



ALLPIRG/5

International Civil Aviation Organization

ALL PLANNING AND IMPLEMENTATION REGIONAL GROUP (ALLPIRG) / ADVISORY GROUP

FIFTH MEETING

**Montreal, Canada
23 – 24 March 2006**

REPORT

INTRODUCTION TO THE REPORT

1. GENERAL

1.1 The fifth meeting of the ALLPIRG/Advisory Group was held at ICAO Headquarters in Montreal from 23 to 24 March 2006.

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. A. Sayce, President of the Air Navigation Commission, Mr. W. Voss, Director, Air Navigation Bureau, as well as staff members of the Air Navigation and Air Transport Bureaux and of the Regional Affairs Office. The list of ICAO Secretariat staff servicing the meeting is at the Appendix to this report.

1.3 The meeting was attended by 100 participants, including 51 observers, listed at the Appendix.

1.4 The following agenda was approved by the meeting:

Agenda Item 1: Review of follow-up actions on the ALLPIRG/4Report

Agenda Item 2: Global Air Navigation Plan

2.1 Framework for global planning

2.2 Roles of ICAO, planning and implementation regional groups (PIRGs) and States

2.3 Transitional issues

2.4 Performance framework

2.5 Supporting methodologies and tools

2.6 Business case for the implementation of CNS/ATM Systems

2.7 Environmental benefits of CNS/ATM Systems

2.8 On-line searchable air navigation plan (ANP) database to support planning activities, including ICAO 5-letter code

Agenda Item 3: Aviation safety

3.1 Outcome of and follow-up to the Conference of Directors General of Civil Aviation

3.2 Use of the ECCAIRS by Contracting States to submit their ADREP reports to ICAO

Agenda Item 4: Aviation security

4.1 Summary of aviation security activities

4.2 Overview of Universal Security Audit Programme (USAP) activities

4.3 Assistance to states in aviation security

Agenda Item 5: Interregional coordination and harmonization

- 5.1 Funding for regional safety monitoring agencies for reduced vertical separation minima (RVSM), required navigation performance (RNP) and automatic dependent surveillance – contract/controller-pilot data link communications (ADS-C/CPDLC)
- 5.2 Global harmonization of RNP/area navigation (RNAV) implementation
- 5.3 Coordination between the regions and between the Regional Offices and ICAO

Agenda Item 6: Any other business

1.5 Electronic copies of the documentation that was presented to the ALLPIRG/5 Meeting — working papers, presentations and the final report — are available on the ALLPIRG website. To access the documentation:

- 1) go to the ICAO web site: <http://www.icao.int>;
- 2) on the left side of the page, navigate down to the heading “Meetings”;
- 3) select “ALLPIRG/5”; and
- 4) under “ALLPIRG/5”, select “Draft Report”.

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AGENDA ITEM 1: REVIEW OF FOLLOW-UP ACTIONS ON THE ALLPIRG/4 REPORT

1.6 The Meeting noted the action taken by the Air Navigation Commission and the Council on the report of the fourth meeting of the ALLPIRG/Advisory Group (ALLPIRG/4), which was held in Montreal from 6 to 8 February 2001.

1.7 The conclusions of ALLPIRG/4 called for certain actions not only by ICAO, but also by other CNS/ATM partners from the ALLPIRG membership. The Meeting received an update on the status of follow-up actions and noted that, in many cases, action had already been completed.

1.8 As a result of the review during the meeting, the updated list of follow-up actions taken on the conclusions developed by ALLPIRG/4 is detailed in the Appendix to the report on Agenda Item 1.

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APPENDIX

FOLLOW-UP ACTIONS ON THE CONCLUSIONS DEVELOPED BY THE ALLPIRG/4 MEETING

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
<p>Conclusion 4/1 – A general framework and terms of reference for interregional coordination meetings</p> <p>That the Council agree to adopt a general framework and terms of reference for interregional coordination meetings (IRCMs) as set out in Appendices A and B to the report on Agenda Item 2.</p>	<p>Include the framework and the terms of reference for interregional coordination meetings in the work programmes of ICAO Regional Offices and PIRGs</p>	<p>Included in the work programmes of ICAO Regional Offices and PIRGs</p>	<p>Completed</p>
<p>Conclusion 4/2 – Interregional meetings specifically dedicated to interface areas</p> <p>That ICAO convene interregional meetings, as and when required, to address the specifically focussed interface problems and other issues of neighbouring States and/or neighbouring regions as a whole.</p>	<p>Arrange focused interregional meetings of neighbouring State of two or more regions as required</p>	<p>ICAO Regional Offices are convening interregional meetings as required</p>	<p>Ongoing task</p>
<p>Conclusion 4/3 – Increased emphasis on addressing interregional issues and missing elements</p> <p>That, with a view to facilitating interregional planning and the harmonization of air navigation systems, ICAO and the CNS/ATM partners put more emphasis on the addressing of interregional issues and the missing elements as outlined in Appendix C to the report on Agenda Item 2.</p>	<p>Address interregional issues and the missing elements for the harmonization of air navigation systems</p>	<p>ICAO Headquarters and Regional Offices, PIRGs, States and industry are addressing the relevant issues</p>	<p>Ongoing task</p>

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
Conclusion 4/4 – Publication and maintenance of ANP/FASID documents That: a) ICAO ensure that sufficient resources and priorities are accorded to the publication of ANP/FASID documents; and b) the ANP/FASID be kept up-to-date through regular amendments thereto.	Accord priority to the publication of ANP/FASID documents Maintain currency of ANP/FASID documents	ANP/FASID documents of CAR/SAM, EUR, NAT and Asia/Pacific published. MID ANP and FASID is under preparation Action in hand	MID ANP and FASID May 2006 Ongoing task
Conclusion 4/5 – Consistency in aeronautical information That, on the basis of work being done in the European Region, ICAO: a) make every effort to increase the awareness of all States of the need to ensure the consistency of aeronautical information, including the development of additional guidance material, if necessary; and b) draw States' attention to the importance of implementation of the new ICAO standard aeronautical information publication format.	1) Increase the awareness of all States of the need to ensure the consistency of aeronautical information 2) Develop additional guidance material, if necessary 3) Draw States' attention to the implementation of the new ICAO standard aeronautical information publication format	Addressed by respective PIRGs, as required Not required Addressed by respective PIRGs, as required	Ongoing task Not required Ongoing task

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
Conclusion 4/6 – RVSM certification process That ICAO develop a suitable standard for use by States in certification of aircraft for RVSM operation and provide appropriate guidance to support the global harmonization of RVSM approval processes.	Develop a standard format for use by States in certification of aircraft approval for RVSM operation	The Manual on Implementation of a 300 m (1000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive, has been published. This document contains guidance on performance and height keeping specifications, airworthiness approval and monitoring, among other things. In addition, Annex 6, Parts I and II have been amended to include requirements for RVSM certification and approval	Completed
Conclusion 4/7 – Adoption of a uniform format for the reporting of WGS-84 implementation That the table available at Appendix D to the report on Agenda Item 2 be adopted as a uniform format for the reporting of WGS-84 implementation by PIRGs and States.	Adopt the table as a uniform format for the reporting of WGS-84 implementation	Uniform table has been adopted by ICAO Regional Offices/ PIRGs and States	Completed
Conclusion 4/8 – Environmental benefits of CNS/ATM systems That: <ul style="list-style-type: none"> a) ICAO Regional Offices and PIRGs support ICAO/CAEP efforts to expand the methodology for the quantification of CNS/ATM environmental benefits to each region by collecting data, as necessary; b) ICAO/CAEP continue its work on the expansion of the methodology for the assessment of the environmental benefits associated with the implementation of CNS/ATM systems to the various regions; and c) ICAO proceeds with the revision of the methodology for inclusion in the Global Air Navigation Plan for CNS/ATM Systems (Doc 9750) at the earliest opportunity. 	Support the expansion of the methodology for the quantification of CNS/ATM environmental benefits by collecting data, as necessary; Continue the work on the expansion of the methodology for the quantification of CNS/ATM environmental benefits to the various regions Include the methodology in the Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)	ICAO Regional Offices/ PIRGs are supporting this task. SL AN1/17-03/86 requesting data to expand the methodology was distributed to States. Very limited replies received. New emissions models for regional and global assessments are under consideration by CAEP Updates on the methodologies for the quantification of CNS/ATM environmental benefits were provided for inclusion in the global plan	Ongoing task Ongoing task Completed. Updates to be provided in future revisions

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
Conclusion 4/9 – Support for the ICAO position at WRC-2003 That regional planning groups and regional offices address matters concerning the allocation and protection of radio frequency spectrum, in coordination with national civil aviation authorities, ICAO Headquarters and regional telecommunication organizations.	Address, as a part of the work programme, matters concerning the allocation and protection of radio frequency spectrum	ICAO Headquarters, Regional Offices, PIRGs, States and industry are addressing this issue for its presentation to ITU WRC - 2007	Ongoing task
Conclusion 4/10 – Reporting of shortcomings and deficiencies That where a State, by virtue of Article 38, has notified ICAO of a difference to Standards and Recommended Practices governing the actual provision of facilities and services listed in an air navigation plan, the non-implementation of a facility or service, in the context of the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies, should not be reported as either a shortcoming or a deficiency when it has no negative impact on safety, regularity and/or efficiency.	Take into account the clarification related to the notification of a difference to SARPs in the context of the application of the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies	Included in the uniform methodology for the identification and reporting of air navigation deficiencies	Completed
Conclusion 4/11 – Single definition That ICAO be invited to refine the following single definition of a shortcoming/deficiency with a view to its incorporation into the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies: “A deficiency is a situation where a facility, service or procedure is not provided in accordance with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international aviation.”	1) Refine the single definition of a shortcoming/deficiency 2) Adopt the single definition of shortcoming and deficiency in the context of the application of the uniform methodology for the identification and reporting of air navigation shortcomings and deficiencies, subject to further refinement and approval by the ANC/Council	Single definition refined and adopted by PIRGs	Completed

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
<p>Conclusion 4/12 – Eurocontrol planning and implementation methods</p> <p>That, with a view to benefiting from Eurocontrol's experience and expertise in the field of performance-driven planning and implementation methods, particularly with regard to the collaborative links that the agency maintained with its CNS/ATM partners, PIRGs:</p> <p>a) study the approach to planning and implementation taken by Eurocontrol, with a view to the possible application of its elements in their respective regions of responsibility; and</p> <p>b) take steps to issue appropriate invitations for Eurocontrol's attendance at PIRG meetings.</p>	<p>Study the approach of Eurocontrol in planning and implementation for its possible application in the regions</p> <p>Extend an invitation to Eurocontrol for attendance at PIRG meetings</p>	<p>Approach has been taken into account in planning and implementation by PIRGs</p> <p>ICAO Regional Offices have extended the invitation to Eurocontrol to attend PIRG meetings</p>	<p>Completed</p> <p>Completed</p>

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
Conclusion 4/13 – Database developments That ICAO: <ul style="list-style-type: none"> a) post promptly all tabular material from all regional air navigation plans relating to facilities and services to an ICAO-controlled web site in a simple PDF format; b) invite CNS/ATM partners to post their relevant planning material on the web site referred to in a) above; c) provide appropriate free access to relevant ICAO Headquarters' Sections, Regional Offices, PIRGs and participating CNS/ATM partners; d) maintain the currency of this database, inter alia, to take account of amendments made to hard copy ANPs; e) with the assistance of PIRGs and interested CNS/ATM partners, refine and develop the database, as a matter of urgency, to provide access and functionality commensurate with its use as a planning tool and in line with ICAO sale of publications practices. 	Post regional ANP material to ICAO website Post partners planning material to ICAO website Provide appropriate free access to all Sections Maintain the currency of the database Refine and develop database	All ANPs are on ICAO-NET Being done by the ICAO Regional offices Ongoing task. Ongoing task On-line searchable ANP database to support planning activities is under development	Completed Ongoing task Ongoing task Ongoing task ALLPIRG/5 was presented with pilot database
Conclusion 4/14 – Expansion of the Universal Safety Oversight Audit Programme That the Universal Safety Oversight Audit Programme be expanded to include Annexes 11 and 14 and the necessary resources be made available.	Expand the Universal Safety Oversight Audit Programme to include Annexes 11 and 14	USOAP has been expanded to include all safety related Annexes	Completed
Conclusion 4/15 – Remedial action That, in following up the audits carried out in the context of the Universal Safety Oversight Audit Programme, the necessary remedial actions be taken as a matter of urgency.	Take remedial actions as follow- up to the audits carried out in the context of the Universal Safety Oversight Audit Programme	Action in hand	Ongoing task

ALLPIRG/4 CONCLUSION	FOLLOW-UP METHOD	STATUS	TARGET DATE/ REMARKS
Conclusion 4/16 – Databases for CNS/ATM systems planning activities That ICAO set up a mechanism to collect and update the relevant data to be used by regions, sub-regions and States for their CNS/ATM systems planning activities.	Establish the databases for CNS/ATM systems planning activities	On-line searchable ANP database to support planning activities is under development	ALLPIRG/5 was presented with pilot database

AGENDA ITEM 2: GLOBAL AIR NAVIGATION PLAN

2.1 Framework for global planning

2.1.1 The Meeting recalled that, in 1998, the Council accepted the Global Air Navigation Plan for communications, navigation, and surveillance/air traffic management (CNS/ATM) Systems (Global Plan), which was followed by the first amendment in 2001. In light of the Eleventh Air Navigation Conference (AN-Conf/11) in 2003 and the sixth meeting of the Air Navigation Commission Consultation with Industry in May 2004, the meeting was informed that the second amendment to the Global Plan was prepared in January 2006.

2.1.2 The Meeting received a comprehensive presentation on the draft second amendment of the Global Air Navigation Plan. The presentation addressed past and future work associated with achieving a global ATM system; the Global Plan Initiatives (GPIs); the performance-based approach to measuring success with implementation; and the process of carrying out regional integration and transition. The revised Global Plan is not merely a document; in fact, it encompasses a systematic and integrated approach to planning. The revised planning process would be facilitated through planning tools, an electronic air navigation planning database, project and programme management techniques and new reporting methodologies. The revised Global Plan would not cause major changes to the work already in progress in the regions since the objective was to harmonize work programmes, improve reporting processes and help to ensure interoperability and seamlessness between regions. It would also introduce methods to ensure that performance objectives were developed and measured. The Meeting noted that ICAO, at the Headquarters level, was committed to offering the support required to the Regional Offices to ensure success with implementation of the GPIs.

2.1.3 For effective planning and implementation of GPIs, the Meeting was apprised that the Secretariat would review the data presented in the tables contained in the regional air navigation plans (ANPs) so as to facilitate integration of the GPIs into the planning process and to maximize their usefulness as part of the ANP searchable database. Additionally, in light of the ATM operational concept and the GPIs, the Secretariat will revisit the Statement of Basic Operating Requirements and Planning Criteria (BORPC) contained in the regional ANPs. Furthermore, this second amendment addresses the elements beyond CNS and ATM systems and includes additional systems covering the aeronautical information service (AIS), aerodromes, air routes and ground aids (AGA), meteorological (MET) areas. Therefore, the document has been renamed “Global Air Navigation Plan”, which also allows for a more logical alignment with the regional ANPs.

2.1.4 Subsequent to the initial review of the amended version of the Global Plan by the Commission, the Meeting noted that the ICAO Secretariat is presently consulting States through established procedures as well as presenting the same version to the ALLPIRG/5 Meeting so as to seek the views and obtain support from the members of ALLPIRG. Consequent to this coordination process and taking into account comments received from States as well as ALLPIRG, the revised draft second amendment is scheduled to be presented to the Air Navigation Commission for its final review in October 2006, and subsequently to the Council for final approval in November 2006.

2.1.5 The Meeting was supportive of the revised Global Plan and the new approach to planning and implementation. However, several issues were raised and the Meeting requested that the following be addressed by the Secretariat when finalizing the revised Global Plan, prior to its acceptance by Council: a) the establishment of a mechanism to ensure integration of the Global Plan into the regional plans; b) the overall planning and implementation processes kept as simple as possible; c) ICAO Headquarters to ensure maximum transfer of knowledge; d) aircraft operations integrated into relevant initiatives;

e) the performance framework finalized so that partners would have a better understanding of how to meet performance objectives; and f) safety is adequately addressed in the GPIs; In this regard, the Meeting supported ICAO in its endeavours to arrange the Performance Symposium for the first Quarter of 2007.

2.1.6 The Meeting discussed the effect of the revised Global Plan on regional resources, and agreed that adjustments to resources may be needed to ensure effective implementation of the GPIs. Consequently, the Meeting requested ICAO to allocate resources accordingly so that technical support is available to ensure effective implementation of the GPIs and to address operational matters. Also, the Meeting agreed that ICAO, in support of the Global Plan, should conduct a series of workshops at the Regional Offices dealing with the integration of the revised planning processes and GPIs into the current planning framework, and the utilization of the planning tools and methodologies. As a result, the Meeting agreed on the following conclusion:

Conclusion 5/1: – Workshops on the Global Plan for Regional Offices

That, in support of the Global Plan, ICAO conduct workshops in the Regional Offices to provide training on planning tools and methodologies as well as strengthening the interaction between technical officers at Headquarters and Regional Offices.

2.1.7 The Meeting discussed the efforts needed in maintaining consistent global harmonization though harmonized regional implementation of GPIs, and adopted the following conclusion as a way forward

Conclusion 5/2: – Implementation of Global Plan Initiatives (GPIs)

That, recognizing that the evolution continues from a systems-based to a performance-based approach to planning and implementation of the air navigation infrastructure, the regional planning groups:

- a) note that the Global Plan is a significant component in the development of regional and national plans and that, together with the global ATM operational concept, it provides an effective architecture for achieving a harmonized and seamless Global ATM system;
- b) identify GPIs that most closely align with the well established implementation plans of their respective regions;
- c) select GPIs that would be most effective in achieving the objectives of the region while ensuring continuation of the work already accomplished;
- d) implement GPIs that take into account the Initiatives across regions, to align work programmes and to develop national and regional plans that facilitate achieving a Global ATM system;
- e) utilize the planning tools as the common planning and implementation mechanism, thereby ensuring proper coordination and global integration; and
- f) review, at each PIRG meeting as a part of its regular agenda, the progress achieved and challenges identified in the implementation of GPIs using a common template.

2.2 Role of planning and implementation regional groups (PIRGs)

2.2.1 As a follow-up to the observation made by the Council on the need to review the format and method of processing the reports of the Commission to the Council as well as the terms of reference of the PIRGs, the Meeting received a progress report on the work accomplished on the subject to date.

2.2.2 The Meeting recalled that, consequent to the establishment of PIRGs by the Council, these Groups have been providing an excellent feedback to ICAO in terms of the issues to be addressed in order to translate the SARPs into implementation plans. The Meeting reemphasized that the PIRGs have an important role to play in ensuring and enhancing air safety. With reference to a suggestion that ICAO implement a process whereby all States, when appointing their representation to a PIRG, issue an official accreditation to the ICAO Regional Office serving the Group, the Meeting opined this process may be very cumbersome for such a regional meeting and may not contribute to the efficiency of the PIRG. Instead, the Meeting called for participation of qualified experts in PIRG meetings and, at the same time, it was noted that the experts could reflect the views of their respective administrations. However, the Meeting agreed to a more detailed examination of this aspect of accreditation, in consultation with Paris Office.

2.2.3 In relation to the periodicity of PIRG meetings, it was agreed that PIRG meetings be convened as and when required, keeping in mind the interests of the region. Other means of contacts with the States, such as teleconferencing, email, telephone and facsimile, are to be encouraged during the intervening period. The Meeting observed that, as the Strategic Objectives of ICAO are applicable to the world civil aviation community, any revision to the terms of reference of PIRGs should be related to these Strategic Objectives and not to the Business Plan of ICAO. The Meeting requested ICAO to consult the Chairmen and Secretaries of all PIRGs in finalizing the terms of reference of all PIRGs.

2.2.4 With regard to PIRG reports, the Meeting recognized that many of the reports are exhaustive and sometimes contain very routine conclusions. From the point of view of States, it is a very good reference material and is also useful in obtaining funds for projects and workshops. Consequently, the Meeting agreed that the content and style of the PIRG reports should be at the discretion of the respective PIRG.

2.3 Business case for the implementation of CNS/ATM Systems

2.3.1 The Meeting received a presentation on the business case model for the implementation of CNS/ATM Systems as developed by ICAO. The ensuing discussion focused on the usefulness of such a tool, the feasibility and the resource availability within PIRGs and at the Regional Offices to conduct business cases. It was noted that the air navigation planning process takes into account the interdependencies between the equipment installed on the ground and the aircraft avionics. Accordingly, this tool, which integrates both the air navigation services providers and the airspace users, will be very useful in the development of various implementation scenarios. Also, this will serve as a basis for the decision-making process by the CNS/ATM partners regarding the implementation of new systems and the investments involved. However, the business case should be used in conjunction with other tools in order to provide more comprehensive and acceptable results. It was noted that, in some regions, the development of business cases in various formats has become a requirement, while other regions lack the necessary resources to perform this type of analysis. In this context, the need for networking among experts in the fields of cost effectiveness, cost-benefit analysis and business cases as well as the provision of the required assistance to the Regional Offices was highlighted.

2.3.2 The Meeting noted the progress achieved in developing a business case model for the implementation of CNS/ATM Systems, and adopted the following conclusions:

Conclusion 5/3: – Workshop on the business case model for communications, navigation, and surveillance/air traffic management (CNS/ATM) Systems

That, in support of the development of business cases for the implementation of CNS/ATM Systems, ICAO convene a training workshop for States at the Regional Offices through an appropriate mechanism, such as Special Implementation Projects (SIPs).

Conclusion 5/4: – Application of the business case model for CNS/ATM Systems implementation

That PIRGs, States and airspace users:

- a) note that business cases for the implementation of CNS/ATM Systems leading to a global ATM system is a key element in the development of regional, subregional and national plans;
- b) consider the application of the model for the development of business cases in the formulation of national and subregional plans with a view to facilitating the achievement of a global ATM system; and
- c) establish, with ICAO's assistance and within the limits of the programme budget, a network of experts on cost effectiveness, cost-benefit analyses and business cases for the implementation of CNS/ATM Systems in order to share expertise and to provide assistance to the Regional Offices.

2.4 Online searchable air navigation plan (ANP) database

2.4.1 Continuing discussions on the Global Plan, the Meeting was presented with a live demonstration of on-line searchable ANP database using the ICAO geographic information system (GIS) portal. The portal was intended to organize Global ANP content and associated services such as aeronautical geo-data directories, planning and search tools, flow and traffic forecast information, planning support resources and associated applications. The portal will provide the capability of querying metadata records for relevant planning and other data and services and to link users directly to the ICAO online site that hosts the air navigation planning services. At the portal, the Global ANP content could be visualized as selectable information layers, overlaid by information from other sources (air navigation geo-based data) and used in user-defined geographic query and analysis.

2.4.2 The Meeting noted with satisfaction the progress made by the ICAO Secretariat in the development and availability of the ICAO Global ANP database and several associated air navigation planning services. The Meeting felt that the database and services, made available through the portal, would improve the efficiency and provide conditions for electronic updates and timely provision of up-to-date Global ANP information to all users. Consequently, this will ensure the currency, coordination and implementation of regional air navigation systems and contribute to the further development of air navigation plans at the national, regional, interregional and global levels.

2.4.3 The Meeting noted that the Secretariat was further progressing the development of planning tools and applications which will incorporate other ANP GIS services such as aeronautical route network (ARN), flight information region (FIR), communications, navigation, and surveillance (CNS), MET, search and rescue (SAR) and AIS, and those new tools will be introduced in the GIS portal as their development is completed. The Meeting felt that certain priorities in the development of the tools should

be established on the basis of requirements defined by the Regional Offices and that this work should also incorporate the synergy from other sources such as EUROCONTROL. The Meeting consequently developed the following conclusions:

Conclusion 5/5: – ICAO Global air navigation plan (ANP) database and geographic information system (GIS) portal

Recognizing that access to an ICAO Global ANP database and associated planning services through an web-based ICAO GIS portal would constitute an invaluable tool in supporting, integrating and monitoring the planning and implementation of harmonized regional, interregional and global air navigation infrastructures, the regional planning groups:

- a) note the progress made by the Secretariat in accordance with Recommendation 1/14 of AN-Conf/11 and the ICAO Global ANP database;
- b) note the ongoing efforts by the Secretariat in harmonizing formats of all the ANP tables together with the inclusion of temporal information in the tables that would assist the regional planning groups in monitoring and analysing the implementation progress;
- c) note the intent to expand the ANP tables to include Global Plan Initiatives (GPIs), as appropriate; and
- d) utilize, through the ICAO GIS portal, the ICAO Global ANP database and associated planning services so as to ensure the currency, coordination and implementation of regional air navigation planning and to contribute to the further development of air navigation plans as the framework for the efficient implementation of new air navigation systems and services at the national, regional, interregional and global levels.

Conclusion 5/6: – Development of planning tools

That ICAO, in the development of planning tools and services, should accommodate requirements established by the Regional Offices, as well as to take into account similar tools developed by other organizations such as EUROCONTROL.

2.5 Environmental benefits of CNS/ATM Systems

2.5.1 The Meeting was apprised of an update on the work of the ICAO Committee on Aviation Environmental Protection (CAEP) and on methodologies for the assessment of the environmental benefits of CNS/ATM Systems at the global and regional levels. It also discussed options for estimating environmental benefits of CNS/ATM systems at the national level. PIRGs and States recognize the importance of protecting the environment and welcomed the contributions from air traffic management systems service providers to reduce the environmental impact, with the emphasis on fuel savings, emissions reductions and noise benefits, and also to mitigate costs to the industry. PIRGs play a critical role in providing technical support and input on ATM procedures used in the regions. The Meeting noted that the CO₂ conversion factor, as provided by CAEP, would be useful in the analysis of environmental benefits of implementing CNS/ATM Systems. The PIRGS identified the issues of resources and expertise with respect to environment and called upon Headquarters to continue providing support. Accordingly, the Meeting developed the following conclusions:

Conclusion 5/7: – Environmental benefits of CNS/ATM Systems

That PIRGs and States:

- a) use the Committee on Aviation Environmental Protection (CAEP) provided CO₂ conversion factor in the analysis of environmental benefits of implementing CNS/ATM Systems;
- b) prioritize the implementation of voluntary, operationally-based improvements in their air traffic management systems, with emphasis on fuel savings, emissions reductions and noise benefits, and also to mitigate costs to the industry.;
- c) provide feedback to ICAO on studies conducted on the environmental benefits of implementing CNS/ATM Systems; and
- d) share air traffic data to improve future CAEP assessments, in line with State letter AN 1/17-03/86.

Conclusion 5/8: – Globally coordinated air traffic services (ATS) routes

That PIRGs:

- a) establish a global consolidated, prioritized list of routes and terminal area (TMA) improvements in close coordination with airspace users; and
- b) work with neighbouring PIRGs/States/air navigation service providers (ANSPs) to accelerate international route improvements.

Conclusion 5/9: – Terminal area (TMA) structure and area navigation

That States:

- a) employ area navigation in all TMAs, including appropriate arrival and departure procedures, to improve efficiency and reduce emissions in the vicinity of airports; and that, in special cases where there are particularly challenging obstacles and where air traffic density is very high and additional approach paths are possible, the more precise and contained required navigation performance (RNP) procedures be employed; and
- b) review operations, procedures and training of controllers to ensure the optimum management of air traffic services.

Conclusion 5/10: – Environmental benefits of RVSM introduction and regional expertise

That ICAO:

- a) undertake a study on the environmental benefits of the introduction of RVSM and to ensure that this information is transmitted to policy makers; and
- b) seek appropriate support from recognized expert organizations in its work on quantifying the environmental benefits of RVSM, noting the support offered by EUROCONTROL in this regard.

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AGENDA ITEM 3: AVIATION SAFETY**3.1 Outcome of and follow-up to the Conference of Directors General of Civil Aviation**

3.1.1 The Meeting noted that the Directors General of Civil Aviation (DGCA) Conference on a Global Strategy for Aviation Safety, which was held at ICAO Headquarters in Montreal from 20 to 22 March 2006, agreed to a unified approach to improve aviation safety through coordinated action by all Contracting States, ICAO, and the aviation industry. The Conference developed number of conclusions and made recommendation on the following subjects: Transparency and sharing of safety information; Management of aviation safety; Resolution of safety-related deficiencies through the Unified Strategy programme; Mutual recognition; Enhancing safety oversight; and Safety framework for the 21st Century. The Meeting received a verbal presentation of conclusions and recommendation that were relevant for the work programme of PIRGs.

3.1.2 The PIRGs can play an important role in ensuring that the recommendations of the Conference are implemented in the most efficient way. To this end, the Meeting agreed that each PIRG develop a practical means of implementing the conclusions and recommendations of the Conference and submit reports to ICAO on a regular basis.

3.1.3 As a follow-up to DGCA Conference, the Meeting addressed areas of air traffic management (ATM) safety requiring urgent, high-priority attention. A number of inhibitors to progress were identified, which continue to need collective action by States, such as the establishment of national safety bodies, the availability of training in the disciplines of safety management and safety regulation, and the lack of an open and just reporting environment – a “Just Culture”. The Meeting noted that although, ATM safety has progressed considerably over recent years, but success in addressing these issues is essential if the safety performance of the industry is to be protected in the context of increasing traffic growth and ATM network complexity. Accordingly, the Meeting developed the following conclusion:

Conclusion 5/11: – Air traffic management (ATM) safety management

That ICAO:

- a) urge States to give priority to the establishment and effective operation of their ATM safety management and safety regulatory functions;
- b) support the development of sufficient expertise levels in the industry through formal training in ATM safety issues and, by cooperation through regional bodies, promote collective means to optimize the effectiveness of training provision; and
- c) develop further measures to enable the implementation of a “just-culture” reporting environment to facilitate the reporting of ATM occurrences.

3.2 Use of the ECCAIRS by Contracting States to submit their ADREP reports to ICAO

3.2.1 In 2004, the Meeting noted that ICAO adopted the European Co-ordination Centre for Aviation Incident Reporting Systems (ECCAIRS) software, developed by the Joint Research Centre of the European Union, as a tool to operate its Accident/Incident Data Reporting (ADREP) system. The ECCAIRS was developed in close cooperation with ICAO with the aim of implementing taxonomies developed in ICAO to facilitate the exchange of occurrence data between States and between States and

ICAO. A presentation was made on the advantages and need for the States to implement and use the ECCAIRS software (or a compatible system) as a means of having a dynamic and seamless exchange of safety data information. It was emphasized that the ECCAIRS software is available to States at no cost and that ICAO will distribute ECCAIRS through the Regional Offices. The Meeting agreed to actively encourage the use of ECCAIRS, plan and monitor the level of ADREP/ECCAIRS implementation; and encourage States to share safety data.

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AGENDA ITEM 4: AVIATION SECURITY**4.1 Summary of aviation security activities**

4.1.1 A report was received by the Meeting on the progress made of the Universal Security Audit Programme (USAP) and its overall impact in assisting States to identify their aviation security deficiencies throughout the audit and audit follow-up processes. Furthermore, the report provided, under the Aviation Security Coordinated Assistance Program, information to support States in effectively developing their aviation security infrastructure and to correct aviation security deficiencies revealed under the USAP.

4.1.2 As of 28 February 2006, a total of 113 security audits have been conducted under the ICAO USAP. Approximately 40 audits are conducted each year and the programme is on schedule for all 189 Contracting States to have benefited from an initial audit by the end of 2007. Sixteen auditor training courses have thus far been conducted under the USAP, and there are now a total of 156 aviation security experts, representing 69 States from all of the ICAO regions, on the ICAO roster of USAP certified auditors. The use of multi-national audit teams under the guidance of an ICAO team leader allow for a valuable interchange of expertise and promote a shared understanding of the Annex Standards in the international aviation security community.

4.1.3 The USAP has revealed that many States have shown alarming shortcomings with respect to, inter alia, effective oversight of aviation security activities, national quality control programmes and implementation of airport security programmes. As a result, the Aviation Security (AVSEC) Section and the Technical Co-operation Bureau (TCB) have increasingly tailored their aviation security programmes to accommodate regional needs in order to increase the long-term sustainability of their aviation security capabilities.

4.1.4 The Meeting noted that an increasing number of States are specifically requesting assistance from ICAO, both independent of, and as a follow-up to their USAP audit in order to implement sound and sustainable aviation security infrastructure and services. In order to meet the growing demands of States and to ensure that such requests for assistance continue to be properly managed, a two-level strategy has been adopted.

4.1.5 Furthermore, the Meeting noted that ICAO will launch an awareness campaign in the international aviation community on the implementation of its aviation security enhancement strategy, including the design and implementation of a proactive communication policy. Having so informed States and partners, it is anticipated that most, if not all, States in need of aviation security assistance will either approach ICAO with their assistance requests or inform ICAO of any assistance programmes being delivered. ICAO is therefore able to maintain a global overview of aviation security measures and assist States in their effort to establish and maintain a viable and sustainable aviation security system.

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AGENDA ITEM 5: INTERREGIONAL COORDINATION AND HARMONIZATION**5.1 Funding for regional safety monitoring agencies for reduced vertical separation minima (RVSM), required navigation performance (RNP) and automatic dependent surveillance – contract/controller-pilot data link communications (ADS-C/CPDLC)***Cost recovery arrangements*

5.1.1 Under this agenda item, the Meeting was apprised that there was a need to fund RVSM monitoring activities through a cost-recovery mechanism. It was noted that, in some of the regions, the funding of RMAs is the main obstacle for the continuation of monitoring operations. Present arrangements under which States, on a voluntary basis, absorb all costs are not sustainable in the long term. Some regions have even established study groups to consider this issue. As a result, the Meeting was presented with a global approach, as developed by the Secretariat, to cost recovery of RMAs and a step-by-step procedure regarding the implementation of a cost-recovery arrangement. The Meeting, noting the global approach, affirmed that the cost-recovery mechanism chosen should be simple but transparent and fair considering the moderate costs involved. Furthermore, it was noted that the proposed global approach would be discussed and finalized during the sixth meeting of the Air Navigation Services Economics Panel (ANSEP/6) (Montreal, 27 to 31 March 2006).

Coordination amongst RMAs

5.1.2 Continuing deliberations, the Meeting reviewed the role of RMAs in ensuring that the monitoring programme meet agreed safety targets, discussed the measures required for proper coordination between the RMAs, and identified the issues that need to be resolved in order to improve the effectiveness of RVSM monitoring. The Meeting noted that monitoring RVSM operations will remain a requirement for the foreseeable future and that the only current effective method of carrying out this function is by using ground-based height monitoring units (HMUs), data input from States or air navigation service providers (ANSP) and an analysis cell within an RMA. The lack of a global coordination mechanism is an impediment to the smooth and economic functioning of RVSM operations. Different monitoring requirements in different regions can cause confusion for the operators and add costs to the monitoring function. In addition, there is no global mechanism for RMAs to coordinate necessary changes to the monitoring requirements because of increase in traffic and the changing environment. Furthermore, no forum exists for RMAs to exchange information on operational experience, monitoring data and best practices.

5.1.3 The Meeting felt that global coordination between the various RMAs would meet the objective of allowing them to exchange operational information, monitoring data and best practices. To accomplish the above task, RMAs should convene in order to establish a coordination mechanism. One of the tasks of the coordination mechanism would be to update the RMA Handbook. The Meeting suggested that the European and North Atlantic (EUR/NAT) Office act as the initial focal point since it already liaises between two RMAs. It is further suggested that the RMA Handbook be maintained by the RMAs, that it be accessed through the EUR/NAT website and that appropriate hyperlinks be made to the document from other sites. Accordingly, the Meeting developed the following conclusion:

Conclusion 5/12 – Coordination between regional monitoring agencies (RMAs)

That the ICAO EUR/NAT Office act as the initial focal point for the required coordination between RMAs in order to:

- d) facilitate the exchange of monitoring and operational data between RMAs;
- e) facilitate the exchange information about best practices between RMAs;
- f) ensure that incident reports are correctly disseminated to the appropriate RMA;
- g) provide a forum to manage changes to monitoring requirements; and
- h) ensure the maintenance of the RMA Handbook.

Monitoring data link applications

5.1.4 The Meeting acknowledged that aircraft equipage with future air navigation systems (FANS)-1/A data link applications is continuously expanding as Boeing and AIRBUS now install the system in all newly delivered long-haul aircraft. As the number of FANS-1/A-equipped aircraft is likely to increase, it appears very attractive for ANSPs to implement the use of data link in all procedural airspace as an alternative to high frequency (HF) voice. The Meeting noted that the Asia and Pacific Regions had established a “FANS Interoperability Team” (FIT) that was responsible for addressing technical and operational issues as well as overall coordination of the implementation of the data link technology. However, FIT realised that daily ongoing support was required to address implementation issues. Accordingly, FIT created a “Central Reporting Agency” (CRA) that was tasked with the daily monitoring, coordination, testing and problem research.

5.1.5 Whilst there needs to be a FIT dedicated to each region due to the specific regional operational issues, it was observed as all FANS users across different ICAO regions depend on a common global satellite data link network. It was noted that the traffic generated by users in one region impacts on the network performance delivered to users of other regions making it impossible to manage or plan the performance of the satellite communications network on a regional basis. This dependence on global satellite data link network is making it clear that regional CRA functions cannot independently manage the use of a global network and that having many different CRA functions would probably delay identification and resolution of performance issues.

5.1.6 Consequently, the Meeting recognized the benefits of adopting the concept of establishing a global CRA function to support the regional FITs across all ICAO regions, but considered that, at this stage, it would be premature to endorse such a proposal and that a business case would be needed before endorsing it.

5.2 Global harmonization of RNP/area navigation (RNAV) implementation

5.2.1 The Meeting noted that ICAO was in the process of reviewing the current RNP concept to meet the increasing demands of airspace planners and aircraft operators for performance-based navigation (PBN). The review includes all segments of flight, from en-route to approach operations. It is expected that the new concept will harmonize the currently available RNAV and RNP-designated PBN applications under one consistent and harmonized concept. This new concept will address current and future operational needs, and will eliminate confusion regarding terminology and implementation that exists today. New ICAO documentation, currently being developed, will provide States with detailed guidance for PBN implementation now and in the future. Furthermore, to support the PBN concept, a complete set of navigation specifications is being developed in close coordination with States, industry, and airlines, based on the needs in different regions. In order to coordinate the development of the relevant ICAO provisions as well as the creation of awareness, acceptance and implementation in States

and regions, the Meeting was informed that ICAO envisages the need for establishment of a PBN programme. In supporting the actions proposed, the meeting agreed to the following conclusion:

Conclusion 5/13 – Implementation of performance-based navigation concept

That, to increase awareness and understanding of the performance based navigation concept and its elements:

- a) ICAO organize workshops and training activities; and
- b) where area navigation (RNAV) or required navigation performance (RNP) implementations are required, these will be implemented by PIRGs and States according to the performance based navigation concept.

5.3 Coordination between the regions and between the Regional Offices and ICAO

Uniform Methodology

5.3.1 On the subject of deficiencies, the Meeting reviewed the regional proposals for updating the uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies (henceforth referred to as Uniform Methodology), which was initially prepared with the assistance of PIRGs and approved by the ICAO Council in June 1998. Moreover, in November 2001, in order to avoid any ambiguity in the definition of a shortcoming or a deficiency as contained in the Uniform Methodology, the Council accepted the single definition by retaining the word *deficiency* in the new single definition. The amended version of the Uniform Methodology has been consistently implemented by all PIRGs.

5.3.2 The Meeting noted that European Region had raised the issue of uniform methodology and its relevance to Universal Safety Oversight Audit Programme (USOAP) and suggested that USOAP eventually incorporate the current PIRGs activities in identifying deficiencies. The Meeting was of the opinion, however, that there would be merit in maintaining the role of PIRGs in dealing with the safety-related deficiencies and should consider the USOAP and the PIRGs activities as complementary under the Unified Strategy for the rectification of safety-related deficiencies. With regard to proposals from the Asia and Pacific and Middle East Regions, calling for inclusion of the SMART concept and the rationale for non-elimination of deficiencies in the Uniform Methodology respectively, the Meeting suggested waiting for results of the experience gained in its utilization by the Regions before extending its application worldwide.

5.3.3 With regard to development of a regional online database of air navigation deficiencies by the Caribbean/South American (CAR/SAM) Regions, the Meeting acknowledging that such a methodology, in addition to providing transparency, enables information in the database to be current and formatted by State, type, deficiency, date, etc., and agreed to its application in the remaining regions. Accordingly, the Meeting adopted the following conclusion:

Conclusion 5/14: – A regional online database of air navigation deficiencies

That, PIRGs consider establishing and maintaining a regional online database of air navigation deficiencies that ensures transparency and provides a secure access to authorized users.

5.3.4 In relation to the elimination of long-standing deficiencies, the Meeting recognized that the Regional Offices have been addressing this ongoing issue with the cooperation of States, international organizations and other entities through missions, letters, meetings and even telephone communication. Additionally, even though a number of deficiencies remain unresolved, only a few States in the Regions had responded with an action plan to eliminate the deficiencies. Consequently, the Meeting welcomed the proposal of GREPECAS in adopting the “last resort action” when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives. The last resort action consists of two parts: first, propose the inclusion of an alternate facility/procedure in the ANP; and, second, if this is not feasible, States, users and ICAO should be provided with an analysis concerning the risk associated with such a deficiency. Noting that the last resort action embodies the principle of transparency and, as such, is in harmony with the unified strategy to resolve safety-related deficiencies, it would be relevant for other regions to develop a similar approach in resolving regional air navigation deficiencies. As such, the Meeting developed the following conclusion:

Conclusion 5/15: – Last resort action to resolve regional air navigation deficiencies

That, when efforts to eliminate deficiencies prove unsuccessful after exhausting all alternatives, PIRGs adopt the following last resort action, which consists of the two parts, as follows:

- a) propose the inclusion of an alternate facility/procedure in the air navigation plan (ANP); or
- b) when a corrective action as a) above cannot be recommended, provide the State(s)/Territory(ies)/users and ICAO with an analysis concerning risk associated with such deficiency.

Use of very small aperture terminal (VSAT)

5.3.5 The Meeting considered the issues associated with the implementation of ground communication networks using very small aperture terminal (VSAT). It was noted that in certain ICAO Regions, VSAT has been the technology of choice for the provision of aeronautical fixed service (AFS) and other ground-ground communications. However, the continuing trend towards proliferation of such networks has been of concern due to cost and complexity of their interconnections and potential degradation of end-to-end performance. It was agreed that any network upgrade or renewal opportunity should be used to integrate neighbouring VSAT networks.

5.3.6 With regards to the network protocols used in VSAT networks, the Meeting noted the widespread availability of Internet Protocol (IP) products and services and the work of the Organization on the development of provisions relating to the use of the Internet Protocol Suite (IPS) in aeronautical communications as well the use of the public Internet. As such, it was agreed that the use of IP and IPS would greatly facilitate the interconnection of various regional VSAT or terrestrial networks and would also provide for their connection to the public Internet when and where necessary.

5.3.7 Noting that some air navigation service providers may not be sufficiently equipped to implement and maintain VSAT or other types of digital networks, the Meeting agreed that the option of leasing virtual private networks (VPN) should also be considered.

5.3.8 The Meeting completed the discussions on the issues associated with the proliferation of VSAT networks and, as a result, adopted the following conclusions to avoid or minimize such problems in the future:

Conclusion 5/16: – Implementation of very small aperture terminals (VSATs)

That PIRGs:

- a) discourage the proliferation of VSAT networks where one/some of the existing ones can be expanded to serve the new areas of interest;
- b) work towards integrated regional/interregional digital communication networks with a single (centralized) operational control and preferably based on the Internet Protocol (IP); and
- c) give due consideration to managed network services (e.g. a virtual private network (VPN)), subject to availability and cost-effectiveness.

Conclusion 5/17: – Provisions for digital communication networks

That ICAO:

- a) expedite the development of provisions relating to the use of the Internet Protocol Suite (IPS) in the aeronautical telecommunication infrastructure; and
- b) initiate the development of provisions governing the end-to-end performance of digital communication networks, irrespective of the technologies and protocols utilized therein.

Regional Supplementary Procedures

5.3.9 The Meeting reflected that the *Regional Supplementary Procedures* (SUPPs) (Doc 7030) constitute an important document to support the implementation of CNS/ATM Systems.. It is the vehicle that provides the enabling text for regional application of global provisions. As such, States often use the document as the source to sustain changes to national regulations. Furthermore, the SUPPs are the procedural part of the ANPs.

5.3.10 The Meeting recalled it had agreed during ALLPIRG/3 that the SUPPS should be reviewed with the objective of developing an adequate format and subdivision conducive to CNS/ATM Systems implementation. As a result, the Meeting was informed that the ICAO Secretariat had carried out an analysis of the SUPPs and had determined that changes should be made in two stages. The first stage would be to reorganise the SUPPS in a more coherent fashion, taking account of the emerging requirements for systems performance and capabilities, which are often pre-requisites to the implementation of CNS/ATM Systems. The second stage would be to change the Index to Application of Supplementary Procedures to more closely reflect the ICAO regions and the areas of responsibility of the PIRGs. Accordingly, the Meeting developed following conclusion as a way forward:

Conclusion 5/18: – Changes to the Regional Supplementary Procedures (SUPPS) (Doc 7030)

That ICAO:

- a) restructure the SUPPS (Doc 7030) by the complete reordering and reorganization of the material;
- b) align the area of application of the SUPPs with the area of application of the regional air navigation plans (ANPs); and
- c) make SUPPs available on ICAO website.

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AGENDA ITEM 6: ANY OTHER BUSINESS

6.1 No other business was addressed by the Meeting.

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