

International Civil Aviation Organization

Middle East Air Navigation Planning and Implementation Regional Group

Sixteenth Meeting (MIDANPIRG/16) (Kuwait, 13 – 16 February 2017)

Agenda Item 5.2.2: Specific Air Navigation issues

SEARCH AND RESCUE

(Presented by the Secretariat)

SUMMARY

The paper presents the global and regional developments related to Search and Rescue and seeks support for the improvement of SAR services in the MID Region.

Action by the meeting is at paragraph 3.

REFERENCES

- ANSIG/2 Report
- MSG/5 Report
- USOAP CM Results

1. Introduction

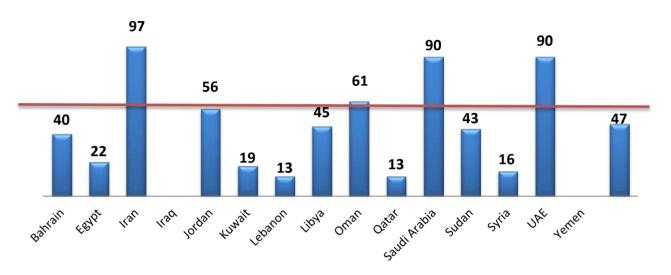
- 2.1 The Standards, Recommended Practices and Procedures and guidance material related to the implementation of Search and Rescue (SAR) are contained in ICAO Annex 12, International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Doc 9731).
- 2.2 The ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) focuses on a State's capability in providing safety oversight by assessing whether the State has effectively and consistently implemented the critical elements of a safety oversight system and determining the State's level of implementation of ICAO's safety related SARPs, including Annex 12 Search and Rescue, and associated procedures and guidance material.

2. DISCUSSION

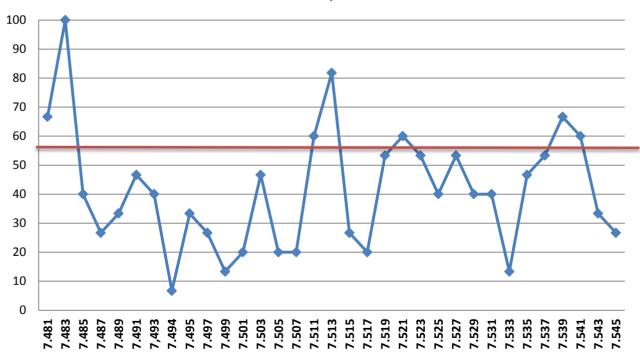
- 2.1 The meeting may wish to note that SAR main USOAP-CMA findings in the MID Region are related to lack of:
 - effective SAR oversight activities;
 - english language proficiency for RCC radio operators;
 - appropriate training programmes/plans of SAR experts;
 - signature of SAR agreements;

- plans of operations for the conduct of SAR operations and SAR exercises;
- provision of required SAR services; and
- non-compliance with the carriage of Emergency Locator Transmitter (ELT) requirements

SAR EI in the MID Region

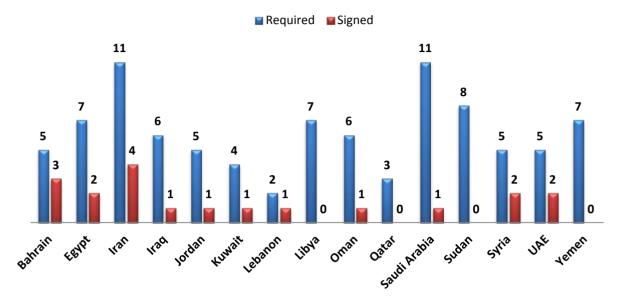


SAR PQs EI



2.2 The meeting may wish to note that SAR bilateral Arrangements have been signed between ANSPs of Bahrain-Iran, Bahrain-Kuwait, Bahrain-UAE, Iran-Armenia, Iran-Azerbaijan, Iran-UAE. However, the status of signed agreements is low as reflected in the following Graph:





- 2.3 The meeting may wish to note that a proposal for the establishment of a SAR Task Force was discussed during MSG/5 meeting. It was recognized that a dedicated SAR Task Force may provide an opportunity for a better attendance of SAR experts, especially from the military side. Nevertheless, the MSG/5 meeting agreed that the formal establishment of a dedicated Task Force for SAR should be further discussed by the ATM SG/3 meeting, for final decision by MSG or MIDANPIRG.
- 2.4 The MSG/5 meeting through MSG Decision 5/6 agreed to the establishment of a MID SAR Action Group composed of SAR Experts from volunteer States (Bahrain, Egypt, Iran, Saudi Arabia and UAE) and ICAO to:
 - a) carry out a Gap Analysis related to the status of implementation of SAR services in the MID Region;
 - b) develop a SAR Plan for the MID Region based on the Asia/Pacific experience and other best practices; and
 - c) develop an action plan for the conduct of regional/sub-regional SAR training exercises.
- 2.5 The meeting may wish to note that a Draft MID Region SAR Action Plan will be presented to the ATM SG/3 meeting, Cairo, Egypt, 22-25 May 2017.
- 2.6 The MSG/5 meeting reviewed the model Agreement for use between SAR Point of Contact (SPOCs) and Mission Control Centres (MCCs) at **Appendix A**, developed by the Secretariat of COSPAS-SARSAT and ICAO collaboratively. Accordingly, the meeting urged States to ensure that their SPOC sign the MCC/SPOC agreement with their relevant MCC, which would enhance the response to the monthly MCC communication tests.
- 2.7 It is to be highlighted that States are required to update as deemed necessary the SPOC contact details on the COSPAS-SARSAT website http://www.cospas-sarsat.int/en/contact-lists-mccs-and-spocs
- 2.3 The meeting may wish to note that the ICAO AFI/APAC/MID Regional and Interregional SAR Workshop was successfully held in Mahe, Seychelles from 19 to 22 July 2016. The Workshop was hosted by the Seychelles Civil Aviation Authority. The Workshop was attended by a

total of eighty-five (85) participants from twenty-six (26) States and four (4) international organizations. Iran, Iraq, Lebanon, Saudi Arabia and UAE participated in the Workshop from the MID Region.

- 2.4 The main objectives of the Workshop was to bring together States from the four ICAO Regions, to share experiences, identify challenges and agree on measures to ensure harmonized SAR service provisions. The workshop familiarized participants with the latest developments at global, regional and interregional level pertaining to SAR services. In addition, available solutions to challenges facing States in implementing SAR requirements as provided for under Annex 12 (Search and Rescue services) to the Chicago Convention were considered. A search and rescue exercise (SAREX) was carried out by the Seychelles Joint Rescue Coordination Centre, in order to familiarize participants with SAR operational aspects.
- 2.5 The Workshop also provided an opportunity for the coordination of SAR Letter of Agreements (LoAs) between the present States, which will enhance the status of LoAs signed and may encourage more multilateral agreements.
- 2.6 The following are the main key points that were highlighted during the workshop based on the lessons learnt from MH370, QZ8501 and MS804, which are considered vital in order to enhance search and rescue services in the four ICAO Regions (APAC, ESAF, MID and WACAF) in an harmonized manner:
 - a) Search and Rescue should be given appropriate support at all levels within the International Civil Aviation Organization (ICAO), including other international and regional organizations and States;
 - b) ICAO should work with all stakeholders concerned with search and rescue to:
 - i. raise awareness on the importance of search and rescue at a high level and obtain the commitment of States in operationalizing SAR;
 - ii. create forums to enable signing of high-level multi-lateral SAR agreements and harmonization of SAR plans; and
 - iii. coordinate with States' Administrations, including donor States and organizations to improve the availability of SAR funds to support SAR activities, including for search and rescue exercise (SAREX) and the provisions of services during large scale SAR responses, such as Mass Rescue Operations (MRO).
 - c) States should work together to share experiences, resources and develop regional or sub-regional SAR JRCC, projects, research development, SAREX, etc.:
 - d) States should take necessary measures to enhance the competency of their SAR experts and workforce, including SAR inspectorate staff, through the organization of SAR courses with the support of ICAO and IMO as appropriate;
 - e) States should ensure proper cooperation between all their national authorities concerned with SAR, such as aeronautical, military, maritime, etc. through the establishment of national SAR committees; and
 - f) States, that have not done so, should finalize their SAR plans and coordinate SAR agreements with all adjacent States as a matter of urgency. States experiencing challenges in implementation should contact their relevant ICAO Regional Office, which will guide and support the coordination of SAR agreements.
- 2.7 The Workshop also agreed on a set of recommendation to be implemented for the enhancement of SAR as at **Appendix B**.

- 2.8 The meeting may wish to note that the amendment to Annex 6 Part 1 in relation to Normal Tracking and Flight Data Recovery and Distress Tracking will be applicable in 2018 and 2021, respectively.
- 2.8 The Council and Commission both observed that extensive work was still required in relation to consequential Standards and Recommended Practices (SARPs) and guidance material and that diligence is required in this work to make sure there is no overlap or gaps in the documentation.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) urge States to take necessary measures to comply with the global and regional requirements related to SAR;
 - b) take into consideration the global and regional developments related to SAR when developing their national plans;
 - c) support the work of the MID SAR Action Group;
 - d) implement the relevant recommendations emanating from the ICAO AFI/APAC/MID Inter-regional SAR Workshop; and
 - a) review and update:
 - i. the status of bilateral Arrangements between ANSPs/ACCs at Appendix C;
 - ii. the SAR Point of Contact (SPOC) contact details on the COSPAS-SARSAT website; and
 - iii. the list of SAR focal points in the MID Region at **Appendix D**.

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Attachment 1

DRAFT MCC/SPOC Model Agreement

[Agreement] between

[name] Mission Control Centre

and

[State name] SAR Point of Contact

for the Distribution and Reception of COSPAS-SARSAT Distress Alert Data for Search and Rescue

DEFINITIONS

"Agreement" means this Agreement;

- "Ground Segment Provider" means any State which establishes and operates the ground segment equipment and avails itself to the System, under the terms of the International COSPAS-SARSAT Programme Agreement (ICSPA) and in the context of this [agreement], [State];
- "Local User Terminal (LUT)" means a computer hardware system installed to receive signals relayed by the satellites and processes them to determine radio beacon location;
- "Mission Control Centre (MCC)" means a computer system established to accept the output from the Local User Terminal and convey distress alert and location data to appropriate authorities and in the context of this MOU, the [name] SPOC;
- "Radio beacons" means distress alert instruments designed to be activated in a distress and to transmit a radio signal at 406 MHz, the characteristics of which comply with appropriate provisions of the International Telecommunication Union and COSPAS-SARSAT specifications;
- "Search and Rescue Point of Contact (SPOC)" means Rescue Co-ordination Centres and other established and recognized national points of contact which can accept responsibility to receive COSPAS-SARSAT alert data to enable the rescue of persons in distress;
- "Service Area" means that part of the world within which a COSPAS-SARSAT alert data distribution service is provided by an MCC, in accordance with document C/S P.011 "COSPAS-SARSAT Programme Management Policy"; an MCC Service Area is defined by the list of SPOCs to which that MCC distributes COSPAS-SARSAT alert data;
- "System" means the COSPAS-SARSAT System comprising a Space Segment, Ground Segment and radio beacons operating at 406 MHz.

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1. PURPOSE

- a. The purpose of this Agreement between the [MCC] and [SPOC] is to formalize the exchange of space based distress alerts received through the satellite system of the International COSPAS-SARSAT Programme. This is to ensure that institutional arrangements between the two entities at the operational level are effective.
- b. This Agreement aims to ensure that rapid and reliable two-way communication is established between the two centres servicing the [name] Search and Rescue Region (SRR) for prompt provision of Search and Rescue Services to persons in distress in aviation, maritime and land incidents.

2. INTRODUCTION

- a. Knowing the importance of co-operation in search and rescue (SAR), and of the provision of expeditious and effective SAR services;
- b. Desiring to support the provisions of the Convention on International Civil Aviation of the International Civil Aviation Organisation (ICAO) and the International Convention on Maritime Search and Rescue of the International Maritime Organisation (IMO);
- c. Noting the Standards and Recommended Practices in Annex 12 to the Convention on International Civil Aviation of ICAO and the provisions of the International Convention for the Safety of Life at Sea (SOLAS);
- d. Supporting the principles of the COSPAS-SARSAT Programme as determined by the COSPAS-SARSAT Council;
- e. The [MCC] and [SPOC] have agreed as follows:

3. OBJECTIVES

[Administration of MCC], as signatory to the International COSPAS-SARSAT Programme Agreement, shall pursue the following objectives:

- a. Provide distress alert and location data from the System to the international community in support of SAR operations on a non-discriminatory basis;
- b. Support, by providing these distress alert and location data, the objectives of IMO and ICAO concerning search and rescue;
- c. Cooperate with other national authorities and relevant international organizations in the operation and co-ordination of the System;

- d. Provide and confirm distress alert and location data from the COSPAS-SARSAT System from the [name] MCC to the [SPOC]; and
- e. Provide information concerning the System status to [SPOC].

The [SPOC] shall at all times endeavour to support the [MCC] in its efforts to fulfil its objectives and commitments under the ICSPA in accordance with the provisions of this [Agreement].

The MCC and SPOC shall establish reliable communication links (AFTN, fax, email) and operational procedures, which include backup routines.

In the spirit of close cooperation, the MCC and SPOC shall consult from time to time with a view to ensuring the full implementation of the provisions of this [Agreement] and necessary amendments as appropriate.

4. PROCEDURES

- a. The [name] Mission Control Centre ([.]MCC) established in [location], [State], providing services under the ICSPA shall communicate distress alerts located in the SRR of the SPOC, or for beacons which contain the country code of the SPOC to [SPOC], [State] for undertaking search and rescue services, assisted as required by RCCs within the State of the SPOC.
- b. MCC and SPOC agree that the distribution of alert data by [name] MCC is undertaken on a best effort basis and that [name] MCC cannot guarantee continuous system availability.
- c. [State] shall designate a single SAR point of contact (SPOC), where possible, for receiving COSPAS-SARSAT alert and location data for distress locations in their SAR area of responsibility and provide the address, telephone, telex or facsimile number or AFTN address of their SPOC to [MCC] and the COSPAS-SARSAT Secretariat (Attachment 1).
- d. [SPOC] will immediately notify [MCC] of any changes to the provided contact details in (Attachment 1).
- e. [SPOC] shall develop a comprehensive plan for the distribution of distress alert and location data to SAR authorities within its SRR, as appropriate.
- f. The [SPOC] shall endeavour to minimize false alerts in their country.
- g. The [SPOC] shall provide information on their national point of contact for beacon registers to the COSPAS-SARSAT Secretariat and the [MCC].
- h. The [SPOC] shall maintain reliable communication links with MCC and respond to monthly communication tests from the [name] MCC immediately after receipt thereof (not using an automatically generated response) to verify the integrity of communications links between the MCC and SPOC.
- [SPOC] shall communicate routine reports, such as alert summaries and monthly operations reports on SAR incidents that were assisted by Emergency Locator Transmitters (ELTs), Emergency Position-indicating Radio Beacons (EPIRBs) or

Personnel Locator Beacons (PLBs) to [MCC] on a regular basis, with special reports as and when required.

5. DEPOSITARY

The Depositary of this Agreement and any subsequent amendments thereto shall be the Secretariat of the International COSPAS-SARSAT Programme.

The MCC and SPOC will also provide a signed copy of this Agreement to the ICAO Regional Office concerned with the [name] SRR and the IMO Secretariat, if desired by them.

6. ENTRY INTO FORCE, AMENDMENT, RENEWAL AND TERMINATION

This [Agreement] will enter into effect when it has been signed on behalf of all parties. The [Agreement] shall remain in force for a period of two years from the date on which it enters into force and shall be extended automatically for successive periods of two years.

- a. This [Agreement] is signed on Day____of___20xx, between [MCC] and [SPOC].
- b. The [Agreement] will be reviewed as required and may be modified or amended by mutual agreement of both parties in writing.
- c. Both parties, in the event of initiating action to terminate the [Agreement] shall give the other party a minimum of 120 days prior notice in writing.

(I)	<u>SIGNATURE</u>
	AUTHORIZED REPRESENTATIVE [MCC]
(II)	SIGNATURE
	AUTHORIZED REPRESENTATIVE [SPOC]

Attachment 1: CONTACT DETAILS

[MCC]	Phone:
	Fax:
	Email:
	AFTN:
	Other:
[SPOC]	
	Phone:
	Fax:
	Email:
	AFTN:
	Other:
[Other]	Phone:
	Fax:
	Email:
	AFTN:
	Other:
[Add fu	rther contacts as required]

APPENDIX B

	Action	Responsible	Timeline	Status / Updates
1.	Organize ICAO Inter-regional AFI/APAC/MID SAR Workshop periodically on a rotational basis between the regions. ICAO ROs to include the workshop venue and dates in 2017 schedule of meetings	ICAO	Dec. 2016	
2.	Coordinate with ICAO HQ to provide more support to SAR through the provision of adequate resources to ensure effective follow-up and assistance regarding global SAR issues.	ICAO	Sep. 2016	
3.	Consider the reduction of the uncertainty phase timing commensurate with adequate communications and surveillance capabilities.	ICAO	TBD	
4.	Clearly define the division of responsibilities regarding command and control and hand over between the search and rescue function (Annex 12) and the air accident investigation search and recovery function (Annex 13).	ICAO	TBD	
5.	Development of AFI and MID Regional SAR Plans in a harmonized manner, taking into consideration the APAC SAR Plan and experience.	ICAO MID ICAO AFI	Mar. 2017 TBD	
6.	Establishment of national SAR committee that manages aeronautical, maritime, and civil/military cooperation aspects.	States ICAO	June 2017	
7.	Establishment of internal Quality Management System (QMS) for RCCs utilizing frameworks such IAMSAR, regional plan, USOAP-CMA protocol questions related to SAR.	States	Ongoing	
8.	Development of a Template for national SAR Plan	ICAO	Jan. 2017	
9.	Development of a comprehensive national SAR Plan addressing the ICAO and IMO requirements, involving the airspace operators and ensuring effective internal and cross borders cooperation, taking into consideration the regional SAR Plan. Aerodrome and airline emergency response plans and disaster management plans should be synchronized with the SAR Plan.	States	June 2017	
10.	Raise awareness related to SAR through promotional material and the conduct of national, regional and inter-regional SAR workshops with the support of ICAO and IMO.	AFCAC (for AFI Region) ICAO IMO States	Ongoing	
11.	Negotiate and sign SAR LoAs between adjacent States	States AFCAC (for AFI Region)	June 2017	

12.	States at the interface with the ICAO MID Region to follow- up with their ACCs the signature of the MID SAR Bilateral Arrangements with their relevant adjacent MID ACCs to ensure that alerting and coordination procedures are in place.	States adjacent to MID States	June 2017
13.	Staff RCCs with sufficient number of adequately dedicated SAR personnel, and ACC with supervisory resource to ensure swift triggering of the alerting and coordination process.	States	Ongoing
14.	Develop a short and long term plans for training of search and rescue personnel, including those involved in the oversight of SAR, derived from comprehensive training programmes, manual, etc. in order to ensure effective training and high level of competency.	ICAO IMO States	Ongoing
15.	Enhance SAR experts' competency thorough the conduct of national, regional and inter-regional SAR courses with the support of ICAO and IMO as appropriate.	States ICAO AFCAC	Ongoing
16.	RCCs and, as appropriate, RSCs, staffed 24 hours a day by trained and qualified operational personnel using radiotelephony communications who are proficient in the use of the English language.	States	Ongoing
17.	Training to interact with the media should be provided to SAR Managers or any person involved with public communications.	States	Ongoing
18.	Alternatives means of communication to promote, coordinate, SAR issues such as social media could be used. Note. Social media should not be used as an initial alerting means in lieu of formal communication mechanism	States	ongoing
19.	Establishment of a Joint Rescue Coordinator Centre (JRCC) to coordinate aeronautical and maritime SAR operations	States	TBD
20.	Sharing of resources (Human, assets, funding, etc.) through the establishment of regional and sub-regional SAR JRCC	ICAO States	Ongoing
21.	Making available funds to ensure effective provision of SAR services, which should cover the running cost of the RCC and the SAR missions in case of incidents and accidents, SAREX and the provisions of services during large scale SAR responses, such as Mass Rescue Operations (MRO).	States Donors Stakeholders	Ongoing
22.	Review the GADSS Concept and consider their preparedness for implementation.	States Airlines	Ongoing
23.	Establishment of a legal framework to support the roles and responsibilities of SAR experts to handle various SAR missions.	States	Ongoing
24.	Conduct national, regional, sub-regional and inter-regional SAREX. SAREX should be effective to test the SAR system in place.	States ICAO IMO	Ongoing
25.	Signature of Memorandum of Arrangements (MoA) between SPOCs and their relevant MCCs	States	June 2017

26.	RCCs should be notified well in advance regarding any activity that may lead to a SAR response (adventure, experimental, etc.) within their area of responsibility by their relevant authorities, for appropriate actions.	States	Ongoing	
27.	Consider the use of drones for SAR services.	States	Ongoing	
28.	Development of guidance on the use of drones for SAR.	ICAO IMO Stakeholders	Dec 2017	
29.	Take note of the emerging space-based ADS-B technology (trial from September 2016)	States	Ongoing	

APPENDIX C

MID REGION SAR AGREEMENT STATUS BETWEEN ANSPS/ACCS December 2016

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

☐ Agreement NOT Signed

Signed Agreements / Total No. of required Agreements

APPENDIX D

MID REGION SAR FOCAL POINTS CONTACT DETAILS

STATE	NAME	TITLE	Address	EMAIL/AFS	FAX	TEL	MOBILE
Bahrain	ACC Duty Supervisor	ACC Duty Supervisor	Bahrain CAA P.O.Box – 586 Kingdom Of Bahrain	bahatc@caa.gov.bh	+973 17321029	+97317321081 +97317321080	
Egypt	Mr. Khaled Abdelraouf Kamel	General Director of Operations Centers & Crisis Management	Ministry of Civil Aviation Cairo - EGYPT	Operation-center- ecaa@hotmail.com Operation-center- ecaa@yahoo.com	202 22681371	202 22688387 202 22678535	01147710035 01001112375
Iran							
Iraq	Ali Muhsin Hashim	Director ATS	ANS Building, BIAP	Atc_iraqcaa@yahoo.com		964 7815762525	964 7815762525
Jordan	Mr. Ahmad Al Heders	Chief Amman ACC	Queen Alia Airport	Ahmad.al- hederes@carc.gov.jo			962796664328
Kuwait							
Lebanon							
Libya							
Oman	RCC HQ RAFO		P.O.Box 722 Muscat P.C. 111, Oman	Hq.rafo.@rafo.gov.om AFS:- OOMSYCYX	+968 24334776	+968 24334211 +968 24334212	

STATE	NAME	TITLE	Address	EMAIL/AFS	FAX	TEL	MOBILE
Qatar							
Saudi Arabia	Mr. Ahmad B. Altunisi	Manager SAR Head of SAMCC	General Authority of Civil Aviation	altunisi@gaca.gov.sa	966-126402855	966-12 671 7717/1840	966-50 460 1445
Sudan	Hashim Mohamed Ahmed	RCC Head	Sudan CAA PO BOX 165	BEGER124@gmail.com	249183528323	249183528323	24912327797 249912382433
Syria	Mr. Monif Abdulla	Head of S.A.R. Department Syrian Civil Aviation Authority	Damascus Airport	monif77@hotmail.com	963-11 540 0312	963-11 540 0312	963 932 710351
UAE	UAE ATC Duty Supervisor			atc@szc.gcaa.ae	971 2 599 6850	971 2 599 6969	
Yemen							