INTERNATIONAL CIVIL AVIATION ORGANIZATION

MIDDLE EAST OFFICE

REPORT OF THE NINTH MEETING OF MIDANPIRG RVSM TASK FORCE (MID RVSM TF/9)

(Abu Dhabi, 24 –27 August 2003)

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

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

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PART I - HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Ninth Meeting of MIDANPIRG Reduced Vertical Separation Minimum Task Force (RVSM TF/9), hosted by the UAE, was held at the conference room of the Hlton Hotel, Abu Dhabi, United Arab Emirates (UAE), 24 – 27 August 2003.

2. OPENING

2.1 The meeting was opened by Mr. Khalifa Abu Jamhoor, Director, Administration and Finance from the UAE General Civil Aviation Authority (GCAA) on behalf of the Director General of the GCAA. Mr. Abu Jamhoor extended the warmest welcome to all participants from four continents on behalf of the United Arab Emirates' General Civil Aviation Authority, and wished them all a successful Task Force meeting. He indicated that although many important tasks have been completed, the objective of this meeting is to review the few outstanding issues to be addressed prior to implementation and to agree on the Go/No-Go decision.

2.2 It was emphasized that implementation is only 3 months away, and the focus should now be on training, publication of procedures, awareness campaign and sustained coordination with our airspace users and adjacent States/ACCs.

2.3 Mr. Sabri Said Al-Busaidy, of Oman, Chairman of the Task Force also welcomed the delegates and thanked the GCAA of UAE for hosting the Task Force meeting. He also urged the parties concerned to expedite action so that all outstanding tasks be completed in a timely manner.

2.4 Mr. Dhiraj Ramdoyal, Regional Officer, Air Traffic Management from the ICAO Middle East Office extended the greetings of Mr A. Zerhouni, the Regional Director and Mr. M. Khonji, the Deputy Director of the ICAO Middle East Office to the participants and thanked the UAE for their sustained cooperation and support.

3. ATTENDANCE

3.1 The meeting was attended by a total of 61 participants from 13 States (Bahrain, Egypt, I.R. Iran, Jordan, Kuwait, Lebanon, Oman, Pakistan, Saudi Arabia, Syria, United Arab Emirates, United States and Yemen) and one Organization (IATA). The list of participants is at **Appendix H** to the report.

4. OFFICERS AND SECRETARIAT

4.1 The meeting was Chaired by Mr. Sabri Said Al-Busaidy of Oman. Mr. Dhiraj Ramdoyal, Regional Officer, Air Traffic Management from the ICAO Middle East Office was Secretary of the meeting assisted by the Rapporteurs of the *two work groups; Mr. Riis Johansen of the UAE (SAM/WG) and Mr. Mohammed Abdullah Zainal of Bahrain (ATC/WG).

**Note:- In consultation with the Chairman of the Task Force, it was agreed that, as it has already completed all tasks which were assigned to it, there was no requirement for the OPS/AIR/WG to convene for the time being.*

5. LANGUAGE

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

6. AGENDA

6.1 The following Agenda was adopted:

1) Review Status of Conclusions and Decisions from MIDANPIRG/7 meeting relating to RVSM and ensuing Task Force meetings.

2) Safety and airspace monitoring aspects (SAM/WG)

3) ATC operations aspects (ATC/WG)

4) Programme management issues

5) Any other business

7. CONCLUSIONS AND DECISIONS - DEFINITION

7.1 All MIDANPIRG Sub-Groups and Task Forces record their actions in the form of Conclusions and Decisions with the following significance:

a) **Conclusions** deal with the 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 9/1:	OPERATOR READINESS
DRAFT CONCLUSION 9/2:	SAFETY ASSESSMENT
DRAFT CONCLUSION 9/3:	SAFTEY MANAGEMENT ISSUES
DRAFT CONCLUSION 9/4:	AMENDMENT TO THE MID ATS ROUTE NETWORK
DRAFT CONCLUSION 9/5:	COORDINATION PROBLEMS OVER THE RED SEA AREA
DRAFT CONCLUSION 9/6:	IMPLEMENTATION OF RVSM IN THE MID REGION

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: REVIEW STATUS OF CONCLUSIONS AND DECISIONS FROM MIDANPIRG/7 MEETING RELATING TO RVSM AND THE ENSUING RVSM TASK FORCE MEETINGS.

1.1 Under this agenda item the meeting reviewed the status of implementation of conclusions and decisions emanating from the MIDANPIRG/7 meeting and the ensuing RVSM Task Force meetings. It noted the subsequent follow-up action(s) which have been taken and other outstanding issues on which prompt action have to be taken. An updated list of conclusions/ decisions and a summary of the status of implementation are indicated at **Appendix 1A (1)** and **1A (2)** to the report on Agenda Item 1.

1.2 The meeting also agreed that, with a view to facilitate informal contacts/consultations with the RVSM Programme Managers in the MID Region, the updated list be indicated in the report on this Task Force meeting *(See **Appendix G** to the report*).

MID RVSM TF/9
Appendix 1A (1) to the Report on Agenda Item 1

STATUS OF IMPLEMENTATION OF CONCLUSIONS/DECISIONS EMANATING FROM MIDANPIRG/7 MEETING			
CONCLUSION/DECISION		**IMPLEMENTATION STATUS**	**REMARKS**
C7/6	Inter-regional coordination	On-going	Meetings with Asia Region organized in October 2002 and August 2003. Meeting with EUR Region being coordinated-October/November2003 *(tentative date)*
C7/9	Establishment of a regional safety and monitoring agency	Middle East Central Monitoring Agency (MECMA) established	Been requested to consider extending the activities of MECMA to cover the activities of ATS safety management (to follow-up)
C7/10	Safety analysis	On-going activity	
C7/11	Reporting of data for carrying out safety assessment	On-going activity	
C7/12	Monitoring requirements	On-going activity	
C7/13	Civil/Military coordination	On-going activity	Need to follow-up
~~C7/14~~	~~Creation of non exclusion areas within RVSM airspace~~	~~On-going activity~~	~~Need to follow-up on procedures being implemented in adjacent regions~~ *Deleted by RVSM TF/8 meeting (Conclusion 8/3 refers)*
C7/15	Nomination of an RVSM Programme Manager	Action taken	
C7/16	Implementation of RVSM in the MID Region	Action completed	Being followed up within the framework of the RVSM Task Force and MECMA *Action completed and superseded by conclusion 9/6 of RVSM/TF/9 meeting.*
C7/17	Training of all personnel involved with the implementation of RVSM	On-going	Two seminars organized A SIP to Jordan, Syria and Lebanon was carried out. Visit to Yemen under consideration.
C7/18	Guidance material for airworthiness and Op erational approvals	Action taken	Draft Manual developed within the framework of the RVSM Task Force
C7/19	RVSM legislation	Action taken	completed
D7/20	Participation of representatives from States in the RVSM approval process	Action taken	
C7/21	funding of the RVSM implementation programme	Action taken	

MID RVSM TF/9
Appendix 1A (2) to the Report on Agenda Item 1

CONCLUSION/DECISION	STATUS	REMARKS
STATUS OF CONCLUSIONS AND DECISIONS RELATING TO THE IMPLEMENTATION OF RVSM IN THE MID REGION FORMULATED AFTER MIDANPIRG/7 MEETING		
Status of Conclusions/Decisions emanating from the RVSM TF-5 Meeting (Abu Dhabi, 02 – 05 June 2002)		
CONCLUSION 5/1: DUAL UNIDIRECTIONAL ROUTES **That:** **with a view to meet the Target Level of Safety (TLS) for implementation of RVSM, the following improvements to the ATS route structure are required:** **Introduction of two separated RNP routes:** **connecting TURAIF to BANIAS (for eastbound traffic), and** **connecting CHEKKA to TONTU (for westbound traffic).** **Introduction of an RNP route from TONTU, and parallel to UR219, to a point on the OEJD/OBBB FIR boundary some 8-10 NM south of GOLBI.** ***Note: These issues were identified as "red flag items", for which progress is required by 28 November 2002 in order to implement RVSM in the northern part of the Arabian Peninsula in November 2003*.**	**Action taken** **Completed.**	**Further enhancements to be discussed within the framework of EMAC meetings**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 5/2: DRAFT ATC MANUAL FOR RVSM IN THE MID REGION **That, States of the MID region review the Draft ATC Manual for RVSM in the MID region, which has been prepared by the Secretariat and send their comments to the ICAO MID Regional Office as soon as possible preferably prior to October 2002.**	**Action taken**	**MIDANPIRG requested to endorse the manuals for regional application**
CONCLUSION 5/3: MID RVSM TRAINING GUIDELINES **That,** **the MID Region States take into account the training guidelines as indicated at Appendix 3-C, when developing their training programme for the implementation of RVSM;** **the CNS/ATM Human Resources Planning and Training Task Force take into account the requirements identified in the training guidelines and evaluate "on-site" training and simulation center capabilities in the MID Region.**	**Action taken** **-**	 **Overtaken by events**
CONCLUSION 5/4- REGIONAL RVSM INFORMATION CAMPAIGN **That MID region States,** **notify their aircraft operators that RVSM will be implemented in the MID region on the AIRAC date of 27 November 2003; and** **request the operators to obtain required regulatory approval to operate in the RVSM airspace.**	**Action taken**	

CONCLUSION/DECISION	STATUS	REMARKS
Status of Conclusions/Decisions emanating from the RVSM TF-6 Meeting (Abu Dhabi14 -17 October 2002)		
CONCLUSION 6/1: 2ND TRAFFIC SAMPLE **a) States should provide MECMA a complete record of flights above FL255 during the period of 26 December 2002 to 23 January 2003. The flight data should be in the specified format and forwarded to MECMA on a weekly basis.** **b) The traffic data for the last week (17 – 23 January) should reach MECMA by 30 January 2003.**	**Action taken**	

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 6/2: NATIONAL SAFETY PLANS **That:** **a) Development of national safety plans is required to assure safe implementation of RVSM;** **b) the Middle East RVSM Task Force adopt the model national safety plan at Appendix H to the report for implementation of RVSM as guideline to States;** **c) States produce a preliminary version of the State Safety Plan in January 2003 for approval by the CAA or Ministry of Transport, and** **d) States provides MECMA with an up-to-date version of the State Safety Plan in April 2003, prior to the eighth meeting of the MID RVSM Task Force.**	**Action taken** **Action taken** **Action taken** **Action taken**	

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 6/3: IMPLEMENTATION OF THE DUAL ROUTES **That:** **a) the precondition for the assessment associated with the safe implementation of RVSM is the establishment of the permanent route structure on a uni-directional basis;** **b) the implementation be completed by 26 December 2002 and remains in place until the implementation of RVSM**	**Action taken**	**Although not in accordance with the MID Plan, alternative arrangements have been made**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 6/4: ROUTE STRUCTURE-MEDITERRANEAN INTERFACE **That:** **a) ICAO Regional Office will initiate procedures for the amendment of the Plan for the creation of a route from point FANOS to point VESAR (limit Nicosia/Ankara FIR boundary) and the segment of UN318 from point DOREN (limit Nicosia/Ankara FIR boundary) to point BALMA (34 29.9N 035 03.0E- limit Nicosia/Beirut FIR boundary) for the channeling of traffic from Eastern Mediterranean to the MID Region.** **b) States concerned are urged to consider the proposal for the creation of the direct segment of the routes from Turaif to VESAR and TONTU to DOREN;** **c) Syria is also invited to consider other options, including the implementation of the direct route segment from points ARAAM to NIKAS; and** **d) States concerned consider the implementation of the segment of P/UP559 within the Amman and Damascus FIRs.**	**Ongoing** **(to be deleted)**	**Suggest that this conclusion be deleted as enhancements to airspace capacity being discussed within the framework of EMAC meetings..** **Options proposed overtaken by events** **EMAC meeting planned on 16 October 2003**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 6/5: COORDINATION PROBLEMS OVER THE RED SEA AREA **That a meeting be organized under the aegis of ICAO with a view to explore ways and means of finding a durable solution to the coordination problems in the Red Sea area.**	**Action taken**	**Refer to C 9/5 of TF/9**
CONCLUSION 6/6: ENDORSEMENT OF THE DRAFT RVSM MANUAL FOR REGIONAL APPLICATION **That:** **a) States of the MID region review the Draft ATC Manual for RVSM in the MID region, which has been prepared by the RVSM Task Force and send their comments to the ICAO MID Regional Office as soon as possible, preferably prior to 31 January 2003;** **b) States are invited to endorse the provisions of the Manual for regional application (See Appendix J to the Report).**	**Action taken**	**To be presented to MIDANPIRG/8 for endorsement**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 6/7: DRAFT OPERATIONS/AIRWORTHINESS APPROVAL MANUAL FOR MID REGION **That,** **the MID Region States and IATA be invited to examine the Draft Operational/Airworthiness Approval Manual for the MID region as indicated in Appendix … to this report, and to send their comments to the ICAO MID Office, as soon as possible, preferably prior to 31st January 2003.**	**Action taken**	
CONCLUSION 6/8: DEVELOPMENT OF NATIONAL OPERATIONAL AND AIRWORTHINESS APPROVAL DOCUMENTS **That,** **States in the MID Region, while developing their National Operational and Airworthiness Approval documents, are invited to inspire from the Draft Operations/Airworthiness Approval Manual for RVSM in the MID Region.**	**Action taken**	
Status of Conclusions/Decisions emanating from the RVSM TF-7 Meeting (Abu Dhabi 23 -26 February 2003)		

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 7/1: FIRS NOT INCLUDED IN THE PLANNING PROCESS **That, due to lack of data needed for the readiness assessment and safety assessment, the airspace of Baghdad, Kabul and Tel Aviv FIRs will be not be included in the safety and monitoring programme associated with implementation of RVSM in the MID Region on 27 November 2003.**		
CONCLUSION 7/2: OPERATOR READINESS **That:** **a) the Middle East regional RVSM readiness is being gauged as the ratio of approved flights to the total number of reported flights within the airspace planned for RVSM implementation, where a flight is being defined as a unique flight multiplied by the number of FIRs in which this flight was reported to have operated above FL255 at some portion of its journey.** **b) the MID readiness was 84.7% as calculated on the traffic samples available by 09 February.** **c) the required readiness in the Middle East Region is 90%.** **d) States are urged to complete the traffic sampling and forward the data to MECMA without further delay.**	**Action taken**	**See C9/1**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 7/3: ESTABLISHMENT OF A DIRECT ROUTEBETWEEN POINTS BEIRUT AND DAMASCUS FIRS **That:** a) the Secretariat initiates procedures for the creation of a direct route (extension of UL620) from BALMA (3428.9N 03503.0E) to intercept UN318 at point RALPO, 13 NM North of ASSEL (3325.2N 03734.0E) via MALOULA (3351.2N 03632.0E; b) awaiting the inclusion of the new route in the MID plan, domestic designator J222 will be assigned to the proposed new route.	**Actioned as J222**	**Need for amendment of the Plan. Some flight level restrictions within Damascus FIR.** **To be included in proposal for amendment of the Plan**
CONCLUSION 7/4: DUAL ROUTES EASTERN MEDITERRANEAN-MID **That action on the implementation of RVSM TF/6 Conclusion 6/4 a), b), and d) concerning the establishment of direct dual routes between the MID Region and the Eastern Mediterranean be discussed within the framework of Europe-Middle East Coordination Bureau on Air Traffic Management (EMAC) meetings.**	**On-going** **(Suggest deletion of this conclusion)**	**To be discussed within the framework of EMAC meetings**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 7/5: FINALIZATION OF THE ATC MANUAL **That, States and other user organizations concerned provide their comments on the draft ATC Manual to the ICAO MID Regional Office as soon as possible, prior to 31 March 2003, with a view to finalize the document for endorsement by MIDANPIRG/8 meeting.**	**Action completed**	
CONCLUSION 7/6: ELABORATION OF OPERATIONAL LETTERS OF AGREEMENT **That:** **a) States prepare and coordinate with adjacent Centres/FIRs draft letters of agreement for the handling of traffic in RVSM and Non-RVSM environments;** **b) A copy of the proposed draft be brought to the RVSM TF/8 meeting in May 2003 with a view to share experiences with adjacent Centres/States;** **c) the Model at Appendix 3B be used in the preparation of the LOAs; and** **d) the procedures should preferably be based on a route-by-route basis and also include flight planning and communications failure procedures.**	**On-going (refer to appendix 4A of report of TF/9 Meeting** **On-going activity** **On-going activity**	**To be completed before 27 November 2003** **Suggest that it be deleted**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 7/7: RVSM IMPLEMENTATION CHANGE-OVER TIME IN THE MID REGION **That:** **a) the most appropriate change-over time for the implementation of RVSM in the MID Region be at 0200 UTC on 27 November 2003;** **b) the proposal be discussed and agreed upon, within the framework of joint coordination meetings with the Asia region.**	**Action taken**	
CONCLUSION 7/8: FINALIZATION OF THE MID RVSM OPS/AIR APPROVAL MANUAL **That, MID Region States and concerned airspace users provide their comments on the Draft MID RVSM OPS/AIR Approval Manual to the ICAO MID Regional Office as soon as possible, preferably, prior to 31st March 2003 in order to finalize the document for endorsement by MIDANPIRG /8 meeting.**	**Action completed**	
Status of Conclusions/Decisions emanating from the RVSM TF/8 Meeting (Abu Dhabi, 25 -28 May 2003		

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 8/1 DRAFT CONCLUSION 8/1: NATIONAL SAFETY PLANS		**To be deleted**
a) Available national safety plans will be audited and returned to States by 20 June 2003 for review of input and queries.	**Action completed**	
b) States are requested to respond to audit reports by 01 August 2003.	**Action completed**	
c) In order to complete the necessary regional planning, States that have not already done so, provide copies of their national safety plans to the ICAO MID Office and to MECMA no later than 30 June 2003.	**Action completed**	
d) National safety plans will be discussed with States on an individual basis at RVSM TF/9, following which a consolidated presentation of this aspect of the RVSM safety efforts will be made to the Task Force in support of its Go/No-Go decision.	**Action completed**	
DRAFT CONCLUSION 8/2 – FUNCTIONAL HAZARD ASSESSMENT **That, the European Functional Hazard Assessment (FHA) should be used by States as part of their safety management in conjunction with RVSM implementation. This FHA should be adapted as required to suit State-specific conditions.**	**Action taken**	**States should indicate status of implementation**

CONCLUSION/DECISION	STATUS	REMARKS
Draft Conclusion 8/3 - Creation of Non-Exclusion Areas Within RVSM Airspace **That, taking into account inherent problems associated with both RVSM and non-RVSM compliant aircraft operations within RVSM airspace, the requirement for the creation of non-exclusion areas as authorized under MIDANPIRG/7 Conclusion 7/14 be discontinued.**	**effective**	**Supersedes MIDANPIRG/7 Conclusion 7/14**

CONCLUSION/DECISION	STATUS	REMARKS
CONCLUSION 8/4 Draft Conclusion 8/4 - Coordination Problems Over the Red Sea Area **That:** **a) States concerned consider the proposal by Egypt for the allocation of reserved flight levels to un-coordinated flights operating over the Red Sea and keep ICAO informed of their decision;** **b) as a matter of urgency, a meeting be organized under the aegis of ICAO, involving Egypt, Saudi Arabia, Sudan, Yemen and IATA with a view to agree on the procedures to be applicable to un-coordinated flights operating over the red sea;** ***Note: It was agreed that the meeting be organized before the end of August 2003 and will involve high level decision makers from the appropriate civil aviation authorities concerned.*** **c) with immediate effect, the following procedures will become applicable:** **i) the first FIR having information on the estimates of the un-coordinated flights, will immediately pass on the traffic information to the adjacent FIRs concerned;**	**Action taken**	**Refer to Conclusion 9/5 of RVSM TF/9 meeting** **Note:- meeting organized by Egypt** **-Two meetings organized within the framework of ACAC meetings** **-Finalized at RVSM TF/9 (procedures indicated at Appendix 3B of the TF/9 meeting)**

CONCLUSION/DECISION	STATUS	REMARKS
ii) with a view to ensure that other aircraft in the vicinity are kept aware of their position/track and flight level, IATA will request all un-coordinated flight operations over the Red Sea, to follow either the *Traffic Information Broadcast by Aircraft and related operating procedures (TIBA) or the IATA In-flight Broadcast Procedures (IFBP). ***Cf. Attachment C to Annex 11***		
Status of Conclusions/Decisions emanating from the RVSM TF/9 Meeting (Abu Dhabi, 24 -27 August 2003)		

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/1: – OPERATOR READINESS **That:** **a) taking into account the fact that operator readiness, including planned approvals work known to the Task Force for RVSM in the Middle East Region was 88.2% as of 25 August 2003, and the accelerating pace of fleet upgrades, the Task Force was confident that the 90%-criterion for readiness would be achieved by 27 November 2003;** **b) Operator readiness was considered sufficient for safe and orderly implementation of RVSM by this date.**	**Action taken**	**Superseded by Conclusion 9/6**

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/2: - SAFETY ASSESSMENT **That,** **Taking into account that a safety assessment has been carried out by MECMA based on traffic samples from all 11 FIRs, assigned altitude deviations (AAD) data and turbulence reporting showing that:** **a) with adherence to the operational concept, horizontal overlap probability is within the global specification of 0.145, and** **b) with the prevailing aircraft population, the global specification of 1.7×10^{-8} for vertical risk is satisfied; and** **c) risk associated with turbulence is negligible,** **The TLS technical risk is met, thereby permitting safe implementation of RVSM within the area encompassed by the safety assessment.**	**Action taken**	**Superseded by Conclusion 9/6**

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/3 – SAFETY MANAGEMENT ISSUES **That,** **Taking into account the fact that management of safety in conjunction with implementation of RVSM has been addressed through development, review and progressive updating of national safety plans for all States concerned within the Middle East RVSM programme and, supplemented by functional hazard assessments,** **a) the general requirements for management of safety in conjunction with system changes were fulfilled; and** **b) safety objectives for operational risk are being satisfied through the evaluation and mitigating measures associated with functional hazard assessments**	**Action taken**	**Superseded by conclusion 9/6**

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/4 - AMENDMENT TO THE MID ATS ROUTE NETWORK **That:** **a) any amendment to the MID ATS route network be carried out in accordance with established procedures as indicated in the Middle East Basic Air Navigation Plan (ANP); and** **b) with a view to ensure that the safety case be not infringed, States adopt a conservative approach while carrying out change(s) to the MID ATS route network and it be coordinated with MECMA.**		

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/5 - COORDINATION PROBLEMS OVER THE RED SEA AREA **That:** **a) with effect from 27 November 2003, the procedures developed within the framework of Arab Civil Aviation Commission (ACAC) meetings and reviewed by the RVSM Task Force, indicated at Appendix 3B, be followed by all uncoordinated flights operating over the Red Sea;** **b) States concerned publish an AIP Supplement as soon as possible, and no later than 30 October 2003 for the promulgation of these procedures;** **c) IATA ensures that concerned operators are fully conversant with these procedures; and** **d) State/military aircraft when flying under "Due Regard" over the Red Sea be informed of the procedures to be followed by Civil Uncoordinated Flights and be requested to take into account the restrictions applicable within RVSM airspace.**		**Supersedes Conclusion 6/5**

CONCLUSION/DECISION	STATUS	REMARKS
DRAFT CONCLUSION 9/6: IMPLEMENTATION OF RVSM IN THE MID REGION **That:** **The *MID Region States will implement RVSM on 27 November 2003 and the rationale for the decision is based on the following:** **a) operator readiness is considered sufficient for the safe implementation of RVSM;** **b) safety objectives for technical risk (**TLS of 1.25 x 10^{-9} fatal accidents per aircraft flight hour) have been met;** **c) safety objectives for operational risk are satisfied through evaluation and mitigation measures associated with functional hazard assessments (FHA) and National Safety Plans (NSP);** **d) appropriate procedures have been put in place; and** **e) States have committed to complete all outstanding issues prior to 27 November 2003.** ***Except Afghanistan and Iraq*** ****This value of technical risk takes into account projected traffic growths in the MID Region for at least 10 years and ensures that a TLS of 2.5 x 10^{-9} will still not be infringed.***		

REPORT ON AGENDA ITEM 2: SAFETY AND MONITORING ASPECTS

SAM/WG Terms of Reference

2.1 The working group noted its terms of reference as set out in **Appendix 2A**.

MECMA Duties and Responsibilities

2.2 The duties and responsibilities of the MECMA were noted, specifically the requirement to conduct readiness assessments and safety assessments. MECMA's duties and responsibilities, including those related to RNP, are as stated in Appendix 2-B.

Readiness Assessment – Update

2.3 MECMA carried out its assessment of operator readiness based on the traffic samples for the 29-day period 26 December 2002 – 23 January 2003. This assessment was presented at TF/8 in May 2003 in a separate report and concluded that 75.9% of the FIR-flights operating above FL255 during the period 26 December 2002 – 23 January 2003 were approved for RVSM operations.

2.3.1 The target level of operator readiness at implementation is 90 per cent of the FIR-flights.

2.3.2 Since TF/8, Kuwait had submitted traffic data for the traffic sampling period, permitting to MECMA base its further work on data from all 11 FIRs with the Middle East RVSM area encompassed by the safety- and readiness assessment.

2.3.3 *Readiness* is being measured as the ratio of approved flights to the total number of reported flights within the airspace planned for RVSM implementation, where a flight is being defined as a unique flight multiplied by the number of FIRs in which this flight was reported to have operated above FL255 at some portion of its journey.

2.3.4 The conclusion of the Readiness Assessment was based on the traffic samples and information in the aircraft and operator approvals database available in early May 2003 and indicated an unacceptable shortfall in readiness. As it was considered that this picture was not an accurate representation of the operational situation as it was likely to develop, it was agreed to obtain additional information in support of the Task Force's Go / No-Go decision on 27 August 2003.

2.3.5 The Readiness Assessment ascribed lack of operator readiness to:

- Lack of accurate data in the MECMA approvals registry.
- Lack of timely fleet upgrading by some operators.
- Sanctions.

2.4 Since TF/8, the time until implementation of RVSM had decreased from six to three months, which clearly had encouraged a number of operators to accelerate their plans for fleet upgrades and/or renewals. This general tendency had been reinforced by the TF/8 conclusion that MID airspace should be exclusive – i.e. that only RVSM approved aircraft will be permitted to navigate above FL280. Through IATA, and directly from operators, MECMA had received substantial information about action plans to upgrade fleets, thus permitting more accurate conclusions to be drawn.

2.4.1 Information and documentation received show that the approvals registries were not complete

- The Regional Monitoring Agencies (RMA) meeting in Montreal in November 2002 has not yet resulted in a set of procedures for global implementation. Consequently, RMAs apply different standards, software and formats for their databases. Furthermore, although it does take place, information is not yet exchanged on a regular basis.
- There is a noticeable difference in focus between pre-implementation RMAs and post-implementation RMAs.
- Most States and operators do not forward approvals data to MECMA with the agreed regularity.

2.4.2 However, the appeals through IATA and directly to operators have yielded significant improvements:

2.4.3 The US military has given detailed and valuable clarifications:

- The fleets of C5, C17, KC135, KC10 and C141 are fully MASPS compliant.
- CRAF aircraft operate to civil standards and will meet all applicable quirements – including RVSM.
- The E3 and E8 fleet are currently under upgrading.
- The fleets of C130J and C21 are not MASPS compliant.

Note: This information had permitted re-classification of 4,191 (out of 4,573) military FIR-flights from non-RVSM to RVSM.

Note: Work is currently in progress on upgrading DC93 and C130J, accounting for 189 of the remaining 382 FIR-flights. As no schedule is available, these flights were considered as being non-RVSM for the purpose of this update.

2.4.4 Additional information, permitting re-classification of 7,128 civil FIR-flights from non-RVSM to RVSM, had been received by 25 August 2003:

a) Pakistan International (PIA) fleets of B742, B743 (B747CL) and A310 are RVSM-approved. Their A30B and B733 will either be withdrawn or RVSM-approved by 27 November 2003. (1,511 FIR-flights.)

b) Iran Air's (IRA) fleet has approval; monitoring is planned to be completed before 27 November. (1,409 FIR-flights are transferred to the approved category.)

c) Air India (AIC) fleets of B742, B743 (B747CL), B744 and A310 are RVSM-approved. This changes 1,150 FIR-flights with A310 to RVSM status

d) Indian airlines (IAC): Entire fleet (A30B and A320), except VT-EYA, is RVSM-approved vide letter with supporting documentation to Omani DGCAM. 723 FIR-flights are transferred to the approved category flights.

e) Mahan Airlines (IRM) fleets of A30B and A310 are RVSM-approved (163 FIR-flights). Their T154 fleet (467 FIR-flights) will be replaced by A320s before the end of 2003 – MECMA counts these flights as RVSM-approved for the purpose of the Readiness Assessment.

f) Garuda's (GIA) entire fleet (mainly B767) is RVSM-approved. (531 FIR-flights are transferred to the approved category.)

g) Asseman Airlines (IRC): Fleet has approval; monitoring will be completed before 27 November. (304 FIR-flights are transferred to the approved category.)

h) Thai Airways (THA) fleets of A306 and A333 are RVSM-approved. (284 FIR-flights.)

i) Saudia (SVA) has ceased operations with L101 and the few remaining B732 aircraft will be phased out by the end of 2003. The 221 FIR-flights listed in the Readiness Assessment will be flown by RVSM-approved aircraft and MECMA will to count these flights as RVSM-approved for the purpose of the Readiness Assessment.

j) Cathay Pacific's (CPA) entire fleet (B742, B744, B772, B773, A333, A343 and A346) is RVSM-approved (219 FIR-flights).

k) Libyan (LAA): A300 fleet is approved, while approval process is on-going for A310 (30 FIR-flights transferred to the approved category).

l) Yemenia (IYE) fleets of A310, B738 and B74S (B747CL) are RVSM-approved (13 FIR-flights). Their B722 fleet (103 FIR-flights) will be fully replaced by B738 by 27 November 2003. Hence, all IYE flights in the sample are now counted as RVSM-approved.

2.4.5 Information has been sought without success from the following operators:

a) Ariana (AFG): No feedback – 865 flights remain counted as non-RVSM.

b) Oman Air (OMA): No conclusive feedback. However, the meeting noted unofficial information indicating that preparations for RVSM certification were progressing well. 827 flights remain counted as non-RVSM.

c) Kish Air (IRK): No feedback – 387 flights remain counted as non-RVSM.

Note: These three operators account for 2,079 FIR-flights – or sufficient to reach the 90%-criterion for operator readiness.

Note: A total of 11,319 FIR-flights have been re-classified from non-RVSM to RVSM based on the information received up to 24 august 2003. The results are summarized in Table 2-1, below:

Airline	Desig-nator	Transfer to RVSM	Non-RVSM	Non %-age
US Military	n/a	4,191	384	0.42%
Pakistan International	PIA	1,511		
Iran Air	IRA	1,409		
Air India	AIC	1,150		
Indian Airlines	IAC	723		
Mahan Airlines	IRM	630		
Garuda	GIA	531		
Asseman Airlines	IRC	304		
Thai Airways	THA	284		
Saudia	SVA	221		
Cathay Pacific	CPA	219		
Libyan	LAA	30		
Yemenia	IYE	116		
Ariana	AFG		865	0.95%
Oman Air	OMA		827	0.90%
Kish air	IRK		387	0.42%
Totals		11,319	2,463	
Previously approved		69,425		
FIR-flights in Sample		91,500		
Readiness (as of 20 Aug 03)		88.2%		

Table 2-1. Approval Status.

2.4.6 Most of the remaining 10% of FIR-flights were distributed on a large number of operators, where each accounted for less than 1 FIR-flight per day.

2.4.7 Operator readiness has increased significantly since TF/8. This is attributed partly to more accurate approvals data in the MECMA registry and partly to a determined effort by major MID operators to attain MASPS compliance. The MID Region is still 1.8% short of the 90%-criterion for readiness. However, in view of the increase of 12.3% achieved over the last three months, there is sound reason to anticipate that a further improvement will be achieved during the three-month period remaining until implementation. Based on the foregoing, the meeting formulated the following draft conclusion:

DRAFT CONCLUSION 9/1: – OPERATOR READINESS

That:

a) taking into account the fact that operator readiness, including planned approvals work known to the Task Force for RVSM in the Middle East Region was 88.2% as of 25 August 2003, and the accelerating pace of fleet upgrades, the Task Force was confident that the 90%-criterion for readiness would be achieved by 27 November 2003;

b) Operator readiness was considered sufficient for safe and orderly implementation of RVSM by this date.

Safety Assessment

2.5 Although the issues of the safety assessment had been addressed, MECMA had not had sufficient time to produce the full document due to late delivery of traffic data. Consequently, and as agreed at TF/8, MECMA presented a summary in support of the Task Force's Go / No-Go decision.

2.5.1 Implementation of RVSM requires that a safety assessment, demonstrating that the overall target level of safety (TLS) of 5×10^{-9} for all risk components, is carried out and that other safety issues be addressed.

2.5.2 TLS consists of two components: Technical risk and operational risk. The RVSM safety objective for technical risk is a maximum of 2.5×10^{-9} fatal accidents per flight hour. This value has been used to derive the global system performance specification and the global height-keeping performance specification. The quantitative statements of the global system performance specification are:

- a passing frequency equal to 2.5 opposite-direction passings per aircraft flight-hour. This limit has been reduced to 1.25 opposite-direction passings per aircraft flight-hour for the Middle East pre-implementation safety assessment to ensure that traffic growth can be accommodated without infringing the TLS;
- a standard deviation of lateral path-keeping error equal to 0.3 NM; and
- a probability that two aircraft will lose procedural vertical separation of RVSM value, $P_z(1\ 000)$, not in excess to 1.7×10^{-8}.

Note: The horizontal risk components, specified in items a and b, above, combine to an equivalent quantitative statement that the frequency of opposite-direction passing events involving lateral overlap shall not exceed 0.145 passings per aircraft flight hour.

2.5.3 The global height-keeping performance specification is set out as four requirements that must be simultaneously satisfied.

a) the proportion of height-keeping errors beyond 300 ft in magnitude shall be less than 2.0×10^{-3}

b) the proportion of height-keeping errors beyond 500 ft in magnitude shall be less than 3.5×10^{-6}

c) the proportion of height-keeping errors beyond 650 ft in magnitude shall be less than 1.6×10^{-7}; and

d) the proportion of height-keeping errors between 950 ft and 1 050 ft in magnitude shall be less than 1.7×10^{-8}.

Note: The four requirements set out in sub-paragraphs a-d, above, constitute the basis for the RVSM minimum aircraft system performance specifications (MASPS), which are more commonly used to determine compliance with the ICAO global height-keeping performance specification.

2.5.4 The RVSM MASPS require that:

a) Aircraft type-groups must demonstrate performance such that the absolute value of the group mean altimetry system error (ASE) does not exceed 80 ft and that the absolute value of the mean ASE plus 3 standard deviations (SD) about the mean does not exceed 245 ft.

Note: No individual measurement shall exceed a value of 245 ft plus monitoring system measurement error.

b) The ASE of each aircraft approved on a non-group basis for RVSM operations shall not exceed 200 ft in magnitude, including monitoring system measurement error.

2.5.5 Collision risk modelling (CRM) had been carried out to establish that the TLS had been satisfied. The Reich Model, as employed in the North Atlantic implementation programme, had been used with MID-specific parameters for aircraft population, such as average speed, aircraft dimensions, etc., and resulted in development of the operational concept as outlined on paragraph 2.5.6, below.

2.5.6 The first traffic sampling, conducted 20 January – 20 February 2001, revealed that the passing frequencies on most main trunk route segments with bi-directional traffic were well in excess of the global system performance specification. This led to the formulation of the operational concept that, ***the main trunk routes shall be designed as dual uni-directional RNP routes with a single alternating flight level orientation scheme (FLOS), i.e., application of the semi-circular rule***. Implementation took place during 2002 and resulted in the required reduction of aircraft passing frequency.

2.5.7 The meeting noted that the average passing frequency was, with the current ATS route structure and level allocation, well under 1.0 opposite-equivalent passing per aircraft flight hour. However, it was emphasized that the validity of the safety assessment was predicated on maintaining the uni-directional RNP route concept.

2.5.8 Lateral path-keeping performance have been monitored through the RNP navigation error monitoring programme managed by MECMA. More than 700,000 flights have been monitored under the normal programme, where reporting criteria are 5 and 8 NM for core- and gross navigation errors, respectively. Additionally, precision monitoring with a limit of 2 NM has been undertaken in three FIRs, covering more than 4,000 flights. Results indicate a standard deviation in the range 0.6 - 1.0 NM, or well within the global specification of 0.3 NM. Navigation performance is, however steadily improving as a result of aircraft equipage with FMS with GPS input, and the Task force noted that this component will require careful monitoring, or consistent adherence to the operational concept.

2.5.9 The vertical risk component, associated with height-keeping performance, was predominantly based on aircraft type-group performance data from the European Region, with applicable adjustments made for different distribution over type-groups ("beta-values") as determined through traffic sampling for the Middle East Region. GMU monitoring results for the MID Region are checked to ascertain that the monitored aircraft display performance characteristics consistent with those in the European database. Calculation of $P_z(1\ 000)$ was then carried out using the Eurocontrol software suite under a licence agreement with MECMA. It showed that vertical risk is below the global specification value of 1.7×10^{-8}.

2.5.10 Assigned altitude deviations (AAD) and flight hours above FL285 had been reported by the main FIRs since July 2001. The incidence was well below that reported in the European pre-implementation safety case (PISC) and were accounted for in the calculation of $P_z(1\ 000)$.

2.5.11 Turbulence reporting has been made since July 2001, and data indicate that this risk is very low. Five cases of (moderate) wake turbulence, a major concern in conjunction with implementation of RVSM in the North Atlantic Region, had been reported. The low incidence was ascribed to the Middle East FLOS and was in line with European and Pacific experiences. It was concluded that risk associated with wake turbulence is too small to affect the TLS. Five cases of meteorological turbulence had been reported. This included one case of severe turbulence, which deviated up to 170 ft from its assigned level. However, it occurred outside the MID Region. No reports of orographic turbulence have been received. The Task Force accordingly concluded that risk associated with turbulence is negligible.

2.5.12 While the Reich Model has been expanded to model risk for emergency descents, i.e. profiles with rates of descent in excess of 4 000 ft per minute, no calculations have been carried out in this respect due to lack data. Emergency descents have occurred during the data sampling period since July 2001; however, all reported manoeuvres have taken place with ATC clearance and did, therefore, not constitute risks with respect to the Reich Model.

2.5.13 While the collision risk model provides the mathematical tools for quantification of the technical risk, this does not apply to the operational risk. Therefore, and in common with the European safety case, MECMA has addressed operational risk through a functional hazard assessment, whereby operational risks are identified and classified, following which mitigation measures are implemented, where required. A large database of coordination failures and other operational risk-bearing failures is available and a risk mitigation effort has been undertaken in conjunction with a functional hazard assessment (FHA) and the national safety plans (NSP). This is described in paragraph 2.7, below. The meetings accordingly formulated the following Draft Conclusion:

DRAFT CONCLUSION 9/2: - SAFETY ASSESSMENT

That:

Taking into account that a safety assessment has been carried out by MECMA based on traffic samples from all 11 FIRs, assigned altitude deviations (AAD) data and turbulence reporting showing that:

a) with adherence to the operational concept, horizontal overlap probability is within the global specification of 0.145, and

b) with the prevailing aircraft population, the global specification of 1.7×10^{-8} for vertical risk is satisfied; and

c) risk associated with turbulence is negligible,

The TLS technical risk is met, thereby permitting safe implementation of RVSM within the area encompassed by the safety assessment.

National Safety Plans

2.6 To ensure safe and orderly implementation of RVSM within the Middle East RVSM area, MECMA has carried out a programme facilitating development, review and updating of National Safety Plans for RVSM. This effort was supported by Integra Consult, who had extensive experience from the safety work associated with the European RVSM programme.

2.6.1 A model National Safety Plan for RVSM had been prepared, based on the one used for implementation in the European Region, but modified to take into account the different organisational structures within the Middle East Region. The objective of this Safety Plan was to set out the national activities required to support safe implementation of RVSM with each of the national activities described in some detail. The model safety plan was presented to the Task force at its sixth meeting in October 2002 along with guidance documentation.

2.6.2 At the seventh meeting of the RVSM Task Force, in February 2003, MECMA presented the UAE national safety plan and provided copies to all States in support their safety efforts. This plan included:

- The role of the activity in support of the safe implementation and operation of RVSM.
- The standards to be applied to the conduct of the activity.
- The additional supporting activities that will provide confidence that the identified national activities will lead to the successful implementation of RVSM.

- Approvals of aircraft and operators for RVSM operations. The regulations, processes and responsibilities were identified.
- Training of ATS staff in preparation for RVSM operations.
- ATS equipment upgrading to accommodate RVSM operations.
- Review of airspace design and identification of required changes.
- Changes to ATS procedures. Some changes were associated with equipment issues, while others were designed to cater for equipment characteristics or rooted in airspace changes.

2.6.3 The objective of providing this level of information was to assist States in providing early assurance that they had identified the requirements associated with safe implementation of RVSM; delegated authority and assigned responsibility to the staff members concerned with the programme and allocated the necessary resources. Furthermore, that regulatory and safety management issues were addressed and documented.

2.6.4 To facilitate thorough and uniform safety planning across the Region, the following process was adopted:

a) Based on the Model National Safety Plan and the responses received from States by the end of TF/8, Integra Consult carried out audits of the specific safety plans which were returned to the States.

b) States were invited to respond to audit reports by 01 August.

c) During TF/9, national safety plans were discussed with States on an individual basis. Based on these consultations, Integra produced a consolidated presentation of this aspect of the RVSM safety efforts for the Task Force in support of its Go/No-Go decision. This summary is presented in as Appendix 2-C to the report.

2.6.4.1 Based on this process encompassing safety plans for all States, whose ACCs will provide air traffic services in Middle East RVSM airspace, it was concluded that States had discharged their responsibilities appropriately for this stage of the RVSM implementation programme.

Functional Hazard Assessment

2.7 A Functional Hazard Assessment (FHA) was carried out in conjunction with the national safety plans. The concept of functional hazard assessment was presented and discussed at TF/8 along appropriate examples of the European FHA, which had been made available by Eurocontrol.

2.7.1 A key part of the management of safety is that the safety risks associated with unsuited regulations, equipment, procedures or airspace design are identified and, as appropriate, shown to be acceptably low. The European FHA consisted of three parts:

- Switch-over phase
- RVSM transition airspace
- Mature RVSM operations

2.7.2 In line with common procedures in safety management, potential hazards are categorised through the use of a matrix to determine whether a particular hazard is acceptable, or mitigation is required. This methodology combines the qualitative and quantitative aspects of operational risk assessment.

2.7.3 The Task Force found that the European FHA in principle was relevant to Middle East airspace and decided to utilise it as basis for national application. Following this, the Middle East States reviewed the hazards and risks identified by in the FHA. Additional activities, required as a result of this review, have been listed as action items in the respective national safety plans.

2.7.4 The European FHA is reproduced as Appendix 2-D to this report.

DRAFT CONCLUSION 9/3: SAFETY MANAGEMENT ISSUES

That,

Taking into account the fact that management of safety in conjunction with implementation of RVSM has been addressed through development, review and progressive updating of national safety plans for all States concerned within the Middle East RVSM programme and, supplemented by functional hazard assessments,

a) the general requirements for management of safety in conjunction with system changes were fulfilled; and

b) safety objectives for operational risk are being satisfied through the evaluation and mitigating measures associated with functional hazard assessments.

MID RVSM TF/9
Appendix 2A to the Report on Agenda Item 2

TERMS OF REFERENCE

SAFETY & AIRSPACE MONITORING WORK GROUP (SAM/WG)

The SAM/WG is responsible for mathematical and statistical analysis to assist with the maintenance and on-going monitoring of safety through the assessment of collision risk for Middle East Region RVSM and other tasks as agreed with the RVSM Task Force.

The main tasks of the SAM/WG are:

a) To develop a monitoring program to ensure that the quantity and quality of data are collected to allow an assessment of vertical collision risk;

b) To review existing mathematical and statistical techniques to assure their appropriateness for MID Region RVSM;

c) To ensure the transferability of aircraft data collected from other airspace regions;

d) To support the assessment of the safety of RVSM prior to and during the Verification and Operational Trials by the production of collision risk assessments based on height deviation incidents and height monitoring data to determine whether the TLS is being met;

e) To devise suitable methodologies for incorporating the effects of projected traffic increases and system changes on occupancy and collision risk in the future environment;

f) To identify those elements which are critical in the assessment of collision risk and suggest areas where improvements might be effective in reducing risk;

g) To establish a policy for investigating those errors that may jeopardise satisfaction of the Target Level of Safety (TLS);

h) To estimate periodically the vertical occupancies (traffic densities, passing frequencies, etc.) in the MID Region; and

i) To perform periodically other data collections (e.g. ASE stability) in order to ensure that the parameter values used in the mathematical collision risk models remain current.

MID RVSM TF/9
Appendix 2B to the Report on Agenda Item 2

DUTIES AND RESPONSIBILITIES OF MECMA

The Middle East Central Monitoring Agency (MECMA) for RVSM implementation has the following duties and responsibilities:

a) to establish and maintain a central registry of State RVSM approvals of operators and aircraft using the Middle East Region airspace where RVSM will be applied;

b) to facilitate the transfer of approval data to and from other RVSM regional monitoring agencies;

c) to establish and maintain a data base containing the results of height-keeping performance monitoring and all altitude deviations of 300 ft or more within Middle East Region airspace, and to include in the database the results of MECMA requests to operators and States for information explaining the causes of observed large height deviations;

d) provide timely information on changes of monitoring status of aircraft type classifications to State authorities and operators;

e) to assume overall responsibility for

   i) coordination of the Global Positioning System Monitoring System (GMS); and

   ii) assessing compliance of operators and aircraft with RVSM height-keeping performance requirements

   in conjunction with RVSM introduction in the Middle East Region;

f) to provide the means for identifying non-RVSM approved operators using Middle East airspace where RVSM is applied; and notifying the appropriate State approval authority; and

g) to conduct readiness assessments and safety assessments as an aid for the Middle East RVSM Task Force for decision making in preparation for RVSM implementation on a specified date.

h) to establish and maintain a database containing results of navigation error monitoring;

i) to prepare, each six months, reports setting out the results of navigation error monitoring for the preceding six-month period. These results shall be presented to the ICAO Middle East Office, Cairo, and States as part of their decision process related to safety management;

j) to conduct safety assessments as an aid for the Middle East RNP/RNAV Task Force for decision making in conjunction with expansion or changes to the RNP route structure within the Middle East Region;

k) to liaise with other Regional monitoring agencies and organisations to harmonise RNP implementation and upgrading.

MID RVSM TF/9
Appendix 2C to the Report on Agenda Item 2

NATIONAL SAFETY PLANS – SUMMARY OF REVIEW PROCESS

1 Integra Consult had received national safety plans (NSP) for review from all 11 States by 10 June 2003. The national safety plans were audited and Integra issued an audit report at 20 June in accordance with conclusions at TF/8. By 01 August, most States had responded on the audit report and several of the States had updated the National safety plan based on the feedback.

2 During TF/9, the national safety plans were discussed with the States on an individual basis, focusing on the following principal issues:

- Clarifying any misunderstandings arising from the audit of the national safety plan;
- Verify the performance of safety activities mainly related to the hazards identified during the EUR-RVSM FHA;
- Identifying the status of different mitigation activities; and
- Future safety related activities.

Additionally, the discussions included all relevant topics such as training, operational procedures, technical systems, switchover and RVSM awareness. The relationship between the RVSM safety activities and the general safety management system was also addressed during the discussions.

3 The discussions were informal, giving Integra all necessary information about the status in the safety work as described in the national safety plans. In this context, it should be noted that the review has been based on the safety documentation provided to Integra and on the information given during the discussions at TF/9.

4 During the discussions it was established that:

- The States are committed to the safety effort and adhere to their national safety plans;
- Within the concept of the European FHA, the States have adapted their approaches in the hazard analysis and re-classification to suit prevailing operational conditions. Consequently, the safety documentation provided to Integra varied from State to State, but was still in compliance with stated requirements;
- Efficient hazard mitigation activities have been performed in all States.

Although there have been differences in the different areas, the general approach has been consistent and within the regional framework as agreed in the RVSM Task Force.

5 Based on the audit of the national safety plans, responses from the States, and on the informal discussions, it can be concluded that the safety work is progressing well, and that all States have initiated the necessary activities to resolve any outstanding safety-critical hazards.

6 The process leading forward to the implementation of RVSM on 27 November 2003 can continue with respect to the safety work. However, this conclusion is made on the premise that the efforts with safety-related aspects continue up to and after the implementation of RVSM.

In this context it should be noted that all States have reviewed the results of the EUR-RVSM FHA with respect to local conditions. Many of the serious hazards in the EUR- FHA have lesser impact within the MID airspace, due to the airspace structure, traffic density and other local conditions.

7 In connexion with the analysis of the results of the audit and the discussions with the State, the following general issues are raised:

- It is of vital importance that the training is executed as planned, and that the results of the training are carefully monitored and documented.

- Upgrading of ATM systems is a key issue for the safe implementation of the RVSM. Effort should be devoted to the finalisation of the ATM-systems including the testing of updates.
- Some State have interface issues with adjacent non-RVSM FIRs, which must be addressed in the period leading up to the RVSM implementation.

8 However, none of the above listed preclude a go-decision. The relevant States have addressed all concerns.

9 During the discussions it was stressed by the States that the safety-related activities will continue and post-implementation is also considered. These activities will be in line with the national safety plans and will address all identified hazards.

10 Taken into account the ongoing safety activities, it is recommended by Integra Consult that the States:

- Perform an update of the national safety plan before implementation, permitting its continued use as documentation of the safety activities performed before implementation of RVSM;
- Review the EUR-RVSM FHA results again before the implementation of RVSM, thus ensuring all issues in the EUR-RVSM FHA have been addressed; and
- The national safety plans shall be extended to cover post-implementation activities to achieve a monitoring mechanism for resolution of any post-implementation hazards.

11 It is also noted that the safety activities performed in connexion with the RVSM implementation should be integrated in the general safety management system to be implemented in accordance with ICAO Annex 11. This work should be performed on a regional basis.

12 It is concluded that, with the continuation of the excellent safety programme, implementation of RVSM will not have a negative impact on the safety level in the Middle East RVSM Area.

REPORT ON AGENDA ITEM 3: ATC OPERATIONS ASPECTS (ATC/WG)

3.1 In accordance with its Terms of Reference and Work Programme (See **Appendix 3A** to the Report on Agenda Item 3), the ATC/WG is responsible for addressing all matters relating to air traffic services (ATS) within the RVSM and transition airspace. The Group addressed the following issues:

i) ATS route network in the MID Region;
ii) co-ordination problems over the Red Sea area;
iii) interface issues; and
iv) Other outstanding issues

3.2 ATS Route Network – MID Region

3.2.1 The meeting was apprised of the procedures to be followed for the inclusion, deletion and/or re-alignment of ATS routes. It reiterated that as indicated in the Basic Air Navigation Plan (ANP), States and organizations concerned should follow the procedures contained therein.

3.2.2 It was noted that informal consultations were being made for major changes to be carried out to the MID ATS route network prior to the implementation of RVSM. The need for ensuring that the safety case, which has been built on the existing route structure, be not infringed with the proposed changes, was emphasized. Furthermore, it was pointed out that any change to the MID ATS route requirements should normally be carried out within the framework of MIDANPIRG mechanism, which is the main planning body for the MID Region. Notwithstanding the above, States and organizations may still propose any change to the route network provided they follow established procedures and appropriate NOTAMs be issued in accordance with the AIRAC cycle dates.

3.2.3 Based on the foregoing, the meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 9/4: AMENDMENT TO THE MID ATS ROUTE NETWORK

That:

a) any amendment to the MID ATS route network be carried out in accordance with established procedures as indicated in the Middle East Basic Air Navigation Plan (ANP); and

b) with a view to ensure that the safety case be not infringed, States adopt a conservative approach while carrying out change(s) to the MID ATS route network and it be coordinated with MECMA.

3.3 Co-ordination Problems Over the Red Sea Area

3.3.1 The meeting noted that the issue concerning uncoordinated flights over the Red Sea was also addressed within the framework of Arab Civil Aviation Commission (ACAC) meetings. The efforts expended by all parties concerned to find a durable solution to the problem was appreciated. The Task Force was informed of the outcome of the meeting organized in Egypt from 21-22 August 2003 involving Egypt, Saudi Arabia, Sudan, ACAC, IATA and ICAO, where agreement was reached on procedures to be followed by uncoordinated flights. The meeting accordingly endorsed the procedures with slight adjustments. A provision was included in the agreement regarding the requirement for civil flights to operate on established ATS routes within Sana'a FIR.

3.3.2 It was also pointed out that many military aircraft, which are not governed by ICAO rules in accordance with Article 3 a), b), d) of the Convention, also operate in the area. The need for informing all military aircraft flying under **"due regard"** of the procedures being followed by Civil Uncoordinated Aircraft was highlighted.

3.3.3 The meeting agreed that all parties concerned be informed, as soon as possible, of the special procedures put in place for uncoordinated flights.

3.3.4 Based on the foregoing the meeting formulated the following Draft Conclusion:

DRAFT CONCLUSION 9/5: COORDINATION PROBLEMS OVER THE RED SEA AREA

That:

a) with effect from 27 November 2003, the procedures developed within the framework of Arab Civil Aviation Commission (ACAC) meetings and reviewed by the RVSM Task Force, indicated at **Appendix 3B**, be followed by all uncoordinated flights operating over the Red Sea;

b) States concerned publish an AIP Supplement as soon as possible, and no later than 30 October 2003 for the promulgation of these procedures;

c) IATA ensures that concerned operators are fully conversant with these procedures; and

d) State/military aircraft when flying under **"Due Regard"** over the Red Sea be informed of the procedures to be followed by Civil Uncoordinated Flights and be requested to take into account the restrictions applicable within RVSM airspace.

3.4 Other related issues

Interface Meeting

3.4.1 The meeting was informed that the interface meeting with the Asia Region will be held in Abu Dhabi from 27 –28 August 2003, and thanked the UAE for the support in hosting the meeting. The tentative date for the interface meeting with EUR Region is planned for 14- 15 October 2003.

Special Implementation Project

3.4.2 The meeting was informed that, as a follow-up to a Special Implementation Project (SIP) approved by the ICAO council, a mission visited Lebanon, Jordan, Syria from 16- 23 July 2003. The objective of the SIP was to assess the status of preparedness of the States for ensuring the safe implementation of RVSM on 27 November 2003, to identify any shortcomings/deficiencies regarding equipment, training, procedures etc., and to give specific advice as necessary. Deficiencies/ shortcomings noted by the mission where highlighted and appropriate remedial measures have already been taken. Another mission to Yemen is also planned and will be carried out in due course.

ATC OPERATIONS WORK GROUP (ATC/WG)

TERMS OF REFERENCE

The ATC/WG is responsible for addressing all matters relating to air traffic services within the RVSM and transition airspace, to include the following:

- To identify airspace in which RVSM will be applied based on statement of application and develop a regional operational concept, ensuring inter-regional harmonization;
- to develop procedures to mitigate wake turbulence;
- to establish transition areas and develop transition procedures;
- to develop contingency procedures; and
- to consider workload issues and identify the need for controller simulations

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MID RVSM TF/9
Appendix 3B to the Report on Agenda Item 3

PROCEDURES FOR THE HANDLING OF UNCOORDINATED FLIGHTS CROSSING THE RED SEA AREA

The following procedures have been agreed within the framework of a meeting organized under the aegis of the Arab Civil Aviation Commission (ACAC) held in Cairo from 21 –22 August 2003.

Uncoordinated flights operating within the Red Sea area will implement the following procedures as from 27 November 2003:

1. Committing all uncoordinated flights over the Red Sea to squawk the Radar Code A2000.
   The representative of IATA was assigned the task of notifying concerned airlines operating in this region of the importance of such issue. Representatives of the concerned States were also informed of the necessity of reporting to IATA any aircraft that do not use the Radar Code A2000.

2. Uncoordinated flights should maintain a single flight level (FL) while crossing the Red Sea from south to north, namely FL300.

3. Uncoordinated flights should maintain a single flight level (FL) while crossing the Red Sea from north to south, namely FL290, unless otherwise is coordinated.

4. Uncoordinated flights crossing the Red Sea should provide their flight details on the working frequencies of the concerned Air Traffic Control Centers (ACCs), namely Sana'a, Jeddah, Khartoum, and Cairo and notify these centers of the following data: callsign, direction, altitude, time of crossing the reporting points along the boundaries of the FIR.

5. Uncoordinated flights crossing the Red Sea should transmit their flight details 10 minutes prior to crossing the boundaries of the concerned FIR and the compulsory reporting points in addition to listen on to the appropriate frequencies in order to identify other civil aircraft that may conflict with them and represent risk of collision.

6. Civil Aviation Authorities of the concerned States should instruct their ACCs to develop procedures for the communication of appropriate information regarding uncoordinated flights; survey and register irregularities by these uncoordinated flights; and find an appropriate mechanism in coordination with regional offices and other international bodies to commit these flights to conformity with the reached recommendations.

7. Increase the awareness of air traffic controllers at ACCs in the concerned States of this situation and of the potential risks; in addition to benefit from radar facilities for the monitoring of non-conforming flights.

8. All flights flying in the center of the Red Sea and maintaining RVSM Flight levels (between FL290-FL410) should be RVSM approved in accordance with the MID Region requirements.

9. Unless otherwise coordinated, all the abovementioned flights, in case of non-compliance with the Region's requirements for flying in an RVSM area, should be allocated two Flight levels, namely FL250 and FL260.

10. All navigational information regarding aircraft on direct routes in the center of the Red Sea and considered unidentified by the air traffic control centers should be sent via either via AFTN or any other means.

11. *IATA will assist in requesting civil flights operating within Sanaá FIR to operate on established ATS routes.

12. The agreement above should be added in the form of Letters of Agreement (LOAs) between the ACCs of the concerned Arab States.

Note:-

- ** Included in the agreement at the request on Yemen*

REPORT ON AGENDA ITEM 4: PROGRAMME MANAGEMENT ISSUES

4.1 Under this agenda item the meeting considered the following issues:

i) elaboration of letters of agreement;
ii) draft RVSM switch over plan
iii) review of the Task List;
iv) update of the evaluation forms; and
v) Review of the proposal for the amendment of the Regional Supplementary Procedures (SUPPs) Doc 7030 for inclusion of procedures for air-ground communications failure, special procedures for in-flight contingencies and the implementation of RVSM (MID/ASIA-S 03/01 RAC).

4.2 Letters of Agreement

4.2.1 The meeting accordingly reviewed existing letters of agreement between the different ACC's concerned and amended them to include provisions for handling RVSM traffic including elaboration of procedures within transition areas. An update on the status of letters of agreement involving all concerned ACC's in the MID Region intending to implement RVSM on 27 November 2003 is at **Appendix 4A** to the Report on Agenda Item 4).

4.3 RVSM Switchover Plan

4.3.1 The meeting considered a proposal for postponing the implementation date of RVSM from 27 November to 15 December 2003. It was pointed out that 27 November 2003 is during a holiday period in the MID Region and the operational ATS staff would be at a minimum. Because of commitments already made and the impact it would have in adjacent regions, the Task Force however decided that the dates for the implementation of RVSM should not be postponed.

4.3.2 The meeting was also apprised of a switchover plan provided by Saudi Arabia which could be used by MID Region States. It was pointed out that the sequence of steps and procedures indicated in the plan for transition towards RVSM is not applicable in all FIRs, and States should develop their own plans taking into account the expected traffic situation and airspace complexity. States may however use the plan as guidance in developing their own procedures (See **Appendix F** to the report).

4.4 Review of the Task List

4.4.1 The meeting reviewed the checklist and identified urgent tasks which should be carried out. The updated Task List is indicated at **Appendix B** to the report.

4.5 Update of the Evaluation Form

4.4.1 The meeting accordingly reviewed and updated the evaluation form checklist which is indicated at **Appendix C** to the report.

4.5 Amendment to Regional Supplementary Procedures Doc 7030

4.6. 1 The meeting was informed that the proposal for the amendment of the Regional Supplementary Procedures (SUPPs) Doc 7030/4 (MID/ASIA-S 03/01 RAC) for inclusion of procedures for air-ground communications failure, special procedures for in-flight contingencies and the implementation of RVSM has been sent to States and Organizations concerned for their comments (See **Appendix E** to the report). It was also noted that the procedures will be harmonized with the Asia Region States within the framework of the joint MID/ASIA coordination meeting (Abu Dhabi, 27 –28 August 2003).

4.7 **Go No-Go Decision**

4.7.1 The meeting, based on the conclusive outcomes from the Safety and Monitoring Work Group (SAM/WG), the ATC Work Group (ATC/WG) and the Operations/ Airworthiness Work Group (OPS/AIR/WG) concluded that:

DRAFT CONCLUSION 9/6: IMPLEMENTATION OF RVSM IN THE MID REGION

That:

The *MID Region States will implement RVSM on **27 November 2003** and the rationale for the decision is based on the following:

a) operator readiness is considered sufficient for the safe implementation of RVSM;

b) safety objectives for technical risk (**TLS of 1.25 x 10^{-9} fatal accidents per aircraft flight hour) have been met;

c) safety objectives for operational risk are satisfied through evaluation and mitigation measures associated with functional hazard assessments (FHA) and National Safety Plans (NSP);

d) appropriate procedures have been put in place; and

e) States have committed to complete all outstanding issues prior to 27 November 2003.

**Except Afghanistan and Iraq*

***This value of technical risk takes into account projected traffic growths in the MID Region for at least 10 years and ensures that a TLS of 2.5 x 10^{-9} will still not be infringed.*

MID RVSM TF/9
Appendix 4A to the Report on Agenda Item 4

STATUS OF LETTERS OF AGREEMENT (LOAs)						
States	**ACCs concerned**	**Adjacent ACCs**	**Status of LOAs**			
			Draft	**Final**	**Signed**	**Remarks**
Bahrain	Bahrain	Emirates			X	No change
		Jeddah	X			
		Kuwait	X			
		Tehran		X		*to be finalized/signed in October*
		Muscat	X			*to be finalized/signed in October*
Egypt	Cairo	Amman			X	
		Athens			X	
		Jeddah	X			*in view of proposed procedures to be applicable within Red Sea, awaiting slight adjustments*
		*Khartoum			X	
		Nicosia			X	
		Tel Aviv		X		
		Tripoli	X			*ICAO to assist Draft already forwarded to Libya*
Iran	Tehran	Ankara			X	
		*Ashgabat	X			
		*Baghdad				
		Bahrain		X		*Minor changes required- in September 2003*
		*Baku				
		Emirates			X	*No Change*
		*Kabul				
		Karachi		X		*Minor changes required-September 2003*
		Kuwait	X			
		Muscat		X		*Minor changes required-September 2003*

STATUS OF LETTERS OF AGREEMENT (LOAs)						
States	**ACCs concerned**	**Adjacent ACCs**	**Status of LOAs**			
			Draft	**Final**	**Signed**	**Remarks**
Jordan	Amman	Yerevan	X			
		Baghdad			X	
		Cairo			X	
		Damascus	X			*in view of proposed changes to route network, awaiting slight adjustments*
		Jeddah	X			*in view of proposed changes to route network, awaiting slight adjustments*
		Tel Aviv				
Kuwait	Kuwait	Baghdad			X	
		Bahrain	X			*October 2003*
		Tehran	X			*October 2003*
		Jeddah	X			*October 2003*
Lebanon	Beirut	Damascus			X	
		Nicosia			X	
Oman	Muscat	Emirates			X	
		Bahrain		X		*October 2003*
		Bombay		X		*Still pending*
		Karachi	X			*Draft developed*
		Sanaá		X		*October 2003*
		Tehran		X		*October 2003*
Saudi Arabia	Jeddah	Amman		X		*in view of proposed changes to route network, awaiting slight adjustments*
		*Asmara		X		
		*Baghdad		X		
		Bahrain		X		*in view of proposed changes to route network, awaiting slight adjustments*

STATUS OF LETTERS OF AGREEMENT (LOAs)						
States	**ACCs concerned**	**Adjacent ACCs**	**Status of LOAs**			
			Draft	**Final**	**Signed**	**Remarks**
		Cairo		X		*in view of proposed procedures to be applicable within Red Sea, awaiting slight adjustments*
		Kuwait		X		
		*Khartoum			X	
		Sana'a		X		
Syria	Damascus	Amman		X		*in view of proposed changes to route network, awaiting slight adjustments*
		Ankara		X		
		*Baghdad	X			
		Beirut			X	
		Nicosia			X	
United Arab Emirates	Emirates	Bahrain			X	*No Change*
		Muscat			X	*No Change*
		Tehran			X	*No Change*
Yemen	Sana'a	Addis Ababa				*Not yet*
		*Asmara				*Not yet*
		Djibouti	X			*FL 240 and below*
		Jeddah	X			
		*Mogadishu	X			*Not yet*
		Muscat				
* Non RVSM						

REPORT ON AGENDA ITEM 5 : ANY OTHER BUSINESS

5.1 Under this agenda item the meeting, taking into account the amount of work necessary for the completion of all activities prior to the Go/No-Go decision regarding the implementation of RVSM in the MID region established a tentative schedule of meetings for the MID RVSM Task Force as follows:

MID RVSM TASK FORCE – TENTATIVE FUTURE SCHEDULE OF MEETINGS

Date	Meeting	Venue
YEAR 2003		
27 –28 August	2nd JCM-RVSM ASIA/MID	Abu Dhabi
14-15 October *(tentative date)*	1st JCM-RVSM EUR/MID	Paris
20 –22 October	MID RVSM TF/10	Abu Dhabi
YEAR 2004		
01-03 March	MID RVSM TF/11*	Abu Dhabi
22 -24 November	MID RVSM TF/12**	Abu Dhabi

*Preliminary post-implementation safety review
**Post-implementation safety review

5.2 **U.A.E. Entry VISA requirements**

5.2.1 With a view to facilitate issuance of entry VISA to the UAE, the meeting was informed that all participants should leave a scanned copy of their National Passports with the administration. Furthermore, they should confirm their participation by email to Mr. Angelo Fernandes (angelo.fernandes@gcaa-uae.gov.ae) at least three weeks before any meeting. This would enable the timely processing of the papers.

MID RVSM TF/9
Appendix A to the Report

TERMS OF REFERENCE FOR THE MID RVSM TASK FORCE

1. Develop a comprehensive implementation plan for RVSM in the MID Region, taking into account the requirements of the *Manual on Implementation of a 300 M (1000 ft) Vertical Separation Minimum between FL 290 and FL 410 Inclusive (Doc 9574)*, and the requirements of users.

2. Identify any areas within the MID Region where it may not be feasible to introduce RVSM in the initial implementation.

3. Determine the extent to which a cost-benefit analysis is required prior to implementation of RVSM.

4. Coordinate with the bodies responsible for the implementation of RVSM in adjacent Regions in order to harmonize implementation plans.

5. Develop guidance material for RVSM operations in the MID Region, taking into account existing guidance material which has been developed by other regions.

6. Address any other matters, as appropriate, which are relevant to the implementation of RVSM.

MID RVSM TASK FORCE - WORK PROGRAMME
(Task List)

ID	DESCRIPTION	START	FINISH	RESOURCES
	Working Methods and Resources			
1	Agree on structure of TF to enable efficient handling of specialist technical tasks		05-Oct-00	RVSM TF - Completed
2	Identify resources for performing specialist technical tasks	05-Oct-00	23 Feb. 03	RVSM TF -Completed
3	Investigate methods of funding any outside assistance required	05-Oct-00	23.Feb.03	RVSM TF- Completed
	Cost Benefits Analysis			
4	Evaluate need for a cost benefit analysis	03-Oct-00	05-Oct-00	RVSM TF - Completed
	Safety Assessment and Monitoring			
5	Conduct preliminary data collection and readiness assessment	01-Dec-00	29-Aug-01	States, SAM/WG, ASIA/PAC RVSM TF - Completed
6	Evaluate options for setting up a central monitoring agency	03-Oct-00	10-Apr-01	SAM/WG - Completed
7	Evaluate options for carrying out the safety analysis	03-Oct-00	29-Aug-01	SAM/WG - Completed
8	Evaluate options for implementation of a height monitoring program	03-Oct-00	06-Mar-02	SAM/WG - Completed
9	Develop procedures for reporting large height deviations in existing system	01-Apr-01	29-Aug-01	SAM/WG- Completed
10	Collect weather and turbulence data for analysis	01-Apr-01	01-May-03	SAM/WG- Completed
11	Develop detailed program for safety analysis	06-Mar-02	27-Aug.-03	SAM/WG- Completed
12	Establish requirements for pre and post-implementation monitoring	TBD	06-Mar-02	SAM/WG - 4th qtr. 03 for post implementation monitoring completed
13	Undertake initial safety analysis	TBD	4th qtr.-02	SAM/WG-Completed
14	Carry out pre-implementation safety analysis	1 Jan.-03	27-Aug-03	SAM/WG- completed (based on executive summary)
14-A	Carry out pre-implementation safety analysis	01-Jan-03	22-Oct.-03	SAM/WG- To be based on final report
15	Carry out pre-implementation readiness assessmsent	TBD	31-Mar-03	SAM/WG- Completed
16	Carry out post-implementation safety analysis during verification phase	TBD	Mid.-04	SAM/WG
17	Review of mathematical and statistical techniques to assure their appropriateness for MID RVSM	11-Apr-01	Jan-03	SAM/WG- Completed
18	Ensure Tranferability of aircraft data from other Regions	11-Apr-01	June-02	SAM/WG- Completed
19	Devise methodologies for incorporating the effects of projected traffic growth and system changes on occupancy & collision risk in the future environment	11-Apr-01	June-02	SAM/WG- Completed
20	Perform periodically other data collections (eg. ASE stability) in order to ensure that the parameter vlaues used in the mathematical collision risk models remain current	11-Apr-01	27-Aug-03	SAM/WG- completed
21	Monitor progress with operator approvals	11-Apr-01	ONGOING	SAM/WG. Some operators not ready and/or facing problems.Data from approval Registry not bering sent. IATA to assist.
22	Review of National Safety plans	28-May-03	27-Aug-03	SAM/WG- completed

MID RVSM TASK FORCE - WORK PROGRAMME
(Task List)

ID	DESCRIPTION	START	FINISH	RESOURCES
22-A	Reply to querries on National Safety Plans	20-Jun-03	1-Aug.-03	SAM/WG- Completed
22-C	Final Review of National Safety plans	24-Aug.-03	27-Aug.-03	SAM/WG- Completed
	ATC Operational Issues			
23	Dertermine the limits of RVSM airspace (geographic and vertical)	10-Apr-01	06-Mar-02	ATC/WG - Completed
24	Develop ATC operational policy & procedures for normal RVSM operations	14 Oct. 02	28-May-03	ATC/WG- Completed
25	Identify transition areas and transition procedures	26-Aug-01	27-Aug.-03	ATC/WG-Completed
26	States assess the impact of RVSM implementation on controller automation systems and plan for upgrades/modifications	10-Apr-01	05-Jun-02	ATC/WG-Completed
27	Develop ATC procedures for non-approved State acft to transit RVSM airspace	10-Apr-01	05-Jun-02	ATC/WG-Completed
28	Develop procedures for handling non-compliant civil aircraft (inc ferry & maintenance)	10-Apr-01	05-Jun-02	ATC/WG-Completed
29	Develop procedures for suspension of RVSM	10-Apr-01	05-Jun-02	ATC/WG- Completed
30	Evaluate the need for simulations to assess ATC workload and possible need for airspace/air route/Sector changes	02-Jun-02	27-Aug-03	ATC/WG-completed under FHA
31	Develop ATC regional training guidance material	TBD	28-May-03	ATC/WG- Completed
32	Harmonization of ATC regional guidance material	05-Jun-02	31-Mar-03	ATC/WG- Completed
33	Identify issues to be adressed in Letters of Agreement	10-Apr-01	28-May-03	ATC/WG- Completed
34	Evaluate the need for chart amendments related to RVSM	11-Apr-01	27-Aug-03	Completed
35	States to conduct local RVSM training for air traffic controllers	27-Mar-03	26-Nov-03	States- On-going activity
	OPS/AIR Issues			
36	States to examine existing legislation and regulations to identify any changes required for RVSM	05-Oct-00	27-Aug-03	OPS/AIR/WG -Completed
37	Develop and promulgate information on the operational approval process	01-Apr-01	29-Aug-01	OPS/AIR/WG - Completed
38	Develop procedures for aircraft found to be non-compliant through monitoring	11-Apr-01	26- Feb. 03	OPS/AIR/WG - Completed
39	Develop regional guidance on pilot, maintenance personnel and dispatcher training	11-Apr-01	26-Feb-03	OPS/AIR/WG - Completed
40	Examine issues related to the use of ACAS in RVSM airspace	11-Apr-01	29-Aug-01	OPS/AIR/WG - Completed
	Joint Tasks			
41	Review preliminary readiness assessment	01-Apr-01	29-Aug-01	RVSM TF - Completed- 90% target achieved
42	Set target proportion of RVSM approved flights for full RVSM implementation	01-Apr-01	23 Feb. 03	RVSM TF - Completed
43	Set target AIRAC implementation date(AIP Supplement to be published)	07-Apr-01	02-Oct-03	RVSM TF -Completed
44	Prepare/maintain regional status report detailing RVSM implementation plans	01-Apr-01	27-Aug-03	RVSM TF - Completed

MID RVSM TASK FORCE - WORK PROGRAMME
(Task List)

ID	DESCRIPTION	START	FINISH	RESOURCES
45	Identify major milestone and targe dates	09-Apr-01	28-May-03	RVSM TF - Completed
46	Develop a regional RVSM informational campaign	07-Apr-01	22-Oct-03	RVSM TF -*Bahrain, Lebanon,Saudi Arabia, UAE and IATA offered to assist*
47	Develop regional RVSM Guidance Material	01-Apr-01	28-May-03	RVSM TF- Version 2.1 completed- Endorsement by MIDANPIRG/8
48	Review weather and contingency procedures for applicability under RVSM	10-Apr-01	22-Oct-03	Draft completed-MID Amd. proposal to SUPPs Ref. MID 03/1 refers
49	Develop model AICs and NOTAMs	09-Apr-01	29-Aug-01	Draft Completed(AIC already Issued)
50	Evaluate preliminary readiness and safety assessments	20-Jan-01	05-Jun-02	
51	Undertake coordination and harmonization of procedures with adjacent Regions	01-Apr-01	ONGOING	RVSM TF-joint MID/ASIA,MID/EUR and MID/.AFI meetings planned
52	Evaluate the need for tactical offset procedures to mitigate the effects of turbulence and TCAS alerts	10-Apr-01	26-Feb-03	RVSM TF- Completed
53	Develop Doc 7030 amendment	10-Apr-01	22-Oct-03	RVSM TF- Sent to States/Org. for comments under MID/ASIA-S 03/1 RAC)
54	Review aircraft altitude-keeping performance and operational errors	01-Jul-01	25-May-03	RVSM TF-Completed
55	Develop monitoring and evaluation program for the verification phase	TBD	05-Jun-02	RVSM TF-Completed
56	Evaluate final readiness assessment	TBD	27-Aug-03	RVSM TF- Completed
57	Evaluate final safety analysis	30-Jan-03	22-Oct-03	RVSM TF-Analysis to be based on executive summary. Second update in Oct. 2003
58	Go/No-Go decision	TBD	27-Aug-03	RVSM TF- completed. "GO" decision taken

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: BAHRAIN

Appendix C

FIR(s): BAHRAIN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

SAFETY AND AIRSPACE MONITORING ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit reports (Due by 01/08/2003	°	-	
	Final Review (due by 25/08/2003, at TF/9)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: BAHRAIN

Appendix C

FIR(s): BAHRAIN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003		27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	°	- *No	Not applicable now *Refer to Appendix 4A
2.3	Have training requirements bee assessed	°	-	
2.4	Issue of aic	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	°	-	
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	°	-	Initial evaluation has started

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: BAHRAIN

Appendix C

FIR(s): BAHRAIN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003		27/08/2003	X				

2.8	Conduct of local training for air traffic controllers	°	-	Awareness phase has started
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	Part of the FDPS upgrade
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	-	No	Not applicable
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	-	No	Will be considered with future upgrade

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: BAHRAIN

Appendix C

FIR(s): BAHRAIN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003		27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	°	-	
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	°	-	100 %
3.6	How many national operators have full RVSM approval	°	-	One
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	°	-	50%
3.8	Did you provide MECMA with RVSM approval documentation	-	No	Being provided
3.9	Did you nominate your State RVSM Programme Manager	°	-	
3.10	Certification	-	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: BAHRAIN

Appendix C

FIR(s): BAHRAIN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003		27/08/2003	X				

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	°	-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: EGYPT

Appendix C

FIR(s): CAIRO

Rev.004

EVALUATION DATE(s):15 September 2002

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

SAFETY AND AIRSPACE MONITORING ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	All reports forwarded to MECMA
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	Forwarded to MECMA from July 2001 – December 2001`
1.3	Whether traffic data has been sent	°	-	Forwarded to MECMA (26/12/2002-last update)
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit reports (due by 01/08/2003)	°	-	
	Final Review (Due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: EGYPT

Appendix C

FIR(s): CAIRO

Rev.004

EVALUATION DATE(s):15 September 2002

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	° °	- -	almost completed. Refer to Appendix 4A for update
2.3	Have training requirements been assessed	°	--	
2.4	Issue of AIC	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	Not applicable now
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	°	-	To be carried out shortly

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: EGYPT

Appendix C

FIR(s): CAIRO

Rev.004

EVALUATION DATE(s):15 September 2002

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

2.8	Conduct of local training for air traffic controllers	°	-	Theoretical part only
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	°	-	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	°	-	*To be updated within 2 months*

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: EGYPT

Appendix C

FIR(s): CAIRO

Rev.004

EVALUATION DATE(s):15 September 2002

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	°	-	
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	92%	-	
3.6	How many national operators have full RVSM approval	12 out of 13	-	
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	60%	-	
3.8	Did you provide MECMA with RVSM approval documentation	°	-	RVSM data monitoring will be automatically interchanged among regional monitoring agencies
3.9	Did you nominate your State RVSM Programme Manager	°	-	Mr. Mahmoud Elshanabary
3.10	Certification	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: EGYPT

Appendix C

FIR(s): CAIRO

Rev.004

EVALUATION DATE(s):15 September 2002

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	°	-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: I.R.IRAN

Appendix C

FIR(s): TEHRAN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X					

SAFETY AND AIRSPACE MONITORING ASPECTS			
REQUIREMENTS	**ACTION TAKEN**		**REMARKS**
	YES	NO	
1.1 -To verify whether the following reports are regularly being sent to MECMA:	°	-	
Assigned Altitude Deviation (AAD) forms	°	-	
-Total IFR movements per month	°	-	
-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
-ATC/ATC Coordination failures	°	-	
1.2 Whether any turbulence data reports have been received and sent to MECMA	-	No	
1.3 Whether traffic data has been sent	°	-	
1.4 National Safety Plan provided to MECMA	°	-	
Feedback to MECMA on audit reports (due by 01/08/2003)	°	-	
Final review (Due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: I.R.IRAN

Appendix C

FIR(s): TEHRAN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X							

ATC OPERATIONS ASPECTS				
	REQUIRMENTS	**ACTION TAKEN**		**REMARKS**
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	- -	No No	signed with Ankara ACC only. Refer to Appendix 4A for update
2.3	Have training requirements been assessed	°	-	
2.4	Issue of AIC	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	Not applicable now
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or	°	-	Eventually Sector 1 will have to operate in 2 Sectors

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: I.R.IRAN

Appendix C

FIR(s): TEHRAN

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X		27/08/2003	X							

	sector reorganization.			
2.8	Conduct of local training for air traffic controllers	°	-	Awareness phase has started
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	Part of the FDPS upgrade. *In consultation with manufacturer.*
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	°	-	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: I.R.IRAN

Appendix C

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X					

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	Under development
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft		No	Under development
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	°	-	29 aircraft approved. 41%
3.6	How many national operators have full RVSM approval	°	-	3Operators (IRAN AIRLINES and MAHAN AIRLINES 2 under process
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	°	-	42% *(28 aircraft)*
3.8	Did you provide MECMA with RVSM approval documentation	°	-	Provided in advance
3.9	Did you nominate your State RVSM Programme Manager	°	-	
3.10	Certification	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: I.R.IRAN

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EVALUATION DATE(s):

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OTHER GENERAL REQUIRMENTS			
REQUIREMENTS	**ACTION TAKEN**		**REMARKS**
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	-	No-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: JORDAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	
	Assigned Altitude Deviation (AAD) forms	°	-	*No report received*
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	*No report received*
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	*No report received*
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (due by 01/08/2003)	°		
	Final review (due by 25/08/2003)	°		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: JORDAN

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FIR(s): AMMAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	*(Order placed already)*
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time	-	No	
	Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	°	-	Almost completed. Refer to Appendix 4A for update Signed with Egypt. Saudi Arabia and Syria to be signed on September
2.3	Have training requirements been assessed	°	-	
2.4	Issue of aic	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°		
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	Not applicable now
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: JORDAN

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01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

2.8	Conduct of local training for air traffic controllers	°	-	
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	-	No	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	-	No	Not applicable now

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: JORDAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°		Jordan Civil Aviation Regulation (JCAR's) 3.136
3.2	Aircraft and Operators approval/guidance	°		Regulatory Guidance :JCAR's Part 3 Appendix C
3.3	Procedures for non-compliant aircraft		No	Procedures shall be coordinated with ATC controlling airspace
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	-	No	Operator procedure
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	-	No	22 out of 28 aircraft are approved
3.6	How many national operators have full RVSM approval	°	-	3 operators (Royal Jordanian, Royal Squadron and Jordan Aviation)
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	°	-	(Royal Jordanian 11 out of 16) 68.75% Royal squadron: 3 out of 6 (50 %)
3.8	Did you provide MECMA with RVSM approval documentation	°	-	
3.9	Did you nominate your State RVSM Programme Manager	°		
3.10	Certification	°		Operations specifications and/or letter of authorization

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: JORDAN

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FIR(s): AMMAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	-	No	
TRAINING	-	No	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: KUWAIT

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SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (due by 01/08/2003)	°		
	Final review (Due by 25/08/2003)	°		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: KUWAIT

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FIR(s): KUWAIT

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	° * °		Refer to appendix 4A for update *partially
2.3	Have training requirements been assessed	°	-	
2.4	Issue of AIC	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	°	-	
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: KUWAIT

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

	reorganization.			
2.8	Conduct of local training for air traffic controllers	-	No	Under preparation
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	
2.10	Is there any need for changes to FDPS?	-	No	Not applicable
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	-	No	Not applicable
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	-	No	Not applicable

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: KUWAIT

Appendix C

FIR(s): KUWAIT

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	°	-	
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	°	-	100%
3.6	How many national operators have full RVSM approval	°	-	*(Only 1 Operator)*
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	°	-	100%
3.8	Did you provide MECMA with RVSM approval documentation	°	-	
3.9	Did you nominate your State RVSM Programme Manager	°	-	
3.10	Certification	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: KUWAIT

Appendix C

FIR(s): KUWAIT

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	26/02/2003		28/05/2003	X	27/08/2003	X				

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	°	-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: LEBANON

Appendix C

FIR(s): BEIRUT

Rev.004

EVALUATION DATE(s):01 MAR2003

01/06/2002	X	01/09/2002	X	01/12/2002	x	01/03/2003	x	28/05/2003	x	27/08/2003	X		

SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	No coordination failures
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	NIL
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (Due by 01/08/2003)	°	-	
	Final review (due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: LEBANON

Appendix C

FIR(s): BEIRUT

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EVALUATION DATE(s):01 MAR2003

01/06/2002	X	01/09/2002	X	01/12/2002	x	01/03/2003	X	28/05/2003	X	27/08/2003	X		

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	On-going .Orders placed
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time	-	No	
	Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	-	No	Refer to Appendix 4A for update
2.3	Have training requirements been assessed	°	-	
2.4	Issue of AIC	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	°	-	
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: LEBANON

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FIR(s): BEIRUT

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EVALUATION DATE(s):01 MAR2003

01/06/2002	X	01/09/2002	X	01/12/2002	x	01/03/2003	x	28/05/2003	x	27/08/2003	X				

	reorganization.			
2.8	Conduct of local training for air traffic controllers	°	-	THEORETICAL TRAINING ONLY
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	°	-	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: LEBANON

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01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	01/06/2003		01/09/2003			

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°		
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	°	-	
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	-	-	**90%**
3.6	How many national operators have full RVSM approval	-	-	**1**
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	-	-	**100%**
3.8	Did you provide MECMA with RVSM approval documentation	°	-	
3.9	Did you nominate your State RVSM Programme Manager	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: LEBANON

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FIR(s): BEIRUT

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EVALUATION DATE(s):01 MAR 2003

01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	01/06/2003		01/09/2003			

3.10 Certification	°	-	

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES		
FUNDING/BUDGETARY ALLOTMENT	°		
TRAINING	°		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: OMAN

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FIR(s): MUSCAT

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	28/05/2003	X	27/08/2003	X			

SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	°	-	*(no reports received)*
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (due by 01/08/2003)	°	-	
	Final review (Due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: OMAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	28/05/2003	X	27/08/2003	X			

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	°	- No	Confirmation received that equipment will be upgraded before implementation of RVSM refer to Appendix 4A for update
2.3	Have training requirements been assessed	°	-	
2.4	Issue of aic	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	Not applicable now
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	°	-	

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MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

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2.8	Conduct of local training for air traffic controllers	°	-	Awareness phase has started Theoretical training completed
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	Part of the FDPS upgrade
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	°	-	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: OMAN

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FIR(s): MUSCAT

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	28/05/2003	X	27/08/2003	X		

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	*3.1 to 3.10: Update not available. To be updated at next TF/8 meeting.*
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	-	No	Investigating the issue
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	°	-	Included in JAA leaflet G
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	°	-	90%
3.6	How many national operators have full RVSM approval	°	-	2
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	°	-	100% during approval process all RVSM approved aircraft are monitored.
3.8	Did you provide MECMA with RVSM approval documentation		-	
3.9	Did you nominate your State RVSM Programme Manager	°		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: OMAN

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EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	01/03/2003	X	28/05/2003	X	27/08/2003	X			

3.10 Certification	°		

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	°	-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SAUDI ARABIA

Appendix C

FIR(s): JEDDAH

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X				

SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	°	-	Final data would be available shortly. *(In progress)*
	Assigned Altitude Deviation (AAD) forms	°	-	
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	°	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	-	No	
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (due by 01/08/2003)	°	-	
	Final review (Due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SAUDI ARABIA

Appendix C

FIR(s): JEDDAH

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X					

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	Order already placed
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time	-	No	
	Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	°	-	Refer to appendix 4A for update
2.3	Have training requirements been assessed	°	-	
2.4	Issue of aic	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	Not applicable now
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	-	No	Not yet ready

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SAUDI ARABIA

Appendix C

FIR(s): JEDDAH

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X				

2.8	Conduct of local training for air traffic controllers	°	-	Initiated (introductory part)
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	°	-	Part of the FDPS upgrade
2.10	Is there any need for changes to FDPS?	°	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	°	-	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	°	-	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	-	No	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	-	No	Not applicable

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SAUDI ARABIA

Appendix C

FIR(s): JEDDAH

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation			In progress.
3.2	Aircraft and Operators approval/guidance			
3.3	Procedures for non-compliant aircraft		°	Not ready
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers			
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval		95%	
3.6	How many national operators have full RVSM approval		95%	
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet			
3.8	Did you provide MECMA with RVSM approval documentation			
3.9	Did you nominate your State RVSM Programme Manager	°		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SAUDI ARABIA

Appendix C

FIR(s): JEDDAH

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X		26/02/2003	X	28/05/2003	X	27/08/2003	X				

3.10 Certification			

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	-	No-	
TRAINING	-	No	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SYRIA

Appendix C

FIR(s): DAMASCUS

EVALUATION DATE(s): Rev.004

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

SAFETY AND AIRSPACE MONITORING ASPECTS

	REQUIREMENTS	ACTION TAKEN YES	ACTION TAKEN NO	REMARKS
1.1	-To verify whether the following reports are regularly being sent to MECMA:	-	No	***RADAR DATA NOT AVAILABLE NOW***
	Assigned Altitude Deviation (AAD) forms	°	-	No reports received from Pilots
	-Total IFR movements per month	°	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	°	-	
	-ATC/ATC Coordination failures	-	No	
1.2	Whether any turbulence data reports have been received and sent to MECMA	-	No	No reports received from Pilots
1.3	Whether traffic data has been sent	°	-	
1.4	National Safety Plan provided to MECMA	°	-	
	Feedback to MECMA on audit report (due by 01/08/2003)	°	-	
	Final review 9due by 25/08/2003)	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SYRIA

Appendix C

FIR(s): DAMASCUS

EVALUATION DATE(s): Rev.004

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	°	-	Radar equipment upgrade due end of 2003
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment		No	Turkey, not yet signed. coordinated. Refer to Appendix 4A for update
2.3	Have training requirements been assessed	°	-	
2.4	Issue of AICc	°	-	
2.5	Issue of AIP Supplement (15 May 2003)	°	-	1st week of June
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	°	-	
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	°	-	
2.8	Conduct of local training for air traffic controllers	°	-	procedural environment

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SYRIA

Appendix C

FIR(s): DAMASCUS

EVALUATION DATE(s): Rev.004

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	-	No	Not installed/procedural
2.10	Is there any need for changes to FDPS?	-	No	Not installed
2.11	Is there any need to changes in radar display systems? (*where applicable)*	-	No	Not installed
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	-	No	
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	-	No	
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	-	No	Do not exist

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SYRIA

Appendix C

FIR(s): DAMASCUS

EVALUATION DATE(s): Rev.004

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	°	-	
3.2	Aircraft and Operators approval/guidance	°	-	
3.3	Procedures for non-compliant aircraft	°	-	
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	-	No	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	90%	-	13 out of 14
3.6	How many national operators have full RVSM approval	-	Nil	
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	95%	-	
3.8	Did you provide MECMA with RVSM approval documentation	°	-	
3.9	Did you nominate your State RVSM Programme Manager	°	-	
3.10	Certification	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: SYRIA

Appendix C

FIR(s): DAMASCUS

EVALUATION DATE(s): Rev.004

01/06/2002	X	01/09/2002	X	26/02/2003	X	28/05/2003	X	27/08/2003	X				

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	°	-	
TRAINING	°	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIREMENTS

STATE: UNITED ARAB EMIRATES

Appendix C

FIR(s): EMIRATES

Rev.005

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	26/02/2003		25/05/2003	X	27/08/2003	X						

SAFETY AND AIRSPACE MONITORING ASPECTS

REQUIREMENTS		ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:	YES		
	Assigned Altitude Deviation (AAD) forms	YES		
	-Total IFR movements per month	YES		
	-Average time spent per movement at assigned levels between FL290 and FL410	YES		
	-ATC/ATC Coordination failures	YES		
1.2	Whether any turbulence data reports have been received and sent to MECMA	YES		
1.3	Whether traffic data has been sent	YES		
1.4	National Safety Plan provided to MECMA:	YES		
	Feedback to MECMA on audit report (Due by 01 Aug 03)	Yes		
	Final review (Due by 25 Aug 03, at TF/9)	Yes		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIREMENTS

STATE: UNITED ARAB EMIRATES

Appendix C

FIR(s): EMIRATES

Rev.005

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	26/02/2003		25/05/2003	X	27/08/2003	X					

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	YES		Installation after 27.11.03
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	YES	N/A	Existent LOAs provide for an RVSM environment
2.3	Have training requirements been assessed	YES		
2.4	Issue of AIC	YES		
2.5	Issue of AIP Supplement (15 May 2003)	YES		AIP Supplement 03/03 issued 27 May 03
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM		NO	Not yet due
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	YES		

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIREMENTS

STATE: UNITED ARAB EMIRATES

Appendix C

FIR(s): EMIRATES

Rev.005

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	26/02/2003		25/05/2003	X	27/08/2003	X			

2.8	Conduct of local training for air traffic controllers	-	No	Awareness phase has started-Oct/Nov/03 Training scheduled for October & November 2003
2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	YES	-	Included in updated procedures for strip marking
2.10	Is there any need for changes to FDPS?		NO	Existent FPDS is sufficient. Installation of the new ATC equipment upgrade will include FDPS upgrade.
2.11	Is there any need to changes in radar display systems? (*where applicable)*		NO	
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)		-	Not applicable
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*		-	Not applicable
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*		-	Not applicable

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIREMENTS

STATE: UNITED ARAB EMIRATES

Appendix C

FIR(s): EMIRATES

Rev.005

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	26/02/2003		25/05/2003	X	27/08/2003	X			

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	YES		
3.2	Aircraft and Operators approval/guidance	YES		
3.3	Procedures for non-compliant aircraft	YES		
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	YES		
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	89%	-	66 out of 74 jet aircraft
3.6	How many national operators have full RVSM approval	7		
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	93%		
3.8	Did you provide MECMA with RVSM approval documentation	YES		
3.9	Did you nominate your State RVSM Programme Manager	YES		
3.10	Certification	YES		Incorporated in the safety plan

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIREMENTS

STATE: UNITED ARAB EMIRATES

Appendix C

FIR(s): EMIRATES

Rev.005

EVALUATION DATE(s):

01/06/2002	X	01/09/2002	X	01/12/2002	X	26/02/2003		25/05/2003	X	27/08/2003	X			

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	YES	-	
TRAINING	YES	-	Material available planning in progress – scheduled for Oct/Nov 03

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: YEMEN

Appendix C

FIR(s): SANA'A

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002		01/12/2002		01/03/2003	X	28/05/2003	X	27/08/2003	X			

SAFETY AND AIRSPACE MONITORING ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
1.1	-To verify whether the following reports are regularly being sent to MECMA:			No deviations observed or reported
	Assigned Altitude Deviation (AAD) forms	✓	-	
	-Total IFR movements per month	✓	-	
	-Average time spent per movement at assigned levels between FL290 and FL410	✓	-	
	-ATC/ATC Coordination failures	✓	-	
1.2	Whether any turbulence data reports have been received and sent to MECMA	✓	-	No reports received
1.3	Whether traffic data has been sent	✓		
1.4	National Safety Plan provided to MECMA	✓	-	
	Feedback to MECMA on audit report (Due by 01/08/2003)	✓	-	
	Final review (Due by 25/08/2003)	✓-	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: YEMEN

Appendix C

FIR(s): SANA'A

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002		01/12/2002		01/03/2003	X	28/05/2003	X	27/08/2003	X				

ATC OPERATIONS ASPECTS

	REQUIRMENTS	ACTION TAKEN		REMARKS
		YES	NO	
2.1	Have appropriate orders been made for purchase of equipment upgrade for ATC systems	✓	-	
2.2	Documentations/procedures Have contingency plans been made in case equipment upgrade not received on time Have letters of agreement been signed with adjacent centres for provision of services in an RVSM environment	✓ ✓	- -	Refer to Appendix 4A for update
2.3	Have training requirements been assessed	✓	-	
2.4	Issue of AIC	✓	-	
2.5	Issue of AIP Supplement (15 May 2003)	✓	-	
2.6	Trigger NOTAM to be issued in October 2003 for confirming implementation of RVSM	-	No	
2.7	Evaluation of the need to carry out simulations to assess ATC workload and consideration of possible requirements for airspace/route and/or sector reorganization.	✓	-	
2.8	Conduct of local training for air traffic controllers	✓	-	Initial training, April 2003

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: YEMEN

Appendix C

FIR(s): SANA'A

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002		01/12/2002		01/03/2003	X	28/05/2003	X	27/08/2003	X			

2.9	Have you considered the need for changes to flight strips? (Non-RVSM, State aircraft etc..)	✓	-	Flight strips being prepared manually at present
2.10	Is there any need for changes to FDPS?	✓	-	
2.11	Is there any need to changes in radar display systems? (*where applicable)*	✓	-	Not applicable
2.12	Have you considered the need for changes to Short Term Conflict Alerts(STCAs)? – (*where applicable*)	✓	-	Not applicable
2.13	Have you considered any need for changes to Medium Term Conflict Detection (MTCD) Systems? (*where applicable)*	✓	-	Not applicable
2.14	Have you considered any need for changes to On-Line Data Interchange (OLDI)? (*where applicable)*	✓	-	Not applicable

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: YEMEN

Appendix C

FIR(s): SANA'A

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002		01/12/2002		01/03/2003	X	28/05/2003	X	27/08/2003	X		

AIRCRAFT OPERATIONS AND AIRWORTHINESS ASPECTS

	REQUIREMENTS	ACTION TAKEN		REMARKS
		YES	NO	
3.1	National Regulations for RVSM Implementation	✓	-	
3.2	Aircraft and Operators approval/guidance	✓	-	
3.3	Procedures for non-compliant aircraft	-*	-	March 2003
3.4	Development of RVSM Training Curriculum for flight crew members and dispatchers	✓	-	
3.5	What is the percentage ratio of the national aircraft that received RVSM airworthiness approval	✓	-	95%
3.6	How many national operators have full RVSM approval	-	-	1
3.7	What is the percentage ratio of aircraft actually monitored with each operator's fleet	-	-	To be notified in due course
3.8	Did you provide MECMA with RVSM approval documentation	✓	-	
3.9	Did you nominate your State RVSM Programme Manager	✓	-	
3.10	Certification	✓	-	

EVALUATION FORM CHECKLIST
MID RVSM IMPLEMENTATION MILESTONES/REQUIRMENTS

STATE: YEMEN

Appendix C

FIR(s): SANA'A

Rev.004

EVALUATION DATE(s):

01/06/2002	X	01/09/2002		01/12/2002		01/03/2003	X	28/05/2003	X	27/08/2003	X	

OTHER GENERAL REQUIRMENTS

REQUIREMENTS	ACTION TAKEN		REMARKS
	YES	NO	
FUNDING/BUDGETARY ALLOTMENT	✓		INFORMATION TO BE PROVIDED AT A LATER STAGE
TRAINING	✓		

MID RVSM TF/9
Appendix D to the Report

International Civil Aviation Organization

MID Reduced Vertical Separation Minima Task Force

NINTH MEETING
(Abu Dhabi, 24- 27 August 2003)

(TRIGGER NOTAM SPECIMEN) FOR RVSM IMPLEMENTATION IN MID REGION FIRs

(to be issued on 27 October 2003)

EFFECTIVE 27 NOVEMBER 2003 AT 0201 UTC, REDUCED VERTICAL SEPARATION MINIMUM (RVSM) OF 1, 000 FT, BETWEEN FL290 AND FL410 INCLUSIVE, WILL BE APPLIED BETWEEN RVSM COMPLIANT AIRCRAFT OPERATING IN THE ……. FIR.

RVSM COMPLIANT AIRCRAFT MAY OPERATE WITHIN …….FIR RVSM AIRSPACE AFTER SUBMITTING A FLIGHT PLAN INDICATING APPROPRIATE RVSM STATUS IN ITEM 10 OF THE ICAO FLIGHT PLAN FORM.

NON-RVSM COMPLIANT AIRCRAFT THAT INTEND TO OPERATE WITHIN THIS RVSM AIRSPACE

WILL NOT BE PERMITTED.

UNDER SPECIAL CIRCUMSTANCES, NON-RVSM COMPLIANT STATE AIRCRAFT ONLY MAY REQUEST APPROVAL TO CRUISE IN RVSM AIRSPACE IN THE …….. FIR ACCORDING TO THE PROCEDURES IN AIP SUPPLEMENT, *(insert number and date).*

MID RVSM TF/9
Appendix E to the Report

Draft Proposal for Amendment of
Regional Supplementary Procedures ICAO Doc 7030/4
(Serial No. - MID/ASIA-S 03/1 RAC)

a) **Regional Supplementary Procedures, Doc 7030/4:** MID/ASIA/RAC

b) **Proposing States:** Bahrain, Egypt, Iran, Jordan, Lebanon, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen

c) **Proposed Amendment:** Editorial note: Amendments are arranged to show "deleted text" using strikeout (~~text to be deleted~~), and "added text" with grey shading (text to be inserted).

1. **Renumber** Sections 4 to 14 to read 5 to 15

2. **Add** the following provisions for Air-ground Communications Failure in Section 4,

3. **Amend** the existing provisions for Special Procedures for In-flight Contingencies in section 5 and

4. **Amend** Section 7.5 (Vertical Separation) to include provisions for the implementation of RVSM in the MID Region

"4.0 Action In The Event Of Air-Ground Communications Failure
(A2 - 3.6.5.2; P-ATM, 8.8.3, 15.2)

4.1.1 As soon as it is known that two-way communication has failed, ATC shall maintain separation between the aircraft having the communication failure and other aircraft based on the assumption that the aircraft will operate in accordance with 4.2 or 4.3.

Note.— The following expands upon the requirements contained in Annex 2, 3.6.5.2 and PANS-ATM, 8.8.3 and 15.2, and specifies additional details regarding air-ground communications failure.

4.2 Visual Meteorological Conditions (VMC)

4.2.1 Except as provided in 4.3.1, a controlled flight experiencing communication failure in VMC shall:

a) set transponder to Code 7600;
b) continue to fly in VMS;
c) land at the nearest suitable aerodrome;
d) report its arrival time by the most expeditious means to the appropriate air traffic control unit.

4.3 Instrument Meteorological Conditions (IMC)

4.3.1 A controlled IFR flight experiencing communications failure in IMC, or in VMC when it does not appear feasible to continue in IMC, within the Amman, Bahrain, Beirut, Cairo, Damascus, Emirates, Jeddah, Kuwait, Muscat (continental part), Sana'a (continental part), and Teheran FIRs shall:

a) set transponder to Code 7600; and

b) maintain the last assigned speed and level or the minimum flight altitude, if the minimum flight altitude is higher than the last assigned level, for a period of 7 minutes. **The period of 7 minutes commences:**

1) if operating on a route without compulsory reporting points or has been instructed to omit position reports:

i) at the time the last assigned level or minimum flight altitude is reached, or

ii) at the time the aircraft sets transponder to Code 7600,

whichever is later; or

2) if operating on a route with compulsory reporting **points and no instruction to omit position reports has been received:**

i) at the time the last assigned level or minimum flight altitude is reached, or

ii) at the previously reported pilot estimate for the compulsory reporting point, or

iii) at the time the aircraft fails to report its position over a compulsory reporting point,

whichever is later;

c) thereafter, adjust level and speed in accordance with the filed flight plan;

Note.— With regard to changes to levels and speed, the filed flight plan, which is the flight plan as filed with an ATS unit by the pilot or a designated representative without any subsequent changes, will be used.

d) if being radar vectored or proceeding offset according to RNAV without a specified limit, proceed in the most direct manner possible to rejoin the current flight plan route no later than the next significant point, taking into consideration the applicable minimum flight altitude;

Note.— With regard to the route to be flown or the time to begin descent to the arrival aerodrome, the current flight plan, which is the flight plan, including changes, if any, brought about by subsequent clearances, will be used.

e) proceed according to the current flight plan to the appropriate designated navigation aid serving the destination aerodrome and, when required to ensure compliance with 4.3 f), **hold over this aid until commencement of descent;**

f) commence descent from the navigation aid specified in 4.3 e) at, or as close as possible to, the expected approach time last received and acknowledged or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;

g) complete a normal instrument approach procedure as specified for the designated navigation aid; and

h) land, if possible, within thirty minutes after the estimated time of arrival specified in 4.3 f) **or the last acknowledged expected approach time, whichever is later.**

Note.— Pilots are reminded that the aircraft may not be in an area of secondary surveillance radar coverage.

~~4.0~~5.0 SPECIAL PROCEDURES FOR IN-FLIGHT CONTINGENCIES

~~4.1~~5.1 General Procedures

~~4.1.1~~5.1.1 The following general procedures apply to both subsonic and supersonic aircraft. Although all possible contingencies cannot be covered, they provide for cases of inability to maintain assigned level due to weather, aircraft performance, pressurization failure and problems associated with high-level supersonic flight. They are applicable primarily when rapid descent

and/or turn-back or diversion to an alternate airport are required. The pilot's judgment shall determine the sequence of actions taken, taking into account specific circumstances.

~~4.1.2~~5.1.2 If an aircraft is unable to continue flight in accordance with its ATC clearance, a revised clearance shall, whenever possible, be obtained prior to initiating any action, using a distress or urgency signal, as appropriate.

~~4.1.3~~5.1.3 If prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time and, until a revised clearance is received, the pilot shall:

a) if possible, deviate away from an organized track or route system **before commencing an emergency descent;**

b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, aircraft position, (including the ATS route designator or the track code) and intentions on the frequency in use, as well as on frequency 121.5 MHz (or, as a back-up, the VHF inter-pilot air-to-air frequency 123.45 MHz);

c) watch for conflicting traffic both visually and by reference to ACAS (if equipped); ~~and~~

d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations)~~.~~;

e) advise the appropriate air traffic control unit as soon as possible of the emergency descent;

f) set the transponder to Code 7700 and select Emergency Mode on automatic dependent surveillance/controller-pilot data link communications (ADS/CPDLC) system, if applicable; and

g) coordinate further intentions with the appropriate ATC unit.

5.1.3.1 The aircraft shall not descend below the lowest published minimum altitude which will provide a minimum vertical clearance of 300 m (1000 ft) or in designated mountainous terrain 600 m (2000 ft) above all obstacles located in the area specified.

5.1.4 *Action by the air traffic control unit*

5.1.4.1 Immediately upon recognizing that an emergency descent is in progress, air traffic control units shall acknowledge the emergency on radiotelephony (RTF) and take all necessary action to safeguard all aircraft concerned.

5.1.4.2 In particular, they may, as required by the situation:

a) suggest a heading to be flown, if able, by the aircraft carrying out the emergency descent in order to achieve spacing from other aircraft concerned;

b) state the minimum altitude for the area of operation, only if the level-off altitude stated by the pilot is below such minimum altitude, together with the applicable QNH altimeter setting;

c) as soon as possible, provide separation with conflicting traffic, or issue essential traffic information, as appropriate.

5.1.4.3 When deemed necessary, air traffic control will broadcast an emergency message, or cause such message to be broadcast, to other aircraft concerned to warn them of the emergency descent.

~~4.2~~5.2 Special Procedures for subsonic aircraft and/or turn-back or diversion to an alternate airport due to aircraft system malfunction or other contingencies

Note.— Additional procedures for in-flight contingencies involving a loss of vertical navigation performance required for flights within the MID RVSM airspace are contained in paragraph 5.3.

~~4.2.1~~5.2.1 Initial action

~~4.2.1.1~~5.2.1.1 If unable to comply with the provisions of ~~4.1.2~~5.1.2 to obtain a revised ATC clearance, the aircraft should leave its assigned route or track by turning 90 degrees to the right or left whenever this is possible. The direction of the turn should, where possible, be determined by the position of the aircraft relative to any organized route or track system, e.g. whether the aircraft is outside, at the edge of, or within the system. Other factors to consider are the direction to the alternate airport, terrain clearance and the levels allocated to adjacent routes or tracks.

~~4.2.2~~5.2.2 *Subsequent action (RVSM airspace)*

~~4~~5.2.2.1In RVSM airspace, an aircraft able to maintain its assigned flight level should turn to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced at 93 km (50 NM) or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and

a) if above FL 410, climb or descend 300 m (1 000 ft); or

b) if below FL 410, climb or descend 150 m (500 ft); or

c) if at FL 410, climb 300 m (1 000 ft) or descend 150 m (500 ft).

45.2.2.2An aircraft that is unable to maintain its assigned flight level should:

a) initially minimize its rate of descent to the extent that it is operationally feasible;

b) turn while descending to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced at 93 km (50 NM) or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and

c) for the subsequent level flight, select a level which differs from those normally used by 300 m (1 000 ft) if above FL 410, or by 150 m (500 ft) if below FL 410.

45.2.3 *Subsequent action (non-RVSM airspace)*

45.2.3.1In non-RVSM airspace, an aircraft able to maintain its assigned flight level should turn to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced 93 km (50 NM) or otherwise, at a distance which is the mid-point from the adjacent parallel route or track and:

a) if above FL 290, climb or descend 300 m (1 000 ft); or

b) if below FL 290, climb or descend 150 m (500 ft); or

c) if at FL 290, climb 300 m (1 000 ft) or descend 150 m (500 ft).

45.2.3.2 An aircraft unable to maintain its assigned level flight should:

a) initially minimize its rate of descent to the extent that it is operationally feasible;

b) turn while descending to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced at 93 km (50 NM) or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and

c) for the subsequent level flight, a level should be selected which differs from those normally used by 300 m (1 000 ft) if above FL 290 or by 150 m (500 ft) if below FL 290.

45.2.4. DIVERSION ACROSS THE FLOW OF ADJACENT TRAFFIC.

Before diverting across the flow of adjacent traffic, the aircraft should climb above FL 410 or descend below FL 280 using the procedures specified in ~~4~~5.2.1 or ~~4~~5.2.2 or ~~4~~5.2.3. However, if the pilot is unable or unwilling to carry out a major climb or descent, the aircraft should be flown at a level as defined in ~~4~~5.2.2.1 or ~~4~~5.2.3.1 until a revised ATC clearance is obtained.

~~4~~5.2.5 EXTENDED RANGE OPERATIONS BY AIRCRAFT WITH TWO-TURBINE POWER UNITS (ETOPS). If these contingency procedures are employed by a twin-engine aircraft as a result of an engine shutdown or a failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation, reminding ATC of the type of aircraft involved and request expeditious handling.

5.3 Special procedures for in-flight contingencies involving a loss of vertical navigation performance.

Note.— Applicable within Amman, Bahrain, Beirut, Cairo, Damascus, Emirates, Jeddah, Kuwait, Muscat (continental part), Sana'a (continental part) and Teheran FIRs.

5.3.1 *Degradation of aircraft equipment — pilot reported*

5.3.1.1 When informed by the pilot of an RVSM approved aircraft operating in the MID RVSM airspace that the aircraft's equipment no longer meets the RVSM MASPS, ATC shall consider the aircraft as non-RVSM approved.

5.3.1.2 ATC shall take action immediately to provide a minimum vertical separation of 600 m (2 000 ft) or an appropriate horizontal separation from all other aircraft concerned that are operating in the MID RVSM airspace. An aircraft rendered non-RVSM approved shall normally be cleared out of the RVSM airspace by ATC when it is possible to do so.

5.3.1.3 Pilots shall inform ATC, as soon as practicable, of any restoration of the proper functioning of equipment required to meet the RVSM MASPS.

5.3.1.4 The first ACC to become aware of a change in an aircraft's RVSM status shall coordinate with adjacent ACCs, as appropriate.

5.3.2 *Severe turbulence — not forecast*

5.3.2.1 When an aircraft operating in the RVSM airspace encounters severe turbulence due to weather or wake vortex that the pilot believes will impact the aircraft's capability to maintain its cleared flight level, the pilot shall inform ATC. ATC shall establish either an appropriate horizontal separation or an increased minimum vertical separation.

5.3.2.2 ATC shall, to the extent possible, accommodate pilots requests for flight level and/or route changes and shall pass on traffic information as required.

5.3.2.3 ATC shall solicit reports from other aircraft to determine whether RVSM should be suspended entirely or within a specific flight level band and/or area.

5.3.2.4 The ACC suspending RVSM shall coordinate such suspension(s) with and any required adjustments to sector capabilities with adjacent ACCs, as appropriate, to ensure an orderly progression to the transfer of traffic.

5.3.3 *Severe turbulence — forecast*

5.3.3.1 When a meteorological forecast is predicting severe turbulence, ATC shall determine whether RVSM should be suspended and, if so, the period of time and specific flight level(s) and/or area.

5.3.3.2 In cases where RVSM will be suspended, the ACC suspending RVSM shall coordinate with adjacent ACCs with regard to flight levels appropriate for the transfer of traffic, unless a contingency flight level allocation scheme has been determined by letter of agreement. The ACC suspending RVSM shall also coordinate applicable sector capabilities with adjacent ACCs as appropriate.

~~4.3~~5.4 Weather deviation procedures for oceanic-controlled airspace

~~4.3.1~~5.4.1 General

~~4.3.1.1~~5.4.1.1 The following procedures are intended to provide guidance. All possible circumstances cannot be covered. The pilot's judgment shall ultimately determine the sequence of actions taken, and ATC shall render all possible assistance.

~~4.3.1.2~~5.4.1.2 If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received, the aircraft shall follow the procedures detailed in paragraph ~~4.3.4~~5.5.4 below.

~~4.3.1.3~~5.4.1.3 The pilot shall advise ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the center line of its cleared route.

~~4.3.2~~5.4.2 *Obtaining priority from ATC when weather deviation is required*

~~4.3.2.1~~5.4.2.1 When the pilot initiates communications with ATC, rapid

response may be obtained by stating "WEATHER DEVIATION REQUIRED" to indicate that priority is desired on the frequency and for ATC response.

~~4.3.2.2~~5.4.2.2 The pilot still retains the option of initiating the communications using the urgency call "PAN PAN" (preferably spoken three times) to alert all listening parties to a special handling condition which will receive ATC priority for issuance of a clearance or assistance.

~~4.3.3~~5.4.3 *Actions to be taken when controller-pilot communications are established*

a) Pilot notifies ATC and requests clearance to deviate from track, advising, when possible, the extent of the deviation expected.

b) ATC takes one of the following actions:

1) if there is no conflicting traffic in the horizontal dimension, air traffic control will issue clearance to deviate from track; or

2) if there is conflicting traffic in the horizontal dimension, ATC separates aircraft by establishing vertical separation; or

3) if there is conflicting traffic in the horizontal dimension and ATC is unable to establish appropriate separation, ATC shall:

i) advise the pilot of inability to issue clearance for requested deviation; and

ii) advise the pilot of conflicting traffic; and

iii) request pilot's intentions.

SAMPLE PHRASEOLOGY:

"**UNABLE** *(requested deviation),* **TRAFFIC IS** *(call sign, position, altitude, direction),* **ADVISE INTENTIONS**."

c) Pilot will take the following actions:

1) advise ATC of intentions by the most expeditious means available; and

2) comply with ATC clearance issued; or

3) execute the procedures detailed in ~~4.3.4~~5.5.4 below. (ATC will issue essential traffic information to all affected aircraft); and

4) if necessary, establish voice communications with ATC to expedite dialogue on the situation

~~4.3.4~~5.4.4 *Actions to be taken if a revised ATC clearance cannot be obtained.*

~~4.3.4.1~~5.4.4.1 The provisions of this section apply to situations where pilot has the need to exercise the authority of a pilot-in-command under the provisions of Annex 2 paragraph 2.3.1.

~~4.3.4.2~~5.4.4.2 If a revised ATC clearance cannot be obtained and deviation from track is required to avoid weather, the pilot shall take the following actions:

a) if possible, deviate away from an organized track or route system;

b) broadcast aircraft position and intentions on the frequency in use, as well as on frequency 121.5 MHz, as suitable intervals stating: flight identification (operator call sign), flight level, track code or ATS route designator, and extent of deviation expected establish communication with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, aircraft position (including the ATS route designator or the track code) and intentions (including the magnitude of the deviation expected) on the frequency in use, as well as on frequency 121.5 MHz (or, as a back-up, the VHF inter-pilot air-to-air frequency 123.45 MHz).

c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);

Note.— If, as a result of actions taken under paragraphs ~~4.3.4.2~~5.4.4.2 b) and c) above, the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.

d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

e) for deviations of less than 19 km (10 NM), aircraft should remain at the level assigned by ATC;

f) for deviations of greater than 19 km (10NM), when the aircraft is approximately 19 km (10 NM) from track, initiate a level change based on the criteria in Table 1;

g) when returning to track, be at its assigned flight level, when the aircraft

is within approximately 19 km (10 NM) of centre line; and

h) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

~~6.5~~7.5 Vertical separation

The minimum vertical separation that shall be applied between FL 290 and FL 410 inclusive is 300 m (1 000 ft).

~~6~~7.5.1 *Area of applicability*

~~6~~7.5.1.1The reduced vertical separation minimum (RVSM) shall be applied for flights within the *Amman, Auckland Oceanic, *Bahrain, Bali, Bangkok, *Beirut, Brisbane, *Cairo, *Damascus, *Emirates, Hanoi, Ho Chi Minh, Hong Kong, Honiara, Jakarta, *Jeddah, Kota Kinabalu, Kuala Lumpur, *Kuwait, Manila, Melbourne, *Muscat, Naha, Nauru, New Zealand, Phnom Penh, Port Moresby, *Sana'a, Singapore, Taibei, *Teheran, Tokyo, Ujung Pandang, and Vientiane flight information regions (FIRs).

~~6~~7.5.2 *RVSM approval*

~~6~~7.5.2.1 The minimum separation in ~~6~~7.5 shall only be applied between aircraft and operators that have been approved by the State of Registry or the State of the Operator, as appropriate, to conduct flights in RVSM airspace and that are capable of meeting the minimum aircraft system performance specification (MASPS) height-keeping requirements (or equivalent).

~~6~~7.5.3 *MASPS*

~~6~~7.5.3.1 The MASPS height-keeping requirements are as follows:

a) for all aircraft, the differences between cleared flight level and the pressure altitude actually flown shall be symmetric about a mean of 0 m (0 ft), shall have a standard deviation no greater than 13 m (43 ft) and shall be such that the error frequency decreases with increasing magnitude at a rate which is at least exponential;

b) for groups of aircraft that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance in the RVSM flight envelope (FL 290 to FL 410 inclusive):

1) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft) in magnitude; and

2) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft);

c) for non-group aircraft for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aircraft, the ASE shall not exceed 61 m (200 ft) in magnitude in the RVSM flight envelope (FL 290 to FL 410 inclusive); and

d) the following criteria shall be used in the operational assessment of airspace system safety: the total vertical error (TVE), which is the difference between the geometric height of the aircraft and the geometric height of the flight level to which it is assigned, is required to be such that:

1) the probability that TVE equal to or greater than 91 m (300 ft) in magnitude is equal to or less than 2.0×10^{-3};

2) the probability that TVE equal to or greater than 152 m (500 ft) in magnitude is equal to or less than 5.0×10^{-6};

3) the probability that TVE equal to or greater than 200 m (650 ft) in magnitude is equal to or less than 1.4×10^{-6};

4) the probability that TVE between 290 m and 320 m (950 ft and 1 050 ft), inclusive, in magnitude is equal to or less than 1.7×10^{-7}; and

5) the proportion of time that aircraft spend at incorrect flight levels, 300 m (1 000 ft), or multiples thereof, away from assigned flight levels is equal to or less than 7.1×10^{-7}.

Note.— Guidance material regarding the initial achievement and continued maintenance of the height-keeping performance in ~~6~~7*.5.3.1 is contained in the* Guidance Material on the Implementation of a 300 m (1 000 ft) Vertical Separation Minimum (VSM) for Application in the Airspace of the Asia/Pacific Region.

~~6~~7.5.4 *Target level of safety (TLS)*

~~6~~7.5.4.1 ~~Application~~*Except for the airspace forming part of the MID RVSM area, where a TLS of 3.75×10^{-9} fatal accidents per aircraft flight hour due to all causes of risk in the vertical dimension has been specified, the application* of RVSM in the other airspace designated in ~~6~~7.5.1.1 shall meet a TLS of 5×10^{-9} fatal accidents per aircraft flight hour due to all causes of risk in the vertical dimension.

*Note.— * The rational for choosing a TLS value of TLS of 3.75×10^{-9} fatal accidents (1.25×10^{-9} for technical risk and 2.5×10^{-9} for operational risk) per aircraft flight hour due to all causes of risk in the*

vertical dimension in the MID RVSM airspace, is to ensure that the TLS value of 2.5 x 10^{-9} for technical risk will not be infringed with future projected traffic growths and the system remains safe for a period of at least 12 years.

~~6~~7.5.5 *Approval status and aircraft registration*

~~6~~7.5.5.1 Item 10 of the flight plan (Equipment) shall be annotated with the letter W if the aircraft and operator have received RVSM State approval. Furthermore, the aircraft registration shall be indicated in Item 18 of the flight plan.

~~6~~7.5.6 *Operation of aircraft not approved for RVSM*

~~6~~7.5.6.1 Aircraft that have not received RVSM State approval may be cleared to operate in airspace where RVSM may be applied in accordance with policy and procedures established by the State provided that 600 m (2 000 ft) vertical separation is applied.

~~6~~7.5.7 *Monitoring*

~~6~~7.5.7.1 *Adequate monitoring of flight operations in the Asia and Pacific RVSM airspace shall be conducted to assist in the assessment of continuing compliance of aircraft with the height-keeping capabilities in ~~6~~7.5.3.1. Monitoring shall include assessment of other sources of risk to ensure that the TLS specified in ~~6~~7.5.4.1 is not exceeded.*

Note.— Details of the policy and procedures for monitoring established by the Asia/Pacific Air Navigation Planning and Implementation Regional Group and the Middle East Planning and Implementation Regional Group (MIDANPIRG) are contained in the Guidance Material on the Implementation of a 300 m (1 000 ft) Vertical Separation Minimum (VSM) for Application in the Airspace of the Asia/Pacific Region *and the MID Region* ATC Manual *and* OPS/AIR Manual.

~~6~~7.5.8 *Wake turbulence procedures*

~~6~~7.5.8.1 The following special procedures are applicable to mitigate wake turbulence encounters in ~~the Asia and Pacific~~ airspace where RVSM is applied.

~~6~~7.5.8.1.1 An aircraft that encounters wake turbulence should notify air traffic control (ATC) and request a revised clearance. However, in situations where a revised clearance is not possible or practicable:

a) the pilot should establish contact with other aircraft, if possible, on the

appropriate VHF inter-pilot air-to-air frequency; and

b) one (or both) aircraft may initiate lateral offset(s) not to exceed 2 NM from the assigned route(s) or track(s), provided that:

1) as soon as it is practicable to do so, the offsetting aircraft notify ATC that temporary lateral offset action has been taken and specify the reason for doing so; and

2) the offsetting aircraft notify ATC when re-established on assigned route(s) or track(s).

Note.— In the contingency circumstances above, ATC will not issue clearances for lateral offsets and will not normally respond to action taken by pilots.

Table 1.

Route centre line Track	Deviations >19 km (10 NM)	Level change
EAST 000-179° magnetic	LEFT RIGHT	DESCEND 90 m (300 ft) CLIMB 90 m (300 ft)
WEST 180-359° magnetic	LEFT RIGHT	CLIMB 90 m (300 ft) DESCEND 90 m (300 ft)

d) **Proposers' reasons for amendment:**

a) In view of the proposed implementation of RVSM in the MID Region with effect from 27 November 2003, the ICAO RVSM Implementation Task Force for MID Region has accordingly reviewed air-ground communications failure procedures, special procedures for in-flight contingencies (including emergency descents, weather deviation procedures) and has developed new provisions for the implementation of RVSM in the MID Region.. This amendment updates the existing text based on operational experience following RVSM implementation in other regions;

e) **Proposed implementation date of the amendment:**

27 November 2003

f) **Proposal circulated to the following States and International Organizations:**

Afghanistan	Greece	Papua New Guinea
Albania	Guinea	Peru
Algeria	Guinea-Bissau Hungary	Philippines
Angola	Iceland	Poland
Argentina	India	Portugal

Armenia
Australia
Austria
Azerbaijan
Bahrain
Bangladesh
Belarus
Belgium
Benin
Bhutan
Bosnia and Herzegovina
Botswana
Brazil
Brunei Darussalam
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Central African Republic
Chad
Chile
China
(cc: Hong Kong, China)
(cc: Macao, China)
Comoros
Congo
Cook Islands
Cote d'Ivoire
Croatia
Cyprus
Czech Republic
Democratic People's Republic of Korea
Denmark
Djibouti
Ecuador
Egypt
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Fiji
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Indonesia
Iran, Islamic Republic of
Iraq
Ireland
Israel Italy
Japan
Jordan
Kazakhstan
Kenya
Kiribati
Kuwait
Kyrgyzstan
Lao People's Democratic Republic
Latvia
Lebanon
Lesotho
Liberia
Libyan Arab Jamahiriya
Lithuania
Luxembourg
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Micronesia, Federated States of
Monaco
Mongolia
Morocco
Mozambique
Myanmar
Namibia
Nauru
Nepal
Netherlands Kingdom of the
New Zealand
Niger
Nigeria
Norway
Oman
Pakistan
Palau
Qatar
Republic of Korea
Republic of Moldova
Romania
Russian Federation
Rwanda
Samoa
San Marino
Sao Tome and Principe
Saudi Arabia
Senegal
Seychelles
Sierra Leone
Singapore
Slovakia
Slovenia
Solomon Islands
Somalia
South Africa
Spain
Sri Lanka
Sudan
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Tajikistan
Thailand
Togo
Tonga
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates*
United Kingdom
United Republic of Tanzania
United States
Uzbekistan
Vanuatu
Viet Nam
Yemen
Zambia
Zaire
Zimbabwe
IATA
IFALPA
IFATCA

* For information only

g) **Secretariat comments:**

a) A review following the proposed implementation of RVSM in the Middle East Region with effect from 27 November 2003, has necessitated an amendment to the existing In-flight Communications Failure Procedures, Special Procedures for In-flight Contingencies and the inclusion of

provisions for the implementation of RVSM

b) This amendment proposal has been modelled on the existing provisions in other regions and will enhance harmonization of procedures, between the European, Middle East/Asia and Pacific Regions

c) This amendment proposal is inclusive of amendment proposal APAC-S 01/3 (State letter ?????)

MID RVSM TF/9
Appendix F to the Report

RVSM SWITCH OVER PLAN FOR THE MID REGION STATES

1 GUIDANCE MATERIAL FOR SECTOR PROTECTION DURING SWITCH OVER TO RVSM PROCEDURES IN THE MID REGION

1.1. INTRODUCTION

1.1.1 As part of its preparation for the Switch Over to RVSM Operations, this RVSM Switch Over Plan provides guidance to ANS Providers as to the extent and duration of any temporary capacity reduction measures needed to ensure a safe and effective start of RVSM. The RVSM Switch Over Plan contains procedures, phraseology, system changes etc to work effectively, shortly before and during implementation of RVSM and extend into the Post-Implementation Phase.

1.2 RATIONALE FOR POSSIBLE FLOW CONTROL RESTRICTIONS, FOR AN APPROPRIATE PERIOD, FOLLOWING THE IMPLEMENTATION OF RVSM

1.2.1 The prime reason for some protection is that air traffic controllers should not be expected to work to their sector capacity during their first exposure to RVSM. Time perhaps will be required to build up controller confidence in processes, procedures and systems. States should make their own assessment of local conditions as to whether sector protection and appropriate flow control measures are required .

1.2.2 Equally, many pilots will also be experiencing and planning for RVSM flight for the first time. It is important that the infrastructure in terms of flight planning and ATS system modifications are found to be working effectively within the new RVSM environment.

1.2.3 The other factors, which need to be carefully monitored as part of the switch over phase, is the impact on military non-RVSM Compliant flights, wake vortex reports and flights that have, as a result of the implementation of RVSM, been pushed below FL290 or above FL410

2. SEQUENCE OF STEPS FOR SWITCH OVER FROM CVSM TO RVSM

ON START DAY :

0100 UTC : Coordination to prepare for the change from CVSM to RVSM between adjacent ACC's supervisors will start.

0100 UTC : Flight Plans will be checked for the letter "W" to be entered in Field 10 or in the case of an RPL, EQPT/W in item Q..

0100 UTC : All ACC sectors shall begin broadcasting an alert message to all aircraft announcing that RVSM will be implemented at 2001 UTC . This alert message shall be repeated every 15 minutes and then 5 minutes, prior to 2001 UTC. A version of this alert message could be included in the ATIS message for 0100 & 0200 UTC as well.

NOTE : **The alert message shall be, " ALL STATIONS, ALL STATIONS, JEDDAH CONTROL , BE ADVISED, RVSM OPERATIONS WILL COMMENCE AT TIME 0201 UTC, I REPEAT, RVSM OPERATIONS WILL COMMENCE AT TIME 0201 UTC, JEDDAH CONTROL OUT " .**

0100 UTC : Actions to establish RVSM Compliant status of each flight shall start. The RVSM Compliant status of each aircraft under control shall need to be established, before Switch Over, to determine potential course of action for level changes and a subsequent comparison against flight plan information and the associated status as displayed on radar. The approved phraseology is:

a) For a controller to ascertain the Compliant status of an aircraft, each aircraft will be asked;:.

Call sign << **CONFIRM RVSM APPROVED** >>**.**

b) For a pilot to report RVSM Compliant status or Non-RVSM Compliant, as appropriate.

Call sign << AFFIRM RVSM >>.

Call sign<< NEGATIVE RVSM>> or
<<NEGATIVE RVSM STATE AIRCRAFT>>

.

0100 UTC : Following prior coordination between the adjacent ACC controllers,

a) RVSM Compliant aircraft shall be re-cleared to appropriate RVSM Flight Levels n accordance with ICAO Annex 2, Appendix 3, (a). (See Attachment 1) . **To avoid the risk of human errors or coordination errors, Fl 310, FL 350 and FL 390 shall not be assigned to any flight from 0100 UTC until 0300 UTC.**

b) Non RVSM Compliant flights shall be restricted to FL280 or below or FL430 and above...

0201 UTC : Confirm RVSM Flight Levels are now in use and correct RVSM Compliant and Non RVSM Compliant status information is appropriately printed on flight progress strips and properly displayed in radar data blocks.

0300 UTC : ACC Supervisors review facility log book and collect significant event data that occurred during the RVSM Switch Over period (0100 UTC to 0300 UTC).. This Switch Over data shall be submitted to MECMA for subsequent analysis.

MID RVSM TF/9
Appendix G to the Report

LIST OF MID STATES' RVSM PROGRAMME MANAGERS

STATE & NAME	TITLE/CONTACT DETAILS
AFGHANISTAN:	
BAHRAIN: Mr. Mohamed Zainal **Alternate:** Mr. Saleem Mohammed Hassan Ali	 Head – Standards Licensing & Developments Civil Aviation Affairs P.O. Box 586 Manama – BAHRAIN FAX: (973) 321 029 TEL: (973) 321 028 Mobile: (973) 967 6707 E-mail: zainalmohammed@hotmail.com Head – Aeronautical & Airspace Planning Bahrain International Airport P.O. Box 586 Manama – BAHRAIN FAX: (973) 321 992 TEL: (973) 321 180 Mobile: (973) 960 8860 SITA: BAHAPYF E-mail: saleemmh@bahrain.gov.bh
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MID RVSM TF/9
Appendix H to the Report

INTERNATIONAL CIVIL AVIATION ORGANIZATION

NINTH MEETING OF THE MIDDLE EAST RVSM TASK FORCE

(Abu Dhabi, 24-27 August 2003)

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