INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

**REPORT OF AERONAUTICAL FIXED SERVICES
AERONAUTICAL TELECOMMUNICATIONS NETWORK
TASK FORCE**

NINTH MEETING

(Cairo, 20-23 October 2003)

The views expressed in this Report should be taken as those of the MIDANPIRG AFS/ATN Task Force Ninth Meeting and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

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

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PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1   The Ninth Meeting of the MIDANPIRG AFS/ATN Task Force was held in the ICAO MID Office in Cairo from 20 to 23 October 2003.

2. OPENING

2.1   Mr. M. Traore, ICAO Regional Officer, Communications, Navigation and Surveillance of ICAO MID Office welcomed all the participants. He stressed that the Task Force should, in its future meetings, concentrate on the Deficiencies and planning implementation of ATN applications in the Middle East Region.

2.2   The Chairman of the Task Force, Mr. Ali Ahmed Mohamed from Bahrain, presided over the meeting.

3. ATTENDANCE

3.1   The meeting was attended by twenty four Experts from seven States and one International Organization. The list of participants and the list of contacts are at page 3-7.

4. LANGUAGE

4.1   The discussions, were conducted in English. Documentation was issued in English.

5. OFFICERS AND SECRETARIAT

5.1   Mr. M. Traore, Regional Officer, Communications, Navigation and Surveillance of ICAO MID Office acted as the Secretary of the meeting.

6. AGENDA

6.1   The following Agenda was adopted:

Item 1:   Adoption of the Provisional Agenda

Item 2:   Review of MIDANPIRG/8 meeting Conclusions and Decisions

Item 3:   Deficiencies related to AFS in the MID Region
- New links implementation
- AFTN Contingency Plan

Item 4:   Review of the MID AFTN/CIDIN Routing Directory

Item 5:   Latest developments in ATN field
- Planning and Implementation considerations

Item 6:   MID VSAT Project

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Item 7:   Any other business.
            - Review of the work of the AFS/ATN Task Force

7. CONCLUSIONS AND DECISIONS – DEFINITION

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

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

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

8. LIST OF CONCLUSIONS AND DECISIONS

DRAFT CONCLUSION 9/1:   USE OF DIGITAL HIGH-SPEED CIRCUITS IN MAIN CENTERS

DRAFT CONCLUSION 9/2:   IMPROVEMENT IN THE KUWAIT-KARACHI CIRCUIT

DRAFT CONCLUSION 9/3:   ADDITION OF BAGHDAD/KUWAIT CIRCUIT TO MID RATIONALIZED AFTN PLAN

DRAFT CONCLUSION 9/4:   ADDITION OF CAIRO/TRIPOLI CIRCUIT TO MID RATIONALIZED AFTN PLAN

DRAFT CONCLUSION 9/5:   PARTICIPATION OF THE MID COM CENTERS IN THE CIDIN MANAGEMENT CENTER (CMC) OF THE EUR/NAT REGION

DRAFT DECISION 9/6:   IMPROVEMENT OF THE WORK OF THE ATN PLANNING GROUP

DRAFT CONCLUSION 9/7:   HARMONIZATION BETWEEN VSAT NETWORKS

DRAFT DECISION 9/8:   REVISED TERMS OF REFERENCE AND WORK PROGRAMME FOR THE AFS/ATN TASK FORCE

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9. LIST OF PARTICIPANTS

NAME	TITLE & ADDRESS

BAHRAIN

Mr. Ali Ahmed Mohamed

Head, Aeronautical Communication
Civil Aviation Affairs
P.O.Box 586 – BAHRAIN
FAX: (973) 321 992
TEL: (973) 321 187
Mobile: (973) 961 1187
E-MAIL: aliahmed@bahrain.gov.bh

Mr. Ebrahim Mohamed Hassan

Senior Aero Communication Ops Specialist
Civil Aviation Affairs
P.O.Box 586 – BAHRAIN
FAX: (973) 321 905
TEL: (973) 321 185 - 4
Mobile: (973) 942 2229
E-mail: Ealqasimi@bahrain.gov.bh

EGYPT

Mr. Raouf Moharam

Data Processing systems General Manager
National Air Navigation Services Company
Ministry of Civil Aviation
Airport Road
Cairo – EGYPT
TEL: (202) 268 5293
Mobile: (2010) 514 3214
E.Mail: raouf.moharam@nansceg.org

Eng. Maged Abu El Ela Nofal

Director of Project Department
National Air Navigation Services Company
Cairo International Airport
Cairo – EGYPT
Tel: (202) 267 4728
Mobile: (2010) 159 6369
E.Mail: maged.nofal@nansceg.org

Mr. Mahmoud Aly Ramadan

Electronic Engineer Computers
National Air Navigation Services Company
Ministry of Civil Aviation
Airport Road
Cairo – EGYPT
TEL: (202) 418 2964
Mobile: (2010) 654 1506
E.Mail: xramadan@hotmail.com

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NAME	TITLE & ADDRESS
Mr. Mohamed Ismail El Kady	Director General Research & Development National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Fax: (202) 268 0627 Tel: (202) 265 7849 Mobile: (2010) 650 4438 E.Mail: mielkady@hotmail.com mohamed.elkady@nansceg.org
Mr. Galal Ibrahim	Satellite Manager National Air Navigation Services Company Ministry of Civil Aviation Airport Road Cairo – EGYPT TEL: (202) 268 5279 Mobile: (2012) 717 3348 E.Mail: galal.ibrahim@nansceg.org
Mr. Mohamed Desouky	Director of ATC Tech. National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Tel: (202) 265 7883
Mr. Ismail Khalil	Director Assistance National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Fax: (202) 268 0629 Tel: (202) 637 5639 Mobile: (2010) 650 4438
Mr. Attia El Sayed Attia	Inspector Operation National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Mobile: (2010) 566 1848
Mr. Ragi Shafik Nashed	Air Traffic Controller National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Tel: (202) 267 7179

MIDANPIRG AFS/ATN TF/9
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NAME	TITLE & ADDRESS
Mr. Ahmed Maher Khalifa	Radio Officer National Air Navigation Services Company Cairo International Airport Cairo – EGYPT Fax: (202) 268 0629 Tel: (202) 637 5639 Mobile: (2010) 335 4823
Mr. El Sayed Ahmed Tahoun	Mechanical Engineer Department of International Affairs National Air Navigation Services Company Ministry of Civil Aviation Cairo International Airport Cairo – EGYPT Mobile: (2010) 604 3616
IRAQ	
Mr. Abdul Razzak Al-Janabi	Chief Engineer/Training Manager Civil Aviation Authority Baghdad International Airport Baghdad – IRAQ Mobile: (1-914) 360 7793
Mr. Jafar Abed Al Rwayid	AFTN Specialist Civil Aviation Authority Baghdad International Airport Baghdad – IRAQ Mobile: (1-914) 360 7793
JORDAN	
Mr. Marwan Ahmad Badawi	Head of AFTN Civil Aviation Authority P.O.Box 7547 Amman – JORDAN FAX: (962-6) 489 1653 TEL: (962-6) 487 5102 E.Mail: alriahdlaeth@yahoo.com
Mr. Nader Ahmad Kanaan	Chief of AFTN Civil Aviation Authority P.O.Box 7547 Amman – JORDAN FAX: (962-6) 489 1653 TEL: (962-6) 489 2282 E.Mail: aftn-am@yahoo.com

MIDANPIRG AFS/ATN TF/9
History of the Meeting

NAME	TITLE & ADDRESS
Mr. Abdullah Nahar Al-Tamimi	Chief AFTN Training Division Civil Aviation Authority P.O.Box 7547 Amman – JORDAN FAX: (962-6) 489 1653 TEL: (962-6) 489 2282 Mobile: (962-79) 559 9569 E.Mail: abd_tamimi@yahoo.com

KUWAIT

Eng. Fozan M. Al-Fozan	Deputy Director General of Civil Aviation for Navigational Equipment Affairs P.O. 17 Safat, 13001 KUWAIT FAX: (965) 431 9232 TEL: (965) 476 0421 E.MAIL: cvnedd@qualitynet.net
Mr. Mohamad A. Al-Asqa	Adviser, Air Navigation Directorate General of Civil Aviation Kuwait International Airport P.O.Box 17 Safat, 13001 KUWAIT FAX: (965) 472 1286 TEL: (965) 474 5020
Mr. Dawood A. Al-Jarrah	First Communication, maintenance technician Civil Aviation for Navigational Equipment Affairs P.O. 17 Safat, 13001 KUWAIT FAX: (965) 431 9232 TEL: (965) 476 0421 Mobile: (965) 908 8511 E.Mail: daj@Q8boat.com

OMAN

Mr. Ali bin Humaid Al-Adawi	Director Air Navigation Services Seeb International Airport P.O. Box 1 Code 111 Muscat, SULTANATE OF OMAN FAX: (968) 519 930 TEL: (968) 519 699 Mobile: (968) 943 3003 E-MAIL: aliaadawi@dgcam.gov.om

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NAME	TITLE & ADDRESS

QATAR

Mr. Ibrahim Abdul Qader

Vice Chairmain Civil Aviaition Authority
Civil Aviation Authority
P.O.Box 3000
Doha – QATAR
Fax: (974) 462 2620
Tel: (974) 465 6565
Mobile: (974) 551 3619
E.Mail: casafety@qatar.net.qa

ORGANIZATIONS

EUROCONTROL

Mr. Yuksel Eyuboglu

Project Manager
EUROCONTROL – SD-ESC
Rue de la Fusée, 96
Brussels -1030 Belgium
FAX: (32-2) 729 9086
Tel: (32-2) 729 3632
E.Mail: yuksel.eyuboglu@eurocontrol.int

MIDANPIRG AFS/ATN TF/9
Report on Agenda Item 1

REPORT ON AGENDA ITEM 1: **ADOPTION OF THE PROVISIONAL AGENDA**

1.1 Reviewing the Provisional Agenda presented by the Secretariat, the meeting estimated that the issue on the MID VSAT project was too important and should be processed in a separate agenda item. In this regard, the meeting adopted the agenda as shown in the History of the Meeting (Part I of this Report).

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REPORT ON AGENDA ITEM 2:   **REVIEW OF MIDANPIRG/8 CONCLUSIONS AND DECISIONS**

2.1   The Conclusions and Decisions adopted by the MIDANPIRG/8 meeting (Cairo, 07-11 September 2003) related to the Aeronautical Fixed Services are shown in **Appendix 2A** to the report on Agenda Item 2.

2.2   The meeting agreed that the follow-up on:

   a)   Conclusion 8/41: *Development of MID regional AFTN Contingency Plan* and Conclusion 8/46: *Need to monitor AFTN circuit occupancy* will be reviewed under Agenda Item 3: Deficiencies related to AFS in the MID Region.

   b)   Conclusion 8/43: *Development of the MID Regional ATN Planning document* and Conclusion 8/44: *ATN Planning Group* will be reviewed under Agenda Item5: Latest Developments in ATN field.

   c)   Conclusion 8/39: *MID VSAT Feasibility Study,* will be reviewed under Agenda Item 6: MID VSAT Project.

   d)   Decision 8/45: *Table of VHF Coverage in the MID Region* will be addressed to the forthcoming CNS/MET meeting.

   e)   Conclusion 8/40: *Improvement in the Table CNS1 of the MID FASID* and Conclusion 8/42: *Upgrade of existing communication infrastructures* will be carried out after the ICAO Council adopts the MIDANPIRG/8 meeting report.

MIDANPIRG/8 CONCLUSIONS AND DECISIONS
RELATED TO AFS/ATN TF MEETING

CONCLUSION 8/39: **MID VSAT FEASIBILITY STUDY**

That,

a) *MID States support and contribute to the MID VSAT feasibility study;*

b) *Civil Aviation Authorities shall obtain timely the necessary authorization from their respective National Telecommunications Regulatory Authorities in order to install and operate VSAT equipments.*

CONCLUSION 8/40: *IMPROVEMENT IN THE TABLE CNS1 OF THE MID FASID*

*That, the current table CNS1 and explanatory note be deleted from the MID FASID and be replaced by the new tabular form and explanatory note as indicated at **Appendix 6T** to report on Agenda Item 6.*

CONCLUSION 8/41: *DEVELOPMENT OF MID REGIONAL AFTN CONTINGENCY PLAN*

That, the MID Regional AFTN Contingency Plan be developed in order to ensure the continuity of AFTN in case of catastrophic failure at any point. States should provide to the ICAO MID Regional Office all the necessary information that would facilitate the development of the plan.

CONCLUSION 8/42: *UPGRADE OF EXISTING COMMUNICATION INFRASTRUCTURES*

That,

a) *the States of the MID Region be encouraged, to deploy digital technology and high-speed links, as part of overall improvement of current ground-to-ground communications and provision of an infrastructure that would facilitate the transition to ATN;*

b) *the ground-ground communications chapter of the MID FASID be amended in a view of taking into account the use of these new improvements in AFS communications.*

DECISION 8/43: *DEVELOPMENT OF THE MID REGIONAL ATN PLANNING DOCUMENT*

*That, the MID Regional ATN Planning Document (**Appendix 6U**) to be developed in order to provide guidance and information necessary for ATN transition in the Region.*

DECISION 8/44:   **ATN PLANNING GROUP**

That,

a)   *the ground-to-ground ATN Study Group established by Decision 6/2 of the AFS/ATN TF/6 be replaced by a new ATN Planning Group consisting of the Experts from: Bahrain, Egypt, Iran, Kuwait, Oman, Pakistan, Saudi Arabia, UAE, Yemen, IATA and ICAO.*

b)   *the new ATN Planning Group be tasked, in developing the draft of the MID Regional ATN Planning Document, to emphasize on the economical and operational justifications which are specific to the Region.*

DECISION 8/45:   **TABLE OF VHF COVERAGE IN THE MID REGION**

That, the table of VHF coverage attached in **Appendix 6V** *to the report on Agenda Item 6 be adopted*

CONCLUSION 8/46:   **NEED TO MONITOR AFTN CIRCUIT OCCUPANCY**

That, the concerned States closely monitor the occupancy of the following circuits and coordinate upgrading of the circuits capacity, in accordance with the LIM MID RAN meeting Conclusion 6/4

1. Abu Dhabi / Muscat	*5. Beirut / Kuwait*
2. Amman / Cairo	*6. Cairo / Nairobi*
3. Amman / Damascus	*7. Jeddah / Addis Ababa*
4. Bahrain / Singapore	*8. Muscat / Mumbai*

REPORT ON AGENDA ITEM 3:   DEFICIENCIES RELATED TO AFS IN THE MID REGION

3.1   Under this Agenda Item, the meeting noted the use of high-speed circuits based on digital technology in the MID AFTN during the last months:

- Amman/Ben Gurion
- Baghdad/Kuwait
- Bahrain/Kuwait
- Bahrain/Doha
- Bahrain/Abu Dhabi
- Bahrain/Muscat
- Cairo/Jeddah
- Cairo/Asmara
- Kuwait/Karachi

3.2   The meeting was presented with a working paper by the Kingdom of Bahrain on the use of high speed links based on digital technology which would eliminate most of the deficiencies associated with the low speed circuits, especially between the Main Centres and will positively affect the transit time of the AFTN messages. This is in addition to the problems associated with the analogue voice communications links serving the ATS direct speech circuits. The high speed aggregate circuits also allow for establishment of additional data links for the exchange of aeronautical data (eg. RADAR data).

3.3   The meeting also took into account the importance of the provision of alternate links for each circuit which should be implemented as soon as possible to ensure a smooth migration to the ATN. The meeting therefore developed the following Draft Conclusion:

DRAFT CONCLUSION 9/1:   USE OF DIGITAL HIGH-SPEED CIRCUITS BETWEEN MAIN CENTERS

That, the main Centers of the MID AFTN are requested to use digital high-speed links in their circuits with other main centers in order to eliminate deficiencies related to the low speed circuits and to facilitate the migration to the ATN in the MID Region.

3.4   Based on the above, the meeting proposed amendment to the ground-to-ground chapter of MID FASID to reflect the need for the implementation of digital circuits for fixed communications. The proposed amendment is in **Appendix 3A** to the Report on Agenda Item 3.

3.5   The meeting was unanimous that significant improvements were carried out in the majority of circuits linked to Bahrain, Jeddah and Kuwait Centers. In this regard the link between Kuwait and Karachi is operating satisfactory on 2.4K. The latter which supports one of the entry-exit points between MID and Asia Pac Region will facilitate the traffic with Karachi and Kabul. Accordingly, MID centers are requested to route via Kuwait Center all traffic to destination to Karachi (OP) and Kabul (OA) in a first stage. Other destinations to the ASIA PAC Region could be added to this routing based on agreement between Kuwait and Karachi. Therefore, the deletion of bilateral circuit between Muscat and Karachi could be envisaged in the future.

3.6　　　　　Based on the above, the meeting agreed on the following conclusion:

DRAFT CONCLUSION 9/2:　　　**UPGRADE OF KUWAIT-KARACHI CIRCUIT**

> *That, based on the upgrade of Kuwait-Karachi circuit to 2.4K, the MID COM centers are requested to route via Kuwait center all traffic to Karachi (OP), Kabul (OA) and other destinations in ASIA PAC Region as appropriate.*

3.7　　　　　The meeting was briefed with a working paper presented by Jordan on the upgrading to 1.2K of the tributary circuit between Amman and Ben Gurion. The meeting was in a view that, in accordance with the MID Rationalized AFTN Plan, the main circuit Amman-Beirut should be implemented and the circuit Amman-Cairo should use digital high-speed link.

3.8　　　　　The meeting was also briefed with a working paper from the Kingdom of Saudi Arabia on the upgrading of link Cairo/Jeddah to CIDIN and further upgrades are expected on the following circuits: Bahrain/Jeddah, Jeddah/Nicosia and Beirut/Jeddah.

3.9　　　　　The meeting agreed that the new VSAT circuit which was established between Baghdad and Kuwait for operational reasons be included in the MID Rationalized AFTN Plan as a tributary circuit. Therefore, the meeting agreed on the following Draft Conclusion:

DRAFT CONCLUSION 9/3:　　　**ADDITION OF BAGHDAD/KUWAIT CIRCUIT TO MID RATIONALIZED AFTN PLAN**

> *That, the MID Rationalized AFTN Plan be amended to include the new circuit between Baghdad and Kuwait as a tributary circuit.*

3.10　　　　The meeting also noted that APIRG 14 Conclusion regarding the inclusion of the Tripoli- Cairo in the AFI Rationalized AFTN Plan has also an impact on the MID Rationalized AFTN Plan. The meeting therefore agreed on the following Draft Conclusion:

DRAFT CONCLUSION 9/4:　　　**ADDITION OF CAIRO/TRIPOLI CIRCUIT TO MID RATIONALIZED   AFTN PLAN**

> *That, the MID rationalized AFTN Plan be amended to include the existing circuit between Cairo and Tripoli as a tributary circuit.*

3.11　　　　The meeting requested that the above amendments be included in the MID FASID as shown in the **Appendices 3B** and **3C** to the Report on Agenda Item 3. Furthermore, the meeting agreed to harmonize the presentation of the CNS part of the MID FASID with that of the other Regions.

3.12　　　　Though the survey on circuit loading statistics gave substantial information, the meeting agreed that the main centers continue to monitor the occupancy of AFTN circuits in accordance with Conclusion 8/43.

3.13　　　　The meeting developed the first Draft Version of the Contingency Plan Document for the AFTN in the Region which is in **Appendix 3D** to the Report on Agenda Item 3. The meeting further agreed that for the development of the second Draft Version of the Document, necessary information should be provided by the States according to MIDANPIRG Conclusion 8/41. In this regard, the ICAO Office will send to the States the appropriate tables to be filled in.

Part IV

COMMUNICATIONS - NAVIGATION - SURVEILLANCE (CNS)

INTRODUCTION

1. The standards, Recommended Practices and Procedures to be applied are as listed in Part IV - CNS of the basic MID ANP. The material in this Part complements that contained in Part I - BORPC of the MID ANP and should be taken into consideration in the overall planning processes for the MID Region.

2. This Part contains a detailed description/list of the facilities and/or services to be provided to fulfil the basic requirements of the Plan and are as agreed between the provider and user States concerned. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. This element of the FASID, in conjunction with the MID Basic ANP, is kept under constant review by the MIDANPIRG in accordance with its schedule of management, in consultation with user and provider States and with the assistance of the ICAO Middle East Regional Office, Cairo.

3. States concerned should take urgent action to implement the main COM centres and trunk circuits of the new rationalized AFTN plan described in FASID Table CNS 1, and implement/promulgate, as soon as practicable, the tributary centres and circuits of the new rationalized AFTN plan in co-ordination with the States responsible for the corresponding main COM centres (MID/3 Rec. 5/37LIM MID (COM/MET/RAC Rec 6/6).

4. States are encouraged to deploy digital and high-speed links, as part of overall improvement of current ground-to-ground communications and provision of an infrastructure that would facilitate the transition to ATN (MID/8 Con.8/42).

5. States, as a matter of urgency should take action to implement the ATS direct speech plan. (FASID Table CNS 1C).

AERONAUTICAL FIXED SERVICE (AFS)

(FASID Tables CNS-1, 1A,1B and 1C, Charts CNS-1, 2 and 3)

Table CNS 1- Rationalized AFTN Plan

Chart CNS 1- Rationalized AFTN Centres and Circuits

Table CNS 1A - Designated AFTN Circuits required for international operations that should be retained until the Rationalized Plan in table CNS 1 is implemented.

The guidance material for ATN transition adopted by MIDANPIRG is a living document which provides technical guidance for regional transition planning, primarily focusing on ATN initial ground-to-ground application (MID/8 Dec. 8/43).

Table CNS 1B - ATN Plan

Table CNS 1C - ATS speech circuits plan

Chart CNS 2 - ATS direct speech circuits

Chart CNS 3 - Coverage of the Satellite Distribution System for WAFS Products (SADIS)

AERONAUTICAL MOBILE SERVICE (AMS) AND AERONAUTICAL MOBILE SATELLITE SERVICE (AMSS)

(FASID Table CNS-2, Chart CNS-4)

Table CNS 2 - Aeronautical mobile service

Appendix A to table CNS 2 indicates the geographical separation for co-channel VHF assignments

Appendix B to table CNS 2 contains the VHF frequency utilization plan

Table CNS 2A indicates the form of harmful interference report

Table CNS 2B – VHF Coverage in the Region

Chart CNS 4 HF en route radiotelephony network

Appendix to Chart CNS 4 indicates the ITU allotment area

AERONAUTICAL RADIO NAVIGATION SERVICE

(FASID Table CNS 3, Chart CNS 5 and 6)

Table CNS 3 - Table of radio navigation aids

Appendix to table CNS 3 shows the geographic separation criteria for VOR, VOR/DME and ILS installations

Chart CNS 5 - En-route radionavigation aids

Chart CNS 6 - Aids to final approach and landing

SURVEILLANCE SERVICE

(FASID Table CNS 4, chart CNS 7)

Table CNS 4 - Surveillance Systems

Chart CNS 7 - Radar facilities

MIDANPIRG AFS/ATN TF/9
Appendix 3B to the Report on Agenda Item 3

4-CNS 1-4   **MID FASID – CNS1**

Table CNS 1 – AFTN Plan

State/Station	Cat	Current				Planned				Target date of implementation	Remarks
		Type	Signaling Speed	Protocol	Code	Type	Signaling Speed	Protocol	Code		
1	2	3	4	5	6	7	8	9	10	11	12
BAHRAIN											
BAHRAIN											
ABU DHABI	T		9600 bps	CIDIN	IA-5						
BEIRUT	M		9600 bps	CIDIN	IA-5						
DOHA	T		200 baud	None	ITA-2						
JEDDAH	M		200 baud	None	ITA-2		9600 bps			2003	
KABUL	T		-								
KUWAIT	M		9600 bps	None	ITA-2						
MUSCAT/SEEB	M		300 baud	None	IA-5						
SINGAPORE	M	LTT	200 baud	None	IA-5		2400 bps			2003	
TEHRAN	M		300 baud	None	IA-5						

State/Station	Cat	Current				Planned				Target date of implementation	Remarks
		Type	Signaling Speed	Protocol	Code	Type	Signaling Speed	Protocol	Code		
1	2	3	4	5	6	7	8	9	10	11	12
EGYPT											
CAIRO											
AMMAN	M		50 baud	None	ITA-2		100 baud			2003	
ATHENS	M		9600 bps CIDIN	CIDIN	IA-5						
BEN GURION	T		50 baud	None	ITA-2						
BEIRUT	M		9600 bps CIDIN	CIDIN	IA-5						
JEDDAH	M		9600 bps CIDIN	CIDIN	IA-5						
KHARTOUM	T		baud	None	ITA-2					2003	
NAIROBI	M		50 baud	None	ITA-2		2400 bps				
TUNIS	M		100 baud	None	ITA-2		1200 bps				
IRAN											
TEHRAN											
BAHRAIN	M		300 baud	None	IA-5						
KABUL	T		-								
KUWAIT	M		100 baud	None	ITA-2		300 baud			2003	
JORDAN											
AMMAN											
BAGHDAD	T		50 baud	None	ITA-2						
BEIRUT	M		-								
BEN GURION	T		1.2 K								
CAIRO	M		50 baud	None	ITA-2						
DAMASCUS	T		50 baud	none	ITA-2						
JERUSALEM	S										

State/Station	Cat	Current				Planned				Target date of implementation	Remarks
		Type	Signaling Speed	Protocol	Code	Type	Signaling Speed	Protocol	Code		
1	2	3	4	5	6	7	8	9	10	11	12
KUWAIT											
KUWAIT											
BAHRAIN	M		9600 bps	None							
BEIRUT	M		100 baud	None			200 baud				
DOHA	T		100 baud	None							
(EUR)	-		100 baud	None							
KARACHI	M		2.4 K	None							
TEHRAN	M		100 baud	None							
LEBANON											
BEIRUT											
AMMAN	M		-								
BAGHDAD	T		50 baud	None	ITA-2						
BAHRAIN	M		9600 bps	CIDIN	IA-5						
CAIRO	M		9600 bps	CIDIN	IA-5						
DAMASCUS	T		100 baud	None	ITA-2						
JEDDAH	M		100 baud	None	ITA-2		200 baud				
KUWAIT	M		100 baud	None	ITA-2		300 baud				
NICOSIA	M		9600 bps	CICIN							
OMAN											
MUSCAT/SEEB											
ABU DHABI	T		50 baud	None			200 baud				
BAHRAIN	M		300 baud	None							
MUMBAI	M		300 baud	None			9600 bps	X25			
JEDDAH	M		300 baud	None							
SANA'A	T		100 baud	None							

State/Station	Cat	Current				Planned				Target date of implementation	Remarks
		Type	Signaling Speed	Protocol	Code	Type	Signaling Speed	Protocol	Code		
1	2	3	4	5	6	7	8	9	10	11	12
SAUDI ARABIA JEDDAH ADDIS-ABABA BAHRAIN BEIRUT CAIRO MUSCAT/SEEB SANA'A	M M M M M T		50 baud 200 baud 100 baud 9600 bps 300 baud 100 baud	None None None CIDIN None None			9600 bps 300 baud			2003 2003	

CNS1 - Rationalized AFTN Plan for the MID Region

LIII
OIII
OAKB
OMAE
OKBK
OPKC
ORBI
OSDI
OTBD
OBBI
LCNC
WSSS
OLBA
OJAM
OOMS
LLBG
VABB
HECA
OEJD
OYSN
LGGG
HAAB
HLLT
DTTC
HKNA
HSSS

LEGEND
Main AFTN COM Center ▪
Tributary AFTN Center ●
Main Circuit ━━━
Tributary Circuit ───
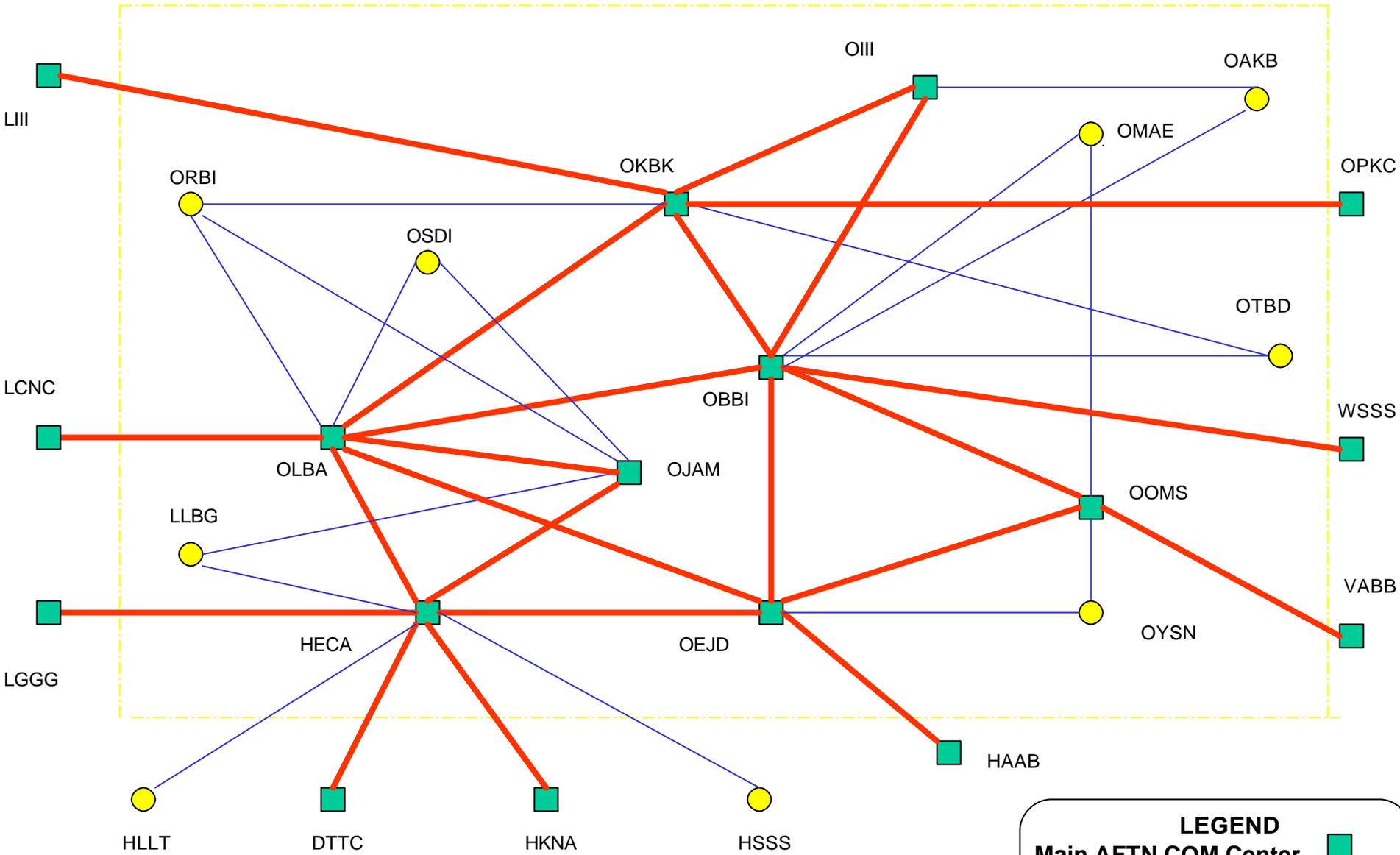
Note: This chart does not illustrate the status of implementation

- DRAFT-

MID REGIONAL AFTN CONTINGENCY PLAN

Document Reference:	MIDANPIRG AFS/ATN - TF
Author:	AFS/ATN Task Force
Revision Number:	Version 0.1 / 2003
Date:	October 2003

1. INTRODUCTION

1.1 The MIDANPIRG has included in the AFS/ATN Task Force work programme a task to study and develop a Contingency Plan for the AFTN in case of major failure. The AFS/ATN Task Force at its eight meeting agreed to develop the document based on multiple-failure Scenario of which to be assessed in order to work-out the recovery measures. The contingency Plan Document concerns only the AFTN part of the Aeronautical Fixed Services.

1.2 The Document is divided into ( ) Sections and each section describes specific scenarios of failures with associated Contingency Plan.

Appendix (A) contains the middle East AFTN Rationalized Plan
Appendix (B) contains the communication Chart showing the existing AFTN Circuit
Appendix (C) contains the MID AFTN Routing Directory
Appendix (D) contains list of equipments systems and back-up services at each center
Appendix (E) contains definition/glossary of abbreviations and terms

2. GENERAL

2.1 AFTN Regional Contingency Plan

2.1.1 A contingency plan for resumption of AFTN service should describe how the Region plans to respond to failures that disrupt its normal operations. Disruptions could be minor or they may include events where the function of the AFTN centres or communication services cannot be performed and may not be performed for an extended period of time. This in turn would disrupt the AFTN communications within the region and further extended outside the region and would have impact on the safety of air traffic. Therefore, with the proper plan in place, the region should become confident that the AFTN communication would continue when unforeseen failures cause serious interruption on the AFTN services.

2.2 AFTN Service Modes of Failure

2.2.1 The Aeronautical Fixed Telecommunications Network (AFTN) has two levels of responsibilities both national and international. There are three important elements that would accomplish the task of a message being transmitted from the originator to the addresses as follows:

      a. Automated Message Switching System

      b. Terrestrial link between the airports and the PTT's/other local links

      c. International circuits

2.2.2 Failure of any element of the above would result in an outage and therefore the communications centre whether an entry/exit point, main or tributary AFTN centers would be isolated from the network and hence the AFTN message traffic flow is affected.

3D-2

2.3   **Identification of the impact of the failure modes**

2.3.1   **Failure of the Automated Message Switching System**

2.3.1.1   Total failure of the Message Switching System. (Entry/Exit and Main Centres): if the message switching system becomes subject to a major failure at one of the Entry/Exit points or one of the Main Centres, the impact would be:

- absence of the centre from the network
- inability to transmit originated messages
- inability to receive addressed messages
- inability to route/relay intra-regional traffic
- inability to route/relay inter-regional traffic

2.3.1.2   Total failure of the Message Switching System (Tributary Stations). This failure would have less risk than the above since the tributary stations normally have less responsibilities than the centres specified above. Therefore the impact would be reduced to:

- absence of the station from the network
- inability to transmit originated messages
- inability to receive addressed messages

2.3.1.3   In both cases above, it is considered that the terrestrial links between the airports and local PTT's, and the international circuits are operating normal.

2.3.2   **Failure of terrestrial links between the AFTN Communication centres at the airports and the local PTT.**

2.3.2.1   The terrestrial links between the airports and the local PTT's may have different configurations in different countries, therefore, the impact may also differ as below:

- A configuration, which is based on, the aggregate landline link with multiplexing technique which is normally common and cost effective. The loss of the aggregate link may result in the isolation of AFTN centre, whether Entry/Exit, Main or Tributary. The impact would be the same as described above. The centres should apply the contingency plan as above. However, The provision of back-up facilities would mitigate the risk of loss of communication. This needs to be considered, as States should arrange for the provision of the back-up communication links and to activate the links in case of the failure of the main links.

- Communication links between the PTT's and the airports that would have different form than that specified in (1) above.

2.3.2.2   In this case, it is considered that the automatic message switching system and the international circuits at the PTT's are operating normal.

3D-3

2.3.3   **Failure of international circuits between the centres**

This type of failure would have different scenarios itself as follows:

- Failure of international circuits between entry/exit points, intra-regional
- Failure of international circuits between entry/exit points, inter-regional
- Failure of international circuits between entry/exit points and main centres
- Failure of international circuits between entry/exit points and tributary stations
- Failure of international circuits between main centres and tributary stations

2.3.3.1   The impact of the above failures would be that States, may loose a single connection and in this case a diversion procedure would apply if available and as specified in the MID regional routing directory. This is considered to be a normal outage, which occurs, and a normal practice is applied. However, failure of main cables, satellite links that serve a group of States for a long period of times, especially between entry/exit points and main centres would have a major impact on the flow of the AFTN traffic and in turn affects the safety of air traffic.

2.3.3.2   While assessing the impact of the above failures, it should be considered that the messages switching systems and the terrestrial links between the local PTT's and the airports are operating normal.

3D-4

SECTION 1

MIDDLE EAST AFTN INTER-REGIONAL ENTRY/EXIT POINTS

There are three interfaces to the MID Region

-      interface   A   (MID - EUR)
-      interface   B   (MID - AFI)
-      interface   C   (MID - ASIA/PAC)

1- INTERFACE (A) MID - EUR

The entry/exit points between the Middle East and Europe are: Cairo/Athens, Beirut/Nicosia (CIDIN links) and Kuwait/Rome (AFTN link).

- In the event of failure of any of entry/exit points, the traffic to EUR should be routed via the remaining entry/exit points.

- In the event of failures of all entry/exit points, the traffic to EUR should be routed via any available bilateral circuit between MID and EUR regions (Bahrain/Nicosia, Kuwait/Rome and Jeddah/Nicosia AFTN circuits).

2- INTERFACE (B) MID - AFI

The entry/exit points between the Middle East and AFI Regions are: Cairo/Nairobi, Cairo/Tunis and Jeddah/Addis-Ababa.

- In the event of failure of any of entry/exit points, the traffic to AFI should be routed via the remaining entry/exit points.

- In the event of failures of all entry/exit points, the traffic to AFI should be routed via the EUR gateways entry/exit points with the northern periphery of the AFI region (Rome, Paris and Madrid) to disseminate traffic to D, F, and G areas according to the proposal agreed by the AFSG/2 (Paris 19-23 April 1999)

3- INTERFACE (C) MID-ASIA/PAC

The entry/exit points between the Middle East and ASIA-PAC Regions are: Bahrain/Singapore, Kuwait/Karachi and Muscat/Mumbai.

- In the event of failure of any of entry/exit points, the traffic to ASIA/PAC should be routed via the remaining entry/exit points.

- In the event of failures of all entry/exit points, the traffic to ASIA-PAC should be routed via any available bilateral circuit between MID and ASIA-PAC regions (Muscat/Karachi and Tehran/Karachi AFTN circuits)

3D-5

SECTION 2

MIDDLE EAST AFTN INTER-REGIONAL AFTN SERVICE

Communication between main centres

The following should be designated main centres that routing the AFTN messages within the Middle East Region:

- Bahrain
- Beirut
- Cairo
- Jeddah
- Kuwait
- Muscat

Scenario (1)

to be developed.

Scenario (2)

to be developed.

Scenario (3)

to be developed.

3D-6

SECTION 3

To be developed

MIDANPIRG AFS/ATN TF/9
Report on Agenda Item 4

REPORT ON AGENDA ITEM 4:   REVIEW OF THE MID AFTN/CIDIN ROUTING DIRECTORY

4.1   The expert of Eurocontrol briefed the meeting through a working paper on the procedures a COM Center should follow to participate voluntarily in the CIDIN Management Center of the EUR/NAT Region. The meeting, after discussing the different alternatives proposed in the **Appendix 4A** to the Report on Agenda Item 4, agreed that the MID Com Centers participate as external COM centers in the CIDIN Management Center (CMC). This option which is the most suitable for the MID Region, will allow that a read/write account be allocated to the MID Com Centers to access the CMC database. Moreover, during the update process which takes place twice a year, the Cooperating CIDIN Centers (CCC) operational procedures defined in the Management Manual, need not to be followed.

4.2   In order to increase the efficiency of the management process, each MID Com Center should designate a CCC operator with details to be sent to Eurocontrol (e.mail yuksel.eyuboglu@eurocontrol.int) as soon as possible.

4.3   Based on the above, the meeting developed the following Draft Conclusion:

DRAFT CONCLUSION 9/5:   PARTICIPATION OF THE MID COM CENTERS IN THE CIDIN MANAGEMENT CENTER (CMC) OF THE EUR/NAT REGION

> *That, all MD Com Centers participate as external COM centers in the operation of CIDIN Management Center (CMC) in the EUR/NAT Region and designate a Cooperating CIDIN Center (CCC) operator for coordination process with Eurocontrol.*

4.4   The meeting noted that some States still have to fill up the tables of the MID AFTN/CIDIN Routing Directory. The meeting urged the Centers which have not done so to provide the ICAO Office before the end December 2003, with the available information in order to publish the final version of the Twentieth Edition of the MID AFTN/CIDIN Routing Directory. The meeting therefore updated the draft document of the Twentieth Edition of the MID AFTN/CIDIN Routing Directory as shown in **Appendix 4A** to the Report on Agenda Item 4.

MIDANPIRG AFS/ATN TF/9
Appendix 4A to the Report on Agenda Item 4

INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST OFFICE

Routing Directory for

AFTN and CIDIN Centres

in the MID Region

Version 0.2 draft

Table of COM Centres

(listed in alphabetical order by COM Centre location indicator)

Location Indicator	Located	State	Table name
HECA	Cairo	Egypt	HECA
OAKB	Kabul	Afganistan	OAKB
OBBI	Bahrain	Bahrain	OBBI
OEJD	Jeddah	Saudi Arabia	OEJD
OIII	Tehran	Iran	OIII
OJAM	Amman	Jordan	OJAM
OKBK	Kuwait	Kuwait	OKBK
OLLL	Beirut	Lebanon	OLLL
OMAE	Abu Dhabi	U.A.E.	OMAE
OOMS	Muscat	Oman	OOMS
OPKC	Karachi	Pakistan	OPKC
ORBI	Bagdad	Iraq	ORBI
OSDI	Damascus	Syria	OSDI
OTBD	Doha	Qatar	OTBD
OYSN	Sanaa	Yemen	OYSN

(listed in alphabetical order by State name)

State	Location Indicator	Located	Table name
Afganistan	OAKB	Kabul	OAKB
Bahrain	OBBI	Bahrain	OBBI
Egypt	HECA	Cairo	HECA
Iran	OIII	Tehran	OIII
Iraq	ORBI	Bagdad	ORBI
Jordan	OJAM	Amman	OJAM
Kuwait	OKBK	Kuwait	OKBK
Lebanon	OLLL	Beirut	OLLL
Oman	OOMS	Muscat	OOMS
Pakistan	OPKC	Karachi	OPKC
Qatar	OTBD	Doha	OTBD
Saudi Arabia	OEJD	Jeddah	OEJD
Syria	OSDI	Damascus	OSDI
U.A.E.	OMAE	Abu Dhabi	OMAE
Yemen	OYSN	Sanaa	OYSN

1. Explanation of the Tables
(Remark: All tables show examples and do not reflect the real situation)

1.1. Information (COM Centre Characteristic Table)

The COM Centre Characteristic Table gives an overview about operational, technical and administrative information of the COM Centre itself.

1.2. AFTN Routeing table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.		Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	WS	OO				OA	WS	OO		
B	LCNCA	(OE)				OB	N	N		
C	LCNCA	(OE)				OE*	OE	OO		
D*	OE	OO				OED	OED	(OE)		
DT	HE	(LCNCA)	HECAA	LCNCA		OI	OI	OM		

Desti-nation First letters of an AFTN address (8 letter address) relevant for the Routeing
D* All destination addresses starting with D except those indicated directly below (DT)
DT Destination addresses starting with DT

Actual Main Actual main outgoing AFTN circuit or CIDIN Ax for this Destination address used actual in the AFTN/CIDIN Centre
WS Represents the outgoing AFTN circuit
LCNCA Defined Exit address (Ax) for the Destination address (Ad) starting with these letters
N Represents the national Routing responsibility

Actual Altn. Alternate outgoing AFTN circuit or CIDIN Ax for this Destination address used if the Main is not available.
(OE) Represents the outgoing AFTN circuit as Alternate
(LCNCA) Defined the Exit address (Ax) as alternate for the Destination address (Ad)
N Represents the national Routing responsibility

(Terms in brackets: For the use of the Exit Address or the AFTN circuit as alternate, co-ordination is required)

Planned Main Planned to replace the Actual Main in the future on a defined date
Planned Altn. Planned to replace the Actual Alternate in the future on a defined date

1.3. CIDIN Routeing Table

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG		CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG
HECA_	OLLL	LCNC	HECA	OLLL						
LCNC_	LCNC	OLLL								

CIDIN Exit Address First four letters of the Exit addresses (Ax) relevant for the selection of connection to be used.

Actual Main VCG Shows the first outgoing direction (main connection path to an adjacent COM Centre) used at first or reaching the Exit centre (Ax). This path is represented by a Virtual Circuit Group (VCG), see 5.4.
Actual Altn. VCG Shows the alternate outgoing direction (main connection path to an other adjacent COM Centre) used in case of unavailability of the main VCG for reaching the Exit centre (Ax). This path is represented by a Virtual Circuit Group (VCG), see 5.4.

(Terms in brackets: For the use of the Actual Alternate VCG, co-ordination is required.)

Planned Main VCG Planned to replace the Actual Main VCG in the future on a defined date.
Planned Altn. VCG Planned to replace the Actual Alternate VCG in the future on a defined date.

1.4. Virtual Circuit Groups (VCG)

Actual VCG	Actual Prim.VC	Actual Secondary VC's		
LCNC	LCNC1			
OLLL	OLLL1			

Planned VCG	Planned Prim.VC	Planned Secondary VC's		
HECA	HECA1			
		OLLL2		

Actual VCG A Virtual Circuit Group consists of a number of Virtual Circuits (VC) that connect two, and only two CIDIN Centres. A Primary-type VC is always present and a Secondary-type VC is optional. Within this group, the selection of the VC is local matter. VC groups form redundant connections between adjacent CIDIN Centres.

Actual Primary VC Primary Virtual Circuit, established actual either as a PVC (Permanent Virtual Circuit) or SVC (Switched Virtual Circuit). In case of SVC no Secondary Virtual Circuits are recommended.

Actual Secondary VC's Actual Secondary VC's: Secondary Virtual Circuits, established actual either as a set of PVC (Permanent Virtual Circuit) and/or a SVC (Switched Virtual Circuit). There is no maximum limit to the number of PVC's forming a VCG.

Planned Primary VC The planned Primary Virtual Circuit will replace the Actual Primary VC in the future on a planned date.

Planned Secondary VC's The planned Secondary Virtual Circuits will replace the Actual Alternate VC (see below).

1.5. Circuit Characteristics

Situation recorded in Nov 1998		
Link to	Protocol	Capacity (bps)
HECA	AFTN	2 x 2.4k
OLLL	CIDIN	1 x 9.6k
OKBK	AFTN	1 x 300
OOMS	AFTN	1 x 50
VTBB	AFTN	1 x 2.4k

Planned		
Protocol	Capacity(bps)	"O" date
CIDIN	1 x 9.6k	TBD

Link to Connection to the COM Centre represented by the location indicator.

Protocol Protocol used actual on this link (conventional AFTN, AFTN over X.25, CIDIN via PVC or CIDIN via SVC).

Capacity (bps) Actual capacity available (bit per seconds). An asterisk (*) indicates a network connection.

Planned Protocol Protocol planned to be used on the upgraded/new link.

Capacity (bps) Planned capacity of the link (bit per seconds).

"O" date Planned operational date of the upgraded/new link.

OAKB - Kabul - Afganistan

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:	

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OAKB - Kabul - Afganistan

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	VI	OI			OA	N	N		
B	OI	VI			OB	OI	VI		
C	OI	VI			OE	OI	VI		
D	OI	VI			OI	OI	VI		
E	OI	VI			OJ	OI	VI		
F	OI	VI			OK	OI	VI		
G	OI	VI			OL	OI	VI		
H*	OI	VI			OM	OI	VI		
HA					OO	OI	VI		
HC	OI	VI			OP	OP	OI		
HD	OI	VI			OR	OI	VI		
HE	OI	VI			OS	OI	VI		
HH					OT	OI	VI		
HL	OI	VI			OY	OI	VI		
HS	OI	VI			P	VI	OI		
K	OI	VI			R	VI	OI		
L*	OI	VI			S	OI	VI		
LB	OI	VI			T	OI	VI		
LL					U	VT	VI		
LT	OI	VI			V*	VI	OI		
M	OI	VI			VA	VI	OI		
N	VI	OI			VE	VI	OI		
					VI	VI	OI		
					VN	VI	OI		
					VO	VI	OI		
					W	VI	OI		
					Y	VI	OI		
					Z	VI	OI		

OAKB - Kabul - Afganistan

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date

OBBI - Bahrain - Bahrain

Information

Operator:	
Phone:	+973 321185
– –	+973 321184
Fax:	+973 321905
Telex:	+490 9186 AIRCIV BN
Email:	---
AFTN:	OBBIYFYX
CIDIN/AFTN:	OBBIM
CIDIN/OPMET:	---
SITA:	BAHAPYF

Technical operator:	
Phone:	+973 883620
– –	+973 883621
Fax:	+973 883461
Telex:	+490 8000
Email:	ns611t@btc.com.bh
AFTN:	OBBIZZZZ
CIDIN/AFTN:	OBBIM
CIDIN/OPMET:	---
SITA:	---

Supervisor:	
Name:	MOHAMED ALI SALEH
Phone:	+973 321186
Fax:	+973 321992
Telex:	9186 AIRCIV BN
Email:	masaleh@bahrain.gov.bh
AFTN:	OBBIYTYX
CIDIN/AFTN:	OBBIM
CIDIN/OPMET:	---
SITA:	BAHAPYF

Technical supervisor:	
Name:	HASHIM A. SHUBBER
Phone:	+973 883884
Fax:	+973 883461
Telex:	+490 8000
Email:	ns61@btc.com.bh
AFTN:	OBBIZZZZ
CIDIN/AFTN:	OBBIM
CIDIN/OPMET:	---
SITA:	---

Management:	
Name:	ALI AHMED MOHAMED
Phone:	+973 321187
Fax:	+973 321992
Telex:	9186 AIRCIV BN
Email:	aliahmed@bahrain.gov.bh
AFTN:	OBBIYTYX
CIDIN/AFTN:	OBBIM
CIDIN/OPMET:	--
SITA:	BAHAPYF

Postal Address:
CIVIL AVIATION AFFAIRS
AIR NAVIGATION DIRECTORATE
P.O.BOX: 586
MUHARRAQ
BAHRAIN

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	OBBIA
AFTN OPM/NM:	OBBIM
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN	Yes	
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OBBI - Bahrain - Bahrain

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	WS	OO		
B	LCNCA	OE	LCNCA	OLBAA
C	LCNCA	OE	LCNCA	OLBAA
D	OE	OO		
E	LCNCA	OE	LCNCA	OLBAA
F	OE	OO		
G	OE	OO		
H*	OE	OO		
HA	OE	00		
HC	OE	OO		
HD	OE	OO		
HE	OE	OO		
HH	OE	OO		
HL	OE	OO		
HS	OE	OO		
K	LCNCA	OE	LCNCA	OLBAA
L*	LCNCA	OE	LCNCA	OLBAA
LB	LT	LCNCA		
LL				
LT	LT	LCNCA		
M	LCNCA	OE	LCNCA	OLBAA
N	WS	OO		

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
OA	OKBK	OO		
OB	N	N		
OE*	OE	OO		
OED	OED	OE		
OI	OI	OMAEA		
OJ	OE	OLBAA		
OK	OK	OLBAA		
OL	OLBAA	OK		
OM	OMAEA	OO		
OO	OO	OE		
OP	OO	OE		
OR	OLBAA			
OS	OLBAA	OK		
OT	OT	OK		
OY	OE	OO		
P	LCNCA	OE	LCNCA	OLBAA
R	WS	OO		
S	LCNCA	OLBAA	LCNCA	OLBAA
T	LCNCA	OLBAA	LCNCA	OLBAA
U	LC	OE		
V*	WS	OO		
VA	OO	OE		
VE	OO	OE		
VI	OO	OE		
VN	OO	OE		
VO	OO	OE		
W	WS	OO		
Y	WS	OO		
Z	OO	OE		

OBBI - Bahrain - Bahrain

CIDIN Routeing Table

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG	CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG
HECA_	OLLL	LCNC							
LCNC_	LCNC	OLLL							
OBBI_									
OLBA_	OLLL	LCNC							
OMAE_	OMAE								

CIDIN Virtual Circuit Group

Actual VCG	Actual Prim.VC	Actual Secondary VC's			Planned VCG	Planned Prim.VC	Planned Secondary VC's		
LCNC	LCNC1								
OLLL	OLLL1								
OMAE	OMAE1								

OBBI - Bahrain - Bahrain

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
LCNC	CIDIN	1 x 9.6K			
LTAA	AFTN	1 x 50			
OEDR	AFTN	1 x 50			
OEJD	AFTN	1 x 200	CIDIN	1 x 9.6K	II/2002
OIII	AFTN	1 x 300			
OKBK	AFTN	3 x 100	AFTN		TBD
OLBA	CIDIN	1 x 9.6K			
OMAE	CIDIN	1 x 9.6K			
OOMS	AFTN	1 x 300			
OTBT	AFTN	1 x 200			
WSSS	AFTN	1 x 200	AFTN	1 x 2400	End 2002

HECA - Cairo - Egypt

Information

Operator:

Phone:	202 6375639
- -	202 2654006
Fax:	202 2678546
Telex:	202 92443 UN
Email:	
AFTN:	HECAYFYX
CIDIN/AFTN:	HECAM
CIDIN/OPMET:	
SITA:	CAIXYYF

Technical operator:

Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:

Name:	
Phone:	202 6375639
Fax:	202 2678546
Telex:	202 92443 UN
Email:	
AFTN:	HECAYFYS
CIDIN/AFTN:	HECAM
CIDIN/OPMET:	
SITA:	CAIXYYF

Technical supervisor:

Name:	Eng Azmy Nabih
Phone:	202 4182964
Fax:	202 6374471
Telex:	202 92443 UN
Email:	
AFTN:	HECAYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:

Name:	Abdel Fattah A. El-Sayed
Phone:	202 6375639
Fax:	202 2680629
Telex:	202 92443 UN
Email:	xramadan@hotmail.com
AFTN:	HECAYTYX
CIDIN/AFTN:	HECAM
CIDIN/OPMET:	
SITA:	CAIXYYT

Postal Address:

National Air Navigation Services
Company
Cairo Air Navigation Centre
Cairo Airport Road
Cairo, Egypt

CIDIN Entry/Exit Addresses:

AFTN Ae/Ax:	HECAA
AFTN OPM/NM:	HECAM
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:

Functions:

Conv. AFTN	Yes
CIDIN/AFTN	Yes
CIDIN/OPMET	
AIS	
MOTNE	
OPMET	
SITA	Yes

HECA - Cairo - Egypt

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OE	OLBAA			L*	LGGGA	OLBAA		
B	LGGGA	OLBAA			LA	LGGGA	OLBAA		
C	LGGGA	OLBAA			LI	LGGGA	OLBAA		
D	DT	LGGGA			LL	LL	LGGGA		
EB	LGGGA	OLBAA			LM	LGGGA	OLBAA		
ED	LGGGA	OLBAA			M	LGGGA	OLBAA		
EE	LGGGA	OLBAA			N	OE	OLBAA		
EF	LGGGA	OLBAA			OA	OLBAA	OE	OBBIA	
EG	LGGGA	OLBAA			OB	OE	OLBAA	OBBIA	
EH	LGGGA	OLBAA			OE	OEJD	OLBAA		
EI	LGGGA	OLBAA			OJ	OJ	OE		
EK	LGGGA	OLBAA			OI	OLBAA	OE	OBBIA	
EL	LGGGA	OLBAA			OK	OLBAA	OE		
EN	LGGGA	OLBAA			OL	OLBAA	OE		
EP	LGGGA	OLBAA			OM	OLBAA	OE		
ES	LGGGA	OLBAA			OO	OE	OLBAA		
ET	LGGGA	OLBAA			OP	OLBAA	OE		
EV	LGGGA	OLBAA			OR				
EY	LGGGA	OLBAA			OS	OS	OJ		
F*	HK	OE			OT	OLBAA	OE	OBBIA	
FH	LGGGA	OLBAA			OY	OE	OLBAA		
FJ	LGGGA	OLBAA			P	OLBAA	LGGGA		
G	DT	LGGGA			R	OE	OLBAA	OBBIA	
H*	HK	OE			S	LGGGA	OLBAA		
HA	OE	HK			T	LGGGA	OLBAA		
HC	HK	OE			U	LGGGA	OLBAA		
HD	OE	HK			V	OLBAA	OE	OBBIA	
HE	N	N			W	OE	OLBAA	OBBIA	
HH	OE	HK			Y	OE	OLBAA	OBBIA	
HL	HL	DT			Z	OLBAA	OE	OBBIA	
HS	HS	OE							
K	LGGGA	OLBAA							

HECA - Cairo - Egypt

CIDIN Routeing Table

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG
HECA_				
LGGG_	LGGG	(OLBA)		
OLBA_	OLLL	(LGGG)		

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG

CIDIN Virtual Circuit Group

Actual VCG	Actual Prim.VC	Actual Secondary VC's		
LGGG	LGGG1			
OLBA	OLBA1			

Planned VCG	Planned Prim.VC	Planned Secondary VC's		

HECA - Cairo - Egypt

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
DTTC	AFTN	1 x 100	AFTN	1 x 1200	2001
HKNA	AFTN	1 x 50	AFTN		2001
HLLT	AFTN	1 x 50			
HSSS	AFTN	1 x 50			
LGGG	CIDIN	9.6K			
LIII	AFTN	1 x 50			
LLBG	AFTN	1 x 50			
OEJD	CIDIN	9.6			
OJAM	AFTN	1 x 50	AFTN	1 x 100	TBD
OLLL	CIDIN	9.6K			
OSDI	AFTN	1 x 50			

OIII - Tehran - Iran

Information

Operator:	
Phone:	0098 21-91022322
- -	
Fax:	0098 21-6025101
Telex:	213889 EPD IR
Email:	
AFTN:	OIIIYTYP
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	THRXTYF

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	Houshang Mazaheri
Phone:	0098 21-9122330
Fax:	0098 21-6025101
Telex:	213889 EPD IR
Email:	
AFTN:	OIIIYTYC
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	THRXTYF

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	H. Ghaffari
Phone:	0098 21-6036645
Fax:	0098 21-6025101
Telex:	213889 EPD IR
Email:	
AFTN:	OIIIYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	THRXTYF

Postal Address:
Civil Aviation Organization
P.O. Box 1798, 13445
Mehrabad Intl Airport
AFTN Com Center
Tehran
Islamic Republic of Iran

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OIII - Tehran - Iran

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OB	OP	OB	OP	OA		OB	OB	OM
B	LT	OB	LT	OB	OB	OB	OM	OB	OM
C	LT	OB	LT	OB	OE	OB	OM	OB	OM
D	OP	OB	OK	OB	OI	N	N	N	N
E	LT	OB	OK	OB	OJ	OS	OB	OS	OK
F	OP	OB	OK	OB	OK	OK	OB	OK	OB
G	OP	OB	OK	OB	OL	OB	OS	OB	OK
H*	OP	OB	OK	OB	OM	OM	OB	OM	OB
HE	OP	OB	OS	OK	OO	OB	OP	OB	OP
HL	OP	OB	OK	OB	OP		OB	OP	OK
HS	OP	OB	OB	OK	OR	OS	OB	OS	OK
K	LT	OB	LT	OB	OS	OS	OB	OS	OK
L*	LT	OB	OK	OB	OT	OB	OK	OB	OK
LC	OB	OM	OB	OK	OY	OB	OM	OB	OK
LL					P	OP	OB	OP	OB
LT	LT	OB	LT	OB	R	OB	OP	OR	OP
M	LT	OB	LT	OB	S	LT	OB	LT	OB
N	OB	OP	OB	OP	T	LT	OB	LT	OB
					U	LT	OB	OB	OS
					V*	OB	OP	OB	OP
					VA	OP	OB	OP	OB
					VE	OP	OB	OP	OB
					VI	OP	OB	OP	OB
					VN	OP	OB	OP	OB
					VO	OP	OB	OP	OB
					W	OB	OP	OB	OP
					Y	OB	OP	OB	OP
					Z	OP	OB	OP	OB

OIII - Tehran - Iran

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
LTAA	AFTN	1 x 50			
OBBI	AFTN	1 x 300			
OKBK	AFTN	1 x 100	AFTN	1X300	2002
OMAE	AFTN	1 x 50	AFTN	1X100	2001
OPKC	AFTN	1 x 200			
OSDI	AFTN	1 x 50			

ORBI - Bagdad - Iraq

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

ORBI - Bagdad - Iraq

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OJ	OS			OA	OJ	OS		
B	OJ	OS			OB	OS	OJ		
C	OJ	OS			OE	OJ	OS		
D	OJ	OS			OI	OS	OJ		
E	OJ	OS			OJ	OJ	OS		
F	OJ	OS			OK	OS	OJ		
G	OJ	OS			OL	OJ	OS		
H	OJ	OS			OM	OJ	OS		
K	OJ	OS			OO	OJ	OS		
L*	OJ	OS			OP	OJ	OS		
LL					OR	N	OS		
M	OJ	OS			OS	OS	OJ		
N	OJ	OS			OT	OJ	OS		
					OY	OJ	OS		
					P	OJ	OS		
					R	OJ	OS		
					S	OJ	OS		
					T	OJ	OS		
					U	OJ	OS		
					V	OJ	OS		
					W	OJ	OS		
					Y	OJ	OS		
					Z	OJ	OS		

ORBI - Bagdad - Iraq
Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OJAM	AFTN	1 x 50			
OSDI	AFTN	1 x 50			

OJAM - Amman - Jordan

Information

Operator: Mona al - Nadaf	
Phone: +962 6 4891401/3261	
- -	
Fax:	
Telex:	
Email: alnadaf@yahoo.com	
AFTN: OJAMYFYX	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA: AMMXYYA	

Technical operato Targrred Ghazi	
Phone:	+962 6 4891401/3263
- -	
Fax:	
Telex:	
Email:	
AFTN:	OJAMYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Superviso Majdolin Al - Trad	
Name: Ahmed Adullah	
Phone: +962 6 4891401/3261	
Fax:	
Telex:	
Email: majdolin@yahoo.com	
AFTN: OJAMYFYX	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA: AMMXYYA	

Technical supervi Marwan Badawi	
Name:	Marwan Badawi
Phone:	+ 962 6 4891401/3500
Fax:	+ 962 6 4875102
Telex:	
Email:	
AFTN:	OJAMYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management: Nader A. Kaled	
Name: Nader A. Kaled	
Phone: 4891401133260	
Fax:	
Telex:	
Email: aftn_am@yahoo.com	
AFTN: OJAMYTYX	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:
Civil Aviation Authority
P.O.Box 7547
Amman -Jordan

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	Yes
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OJAM - Amman - Jordan

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OE	HE			OA	OE	HE		
B	OS	HE			OB	OE	HE		
C	OS	HE			OE	OE	HE		
D	HE	OS			OI	OS	OE		
E	OS	HE			OJ	N	N		
F	HE	OS			OK	OE	HE		
G	HE	OS			OL	HE	OS		
H*	HE	OL			OM	OE	HE		
HE	HE	OS			OO	OE	HE		
HL	HE	OS			OP	OE	HE		
HS	HE	OE			OR	OR	OS		
K	OS	HE			OS	OS	HE		
L*	OS	HE			OT	OE	HE		
LC	OS	HE			OY	OE	HE		
LL	HE	HE			P	OS	HE		
LT	OS	HE			R	OE	HE		
M	OS	HE			S	OS	HE		
N	OE	HE			T	OS	HE		
					U	OS	HE		
					V*	OE	HE		
					VA	OE	HE		
					VE	OE	HE		
					VI	OE	HE		
					VN	OE	HE		
					VO	OE	HE		
					W	OE	HE		
					Y	OE	HE		
					Z	HE	OS		

OJAM - Amman - Jordan

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
HECA	AFTN	1 x 50	AFTN	1 x 100	End 2004
OEJD	AFTN	1 x 100			
ORBI	AFTN	1 x 50			
OSDI	AFTN	1 x 50			
LLBG	AFTN	1.2 K			

OKBK - Kuwait - Kuwait

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OKBK - Kuwait - Kuwait

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OP	OB			OA	OB	OP		
B	LI	OL			OB	OB	OL		
C	LI	OL			OE	OB	OL		
D	OL	OB			OI	OI	OB		
E	LI	OL			OJ	OL	OS		
F	OB	OL			OK	N	N		
G	OL	OB			OL	OL	OB		
H*	OL	OB			OM	OB	OL		
HE	OL	OB			OO	OB	OL		
HL	OL	OB			OP	OP	OB		
HS	OL	OB			OR	OS	OL		
K	LI	OL			OS	OS	OL		
L*	LI	OL			OT	OT	OB		
LC	OL	LI			OY	OB	OL		
LL					P	LI	OL		
LT	LI	OL			R	OP	OB		
M	LI	OL			S	LI	OL		
N	OP	OB			T	LI	OL		
					U	LI	OL		
					V*	OP	OB		
					VA	OP	OB		
					VE	OP	OB		
					VI	OP	OB		
					VN	OP	OB		
					VO	OP	OB		
					W	OP	OB		
					Y	OP	OB		
					Z	OP	OB		

OKBK - Kuwait - Kuwait

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
LIII	AFTN	1 x 100			
OBBI	AFTN	3 x 100	AFTN	1200	TBD
OIII	AFTN	1 x 100			
OLBA	AFTN	1 x 100	AFTN	200	TBD
OPKC	AFTN	2.4K			
OSDI	AFTN	1 x 50			
OTBD	AFTN	1 x 100			
ORBI	AFTN	9.6K			

OLLL - Beirut - Lebanon

Information

Operator:	
Phone: + 961 1 628161	
- -	
Fax: +961 1 629035	
Telex:	
Email:	
AFTN: OLBAYFYX	
CIDIN/AFTN:	OLBAM
CIDIN/OPMET:	OLBAYMYX
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name: Chawki Hatem	
Phone: +961 1 628161	
Fax: +961 1 629035	
Telex:	
Email:	
AFTN: OLBAYFYX	
CIDIN/AFTN: OLBAM	
CIDIN/OPMET: OLBAYMY│X	
SITA:	

Technical supervisor:	
Name: Mouhammad Saad	
Phone: +961 3 280299 - 961 128000/3049	
Fax: +961 1 628198	
Telex:	
Email: msaad@beirutairport.gov.lb	
AFTN: OLBAYTYX	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name: Adib Aoun	
Phone: +961 1 628150	
Fax: +961 1 629035	
Telex:	
Email: ```	
AFTN: OLBAYTYX	
CIDIN/AFTN:	OLBAM
CIDIN/OPMET:	OLBAYMYX
SITA:	

Postal Address:
Beirut International Airport
Telecom Department
Beirut-Lebanon

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	OLBAA
AFTN OPM/NM:	OLBAM
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:	
Conv. AFTN	Yes
CIDIN/AFTN	Yes
CIDIN/OPMET	
AIS	
MOTNE	
OPMET	
SITA	

OLLL - Beirut - Lebanon

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OBBIA	OE		
B	LCNCA	HECAA		
C	LCNCA	HECAA		
D	HECAA	LCNCA		
E	LCNCA	HECAA		
F	OE	HECAA		
G	HECAA	OE		
H	HECAA	OE		
K	LCNCA	HECAA		
L*	LCNCA	HECAA		
LL				
LT	LCNCA	HECAA		
M	LCNCA	HECAA		
N	OK	OE		

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
OA	OK	OE		
OB	OBBIA	OE		
OE	OE	OBBIA		
OI	OBBIA	OK		
OJ	HECAA	OE		
OK	OK	OBBIA		
OL	N	N		
OM	OBBIA	OE		
OO	OBBIA	OE		
OP	OK	OBBIA		
OR	OR	OS		
OS	OS	HECAA		
OT	OBBIA	OK		
OY	OE	OBBIA		
P	LCNCA	HECAA		
R	OBBIA	OE		
S	LCNCA	HECAA		
T	LCNCA	HECAA		
U	LCNCA	HECAA		
V*	OK	OBBIA		
VA	OK	OBBIA		
VE	OK	OBBIA		
VI	OK	OBBIA		
VN	OK	OBBIA		
VO	OK	OBBIA		
W	OBBIA	OK		
Y	OBBIA	OE		
Z	OK	OE		

OLLL - Beirut - Lebanon

CIDIN Routeing Table

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG	CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG
OLBA_	OLBA	(LCNC)							
LCNC_	OLBA	(OBBI)							
OBBI_	OLBA	HECA							

CIDIN Virtual Circuit Group

Actual VCG	Actual Prim.VC	Actual Secondary VC's			Planned VCG	Planned Prim.VC	Planned Secondary VC's		
HECA	HECA1								
LCNC	LCNC1								
OBBI	OBBI1								

OLLL - Beirut - Lebanon

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
HECA	CIDIN	1 x 9.6K			
LCNC	CIDIN	1 x 9.6K			
OBBI	CIDIN	1 x 9.6K			
OEJD	AFTN	1 x 100	AFTN	1 x 300	II/2002
OKBK	AFTN	1 x 100	AFTN	1 x 200	TBD
OSDI	AFTN	2 x 50			
ORBI	AFTN	1 x 50			

OOMS - Muscat - Oman

Information

Operator:	Mushal Abdul Aziz
Phone:	968 519209/332
- -	
Fax:	968 510617
Telex:	5418 DGCAOMAN ON
Email:	aircomms@dgcam.com.om
AFTN:	OOMSYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	Ahmed Issa
Phone:	968 519492
- -	
Fax:	968 510617
Telex:	5418 DGCAOMAN ON
Email:	ahmedissa@dgcam.com.om
AFTN:	OOMSYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	Akhtar Kareem Al-Balu
Phone:	968 519260
Fax:	968 510617
Telex:	5418 DGCAOMAN ON
Email:	aircomms@dgcam.com.om
AFTN:	OOMSYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	Mohd Hamed Al-Mauly
Phone:	968 519492
Fax:	968 510617
Telex:	5418 DGCAOMAN ON
Email:	mody07@hotmail.com
AFTN:	OOMSYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	Ali Humaid Al-Adawi
Phone:	968 519207/699
Fax:	968 519930
Telex:	5418 DGCAOMAN ON
Email:	alialadawi@dgcam.com
AFTN:	OOMSYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:	
	P.O. BOX 1
	Postal Code 111
	Seeb Int. Airport
	Sultanate of Oman

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS	Yes	
MOTNE		
OPMET		
SITA		

OOMS - Muscat - Oman

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OB	VA			OA	OB	OP		
B	OB	OE			OB	OB	OM		
C	OB	OE			OE	OE	OB		
D	OE	OB			OI	OB	OP		
E	OB	OE			OJ	OE	OB		
F	OE	VA			OK	OB	OE		
G	OE	OB			OL	OB	OE		
H	OE	VA			OM	OMA	OB		
K	OB	OB			OO	N	N		
L* EX. LL	OB	OE			OP	OP	VA		
M	OB	OE			OR	OB	OE		
N	OB	VA			OS	OE	OB		
OA	OB	OP			OT	OB	OMA		
OB	OB	OMA			OY	OYS	OE		
OE	OE	OB			P	OB	OP		
0I	OB	OP			R	OB	VA		
OJ	OE	OB			S	OB	OE		
OK	OB	OE			T	OB	OE		
					U	VA	OP		
					V*	OB	VA		
					VA	VA	OP		
					VE	VA	OP		
					VI	VA	OP		
					VN	VA	OP		
					VO	VA	OP		
					W	OB	VA		
					Y	OB	VA		
					Z	OP	VA		

OOMS - Muscat - Oman

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OBBI	AFTN	1 x 300			
OEJD	AFTN	1 x 300			
OMAE	AFTN	1 x 50	AFTN	1 x 200	IV/2001
OPKC	AFTN	1 x 300	intent to	delete	
OYSN	AFTN	1 x 100			
VABB	AFTN	1 x 300	AFTN (X.25)	TBD	End 2001

OPKC - Karachi - Pakistan

Information

Operator:	
Phone:	92-21-45791943
- -	45797232
Fax:	92-21-9218216
Telex:	29336 CAA PK
Email:	
AFTN:	OPKCYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	OPKCYZYX
SITA:	

Technical operator:	
Phone:	92-21-45791944
- -	45797519
Fax:	
Telex:	29336 CAA PK
Email:	
AFTN:	OPKCYFYT
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	Mr. Fasihuzzaman
Phone:	92-21-9218242
Fax:	92-21-9218216
Telex:	29336 CAA PK
Email:	
AFTN:	OPKCYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	Mr. Nadeem Sharif Pasha
Phone:	92-21-9218174
Fax:	
Telex:	29336 CAA PK
Email:	Ctoqiap@sat.net.pk
AFTN:	OPKCYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	Air Cdre Qamaruddin
Phone:	92-21-9218732
Fax:	92-21-9218733
Telex:	29534 DG CAA PK
Email:	q-uddin@yahoo.Com
AFTN:	OPHQZXCM
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:
Comm-Ops branch, HQ.CAA
Technical Devision
Terminal-1
QIAP, Karachi-75200
Pakistan

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS	Yes	
MOTNE		
OPMET	Yes	
SITA		

OPKC - Karachi - Pakistan

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	VA	OO			OA	OA	N		
B	OK	OO			OB	OO	OI		
C	OK	OI			OE	OO	OK		
D	OK	OO			OI	OI	OO		
E	OK	OI			OJ	OK	OI		
F	OK	OO			OK	OK	OO		
G	OK	OO			OL	OO	OK		
H	OK	OO			OM	OO	OI		
K	OK	OI			OO	OO	OI		
L*	OK	OI			OP	N	N		
LL					OR	OO	OK		
LT	OI	OK			OS	OI	OO		
M	OK	OI			OT	OO	OI		
N	VA	OI			OY	OO	OI		
					P	VA	OO		
					R	VA	OO		
					S	OK	OI		
					T	OK	OI		
					U	OI	OK		
					V*	VA	OO		
					VN	ZB	VA		
					W	VA	OO		
					Y	VA	OO		
					Z	ZB	VA		

OPKC - Karachi - Pakistan

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OIII	AFTN	1 x 200			
OKBK	AFTN	2.4K			
OOMS	AFTN	1 x 300			
ZBBB	AFTN	1 x 50			
VABB	AFTN	1 x 200			
OAKB	AFTN (VSAT)	1 x 2400			

OTBD - Doha - Qatar

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OTBD - Doha - Qatar

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OB	OK			OA	OB	OK		
B	OB	OK			OB	OB	OK		
C	OB	OK			OE	OB	OK		
D	OB	OK			OI	OK	OB		
E	OB	OK			OJ	OB	OK		
F	OB	OK			OK	OB	OK		
G	OB	OK			OL	OB	OK		
H	OB	OK			OM	OB	OK		
K	OB	OK			OO	OB	OK		
L*	OB	OK			OP	OK	OB		
LL					OR	OK	OB		
M	OB	OK			OS	OB	OK		
N	OB	OK			OT	N	N		
					OY	OB	OK		
					P	OB	OK		
					R	OB	OK		
					S	OB	OK		
					T	OB	OK		
					U	OB	OK		
					V	OB	OK		
					W	OB	OK		
					Y	OB	OK		
					Z	OB	OK		

OTBD - Doha - Qatar

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OBBI	AFTN	1 x 200			
OKBK	AFTN	1 x 100			

OEJD - Jeddah - Saudi Arabia

Information

Operator:	
Phone:	+966 2 685 0532
- -	
Fax:	+966 2 685 4016
Telex:	603807 KAIAP
Email:	
AFTN:	OEJNYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	+966 2 685 5040 or
- -	+966 2 685 5039
Fax:	+966 2 685 5718
Telex:	
Email:	
AFTN:	OEJNYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	Modhish A. Al-Garni
Phone:	+966 2 685 5611
Fax:	+966 2 685 4014
Telex:	603807 KAIAP
Email:	
AFTN:	OEJNYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	Saleh Al-Ghamdi
Phone:	+966 2 6717717
Fax:	+966 2 6719041
Telex:	
Email:	dc97sha@hotmail.com
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	Hassan Al - Bishi
Phone:	+966 2 640 5000 ext: 5564
Fax:	+966 2 640 1477
Telex:	601093 CIVAIR SJ
Email:	albishi_h@yahoo.com
AFTN:	OEJDYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:
Manager
ATS Comm. Ops and Procedures
Presidency of Civil Aviation
P.O. Box 929
JEDDAH 21421
SAUDI ARABIA

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	OEJNA
AFTN OPM/NM:	OEJNM
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN	Yes	
CIDIN/OPMET	No	
AIS	No	
MOTNE	No	
OPMET	No	
SITA	No	

OEJD - Jeddah - Saudi Arabia

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OBBIA	OO			OA	OBBIA	OO		
B	LCNCA	OBBIA			OBBIA	OBBIA	OO		
C	LCNCA	OBBIA			OE	N	N		
D	HECAA	LCNCA			OI	OBBIA	OO		
E	LCNCA	OBBIA			OJ	OJ	HECAA		
F	HA	HECAA			OK	OBBIA	OO		
G	HECAA	LCNCA			OL	OL	HECAA		
H*	HA	HECAA			OM	OBBIA	OO		
HECAA	HECAA	LCNCA			OO	OO	OBBIA		
HL	HECAA	LCNCA			OP	OO	OBBIA		
HS	HS	HECAA			OR	OL	HECAA		
K	LCNCA	OBBIA			OS	OL	HECAA		
L*	HECAA	LCNCA			OT	OBBIA	OO		
LCNCA	LCNCA	OBBIA			OY	OYS	OO		
LK	LCNCA	OBBIA			P	OBBIA	OO		
LL					R	OBBIA	00		
LT	OBBIA	OO			S	HECAA	LCNCA		
M	HECAA	LCNCA			T	HECAA	LCNCA		
N	OBBIA	OO			U	LCNCA	OBBIA		
					V*	OBBIA	OO		
					VA	OO	OBBIA		
					VE	OO	OBBIA		
					VI	OO	OBBIA		
					VN	OO	OBBIA		
					VO	OO	OBBIA		
					W	OBBIA	OO		
					Y	OBBIA	OO		
					Z	OO	OBBIA		

OEJD	Jeddah - Saudi Arabia
CIDIN Routeing Table	

CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG	CIDIN Exit Address	Actual Main VCG	Actual Altn. VCG	Planned Main VCG	Planned Altn. VCG
HECA_	HECA								
LCNC_	LCNC	OBBI							
OBBI_	OBBI	LCNC							

CIDIN Virtual Circuit Group

Actual VCG	Actual Prim.VC	Actual Secondary VC's			Planned VCG	Planned Prim.VC	Planned Secondary VC's		
HECA	HECA1								
LCNC	LCNC1								
OBBI	OBBI1								

OEJD - Jeddah - Saudi Arabia

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
HAAB	AFTN	1 x 50			
OJAM	AFTN	1 x 100			
OBBI	CIDIN	9.6 K			
OLBA	AFTN	1 x 100	AFTN	1 x 300	I/2004
HECA	CIDIN	9.6 K			
HSSS	AFTN	1 x 50			
OOMS	AFTN	1 x 300			
LCNC	CIDIN	9.6 K			
OYSN	AFTN	1 x 100			

OSDI - Damascus - Syria

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	Eng. Arkan Zhralden
Phone:	011-221 3752
Fax:	
Telex:	
Email:	Planned
AFTN:	OSDIYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	Eng. Bassam Alfndi
Phone:	011-223 2203
Fax:	011-231 0875
Telex:	
Email:	
AFTN:	OSDIYTYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:	

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OSDI - Damascus - Syria

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OI	HE			OA	OI	HE	OI	OH
B	LG	HE			OB	OI	OK		
C	LG	HE			OE	OJ	OK	OJ	HE
D	HE	LG			OI	OI	HE	OI	OK
E	LG	HE			OJ	OJ	HE		
F	HE	LG			OK	OK	OI		
G	HE	LG			OL	OL	HE		
H	HE	LG			OM	OI	OK		
K	LG	HE			OO	OI	OK		
L*	LG	HE			OP	OI	OK		
LL					OR	HE	OJ	OR	OJ
M	LG	HE			OS	N	N	N	N
N	HE	LG			OT	OI	OK	OI	OK
					OY	OJ	HE		
					P	LG	HE		
					R	HE	LG	OK	OL
					S	LG	HE		
					T	LG	HE		
					U	LG	HE		
					V	OI	OK		
					W	HE	LG	OK	OI
					Y	OI	OK		
					Z	HE	LG	OK	OI

OSDI - Damascus - Syria

Circuit Characteristics

Situation recorded in October 2003			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
HECA	AFTN	1 x 50	AFTN	300	*)2001/2002
LGGG	AFTN	2 x 50	AFTN	300	*)2001/2002
OIII	AFTN	1 x 50	AFTN	300	*)2001/2002
OJAM	AFTN	1 x 50	AFTN	300	*)2001/2002
OKBK	AFTN	1 x 50	AFTN	300	*)2001/2002
OLLL	AFTN	2 x 50	AFTN	300	*)2001/2002
ORBI	AFTN	1 x 50	AFTN	300	*)2001/2002
CITA	AFTN	1 X 50	AFTN	300	

*) The COM Centre will be able to upgrade links t0 100 - 300 bouds in 2001.

OMAE - Abu Dhabi - U.A.E.

Information

Operator:	
Phone:	00971 2 4054217
- -	
Fax:	00971 2 4054373
Telex:	
Email:	peter.comber@gcaa-uae.gov.ae
AFTN:	OMAEYFYX
CIDIN/AFTN:	OMAEM
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	00971 2 4054337
- -	
Fax:	00971 2 4054334
Telex:	
Email:	gcaa1@emirates.net.ae
AFTN:	
CIDIN/AFTN:	OMAEM
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	V. Koshy
Phone:	00971 2 4054385
Fax:	00971 2 4054373
Telex:	
Email:	aftnuae@emirates.net.ae
AFTN:	OMAEYFYX
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	M. Le Roux
Phone:	00971 2 4054203
Fax:	00971 2 4054334
Telex:	
Email:	martin.le-roux@gcaa-uae.gov
AFTN:	
CIDIN/AFTN:	OMAEM
CIDIN/OPMET:	
SITA:	

Management:	
Name:	P. Comber
Phone:	00971 2 4054246
Fax:	00971 2 4054334
Telex:	
Email:	aftnuae@emirates.net.ae
AFTN:	OMAEYTSC
CIDIN/AFTN:	OMAEM
CIDIN/OPMET:	
SITA:	

Postal Address:	
GCAA	
P.O. Box 6558	
Abu Dhabi	
United Arab Emirates	

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	OMAEA
AFTN OPM/NM:	OMAEYPYX
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN	Yes	
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OMAE - Abu Dhabi - U.A.E.

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OBBIA	OO			OA	OBBIA	OO		
B	OBBIA	OO			OB	OBBIA	OO		
C	OBBIA	OO			OE	OBBIA	OO		
D	OBBIA	OO			OI	OI	OBBIA		
E	OBBIA	OO			OJ	OBBIA	OO		
F	OBBIA	OO			OK	OBBIA	OI		
G	OBBIA	OO			OL	OBBIA	OO		
H	OBBIA	OO			OM	N	N		
K	OBBIA	OO			OO	OO	OBBIA		
L*	OBBIA	OO			OP	OO	OBBIA		
LL					OR	OBBIA	OI		
LT	OBBIA	OO			OS	OBBIA	OI		
M	OBBIA	OO			OT	OBBIA	OI		
N	OBBIA	OO			OY	OO	OBBIA		
					P	OBBIA	OO		
					R	OBBIA	OO		
					S	OBBIA	OO		
					T	OBBIA	OO		
					U	OBBIA	OO		
					V*	OBBIA	OO		
					VA	OO	OBBIA		
					VE	OO	OBBIA		
					VI	OO	OBBIA		
					VN	OO	OBBIA		
					VO	OO	OBBIA		
					W	OBBIA	OO		
					Y	OBBIA	OO		
					Z	OO	OBBIA		

OMAE - Abu Dhabi - U.A.E.

Circuit Characteristics

Situation recorded in March 2001			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OBBI	CIDIN	1 x 9.6K			
OIII	AFTN	1 x 50	AFTN	1 x 200	in 2002
OOMS	AFTN	1 x 50	AFTN	1 x 200	IV/2001

OYSN - Sanaa - Yemen

Information

Operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical operator:	
Phone:	
- -	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Technical supervisor:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Management:	
Name:	
Phone:	
Fax:	
Telex:	
Email:	
AFTN:	
CIDIN/AFTN:	
CIDIN/OPMET:	
SITA:	

Postal Address:

CIDIN Entry/Exit Addresses:	
AFTN Ae/Ax:	
AFTN OPM/NM:	
OPMET Ae/Ax:	
OPMET OPM/NM:	

Other:	

Functions:		
Conv. AFTN	Yes	
CIDIN/AFTN		
CIDIN/OPMET		
AIS		
MOTNE		
OPMET		
SITA		

OYSN - Sanaa - Yemen

AFTN Routeing Table

Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.	Desti-nation	Actual Main	Actual Altn.	Planned Main	Planned Altn.
A	OO	OE			OA	OO	OE		
B	OO	OE			OB	OO	OE		
C	OO	OE			OE	OE	OO		
D	OO	OE			OI	OO	OE		
E	OO	OE			OJ	OO	OE		
F	OE	OO			OK	OO	OE		
G	OE	OO			OL	OE	OO		
H	OE	OO			OM	OO	OE		
K	OO	OE			OO	OO	OE		
L*	OO	OE			OP	OO	OE		
LL					OR	OO	OE		
M	OO	OE			OS	OO	OE		
N	OO	OE			OT	OO	OE		
					OY	N	N		
					P	OO	OE		
					R	OO	OE		
					S	OO	OE		
					T	OO	OE		
					U	OO	OE		
					V	OO	OE		
					W	OO	OE		
					Y	OO	OE		
					Z	OO	OE		

OYSN - Sanaa - Yemen

Circuit Characteristics

Situation recorded in Feb.2000			Planned		
Link	Protocol	Capacity (bps)	Protocol	Capacity (bps)	"O" date
OEJD	AFTN	1 x 100			
OOMS	AFTN	1 x 100			

End of Table

REPORT ON AGENDA ITEM 5:   LATEST DEVELOPMENTS IN ATN FIELD

5.1   Under this Agenda Item, the Meeting was informed about the ICAO policy on the issues of the Internet and TCP/IP. It was noted that the MET DIV meeting 2002 considered the Internet as another form of public switched network and as such when and where available and its performance was satisfactory, its use could be considered. Due to the fact that internet does not guarantee the security, integrity of aeronautical data which are essential to the safety of flights, the ANC tasked a new CNS study Group: AUPISG (Aeronautical Use of Public Internet Sub Group) to produce guidelines on the use of public Internet for aeronautical purposes. The ANC also encouraged ICAO Regions to designate appropriate experts to drive the new sub group.

5.2   In this regard, the meting noted that, contrary to State letter AN 7/11.1 dated 25 April 2003, none of the MID States have nominated an expert to the AUPISG (Aeronautical Use of Public Internet) which had already started its work. The meeting then agreed to a proposal made by Egypt to designate an appropriate expert to the work of AUPISG as soon as possible; all expenses incurred by this expert in the study group work will be born by Egypt. The meeting was reminded that the working methods of AUPISG are mainly through correspondence; however, it would be necessary to hold two meetings during the course of the work.

5.3   The meeting also noting the use of TCP/IP technique by Eurocontrol in lieu of ATN/ISO-OSI for AMHS, recommended that States of the MID Region follow the provisional guidance drafted by ATN Panel. This guidance on AMHS over TCP/IP is shown in **Appendix 5A** to the Report of Agenda Item 5.

5.4   Based on a working paper presented by the Kingdom of Bahrain on the development of the MID Regional ATN Planning Document, the meeting agreed on a principle of working methodology for the ATN Planning Group which members were not all present to this meeting. It was then agreed that a core team composed of Bahrain, Egypt, Kuwait, Oman and ICAO could start a preliminary work to be submitted to the first meeting of the ATN Planning Group. The first meeting of the ATN Planning Group will be tasked to establish a working methodology and to appoint a Rapporteur in order to facilitate the development of the second version of the document as requested by MIDANPIRG/8 meeting. The meeting recommended that the ATN Planning Group meets preferably back-to-back with the forthcoming CNS/MET meeting. Accordingly, the meeting agreed on the following Draft Decision:

DRAFT DECISION 9/6:   IMPROVEMENT OF THE WORK OF THE ATN PLANNING GROUP

That, in order to have the work on the development of the MID Regional ATN Planning Document fully coordinated and followed up, the ATN Planning Group is invited to establish a working methodology and to appoint a Rapporteur.

5.5   Meanwhile, the meeting agreed on a new covering sheet provided by the Kingdom of Bahrain to be used for the presentation of the second version of the MID Regional ATN Planning Document as shown in **Appendix 5B** to the Report on Agenda Item 5.

Guidance provided by ATNP on "AMHS over TCP/IP"

1- It has been observed that some States or even Regions are implementing or planning to implement AMHS systems making use of lower communication layers that are not conformant to the ATN Internet Communication Services (ICS). Such AMHS systems conform to Doc 9705, Sub-Volume III, Chapter 1, with the exception of the clauses related to interfacing with ATN ICS. The most frequent occurrence of such non-compliant systems is related to AMHS systems making use of TCP/IP lower layers through a RFC1006 interface ("AMHS over TCP/IP").

2- Due to the store-and-forward nature of the AMHS, this can be done without compromising the end-to-end interoperability at the AMHS application layer with SARPs-compliant AMHS implementations, but at the cost of some dual-stack systems[1] for lower layers. Strict conformance to Doc 9705, Sub-Volume III, Chapter 1 is required, with the only exception of clause 3.1.2.2.2.1.2 ("Use of Transport Service"), to ensure such end-to-end interoperability. The reasons invoked by States adopting such local policies include the following:

* The need for an immediate or short-term transition from existing ground networks, and in particular from X.25 networks that are reaching obsolescence;
 * The use of a common ground network infrastructure shared with other ground applications, such as radar data distribution or inter-centre communications (such as OLDI in Europe), such infrastructure being sometimes already in operation.

3- It should be noted that in all known cases, the IP network used or planned to be used is a network infrastructure in which switching equipment and links are dedicated to ATS communications, building a so-called "private" IP network.
It is recognized that other transition strategies can also be developed, that make use of the proposed IP SNDCF to enable IP sub-networks to be used as ATN sub-networks, in a fully SARPs-compliant ATN ICS architecture. However such an architecture is not discussed in the present document.

4- Despite the fact that the implementation of "AMHS over TCP/IP" can meet, as described above, the specific objectives of a State on a local or regional basis, the attention of implementers should be drawn to the fact that the implementation of two different architectures has the following drawbacks:

* It limits "any-to-any" communication between AMHS systems on a global basis that could be needed in specific cases, e.g. for performance requirements;

* It requires the implementation by some States of "dual-stack" AMHS systems, to gateway between AMHS systems using the ATN ICS and AMHS systems using TCP/IP. This may reduce performance and availability;

*The cost of such gateway facilities is expected to be borne by States implementing non SARPs-compliant AMHS systems.

5- In view of the elements above, the following guidance is offered by the ATN Panel on the use of "AMHS over TCP/IP":

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[1]   Such dual-stack systems are beyond the baseline ATN architecture which is specified by ICAO.

1. "AMHS over TCP/IP" implementations should not be presented as fully SARPs-compliant ATN implementations.
2. Non-SARPs-compliant "AMHS over TCP/IP" implementations are seen as a "local solution" within a State or Region. Inter-State or inter-Regional connections between such systems using TCP/IP should be subject to bilateral/regional agreements.
3. States or Regions that implement "AMHS over TCP/IP" systems within their domains are responsible for taking those necessary measures to ensure interoperability with SARPs-compliant implementations in other States or Regions.
4. Appropriate security measures should be taken when using an IP network, irrespective of whether AMHS uses TCP/IP directly or via the IP SNDCF.

The ATNP will continue to monitor related developments and will provide further guidance as appropriate.

MIDANPIRG AFS/ATN TF/9
Appendix 5B to the Report on Agenda Item 3

MID REGIONAL ATN PLANNING DOCUMENT

Document Reference:	MIDANPIRG AFS/ATN – TF/APG
Author:	ATN Planning Group
Revision Number:	Version 02 / 2003
Date:	October 2003

1. CURRENT GROUND INFRASTRUCTURE AND UPGRADE PLANS:

1.1 The present ground-ground data communications system in the Middle Region comprises AFTN circuits, which are not only link tributary and main centers but also allow the exchange of ATS and other operational messages, as well.

1.2 Only four States have implemented the Common ICAO Data Interchange Network (CIDIN) as an upgrade of the low speed AFTN circuits to improve the efficiency and reliability of message exchange. These CIDIN circuits are operating at 9600Bps and the remaining circuits at 50 Bps to 300 Bps, using asynchronous protocols.

1.3 For the time being, there are 19 international circuits that operate within the Region and between neighboring regions. A further detail for each AFTN circuit within the Middle East Region is documented in Table CNS 1A of the ICAO MID CNS Facilities and Services Implementation Document (FASID).

1.4 The current AFTN topology in the Region shows that the majority of circuits will not be suitable to be used for the ATN without some form of upgrade. In later stage, it will be necessary to identify those circuits that need to be upgraded in both bandwidth and protocols.

1.5 With regard to bandwidth requirements, it is assumed that 9600Bps could be used for Intra-regional connections while 19200Bps or higher speed could be preferred for Inter-Regional connections when full ATN is implemented.

1.6 However, lower speeds may be introduced in the initial implementation phases between some centers by bilateral arrangements. Centers will be expected to monitor the performance of these links and increase bandwidth requirements as traffic load increases.

1.7 In respect to the upgrade of protocols, it is expected that they will be implemented on a bilateral arrangements between States according to the preferred protocols: **X25, Frame Relay or Asynchronous Transfer Mode (ATM).**

1.8 It can happen that due to different planning activities by States, which not all States within the Region will be migrating to the ATN at the same time. Therefore, there will be a need to maintain the existing AFTN circuits to operate in parallel with any new implementation of high speed links to meet ATN requirements.

ATN ground applications:

1.9 According to the Manual of Technical Provisions for ATN (Doc. 9705- AN/956), there are currently six end system applications. The table below lists these applications and provides a brief summary of their functions:

Applications	Functions
Context Management (CM)	An ATN application that provides a logon service allowing initial aircraft introduction into the ATN and a directory of all other data link applications on the aircraft.
Automatic Dependent Surveillance (ADS)	An ATN application that provides data from the aircraft to the ATS unit(s) for surveillance purpose.
Controller Pilot Data Link Communication (CPDLC)	An ATN application that provides a means of ATC data communication between controlling, receiving or downstream ATS units and the aircraft, using air-ground and ground-ground sub-networks.
Flight Information Service (FIS)	An ATN application that provides to aircraft information and advice useful for the safe and efficient conduct of flight.
ATS Message Handling Service (ATSMHS)	**The set of computing and communication resources implemented by ATS organizations to provide the ATS message service.**
ATS Inter-facility Data Communication (AIDC)	**An ATN application dedicated to exchanges between ATS units of ATC information in support of flight notification, flight coordination, transfer of control, transfer of communication, transfer of surveillance data and transfer of general data.**

2. CONCEPTS:

2.1 The Middle East Regional ATN routing architecture plan is based upon several concepts:

   a) from a routing domain point of view, the Region can be considered as an "autonomous" area, that is, there is a difference between routers located within the Region and outside the Region.

   b) routing domains and confederations of routing domains may be applied to areas within the Region.

   c) States will make their own implementation and transition decisions.

2.2 The ATN routing architecture plan can be divided into several distinct parts:

- the definition of the backbone routing structure for passing information between routing domains within the Region;
- the definition of the routing structure between routing domains not on the backbone;
- the definition of the routing structure for use in end-routing domains; and
- the definition of the routing structure for passing information from the MID Region to other Regions.

2.3   The first component is the definition of the backbone routing structure that supports the exchange of data within the Region. This part defines the interconnection of the major communication facilities in the Region and how they cooperate to link all of the systems in the Region.

2.4   The second component is the definition of the structure that allows end routing domains to exchange data across the backbone to another end routing domain. This part defines how the end routing domains connect through the backbone.

2.5   The third component defines the routing structure that is used within an end routing
domain. This part defines how the individual routing domains may be used to pass data.

2.6   The fourth part is needed to define how data will be routed between the systems within the Region with those systems outside the Region. More importantly, the structure describes how all-global ATN systems are accessible from systems in the Region.

3.   REGIONAL BACKBONE

3.1   The definition of a Regional Backbone is based upon the efficiencies that may be realized by concentrating ATN traffic at major communication centers and using the economy of scale in passing this information between major communication centers.

3.2   The rationale for defining Regional Backbone sites may be based upon existing major AFTN center sites and on the flow of both current AFTN traffic and possible future air-ground ATN traffic.

3.3   Within the Middle East Region, there are existing major communication centers that can be used to simplify the definition of backbone architecture.

3.4   However, it must be understood that the expected growth in communication traffic over the ATN could quickly exceed the capabilities of the existing communication infrastructure. Planning for the increased traffic loads will be needed as soon as ATN traffic begins to flow.

3.5   The architecture and communication requirements define a routing plan that incorporates alternate routing and communication paths so that no single router or communication failure can isolate major parts of the Region.

3.6   The seven (9) BBIS sites defined in the table below are based on the expected traffic flows. The table is organized with one State and a current AFTN center site identified as a potential backbone router site.

Note: The identified backbone router sites are only examples. Actual backbone router sites will be determined by implementation schedules and States' willingness to implement backbone routers.

ATN Backbone router site	State
1	Bahrain
2	Egypt
3	Iran
4	Jordan
5	Kuwait
6	Lebanon
7	Oman
8	Saudi Arabia
9	United Arab Emirates

Table of definition of Middle East Regional Backbone Sites

3.7   At each ATN Backbone router site, there should be at least one BBIS. States committing to operate backbone routers are presented in the table above.

3.8   Summarizing the information presented above, the Middle East Regional Backbone

3.9   Network will consist of at least one BBIS outer at each of the backbone sites identified above. Examples of locations for these routers are: Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia and United Arab Emirates.

3.10   The actual location of the routers will be based upon implementation schedules and the choices of States.

4.   REGIONAL BACKBONE ROUTER REQUIREMENTS

4.1   The definition of BBIS and the location of these routers may be affected by the requirements for backbone routers. A backbone router must meet several performance and reliability requirements:

- Availability,
- Reliability,
- Capacity, and
- Alternative routing.

Availability

4.2   A backbone router must provide a high-level of availability (24 hours a day, 7 days a week.)

Reliability

4.3   A backbone router must be a very reliable system that may require either redundant hardware or more than one router per site.

Capacity

4.4   As a communication concentrator site, backbone routers must be capable of supporting significantly more traffic than other ATN routers.

Alternative Routing

4.5   Based upon the need for continuity of service, backbone routers will require multiple communication links with a minimum of two and preferably three or more other backbone routers to guarantee alternate routing paths in case of link or router failure.

ROUTING POLICIES

4.6   States providing Regional BBISs must be capable of supporting routing policies that allow for Regional transit traffic and for dynamic re-routing of traffic based upon loading or link/router failures.

Inter-Regional Backbone

4.7   The second component of the Middle East Regional Routing Architecture is the definition and potential location of Inter-Regional Backbone Routers. The manner in which this architecture was developed was to ensure that the use of the existing communication infrastructure is possible to the greatest degree. The use of the existing communication infrastructure should reduce the overall cost of transitioning to the ATN.

4.8   To sum-up, the Inter-Regional BBISs provide communication from routers within the Middle East Region to routers in other regions. These Inter-Regional BBISs provide vital communications across regions and therefore need to have redundant communication paths and high availability. (Note: This can be accomplished through multiple routers at different locations.)

4.9   Based upon the current AFTN circuit environment, the following States have been identified as potential sites for Inter-Regional BBISs. The States currently have circuits with States outside of the Middle East Region are found in the table below.

State	Neighboring Region	Current circuit
Bahrain	Asia-Pac	to be upgraded
Egypt	Africa Europe	to be upgraded
Kuwait	Asia-Pac Europe	to be upgraded to be upgraded
Lebanon	Europe	
Oman	Asia-Pac	to be upgraded
Saudi Arabia	Africa	to be upgraded

Table of circuits with other ICAO Regions

4.10   For the transition to the ATN, connectivity to the other Regions should be a priority. This is especially important as other Regions begin the transition to the ATN and begin deploying ATN BISs.

Long Term Implementation

Note: Information is needed on the plans of States in implementing ATN.

4.11   The transition to a fully implemented ATN requires that connectivity amongst the IACO Regions be robust. That is, there is the need to ensure alternate paths and reliable communication.

4.12   The table below presents a minimal Inter-Regional Backbone that provides a minimum of 2 circuits to other ICAO Regions that communicate directly with the Middle East Region.

4.13   For the long term implementation of ATN, it would be advisable to have 3 circuits to each Region.

Initial Implementation

Note: Information is needed on the plans of States in implementing ATN.

4.14   The initial implementation of the ATN, outside of the Middle East Region, will most likely be in Asia Pac. and Europe. Therefore, initial transition planning may focus on those locations.

4.15   For connecting to Asia Pac, there should be a minimum of two (2) Inter-Regional BBISs. The location of these Inter-Regional BBISs may be located at the centers where the AFTN centers are already located. For example, the following locations would be candidates for such routers: Bahrain, Kuwait and Oman

Note: The locations presented above are examples of possible router sites. The selection of actual locations will be based on implementation schedules and circuit availabilities.

4.16   For connecting to Africa Inter-Regional BBISs may be located in the existing AFTN centers such as Egypt and Saudi Arabia. However, these routers would not be needed until such time as ATN traffic is destined for that Region, at which time the location of the routers would be determined.

4.17   One Inter-Regional BBIS (for example, one located at Jeddah) should serve as a routing gateway to the East and Central African Region.

4.18   A second Inter-Regional BBIS (for example, one located at Cairo) should serve as a routing gateway to the North and East African Region.

4.19   For connecting to European Region, Inter-Regional BBISs may be located at the existing AFTN centers, which already possess high speed and reliable circuits with European centers.

Note: Future work is still required for the definition of policy descriptions for the backbone architecture plan.

Transition Issues

This area needs further work. Information about plans of the States is required.

End BISs

4.20   It is assumed that naming and addressing (and routing domain definition) will be done on a Regional basis. Further, that for areas within the Region that may utilize an End BIS serving more than one State, the naming structure will be based on the Regional NSAP format defined in Doc. 9705. Further, States may choose to either implement the Regional (or Sub-Regional) NSAP format or the State NSAP format based on whether it installs a BIS.

5.   ROUTING DOMAINS

5.1   Each State is expected to have one or more routing domains. Where a State chooses not to implement an ATN BIS, it may choose to incorporate its systems into a routing domain of another State.

5.2   The Middle East ATN Backbone will consist of routers from the selected States. Each of these routers will be part of its State's routing domain.

Note: This means that the backbone will not be configured with its own routing domain. Routing to the backbone and between backbone routers will be controlled through IDRP routing policies.

5.3   Each State will be responsible for the designation of routing policies for its End Systems and End BISs. Individual States will also be responsible for establishing routing policies for routing to its designated BBIS.

5.4   The use of routing confederations is for further study.

6.   ATN TRANSITION

6.1   Based upon the previous sections, the implementation of the ATN within the Middle East Region may require considerable planning for the transition of the AFTN.

Initial Regional Implementations

6.2   The very beginning of ATN implementation will be bilateral testing between States. For this scenario, each State will need at a minimum:

- an ATN-compliant router,
- a means for managing the router,
- an ATN application, and
- a circuit connecting the States.

6.3   States involved in bilateral ATN trials should consider the use of the trial infrastructure in expanding the ATN throughout the Region.

Regional ATN Implementation

6.4   At a certain time, sufficient bilateral trials will be underway to permit a Region-wide ATN network based upon the plan presented above. As each State implements the ATN applications and network infrastructure, it will be added to the Regional infrastructure according to this plan.

MIDANPIRG AFS/ATN TF/9
Report on Agenda Item 6

REPORT ON AGENDA ITEM 6:   MID VSAT PROJECT

6.1   The meeting discussed the technical issues of the MID VSAT feasibility study, taking into account the integration of existing equipments, the harmonization of procedures and the interoperability requirements with the adjacent Regions. Based on the information available, the meeting was of a view that the proposal (Frame Relay over Multiple Channels Per Carrier) in the feasibility study is flexible enough to facilitate a smooth integration of the existing domestic networks and to ensure the necessary interoperability with other Regions. Therefore, the meeting agreed on the following Draft Conclusion:

DRAFT CONCLUSION 9/7:   HARMONIZATION BETWEEN VSAT NETWORKS

That, for the sake of harmonization in the Region and between MID Region with other Regions, the interconnectivity of the MID VSAT be done on the basis of hub-less network using a sole satellite in order to constitute an integrated and seamless network.

6.2   Reviewing the three management scenarios proposed in the MID VSAT feasibility study, the meeting agreed that the forthcoming meeting of the CNS/MET comprising more participants would be in a better position to make a final proposal on the management structure of the future network.

6.3   The meeting recognized that the choices on the technical solutions and management scenarios had direct impact on financing and funding aspects. In order to convince the decision makers in the Region, the meeting suggested that based on information contained in the feasibility study, States should carry out the benefit analysis for the use of VSAT technology versus current leased lines. In this regard, the following disadvantages related to the utilization of leased lines should be taken into account:

- high cost
- insufficient bandwidth
- frequent disruptions (statistics of failures)
- less priority in intervention on solving disruptions

6.4   The meeting agreed that the above mentioned disadvantages have a severe impact on safety, regularity and efficiency of air navigation in the Region,. The Civil Aviation Authorities should use these disadvantages to justify to the Telecommunication Regulatory Authorities the use of VSAT technology by Air Navigation Services Providers in the MID Region and to enhance aeronautical telecommunications.

REPORT ON AGENDA ITEM 7:   ANY OTHER BUSINESS

7.1   Based on the Working Paper presented by the Kingdom of Bahrain the meeting recognized that the Terms of Reference and related Work Programme adopted by the AFS/ATN TF/4 meeting need to be amended due to the following achievements:

-      Development of AFS Plans for both AFTN and ATS Direct speech circuits
-      Improvements in the AFS field and gradual elimination of the deficiencies
-      Implementation of CIDIN, inter-regional and intra-regional
-      Development of initial plan for the ground-to-ground portion of the ATN in the MID Region, including phases of ATN introduction in the Region
-      Preliminary Study of the Middle East VSAT Network
-      Development of MID Regional ATN Planning Document

7.2   The meeting therefore revised the terms of reference and work programme of the Task Force taking into account the introduction of new digital systems and the agreed ATN Plan for transition and implementation in the MID Region which is under development. The revised terms of reference and work programme are shown in **Appendix 7A** to the Report on Agenda Item 7. Accordingly, the meeting developed the following Draft Decision:

DRAFT DECISION 9/8:   REVISED TERMS OF REFERENCE AND WORK PROGRAMME FOR THE AFS/ATN TASK FORCE

That, the MIDANPIRG meeting approves the revised Terms of Reference and Work Programme of the AFS/ATN Task Force as presented in Appendix 7A to the Report on Agenda Item 7.

7.3   The meeting noticed a poor attendance in this Task Force which is affecting its work. Emphasis was once again put on the commitment of States to participate in the task Force meetings and to send the appropriate experts. In this regard, the meeting requested that henceforth, the invitation letter to be sent to all MID States.

7.4   The meeting was informed about the decision of Jordan Civil Aviation Authorities to postpone the ATN Seminar which was planned in Amman in December 2003. Coordination is being made by the ICAO MID Office to find a suitable period in the year 2004. However, it is worth noting that the probability to get again all lecturers available at the same time is very limited.

MIDANPIRG AFS/ATN TF/9
Appendix 7A to the Report on Agenda Item 7

TERMS OF REFERENCE AND WORK PROGRAMME OF THE AFTN/ATN TASK FORCE

1. Terms of Reference

1.1   Follow up on the implementation of the elements of the Aeronautical Fixed Services (AFS) data and digital voice communications and plan for the transition and implementation of ATN in the MID Region to meet performance capacity requirements of the CNS ATM System.   The planning function includes the development of necessary recommendations and regional documentation.

2. Work Programme

Item	Description	Target Date
1	Review the AFTN plan with a view to ensure alternate routing capability where required and to ensure the efficiency of the plan and use of AFTN message statistics for the purpose of increasing capacity and circuit planning in the region.	On-going
2	Review and evaluate the effect of increases in capacity and of newly implemented and proposed AFTN connections on existing circuit loadings	On-going
3	Study and develop a contingency plan in case of major failure of the AFTN.	2004
4	Identify any circuits which could be made redundant as a result of the upgrading of existing circuits and recommended closures, as well as the requirement for new circuits to increase efficiency of the AFTN and recommend the establishment of these circuits.	On-going
5	Consider technological advances and changes to the AFTN with due account of the implementation of ground-to ground elements of ATN.	On-going
6	Further review of ATS Voice Communication Plan in order to develop methods to improve reliability and efficiency including the use of digital communications.	On-going
7	Evaluate the use of available technology for the transfer of ATS messages between adjacent centers as an interim step, if required, until the availability of ATN.	2006
8	Continue the development of the MID Regional ATN Planning Document.	On-going
9	Follow up on the deficiencies in the AFS field.	On-going
10	Follow up on the development and implementation of the MID VSAT Project	On-going

- END -