International Civil Aviation Organization

MID ATS Message Management Center Steering Group

Third Meeting (MIDAMC STG/3)
(Cairo, Egypt26- 28January 2016)

Agenda Item 5:   **MIDAMC Functions and Tools**

MIDAMC USER MANUAL

(Presented by MIDAMC/Jordan)

SUMMARY
This working paper presents the MIDAMC User Manual. Action by the meeting is at paragraph 3.
REFERENCES
- MIDANPIRG/15 Report

1.   INTRODUCTION

1.1   The MIDAMC Training was held at IATA premises in Amman from 5-7 January, 2015. The training was attended by twenty-three (23) participants from nine (9) States.

2.   DISCUSSION

2.1   This paper presents the first version of the MIDAMC User Manual; the Manual will guide the users from the MID Region how to use the MIDAMC functions and tools. The Manual is at **Appendix A**.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

    a.   review and update as necessary the MIDAMC Manual; and

    b.   agreed to the following Draft Conclusion:

       DRAFT CONCLUSION 3/1:   MIDAMC USER MANUAL

       That, the first edition of MIDAMC User Manual is endorsed; and be published as MID Doc xxx.

APPENDIX A

MIDAMC User Manual

Author:	MIDAMC STG
Version:	V1.0
Date:	26/1/2016

Table of contents

1. Introduction

1.1 Scope of the Document

This Document is MIDAMC User Manual, developed to guide users in the MID Region to use the MIDAMC. The document developed by the ICAO MIDAMC Steering Group.

1.2 MIDAMC Project

MID COM Centers participate in EUR-AMC as external COM operators that have access to some of the operational functions, but they can't use an important function like routing management which is currently available to EUR COM Centers.

The Aeronautical fixed telecommunication network in the MID Region has some operational issues like Asymmetric routes which can cause message loss. The Routing function can integrates AMHS routing with AFTN/CIDIN routing, and ensure optimal consistent routes. The MID region decided to develop their own AMC, the project sponsored by Jordan.

The Goals of the project are:

- To facilitate transition from AFTN/CIDIN to AMHS.

- To support states with AMHS in operation or on their way to implement.

- To provide Routing management function that can ensure optimum consistent routes.

- To provide an electronic tool to keep ANP FASID data up-to-date.

1.3 MIDAMC Steering Group (MIDAMC STG)

The Fourteenth meeting of the Regional Air Navigation planning and Implementation group (MIDANPIRG/14) decided to establish the MIDAMC steering committee,

- **DECISION 14/20:** ESTABLISHMENT OF MID-AMC STEERING GROUP

That,

a) a MID-AMC Steering Group is established with TOR as at Appendix 4.5A to the MIDANPIRG/14 Report on Agenda Item 4.5; and

b) States appoint a Member and Alternate for the MID-AMC Steering Group.
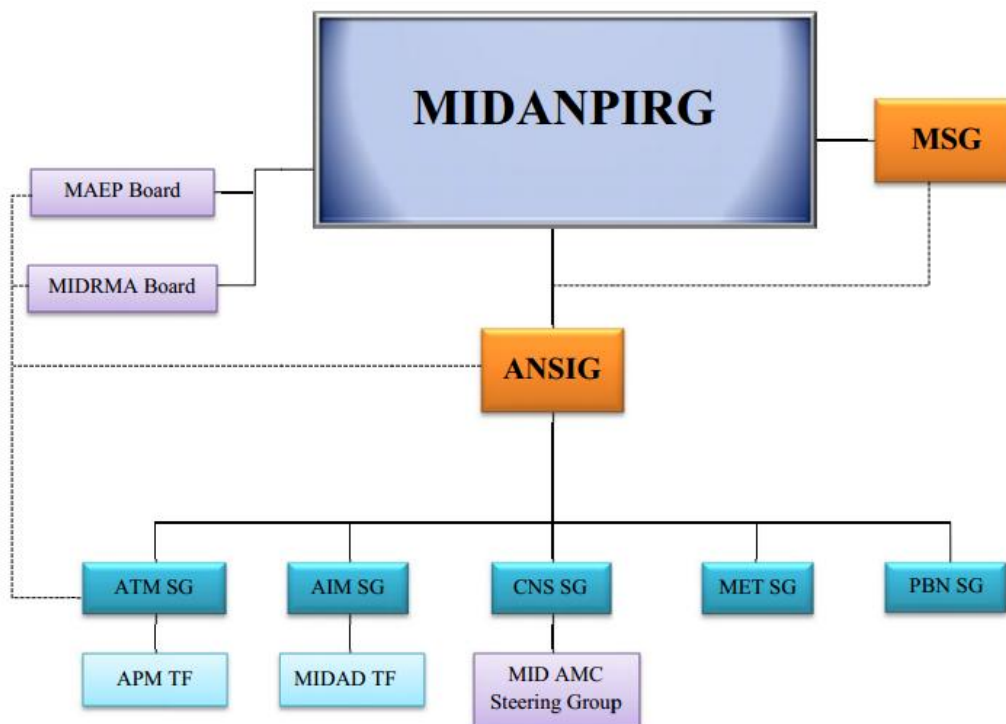
2. General Requirements
2.1 Users Types

The MIDAMC User types are as in the European AMC

➢ AMF-I Users

➢ CCC Operators (Co-operating COM Centre)

➢ External COM Centres

➢ Read-Only Users

➢ Participating COM Centres

> ➢ Non-Participating COM Centres

The Access to AMC functions by each user category as in the following table

AMC functions / user categories	AMF-I functions	AMF-O functions	AMC Operator functions
AMC Operator	yes	yes	yes
CCC Operators	yes	yes	no
External COM Operators	yes	access to some functions	no
AMF-I Users	yes	read-only access to some functions	no
Read/Only Users	read-only access to some functions	read-only access to some functions	no
Participating COM Centres	indirect access to some functions through AMC Operator	indirect access to some functions through AMC Operator	no

Table 2: Status of participants in ATS Messaging Management
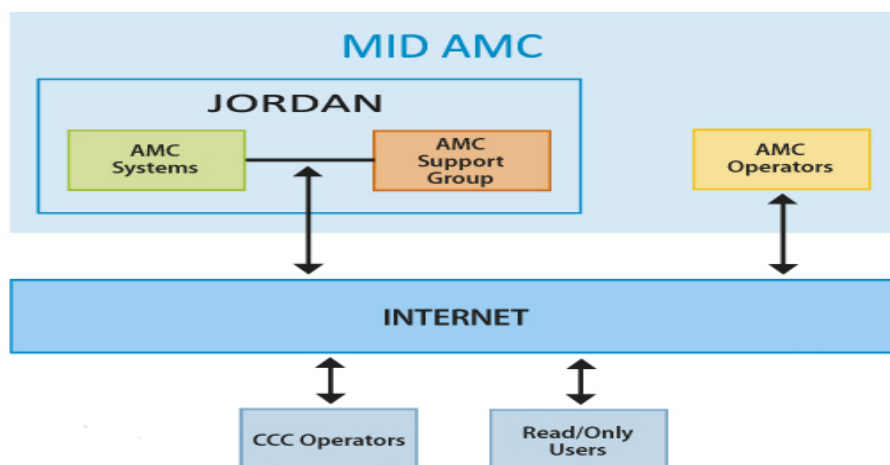
2.2 MIDAMC Operator

The MIDAMC Operator is responsible for overall operation of the AMC and of associated procedures. Currently four AMC Operators are selected from Jordan. The team performs several Functions including a high number of functions which are not visible to any other user category

❑ The main functions of AMC Operator are :

1. Manages the overall operation of MID AMC.

2. Acts as a Regional Focal point on the European AMC.

3. Creates access accounts according to regional procedures.

4. Collecting & analyzing ATS messaging data received from MID states as well as from European AMC.

2.3 Users Registration

New User should register on the MIDAMC to create a login access, user should visit www.midamc.jo
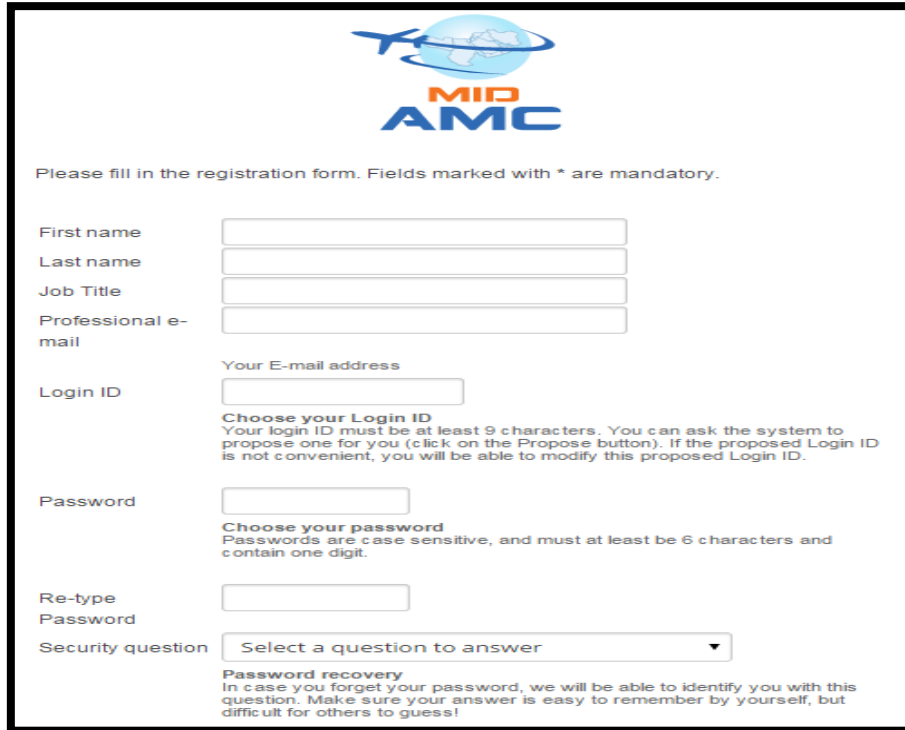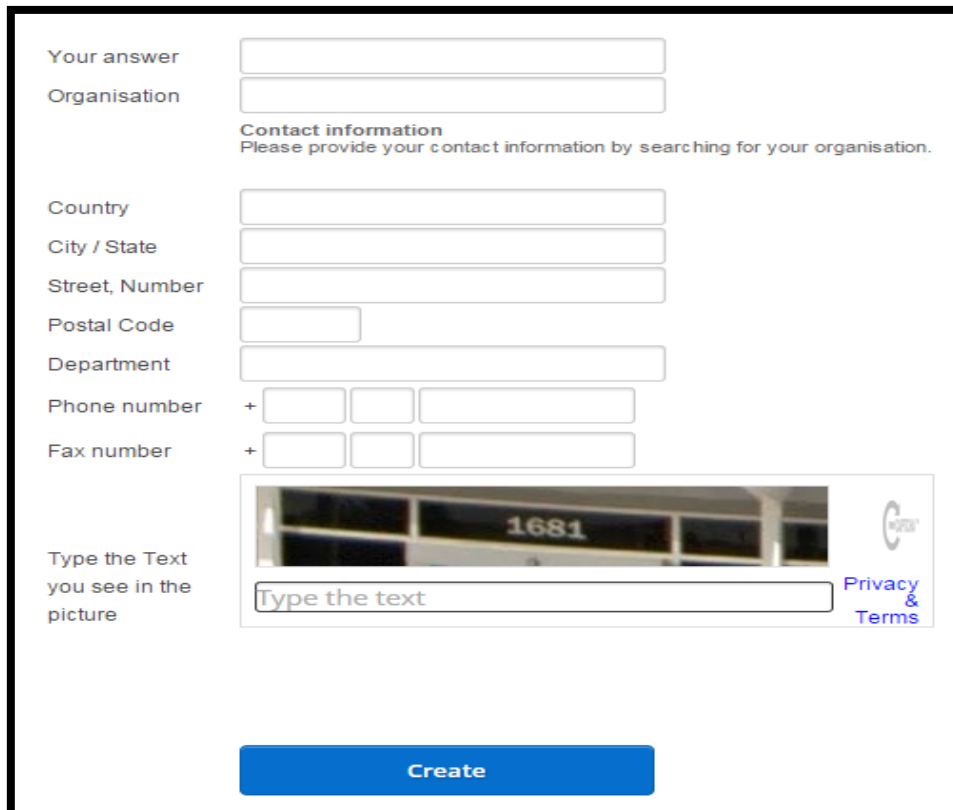
After selecting the "Register for MID AMC", a registration form open as following:

After filling the required information successfully, the following message will appear:
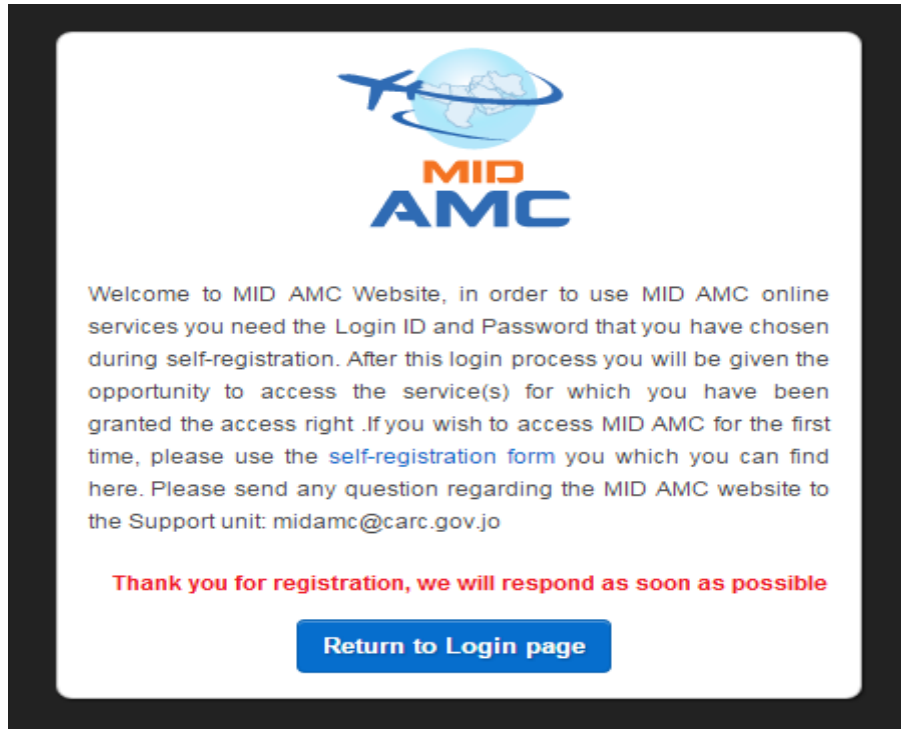
2.4 Users Accreditation Procedure

There are three Four MID-AMC user types:

1) Operator which is equivalent to AMC Operator

2) User which is equivalent to AMC CCC Operator

3) Read-Only User which is equivalent to AMC Read-Only.

4) External MID AMC User

To guarantee the confidentiality and integrity of data contained in the MID-AMC database, it is necessary to grant access rights of a given user category only to people who are duly identified and have the right to view and/or modify such data. This process is called accreditation of users, which is defined hereafter for the accreditation of a user in each category:

1) AMC External Operators on European AMC of the MID Region:

1-1 MID-AMC Operator transferred those users to MID-AMC as MID-AMC Users.

1-2 AMC External operator to register online on MID-AMC website at www.midamc.jo

2) New MID-AMC Users:

2-1 State to send letter (email) to ICAO MID Regional Office to designate a new MID-AMC User.

2-2 New MID-AMC User to register online on MID-AMC website at www.midamc.jo

2-3 MID-AMC Operator coordinate with ICAO MID Office to approve the request in (2-2)

3) AMC Read-Only Users on European AMC of the MID Region:

3-1 MID-AMC Operator transferred those users to MID-AMC as MID-AMC Read-only Users.

3-2 AMC Read-only users to register online on MID AMC website at www.midamc.jo

4) New MID-AMC Read-only User:

4-1 New MID-AMC Read-Only User to register online on MID AMC website at www.midamc.jo

4-2 MID-AMC Operator coordinate with the MID AMC User of the corresponding COM center (if any) Or with the ICAO MID office to approve the request in (4-1).

5) External MID AMC User: Users from outside MID Region and act as   either CCC on EUR AMC or External AMC user can register on the MID AMC as MID AMC User:

5-1 register online at www.midamc.jo

5-2 MID AMC Operator check the registration on EUR AMC to validate the registration

The MID Email Domains List is as in the following table

Bahrain: Ministry of transportation	@mot.gov.bh
Egypt: Ministry of Civil Aviation	@civilaviation.gov.eg
Iran: Civil Aviation Organization	@cao.ir
Iraq: Iraqi Civil Aviation Authority	@iraqcaa.com
Jordan: Civil Aviation Regulatory Commission	@carc.gov.jo
Kuwait: Directorate General of Civil Aviation	@dgca.gov.kw
Lebanon: Lebanese Civil Aviation Authority	@lebcaa.com
Libya: Libyan Civil Aviation Authority	@caa.ly
Qatar: Civil Aviation Authority	@caa.gov.qa
Saudi: General Authority of civil Aviation	@gaca.gov.sa
Sudan: Civil Aviation Authority	@scaa.gov.sd
Syria: Syrian Civil Aviation Authority	@scaa.sy
UAE: General Civil Aviation Authority	@gcaa.gov.ae
Yemen: Civil Aviation and Metrological Authority	@camayemen.com

2.5 Windows Structure

Three Menus in the main page of the MIDAMC; Main Window, Function Menu and Sub-Functions (tabs)

The Screen areas of main window as the following figure

The Management of Access Rights at menu level not the same groups of functions are visible for each category, while at window level:

➢ sub-functions can be hidden depending on user category

➢ buttons are enabled / disabled

➢ data are enabled / disabled

3. MIDAMC Functions

There are two main function type at the MIDAMC Implementation Support Functions (AMF-I) and Operational Functions (AMF-O). The AMF-I functions like AMHS MD contacts, AMHS Implementation

planning, Inter-working Test Support and Helpdesk Functions. While the AMF-O are Network inventory, Routing management, Address management, AMHS user capabilities management and Miscellaneous functions

MIDAMC Functions do not need to be executed in a short time period. These relate to medium and long-term requirements. The current implementation of ATS Messaging Management includes only off-line management functions. On-line functions may be designed and implemented in the future.

3.1 AMF-O Functions

Information is structured in three data areas:

❑ The Operational Data Area

❑ The Pre-Operational Data Area

❑ The Background Data Area

The B<u>ackground Data Area</u> **is the working area of the CCC operatos**

purpose	working area (CCC Operators and MIDAMC Operators)
access	restricted to own COM Centre (except for MIDAMC Operator)
AMC Operator actions	validating Inventory, work on Routing Tables
functions	data entry and validation

The Pre-operational Data Area represents the planned operational state

purpose	represent planned operational state
access	read (all), routing acknowledgement (restricted)
AMC Operator actions	transfers COM centre information, propose Routing Tables
Functions	retrieval, all functions, routing acknowledgement

The Operational area represents the operational state

purpose	represent operational state
access	read (all)
AMC Operator actions	copied as whole from Pre-operational
functions	retrieval, all functions
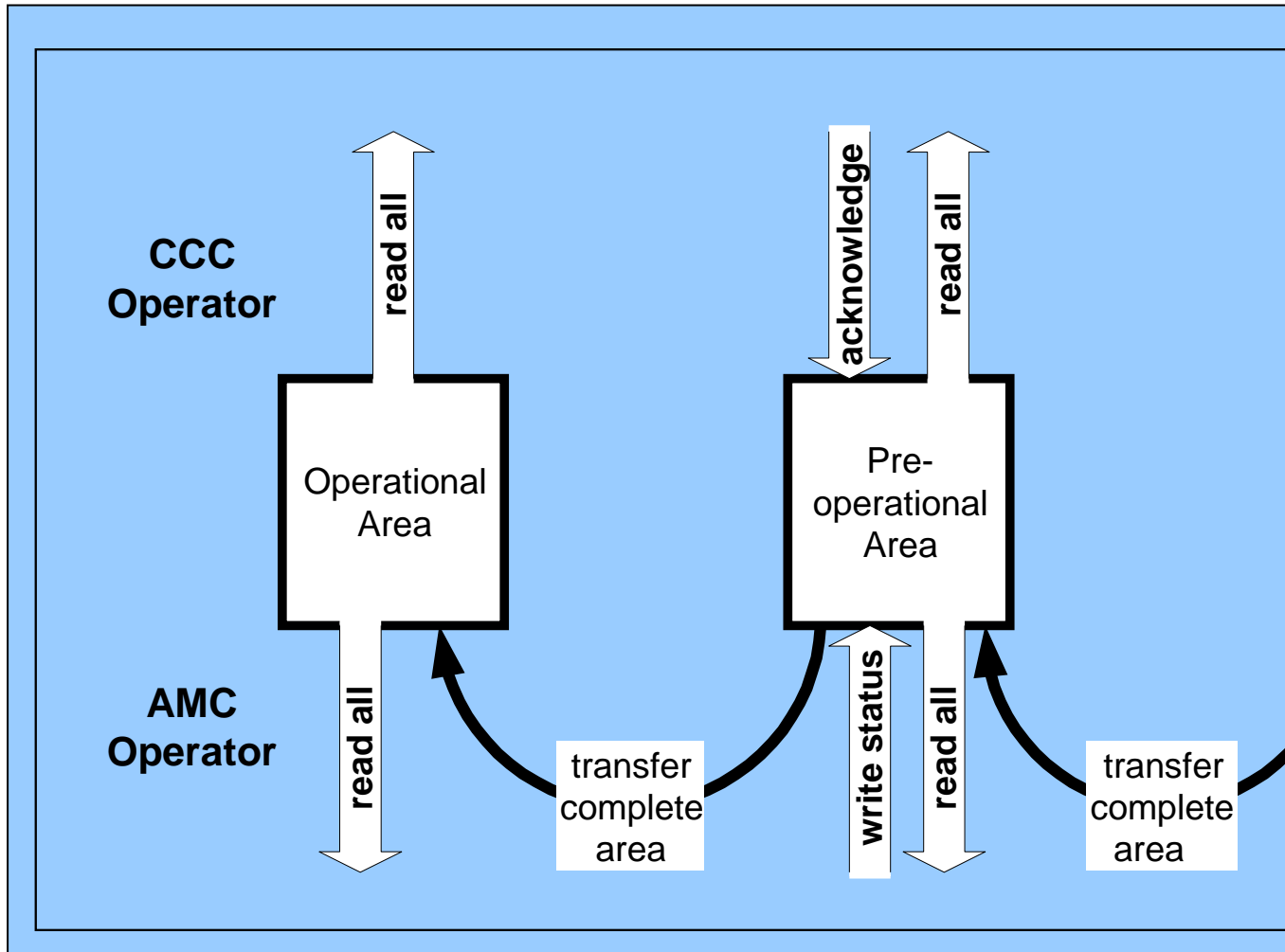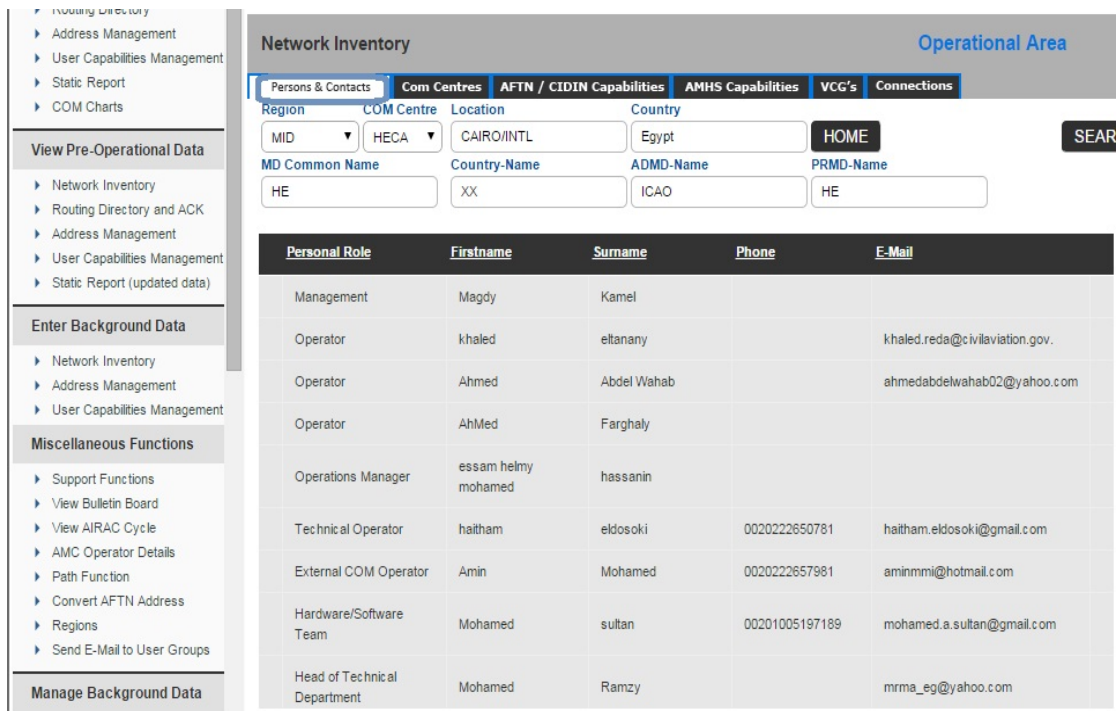
3-2 Network Inventory Function

The Network Inventory enables to enter descriptive data about COM centers, and includes five (5) sub-functions:

PERSONS & Contacts	COM Centers	AFTN/CIDIN Capabilities	AMHS	Connec

The Person &Contacts sub-function enables to enter data related to a person or contact associated to the considered COM Centre. The main screen shows a table with the full list of persons/contacts, and summary information for each person/contact. A record in this table can be

selected by clicking on any field to enter the Details mode and open the associated pop-up window. The following figure shows this sub-function.
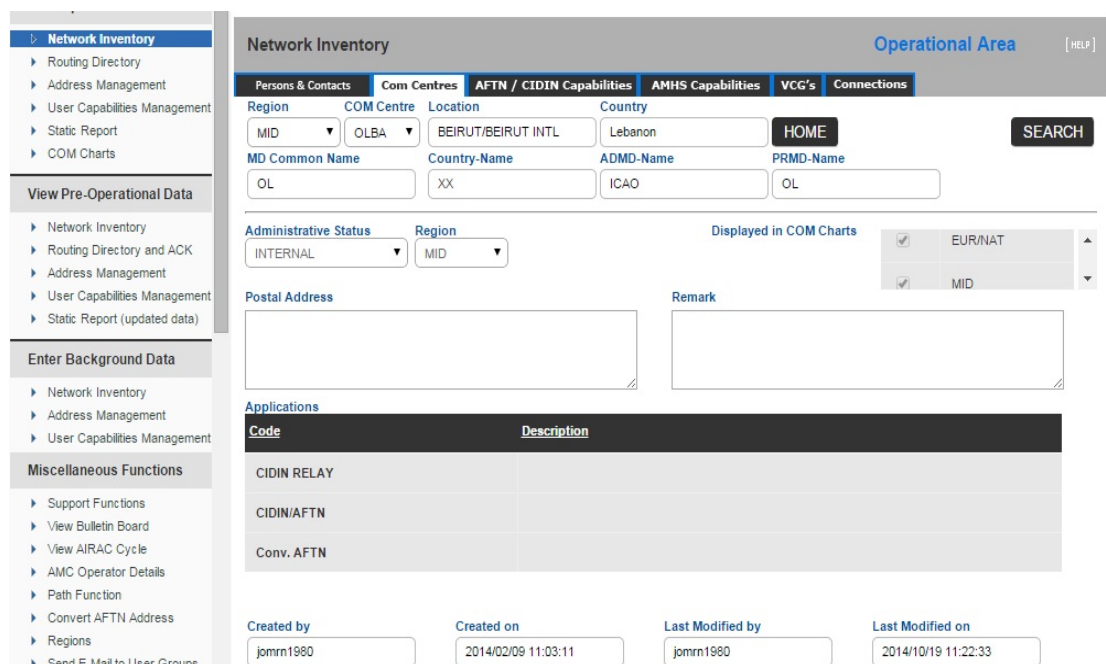

3-2-1 Persons & contacts

The Popup Menu Data Elements are Personal Role, first name, surname, local title, phones, Fax, Email, Telex, Userid.

Personal Role	contains the personal role of the person or contact, according to a pre-defined categorisation of generic roles
First Name	Can be empty.
Surname	Can be empty.
Local title	the title/function of the person or contact, as defined in his/her organisation
Phones	Phone number of the person or contact
Fax	Fax number of the person or contact
E-Mail	E-Mail address of the person or contact
Telex	. telex number of the person or contact
User ID	User ID for persons who have access to the AMC
AFTN Address	AFTN address indicator of the person or contact
SITA	SITA Type B messaging address of the person or contact.
Remark	a free text field for additional information, if needed

3.2.2 COM Center sub-function provides general information about the COM Centre.like

- *Administrative status (Internal or External)*

- *Postal address*

- *Remark*

- *Application (s):*

A table includes the list of applications supported by the COM Centre (ATS Message Server, AFTN/AMHS Gateway, Conventional AFTN, CIDIN/AFTN, ...)

3.2.3 AFTN/CIDIN Capabilities sub-function describes the AFTN and CIDIN capabilities of the COM Centre

3.2.4 AMHS Capabilities Sub-function enables the MID AMC user to enter data related to the AMHS capabilities of his COM Centre. Data includes:

1- Capabilities of the ATS Message Server

2- Capabilities of the AFTN/AMHS Gateway

ATS Message Server	If Ticked: ATS Message server present and active Not ticked: Not present OR not Active
MTA Name	X.400 MTA Name
Maximum Content Length	Maximum length (in bytes) of messages that the MTA is capable to accept, transfer and deliver. EUR recommendation should be at least 2 M
Message Lifetime	Duration during which the MTA will try to transfer before assuming transfer failure and generating NDR

| Extended Encoded Information Types (EITs) in support of | Message Encodings that the MTA is capable to transfer to accept, transfer and deliver checkbox (ticked = yes, un-ticked = no) for each body part / encoding combination specified in Doc 9880 – part 2 (4.5.2.1.4) |

ATS Message Server Frame

ATS Message Server	If Ticked: ATS Message server present and active Not ticked: Not present OR not Active
MTA Name	X.400 MTA Name
Maximum Content Length	Maximum length (in bytes) of messages that the MTA is capable to accept, transfer and deliver. EUR recommendation should be at least 2 M
Message Lifetime	Duration during which the MTA will try to transfer before assuming transfer failure and generating NDR
Extended Encoded	Message Encodings that the MTA is capable to transfer to accept, transfer and deliver

Information Types (EITs) in support of	checkbox (ticked = yes, un-ticked = no) for each body part / encoding combination specified in Doc 9880 – part 2 (4.5.2.1.4)

AFTN/AMHS Gateway Frame

AFTN/AMHS Gateway	Derived from "applications" selected in the COM Centres function (not modifiable) If unticked the whole frame is disabled. a checkbox: ticked = present and active unticked = not present or not active
Currently Authorized Content Length Maximum	length (in bytes) of messages that the gateway will accept to convert to AFTN recommendation in EUR should be at least 2 Mbytes Maximum
Number of Recipients	The maximum number of recipients O/R addresses allowed in a message converted by the gateway. Messages with more recipients are rejected. Doc 9880 requirement is 512 recipients
Converted General-Text Body Parts	General-text body parts that the gateway is capable to convert to AFTN one checkbox (ticked = yes, un ticked = no) for each body part character set

The Operational Status indicate that the AMHS is operational in COM center Coming from the AMHS MD Register function (not modifiable), when you put the AMHS in operation, inform the MID AMC operator to change the status to "OP"

The Protocol Capabilities table made of six columns showing the protocols supported by the COM Centre for international connectivity, and the MTA configuration parameters associated with the network access, which are needed by Remote COM Centres to configure AMHS connections with the COM Centre. AMHS/IPS is the target Implementation in the MID Region

Protocol	Supported AMHS protocols for COM Centre to COM Centre communication. There can be various protocol stacks 'AMHS/TCP-IP' 'AMHS/ATN-TP4' 'AMHS/TP0-X.25'
P-SEL	Presentation selector for OSI Upper Layer stack

S-SEL	Session selector for OSI Upper Layer stack
T-SEL	Transport selector for OSI Upper Layer stack
Network Address	The IP address or ATN NSAP
Active	Indicates the current operational status of the protocol stack a checkbox: ticked = active unticked = present but not yet active

3.2.5 Connections sub-function describes the Connections of all kinds, AFTN, CIDIN and AMHS, existing and planned between the COM Centre and remote COM Centres. it includes two tables (EXSITING & PLANNED)

Remote COM	The "other end" of the connection, the COM Centre location indicator.
Protocol	protocol used over the connection, can be AMHS, AFTN, CIDIN,...etc
Network Address	The network address of the REMOTE Com Centre used for the connection
Link Type	Type an indication of the physical connectivity used for the connection
Capacity	The capacity of the link or circuit or of the network access value in kbits/s
Circuit type	The type of circuit supporting the connection, based on a standard ICAO classification 'L' (Landline), 'S' (Satellite)
Supplier	An indication of the supplier of physical connectivity used for the connection
Active	Active indicates the current operational status of the connection

| a checkbox: ticked = active |
| unticked = present but not yet active |

3.2.6 The tasks cycle at Network Inventory

CCC Operator update data on day 1- day 5

New data released on day 25, and implements on day 28 at 1100 UTC

MID AMC Operato the new data & coo the CCC OP if neede

MID AMC Operator moves the data into pre-operational Area on day 7

MID AMC Operator e new data at EUR AMC day 7 to ensure consis
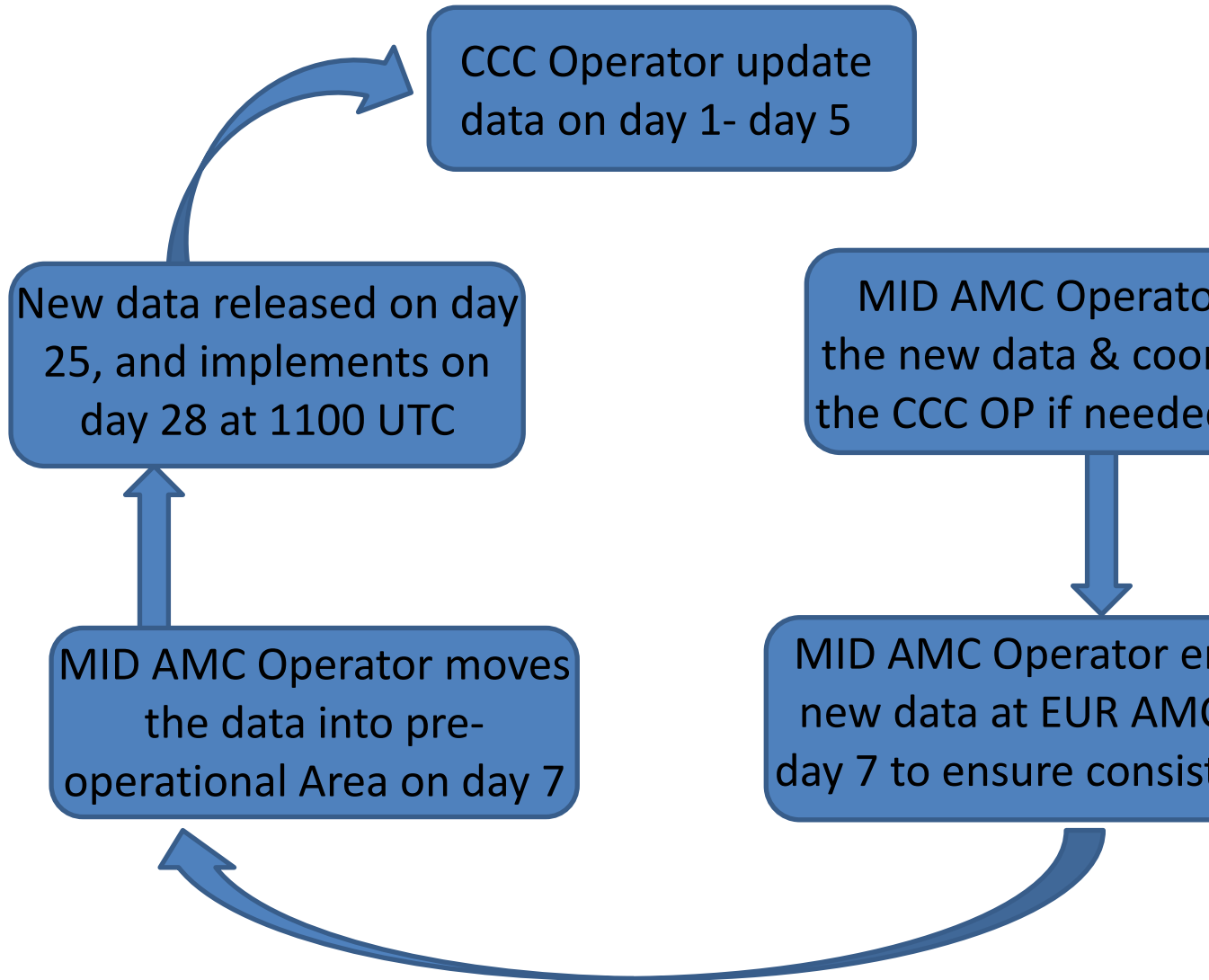
3.3 Address management

The Originator/ recipient address (O/R) is used to route messages , the high level attributes are used for Inter- domain routing, while the low level attributes are used for Intra- domain Routing. The use of wrong

AMHS addresses may cause mis-routings and non-deliveries. Also, lack of synchronization in changes introduces wrong addresses.

AMHS Addressee are expected to change frequently during the transition period, AFTN and CIDIN are more static. At the AFTN/AMHS Gateway; where is a mixed environment, conversion from AFTN/CIDIN address to AMHS address needs up to date AMHS addressee information.

In the short- to medium-term, ICAO HQ will utilize the AMC and has urged the States to follow the procedures for AMHS address coordination through the AMC (see ICAO State Letter - Ref.:AN 7/49.1-09/34 from 14 April 2009).

Address Management is a key function used in support of address conversion, which is itself critical to AMHS operation during transition from CIDIN/AFTN to AMHS.
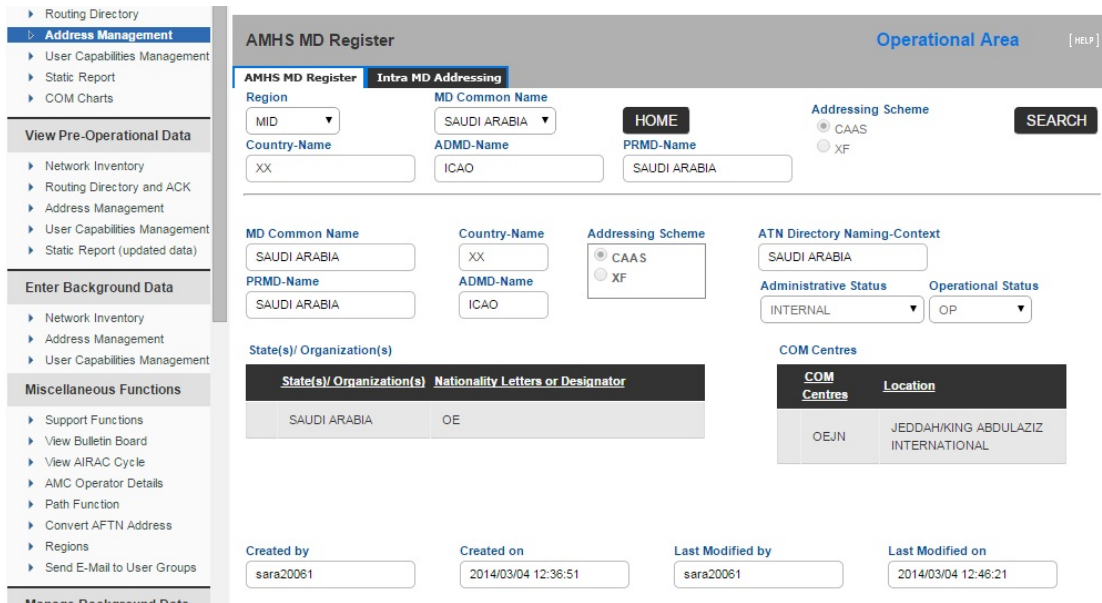
AMHS address is composed of two parts:

- A global domain identifier, which is globally unique within ICAO and AMHS

- Set of "low level" address attributes, which uniquely identify the user within the considered MD.

A modification in an AMHD Management domain creates a need for change in all other MDs worldwide. Three Sets of Information are managed by the Address Management function:

1) AMHS MD register
2) CAAS Table
3) User Address

The address Management function at the MIDAMC consists of two tabs; sub-functions, AMHS MD Register and Intra MD Address.

AMHS MD Register sub-function, which contains all MD information registered by ICAO Headquarters

AMHS MD Register consists of:

> The *name of the State or Organization*

> The *Nationality Letters (two letters), should be unique*

> the global domain identifier of the Management Domain (GDI) , *Made of three elements (High level Attribute)*

  a) Country-name attribute (C) = XX

  B) Administrative Management Domain (A)= ICAO

  c) Private Management Domain (P)

> The Addressing scheme (CAAS or XF)

> *ATN directory naming-context*

> *COM Center*

> CAAS table contains "O-OU1" relationship

One entry for each Location Indicator belonging to the AMHS MD, which in a CAAS address is borne by the *organisational-unit-names attribute (OU1)*. Each entry also includes the associated geographical unit identification, grouping several Location Indicators, which in a CAAS address is borne by the *organisation-name* attribute (O). Or Nationality Letters plus the wild card character(s) "*"

For MDs selected XF addressing scheme the table shall be empty

User addresses table contains full user O/R address and used to define any individual address in exceptional cases only.

Address Change:

Two categories of address changes

A) **Major changes** include:

- Addition or deletion of PRMDs

- Modification of PRMD-name

- Change of addressing scheme (from XF to CAAS or vice-versa)

Those changes have a major operational impact, They are expected to be infrequent, the MID CCC Operator should contact the MID AMC Operator or the CNS officer in ICAO MID Office to make a major Address change, cannot be entered into the MID AMC directly by the state user.

After Coordination with ICAO HQ, MID AMC enters the change into the MID AMC inform the EUR AMC Operator .

Procedure for Major change

1- An accredited person in the considered State declares the change to the MID Office for the ICAO Region or to the MID AMC Operator. the applicability date of the change (an AIRAC date); using a standard written pro-forma

2. The CNS Officer in the Regional Office, in coordination with ICAO Headquarters as appropriate, validates the acceptability of the declared change from an official and institutional viewpoint;

3. after validation, the CNS Officer forwards the declaration of change to the MID AMC Operator, **at the latest 21 days before the applicability date**

4. the MID AMC Operator enters data in the MID AMC (AMHS MD Register sub-function) based on the input received from the MID Office, at the appropriate time considering the applicability date of the change and using the AMC operational procedures; and inform the EUR AMC operator to take same action in the EUR AMC

5. at the date of applicability, i.e. at each AIRAC cycle date, the MID AMC users should retrieves an AMHS address management export file from the MID AMC and uploads it to AMHS system in place. MID AMC operator should notify MID users if there is a change.

B) Minor changes consist in modifications in a CAAS table, they have an operational impact which can be more limited and can be more frequent

Procedure for Minor change:

1- The CCC Operator in the considered State enters data corresponding to the intended change in the MID AMC during the Data entry Phase

2- The AMC operator performs the standard AMC operational procedures, such that the status of changed data is passed to "operational" at the applicability date;

3. at the date of applicability, at each AIRAC cycle date, All MID AMC Users should export file from the MID AMC and uploads it to system in place.

3.4 Routing Management

Routing Management function deals with the creation and distribution of AMHS, CIDIN and AFTN routing tables for all COM Centers in the Middle East. Migration to AMHS requires integration of the AMHS routing table to the AFTN/CIDIN tables. And change in the AMHS Routing table impact the AFTN/CIDIN Routing tables.

This centralized function can look at the whole network in the MID and recommends optimal consistent routes. The Routing Management function is composed of three sub-functions, "AFTN Routing Table", "CIDIN Routing Table" and "AMHS Routing Table". Optimal Route means to create route with minimum number of hops, robust in the case of failures / overload, symmetry of routes, good distribution of traffic, and simple relationships with other Regions.

MID AMC has an automated tool which can detects:

 1) Asymmetric Routes

 2) Potential Loop

 3) Incomplete path

The MID AMC Operator should recommend action to the CCC operator to rectify these inconsistencies hop .

The routing function includes three sub-function at the MIDAMC, AFTN Routing table, CIDIN Routing Table and AMHS Routing Table. As shown in the figure below:

3.4.1 AFTN Routing

Message routing is performed using character sequences extracted from the message addressee indicator; the destination composed from 1 to 8 characters

Destination	Main	Alternative
A	OSDI	HECA
OE	OEJN	HECA

HE	HECA	OEJN
OJAQZPZX	OJAQZPZX	-

3.4.2 AMHS Routing

Message routing is performed using high level attributes (C,A,P) and O in some cases the AMHS Routing table should includes route to all AMHS MD worldwide.

The Destination expressed using the Global Domain Identifier of each AMHS Management domain. If an AMHS MD selected CAAS addressing scheme and has multiples International COM centers, "O" Value should be used in combination with the GDI as destination in AMHS Routing table

CIDIN Routing table contains all CIDIN routes from each COM Centre supporting CIDIN operationally

Destination	Existing Main	MTCU	Existing Altn	MTCU	Planned Main	MTCU	Planned Altn	MTCU
A	OBBIA	☐	OEJN	☐		☐		☐
B	LCNCA	☐	HECAA	☐		☐		☐
C	LCNCA	☐	HECAA	☐		☐		☐
D	HECAA	☐	OEJN	☐		☐		☐
E	LCNCA	☐	HECAA	☐		☐		☐
F	OEJN	☐	OBBIA	☐		☐		☐
G	HECAA	☐	OEJN	☐		☐		☐
H	HECAA	☐	OEJN	☐		☐		☐

The CCC operator should "ACK" or "NACK" the proposed routing tables set by the MID AMC operator in the pre-operational Area with status "Proposed". Routing tables can be exported as CSV file (Comma separated values) from the operational Area and loaded into AMHS system.

3.5 User Capabilities Management

User Capabilities Management function allows to manage and distribute information about the functional capabilities of an AMHS user. And will be particularly useful when the AMHS expands to new functions and/or new message types (e.g. BUFR, security, extended service, etc.), to determine the capabilities of a message recipient before sending the message.

The publication of this information, for retrieval by CCC Operators as an input to the configuration of the AMHS systems in their respective AMHS MDs .User Capabilities management Function enables the publication of this information for direct retrieval by AMHS message originators when generating a message to its possible recipients, potentially at each ATS Message User Agent.

This aspect of the function is more related to directory functionality, and the provision of this service is not a priority of the ATS Messaging Management. The considered AMHS User Capabilities information comprises the direct as well as the indirect AMHS users and includes:

-The AMHS user OR-address and AF-address, as a reference and the following Capability Classes:

- Body-parts (which includes the former capability elements as defined in ICAO Document 9880 like 'maximum deliverable content length' and 'encoded information types – EITS'),

- Address type,

- IPM heading extensions,

- Directory,

- AMHS Security

The considered AMHS User Capabilities information comprises the direct as well as the indirect AMHS users and includes:

1) The AMHS user OR-address and AF-address, as a reference

2) The following Capability Classes:

- Body-parts (which includes the former capability elements as defined in ICAO Document 9880 like 'maximum deliverable content length' and 'encoded information types – EITS'),

- Address type,

- IPM heading extensions,

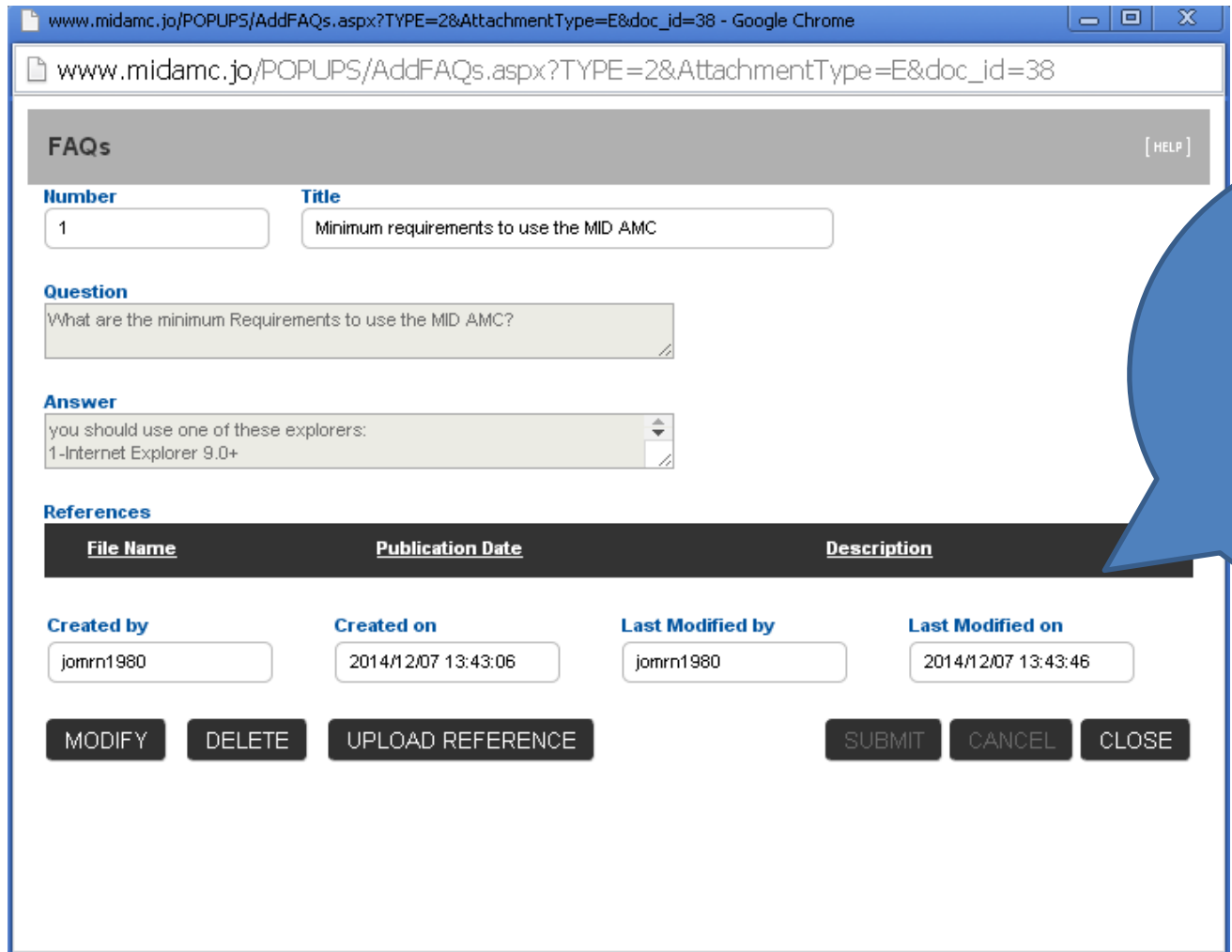- Directory,

- AMHS Security

3.6 MIDAMC Miscellaneous Functions

These functions provide a description of set of miscellaneous functions related to support, reference information and data presentation under specific or transverse formats.

3.6.1 Support Function:

The Support (helpdesk) functions are a set of functions in which informal questions can be asked, and non-formal support obtained.
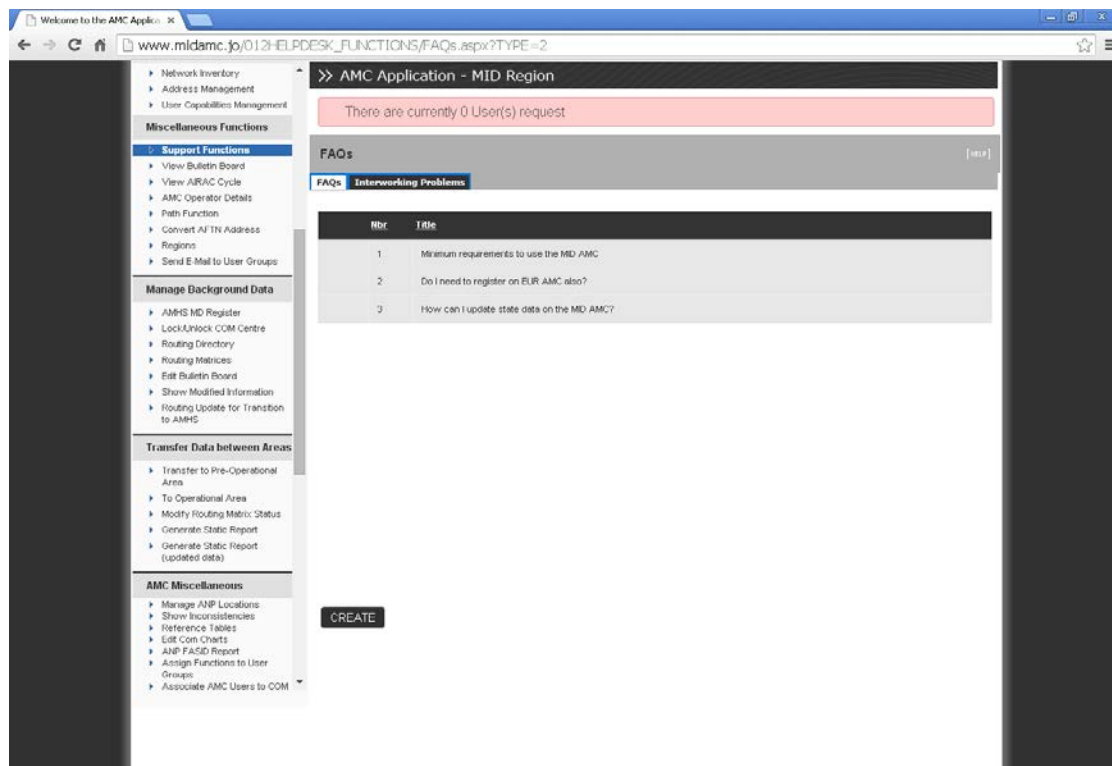
3.6.2 View Bulletin Board

The goal of the "View Bulletin Board" function is to facilitate communication between the MID AMC Operator and other MID AMC users. It enables users to see the bulletin board posted by the MID AMC Operator, to retrieve the e-mail address of the AMC Operator and to automatically create a blank e-mail to that address.
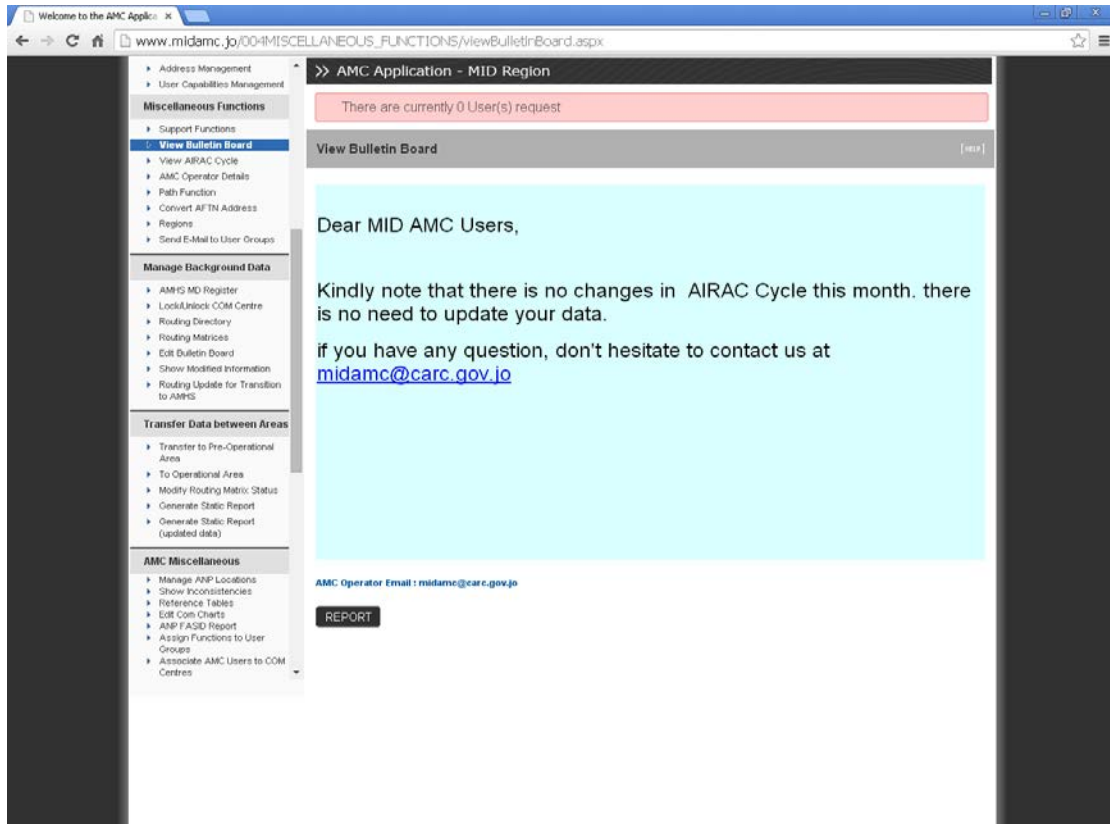
3.6.3 View AIRAC Cycle

This function gives a generic view of the seven phases of the AIRAC cycle with the milestones related to the procedures.

3.6.4 AMC Operator Details

### 3.6.5 Path Function

The "Path Function" calculates end-to-end paths in the integrated network, taking into account the routing in each network technology and the specified routes via gateways (AFTN to AMHS and vice-versa). It is closely related to the Routing management function, as it directly exploits the contents of a given set of routing tables.
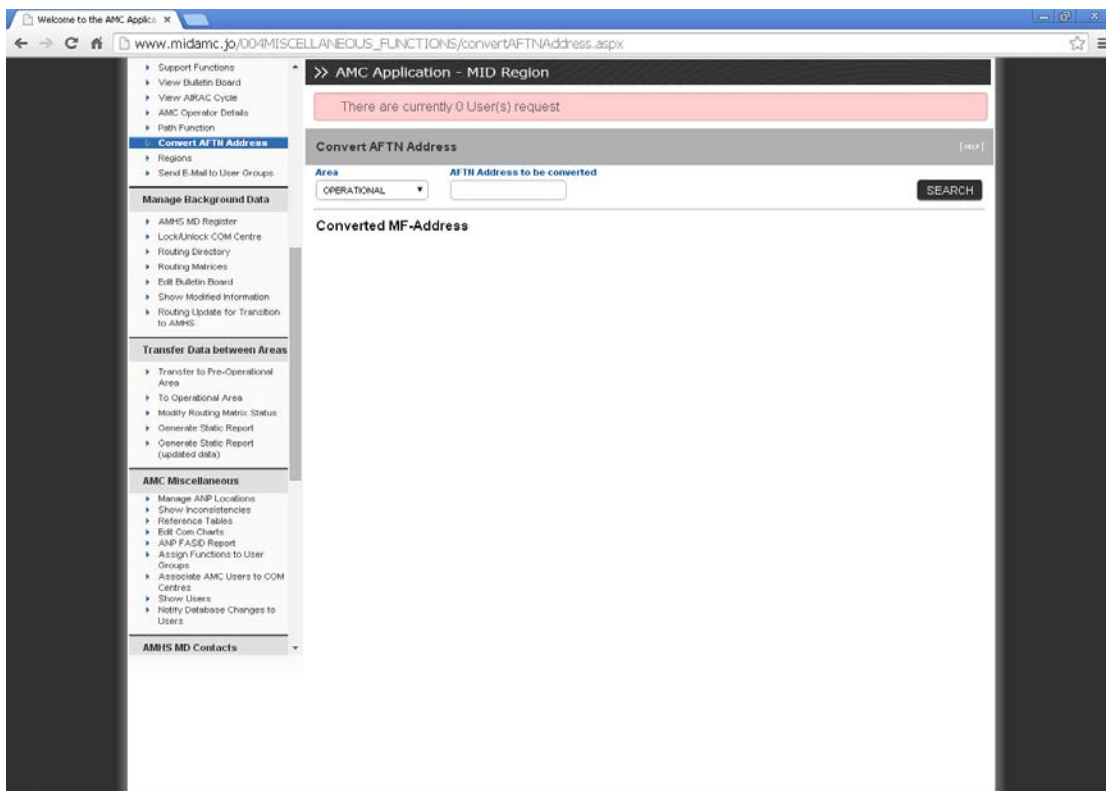
This function enables to see the path between two COM Centres in the network, determined by the combination of the routing tables comprised in the matrix selected in the search area.
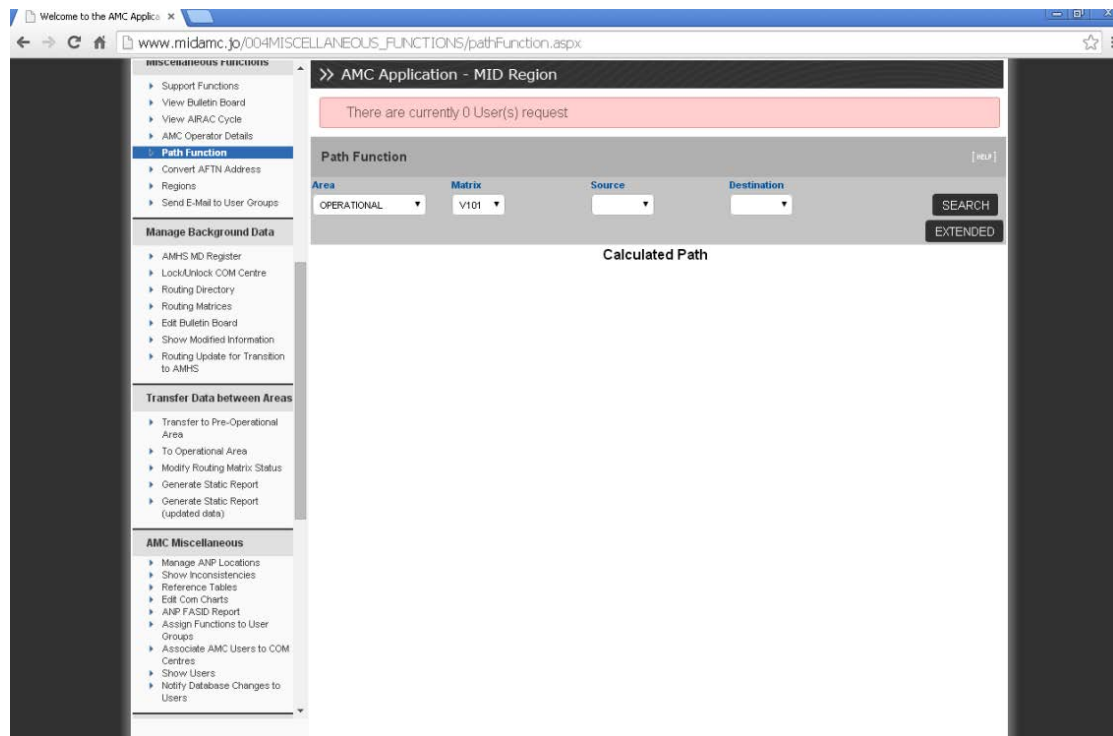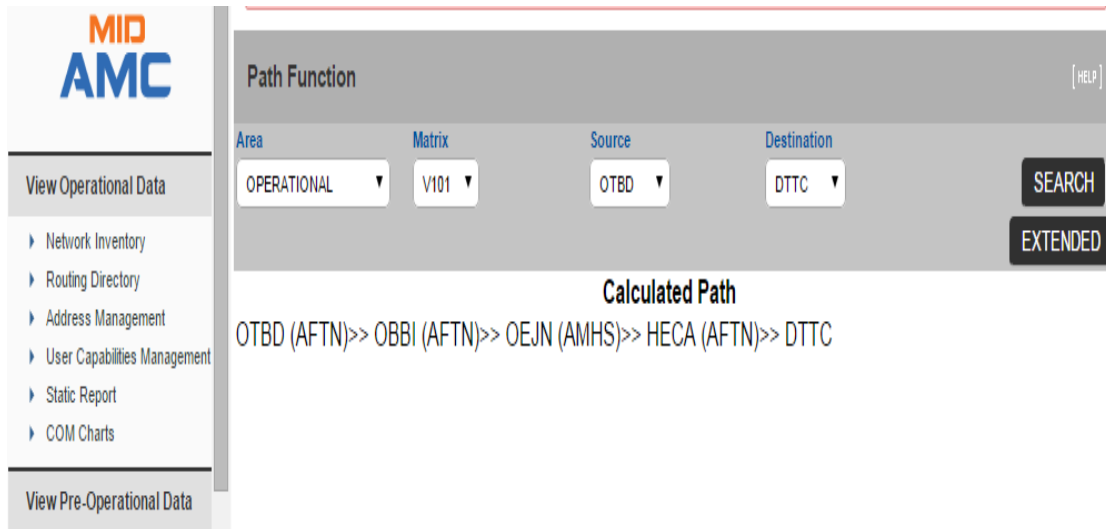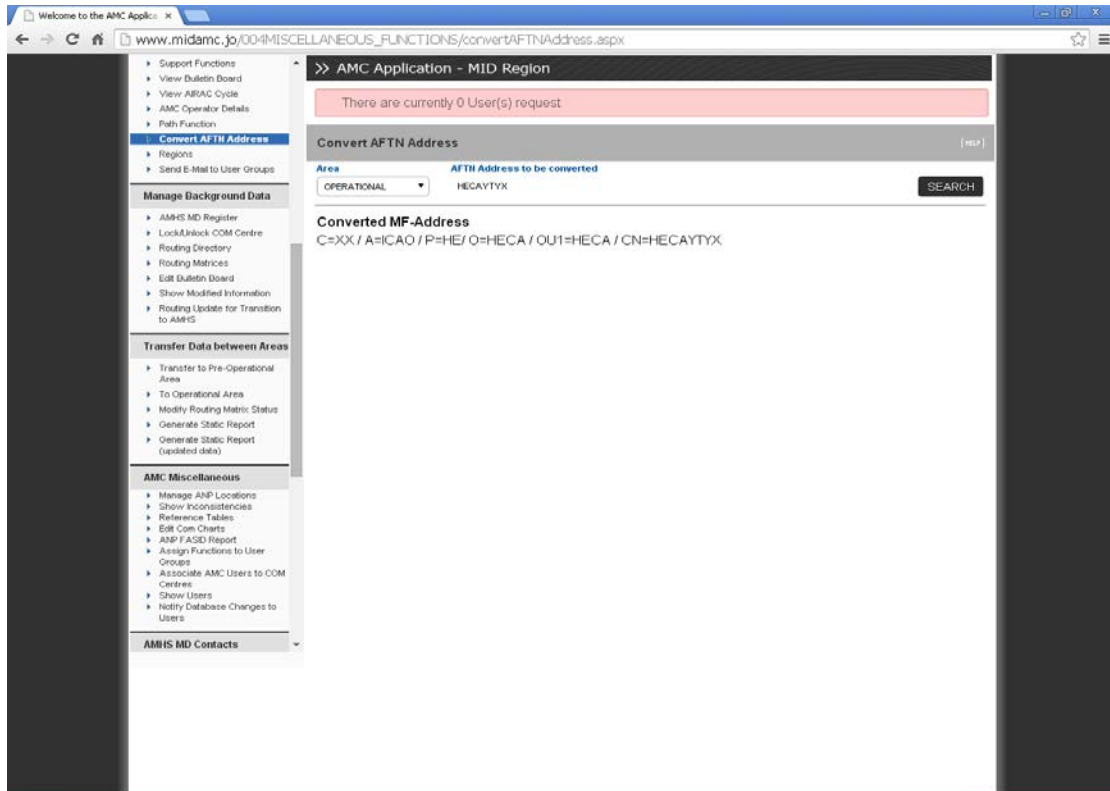
3.6.6 Convert AFTN Address

This function convert AFTN address into AMHS address according to the Addresses tables included at the MIDAMC

3.6.7 Region

The goal of the "Regions" function is to provide general information about each ICAO Region, including postal address of the Regional Office, ICAO persons and contacts and COM Centers associated with each Region.
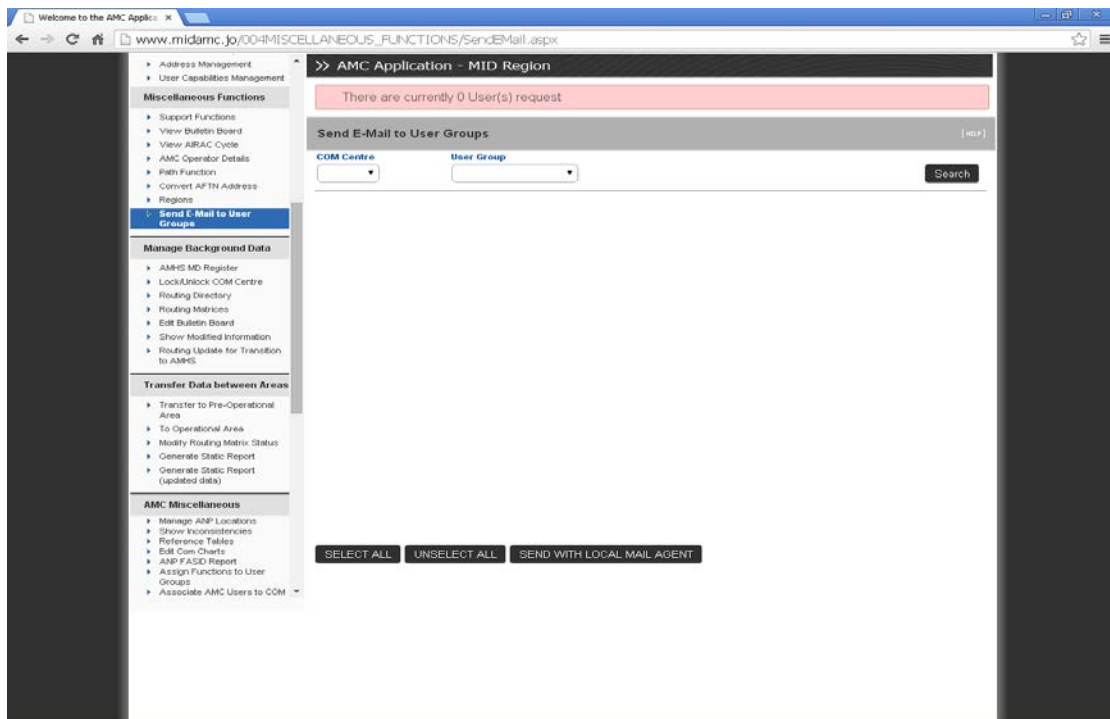
ICAO Six regions :

- AFI (Africa)

- ASIA/PAC (Asia Pacific)

- EUR/NAT (Europe North Atlantic)

- MID (Middle East)

- NAM/CAR (North Atlantic Caribbean)

- SAM (South America)
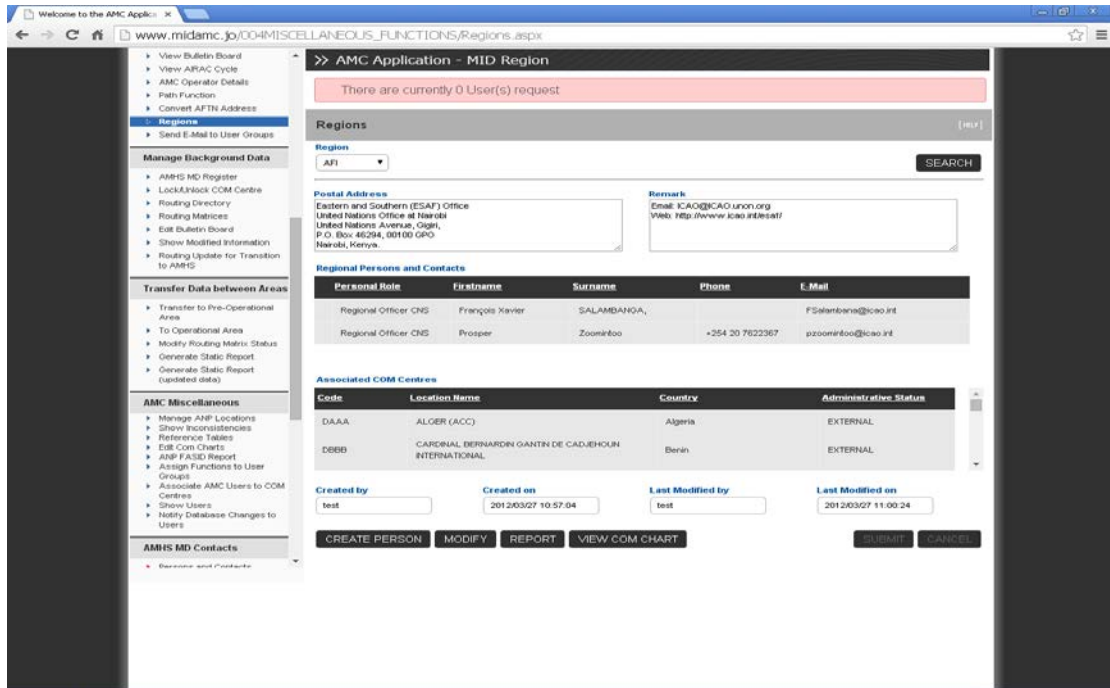
3.6.8 Send email to User Group

This function enables the CCC Operator to create and send an E-Mail to a group of users listed in the table managed by the Persons and Contacts function.
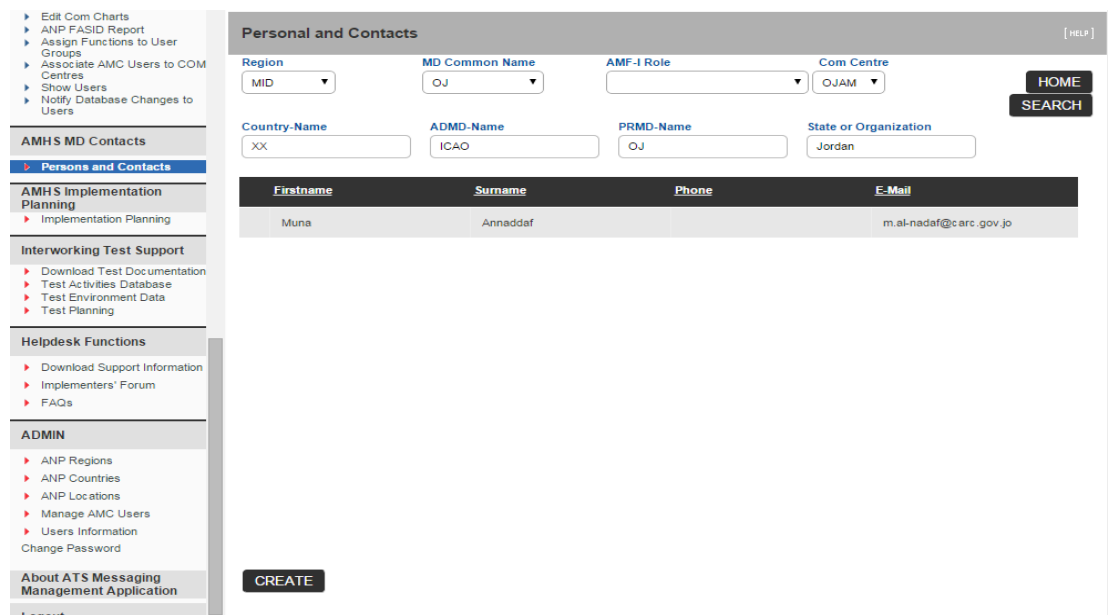
4. AMF-I Functions

AMF-I stands for **A**MHS offline **M**anagement **F**unctions - **I**mplementation Support, the Purpose of these functions are to:

1- To provide support to States that are in the process of implementing AMHS, and do not yet have AMHS in operational use.

2- To be used by States that have already started operational use of AMHS and plan future evolution of their AMHS systems.

4.1 AMHS MD Contact

This function enables to identify Users and contacts involved in AMHS Implementation process in AMHS MD

4.2 AMHS Implementation Plan

This function enables to exchange information about implementation plans of ANSPs

4.3 Helpdesk Function

Helpdesk Function is an interactive community website includes:

- Support Information to be downloaded

- Implementers' forum

- Frequently Asked Questions (FAQs) related to AMHS Implementation, AMHS Operation FAQs under Miscellaneous

References List

R1	ICAO Annex 10 – Aeronautical Telecommunication; Vol.II, Communication Procedure
R2	ICAO doc 9880- Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols, Part II – Ground-Ground Applications - Air Traffic Services Message Handling Services (ATSMHS), First Edition – 2010
R3	EUR Doc 020 – AMHS Manual
R4	AMC Operator Manual, V1.01
R5	AMC User Manual, V 2.0

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