1. FIR(s)				
2. Stakeholders				
- Airport Operators				
- Aircraft Operators				
- Military				
- General Aviation				
- ATFM Units				
- National ATFM center				
- Area control center				
- Approach control				
- Control tower				

Comments

*“Collaborative decision-making (CDM) is defined as a process focused on how to decide on a course of action articulated between two or more community members. Through this process, ATM community members share information related to that decision and agree on and apply the decision-making approach and principles. The overall objective of the process is to improve the performance of the ATM system as a whole while balancing the needs of individual ATM community members.”*

7. Does your State have existing CDM procedures (planned or Ad-Hoc Teleconferences,) and/or tools with the following stakeholders? If future CDM procedures and/or tools are planned, please add the date.

Stakeholders	Yes	No	If yes, please list	LOA planned date
Airport Operators				
Aircraft Operators				
Military				
General Aviation				
Area control center				
Approach control				
Control tower				
Other ANSP ATFM Units				
Other ANSP ATC Units				

Comments

8. Does your State’s ATFM unit(s) perform the following tasks? If future implementation planned, please add the date.

Current	Yes	No	Planned date	Remarks
1. Create and distribute an ATFM daily plan				

2. Collect the following relevant information				
- meteorological conditions				
- capacity constraints				
- equipment outages				
- runway closures				
- procedural issues				
3. Analyze and distribute relevant information				
4.Coordination procedures with stakeholders (indicate method(e.g., voice meetings, email) and frequency) in the comments section				
5. Structured information dissemination process, i.e. website				

Comments

*Note: Please include sample ATFM daily plan and/or other documentation examples with survey response.*

9. Are the following CDM elements included as part of your stakeholder’s participation in the ATFM process?

Current	Yes	No	If yes, please list
1.Provide updated flight plan intent information (e.g., plans, changes, delays) provided by:			
- Aircraft Operators			
- Military			
- General Aviation			
2.Telephone conferences			
- Airport			



- Military			
- Aircraft Operators			
- General Aviation			
- ATFM Units			
- Other FIR ANSP's			
3. Web based interfaces			
- Airport			
- Military			
- Aircraft Operators			
- General Aviation			
- ATFM Units			
- Other FIR ANSP's			

Comments

10. Does your State provide standardized and recurrent ATFM training for the following personnel and stakeholders? If standardized training is planned, please add date.

Current	Yes	No	Planned date	Remarks
1. Personnel performing ATFM functions				
- National ATFM center				
- Area control center				
- Approach control				
- Control tower				
2. Stakeholders				
- Airports				
- Aircraft Operators				
- Military				
- General Aviation				

Comments

11. Does your State have an electronic ATFM system that displays airborne traffic? Is this system shared? If not, what is the planned date (if any) for sharing this system?

	Yes	No	Planned date	Remarks
Electronic ATFM display system				
Shared with:				
1. FIR(s)				
2. Stakeholders				
- Airport Operators				
- Aircraft Operators				

**APPENDIX A**

A-8

- Military				
- General Aviation				

Comments

**ATFM - Capacity, Demand, Balance**

12. Does your State declare ATC strategic capacity values for the following resources? If capacity value declarations are planned to be completed, please add date.

Current	Yes	No	Planned date	Remarks
1. Airspace sectors				
2. Waypoint(s) or boundaries				
3. Airport acceptance rate(s) (arrival and departure)				

Comments

13. How are the declared capacity values determined?

14. Does your State have strategic airport arrival/departure slots? If planned, please indicate the dates:

Airport	Arrival	Departure	Planned date	Remarks

Comments

15. Does your State have a methodology to balance demand and capacity in the following time frames?

Timeframe	Yes	No
Strategic (more than 1 day before operation)		
Pre-tactical (1 day before operation)		
Tactical (day of operation)		

Comments

16. Has your administration (and/or State) implemented procedures, review, and tools to identify available capacity, compare capacity to forecast demand and establish performance targets including. If initiatives are planned, please add date.

Current	Yes	No	Planned date
1.Airspace design review			
2.ATFM support tools			
3.Procedures review			
4.Staffing resources to workload / traffic review			
5.ATFM Training completed			
6.Forecast demand			

Comments

**Interoperability**

17. Does your State complete automated exchange of ATS messages (e.g. FPL, CHG, CNL, DEP, DLA, EST, ARR, CPL) with any or all adjacent Flight Information Regions (FIRs) or other non-adjacent FIRs?

FIR	Yes	No	If yes, please identify data exchanged.

Comments

18. Does your State have plans to complete automated exchange of ATS messages with any or all adjacent Flight Information Regions (FIRs) or other non-adjacent FIRs?

FIR	Yes	Date	If yes, please identify data exchanged.

Comments

19. Does your State exchange Airport Acceptance Rate (AAR) information for primary airports with other FIRs? If there are plans to exchange AAR information, please provide date.

FIR	Yes	No	Planned date	Remarks

Comments

20. Does your State share adjacent sector capacity information with other FIRs? If there are plans to exchange sector capacity information, please provide date.

FIR	Yes	No	Planned date	Remarks

Comments

21. Does your State have automated Pre-tactical (day prior to the operation) demand monitoring capability? If yes, is the information shared with other FIRs?

	Yes	No	If yes, please list FIRs
--	-----	----	--------------------------

Airport Demand			
Sector Demand			
Route/Airway Demand			

Comments

22. Does your State have automated Tactical (day of the operation) demand monitoring capability? If yes, is the information shared with other FIRs?

	Yes	No	If yes, please list FIRs
Airport Demand			
Sector Demand			
Route/Airway Demand			
Arrival Management			

Comments

23. Does your State have Strategic, Pre-tactical and Tactical planning agreements with other FIRs?

Yes	No	If yes, please explain

24. Are there plans to initiate these agreements?

Yes	No	If yes, please explain

*Note: Please include any additional documents with the survey.*

25. Has your State identified airports, sectors of airspace or routes which are regularly requiring ATFM Measures to balance demand and capacity? If yes, list them:

26. Does your State initiated/implemented the following Air Traffic Management Measures (ATFM Measures) internally?

ATFM Measures	Yes	No	Remarks
Miles-in-trail (MIT)			
Minutes-in-trail (MINIT)			
Speed restrictions			
Airborne Holding			
Fix balancing			
Altitude/Flight Level capping			
Tactical alternative routing options			
Fix crossing times			
Airport slot			
Minimum departure intervals (MDIs)			
Published, pre-defined alternative routes			



Ground delay program (GDP) – airport arrival constraint			
Ground stop (GSt)			
Ground delay program (GDP) – airspace constraint (also known as airspace flow program: AFP)			

Comments

27. When determining an ATFM Measure, are the following factors considered?

	Yes	No
Demand exceeds capacity		
Weather		
Military exercises		
Resources		
Maintenance / outages		
VIP movements		

Comments

28. Does military airspace/activity cause the use of ATFM Measures? If yes, please explain.

29. Is the military airspace/activity included in strategic planning?

30. How is the effectiveness of the ATFM Measure analyzed?

31. What are the primary demand- capacity imbalance reasons for the ATFM Measures?

	Please list airport/sector/route/airway
--	---

Airport capacity	
Sector capacity	
Route/Airway capacity	
Other	

Comments

32. Does your State initiate the following ATFM Measures with adjacent FIRs?

		TMIs	Yes	No	If yes, please list FIRs.
Comments		Miles-in-trail (MIT)			
		Minutes-in-trail (MINIT)			
		Speed restrictions			
33. What ATFM measures do you initiate when an ATFM Measure is implemented.		Airborne Holding			
		Fix balancing			
		Altitude capping			
		Alternative routing options			
		Fix crossing times			
		Airport Slot			
		Minimum departure intervals (MDIs)			
		Published, pre-defined alternative routes			
		Ground delay program (GDP) – airport arrival constraint			
		Ground stop (GS <sub>t</sub> )			
		Ground delay program (GDP) – airspace constraint (also known as airspace flow program : AFP)			

deration when an ATFM Measure is implemented.

34. How is the duration of the selected ATFM Measure determined?

35. Does your ANSP carry out any post-operations analysis?

36. How is the effectiveness of the ATFM Measure analyzed?

37. Are the ATFM Measures included in LOAs?

38. Does your State communicate ATFM Measures through automated or verbal communication with adjacent FIRs?

	Automated	Verbal	Please list FIRs
Miles in trail			
Speed restrictions			
Holding			
Altitude			
Fix crossing times			
Airport arrival times			
Ground delay programs – airport arrival constraint			
Ground stops			
Ground delay program – airspace constraint			

Comments

39. If your State have future ATFM initiatives planned **with other FIRs** please list them below.

Initiative Title	
Primary Functions	
Status (Planning, Approved, Implementation, Testing)	
Initial Operational Capability Date	
Full Operational capability Date	

Initiative Title	
Primary Functions	
Status (Planning, Approved, Implementation, Testing)	
Initial Operational Capability Date	
Full Operational capability Date	

Comments

:

Please include any related documents with the survey.

40. If your State have future ATFM initiatives planned please list them below.

Initiative Title	
Primary Functions	
Status (Planning, Approved, Implementation, Testing)	
Initial Operational Capability Date	

Full Operational capability Date	
-------------------------------------	--

Initiative Title	
Primary Functions	
Status (Planning, Approved, Implementation, Testing)	
Initial Operational Capability Date	
Full Operational capability Date	

Comments

Please include any pertinent documents.

41. ICAO has identified various ATFM and CDM initiatives in the Aviation System Block Upgrades (ASBU) process (Block 0 and Block 1 to be implemented by 2018). Please identify which of the following have been implemented or are planned to be implemented:

ASBU Module	Implemented	Planned date	Comments
B0- A-CDM Improved Airport Operations through			
B0-RSEQ Improved Traffic Flow through Runway Metering			
B0-FICE Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration			
B0-DATM Service Improvement through Digital Aeronautical Information Management			
B0-FRTO Improved Operations through Enhanced En-Route Trajectories			
B0-NOPS Improved Flow Performance through Planning based on a Network-Wide view			
B1- A-CDM Optimized Airport to Airport Operations through			
B1-RSEQ Improved Approach and Departure Management through Integration			
B1-FICE Increased Interoperability, Efficiency and Capacity through FF-ICE/1 application before Departure			
B1-DATM Service Improvement through Integration of all Digital ATM Information			
B1-SWIM Performance Improvement through the application of System Wide Information Management (SWIM)			
B1-NOPS Enhanced Flow Performance through Network Operational Planning			

B1-AMET Better Operational Decisions through Integrated Weather Information (Strategic >40 Minutes)			
B1-TBO Improved Traffic Synchronisation and Initial Trajectory-Based Operation			

*Note: For these items, please ensure they are included in the responses to previous questions about future plans.*

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**ROADMAP FOR DEVELOPEMNT OF ATFM CONCEPT OF OPERATIONS  
FOR THE MID REGION**

Level of Cooperation	Action		Target date	Deliverable	Champion	Supported by	Status
	No	Description					
<b>Key Activity 1</b> Cooperation among MID States to collect information, related to ATM capabilities, airspace, sectors and airports capacity, ATFM systems/ measures in place, ATS route structure, etc.	1.	Establishment of ATFM Core Team	25 Sep 2018	Core Team	ATFM TF		
	2.	Develop a questionnaire and disseminate to States through a State Letter for surveying the current status of the MID Region related to ATM capabilities, airspace, sectors and airports capacity, ATFM, etc. The questionnaire should be sent to ATFM/ATM focal points and MIDANPIRG Members.	30 Oct 2018	Questionnaire	ATFM Core Team	CANSO FAA	
			30 Nov 2018	State Letter	ICAO		
				Responses	States		
	3.	Carry out an hourly traffic count on entry/exit waypoints for each FIR using August 2018 traffic data provided for the MID RVSM airspace.	30 Nov 2018	Traffic count	MIDRMA		
4.	Define the hotspots within each FIR (RVSM airspace)	30 Nov 2018	Hotspots	MIDRMA			
5.	Analyze the received responses for the questionnaire (1)	30 Dec 2018	Analysis Report	ATFM Core Team	CANSO		
<b>Key Activity 2</b> Development of Draft CONOPS	6.	Carry out teleconferences with each State to explore their views and thoughts related to ATFM taking into the questionnaire responses	30 Jan 2019	Telecom	ATFM Core Team		
	7.	Consolidate the responses and prepare a progress report to be presented to the ATFM TF/2 meeting	15 Feb 2019	Analysis of the situation Progress report	ATFM Core Team		
	8.	Define the required minimum set of data that should be exchanged and explore means that would be used for the exchange of data including the development of a common template	15 Feb 2019	Data Exchange means	ATFM Core Team	FAA NM CANSO AEROTAI	
	9.	Prepare an initial draft ATFM CONOPS (Skeleton) for presentation to the ATFM TF/2 meeting	15 Feb 2019	Initial Draft CONOPS	ATFM Core Team	FAA NM CANSO AEROTAI	



**APPENDIX B**

B-2

	<b>10.</b>	Agree on the way forward by the ATFM TF/2 meeting based on the analysis results and the progress report	26 Feb 2019	Way Forward	ATFM TF/2 meeting	India FAA NM CANSO AEROTAI	
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**MID ATFM CORE TEAM  
TERMS OF REFERENCE**

The ATFM Task Force was established by MIDANPIRG through the following Decision:

*DECISIONS 16/16: ATFM TASK FORCE*

*That,*

- a) an ATFM Task Force be established to develop an ATFM Concept of Operations for the MID Region;*
- b) the ATM SG/3 meeting develop the terms of reference of the ATFM Task Force; and*
- c) States support the ATFM Task Force through:*
  - i. assignment of ATFM Focal Point to contribute to the work of the Task Force; and*
  - 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.*

The Core Team is expected to carry out the task assigned by the ATFM Task Force which include but not limited to:

*Develop a questionnaire and disseminate to States through a State Letter for surveying the current status of the MID Region related to ATM capabilities, airspace, sectors and airports capacity, ATFM, etc.*

*The questionnaire should be sent to ATFM/ATM focal points and MIDANPIRG Members*

1. Analyze the received responses for the questionnaire;
2. Carry out teleconferences with each State to explore their views and thoughts related to ATFM taking into consideration the questionnaire responses
3. Consolidate the responses and prepare a progress report to be presented to the ATFM TF/2 meeting
4. Define the required minimum set of data that should be exchanged and explore means that would be used for the exchange of data including the development of a common template
5. Prepare an initial draft ATFM CONOPS.
6. Develop guidance as required to support States addressing issues related mainly to:
  - a) aerodromes and airspace capacities under the normal circumstances and adjustment factors affecting the capacity;
  - b) regular review for aerodromes and airspaces where traffic demand is expected to reach capacity, or is resulting in traffic congestion;
  - c) mechanisms for ATFM data gathering, collation and sharing between States, Organizations and ICAO, which may include:
    - i. adjusted aerodromes and airspace capacity due to factors affecting capacity such as special use airspace status, runway closures and weather information;

- ii. traffic demand information which may include flight schedules, flight plan data, repetitive flight plan data as well as associated surveillance updates of flight status; and
  - iii. ATFM Daily Plan.
  - d) compliance by airspace users with ATFM measures; and
  - e) any other guidance relevant to the regional ATFM Framework.
7. Develop a Template to support States with the development of National ATFM Implementation Plan.

**B) COMPOSITION**

The ATFM Core Team will be composed of the following experts:

Name/Title	State/Organization	Contact details
	Bahrain	
	Oman	
Mr. Kevin Cooper	Qatar	
	Saudi Arabia	
	India	
Mr. Travis	FAA	
Mr. Keith	EUROCONTROL	
Mr. Stuart	CANSO	
Toon	AEROTHAI	
	IATA	
Mr. Mohamed Rejeb Safety and Air Navigation expert	ACAO	
Mr. Hamad Al Belushi Director ATM ATFM TF Chairman	UAE	
Mr. Elie El Khoury RO ATM/SAR	ICAO MID Office	

The ATFM Core Team would be supported by experts from States and Organizations as required in performing its tasks.

**C) WORKING ARRANGEMENTS**

- a) The Core Team shall report to the ATFM Task Force; and
- b) The work of the ATFM Core Team shall be carried out mainly through exchange of correspondence, between its Members using all means of communication (email, facsimile, Tel, Teleconferencing, etc.) and face-to-face meetings as appropriate.

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**TERMS OF REFERENCE (TOR) OF THE  
MIDANPIRG AIR TRAFFIC FLOW MANAGEMENT TASK FORCE  
(ATFM TF)**

**I. TERMS OF REFERENCE**

- 1.1 *Perform a joint assessment and confirmation of the Pre-requisites for a regional ATFM. This shall include*
- 1.2 *Assessment of the performance objectives of the individual cooperating States and definition of common performance objectives for a regional ATFM service.*
- 1.3 *Perform a data collection and analysis to identify the hot-spot areas and critical times in a regional ATFM service area where demand consistently exceeds capacity. The reasons and contributing factors for unbalanced demand and capacity are to be identified.*
- 1.4 *Analysis of air traffic flows within the designated area of the regional ATFM service that is causing unbalanced demand and capacity. The analysis shall identify the traffic fractions that due to their uniformity are candidates for effective ATFM measures to increase the efficiency without violating the equity principle.*
- 1.5 Develop an ATFM Concept of Operations and a Framework which addresses ATFM minimum requirements for the implementation of and ATFM operational issues in the ICAO MID Region.
- 1.1.6 Agree on a mechanism to support the phased implementation of ATFM measures in the MID Region, when and where required.
- 1.2.7 Identify, research and recommend appropriate guidance regarding:
- a) aerodromes and enroute capacities under the normal circumstances and adjustment factors affecting the capacity ~~assessment and adjustment mechanisms~~;
  - b) regular review for all aerodromes and ATC sectors where traffic demand is expected to reach capacity, or is resulting in traffic congestion;
  - c) mechanisms for ATFM data gathering, collation and sharing between States, Organizations and ICAO, which may include:
    - i. adjusted aerodromes and enroute capacity ~~assessments, including due to~~ factors affecting capacity such as special use airspace status, runway closures and weather information;
    - ii. traffic demand information which may include flight schedules, flight plan data, repetitive flight plan data as well as associated surveillance updates of flight status; and
    - iii. ATFM Daily Plan.
  - d) compliance by airspace users with ATFM measures; and
  - e) any other guidance relevant to the Regional ATFM Framework.
- 1.3.8 ~~Review~~ Consider existing and planned ATFM initiative in the Region, and make specific recommendations to ensure their alignment.
- 1.4.9 Ensure inter-regional ATFM harmonization with adjacent ICAO Regions.
- 1.5.10 Recommend appropriate inputs to the ASBU Modules relevant to ATFM such as NOPS,

A-CDM, etc.

~~1.6~~1.11 Report to the ATM SG.

~~1.7~~1.12 Review periodically its Terms of Reference and propose amendments as necessary.

~~1.8~~1.13 Coordinate as deemed necessary with the Runway and Ground Safety Working Group (RGS WG) and the Meteorology Sub-Group (MET SG) the issues of mutual interest.

## II. COMPOSITION

2.1 The Sub-Group is composed of MID ATFM focal points and experts from:

- a) MIDANPIRG Member States;
- b) India, FAA, AACO, ACAOC, AEROTHAI, CANSO, EUROCONTROL, FAA, IATA, and ICAO (Bangkok, Cairo, Paris Offices and HQ); and
- c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

2.2 The Task Force shall elect a Chairperson to act as the point of contact on behalf the Task Force.

2.3 The Task Force shall meet at least once a year and when deemed necessary.

2.2.4 ICAO MID Office will act as the Secretary of the ATFM Task Force meetings.

DRAFT

**LIST OF PARTICIPANTS**

NAME	TITLE
<p><b><u>STATES</u></b></p> <p><b>BAHRAIN</b></p> <p>Mr. Ahmed Mohamed Bucheery</p>	<p>Chief Air Traffic Management Air Navigation Directorate KINGDOM OF BAHRAIN</p>
<p>Mr. Richard Philips</p>	<p>Manager ATC Air Navigation Directorate KINGDOM OF BAHRAIN</p>
<p><b>EGYPT</b></p> <p>Mr. Hesham Abdel Fatah Ibrahim Mostafa</p>	<p>Head of Air Navigation Central Administration Egyptian Civil Aviation Authority Cairo - EGYPT</p>
<p><b>INDIA</b></p> <p>Mr. Manjunath Krishna Nelli</p>	<p>Joint General Manager (ATM-IPG) New Delhi - India/Airport Authority of India New Delhi - 110003 INDIA</p>
<p>Mr. Shashi Bhushan Sharma</p>	<p>General Manager (ATM-IPG/ATFM) New Delhi - India/Airport Authority of India New Delhi - 110003 INDIA</p>
<p>Mrs. Veena Bisht</p>	<p>AGM (ATM) Airports Authority of India Rajiv Gandhi Bhawan, Safdarjung Airport New Delhi – 110003 INDIA</p>
<p><b>IRAQ</b></p> <p>Mr. Ahmed Kadhim Ali</p>	<p>ACC Supervisor Iraqi Civil Aviation Authority Baghdad International Airport Baghdad - IRAQ</p>
<p>Mr. Erwin Obergruber</p>	<p>MBA Iraqi Civil Aviation Authority Baghdad International Airport Baghdad - IRAQ</p>

NAME	TITLE
Mr. Riad Chehayeb	Advisor Iraqi Civil Aviation Authority Baghdad International Airport Baghdad - IRAQ
Mr. Tammer Mohammed Muneer Alsaffar	Chief Air Operations Iraqi Civil Aviation Authority Baghdad International Airport Baghdad - IRAQ
<b>KUWAIT</b> Mr. Mansour Al Harbi	ATC Superintendent Directorate General of Civil Aviation Kuwait International Airport KUWAIT
Mr. Tarek Alghareeb	Air Traffic Control Supervisor Directorate General of Civil Aviation Kuwait International Airport KUWAIT
<b>OMAN</b> Mr. Mubarak Saleh Mubarak Al-Ghelani	Director of Air Traffic Control Services Public Authority for Civil Aviation Muscat International Airport Muscat, SULTANATE OF OMAN
Mr. Nasser Salim Al Mazroui	Chief ACC Public Authority for Civil Aviation Muscat International Airport Muscat, SULTANATE OF OMAN
Mr. Sabri Said Al Busaidi	Chief of Air Space Planning and Management Public Authority for Civil Aviation Muscat International Airport Muscat, SULTANATE OF OMAN
<b>QATAR</b> Capt. Abdulrahman Al-Hammadi	Director of Air Safety Department Qatar Civil Aviation Authority Doha - QATAR
Mr. Dhiraj Ramdoyal	National Continuous Monitoring Coordinator Head ANS Inspectorate SSP Coordinator Qatar Civil Aviation Authority (QCAA)

NAME	TITLE
Mr. Kevin Cooper	ANS Advisor Qatar Civil Aviation Authority Doha – QATAR
Mr. Khalid Al Mutawa	Advisor Civil Aviation Authority Doha – QATAR
Mr. Ramy Saad	ANS Inspector Qatar Civil Aviation Authority (QCAA) Doha – QATAR
Mr. Ahmed Al-Eshaq	Air Navigation Qatar Civil Aviation Authority Doha – QATAR
<b>SAUDI ARABIA</b> Mr. Saleh Awad Al Zahrani	Airspace Management Manager Saudi Air Navigation Services (SANS) Jeddah 21444 - KINGDOM OF SAUDI ARABIA
Mr. Abdullah Mohammed Albathi	Civil Aviation Inspector General Authority of Civil Aviation Aviation Standard Sector –(Airspace Standards) Riyadh - KINGDOM OF SAUDI ARABIA
<b>UNITED ARAB EMIRATES</b> Mr. Ahmed Al Jallaf	Assistant Director General Air Navigation Services General Civil Aviation Authority Abu Dhabi UNITED ARAB EMIRATES
Mr. Hamad Rashid Al Belushi	Director Air Traffic Management General Civil Aviation Authority Abu Dhabi UNITED ARAB EMIRATES
<b>USA</b> Ms. Denise Braemer	Foreign Affairs Specialist Federal Aviation Administration Europe, Africa and Middle East Region Washington, DC 2059 USA



NAME	TITLE
Ms. Midori Tanino	ATO-International Global ATM Program Manager Federal Aviation Administration ATO International Office System Operations Services Washington, DC 2059 USA
Mr. Robert Roxbrough	Senior Representative - Abu Dhabi Office of International Affairs Federal Aviation Administration Embassies District Airport Rd St #4 Abu Dhabi 09825-UNITED ARAB EMIRATES
Mr. Travis Fiebelkorn	Senior International Representative Air Traffic Organization, System Operations Europe, Africa, Middle Est Group FAA c/o American Embassy Brussels, BELGIUM
<p data-bbox="289 1014 708 1045"><b><u>ORGANIZATIONS/INDUSTRIES</u></b></p> <p data-bbox="289 1077 444 1108"><b>AEROTHAI</b></p> <p data-bbox="289 1125 591 1157">Mr. Piyawut Tantimekabut</p>	<p data-bbox="807 1125 1292 1220">Air Traffic Management Network Manager AEROTHAI Bangkok 10120-THAILAND</p>
<p data-bbox="289 1251 391 1283"><b>CANSO</b></p> <p data-bbox="289 1299 581 1331">Mr. Rafael D. L. Quezada</p>	<p data-bbox="807 1299 1284 1457">Programme Manager, Operations Standing Committee CANSO (Civil Air Navigation Services Organization) WASHINGTON, DC 20591</p>
Mr. Frank Hellenthal	<p data-bbox="807 1503 1276 1661">Product Manager Surveillance and ATFM Research CANSO Memer Frequenties (Frequentis Comsoft Gmbh) GERMANY</p>
Mr. Stepan Jaki	<p data-bbox="807 1703 1260 1829">Business Development Middle East CANSO Memer Frequenties (Frequentis Comsoft Gmbh) GERMANY</p>

NAME	TITLE
Mr. Stuard Ratcliffe	CANSO ATF WG Co-Chair CANSO Johannesburg SOUTH AFRICA
<b>EUROCONTROL</b> Mr. Keith Crawford	Senior ATFCM Expert Directorate Network Management Network Operations/NOM/NOS/OPL B-1130 BRUSSELS
<b>IATA</b> Mr. Issa Abdullah Al Rawahi	Manager ATM & Operation Efficiency Etihad Airways UAE
Mr. Milan Stefanik	ATM Regional Manager (Middle East/Africa) Qatar Airways Doha, QATAR
<b>MAAR</b> Ms. Nattamon Tharornpitak	Engineer (Safety Management System) Aeronautical Radio of Thailand (AEROTHAI) Monitoring Agency for Asia Region, Salthon Bangkok 10120 THAILAND
Ms. Saifon Obromsook	Engineering Manager (Safety Management System) Aeronautical Radio of Thailand (AEROTHAI) Monitoring Agency for Asia Region, Salthon Bangkok 10120 THAILAND
<b>MIDRMA</b> Mr. Fareed Abdullah Alalawi	MIDRMA Manager MIDRMA KINGDOM OF BAHRAIN
Mr. Fathi Ibrahim Al-thawadi	MIDRMA Officer MIDRMA KINGDOM OF BAHRAIN

**ACAO/ICAO ATFM Workshop (Casablanca, Morocco, 17 – 18 March 2019)**

The main objectives of the ACAO/ICAO ATFM Workshop (Casablanca, Morocco, 17 – 18 March 2019) were to is to raise awareness about ATFM, share other ICAO Regions and States' experience as well as discuss and agree on recommendations for the implementation of ATFM in the MID Region based on the work carried out by the ATFM Core Team.

*The Workshop recognized that:*

- a regional solution to manage the traffic flow across the MID Region became a priority.
- collaboration between all stakeholders is a key success for effective development and implementation of regional framework for ATFM/CDM.
- development of ATFM Concept of Operations requires inputs/data from all stakeholders to ensure it meet the projected objectives.
- sharing information is the most important enabler for ATFM/CDM.

*The Workshop agreed to the following Recommendations*

1. States and Stakeholders are encouraged to support ACAO and ICAO efforts related to the implementation of ATFM/CDM and in particular the work of the MIDANPIRG ATFM Task Force related to the Development of ATFM Concept of Operations for the MID Region taking into consideration other experiences.

*States are encouraged to:*

2. establish ATFM framework at the national level (regulations, organizational structure, functions, operating procedures, etc.)
3. develop ATFM National Implementation Plan
4. ensure that ATFM personnel are trained and qualified to effectively carry out their tasks. ATFM Manager (decision maker) should have adequate ATC experience.
5. carry out necessary studies to determine airspace and airports capacities
6. exhaust all measures that would increase capacity and continue working on the airspace improvements and the enhancement of the air navigation services within their relevant FIRs taking into consideration the airspace users' requirements.
7. support the implementation of the IFPS at regional level
8. ensure the implementation of the Collaboration Decision Making (CDM) concept.
9. support flight data exchange for the management and monitoring of air traffic flow at regional and inter-regional levels

*ATFM TF is invited to:*

10. develop a training programme template to be used by States.
11. develop a Template for National ATFM Implementation Plan
12. support States in carrying out their airspace and sector capacity studies

*ACAO and ICAO, supported by ATFM experts as required, are invited to:*

13. organize workshops and training courses related to ATFM.
14. conduct visits to States to support the ATFM Implementation.

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**INTERNATIONAL CIVIL AVIATION ORGANIZATION**  
**FIRST MEETING OF THE MIDANPIRG ATFM CORE TEAM**  
**(ACT/1)**

*(Abu Dhabi, UAE, 22 - 24 January 2019)*

**SUMMARY OF DISCUSSIONS**

**1. PLACE AND DURATION**

1.1 The First Meeting of the MIDANPIRG ATFM Core Team (ACT/1) was thankfully hosted by the General Civil Aviation Authority – UAE at Sheikh Zayed Air Navigation Centre in Abu Dhabi, UAE, from 22 to 24 January 2019.

**2. OPENING**

2.1 The meeting was opened by Mr. Elie El Khoury, ICAO Regional Officer, Air Traffic Management and Search and Rescue, Middle East Office, Cairo, who extended a warm welcome to all participants and wished them a successful meeting. He thanked all experts who made it to Abu Dhabi to support the meeting as well the Core Team members who were not able to join the meeting but their contribution to the work of the Team was highly appreciated.

**3. ATTENDANCE**

3.1 The meeting was attended by seventeen (17) participants from Bahrain, India, Qatar, Saudi Arabia, UAE, CANSO, EUROCONTROL and IATA. The list of participants is at **Attachment A**.

3.2 The meeting noted that the representative of the Arab Civil Aviation Organization (ACAO) apologized for not having attended the meeting.

**4. OFFICERS AND SECRETARIAT**

4.1 Mr. Elie El Khoury, ICAO Regional Officer, Air Traffic Management/Search and Rescue (RO/ATM/SAR) Middle East Office, was Secretary of the meeting.

**5. DISCUSSIONS**

5.1 The meeting reviewed the tasks assigned to the Core Team by the ATFM Task Force with a main objective to develop a draft ATFM Concept of Operations for the MID Region.

5.2 The meeting reviewed the responses to the survey received from 10 States as per the consolidated table at **Appendix A**. It was recognized that the MID Region is still in the first steps related to the establishment of ATFM capabilities. Accordingly, supporting States with the qualification of experts in ATFM as well as raising awareness should be given high priority.

5.3 The meeting noted with appreciation that India, FAA, CANSO, EUROCONTROL and other stakeholders are ready to provide the required support.

5.4 The meeting discussed all the scenarios for the implementation of ATFM at the regional level and agreed to consider only four scenarios to be presented to the ATFM TF/2 meeting.

5.5 The meeting agreed to a set of criteria to be used for the evaluation of the scenarios based on the severity of the challenge to achieve the criteria as well as its weight/importance on the success of the scenario. The scenarios and their evaluation results are at **Appendix B**.

5.6 The meeting emphasized that establishing a centralized ATFM Unit would be the optimal solution followed by the scenario in having 2 Centres for 2 participating areas, then a centralized scenario through a third party providing the ATFM service and the last one would be the Multi-Nodal. However, considering the challenges, feasibility and time and efforts required, the Multi Nodal Scenario achieved the highest Score.

5.7 The meeting noted that for Asia Pacific Multi Nodal project; three documents have been prepared and agreed upon by the States: CONOPS, Regional Framework and Common Operating Procedures, which would be used as basis for the development of the MID Region Documentation.

5.8 The meeting agreed that in order to start working on the ATFM CONOPS a decision should be made related to the framework to be implemented. In this respect, the meeting agreed to the following high level outline to be considered during the development of the CONOPS:

*Phase I- Building State's National ATFM Capabilities:*

- 1- Raising awareness related to ATFM
- 2- Establishing the regulatory framework for ATFM at national level
- 3- Establishment of ATFM Services within the ATS organizational structure (FOC, FMP, FMU, etc.)
- 4- Human resources
- 5- Training
- 6- Operating Procedures
- 7- National ATFM Team to ensure Collaborative Decision Making (CDM)
- 8- Tools to be used
- 9- Determine and declare Airspace and airports capacity
- 10- Establishment of State's National ATFM CONOPS

*Phase II – Establishment of Regional Framework*

- 1- Setting up the concept/framework for Cross border ATFM in the MID Region
- 2- Define which ATFM Measures would be required including GDPs (where applicable to be defined by States)
- 3- Agreement on the Format of the ATFM Messages
- 4- Means to be used for Communication between adjacent States ATFM FOC
- 5- Development of Common Operating Procedure (COP)
- 6- Agreement on LoA template for ATFM (App G of ATS LoA Template)
- 7- Agreement on the coordination procedures
- 8- Signature of LoAs between adjacent ATFM FOC
- 9- Establishment of platform to be used for sharing of information

*Phase III- Implementation of Cross border ATFM*

- 1- Exchange of information through the established platform and/or periodic daily teleconferences
- 2- Sharing of the ATFM Daily Plan
- 3- Implementation of the ATFM/CDM process for regulating traffic when required (regional and later inter-regional)
- 4- Post Implementation Review
- 5- Research and future development

5.9 The meeting discussed the Agenda of the ACAO/ICAO ATFM Workshop planned to be held in Casablanca, Morocco, 17-18 March 2019, back-to-back with the ATFM TF/2 and FWC2022 TF/2 meetings. In this respect, the meeting noted with appreciation that India, Saudi Arabia, UAE, USA, CANSO and EUROCONTROL will contribute to the Workshop with presentations and be part of the panel discussions.

**6. CLOSING**

6.1 The meeting agreed to keep the work ongoing through emails and teleconferences to ensure the readiness of the required documentation to be presented to the meetings in Casablanca.

6.2 The meeting thanked UAE for hosting such an important meeting and for the generous hospitality.

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## Responses of the ATFM Questionnaire (November 2018)

Question	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE			
<b>ATFM Structure and Organization</b>													
1. Does your State have a regulatory requirement for ATFM to be implemented in your Flight Information Region (FIR)?			YES	YES	NO	YES	NO	YES	NO	YES	NO	NO	
2. Does your State have an operational requirement (e.g. demand exceeding capacity) for ATFM in your FIR?			YES	HECA, HEGN, HESH& ACC Sectors	NO	NO	NO	YES. Operational LoA with UAE ACC, Appendix G : Air Traffic Flow Management	YES	YES	NO	YES	
3. Does your State have future plans or initiatives for ATFM in your FIR?			YES	YES. Aerodromes TFC LOAD MONITOR & AMAN	NO	NO	Waiting for regional initiatives	YES. The CONOPS has not been developed.	YES	YES	NO	YES	
4. Does your State have an organizational structure including the following facilities and/or working positions? If future organizational structure is planned, please include date.	ATFM Services		NO	YES	NO	NO	NO		NO	Q4/2019	NO	YES	
	ATFM Operational Manager		NO	YES	NO	NO	NO	Dec-19	NO	2019 - 2020	NO	YES	
	ATFM positions located in the following	National ATFM center	NO	YES CANC	NO	NO	NO		NO	2021-2022	Not Answered	Q4 2022	
		Area control center(s)	NO	YES. CHMI EUROCONTROL	NO		NO	Dec-19	NO	Q4/2019	NO	YES	
		Approach control(s)	NO	NO	NO	NO	NO		NO	Q1/2020	NO	NO	
	Control tower(s)	NO	NOPs EUROCONTROL	NO	NO	NO		NO	Q1/2020	NO	NO		
5. If there is existing ATFM functions performed, are there dedicated resources for these ATFM functions/positions or are these functions provided by another operational position? If provided by another operational position, please identify in the comments section.	Dedicated resource		NA		NO	Not answered	NO			Currently, there is no dedicated resources for ATFM	Not Answered	Flow Operator (Departure)	
	Another Operational Position		NA	Delegated to ATC units	NO	Not answered	Receive CTOT from NM for traffic departing to EUR	Muscat ACC Planner controller			Not Answered		
6. Does your State have Letters of Agreement (LOA) that include ATFM with any of the following stakeholders? If so, please provide a copy or relevant excerpt of the LOA(s) with the survey response:	1. FIR(s)		OMAE & OEJD	NO	NO	NO	YES. Nicosia	OMAE	NO	Muscat, Bahrain, Cairo, Jordan, Khartoum, Sanaa and Doha Center	NO	YES. OOMM, OBBB, OEJD	
	2. Stakeholders	- Airport Operators	NO	NO	NO	NO	NO	NO		NO	Jeddah Airport within hajj season	NO	NO
		- Aircraft Operators	NO	NO	NO	NO	NO	NO		NO	NO	NO	NO
		- Military	NO	YES. MIL reservation	NO	NO	NO	NO		NO	AirForce within hajj season	NO	NO
		- General Aviation	NO	NO	NO	NO	NO	NO		NO	NO	NO	NO
		- ATFM Units	NO	YES.	NO	NO	NO	NO		NO	NO	NO	NO
		- National ATFM center	NO	NO	NO	NO	NO	NO		NO	NO	NO	NO
		- Area control center	NO	NO	NO	NO	NO	NO		NO	Q4/2019	NO	NO
		- Approach control	YES- DOHA	NO	NO	NO	NO	NO		NO	Q1/2020	NO	YES. OMDB, OMAA, OMRK, OMFJ
	- Control tower	NO	NO	NO	NO	NO	NO		NO	Q1/2020	NO	NO	
Comments							Operational LoA with UAE ACC, Appendix G : Air Traffic Flow						
7. Does your State have existing CDM procedures (planned or Ad-Hoc Teleconferences,) and/or tools with the following stakeholders? If future CDM procedures and/or tools are planned, please add the date.	Airport Operators		YES		NO	YES. Close coordiantion by system	NO	Oman airports by 2020	NO	NO	NO	NO	
	Aircraft Operators		NO		NO		NO		NO	NO	NO	YES. UAE, ETD, FDB, ABY	
	Military		NO		NO		NO		NO	NO	NO	NO	
	General Aviation		NO		NO		NO		NO	NO	NO	NO	
	Area control center		NO		NO	YES. Close coordiantion by system	NO		NO	NO	NO	Yes. OMAE	





Question		Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE	
	Comments								SANS Staff in charge of ATFM (ATFCM section under ATM department) are scheduled in specialized training on ATFM and it's expected that all Staff will end the training by 2020-2021			
11. Does your State have an electronic ATFM system that displays airborne traffic? Is this system shared? If not, what is the planned date (if any) for sharing this system?	Electronic ATFM display system Shared with:	1. FIR(s)	YES AMAN not shared	NO		NO	NO	YES	NO		NO	Q4 2022
	2. Stakeholders	- Airport Operators	NO	NO	NO	NO		2020	NO		NO	Q4 2022
		- Aircraft Operators	NO	NO	NO	NO		2020	NO		NO	Q4 2022
		- Military	NO	NO	NO	NO		2020	NO		NO	Q4 2022
		- General Aviation	NO	NO	NO	NO		2020	NO		NO	Q4 2022
Comments								Long Term Planned but not finalized yet				
<b>ATFM - Capacity, Demand, Balance</b>												
12. Does your State declare ATC strategic capacity values for the following resources? If capacity value declarations are planned to be completed, please add date.	1. Airspace sectors		YES	YES	YES	NO	NO	2020	NO	Q2/2019	NO	NO
	2. Waypoint(s) or boundaries		NO	NO	YES	NO	NO	2020	NO	Q1/2020	NO	NO
	3. Airport acceptance rate(s) (arrival and departure)		NO		NO	NO	NO	2020	NO	Q1/2020	NO	NO
	Comments									We are validating the ACC sector capacity and then we will move to airport acceptance rate		
13. How are the declared capacity values determined?			Determined by Operations using capacity management studies		Staffing methodology and manning level and procedures (ATM)		NA	Capacity values are not determined		Refer to questionnaire	Not answered	Not Declared
14. Does your State have strategic airport arrival/departure slots? If planned, please indicate the dates:	Airport	Planned date	NA		OJAI & OJAQ (NO-Pending)			OOMS, OOSA 2020			No slots	OMAA, OMDB
	Arrival	Planned date	NA	-							NA	OMAA, OMDB
	Departure	Planned date	NA	-							NA	OMAA, OMDB
15. Does your State have a methodology to balance demand and capacity in the following time frames?	Strategic (more than 1 day before operation)		NO	NO	NO	NO		NO	NO	NO	No methodology	NO
	Pre-tactical (1 day before operation)		NO	NO	NO	NO		NO	NO	NO	No methodology	NO
	Tactical (day of operation)		YES. Tactical oversight of sector volume with	NO	NO	NO		YES	NO	NO	No methodology	YES
16. Has your administration (and/or State) implemented procedures, review, and tools to identify available capacity, compare capacity to forecast demand and establish performance targets including. If initiatives are planned, please add date							Not answered		NO	NO		
	1. Airspace design review		Yes. Early 2019	NO	NO	NO		NO 2019	Early 2019	NO		YES
	2. ATFM support tools		YES	NO	YES. Statistical tool			YES	NO	NO		Q4 2022
	3. Procedures review		YES	NO	NO	NO		NO 2019	Mid 2019	NO		YES
	4. Staffing resources to workload / traffic review		YES	NO	YES. ATM Procedures			YES	Mid 2019	NO		YES
	5. ATFM Training completed		NO	NO	NO			NO 2020	NO	NO		Q4 2022
	6. Forecast demand		NO	NO	NO			YES	YES	NO		Q4 2022

Question		Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE	
	Comments								Currently we evaluate the statistical report and compare the last three years to define the traffic growth percentage and defined the peak hour as well to have an image how is the traffic demand will increase and take the initiative to implement flow management measure.			
<b>Interoperability</b>												
17. Does your State complete automated exchange of ATS messages (e.g. FPL, CHG, CNL, DEP, DLA, EST, ARR, CPL) with any or all adjacent Flight Information Regions (FIRs) or other non-adjacent FIRs?		OMAE-OLDI OIXX-AFTN EST MSGs	LGGG-OLDI	YES. OSTT, OEJN, HECC, LLLL, ORBB	YES. OBBS, ORBB,OEJN, OIXX, OTBD	YES. All	ONLY WITH OMAE: ABI Advanced Boundary Information Message (including revised ABI's) ACT Activate Message LAM Logical Acknowledgement Message PAC Preliminary Activate Message	NO	SANS is implementing an IFPS that will be ready for operation during 2019. A transition roadmap is under development. The NEW ATM System is sharing the information throw OLDI	Yes (All)	<b>OOMM:</b> FPL, CHG, CNL, DEP, DLA <b>OBBS:</b> FPL, CHG, CNL, DEP, DLA, EST <b>OEJD:</b> FPL, CHG, CNL, DEP, DLA <b>OIXX:</b> FPL, CHG, CNL, DEP, DLA, EST	
18. Does your State have plans to complete automated exchange of ATS messages with any or all adjacent Flight Information Regions (FIRs) or other non-adjacent FIRs?		OKAC-Early 2019- OLDI OEJN-MID 2019- OLDI Doha Approach - OLDI, early 2019; Dammam Approach in conjunction with OEJD	BY 2020 AIDC with all except LCCC- OLDI	<i>Estimate Over Border</i> OSTT, OEJN, HECC, LLLL, ORBB		Yes. Nicosia and Damascus	Planned 2019: <b>Mumbai:</b> AIDC messages : ABI, PAC, CDN, CPL, ACP, REJ, MAC, LAM, and LRM will be established between Muscat ACC and Mumbai OCC <b>Jeddah:</b> ABI Advanced Boundary Information Message (including revised ABI's) ACT Activate Message LAM Logical Acknowledgement Message PAC Preliminary Activate Message	YES. OBBS, OEJN, OMAE date TBD	OJAC by 03/2019 Type X AMHS/SITA  BY 2020 with OBBS, OKAC, OOMM	Yes		
19. Does your State exchange Airport Acceptance Rate (AAR) information for primary airports with other FIRs? If there are plans to exchange AAR information, please provide date.		NO	Yes. EURO CONTROL	NA	NO	NO	2020 with all adjacent FIRs	NO	NO	NO	NO	
20. Does your State share adjacent sector capacity information with other FIRs? If there are plans to exchange sector capacity information, please provide date.		NO		NA	NO	NO	2020 with all adjacent FIRs	NO	NO	NO	NO	
21. Does your State have automated Pre-tactical (day prior to the operation) demand monitoring capability? If yes, is the information shared with other FIRs?		NO		NA	NO	NO	NO	NO	NO	NO	NO	
	Airport Demand					NO	NO	NO	NO	NO	NO	
	Sector Demand					NO	NO	NO	NO	NO	NO	
22. Does your State have automated Tactical (day of the operation) demand monitoring capability?		NO		NA	NO	NO	NO	NO	NO	NO	YES	
	Airport Demand					NO	NO	NO	NO	NO	YES	



Question		Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE	
	Ground delay program (GDP) – airspace constraint (also known as airspace flow program: AFP)	YES- 5 min departure spacing implemented tactically	NO	NO	NO	NO	NO	NO	NO	NO	YES	
27. When determining an ATFM Measure, are the following factors considered?	Demand exceeds capacity	YES		NO		YES	YES	YES	YES			
	Weather	YES		YES		YES	YES	NO	YES		YES	
	Military exercises	YES		YES		YES	NO	NO	YES		YES	
	Resources	YES		YES		YES	YES	NO	YES		YES	
	Maintenance / outages	YES		YES		YES	YES	NO	YES		YES	
	VIP movements	YES		YES		YES	YES	NO	YES		YES	
28. Does military airspace/activity cause the use of ATFM Measures? If yes, please explain.		NO		NO	NO	YES	NO	NO	In general, yes, because when Reserved Military Airspace is active, the available airspace for civil flights is impacted leading to apply ATFM measures	NO	NO	
29. Is the military airspace/activity included in strategic planning?		YES		YES		NA	NO	NO	Yes, it's included, and the civil military coordination section is working on flow management measure initiatives through Joint-committee		NO	
30. How is the effectiveness of the ATFM Measure analyzed?		Periodic procedures review		NA		NA	The use of flexible statistical tools to effectively analyze and report on the metrics	NA	By measuring the degree of implementation		<input type="checkbox"/> Departures: o Monthly DST Compliance and Ground delay <input type="checkbox"/> Arrivals: o Runway throughput and airborne delay	
31. What are the primary demand-capacity imbalance reasons for the ATFM Measures?	Airport capacity			NO			OOMS		OEJN, OERK, OEMA, OEDF and OEAB		OMDB	
	Sector capacity	East High, Central, North - demand exceeds capacity;		YES			Central sector	YES	ACC-West, ACC-northeast upper and lower			
	Route/Airway capacity			NO			TONVO A777 NADSO and LALDO B525 NADSO	YES	L604, L677, L550& UL768			
	Other			NO								
	Comments			procedure includes the formula								
32. Does your State initiate the following ATFM Measures with adjacent FIRs?	Miles-in-trail (MIT)	OMAE		YES	NO	YES	OMAE	NO	YES		OOMM, OIIX, OBBB	
	Minutes-in-trail (MINIT)	NO		YES	NO	YES	OMAE	NO	YES. Muscat, Bahrain, Cairo, Jordan, Khartoum, Sanaa and Doha		OEJD	
	Speed restrictions	NO		YES	NO	YES	OMAE	NO	YES		OOMM, OIIX, OBBB, OEJD	
	Airborne Holding	NO		NO	NO	YES		NO	YES		OOMM, OIIX, OBBB, OEJD	
	Fix balancing	NO		NO	NO	NO		NO	NO		OOMM, OIIX, OBBB, OEJD	
	Altitude/Flight Level capping	OMAE, OKAC		NO	NO	NO		NO	YES. AMMAN, DOHA, BAHRAIN, KUWAIT & CAIRO		OIIX, OOMM	
	Alternative routing options	NO		NO	NO	NO	OMAE	NO	YES		OBBB, OEJD, OOMM	

Question		Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE		
	Fix crossing times	NO		NO	NO	YES	OMAE	NO	YES		OOMM, OEJD		
	Airport slot	NO		NO	NO	NO		NO	YES		NO		
	Minimum departure intervals (MDIs)	NO		NO	NO	YES		NO	YES		OOMM, OIIX		
	Published, pre-defined alternative routes	NO		NO	NO			NO	YES		NO		
	Ground delay program (GDP) – airport arrival constraint	NO		NO	NO			NO	YES		OOMM, OEJD		
	Ground stop (GSt)	OMAE, OEJD, OKAC		NO	NO			NO	YES		OOMM, OIIX, OBBB, OEJD		
	Ground delay program (GDP) – airspace constraint (also known as airspace flow program: AFP)	NO		NO	NO			NO	YES		NO		
33. What is taken into consideration when an ATFM Measure is implemented			Volume and sector capacity, weather, outages		Delay action/holding/miles in trail/minutes in trail		ATCO workload, traffic demand/sector capacity, Airspace complexity and weather.	Capacity overload	• Reduction of ATCOs workload to ensure the safe provision of ATS; • Reduction of congestion and operating costs		Demand Exceeds capacity, Weather, Military Exercises, Resources, Maintenance/ Outages, Vip movements		
34. How is the duration of the selected ATFM Measure determined?			Tactical decision based on real-time information		Regional coordination.		The duration of the selected ATFM Measure is determined based on extent of over demand	By traffic levels	Declared capacity will be the main factor that is considered in the application of ATFM measures. When the capacity is reached, ATFM measures are applied until the capacity is exceeding the demand by at least 10%. Therefore, the timing will vary depending on the level of traffic		Sector and aerodrome forecast, as well as duration requirements by accepting unit		
35. Does your ANSP carry out any post-operations analysis?			NO		NA		PACA carry out any post-operations analysis using the flexible statistical tools to generate report on the metrics	NO	SANS are using the post-analysis to determine the bottleneck, Peak hour, congested airway, waypoint and congested aerodrome. This practice will improve enhance with the implementation of activation of ATCFM section		YES		
36. How is the effectiveness of the ATFM Measure analyzed?			NA		NO		The use of flexible statistical tools to effectively analyze and report on the metrics	Unknown	Refer to question number 30		Departures: o Monthly DST Compliance and Ground delay □ Arrivals: o Runway throughput and airborne delay		
37. Are the ATFM Measures included in LOAs?			YES		NO	NO	YES	Operational LoA with UAE ACC, Appendix G : Air Traffic Flow Management	NO	No, it will be included in the ATM operation manual and later on LoA		YES	
38. Does your State communicate ATFM Measures through automated or verbal communication with adjacent FIRs?	Miles in trail		Automated and verbal with OKAC, OEJD, OMAE		Verbal		Verbal	Verbal OMAE		Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait,		Verbal	
	Speed restrictions				Verbal		Verbal	Verbal OMAE				Verbal	

Question		Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE
	Holding			Verbal		Verbal			Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Altitude			Verbal		Verbal	Verbal OMAE		Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Fix crossing times			Verbal		Verbal	Verbal OMAE		Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Airport arrival times			Verbal					Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Ground delay programs – airport arrival constraint			Verbal					Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Ground stops	Verbal		Verbal					Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Ground delay program – airspace constraint			Verbal					Verbal: Muscat, Bahrain, Cairo, Jordan, Khartoum, Kuwait, Sanaa and Doha		Verbal
	Comments		Miles in trail by NOT AM	Verbal							
39. If your State have future ATFM initiatives planned with other FIRs please list them below.		NA		NA							
	Initiative Title						Regional ATFM Implementation with MID Member States			Waiting for regional initiatives	Cross Border Arrival Management (X-MAN)
	Primary Functions										Absorb delay en-route
	Status (Planning, Approved, Implementation, Testing)						Planning				Planning
	Initial Operational Capability Date						TBD				Q2 2019
	Full Operational capability Date						TBD				Q2 2021
	Initiative Title										
	Primary Functions										
	Status (Planning, Approved, Implementation, Testing)										
	Initial Operational Capability Date										
	Full Operational capability Date										
	Initiative Title										
	Primary Functions										
	Status (Planning, Approved, Implementation, Testing)										
	Initial Operational Capability Date										
	Full Operational capability Date										
40. If your State have future				NO							

Question	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE	
ATFM initiatives planned, please list them below.	Initiative Title					CDM EXCHANGE OF DATA with UAE		SFAC-ATFCM Saudi future airspace concept project and air traffic flow and capacity management system	Waiting for regional initiatives	Airport CDM and Departure Manager	
	Primary Functions							Re-structuration of the whole airspace and implementation of ATFM system		Collaborative Departure Sequencing	
	Status (Planning, Approved, Implementation, Testing)					Planning		Planning/Tendering		Testing	
	Initial Operational Capability Date							2022		Q4 2018	
	Full Operational capability Date							2023		Q2 2021	
	Comments		Bahrain is in the process of building a new FIC and implementing a new ATM system which will include integration of ATFM functionality such as SWIM capabilities, AMAN/DMAN. Est. completion mid 2020.								
				NO							
	Initiative Title					CDM EXCHANGE OF DATA with UAE		IFPS initial flight plan processing system	Waiting for regional initiatives		
	Primary Functions							Exchange ATS service messages and FPL			
	Status (Planning, Approved, Implementation, Testing)					Planning		In progress, designing phase			
	Initial Operational Capability Date							Q4/2019			
	Full Operational capability Date							Q2/2020			
41. ICAO has identified various ATFM and CDM initiatives in the Aviation System Block Upgrades (ASBU) process (Block 0 and Block 1 to be implemented by 2018). Please identify which of the following have been implemented or are planned to be implemented:	B0- A-CDM Improved Airport Operations through Airport-CDM		End 2019 Planning/Coordination completed. Design/config. In progress	Implemented		Planned	2019	Mid 2019	TBD	Q4 2020	
	B0-RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)		Partially Full by 2020	Not Implemented			2019	Mid 2019	Q3-2019	Implemented	

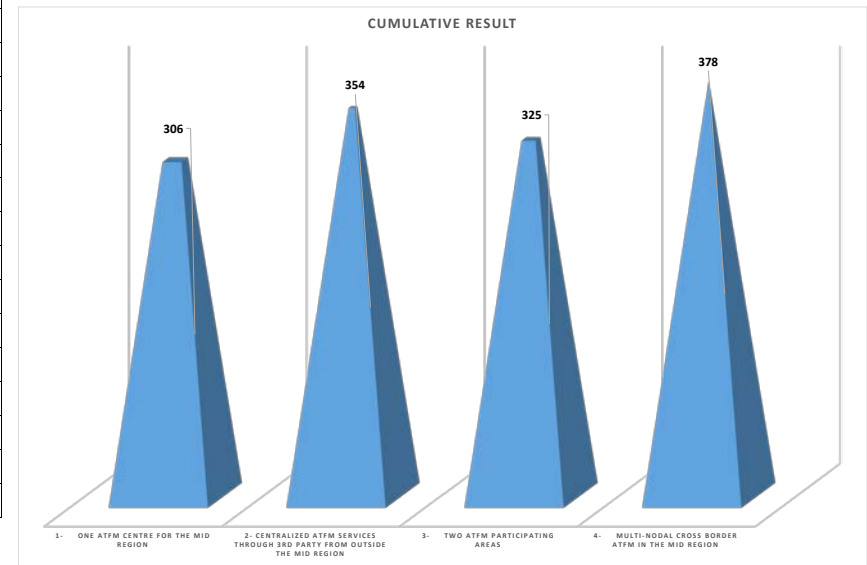
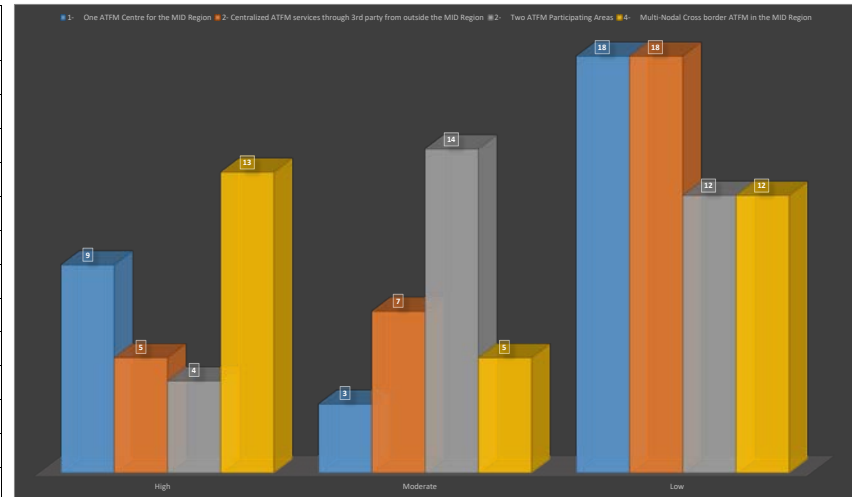
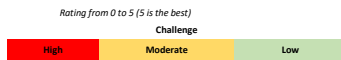
Question	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Sudan	UAE		
B0-FICE Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	Partially Full by 2021		Planning no date		Planned	2019		End of 2019 AMHS capability End of 2019 AIDC/ OLDI capability end 2019		Implemented		
B0-DATM Service Improvement through Digital Aeronautical Information Management	Implemented		in the process		Planned	2020		Ongoing. Ref questionnaire		Implemented		
B0-FRTO Improved Operations through Enhanced En-Route Trajectories	Partially Full by 2020 Current status: Pre Tactical basis		Implemented		Planned	2019		Ongoing. Ref questionnaire		Q4 2020		
B0-NOPS Improved Flow Performance through Planning based on a Network-Wide view	Partially Established ATFM measures		NO		Planned	2020		2022		Q4 2022		
B1- A-CDM Optimized Airport Operations through A-CDM Total Airport Management	End 2019		NO			2020		TBD		Q2 2021		
B1-RSEQ Improved Airport operations through Departure, Surface and Arrival Management	Partially full by 2020		NO			2019		2021		Q2 2021		
B1-FICE Increased Interoperability, Efficiency and Capacity through FF-ICE/1 application before Departure	Partially Full by 2020		NO			2019		2020		Q2 2021		
B1-DATM Service Improvement through Integration of all Digital ATM Information	Partially Full by 2020		NO			2020		2021		Q2 2021		
B1-SWIM Performance Improvement through the application of System Wide Information Management (SWIM)	2020		NO			2022		Q4 2020		Q2 2019		
B1-NOPS Enhanced Flow Performance through Network Operational Planning	Dependent on Regional agreement Planning phase		NO			2022		2022		Q4 2022		
B1-AMET Enhanced Operational Decisions through Integrated Meteorological Information	2020		Ongoing			2022		Q4 2020		Q4 2020		
B1-TBO Improved Traffic Synchronization and Initial Trajectory-Based Operation	Partially by 2020		NO			2022		Q4 2020		Q4 2020		



Scenarios for MID Regional ATFM Framework

	Criteria/Advantages/Challenges	Scenarios for MID Regional ATFM Framework				Weight (1 to 6)	1- One ATFM Centre for the MID Region	2- Centralized ATFM services through 3rd party from outside the MID Region	3- Two ATFM Participating Areas	4- Multi-Nodal Cross border ATFM
		1- One ATFM Centre for the MID Region	2- Centralized ATFM services through 3rd party from outside the MID Region	3- Two ATFM Participating Areas	4- Multi-Nodal Cross border ATFM					
1	Institutional Framework (legal, financial, funding mechanism, etc.)	3	3	4	5	6	18	18	24	30
2	Time required for the States to join the project (legal, Financial, etc.)	1	2	3	5	6	6	12	18	30
3	Political Issues	1	1	3	5	6	6	6	18	30
4	Agreement on the Location	1	5	3	5	6	6	30	18	30
5	Funds required as a regional project (Centre) (cost)	3	1	2	5	6	18	6	12	30
6	Manpower (Centre)	3	5	1	5	4	12	20	4	20
7	Harmonized ATFM National procedures	5	3	4	3	3	15	9	12	9
8	Centralized Decision Making	5	5	4	2	3	15	15	12	6
9	Regional and cross regional coordination	5	5	4	2	3	15	15	12	6
10	Data Consistency/availability	5	5	4	3	3	15	15	12	9
11	Time needed for establishing the ATFM Framework	2	5	3	5	4	8	20	12	20
12	Third party could provide the service	5	5	5	0	2	10	10	10	0
13	Single system supplier and maintenance	5	2	3	0	2	10	4	6	0
14	Evolution process	5	3	4	3	2	10	6	8	6
15	Concentrated Team	5	5	3	2	2	10	10	6	4
16	Crisis management	5	5	4	4	2	10	10	8	8
17	Effective Airspace Management	5	5	3	2	2	10	10	6	4
18	Integration with regional IFPS	5	5	4	2	2	10	10	8	4
19	Stakeholders simplicity	5	5	3	2	3	15	15	9	6
20	Data collection that would be used by States	5	5	4	2	2	10	10	8	4
21	Centralized Post Assessment process	5	5	4	2	2	10	10	8	4
22	Support optimization of the use of the MID Region available airspace	5	3	4	3	2	10	6	8	6
23	Research and Development at regional level	5	5	5	2	2	10	10	10	4
24	States' willingness for Data Sharing with the ATFM Regional Centre(s) including Military Flights	2	2	2	5	6	12	12	12	30
25	Contingency Operations	1	5	5	5	3	3	15	15	15
26	local customization and integration systems	1	3	2	5	1	1	3	2	5
27	Common ATFM Messages Format	5	5	4	2	2	10	10	8	4
28	Compliance with ATFM Measures	5	5	3	2	2	10	10	6	4
29	Possibility of successful implementation	1	2	3	5	6	6	12	18	30
30	Timeframe to start operation	1	3	3	4	5	5	15	15	20
		306	354	325	378	100	306	354	325	378

Legend:



**LIST OF PARTICIPANTS**

<b>NAME</b>	<b>STATE/ORGANIZATION</b>
Mr. David Edward Christmas	Bahrain
Mr. Manjunath Krishna Nelli	India
Mr. Kevin Cooper	Qatar
Mr. Saleh Al Zahrani	Saudi Arabia
Mr. Ahmad Abughalab	Saudi Arabia
Mr. Hamad Rashid Al Belushi	UAE
Mr. Mohammed Al Baloushi	UAE
Yousif Al Awadhi	UAE
Werner Pitz	UAE
Mr. Robert Roxbrough	USA/FAA
Mr. Stuart Ratcliffe	CANSO
Mr. Keith Crawford	EUROCONTROL
Mr. George Rhodes	IATA
Mr. Ekkehard Gutt	IATA
Mr. Saeed AlSuwaidi	IATA
Mr. Issa Al Rawahi	IATA
Elie El Khoury	ICAO

**ACTION PLAN FOR IMPLEMENTATION OF ATFM IN THE MID REGION**

Key Activities	Action		Target date	Deliverable	Champion	Supported by	Status/RMK
	No	Description					
<b>Key Activity 1</b> Agreement on the ATFM Regional Framework	1.	Recommending the best Scenario for a regional ATFM framework	20 Mar 2019	Recommendation	ATFM TF/2 meeting		Completed
	2.	Presentation to the ACAO ANC/40	21 Mar 2019	Support	ACAO		
	3.	Preparing a Working Paper to MIDANPIRG/17	30 Mar 2019	WP	Secretariat	Chairman	
	4.	Agreement on the regional ATFM framework by MIDANPIRG	18 Apr 2019	MIDANPIRG Conclusion	MIDANPIRG/17	Secretariat	
	5.	Presentation to the ACAO Executive Council	28-29 Apr 2019	For support	ACAO		
	6.	Notifying States about MIDANPIRG/17 Conclusion and that the development of ATFM CONOPS started	30 Apr 2019	State Letter	ICAO	Chairman	
<b>Key Activity 2</b> Development of Draft CONOPS	7.	Development of a Draft ATFM CONOPS	10 Jul 2019	Draft ATFM CONOPS	ATFM Core Team		
	8.	Circulating the Draft ATFM CONOPS to States	15 Jul 2019	State Letter	ICAO	ACAO	
	9.	Feedback form States on the Draft ATFM CONOPS	15 Aug 2019	Feedback	States		
	10.	Consolidation of the Draft ATFM CONOPS for presentation to the ATM SG/5 meeting	30 Aug 2019	Consolidated version of ATFM CONOPS	Secretariat	Chairman ATFM Core Team	
	11.	Agreement on the Draft ATFM CONOPS	11 Sep 2019	Draft ATFM CONOPS	ATM SG/5		
	12.	Circulating the Draft ATFM CONOPS	25 Sep 2019	State Letter	ICAO	ACAO	
	13.	Presentation to DGCA-MID/5	Nov 2019	For Info and Support	ICAO		
	14.	Presentation to ACAO Executive Council	Dec 2019	For Info and Support	ACAO		
<b>Key Activity 3</b> Development of ATFM Regional Framework and	15.	Development of Initial Draft ATFM Regional Framework and draft ATFM Common Operating Procedures	31 Dec 2019	Initial Draft ATFM Regional Framework and draft Common Operating Procedures	ATFM Core Team	Face-to-face meeting(s) might be required	

draft Common Operating Procedures based on the agreed CONOPS	<b>16.</b>	Agreement on the Draft Regional Framework and draft Common Operating Procedures	13 Jan 2020	Draft ATFM Regional Framework and draft Common Operating Procedures	ATFM TF/3 meeting (12-13 Jan 2020)		
	<b>17.</b>	Circulating the Draft Regional Framework and draft Common Operating Procedures to States	20 Jan 2020	State Letter	ICAO	ACAO	
	<b>18.</b>	Feedback form States on the Draft ATFM Regional Framework and draft Common Operating Procedures	10 Mar 2020	Feedback	States		
	<b>19.</b>	Consolidation of a Draft Regional Framework and draft Common Operating Procedures for presentation to the MSG/7 meeting	25 March 2020	Consolidated version of Draft ATFM Regional Framework and draft Common Operating Procedures	Secretariat	Chairman ATFM Core Team	
	<b>20.</b>	Presentation to ACAO Executive Council	Apr 2020	For Info and Support	ACAO		
	<b>21.</b>	Endorsement of the ATFM CONOPS, Regional Framework and Common Operating Procedures including agreement on a roadmap for the implementation	17 Jun 2020	ATFM CONOPS, Regional Framework and Common Operating Procedures	MSG/7 (15-17 Jun 2020)		
	<b>22.</b>	Circulation of the CONOPS, Regional Framework and Common Operating Procedures and posting them on the ICAO MID Website	30 Jun 2020	State Letter	ICAO	ACAO	
	<b>23.</b>	Presentation to ACAO Executive Council	Dec 2020	For Info and Support	ACAO		
<b>Key Activity 4</b> Implementation of the MID ATFM Regional Framework and Common Operating Procedures based on the agreed CONOPS	<b>24.</b>	Implementation of the MID ATFM Regional Framework and Common Operating Procedures	Cont.	Implementation of ATFM Regional Framework and Common Operating Procedures	States		
	<b>25.</b>	Implementation of ATFM framework at national level	Cont.	National ATFM framework	States		

<b>Key Activity 5</b> Post Implementation Review of the MID ATFM Regional Framework	<b>26.</b>	Post implementation review	Each 3 months	Post Implementation review	ATFM Core Team		
	<b>27.</b>	Improvement of the ATFM Regional Framework and Common Operating Procedures	TBD 2021	Proposal for improved ATFM Regional Framework and Common Operating Procedures	ATFM TF	ATFM Core Team	
	<b>28.</b>	Review and continuous improvement of the ATFM Implementation in the MID Region with consideration of establishment of centralized ATFM system for the MID Region	TBD	Continuous improvement	ATFM TF	ATFM Core Team	
<b>Key Activity 6</b> Training and raising awareness related to ATFM	<b>1.</b>	Development of Training Programme Template for qualifying ATFM Specialist	31 Dec 2019	Training Programme Template for ATFM Specialist	ATFM TF / ATFM Core Team		
	<b>2.</b>	Development of working arrangement for the ATFM Visits to States that would include ATFM Workshop and/or training courses	31 Dec 2019	working arrangement for the ATFM Visits	ATFM TF / ATFM Core Team		
	<b>3.</b>	Organizing an ATFM Workshop with the planned A-CDM Workshop	21-23 Oct 2019	A-CDM/ATFM Workshop	ICAO/ACAO	ATFM TF	
	<b>4.</b>	Organizing of ATFM Training Courses	TBD 2020/2021	ATFM Training Courses	ICAO/ACAO	TBD	
	<b>5.</b>	Conduct ATFM Support visits to States	TBD 2020/2021	ATFM Support visits	ATFM support Team	TBD	
	<b>6.</b>	Conduct familiarization visits to CADENA, Singapore, India, EUROCONTROL, FAA, etc.	TBD	ATFM Familiarization Visits	ACAO ICAO		

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**LSIT OF PARTICIPANTS**

NAME	TITLE
<p><b><u>STATES</u></b> <b>ALGERIA</b> Mrs. Hassina Hamdi</p>	<p>Deputy Head of Algeria ALGERIA</p>
<p>Mr. Mohamed Lamine Rekkaa</p>	<p>Training Manager ENNA ALGERIA</p>
<p><b>BRAZIL</b> Mr. Andrei Oliveira Da Silva Santos</p>	<p>Air Navigation Management Officer ATFM Chief CGNA (ATFM Center) Senador Salgado Filho Square 4th Floor Downtown Zip 20021-340 BRAZIL</p>
<p>Mr. Sidnei Nasumento De Souza</p>	<p>Chief of Air Navigation Center CGNA (ATFM Center) Senador Salgado Filho Square 4th Floor Downtown Zip 20021-340 BRAZIL</p>
<p><b>EGYPT</b> Nav. Tayseer Mohamed AbdelKareem</p>	<p>General Manager of ATS Egyptian Civil Aviation Authority (ECAA) Ministry of Civil Aviation Cairo International Airport Road Cairo - EGYPT</p>
<p>Gen. Abdelgalil Abdelfattah</p>	<p>Egyptian Military EGYPT</p>
<p>Mr. Shaaabn Ahmed Shaaban</p>	<p>Air Force EGYPT</p>

NAME	TITLE
<b>INDIA</b> Mr. Joshi Sandeep Dineshchandra	Joint GM (ATM) Airports Authority of India New ATS Complex, Sutar Pakhadi Road Near Sahar Cargo Complex, Andheri€ Mumbai-400 099 - INDIA
Mr. Lokesh Chauman	A.M. (ATM-ATFM) Airports Authority of India Corporate Headquarters, Rajiv Gandhi Bhavan Safdarjung Airport New Delhi - INDIA
Ms. Veena Bisht	AGM (ATM-ATFM) Airports Authority of India Rajiv Gandhi Bhawan, Safdarjung Airport New Delhi – 110003 INDIA
<b>IRAQ</b> Ms. Dania Hashim Hasan	ATFM Unit Coordinator General Company for Air Navigation Services (GCANS) Baghdad Airport 10020 Baghdad - IRAQ
Mr. Erwin Obergruber	MBA General Company for Air Navigation Services (GCANS) Al-Burhan Center, Baghdad Airport 10023 Baghdad - IRAQ
Mr. Mohamed Ahmed Mahmood Ibrahim	ACC Manager General Company for Air Navigation Services (GCANS) Baghdad Airport 10020 Baghdad - IRAQ
<b>MOROCCO</b> Mr. Hamza Hmamouch	MOROCCO

NAME	TITLE
Mr. Mohamed Ettemri	Head of Air Traffic Service MOROCCO
<b>OMAN</b> Mr. Mubarak Saleh Mubarak Al-Ghelani	Director of Air Traffic Control Services Public Authority for Civil Aviation (PACA) Muscat International Airport P.O. Box 1 - Code 111 Muscat - SULTANATE OF OMAN
Mr. Nasser Salim Al Mazroui	Chief of ACC Public Authority for Civil Aviation (PACA) Muscat International Airport P.O. Box 1 - Code 111 Muscat - SULTANATE OF OMAN
<b>QATAR</b> Capt. Abdulrahman Al-Hammadi	Director of Air Safety Department Qatar Civil Aviation Authority P.O. Box 3000 Doha - QATAR
Mr. Ahmed Mohammed Al-Eshaq	Director of Air Navigation Department Qatar Civil Aviation Authority (QCAA) P.O. Box 73 Doha – QATAR
Mr. Gavin Morris	ATCO Qatar Civil Aviation Authority (QCAA) P.O. Box 3000 Doha – QATAR
Eng. Hicham Bennani	SSP Coordinator Qatar Civil Aviation Authority (QCAA) P.O. Box 3000 Doha – QATAR



NAME	TITLE
Mr. Kevin Cooper	ANS Advisor Qatar Civil Aviation Authority (QCAA) P.O. Box 73 Doha – QATAR
Mr. Khalid Al Mutawah	ASD Advisor Civil Aviation Authority P.O. Box 3000 Doha – QATAR
Mr. Nasser Jassim Al-Khalaf	Air Navigation Qatar Civil Aviation Authority (QCAA) P.O. Box 3000 Doha – QATAR
Mr. Ramy Saad	ANS Inspector Qatar Civil Aviation Authority (QCAA) P.O. Box 3000 Doha – QATAR
<b>SAUDI ARABIA</b> Mr. Ahmed Bin Sami Abu Ghallab	ATFM Specialist Saudi Air Navigation Services (SANS) P.O. Box 15441 Jeddah 21444 - KINGDOM OF SAUDI ARABIA
Mr. Al Waleed Abdulaziz Alenzi	ANS Safety Inspector General Authority of Civil Aviation (GACA) KINGDOM OF SAUDI ARABIA
Mr. Ibrahim B. AlJabri	Airspace Standards General Manager General Authority of Civil Aviation (GACA) KINGDOM OF SAUDI ARABIA
Mr. Saleh Awad Al Zahrani	Airspace Management Manager Saudi Air Navigation Services (SANS) P.O. Box 15441 Jeddah 21444 - KINGDOM OF SAUDI ARABIA

NAME	TITLE
<p><b>TUNISIA</b> Mr. Abidi Mohamed Nader</p>	<p>ANS ATM Expert CCA TUNISIA</p>
<p>Mr. Trakhna Ahmed</p>	<p>ANS Inspector Aid TUNISIA</p>
<p><b>UNITED ARAB EMIRATES</b> Mr. Hamad Al Belushi</p>	<p>Director of Air Traffic Management General Civil Aviation Authority (GCAA) Sheikh Zayed Air Navigation Centre P.O. Box 666 Abu Dhabi - UNITED ARAB EMIRATES</p>
<p>Mr. Mohammed Khamis Al Baloushi</p>	<p>Research and Dataset Officer General Civil Aviation Authority (GCAA) Sheikh Zayed Air Navigation Centre P.O. Box 666 Abu Dhabi - UNITED ARAB EMIRATES</p>
<p><b>UNITED STATES OF AMERICA</b> Ms. Midori Tanino</p>	<p>International NextGen Lead Federal Aviation Administration (FAA) ATO International Office System Operations Services 600 Independence Ave, SW Washington, DC 20597</p>
<p>Mr. Robert Roxbrough</p>	<p>Senior Representative - Abu Dhabi Federal Aviation Administration (FAA) Office of International Affairs Embassies District Airport Rd St #4 Abu Dhabi 09825 - UNITED ARAB EMIRATES</p>
<p><b><u>ORGANIZATIONS</u></b>  <b>ACAO</b> Mr. Mohamed Rejeb</p>	<p>Air Navigation and Air Safety Expert Arab Civil Aviation Organization (ACAO) Casablanca – MOROCCO</p>

NAME	TITLE
<p><b>CANSO</b> Mr. Stuart Ratcliffe</p>	<p>CANSO ATF WG Co-Chair CANSO 24 Algeruon Road Norwood Johannesburg SOUTH AFRICA</p>
<p><b>EUROCONTROL</b> Mr. Keith Crawford</p>	<p>Senior ATFCM Expert EUROCONTROL Rue de la Fusee 96 1130 Brussels - BELGIUM</p>
<p><b>IATA</b> Mr. George Rhodes</p>	<p>Assistant Director Infrastructure MENA International Air Transport Association (IATA) MENA P.O. Box 940587 Amman 11194 - JORDAN</p>
<p><b>IFATCA</b> Mr. Fateh Bekhti</p>	<p>IFATCA President Africa and Middle East IFATCA Suite 2002, 360 Rue Saint Jacques CANADA</p>
<p><b>ICAO</b> Mr. Mohamed Smaoui</p>	<p>Deputy Regional Director Middle East Regional Office Ministry of Civil Aviation Complex Airport Road Cairo – EGYPT</p>
<p>Mr. Elie El Khoury</p>	<p>Regional Officer, Air Traffic Management/Search and Rescue (ATM/SAR) Middle East Regional Office Ministry of Civil Aviation Complex Airport Road Cairo – EGYPT</p>