INTERNATIONAL CIVIL AVIATION ORGANIZATION

**REPORT OF THE APANPIRG
FUTURE DIRECTIONS TASK FORCE MEETING
(FDTF)**

BANGKOK, THAILAND, 17 – 19 MAY 2004

Adopted by the FDTF
and published by the ICAO Asia and Pacific Office

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PART I – HISTORY OF THE MEETING

1.   **Introduction**

1.1   The Future Direction Task Force (FDTF) meeting of APANPIRG was held from 17 to 19 May 2004 at the " Kotaite Wing " of the ICAO Asia and Pacific Office in Bangkok, Thailand.

1.2   Mr. Lalit B. Shah, Regional Director of the ICAO Asia and Pacific Office opened the meeting. He extended a warm welcome to all the participants, particularly representatives from Viet Nam as Viet Nam's membership to APANPIRG had just been approved by the ICAO Council.

1.3   He stated that the first meeting of APANPIRG held in 1992 established four Sub-Groups: ATS/AIS, CNS/ATM, COM/MET and NAV/SUR. The fourth meeting of APANPIRG held in Canberra, Australia in 1994 dissolved the CNS/ATM Sub-Group as it had completed its tasks of developing the ASIA/PAC Regional Plan for the New CNS/ATM System, and established the CNS/ATM Implementation Coordination Sub-Group (CNS/ATM/IC SG) to proceed with the detailed implementation planning of the CNS/ATM Systems and to coordinate implementation of elements CNS/ATM systems. He provided background information on the issue of reorganization of the Sub-Groups discussed since the tenth meeting of APANPIRG.

1.4   He further stated that the fourteenth meeting of APANPIRG recognized that there was a need to undertake a major review of the Terms of Reference and work programme of the Sub-Groups of APANPIRG taking into account the outcome of the Eleventh Air Navigation Conference (AN-Conf/11). The Task Force is expected to make recommendations as to the changes that may be necessary in the operation of its contributory bodies to ensure that APANPIRG was fulfilling its mandate in line with the Procedural Handbook in the functioning of the Sub-Groups taking into account results of AN-Conf/11. While undertaking this task, it is also required to ascertain the need to maintain and update the ASIA/PAC Regional Plan for the CNS/ATM Systems vis-à-vis the Global Air Navigation Plan for the CNS/ATM Systems.

1.5   Mr. George Pao-shu, Chao, Assistant Director General of the Civil Aviation Department Hong Kong, China, who is also the Chairman of the ATM/AIS/SAR Sub-Group of APANPIRG, was nominated Chairman of the Task Force. The Chairman expressed his pleasure in having been given the opportunity to chair the meeting and thanked all the participants. He noted that the work to be carried out by the Task Force was challenging. He provided an overview of the main tasks to be addressed.

2.   **Attendance**

2.1   The meeting was attended by 30 participants from Australia, Hong Kong China, Fiji, India, New Zealand, Singapore, Thailand, United States, Vietnam, IATA, IFALPA and IBAC. List of participants is at **Appendix A**.

3.   **Officers & Secretariat**

3.1   Mr. George Pao-shu, Chao, Assistant Director General of Civil Aviation Department, Hong Kong, China chaired the Meeting.

3.2   Mr. K.P. Rimal, Regional Officer CNS, and Mr. David Moores Regional Officer ATM acted as Secretaries of the Meeting assisted by Mr. Andrew Tiede, Regional Officer, ATM of the ICAO Asia and Pacific Regional Office.

4.   **Organization, Working Arrangements and Language**

4.1   The meeting met as a single body. The working language was English only inclusive of all documentation and this Report. Lists of Working Papers, Information Papers presented at the meeting are at **Appendix B**.

5.   **Terms of Reference of the Task Force**

Considering:

a)   the Terms of Reference of APANPIRG;

b)   the Terms of Reference and Subject/Task List of the ATM/AIS/SAR, CNS/ATM/IC and CNS/MET Sub-Groups and the RASMA Group; and

c)   the outcomes of the 11th Air Navigation Conference

The Task Force shall:

a)   in light of c) above, and review the terms of reference and work programme of APANPIRG's contributory bodies;

b)   review the coordination, effectiveness and efficiency of the Sub-Groups to achieve the APANPIRG objectives taking into account the terms of reference and work programme of each Sub-Group; and

c)   to make recommendations as to the changes that may be necessary in the operation of APANPIRG's contributory bodies.

The Future Directions Task Force to be constituted from:

a)   the Chairperson or nominee of the ATM/AIS/SAR, CNS/ATM/IC and CNS/MET Sub Groups and RASMA Group; and

b)   not more than ten other members drawn from States and International Organizations.

List of Draft Decisions

Draft Decision 1/1 –   **Dissolution of CNS/ATM Implementation Coordination Sub-Group**

Draft Decision 1/2 –   **Implementation of AN-Conf/11 Recommendations by APANPIRG**

Draft Decision 1/3 –   **Assignment of new Tasks to the ATM/AIS/SAR and CNS/MET Sub-Groups**

Draft Decision 1/4 –   **Dissolution of the Future Directions Task Force**

PART II - REPORT ON AGENDA ITEMS

Agenda Item 1:   **Adoption of Provisional Agenda**

1.1   The meeting reviewed the provisional agenda and adopted it without any change. The agenda adopted by the meeting was as follows:

> <u>Agenda Item 1:</u>   Adoption of Provisional Agenda
>
> <u>Agenda Item 2:</u>   Review Terms of Reference of APANPIRG and its contributory bodies and related task lists
>
> <u>Agenda Item3:</u>   Review the APANPIRG key priorities for implementation of CNS/ATM systems for the Asia/Pacific Region
>
> <u>Agenda Item 4:</u>   Review the outcome of the Eleventh Air Navigation Conference relevant to the Asia/Pacific Region
>
> <u>Agenda Item 5:</u>   Development of Recommendations to APANPIRG
>
> <u>Agenda Item 6:</u>   Any other business

Agenda Item 2:   **Review of Terms of Reference of APANPIRG and its contributory bodies and related task lists**

Terms of Reference of the CNS/MET Sub-Group

2.1   The meeting reviewed the Terms of Reference (TOR) of the CNS/MET Sub-Group provided in **Appendix C**. It was noted that the TOR was broad and covered all the important issues. The COM/MET/NAV/SUR Sub-Group was established by APANPIRG/7 in 1996 in its Decision 7/37 by the combination of the former NAV/SUR and COM/MET Sub-Groups established by APANPIRG/1 in 1992 in its Decisions 1/3 and 1/4. The Sub-Group was renamed as the CNS/MET Sub-Group and its current TOR based on the recommendation of the APANPIRG Sub-Group Work Programme Review Task Force was adopted by APANPIRG/11 in 2000. The Sub-Group follows its TOR and Subject/Tasks List to address both the conventional and the new CNS systems. The meeting also noted that, of the 40 Tasks, the Sub-Group had completed 29 Tasks, and actions were taken on the remaining 11 Tasks.

Terms of Reference of the ATN Transition Task Force

2.3   The meeting reviewed the Terms of Reference of the ATN Transition Task Force provided in **Appendix D**. The Task Force was established by APANPIRG/9 in 1998 in its Decision 9/16. The meeting noted that the Task Force had completed six meetings and adequately addressed the Terms of Reference. The Task Force is expected to complete its tasks by the end of 2005. The meeting did not recognize the need to suggest any changes. The Task Force reports to APANPIRG through the CNS/MET/SG.

Terms of Reference of the ADS-B Study and Implementation Task Force

2.4   The meeting noted the Terms of Reference of the ADS-B Study and Implementation Task Force provided in **Appendix E**. The Task Force was established by APANPIRG/13 in 2002 in its Decision 13/19. The Task Force has conducted 2 meetings. The meeting did not recognize the need to

propose any change to the Terms of Reference. The ADS-B Task Force reports to APANPIRG through the CNS/MET/SG.

2.5   The Secretariat brought to the attention of the meeting that at the Second Meeting of the ADS-B Study and Implementation Task Force, it was requested to bring to the attention of the Future Direction Task Force to explore the possibility of identifying an appropriate body to develop a framework of regulatory materials required to assist States to progress implementation of the new CNS technology. The meeting noted the suggestion and expressed the view that related ICAO Panels were developing associated SARPs and guidance materials. The regulatory framework could be developed by the Task Force concerned as there was no other suitable contributory body under APANPIRG to undertake such task.

List of APANPIRG Contributory Bodies, Associated Group and Related Issues

2.6   The meeting reviewed a comprehensive list of contributory bodies, associated groups and issues as reviewed by APANPIRG/14 meeting. It was also noted that APANPIRG/13 in its Decision 13/42 had proposed to include a table of contributory bodies, associated groups and issues in the APANPIRG meeting reports for periodic review by Sub-Groups. In the list, it was noted that the CNS/ATM/IC Sub-Group was responsible for only one item on environmental issue. As this Table would be reviewed and updated by the Sub-Groups, the meeting did not review the list in detail but noted the activities and various tasks undertaken by the contributory bodies of APANPIRG.

Terms of Reference of the ATM/AIS/SAR Sub-Group

2.7   The meeting reviewed the Terms of Reference of the ATM/AIS/SAR/SG as shown in **Appendix F**. The meeting recalled the background to the establishment of the ATM/AIS/SAR/SG, which was established in1992 by APANPIRG/1 (Decision 1/2) to deal with matters related to air traffic services and aeronautical information services. APANPIRG/4 (1994) (Decision 4/3) included search and rescue (SAR) on the ATS/AIS work programme. Further in 1995, APANPIRG/6 (Decision 6/16) renamed the ATS/AIS Sub-Group as the ATS/AIS/SAR Sub-Group to more correctly reflect the activities of the group. In 2003, APANPIRG/14 (Decision 14/11) considered that it was timely in view of the wider area of interest of the Group beyond ATS matters, which included issues related to airspace management, airspace safety management and air traffic flow management, as well as matters within the scope of the ATM system as described in the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), to revise the title to the ATM/AIS/SAR Sub-Group.

2.8   The meeting recognized that this Sub-Group was the principal Group of APANPIRG overseeing the planning and implementation of operational air traffic and airspace changes to the international airspace in accordance with the Asia/Pacific Regional Air Navigation Plan (ANP) and *Regional Plan for the New CNS/ATM Systems*. The meeting considered that the TORs were appropriate for the present work programme of the Group. Also, the meeting noted that there was significant overlap with the TOR of the CNS/ATM/IC/SG as described below.

Terms of Reference of the Regional Airspace Monitoring Advisory Group (RASMAG)

2.9   The meeting reviewed the Terms of Reference of the RASMAG as shown in **Appendix G**. It was recalled that APANPIRG/14 (August 2003) under Decision 14/48 agreed to the establishment of the RASMAG on the basis of the report of the Asia/Pacific Airspace Monitoring Task Force (APASM/TF). Further, APANPIRG/14 recognized that the RASMAG would provide a framework for airspace safety monitoring services at a time when further monitoring activities were being established for implementation of ADS and CPDLC in the Asia Region. The present airspace monitoring activities were extensive and would continue to grow as more States implemented data link services and reduced vertical

and horizontal separation minima. Therefore, APANPIRG/14 considered it was timely to establish the RASMAG to provide support on airspace safety monitoring activities and keep these under review.

2.10 The first meeting of RASMAG was held on 26-30 April 2004, and mainly dealt with reviewing the existing airspace monitoring structure in the Asia/Pacific Region and identifying further requirements for safety monitoring services for the international airspace in the region. Also, it established its initial work programme and considered the deliverables and applicable timescales. The meeting considered that the present TORs adequately provided for the work programme of the Group, and that RASMAG would report to APANPIRG and the ATM/AIS/SAR/SG.

2.11 The meeting recognized that the establishment of RASMAG was a significant step forward in providing APANPIRG with a centralized and harmonized approach to overseeing the safety monitoring programmes in the region. However, the meeting was of the view that RASMAG was presently focused on airspace monitoring activities for the en-route international airspace but had the potential to grow and expand its activities to include other airspace safety management activities, and provide assistance to States to establish safety monitoring programmes. This should be kept under review by APANPIRG.

Terms of Reference of the RVSM Task Force

2.12 The meeting reviewed the Terms of Reference of the RVSM Task Force as shown in **Appendix H**. The meeting noted that it was established in 1998 by APANPIRG/9 under Decision 9/4 to further the work that had been started by the Pacific RVSM/TF, which was initiated by the United States and Japan under the Informal Pacific ATS Coordination Group (IPACG). The RVSM Implementation Plan for the Asia/Pacific Region was a significant programme that had led to major benefits to ATS providers and airspace users by increasing airspace capacity, operational efficiency and flexibility and providing significant fuel savings resulting in environmental improvements. With the implementation of RVSM in the Bay of Bengal and Beyond area on 27 November 2003, RVSM was now operating in all the major oceanic airspace in the Asia/Pacific Region. The next phase of RVSM implementation in the Asia Region was being undertaken by Japan and the Republic of Korea for the Naha, Tokyo (domestic) and Incheon FIRs in June 2005. The RVSM/TF was expected to complete its work in 2005 following the one year review meeting for the Bay of Bengal area. The meeting considered the TOR were appropriate and the Task Force reports to the ATM/AIS/SAR/SG.

Terms of Reference of the ATS Route Network Review Task Force (ARNR/TF)

2.13 The meeting reviewed the Terms of Reference of the ARNR/TF as shown in **Appendix I**. The meeting noted that significant changes to the ATS route structures in the Asia/Pacific Region had taken place since the last major review of the regional ATS route network carried out by the third Asia/Pacific Regional Air Navigation (RAN/3) Meeting in 1993. The RAN meetings were the principal fora to undertake major reviews of ATS route networks in the ICAO regions taking into account the route requirements of States and users, and updating Air Navigation Plans. Since the establishment of APANPIRG in 1992, there has not been a need to hold another RAN meeting in the Asia/Pacific Region ,and there is no plan at present to convene another meeting in the near to mid-term. APANPIRG/14 recognized the need to update the Basic ANP and to undertake a thorough review of the ATS route network in the region, and develop new route requirements as appropriate, and established the ARNR/TF under Conclusion 14/5**.**

2.14 The meeting endorsed the importance of the work of the ARNR/TF as reflected in its TOR. The meeting was advised by the Secretariat that due to a lack of staff in the ATM Section and the amount of preparation required, the Task Force would hold its first meeting in September 2004. The Task Force reports to APANPIRG through the ATM/AIS/SAR/SG.

Terms of Reference of the CNS/ATM Implementation Co-ordination Sub-Group (CNS/ATM/IC/SG)

2.15   The meeting reviewed the Terms of Reference of the CNS/ATM/IC/SG as shown in **Appendix J**. It was recalled that in 1992, APANPIRG/1 (Decision 1/1) established the CNS/ATM Sub-Group to address the planning and implementation of the new CNS and ATM Systems. The Sub-Group developed the *CNS/ATM Implementation Plan for the ASIA/PAC Region*, which was the primary task of the Group. The Plan was presented to and adopted by APANPIRG/2, and endorsed by the RAN/3 meeting. In 1994, APANPIRG/4 agreed (Decision 4/40) that the Sub-Group had completed its assigned tasks and was dissolved.

2.16   APANPIRG/4 recognized that there was outstanding work on CNS/ATM matters to be completed, and in particular a need existed for coordination and linkage between State CNS/ATM programmes and APANPIRG, and a contributory body of APANPIRG was needed. Accordingly, under Decision 4/41, the CNS/ATM Implementation Coordination Sub-Group was established. In its subsequent work, the Sub-Group made a significant contribution to the work of APANPIRG by maintaining a focus and momentum to assist and encourage States to implement the CNS/ATM systems.

2.17   Since the mid-90's, the implementation of CNS/ATM applications such as data link, RNP, RNAV and associated reduced separation minima has been carried out by other dedicated groups on a project basis, such as EMARSSH, the South China Sea Task Force, RVSM Task Force, FANS Interoperability Teams in the Pacific Region, FANS Implementation Team (FIT) in the Bay of Bengal, and soon to be formed FIT for the Southeast Asia area. The implementation and operational review and oversight was being performed by the ATM/AIS/SAR/SG, and this has led to a duplication of work with the CNS/ATM/IC/SG. Similarly, there was an overlap of work between the CNS/MET/SG and the CNS/ATM/IC/SG.

2.18   As time has passed, the emphasis in the region has been on implementation of CNS/ATM systems, and the focus shifted to related activities, which were not the primary interest of the CNS/ATM/IC/SG. This had resulted in the CNS/ATM/IC/SG being less and less involved in CNS/ATM implementation and more concerned about information sharing and updating on CNS/ATM developments. This is evident in the way the Group's work programme was structured, which is not task orientated with identified timelines. Instead, the results of the Group's work programme are in the form of draft conclusions and decisions presented to APANPIRG.

2.19   The meeting noted that the role and function of the CNS/ATM/IC/SG had been the subject of considerable scrutiny and discussion since APANPIRG/10 in September 1999. APANPIRG/10, on reviewing the work programme of the APANPIRG Sub-Groups, ATM/AIS/SAR/SG, CNS/ATM/IC/SG and CNS/MET/SG, was of the opinion that the CNS/ATM/IC/SG was only meeting part of its charter. However, it was noted that the Sub-Group was providing a very important venue for the exchange of information and updates on activities within the region. APANPIRG/10 under Decision 10/45 established a Work Programme Review Task Force to review the APANPIRG Sub-Group work programmes. The Task Force members comprised the Chairpersons and Secretaries of the three Sub-Groups, and their work included developing a consolidated action plan to reflect present and future work activities of APANPIRG Sub-Groups.

2.20   The results of the Task Force review meeting held in March 2000 were reported to APANPIRG/11. The Task Force was of the opinion that the CNS/ATM/IC/SG had completed most of its tasks and could be dissolved. APANPIRG/11 noted that the COM/MET/NAV/SUR/SG/4 meeting had supported the recommendation to dissolve the CNS/ATM/IC/SG, the ATS/AIS/SAR/SG/10 had noted it, and the CNS/ATM/IC/SG/6 had a differing opinion. After considering all the issues, APANPIRG/11 decided to defer a decision regarding the dissolution of the CNS/ATM/IC/SG and review this matter at APANPIRG/12.

2.21   APANPIRG/12 on reviewing the work programme of the three APANPIRG Sub-Groups, and the results of the Review Task Force established to review the present tasks and key issues of these Groups, under Decision 12/46, decided that the CNS/ATM/IC/SG should continue as an active Sub-Group of APANPIRG and revised the Terms of Reference.

2.22   The meeting noted that the matter was raised again at APANPIRG/13, where it was recognized that while the TORs had been expanded to include training, environmental issues and the use of business case studies, there was also a need for future discussions of the Group to be more directed towards implementation to realize full benefits of APANPIRG planning. The establishment of target dates for action items would also assist States in determining future work priorities. The TORs were further revised to include more specific requirements to address environmental issues.

2.23   The CNS/ATM/IC/SG/10 meeting held jointly with the CNS/MET/SG/7 in July 2003, reviewed the issues raised by APANPIRG concerning its effectiveness and continuation, and agreed that there was a need to undertake a major review of its TORs and work programme, and to develop a detailed task list, timelines taking into account the outcome of the eleventh Air Navigation Conference (AN-Conf/11). Further, the Sub-Group was not in a position to complete this work due to the constraints on time, and lack of ATM representation at the meeting due to the combined meeting of the two Sub-Groups. Therefore, it recommended to APANPIRG/14 that a Task Force be formed to undertake this review**.**

2.24   APANPIRG/14 recognized that the present work programme of the CNS/ATM/IC/SG was not task orientated and no timelines were established to complete its work. Also, the meeting noted the recommendation of the Work Programme Review Task Force established by APANPIRG/10, which had recommended that the CNS/ATM/IC/SG should be dissolved, and the remaining work items assigned to the ATS/AIS/SAR and CNS/MET Sub-Groups.

2.25   APANPIRG/14 on reviewing the TORs and future work programme of the three Sub-Groups was of the view that AN-Conf/11 would produce results that could have a major impact on the future planning and implementation of CNS/ATM in the ICAO regions, in particular in regard to ATM and application of the ATM operational concept. Also, developments in technology such as ADS-B, airborne separation assurance systems (ASAS), data link services and satellite voice communications would need to be reviewed, and the *Asia/Pacific Regional Plan for New CNS/ATM Systems* revised and guidance material developed as appropriate. Although it was not anticipated that AN-Conf/11 would have a major effect on regional activities in the short term, it was necessary to review the outcome of the Conference and consider its impact on the region. This could lead to new work items to be undertaken by the APANPIRG Sub-Groups, and changes to their TORs.

2.26   APANPIRG/14 discussed at length the background to the continued existence of the CNS/ATM/IC/SG, taking into account the issues for and against that had been raised at earlier APANPIRG meetings and raised again at this meeting. The meeting was aware of the changing role of the CNS/ATM/IC/SG, and the overlapping of work with the other two Sub-Groups and there was a need to resolve this problem. Also, it was recognized that the CNS/ATM/IC/SG did not have a detailed task list and deliverables identified with timelines.

2.27   At this stage, it was not evident to APANPIRG/14 what the outcome of AN-Conf/11 would be, and of significant issues that would be of relevance to the region. In this regard, it was felt that there may be a need to assign new tasks to the CNS/ATM/IC/SG. Also, the meeting was not able to arrive at a consensus whether to continue with the Sub-Group. Accordingly, the meeting decided that in view of the need to ensure that APANPIRG was fulfilling its mandate in line with the Procedural Handbook in the functioning of its Sub-Groups, and in light of the expected outcome of AN-Conf/11, the meeting agreed to establish a Future Direction Task Force (FDTF) to address this issue.

2.28   In light of the foregoing, and ongoing questions over the role and functioning of the CNS/ATM/IC/SG, the meeting undertook a thorough analysis of the TORs, work programmes and deliverables of three Sub-Groups and RASMAG against the TOR of APANPIRG, and took into account the APANPIRG Procedural Handbook in respect to the creation and dissolution of contributory bodies. In this regard, it was noted that whether a Sub-Group should continue to function had to be assessed against the Handbook considerations, in particular items a) and e), which state:

> a)   a sub-group shall be formed when it clearly is established that it can make a substantial contribution to the resolution of the problem(s) in question; and

> e)   a sub-group shall be dissolved when it has either completed its assigned tasks or it had become apparent that the work on the subject in question cannot be usefully continued.

2.29   To assist with its discussions, a matrix was developed (**Appendix K** refers), which maps the TORs of the three Sub-Groups and RASMAG with the present TORs of APANPIRG. This showed the areas of overlap between the TORs unique to each Sub-Group. The meeting noted that of the ten items on the TOR of the CNS/ATM/IC/SG, only four were unique to that Group i.e. items 4), 7), 9) and 10). Under item 1), the part concerning the *ASIA/PAC Plan for the New CNS/ATM Systems* was also on the TORs of the other two Sub-Groups but harmonization with the *Global Air Navigation Plan for CNS/ATM Systems* was not covered by the other Groups. However, the Secretariat advised that the Regional Office would become aware of changes to the Global Plan, and in the case of major revisions, such as the future inclusion of the ATM operational concept material, these would be brought to the attention of APANPIRG. In regard to major revisions to the Regional Plan, a Task Force could be convened to undertake this work, otherwise, ongoing review of the documents could be managed by the Regional Office. In regard to, items 2), 3), 5), 6), and 8), these were related to implementation matters intrinsically part of implementation planning, and addressed by the implementation groups, and kept under review by the ATM/AIS/SAR/SG and the CNS/MET/SG.

2.30   In regard to item 4), concerning key priorities for CNS/ATM implementation, the meeting noted that this item was not included in the TORs of the other Groups or on the task lists, nevertheless, was being addressed by these Groups, as the key priorities related to implementation matters. Therefore, the meeting agreed that a task to review key priorities should be included on the Task Lists of the ATM/AIS/SAR/SG and the CNS/MET/SG, and this is considered further under Agenda Item 3.

2.31   In regard to item 7) concerning the development of guidance material on the applicability of the ICAO ATM concept, the meeting was of the view that it was too soon to consider developing such material, as the technical work programme of the Air Navigation Commission was ongoing to develop SARPs, procedures and guidance material arising from the ATM operational concept. In the future, it may be necessary to develop regional guidance material. This matter would be kept under review by the Regional Office and APANPIRG updated as appropriate.

2.32   In regard to, item 9) concerning the development of a framework for regional training plans for the introduction of CNS/ATM systems, no work had been undertaken by the CNS/ATM/IC/SG and it was not covered by the other Groups, except in the context of implementation, where introduction of new CNS/ATM systems and operating procedures require a training element. This aspect was being addressed in implementation plans. The meeting did not see a need being expressed by States to pursue this matter at present. However, training issues were recognized as an important part of operational considerations and where specific training needs were identified, these would be dealt with by the implementation groups and ATS coordination groups concerned.

2.33   The meeting considered that item 8) regarding business cases, and item 10) on environment issues were closely related to implementation, and would be included in implementation planning and considered by the relevant implementation groups. Matters of a more general nature arising from ICAO's work in these fields would be brought to the attention of the respective groups and APANPIRG by the Regional Office. The meeting noted the significant part business cases played in the implementation of RVSM, and that substantial fuel savings had led to significant environmental benefits.

2.34   The meeting on completing its review of the TORs of the three Sub-Groups, agreed that the TORs of the CNS/ATM/IC/SG were being already covered or could be adequately covered by the other two Sub-Groups and the Regional Office.

2.35   In considering the work programme and deliverables of the CNS/ATM/IC/SG, there were currently no tasks established and no clear deliverables identified. In determining what tasks could be developed for the Group, the meeting felt that in the main, the task lists of the other two Sub-Groups substantially covered the areas concerned. In the interest of avoiding duplication and maximizing resources, the meeting agreed that there was no compelling justification to develop a detailed task list for the Group.

2.36   In this regard, the meeting was advised by IATA that judicious application of resources was a very high priority for operators, and this was also an important consideration by States and ICAO. The aviation industry was emerging from a period of sustained economic difficulties, and there was a need to prioritize our efforts to achieve the optimum use of limited resources, and maximize benefits for all stakeholders in the industry. However, in spite of the economic difficulties the industry was facing, there were strong pockets of substantial growth. For example, China had been experiencing annual traffic growth of about 12 percent during recent years in spite of the depressed economic climate, and was forecasting a 22 percent growth this year; India has seen growth rates in the order of 12 percent and was forecasting a tripling of traffic by 2016; and in the Middle East there has been significant growth in the order of 20 percent. Continued economic recovery would stimulate more widespread growth, therefore it was imperative that this region concentrated its effort on implementation and improvement to the CNS/ATM system.

2.37   The meeting noted the significant implementation effort made by this region in recent times, which has been highly acclaimed particularly in respect to the implementation of the EMARSSH routes, the revised South China Sea routes and RVSM. Further, although implementation of data link services has been progressing slowly in the Asia Region, partly due to resource constraints and the substantial upgrade of the CNS/ATM systems required by States, there has been a renewed effort to make more rapid progress with the setting up of the FIT-BOB and proposed FIT-SEA activities. The meeting agreed that there needs to be a more determined effort made by all partners to progress the CNS/ATM implementation plan for the region, and it was appropriate to concentrate resources on implementation.

2.38   Notwithstanding the above, the meeting agreed that on future CNS/ATM developments, States and other stakeholders in the region should be kept up to date, and it would be necessary to keep pace with these developments, in particular with the ATM operational concept. With ever increasing traffic, it would be necessary to continue to plan for further enhancements and improvements to the operational ATM system, and to take full advantage of CNS technology.

2.39   The meeting recognized the important role education and information sharing played in keeping States and partners informed and up to date with CNS/ATM developments and ICAO provisions. Therefore, there needed to be a proactive approach on the part of APANPIRG and its contributory bodies to identify and plan for seminars and workshops that addressed the more pressing issues. The meeting agreed that the Sub-Groups should determine the priorities and subjects to be covered by seminars and workshops. It was recognized that the CNS/ATM/IC/SG had fulfilled this role to some extent in recent

years, and this may explain in part, why the participating States and international organizations kept the Group active. However, in due consideration of the APANPIRG Handbook, and the primary purpose for establishing a Sub-Group as described above, the meeting was of the opinion that simply the passing of information was not sufficient justification to continue to maintain this Sub-Group.

2.40   Further, in consideration that the review of the TORs of the three Sub-Groups and RASMAG has identified substantial duplication of the TORs with the CNS/ATM/IC/SG, and taking into account the priority expressed by the States and users at this meeting to concentrate the effort of APANPIRG and its contributory bodies on continued implementation of the ASIA/PAC ANP and Regional CNS/ATM Plan requirements, the meeting was unanimous in agreement that the CNS/ATM/IC/SG should be dissolved and to recommend this course of action to APANPIRG/15.

2.41   In view of the above, the meeting formulated the following draft Decision.

> **Draft Decision 1/1 – Dissolution of the CNS/ATM Implementation Coordination Sub-Group**
>
> That, in consideration of optimizing the effectiveness and efficiency of the contributory bodies of APANPIRG and in accordance with the provisions of the APANPIRG Procedural Handbook, the CNS/ATM/IC/SG be dissolved.

2.42   In light of the above Draft Decision, the meeting was of the opinion that the next meeting of the CNS/ATM/IC/SG scheduled for 26-30 July 2004 should be deferred until after APANPIRG/15 had reviewed the report of this Task Force. The meeting also felt that there were not sufficient priority items outstanding from the last meeting of the Sub-Group that warranted holding the next meeting, without further direction from APANPIRG to define a more specific work programme. It was the view of this meeting, that matters related to CNS/ATM implementation of concern to the CNS/ATM/IC/SG were being addressed by the ATM/AIS/SAR/SG and the CNS/MET/SG, and any outstanding matters could be included on the work programme of these Groups or be addressed by the Regional Office.

Agenda Item 3:   Review the APANPIRG key priorities for implementation of CNS/ATM systems for the Asia/Pacific Region

3.1   The meeting considered the key priorities of APANPIRG and agreed that these would be included as tasks on the work programme of the ATM/AIS/SAR Sub-Group and the CNS/MET Sub-Group, and be reviewed and kept up to date. The meeting formulated a draft decision to this effect under Agenda Item 5.

3.2   In regard to updating the key priorities, the meeting was of the view that the Chairpersons and Secretaries of the respective Sub-Groups should maintain close coordination to consider matters to be submitted to the Sub-Groups to be included on the list of key priorities.

Agenda Item 4:   **Review the outcome of the Eleventh Air Navigation Conference relevant to the Asia/Pacific Region**

4.1   The Secretariat presented information on the outcome of, and actions taken by, the Council of ICAO on the recommendations of the Eleventh Air Navigation Conference held in Montreal from 22 September to 3 October 2003 as shown in **Appendix L**. The Council agreed to a number of recommendations which call for further follow-up works by ICAO, States, international organizations and Planning and Implementation Regional Groups (PIRGs), as well as CNS/ATM partners. The proposed actions to be taken by PIRGs on the recommendations were reviewed by the ICAO Secretariat, who developed suggested recommendations to be adopted by APANPIRG.

4.2   In light of the foregoing, the meeting reviewed the suggested recommendations to be proposed to APANPIRG/15 and formulated the following draft Decision:

> Draft Decision 1/2   –   Implementation of AN-Conf/11 Recommendations by APANPIRG

> That, the following recommendations of AN-Conf/11 be studied by the concerned Sub-Groups, and action be taken to implement them.

Recommendations 1/1, 1/10, 1/13, 4/1, 4/2,4/4, 6/11 and 7/1: ATM/AIS/SAR/SG
Recommendations 1/1, 1/10, 1/13, 4/1, 4/2, 6/11, 7/1 and 7/3: CNS/MET/SG
Recommendations 4/8: Deficiency Review Task Force (DRTF) (review completed as part of DRTF/2)

Agenda Item 5:   **Development of Recommendations to APANPIRG**

5.1   Consequent to the review of the TOR of the CNS/ATM/IC Sub-Group, it was proposed to include a new item on the Subject/Task Lists of the ATM/AIS/SAR/SG and CNS/MET/SG: "to review key priorities for implementation of CNS/ATM systems for the ASIA/PAC region and identify new items, as required and monitor implementation".

5.2   The meeting was advised by Viet Nam that APANPIRG and its Sub-Groups had not been addressing matters relating to the terminal area and airport operations, and consideration should be given to including these subjects on the work programme of the Sub-Groups. The meeting recognized the importance of the terminal area and airport operations in the overall efficient operation of the ATM system.

5.2   In light of the foregoing, it was also proposed to include on the Subject/Tasks Lists of the ATM/AIS/SAR and CNS/MET Sub-Groups an item to "make recommendations aimed at improving ATM and CNS support for Terminal Area and Airport Operations". Accordingly, the meeting formulated the following draft Decision:

> **Draft Decision 1/3   –   Assignment of new Tasks to the ATM/AIS/SAR and CNS/MET Sub-Groups**

> That, the following tasks be included in the Subject/Tasks List of the ATM/AIS/SAR and CNS/MET Sub-Groups:

> 1)   Review key priorities for implementation of CNS/ATM systems for the ASIA/PAC region, identify new items as required and monitor implementation; and

2)   Make recommendation aimed at improving ATM and CNS support for Terminal Area and Airport Operations, respectively.

Agenda Item 6:   Any other business

6.1   Viet Nam expressed its appreciation to APANPIRG and ICAO for accepting its membership to APANPIRG. Information was provided on the recent air navigation planning process by the Civil Aviation Administration of Viet Nam. The meeting noted the good progress made with the development of air navigation services by Viet Nam.

7.   **Date and venue of next meeting**

7.1   The meeting agreed that the work of the Task Force had been completed and no further meetings were required. In light of the foregoing, the meeting agreed that the FDTF should be dissolved and formulated the following draft Decision:

Draft Decision 1/4   –   Dissolution of the Future Directions Task Force

That, the Future Directions Task Force having completed its work programme as set out in its Terms of Reference be dissolved.

8.   **Closing of the meeting**

8.1   The Chairman thanked the participants for their contribution to the successful completion of the Task Force's work to review the terms of reference of APANPIRG's contributory bodies and their efficiency and effectiveness in achieving their assigned tasks. He recognized the importance of the work of APANPIRG and its contributing bodies, and the support and resources provided by States and International Organizations to their success. From time to time it has been necessary to review and optimize the effectiveness of the contributory bodies to reflect priorities and refocus their terms of reference and work programmes. In this regard, he was of the view that the Task Force had met its goal as set out in its terms of reference, and the decision taken to recommend to APANPIRG to dissolve the CNS/ATM/IC/SG was carried out in that spirit. In doing so, he was confident that there would be no loss of emphasis and momentum on the implementation of CNS/ATM systems in the region, and for all parties concerned to remain cognizant of developments in this field. By streamlining the Sub-Groups and redistributing their work, this should lead to greater efficiency and effectiveness in the use of resources and productivity of the Groups. On behalf of participants he thanked the Regional Office for the excellent facilities and support for the meeting.

8.2   The meeting expressed its appreciation for the substantial contribution the CNS/ATM/IC/SG has made to the work of APANPIRG since it was established by APANPIRG/4 in 1994 to facilitate, promote and educate States and partners on the ICAO CNS/ATM system. The fact that CNS/ATM was an intrinsic part of the air navigation system in the Asia/Pacific is a credit to all members who have served the Sub-Group.

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LIST OF WORKING AND INFORMATION PAPERS

WORKING PAPERS

WP No.	Date	Agenda Item	Presented by	Subject
1	17/5/04	4	Secretariat	Results of the Eleventh Air Navigation Conference (AN-Conf/11) 2003, Follow-up Action to be taken by APANPIRG
2	17/5/04	2	Secretariat	Terms of Reference and Subject/Tasks List of CNS/MET Sub-Group
3	17/5/04	2	Secretariat	Terms of Reference and Subject/Tasks List of ATN Transition Task Force
4	17/5/04	2	Secretariat	Terms of Reference and Subject/Tasks List of ADS-B Study and Implementation Task Force of APANPIRG
5	17/5/04	2	Secretariat	APANPIRG Contributory Bodies, Associated Groups and Related Issues
6	17/5/04	2	Secretariat	ARNR/TF Terms of Reference
7	17/5/04	2	Secretariat	ATM/AIS/SAR/SG Terms of Reference and Task List
8	17/5/04	2	Secretariat	CNS/ATM/ICSG Terms of Reference and Recommendations
9	17/5/04	2	Secretariat	AIS Implementation Task Force Terms of Reference
10	17/5/04	2	Secretariat	RASMAG Terms of Reference
11	17/5/04	2	Secretariat	RVSM Task Force Terms of Reference and Task List
12	17/5/04	2	Secretariat	Key Priorities in CNS/ATM Implementation
Flimsy No.1	18/5/04	2	Secretariat	APANPIRG/14 Review of TOR and Work Programme of CNS/ATM/IC/SG
Flimsy No.2	18/5/04	-	Secretariat	APANPIRG Procedural Handbook

INFORMATION PAPERS

IP No.	Date	Agenda Item	Presented by	Subject
1	17/5/04	2	Secretariat	Report of the APANPIRG Sub-Group Work Programme Review Task Force
2	17/5/04	2	Secretariat	TOR Future Direction Task Force
3	17/5/04	2	Secretariat	Revised Terms of Reference for the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG)

TERMS OF REFERENCE OF THE

**COMMUNICATIONS, NAVIGATION, SURVEILLANCE/METEOROLOGY
(CNS/MET) SUB-GROUP**

TERMS OF REFERENCE

1.　　Ensure the continuing and coherent development of the ASIA/PAC Regional Air Navigation Plan and the ASIA/PAC Regional Plan for the New CNS/ATM Systems in the CNS/MET fields.

2.　　Review and identify deficiencies that impede the implementation or provision of efficient CNS/MET services in the ASIA/PAC Region.

3.　　Monitor CNS/ATM systems research and development, trials and demonstrations in the fields of CNS/MET and facilitate the transfer of this information and expertise between States.

4.　　Make specific recommendations aimed at improving CNS/MET services by the use of existing procedures and facilities and/or through the evolutionary implementation of CNS/ATM systems.

5.　　Review and identify inter-regional co-ordination issues in the fields of CNS/MET and recommend actions to address those issues.

TERMS OF REFERENCE OF THE

AERONAUTICAL TELECOMMUNICATION NETWORK (ATN)
TRANSITION TASK FORCE

<u>TERMS OF REFERENCE</u>

Plan for implementation of the Aeronautical Telecommunication Network (ATN) in the ASIA/PAC region to meet performance and capacity requirements of CNS/ATM Systems. The planning also addresses the ongoing development of the AFS including digital speech communication.

TERMS OF REFERENCE OF THE

ADS-B STUDY AND IMPLEMENTATION TASK FORCE

TERMS OF REFERENCE

Complete an industry wide ADS-B cost/benefit study for the near term use of ADS-B throughout the ASIA/PAC Region.

Develop an implementation plan for near term ADS-B applications in Asia Pacific including target dates taking into account available equipment standards and readiness of airspace users and ATS providers.

Note:

1. The Task Force, while undertaking the task, should take into account of the work being undertaken by OPLINK, SAS, SCRS and AMC Panels with a view to avoid any duplication.

2. The Task Force should report to the APANPIRG meeting to be held in 2004 and subsequent meetings.

TERMS OF REFERENCE OF THE

**AIR TRAFFIC MANAGMENT/AERONAUTICAL INFORMATION SERVICE/SEARCH
AND RESCUE SERVICES (ATM/AIS/SAR) SUB-GROUP**

TERMS OF REFERENCE

Ensure the continuing and coherent development of the ASIA/PAC Regional Air Navigation Plan in the ATS/AIS/ fields including the new CNS/ATM systems for the provision of the required Air Navigation Services and facilities;

Review and identify any shortcomings or deficiencies that impede the implementation or provision of efficient air traffic services and/or aeronautical information services in the ASAI/PAC Regions; and

Make specific recommendations aimed at improving air traffic services and aeronautical information services through the use of existing procedures and facilities or, through modernization programmes and evolutionary introduction of new technologies and procedures.

Task

Progress work on specific problems and tasks assigned to the Sub Group as contained in Appendix I

TERMS OF REFERENCE OF THE

REGIONAL AIRSPACE SAFETY MONITORING ADVISORY GROUP (RASMAG)

TERMS OF REFERENCE

The objectives of the Group are to:

a)   facilitate the safe implementation of reduced separation minima and CNS/ATM applications within the Asia and Pacific Regions in regard to airspace safety monitoring; and

b)   assist States to achieve the established levels of airspace safety for international airspace within the Asia and Pacific Regions.

To meet these objectives the Group shall:

a)   review airspace safety performance in the Asia and Pacific Regions at the regional level and within international airspace;

b)   review and develop as necessary guidance material for airspace safety monitoring, assessment and reporting activities;

c)   recommend and facilitate the implementation of airspace safety monitoring and performance assessment services;

d)   review and recommend on the competency and compatibility of monitoring organizations;

e)   review, coordinate and harmonize regional and inter-regional airspace safety monitoring activities;

f)   review regional and global airspace planning and developments in order to anticipate requirements for airspace safety monitoring and assessment activities;

g)   address other airspace safety related issues as necessary;

h)   facilitate the distribution of safety related information to States, and

i)   provide to APANPIRG comprehensive reports on regional airspace safety.

Task List

To review the safety monitoring programmes in the Asia and Pacific Regions for implementation and operation of:

a)   reduced vertical separation minimum (RVSM);

b)   reduced horizontal (lateral and longitudinal) separation minima using RNP; and

c)   aircraft separation applications using ADS and CPDLC).

TERMS OF REFERENCE OF THE

RVSM IMPLEMENTATION TASK FORCE

TERMS OF REFERENCE

1)   To develop strategic, benefits-driven implementation plans (based on cost benefit studies), in concert with airspace users, for RVSM operations within selected areas and airspace of the Asia/Pacific Region, ensuring inter-regional harmonization;

2)   To consider any amendments to RVSM guidance material that may be proposed by States and international organizations;

3)   To address any other matters as appropriate and relevant to the implementation of RVSM;

4)   The Task Force will include participation from States and International Organizations that are considering or involved with the implementation of RVSM; and

5)   The Task Force will report to the ATM/AIS/SAR Sub-Group.

TERMS OF REFERENCE OF THE

ATS ROUTE NETWORK REVIEW TASK FORCE (ARNR/TF)

TERMS OF REFERENCE

The Task Force shall:

a)   review the ATS route network of the ASIA/PAC Regions as described in Doc 9673 (1st Edition of the Basic Air Navigation Plan dated 2001) and subsequent changes;

b)   determine the required ATS route network;

c)   revise Doc 9673 to the extent necessary after considering whether the requirements for routes still exists or if the requirements need to be modified in order to ensure that an up-to-date basis is provided for taking into account;

      i)   an orderly flow of air traffic and the need for a well balanced cost/benefit relationship for both users and providers of services;

      ii)   an ATS route system based on area navigation (RNAV) and CNS/ATM, providing for optimal routing where possible and offering possibilities to aircraft to operate on routes not provided with station reference aids;

      iii)   the current pattern of aircraft operations and the need for fuel conservation and economy of operations;

      iv)   the opportunity for long haul flights to operate along, or as near as possible to preferred routes from the point of departure to destination in accordance with the principles contained in the Global CNS/ATM Plan and further developed by the ATM Concepts Panel (ATMCP). Particular emphasis should be focussed on a flexible use of airspace approach wherever possible.

The Task Force will report to ATM/AIS/SAR/SG/14.

TERMS OF REFERENCE OF THE

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

TERMS OF REFERENCE

1.   Review and update, on a regular basis, the "Asia/Pacific Regional Plan for the New
CNS/ATM Systems" and ensure the harmonization with the Global Air Navigation Plan
for CNS/ATM Systems;

2.   Develop, based on the research and development, trials and demonstrations being carried
out in the Asia/Pacific as well as other regions, regional guidance material for the
implementation of CNS/ATM systems;

3.   Co-ordinate the plans of States, international organizations, airlines and industry for the
implementation of the ASIA/PAC Regional Implementation Plan for the CNS/ATM
systems under development and implementation;

4.   Identify key priorities for implementation of CNS/ATM for the ASIA/PAC region, co-
ordinate and monitor implementation;

5.   Review and identify intra and inter-regional CNS/ATM co-ordination matters and where
appropriate recommend actions to address these issues;

6.   Co-ordinate and harmonize the establishment and operation of ASIA/PAC system
performance monitoring agencies for implementation of CNS/ATM systems and reduced
separation minima, and co-ordinate with other regional monitoring agencies; and

7.   Develop guidance material for the applicability of the ICAO ATM Concept in the
Asia/Pacific Region, taking into account national planning;

8.   Develop business cases for various options of CNS/ATM implementation taking into
account environmental benefits; and

9.   Develop a framework for regional training plans for the introduction of CNS/ATM systems
and to include this material in the "Asia/Pacific Regional Plan for the New CNS/ATM
Systems".

10.   To monitor environmental issues relating to the implementation of CNS/ATM
systems, in particular, the work of the ICAO's Committee on Aviation
Environmental Protection (CAEP), to disseminate relevant information to
Contracting States, and to carry out appropriate coordination with
Contracting States.

**COMPARISION OF TERMS OF REFERENCE
OF THE CONTRIBUTORY BODIES OF APANPIRG
WITH THE TERMS OF REFERENCE OF APANPIRG**

APANPIRG TOR	ATM/AIS/SAR/SG	CNS/MET/SG	CNS/ATM/IC/SG	RASMAG	Comments
a)	1, 5	1, 5	1		
b)	3, 4	3, 4	2,4	Objective	
c)	2	2	-		
Actions					
a)	1	1	1, 3		
b)	2, 3, 4	2, 3, 4	3		
c)	2	2	6 part	c)	
d)	2	2	-		
e)	4	4	1 part		
f)	5 part	5 part	5,10		
g)	1	1	9		
h)	1	1	5	d)	
i)	-	-	8		
j)	3	3	3		
k)	Procedural Handbook	Procedural Handbook	Procedural Handbook	Procedural Handbook	

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

		RECOMMENDATION		ACTION
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
AGENDA ITEM 1: INTRODUCTION AND ASSESSMENT OF A GLOBAL AIR TRAFFIC MANAGEMENT (ATM) OPERATIONAL CONCEPT				
1	1/1	**Endorsement of the global ATM operational concept** That: a) ICAO, States and planning and implementation regional groups (PIRGs), consider the global ATM operational concept as the common global framework to guide planning for implementation of ATM systems and to focus all ATM development work; b) the global ATM operational concept be used as guidance for development of ICAO CNS/ATM related provisions; c) States with the support of the other members of the ATM community undertake work to validate the seven components in the global ATM operational concept; d) ICAO, States and PIRGs develop transition strategies for implementation of ATM systems based on the global ATM operational concept; and e) ICAO align its technical work programme to facilitate future work related to the global ATM operational concept	PIRGs/States/ IOs PIRGs/States/ IOs States/IOs PIRGs/States ICAO	re (a) and (b): Consider the global ATM operational concept as the common global framework and use as guidance for the planning and implementation of CNS/ATM systems. Validate the seven components in the global ATM operational concept. Develop transition strategies based on the global ATM operational concept. Secretary General to align its technical work accordingly.
2	1/2	**Coordination with military authorities**		

	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		RECOMMENDATION		**ACTION**
		That States take appropriate action to coordinate the global ATM operational concept with their military authorities with a view to achieving maximum cooperation and integration in an effort to implement a flexible and cooperative approach to airspace organization and management.	States	Coordinate with their military authorities for implementation of a flexible and cooperative approach to airspace organization and management.
3	1/3	**Development of ATM requirements** That ICAO as a high priority develop a set of ATM functional and operating requirements for a global ATM system on the basis of the global ATM operational concept.	ICAO	Requested the Air Traffic Management Operational Concept Panel (ATMCP) to develop relevant proposals before the end of 2005.
4	1/4	**Development of Standards and Recommended Practices (SARPs) from the global ATM operational concept** That ICAO, when developing CNS/ATM-related SARPs, ensure that such SARPs are traceable to ATM requirements.	ICAO	Requested the Secretary General to bring it to the attention of relevant panels.
5	1/5	**Interoperability and seamlessness** That ICAO, when developing ATM requirements, define a corresponding minimum set of requirements for interoperability and seamlessness.	ICAO	Requested the ATMCP to develop relevant proposals before the end of 2005.
6	1/6	**Endorsement of the automatic dependent surveillance-broadcast (ADS-B) concept of use and recommendations for further work** That ICAO: a) follow research and development work in the area of ADS-B applications, and update/maintain the ADS-B concept of use as necessary; b) work cooperatively with other international bodies to ensure that the ADS-B concept of use is properly aligned with existing operational and technical documents;	ICAO	Noted. Requested Operational Data Link Panel (OPLINKP) to consider it in its further work to the extent possible.

RECOMMENDATION			ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		c) utilize the ADS-B concept of use, in its current form and as it matures, as a basis for development of SARPs and guidance material for air-to-air and air-to-ground surveillance applications; and		Noted.
		d) ensure that all future work on the ADS-B concept of use is aligned with the ATM operational concept and meets the emerging ATM requirements that emanate therefrom.		Noted.
7	1/7	**Ground and airborne automatic dependent surveillance-broadcast (ADS-B) applications for global interoperability** That ICAO and States: a) recognize ADS-B as an enabler of the global ATM operational concept bringing substantial safety and capacity benefits;	ICAO/States/ IOs	To note.
		b) support the cost-effective early implementation of packages of ground and airborne ADS-B applications, noting the early achievable benefits from new ATM applications; and	ICAO/States/ IOs	To note.
		c) ensure that implementation of ADS-B is harmonized, compatible and interoperable with respect to operational procedures, supporting data link and ATM applications.	States/IOs	Ensure that implementation of ADS-B is harmonized, compatible and interoperable.
8	1/8	**Global aeronautical information management and data exchange model** That ICAO: a) when developing ATM requirements, define corresponding requirements for safe and efficient global aeronautical information management that would support a digital, real-time, accredited and secure aeronautical information environment;	ICAO	Requested the ATMCP to develop relevant proposals by the end of 2005.

		RECOMMENDATION		ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
		b) urgently adopt a common aeronautical information exchange model, taking into account operational systems or concepts of data interchange, including specifically, AICM/AIXM, and their mutual interoperabilities; and	ICAO	Secretary General is taking appropriate action.	
		c) develop, as a matter of urgency, new specifications for Annexes 4 and 15 that would govern provision, electronic storage, on-line access to and maintenance of aeronautical information and charts.	ICAO	Secretary General to progress the work.	
9	**1/9**	**Raising the status of the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750)** That ICAO develop a formal review and agreement process for the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750).	ICAO	Noted the intent of the recommendation and requested the ANC to develop relevant proposals.	
10	**1/10**	**Status of the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750)** That States and planning and implementation regional groups (PIRGs) consider the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) as a catalyst for change, providing a global safety and interoperability framework while allowing regional or local adaptation to efficiently meet regional and local needs.	PIRGs/States/ IOs	To note the intent of the recommendation.	
11	**1/11**	**Publication of the Global ATM Operational Concept** That ICAO publish the global ATM operational concept as a new ICAO manual.	ICAO	Secretary General to develop relevant proposals for an appropriate approval and publication process.	

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

		RECOMMENDATION		ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	

15	**1/15**	**Implementation of airborne collision avoidance system (ACAS) provisions** That States take immediate action to implement, in appropriate national documentation, the ACAS provisions contained in Amendment 28 to ICAO Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, and in Amendment 12 to the *Procedures for Air Navigation Services — Operations* (PANS-OPS, Doc 8168), Volume I.	States	Implement, in appropriate national documentation, the ACAS provisions as contained in ICAO Annex/PANS-OPS.
16	**1/16**	**Provisions related to airborne collision avoidance systems (ACAS)** That ICAO review current provisions and investigate the need to develop new provisions to enhance the effectiveness of ACAS as follows: a) provisions in Annex 6, Part II concerning training of general aviation pilots in the operation of ACAS; b) provisions in Annex 10, Volume IV concerning performance of the ACAS II collision avoidance logic; c) provisions concerning the training of air traffic control personnel; d) the registering by the parametric flight recorder of resolution advisory commands; and e) air traffic control provisions in ICAO Annexes 2 and 11 and the PANS-ATM.	ICAO	Noted parts (a) (b) and (c) of the recommendation and that work is already in progress; and as far as part (d) of the recommendation, requested that Surveillance and Conflict Resolution Systems Panel (SCRSP) to develop relevant proposals for review by the ANC. Noted the recommendation and that work is already in progress.

		RECOMMENDATION	ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**
AGENDA ITEM 2:		**SAFETY AND SECURITY IN AIR TRAFFIC MANAGEMENT (ATM)**		
17	2/1	**A framework for system safety** That ICAO investigate appropriate mechanisms for the development and implementation of a framework for a uniform and system-wide approach to safety, and the application of this framework to: a) the harmonization of provisions relating to safety assessment and safety management in relevant Annexes and Procedures for Air Navigation Services (PANS); and b) the harmonization of the approaches to safety assessment in the development of safety-related standards and recommended practices (SARPs).	ICAO	Requested the Secretary General to take appropriate action.
18	2/2	**Implementation of ATS safety management programmes and establishment of acceptable levels of safety** That States which have not already done so, take action in accordance with Annex 11, 2.26 to: a) implement systematic and appropriate ATS safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes; and b) establish the acceptable levels of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes.	States States	Implement systematic and appropriate ATS safety management programmes. Establish the acceptable levels of safety and safety objectives to the provision of ATS.
19	2/3	**Sharing of ATM accident and incident data** That ICAO: a) develop guidance material on the use of the ADREP 2000 data base; and	ICAO	Requested the Secretary General to develop the relevant guidance material; and

RECOMMENDATION			ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		b) encourage States to share information on ATM accidents and incidents.	States	share information on ATM accidents and incidents.
20	2/4	**The protection of sources of safety information** That ICAO develop guidelines which will provide support to States in adopting adequate measures of national law, for the purpose of protecting the sources and free flow of safety information, while taking into account the public interest in the proper administration of justice.	ICAO	Requested the Secretary General to take appropriate action.
21	2/5	**Monitoring of safety during normal operations** That ICAO initiate studies on the development of guidance material for the monitoring of safety during normal air traffic service operations, taking into account, but not limited to, the line operations safety audit (LOSA) programmes which have been implemented by a number of airlines.	ICAO	Requested the Secretary General to develop the relevant guidance material.
22	2/6	**Safety certification of ATM systems** That ICAO investigate the need for the development of provisions for safety certification of ATM systems and service providers.	ICAO	Requested the Secretary General to take appropriate action.
23	2/7	**Safety oversight capabilities and procedures** That ICAO encourage States to develop ATM safety oversight capabilities and procedures.	States	Develop ATM safety oversight capabilities and procedures.
24	2/8	**Harmonization of aviation safety and aviation security** That ICAO: a) continue its efforts to encourage and monitor the harmonization of aviation safety and aviation security; and b) encourage States to monitor the impact of aviation security measures on aviation safety, and to take action as necessary.	ICAO States	Requested the Secretary General to take action as necessary; and monitor the impact of aviation security measures on aviation safety and to take action as necessary.

	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		RECOMMENDATION	**ACTION**	
25	2/9	**In-flight emergency response procedures for air traffic controllers** That, consistent with the ICAO Aviation Security Plan of Action and the ATM operational concept, ICAO consider developing in-flight emergency response and coordination procedures for air traffic controllers, together with training guidance, related to the distinctly different types and phases of unlawful interference. These procedures and guidance material should allow for the different conditions which exist in States.	ICAO	Requested the Secretary General to take appropriate action.
AGENDA ITEM 3:		**AIR TRAFFIC MANAGEMENT (ATM) PERFORMANCE TARGETS FOR SAFETY, EFFICIENCY AND REGULARITY AND THE ROLE OF REQUIRED TOTAL SYSTEM PERFORMANCE (RTSP) IN THIS RESPECT**		
26	3/1	**Required communication performance (RCP)** That ICAO:		
		a) continue the development of Standards and Recommended Practices (SARPs), procedures and guidance material on RCP; and	ICAO	Noted.
		b) investigate areas for further work to determine the relationship of the RCP concept to separation studies and interoperability, the standardization of RCP types and allocations, the adequacy of ATS functions and procedures for new CNS/ATM environments, as well as requirements for safety performance monitoring.	ICAO	Requested OPLINKP to progress with the work accordingly.
27	3/2	**Standardization of minimum reporting requirements** That ICAO continue its work in the field of economic performance of ATM and benchmarking, and assess the need for world-wide standardization of minimum reporting requirements in relation to information disclosure.	ICAO	Requested the Secretary General to take appropriate action.
28	3/3	**Performance framework** That ICAO, in consultation with the other members of the ATM community:		

		RECOMMENDATION		ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
		a) formulate the performance objectives and targets for a future global ATM system;	ICAO	re (a) and (b): Requested the ATMCP to develop relevant proposals for review by the ANC.	
		b) continue the definition of related performance metrics and elementary characteristics in the context of the overall behaviour of the ATM system; and	ICAO		
		c) coordinate and harmonize all related contributions within the overall performance framework initiated by the Air Traffic Management Operational Concept Panel, including definitions, standards for reporting requirements and guidance for monitoring.	ICAO	Requested the Secretary General to take appropriate action.	
AGENDA ITEM 4:		**CAPACITY-ENHANCEMENT MEASURES**			
29	4/1	**Harmonization of air navigation systems between regions** That ICAO:			
		a) maintain, and develop further, a coordination mechanism between regions for planning and implementation of capacity-enhancing measures and ATM performance improvement between regions for a harmonized evolution aimed at enhancing aviation efficiency and safety;	ICAO/PIRGs	Develop further, a coordination mechanism between regions for a harmonized evolution aimed at enhancing aviation efficiency and safety.	
		b) be systematically involved in any regional initiatives aiming at enhancing ATM capacity and performance; and	ICAO	Noted.	
		c) urge States, who have not already done so, to establish national CNS/ATM coordination and implementation committees, with a point of contact to be made known to the respective ICAO Regional Office, so as to facilitate harmonized transition to CNS/ATM systems.	States	Establish national CNS/ATM coordination and implementation committees, with a point of contact to be made known to the respective ICAO Regional Office.	

	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		RECOMMENDATION		**ACTION**
30	4/2	**Investigation of performance-driven planning and implementation methods** That States study the approach to planning and implementation commonly adopted by European States, with a view to the possible application of its elements in their respective regions.	PIRGs/States	Study the approach to planning and implementation commonly adopted by European States, with a view to the possible application of its elements.
31	4/3	**Collaborative decision-making and global demand/capacity balancing** That ICAO: a) develop SARPs and procedures for global air traffic flow and capacity management based on the concept of demand/capacity balancing as described in the operational concept; and b) develop guidance material for States to implement global demand/capacity balancing techniques based on collaborative decision-making processes, and sharing of aviation information in accordance with the operational concept.	ICAO	re (a) and (b): Requested the Secretary General to take appropriate action.
32	4/4	**Investigation and analysis of the "Single European Sky" approach to global harmonization** That ICAO follow the progress of the "Single European Sky" project for possible use in other homogeneous regions or at the global level.	ICAO/PIRGs	Follow the progress of the "Single European Sky" project for possible use in other homogeneous regions or at the global level.
33	4/5	**Runway safety programmes** That States: a) take appropriate actions to improve runway safety worldwide through the implementation of runway safety programmes;	States	Improve runway safety through the implementation of runway safety programmes.

	RECOMMENDATION		ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		b) collect and share runway incursion incidents in accordance with Annex 13 — *Aircraft Accident and Incident Investigation*, Chapter 8, *Accident Prevention Measures*; and	States	Collect and share runway incursion incidents in accordance with Annex 13.
		c) take into consideration that part of the ICAO *Manual on Advanced Surface Movement Guidance and Control Systems (A-SMGCS)* related to surveillance and control functions, when implementing such systems at airports.	States	To note.
34	4/6	**Capacity-enhancing procedures** That States, when considering capacity-enhancing procedures at aerodromes, conduct appropriate safety studies and take due consideration of the effect on runway safety.	States	When considering capacity-enhancing procedures at aerodromes, conduct appropriate safety studies and take due consideration of the effect on runway safety.
35	4/7	**Global runway incursion risk management** That ICAO: a) urgently progress the development of a formal definition for "runway incursion" as a prerequisite for further actions to be taken in this domain; and b) enhance the Accident/Incident Data Reporting (ADREP) to incorporate a common categorization taxonomy of runway incursion severity, error type and/or factors that contribute to incursions.	ICAO ICAO	The work was already being progressed. Requested the Secretary General to take appropriate action, noting that work was already being progressed.

	RECOMMENDATION		ACTION	
#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
36	**4/8**	**Rectification of air navigation deficiencies**		

#	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
36	4/8	**Rectification of air navigation deficiencies** That ICAO: a) urge States to: 1) review their respective lists of identified deficiencies and inform the ICAO Regional Office of those that have been eliminated; 2) formulate and forward an action plan and time-table for rectification of outstanding deficiencies to the respective ICAO Regional Office for review; and 3) identify areas, if any, where the establishment of multinational agreements or informal coordination groups may contribute to the resolution of deficiencies;	States	re (a): Review respective lists of identified deficiencies; formulate and forward an action plan to the respective ICAO Regional Office for review; and identify areas, where the establishment of multinational agreements may contribute to the resolution of deficiencies.
		b) encourage users of air navigation facilities and services to report to the respective regional office once they note that the remedial action on the deficiency they had reported has been taken; and	IOs	Users to report once they note that the remedial action on the deficiency has been taken.
		c) continue to provide assistance to States for the purpose of rectifying deficiencies.	ICAO/PIRGs	Continue to provide assistance to States for the purpose of rectifying deficiencies.
37	4/9	**Harmonization of flight level assignment methodology across flight information boundaries** That relevant States, when planning for the introduction of reduced vertical separation minimum (RVSM) at interfaces between airspaces where different units of measurement are used, taking into account relevant operational and technical considerations, should apply a common cruising levels structure in accordance with the tables of cruising levels expressed in metres or feet, as outlined in Annex 2 — *Rules of the Air*, Appendix 3.	States	When planning for RVSM, apply a common cruising levels structure in accordance with the tables of cruising levels expressed in metres or feet, as outlined in Annex 2 — *Rules of the Air*, Appendix 3.

		RECOMMENDATION		ACTION
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**
38	**4/10**	**Tables of cruising levels** That ICAO continue to study the common cruising levels structure, as outlined in Annex 2 — *Rules of the Air*, Appendix 3.	ICAO	Noted the recommendation and its relation to Recommendation 4/9, and agreed that no action was required.
AGENDA ITEM 5:		**REVIEW OF THE OUTCOME OF THE ITU WORLD RADIO CONFERENCE (2003) (WRC-2003) AND ITS IMPACT ON AERONAUTICAL ELECTROMAGNETIC SPECTRUM UTILIZATION**		
39	**5/1**	**Preparation for WRC-2007** That ICAO; a) urge States and international organizations to continue their efforts on implementation of the relevant elements of Assembly Resolution A32-13 and in particular participate in the preparatory work of the ITU and the regional telecommunication organizations for WRC-07; and	States/IOs	Continue participating in the preparatory work of the ITU and the regional telecommunication organizations for WRC-07.
		b) continue to assign high priority to the tasks relating to the protection and availability of radio-frequency spectrum allocated to aeronautical services and in particular actively participates in the relevant activities of the ITU-R and of the regional telecommunication organizations.	ICAO	Noted.
40	**5/2**	**ICAO activities on interference** That ICAO a) intensify its activities to secure protection of aeronautical communication, navigation and surveillance systems from the adverse effects of electromagnetic interference and develops guidance material, as necessary;	ICAO	The Secretary General to take appropriate action.
		b) develop material to assist States in assessing interference from FM broadcasting stations;	ICAO	re (b) and (d): The Aeronautical Communications Panel (ACP) in coordination with the Navigation Systems Panel (NSP) as required, to develop the necessary guidance material.

RECOMMENDATION			ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		c) support the relevant activities of the ITU and regional telecommunication and standards-making organizations; and	ICAO	Noted.
		d) develop guidance material on the control and removal of interference to aeronautical systems.	ICAO	See above.
AGENDA ITEM 6:		**AERONAUTICAL NAVIGATION ISSUES**		
41	**6/1**	**Transition to satellite-based air navigation** That: a) ICAO continue to develop as necessary provisions which would support seamless GNSS guidance for all phases of flight and facilitate transition to satellite-based sole navigation service with due consideration of safety of flight, technical, operational and economics factors; b) air navigation service providers move rapidly, in coordination with airspace users, with a view to achieving, as soon as possible, worldwide navigation capability to at least APV I performance; and c) States and airspace users take note of the available and upcoming SBAS navigation services providing for APV operations and take necessary steps towards installation and certification of SBAS capable avionics.	ICAO States/IOs States/IOs	The relevant panels continue the development of SARPs, procedures and guidance material in line with part (a). Implement, in coordination with airspace users, navigation capability to at least APV I performance. Take necessary steps towards installation and certification of SBAS capable avionics.
42	**6/2**	**Guidelines on mitigation of GNSS vulnerabilities** That States in their planning and introduction of GNSS services:	States/IOs	Assess the likelihood and effects of GNSS vulnerabilities in their airspace.

		RECOMMENDATION		ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS	
		a) assess the likelihood and effects of GNSS vulnerabilities in their airspace and utilize, as necessary, the mitigation methods as outlined in the guidelines contained in Appendix A to the report on Agenda Item 6;	ICAO	Incorporate the guidelines contained in Appendix A to the report on Agenda Item 6 in the first edition of the *Global Navigation Satellite System (GNSS) Manual*.	
		b) provide effective spectrum management and protection of GNSS frequencies to reduce the possibility of unintentional interference;	States	Reduce the possibility of unintentional interference.	
		c) take full advantage of on-board mitigation techniques, particularly inertial navigation;	States/IOs	To note.	
		d) where determined that terrestrial navigation aids need to be retained as part of an evolutionary transition to GNSS, give priority to retention of DME in support of INS/DME or DME/DME RNAV for en-route and terminal operations, and of ILS or MLS in support of precision approach operations at selected runways; and	States	As part of an evolutionary transition to GNSS, give priority to retention of DME if required.	
		e) take full advantage of the future contribution of new GNSS signals and constellations in the reduction of GNSS failures and vulnerabilities.	States	To note.	
43	6/3	**Assessment of atmospheric effects on SBAS performance in equatorial regions** That ICAO, in order to aid the work on mitigation of ionospheric effects on SBAS performance in equatorial regions, assess the results of data collection being carried out in States and develop appropriated guidance material.	ICAO	Requested the Navigation Systems Panel (NSP) to give priority to the development of suitable guidance material.	
44	6/4	**Automated means for reporting and assessing the effects of outages on GNSS operations** That ICAO consider standardization of an automated means of monitoring and reporting scheduled and unscheduled GNSS outages and assessing their effects on GNSS operations and develop, as necessary, the requisite provisions.	ICAO	Requested the Navigation Systems Panel (NSP) to consider the development of the relevant provisions.	

RECOMMENDATION			ACTION	
#		ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
45	6/5	**Early resolution of issues arising from implementation of RNAV and RNP** That ICAO as a matter of urgency address and progress the issues associated with the introduction of RNP and RNAV.	ICAO	Requested the Secretary General to progress the necessary work with the assistance of the Required Navigation Performance and Special Operational Requirements Study Group (RNPSORSG).
46	6/6	**Advanced GNSS procedure design** That ICAO develop RNAV procedures supported by GNSS for both fixed and rotary wing aircraft, enabling lower operating minimas in obstacle rich or otherwise constraint environments.	ICAO	Requested the Navigation Systems Panel (NSP) and Obstacle Clearance Panel (OCP) to develop relevant proposals for consideration by the ANC.
47	6/7	**Curved RNAV procedures** That ICAO develop RNAV procedures supported by GNSS for fixed wing aircraft, providing high track and velocity keeping accuracy to maintain separation through curves and enable flexible approach line-ups.	ICAO	Requested the Navigation Systems Panel (NSP) and Obstacle Clearance Panel (OCP) to develop relevant proposals for consideration by the ANC.
48	6/8	**GNSS/INS integration** That ICAO develop provisions for the integration of GNSS/INS in order to reduce the vulnerability of GNSS to RF interference and aid the development of advanced GBAS capabilities.	ICAO	Requested the Navigation Systems Panel (NSP) to develop relevant proposals for consideration by the ANC.
49	6/9	**Support of and participation in SBAS pre-operational implementation activities** That: a) States that develop and introduce satellite-based augmentation systems and other SBAS service providers commence or continue to provide their technical and financial support and participation in the activities leading to the extension of their SBAS service areas into neighbouring States and Regions; and	States/IOs	To note

RECOMMENDATION			ACTION	
#		**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**
		b) States participating in SBAS implementation activities coordinate with other participating States to optimize their effort, minimize duplication of service and facilitate participation of service providers.	States	States participating in SBAS implementation coordinate with other participating States to optimize their effort.
50	6/10	**Amendment to Annex 10, Volume I, Attachment B — Updating the strategy for introduction and application of non-visual aids to approach and landing** That Attachment B to Annex 10, Volume I be amended as shown in Appendix B to the report on Agenda Item 6.	ICAO	The Air Navigation Commission made a preliminary review of Recommendation 6/10, and agreed that it should be transmitted to Contracting States and interested international organizations for comments, together with the Commission's comments and proposals thereon. Following receipt of these comments, a further review will be conducted by the Commission, which will then present its final proposals to the Council for adoption of the amendments to Annex 10, Volume I.
51	6/11	**Amendment to the Global Plan — Navigation** That: a) the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) be amended as shown in Appendix C to the report on Agenda Item 6; and b) updated CNS/ATM systems implementation time lines contained in Part II of the Global Plan be reviewed by the Regional Implementation Group and consolidated for incorporation in the next edition of the Global Plan.	ICAO PIRGs	Requested the Secretary General to take appropriate action. Update CNS/ATM systems implementation time lines contained in Part II of the Global Plan.
52	6/12	**Development of guidance material on applications of new GNSS elements and their combinations** That ICAO, in developing standards for new GNSS elements and signals, address the issues associated with the use of multiple signals and their combinations, and develop guidance on the most promising combinations of GNSS elements.	ICAO	Requested the Navigation Systems Panel (NSP) to develop the required guidance material.

	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
		RECOMMENDATION		**ACTION**
53	6/13	**Potential constraints on using multiple GNSS signals** That States, in their planning for implementation of GNSS services, take full advantage of future benefits accrued from using independent core satellite constellations, other GNSS elements and their combinations, and avoid limitations on the use of specific system elements.	States/IOs	Take full advantage of future benefits, and avoid limitations on the use of specific system elements.
54	6/14	**GNSS services in the 960 - 1 215 MHz band** That, a) States be encouraged to take into account the need to minimize potential interference to GNSS services in their planning of the deployment of DMEs; and b) an appropriate ICAO body be tasked to review the issues listed in paragraph 6.4.2.4 of the report on Agenda Item 6.	States ICAO	Minimize potential interference to GNSS services in their planning of the deployment of DMEs Requested the Navigation Systems Panel (NSP) to develop proposals for consideration by the ANC.
55	6/15	**Updating of SARPs for radio navigation aids in Annex 10, Volume I** That ICAO undertake a review of SARPs and guidance material in Annex 10, Volume I in the areas identified in paragraph 6.4.3.4 of the report on Agenda Item 6.	ICAO	Requested the Navigation Systems Panel (NSP) to develop relevant proposals for consideration by the ANC.
56	6/16	**Completion of guidance material on application of data quality SARPs in Annex 15** That ICAO give high priority to the completion of guidance material for the data quality assurance including the data processing from origination to end-use.	ICAO	Requested the Secretary General to expedite publication of the *Quality Management System Manual for AIS/MAP Services*.

	RECOMMENDATION		ACTION	
#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
AGENDA ITEM 7:	**AERONAUTICAL AIR-GROUND AND AIR-TO-AIR COMMUNICATIONS**			
57 **7/1**	**Strategy for the near-term introduction of ADS-B** That States: a) note that a common element in most of the approaches currently adopted for early implementation of ADS-B is the selection of the SSR Mode S extended squitter as the initial data link; and b) take into account this common element to the extent possible in their national and regional implementation choices in order to facilitate global interoperability for the initial introduction of ADS-B.	PIRGs/States PIRGs/States	To note. Take into account this SSR Mode S extended squitter as a common element in their national and regional implementation choices for the initial introduction of ADS-B.	
58 **7/2**	**Support of longer term ADS-B requirements** That a) States recognize that in the longer term the current SSR Mode S extended squitter technology may not be able to fully satisfy all of the requirements for ADS-B services in all airspaces; and b) ICAO continue development of technical standards for ADS-B link technologies, including SSR Mode S extended squitter, VDL Mode 4 and UAT, with special attention being paid to ICAO ADS-B operational requirements, frequency spectrum availability and aircraft integration issues.	States/IOs ICAO	To note. Requested the ACP and the SCRSP, in coordination with other appropriate panels, to continue the development of provisions for ADS-B technologies as required.	

		RECOMMENDATION		ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
59	**7/3**	**Evolutionary approach for global interoperability of air-ground communications** That States: a) continue the use of currently implemented ICAO standardized systems for VHF band voice and data communications until such time as either saturation of the VHF band is approached or significant cost/benefit or safety advantages are expected from the implementation of other ICAO Standards;	PIRGs/States /IOs	To note.	
		b) continue efforts in maximizing efficient use of existing aeronautical spectrum allocations through spectrum management measures	PIRGs/States/ IOs	To note.	
		c) continue the progressive deployment of data communications on the basis of applicable ICAO Standards such as aeronautical telecommunication network (ATN) using VDL Mode 2 as dictated by evolving operational requirements with a view to complementing or replacing voice communications for most routine communications;	PIRGs/States/ IOs	To note.	
		d) provide a forecast of anticipated VHF band saturation in high-density regions;	States	Provide a forecast of anticipated VHF band saturation in high-density regions.	
		e) in view of the anticipated saturation of the VHF band for voice communication, consider transition to spectrally more efficient ICAO systems, and/or make increased use of data communications; and	States	To note.	
		f) investigate multi-mode avionics as a transitional method of achieving interoperability of air/ground communications, where global harmonization has not been achieved.	States/IOs	Use multi-mode avionics for achieving interoperability of air/ground communications.	

RECOMMENDATION			ACTION	
	#	ITEM	BY ICAO/PIRGs/ STATES/IOs	ACTION/TASKS
60	7/4	**Investigation of future technology alternatives for air-ground communications** That ICAO a) investigate new terrestrial and satellite-based technologies, on the basis of their potential for ICAO standardization for aeronautical mobile communications use, taking into account the safety-critical standards of aviation and the associated cost issues; b) continue evolutionary development of existing standardized ICAO technologies with a view to increasing their efficiency and performance; and c) assess the needs for additional aeronautical spectrum to meet requirements for increased communications capacity and new applications, and assist States in securing appropriate additional allocations by the ITU.	ICAO	Requested the ACP to carry out the relevant activities in (a), (b) and (c).

61	7/5	**Standardization of aeronautical communication systems**
		
		That, for new aeronautical communication systems, ICAO:
		
		a) continue to monitor emerging communication systems technologies but undertake standardization work only when the systems meet all of the following conditions:
		
		   1) can meet current and emerging ICAO ATM requirements;
		
		   2) are technically proven and offer proven operational benefits;
		
		   3) are consistent with the requirements for safety;
		
		   4) are cost-beneficial;
			ICAO	Requested all ICAO bodies involved in the standardization of aeronautical communication systems to apply it in their work.

		RECOMMENDATION		ACTION	
	#	**ITEM**	**BY ICAO/PIRGs/ STATES/IOs**	**ACTION/TASKS**	
		5) can be implemented without prejudice to global harmonization of the CNS/ATM systems; and			
		6) are consistent with the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750)			
		b) include in Annex 10 provisions ensuring that the introduction of mandatory carriage of new equipment be based only on appropriate ICAO regional and interregional coordination; and			
		c) further limit SARPs for complex aeronautical systems to broad, system-level, functional and performance requirements and better capitalize on the work of other standard-making organizations so as to reduce the complexity/size of technical provisions.			

— END —