



International Civil Aviation Organization

**Seventh Meeting of CNS/MET Sub-Group of APANPIRG and
Tenth Meeting of CNS/ATM IC Sub-Group of APANPIRG**

Bangkok, Thailand, 15 – 21 July 2003

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- Agenda Item 4: Aeronautical Mobile Service;**
Agenda Item 5: Radio Navigation Aids;
Agenda Item 7: Aeronautical electromagnetic spectrum utilization;
Agenda Item 16: Safety and Security in Air Traffic Management;
Agenda Item 17: Air Traffic Management Operational Concept

**REGIONAL PREPARATORY MEETING FOR THE
ELEVENTH AIR NAVIGATION CONFERENCE (AN-Conf/11)**

(Presented by the Secretariat)

SUMMARY

This paper presents the Report of Regional Preparatory Meeting for the Eleventh Air Navigation Conference held in January 2003 for review and considerations by the meeting.

1. INTRODUCTION

1.1 The Regional Preparatory Meeting for the Eleventh Air Navigation Conference (AN Conf/11) was held in Bangkok, Thailand from 27 to 28 January 2003 in accordance with recommendation made by the 39th DGCA Conference to supplement State's preparations for the Conference.

1.2 The AN Conf/11 will be held from 22 September to 3 October 2003 at ICAO Headquarters, Montreal, Canada.

2. DISCUSSION

2.1 A copy of the Report of the Regional Preparatory Meeting for AN Conf/11 is provided in the Attachment to this paper.

3. ACTION BY THE MEETING

3.1 The meeting is invited to review the Report of Regional preparatory meeting for AN Conf/11 and comment as appropriate.



INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA AND PACIFIC OFFICE

Report of

**Regional Preparatory Meeting for
the Eleventh Air Navigation Conference 2003**

Bangkok, Thailand, 27 – 28 January 2003

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Attachment:

Attachment 1: List of participants

Attachment 2: List of working papers and information papers

1. Introduction

1.1 The Regional Preparatory Meeting for the Eleventh Air Navigation Conference 2003 (AN-Conf/11) was held in Bangkok, Thailand from 27 – 28 January 2003.

2. Attendance

2.1 The meeting was attended by 34 participants from 13 States and two International Organizations. The list of participants is at Attachment 1.

3. Opening of the Meeting

3.1 Mr. L. B. Shah, ICAO Regional Director for the Asia and Pacific Office, opened the meeting. He stated that this meeting is held as requested by the 39th DGCA Conference to supplement State's preparation for the Eleventh Air Navigation Conference.

3.2 He reminded the participants that the Air Navigation Conference makes recommendations, within the scope of its agenda, for new Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS), and guidance materials, or for amendments to the existing SARPs, PANS and guidance materials. Apart from this primary objective, the Conference prepares, as necessary, other recommendations on individual agenda items for action by Contracting States or the Organization. From this point of view it can be seen that the Air Navigation Conference is held to address issues of a Global nature based on the work of the Air Navigation Commission.

3.3 In order to achieve this objective and to assist States, the ICAO Secretariat under the direction of the Commission prepares a basic working paper on each agenda item, defining the issues and providing a brief historical background. Each such paper includes, as appropriate, lines of development, tentative conclusion and specific suggestions for action. When appropriate, the Secretariat also prepares a consolidation of the various proposals received from States and international organizations on each agenda item, or a short paper identifying the substance of the various proposal received. States and international organizations are encouraged to prepare documentation on specific agenda items.

3.4 He further stated that the Eleventh Air Navigation Conference is expected to discuss the present air navigation planning process so as to identify the most appropriate method to meet the future implementation planning needs including the option of having a global air navigation plan.

3.5 He pointed out that the ATM Operational Concept and supporting operational and technical requirements are intended to be included in a Global Air Navigation Plan, under consideration, which is intended to be a blue print of the envisaged air navigation infrastructure of facilities and services.

3.6 In addition, the Conference would address safety management system issues. The Conference will review all aspects of safety. The universal safety oversight audit programme will be expanded to include aerodromes and air traffic services and security. A manual on safety management systems will be available and States will be encouraged to implement safety management programmes. Also, they will be encouraged to adopt an integrated holistic approach to safety and discussions at Conference should include ways of assuring safety in a future integrated ATM system. It is expected that this would lead to recommendations for the Separation and Airspace Safety Panel (SASP) to continue to work on this matter.

3.7 The result of the work of eighth meeting of the Aeronautical Mobile Communication Panel (AMCP/8) to be held from 4 to 13 February 2003 and the Fourth meeting of the Global Navigation Satellite System Panel (GNSSP) to be held from 23 April to 2 May 2003 will also contribute significantly to the preparation of the Conference. There will be sufficient materials to consider under agenda items 5,6 and 7 after these two Panel meetings.

3.8 The participants were encouraged to take the opportunity to be thoroughly familiar with the purpose of the Conference, agenda of the Conference and the issues involved to enable States to prepare for the Conference.

3.9 Mr. K.P. Rimal, Regional Officer CNS of the ICAO Asia and Pacific Office welcomed the participants and provided an overview of the proceedings of the meeting and encouraged participants to seek clarification on any of the issues and provide input, as required.

4. Officer and Secretariat

4.1 Mr. K.P. Rimal and Mr. David Moores, Regional Officer ATM acted as the Moderator for respective agenda items assisted by Mr. John Richardson, Regional Officer ATM and Mr. Li Peng Regional Officer CNS.

5. Agenda of the Meeting

5.1 The Agenda of the meeting was as follows:

- Agenda Item 1: Introduction and assessment of a global air traffic management operational concept
- Agenda Item 2: Safety and security in air traffic management
- Agenda Item 3: Air traffic management performance targets for safety, efficiency and regularity and the role of required total system performance (RTSP) in this respect
- Agenda Item 4: Capacity - enhancement measures
- Agenda Item 5: Review of the outcome of the ITU World Radio Conference (2003) (WRC-2003) and its impact on aeronautical electromagnetic spectrum utilization
- Agenda Item 6: Aeronautical navigation issues
- Agenda Item 7: Aeronautical air-ground and air-to-air communications
- Agenda Item 8: Any other business

6. Organization, Working arrangement, Language and Documentation

6.1 The Meeting met as a single body. The working language was English inclusive of all documentation and this report. A list of working papers and information papers presented at the meeting is at Attachment 2.

Agenda Item 1: Introduction and assessment of a global air traffic management operational concept

1.1 Under this agenda item the meeting considered the following items on the AN-Conf/11 agenda: the global air traffic management operational concept; enabling concepts in support of the global air traffic management operational concept; the need for a global air navigation plan; and the role of airborne collision avoidance systems (ACAS) technologies.

Global air traffic management operational concept and global air navigation plan

1.2 The meeting was updated on progress made by ICAO to finalize the global ATM operational concept document, which is a major item on the agenda of AN-Conf/11. It was recalled that the Air Navigation Commission had established the Air Traffic Management Operational Concept Panel (ATMCP) to develop a gate-to-gate ATM operational concept that would facilitate implementation of a seamless global ATM system. At the ATMCP/1 meeting in 2002, a first draft Global ATM Operational Concept was completed and circulated by State letter (SP 58/4-02/56) dated 28 June 2002 to States and international organizations for comment. The results of the State letter were presented to the Commission (161-10, November 2002) and referred to the ATMCP for further consideration. The ATMCP, taking into account the Commission and State comments is updating the concept for presentation to the Commission and then to AN-Conf/11.

1.3 The meeting supported ICAO's work to provide a global ATM operational concept that would give direction to the aviation community for the advancement of the CNS/ATM system. However, the meeting felt that the ATM Concept, which was visionary in nature looking ahead to 2025, should have a practical application to support an evolutionary transition to a global ATM end system. In this regard, the meeting was interested in how the ATM systems of today would transition to a global ATM system as envisaged in the ATM Concept. The meeting was of the view that this question should be taken into account by AN-Conf/11 and priority given to address this issue in the work of ICAO panels.

1.4 It was noted that the global ATM operational concept describes how an integrated global ATM system should operate and would provide States and industry with clearer objectives for designing and implementing ATM and supporting systems. Therefore, the review and assessment of the ATM Concept by the AN-Conf/11 should have a practical focus that would facilitate the eventual acceptance and implementation of the ATM Concept into the planning framework of States and planning and implementation regional groups (PIRGs). Also, the recommendations of AN-Conf/11 should guide and encourage transition and implementation.

1.5 In regard to the above, the meeting felt that the ATM Concept, whilst giving PIRGs a vision of the future global ATM system and providing a basis for planning of facilities and services and development of regional air navigation plans, required detailed technical performance parameters of the elements of the ATM system. In this regard, the meeting recognized that development of the Required Total System Performance Requirement (RTSP) could provide a vehicle to achieve this. It was noted that considerable detailed work was still required by ATMCP to define RTSP and its components. In the meantime, the meeting pointed out that States, ATS providers and aircraft operators continue to invest in available technology, which would be in use for a considerable time. In this regard, the meeting emphasized that interoperability, efficiency and cost were of primary concern. Operational needs today are being met in a pragmatic way with considerable diversification of technology being used. To achieve global harmonization and common operating practices, the meeting was of the view that priority needed

to be given to integrate present ATM systems and this work would be primarily undertaken at a regional level.

1.6 From an airline users perspective, the meeting was advised by IATA that regularity was of primary importance and more emphasis needed to be given to on-time performance in developing a global ATM system. The meeting recognized that in the ATM operational concept the driver for change to the ATM system had been changed from a range of factors, including cost, efficiency, safety and national interest to ATM user expectations within a framework of safety case/cost/benefit analyses and a business case. It was expected, therefore, that user requirements would be given high priority in determining future ATM requirements.

1.7 Noting the above, the meeting recognized that there was insufficient information available on how the global ATM operational concept would be integrated in the regional planning process. In this regard, regional planning addressed the unique characteristics of a region and it was essential that regional ANPs, which reflect the requirements of States and users, continued to meet regional priorities. In respect to the Asia/Pacific Region, which has the largest area of oceanic airspace, implementation planning has been innovative and progressive wherein advantage had been taken of available technology to introduce operational benefits. However, IATA pointed out that realizing improvements was often a slow process. For example, aircraft have had area navigation (RNAV) capability for many years but implementing RNAV routes on a regional basis has been difficult to achieve. This is also true for communications whereby HF radio is still providing the primary means of oceanic ATC communications. Although technology has been available for some time for data link services, States have been slow to introduce these services. Experience in this region has shown that harmonizing air traffic services regionally has proved to be difficult to achieve. Implementation issues are major obstacles to achieving a global ATM system, and this must be fully addressed in developing a global air navigation plan.

1.8 In regard to ICAO establishing a global air navigation plan, the meeting noted that the provision of a global planning framework or architecture and inclusion of the ATM operational concept, should take into account regional requirements and priorities. Further, a regional air navigation plan should remain a unique document designed for a particular region based on the global planning framework and harmonized with other regions to the extent possible.

Airborne collision avoidance systems (ACAS) technologies

1.9 In considering the role of airborne collision avoidance systems (ACAS) technologies, the meeting recognized the essential role of these systems to prevent aircraft collisions. IATA expressed the view that more use could be made of the ACAS technology to provide ATC separation. Also, in future developments it should play a more active role rather than being passive. It was explained that at present ICAO ATS separation criteria excluded consideration of aircraft capabilities dependent on ACAS equipment. Collision avoidance systems are not part of separation provision and are not included in determining the calculated level of safety required for separation provision. However, they do form part of the safety management system.

1.10 In regard to future developments of ACAS technologies which use SSR transponders and pilot displays, the Airborne Separation Assistance System (ASAS) which uses the same technologies is under development by the Surveillance and Conflict Resolution Systems Panel (SCRSP) and SASP. The meeting recognized the important issue of the transfer of responsibility for separation from controllers to pilots. The meeting further recognized that human factor considerations were critical in the application of airborne separation by pilots using surveillance systems. At present it was too early

to have a clear understanding of how these systems will operate, and the meeting expected AN-Conf/11 to clarify the use of ACAS in separation and using ACAS related technology in airborne separation applications.

1.11 The United States briefed the meeting on the subjects under this agenda item they would be covering in working papers to be presented to AN-Conf/11. These papers should be circulated within 60 days and States were invited to provide comments, which would be welcomed.

Summary of issues discussed

1.12 The meeting summarized the main issues discussed:

- a) the ATM operational concept whilst providing a visionary framework for global ATM, must also be an effective planning tool for regional use;
- b) in transitioning from present CNS/ATM systems to the future system, interoperability and common ATS procedures are essential;
- c) regional planning should focus on requirements in the current operational environment to use technology as a means to resolve operational problems;
- d) the technical work of ICAO panels must remain relevant to support regional implementation requirements;
- e) the global ATM system evolution path should fully utilize existing systems while migrating to the future system taking fully into account interoperability, efficiency and cost;
- f) ATM user requirements should be the primary driver of change to the ATM system; and
- g) ACAS and related technologies play an important role in aircraft collision avoidance and separation, and a clear understanding of their application is required.

Agenda Item 2: Safety and security in air traffic management

2.1 Under this agenda item the following subjects were considered: safety management systems and programmes; safety certification of ATM systems; safety regulations; Global Aviation Safety Plan (GASP) and safety and security of the ATM infrastructure.

Airspace safety management systems and programmes

2.2 The meeting recognized that the Annex 11—*Air Traffic Services* provisions requiring States to implement systematic and appropriate ATS safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes had significant impact on States. The meeting expressed concern that ICAO guidance material was not available when the amendments to Annex 11 and the *Procedures for Air Navigation Service-Air Traffic Management* (PANS-ATM, Doc 4444) became applicable on 28 November 2002, thus making it difficult for States to meet their obligation under Annex 11 by 27 November 2003. The meeting noted that ICAO was developing guidance material, which was expected to be presented to AN-Conf/11. The meeting fully endorsed these provisions and urged ICAO to publish guidance material as a matter of highest priority. Also, the meeting was informed that APANPIRG/13 (September 2002) Conclusion 13/44 addressed the need for ICAO and States with expertise to support the implementation of Annex 11 requirements by States through holding seminars, workshops and provision of guidance material. In this regard, the meeting was informed that ICAO was planning a seminar in November 2003 and early 2004, which would take into account the outcome of AN-Conf/11.

2.3 The meeting was further informed that APANPIRG/12 (August 2001) had established the Asia Pacific Airspace Safety Monitoring Task Force (APASM/TF) to develop an airspace safety monitoring structure for the Asia/Pacific Region. It was expected that this work would be completed for presentation to APANPIRG/14 to be held on 4-8 August 2003. It is envisaged that the safety organization established by APANPIRG (presently named the Asia/Pacific Airspace Safety Advisory Group (APASAG)) would be available to provide support to States to establish and operate airspace safety management activities that meet ICAO requirements.

2.4 The meeting recognized that in considering the establishment of safety management programmes by States, one of the difficulties would be balance the cost of introducing safety measures with increasing cost to operators and operational efficiency. The view was expressed that without safety there would be no business and without profit safety could be marginalized. Therefore, it was important to understand how to balance safety with cost benefits and operational efficiency. In addressing this matter, it was hoped that AN-Conf/11 would shed some light on the way forward to achieve global safety standards in all phases of flight operations.

Safety certification of ATM systems and safety regulations

2.5 The meeting recognized that safety certification of ATM systems would promote safety and efficiency in the international air navigation system. The users of ATM systems should expect and receive systems, which are installed and maintained to the highest possible standards irrespective of the airspace they are flying over, or entering. Today, there are no ICAO SARPs and procedures to be followed by States for the design and operation of ATM systems including avionics. Also, in most States there is no independent certification authority responsible to certify ATS systems or sub-systems approved for operational use. In this regard, new ATS systems become operational without an obligation on the ATS provider to demonstrate that the system works according to international specifications. The

meeting agreed that in the context of a global ATM system, there should be common standards for the design and manufacture of ATM systems and for their certification for operational use.

2.6 The meeting recognized that to achieve global harmonization of ATM and CNS systems standardization was essential. In regard to developing ICAO SARPs for technology in light of the rapid pace at which technology changes, it is not possible to chase technology with SARPs. This creates considerable difficulty for manufacturers, aircraft operators and ATS customers to make use of emerging technology. In the case of airframe and avionics equipment manufacturing, industry standards are extensively used as regulated by States. IATA pointed out that the aviation industry accepts many standards outside of SARPs, such as RTCA/EUROCAE, AEEC/ARINC, and SAE. The International Organization for Standardization (ISO) system of standards and certification also had widespread acceptance by States and airlines and could provide a means for ICAO SARPs to address ATS and safety management systems. In this regard, IATA has introduced Operational Quality Standards audits of airlines to help improve the quality of the services of its member airlines. A similar approach if adopted for ATM systems, would possibly contribute to increasing the reliability and effectiveness of the ATM global service provided and enhance safety. The meeting noted the potential of ISO standards and certification for ATM systems and the AN-Conf/11 may wish to consider this approach to complement the ICAO Regulatory Safety Audit programmes.

2.7 In considering safety issues related to the role of the regulator and the ATS service provider, Australia advised the meeting that Australian legislation had created two bodies: the Civil Aviation Safety Authority (CASA) as the regulator, and Airservices Australia as the ATS provider. In respect to safety, CASA had complete authority over Airservices. Also, before Airservices implements any change that involves safety matters, a safety case has to be submitted and approved by CASA.

2.8 Hong Kong China advised the meeting that over the past two years they have been developing safety management systems for ATM and separating the ATS service provider from the regulator. Separate divisions have been established within the Civil Aviation Department operating independently of each other. Within the context of the limited scope of regulatory and ATS activities in Hong Kong, it was not feasible to establish a separate regulatory authority.

2.9 In regard to security, States indicated that security arrangements with their relevant authorities were in place and in general working satisfactorily. ATM security could be seen as two separate aspects: protection of the infrastructure against unlawful interference, and security of ATM operational services including protection of aeronautical information from malicious interference.

2.10 IATA advised that they have a requirement, as a condition of membership, that airlines must establish both security and safety departments, which are subject to independent audits by IATA.

2.11 The meeting welcomed the emphasis on safety and security matters including the review of the ICAO Global Aviation Safety Plan (GASP) by the AN-Conf/11.

Agenda Item 3: Air traffic management performance targets for safety, efficiency and regularity and the role of required total system performance (RTSP) in this respect

3.1 The meeting noted that the development of a required total system performance (RTSP) was a highly technical matter being undertaken by ATMCP with input from other panels. Progress to date included the following: completion of required navigation performance (RNP) for en-route operations by the Review of the General Concept of Separation Panel ((RGCSP) renamed the Separation and Airspace Safety Panel (SASP)); RNP for approach landing and departure is under development by the GNSSP and is expected to be ready for operational application in the near term; and the required communication performance (RCP) operational concept has been completed by the Operational Data Link Panel (OPLINKP) and circulated by State letter for comment. At present there are no surveillance requirements to support global ATM, in terms of airspace coverage and required surveillance performance (RSP). This work is ongoing by OPLINKP.

3.2 The meeting recognized that RTSP was not simply a question of combining the required performance elements but would cover a much broader field of system performance parameters including ATM, human factors, system interoperability, and interface with human operators and procedures. In this regard, the meeting supported the need to develop performance parameters necessary for ATM applications, which should be determined by operational requirements. The view was expressed that technology needed to be harnessed to meet operational needs in a pragmatic way which should have a strong regional focus on implementation.

3.3 There was high expectation that the AN-Conf/11 would clarify the concept of use of RSTP and its components and give direction to meeting regional planning needs. The meeting reiterated that concepts needed to be rooted in practical application that met State requirements as reflected in regional air navigation plans.

Agenda Item 4: Capacity - enhancement measures

4.1 The meeting noted that in the Asia/Pacific Region significant progress has been made to improve airspace capacity for major oceanic traffic flows such as the South China Sea and Bay of Bengal areas where new ATS route structures were implemented based on RNAV and RNP 10. Also, reduced vertical separation minimum (RVSM) has been widely implemented in the region providing increased capacity and greater operational flexibility for ATM.

4.2 The meeting was briefed on the revised Route Structure Asia to Middle East/Europe South of the Himalayas (EMARSSH), which was implemented in phases from December 2001 to November 2002. This route structure was one of the biggest ATS route changes in international airspace undertaken by ICAO and involved three ICAO Regions: Asia/Pacific, Middle East and Europe. The meeting recognized that EMARSSH was a large-scale project management undertaking involving a multi-disciplinary approach covering a wide geographical area with diverse operational environments and led by a core team management group. The project was successfully completed in a short timeframe of about two years. Significant benefits are being realized in air traffic management and flight operations, including safety enhancements, efficiency, cost and the environment due to reduced flight times and fuel consumption. The meeting noted that this substantial planning and implementation process and the experience gained provided a useful model for other regions. In this regard, the meeting was of the view that the ATM operational concept document would benefit from including material on how the Concept could be applied, and the meeting felt that the EMARSSH model would be suitable material to be included.

4.3 The meeting turned its attention to aerodrome matters, which are a key to achieving the efficient handling of traffic gate-to-gate as described in the operational concept. In this regard, the meeting recognized that the principal challenge to aerodrome operators worldwide is to provide sufficient aerodrome capacity. However, it was noted that the Asia/Pacific Region was in a better position than other regions because of the substantial investment in new airports and improvements to existing airports being made by States in this region. Whilst at many major airports in the Asia/Pacific Region there is sufficient capacity to meet current demand, there were operating practices that could be improved to fully utilize the available capacity.

4.4 The United States was considering the need for special qualification certification for pilots, controllers and other operational personnel working at major multiple runway airports. The operating environment at these airports are unique and extremely complex with a high volume of traffic operating at reduced separation enabled by runway enhancement tools such as precision runway monitoring. The United States advised that they will be presenting a paper on this subject to the AN-Conf/11.

4.5 The introduction of the Annex 11 provisions on safety management programmes includes aerodromes and there is a need for specific guidance material on assessing the safety of aerodrome operations. This is particularly relevant when capacity enhancement measures are being introduced.

4.6 In regard to global measures, there has been considerable emphasis in ICAO on the global air navigation CNS/ATM system, global air traffic management operational concept and global harmonization of system implementation and operation. The meeting recognized the need for a global approach, however, it cautioned against any diminishing of the importance of regional requirements. In this regard, the pace at which improvements are made, and new CNS/ATM systems implemented will

vary from region to region. Also, advances in technology have had a regional bias and a technological solution in one region may not be as important in another region, as in the case of early introduction of data link communications in the Pacific oceanic airspace. In this regard, the meeting acknowledged that the role of the ICAO Regional Supplementary Procedures (SUPPs, Doc 7030) is extremely important.

4.7 The meeting considered that the SUPPs are in need of major overhaul and procedures that have global applicability such as RVSM phraseology and oceanic weather deviation procedures, should be contained in the PANS-ATM. The meeting emphasized the continued importance of the SUPPs and the need for ICAO to streamline and improve the efficiency of producing amendments. The inclusion of this item on the agenda of AN-Conf/11 was highly supported if it leads to greater regional harmonization and efficiency of operating procedures.

**Agenda Item 5: Review of the outcome of the ITU World Radio Conference (2003)
(WRC-2003) and its impact on aeronautical electromagnetic spectrum
utilization**

5.1 Under this agenda item, the meeting was provided information on the regional preparatory activities for WRC-2003. It was noted that two Regional Preparatory Group Meetings were conducted by the Regional Office. APANPIRG meetings and DGCA Conferences had urged States to provide necessary support for the ICAO position at national level discussions, at the regional level as well as at WRC-2003.

5.2 Agenda items of WRC-2003 of particular importance were highlighted. The proposed agenda for WRC-2007 was also noted. The meeting considered that identification and availability of the radio frequencies to satisfy spectrum requirement for the ATM operational concept is critically important. The Conference will review the outcome of WRC-2003 to assess its impact on aeronautical spectrum requirements and will also consider continuing availability of spectrum for aeronautical communications and navigation. It was, therefore, considered very important to secure support from States at WRC-2003 for the aviation spectrum requirements and consider this as one of the important activities. IATA reiterated support on the spectrum issue.

5.3 Japan informed the meeting of the need to secure spectrum for the aeronautical mobile satellite (R) service (AMS (R) S), as the current ITU provision does not ensure priority and protection of the AMS (R) S in the band 1.5/1.6 GHz. Since WRC-2003 adopts agenda for WRC-2007, Japan requested the civil aviation administrations to support Japan's proposal to include a new item to discuss prioritization and protection of AMS (R) S spectrum in the WRC-2007 agenda at the APT APG 2003-5 meeting to be held in Tokyo from 19 to 25 February 2003 and also at WRC-2003. Australia expressed support to the proposal from Japan. Since this proposal was in line with the ICAO position for WRC-2003, it was considered important to support the proposal, which is aimed at protecting the spectrum for AMS(R) S.

5.4 States are expected to study spectrum allocations to all aeronautical services in light of the outcome of WRC 2003 and present proposals at the AN-Conf/11 if further actions are required to ensure availability of adequate spectrum to support the ATM operational concept.

Agenda Item 6: Aeronautical navigation issues

6.1 The meeting thoroughly reviewed the agenda item and the explanatory notes on this agenda item with a view to develop full understanding of the issues involved. The meeting also reviewed the strategies for the provision of precision approach and landing guidance system and the GNSS implementation for the ASIA/PAC region adopted by APANPIRG. The strategy contained in Annex 10, Volume I, Attachment B was reviewed. It was also noted that Attachment B would be updated by the Conference based on the developments and progress in implementation of GNSS. The Secretariat informed that the GNSSP/4 Meeting will be held from 23 April to 2 May 2003, the result of which, as approved by the Air Navigation Commission will be presented to the Conference. It was also noted that the Conference is expected to recommend revision to the Global Air Navigation Plan for the CNS/ATM System – Second Edition 2002, develop guidelines for transition to GNSS, identify the need for a back-up system and draft amendments to SARPs in Annex 10.

6.2 Regarding the ability of GNSS to become a sole means, IATA indicated that its position in this regard has not changed. Generally the international airlines do not consider that GNSS by itself will be required as a sole means of navigation by airlines without the support of inertial reference units (IRU). It was also stated that high quality RNP for approach and landing purposes can be best achieved with IRU integrated with GNSS. IATA expressed its full support for GNSS developments to meet these goals.

6.3 It was recognized that an inter-operability of various systems such as GPS, GLONASS, Galileo, and WAAS, EGNOS and MSAS as SBAS would be addressed by the Conference. The meeting was also advised by the United States that the WAAS was completed for certification and handed over to the U.S. Government. It was further stated that GBAS (LAAS) for Cat-I, will be certified by the end of 2005. Category II/III, A and B, GBAS (LAAS) will be available during 2006-2007 time frame. Full GBAS capability is expected to be achieved by 2010. It was further stated that the essential ground based infrastructure will be retained in the U.S.

6.4 Australia placed emphasis on the training need to make full use of the capabilities afforded by GNSS. The meeting noted that although seminars and workshops are conducted by ICAO, States and other agencies are assisting State to some extent. It was recognized that a formal training programme is required to be conducted at regular intervals, such as procedure design, training of concerned personnel and to address issue relating to certification and operational approvals, etc.

6.5 IATA emphasized that full capability of GNSS would also greatly assist in providing navigation guidance to address CFIT accidents.

Agenda Item 7: Aeronautical air-ground and air-to-air communications

7.1 The meeting noted that availability of adequate spectrum for different communication systems is becoming a critical aspect of air navigation planning.

7.2 It was noted that almost all the SARPs for air-ground data links were completed.

7.3 The outstanding issues identified were the need for integration of multiple data links for simultaneous operation and provision to ensure priority access and pre-emption over non -aeronautical users on the 1.5/1.6 GHz band AMS (R) S spectrum.

7.4 Satisfactory operation of data link should significantly decrease the need for voice communication in TMA, at aerodrome and for en-route function.

7.5 The meeting noted that SARPs for SSR Mode-S data link and VDL Mode-4 have been included in Annex 10 and SARPs for UAT being considered by AMCP/8 meeting for ADS-B. The interoperability of the three data links was a matter of concern. It was recognized that careful consideration should be given in identifying a suitable a data link for ADS-B including possibility of multi model data link system which would address interoperability issue. States while, preparing papers for the Conference, were encouraged to take note of the outcome of AMCP/8 in this regard.

Agenda Item 8: Any other business

8.1 Under this agenda item, the meeting reviewed the Key Priorities for CNS/ATM Implementation in the ASIA/PAC region. In particular, the meeting took note of the item, ADS-B study and implementation.

8.2 The meeting noted the tasks APANPIRG/13 had assigned to its Sub-Groups with a view to assist States in the preparation for the Conference. As the ATS/AIS/SAR Sub-Group meeting will be held from 19 to 23 May 2003, it may not have access to most of the papers prepared for the Conference for study. The CNS/ATM/IC SG and CNS/MET SG meetings to be held jointly from 15 to 21 July 2003 will have opportunity to study a large number of documents and express their views on important matters to APANPIRG/14 meeting.

8.3 It was proposed that in order to facilitate co-ordination among ASIA/PAC States for preparation of documents for AN-Conf/11, a point of contact should be designated by each State and his/her contact details should be published. The ASIA/PAC Regional Office was requested to facilitate in this regard by compiling the list of contact person and distributing to all the ASIA/PAC States. The details of the designated contact person in Australia responsible for preparation for the AN-Conf/11 can be found in the list of participants to this meeting. States were requested to provide contact details of the designated contact person to the Regional Office.

8.4 IATA encouraged States to express their support to the spectrum issues, GNSS developments and on safety issues in their papers to be presented to the Conference.

8.5 The meeting was advised by the Secretariat that a website is being established for the AN-Conf/11 documentation.

Regional Preparatory Meeting for Eleventh Air Navigation Conference 2003
Bangkok, Thailand, 27 – 28 January 2003

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1	-	Agenda of the Conference	Secretariat
2	8	Key priorities for CNS/ATM implementation	Secretariat
3	8	Regional Preparatory Activities for the AN-Conf/11	Secretariat
4	6	Strategies for the Provision of Precision Approach and Landing Guidance Systems and the Implementation of GNSS Navigation Capability	Secretariat
5	5	Result of the Second Regional Preparatory Group Meeting (RPG/2) for WRC-2003	Secretariat
6	1 (1.1)	ATM Operational Concept Document	Secretariat
List of Information Papers			
IP/No.	Agenda Item	Subject	Presented by
1	-	Conference Bulletin	Secretariat
2	7	Future Aeronautical Mobile Communications Systems Development	Secretariat
3	8	Updating Key Priorities for CNS/ATM Implementation Asia/Pacific Region RVSM Implementation Plans Status Report	Secretariat
4	5	Prioritization and Protection of AMS(R) S Spectrum	Japan