

FOURTH MEETING OF THE ALLPIRG/ADVISORY GROUP

(Montreal, 6 – 8 February 2001)

Agenda Item 2.1: Interregional coordination and harmonization mechanism – Harmonization of air navigation systems

INTERFACE PROBLEMS AND RESOLUTIONS AS A RESULT OF THE IMPLEMENTATION OF SYSTEMS AND PROCEDURES

(Presented by the Secretariat)

SUMMARY

This paper appraises the meeting of the developments going on within the framework of informal coordination meetings which have been established to address the interregional harmonization and coordination of air navigation systems and procedures, including CNS/ATM systems.

REFERENCES

AFI/7 RAN Meeting Report (Doc 9702)
AFI CNS/ATM Implementation Plan (Doc 003)
CAR/SAM/3 RAN Meeting Report (Doc 9749)
Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)

1. INTRODUCTION

1.1 Regional air navigation plans and CNS/ATM implementation plans are to be carried out in a coordinated and coherent manner, under regional air navigation (RAN) meetings and planning and implementation regional groups (PIRGs).

1.2 As far as CNS/ATM is concerned, it is noted in the Global CNS/ATM Systems Implementation Tables that implementation time-frames for the various elements differ due to the fact that requirements identified in the respective CNS/ATM plans of the ICAO Regions are not the same, when it is essential to ensure that:

- a) adjacent systems shall interface in such a way that airspace boundaries between control sectors, flight information regions, or air navigation regions, are transparent; and

- b) systems must remain responsive to operational requirements at every step of development, avoiding — to the extent possible — discontinuities in evolution likely to cause disturbances in the operational environment.

In order to achieve the global harmonization of air navigation systems and procedures, there is a need to develop an interregional coordination mechanism for interface areas. In this respect, the AFI and CAR/SAM RAN Meetings, including the associated PIRGs, have recognized the need for the creation of informal groups aimed at addressing interface problems and to promote the coordinated implementation of the respective regional air navigation and CNS/ATM plans.

1.3 As far as the AFI, EUR and SAM Regions are concerned, two informal groups have been created: the Informal Meeting for the Improvement of Air Traffic Services over the South Atlantic (SAT) and the AFI/EUR Interface Meeting (AFI/EUR). The SAT Group is also charged with the implementation of CNS/ATM systems within areas of routing AR-1 (Europe – South America) and AR-2 (Atlantic Ocean interface between the AFI, NAT and SAM Regions). The AFI/EUR Interface Meeting is charged with the implementation of CNS/ATM systems in areas of routing AR-6 (Iberian Peninsula to Canarias) and AR-7 (North Africa coastal area).

1.4 ICAO's WACAF and MID Offices have recently organized an informal coordination meeting in N'djamena (Chad), from 27 to 28 November 2000, between Algiers, Khartoum, N'djamena and Niamey FIRs, which are part of routing areas AR-3 (Europe-East AFI, including oceanic routes), AR-4 (Europe – South AFI) and AR-9 (Trans-Sahelian routes), in order to consider both intra-regional and interregional issues, including the implementation of CNS/ATM systems in this part of the AFI Region and the interface area with the MID Region.

2. DISCUSSIONS

2.1 Achievements in the SAT area

2.1.1 Within the EUR/SAM corridor area of routings AR-1(AFI) AR-2 (AFI) (AH-1 and AH-8 SAM), which is addressed within the framework of Informal SAT Co-ordination Meetings, the following issues are being addressed.

2.1.1.1 Air traffic management

New ATS route network

2.1.1.1.1 A new ATS route network in an RNP 10 environment has been elaborated and implementation is subject to the conclusive results of safety assessments being carried out by Spain. Lateral spacings between these routes are 93 km (50 NM).

Reduced vertical separation minimum (RVSM)

2.1.1.1.2 A plan for the evolutionary implementation of RVSM has been elaborated. Implementation is subject to the conclusive results of the safety assessments being carried out by Spain. The target date for implementation is 24 January 2002, which has been harmonized with the implementation of RVSM in Europe.

An amendment to the Regional SUPPs has been developed and has been circulated to States and organizations concerned.

10-minute longitudinal separation Standards

2.1.1.1.3 Ten (10) minutes longitudinal separation has been implemented in the EUR/SAM corridor using the Mach number technique (MNT), air traffic control service being provided where ATS/DS and AMS communications are operating satisfactorily.

2.1.1.2 Communications

Implementation of the CAFSAT VSAT network

2.1.1.2.1 The main objective of the CAFSAT VSAT network is to expand, modernize and improve AFS communications for the current air navigation services through the implementation of cost-effective, fast, reliable and high-performance communications in the SAT area, and at the same time to establish the digital platform to support the development of the aeronautical telecommunication network (ATN) included in the ICAO CNS/ATM systems. CAFSAT-participating States are Brazil, Cape Verde, Morocco, Portugal, Senegal and Spain. Most of the participating States have implemented or are about to implement their respective nodes.

Interconnection between the AFI and SAM Regions

2.1.1.2.2 The interconnection between the AFI and SAM Regions is being considered through the CAFSAT and REDDIG networks, with Johannesburg (South Africa) and Dakar (Senegal) being the AFI/SAM entry/exit points.

GNSS

2.1.1.2.3 The SAT Group monitors developments in GNSS augmentation systems (SBAS), notably the EGNOS project which will be compatible and interoperable with similar systems being developed, such as WAAS in North America. Discussions focus, *inter alia*, on an AFI EGNOS test bed and facilitation of the AFI SBAS trials and development under consideration by the GNSS Study Group, which was established by APIRG to consider related technical, operational, financial, and institutional aspects.

ADS/CPDLC

2.1.1.2.4 The use of ADS/CPDLC in the EUR/SAM corridor will in fact enhance the provision of ATS in the SAT area. All States/organizations responsible for the provision of air traffic services in this area are conducting or are about to conduct ADS/CPDLC trials and demonstrations. In order to ensure compatibility of systems and their interoperability, there is a need to share relevant technical information on implementation plans in order to ensure compatibility of systems and their interoperability.

2.2 **AFI/EUR interface area**

2.2.1 In the AFI/EUR interface area, also charged with the implementation of CNS/ATM in areas of routing AR-6 and AR-7, significant progress has been achieved through Informal AFI/EUR Interface Meetings. It is noted that any development in the EUR area has a direct impact in the AFI Region. In particular,

the implementation of 8.33 Khz channel spacing is being monitored, while the target date for ACAS in Europe has been harmonized with the implementation date in the AFI Region. Another major development which is being closely monitored is the implementation of RVSM in Europe, on 24 January 2002. As most of the international traffic flows originating from/to Europe and Africa enter this airspace, the need for the establishment of a formal forum cannot be over-emphasized.

2.3 Interface problems associated with the transition to ATN

2.3.1 The next meeting of APIRG (APIRG/13) will consider a proposal from the Communications Sub-group aiming at creating an ATN Task Force charged to pave the way for the transition from the existing communication system to the aeronautical telecommunication network in the CNS/ATM environment. Though ATN as a system is not yet planned in the AFI Region, it is anticipated that close coordination with adjacent regions will be of essence in order to ensure compatibility/interoperability between systems. It is noted that some countries in the AFI/EUR and AFI/MID interface areas are considering whether they should first implement a CIDIN system in replacement of their current AFTN facilities, and migrate to ATN at a further stage, which would require gateways in the meantime. Interoperability between the ATS interfacility data communications (AIDC) application (developed by ICAO) and the on-line data interchange (OLDI) application (developed in EUR) should also be considered.

2.4 Interface AFI/ASIA/PAC in the Indian Ocean area

2.4.1 Regarding the AFI and ASIA/PAC Regions, an informal group has been established: the Implementation Coordination Group for Area of Routing 10 (ICG10 for AR10), corresponding to area of routing 1 in the ASIA/PAC CNS/ATM Plan. The group has held two meetings, the most recent in November 2000. However, participation by the concerned ASIA/PAC States (Australia, India and Maldives) has been lacking. ALLPIRG is invited to encourage these States to participate in the activities of the ICG10.

2.4.2 An Indian Ocean random routing area (IORRA) has been created since 1996. The last meeting of the ICG10 adopted amendments for the extension of the IORRA. A draft AIP Supplement will be coordinated with stakeholders before implementation on 17 May 2001.

3. ACTION BY ALLPIRG

3.1 The meeting is invited to:

- a) note the need for continuous coordination at interface areas between air navigation regions, in order to harmonize the implementation of air navigation systems, including new CNS/ATM systems, and thus avoid potential discontinuities/disturbances associated with the present planning mechanism; and
- b) note the work being carried out through the existing informal planning groups/meetings.