

APPENDIX B

DEVELOPMENT STATUS OF SARPS AND GUIDANCE MATERIAL
RELATED TO CNS/ATM SYSTEMS

Main Field		Elements	SARPs/PANS		Guidance Material	
			Target Completion Date	Status	Target Completion Date	Status
A T M	A T M	Global air traffic management requirements	2005	Annexes 2 and 11 SARPs and PANS-ATM procedures under development.	2003	Draft global ATM operational concept finalized - 2nd edition of the Global Plan was published in 2002.
		Interoperability and functional integration of flight operations, ATS, ATFM and tactical ASM	2005	Annexes 2 and 11 SARPs and PANS-ATM procedures under development.	2003	Draft global ATM operational concept finalized - Further refinement to take place in 2003.
		Required total system performance (RTSP)	2005	Draft policy statement under development.	2003	Definition developed - Role and functionality of RTSP being explored as part of work on the global ATM operational concept.
		ATM requirements for communications, navigation and surveillance	2004	Annexes 2, 6 and 11 SARPs and PANS-ATM procedures under development.	2003	Additional guidance material for the <i>Manual of Air Traffic Services Data Link Applications</i> (Doc 9694) under development.
	A S M	Airspace infrastructure planning	—	—	2005	<i>Manual on Airspace Planning Methodology for the Determination of Separation Minima</i> (Doc 9689) published. Further guidance material under development by SASP and ATMCP
		RNP and RNAV for en-route operations	Completed	Annex 11 SARPs and PANS-ATM procedures adopted by Council in 1998.	Completed	Update of the <i>Manual on Required Navigation Performance (RNP)</i> (Doc 9613) completed. Second edition published.

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A T M	A T S	Separation between aircraft	2005	PANS-ATM procedures approved by Council in 1998; further amendment to Annexes 2, 6, 11 and PANS-ATM under development.	2003	Amendment to the <i>Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum between FL 290 and FL 410</i> (Doc 9574) completed. Additional guidance is under development for the Manual on Airspace Planning Methodology (APM) (Doc 9689).
		ATS (uplink of MET data)	2004	Annex 3 SARPs and PANS-ATM procedures concerning D-VOLMET have been developed with the assistance of the METLINKSG.	2005	<i>Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services</i> (Doc 9377) to be amended to include the subject guidance material.
		ATS (uplink of SIGMET information in graphical format)	2004	Initial Annex 3 SARPs for graphical SIGMETs have been developed with the assistance of the METLINKSG.	2005	<i>Manual of Aeronautical Meteorological Practice</i> (Doc 8896) to be amended to include the subject of guidance material.
		WAFS planning and implementation (final phase)	2004	Annex 3 SARPs for global WAFS SIGWX forecasts in binary format (BUFR code) for direct transmission to airline and ATM computers have been developed with the assistance of WAFSSG.	2005	<i>Manual of Aeronautical Meteorological Practice</i> (Doc 8896) to be amended to include the subject guidance material.
		ATS applications for air-ground data links	2005	Annex 11 SARPs and PANS-ATM procedures are being developed.	Completed	The <i>Manual of Air Traffic Services Data Link Applications</i> (Doc 9694) published and dispatched in second quarter 1999. Additional guidance is under development.
		Data interchange between automated ATS systems	2004	Annex 11 SARPs and PANS-ATM procedures under development.	—	—

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	ATFM	ATFM systems and procedures	2005	Annexes 2 and 11 SARPs and PANS-ATM procedures to be developed.	2003	ATFM part of the ATM operational concept under development.
CNS/ATM		Human Factors	Completed	HF-related SARPs were developed and incorporated in Annexes 10 and 11. Further, HF-related requirements for inclusion in the PANS-OPS were developed during 2000, with an applicability date of 1 November 2001.	Completed	A manual on Human Factors Guidelines for Air Traffic Management Systems (Doc 9758) was completed and published in 2000.
		Human Resource Planning and Training	—	—	2003	The human resource planning guidance material is under development. A potential approach and format for regional training planning was developed.
COM		VHF digital link (Modes 3 and 4)	Completed	Completed in 2001. Assessment of the potential use of VDL Mode 4 for communications initiated.	2003	SARPs adopted in 2001. Manual on VDL Mode 3 technical details and implementation aspects published in 2002. Manual on VDL Mode 4 will be published by the end of 2003.
		UAT	2007	Draft SARPs are under development	2007	Manual on UAT under development

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	ATN	Completed	Completed in 2001	2004	The second edition of Doc 9739 - <i>Comprehensive ATN Manual</i> has been finalized and is being processed for publication.
NAV	RNP (en-route)	Completed	Adopted/approved by Council in 1994 (Annexes 2, 4, 6, 11, 15 and PANS-ATM).	2004	Second edition of Doc 9613, <i>Manual on Required Navigation Performance (RNP)</i> was published in 1999. Additional guidance material on approval of aircraft and operations for RNP 10 was published in 2001. Similar guidance material for RNP 4 is under development.
	WGS-84	Completed	Adopted by Council in 1994, 1995, 1997 and 1998. Annexes 4, 11, 14 (both volumes) and 15 updated, provisions applicable from 1 January 1998.	Completed	<i>WGS-84 Manual</i> (Doc 9674) Second edition, which was published in 2002, included provisions relating to taxiway and apron surveying points. ICAO WGS-84 website is under development.
		2004	1. Updating of WGS-84 (as the horizontal reference system) to include temporal changes in the tectonic plate motion required for precise geodetic and some air navigation applications. 2. Introduction into Annex 15 of the vertical reference system for international civil aviation and consequential amendments to Annexes 4, 11 and 14 (both volumes) 3. Introduction into Annex 15 of the temporal reference system for international civil aviation	2005	Amendment to the <i>World Geodetic System — 1984 (WGS-84) Manual</i> (Doc 9674) to reflect the changes resulting from the latest proposed amendment to Annex 15, specifically from the proposed common reference systems for air navigation.

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	Aeronautical data bases	2005	The Secretariat with the assistance of The East Tennessee State University (ETSU) developed an aeronautical communication transfer protocol for the exchange of aeronautical information/data and a new concept for computerized AIS systems.	2006	To be developed by the Secretariat with the assistance of AISMAPSG and ADMSG.
NAV (cont'd)		2006	Initial SARPs for electronic aeronautical charts for cockpit display were incorporated by Amendment 52 to Annex 4 in 2002. Further SARPs for Annex 4 under development.	2006	Under development by the Secretariat with the assistance of AISPMAPSG.
		2005	SARPs for the electronic terrain data format and exchange are under development in consultation with RTCA/EUROCAE and ISO Technical Committee 211. An interim amendment to Annex 4 planned for applicability in 2004.	2006	To be developed by the Secretariat.
	GNSS performance criteria to support operational requirements	2001	Completed	2002	Completed.
	GNSS performance criteria to support advance operations (CAT II/III, A-SMGCS and curved approaches)	2005/2007	Under development	2005/2007	To be developed in parallel with SARPs.
	SARPs for the use of existing satellite navigation systems with augmentation sub-systems	2001	Completed	2003	Completed. To be published in the form of a manual.
	SARPs for new GNSS elements and signals	2007	Work on the development of SARPs for new elements of GNSS (GPS second civil frequency, Galileo, GLONASS-M) is under way.	2007	Under development

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SUR	Surveillance system specifications for emerging surveillance systems and architectures	2004	Surveillance enhancements (ANC Task No. CNS-9601) being developed by SCRSP.	2004	A draft circular on ASAS completed.
	SSR procedures	Completed	Update of Annex 11 and PANS-ATM.	Completed	
	ADS procedures	2004	Annex 11 SARPs and PANS-ATM procedures developed by the OPLINKP and SASP. Applicable in November 2002.	2003	<i>Manual of ATS Data Link Applications</i> (Doc 9694) published and dispatched in second quarter 1999. The first amendment is being developed.
	ADS-B and equivalent	2005	Being developed by OPLINKP	2005	Amendment to the <i>Manual of ATS Data Link Applications</i> (Doc 9694) to be developed.
	ADS: inclusion of turbulence reporting	completed	Annex 3 SARPs and PANS-ATM turbulence reporting procedures based on the eddy dissipation rate have been developed with the assistance of METLINKSG.	—	—

LEGEND

ATM	—	Air traffic management	GNSS	—	Global navigation satellite system
ADS	—	Automatic dependent surveillance	NAV	—	Navigation
ADS-B	—	ADS broadcast	RNAV	—	Area navigation
AIS	—	Aeronautical information services	RNP	—	Required navigation performance
ASM	—	Airspace management	SSR	—	Secondary surveillance radar
ATFM	—	Air traffic flow management	SUR	—	Surveillance
ATN	—	Aeronautical telecommunication network	UAT	—	Universal access transceiver
ATS	—	Air traffic services	WAFS	—	World area forecast system
CNS	—	Communications, navigation, and surveillance	WGS	—	World geodetic system
COM	—	Communications			
