



INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

**REPORT OF THE SECOND MEETING OF THE
COMMUNICATION, NAVIGATION,
SURVEILLANCE/AIR TRAFFIC MANAGEMENT/
IMPLEMENTATION COORDINATION SUB-GROUP**

(CNS/ATM/IC SG/2)

(Cairo, 16-18 March 2005)

The views expressed in this Report should be taken as those of the CNS/ATM/IC SG Second 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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CNS/ATM/IC SG/2
History of the Meeting

PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Second Meeting of the MIDANPIRG CNS/ATM/IC SG was held at the ICAO MID Regional Office in Cairo, Egypt from 16 to 18 March 2005.

2. OPENING

2.1 Mr. M.R.M. Khonji, ICAO Regional Director Cairo welcomed delegates to this meeting. He drew the attention of the meeting to the important developments regarding the approach and methodology towards CNS/ATM planning and implementation based on the common framework of the Global ATM Operational Concept. In this regard, Mr. Khonji requested the meeting to review and update the MID Air Navigation Plan taking into account the objectives of the proposed amendments to the Global Air Navigation Plan for CNS/ATM systems. To conclude, Mr. Khonji wished the meeting fruitful deliberations and outcome that would reflect the MID Region's position on matters related to planning and implementation of CNS/ATM systems.

2.2 Mr. M. O. Al-Alawi, Director General ATS, Presidency of Civil Aviation, Saudi Arabia, the chairman of the meeting also welcomed all the participants to the meeting and expressed his hope for a fruitful dialogue among the experts of the Sub-Group.

3. ATTENDANCE

3.1 The meeting was attended by a total of 45 participants, which included delegates from 9 States and two International Organizations. The list of participants is at Attachment A.

4. OFFICERS AND SECRETARIAT

4.1 Mr. M. Traore, RO/CNS and Mr. M. Smaoui, RO/AIS/MAP of ICAO MID Office acted as Secretaries of the meeting.

5. LANGUAGE

5.1 The discussions were conducted in English. Documentation was issued in English.

6. AGENDA

6.1 The following Agenda was adopted:

- Item 1: Adoption of the Agenda and election of the Vice-Chairperson
- Item 2: Review Status of Conclusions and Decisions from MIDANPIRG/7 & 8 relevant to CNS/ATM Planning and Implementation
- Item 3: Review of the proposed Terms of Reference and Work Programme

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- Item 4: Review of the outcome of the ATM/SAR/AIS SG/7, GNSS TF/4, CNS/MET SG/6 and AFS/ATN TF/9 & 10
- Item 5: Harmonization of the MID CNS/ATM Implementation Plan as a result of the outcomes of the 11th Air Navigation Conference
- Item 6: Review/update of implementation timelines
- Item 7: Any other business
- 7.1 ITU World Radiocommunication Conferences (WRC-03 and WRC-07)
- 7.2 On-Line Data Interchange (OLDI)
- 7.3 CNS/ATM Human Resource Planning and Training Task Force
- 7.4 Future Work Programme

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 which, in accordance with the Group's terms of reference, merit directly the attention of States on which further action will be initiated by ICAO in accordance with established procedures; and
- b) **Decisions** deal with matters of concern only to the MIDANPIRG and its contributory bodies

8. LIST OF CONCLUSIONS AND DECISIONS

- DRAFT CONCLUSION 2/1: FURTHER TEST ACTIVITIES AND STUDIES OF EGNOS IN THE MID REGION
- DRAFT CONCLUSION 2/2: WAAS DEMONSTRATION TEST BEDS
- DRAFT CONCLUSION 2/3: COST-BENEFIT CONSIDERATION FOR AUGMENTATION SYSTEMS
- DRAFT CONCLUSION 2/4: REVISED STRATEGY OF THE GNSS IMPLEMENTATION IN THE MID REGION
- DRAFT DECISION 2/5: IMPROVEMENT OF THE WORK OF THE ATN PLANNING GROUP
- DRAFT CONCLUSION 2/6: USE OF DIGITAL HIGH-SPEED CIRCUITS BETWEEN MAIN CENTRES
- DRAFT CONCLUSION 2/7: HARMONIZATION BETWEEN VSAT NETWORKS
- DRAFT CONCLUSION 2/8: ORGANIZATION OF THE ATN SEMINAR IN THE MID REGION

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- DRAFT CONCLUSION 2/9: METHODOLOGY TO ERADICATE MULTIPLE REPETITIONS AND NON-RECEIPT OF ATS MESSAGES
- DRAFT CONCLUSION 2/10: ESTABLISHMENT OF AN INTEGRATED INITIAL FLIGHT PLAN PROCESSING SYSTEM (IFPS) IN THE MID REGION
- DRAFT CONCLUSION 2/11: IMPLEMENTATION OF D-ATIS AND PDC IN THE MID REGION
- DRAFT CONCLUSION 2/12: CONVENING OF THE CNS/ATM HR P&T TF/1

CNS/ATM/IC SG/2
Report on Agenda Item 1

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE AGENDA AND ELECTION OF VICE-CHAIRPERSON

Adoption of Provisional Agenda

1.1 The meeting was presented with a Provisional Agenda for the Second Meeting of the CNS/ATM/IC Sub-Group. After review the meeting adopted the Agenda as shown in paragraph 6 of the History of the Meeting.

Election of Vice-Chairperson

1.2 The meeting recalled that the CNS/ATM SG/4 unanimously elected Mr. Mohamed Thamer Al-Kaabi from Bahrain as Vice-Chairman. The CNS/ATM/IC SG, which replaced the CNS/ATM SG, at its first meeting (Cairo, 5-9 November 2001), was of view that both the Chairman and Vice-Chairman of the former CNS/ATM/SG continue to serve the CNS/ATM/IC SG in their previous positions.

1.3 Bahrain informed the meeting that Mr. Mohamed Thamer Al-Kaabi was not able to attend this meeting due to unforeseen circumstances, however he is willing to continue serving as Vice-Chairperson of the CNS/ATM/IC SG. This was supported by Egypt and agreed by the meeting.

CNS/ATM/IC SG/2
Report on Agenda Item 2

**REPORT ON AGENDA ITEM 2: REVIEW STATUS OF CONCLUSIONS AND DECISIONS FROM
MIDANPIRG/7 & 8 RELEVANT TO CNS/ATM PLANNING
AND IMPLEMENTATION**

2.1 Under this agenda item, the meeting recalled that States have highlighted the need to review the Conclusions/Decisions of previous MIDANPIRG meetings to ensure that they are amended/updated regularly to indicate the implementation status. It was also mentioned that the complete list of Conclusions/Decisions from MIDANPIRG/5 to MIDANPIRG/8 will be presented to MIDANPIRG/9 meeting, which will be convened in Cairo, 11-15 April 2005.

2.2 The meeting noted the actions, taken pursuant to MIDANPIRG/7& 8 Conclusions and Decisions relating to the ATM, AIS, CNS and MET fields. Special attention was, however, given to those Conclusions/Decisions related to CNS/ATM implementation. The relevant list of Conclusions and Decisions and a summary of action(s) taken are at **Appendix 2A** to the report on Agenda Item 2.

CNS/ATM/IC SG/2
 Appendix 2A to the Report on Agenda Item 2

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>CONCLUSION 7/8: IMPLEMENTATION OF GNSS IN THE MID REGION</p> <p>That, recognizing that the use of GNSS will significantly facilitate RNP operational approvals in the MID Region:</p> <p>a) States use JAA Guidance Material on Airworthiness and Operational Criteria for use of navigation systems in European airspace designated for basic RNAV (RNP 5) operations;</p> <p>b) States use the FAA Order 8400.12 for the granting of RNP 10 operational approvals; and States issue an AIC on the use of GNSS as a supplemental means of navigation on the AIRAC date of 18 April 2002 and ensure that provisions regarding the use of GNSS be included in their national legislation.</p>	Ongoing	<p>Endorsed by majority of MID Region States. Still current and to be maintained.</p>
<p>DECISION 7/37: ESTABLISHMENT OF THE CNS/ATM HUMAN RESOURCE PLANNING AND TRAINING TASK FORCE</p> <p>That, the CNS/ATM Human Resources Planning and Training Task Force be established as a matter of priority for the MID Region with the Terms of Reference and Work Programme as presented at Appendix 6C to the report on Agenda Item 6 The composition will be decided at the first meeting of the task force which will report to the MIDANPIRG.</p>	Action taken	<p>Need to merge with MIDANPIRG/8 Conclusion 8/39.</p>
<p>CONCLUSION 7/38: THE STEP-BY-STEP APPROACH FOR PLANNING ATM REQUIREMENTS AND CNS INFRASTRUCTURE IN THE MID REGION</p> <p>That, MID Region States that have not yet done so, either individually or in-group of States use the methodology indicated in the Global Air Navigation Plan for CNS/ATM Systems (Doc 9750), in carrying out tasks associated with the step-by-step approach for planning ATM requirements and CNS infrastructure.</p>	Ongoing	<p>Requires input from States. To be discussed in the CNS/ATM/IC SG/2 meeting.</p>

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>CONCLUSION 7/39: CNS/ATM NATIONAL PLANS AND UPDATES TO TIMELINES</p> <p>That, MID Region States that have not yet submitted their National CNS/ATM Plan and those that have updates to their National CNS/ATM Plan, are urged to submit as soon as possible to the ICAO MID Regional Office prior to 1st June 2002, in order to be incorporated in the Second Edition of the CNS/ATM Implementation Plan for the Middle East Region.</p>	Ongoing	<p>The following States have submitted plans: Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, UAE and Yemen.</p>
<p>CONCLUSION 7/41: TARGET DATE FOR THE APPROVAL OF GNSS AS A SUPPLEMENTAL MEANS FOR EN-ROUTE AND NON-PRECISION APPROACHES IN THE MID REGION</p> <p>That,</p> <p>a) The AIRAC date for the implementation of GNSS in the MID Region as a supplemental means for en-route is 18 April 2002. b) States may wish to implement GNSS for Non Precision Approaches with effect from 18 April 2002. c) States that have not yet amended their legislation and regulations are urged to do so in order to meet the above AIRAC date.</p>	Ongoing	<p>GNSS is implemented for en-route in Egypt, Iran, Kuwait, Lebanon, Qatar, Oman and en-route NPA, Bahrain and UAE.</p>
<p>CONCLUSION 8/1: HARMONIZATION OF AIR NAVIGATION SYSTEMS</p> <p>That, ICAO and the CNS/ATM partners place emphasis on identifying and addressing the interface issues and associated difficulties with a view to facilitating the harmonized planning and implementation of air navigation systems giving rise to a global ATM system.</p>	Ongoing	
<p>CONCLUSION 8/36: WGS-84 IMPLEMENTATION IN THE MID REGION</p> <p>That States,</p> <p>a) not having done so, are urged to achieve the total implementation of the WGS-84 System;</p>	Ongoing	Action by States

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>b) use the ICAO uniform format (FASID Table AIS-5) for reporting the status of implementation of WGS-84; and</p> <p>c) report the status of implementation of WGS-84 on a regular basis until the system is fully implemented.</p>		
<p>DECISION 8/37: REVISED TERMS OF REFERENCE AND WORK PROGRAMME FOR THE CNS/ATM/IC SUB-GROUP</p> <p>That, for the CNS/ATM/IC Sub-Group to properly progress with a clear vision and appropriate directives, the approved revised Terms of Reference (TOR) and Work Programme of the Sub Group attached at Appendix 6P, should be further reviewed by the CNS/ATM/IC Sub-Group.</p>	Ongoing	Action by States
<p>CONCLUSION 8/38: PRESENTATION OF CNS/ATM IMPLEMENTATION PROJECTS BY MID STATES TO CNS/ATM/IC SUB-GROUP MEETINGS</p> <p>That, MID Region States attending the CNS/ATM/IC Sub Group meetings should submit to ICAO MID Regional Office in sufficient time prior to each meeting of the Sub-Group, working and/or information paper(s) on recent studies, projects, developments, trials and demonstrations related to the implementation of the CNS/ATM systems in their State or group of States.</p>	Ongoing	
<p>CONCLUSION 8/39: MID REGION STATES SUPPORT FOR THE CNS/ATM HUMAN RESOURCES PLANNING AND TRAINING TASK FORCE</p> <p>That, MID region States in addition to that listed in the CNS/ATM Human Resources Planning and Training Task Force composition, having experience in the fields of human resources planning and training, specially those having training schools/colleges, should:</p> <p>a) provide the ICAO MID Regional Office with adequate information on their CNS/ATM training programmes; and</p> <p>b) support the Task Force by participating effectively in its meetings.</p>	Ongoing	Action by States

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>DECISION 8/44: DEVELOPMENT OF THE MID REGIONAL ATN PLANNING DOCUMENT</p> <p>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.</p>	Ongoing	
<p>CONCLUSION 8/52: PROTECTING GNSS FROM HARMFUL INTERFERENCE IN THE MID REGION</p> <p>That considering, Para. (c) of Conclusion 7/8, regarding the Implementation of GNSS in the MID Region, footnotes 5.362B and 5.362C of ITU WRC - 2003 Conference, regarding the additional allocation of the band 1 559 – 1 610 MHz (which is used for elements of GNSS) to fixed service and in order to protect GNSS from harmful interference in the MID Region:</p> <ul style="list-style-type: none"> i) MID Region States who have not done so should immediately refrain from using or allocating the band 1 559 – 1 610 MHz to fixed service. ii) MID Region States whose name is still in the footnotes should request ITU to delete their country's name from footnotes 5.362B and 5.362C. iii) Aeronautical community using GNSS in the MID Region when detecting harmful interference should immediately inform ICAO MID Region office using the Harmful Interference Report Form. 	Actioned	Request was sent to States to remove their names from the relevant footnotes.
<p>CONCLUSION 8/54: ELIMINATION OF AIR NAVIGATION DEFICIENCIES IN THE MID REGION</p> <p>That,</p> <p>1) States allocate sufficient resources for the elimination of the deficiencies.</p>	Ongoing	SL AN 2/2-242 dated 19 Nov 2003, has been sent to MID States. Seven (7) States have provided the requested action plan and updated list of deficiencies. Followed by ICAO Secretary General letter A 6/1 dated 15 July 2004.

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>2) States are encouraged to set up an internal group of experts to examine the list of deficiencies and take appropriate actions with a view to recommend to their higher Civil Aviation Authorities solutions for elimination of deficiencies.</p> <p>Note: Such group should also include other experts from out of the air navigation field as appropriate, for strengthening and effectiveness of recommendations.</p> <p>3) States formulate and review on a regular an action plan including the rationale for non-elimination of deficiencies, using the format presented as Appendix 8H.</p> <p>The first action plan to be submitted to the ICAO MID Regional Office for review, prior to the 31st December 2003.</p>		
<p>CONCLUSION 8/58: STATES DELEGATION TO THE TRAFFIC FORECASTING SUB-GROUP</p> <p>That MID Region States,</p> <p>a) ensure that their representatives in the TFSG include appropriately qualified ATM and Air Transport experts and, when required, financial analysts;</p> <p>b) ensure that their respective nominees to the membership of TFSG regularly attend meetings of the Sub-group and participate in the development of forecasts and other planning parameters to support air navigation planning and implementation processes, including the implementation of CNS/ATM systems in the region; and</p> <p>c) supply TFSG with the data and other information required for the development of forecasts and the conduct of business case studies and cost/benefit analysis on a regular basis.</p>	<p>Progressing satisfactory</p>	

FOLLOW-UP ACTION ON MIDANPIRG/7&8 CONCLUSIONS/DECISIONS		
CONCLUSIONS/DECISIONS	STATUS	REMARKS
<p>CONCLUSION 8/59: STATES SUPPORT TO THE TRAFFIC FORECASTING SUB-GROUP</p> <p>That, the change of the TFSG strategy which is aimed at making it largely self-sufficient in developing forecasts, business case studies and cost/benefit analysis requires additional support and commitment by States in order to enable the Sub-group to meet the requirements of the MIDANPIRG in an effective manner. Such support may include:</p> <p>a) financial support; b) in-kind support; and c) other support as identified by the Sub-group</p>	Ongoing	

CNS/ATM/IC SG/2
Report on Agenda Item 3

**REPORT ON AGENDA ITEM 3: REVIEW OF THE PROPOSED TERMS OF REFERENCE AND
WORK PROGRAMME**

3.1 Under this agenda item, the meeting recalled that MIDANPIRG/8 under Decision 8/37 approved revised Terms of Reference and Work Programme of the CNS/ATM/IC Sub-Group and agreed that they should be further reviewed by the Sub-Group.

3.2 The meeting accordingly, agreed to the revised TOR and Work Programme as shown at **Appendix 3A** to the report on Agenda Item 3.

**COMMUNICATIONS, NAVIGATION, SURVEILLANCE/
AIR TRAFFIC MANAGEMENT/IMPLEMENTATION COORDINATION SUB-GROUP
(CNS/ATM/IC SG)**

TERMS OF REFERENCE AND WORK PROGRAMME

TERMS OF REFERENCE

In accordance with the objectives and planning methodology developed for the evolutionary transition towards the progressive implementation of the global air traffic management systems, taking into consideration the new CNS technologies and the requirements and expectations of the ATM partners. The CNS/ATM/Implementation Coordination Sub-Group will:

1. Review and update, on a regular basis of the CNS/ATM Implementation Plan for the MID Region in the light of new developments.
2. *Harmonize Plans of MID States and international organizations with that of the MID Region and the Global Plan for the evolutionary implementation of CNS/ATM within the MID Region.*
3. Monitor the progress of updated studies, projects, trials and demonstrations by the MID Region States, and information available from other Regions.
4. Provide a forum for active exchange of information between States.
5. Identify deficiencies and constraints that would impede implementation of the CNS/ATM systems, and propose solutions that would facilitate the rectification of such problems.

WORK PROGRAMME

- a) Review and identify intra and inter regional co-ordination issues and where appropriate recommend actions to address those issues.
- b) Provide assistance in planning and implementation CNS/ATM elements to States in the MID Region.
- c) Suggest ways and means for rectifying the problems as they arise related to the implementation of CNS/ATM systems.
- d) Identify and co-ordinate CNS/ATM implementation priorities in the MID Region, and promote implementation activities in the field of CNS/ATM.
- e) Identify CNS/ATM requirements for inclusion in the MID FASID in a progressive manner.

COMPOSITION

The Sub-Group will be composed of the 15 MID Region Provider States and IATA (observer).

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Report on Agenda Item 4

**REPORT ON AGENDA ITEM 4: REVIEW OF THE OUTCOME OF THE ATM/SAR/AIS SG/7,
GNSS TF/4, CNS/MET SG/6 AND AFS/ATN TF/9&10**

4.1 Review of the outcome of the ATM/SAR/AIS SG/7 meeting

4.1.1 Under this agenda item, the meeting was apprised of the outcome of the seventh meeting of the ATM/SAR/AIS Sub Group (ATM/SAR/AIS SG/7), which was held in Cairo, 11-14 October 2004. The meeting recalled that the ATM/SAR/AIS Sub-Group reports directly to MIDANPIRG and that the outcome of the ATM/SAR/AIS SG/7, which emanates mainly from the reports of the RNP/RNAV TF/7, RVSM TF/11, MMS/2 and AIS/MAP TF/2, would be presented to MIDANPIRG/9.

4.1.2 The meeting noted accordingly the outcome of the ATM/SAR/AIS SG/7 and made comments on a number of issues. Concerns were raised especially on the establishment of a Regional Monitoring Agency (RMA) in the MID Region and the replacement of the terms P-RNAV (Precision RNAV) by T-RNAV (Terminal RNAV) and RNP 5 by B-RNAV (Basic RNAV).

4.1.3 It was clarified, in this regard, that the issue of establishment of an RMA was not specific to the MID Region and that it had been discussed during the second meeting of the MIDANPIRG Member States (MMS/2) held in Bahrain, 19-21 September 2004 whose Recommendations on the subject were fully endorsed by the ATM/SAR/AIS SG/7 and will be presented to MIDANPIRG/9. The meeting noted also that the MID Regional Office has approached FAA and Eurocontrol asking for assistance for the establishment of an RMA in the MID Region.

4.1.4 It was highlighted also that a Study Group named "Required Navigation Performance and Special Operational Requirements Study Group (RNP SORSG)" had been established by the ICAO Council with a view to urgently address and progress the issues associated with the introduction of RNAV and RNP. The RNP SORSG agreed that the term P-RNAV would be replaced by T-RNAV. The meeting recalled also that B-RNAV is implemented in Europe and that the airworthiness and approval criteria are available for B-RNAV but not for RNP 5.

4.1.5 The meeting then, reviewed and updated the status of implementation of WGS-84 in the MID Region as shown at **Appendices 4A** and **4B** to the report on Agenda Item 4 and agreed that the development of some AIS/MAP timelines as shown at **Appendix 4C** to the report on Agenda Item 4, could be a useful planning tool for the MID Region.

4.1.6 Based on the information presented by Saudi Arabia, the meeting supported the development and implementation of RNAV SIDs and STARs in the MID Region and recalled Draft Conclusion 7/10 of the ATM/SAR/AIS SG/7 **ESTABLISHMENT OF RNAV SIDS AND STARS IN THE MID REGION**", which will be presented to MIDANPIRG/9. The meeting agreed that year 2006 will be the timeline for the region to implement such procedures.

4.1.7 The meeting noted with appreciation the proposal made by Saudi Arabia related to the adoption of a project management approach, which consists of the establishment of Operational Improvement Groups "OIG" or Working Groups "WG", to fulfil specific ATM requirements and/or develop an ATM transition strategy/plan for the MID Region. Those Groups should be composed of experts from MID States, ICAO, and IATA, using mainly internet/emails for communication and exchange of information, and tasked to produce specific deliverables within defined timelines. When the task is accomplished, the Team Leader will present the deliverable, to the appropriate MIDANPIRG Sub-Group or Task Force for review and action.

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Report on Agenda Item 4

4.2 Review of the outcome of the GNSS TF/4 meeting

4.2.1 Under this agenda item, the meeting was informed about the outcome of the EGNOS test campaign that took place in Bahrain, Egypt and Saudi Arabia. The result of the trials showed that the extension of EGNOS architecture was technically feasible in the MID Region provided that additional reference stations are installed in adequate sites. In this regard, European Space Agency in coordination with Galileo Joint Undertaking should carry out system engineering studies to define the adequate architecture scenarios and the relevant cost estimation, in order to satisfy APV1 and APV2 requirements in the Region. Accordingly, the meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 2/1: FURTHER TEST ACTIVITIES AND STUDIES OF EGNOS IN THE MID REGION

That,

- a) *EGNOS test bed based on the ENAV experience during the MIDAN activities be continued until adequate data representative of the region be available.*
- b) *The feasibility of using additional Ranging Integrity Monitoring Systems (RIMS) for achieving APV1 and APV2 requirements and a proposal for time scale be evaluated by Galileo Joint Undertaking.*
- c) *To support the regional cost-benefit analysis, European Space Agency (ESA), defines the EGNOS architecture scenarios on the number/location of RIMS required for achieving APV 1 and APV 2 requirements throughout the MID Region.*

4.2.2 The meeting noted with interest the proposal from US Trade and Development Agency (USTDA) for feasibility studies of the possibility of implementing a GNSS/SBAS in the Middle East Region. This new test bed should be considered as one of the options for GNSS augmentation scenario in the Region and as such should be encouraged by the States. In this regard, the meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 2/2: WAAS DEMONSTRATION TEST BEDS

That, the States of the MID Region be encouraged to participate in the study of the WAAS demonstration test beds by providing facilities for the reference stations when required.

4.2.3 With regards to the NAVISAT project, which could be considered as one of the space communications segment options to support the implementation of GNSS in the Region, the meeting urged the NAVISAT Working Group to finalize its task and present it to the next GNSS TF meeting.

4.2.4 Based on the above, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/3: COST-BENEFIT CONSIDERATION FOR AUGMENTATION SYSTEMS

That,

- a) *no commitment be made on the augmentation systems to be used until all other options and implementation trends with associated cost benefit analyses are fully considered; and*

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Report on Agenda Item 4

b) implementation strategy to be considered with user requirements, implementation trends/options endorsed in adjacent regions in accordance with the operational concept and planning principles of the global air navigation plan for CNS/ATM systems.

4.2.5 The meeting recalled that IATA made comments and remarks on the NAVISAT project. IATA also pointed out that they had never supported the use of any space based augmentation systems, since the current GPS meets the requirements of the airspace users.

4.2.6 Following the outcome of the ANConf/11 related to the amendment of the Global Air Navigation Plan for CNS/ATM Systems (Doc 9750), the meeting noted that the vision of GNSS was evolving away from the concept of supplementary, primary or sole means of navigation (using a single system) to the concept of multiple sensors to be used for area navigation and approach, landing and departure operations, where GNSS elements are regarded as individual sensors.

4.2.7 Reviewing the other GNSS activities, the meeting made some amendments to Package 1 of the document called "Improvement of Navigation Systems in the MID Region" attached at **Appendix 4D** to the report on Agenda Item 4.

4.2.8 In light of the above, and in order to adopt the Revised Strategy for the Implementation of GNSS capabilities in the MID Region as indicated in **Appendix E** to the report on Agenda Item 4. The meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 2/4: REVISED STRATEGY OF THE GNSS IMPLEMENTATION IN THE MID REGION

*That, the revised strategy for the implementation of GNSS in the Middle East Region be adopted as indicated in **Appendix 4E** to the report on Agenda Item 4.*

4.3 Review of the outcome of the AFS/ATN TF/9 and CNS/MET SG/6 Meetings

4.3.1 The CNS/ATM/IC SG meeting noted the work done by the ATN Planning Group and agreed with the working methodology to appoint a Rapporteur in order to expedite the development of the MID ATN Planning Document. Accordingly, the meeting adopted the following Draft Decision:

DRAFT DECISION 2/5: 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.

4.3.2 Due to the introduction of new digital systems and the ATN Plan for transition and implementation in the MID Region, the meeting agreed with the revised terms of reference and work programme proposed by the AFS/ATN TF/9 meeting. The revised Terms of Reference and Work Programme are at **Appendix 4F** to the report on agenda item 4.

4.3.3 Taking into account the fact that the use of high speed links based on digital technology would facilitate a smooth transition to the ATN, the meeting formulated the following Draft Conclusion:

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Report on Agenda Item 4

DRAFT CONCLUSION 2/6: USE OF DIGITAL HIGH-SPEED CIRCUITS BETWEEN MAIN CENTRES

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

4.3.4 Regarding the technical and institutional aspects of MID VSAT Project, the meeting agreed that MID States:

- a) Provide ICAO MID Regional Office with their cost benefit analysis (CBA) on the use of VSAT technology, preferably before July 2005.
- b) Obtain the necessary authorization from their respective National Telecommunications Regulatory Authorities in order to install and operate VSAT equipments, preferably before December 2005.

4.3.5 The meeting also agreed that the harmonization process and the interoperability requirements of the MID VSAT within the Region and with the adjacent Regions, took into account the use of FM-TDMA technique (Frequency Modulation Time Division Multiplex Access). Accordingly, the meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 2/7: HARMONIZATION BETWEEN VSAT NETWORKS

That, for the sake of harmonization in the Region and between MID Region and 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.

4.3.6 Regarding the MID Contingency Planning Document, the meeting agreed on the amendments brought in some chapters of the document to take into account the MID GNSS strategy and the availability of digital high-speed circuits. The updated Contingency Planning Document is at **Appendix 4G** to the report on Agenda Item 4.

4.4 Review of the outcome of the AFS/ATN TF/10 meeting

4.4.1 The meeting noted with satisfaction that the first ATN Seminar in the Region was held in Amman from 20 to 22 November 2004. The summary of discussions is attached at **Appendix 4H** to the report on Agenda Item 4. In this regard, the meeting expressed its gratitude and appreciation to Jordan Civil Aviation for all the support they provided in successfully organizing this important event in Amman.

4.4.2 Based on the summary of discussions and the feedback received from the Region, the meeting considered the first ATN Seminar a successful event. However, the meeting noted with surprise the poor attendance from MID States in spite of the effort put by the ICAO MID Regional Office during three years in finding a hosting State and adequate speakers. In this regard, concerns were expressed on the commitment of States to give special attention for training issues, especially seminars. Consequently, the meeting developed the following Draft Conclusion:

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Report on Agenda Item 4

DRAFT CONCLUSION 2/8: ORGANIZATION OF THE ATN SEMINAR IN THE MID REGION

That,

- a) *ICAO MID Regional Office makes the required arrangements to organize an ATN Seminar/Workshop in year 2006 to assist States for the initial implementation of AMHS in the Region.*
- b) *MID States cooperate in assisting ICAO MID Regional Office in hosting this important event.*
- c) *MID States take this opportunity by sending sufficient participants to this seminar/workshop in order to constitute the nucleus of the core team charged of the ATN implementation in the Region.*

4.4.3 The meeting was seriously concerned about the information provided by UAE and IATA regarding the harm caused to some MID Centres by the multiple repetitions of FPL messages.

4.4.4 The meeting recalled that the RVSM TF/11 and the ATM/SAR/AIS SG/7 discussed this issue and noted the concerns of the users regarding delays in the processing/transmission of flight plans and highlighted that there is an urgent need to ensure that flight plans are properly filed and transmitted over the AFTN. It was noted that most of the time the problem is related to human factors, where improper addressees are being typed or typing errors at the level of manual processing systems, resulting in rejection of the flight plan at the level of automated systems.

4.4.5 The meeting was informed also that some FDPS systems couldn't accept more than 7 to 8 characters in item 10 of the flight plan and RVSM status, letter **W** is often chopped off. This results in treating those flights as non-RVSM approved in the MID Region and aircraft are often instructed to descent below RVSM flight levels. The meeting recalled that MECMA carried out a check of flight plans for flights within the Emirates FIR (OMAE) with the "W" capability indicator in Item 10 against the RVSM approvals registry.

4.4.6 The meeting shared the concerns of the ATM/SAR/AIS SG and the RVSM TF and recognized the widespread lack of adherence to ICAO standards and procedures, manifested in:

- late filing of FPL
- no filing of FPL
- use of incorrect aircraft type designators
- incorrect procedures for filing of changes to FPL
- duplicate filing of FPL
- incorrect addressing of FPL
- lack of compliance with ICAO Doc 4444 and Doc 7910 procedures.

4.4.7 The meeting was informed that many flight plans did not reach their destinations and noted the need for using proper addressees and transmission delays/outages. In this regard, the meeting requested ICAO in coordination with IATA and the concerned MID States to carry out a survey on the inconsistencies related to the dissemination of ATS messages over the AFTN system in the MID Region.

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4.4.8 Meanwhile, the meeting agreed on concrete and immediate measures as described below:

- a) All en-route addresses be standardized and those required in the relevant Flight Data processing System to be available and advertised to all ATC units so that FPLs can be addressed to them.
- b) Flight Data Processing Systems be able to process all FPL items in accordance with Doc 4444 procedures.
- c) Encourage the automated filing of FPLs.
- d) ICAO MID Regional Office to inform the AFI Region about the missing of the letter " W " in FPL item 10 and non-reception of the FPLs originated from Khartoum and Lagos Centres.

4.4.9 Based on the above the meeting developed the following Draft Conclusion:

DRAFT CONCLUSION 2/9: *METHODOLOGY TO ERADICATE MULTIPLE REPETITIONS AND NON-RECEIPT OF ATS MESSAGES*

*That, in order to identify and remedy the inconsistencies related to the multiple repetitions and non-receipt of ATS messages, the MID Region adopts the working methodology attached at **Appendix 4I** to the report on Agenda Item 4.*

4.4.10 Moreover, the meeting noted with appreciation the proposal made by Bahrain to establish an Integrated Initial Flight Plan Processing System (IFPS) for the MID Region. The meeting was of view that this could be a solution to eliminate all the problems associated with the reception and processing of flight plans in the Region.

4.4.11 Based on the foregoing the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 2/10: *ESTABLISHMENT OF AN INTEGRATED INITIAL FLIGHT PLAN PROCESSING SYSTEM (IFPS) IN THE MID REGION*

That,

- a) *The concept of establishment of an Integrated Initial Flight Plan Processing System (IFPS) in the MID Region is supported by MID States; and*
- b) *a feasibility study for the Implementation of an IFPS in the MID Region be carried out.*

Note: This study will be led by Bahrain with the cooperation of all concerned parties, in coordination with ICAO.

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Appendix 4A to the Report on Agenda Item 4

STATUS OF IMPLEMENTATION OF WGS-84 IN THE MID REGION

	FIR	ENR	TMA/CTA/CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	REMARKS
AFGHANISTAN	N	N	N	N	N	N	N	N	N	Not reported using uniform format
BAHRAIN	F	F	F	F	F	F	F	F	F	
EGYPT	F	F	F	F	F	F	F	F	F	
IRAN	F	F	P	N	F	N	P	P	F	
IRAQ	N	N	N	N	N	N	N	N	N	Not reported using uniform format
ISRAEL	N	N	N	N	N	N	N	N	N	Ref is made to Israel Fax dated 21 Aug. 2002: Implementation was expected for Nov 2003
JORDAN	F	F	F	F	F	F	F	N	F	
KUWAIT	F	F	F	F	F	F	N	N	F	
LEBANON	F	F	F	F	F	F	N	N	F	
OMAN	F	F	F	F	F	F	F	F	F	
QATAR	F	F	F	F	F	F	N	N	F	
SAUDI ARABIA	F	F	F	F	F	F	N	F	F	GUND implementation under process
SYRIA	N	F	P	P	P	P	N	N	N	Under Process Latest report dated 28/3/02
UNITED ARAB EMIRATES	F	F	F	F	F	F	F	F	F	
YEMEN	N	N	N	N	F	F	N	N	N	Not reported using uniform format (Publication was expected for June 2003)

Legend:

F: Fully implemented

P: Partly implemented

N: Not implemented

CNS/ATM/IC SG/2
Appendix 4B to the Report on Agenda Item 4

FASID TABLE AIS-5 — WGS-84 REQUIREMENTS

EXPLANATION OF THE TABLE

Column

- 1 Name of the State, territory or aerodrome for which WGS-84 coordinates are required with the designation of the aerodrome use:

RS — international scheduled air transport, regular use
RNS — international non-scheduled air transport, regular use
RG — international general aviation, regular use
AS — international scheduled air transport, alternate use
- 2 Runway designation numbers
- 3 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume 1, Chapter I, are:

NINST — non-instrument runway;
NPA — non-precision approach runway
PA1 — precision approach runway, Category I;
PA2 — precision approach runway, Category II;
PA3 — precision approach runway, Category III.
- 4 Requirement for the WGS-84 coordinates for FIR, shown by an “X” against the State or territory to be covered.
- 5 Requirement for the WGS-84 coordinates for Enroute points, shown by an “X” against the State or territory to be covered.
- 6 Requirement for the WGS-84 coordinates for the Terminal Area, shown by an “X” against the aerodrome to be covered.
- 7 Requirement for the WGS-84 coordinates for the Approach points, shown by an “X” against the runway designation to be covered.
- 8 Requirement for the WGS-84 coordinates for runways, shown by an “X” against the runway designation to be covered.
- 9 Requirement for the WGS-84 coordinates for Aerodrome/Heliport points (e.g. aerodrome/heliport reference point, taxiway, parking position, etc.), shown by an “X” against the aerodrome to be covered.
- 10 Requirement for geoid undulation shown by an “X” against the runway threshold to be covered.
- 11 Requirement for the WGS-84 Quality System, shown by an “X” against the State or territory to be covered.
- 12 Requirement for publication of WGS-84 coordinates in the AIP shown by an “X” against the State or territory to be covered.
- 13 Remarks (timetable for implementation)

Note.- For Columns 4 to 12 use the following symbols:

- X- Required but not implemented
- XI- Required and implemented

WGS-84 Requirements (MID FASID Table AIS-5)

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/ HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
AFGHANISTAN			X	X						X	X	
(OAKB) KABUL/Kabul					X			X				
RS	11 29	NPA PA1				X X	X X		X X			
(OAKN) KANDAHAR/Kandahar					X			X				
AS	05 23	NPA NPA				X X	X X		X X			
BAHRAIN			XI	XI						X X	XI	
(OBBI) Bahrain Intl.					XI			XI				
RS	30 12	PA1 NPA1				XI XI	XI XI		X X X X			
EGYPT			XI	XI						XI	XI	
HEAR EL-ARISH/El-Arish Int'l					X X			X X				
AS	16 34	NPA NPA				XI XI	XI XI		X X X X			
(HEAT) Asyut					X			X X				
AS	13 31	NINST NPA				X X	XI XI		X X			
(HEAX) Alexandria Int'l					XI			XI				
RS	18 36	NINST NPA				X X	XI XI		X X			
	04 22	NPA NINST				X X	XI XI		X X			
HEAZ CAIRO/Almaza Int'l					X X			X X				
ANS	18 36	NPA NPA				X X X X	X X X X		X X X X			
	05 23	NINST NINST					X X					

4B-3

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
HEBA ALEXANDRIA/Borg El-Arab RS					X			X				
	14 32	NPA PA1				X X	X X		X X			
(HECA) Cairo RS					XI			XI				
	05L 23R	PA2 PA2				XI XI	XI XI		X X	X X		
	05R 23L	PA2 PA2				XI XI	XI XI		X X	X X		
	16 34	NINST NINST				XI XI	XI XI		X X	X X		
(HEGN) Hurghada RS					XI			XI				
	16 34	NPA PA1				XI XI	XI XI		X X	X X		
(HELX) Luxor RS					XI			XI				
	02 20	NPA PA1				XI XI	XI XI		X X	X X		
HEMA MARSA ALAM/ Marsa Alam RNS					X X			X X				
	15 33	NPA NPA				X X	X X		X X	X X		
HEOW SHARK EL OWEINAT/Shark El-Owenat Int'l AS					X X			X X				
	01 19	NPA NINST				X X	XI XI		X X			
HEPS PORT SAID/Port Said Int'l AS					X X			X X				
	10 28	NPA NPA				X X	X X		X X	X X		
(HESC) St. Catherine RS								XI				
	17 35	NINST NINST					XI XI					
(HESH) Sharm-El-Sheikh RS					XI			XI				
	04L 22R	PA1 NINST				XI	XI XI		X X			
	04R 22L	NPA NINST				XI	XI XI		X X			
(HESN) Aswan RS					XI			XI				
	17 35	NPA PA1				XI	XI XI		X X	X X		

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED										REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CZ	APP	RWY	AD/ HEL	GUND	QUALITY SYSTEM	AIP		
1	2	3	4	5	6	7	8	9	10	11	12	13	
(HETB) Taba AS					XI	XI		XI					
	04 22	NPA NINST					XI XI		XI				
IRAN			XI	XI						XI	XI		
(OIKB) Bandar Abbass/ Bandar Abbas Intl RS					XI X			XI X					
	03R 21L	NPA PA1				XI X XI X	XI XI		X X				
	03L 21R	NINST NINST				XI X XI X	XI XI						
(OIFM) Esfahan/ Shahid Beheshti Intl RS					XI X			XI X					
	08L 26R	NPA PA1				XI X XI X	XI XI		X X				
	08R 26L	NPA NPA				XI X XI X	XI XI		X X				
(OIMM) Mashhad/ Shahid Hashemi Nejad Intl RS					XI			XI X					
	13L 31R	NPA PA1				XI X XI X	XI XI		X X				
	13R 31L	NPA PA1				XI X XI X	XI XI		X X				
(OISS) Shiraz/shahid Dastghaib Intl RS					XI			XI					
	11R 29L	NPA PA1				XI XI	XI XI		X X				
	11L 29R	NPA PA1				XI XI	XI XI		X X				
(OITT) Tabriz/Tabriz Intl RNS					XI X			XI X					
	12L 30R	NPA PA1				XI X XI X	XI XI		X X				
	12R 30L	NINST NINST				XI X XI X	XI XI						
(OIIL) Tehran/ Mehrabad Intl RS					XI X			XI X					
	11R 29L	NPA PA1				XI X XI X	XI XI		X X				
	11L 29R	NPA NPA				XI X XI X	XI XI		X X				
(OIIE) TEHRAN/Emam Khomeini Intl RS (Future)					X			X					
	11L 29R	NPA PA1				X X	X X X X		X X				

4B-5

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
(OIZH) Zahedan/Zahedan					X	X		X	X			
Intl RS	17 35	NPA NPA1				X	X		X			
IRAQ			X	X						X	X	
(ORBS) Baghdad Saddam Intl.					X			X				
RS	15L 33R	PA2 PA2				X	X		X			
	15R 33L	PA1 PA1				X	X		X			
					X			X				
(ORMM) Basrah Intl.					X			X				
RS	14 32	PA2 PA2				X	X		X			
ISRAEL			X	X						X	X	The end of the implementation process is expected for July 2003 Publication of coordinates in the AIP is expected for November 2003 .
(LLET) EILAT/Eilat					X			X				
RNS	03 21	NPA NINST				X	X		X			
(LLHA) HAIFA/Haifa					X			X				
RS	16 34	NINST NINST					X					
(LLJR) JERUSALEM/Atarot					X			X				
RS	12 30	PA1 NPA				X	X		X			
(LLOV) OVDA/Intl					X			X				
RNS	02L 20R	NINST NPA				X	X		X			
(LLBG) TEL AVIV/ Ben Gurion					X			X				
RS	03 21	NPA NINST				X	X		X			
	08 26	NPA PA1				X			X			
	12 30	PA1 NPA				X			X			
(LLSD) TEL AVIV/ Sde-Dov					X			X				
AS	03 21	NINST NINST					X					

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CZ	APP	RWY	AD/ HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
JORDAN			XI	XI						X	XI	
(OJAI) Amman/Queen Alia RS	08R 26L	NPA PA1			XI	XI XI	XI XI		X X	XI XI		
	08L 26R	PA1 NPA				XI XI	XI XI		X X	XI XI		
(OJAM) Amman/Marka Intl AS	24 06	PA1 NINST			XI	XI XI	XI XI		X X	XI XI		
(OJAQ) Aqaba/King Hussein RNS	01 19	PA1 NPA			XI	XI XI	XI XI		X X	XI XI		
(OJJR) JERUSALEM/ Jerusalem RS	12 30	NPA PA1										
KUWAIT			XI	XI						X	XI	
(OKBK) Kuwait Intl. RS	33L 15R	PA2 PA2			XI	XI XI	XI XI		X X			
	33R 15L	PA2 PA2				XI XI	XI XI		X X			
LEBANON			XI	XI						X	XI	
(OLBA) Beirut Intl. RS	17 35	PA1 NINST			XI	XI XI	XI XI		X			RWY 35 not used for landing RWY 36 no Land during night
	18 36	PA1 NINST				XI XI	XI XI		X			
	03 21	PA1 NINST				XI XI	XI XI		X			
OMAN			XI	XI						XI	XI	
(OOMS) Muscat/Seeb RS	26 08	PA1 PA1			XI	XI XI	XI XI		X X	XI XI		
(OOSA) Salalah AS	07 25	NPA PA1			XI	XI XI	XI XI		X X	XI XI		
QATAR			XI	XI						X	XI	
(OTBD) Doha Int. Airport RS	34 16	PA2 NPA			XI	XI XI	XI XI		X X			

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
SAUDI ARABIA			XI	XI						XI	XI	
(OEDF) DAMMAM/King Fahd Intl RS					XI			XI				
	16L 34R	PA1 PA1				XI XI	XI XI		X X			
	16R 34L	PA1 PA1				XI XI	XI XI		X X			
(OEJN) JEDDAH/King Abdulaziz RS					XI			XI				
	16R 34L	PA2 PA2				XI XI	XI XI		X X			
	16C 34C	PA2 PA2				XI XI	XI XI		X X			
	16L 34R	PA1 PA1				XI XI	XI XI		X X			
(OEMA)MADINAH/Prince Mohammad Bin Abdulaziz RS					XI			XI				
	17 35	PA1 PA1				XI XI	XI XI		X X			
	18 36	NPA PA1				XI XI	XI XI		X X			
(OERK) RIYADH/King Khalid Intl RS					XI			XI				
	15L 33R	PA1 PA1				XI XI	XI XI		X X			
	15R 33L	PA1 PA1				XI XI	XI XI		X X			
SYRIA			X	XI						X	X	
(OSAP) Aleppo Intl. RS					XI			X				
	09 27	NINST NPA				XI XI	XI XI		X			
(OSLK) Bassel Al-Assad RS					X			X				
	17 35	NPA NINST				X X	X X					
(OSDI) Damascus RS					XI			XI				
	05L 23R	NPA PA1				X XI	X XI		X X			
	05R 23L	NPA NPA				X X	X X		X X			


WGS-84 coordinates published in AIP Supplement 02/01 dated 01Aug.2001

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS	
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/ HEL	GUND	QUALITY SYSTEM	AIP		
1	2	3	4	5	6	7	8	9	10	11	12	13	
UNITED ARAB EMIRATES			XI	XI						XI	XI		
(OMAA) Abu Dhabi Int. Airport					XI			XI					
	31L 13R	PA3 PA1				XI XI	XI XI		XI XI				
	13L 31R	PA3 PA1				XI XI	XI XI		XI XI				
(OMAL) Al Ain Int. Airport	RS				XI			XI					
	01 19	PA1 NPA				XI XI	XI XI		XI XI				
(OMDB) Dubai Int. Airport	RS				XI			XI					
	12L 30R	PA3 PA3				XI XI	XI XI		XI XI				
	12R 30L	PA2 PA2				XI XI	XI XI		XI XI				
(OMFJ) Fujairah Int. Airport	RS				XI			XI					
	11 29	NPA PA1				XI XI	XI XI		XI XI				
(OMRK) Ras Al Khaimah Int. Airport	RS				XI			XI					
	16 34	NPA PA1				XI XI	XI XI		XI XI				
(OMSJ) Sharjah Int. Airport	RS				XI			XI					
	12 30	NPA PA2				XI XI	XI XI		XI XI				
YEMEN			X	X						X	X	WGS-84 Implementation is under process. Publication expected June 2003 (Not yet reported using uniform format)	
(OYAA) Aden	RS				X			XI					
	08 26	NPA PA1				X X	XI XI		X X				
(OYHD) Hodeidah	RS				X			XI					
	03 21	NPA NPA				X X	XI XI		X X				
(OYRN) Mukalla/Riyan	RS				X			XI					
	06 24	NPA NPA				X X	XI XI		X X				
(OYSN) Sanna'a	RS				X			XI					
	18 36	PA1 NPA				X X	XI XI		X X				

STATE, TERRITORY OR AERODROME FOR WHICH WGS-84 IS REQUIRED			WGS-84 REQUIRED									REMARKS
CITY/AERODROME/	RWY No	RWY TYPE	FIR	ENR	TMA CTA CTZ	APP	RWY	AD/ HEL	GUND	QUALITY SYSTEM	AIP	
1	2	3	4	5	6	7	8	9	10	11	12	13
(OYTZ) Taiz/Ganad RS					X			XI				
	01 19	NPA NPA				X X	XI XI		X X			

Middle East Region
AIS/MAP IMPLEMENTATION PLAN
Updated timelines

TIMELINES:

	Global
	Regional
	National

Middle East — Aeronautical Information Services Implementation		1994	95	96	97	98	99	2000	01	02	03	04	05	06	07	08	09	2010
Global	Publication of the Integrated Aeronautical Information Package on a CD-ROM and on the website.	SARPs not available																
MID Region																		
States	Afghanistan																	
	Bahrain																	
	Egypt																	
	Iran, Islamic Rep. of																	
	Iraq																	
	Israel																	
	Jordan																	
	Kuwait																	
	Lebanon																	
	Oman																	
	Qatar																	
	Saudi Arabia																	
	Syrian Arab Republic																	
	United Arab Emirates																	
	Yemen																	
Global	Implementation of a fully automated AIS Database/System.	SARPs not available																
MID Region																		
States	Afghanistan																	
	Bahrain																	
	Egypt																	
	Iran, Islamic Rep. of																	
	Iraq																	
	Israel																	
	Jordan																	
	Kuwait																	
	Lebanon																	
	Oman																	
	Qatar																	
	Saudi Arabia																	
	Syrian Arab Republic																	
	United Arab Emirates																	
	Yemen																	



Improvement of NAVIGATION SYSTEMS in the MID Region

Document Reference:	MIDANPIRG GNSS – TF/AG
Author:	GNSS TF Action Group
Revision Number:	Version 01 / 2004
Date:	May 2004

**EVALUATION and PLANNING of RADIONAVIGATION FACILITIES
in the MID REGION**

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1. INTRODUCTION

1.1 The objective of this study is to define some inputs for the GNSS Implementation Strategy in the Middle East Region. To do so, the evaluation of the existing navigation systems and communication infrastructures in the Region will be performed, as well as the review of the related development plans.

1.2 The analysis of the existing navigation infrastructure will show minimum constraints for the operational requirements and will contribute to the benefits provided by the satellite-based navigation regarding the cost benefit analysis.

1.3 The analysis of the existing communication infrastructure will allow defining what may be re-used for GNSS augmentation and what needs to be implemented. This will influence the system architecture and the cost benefit analysis.

2. EVALUATION OF THE EXISTING FACILITIES

2.1 Review of Flight Information Regions (FIRs)

The Middle East Region is organized into 14 Flight Information Regions that support the Air routes areas.

The present radio-navigation aids infrastructure is composed of locators, NDBs, VOR/DME and ILS. Most of these requirements comply with the Middle East Air navigation Plan and the others are implemented by States for their own national needs.

2.2.1 *En-route navigation Aids*

The Middle East Region is well covered by en-route navigation aids, however improvement is expected in the northeast part where it is noted a low density of aids.

- 50 VOR are operational and 16 have not yet been implemented
- 89 DME are operational, 4 unserviceable and 8 have not yet been implemented
- 23 NDBs and 12 Locators are operational

2.2.2 *Precision Approach Aids*

All countries have implemented at least one CAT I precision approach located at their international airports. Some of the States have at their disposal CAT II and CAT III precision approach equipments at their main airports. Recently, two of these equipments were downgraded due to either harmful interferences or to signal instability.

There are currently 62 ILS installed out of 90 required for the Region. Out of these 62 ILS, 56 are serviceable. This means that 69 per cent of the requirement for precision approach capability is fulfilled.

In the meantime, 73 per cent of DME and 72 per cent of VOR are implemented.

The table CNS 3 of the MID FASID shows the distribution of the approach radio navigation aids implemented in the Region.

2.2.3 *Non Precision Approach Aids*

The other airports of the Middle East Region have either instrument approach runways, allowing NPA approaches with the instruments, or non-instrument approach runways.

Out of the 204 runways of the 139 airports included in the table CNS 3, there are 89 instrument approach runways and 115 non-instrument runways. Most instrument approach runways are provided with a VOR/DME.

In consequence, NPA approaches are currently possible on 57 per cent of the runways.

2.3 Review of existing communication Infrastructures

2.3.1 General

The communication means provided by States, at national or international level, include the following services:

- The Aeronautical Mobile Service (AMS), which includes all communications with aircraft for air traffic control and airspace management. These services are mainly achieved by vocal communications either on VHF (continental area) or HF (remote and oceanic area). Most of the continental area of the Middle East Region is covered by extended and improved VHF communications.
- The Aeronautical Fixed Service (AFS) that includes all point-to-point communications for Air Traffic Control, Meteorology, Search and Rescue. These services are provided by vocal and data communications.

The major elements of the AFS are the AFTN (Aeronautical Fixed telecommunications Network) for data communications and the ATS/DS network (Air traffic Services Direct Speech) for voice communications.

It is worth noting that many States have improved their AFTN circuits by using CIDIN protocol with high reliability links.

2.3.2 Domestic satellite networks

Five VSAT domestic networks are operating in the Middle East Region and are aimed at extending VHF communications, improving AFTN and ATS/DS communications with secondary airports. The results gained from this experience have led the MID States to agree for the study of the so called the MID VSAT network intended to cover all Middle East Region and, at the same time, to ensure connectivity with the adjacent Regions (EUR, AFI and ASIA-PAC).

Another domestic satellite network is operating in a neighboring country: Sudan

2.3.2.1 Egyptian satellite network

The domestic network has a star configuration and is composed of one hub station installed in Cairo and twelve VSAT remote stations spread over the Cairo FIR. These remote stations support the VHF extended coverage, AFTN, ATS/DS, Radar coverage, AIS and the maintenance communications.

The network is now congested and does not allow anymore any integration with other networks. The Egyptian Authorities are planning a new domestic VSAT network to solve this inadequacy.

2.3.2.2 Yemenite satellite network

The domestic network is composed of one hub station and six VSAT remote stations spread over the Sana'a FIR. These remote stations can support the VHF extended coverage, AFTN, ATS/DS, Radar coverage and the maintenance communications. The configuration of the network allows its extension and integration to other networks.

2.3.2.3 *Iraqi satellite network (non documented)***2.3.2.4** *Kuwait satellite network (non documented)***2.3.2.5** *Iranian satellite network (non documented)***2.3.2.6** *Sudanese satellite network*

The Aeronautical Telecommunication Service is in the process of full restructuring with the implementation of nine VHF remote stations spread in the Khartoum FIR. These remote stations which are supported by a domestic VSAT network, are still under tests.

The main objective of the network is to provide aeronautical fixed and aeronautical mobile services in Khartoum FIR.

Moreover, the current provisions allow the Ministry of Aviation to implement and to operate a VSAT network for safety purposes, as a usual telecommunications service provider.

3. DEVELOPMENT PLANS**3.1 Introduction**

The Middle East Regional Navigation Plan provides the principles and the direction that shall be consistently followed by all States, services providers and users within the Region.

3.2 Directions**3.2.1 Communications**

According to the global recommendations set by ICAO, the direction to follow is the evolution towards satellite communications means that will support both voice and data transmissions (including GNSS augmentation data transmissions).

During the long transition period, extended and VHF data communications means should be developed and deployed to allow a broader coverage and reliable data transmissions in the remote areas.

3.2.2 Navigation

The VOR equipment will remain the main navigation means on traditional ATS routes. The traffic shall be passed gradually from ATS routes to RNAV ones, and the airspace shall be consequently restructured.

The ILS equipment will be maintained at least until 2010, and any equipment withdrawal will be announced to the users several years in advance.

En route as well as approaches will be gradually supported by GNSS whose operational performances will be extensively demonstrated during various experimental campaigns.

3.2.3 Surveillance

The implementation and usage of SSRs and ADS should be broadened.

3.3 Near term development plans

3.3.1 *Communications*

The development plans for the communication infrastructures are part of the overall improvement plan for air traffic control and airspace management with future system technologies.

The main example of network project is the MID VSAT project. MIDANPIRG/8 meeting approved the feasibility study of the MID VSAT project that should be refined by updated information received from States.

3.3.1.1 *MID VSAT Network*

The planned MID VSAT network will cover all MID Region and ensure connectivity with the neighboring Regions (AFI, EUR and ASIA-PAC).

The F type stations could be used by States on the main airports, with the respective transmission rates of 64, 128 and 256 Kbps.

Voice and data are transmitted over Frame Relay, where

- the VHF and ATS/DS voice communications use 8 Kbps channel
- the AFTN data applications use 2.4 Kbps channel
- the radar and supervision data applications use 9.6 Kbps channel

Coordination has been made with other similar projects, especially with NAFISAT project (AFI Region) to operate TDMA technique over INTELSAT 1002.

3.2.2 *Navigation*

The existing nav aids infrastructure will continue to be used for a certain time in the future, as no alternative for its replacement is available yet. Improvement to the existing infrastructure is sought through replacement of very old facilities, better maintenance and regular flight checking.

Decommissioning of the VOR/DME and ILS equipments is not contemplated before 2015. Any equipment withdraw will be announced to its potential users several years in advance.

3.2.2.1 *NAVISAT network*

(to be developed)

4. SUMMARY

It appears that there is no urgent need for augmentation navigation service in the near term on both en-route and approaches.

Moreover, the existing satellite navigation systems can be used with appropriate augmentation systems for en-route navigation, terminal and NPA for some airports.

The Middle East Region must put all efforts in the implementation of a dedicated MID VSAT network which will be used for ground– ground data and voice communications and also serves as an important step in planning for transition to CNS/ATM systems.

In parallel, the Region should also paid attention to the utilization of available digital techniques and digital circuits for data communications.

Implementation of Requirements

(to be developed)

CNS/ATM/IC SG/2
Appendix 4E to the Report on Agenda Item 4

**REVISED STRATEGY FOR THE IMPLEMENTATION OF GNSS NAVIGATION
CAPABILITY IN THE MID REGION**

Considering that:

- 1) Safety is the highest priority.
- 2) Elements of Global Air Navigation Plan for CNS/ATM System on GNSS and requirements for the GNSS implementation will be incorporated into the CNS part of FASID.
- 3) GNSS Standards and Recommended Practices (SARPs), PANS and guidance material for GNSS implementation are available.
- 4) The availability of avionics including limitations of some receiver designs; the ability of aircraft to achieve RNP requirements and the level of user equipage.
- 5) Development of GNSS systems including satellite constellations and improvement in system performance.
- 6) Airworthiness and operational approvals allowing the current GNSS to be applied for en-route and non precision approach phases of flight without the need for augmentation services external to the aircraft.
- 7) Development status of aircraft-based augmentation systems.
- 8) Regional augmentation systems include both satellite-based and ground-based systems.
- 9) Human, environmental and economic factors will affect the implementation.

The general strategy for the implementation of GNSS in the MID Region is detailed below. This strategy is based on the regional navigation requirements of:

- a) RNP 10 for en-route in remote/oceanic areas;
 - b) RNP 5 for en-route;
 - c) NPA/APV for approaches; and
 - d) Precision approaches at selected airports.
- 1) There should be an examination of the extent to which the GNSS system accessible in the Region can meet the navigational requirements of ATM service providers and aircraft operators in the Region.
 - 2) Evolutionary introduction of GNSS Navigation Capability should be consistent with the Global Air Navigation Plan for CNS/ATM systems.
 - 3) Implementation should be in full compliance with ICAO Standards and Recommended Practices and PANS.
 - 4) Introduce the use of GNSS for navigation in remote/oceanic areas.
 - 5) Introduce the use of GNSS with appropriate augmentation systems, as required, for en-route navigation

and non-precision approach.

- 6) Any external augmentation system deemed necessary for the implementation of GNSS for a particular flight phase in an area under consideration (SBAS/GBAS including ground-based regional augmentation system) should be implemented in full compliance with ICAO SARPs.
- 7) To the extent possible, States should work co-operatively on multinational basis to implement GNSS augmentation system in order to facilitate seamless and inter-operable systems.
- 8) States consider segregating traffic according to navigation capability and granting preferred routes to aircraft with better navigation performance with the exception to State aircraft.
- 9) States undertake a coordinated R & D program on GNSS implementation and operation.
- 10) ICAO and States should undertake education and training programs to provide necessary knowledge in GNSS theory and operational application.
- 11) States establish multidisciplinary GNSS implementation teams, using section 6.10.2 of ICAO Circular 267, Guidelines for the Introduction and Operational Approval of the GNSS, as a guide.

**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



- DRAFT -

MID REGIONAL AFTN CONTINGENCY PLAN

Document Reference:	MIDANPIRG AFS/ATN - TF
Author:	AFS/ATN Task Force
Revision Number:	Version 0.2 / 2004
Date:	April 2004

INTRODUCTION

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 scenarios 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.

The Document is divided into (3) Sections and each section describes specific scenarios of failures with associated Contingency Plan.

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

GENERAL

AFTN Regional Contingency Plan

1.1.1 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 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 not only disrupt the AFTN communications within the region and outside the region but would also have impact on the safety of air traffic *as well*. 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.

AFTN Service Modes of Failure

1.1.2 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

1.1.3 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.

Identification of the impact of the failure modes

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

1.1.4.1 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

1.1.4.2 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

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

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

1.1.5.1 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, 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. *Since* the impact would be the same as described above, the centres should apply the contingency plan *accordingly*. However, the provision of back-up facilities would mitigate the risk of loss of communication. *In this regard*, States should arrange for the provision of the back-up communication links and activate *them* in case of the failure of the main links.
- Communication links between the PTT's and the airports that would have different form from that specified in (1) above.

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

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

This type of failure would have different scenarios:

- 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

1.1.6.1 The impact of the above failures may consequently cause loss of a single connection and in this case, a diversion procedure would apply if available 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.

1.1.6.2 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 *normally*.

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

1.1 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

2.1 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-ASIAPAC

3.1 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 ASIAPAC 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 circuit).

SECTION 2

MIDDLE EAST AFTN INTER-REGIONAL AFTN SERVICE

Communication between main centres

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

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

~~Scenario (1)~~

AFTN Main COM Centres

A Main AFTN COM Centre should have a different stand-alone PC-based terminal or standby message switching system with essential functionality, for immediate use when the main equipment fails.

The SITA message network should be used, where available, where a stand-alone PC-based standby system is not available.

In the event of failure of the PTT system, Satellite based communications systems located at the centre should be used where available.

In the event of failure of a main trunk circuit between centres, the normal alternate routing as specified in the MID routing directory will occur.

In the event of unavailability of alternate routing, AFTN messages should be routed through the following facilities in order of preference depending on the availability of services:

- a) A stand alone PC-based terminal or a standby MSS with AFTN terminal
- b) Fax or IDD voice (limited to handle essential operational messages)
- c) Telex (limited to handle essential operational messages)
- d) SITA (e.g. by sending messages via SITA facilities, such as in an airline office through bi-lateral arrangements, where such a system does not exist).
- e) Sat phone link - voice and data
- f) E-Mail

In the event of failure of an AFTN COM Centre's equipment, the adjacent centres should:

- i) relay transit traffic via alternate routing
- ii) store destination traffic to the failed centre until restoration of a system. Essential operational messages shall be transmitted through any other acceptable means of handling of the messages.

Scenario (2)

AFTN Tributary COM Centres

Alternative links for AFTN Tributary COM Centres shall be determined by a State and reflected in a national plan or in letters of agreement.

In addition to fax and/or IDD voice capabilities, each AFTN Tributary COM Centre should have a stand-alone AFTN terminal to allow basic AFTN communications to be re-established to the main AFTN COM Centre serving that station.

In the event of failure of an AFTN Tributary COM Centre connected to a main AFTN COM centre, normal outage procedures will initially apply. Fax and IDD phone may be used to relay messages from the main centre.

In the event of a prolonged outage, AFTN messages should be routed through the following service facilities in order of preference depending on the availability of services:

- a) *Stand-alone AFTN terminal*
- b) *Fax or IDD voice*
- c) *Telex*
- d) *SITA (e.g. by sending messages to the nearest SITA terminal such as in an airline office at the airport)*
- e) *Satphone link - voice and data*
- f) *HF air-ground voice channel (for ground to ground communication)*
- g) *E-Mail*

Phone, Fax and Telex numbers for AFTN Tributary COM Centres and the main AFTN COM centre must be exchanged in advance. SITA and E-mail addresses must be advised where these facilities are available.

Scenario (3)

Traffic Handling

In critical situations, contingency measures and constraints need to be imposed and a traffic handling strategy must be developed. This is to avoid impact of traffic volumes taking into account the increased risk of multiple failures, and to aim at ensuring continuity of air traffic services operations under normal or close to normal circumstances.

1- ATS Messages

- a) *States, airspace users and other organizations mandated to carry-out airlines tasks shall undertake to submit flight plans 12 hours in advance of their estimated times of departure of the UTC times.*
- b) *RPLs should be ceased.*
- c) *Collective address messages should not be used*

2- MET Messages:

- a) *OPMET routine messages and forecasting messages with long-term effect shall be ceased at least 6 hours before the critical time.*
- b) *Starting from time 1800 UTC, OPMET data exchange shall be limited to information supporting aircraft operations needed for flight safety and in the following order SIGMETS, TAF AMD, AIREPS, METARS and SPECI.*

- c) *Requests from data banks should be ceased during the contingency plan.*
- d) *Collective address messages should not be used.*

3- *AIS Messages:*

- a) *Only messages with immediate effect declaring status of aeronautical facilities and airports shall be permitted.*
- b) *Collective address messages should be ceased, but individual and multi-address messages are acceptable within the scope of a) above.*
- c) *Updating procedures either nationally or internationally shall be ceased.*

4- *AOA Messages:*

Aircraft operating agencies and organizations mandated for airlines tasks shall assist ICAO and States to activate their contingency plans and limit their use of the AFTN network to messages of immediate concern to aircraft in flight or about to depart.

SECTION 3

To be developed

INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST OFFICE

FIRST ATN SEMINAR IN THE MID REGION

(Amman, 22-24 November 2004)

SUMMARY OF DISCUSSIONS

1. INTRODUCTION

1.1 The participants of the Seminar would like to express their sincere gratitude and appreciation to the Hashemite Kingdom of Jordan who hosted the ATN Seminar, the first of its kind in the Region at the premises of Marriott Hotel in Amman from 22 to 24 November 2004.

1.2 The Seminar was conducted in the framework of ATN implementation in the Region, pursuant to MIDANPIRG/7 Conclusion 7/27. The objective of the ATN Seminar was to provide a clear understanding of the initial introduction of ATN applications, such as AMHS and AIDC. Emphasis was put on the identification of needs/benefits and places where such benefits can be accrued using ATN applications.

1.3 The Seminar was attended by a total of 42 participants from 9 States and 5 Organizations. The list of participants and speakers is available in **Attachment A** to this summary. Mr. Hanna Najjar Director General of Jordan Civil Aviation Authority opened the Seminar.

1.4 Mr. Ali Ahmed, Chairman of AFS/ATN TF and CNS/MET SG, was the moderator of the Seminar. Mr. Mamadou Traore Regional Officer, CNS Middle East Office served as Secretary.

2. PRESENTATIONS AND DISCUSSIONS

2.1 On the first day of the Seminar, participants were provided with presentations covering the following issues: Overview of the ATN, Air-Ground ATN Application addressing DLIC, CPDLC, ADS, FIS, Internet Communication Service and Upper Layers Communications Service.

2.2 Regarding the first presentation, participants were provided with an overview of ATN covering the basic concept, function, components and applications. Emphasis was made on the importance of the interregional coordination for ensuring harmonized implementation of ATN components so as to achieve a seamless and integrated system.

2.3 The second presentation stressed on the Internet Communication Service (ICS), the construction of an ATN Internet and the protocols/functions used. Reference was also made to the addressing aspects of the internetwork where the property of the routing architecture is exploited by the ATN to support mobile routing. During the same presentation, the speaker provided the seminar with an:

- overview of Upper Layer Communications Service (ULCS) functionality and the relationship with other SARPs.
- indication of future direction of the ATN Upper Layers, including a description of the provisions for forward compatibility in the initial edition of ATN SARPs.

2.4 On the second day, the speakers made presentations on the following issues: air-ground and ground-ground applications, regional planning considerations, AMHS and ATN solutions and related operational/Implementation issues.

2.5 Regarding air-ground applications, the speaker put emphasis on the communications environment, especially on the mobile subnetworks that are expected to be used in support of the ATN: AMSS, VDL, HF DL and SSR Mode S Data Link. The route initiation procedures were also described in detail using different scenarios between the airborne and ground routers.

2.6 The presentation on ground-ground applications started with the AFTN/AMHS operating concepts. The gateway was introduced to solve the interface problem that might arise between different centers. The speaker stressed also on the operational environment and system architecture, the AMHS model, the AMHS organization and the AMHS naming/addressing.

2.7 The presentation on regional planning considerations suggested the implementation of the two ATN applications (AMHS and AIDC) as first step in the MID Region. To do so, the transition procedures adopted by MIDANPIRG/7 meeting are used as regional guidance: improvement of current circuits and smooth introduction of routers according to operational needs.

2.8 The second day continued with presentation on operational/Implementation aspects of the AMHS. In this regard, AVITECH presented their SARPs-compliant AMHS solutions, which were implemented in Germany and the Republic of Korea in 1997 and 2002, respectively. The presentation concluded with information about the European working group called FIRIT, which is intended to assist States for implementation and reliable test documentation of AMHS.

2.9 The last day of the Seminar started with a presentation made by THALES IC on AMHS operational/implementation issues. Through ECG project, Euro control and ECAC already tested and accepted solutions. While trials are undergoing in three European countries, three others are ready to operate AMHS out of Europe, two other countries are looking for trials and implementation of AMHS.

2.10 Three other presentations followed on current activities: AMHS standardization progress, use of TCP/IP, ongoing implementation activities on AMHS, continental air-ground data link deployment, oceanic data link deployment, performance of interoperability tests regarding bilateral basic, bilateral extended and trilateral network tests.

2.11 The last session of the Seminar was devoted to questions and answers. At first, the speakers answered the questions of those MID experts who could not attend the Seminar. Then, the participants actively reacted during this session and requested that ICAO MID Regional Office organize another seminar/workshop focused specifically on AMHS.

2.12 The forthcoming AFS/ATN Task Force will review the outcome of this meeting.

2.13 The Director General of Jordan Civil Aviation Authority closed the Seminar on 22 November 2004 at 12h00.

CNS/ATM/IC SG/2
Appendix 4I to the Report on Agenda Item 4

**Proposal for a Working Methodology to eradicate multiple repetitions
& non receipt of ATS messages**

Taking an average day, MID states should initiate a survey to ascertain:

- a) The number of incidents where a FPL has not been received by a concerned FIR.
- b) The typical number of ATS related messages received, against the number of controlled flights within their respective FIR's.
- c) The number of those ATS related messages that were received once.
- d) The number of those ATS related messages that were received more than once.
- e) The number of those ATS related messages that were received concerning flights that were not entering their FIR.

Having completed the above, the data gathered from the survey should be analysed to determine the following:

- 1) FPL messages that were not received by the concerned FIR to be identified by Operator (airline) and the communications centre of origin. Trace procedures will have to be initiated to determine the reason for non receipt.
- 2) ATS messages that were repeated once to be identified by Operator (airline), the communications centre of origin and the number of scheduled flights from that origin (see attachment "A").
- 3) ATS messages that were repeated more than once to be identified by Operator (airline), flight number, the communications centre of origin and the number of repeated messages for each flight number (see attachment "C").
- 4) ATS messages that were received concerning flights that were not routing through your FIR. These should be identified by Operator (airline), the communications centre of origin and the number of related ATS messages from that origin (see attachment "B").

On completion of the survey, states shall have evidence that can be used to council both the offending operators and communications staff on the correct application of the AFTN provisions and to disseminate their findings on the shortcomings with the ICAO MID Office and other FIR's in the MID region.

CNS/ATM/IC SG/2
Report on Agenda Item 5

REPORT ON AGENDA ITEM 5: HARMONIZATION OF THE MID CNS/ATM IMPLEMENTATION PLAN AS A RESULT OF THE OUTCOMES OF THE 11TH AIR NAVIGATION CONFERENCE

5.1 Under this agenda item, the meeting was informed that the Council of ICAO, on 10 March 2004 during the eleventh meeting of its 171st Session approved the Report of ANConf/11. The Council, in confirming ICAO's role in the follow-up to recommendations, called upon States, International Organizations, PIRGs and all CNS/ATM partners to initiate necessary action on specific recommendations as detailed in **Appendix 5A** of the report on Agenda Item 5.

5.2 In this regard, the meeting considered that one of the first coordination efforts required by MIDANPIRG will be to assign the task of developing an implementation plan for the relevant recommendations. Therefore, the meeting agreed to split all 61 recommendations of the 11th Air Navigation Conference into three packages.

5.3 The **package 1** includes those recommendations to be studied by the concerned subsidiary bodies of MIDANPIRG:

Recommendations 1/14, 2/1,4/5, 4/6, 4/7 and 4/8: AOP SG
Recommendations 1/1, 1/10,1/13, 4/1 and 4/2: ATM/AIS/SAR SG
Recommendations 1/1, 1/10,1/13, 4/1, 4/2, 4/4, 6/11, 7/1 and 7/3: CNS/MET SG
Recommendation 4/8: ANS WG

5.4 The **package 2** includes those recommendations for action by the MID States:

Recommendations 1/1, 1/2, 1/7, 1/10,1/13, 1/15, 2/2, 2/3, 2/7, 2/8, 4/1, 4/2, 4/5, 4/6, 4/8, 4/9, 5/1, 6/1, 6/2, 6/9, 6/13, 6/14, 7/1, 7/2 and 7/3.

5.5 The **package 3** includes those recommendations for action by the International Organizations:

Recommendations 1/1, 1/7, 1/10, 1/13, 4/8, 5/1, 6/1, 6/2, 6/9, 6/13, 7/2 and 7/3.

CNS/ATM/IC SG/2
Appendix 5A to the Report on Agenda Item 5

**RECOMMENDATIONS OF AN-CONF/11
FOLLOW-UP ACTIONS BY ICAO/PIRGs/STATES/INTERNATIONAL ORGANIZATIONS (IOs)**

		RECOMMENDATION	ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
AGENDA ITEM 1: INTRODUCTION AND ASSESSMENT OF A GLOBAL AIR TRAFFIC MANAGEMENT (ATM) OPERATIONAL CONCEPT				
1	1/1	<p>Endorsement of the global ATM operational concept</p> <p>That:</p> <p>a) ICAO, States and planning and implementation regional groups (PIRGs), consider the global ATM operational concept as the common global framework to guide planning for implementation of ATM systems and to focus all ATM development work;</p> <p>b) the global ATM operational concept be used as guidance for development of ICAO CNS/ATM related provisions;</p> <p>c) States with the support of the other members of the ATM community undertake work to validate the seven components in the global ATM operational concept;</p> <p>d) ICAO, States and PIRGs develop transition strategies for implementation of ATM systems based on the global ATM operational concept; and</p> <p>e) ICAO align its technical work programme to facilitate future work related to the global ATM operational concept</p>	<p>PIRGs/States/ IOs</p> <p>PIRGs/States/ IOs</p> <p>States/IOs</p> <p>PIRGs/States</p> <p>ICAO</p>	<p>re (a) and (b): Consider the global ATM operational concept as the common global framework and use as guidance for the planning and implementation of CNS/ATM systems.</p> <p>Validate the seven components in the global ATM operational concept.</p> <p>Develop transition strategies based on the global ATM operational concept.</p> <p>Secretary General to align its technical work accordingly.</p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
2	1/2	<p>Coordination with military authorities</p> <p>That States take appropriate action to coordinate the global ATM operational concept with their military authorities with a view to achieving maximum cooperation and integration in an effort to implement a flexible and cooperative approach to airspace organization and management.</p>	States	Coordinate with their military authorities for implementation of a flexible and cooperative approach to airspace organization and management.
3	1/3	<p>Development of ATM requirements</p> <p>That ICAO as a high priority develop a set of ATM functional and operating requirements for a global ATM system on the basis of the global ATM operational concept.</p>	ICAO	Requested the Air Traffic Management Operational Concept Panel (ATMCP) to develop relevant proposals before the end of 2005.
4	1/4	<p>Development of Standards and Recommended Practices (SARPs) from the global ATM operational concept</p> <p>That ICAO, when developing CNS/ATM-related SARPs, ensure that such SARPs are traceable to ATM requirements.</p>	ICAO	Requested the Secretary General to bring it to the attention of relevant panels.
5	1/5	<p>Interoperability and seamlessness</p> <p>That ICAO, when developing ATM requirements, define a corresponding minimum set of requirements for interoperability and seamlessness.</p>	ICAO	Requested the ATMCP to develop relevant proposals before the end of 2005.
6	1/6	<p>Endorsement of the automatic dependent surveillance-broadcast (ADS-B) concept of use and recommendations for further work</p> <p>That ICAO:</p>	ICAO	

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		a) follow research and development work in the area of ADS-B applications, and update/maintain the ADS-B concept of use as necessary;		Noted.
		b) work cooperatively with other international bodies to ensure that the ADS-B concept of use is properly aligned with existing operational and technical documents;		Requested Operational Data Link Panel (OPLINKP) to consider it in its further work to the extent possible.
		c) utilize the ADS-B concept of use, in its current form and as it matures, as a basis for development of SARPs and guidance material for air-to-air and air-to-ground surveillance applications; and		Noted.
		d) ensure that all future work on the ADS-B concept of use is aligned with the ATM operational concept and meets the emerging ATM requirements that emanate therefrom.		Noted.
7	1/7	<p>Ground and airborne automatic dependent surveillance-broadcast (ADS-B) applications for global interoperability</p> <p>That ICAO and States:</p> <p>a) recognize ADS-B as an enabler of the global ATM operational concept bringing substantial safety and capacity benefits;</p> <p>b) support the cost-effective early implementation of packages of ground and airborne ADS-B applications, noting the early achievable benefits from new ATM applications; and</p> <p>c) ensure that implementation of ADS-B is harmonized, compatible and interoperable with respect to operational procedures, supporting data link and ATM applications.</p>	<p>ICAO/States/ IOs</p> <p>ICAO/States/ IOs</p> <p>States/IOs</p>	<p>To note.</p> <p>To note.</p> <p>Ensure that implementation of ADS-B is harmonized, compatible and interoperable.</p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
8	1/8	<p>Global aeronautical information management and data exchange model</p> <p>That ICAO:</p> <ul style="list-style-type: none"> a) when developing ATM requirements, define corresponding requirements for safe and efficient global aeronautical information management that would support a digital, real-time, accredited and secure aeronautical information environment; b) urgently adopt a common aeronautical information exchange model, taking into account operational systems or concepts of data interchange, including specifically, AICM/AIXM, and their mutual interoperabilities; and c) develop, as a matter of urgency, new specifications for Annexes 4 and 15 that would govern provision, electronic storage, on-line access to and maintenance of aeronautical information and charts. 	<p>ICAO</p> <p>ICAO</p> <p>ICAO</p>	<p>Requested the ATMCP to develop relevant proposals by the end of 2005.</p> <p>Secretary General is taking appropriate action.</p> <p>Secretary General to progress the work.</p>
9	1/9	<p>Raising the status of the <i>Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)</i></p> <p>That ICAO develop a formal review and agreement process for the <i>Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)</i>.</p>	<p>ICAO</p>	<p>Noted the intent of the recommendation and requested the ANC to develop relevant proposals.</p>
10	1/10	<p>Status of the <i>Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)</i></p> <p>That States and planning and implementation regional groups (PIRGs) consider the <i>Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)</i> as a catalyst for change, providing a global safety and interoperability framework while allowing regional or local adaptation to efficiently meet regional and local needs.</p>	<p>PIRGs/States/ IOs</p>	<p>To note the intent of the recommendation.</p>

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
11	1/11	<p>Publication of the Global ATM Operational Concept</p> <p>That ICAO publish the global ATM operational concept as a new ICAO manual.</p>	ICAO	Secretary General to develop relevant proposals for an appropriate approval and publication process.
12	1/12	<p>Amendment of Chapter 4 of the <i>Global Air Navigation Plan for CNS/ATM Systems</i> (Doc 9750)</p> <p>That ICAO take action to amend Chapter 4 of the <i>Global Air Navigation Plan for CNS/ATM Systems</i> (Doc 9750), clearly establishing the linkage to the Global ATM Operational Concept.</p>	ICAO	Secretary General to take it into account when developing the next amendment to Doc 9750.
13	1/13	<p>Harmonization of air navigation systems</p> <p>That ICAO and the ATM community explore the possibility of developing a mechanism for implementing the interregional interface applications with a view to facilitating the harmonized implementation of air navigation systems giving rise to a global ATM system in an evolutionary fashion.</p>	PIRGs/States/ IOs	To identify interface issues and address them through appropriate interregional mechanism.
14	1/14	<p>Development of an ICAO air navigation plan database and associated web-based information and charting service</p> <p>That ICAO develop and maintain a database containing all tabular material from all the regional air navigation plans, both Basic Operational Requirements and Planning Criteria (BORPC) and the Facilities and Services Implementation Document (FASID), together with the major traffic flows and other regional data from Part II of the <i>Global Air Navigation Plan for CNS/ATM Systems</i> (Doc 9750), and make this database and associated charts available through the Web.</p>	ICAO	Secretary General to take appropriate action, noting that work was already in progress.

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
15	1/15	<p>Implementation of airborne collision avoidance system (ACAS) provisions</p> <p>That States take immediate action to implement, in appropriate national documentation, the ACAS provisions contained in Amendment 28 to ICAO Annex 6 <i>C Operation of Aircraft, Part I C International Commercial Air Transport C Aeroplanes</i>, and in Amendment 12 to the <i>Procedures for Air Navigation Services C Operations</i> (PANS-OPS, Doc 8168), Volume I.</p>	States	Implement, in appropriate national documentation, the ACAS provisions as contained in ICAO Annex/PANS-OPS.
16	1/16	<p>Provisions related to airborne collision avoidance systems (ACAS)</p> <p>That ICAO review current provisions and investigate the need to develop new provisions to enhance the effectiveness of ACAS as follows:</p> <ul style="list-style-type: none"> a) provisions in Annex 6, Part II concerning training of general aviation pilots in the operation of ACAS; b) provisions in Annex 10, Volume IV concerning performance of the ACAS II collision avoidance logic; c) provisions concerning the training of air traffic control personnel; d) the registering by the parametric flight recorder of resolution advisory commands; and e) air traffic control provisions in ICAO Annexes 2 and 11 and the PANS-ATM. 	ICAO	<p>Noted parts (a) (b) and (c) of the recommendation and that work is already in progress; and</p> <p>as far as part (d) of the recommendation, requested that Surveillance and Conflict Resolution Systems Panel (SCRSP) to develop relevant proposals for review by the ANC.</p> <p>Noted the recommendation and that work is already in progress</p>

		RECOMMENDATION	ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
AGENDA ITEM 2: SAFETY AND SECURITY IN AIR TRAFFIC MANAGEMENT (ATM)				
17	2/1	<p>A framework for system safety</p> <p>That ICAO investigate appropriate mechanisms for the development and implementation of a framework for a uniform and system-wide approach to safety, and the application of this framework to:</p> <ul style="list-style-type: none"> a) the harmonization of provisions relating to safety assessment and safety management in relevant Annexes and Procedures for Air Navigation Services (PANS); and b) the harmonization of the approaches to safety assessment in the development of safety-related standards and recommended practices (SARPs). 	ICAO	Requested the Secretary General to take appropriate action.
18	2/2	<p>Implementation of ATS safety management programmes and establishment of acceptable levels of safety</p> <p>That States which have not already done so, take action in accordance with Annex 11, 2.26 to:</p> <ul style="list-style-type: none"> a) implement systematic and appropriate ATS safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes; and b) establish the acceptable levels of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes. 	<p>States</p> <p>States</p>	<p>Implement systematic and appropriate ATS safety management programmes.</p> <p>Establish the acceptable levels of safety and safety objectives to the provision of ATS.</p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
19	2/3	<p>Sharing of ATM accident and incident data</p> <p>That ICAO:</p> <p>a) develop guidance material on the use of the ADREP 2000 data base; and</p> <p>b) encourage States to share information on ATM accidents and incidents.</p>	<p>ICAO</p> <p>States</p>	<p>Requested the Secretary General to develop the relevant guidance material; and</p> <p>share information on ATM accidents and incidents.</p>
20	2/4	<p>The protection of sources of safety information</p> <p>That ICAO develop guidelines which will provide support to States in adopting adequate measures of national law, for the purpose of protecting the sources and free flow of safety information, while taking into account the public interest in the proper administration of justice.</p>	<p>ICAO</p>	<p>Requested the Secretary General to take appropriate action.</p>
21	2/5	<p>Monitoring of safety during normal operations</p> <p>That ICAO initiate studies on the development of guidance material for the monitoring of safety during normal air traffic service operations, taking into account, but not limited to, the line operations safety audit (LOSA) programmes which have been implemented by a number of airlines.</p>	<p>ICAO</p>	<p>Requested the Secretary General to develop the relevant guidance material.</p>
22	2/6	<p>Safety certification of ATM systems</p> <p>That ICAO investigate the need for the development of provisions for safety certification of ATM systems and service providers.</p>	<p>ICAO</p>	<p>Requested the Secretary General to take appropriate action.</p>
23	2/7	<p>Safety oversight capabilities and procedures</p> <p>That ICAO encourage States to develop ATM safety oversight capabilities and</p>	<p>States</p>	<p>Develop ATM safety oversight capabilities and procedures.</p>

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		procedures.		
24	2/8	<p>Harmonization of aviation safety and aviation security</p> <p>That ICAO:</p> <p>a) continue its efforts to encourage and monitor the harmonization of aviation safety and aviation security; and</p> <p>b) encourage States to monitor the impact of aviation security measures on aviation safety, and to take action as necessary.</p>	<p>ICAO</p> <p>States</p>	<p>Requested the Secretary General to take action as necessary; and</p> <p>monitor the impact of aviation security measures on aviation safety and to take action as necessary.</p>
25	2/9	<p>In-flight emergency response procedures for air traffic controllers</p> <p>That, consistent with the ICAO Aviation Security Plan of Action and the ATM operational concept, ICAO consider developing in-flight emergency response and coordination procedures for air traffic controllers, together with training guidance, related to the distinctly different types and phases of unlawful interference. These procedures and guidance material should allow for the different conditions which exist in States.</p>	<p>ICAO</p>	<p>Requested the Secretary General to take appropriate action.</p>
AGENDA ITEM 3: AIR TRAFFIC MANAGEMENT (ATM) PERFORMANCE TARGETS FOR SAFETY, EFFICIENCY AND REGULARITY AND THE ROLE OF REQUIRED TOTAL SYSTEM PERFORMANCE (RTSP) IN THIS RESPECT				
26	3/1	<p>Required communication performance (RCP)</p> <p>That ICAO:</p> <p>a) continue the development of Standards and Recommended Practices (SARPs), procedures and guidance material on RCP; and</p> <p>b) investigate areas for further work to determine the relationship of the RCP concept to separation studies and interoperability, the standardization of RCP types and allocations, the adequacy of ATS functions and procedures for new</p>	<p>ICAO</p> <p>ICAO</p>	<p>Noted.</p> <p>Requested OPLINKP to progress with the work accordingly.</p>

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		CNS/ATM environments, as well as requirements for safety performance monitoring.		
27	3/2	<p>Standardization of minimum reporting requirements</p> <p>That ICAO continue its work in the field of economic performance of ATM and benchmarking, and assess the need for world-wide standardization of minimum reporting requirements in relation to information disclosure.</p>	ICAO	Requested the Secretary General to take appropriate action.
28	3/3	<p>Performance framework</p> <p>That ICAO, in consultation with the other members of the ATM community:</p> <p>a) formulate the performance objectives and targets for a future global ATM system;</p> <p>b) continue the definition of related performance metrics and elementary characteristics in the context of the overall behaviour of the ATM system; and</p> <p>c) coordinate and harmonize all related contributions within the overall performance framework initiated by the Air Traffic Management Operational Concept Panel, including definitions, standards for reporting requirements and guidance for monitoring.</p>	<p>ICAO</p> <p>ICAO</p> <p>ICAO</p>	<p>re (a) and (b): Requested the ATMCP to develop relevant proposals for review by the ANC.</p> <p>Requested the Secretary General to take appropriate action.</p>
AGENDA ITEM 4: CAPACITY-ENHANCEMENT MEASURES				
29	4/1	<p>Harmonization of air navigation systems between regions</p> <p>That ICAO:</p> <p>a) maintain, and develop further, a coordination mechanism between regions for planning and implementation of capacity-enhancing measures and ATM performance improvement between regions for a harmonized evolution aimed at</p>	ICAO/PIRGs	Develop further, a coordination mechanism between regions for a harmonized evolution aimed at enhancing aviation efficiency and safety.

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		enhancing aviation efficiency and safety;		efficiency and safety.
		<p>b) be systematically involved in any regional initiatives aiming at enhancing ATM capacity and performance; and</p> <p>c) urge States, who have not already done so, to establish national CNS/ATM coordination and implementation committees, with a point of contact to be made known to the respective ICAO Regional Office, so as to facilitate harmonized transition to CNS/ATM systems.</p>	<p>ICAO</p> <p>States</p>	<p>Noted.</p> <p>Establish national CNS/ATM coordination and implementation committees, with a point of contact to be made known to the respective ICAO Regional Office.</p>
30	4/2	<p>Investigation of performance-driven planning and implementation methods</p> <p>That States study the approach to planning and implementation commonly adopted by European States, with a view to the possible application of its elements in their respective regions.</p>	PIRGs/States	Study the approach to planning and implementation commonly adopted by European States, with a view to the possible application of its elements.
31	4/3	<p>Collaborative decision-making and global demand/capacity balancing</p> <p>That ICAO:</p> <p>1) develop SARPs and procedures for global air traffic flow and capacity management based on the concept of demand/capacity balancing as described in the operational concept; and</p> <p>2) develop guidance material for States to implement global demand/capacity balancing techniques based on collaborative decision-making processes, and sharing of aviation information in accordance with the operational concept.</p>	ICAO	<p>re (a) and (b):</p> <p>Requested the Secretary General to take appropriate action.</p>
32	4/4	<p>Investigation and analysis of the ASingle European Sky® approach to global harmonization</p> <p>That ICAO follow the progress of the ASingle European Sky®project for possible use</p>	ICAO/PIRGs	Follow the progress of the ASingle European Sky®project for

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		in other homogeneous regions or at the global level.		possible use in other homogeneous regions or at the global level.
33	4/5	<p>Runway safety programmes</p> <p>That States:</p> <p>a) take appropriate actions to improve runway safety worldwide through the implementation of runway safety programmes;</p> <p>b) collect and share runway incursion incidents in accordance with Annex 13 C Aircraft Accident and Incident Investigation, Chapter 8, <i>Accident Prevention Measures</i>; and</p> <p>c) take into consideration that part of the ICAO <i>Manual on Advanced Surface Movement Guidance and Control Systems (A-SMGCS)</i> related to surveillance and control functions, when implementing such systems at airports.</p>	<p>States</p> <p>States</p> <p>States</p>	<p>Improve runway safety through the implementation of runway safety programmes.</p> <p>Collect and share runway incursion incidents in accordance with Annex 13.</p> <p>To note.</p>
34	4/6	<p>Capacity-enhancing procedures</p> <p>That States, when considering capacity-enhancing procedures at aerodromes, conduct appropriate safety studies and take due consideration of the effect on runway safety.</p>	<p>States</p>	<p>When considering capacity-enhancing procedures at aerodromes, conduct appropriate safety studies and take due consideration of the effect on runway safety.</p>
35	4/7	<p>Global runway incursion risk management</p> <p>That ICAO:</p> <p>a) urgently progress the development of a formal definition for runway incursion as a prerequisite for further actions to be taken in this domain; and</p> <p>b) enhance the Accident/Incident Data Reporting (ADREP) to incorporate a</p>	<p>ICAO</p> <p>ICAO</p>	<p>The work was already being progressed.</p> <p>Requested the Secretary General to take appropriate action,</p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		common categorization taxonomy of runway incursion severity, error type and/or factors that contribute to incursions.		noting that work was already being progressed.
36	4/8	<p>Rectification of air navigation deficiencies</p> <p>That ICAO:</p> <p>a) urge States to:</p> <ol style="list-style-type: none"> 1) review their respective lists of identified deficiencies and inform the ICAO Regional Office of those that have been eliminated; 2) formulate and forward an action plan and time-table for rectification of outstanding deficiencies to the respective ICAO Regional Office for review; and 3) identify areas, if any, where the establishment of multinational agreements or informal coordination groups may contribute to the resolution of deficiencies; <p>b) encourage users of air navigation facilities and services to report to the respective regional office once they note that the remedial action on the deficiency they had reported has been taken; and</p> <p>c) continue to provide assistance to States for the purpose of rectifying deficiencies.</p>	<p>States</p> <p>IOs</p> <p>ICAO/PIRGs</p>	<p>re (a): Review respective lists of identified deficiencies; formulate and forward an action plan to the respective ICAO Regional Office for review; and identify areas, where the establishment of multinational agreements may contribute to the resolution of deficiencies.</p> <p>Users to report once they note that the remedial action on the deficiency has been taken.</p> <p>Continue to provide assistance to States for the purpose of rectifying deficiencies.</p>
37	4/9	<p>Harmonization of flight level assignment methodology across flight information boundaries</p> <p>That relevant States, when planning for the introduction of reduced vertical separation minimum (RVSM) at interfaces between airspaces where different units of measurement are used, taking into account relevant operational and technical</p>	<p>States</p>	<p>When planning for RVSM, apply a common cruising levels structure in accordance with the tables of cruising levels expressed in metres or feet, as outlined in Annex 2 <i>C Rules of</i></p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		considerations, should apply a common cruising levels structure in accordance with the tables of cruising levels expressed in metres or feet, as outlined in Annex 2 C <i>Rules of the Air</i> , Appendix 3.		<i>the Air</i> , Appendix 3.
38	4/10	<p>Tables of cruising levels</p> <p>That ICAO continue to study the common cruising levels structure, as outlined in Annex 2 C <i>Rules of the Air</i>, Appendix 3.</p>	ICAO	Noted the recommendation and its relation to Recommendation 4/9, and agreed that no action was required.
AGENDA ITEM 5: REVIEW OF THE OUTCOME OF THE ITU WORLD RADIO CONFERENCE (2003) (WRC-2003) AND ITS IMPACT ON AERONAUTICAL ELECTROMAGNETIC SPECTRUM UTILIZATION				
39	5/1	<p>Preparation for WRC-2007</p> <p>That ICAO;</p> <p>a) urge States and international organizations to continue their efforts on implementation of the relevant elements of Assembly Resolution A32-13 and in particular participate in the preparatory work of the ITU and the regional telecommunication organizations for WRC-07; and</p> <p>b) continue to assign high priority to the tasks relating to the protection and availability of radio-frequency spectrum allocated to aeronautical services and in particular actively participates in the relevant activities of the ITU-R and of the regional telecommunication organizations.</p>	<p>States/IOs</p> <p>ICAO</p>	<p>Continue participating in the preparatory work of the ITU and the regional telecommunication organizations for WRC-07.</p> <p>Noted.</p>
40	5/2	<p>ICAO activities on interference</p> <p>That ICAO</p> <p>a) intensify its activities to secure protection of aeronautical communication, navigation and surveillance systems from the adverse effects of electromagnetic</p>	ICAO	The Secretary General to take appropriate action.

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		interference and develops guidance material, as necessary;		
		b) develop material to assist States in assessing interference from FM broadcasting stations; <i>(continued...)</i>	ICAO	re (b) and (d): The Aeronautical Communications Panel (ACP) in coordination with the Navigation Systems Panel (NSP) as required, to develop the necessary guidance material.
40	5/2	ICAO activities on interference <i>(continued)</i>		
		c) support the relevant activities of the ITU and regional telecommunication and standards-making organizations; and	ICAO	Noted.
		d) develop guidance material on the control and removal of interference to aeronautical systems.	ICAO	See above.
AGENDA ITEM 6: AERONAUTICAL NAVIGATION ISSUES				
41	6/1	Transition to satellite-based air navigation That:		
		a) ICAO continue to develop as necessary provisions which would support seamless GNSS guidance for all phases of flight and facilitate transition to satellite-based sole navigation service with due consideration of safety of flight, technical, operational and economics factors;	ICAO	The relevant panels continue the development of SARPs, procedures and guidance material in line with part (a).
		b) air navigation service providers move rapidly, in coordination with airspace users, with a view to achieving, as soon as possible, worldwide navigation capability to at least APV I performance; and	States/IOs	Implement, in coordination with airspace users, navigation capability to at least APV I performance.
		c) States and airspace users take note of the available and upcoming SBAS navigation services providing for APV operations and take necessary steps	States/IOs	Take necessary steps towards installation and certification of SBAS capable avionics.

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		towards installation and certification of SBAS capable avionics.		SBAS capable avionics.
42	6/2	<p>Guidelines on mitigation of GNSS vulnerabilities</p> <p>That States in their planning and introduction of GNSS services:</p> <p>a) assess the likelihood and effects of GNSS vulnerabilities in their airspace and utilize, as necessary, the mitigation methods as outlined in the guidelines contained in Appendix A to the report on Agenda Item 6;</p> <p style="text-align: right;"><i>(continued...)</i></p>	<p>States/IOs</p> <p>ICAO</p>	<p>Assess the likelihood and effects of GNSS vulnerabilities in their airspace.</p> <p>Incorporate the guidelines contained in Appendix A to the report on Agenda Item 6 in the first edition of the <i>Global Navigation Satellite System (GNSS) Manual</i>.</p>
42	6/2	<p>Guidelines on mitigation of GNSS vulnerabilities <i>(continued)</i></p> <p>b) provide effective spectrum management and protection of GNSS frequencies to reduce the possibility of unintentional interference;</p> <p>c) take full advantage of on-board mitigation techniques, particularly inertial navigation;</p> <p>d) where determined that terrestrial navigation aids need to be retained as part of an evolutionary transition to GNSS, give priority to retention of DME in support of INS/DME or DME/DME RNAV for en-route and terminal operations, and of ILS or MLS in support of precision approach operations at selected runways; and</p> <p>e) take full advantage of the future contribution of new GNSS signals and constellations in the reduction of GNSS failures and vulnerabilities.</p>	<p>States</p> <p>States/IOs</p> <p>States</p> <p>States</p>	<p>Reduce the possibility of unintentional interference.</p> <p>To note.</p> <p>As part of an evolutionary transition to GNSS, give priority to retention of DME if required.</p> <p>To note.</p>
43	6/3	<p>Assessment of atmospheric effects on SBAS performance in equatorial regions</p> <p>That ICAO, in order to aid the work on mitigation of ionospheric effects on SBAS</p>	ICAO	Requested the Navigation Systems Panel (NSP) to give

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		performance in equatorial regions, assess the results of data collection being carried out in States and develop appropriated guidance material.		priority to the development of suitable guidance material.
44	6/4	<p>Automated means for reporting and assessing the effects of outages on GNSS operations</p> <p>That ICAO consider standardization of an automated means of monitoring and reporting scheduled and unscheduled GNSS outages and assessing their effects on GNSS operations and develop, as necessary, the requisite provisions.</p>	ICAO	Requested the Navigation Systems Panel (NSP) to consider the development of the relevant provisions.
45	6/5	<p>Early resolution of issues arising from implementation of RNAV and RNP</p> <p>That ICAO as a matter of urgency address and progress the issues associated with the introduction of RNP and RNAV.</p>	ICAO	Requested the Secretary General to progress the necessary work with the assistance of the Required Navigation Performance and Special Operational Requirements Study Group (RNPSORSG).
46	6/6	<p>Advanced GNSS procedure design</p> <p>That ICAO develop RNAV procedures supported by GNSS for both fixed and rotary wing aircraft, enabling lower operating minimas in obstacle rich or otherwise constraint environments.</p>	ICAO	Requested the Navigation Systems Panel (NSP) and Obstacle Clearance Panel (OCP) to develop relevant proposals for consideration by the ANC.
47	6/7	<p>Curved RNAV procedures</p> <p>That ICAO develop RNAV procedures supported by GNSS for fixed wing aircraft, providing high track and velocity keeping accuracy to maintain separation through curves and enable flexible approach line-ups.</p>	ICAO	Requested the Navigation Systems Panel (NSP) and Obstacle Clearance Panel (OCP) to develop relevant proposals for consideration by the ANC.
48	6/8	<p>GNSS/INS integration</p> <p>That ICAO develop provisions for the integration of GNSS/INS in order to reduce</p>		Requested the Navigation Systems Panel (NSP) to develop

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		the vulnerability of GNSS to RF interference and aid the development of advanced GBAS capabilities.	ICAO	relevant proposals for consideration by the ANC.
49	6/9	<p>Support of and participation in SBAS pre-operational implementation activities</p> <p>That:</p> <p>a) States that develop and introduce satellite-based augmentation systems and other SBAS service providers commence or continue to provide their technical and financial support and participation in the activities leading to the extension of their SBAS service areas into neighbouring States and Regions; and</p> <p>b) States participating in SBAS implementation activities coordinate with other participating States to optimize their effort, minimize duplication of service and facilitate participation of service providers.</p>	<p>States/IOs</p> <p>States</p>	<p>To note</p> <p>States participating in SBAS implementation coordinate with other participating States to optimize their effort.</p>
50	6/10	<p>Amendment to Annex 10, Volume I, Attachment B C Updating the strategy for introduction and application of non-visual aids to approach and landing</p> <p>That Attachment B to Annex 10, Volume I be amended as shown in Appendix B to the report on Agenda Item 6.</p>	ICAO	The Air Navigation Commission made a preliminary review of Recommendation 6/10, and agreed that it should be transmitted to Contracting States and interested international organizations for comments, together with the Commission's comments and proposals thereon. Following receipt of these comments, a further review will be conducted by the Commission, which will then present its final proposals to the Council for adoption of the amendments to Annex 10, Volume I.
51	6/11	<p>Amendment to the Global Plan C Navigation</p> <p>That:</p>		

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		a) the <i>Global Air Navigation Plan for CNS/ATM Systems</i> (Doc 9750) be amended as shown in Appendix C to the report on Agenda Item 6; and	ICAO	Requested the Secretary General to take appropriate action.
		b) updated CNS/ATM systems implementation time lines contained in Part II of the Global Plan be reviewed by the Regional Implementation Group and consolidated for incorporation in the next edition of the Global Plan.	PIRGs	Update CNS/ATM systems implementation time lines contained in Part II of the Global Plan.
52	6/12	Development of guidance material on applications of new GNSS elements and their combinations That ICAO, in developing standards for new GNSS elements and signals, address the issues associated with the use of multiple signals and their combinations, and develop guidance on the most promising combinations of GNSS elements.	ICAO	Requested the Navigation Systems Panel (NSP) to develop the required guidance material.
53	6/13	Potential constraints on using multiple GNSS signals That States, in their planning for implementation of GNSS services, take full advantage of future benefits accrued from using independent core satellite constellations, other GNSS elements and their combinations, and avoid limitations on the use of specific system elements.	States/IOs	Take full advantage of future benefits, and avoid limitations on the use of specific system elements.
54	6/14	GNSS services in the 960 - 1 215 MHz band That, a) States be encouraged to take into account the need to minimize potential interference to GNSS services in their planning of the deployment of DMEs; and b) an appropriate ICAO body be tasked to review the issues listed in paragraph 6.4.2.4 of the report on Agenda Item 6.	States ICAO	Minimize potential interference to GNSS services in their planning of the deployment of DMEs Requested the Navigation Systems Panel (NSP) to develop proposals for consideration by the ANC.

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
55	6/15	<p>Updating of SARPs for radio navigation aids in Annex 10, Volume I</p> <p>That ICAO undertake a review of SARPs and guidance material in Annex 10, Volume I in the areas identified in paragraph 6.4.3.4 of the report on Agenda Item 6.</p>	ICAO	Requested the Navigation Systems Panel (NSP) to develop relevant proposals for consideration by the ANC.
56	6/16	<p>Completion of guidance material on application of data quality SARPs in Annex 15</p> <p>That ICAO give high priority to the completion of guidance material for the data quality assurance including the data processing from origination to end-use.</p>	ICAO	Requested the Secretary General to expedite publication of the <i>Quality Management System Manual for AIS/MAP Services</i> .
AGENDA ITEM 7: AERONAUTICAL AIR-GROUND AND AIR-TO-AIR COMMUNICATIONS				
57	7/1	<p>Strategy for the near-term introduction of ADS-B</p> <p>That States:</p> <p>a) note that a common element in most of the approaches currently adopted for early implementation of ADS-B is the selection of the SSR Mode S extended squitter as the initial data link; and</p> <p>b) take into account this common element to the extent possible in their national and regional implementation choices in order to facilitate global interoperability for the initial introduction of ADS-B.</p>	PIRGs/States PIRGs/States	To note. Take into account this SSR Mode S extended squitter as a common element in their national and regional implementation choices for the initial introduction of ADS-B.
58	7/2	<p>Support of longer term ADS-B requirements</p> <p>That</p> <p>a) States recognize that in the longer term the current SSR Mode S extended squitter technology may not be able to fully satisfy all of the requirements for ADS-B services in all airspaces; and</p>	States/IOs	To note.

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		b) ICAO continue development of technical standards for ADS-B link technologies, including SSR Mode S extended squitter, VDL Mode 4 and UAT, with special attention being paid to ICAO ADS-B operational requirements, frequency spectrum availability and aircraft integration issues.	ICAO	Requested the ACP and the SCRSP, in coordination with other appropriate panels, to continue the development of provisions for ADS-B technologies as required.
59	7/3	<p>Evolutionary approach for global interoperability of air-ground communications</p> <p>That States:</p> <p>a) continue the use of currently implemented ICAO standardized systems for VHF band voice and data communications until such time as either saturation of the VHF band is approached or significant cost/benefit or safety advantages are expected from the implementation of other ICAO Standards;</p> <p>b) continue efforts in maximizing efficient use of existing aeronautical spectrum allocations through spectrum management measures</p> <p>c) continue the progressive deployment of data communications on the basis of applicable ICAO Standards such as aeronautical telecommunication network (ATN) using VDL Mode 2 as dictated by evolving operational requirements with a view to complementing or replacing voice communications for most routine communications;</p> <p>d) provide a forecast of anticipated VHF band saturation in high-density regions;</p> <p style="text-align: right;"><i>(continued...)</i></p>	<p>PIRGs/States /IOs</p> <p>PIRGs/States/ IOs</p> <p>PIRGs/States/ IOs</p> <p>States</p>	<p>To note.</p> <p>To note.</p> <p>To note.</p> <p>Provide a forecast of anticipated VHF band saturation in high-density regions.</p>

	RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
59	7/3	<p>Evolutionary approach for global interoperability of air-ground communications <i>(continued)</i></p> <p>e) in view of the anticipated saturation of the VHF band for voice communication, consider transition to spectrally more efficient ICAO systems, and/or make increased use of data communications; and</p> <p>f) investigate multi-mode avionics as a transitional method of achieving interoperability of air/ground communications, where global harmonization has not been achieved.</p>	<p>States</p> <p>States/IOs</p>	<p>To note.</p> <p>Use multi-mode avionics for achieving interoperability of air/ground communications.</p>
60	7/4	<p>Investigation of future technology alternatives for air-ground communications</p> <p>That ICAO</p> <p>a) investigate new terrestrial and satellite-based technologies, on the basis of their potential for ICAO standardization for aeronautical mobile communications use, taking into account the safety-critical standards of aviation and the associated cost issues;</p> <p>b) continue evolutionary development of existing standardized ICAO technologies with a view to increasing their efficiency and performance; and</p> <p>c) assess the needs for additional aeronautical spectrum to meet requirements for increased communications capacity and new applications, and assist States in securing appropriate additional allocations by the ITU.</p>	<p>ICAO</p>	<p>Requested the ACP to carry out the relevant activities in (a), (b) and (c).</p>

		RECOMMENDATION	ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
61	7/5	<p>Standardization of aeronautical communication systems</p> <p>That, for new aeronautical communication systems, ICAO:</p> <p>a) continue to monitor emerging communication systems technologies but undertake standardization work only when the systems meet all of the following conditions:</p> <ol style="list-style-type: none"> 1) can meet current and emerging ICAO ATM requirements; 2) are technically proven and offer proven operational benefits; 3) are consistent with the requirements for safety; 4) are cost-beneficial; 5) can be implemented without prejudice to global harmonization of the CNS/ATM systems; and 6) are consistent with the <i>Global Air Navigation Plan for CNS/ATM Systems</i> (Doc 9750) <p>b) include in Annex 10 provisions ensuring that the introduction of mandatory carriage of new equipment be based only on appropriate ICAO regional and interregional coordination; and</p> <p>c) further limit SARPs for complex aeronautical systems to broad, system-level, functional and performance requirements and better capitalize on the work of other standard-making organizations so as to reduce the complexity/size of technical provisions.</p>	ICAO	Requested all ICAO bodies involved in the standardization of aeronautical communication systems to apply it in their work.

CNS/ATM/IC SG/2
Report on Agenda Item 6

REPORT ON AGENDA ITEM 6: REVIEW/UPDATE OF IMPLEMENTATION TIMELINES

6.1 Under this agenda item, the meeting was apprised of the outcome of the 11th Air Navigation Conference relating to the role and function of the Global Air Navigation Plan for CNS/ATM systems (Doc. 9750), under review by ICAO Headquarters with a view to amend Chapter 4 'AIR TRAFFIC MANAGEMENT' and establish the linkage to the Global ATM Operational Concept, which will be published in a separate ICAO Manual.

6.2 The meeting, accordingly, updated the CNS/ATM systems implementation timelines contained in Part II of the Regional Air Navigation Plan, as indicated in **Appendix 6A** to the report on Agenda Item 6.

6.3 For ease of reference, the meeting was of the view that a glossary should be included in the updated implementation timelines. The Sub Group also requested that the Terms of Reference/Work Programme of some MIDANPIRG subsidiary bodies should be revised with a view to include a specific task related to the update of the appropriate CNS/ATM implementation timelines.

6.4 IATA informed the meeting that Bahrain and UAE have already implemented the dissemination of the ATIS via data link (D-ATIS). The meeting recalled the operational benefits gained from/supported the implementation of D-ATIS and the dissemination of the Pre-Departure Clearance via data link, and endorsed the following Draft Conclusion:



DRAFT CONCLUSION 2/11: IMPLEMENTATION OF D-ATIS AND PDC IN THE MID REGION

That, MID States not having done so, and where needs justify, are urged to implement in their international airports the dissemination of the ATIS and Pre-Departure Clearance via data link (D-ATIS and PDC).

CNS/ATM IMPLEMENTATION PLAN

UPDATED TIMELINES

TIMELINES:

-  **Global**
-  **Regional**
-  **National**

MIDDLE EAST — NAVIGATION SYSTEM IMPLEMENTATION		1994	95	96	97	98	99	2000	1	2	3	4	5	6	7	8	9	2010
Global	En-route ^{*1}																	
<i>MID Region</i>																		
States	Afghanistan																	
	Bahrain																	
	Egypt																	
	Iran, Islamic Rep. of																	
	Iraq																	
	Israel																	
	Jordan	NA																
	Kuwait																	
	Lebanon																	
	Oman																	
	Qatar																	
	Saudi Arabia																	
	Syrian Arab Republic																	
	United Arab Emirates																	
	Yemen																	
Global	Terminal/NPA ^{*2}																	
<i>MID Region</i>																		
States	Afghanistan																	
	Bahrain																	
	Egypt	TBD																
	Iran, Islamic Rep. of																	
	Iraq																	
	Israel	TBD																
	Jordan	NA																
	Kuwait	TBD																
	Lebanon																	
	Oman																	
	Qatar																	
	Saudi Arabia																	
	Syrian Arab Republic																	
	United Arab Emirates																	
	Yemen																	
Global	Precision approach																	
<i>MID Region</i>																		
States	Afghanistan																	
	Bahrain																	
	Egypt	TBD																
	Iran, Islamic Rep. of																	
	Iraq																	
	Israel	TBD																

* 1 Note: Use of GNSS for En-route will initially be as supplemental Means.

²Note: Use of GNSS for Terminal /NPA will initially be as supplemental Means.
Primary and Sole Means TBD

Table 10-1

MIDDLE EAST — SURVEILLANCE SYSTEM IMPLEMENTATION			1994	95	96	97	98	99	2000	1	2	3	4	5	6	7	8	9	2010	
R S P	Development of SARPs	ADS	[Shaded]																	
		ADS-B	TBD	[Shaded]																
		SSR Mode S	[Shaded]	[Shaded]																
Aircraft Equipage		ADS	TBD	[Shaded]																
		ADS-B	[Shaded]																	
		SSR Mode S	[Shaded]																	
		Interim ADS (FANS 1/A)	[Shaded]																	
Trials & Demonstrations			[Shaded]																	
Global		ADS	[Shaded]																	
MID Region			[Checkered]																	
States		Afghanistan	[Shaded]																	
		Bahrain	TBD	[Shaded]																
		Egypt	[Vertical Lines]																	
		Iran, Islamic Rep. of	[Vertical Lines]																	
		Iraq	[Shaded]																	
		Israel	N/A	[Shaded]																
		Jordan	N/A	[Shaded]																
		Kuwait	[Shaded]																	
		Lebanon	TBD	[Shaded]																
		Oman	N/A	[Shaded]																
		Qatar	[Shaded]																	
		Saudi Arabia	[Vertical Lines]																	
		Syrian Arab Republic	[Vertical Lines]																	
		United Arab Emirates	N/A	[Shaded]																
		Yemen	TBD	[Vertical Lines]																
Global		ADS-B	[Shaded]																	
MID Region			TBD	[Checkered]																
States		Afghanistan	[Shaded]																	
		Bahrain	TBD	[Shaded]																
		Egypt	N/A	[Shaded]																
		Iran, Islamic Rep. of	TBD	[Shaded]																
		Iraq	[Shaded]																	
		Israel	N/A	[Shaded]																
		Jordan	N/A	[Shaded]																
		Kuwait	[Shaded]																	
		Lebanon	TBD	[Shaded]																
		Oman	N/A	[Shaded]																
		Qatar	[Shaded]																	
		Saudi Arabia	[Vertical Lines]																	
		Syrian Arab Republic	[Vertical Lines]																	
		United Arab Emirates	N/A	[Shaded]																
		Yemen	TBD	[Vertical Lines]																
Global		SSR Mode S	[Shaded]																	
MID Region			[Checkered]																	
States		Afghanistan	[Shaded]																	
		Bahrain	[Shaded]																	
		Egypt	TBD	[Vertical Lines]																
		Iran, Islamic Rep. of	TBD	[Vertical Lines]																
		Iraq	[Shaded]																	

Table 11-2

MID REGION ! ATM ENHANCEMENTS BY MAJOR TRAFFIC FLOWS		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
AR-1 (Northern Arabian Peninsula, Near East and Northern Egypt)	Region	Longitudinal separation reduction to 80 NM RNAV															
	States	Bahrain															
		Egypt															
		Iraq															
		Israel															
		Jordan															
		Kuwait															
		Lebanon															
		Oman															
		Qatar	N/	A													
		Saudi Arabia															
		Syrian Arab Republic															
	United Arab Emirates	N/	A														
Region	Longitudinal separation reduction to 50 NM/RNAV procedures (RNP 10)																
States	Bahrain																
	Egypt	N/	A														
	Iraq																
	Israel																
	Jordan	T	B	D													
	Kuwait																
	Lebanon	N/	A														
	Oman	N/	A														
	Qatar	N/	A														
	Saudi Arabia	N/	A														
	Syrian Arab Republic																
	United Arab Emirates	N/	A														
Region	Longitudinal separation reduction to 30 NM (RNP 5) ¹																
States	Bahrain																
	Egypt																
	Iraq																
	Israel																
	Jordan	T	B	D													
	Kuwait																
	Lebanon																
	Oman	N/	A														
	Qatar	N/	A														
	Saudi Arabia																
	Syrian Arab Republic																
	United Arab Emirates	N/	A														
Region	Lateral Separation Reduction to 18 NM (RNP 5)																

¹ SARPS not yet completed

MID REGION ! ATM ENHANCEMENTS BY MAJOR TRAFFIC FLOWS																				
AREA OF ROUTING	ATM OBJECTIVE/ STATES' IMPLEMENTATION		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10		
	States	Bahrain																		
		Egypt																		
		Iraq																		
		Israel																		
		Jordan	T	B	D															
		Kuwait																		
		Lebanon																		
		Oman	N/A																	
		Qatar																		
		Saudi Arabia																		
		Syrian Arab Republic																		
		United Arab Emirates																		
AR-2 (Southern Arabian Peninsula and Southern Egypt)	Region	Introduce RVSM to 1 000 ft above FL 290																		
	States	Bahrain																		
		Egypt																		
		Iraq																		
		Israel																		
		Jordan																		
		Kuwait																		
		Lebanon																		
		Oman																		
		Qatar																		
		Saudi Arabia																		
		Syrian Arab Republic																		
		United Arab Emirates																		
Region	Longitudinal separation reduction to 10 min /80 NM RNAV																			
	States	Bahrain																		
		Egypt																		
		Oman																		
		Saudi Arabia																		
		United Arab Emirates	N/A																	
		Yemen																		
Region	Longitudinal separation reduction to 50 NM/RNAV procedures (RNP 10)																			
States	Bahrain																			
	Egypt	N/A																		
	Oman	N/A																		
	Saudi Arabia																			
	United Arab Emirates	N/A																		
	Yemen																			
Region	Longitudinal separation reduction to 30 NM (RNP 5) ¹																			
States	Bahrain																			
	Egypt	N/A																		
	Oman	N/A																		
Saudi Arabia																				

¹SARPS not yet completed

MID REGION ! ATM ENHANCEMENTS BY MAJOR TRAFFIC FLOWS																		
AREA OF ROUTING	ATM OBJECTIVE/ STATES' IMPLEMENTATION		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
			N/	A														
		United Arab Emirates Yemen	T	B	D													
	Region	Lateral Separation Reduction to 18 NM (RNP 5)																
	States	Bahrain Egypt Oman Saudi Arabia Syrian Arab Republic United Arab Emirates Yemen	N/	A														
	Region	Introduce RVSM to 1 000 ft above FL 290																
	States	Bahrain Egypt Oman Saudi Arabia United Arab Emirates Yemen																
AR-3 (Iran/Afghanistan)	Region	Longitudinal separation reduction to 10 min /80 NM RNAV																
	States	Afghanistan Iran, Islamic Republic of																
	Region	Longitudinal separation reduction to 50 NM/RNAV procedures (RNP 10)																
	States	Afghanistan Iran, Islamic Republic of																
	Region	Longitudinal separation reduction to 30 NM (RNP 5) ¹																
	States	Afghanistan Iran, Islamic Republic of																
	Region	Lateral Separation Reduction to 18 NM (RNP 5)																
	States	Afghanistan Iran, Islamic Republic of																
	Region	Introduce RVSM to 1 000 ft above FL 290																
States	Afghanistan Iran, Islamic Republic of																	

¹SARPS not yet completed

Table 11-3

MID REGION ! ATM REQUIREMENTS FOR COMMUNICATIONS BY MAJOR TRAFFIC FLOWS																			
AREA OF ROUTING	SYSTEM COMPONENT/ STATES' IMPLEMENTATION		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	
			AR-1 (Northern Arabian Peninsula, Near East and Northern Egypt)	Region	Continuous coverage of VHF voice	[Checkered pattern]													
States	Bahrain	[Vertical lines]																	
	Egypt	[Vertical lines]																	
	Iraq	[Vertical lines]																	
	Israel	[Vertical lines]																	
	Jordan	[Vertical lines]																	
	Kuwait	[Vertical lines]																	
	Lebanon	[Vertical lines]																	
	Oman	[Vertical lines]																	
	Qatar	[Vertical lines]																	
	Saudi Arabia	[Vertical lines]																	
Syrian Arab Republic	[Vertical lines]																		
United Arab Emirates	[Vertical lines]																		
Region	CPDLC	[Vertical lines]										[Checkered pattern]							
States	Bahrain	[Vertical lines]																	
	Egypt	[Vertical lines]																	
	Iraq	[Vertical lines]																	
	Israel	[Vertical lines]																	
	Jordan	[Vertical lines]																	
	Kuwait	T	B	D	[Vertical lines]														
	Lebanon	T	B	D	[Vertical lines]														
	Oman	T	B	D	[Vertical lines]														
	Qatar	N/	A	[Vertical lines]															
	Saudi Arabia	[Vertical lines]																	
Syrian Arab Republic	[Vertical lines]																		
United Arab Emirates	[Vertical lines]																		
Region	AMHS	[Vertical lines]										[Checkered pattern]							
States	Bahrain	[Vertical lines]																	
	Egypt	T	B	D	[Vertical lines]														
	Iraq	[Vertical lines]																	
	Israel	[Vertical lines]																	
	Jordan	[Vertical lines]																	
	Kuwait	T	B	D	[Vertical lines]														
	Lebanon	T	B	D	[Vertical lines]														
	Oman	[Vertical lines]																	
	Qatar	N/	A	[Vertical lines]															
	Saudi Arabia	[Vertical lines]																	
Syrian Arab Republic	[Vertical lines]																		
United Arab Emirates	[Vertical lines]																		

MID REGION ! ATM REQUIREMENTS FOR COMMUNICATIONS BY MAJOR TRAFFIC FLOWS																				
AREA OF ROUTING	SYSTEM COMPONENT/ STATES' IMPLEMENTATION		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10		
AR-1 (Northern Arabian Peninsula, Near East and Northern Egypt)	Region	AIDC																		
	States	Bahrain																		
		Egypt	T	B	D															
		Iraq																		
		Israel																		
		Jordan																		
		Kuwait	T	B	D															
		Lebanon	T	B	D															
		Oman																		
		Qatar	N/	A																
		Saudi Arabia																		
Syrian Arab Republic																				
United Arab Emirates																				
AR-2 (Southern Arabian Peninsula, and Southern Egypt)	Region	Continuous coverage of VHF voice *	Not Feasible																	
	States	Bahrain																		
		Egypt																		
		Oman																		
		Saudi Arabia																		
		United Arab Emirates																		
		Yemen																		
	Region	CPDLC																		
	States	Bahrain																		
		Egypt																		
		Oman	T	B	D															
		Saudi Arabia																		
		United Arab Emirates																		
		Yemen																		
	Region	AMHS																		
States	Bahrain																			
	Egypt																			
	Oman	T	B	D																
	Saudi Arabia																			
	United Arab Emirates																			
	Yemen	T	B	D																
Region	AIDC																			
States	Bahrain																			
	Egypt																			
	Oman	T	B	D																
	Saudi Arabia																			
	United Arab Emirates																			
	Yemen	T	B	D																

* Coverage not possible in oceanic and remote parts of AR-2

MID REGION ! ATM REQUIREMENTS FOR COMMUNICATIONS BY MAJOR TRAFFIC FLOWS																		
AREA OF ROUTING	SYSTEM COMPONENT/ STATES' IMPLEMENTATION		95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
			AR-3 (Iran/Afghanistan)	Region	Continuous coverage of VHF voice	█	█	█	█	█	█	█	█	█	█	█	█	█
States	Afghanistan Iran, Islamic Republic of																	
Region	CPDLC**									█	█	█	█	█	█	█	█	█
States	Afghanistan Iran, Islamic Republic of																	
Region	AMHS										█	█	█	█	█	█	█	█
States	Afghanistan Iran, Islamic Republic of																	
Region	AIDC											█	█	█	█	█	█	█
States	Afghanistan Iran, Islamic Republic of																	

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REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS

7.1 ITU World Radiocommunication Conferences (WRC-03 and WRC-07)

7.1.1 The meeting while reviewing the outcome of the ITU World Radiocommunication Conference (WRC-2003) on the key aeronautical items, noted with satisfaction that many concerns of the aeronautical community were taken into consideration and that the extensive preparatory work and participation by States had contributed significantly to the successful outcome. However, the meeting noted that some MID States still have their names on the footnotes 5.362B and 5.362C which allow the use of the band 1559-1610 MHz to the fixed service. This situation could lead to the disruption to GNSS operation and thus affect the safety of aircraft in flight in the MID Region.

7.1.2 In this regard, the ICAO MID Regional Office sent letters to the concerned States bringing their attention to MIDANPIRG/8 Conclusion 8/52 – *Protecting GNSS from harmful Interference in the MID Region*.

7.1.3 As regards the preparation of the ITU World Radiocommunication Conference (WRC-2007), the meeting noted some items of critical concern to aviation community on the agenda, which is reproduced in **Appendix 7A** to the report on Agenda Item 7.

7.1.4 The meeting noted that the Air Navigation Commission reviewed the draft ICAO Position for WRC-2007 that will be submitted to the Council in year 2005. As for the preparation of the ITU WRC-2003, the ICAO Regional Office is requested to present to States a table with the summary of the ICAO Position for ITU WRC-2007 and that of the Telecommunication Conference of Arab States. In this regard, the Sub-Group was of the view that MIDANPIRG/6 Conclusion 6/4 – Civil Aviation Support of ICAO Position and Conclusion 6/5 – Civil Aviation Representatives' Participation in ITU WRC Activities, were still valid.

7.1.5 The meeting while discussing Harmful Interference, noted Recommendation 5/2 of the 11th Air Navigation Conference requesting ICAO to intensify its activities to secure the protection of aeronautical communication, navigation and surveillance frequencies from the adverse effects of electromagnetic interference and develop guidance material as necessary.

7.2 On line Data Interchange (OLDI)

7.2.1 The meeting noted with satisfaction the presentation made by Eurocontrol on the use of On-line Data Interchange (OLDI) in EUR Region, emphasizing on operational and technical issues. In this regard, the meeting was of the view that pending the availability of ATN infrastructure for the implementation of the AIDC, OLDI might provide operational benefits.

7.2.2 Based on the above, the meeting noted that States intending to implement OLDI should develop an Interface Control Document (ICD) through related Letters of Agreement in order to harmonize the system. This document should define the facilities and messages to be provided between FDPs serving the concerned ATC units for the purpose of achieving the coordination required prior to the transfer of flights from one unit to the next and the transfer of communication of such flights.

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7.3 **CNS/ATM Human Resource Planning and Training Task Force**

7.3.1 The meeting recalled that MIDANPIRG/7 meeting held in Cairo, 21-25 January 2002, under Decision 7/37 established the CNS/ATM Human Resource Planning and Training Task Force. It was also noted that MIDANPIRG/8 meeting held in Cairo, 7-11 September 2003, in order to strengthen this Task Force and to expedite the process to accomplish the expected results, adopted Conclusion 8/39 – *MID REGION STATES SUPPORT FOR THE CNS/ATM HUMAN RESOURCES PLANNING AND TRAINING TASK FORCE* and agreed that States having experience in the fields of human resources planning and training, and those having civil aviation training schools, colleges or academies, should assist the ICAO MID Regional Office and support the Task Force by providing adequate information and expertise through the participation of professionals in training management in its meetings.

7.3.2 The meeting was apprised of the outcome of the Special Implementation Project (SIP) carried out in the MID Region during period November/December 2004. The objective of the SIP was to gather information on human resources planning and training facilities and programmes in the MID Region with a view to have a broader perspective on regional training activities and capacity so as to respond to regional/global requirements regarding the need for harmonization and streamlining of training programmes in accordance with the strategic objectives of ICAO, and in particular, the CNS/ATM Implementation Plan.

7.3.3 The findings/outcomes of the SIP are summarized as follows:

- a. The urgent need for the harmonization of training programmes in the region is recognized.
- b. The CNS/ATM Human Resources and Training Task Force be apprised of and be guided by the outcome if the SIP.
- c. States are conscious of their responsibilities regarding training requirements. However, with a view to meet the future challenges in the air navigation fields, the need for specially tailored courses and advanced courses was highlighted. The need for advanced training to trainers was also recognized.
- d. Some States/Training institutions informally indicated that they would like to join the TRAINAIR programme. However, as they are not founding members of TRAINAIR, the charges for joining the programme at this stage, are in their view, exaggerated and not affordable/justified.
- e. Some training institutions have indicated that they are not aware of activities being carried out by the Regional Office and would like to participate fully in the MID regional planning mechanism (MIDANPIRG). It was agreed that for future activities in the region a specific request be made for States to include participants from their training institutions in their delegation.
- f. Only two training institutions have been certified to ISO 9001/2000 specifications. The need for the provision of courses in quality management systems has also been recognized.
- g. States/training institutions have been requested to put emphasis on the implementation of ICAO Language Proficiency Requirements, which will become mandatory on 2008.

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- h. Some States/service providers have obtained ISO 9001/2000 certification for the Air Navigation Services (Area Control Centre, AIS, Communications and Automation Sections), the Flight Safety Services and the Administration. This unique experience in the Middle East Region should be further exploited and States may wish to inspire from it.
- i. There is a need to organize a workshop under the aegis of ICAO in the Middle East Region with the participation of all training institutions and concerned States with a view to harmonize training programmes/share experiences so as to cope with the new challenges facing the Region.
- j. There is a requirement to include a link to all training institutions available in the MID Region in the ICAO Middle East office website.

7.3.4 Egypt informed the meeting about the ACAC CNS/ATM study, which is in progress and composed of two phases, as follows:

- i) Phase 1: concerns the technical aspects i.e. data collection, traffic forecast and CNS implementation issues; and
- ii) Phase 2: concerns other aspects related to CNS/ATM i.e. training needs, cost benefit analyses, institutional issues and implementation roadmap.

7.3.5 Concern was raised about the non-convening of the CNS/ATM Human Resource Planning and Training Task Force (CNS/ATM HR P&T TF/1) due to limited number of participation (four States out of fifteen MIDANPIRG provider States replied favourably to the invitation letter). The meeting was of view that the Task Force should take into consideration and be guided by the outcome of the SIP carried out in the MID Region.

7.3.6 Based on the above, the meeting endorsed the following Draft Conclusion:

DRAFT CONCLUSION 2/12: CONVENING OF THE CNS/ATM HR P&T TF/1

That,

- a) *MID States are urged to attend the CNS/ATM Human Resources Planning and Training Task Force meeting (CNS/ATM HR P&T TF/1);*
- b) *the CNS/ATM HR P&T TF/1 take into consideration and be guided by the outcome of the SIP carried in the MID Region during the period November/December 2004; and*
- c) *the Terms of Reference and Work Programme of the Task Force be amended as at **Appendix 7B** to the report on Agenda Item 7.*

7.4 Future Work Programme

7.4.1 The meeting agreed that the CNS/ATM/IC SG/3 meeting should be held in the 2nd half of 2006 depending on ICAO MID Regional Office work programme and the date of MIDANPIRG/10 meeting. The venue will be ICAO MID Regional Office in Cairo, unless a State is interested in hosting this meeting.

ITU COUNCIL RESOLUTION 1227
Agenda for the World Radiocommunication
Conference (WRC-07)

The Council,

Noting

that Resolution 802 of the World Radiocommunication Conference (Geneva, 2003):

- a) resolved to recommend to the Council that a world radiocommunication conference be held in 2007 for a period of four weeks; and
- b) recommended its agenda, and invited the Council to finalize the agenda and arrange for the convening of WRC-07 and to initiate as soon as possible the necessary consultation with Member States,

resolves

to convene a World Radiocommunication Conference (WRC-07) in Geneva (Switzerland) from 8 October to 2 November 2007 with the following agenda:

1 on the basis of proposals from administrations, taking account of the results of WRC-03 and the Report of the Conference Preparatory Meeting, and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action with respect to the following items:

- 1.1 requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution **26 (Rev.WRC-97)**;
- 1.2 to consider allocations and regulatory issues related to the Earth exploration-satellite (passive) service, space research (passive) service and the meteorological satellite service in accordance with Resolutions **746 (WRC-03)** and **742 (WRC-03)**;
- 1.3 in accordance with Resolution **747 (WRC-03)**, consider upgrading the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (EESS) (active) and the space research service (SRS) (active) in the band 9 500-9 800 MHz without placing undue constraint on the services to which the bands are allocated;
- 1.4 to consider frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000 taking into account the results of ITU-R studies in accordance with Resolution **228 (Rev.WRC-03)**;
- 1.5 to consider spectrum requirements and possible additional spectrum allocations for aeronautical telecommand and high bit-rate aeronautical telemetry, in accordance with Resolution **230 (WRC-03)**;

1.6 to consider additional allocations for the aeronautical mobile (R) service in parts of the bands between 108 MHz and 6 GHz, in accordance with Resolution **414 (WRC-03)** and, to study current satellite frequency allocations, that will support the modernization of civil aviation telecommunication systems, taking into account Resolution **415 (WRC-03)**;

1.7 to consider the results of ITU-R studies regarding sharing between the mobile-satellite service and the SRS (passive) in the band 1 668-1 668.4 MHz, and between the mobile-satellite service and the mobile service in the band 1 668.4-1 675 MHz in accordance with Resolution **744 (WRC-03)**;

1.8 to consider the results of ITU-R studies on technical sharing and regulatory provisions for the application of high altitude platform stations operating in the bands 27.5-28.35 GHz and 31-31.3 GHz in response to Resolution **145 (WRC-03)**, and for high altitude platform stations operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz in response to Resolution **122 (Rev.WRC-03)**;

1.9 to review the technical, operational and regulatory provisions applicable to the use of the band 2 500-2 690 MHz by space services in order to facilitate sharing with current and future terrestrial services without placing undue constraint on the services to which the band is allocated;

1.10 to review the regulatory procedures and associated technical criteria of Appendix **30B** without any action on the allotments, the existing systems or the assignments in the List of Appendix **30B**;

1.11 to review sharing criteria and regulatory provisions for protection of terrestrial services, in particular the terrestrial television broadcasting service, in the band 620-790 MHz from broadcasting-satellite service networks and systems, in accordance with Resolution **545 (WRC-03)**;

1.12 to consider possible changes in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference: "Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks" in accordance with Resolution **86 (WRC-03)**;

1.13 taking into account Resolutions **729 (WRC-97)**, **351 (WRC-03)** and **544 (WRC-03)**, to review the allocations to all services in the HF bands between 4 MHz and 10 MHz, excluding those allocations to services in the frequency range 7 000-7 200 kHz and those bands whose allotment plans are in Appendices **25**, **26** and **27** and whose channelling arrangements are in Appendix **17**, taking account of the impact of new modulation techniques, adaptive control techniques and the spectrum requirements for HF broadcasting;

1.14 to review the operational procedures and requirements of the Global Maritime Distress and Safety System (GMDSS) and other related provisions of the Radio Regulations, taking into account Resolutions **331 (Rev.WRC-03)** and **342 (Rev.WRC-2000)** and the continued transition to the GMDSS, the experience since its introduction, and the needs of all classes of ships;

1.15 to consider a secondary allocation to the amateur service in the frequency band 135.7-137.8 kHz;

1.16 to consider the regulatory and operational provisions for Maritime Mobile Service Identities (MMSIs) for equipment other than shipborne mobile equipment, taking into account Resolutions **344 (Rev.WRC-03)** and **353 (WRC-03)**;

1.17 to consider the results of ITU-R studies on compatibility between the fixed-satellite service and other services around 1.4 GHz, in accordance with Resolution **745 (WRC-03)**;

1.18 to review pfd limits in the band 17.7-19.7 GHz for satellite systems using highly inclined orbits, in accordance with Resolution **141 (WRC-03)**;

1.19 to consider the results of the ITU-R studies regarding spectrum requirement for global broadband satellite systems in order to identify possible global harmonized fixed-satellite service frequency bands for the use of Internet applications, and consider the appropriate regulatory/technical provisions, taking also into account No. **5.516B**;

1.20 to consider the results of studies, and proposals for regulatory measures if appropriate regarding the protection of the EESS (passive) from unwanted emissions of active services in accordance with Resolution **738 (WRC-03)**;

1.21 to consider the results of studies regarding the compatibility between the radio astronomy service and the active space services in accordance with Resolution **740 (Rev.WRC-03)**, in order to review and update, if appropriate, the tables of threshold levels used for consultation that appear in the Annex to Resolution **739 (WRC-03)**;

2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-03)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution **27 (Rev.WRC-03)**;

3 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the Conference;

4 in accordance with Resolution **95 (Rev.WRC-03)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

5 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention;

6 to identify those items requiring urgent action by the Radiocommunication Study Groups in preparation for the next world radiocommunication conference;

7 in accordance with Article 7 of the Convention:

7.1 to consider and approve the Report of the Director of the Radiocommunication Bureau:

- on the activities of the Radiocommunication Sector since WRC-03;
- on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and
- on action in response to Resolution **80 (Rev.WRC-2000)**;

7.2 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **803 (WRC-03)**,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and the Special Committee on Regulatory/ Procedural Matters and to prepare a report to WRC-07,

instructs the Secretary-General

1 to make all the necessary arrangements, in agreement with the Director of the Radiocommunication Bureau, for the convening of the Conference;

2 to communicate this resolution to international and regional organizations concerned.

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Appendix 7B to the Report on Agenda Item 7

CNS/ATM HUMAN RESOURCES PLANNING AND TRAINING TASK FORCE

TERMS OF REFERENCE AND WORK PROGRAMME

1. TERMS OF REFERENCE

- a) Develop a comprehensive human resources planning and training programme for the MID Region with a view to assist States in the evolutionary implementation of the different elements of the MID CNS/ATM Implementation Plan.
- b) Develop guidance materials on human resource planning and training requirements for eventual inclusion in the MID Air Navigation Plan.

Note: The Task Force should be guided by:

- 1) *The ICAO Human Resources Planning Document (under development) as well as supporting guidance material;*
- 2) *studies and work carried out in ~~other~~ ICAO Regions; and*
- 3) *other relevant training modules developed by States and International/Regional Organizations.*

2. WORK PROGRAMME

- a) Identify the training resources already available in the MID Region;
- b) evaluate the human resource requirements and training demand associated with the implementation of the CNS/ATM systems in the MID Region;
- c) propose procedures and strategies which may be used by the MID Region States aimed at the assessment of human resource needs and consequential training demand; and
- d) propose a concrete action training plan with a view to assist States in the MID Region to implement the different elements of the CNS/ATM Plan.

3. COMPOSITION

3.1 The Task Force will be composed of experts from Civil Aviation Training Institutions, CNS/ATM, Human Resources Planning and Training fields nominated by MIDANPIRG Provider States.

IATA and IFALPA observers.

~~3.2 The Task Force will be composed of members from the States and International Organizations as follows:~~

Egypt
Iran, Islamic Republic of
Jordan
Kuwait
Oman
Saudi Arabia

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Attachment A to the Report

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