REPORT OF THE SECOND MEETING OF THE ALLPIRG/ADVISORY GROUP

Montreal, 16 - 18 February 1998

(Presented by the Secretariat)

1.   **GENERAL**

1.1   The second meeting of the ALLPIRG/Advisory Group was held at ICAO Headquarters in Montreal from 16 to 18 February 1998.

1.2   The meeting was chaired by Dr. Assad Kotaite, President of the Council of ICAO. Mr. V.D. Zubkov, Chief, Regional Affairs Office (RAO) served as Secretary of the meeting. The meeting was also assisted by Mr. J.D. Howell, Director, Air Navigation Bureau, Mr. C.-R. Boquist, Chief, Air Traffic Management (ATM) Section, Mr. J. Chagas, Chief, Communications, Navigation and Surveillance (CNS) Section, Mr. V. Galotti, Technical Officer, ATM Section, Dr. A.M. Donato, Director, Air Transport Bureau, Mr. C.B. Lyle, Deputy Director, Air Transport Bureau, Mr. G. Finnsson, Chief, Airport and Route Facility Management (ARFM) Section, Mr. O.N.V. Magnusson, Economist, ARFM Section, Mr. U.K. Wickrama, Chief, Forecasting and Economic Planning (FEP) Section, Mr. J. Huang, Legal Advisor, Legal Bureau, Mr. A.R. El Hicheri, Director, Technical Co-operation Bureau, Mr. W. Sander-Fischer, Field Operations Officer — Asia and Pacific, Technical Co-operation Bureau, Mr. D. McKnight, Regional Affairs Officer, Mr. H.V. Sudarshan, Regional Affairs Officer, and Mr. H. Tehrani, Regional Affairs Officer.

1.3   The meeting was attended by 41 participants and 25 observers, listed at Appendix A.

1.4   The following agenda was approved by the meeting:

Agenda Item 1:   Review of follow-up actions on ALLPIRG/1 Report

Agenda Item 2:   Inter-regional co-ordination and harmonization mechanism

        2.1   Global Plan for CNS/ATM systems
        2.2   Management of a Global ATM system
        2.3   Review of the status of implementation of World Geodetic System - 1984 (WGS-84)
        2.4   Role and Scope of PIRGs
        2.5   Facilities and Services Implementation Databases and Documents
        2.6   The impact of the Year 2000 data problem on computer-based systems
        2.7   World Radio-communication Conference 97

Agenda Item 3:   Financing issues

Agenda Item 4:   Preparations for the World-wide CNS/ATM Systems Implementation Conference

Agenda Item 5:   Any other business

Agenda Item 6:   Report approval

Agenda Item 1:   REVIEW OF FOLLOW-UP ACTIONS ON **ALLPIRG/1** REPORT

1.1   The meeting noted the action taken by the ANC and the Council on the report of the first meeting of the ALLPIRG/Advisory group held in Montreal, from 8 to 10 April 1997.

1.2   The meeting, while reviewing follow up actions taken by the Secretariat on ALLPIRG/1 conclusions, noted the view expressed by IFALPA that accommodation of FANS 1 equipped aircraft into the aeronautical telecommunication network environment (Conclusion 1/7) should not undermine the integrity of CNS/ATM systems. With regard to the development of defined routing areas or homogeneous areas (Conclusion 1/10), as it requires further work, it was recognized as an on-going activity. Concerning inter-regional functional interoperability, it was felt that, a conclusion would have been more appropriate to address the issue. Consequently, it was stressed that the subject of functional interoperability requires further attention in the future. As regards preparatory work for the Rio Conference (Conclusion 1/21) the meeting agreed that ICAO in addition to individual States invite representative groups of States to prepare CNS/ATM systems case studies for the World-wide Conference. In order to provide the necessary support for inter-regional and global implementation coordination (Conclusion 1/12), the meeting again stressed the need for establishment of a CNS/ATM implementation core coordinating team at ICAO Headquarters. As this subject was further discussed under Agenda Item 2.4, Conclusion 1/12 was further developed in paragraphs 2.4.16 to 2.4.17 as Conclusion 2/13.

3   The meeting agreed that the action on Conclusions 1/2, 1/4, 1/5, 1/6, 1/14, 1/19, 1/20, and 1/21 a) had been completed and action on Conclusions 1/1, 1/10, 1/13, 1/15, 1/16, 1/17 and 1/18 were on-going (Appendix B).

1.4   An updated list of Conclusions 1/3,1/7,1/8,1/9,1/11,1/12 and 1/21 b) and c) which are still under follow up are detailed in Appendix C attached.

Agenda Item 2.1:   GLOBAL PLAN FOR CNS/ATM SYSTEMS

2.1.1   The meeting was presented with an updated version of the "Global Co-ordinated Plan for Transition to the ICAO CNS/ATM Systems" and noted that it had been retitled as the "Global Air Navigation Plan for CNS/ATM Systems" (Global Plan). This would reinforce the relationship with the regional air navigation planning process and link the Plan more closely to the regional air navigation plans. In this way, the Global Plan would provide the convergence between regional air navigation plans and the regional CNS/ATM systems implementation plans, and would form the basis for a commitment to implementation of CNS/ATM systems based on established and agreed to requirements. The participants received positively the revised Global Plan and lauded the work of the Secretariat, agreeing that the revised Global Plan could serve to expedite and guide the planning for implementation of CNS/ATM systems.

2.1.2   It was noted that the Global Plan was divided into two parts: Operational Concept and General Planning Principles - Volume I, and the Global Plan - Volume II. Volume I presented a high-level vision of CNS/ATM systems and would guide further revisions of the Basic Operational Requirements and Planning Criteria (BORPC) of the regional plans, while Volume II would reflect progress on implementation accomplished at the global, regional and national levels, at the same time indicating the future work with timeliness. The meeting agreed that the tables in Volume II, when completed and periodically updated, would form the framework to guide the implementation of CNS/ATM systems on the basis of homogeneous ATM areas and major international traffic flows (paragraph 2.2.4 refers).

2.1.3   It was noted that several of the regional offices had provided input to Volume II of the Global Plan which included the identification of homogeneous ATM areas and major international traffic flows and this information had already been incorporated into Volume II with the understanding that the data were preliminary and would change. It was understood that progress on identification of homogeneous ATM areas and major international traffic flows, and on the associated timeliness, would require further work and that the process would be ongoing.

2.1.4   In concluding its review of the Global Plan, the meeting determined that a high level document in the form of an executive summary would serve the purpose of obtaining the political commitments necessary for implementation of CNS/ATM systems. In this regard, the meeting agreed upon the following conclusion:

Conclusion 2/1 -   Global Plan Executive Summary

                That:

a) the Secretariat develop a high level Global Plan Executive Summary, focussing on crucial planning and implementation issues, including safety, which would serve the purpose of gaining the political commitment necessary for implementation of CNS/ATM systems; and

b) the Executive Summary be completed in time for the CNS/ATM World-wide Implementation Conference.

2.1.5   The meeting expressed the view that the Global Plan should be actively updated and used as a guiding tool for implementation of global CNS/ATM and not be allowed to sit idle and become defunct. In this regard, the meeting was made aware that the current version of the Global Plan had been reviewed by the Air Navigation Commission, who considered it to be sufficiently stable so that in the future, all that would be required would be periodical updates. Additionally, the Commission was of the opinion that the Global Plan should be distributed to States as part of the documentation package for the World-wide CNS/ATM Systems Implementation Conference, as previously directed by the Council, and should then be published as a self-contained, loose leaf document, to facilitate its updating.

2.1.6   The meeting was informed that the acceptance and update process of the Global Plan still needed to be agreed to by the Council, however, the Commission would recommend to Council that the Global Plan be kept up-to-date by the Secretariat based on the ongoing work of ICAO at both the global and regional levels. Any consultation process would be kept to a minimum, limited to ICAO Representatives and chairmen of the PIRGs. After review by the Commission, proposed amendments would be submitted to the Council for acceptance in line with Recommendation 8/1 of the FANS(II)/4 Report. Volume II would be amended as necessary to reflect changes in facilities and services emanating from regional type air navigation meetings or through the amendment procedure described in the regional air navigation plans. The information in this document, therefore, would reflect what had been agreed through the normal regional planning processes and, assuming agreement by the Council, would not require a separate, formal approval process.

2.1.7   During the discussions, it was noted that implementation of CNS/ATM systems could bring substantial environmental benefits to the global community due to a reduction in fuel burn, and that the opportunity to point this out should not be missed. The meeting therefore agreed that information concerning the environmental benefits associated with implementation of CNS/ATM systems should be included in the Global Plan at the earliest opportunity.

2.1.8   The meeting was informed of the work programme of the Secretariat concerning the development of an ATM operational concept which would describe the vision, benefits and objectives of the future ATM system and how emerging concepts and technologies should be integrated into a global system. The operational concept would also identify the ATM operational requirements for communications, navigation and surveillance systems. This work would also entail development of world-wide criteria for total system performance in terms of safety, regularity and efficiency in pursuance of the concept of required total system performance (RTSP).

2.1.9   In order to progress work on the operational concept as described above, the meeting was informed that the Secretariat intended to propose to the Air Navigation Commission during the current session (147th), that an ATM Operational Concept Panel be established. The meeting expressed its support for such a panel and agreed that CNS/ATM systems needed a vision and that an ATM operational concept, applicable at the global level and with world-wide consensus, would be a suitable mechanism to accomplish that goal.

2.1.10   The meeting noted the concern expressed by one State over the material in the updated Global Plan concerning legal issues, recognizing that the material was not yet mature, as the work of the third meeting of the Legal and Technical Experts Panel (LTEP) had not yet been incorporated into the Global Plan. Therefore, that State noted that Sections 1, 2 and 11 of the Global Plan related to legal issues required significant amendments to properly reflect the conclusions of LTEP. In addition, unsettled legal issues might detract from early implementation of CNS/ATM systems, a main objective of the updated Global Plan. The meeting agreed that the Global Plan would be updated by the Legal Bureau to reflect the results of LTEP. However, it was recognized that a reflection of the scope of the longer-term legal issues in the updated Global Plan served a useful purpose.

Agenda Item 2.2:   MANAGEMENT OF A GLOBAL ATM SYSTEM

2.2.1   The meeting noted that, in order to achieve the primary goal of an integrated global air traffic management (ATM) system , so as to enable aircraft operators to meet their planned times of departure and arrival and adhere to their preferred flight profiles with minimum constraints and no compromise to safety, the planning needs to be based on the concept of homogeneous ATM areas and major international traffic flows. To accomplish this goal, the technologies afforded through the communications, navigation and surveillance (CNS) system will have to be fully exploited through international harmonization of ATM standards and procedures. From the aircraft operator's point of view, it is desirable to equip aircraft operating internationally with a minimum set of avionics which would be usable everywhere.

2.2.2   The meeting, while noting that the regional planning process is the principal engine of ICAO's planning and implementation work, confirmed the need for additional, focussed CNS/ATM systems planning based on the concept of homogeneous ATM areas and major international traffic flows.

2.2.3   The main features of this approach are: the infrastructure could be established and managed by a multinational group, service providers or States; there are early benefits to airspace users and States; it lends itself to a business case; user charges being the prime means of cost recovery will serve as source of repayment for funding of ATM systems projects ; and there may be merit in the establishment of joint charges collection agencies.

Homogeneous ATM Areas and Major International Traffic flows

 2.2.4   In the discussion that followed concerning homogeneous ATM areas and major international traffic flows, the meeting decided to define as follows :

> a) homogeneous ATM areas : the areas which, among other considerations, have similar traffic density and complexity and similar air navigation infrastructure requirements; and

> b) major international traffic flows : geographical bands defined by origin and destination. (*Note: major international traffic flows may cross several homogeneous ATM areas with different characteristics).*

2.2.5   The meeting stressed the need for close coordination between CNS/ATM systems implementation partners and also between PIRGs for monitoring and ensuring harmonization and seamlessness in the implementation of CNS/ATM systems. As regards sharing of information and experience between PIRGs ,the meeting noted that the planning and implementation guidance, prepared for the introduction of RVSM in North Atlantic airspace would be made available for use in any other region.

2.2.6   In view of the foregoing the meeting agreed on the following conclusions:

Conclusion 2/2 –   **Identification of homogeneous ATM areas and major international traffic flows at the global and regional levels**

That ICAO's regional planning groups identify homogeneous ATM areas and major international traffic flows at the global and regional levels, with the support of CNS/ATM implementation partners, to ensure the co-ordinated implementation of CNS/ATM systems resulting in a seamless environment for airspace users.

Conclusion 2/3 –   **Planning and implementation of CNS/ATM systems by States**

That States, at the global and regional levels, adopt planning and implementation of CNS/ATM systems on the basis of homogeneous ATM areas and major international traffic flows.

Conclusion 2/4 –   **Planning and implementation of CNS/ATM systems by service providers and airspace users**

That service providers and airspace users, at the global and regional levels, participate in planning and implementation of CNS/ATM systems on the basis of homogeneous ATM areas and major international traffic flows.

Conclusion 2/5 –   **Need for political commitment for implementation of CNS/ATM systems**

That, ICAO, in coordination with States, regional and subregional organizations make arrangements to generate the necessary political will at the highest level possible needed to sustain the implementation of CNS/ATM systems.

2.2.7   The meeting noted that communications, navigation and surveillance/air traffic management (CNS/ATM) system elements, due to their global coverage capabilities, have an impact on implementation options which, in turn, would call for institutional arrangement which may be somewhat different from those in practice for the current air navigation system.

2.2.8   The meeting reviewed the three different approaches to establishing and managing CNS/ATM systems elements. These can be grouped as national systems, regional systems and global systems. It is possible to adopt a mix of these approaches, depending on differing environments.

2.2.9   The meeting noted that national systems offer appropriate solutions for systems and equipment of a very limited range, even if they partly operate beyond national boundaries. The providers may be public or private, with all kinds of intermediate variations between purely public and purely private solutions.

2.2.10   Regional systems of one kind or another are necessary where the function of equipment and systems transcend national boundaries. Here again, public as well as private providers are possible. The following alternatives may serve as an illustration of different scenarios:

        a) service provided by one government;

        b) services provided by a group of governments; and

        c) organizations with their own legal responsibility.

2.2.11   Global systems, as the name implies provide global coverage. The service providers of global systems are responsible for creating and maintaining the necessary infrastructure for provision of services to States and airspace users. Consequently, there will be no requirement for capital investment by the States to establish the infrastructure. These services could be purchased from a service provider. With regard to the categories of providers and all other aspects, the information as applicable to regional systems also holds true for global systems.

2.2.12   The meeting, while noting the information on the institutional issues for implementation of CNS/ATM systems, recognized the different roles and responsibilities of regulatory bodies and service providers. The meeting emphasized that safety elements should be accorded primary importance in establishing and managing of CNS/ATM systems at the national, regional and global levels. In view of the foregoing, the meeting agreed on the following conclusion:

Conclusion 2/6   –   Establishment and management of CNS/ATM systems

That States and Groups of States:

        a)   consider the various institutional arrangements, covering regulatory aspects and service provisions, that are available for the establishment and management of CNS/ATM systems at the national, regional and global levels;

        b)   adopt a co-operative, multinational approach in order to ensure seamlessness and interoperable systems at the regional and global levels; and

        c)   avoid proliferation of system elements in order to reduce costs, enhance safety and increase operational efficiency.

Agenda Item 2.3:   REVIEW OF THE STATUS OF IMPLEMENTATION OF WORLD GEODETIC SYSTEM -1984 (WGS-84)

2.3.1   The meeting recalled past developments within the Future Air Navigation Systems (FANS) Committee which had led to the adoption by the ICAO Council of WGS-84 as a standard geodetic reference system for the determination of latitude, longitude and height within the air navigation system. In this connection, ICAO States were required to publish geographical co-ordinates in terms of WGS-84 geodetic reference datum as of 1 January 1998.

2.3.2   The meeting also noted the significance that the ICAO Council attaches to the timely implementation of WGS-84 because of the relationship of the matter to the total CNS/ATM systems implementation. It was for this reason that the status of implementation of WGS-84 was being reported to the ALLPIRG for information and advice as to how the situation could be improved.

2.3.3   The results of a survey that had been done by ICAO in January 1998 to know the status of implementation of WGS-84 in ICAO States, and updated by further information provided during ALLPIRG/2, were as follows:

   a)   23% of States have fully implemented WGS-84;

   b)   7% of States have partially implemented WGS-84;

   c)   30% of States are in the process of implementation;

   d)   17% of States have no plan for implementation; and

   e)   23% of States have not responded to the survey.

2.3.4   In reviewing these results, the meeting noted that, although 60% of States had addressed the implementation of WG-84 at varying degrees, lack of implementation in many other States was still a matter of deep concern. This deep concern resulted from the potential safety consequences that lack of implementation of WGS-84 could create. Some of the consequences could be identified as follows:

   a)   unless operators are aware that the geographical coordinates published by non-compliant States are not in WGS-84, confusion will arise when the aircraft's navigation instruments indicate a difference in position over a navigation aid to that which is shown on their flight documentation. Furthermore, this partial disorientation could lead to a loss of situational awareness, thus affecting flight safety;

   b)   the progressive implementation of CNS/ATM will be adversely affected by uncertainties of navigational tolerances of aircraft that are reliant on GNSS; and

   c)   unless the published geographical coordinates by States meet the accuracy requirements of the ICAO Annexes, introduction of GNSS instrument approaches could have flight safety implications. If the published coordinates do not comply with WGS-84 and/or do not meet the accuracy requirements, the aircraft's approach to the runway will be mis-aligned or displaced by a corresponding amount.

2.3.5   The reasons for non-implementation of WGS-84 are as follows:

a)   In some Departments of Civil Aviation, there is a certain lack of understanding of the necessity and benefits of change to WGS-84. ICAO has attempted to overcome this by convening WGS-84 training seminars and workshops, by the publication of Doc 9674 - *World Geodetic System - 1984 (WGS-84) Manual*, and by conducting several Special Implementation Projects. ICAO is continuing its efforts to assist States;

b)   some Departments of Civil Aviation do not have a surveying capability, and are not aware that these resources may exist within other Ministries of their governments, such as the military and/or geographical and natural resources departments. ICAO has brought this to the attention of States under Special Implementation Projects;

c)   some States have under-estimated the time it would take to complete the task;

d)   there have been competing priorities for funds;

e)   some States do not have the appropriate skills and/or equipment; and

f)   States whose local geographical coordinates have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the ICAO requirements, should re-survey those positions.

2.3.6   The meeting appreciated the steps taken by ICAO to assist States in the implementation of WGS-84, like development of the WGS-84 Technical Manual, holding of WGS-84 seminars and workshops and the conduct of WGS-84 special implementation projects (SIP) in certain States.

2.3.7   The meeting emphasized the need that regular updates be provided to the related PIRGs as well as to the ALLPIRG with regard to the progress of implementation of WGS-84 and agreed on the following conclusions.

Conclusion 2/7   –   Regular updates to show the regional picture of WGS-84 implementation

That ICAO Regional Offices present to each meeting of the PIRG concerned the regional situations, State by State, of implementation of WGS-84 and the reasons for non-implementation. Each PIRG should assess the implications on the CNS/ATM regional plan and possible solutions for improvement.

2.3.8   The meeting also recognized the need for further assistance to States by ICAO to improve WGS-84 implementation. To do so ICAO should conduct more seminars/workshops and special implementation projects (SIPs) in a focussed and oriented manner. In this task ICAO should seek assistance from States, international and regional organizations in a position to do so. In this connection the meeting noted the offer by EUROCONTROL to support PIRGs to participate at specific events to share its experience with them. The meeting agreed on the following:

Conclusion 2/8   –   Further assistance to States for WGS-84 implementation

That ICAO provide more assistance to States in the form of WGS-84 seminars, workshops and SIPs on the basis of the results of regular updates resulting from Conclusion 2/7 above. In doing so ICAO should seek assistance from States, international/regional organizations and other CNS/ATM systems implementation partners as appropriate.

Agenda Item 2.4:   ROLE AND SCOPE OF PIRGS

2.4.1   The meeting reviewed a Secretariat paper which argued that ICAO should adopt a more business-like approach to its regional planning and implementation process. This would involve some changes to the role and scope of the PIRGs and their working methods but these were considered to be both appropriate and timely. The paper also discussed how States and users might interact with, and take advantage of, such an enhanced ICAO regional planning and implementation process and proposed a pilot project to help accelerate the adoption of the proposed changes.

More Business-like Planning

2.4.2   As a first step, ALLPIRG agreed that a more business like approach was indeed required both with regard to ICAO planning and to its assistance to States with implementation. It noted that, although PIRGs are already becoming more efficient and business-like in their regional planning role, there was an increasing number of "inter-regional" issues that need to be addressed efficiently. The number of such issues was likely to increase since PIRGs' new planning methods were now being based on "homogeneous" areas which were likely to be "multi-State" rather than fully inter-regional.

2.4.3   The planning innovations emerging from PIRGS were characterized by a methodology that would initially establish air traffic management objectives based largely on present and forecast major international traffic flows. Different feasible options for the CNS elements required to support ATM scenarios would then be explored on the basis of technical merit and cost benefit analyses with the object of selecting the "best" option.

2.4.4   The meeting noted that the "homogeneous ATM areas and major international traffic flows" emerging from the above exercise would be either fully contained in a single existing ICAO planning region or it would straddle one or more such regions. It followed that, while a PIRG could be expected to plan for homogeneous ATM areas and major international traffic flows which fell fully inside the ICAO region for which it had responsibility, there would be a number of "multi-State" areas where this was not the case and the PIRG's scope might be inadequate.

2.4.5   In this regard, the meeting had the benefit of a presentation from the Chairman of the APANPIRG CNS/ATM sub-group which explained that APANPIRG was addressing these inter-regional issues through a number of informal co-ordination sub-groups whose memberships coincided with provider- and user-States and organizations from areas coinciding with major traffic flows. In some cases, those flows were inter-regional and participation at the relevant sub-group therefore comprised experts from outside the Asia/Pac regions.

2.4.6   The meeting also noted the approach being taken in the Asia/Pac regions where identified operational benefits lead to the specification of the technical system requirements to be implemented. Such an approach was somewhat at odds with another view expressed by IFALPA that saw the need for ICAO Headquarters' leadership on the technical aspects of CNS/ATM because of its global nature.

2.4.7   On the basis of the above, and with a view to promoting a more business-like approach to these issues that would enhance planning, ALLPIRG adopted the following Conclusion:

Conclusion 2/9 –   **More business-like planning**

That, the ICAO regional planning process include:

a) greater emphasis on sharing/co-operative arrangements at the planning level, particularly with regard to those areas that involve more than one ICAO planning region;

b) the development of a standardized approach to planning for these areas; and

c) increased interaction between planning partners including groups of States within the region to avoid duplication of work.

2.4.8   The meeting also recognized that other PIRGs were organizing their work in a similar fashion to APANPIRG and there was agreement that the flexibility offered by the use by PIRGs of informal co-ordination sub-groups was to be retained. In a similar fashion, it was also agreed that ICAO should make the best use of its existing sub-groups such as Traffic Forecasting Groups, particularly with regard to cost-benefit analysis work. In addition, it was concluded that overall co-ordination of this work was also required.

2.4.9   This last conclusion which called for a new set of tasks inevitably led to the question of resource requirements. The meeting decided to address what it considered to be a most important question of resources, globally, taking into account not only other resource requirements referred to in paragraphs 2.4.10 to 2.4.13 below but also in the context of follow-up to Conclusion 1/12 of ALLPIRG/1 which called for the creation of a core co-ordinating team for CNS/ATM to be established at ICAO Headquarters. The results are reported on in paragraphs 2.4.16 to 2.4.17 and Conclusion 2/13 below.

More Business-like Assistance with Implementation

2.4.10   The main proposed change to the role of PIRGs relates to the way in which they would assist States with implementation. PIRGs (and their sub-groups) should take on the work of fully justifying (in the business sense) the plans which they develop. This will involve greater emphasis on economic and institutional issues and the need for PIRGS to demonstrate that they are choosing the "best" implementation options, not just on their technical merits but also on the basis of cost-effectiveness and institutional feasibility. PIRGs would also be expected to be watchful of the "bankability" of implementation options that it approves. PIRGs would, above all, develop comprehensive business cases that will be acceptable to would-be financers of the systems being planned. In this connection the question of commercial confidentiality was raised. To this end, business cases would clearly demonstrate the mechanism and timescale for recovery of the investment. It was agreed that such additional tasks should not hamper the progress of PIRGs on technical matters nor should they interfere with the different pace which each PIRG set for its own progress.

2.4.11   To that end, PIRGs would be provided with additional resources to strengthen their expertise in the fields of economics and finance to facilitate cost/benefit analysis work, the preparation of business cases, and to help develop PIRGs' knowledge of the financial institutions so that the business cases could be prepared in accordance with banking standards. ICAO would undertake to allocate resources for these purpose through attendance at meetings of PIRG bodies and through the development of guidance material on cost/benefit analysis and business case preparation, which might apply on a case-by-case basis.

2.4.12   The meeting agreed that the commitment by ICAO of extra resources to the regional planning process would need to be reciprocated by States and other planning partners if the overall aim of improving implementation is to be achieved in a significant way.

2.4.13   In light of the above, the meeting agreed that the PIRGs role would be expanded and adopted the following Conclusion to that effect:

Conclusion 2/10 –   Expanded role for PIRGS

That, using a system approach, the role of PIRGs be expanded to include:

a) intensified efforts to assist with implementation;

b) the preparation of cost/benefit analyses for implementation options; and

c) the development of comprehensive business cases for "competing" implementation options for homogeneous ATM areas and major international traffic flows;

and, to that end, ICAO, with the support of providers and users of the system:

d) would give PIRGs greater access to economics and financial expertise;

e) facilitate contacts between PIRGs and financial institutions; and

f)   make available guidance material for cost/benefit analysis and business-case development.

2.4.14   ALLPIRG also agreed to encourage States and planning partners during their attendance at the forthcoming Rio Conference to join ICAO in committing to the above-mentioned changes in the role of PIRGs and to participating actively in the new enhanced regional planning process. On that basis, it was also hoped that the Rio venue would provide an opportunity to convince financial institutions of the merits of the business cases that ICAO was planning to prepare and the meeting formulated the following Conclusion in that regard:

Conclusion 2/11 –   Business cases to facilitate financing

That the Rio Conference is availed of to persuade financial institutions, on submission of the business cases developed for implementation of CNS/ATM systems for homogeneous ATM areas and/or traffic flows, to consider favourably financing the transition (loans/debt financing) in the States requesting it.

2.4.15   On the basis of the above, and with a view to promoting a more business-like approach to those issues that would enhance assistance with implementation, ALLPIRG also adopted the following Conclusion:

Conclusion 2/12 –   **More Business-like assistance with implementation**

That, the ICAO regional planning process provide:

a) greater emphasis on sharing/co-operative arrangements at the financing and implementation levels;
b) for the development of a standardized approach to the development of business cases in support of sets of planned facilities and services; and

c) for participation of financial institutions as CNS/ATM partners when required.

Resource issues

2.4.16   In addressing the question of resources required to implement the above changes, the meeting took into account papers presented by the Chairman of the GREPECAS CNS/ATM/IC Committee and the United States ALLPIRG Member both of which had called for the early creation of the core co-ordinating team for CNS/ATM envisaged in ALLPIRG/1, Conclusion 1/12. The meeting agreed on the need to enact that ALLPIRG/1 conclusion urgently by creating such a core team in order to provide the necessary resources to carry out the tasks referred to above.

2.4.17   In this regard, the meeting was informed that the Secretariat had already a team in place which was presently devoted to preparations for the forthcoming World-wide Conference on CNS/ATM Systems Implementation (Rio de Janeiro, 11 - 15 May 1998). The Chairman indicated that, in his capacity as President of the Council, he would invite the Secretary General to create such a core team in the Secretariat by suitably enhancing the existing team in order to deal with all the tasks envisaged above. The following conclusion which supersedes ALLPIRG/1 Conclusion 1/12 was adopted in this regard:

Conclusion 2/13 –   **Core co-ordinating team on CNS/ATM**

That, ICAO:

a) create a core co-ordinating team on CNS/ATM by appropriately enhancing the existing Secretariat team devoted to preparations for the forthcoming world-wide conference on CNS/ATM; and

b) entrust this team with the tasks of co-ordinating and assisting PIRGs during and after the implementation of the changes to their role and scope as envisaged above, as well as providing general support of the ALLPIRG group and its terms of reference.

Pilot Project

2.4.18   Finally, the meeting noted that GREPECAS was presently gearing up for a full-scale RAN meeting in 1999 when it plans not only to develop a new CAR/SAM ANP on the basis of the new FASID concept agreed by the Council but also to integrate the CAR/SAM CNS/ATM implementation plan into the ANP proper. During that time, GREPECAS will also be moving forward with the planning innovations based on homogeneous areas and will also clearly want to take into account elements that emerge from the Rio Conference.

2.4.19   ALLPIRG agreed that if States and other planning partners attending the Rio Conference were to agree to an increased role and scope for the PIRGs and commit to devoting some of their resources, GREPECAS might be able to act as a test bed for the new approach. In that regard, it was agreed to develop a special implementation project that would advance the work referred to above and which could start immediately after the Rio Conference. Accordingly the meeting adopted the following Conclusion:

Conclusion 2/14 –   **Pilot project**

                          That ICAO develop a 1998 special implementation project (SIP) that would comprise implementation, on a trial basis and in the context of the work of the GREPECAS group in the CAR/SAM Regions, of all the enhancements to the role and scope of PIRGs envisaged above.

Uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies

2.4.20   The meeting recalled Conclusion 1/8 of ALLPIRG/1 that had requested ICAO to develop a uniform methodology for reporting shortcomings and deficiencies in the air navigation field with special emphasis on safety related aspects. The methodology was to be used by PIRGs for addressing shortcoming and deficiencies in their regions, including a uniform reporting manner to ICAO Council.

2.4.21   In response to ALLPIRG/1 Conclusion 1/8, a uniform methodology was presented to the meeting for review and advice. The meeting noted that the methodology was the result of an earlier version that had been reviewed by the PIRG meetings in 1997 and the version presented to ALLPIRG/2 had been endorsed by those PIRG meetings.

2.4.22   The meeting supported the uniform methodology presented to it as contained in Appendix D of this report. The meeting particularly emphasized the role of States as well as international organizations in providing timely and accurate information to the regional offices to facilitate their work to provide the necessary documentation for actions by the PIRGs.

2.4.23   The meeting noted that serious causes of shortcomings and deficiencies should be brought to the attention of the ICAO Council without delay, if the forthcoming meeting of the related PIRG to take actions on them is not in a near future.

2.4.24   The meeting agreed on the following conclusion, noting that the methodology reviewed by it is subject to approval by the ICAO Air Navigation Commission.

Conclusion 2/15 –   **Uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies**

                          That the methodology in Appendix D is endorsed by ALLPIRG, noting that serious cases of shortcomings and deficiencies will be brought to the attention of the ICAO Air Navigation Commission in the most expeditious manner.

Agenda Item 2.5:   FACILITIES AND SERVICES IMPLEMENTATION DOCUMENTS (FASID) AND
                           DATABASES

2.5.1   The meeting noted the background of new ICAO policy with regard to regional air
navigation plan (ANP) documents whereby each region would have a basic ANP document containing stable
planning material and implementation guidelines and an accompanying FASID document which would be an
integral part of the basic ANP and would contain the list of air navigation facilities and services that States of
the region have agreed to be required for the safety, regularity and efficiency of international civil aviation.
The aims of this policy was to better respond to the dynamic requirements of the new ICAO CNS/ATM
systems implementation.

2.5.2   The meeting also noted that the PIRGs would be involved in the preparation of the
basic ANP and FASID documents and emphasized that priority should be given to the preparation, printing,
dissemination and maintenance of the basic ANP and FASID documents. It was remarked that up-to-date
ANP and FASID documents are important planning tools and their absence would greatly complicate the
work of States and PIRGs.

2.5.3   The meeting was pleased to note that the basic ANPs and accompanying FASIDs
would contain not only material related to the conventional air navigation facilities and services but facilities
and services arising from approved regional CNS/ATM plans as well.

2.5.4   The meeting noted that in the ASIA/PAC Regions the APANPIRG had created a
FASID Task Force to assist the regional office in the preparation of the ASIA/PAC basic ANP and FASID
documents. Furthermore, the meeting noted that in the AFI Region, the APIRG was continuing the approach
adopted by the AFI/7 Regional Air Navigation Meeting for the preparations of the AFI basic ANP and
FASID documents. The meeting agreed that in other ICAO regions the related PIRGs should consider the
establishment of a FASID task force to prepare their basic ANP and FASID documents as a matter of high
priority unless a better approach was adopted. The meeting agreed on the following conclusions.

Conclusion 2/16   –   **Assistance by PIRGs for the preparation of basic ANP and FASID documents**

                               That PIRGs which have not already done so establish, as a matter of high priority,
                               a FASID task force to assist regional offices in the preparation of the basic ANP
                               and FASID documents. These documents should contain the conventional
                               planning and implementation regional material as well as material related to the
                               new ICAO CNS/ATM systems.

Conclusion 2/17   –   **Priority by ICAO to maintain basic ANP and FASID documents**

                               That ICAO should give higher priority to the timely development, printing and
                               dissemination of regional basic ANP and FASID documents since they are
                               important planning tools for States and PIRGs.

Creation and Maintenance of an air navigation planning database

2.5.5   ALLPIRG recalled that ICAO has already formally called for (through various Council, Air Navigation Commission (ANC) and ALLPIRG conclusions and decisions), or is expected to call for, work to be carried out in the following areas:

> a) the development of uniform regional air navigation plans (ANPs) to be based on the new formats for a basic ANP and an accompanying facilities and services implementation document (FASID);
>
> b) the systematic identification, assessment and reporting of air navigation shortcomings and deficiencies to be carried out on the basis of a uniform methodology in all ICAO regions;
>
> c) the development of a CNS/ATM database to facilitate, *inter alia*, the monitoring of CNS/ATM implementation; and
>
> d) the development of business cases as part of the ICAO regional planning processes.

2.5.6   In the Secretariat's view, all the above tasks called for database support and it was now opportune to envisage the creation and maintenance of an air navigation planning database to provide this support. On this basis, ALLPIRG was invited to support such a project outlined in a Secretariat paper in order to help it to gain priority and have resources allocated in the ICAO system.

2.5.7   The meeting was informed that such a database would be built around a core of the data in ICAO regional air navigation plans (ANPs). The intention was not just to create a full soft copy of the set of regional plans in Microsoft Word or WordPerfect but rather to organize the ANP material as a structured database. Some work had already been done in this regard and initial data formats were available. This approach would not only allow the printing of extracts of the plans but also offer the facility to analyse the data and this would be valuable in assisting the regional planning process

2.5.8   The reason support from ALLPIRG was being sought followed initially from the fact that the information that goes into the ANPs (and would form the core of the database) is mainly developed by the ICAO Regional Offices and the PIRGs, but since it would also be of value to link this planning data to other data such as that upon which user-driven plans are based, the specific interest of other CNS/ATM partners in this exercise was important.

2.5.9   Furthermore, since regional offices and PIRGs had to maintain the information from their ANPs anyway, this database approach could well improve efficiency. Planning partners also have to devote time to develop their own plans and such a database suitably linked to their own should also be cost-effective if only because it provides all the planners with an common set of data.

2.5.10   It was recognized in the proposal for such a database that any duplication with other existing database would be avoided. In the case of the European Region, the EUR ANP/FASID, under its new structure and format and the Eurocontrol CIPD, include both common scopes as well as those specific to each of them respectively. Close co-ordination with the ICAO EUR/NAT Regional Office is required in order to ensure consistency between these two documents and avoid duplication of work. It was noted in particular that the ICAO Paris Office was working closely with EUROCONTROL on several database initiatives such as ICARD (5-letter codes), COM lists, and air route designators.

2.5.11   Finally, since the database would be the electronic version of the authentic ICAO regional air navigation plans it was recognized that, while "read" access to it could be made available on a wide basis, ICAO would be the custodians of the data and, as such, would be the only database user having "write" access. In this regard, it was envisaged that changes to the database would be made strictly in line with the manual amendment procedure used for the hard copy ANPs and would thus be under the Council's authority.

2.5.12   On the above basis, the Secretariat proposal was given wide support by ALLPIRG who framed the following Conclusion.

Conclusion 2/18   –   Creation and maintenance of an air navigation planning database

That

a) the "strawman" CNS/ATM database exercise envisaged by ALLPIRG/1 (Conclusion 1/13) should be incorporated into a more general exercise of an air navigation planning database to be developed from the information contained in the regional air navigation plans (including implementation dates) and linked to users' and manufacturers' selected databases;

b)   this ANP database be used to support ICAO work in the areas of:

i)   development of new regional ANPs;
ii)   integration of regional CNS/ATM plans into the new ANPs;
iii) CNS/ATM planning and implementation;
iv) elimination of air navigation shortcomings and deficiencies;
v)   planning homogeneous ATM areas; and
vi) the development of business cases in the context of the work of PIRGs.

c) the ANP database should be linked to:

i)   internal and external air traffic forecast and timetable databases;
ii)   the Volume II of the ICAO Global Plan;
iii) National Plans to the extent possible; and
iv) databases of regional organizations.

Agenda Item 2.6:   THE IMPACT OF THE YEAR **2000** DATA PROBLEM ON COMPUTER-BASED SYSTEMS

2.6.1   The meeting discussed the "year 2000 problem", an issue that had been gaining widespread attention within the aviation industry. It was noted that the problem stemmed from the fact that many computer systems world-wide may malfunction or produce incorrect information because of a date change anomaly which had to do with the way computer systems store and manipulate data. The meeting was informed that a significant number of computer-based mission critical aviation systems may be adversely affected by the year 2000 date change including mainframes, client/servers, networks, telecommunications, navigation, surveillance, en route, terminal, oceanic and air traffic flow management automation systems. In this regard, the meeting was provided with a State Letter that ICAO had circulated to States which served to notify States of the impending problem, identify possible technical solutions, make them aware of the particular management challenge that they may experience and identify the particular air traffic services difficulties that could arise.

2.6.2   In addition to problems that all airports and air traffic service providers worldwide could face with their own automated systems, there were potential problems involving inter- and intra-regional exchange of radar data, flight plan data and NOTAMS. It was recognized that the only safe assumption was that all systems were affected until they had been assessed and found consistent with the year 2000 conformity requirements. The meeting was further informed that Eurocontrol would hold a workshop on 19 and 20 March 1998 on the subject and that a programme in the United States addressed the problem through a five phase process: awareness, assessment, renovation, validation and implementation.   Further information was available from www.faa.gov/ait/year2000.

2.6.3   The meeting noted the action taken by the International Air Transport Association (IATA) both internally and among its members. The issue had been identified as a corporate priority and, among other things, had recently appointed a Director Project 2000 to coordinate all of its activities associated with this problem and had circulated the ICAO State Letter mentioned in paragraph 2.6.1 above, among its member airlines. In view of the above, the meeting agreed to the following recommendation.

Conclusion 2/19   –   Year 2000 date change problem

That,

a) ICAO, IATA and States, while looking into the assistance required, to assess, to the extent possible, the potential impact of the year 2000 problem on international aviation;

b) ICAO, States, service providers and users as a matter of urgency, to develop contingency plans to mitigate potential year 2000 problems to aviation systems;

c) ICAO collect from States, data relating to the year 2000 problem and disseminate the information emphasizing the role and responsibilities of States, certification authorities and provide assistance as may be necessary; and

d) the year 2000 problem be included in the work programmes of planning and implementation regional groups (PIRG) and that work on the subject be commenced urgently in order to provide assistance to States.

Agenda Item 2.7:   **WORLD RADIO-COMMUNICATION CONFERENCE 97**

2.7.1   The meeting discussed issues relating to the need for continuing support of civil aviation interests dealt with in ITU World Radio-communication Conferences on the basis of papers presented by the Secretariat and EUROCONTROL.

2.7.2   The meeting was informed of the major consequences of the deliberations of WRC-97, Geneva, 27 October to 21 November 1997, and that over recent years the growing level of competition for radio-frequency spectrum has raised serious concerns for civil aviation users.

2.7.3   The meeting also agreed that the level of support to ICAO's position at recent WRC's has at times proven insufficient to guarantee that civil aviation requirements are consistently met. This can be attributed mainly to growing competition from non-aviation users, supported by commercial telecommunication interests which are better placed than civil aviation authorities to control the process leading to the development of national proposals for presentation to the ITU WRC's.

2.7.4   There was a general agreement that common proposals developed by regional telecommunication organizations have come to dominate the discussions at ITU Conferences.

2.7.5   Strong support was voiced for the consensus of action contained in the Secretariat paper and the following points were added:

> a) the issue of radio-frequency protection should be brought to the attention of ICAO Contracting States attending the World-wide CNS/ATM Systems Implementation Conference (Rio de Janeiro, 11-15 May 1998);
>
> b) the matter should be documented for consideration at the forthcoming ICAO Assembly (autumn 1998); and
>
> c) the Secretary General should consider addressing the opening session of future WRC's to emphasize the need to ensure that international civil aviation interests are consistently supported within the ITU fora.

2.7.6   In closing the discussion on this topic the meeting concluded as follows:

Conclusion 2/20 –   **Support for the ICAO position at future ITU Conferences**

a) regional planning groups should address matters concerning the protection of radio frequency spectrum directly in co-ordination with national CAAs and ICAO Headquarters with States and regional telecommunication organizations;

b) the ICAO Assembly should emphasize the need for an adequate mechanism to ensure protection of the aeronautical radio frequency spectrum;

c) the Secretary General should consider addressing future ITU WRC's;

d) the States should be informed at the World-wide CNS/ATM Systems Implementation Conference (Rio de Janeiro, 11-15 May 1998) on the importance of securing adequate radio frequency allocations for CNS/ATM system implementation;

e) regional meetings with director generals of civil aviation should review the progress of States' preparations for ITU WRC's on a regular basis;

f) participation of aeronautical experts in national delegations to ITU conferences need to be increased; and

g) co-ordination between Contracting States, ICAO, IMO and interested international organizations should be intensified and should take place well in advance of the next WRC 1999.

Agenda Item 3:   FINANCING ISSUES

3.1   The Group based its consideration of this Agenda Item on WP/13 and IP/2, through which the Secretariat presented the "action papers" for discussion respectively of financial matters and of related technical co-operation challenges at the World-wide CNS/ATM Implementation Conference convened in Rio de Janeiro from 11 to 15 May 1998.

3.2   The Group noted that with the technology and the legal framework for implementation of CNS/ATM largely available or in place, financing was a key remaining hurdle. The issue of financing and associated organizational arrangements would consequently be at the forefront of Conference.

3.3   A primary objective of the Conference is to convince the providers of air navigation services and financial institutions that implementation of CNS/ATM will generate a significant positive return on investment, an investment which can be recovered through user charges. Furthermore, efforts will be made to demonstrate that significant economies and increased efficiency result from assigning the operation of air navigation services to autonomous authorities, that international co-operative efforts in general permit the more efficient provision of air navigation services and that with regard to major CNS/ATM systems components in particular such co-operation may be the only feasible alternative.

3.4   The Group noted that the "action papers" formed just part of a broad range of tools for achieving these objectives, other tools including supporting documents and associated (PowerPoint-type) presentations, a variety of "business cases" to cover a range of circumstances and implementation options, panels or seminars of industry experts, plus a continuous demonstration (in the Exhibition area), using a portable computer display, to enable States and other interested parties to enter specific data and carry out their own cost-benefit analyses of CNS/ATM.

3.5   At the same time, the action papers formed the core basis for both the promotional and the decision-making process at the Conference. The Group therefore reviewed the content of the papers and made a number of comments which the Secretariat agreed to take into account in the preparation of further papers and presentations for the Conference.

3.6   Of particular note was the view that the potential benefits of CNS/ATM for environmental protection through reduced fuel burn, while already mentioned in the documentation, should be given greater emphasis. This aspect has received increased attention recently following the adoption of the Kyoto Protocol in December 1997, which requires developed countries to pursue limitation or reduction of emissions of greenhouse gases from international aviation, *working through ICAO*. While there will undoubtedly be environmental benefits from the introduction of CNS/ATM, it remains difficult to quantify these benefits, since much will depend on how implementation takes place in practice. In certain circumstances, CNS/ATM could lead to some stimulation in traffic.

Agenda Item 4:   **PREPARATIONS FOR THE WORLD-WIDE CNS/ATM SYSTEMS IMPLEMENTATION CONFERENCE**

4.1   The meeting discussed preparations for the World-wide CNS/ATM Systems Implementation Conference on the basis of an audio-visual Secretariat presentation and papers from the Secretariat, the Chairman of the AFI Planning and Implementation Regional Group (APIRG), the United States ALLPIRG member and IATA.

4.2   During initial discussion, some concern was expressed about the fact that transition was not covered adequately in the Global Air Navigation Plan for CNS/ATM systems which would be reviewed by the World-wide Conference. It was expected that the road to transition would be long and expensive.   It was noted however that the plan was a living document and evolution would be expected. In particular, the expectation was expressed that timelines for the decommissioning of current systems would be included. The meeting also noted that the billing and collection agency of IATA, in coordination with ICAO, could be another option for the States in cost recovery mechanism to facilitate implementation of agreed facilities.

4.3   Other concerns relating to the intended format of the Conference were expressed, in particular the need for more seminar and workshop-type sessions was suggested. Similarly, working papers might not be the best vehicle to convey information and recommendations and conclusions might not be the most appropriate output for the Conference. It would also be important to make a positive presentation of the global CNS/ATM project by stressing the significance that the large number of States attending the Conference, the significant co-ordination efforts that had been made and the relevant contribution from the work of PIRGs. The need to indicate that while some open issues as ATM implementation strategies, legal and institutional matters, R&D programmes and human resources issues still existed, positive action could still take place.

4.4   The meeting was informed that the African States would be presenting three papers to the Conference covering technical, economic and co-operative issues. The issue of how regional planning groups and/or regional commissions might submit papers was raised. The specific character of the Conference allowed some flexibility in this regard and ways would be found to accommodate these papers.

4.5   The meeting had before it a set of the conclusions and recommendations already included in Secretariat working papers for the Conference. It was noted that some of these had been reviewed and revised during earlier agenda items and it was agreed that the necessary alignment would be made in due course. Similarly, some changes were proposed and noted with regard to specific items.

4.6   The meeting noted that cost/benefit analysis work being carried out for the NAT and EUR regions suggested that disappointing results might be in the pipeline for some user groups. The Chairman of the NAT SPG which had commissioned what was probably the largest single CBA for CNS/ATM indicated his willingness to present results to the Conference if that was considered useful.

4.7   In this regard, it was agreed that the newly-recommended core team (Conclusion 2/13 refers) should co-ordinate such CBA studies in order to ensure the alignment of assumptions used. The importance of human factors was stressed and this area should also be addressed by the core co-ordination team.

4.8   The meeting also noted that the use of the expression "cost-recovery" concept was considered by Eurocontrol as outdated and that "pricing" as a new concept might be the more appropriate focus in those areas where cost-recovery was dealt with. The meeting agreed that ICAO should look into this new concept.

4.9   Finally, with regard to the approach that would be taken at the Conference, it was agreed that a pragmatic approach would be taken with regard to ensuring that open issues did not hamper progress with CNS/ATM implementation. In cases were the subject was mature it was presumed that conclusions and recommendations could be formulated. Conversely, immature items would lend themselves to simply being reported on.

4.10   The meeting felt that an invitation from the President of the Council to the Ministers would be appropriate in ensuring a high level participation at the conference.

Agenda Item 5:   **OTHER BUSINESS**

5.1   The meeting noted that there was a need to enhance the interaction amongst CNS/ATM sub-groups of all the PIRGs for developing a co-ordinated approach for implementation of CNS/ATM systems and that ALLPIRG meetings would be the appropriate platform for conducting such co-ordination meetings. As a result, the meeting agreed to devote one day before every ALLPIRG meeting, commencing with ALLPIRG/3, for the co-ordination meeting of Chairmen of all the CNS/ATM IC sub-groups.

5.2   In addressing the question of resources required for creation of a core co-ordinating team in ICAO Secretariat (Conclusion 2/13), the meeting agreed to the suggestion of enhancing the role and responsibilities of this core co-ordinating team by extending the membership to CNS/ATM systems implementation partners.

APPENDIX A

LIST OF PARTICIPANTS

ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)

Chairman:	Vacant
Secretary:	Mr. L.B. Shah (ICAOREP, Bangkok)
Chairman of CNS/ATM sub-group:	Mr. B. Kendal

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

Chairman:	Mr. A. Bodian
Secretary:	Mr. Z.M. Baliddawa (ICAOREP, Nairobi)
Chairman of CNS/ATM sub-group:	Mr. G. Elefteriou
ICAOREP, Dakar:	Mr. A. Cheiffou

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

Chairman:	
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Chairman of CNS/ATM sub-group:	Mr. M. Alawi

CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)

Chairman:	
Secretary:	Mr. P.I. Hegedus (ICAOREP, Lima)
Chairman of CNS/ATM sub-group:	Mr. D. Gardilcic

EUROPEAN AIR NAVIGATION PLANNING GROUP (EANPG)

Chairman:	Mr. J.A.P. Koren
Secretary:	Mr. C. Eigl (ICAOREP, Paris)

NORTH ATLANTIC SYSTEMS PLANNING GROUP (NAT SPG)

Chairman:	Mr. M. Murphy
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NORTH AMERICAN GROUP (CANADA/MEXICO/USA)

Co-Chairmen:	Mr. K. Moody (Canada)
	Mr. F. Molinar (Mexico)
	Ms. C. Fagan (USA)
Secretary:	Mr. R. Ybarra (ICAOREP, Mexico)

PRESIDENT OF THE AIR NAVIGATION COMMISSION

Mr. V.M. Aguado

CHAIRMAN OF THE CNS/ATM IMPLEMENTATION COMMITTEE

Mr. G.O. Seignoret

AERONAUTICAL RADIO, INC. (ARINC)

Mr. E.R. Adelson   Vice President of Industry Activities

AIRPORTS COUNCIL INTERNATIONAL (ACI)
Mr. R. Heitmeyer   Director

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Mr. M. Ndiaye   Ingénieur de l'Aviation civile, Montréal
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Mr. E.K. Soehnle   Head of Division
Mr. R. van Dam   Head, Legal Service

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Mr. J. White   Director, Infrastructure Support Group
Mr. M.T. Comber   Director, ICAO Relations
Mr. L.J. Desmarais   Assistant Director
Mr. Van Den Boogaard   Assistant Director CNS
Mr. V. an Der Westhuizen AssistantDirector FANS Implementation

INTERNATIONAL BUSINESS AVIATION COUNCIL (IBAC)

Mr. J-D. Lyon   President and Chief Executive Officer, Canadian Business Aircraft Association (CBAA)
Mr. B. Stine   Corporate Secretary

INTERNATIONAL CO-ORDINATING COUNCIL OF AEROSPACE INDUSTRIES ASSOCIATIONS (ICCAIA)

Mr. R. Axford   Director FEI
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Capt. E. Smart   Montreal Representative
Capt. P. Foreman   ATS Chairman
Mr. W. van Beek   PVP M&R

INTERNATIONAL FEDERATION OF AIR TRAFFIC CONTROLLERS' ASSOCIATIONS (IFATCA)

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Mr. K. Fukumoto   Director, Aeronautical Satellite Systems Office,
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Mr. A. Shimamura   Special Assistant to the Director, Radio Engineering Division, Air Traffic Services
                         Department

RUSSIAN FEDERATION AS PROVIDERS OF THE GLOBAL ORBITING NAVIGATION SATELLITE SYSTEM (GLONASS)

Mr. V.A. Routchkine   Representative of the Russian Federation on the Council of ICAO

UNITED STATES AS PROVIDERS OF THE GLOBAL POSITIONING SYSTEM (GPS)

Mr. R. Morgan   Director of Air Traffic
Ms. J. Bauerlein   Director, International Aviation, Federal Aviation Administration (FAA)
Miss M. Greaver   Program Analyst, Federal Aviation Administration (FAA)
Mr. R. Hilton   Director, Air Traffic Management, Air Transport Association
Mr. J. Klang   Senior Attorney for International Affairs
Col. C. Little   Colonel USAF, United States Department of Defense
Mr. G. O'Toole   International Planning Specialist, Federal Aviation Administration (FAA)
Mr. C. Reavis   Manager, ATS International Staff

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Dr. J. Zhu   Advisor, Delegation of China to ICAO

APPENDIX B
ON-GOING CONCLUSIONS OF THE ALLPIRG/1 MEETING

ALLPIRG/1 CONCLUSION
Conclusion 1/1 – Co-ordination with financial institutions and inter-governmental organizations   That ICAO and the stakeholder/partners, through their various resources, make all efforts to convince the major financial institutions and the relevant inter-governmental organizations that CNS/ATM systems implementation should be afforded a high priority among States' administrations, and that there are potential investment opportunities and economic benefits that could be obtained through implementation of such systems.
Conclusion 1/10 –   Development of defined routing areas or homogeneous areas   That ICAO, both at the global and regional levels, support the users and providers in defining routing areas or homogeneous areas that would serve as the foundation of CNS/ATM planning and implementation, based on traffic flows, traffic density and complexity, and the resulting infrastructure requirements.

Conclusion 1/13 –   Development of CNS/ATM planning and implementation databases
 	
 That:
 	
 a)   ICAO develop a "straw-man" or prototype database consisting of all the relevant database aspects such as:
 	
      1)   information architecture;
 	
      2)   data dictionary;
 	
      3)   off-the-shelf analysis application;
 	
      4)   user-friendly graphical interface;
 	
      5)   data validation process; and
 	
      6)   sample report results; and
 	
 b)   such work would be pursued in co-ordination with ALLPIRG participants by making use of existing electronic tools, such as electronic mail (e-mail) and the Internet, and would develop specific sample results for one route family or homogeneous area.

Conclusion 1/15 –   Application of charges and related organizational aspects   That ICAO further promote the policy guidance set out in the *Statements by the Council to Contracting States on Charges for Airports and Air Navigation Services* (Doc 9082/5) and in particular the precepts that: a)   revenues generated from airport and air navigation services charges should only be applied towards offsetting the costs of providing the facilities and services being charged for; and   b)   application of this principle may be greatly facilitated by the establishment of autonomous authorities to operate airports or air navigation services or both.

APPENDIX B

ALLPIRG/1 CONCLUSION

Conclusion 1/16 –   Role of ICAO in CNS/ATM systems financing

That ICAO:

a)   increase its efforts to promulgate the benefits of CNS/ATM systems implementation to governments, financial institutions and organizations, and industry;

b)   emphasize to States and financial institutions the importance and efficiency of a co-operative approach to the implementation and operation of CNS/ATM systems components;

c)   describe examples of instances where the co-operative aspects may provide the most beneficial, or even only viable, solution to overcoming obstacles to implementing a CNS/ATM system component;

d)   describe the expertise ICAO possesses and the neutral advice and assistance it can provide on technical, financial, organizational and co-operative aspects of CNS/ATM systems implementation and operation, and in particular ICAO's extensive experience in administering regional co-operative agreements and in implementing technical co-operation projects;

e)   identify all potential sources of loans and financial assistance to States;

f)   provide guidance to States on procedures for securing loans and assistance to States;

g)   serve as a clearing house for the information referred to under subparagraphs e) and f); and

h)   document these subjects for the 1998 World-wide CNS/ATM Systems Implementation Conference in Brazil.

Conclusion 1/17 –   ALLPIRG mechanism for technical co-operation

That ALLPIRG, in accordance with its Terms of Reference, and in order to ensure timely and co-ordinated implementation of the new ICAO CNS/ATM systems, support ICAO and States in mobilizing funds for the ICAO Objective Mechanism of the ICAO Technical Co-operation Programme per ICAO Assembly Resolution A31-14.

Conclusion 1/18 –   Technical co-operation for national CNS/ATM planning and implementation

That the Technical Co-operation Project proposal document already approved be considered by the other PIRGs, with a view to exploring its usefulness in the ICAO regions

APPENDIX C

OUTSTANDING CONCLUSIONS OF THE ALLPIRG/1 MEETING

ALLPIRG/1 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE
Conclusion 1/3 – Need for a strategy on training for CNS/ATM systems That ICAO, working with the stakeholders/partners, continue to develop a world-wide strategy for the development and implementation of training for CNS/ATM systems.		Under study	
Conclusion 1/7 – Accommodation of FANS 1-equipped aircraft into the aeronautical telecommunication network (ATN) environment That ICAO identify and address all aspects of transition to the ATN, recognizing that aircraft equipped with FANS 1 or similar type equipment need to be accommodated during the transition period.	Guidance material	Under preparation	March 1999
Conclusion 1/8 – Reporting of shortcomings/deficiencies That ICAO develop a standard methodology for reporting shortcomings/deficiencies in the air navigation field, with special emphasis on safety related aspects. This methodology is intended be used by all air navigation planning groups for submitting information to ICAO.	Uniform methodology	Being finalized	June 1998
Conclusion 1/9 – Expeditious approval, adoption and dissemination of ICAO SARPs, procedures and guidance material That innovative measures be encouraged, aimed at the process of approval, adoption and dissemination of SARPs, procedures and guidance material that support the timely implementation of CNS/ATM systems on a global basis.	A new abbreviated SARPs amendment process	Under trial with new Annex 10 material	March 1999
Conclusion 1/11 – Model National CNS/ATM Plan That ICAO take expeditious steps in finalizing a model national CNS/ATM system plan.	An ICAO circular	Being aligned with the revised Global Plan	April 1998
Conclusion 1/12 – Central co-ordination That ICAO establish a CNS/ATM Implementation Core Co-ordinating Team at ICAO Headquarters in order to provide the necessary support for inter-regional and global implementation co-ordination.	To be determined	See ALLPIRG/2 Conclusion 2/13	—

Conclusion 1/21 – Preparatory work
That:
   a) ICAO develop a similar educative tool that modelled different CNS/ATM scenarios; and
   b) other selected training material and tools relevant to CNS/ATM might also be prepared.
	A model training tool	Under study by the HPRT Study Group	

APPENDIX D

UNIFORM METHODOLOGY FOR THE IDENTIFICATION, ASSESSMENT AND REPORTING OF AIR NAVIGATION SHORTCOMINGS AND DEFICIENCIES

1.   **Introduction**

1.1   Based on the information resulting from the assessment carried out by ICAO on the input received from various regions regarding shortcomings and deficiencies in the air navigation field, it became evident that improvements were necessary in the following areas:

    a)   collection of information;

    b)   safety assessment of reported problems;

    c)   identification of suitable corrective actions (technical/financial/organizational), both short-term and long-term; and

    d)   uniform method of reporting in the reports of ICAO planning and implementation regional groups (PIRGs).

1.2   This methodology is therefore prepared with the assistance of ICAO PIRGs and is adopted for the efficient identification, assessment and clear reporting of air navigation shortcomings and deficiencies.

1.3   For the purpose of this methodology, a non-implementation of a facility or service required in accordance with a regional air navigation plan is considered to be a shortcoming. An operational requirement which has not been met as a result of non-application of relevant SARPs and procedures in the provision of facilities and services is considered to be a deficiency. The net effect of either a shortcoming or a deficiency is a negative impact on safety.

2.   **Collection of information**

        Regional office sources

2.1   As a routine function, the regional offices are expected to maintain a list of specific shortcomings and deficiencies, if any, in their regions. To ensure that this list is complete and clear, it is understood that the regional offices take the following steps:

    a)   compare the status of implementation of the air navigation facilities and services with the regional air navigation plan documents and identify facilities, services and procedures not implemented;

    b)   review mission reports with a view to detecting shortcomings and deficiencies that affect safety, regularity and efficiency of international civil aviation;

    c)   make a systematic analysis of the differences with ICAO Standards and Recommended Practices filed by States to determine the reason for their existence and their impact, if any, on safety;

    d)   review aircraft accident and incident reports with a view to detect possible systems or procedures deficiencies;

e)   review inputs, provided to the regional office by IATA and IFALPA on the basis of Assembly Resolution A31-5, Appendix M;

f)   assess and prioritize the result of a) to e) according to paragraph 4;

g)   report the outcome to the State(s) concerned for resolution; and

h)   report the result of g) above to the related PIRG for further examination, advice and report to the ICAO Council, as appropriate through PIRG reports.

States sources

2.2   To collect information from all sources, States will need to establish reporting systems as called for in Annex 13, paragraph 7.3 and Assembly Resolution A31-10. Those systems should be non-punitive in order to capture the maximum number of deficiencies.

Users sources

2.3   Appropriate international organizations, including IATA and IFALPA are valuable sources of information on shortcomings and deficiencies, especially those that are safety related. In their capacity as users of air navigation facilities they should identify facilities, services and procedures that are not implemented or are unserviceable for prolonged periods or are not fully operational. In this context it should be noted that Assembly Resolution A31-5, Appendix M and several decisions of the Council obligate users of air navigation facilities and services to report any serious problems encountered due to the lack of implementation of air navigation facilities or services required by regional plans. It is emphasized that this procedure, together with the terms of reference of the PIRGs should form a solid basis for the identification, reporting and assisting in the resolution of non-implementation matters.

3.   **Reporting of information on shortcomings and deficiencies**

3.1   In order to enable the ICAO PIRGs to make detailed assessments of shortcomings and deficiencies, States and appropriate international organizations including IATA and IFALPA, are expected to provide the information they have to the ICAO regional office for action as appropriate, including action at PIRG meetings.

3.2   The information should at least include: description of the shortcoming and deficiency, risk assessment, possible solution, time-lines, responsible party, agreed action to be taken and action already taken.

3.3   The agenda of each PIRG meeting should include an item on air navigation shortcomings and deficiencies, including information reported by States, IATA and IFALPA in addition to those identified by the regional office according to paragraph 2.1 above. Review of the shortcomings and deficiencies should be a top priority for each meeting.   The PIRGs, in reviewing lists of shortcomings and deficiencies, should make an assessment of the safety impact for subsequent review by the ICAO Air Navigation Commission.

3.4   In line with the above, and keeping in mind the need to eventually make use of this information in the planning and implementation process, it is necessary that once a shortcoming or deficiency has been identified and validated, the following fields of information should be provided in the reports on shortcomings and deficiencies in the air navigation systems. These fields are as follows and are set out in the reporting form attached hereto.

a) Identification of the requirements

As per ICAO procedures, Regional Air Navigation Plans detail *inter alia* air navigation requirements including facilities, services and procedures required to support international civil aviation operations in a given region. Therefore, shortcomings or deficiencies would relate to a requirement identified in the regional air navigation plan documents. As a first item in the shortcoming/deficiency list, the requirements along with the name of the meeting and the related recommendation number should be included. In addition, the name of the State or States involved and/or the name of the facilities such as name of airport, FIR, ACC,TWR, etc. should be included.

b) Identification of the shortcoming and deficiency

This item identifies the shortcoming and deficiency and would be composed of the following elements.

   a) a brief description of the shortcoming and deficiency;

   b) date shortcoming and deficiency was first reported;

   c) Status of implementation; ie, NI = not implemented
                                    ID = implemented but deficient

   d) appropriate important references (Meetings, Reports, Missions, etc)

c) Identification of the corrective actions

In the identification of the corrective actions, this item would be composed of:

   a) a brief description of the corrective actions to be undertaken;

   b) identification of the executing body;

   c) expected completion date of the corrective action; and

   d) when appropriate or available, an indication of the cost involved.

* It should be noted that a longer implementation period could be assigned in those cases in which the expansion or development of a facility was aimed at serving less frequent operations or entailed excessive expenditures.

4.   **Assessment and prioritization**

4.1   A general guideline would be to have three levels of priority organized on the basis of safety assessment as follows:

   "U" priority =   **Urgent** requirements having a **direct** impact on **safety** and requiring **immediate** corrective actions.

                Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = **Top priority** requirements **necessary** for air navigation **safety**.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = **Intermediate** requirements **necessary** for air navigation **regularity and efficiency**.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

5.   **Model reporting table for use in the reports of PIRGs**

5.1   Taking the foregoing into account, the model table at the Appendix is for use by PIRGs for the identification, assessment, prioritization etc. of shortcomings and deficiencies. It might be preferred that a different table would be produced for each of the different topics i.e. AGA, ATM, SAR, CNS, AIS/MAP, MET. However, all tables should be uniform.

6.   **Action by the regional offices**

6.1   Before each PIRG meeting, the regional office concerned will provide advance documentation concerning the latest status of shortcomings and deficiencies.

6.2   It is noted that the regional offices should document serious cases of shortcomings and deficiencies to the Air Navigation Commission (through ICAO Headquarters) as a matter of priority, rather than waiting to report the matter to the next PIRG meeting.

REPORTING FORM ON AIR NAVIGATION SHORTCOMINGS AND DEFICIENCIES IN THE .... FIELD IN THE .... REGION

Identification			Shortcomings and deficiencies				Corrective action			
Requirements	States/facilities	Description	Date first reported	Status	Remarks	Description	Executing body	Date of complete	Priority for action*	
Requirement of Part .., paragraph (table) .. of the air navigation plan	Terra X Terra Y	Speech circuits not implemented Villa X - Villa Y	12/02/9X	NI	Co-ordination meeting between Terra X and Terra Y on 16/07/9X to finalize arrangements to implementation circuit via satellite	Implementation of direct speech circuit via satellite	Terra X	August 199X	A	

* Priority for action to remedy the shortcoming is based on the following safety assessments:

"U" priority = **Urgent** requirements having a **direct** impact on **safety** and requiring **immediate** corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = **Top priority** requirements **necessary** for air navigation **safety**.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = **Intermediate** requirements **necessary** for air navigation **regularity and efficiency**.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

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