



International Civil Aviation Organization

**Seventh Meeting of CNS/MET Sub-Group of APANPIRG and  
Tenth Meeting of CNS/ATM IC Sub-Group of APANPIRG**

Bangkok, Thailand, 15 – 21 July 2003

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**Agenda Item 13: Review Developments, Research, Trial and Demonstration relating to  
CNS/ATM**

**CNS/ATM IMPLEMENTATION AND PLANNING MATRIX**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the Regional CNS/ATM Implementation and Planning Matrix for review by the meeting on CNS/MET related items.

**1. INTRODUCTION**

1.1 In order to provide implementation status of various elements of the new CNS/ATM systems for assessment by the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) and States, the Eleventh Meeting of APANPIRG adopted Conclusion 11/37 for the development of CNS/ATM Implementation Planning Matrix against ASIA/PAC FIRs.

**2. DISCUSSION**

2.1 The Regional Office issued a State Letter in June 2001 with a questionnaire to obtain necessary information for inclusion in the Matrix. Most of replies received from States were based on implementation status of States rather than each individual FIR.

2.2 Based on the information provided by States, a draft Matrix was prepared and presented to the Ninth Meeting of the CNS/ATM Implementation Coordination Sub-Group (CNS/ATM/IC/SG/9) of APANPIRG held in Bangkok from 11 to 15 March 2002 and APANPIRG/13 held in Bangkok 9-13 September 2002. It was recently reviewed and updated by the the Fifth ATN Transition Task Force Meeting held in Phuket from 9 to 13 June 2003.

2.3 The Matrix contains implementation status of CNS elements such as ATN, AIDC, CPDLC, GNSS and ADS. It is expected to be reviewed by APANPIRG and its Sub-Group on a regular basis to assess progress of implementation. The Matrix would be further developed progressively to include implementation status of major CNS/ATM elements covering all ASIA/PAC FIRs.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to review and update the CNS/ATM Implementation and Planning Matrix provided in the Attachment.

**CNS/ATM Implementation Planning Matrix**  
**Implementation Status of CNS Elements**

State/ Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AIDC	CPDLC	GNSS		ADS-B	ADS-C	Remarks
				NPA Supplemental Means (S) Primary means (P)	En-route Supplemental Means (S) Primary means (P)			
<b>AUSTRALIA</b>	ATN tests were conducted. BIS Router and Backbone BIS Router will be implemented by 2005 and AMHS in 2005.	AFTN based AIDC Implemented between Brisbane and Auckland.	Implemented to support FANS1/A equipped aircraft.	Implemented (S) 260 GPS NPA Final 26 aerodromes to be completed 2002.	Developed en-route as (P) for approval to use in domestic airspace.	ADS-B trial being conducted.	FANS 1/A ADS-C implemented.	
<b>BANGLADESH</b>	ATN BIS Router and AMHS planned for 2005							
<b>BHUTAN</b>	ATN BIS Router planned for 2005			Procedures developed for NPA as (S)				
<b>BRUNEI DARUSSALAM</b>	ATN BIS Router planned for 2005							
<b>CAMBODIA</b>								
<b>CHINA</b>	ATN BIS Router will be implemented by 2005.	A IDC between ACCs within China are being implemented.	Implemented to support ATS Route L888 and polar routes. Trial on HF data link conducted for use in western China.		Implemented in certain airspace as (S).		FANS 1/A ADS-C implemented to support L888 and polar routes.	

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<b>HONG KONG, CHINA</b>	-AMHS trial with Australia conducted in late 2002; - Tripartite BBIS trial with Beijing and Bangkok conducted in end of 2002; -BBIS/AMHS trials with Thailand and Japan are conducted in 2003. Implementation in 2003/2004; - An operational AMHS planned for commissioning by end of 2003.	Trial on the AFTN based AIDC with Guangzhou China commenced.  Implementation planned for 2003/2004.  AIDC trial with Sanya planned for 2003.	Trials continuing for CPDLC. D-ATIS D-VOLMET and PDC implemented.  VDL Mode-2 trial planned commenced Sep. 2002 and further trials being conducted.		Implemented in certain airspace as (S).	ADS-B trial scheduled for 2004.	FANS I/A Trials continuing for ADS-C.	
<b>MACAO, CHINA</b>								
<b>COOK ISLANDS</b>								
<b>DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA</b>								
<b>FIJI</b>	ATN in-house trials planned for 2003.  ATN BIS Router will be implemented in 2005.	Implementation of AFTN based AIDC with Brisbane and Auckland in 2003.	FANS-1. Implemented since 1997.	NPA procedures for (S) to be completed in Dec. 2002.	Implemented as (S).	ADS-B trials planned for 2003/2004.  Implementation in 2004.	ADS-C implemented in oceanic airspace using EUROCAT 2000 X.	

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<b>FRANCE</b> French Polynesia Tahiti		Implementation of limited message sets with adjacent centres under discussion.	FANS-1. Implemented since 1996.				FANS 1/A ADS-C implemented since March 1999.	
<b>INDIA</b>	ATN BIS router and BBIS router planned for implemented at Mumbai in 2005.		FANS-1 limited Implemented at Kolkata and Chennai. Planned for Mumbai and Delhi.		SBAS (S). Planned for 2005.		FANS 1/A ADS-C implemented at Kolkata and Chennai. Plan to implement in Delhi and Mumbai.	
<b>INDONESIA</b>	ATN BIS router planned implementation in 2005.	AFTN based AIDC planned for implementation between Brisbane and Jakarta in 2004.	FANS-1/A. CPDLC in Jakarta, Ujung Pandang FIRs planned for 2004.	Procedure to be completed in 2006 for NPA (S).			FANS 1/A ADS-C trial planned for Jakarta and Ujung Pandang FIRs for 2004.	
<b>JAPAN</b>	ATN BBIS already implemented. AMHS implementation between Japan, USA and Hong Kong planned for 2004.	AIDC based. AFTN procedure implemented with Oakland USA.	FANS1/A system Implemented in Tokyo FIR.				FANS 1/A. ADS-C implemented in Tokyo FIR.	
<b>KIRIBATI</b>								

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<b>LAO PDR</b>	ATN BIS Router planned for implementation with Bangkok in 2005.		FANS-1/A Planned for Bay of Bengal and South China Sea areas. Equipment is under test operation.		Implemented as (S).		FANS-1/A. ADS-C planned for Bay of Bengal and South China Sea areas. Equipment under test operation.	
<b>MALAYSIA</b>	ATN BIS Router planned for 2005.		Planned for Bay of Bengal and South China Sea areas.	NPA (S) at KLIA planned for 2003.			FANS 1/A ADS-C planned for Bay of Bengal and South China Sea areas.	
<b>MALDIVES</b>								
<b>MARSHALL ISLANDS</b>				NPA (S) implemented at Majuro Atoll.				
<b>MICRONESIA FEDERATED STATES OF</b>								
Chuuk				NPA(S) implemented				
Kosrae				NPA(S) implemented				
Pohnpei				NPA(S) implemented				
Yap				NPA(S) implemented				

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<b>MONGOLIA</b>	ATN BIS Router planned for 2005.		Function available. Regular trials are conducted.	GPS procedures are being developed.	Implemented as (P).	ADS-B trial in progress implementation planned for 2002/2003.	FANS 1/A ADS-C implemented since August 1998.	
<b>MYANMAR</b>	Trial for ATN BIS Router with Thailand planned for 2003. Test with China planned for 2005.		Implemented since August 1998				Implemented since August 1998	
<b>NAURU</b>								
<b>NEPAL</b>	BIS Router planned for 2005.			Development of arrival procedure and NPA as (S) completed. Departure procedure is being developed.	Implemented as (S).			
<b>NEW ZEALAND</b>	BIS Router planned for 2005	AFTN based AIDC implemented between New Zealand and Australia. Tests with Fiji and USA planned.	FANS/1A. Implemented				FANS 1/A Implemented ADS-C.	
<b>PAKISTAN</b>	Implementation of ATN considered for Phase II (2005-2010).							RADAR coverage provided in Karachi and Lahore FIRs.

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PAPUA NEW GUINEA								
PHILIPPINES	ATN BIS Router planned for 2005. Implementation for AMHS also planned.		D-ATIS and CPDLC Planned for 2006.				FANS 1/A ADS-C planned for 2006.	
REPUBLIC OF KOREA	ATN BIS planned for 2005.	FTN based AIDC implemented between Incheon ACC and Seoul APP.					FANS 1/A ADS-C planned for 2003.	
SINGAPORE	ATN BBIS Router trial with Hong Kong is progressing.		Implemented since 1997. Integrated in the ATC system in 1999. D-ATIS implemented since February 2000.	NPA (S) procedure developed and is being published in the AIP.	Implemented (S).	Trial in 2003 and 2004 planned.	FANS 1/A ADS-C implemented since 1997. Integrated with ATC system in 1999.	
SRI LANKA	ATN BIS Router Planned for 2005. AMHS planned along with BIS in 2005.		CPDLC implemented since November 2000.	NPA (S) planned for 2005.			FANS 1 /A ADS-C implemented since November 2000.	GPS based domestic route structure being developed.

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<b>THAILAND</b>	ATN G/G system implemented for domestic services. BBIS/BIS Routers already implemented. AMHS 2005.	ATN based AIDC Implemented in Domestic Sector.	FANS-1/A Implemented.		Implemented as (S).		FANS 1/A ADS-C Implemented.	
<b>TONGA</b>								
<b>UNITED STATES</b>								
Anchorage				NPA(S) implemented	En-route (P) implemented	ADS-B trials continuing.	FANS/1-ADS-C 2004.	
Fairbanks				NPA(S) implemented				
Guam (Agana NAS)				NPA(S) implemented				
Guam (Anderson)				NPA(S) implemented				
Honolulu Intl.				NPA(S) implemented	En-route (P) implemented		FANS 1/A ADS-C planned for Dec. 2004	
Johnston Atoll				NPA(S) implemented				
Kahului				NPA(S) implemented				



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Oakland	ATN BBIS will be implemented in 2002. Router Tests are progressing. AMHS implementation between Japan and USA in 2004.	Implemented using AFTN procedure. ATN AIDC planned for 2005.	FANS-1 2001. Phase I ATN CPDLC implemented in Sept 2001. Phase IA planned for implementation at 20 en-route centres in USA for en-route function in 2006/2007 time frame.	NPA (S) implemented	En-route (P) implemented		FANS-1/A ADS-C planned for Dec. 2004.	
Saipan				NPA (S) implemented				
<b>VANUATU</b>								
<b>VIETNAM</b>	ATN BIS Router planned for 2005 and AMHS in 2005.	ATN based AIDC planned between Ho-Chi-Minh and Bangkok in 2005.	Planned for 2005.	Planned for NPA (S) for 2004.	Implementation as (S) planned for 2004.		FANS 1/A ADS-C planned for 2005.	Most of air space in Hanoi and Ho-Chi-Minh FIRs covered by RADAR.