International Civil Aviation Organization

FOURTEENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/14)
Bangkok, Thailand, 4 to 8 August 2003

Agenda Item 3: CNS/ATM Implementation and Related Activities

REPORT ON REGIONAL DEVELOPMENTS IN THE MODERNIZATION OF AIR NAVIGATION SYSTEMS

(Presented by the Secretariat)

SUMMARY

This paper provides an overview of the regional developments in the modernization of air navigation systems as well as future plans of CNS/ATM systems.

Action by APANPIRG is proposed at paragraph 3.

1. INTRODUCTION

1.1. This paper provides information on technical and operational developments in the field of air navigation systems, as well as future plans related to communications, navigation and surveillance/air traffic management (CNS/ATM) systems.

2. OVERVIEW

2.1 This report provides information on the status of the programmes of the ICAO Planning and Implementation Regional Groups (PIRGs). These programmes are designed to modernize the air navigation infrastructure worldwide by increasing airspace and airport capacity and operational efficiency as well as providing higher levels of aviation safety and service regularity. The term "modernization" refers to building on existing air navigation systems, focusing mainly on emerging technologies, such as satellites and data links for improved CNS functions, thus making the advanced air traffic management concepts feasible.

2.2 Work related to air navigation systems and, in particular, development and implementation, continues to rank among the highest priority items on ICAO's work programme. Therefore, there has been a need for the timely completion of necessary Standards and Recommended

Practices (SARPs), Procedures for Air Navigation Services (PANS) and guidance material, in order to provide a sound basis for the implementation of emerging air navigation systems. Through its panels of the Air Navigation Commission and the Secretariat, assisted by study groups, ICAO has made progress in the development of SARPs, PANS and guidance material.

2.3 The regional planning groups, through the subregional groups, have implemented and also put in place a number of ongoing initiatives enveloping ATM, communications, navigation, surveillance as well as economic and institutional areas that would enhance and expedite the process of attaining the concept a global ATM system. A detailed list of these subregional and regional projects/plans covering the past, present and future contributing to regional harmonization are provided in Appendix A. An examination of the list shows that some projects such as Europe, Middle East, Asia Route Structure South of Himalayas (EMARSSH) and reduced vertical separation minimum (RVSM) have been implemented in multiple regions using interregional approach, thereby providing harmonization across regions.

3. ACTION BY APANPIRG

3.1 The meeting is invited to:

a) note the information provided in this working paper;

b) take into account in the work programme of APANPIRG; and

c) enhance the ongoing interregional coordination for the harmonized implementation of air navigation systems.

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APPENDIX

SUB-REGIONAL/REGIONAL/INTERREGIONAL INITIATIVES FOR THE HARMONIZED IMPLEMENTATION OF AIR NAVIGATION SYSTEMS

AIR TRAFFIC MANAGEMENT								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	Revision of ATS route structure	South China Sea - implemented on 1 November 2001. Asia to Europe through Middle East via south of Himalayas implemented on 28 November 2002. (EMARSSH)	Establishment of new ATS routes, namely: a) UB403 from Mandera (Nairobi FIR in AFI) to ODAKA (Sana'a FIR in MID); b) UB404 from Hargeisa (Mogadishu FIR in AFI) to ODAKA (Sana'a FIR in MID). Extension of route UB413 from Sana'a/Mogadishu FIR boundary to Praslin (Seychelles FIR).	Asia to Europe through Middle East via south of Himalayas implemented on - 28 November 2002. (EMARSSH) Revision of route structure in Eastern and Western part of Europe - On going.	The development of a new ATS RNAV route network in CAR/SAM Regions - In progress.	Asia to Europe through Middle East via south of Himalayas implemented on - 28 November 2002. (EMARSSH) New Middle East ATS route network - 22 December 2003.	The ATS route structure of the NAM Region is pending to be included in an updated version of the NAM ANP.	-
2	RVSM	Pacific airspace- implemented on 24 February 2000. Western Pacific airspace implemented on 21 February 2002. Hong Kong FIR and Sanya AOR implemented on 31 October 2002. Asia to Europe south of Himalayas - 27 November 2003.	Being pursued by RVSM/RNAV/ RNP TF. Target date to be determined. Parts of Region falling in SAM and EUR corridor - implemented on 24 January 2002.	Western part of European Region - Implemented on 24 January 2002. Planning for expansion in Eastern part of the Region has commenced. EUR/SAM Corridor - 24 January 2002	EUR/SAM corridor - 24 January 2002. CAR/SAM Regions - 20 January 2005	Middle East Region - 27 November 2003.	Canada implemented RVSM between FL 290 to FL 410 inclusive in Northern domestic airspace (north of 57N Lat) and transition airspace (between 52N and 57N) on 18 April 2002. United States is to implement RVSM in the domestic airspace from FL 290 to FL 410 - 20 January 2005.	Horizontal RVSM expansion in the entire NAT Region from FL 310 to FL 390 completed on 1 November 2001. Vertical expansion of RVSM throughout NAT Region from FL 290 to FL 410 - implemented on 24 January 2002.

AIR TRAFFIC MANAGEMENT								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
3	Establishment of regional airspace safety system performance monitoring structure.	In progress with a target date of September 2003.	Under consideration.	Under development.	Brazil has been designated as monitoring agency for CAR/SAM regions for implementation of RVSM.	Under consideration.	Canada will implement in the designated RVSM airspace.	Implemented.
4	ACAS II	*Mandated from 23 March 2000.*	*Mandated from 1 January 2000.*	*Mandated from 1 January 2000.*	Mandated from 1 January 2003.	*Mandated from 1 July2001.*	Implemented in Canada and the United States airspace.	*Mandated from 31 March 2001.*
5	RNAV/RNP	RNP 10: 1) North Pacific and Tasman - 23 April 1998; 2) South China Sea - 1 November 2001; 3) Australia and Indonesia - 1 November 2001; 4) Bay of Bengal - November 2002. Other routes in progress. RNP 4 under development in the South Pacific area.	RNP5 - implemented in continental Johannesburg FIR in 1998. For other routes - Under consideration.	RNAV/RNP5 implemented in ECAC area from January 1998. Implementation of precision RNAV (nearly equivalent to RNP 1) in terminal areas is planned for 2003.	EUR/SAM corridor RNP10 - implemented on 4 October 2001; Pre-operational implementation of RNP10 for routes UL302 and UL780 was approved on 22/01/04. Four other routes - Under consideration.	RNP 5 Phase 1 Implemented - 14 June 2001. RNP5/RNAV Phase 2 implemented with effect from 28 November 2002.	United States has implemented RNP in domestic and oceanic airspace since 1998. Canada is planning to implement RNP in domestic airspace in 2006. RNAV route structure in the NAM Region is under review.	MNPS implemented in 1981.

COMMUNICATIONS								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	ATN (Subnetworks, End systems and Intermediate systems)	ATN transition plan has been developed with a target date of 2005 for ground - ground application namely ATN router and AMHS.	ATN implementation is Under study. Focus is more on improving current circuits with long term plans for migrating to AMHS.	ATN transition plan is being developed. Pre-operational trials are in progress. The Link 2000 programme will gradually introduce operational applications over A-G ATN on VDL2 from 2003 to 2010.	ATN initial transition plan is under revision. With the REDDIG implementation (SAM Digital Network), in second trimester of 2003 AMHS and AIDC implementations would be facilitated.	Current AFTN circuits are being improved for transition to ATN. Guiding principles have been prepared for ground-ground application namely AMHS and AIDC - Dates to be determined.	ATN transition plan has been developed with focus on ground-ground applications. Test, development and validation phases completed. Operational implementation is under review.	Investigation of operational ATN data link scenarios in the Region with focus on air-ground applications is in progress.
2	Air-ground communication infrastructure	Further improvements are made in VHF voice in continental and terminal areas. VHF data link is used for D-ATIS, DVOLMET and CPDLC AMSS data and voice are used in oceanic and remote areas. SSR Mode S data link for high density airspace are being planned.	VHF Voice is provided in terminal areas. Extension of VHF coverage to en route areas is in progress in several FIRs. HF Voice is provided in most of FIRs. CPDLC based on FANS 1/A is being used.	Implementation of air-ground data link services is planned for 2002-2007. Horizontal expansion of 8.33 kHz channel spacing from 7 to 29 States implemented on 31 October 2002. Vertical expansion of 8.33 kHz channel spacing. from FL 245 to FL 195 planned for 2006.	VHF voice is provided in continental and terminal areas. HF voice is provide in oceanic areas. Implementation of VDL Mode 2 to support CPDLC and D-ATIS is under study. Tests on HFDL are being conducted.	VHF voice in continental and terminal areas. VHF data being studied. AMSS for data and Voice in oceanic and remote areas. SSR Mode S data link for high density airspace are being considered.	There are plans for AMSS for voice and ATN-compatible sub-networks such as VDL Mode 2, HFDL and AMSS to support CPDLC applications.	HF is the main communication and already saturated with difficulty of obtaining additional frequencies. Trials to use. CPDLC based on FANS 1/A for routine communications are being carried out. AMSS application is being assessed.

COMMUNICATIONS								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
3	Ground-ground communication infrastructure	Some of the States have implemented digital networks. (Japan, Australia, Thailand). AFTN based AIDC procedure is implemented by some States. Other States are also considering upgrading their networks.	Three major satellite networks have been provided in the States of the Region. Another satellite network (NAFISAT) is being developed for AFI North East region.	Well developed. Many of the States have upgraded to digital networks.	Number of digital networks have been implemented in the Region. Interconnection of theses networks so as to provide interoperability is in progress.	Establishment of a regional satellite based digital network is being studied.	Well developed. Canada, Mexico and United States have upgraded to digital networks.	Well developed. Many of the States have upgraded to digital networks.

NAVIGATION								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	GNSS	Transition to WGS-84 is in progress. Strategy for implementation of GNSS adopted. A check list to assist GNSS implementation has been developed. Satellite based augmentation system (MSAS) is being developed. GNSS is being used for oceanic and remote continental areas for en- route operations and NPA as supplemental means.	Transition to WGS-84 is in progress. GNSS strategy has been adopted. SBAS test bed in cooperation with EGNOS is being implemented. Mobile reference stations to be used. GNSS is being used for oceanic and continental en- route operations. Development of harmonized GNSS procedures for States of SADC completed in December 2001, and for ASECNA States in 2002.	Transition to WGS-84 is on-going. Specific deficiencies have been identified and corrective action defined. Launching of "Galileo", a new constellation of navigation satellites is under consideration with full operation capability slated for 2008. Satellite based augmentation system (EGNOS) is being developed. GNSS is being used for continental en route operations.	Transition to WGS-84 is in progress. SBAS test bed project in cooperation with WAAS is being developed. A ionospheric model is under study in order to apply the NPA Operation with SBAS Test Bed. SBAS test bed in cooperation with EGNOS is under study with a target date of Dec. 2004. GNSS is being used for oceanic and continental en route operations on supplemental and primary means of navigation.	Transition to WGS-84 is in progress. Strategy for implementation of GNSS is under development. An ongoing issue. SBAS test bed in cooperation with EGNOS was carried out. GNSS is being used on supplemental and primary means for navigation for enroute and NPA.	Transition to WGS-84 completed in Canada and United States. In Mexico, it is in progress. The GNSS/GPS strategy has been adopted. SBAS based on the United States' wide area augmentation system (WAAS) is being developed. GNSS is being used for oceanic and continental en-route operations. A GNSS approach implementation programme has been initiated by all three States and GNSS augmentation system agreements have been completed for the future expansion of the GNSS concept.	Transition to WGS-84 completed. GNSS is being used for oceanic operations

SURVEILLANCE								
No	System	ASIA/PAC	AFI	EUR	CAR/SAM	MID	NAM	NAT
1	SSR Modes A/C and SSR Mode S	Currently SSR Modes A/C is employed. SSR Mode S implemented in some terminal areas and high density en route.	Surveillance in most FIRs is through pilot voice position reporting. PSR and SSR Mode A/C is employed in some busy terminals and for en-route operations. Adopted an en-route aeronautical surveillance plan with SSR requirements to be included in the AFI FASID.	Currently SSR Modes A/C is employed. The ORCAM code management has been extended to the whole Region. SSR Mode S in some terminal areas and high density en route is planned for implementation: - basic Mode S in 2003 to 2005, - enhanced Mode S 2005 to 2007.	Currently SSR Modes A/C is employed. In the near future SSR Mode S in some terminal areas and high density en route will be planned. Use of ASTERIX protocol for SSR data sharing was established.	The Region is well covered by radars (PSR/SSR Mode A/C). SSR Mode S is planned for some terminal and high density en route areas in 2006.	En-route radar surveillance has seen substantial improvements with the upgrading of radar systems in a large part of the airspace. In several areas of the Gulf of Mexico and Northern Canada, surveillance has been restricted to position reports sent by pilots via air-ground communications. A plan to improve radar surveillance in the Gulf of Mexico is being developed.	Surveillance in most of the NAT Region is via position reports using HF Voice at approximately every 10 degrees of longitude.
2	ADS	FANS-1/A based ADS is used initially for oceanic airspace and in remote areas.	ADS will be used for low density, remote and oceanic airspace as well as outside SSR coverage.	ADS will be used in some parts of the Region.	ADS will be used initially for oceanic airspace and later in remote areas.	ADS will be used initially for oceanic airspace and later in remote areas and possibly as a backup to SSR in high density traffic areas in 2005.	ADS will be used in oceanic or remote areas; however, further review is needed for continental domestic airspace areas.	To improve surveillance, the regional plan specifies ADS over the ATN. Nevertheless, provisions have been made to accommodate FANS 1/A equipped aircraft.
3	ADS-B	ADS-B trials are in progress in a few States such as Australia, Japan and Mongolia. Implementation plans yet to be finalized.	To be determined.	To be determined. Mode S squitter related applications from 2007.	To be determined.	To be determined.	ADS-B trials are in progress in Canada and United States. Implementation plans still have to be finalized.	-

RELATED ISSUES								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	Transition from current single volume ANP to two volumes Basic ANP and FASID documents	Material finalized. Document in final preparation stage for publication.	Material finalized. Document in final preparation stage for publication.	Material finalized and published.	Material finalized and published. FASID is being kept up to date.	Material finalized, to go through approval process.	A revision programme was proposed to update the FASID document.	The trial NAT Basic ANP and FASID are being reviewed and is scheduled to be completed by the middle of 2003.
2	Development and update of Regional plan for CNS/ATM systems	Reviewed and updated. It now includes a new chapter on the subject of meteorology.	Reviewed and updated.	Reviewed and updated.	Under review to update the Plan.	Reviewed and updated.	Reviewed and updated.	New plan being developed.

RELATED ISSUES								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
3	Interregional groups which coordinate and ensure seamlessness in the implementation of Air Navigation Systems between the Regions	South-West Asia ATS Coordination Group (SWACG). Europe/Asia Air Routes Meeting (EAAR). Indian Ocean ATS Co-ordination Group (IOACG). ICAO Meetings for the Planning and Coordination of Implementation of ATS Routes through the airspace of the Eastern Part of the ICAO EUR Region, including Middle Asia (TARTAR). Informal Trans-Asia, Trans-Siberia and Cross-Polar Routes Steering Group (ITAPS).	Indian Ocean ATS Co-ordination Group (IOACG). South Atlantic Coordination Group (SAT).	South-West Asia ATS Coordination Group (SWACG). Europe/Asia Air Routes Meeting (EAAR). ICAO Meetings for the Planning and Coordination of Implementation of ATS Routes through the airspace of the Eastern Part of the ICAO EUR Region, including Middle Asia (TARTAR). Informal Trans-Asia, Trans-Siberia and Cross-Polar Routes Steering Group (ITAPS). South Atlantic Coordination Group (SAT).	South Atlantic Coordination Group (SAT)	South-West Asia ATS Coordination Group (SWACG).	Informal Trans-Asia, Trans-Siberia and Cross-Polar Routes Steering Group (ITAPS).	

RELATED ISSUES

No	System	ASIA/PAC	AFI	EUR	CAR/SAM	MID	NAM	NAT
3	Meteorological component of CNS/ATM systems	Migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms) is being addressed.	Migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms) is being addressed.	Migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms) is being addressed.	Initial discussions have taken place to address migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms).	Migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms) is being addressed.	Initial discussions have taken place to address migration from traditional alphanumeric code forms to digital code forms (WMO BUFR and GRIB code forms).	Not applicable as this issue is being addressed by the States as part of EANPG.
		Workshops on the use of the GRIB and BUFR coded WAFS data have been orgnized by the WAFC Provider States in coordination with ICAO and WMO.	Workshops on the use of the GRIB and BUFR coded WAFS data have been orgnized by the WAFC Provider States in coordination with ICAO and WMO.	Workshops on the use of the GRIB and BUFR coded WAFS data are planned to be orgnized by the WAFC Provider States in coordination with ICAO and WMO..	Workshops on the use of the GRIB and BUFR coded WAFS data are planned to be orgnized by the WAFC Provider States in coordination with ICAO and WMO.	Workshops on the use of the GRIB and BUFR coded WAFS data are planned to be orgnized by the WAFC Provider States in coordination with ICAO and WMO.	Workshops on the use of the GRIB and BUFR coded WAFS data are planned to be orgnized by the WAFC Provider States in coordination with ICAO and WMO.	
	Transition to final phase of World Area Forecast System (WAFS)	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	The transition has been completed as far as the phasing-out of the Regional Area Forecasts Centres are concerned. The T4 charts will be discontinued in 2005 and are being replaced by WAFS forecasts in the GRIB and BUFR code forms.	Not applicable.

RELATED ISSUES								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
4	Review of deficiencies	Addressed as part of the PIRG work programme. Dedicated TF established to develop appropriate management tools.	Addressed as part of the PIRG work programme. The list of deficiencies are grouped on the basis of States in addition to facility wise. Establishment of an aviation safety board is under consideration.	Addressed as part of the PIRG work programme. There are currently no outstanding formal deficiencies.	Addressed as a part of the GREPECAS work programme, through the Aviation Safety Board.	Addressed as part of the PIRG work programme.	-	Addressed as part of the PIRG work programme. There are currently no outstanding formal deficiencies.
5	Specific to the region	Guidance material to enhance aeronautical information services activities within the Region has been developed. AIS quality assurance manual has been developed.	The new larger aeroplane task force has been established to evaluate the impact on aerodromes of the AFI Region. Establishment of an appropriate body for addressing regional human resource and training issues is under consideration.	Focusing on increasing the efficiency and capacity at international aerodromes through the implementation of capacity enhancing procedures.	Human resources and training issues are being addressed. The development of an ATS and AIS Quality Assurance Programme and its associated activities are being carried out.	Formulation of a plan for development of regional training capabilities within specific training centres is being addressed.	-	Work has been initiated for the development of operational and economic performance indicators to be used throughout NAT Region.

ECONOMIC AND ORGANIZATIONAL ISSUES								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	Subregional approach for business case development and cost recovery system	-	Business case and cost benefit analysis has been carried out for SADC States for the UACC project.	Business case and cost benefit analysis are being carried out by Eurocontrol.	The Secretariat assisted in the economic aspects of the study of the transitional plan (Project RLA/98/003) to CNS/ATM systems through the development and integration of a financial module.	A business case illustrative application has been developed for the region.	Business case and cost benefit analysis are being carried out by CAN/MEX/USA.	The feasibility of creating a common cost-recovery system for the provision of air navigation services in the northern part of the region is being considered.
2	Establishment of Sub-regional entities/groups for provision of air navigation services.	-	Southern Africa Development Community (SADC) Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA) Common Market for Eastern and Southern Africa (COMESA)	(EUROCONTROL)	Central American Corporation for Air Navigation Services (COCESNA); SAM Sub-regional Group for Digital Network (REDDIG) Eastern Caribbean Sub-Regional Group for digital network (E-CAR) Central Caribbean Sub-regional Group for digital network (MEVA)	European Middle-East Air Traffic Management Coordination (EMAC)	Sub-regional group comprising of Canada, Mexico, United States of America (CAN/MEX/USA)	–

ECONOMIC AND ORGANIZATIONAL ISSUES								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
3	Cost benefit study, business case analysis and cost recovery system		Business case and cost benefit analysis has been carried out for SADC States for the UACC project. Similar exercise is under consideration for areas of routing AR4 (Europe to Southern Africa).	Business case and cost benefit analysis are being carried out by Eurocontrol. No ICAO Secretariat involvement.	The Secretariat assisted in the economic aspects of the study of the transitional plan (Project RLA/98/003) to CNS/ATM systems through the development and integration of a financial module. The Secretariat also participated in the organization of a Seminar in Honduras (Oct. 2002) on the economics and institutional aspects of CNS/ATM systems. GREPECAS Task Force on Institutional Aspects for CNS/ATM implementation has been reactivated.	A business case illustrative application has been developed for the region.	Business case and cost benefit analysis are being carried out by CAN/MEX/USA. No ICAO Secretariat involvement.	The feasibility of creating a common cost-recovery system for the provision of air navigation services in the northern part of the region is being considered. Cost effectiveness of implementation of new systems are studied as an ongoing exercise.

AIR TRANSPORT - TRAFFIC FORECASTS								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	Traffic Forecasting Groups (TFGs)	Traffic Forecasting Group is in existence since 1991. Eleventh meeting of TFG was held in Bangkok from 30 September to 4 October 2002. Next meeting: tentatively 2004	Traffic Forecasting Group formed in 1998. Third meeting of TFG was held in Dakar from 24 to 26 March 2001. Next meeting: tentatively either 2004 or 2005	Data developed by EUROCONTROL are being used.	Traffic Forecasting Group established in 1996. Fifth meeting of TFG was held in Lima from 5 to 9 August 2002. Next meeting tentatively 2004	Traffic Forecasting Group (TFG) created in 1998. The fifth meeting of the TFG was held in Cairo from 15-19 January 2002. Next meeting: tentatively October 2003	No ICAO Secretariat involvement.	NAT Forecasting Group was established in 1965.
2	Traffic forecasts	Traffic forecasts have been developed for major route groups up to the year 2015 and updated to reflect the impact of the 11 September events.	Major route groups identified. Forecasts are under development.	No ICAO Secretariat involvement. Forecasting is done by EUROCONTROL.	Forecasts prepared for 6 major route groups up to the year 2012 and reviewed taking into account the impact of the 11 September events.	Forecasts of major traffic flows to, from and within the Middle East region as well as aircraft movement forecasts for the city -pairs within each major traffic flow up to the year 2015 has been developed.	No ICAO Secretariat involvement.	Traffic forecasts are developed bi-annually. They were reviewed early in 2002 to reflect the impact of the 11 September events.

Legal Issues								
No	**System**	**ASIA/PAC**	**AFI**	**EUR**	**CAR/SAM**	**MID**	**NAM**	**NAT**
1	Addressing legal issues such as universal accessibility, continuity, certification and liability.	Legal issues have been raised but these are beyond the scope of regional bodies. HQ should continue to provide guidance and address and resolve them at global level.	The subject has not yet been examined by APIRG. We expect the HQ to adequately address this issue for the benefit of PIRGs.	Legal issues were discussed in the context of the Galileo programme.	Legal issues are beyond the resolution at the regional level. HQ must provide the leadership in this domain.	The question is too large and complex. MIDANPIRG did not look into the matter deep.	-	-
2	Development of an interim legal framework	An interim legal framework, the "Charter on the Rights and Obligations of States Relating to GNSS Services", was adopted in 1998 by the 32nd Session of the Assembly in the form of Resolution A32-19, which embodies certain fundamental principles applicable to GNSS. The ICAO headquarters is accelerating its efforts to resolve the complex legal issues involved and will continue to provide guidance at global level. The Secretariat Study Group on Legal Aspects of CNS/ATM systems will finalize the concept of a contractual framework for CNS/ATM systems and provide a path toward its implementation, including the consideration of an international convention. The results of the work of the Group will be reported to the next ordinary session of the Assembly in 2004. The security aspects concerning prevention of unlawful interference with CNS/ATM systems will be reviewed in the context of aviation security.						

— END —