INTERNATIONAL CIVIL AVIATION ORGANIZATION

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

**REPORT OF THE FIRST
RVSM/PBN TASK FORCE**

(Amman, Jordan, from 16 to 17 March 2008)

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

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

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PART I – HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1   The First Meeting of the Reduced Vertical Separation Minima/Performance Based Navigation Task Force (RVSM/PB TF) was held at Le Méridien Hotel, Amman, Jordan from 16 to 17 March 2008.

2. OPENING

2.1   The meeting was opened by Mr. Ahmad Al Azzam, Air Navigation Services Commissioner who addressed the meeting on behalf of the Chief Commissioner of the Jordan Civil Aviation Regulatory Commission (CARC), and Mr. Jehad Faqir, ICAO Deputy Director, Middle East Regional Office. Mr. Azzam welcomed all participants to the meeting, and indicated that the CARC had committed itself to the same Strategic Objectives as ICAO, to which he also noted the supporting role of PBN. Mr. Azzam highlighted that the Task Force was the confluence of PBN expertise in the Region and urged all stakeholders' cooperation. He urged States to allocate resources for PBN implementation and ICAO to provide States with further guidance material, particularly on legislative approval requirements. Finally Mr. Azzam thanked ICAO for holding the Task Force meeting in Jordan, as well as the Officials of ICAO for their role.

2.2   In his opening remarks, Mr. Faqir welcomed all delegates to Le Méridien Amman hotel and to the meeting itself. He thanked the CARC for hosting the meeting and for their warm hospitality. Mr. Faqir, also expressed appreciation at the efforts taken by the States, IATA and all the delegates to participate in the meeting.

2.3   Mr. Faqir recalled the historical events of the PBN concept that included the initiative to address the lack of harmonization in the implementation of Required Navigation Performance/Area Navigation (RNP/RNAV), the MIDANPIRG Conclusion to establish the RVSM/PBN Task Force and the Assembly Resolution A36-23 which provided the ICAO global goals for implementation of PBN. He underscored the imperative for progress by the Task Force, which includes direction for the Task Force and action plan for the MID Region PBN implementation roadmap.

3. ATTENDANCE

3.1   The meeting was attended by a total of thirty two (32) participants from eight (8) States (Bahrain, Iran, Israel, Jordan, Kuwait, Saudi Arabia, United Arab Emirates and Yemen) and one (1) International Organization (IATA). The list of participants is at **Attachment A** to the Report.

4. OFFICERS AND SECRETARIAT

4.1   The Chairperson of the meeting was Mr. Ali Abbadi, from Jordan, and Mr. Seboseso M. Machobane, Regional Officer/ATM/SAR was the Secretary of the meeting. Messrs. Jehad Faqir, Deputy Regional Director, Erwin Lassooij, Technical Officer ATM from ICAO HQ and Raza A. Gulam, Regional Officer CNS from the ICAO Middle East Office supported the meeting.

RVSM/PBN TF/1
History of the Meeting

5. LANGUAGE

5.1   The discussions were conducted in the English language and documentation was issued in English.

6. AGENDA

6.1   The following Agenda was adopted:

Agenda Item 1:   Adoption of the Provisional Agenda

Agenda Item 2:   Election of Chairperson of the Task Force

Agenda Item 3:   Introduction to PBN

Agenda Item 4:   Outcome of MIDANPIRG/10, ATM/SAR/AIS SG/9,
36th Assembly Session

Agenda Item 5:   Review of the Task force Terms of Reference

Agenda Item 6:   Development of the List of Tasks (including the Regional PBN Implementation Plan and Guidance Material)

Agenda Item 7:   Working arrangements of the Task Force

Agenda Item 8:   Future Work Programme

7. CONCLUSIONS AND DECISIONS – DEFINITION

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

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

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

8. LIST OF CONCLUSIONS AND DECISIONS

DRAFT DECISION 1/1:   ESTABLISHMENTS OF THE PBN/GNSS TASK FORCE

DRAFT DECISION 1/2:   ASSIGNMENT OF TASKS

DRAFT DECISION 1/3:   WORKING ARRANGEMENTS OF THE PBN/GNSS TASK FORCE

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1:   ADOPTION OF THE PROVISIONAL AGENDA

1.1   The Secretariat presented the meeting with the revised Provisional Agenda for the RVSM/PBN TF/1 meeting. The Provisional Agenda of the meeting was adopted as indicated in paragraph 6 of the History of the Meeting.

RVSM/PBN TF/1
Report on Agenda Item 2

REPORT ON AGENDA ITEM 2:   ELECTION OF CHAIRPERSON

1.1   In Accordance with MIDANPIRG procedural handbook, part IV "Rules of Procedure for the conduct of meeting of the Contributory Bodies of MIDANPIRG", Section 6 "Officers and Secretariat of Sub-Groups of the MIDANPIRG", the representative from Bahrain proposed Mr. Ali Al-Abbadi (Director ATM) from Jordan as Chairperson, and Mr. Mohamed Khodakarami (Deputy of Director General of ATC Mehrabad International Airport) from Iran as Vice Chairperson for the RVSM/PBN Task Force. Saudi Arabia, UAE and Kuwait supported the nominations. As such, Messrs Mr. Abbadi and Khodakarami were elected Chairperson and Vice Chairperson for the Task force respectively

1.2   In accepting the election, Mr. Ali Al-Abbadi thanked the participants for their confidence and assured them that he will do his best to achieve and implement the MIDANPIRG/10 Conclusions and the Assembly Resolution A36-23 related to PBN Strategy and Development of the Regional Plan.

RVSM/PBN TF/1
Report on Agenda Item 3

REPORT ON AGENDA ITEM 3: INTRODUCTION TO PERFORMANCE BASED NAVIGATION

3.1　　　　Under this Agenda Item, the meeting recalled the developments within ICAO that preceded the Required Navigation Performance (RNP), starting with the ICAO Specialized Committee on Future Air Navigation Systems (FANS). The meeting noted that implementation of Required Navigation Performance (RNP) and Area Navigation (RNAV) had taken different directions in different Regions and States. The variations in implementation resulted in a lack of harmonization between RNP and RNAV applications in different areas of the world, reflected in several RNAV and RNP specifications and nomenclature which were proliferating and presenting operational, approval and other difficulties.
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3.2　　　　The RNP Special Operational Requirements Study Group (RNPSORSG), created by the Air Navigation Commission in June 2003, to act as focal point for addressing several issues related to RNP/RNAV, developed the concept of Performance Based Navigation (PBN) in May 2007. The meeting noted that the concept of PBN includes specifications for terminal airspace, which was not sufficiently covered in the earlier concept of RNAV and RNP, and that the Final Draft of the PBN Manual (Doc 9613) was completed in 2007.

3.3　　　　The meeting noted that PBN was an end-to-end system of requirements, in which aviation authorities specify the aircraft performance and navigation function requirements necessary to operate in a given airspace or on a given procedure. The meeting also noted that PBN offers a number of benefits over the sensor-specific navigation routes and procedures, some of which benefits are listed below:

   i) Reduced need to maintain sensor-specific routes and procedures, and their associated costs.

   ii) Avoids need for development of sensor-specific operations with each new evolution of navigation system. The present requirement of developing procedures with each new introduction is often very costly.

   iii) Allows more efficient use of airspace.

   iv) In true harmony with the way in which RNAV systems are used.

   v) Facilitates the operational approval process for operators by providing a limited set of navigation specifications intended for global use.

   vi) For the pilots, the main advantage of using this system is that the navigation function is performed by highly accurate and sophisticated on-board equipment and thus allowing reduction in cock-pit workload and also increase in safety.

   vii) For Air Traffic Controllers, the main advantage of aircraft using a RNAV system is that ATS routes can be straightened as it is not necessary for the routes to pass over locations marked by conventional NAVAIDS.

   viii) RNAV based arrival and departure routes can complement and in some cases even obviate the need for radar vectoring, thereby reducing Approach and Departure Controllers' workload.

3.4   The attention of the meeting was drawn to Assembly Resolution A36-23: *Performance based navigation global goals*, which, inter alia, sets out global PBN implementation goals to be achieved by the ICAO Regions, Planning and Implementation Regional Groups (PIRGs) and States.

3.5   In order to further enhance the knowledge of the PBN concept, the meeting was provided with two presentations by the PBN Programme Manager from ICAO HQ, Mr. Erwin Lassooij. The first presentation covered issues such as, why PBN was established, ICAO provisions related to PBN, major drivers and challenges that face the aviation industry such as safety, airspace congestion, fuel efficiency and environmental requirements, in which PBN contributes significantly to solutions. The roles of the various stakeholders (ICAO, States, Airspace users, ANSPs, etc.) was explained in order to clarify and highlight the importance of coordination in the implementation of PBN.

3.6   The second presentation highlighted three important elements: (a) the three components that the building blocks of PBN namely, Navigation Specification, Navigation Application and Navigation Infrastructure, (b) the PBN context in the Airspace Concept and in the ICAO Global Air Navigation Plan (GANP), and (c) the PBN implementation processes.

3.7   The meeting noted that there is a strong relationship between the Navigation Specification, Navigation Application and Navigation Infrastructure components. The Navigation Specification, among others, defines the eligible navigation sensors for operational approval; it is important that aircraft approved for certain sensors can meet the requirements of the navigation infrastructure environment. The Navigation Application defines the use of the Navigation Specification in a particular Navigation Infrastructure environment, for example a SID or STAR based on RNAV1.

3.8   Implementation of PBN follows three processes, which are:

> Process 1 – Determine Requirements
> Process 2 – Identifying ICAO Navigation Specification for Implementation
> Process 3 – Planning and Implementation

3.9   It was explained to the meeting that in the PBN concept, navigation specifications in which there is no requirement for on-board performance monitoring and alerting are now designated as RNAV, and navigation specifications with a requirement for on-board performance monitoring and alerting are designated as RNP.

3.10   The meeting note that in the PBN concept, there were no provisions for RNP5, which is implemented in the MID Region (implementation took place before the PBN Concept was introduced). The meeting noted that the RNP5 specification that is currently implemented in the MID region does not require on-board performance monitoring and alerting. In order to be aligned with the PBN terminology, the term RNP 5 would need to be replaced by RNAV5. It was furthermore stated that in the regional implementation, the above mentioned 3 implementation processes should be used to identify a suitable navigation specification rather than replacing RNP 5 by RNAV 5 blindly.

3.11   There was a view that in light of these developments, RNP5 should then be replaced by RNP4 in the MID Region. It was however, explained that this would be an excessive requirement on users in terms of aircraft equipment, since RNP4 is supported by GNSS only (not conventional NAVAIDS). Furthermore, it was highlighted that RNP4 is only required for remote en-route airspace.

REPORT ON AGENDA ITEM 4: OUTCOME OF MIDANPIRG/10, ATM/SAR/AIS SG/9 AND 36TH ASSEMBLY SESSION

4.1   Under this Agenda Item, the meeting recalled that the MIDANPIRG/10 meeting in Doha, 15-19 April 2007, was apprised on developments relating to PBN and reviewed progress regarding the implementation of RVSM, RNAV and RNP. In order to improve efficiency among its subsidiary bodies, MIDANPIRG/10 noted that the work programme of the RVSM Task Force had almost been completed following the successful implementation of RVSM in the MID Region, and as such agreed to merge the RVSM and RNP/RNAV Task Forces into a new single Task Force titled the RVSM/PBN Task Force.

4.2   The meeting noted that the ATM/SAR/AIS SG/9 meeting, December 2007 had also noted that the MID Region Introduction to Performance Based Navigation (PBN) Seminar was successfully held at the Conrad Hotel, Cairo from 12 to 15 November 2007, with the support of the EUROCONTROL and FAA. The Sub-Group furthermore, noted the outcome of the 36th Session of the ICAO Assembly regarding the implementation of PBN including Resolution A36-23 which sets out the implementation global goals.

4.3   Taking into consideration the status of implementation of RVSM and PBN in the MID Region, the ATM/SAR/AIS SG/9 had recognized that, while on the one hand there was reduced RVSM implementation work, on the other hand there was a significant amount of work related to PBN implementation, part of which should be achieved in the near future in order to enable States to develop by 2009, PBN implementation plans based on the Regional PBN strategy and plan. The Sub-Group had consequently agreed that the RVSM/PBN Task Force should focus primarily on PBN implementation in the MID Region and that the remaining RVSM work could be adequately addressed by the ATM/SAR/AIS SG and the MID RMA Board.

4.4   With a view to increase efficiency within MIDANPIRG, and taking into consideration the close and increasing relationship between GNSS and PBN implementation, the Sub-Group was also of the view that merging the GNSS and PBN Task Forces should be explored.

4.5   Based on the above, the ATM/SAR/AIS SG/9 agreed to change the title of the RVSM/PBN Task Force to PBN Task Force, to amend the TOR of the Task Force, and accordingly formulated Draft Decision: *DRAFT DECISION 9/10: REASSIGNMENT OF RVSM AND PBN FUNCTIONS.*

4.6   The meeting noted that the 36th Session of the ICAO Assembly was held in Montreal 18-28 September 2007, and that the Assembly adopted Resolution A36-23: *Performance based navigation global goals,* urging Contracting States, amongst others, to implement RNAV and RNP air traffic services (ATS) routes and procedures in accordance with the ICAO PBN concept described in the *Performance Based Navigation Manual* (Doc 9613). Resolution A36-23, which is at **Appendix A** to the Report on Agenda Item 4, also calls on the States and Planning and Implementation Regional Groups (PIRGs) to develop PBN implementation plans by 2009 to ensure globally harmonized and coordinated implementation of PBN.

4.7   The meeting agreed to take the necessary action to follow up MIDANPIRG/10, ATM/SAR/AIS SG/9 Decisions and Assembly Resolution A36-23 under the appropriate agenda items

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ASSEMBLY RESOLUTION A36-23

A36-23: Performance based navigation global goals

Whereas a primary objective of ICAO is that of ensuring the safe and efficient performance of the global Air Navigation System;

Whereas the improvement of the performance of the Air Navigation System on a harmonized, worldwide basis requires the active collaboration of all stakeholders;

Whereas the Eleventh Air Navigation Conference recommended that ICAO, as a matter of urgency, address and progress the issues associated with the introduction of area navigation (RNAV) and required navigation performance (RNP);

Whereas the Eleventh Air Navigation Conference recommended that ICAO develop RNAV procedures supported by global navigation satellite system (GNSS) for fixed wing aircraft, providing high track and velocity-keeping accuracy to maintain separation through curves and enable flexible approach line-ups;

Whereas the Eleventh Air Navigation Conference recommended that ICAO develop RNAV procedures supported by GNSS for both fixed and rotary wing aircraft, enabling lower operating minima in obstacle rich or otherwise constrained environments;

Whereas Resolution A33-16 requested the Council to develop a programme to encourage States to implement approach procedures with vertical guidance (APV) utilizing such inputs as GNSS or distance measuring equipment (DME)/DME, in accordance with ICAO provisions;

Recognizing that implementation of approach with vertical guidance (APV) is still not widespread;

Recognizing that the Global Aviation Safety Plan has identified Global Safety Initiatives (GSIs) to concentrate on developing a safety strategy for the future that includes the effective use of technology to enhance safety, consistent adoption of industry best practices, alignment of global industry safety strategies and consistent regulatory oversight;

Recognizing that the Global Air Navigation Plan has identified Global Plan Initiatives (GPIs) to concentrate on the incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure, the optimization of the terminal control area through improved design and management techniques, the optimization of the terminal control area through implementation of RNP and RNAV SIDs and STARs and the optimization of terminal control area to provide for more fuel efficient aircraft operations through FMS-based arrival procedures; and

Recognizing that the continuing development of diverging navigation specifications would result in safety and efficiency impacts and penalties to States and industry;

The Assembly:

1.   *Urges* all States to implement RNAV and RNP air traffic services (ATS) routes and approach procedures in accordance with the ICAO PBN concept laid down in the *Performance Based Navigation Manual* (Doc 9613);

2.   *Resolves* that:

    a) States and planning and implementation regional groups (PIRGs) complete a PBN implementation plan by 2009 to achieve:

        1) implementation of RNAV and RNP operations (where required) for en route and terminal areas according to established timelines and intermediate milestones; and

        2) implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and/or augmented GNSS) for all instrument runway ends, either as the primary approach or as a back-up for precision approaches by 2016 with intermediate milestones as follows: 30 per cent by 2010, 70 per cent by 2014; and

    b) ICAO develop a coordinated action plan to assist States in the implementation of PBN and to ensure development and/or maintenance of globally harmonized SARPs, Procedures for Air Navigation Services (PANS) and guidance material including a global harmonized safety assessment methodology to keep pace with operational demands;

3.   *Urges* that States include in their PBN implementation plan provisions for implementation of approach procedures with vertical guidance (APV) to all runway ends serving aircraft with a maximum certificated take-off mass of 5700 kg or more, according to established timelines and intermediate milestones.

4.   *Instructs* the Council to provide a progress report on PBN implementation to the next ordinary session of the Assembly; and

5.   *Requests* the Planning and Implementation Regional Groups (PIRG) to include in their work programme the review of status of implementation of PBN by States according to the defined implementation plans and report to ICAO any deficiencies that may occur.

REPORT ON AGENDA ITEM 5:   REVIEW OF THE TASK FORCE TERMS OF REFERENCE

5.1   Under this Agenda Item the meeting recalled that the ninth meeting of the ATM/SAR/AIS Sub-Group was held in Cairo 10-13 December 2007. Furthermore, that the Sub-Group was of the view that the work related to implementation of RVSM had been reduced to an extent that it could be adequately addressed by ATM/SAR/AIS SG and MID RMA Board. Consequently the ATM/SAR/AIS SG/9 agreed to the following Draft Decision:

DRAFT DECISION 9/10:   REASSIGNMENT OF RVSM AND PBN FUNCTIONS

That, taking into consideration the status of implementation of RVSM and PBN in the MID Region:

a)   *the RVSM/PBN Task Force is renamed PBN Task Force with TOR as at Appendix 9A to the Report on Agenda Item 9;*

b)   *prior to the formal establishment of the PBN Task Force, the RVSM/PBN Task Force focus primarily on matters related to PBN implementation in the MID Region; and*

c)   *MIDANPIRG Steering Group (MSG) and the CNS/ATM IC SG explore the possibility of combining the PBN and GNSS Task Forces.*

5.2   The Task Force deliberated at length on the merits and demerits of combining the PBN and GNSS Task Forces, as well as on the related TOR. The meeting recognized that GNSS was an enabler of PBN, and that conversely, PBN is expected to greatly facilitate the transition to GNSS, as it will provide the operational framework thereto. The significant benefits to be derived from implementation of PBN, in terms of safety, efficiency, airspace capacity and environmental protection are associated to and highlight the importance of GNSS implementation.

5.3   The meeting further noted that GNSS is the only navigation infrastructure that supports all PBN Navigation specifications, as compared to other navigation infrastructure which support some but not all PBN Navigation Specifications. With the foregoing, the meeting agreed to the following Draft Decision:

DRAFT DECISION 1/1:   ESTABLISHMENTS OF THE PBN/GNSS TASK FORCE

That, taking into consideration the need to harmonize the implementation of PBN and to enhance coordination of expertise regarding GNSS :

a)   *the PBN/GNSS TF is to be established with TOR as in **Appendix 5A** to the Report on Agenda Item 5; and*

b)   *GNSS matters not related to PBN will be discussed separately from PBN matters .*

5.4   The meeting highlighted that the invitation letters from the MID Regional Office to meetings of the combined PBN/GNSS Task Force should clearly indicate that it is essential that the delegations to the Task Force should include both the engineering and the operational expertise.

RVSM/PBN TF/1
Report on Agenda Item 5

5.5   It was brought to the attention of the meeting that the GNSS TF/7 will be held in April 2008 and that it will also review the TOR for the combined PBN and GNSS Task Forces which will be presented to MSG/1 meeting in June 2008.

PROPOSED TERMS OF REFERENCE FOR
PBN/GNSS TASK FORCE

1. Terms of Reference

a) Carry out specific studies in support of the implementation of Performance Based Navigation (PBN) in the MID, according to the ICAO Strategic Objectives and Global Plan Initiative (GPI) 5 and related GPIs (GPIs 7, 10, 11, 12, 20, 21)

b) Identify other issues/action items arising from the work of ICAO or for consideration by ICAO in order to facilitate regional and global harmonization of existing applications as well as future implementation of Performance Based Navigation operations

c) Determine and recommend, on the basis of the study, the PBN strategy and Implementation Plan for the MID Region, based on the ICAO PBN Implementation goals as reflected in assembly resolution 36-23.

d) Assist States that may require support in the implementation of PBN,

2. Work Programme

a) Study and assess the Regional RNAV and RNP requirements

b) Initially focus assistance to States that may require support on development of the State PBN implementation plans.

c) Identify priority routes and terminal areas where RNAV and RNP should be implemented

d) Identify priority runways for Approach Procedures with Vertical Guidance (APV) to be implemented based on the ICAO RNP APCH navigation specification (APV/Baro-VNAV).

e) Develop an amendment proposal to the MID Regional Supplementary Procedures concerning the implementation of PBN in the Region.

f) Identify guidance material and training needs

g) Follow up on the developments in ICAO affecting the Global Plan and PBN in particular, in order to update the Regional plans accordingly

h) Coordinate with other ICAO Regions as necessary to address implementation interface issues

i) Undertake other functions relevant to implementation of PBN as assigned by the ATM/SAR/AIS SG or MIDANPIRG

j) Complete the development of the Regional PBN Implementation Strategy and Plan in 2008

k) Report to the ATM/SAR/AIS SG and keep the CNS SG closely briefed

3. **The Task Force shall in its work be guided by the following principles**:

   a) Implementation of PBN shall follow the ICAO PBN goals and milestones

   b) Avoid undue equipage of multiple on board equipment and/or ground-based systems.

   c) Avoid the need for multiple airworthiness and operational approvals for intra- and inter-regional operations.

   d) Continue application of conventional air navigation procedures during the transition period, to guarantee the operations by users that are not RNAV- and/or RNP-equipped

   e) The first regional PBN Implementation Strategy and Plan should address the short term (2008-2012), medium term (2013-2016) and take into account long term global planning issues.

   f) Cognizance that the primary objective of ICAO is that of ensuring the safe and efficient performance of the global Air Navigation System, ensure that pre- and post-implementation safety assessments will be conducted to ensure the application and maintenance of the established target levels of safety

   g) Take into account the introduction of new technologies, encourage implementation and development in GNSS

   h) Coordinated implementation with other relevant Regional Plans

   i) Apply ICAO guidance material and information as may be applicable to the Region to facilitate the implementation of PBN.

4. **Composition of the Task Force**

   STATES

   MID Region States

   ORGANIZATIONS *(AS OBSERVERS)*

   IATA, ICAO, IFALPA, IFATCA and, EUROCONTROL.

RVSM/PBN TF/1
Report on Agenda Item 6

REPORT ON AGENDA ITEM 6: **DEVELOPMENT OF THE LIST OF TASKS (INCLUDING THE REGIONAL PBN IMPLEMENTATION PLAN AND GUIDANCE MATERIAL)**

6.1   Under this Agenda Item, for the purpose of facilitating the developing of the MID Region PBN implementation plan, the meeting reviewed the ICAO CAR/SAM Region Roadmap for Implementation of PBN and the outcome of the APAC Regions' PBN TF/1 meeting Bangkok 9-11 January 2008 with respect to Regional implementation.

6.2   The meeting was of a view that there was no need to reinvent the wheel, that there would be more common aspects of the Regional plans than otherwise, and that it would be beneficial to harmonize to the extend practical, the various Regional plans. The meeting noted that the APAC Region had used the CAR/SAM Roadmap as the basis for its discussion.

6.3   The meeting agreed to adopt a similar approach as used by the APAC Region, with necessary modifications to adapt it to the situation in MID Region. In order to facilitate its work, the meeting formed a Small Working Group (SWG) comprising at least one participant from each delegation, to address the details of the MID Region Plan. Based on the outcome of the SWG, the meeting agreed on the contents of the MID Region PBN Implementation Plan as at **Appendix 6A** to the Report on Agenda Item 6.

6.4   In order to complete development of the Regional Strategy and Plan in 2008 as indicated in the TOR of the Task Force, the meeting assigned to various parties the tasks arising from TOR and the agreed table of contents of the MID Region PBN Implementation Plan, as at **Appendix 6B** to the Report on Agenda Item 6. The meeting noted that other ICAO Regions had undertaken to develop guidance material that would assist in the implementation of PBN on a global basis. In this context, the meeting agreed to develop *RNP APCH Operational Approval Guidance* in contribution to the global guidance material. The task of developing the *RNP APCH Operational Approval Guidance* material was also assigned and added to the table of tasks in Appendix 6B to the report on Agenda Item 6. based on the above the meeting agreed to the following draft decision:

> *DRAFT DECISION 1/2:   ASSIGNMENT OF TASKS*
>
> *That, in order to achieve the requirements for the MID PBN Regional Plan and Strategy, the Task Force deliver on the tasks in **Appendix 6B** to the Report of Agenda Item 6.*

6.5   The meeting agreed that in order to allow for sufficient time for processing of the inputs from the assigned tasks, tasks intended to be completed before the next meeting of the Task Force should be forwarded to the Secretariat before 15 August 2008. The meeting highlighted the importance of focal points in order to facilitate accountability and communication, and requested that each State appoint a PBN implementation focal point.

RVSM/PBN TF/1
Report on Agenda Item 6

6.6   The meeting noted with appreciation recent developments in Jordan with regard to the implementation of PBN, in particular the Commitment of Jordan CARC to implementation, which includes the establishment and responsibilities of a National PBN Committee comprising various PBN stakeholders, the PBN awareness programme which is underway and expected to reach 90% of interested parties by the end of 2009, and the updating of the Jordan CNS/ATM plan.

6.7   In order to further support implementation, the meeting generally agreed that the following issues also need to be addressed:

      (a) States to develop action plans for the PBN concept awareness through such activities as participation in related meetings, seminars and workshops;

      (b) ICAO provide more guidance material for regulatory approval and procedures; and

      (c) States update their CNS/ATM plans to include the PBN elements, taking into account relevant timelines and forward the updates to the MID Regional Office.

MID REGION PBN IMPLEMENTATION PLAN

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Short Term (2008-2012)	
Airspace	**Navigation Specification**
En-route - Oceanic	
En-route - Remote continental	
En-route - Continental	
En-route - Local / Domestic	
TMA - Arrival	
TMA - Departure	
Approach	

⇨ Medium Term
- Route
  - Local / Domestic
  - Remote continental
  - Continental en-route
- TMA
  - Arrival
  - Departure
- Approach
- Summary table & Implementation targets

Medium Term (2011-2016)	
Airspace	**Navigation Specification**
En-route - Oceanic	
En-route - Remote continental	
En-route - Continental	
En-route - Local / Domestic	
TMA – Arrival	
TMA – Departure	
Approach	

⇨ Long Term (2016 and beyond)
- Implementation strategies

9. Transitional Strategies
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11. Periodic review of implementation activities
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Appendix A – Practical Example of tangible benefits (living document).

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Appendix 6A to the Report on Agenda Item 6

MID REGION PBN IMPLEMENTATION PLAN

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         • Continental
         • Local / Domestic
      ▪ TMA
         • Arrival
         • Departure
      ▪ Approach
      ▪ Summary table & Implementation targets

Short Term (2008-2012)	
Airspace	**Navigation Specification**
En-route - Oceanic	
En-route - Remote continental	
En-route - Continental	
En-route - Local / Domestic	
TMA - Arrival	
TMA - Departure	
Approach	

⇨ Medium Term
- Route
  - Local / Domestic
  - Remote continental
  - Continental en-route
- TMA
  - Arrival
  - Departure
- Approach
- Summary table & Implementation targets

Medium Term (2011-2016)	
Airspace	**Navigation Specification**
En-route - Oceanic	
En-route - Remote continental	
En-route - Continental	
En-route - Local / Domestic	
TMA – Arrival	
TMA – Departure	
Approach	

⇨ Long Term (2016 and beyond)
- Implementation strategies

9. Transitional Strategies
10. Safety Assessments & Monitors
   ⇨ Methodology
   ⇨ Roles & Responsibilities
11. Periodic review of implementation activities
   ⇨ Implementations status
   ⇨ Challenges
   ⇨ Review of Strategy
   ⇨ Procedure to modify the regional plan

Appendix A – Practical Example of tangible benefits (living document).

RVSM/PBN TF/1
Appendix 6B to the Report on Agenda Item 6

No.	ICAO Strategic Objective	Associated GPI	Tasks	Objective	Deliverables	Target Date	To be delivered by	Supporting Parties	Status
1	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Introduction** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	Iran-CAO		Ongoing
2	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **PBN Operational requirements & Implementation Strategy** Section of PBN Regional Plan - En-route o Oceanic o Remote Continental o Continental, o Local / Domestic - TMA (Arrival, Departure) - Approach	To facilitate the development of the Regional Plan	Draft document	15 August 2008	UAE GCAA	Yemen, Oman / Bahrain / All States	Ongoing
3	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Current Status & Forecast: MID Traffic Forecast** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	MID Regional Office	IATA	Ongoing

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No.	ICAO Strategic Objective	Associated GPI	Tasks	Objective	Deliverables	Target Date	To be delivered by	Supporting Parties	Status
4	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Current Status & Forecast: Aircraft fleet readiness status** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	IATA (Mr. Ahmad Qinawi)	States, States	Ongoing
5	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Current Status & Forecast: CNS Infrastructure** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	CARC Jordan (Eng. Samieh Shehin)	SWG Members, States	Ongoing
6	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Implementation Roadmap of Performance Based Navigation** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	Bahrain	SWG Members, States	Ongoing
7	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Transitional Strategies** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	ICAO HQ	-	Ongoing
8	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Safety Assessments and Monitors** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	Israel (Mr. Abraham Shai)	–	Ongoing
9	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Periodic Review of implementation activities** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	Egypt (NANSC)	–	Ongoing
10	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **Appendix A – Practical Example of tangible benefits** Section of PBN Regional Plan	To facilitate the development of the Regional Plan	Draft document	15 August 2008	MID Office	–	Ongoing

6B-3

No.	ICAO Strategic Objective	Associated GPI	Tasks	Objective	Deliverables	Target Date	To be delivered by	Supporting Parties	Status
11	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Study and assess the Region RNAV and RNP requirements**	To facilitate the development of the Regional Plan	Draft document	15 August 2008	UAE GCAA (B Snowsill)	–	Ongoing
12	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Initially focus assistance on States that may require support on development of State PBN implementation plans**	To facilitate timely harmonized implementation	Draft document	15 August 2008	Task Force	States	Ongoing
13	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Identify priority routes and terminal areas where RNAV and RNP should be implemented**	To facilitate implementation efficiency and early operational benefits	Draft document	15 August 2008	IATA	States	Ongoing
14	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Identify priority runways for Approach Procedures with Vertical Guidance (APV) to be implemented based on the ICAO RNP APCH navigation specification (APV/Baro-VNAV)**	To facilitate implementation efficiency and early operational benefits	Draft document	15 August 2008	States	IATA	Ongoing
15	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Develop an amendment proposal to the MID Regional Supplementary Procedures concerning the implementation of PBN in the Region**	To facilitate harmonized implementation	Doc 7030 amendment proposal	August 2009	MID Regional Office	–	Ongoing
16	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Follow up on the developments in ICAO affecting the Global Plan and PBN in particular, in order to update the Regional plans accordingly**	To facilitate planning updates and global harmonization	Information and action items for PBNTask Force	Ongoing	MID Regional Office	-	Ongoing

6B-4

No.	ICAO Strategic Objective	Associated GPI	Tasks	Objective	Deliverables	Target Date	To be delivered by	Supporting Parties	Status
17	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Coordinate with other ICAO Regions as necessary to address implementation interface issues**	To facilitate harmonized implementation	Information and action items for PBN Task Force	Ongoing	MID Regional Office	–	Ongoing
18	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Undertake other functions relevant to implementation of PBN as assigned by the ATM/SAR/AIS SG or MIDANPIRG**	To facilitate implementation of PBN	As per assignments	Ongoing	PBN Task Force	-	Ongoing
19	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Complete the development of the Regional PBN Implementation Strategy and Plan in 2008**	To facilitate implementation of PBN in the MID Region	Draft document	October 2008	Task Force	–	Ongoing
20	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Report to the ATM/SAR/AIS SG and keep the CNS SG closely briefed**	To facilitate efficiency and effectiveness	Task Force reports	Ongoing	Task Force	–	Ongoing
21	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	**Identify guidance material and training needs/gap**	To determine required complementary guidance material	Draft document	October 2008	Jordan CARC	–	Ongoing
22	A: Safety D: Efficiency C: Environment	GPI-5, GPI- 7, GPI-10, GPI-11, GPI-12, GPI-20, GPI-21	Draft **RNP APCH Operational Approval Guidance**	To contribute to development of global implementation guidelines	Draft document	15 August 2008	IATA	UAE GCAA	Ongoing

6B-5

Notes:

1. RVSM/PBN TF/1 established a Small Working Group (SWG) to address the tasks in the list. The SWG members were Messrs: Fareed Al-Alawi (Bahrain), Mohammad Karimi (Iran), Dawood Al Khandari (Kuwait), Mahmoud Sabrah supported by Eng. Samih Shahin (Jordan), Abdulshakoor Qashqari (Saudi Arabia) Abraham Shai (Israel), Bruce Snowsill (UAE), and Ahmad Qinawi (IATA)

2. Where the name of a person has not been specifically identified in the "**to be delivered by**," column, the SWG member from the State/Organization that has been named will be responsible for delivery unless the State/Organization names a different person. Where a State did not participant in the meeting and as such not in the SWG, the MID Office will follow up with the State for nomination of focal point for delivery of the Task.

RVSM/PBN TF/1
Report on Agenda Item 7

REPORT ON AGENDA ITEM 7:   WORKING ARRANGEMENTS OF THE TASK FORCE

7.1   Under this Agenda Item, the meeting referred to discussions under Agenda Item 5 and furthermore noted that there were aspects of GNSS, such as Space Based Augmentation Systems (SBAS) development, which may not be optimally discussed by the combined Task Force members as a whole. To this effect, the meeting agreed that the combined Task Force could facilitate efficiency and effectiveness by adopting a working arrangement that allows discussions on these aspects without engaging the whole Task Force

7.2   Based on the above the meeting agreed to the following draft decision:

*DRAFT DECISION 1/3:   WORKING ARRANGEMENTS OF THE PBN/GNSS TASK
                            FORCE*

That, taking into consideration the need for efficiency and effectiveness in the implementation of PBN and GNSS, the PBN/GNSS Task Force will maintain a flexible schedule, allowing the convening of meetings as work demand.

REPORT ON AGENDA ITEM 8:   FUTURE WORK PROGRAMME

8.1   The meeting noted that in accordance with the ICAO Business plan and the requirements for performance monitoring, the task force has to develop a follow-up action plan on the results of the meeting. Accordingly, the meeting developed **Appendix 8A** to the Report on Agenda Item 8.

8.2   The meeting agreed that, taking into consideration Assembly Resolution A36-23 which calls for development of States' PBN implementation plans by 2009, the need for consolidation of the PBN and GNSS Task Forces, and in order to meet the requirements and deadlines set for the Task Force in its TOR, the next meeting of the Task force should be held on 20-23 October 2008.

RVSM/PBN TF/1
Appendix 8A to the Report on Agenda Item 8

DRAFT FOLLOW-UP ACTION PLAN

CONC/DEC NO. --- STRATEGIC OBJECTIVE	TITLE OF CONCLUSION/DECISION	TEXT OF CONCLUSION/DECISION	FOLLOW-UP ACTION	TO BE INITIATED BY	DELIVERABLE	TARGET DATE
Draft Dec. 1/1	**Establishments of the PBN/GNSS Task Force**	That, taking into consideration the need to harmonize the implementation of PBN and to enhance coordination of expertise regarding GNSS : a) the PBN/GNSS TF is to be established with TOR as in **Appendix 5A** to the Report on Agenda Item 5; and b) GNSS matters not related to PBN will be discussed separately from PBN matters .	MSG Approval	ICAO Sates	PBN/GNSS TF Meeting Report	1 Qtr 2009

CONC/DEC NO. --- STRATEGIC OBJECTIVE	TITLE OF CONCLUSION/DECISION	TEXT OF CONCLUSION/DECISION	FOLLOW-UP ACTION	TO BE INITIATED BY	DELIVERABLE	TARGET DATE
Draft Dec. 1/2	**Assignment of tasks**	That, in order to achieve the requirements for the MID PBN Regional Plan and Strategy, the Task Force deliver on the tasks in **Appendix 6B** to the Report of Agenda Item 6.	As per Appendix 6B	ICAO and Sates	Approval of the Plan	As per Appendix 6B
Draft Dec. 1/3	**Working arrangements of the PBN/GNSS Task Force**	That, taking into consideration the need for efficiency and effectiveness in the implementation of PBN and GNSS, the PBN/GNSS Task Force will maintain a flexible schedule, allowing the convening of meetings as work demand.	Flexible schedule and order of business	MID Office	PBN/GNSS TF Meeting Report	1 Qtr 2009

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