



International Civil Aviation Organization

**Fifteenth Meeting of the APANPIRG ATM/AIS/SAR Sub-Group
(ATM/AIS/SAR/SG/15)**

Bangkok, Thailand, 25 – 29 July 2005

**Agenda Item 3: Review and progress the tasks assigned to the ATM/AIS/SAR/SG by
APANPIRG**

**REVIEW AND UPDATE THE CNS/ATM SYSTEMS IMPLEMENTATION TIME LINES
CONTAINED IN PART II OF THE GLOBAL AIR NAVIGATION PLAN FOR CNS/ATM
SYSTEMS (DOC 9750)**

(Presented by the Secretariat)

SUMMARY

In line with Decision 15/46 (D15/46) of the APANPIRG/15 meeting, this paper presents for review and update by the ATM/AIS/SAR/SG/15 meeting Part II of the Global Plan (Doc 9750), as recommended by the Eleventh Air Navigation Conference (AN-Conf/11 under Recommendation 6/11). This paper to be taken in conjunction with WP/9.

1. INTRODUCTION

1.1 The APANPIRG/15 (August 2004), on reviewing the report on the outcome of, and action taken by the Council of ICAO on the Eleventh Air Navigation Conference (AN-Cof/11) held on 22 September-3 October 2003, agreed to take appropriate action to follow-up on the recommendations of AN-Conf/11 by ICAO, and States and international organizations and Planning and Implementation Groups (PIRGs) were informed accordingly by ICAO. APANPIRG/15 included this task on the Sub-Groups Task List, Item 19 as presented in the Appendix to WP/9 (APANPIRG D15/46 refers).

1.2 APANPIRG/14 established the Future Directions Task Force (FDTF, Decision 14/47) to review provision for the effective regional management by APANPIRG of the outcomes of AN-Conf/11 and the coordination, effectiveness and efficiency of the Sub-Groups of APANPIRG. The report of the FDTF was reviewed by APANPIRG/15.

2. DISCUSSION

2.1 APANPIRG/15 on reviewing the report of the FDTF held on 17-19 May 2004, which had completed its work, recommended to APANPIRG/15 that the CNS/ATM/IC/SG be dissolved and outstanding items on its work programme be transferred to other relevant APANPIRG Sub-Groups. Accordingly, under D15/49 new tasks were assigned to the ATM/AIS/SAR/SG. And the CNS/ATM/IC/SG was dissolved (D15/50 refers).

2.2 In regard to An-Conf/11, Recommendation 6/11 (reproduced below), the ATM/AIS/SAR/SG is expected to review paragraph b) in respect to the time lines for CNS/ATM systems implementation for amendment of the Global Plan, Part II (Appendix refers).

Recommendation 6/11 — Amendment to the Global Plan — Navigation

That:

- a) the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) be amended as shown in Appendix C to the report on Agenda Item 6; and
- b) updated CNS/ATM systems implementation time lines contained in Part II of the Global Plan be reviewed by the regional Implementation Group and consolidated for incorporation in the next edition of the Global Plan.

3. ACTION BY THE MEETING

3.1 The meeting is invited in line with APANPIRG/15 D15/46, to review and update the time lines for CNS/ATM implementation in the Asia/Pacific Region contained in the Global Plan, Part II and to propose an amendment accordingly.

Chapter 5

AIR TRAFFIC MANAGEMENT

INTRODUCTION

5.1 The material contained in this chapter complements that contained in Chapter 4 of Part I and in the ATM sections of the FASIDs of the regional ANPs. This chapter is kept under review by the PIRGs and should be periodically updated to reflect the information contained in the ATM sections of the regional FASIDs.

ATM OBJECTIVES

5.2 Each regional planning group will develop its own work structure for accomplishing the work associated with the step-by-step approach identified in Chapter 3 of Part I. In some cases, an already established working group or CNS/ATM Subgroup may be in a suitable position to accomplish the work; in other cases, specific task forces or subgroups will need to be established.

5.3 To complete the tables in this chapter, the following steps from the global planning methodology outlined in Chapter 3 of Part I will need to be considered:

Step 4. Perform an operational analysis of the current infrastructure for the areas identified in terms of:

- a) ATM limitations and shortcomings;
- b) separation standards; and
- c) CNS availability.

Step 5. Determine the ATM objectives for the areas identified in Step 2 using as the basis the guidance material contained in the operational concept document (operational analysis) (Appendices A and B to Chapter 4 of Part I refer).

GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION OBJECTIVES BY REGION

		GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																		
			1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Development of SARPs	R T S P	Global ATM																		
		Functional integration of flight OPS/ATM																		
		ATM requirements for CNS																		
		Separation between aircraft																		
		AIDC																		
		ATFM procedures and systems																		
Aircraft equipage/ flight operations		RNP certification/approval																		
		Functional integration of airborne systems with ground systems																		
Implementation and operational use																				
REGIONAL ATM OPERATIONAL CONCEPT																				
Global	Determination of major traffic flows																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM¹																			
	NAT																			
Global	Identification of ATM objectives based on these traffic flows																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM¹																			
	NAT																			
Global	Development of regional strategic airspace CNS infrastructure plan based on ATM requirements																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM¹																			
	NAT																			

1. To be developed

		GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																		
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
AIRSPACE MANAGEMENT																				
Global	Optimized sectorization																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM																			
	NAT¹																			
Global	Fixed RNAV ATS routes																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM																			
	NAT																			
Global	Contingency RNAV routes																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM¹																			
	EUR																			
	MID																			
	NAM¹																			
	NAT¹																			
Global	Random RNAV routes																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID¹																			
	NAM¹																			
	NAT¹																			

1. To be developed

	GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																		
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Global	Airspace desegregation/flexible use of airspace ²																		
Regions	AFI																		
	ASIA/PAC																		
	CAR/SAM ¹																		
	EUR																		
	MID																		
	NAM																		
	NAT ¹																		
Global	Application of RNP																		
Regions	AFI																		
	ASIA/PAC																		
	CAR/SAM																		
	EUR																		
	MID																		
	NAM																		
	NAT																		
Global	Application of RCP ²																		
Regions	AFI ¹																		
	ASIA/PAC ¹																		
	CAR/SAM ¹																		
	EUR ¹																		
	MID ¹																		
	NAM ¹																		
	NAT ¹																		
Global	Application of RSP ²																		
Regions	AFI ¹																		
	ASIA/PAC ¹																		
	CAR/SAM ¹																		
	EUR ¹																		
	MID ¹																		
	NAM ¹																		
	NAT ¹																		

1. To be developed.

2. Emerging concept or technology — consensus still to be reached.

		GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AIR TRAFFIC SERVICES																		
Global	Trajectory conformance monitoring																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM ¹																	
	EUR																	
	MID																	
	NAM ¹																	
	NAT																	
Global	Minimum safe altitude warning																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM																	
	EUR																	
	MID																	
	NAM																	
	NAT ¹																	
Global	Conflict prediction																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM ¹																	
	EUR																	
	MID																	
	NAM																	
	NAT																	
Global	Conflict alert																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM ¹																	
	EUR																	
	MID																	
	NAM																	
	NAT																	
Global	Conflict resolution advice ²																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM ¹																	
	EUR ¹																	
	MID																	
	NAM ¹																	
	NAT																	

1. To be developed.
2. Emerging concept or technology — consensus still to be reached.

		GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Global	Functional integration of ground systems with airborne systems																	
Regions	AFI ¹																	
	ASIA/PAC ¹																	
	CAR/SAM ¹																	
	EUR ¹																	
	MID ¹																	
	NAM ¹																	
	NAT ¹																	
Global	Dynamic accommodation of user-preferred flight profiles ²																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM ¹																	
	EUR																	
	MID ¹																	
	NAM																	
	NAT ¹																	
Global	Reduced vertical separation																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM																	
	EUR																	
	MID																	
	NAM																	
	NAT																	
Global	Reduced longitudinal separation																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM																	
	EUR																	
	MID																	
	NAM																	
	NAT ¹																	
Global	Reduced lateral separation																	
Regions	AFI																	
	ASIA/PAC																	
	CAR/SAM																	
	EUR																	
	MID																	
	NAM																	
	NAT ¹																	

1. To be developed.

2. Emerging concept or technology — consensus still to be reached.

	GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																			
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Global	Independent IFR approaches to closely spaced runways																			
Regions	AFI ¹																			
	ASIA/PAC																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM ¹																			
	NAT ¹																			
Global	RNAV SIDs and STARs																			
Regions	AFI																			
	ASIA/PAC																			
	CAR/SAM																			
	EUR																			
	MID																			
	NAM ¹																			
	NAT ¹																			
Global	Curved and segmented approaches																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR ¹																			
	MID ¹																			
	NAM ¹																			
	NAT ¹																			
Global	Arrival metering, sequencing and spacing ²																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM ¹																			
	NAT ¹																			
Global	A-SMGCS ²																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM ¹																			
	NAT ¹																			

1. To be developed.
2. Emerging concept or technology — consensus still to be reached.

		GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																	
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Global	ATS inter-facility data (AIDC) communications																		
Regions	AFI																		
	ASIA/PAC																		
	CAR/SAM																		
	EUR																		
	MID																		
	NAM																		
	NAT																		
Global	Application of data link																		
Regions	AFI																		
	ASIA/PAC																		
	CAR/SAM																		
	EUR																		
	MID																		
	NAM																		
	NAT																		
AIR TRAFFIC FLOW MANAGEMENT																			
Global	Centralized ATFM																		
Regions	AFI ¹																		
	ASIA/PAC ¹																		
	CAR/SAM ¹																		
	EUR																		
	MID ¹																		
	NAM ¹																		
	NAT ¹																		
Global	Inter-regional cooperative ATFM																		
Regions	AFI ¹																		
	ASIA/PAC ¹																		
	CAR/SAM ¹																		
	EUR ¹																		
	MID ¹																		
	NAM ¹																		
	NAT ¹																		
Global	Establishment of ATFM databases																		
Regions	AFI ¹																		
	ASIA/PAC ¹																		
	CAR/SAM ¹																		
	EUR																		
	MID ¹																		
	NAM																		
	NAT																		

1. To be developed

	GLOBAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY REGION																			
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Global	Application of strategic ATFM planning																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM																			
	NAT ¹																			
Global	Application of pre-tactical ATFM planning																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM																			
	NAT ¹																			
Global	Application of tactical ATFM planning																			
Regions	AFI ¹																			
	ASIA/PAC ¹																			
	CAR/SAM ¹																			
	EUR																			
	MID ¹																			
	NAM																			
	NAT ¹																			

1. To be developed.

REGIONAL AIR TRAFFIC MANAGEMENT SYSTEM IMPLEMENTATION BY STATE

[illegible]