INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF THE FOURTEENTH MEETING OF THE BAY OF BENGAL ATS COORDINATION GROUP (BBACG/14) AND THIRD FANS IMPLEMENTATION TEAM FOR THE BAY OF BENGAL (FIT-BOB/3) MEETING

Bangkok, Thailand, 2 to 6 February 2004

The views expressed in this Report should be taken as those of the Meeting and not of the Organization

Approved by the Meeting
And Published by the ICAO Asia and Pacific Office

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PART I – HISTORY OF THE MEETING

1. **Introduction**

1.1 The Fourteenth Meeting of the Bay of Bengal ATS Co-ordination Group (BBACG/14) and the Third FANS Implementation Team for the Bay of Bengal (FIT-BOB/3) Meeting was held at the Kotaite Wing, ICAO Asia & Pacific Regional Office, Bangkok, Thailand between 2 to 6 February 2004.

2. **Attendance**

2.1 The meeting was attended by 26 participants from 5 States, 2 International Organizations, and 2 Data Link Service Providers. A list of participants is at **Attachment 1**.

3. **Officers and Secretariat**

3.1 Mr. David J. Moores, Regional Officer ATM from the ICAO Asia and Pacific Office, Bangkok acted as the Moderator and Secretary for the meeting.

4. **Opening of the Meeting**

4.1 Mr. David Moores on behalf of Mr. Lalit B. Shah, Regional Director, ICAO Asia and Pacific Regional Office welcomed the participants to Bangkok. This was the first meeting to be held in the new ICAO Asia and Pacific Conference Centre built by the Royal Thai Government and presented to ICAO at the inauguration ceremony on 15 January 2004. The Conference Centre was named the Kotaite Wing by the Thai Government as a tribute to Dr. Assad Kotaite, President of the Council of ICAO for his contribution to international civil aviation.

4.2 This combined meeting would be addressing an important stage in the CNS/ATM systems implementation effort in the region with the setting up of an ADS and CPDLC operational trial by the States of the Bay of Bengal area. This development has been welcomed by all parties concerned and at the end of the trial period, ADS and CPDLC air traffic control services would be introduced bringing substantial operational benefits to enhance operational efficiency and safety. Considerable changes had taken place to the airspace structure and operations in the Bay of Bengal area with the implementation of the EMARSSH project completed on 28 November 2002 and RVSM on 27 November 2003. There were a number of outstanding operational issues that needed to be addressed by this meeting to realize the full benefits of these projects.

5. **Documentation and Working Language**

5.1 The working language of the meeting and the language for all documentation was in English. Four (4) Working Papers were presented to the BBACG/14 meeting, and Six (6) Working Papers and one (1) Information Paper were presented to the FIT-BOB/3 meeting. The list of papers is shown at **Attachment 2**.

REPORT OF THE FIT-BOB/3 MEETING

Agenda Item 1: Introduction and Adoption of Agenda

1.1 The meeting reviewed the provisional agenda and changed the order of Agenda Item 2 and 3, and added the Work Plan to Agenda Item 2. The revised Agenda was adopted by the meeting:

Agenda Item 1: Introduction and Adoption of Agenda

Agenda Item 2: Review Terms of Reference and Work Plan

Agenda Item 3: Selection of Central Reporting Agency

Agenda Item 4: Operations procedures document

Agenda Item 5: Establishment of operational trial

Agenda Item 6: Data link monitoring requirements

Agenda Item 7: Any other business

Agenda Item 8: Venue for the FIT-BOB/4 meeting

Agenda Item 2: Review Terms of Reference and Work Plan

2.1 The meeting reviewed the Terms of Reference (**Appendix A)** and Work Plan agreed at the FAT/BOB/2 meeting (8-12 September 2003). The meeting agreed that the TORs met the requirements for the establishment of the ADS/CPDLC operational trial for the Bay of Bengal area. The Work Plan was developed to include action items agreed at this meeting as shown in **Appendix B.**

Agenda Item 3: Selection of Central Reporting Agency

3.1 The meeting reviewed the results of the Special ATS Coordination Meeting on the Central Reporting Agency Funding (SCM/CRA) for the Bay of Bengal held at the ICAO Regional Office, Bangkok, Thailand, 8 -10 December 2003.

3.2 The meeting recalled that at the BBACG/13 meeting (8-12 September 2003), it was recognized that the establishment of a CRA was critical to enabling States to implement operational ADS and CPDLC systems. The CRA performed the essential technical analysis of the performance of these systems and undertook the investigation of system failures and other technical malfunctions. The BBACG/13 meeting recommended that a special meeting be held to consider the funding issues.

3.3 The SCM/CRA reviewed the various options that could provide a mechanism for collecting funds, and agreed that the model that best met the needs of obtaining funds for the CRA was based on a joint financing arrangement. In this regard, the meeting developed a modified version of the traditional model which provided for IATA to collect a levy on the airspace users, and to include provision for contributions to be made from other sources. Further, the SCM/CRA recognized that the cost of operating the CRA was related to the number of States participating in the operational trial and the complexity of the airspace and the ADS/CPDLC systems. In this regard, FIT-BOB was requested to undertake a detailed review of the participating States and the extent of their commitment to implement ADS/CPDLC services.

3.4 The SCM/CRA made the following recommendations for follow-up action by the FIT-BOB/3 meeting:

That, recognizing that the participating States in the FIT-BOB are responsible for the airspace safety management programmes for the provisions of ATS in the FIRs where ADS/CPDLC will be implemented in the Bay of Bengal area, FIT-BOB should:

a) establish a CRA to evaluate the ground and airborne ADS/CPDLC systems performance during the operational trial;

b) determine the budget for the CRA in consultation with the CRA service provider, the participating States and users, and to establish the funding arrangement to provide funds for the CRA, taking into account the framework provided in Appendix B to this report;

c) request IATA to collect funds for the CRA from airlines and other stakeholders as advised by FIT-BOB, and establish an arrangement for the provision of CRA services with a service provider subject to available funds for a trial period of one year;

d) seek contributions from other parties to contribute to the cost of operating the CRA and make these funds available to the CRA service provider; and

e) keep the funding arrangements under review during the operational trial period, and to review the efficiency and effectiveness of the funding arrangements prior to the end of the operational trial.

3.5 The meeting reviewed and endorsed the above recommendations. The meeting in consideration of a suitable service provider for the CRA, noted that Boeing who was operating the CRA for the Pacific Region, had confirmed at the FAT-BOB/2 (renamed FIT-BOB) (8-12 September 2003) that they would be willing to provide CRA services to the States of FIT-BOB to support the operational trial and implementation of ADS and CPDLC services. In regard to other organizations that would be able to provide CRA services, SITA advised the meeting that they had considered the possibility, but after carrying out a detailed analysis, came to the conclusion that the cost of setting up a CRA would be considerable and Boeing was in a better position to operate the CRA. In view of Boeing's willingness to operate the CRA for the Bay of Bengal area, SITA would not pursue the matter further. The meeting expressed its appreciation to SITA for having considered offering to operate the CRA.

3.6 The meeting agreed to accept Boeing's offer to provide CRA services for the Bay of Bengal operational trial. Accordingly, IATA and Boeing were requested to pursue the establishment of a contract on behalf of the FIT-BOB States participating in the operational trial for Boeing to set up and operate the CRA. IATA agreed to the arrangements and would work with Boeing to evaluate the costs of operating the CRA, arrange for a contract with Boeing, and collect the funds from the airspace users concerned.

3.7 Boeing advised the meeting that they would not be able to commence the CRA operation until a contract was agreed. The meeting acknowledged this position, and agreed that the operational trial could commence as planned on AIRAC date of 19 February 2004, and data collected submitted to the CRA. For operators submitting data automatically to the CRA, and details of the procedure would be provided.

Agenda Item 4: Operations procedures document

4.1 The Secretariat briefed the meeting on the outcome of the APANPIRG Review of the *Guidance Material on CNS/ATM Operations in the Asia and Pacific Region* Task Force meeting hosted by the Federal Aviation Administration (FAA) of the United States at Honolulu, Hawaii, in October 2003. The Task Force was set up by APANPIRG/14 (August 2002) under Conclusion 14/2 to review the regional *Guidance Material on CNS/ATM Operations in the Asia and Pacific Region (Guidance Material)*. APANPIRG/14 had taken action on the request of the Air Navigation Commission to ensure that the regional *Guidance Material* was in accordance with the SARPs and PANS, and in particular with Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444).

4.2 The meeting was reminded that ICAO had carried out a detailed technical review of the *Guidance Material* in light of Amendment 1 to PANS-ATM, which included ADS operating procedures, and had recommended to the Commission that there was a need to harmonize the *Guidance Material* with ICAO provisions. The Commission also wished to see other ADS/CPDLC operating procedures being used by States brought in line with ICAO provisions to the extent possible. In this regard, APANPIRG/14 requested the Task Force to coordinate its work with States responsible for the Pacific Operations Manual (POM) with the intent of harmonizing both documents.

4.3 The Task Force had carried out a detailed review of the *Guidance Material*, and a revision to the document was under preparation, which had been harmonized with the POM. The meeting was reminded that Part III of the *Guidance Material* was based on the POM and was substantially the same with minor editorial differences. Therefore, States when using the POM would be following operating procedures supported by the ICAO Asia/Pacific Region *Guidance Material*.

4.4 The meeting was informed by Boeing who had participated in the development and updating of the POM, that the Informal South Pacific ATS Coordination Group (ISPACG) and the Informal Pacific ATS Coordinating Group (IPACG), responsible for the POM, had reviewed the ICAO *Guidance Material* Task Force report and revised the POM as appropriate. The POM Version 2.1 (10 October 2003) distributed at this meeting would need to be replaced with the latest revised document, which would be made available in due course. In line with ICAO's wish to see common operating procedures for data link applications using the FANS-1/A system, ISPACG and IPACG had agreed to change the title of the POM to the FANS Operations Manual and amended the document for global applicability.

4.5 The Secretariat welcomed the changes made to the POM but requested that consideration be given to changing the generic title FANS to more accurately reflect the content of the document which related to the FANS-1/A aircraft systems. Boeing agreed to bring this to the next ISPACG meeting to be held in Fiji on 23-27 February 2004, and would recommend that the POM be titled the FANS-1/A Operations Manual (FOM). The meeting concurred with this position.

4.6 The meeting emphasized the importance for States to review their operational procedures and revise them in line with the FOM. For the present, they could refer to the POM Version 2.1 which was substantially identical to the FOM. States were reminded that there were significant operational and safety issues related to not using common operating procedures, and this matter should be given high priority. Also, training of controllers and technical staff on the FANS-1/A operating procedures was crucial. Training material was included in a package of material on a CD distributed at this meeting. Also, the meeting was advised that support and assistance with any matter related to the POM was readily available. In this regard, both Boeing and IFALPA urged ATS providers to contact them if they required further explanation on the POM and pilot operation of the FANS-1/A system.

4.7 The meeting was reminded that FANS-1/A had been in use in the Pacific Region for about 7 years, and considerable operating experience had been gained. Many valuable lessons had been learnt that led

to improvements to the overall system performance. Reference material on the lessons learnt was included in the CD. As a consequence of the above, a considerable body of knowledge was available which would benefit the Bay of Bengal operational trial.

Agenda Item 5: Establishment of operational trial

5.1 The meeting requested States present to confirm their readiness to commence the operational trial on 19 February 2004, and to update the status of their systems capability which is shown in **Appendix C**. All States, except Singapore, confirmed that they would be able to participate in the operational trial as planned. Singapore would not be involved in the trial as flights to and from the Bay of Bengal area were operating within radar and VHF coverage when they were under Singapore ATC. The meeting noted that India, Indonesia, Myanmar, Singapore, Sri Lanka and Thailand had already introduced ADS/CPDLC on an operational trial basis. SITA provided information on the status of implementation of FANS-1/A by ATS Providers worldwide as shown in **Appendix D**.

5.2 Indonesia updated the meeting on progress with the development of the ADS and CPDLC system installed at the Jakarta ACC. It consisted of two stand alone workstations, which were not integrated with the Jakarta ACC automated ATC flight data processing system. It was installed in June 1996 and upgraded in November 2000. During an earlier operational trail, difficulties had been experienced with FANS-A aircraft not being able to logon, and there were inconsistencies with the format of messages. These problems were being resolved and the system would be ready for the operational trial to commence on 19 February 2004 for the Bay of Bengal area.

5.3 The Secretariat advised the meeting that the Airport and Aviation Services (Sri Lanka) Ltd. had been contacted and they indicated they would participate in the trial. Representatives of Sri Lanka had planned to attend this meeting but official approval had not been granted. In the case of Malaysia, who also could not attend the meeting, they had notified the Regional Office of their withdrawal. It was noted that Malaysia had previously indicated that they intended to participate in the trial once their ADS and CPDLC equipment was operational. An update on their position would be obtained by the Secretariat and members informed. Further, the Secretariat advised that Myanmar had indicated that they could not confirm participation in the trial at this time. The meeting noted that Myanmar had been operating ADS/CPDLC on a trial basis in the Yangon FIR for some time but pilot reports consistently reported not being able to logon, and the service was operating sporadically.

5.4 IATA stated that they would be interested to explore with Myanmar ways to provide training and other technical support to operate their ADS/CPDLC systems, and requested ICAO to coordinate this with Myanmar. The Regional Office would take this up with Myanmar and obtain further information from IATA.

5.5 IFALPA encouraged States to make every effort to ensure the success of the trial as the operational benefits to be gained were considerable as the Pacific experience had showed. From a pilot viewpoint it was essential that common operating procedures were adopted and faults reports made in a timely manner to enable the CRA to follow-up This needed to be done promptly, as the aircraft system stored data link information for a limited period, typically 15 days.

5.6 The meeting considered the objectives and benefits to be derived from implementation of ADS and CPDLC services in the Bay of Bengal and the following were identified:

a) introduction of reduced horizontal separation based on distance:

- 1st Phase - 50 NM longitudinal and intersecting track (50 NM lateral separation already implemented on the parallel route system);
- 2nd Phase - 30 NM lateral and longitudinal separation.

b) introduction of user preferred routes (UPR);

c) offsetting for deviation due to weather and contingency procedures including emergencies;

d) introducing surveillance of non-radar airspace to improve ATM situational awareness;

e) improved accuracy and reliability of aircraft position reporting;

f) improve operational efficiency and optimizing flight operations; and

g) introducing CPDLC as a primary means of communication, thereby improving controller/pilot communications in the HF radio environment and contributing to efficiency and enhancing safety of operations.

5.7 The meeting agreed that ATS providers should use a common NOTAM to notify the introduction of the ADS/CPDLC operational trial. The meeting reminded ATS providers to include the logon address of the ATS Unit providing the ADS/CPDLC service. Details of the initial ATS Facilities Notification (AFN) logon by pilots is contained in the POM, paragraph 4.3.4. The model NOTAM (based on the NOTAM issued by the Chennai ACC on their ADS/CPDLC operation trial) is provided in **Appendix E**.

5.8 In regard to the logon address of the ATSU, which was essential to establishing a CPDLC connection between the aircraft and the ATSU, IFALPA requested ICAO to give consideration to including the logon address on aeronautical charts to facilitate pilot operation and prevent errors with logon procedures. The meeting noted that Annex 4 – Aeronautical Charts includes under the components of the ATS system, a requirement to show radio communications facilities with their frequencies, and considered that the data link logon address should be included in this data block on all charts where ATS communications were required. This matter would be brought to the attention of ICAO Headquarters for further study.

5.9 A question was asked whether the data link service providers (DSPs) in the Bay of Bengal area were interoperable, as this could pose problems with ATS providers using different DSPs. SITA informed the meeting that data link internetworking in the region had been working smoothly, especially since 5 June 2003 when ARINC commenced use of the gateway (ATSXCXA) to support internetworking between ARINC, AEROTHAI and Aviation Data Communications Corporation (ADCC) of China.

5.10 SITA requested that each ATS provider involved in the trial check the list of SITA Service Advisory addresses to ensure currency, and to add any new address (email or AFTN). In this regard, the meeting was reminded that SITA Service Advisories provided information on notification of service degradation or outage of data link services.

5.11 Boeing and SITA also requested that ATS providers confirm that their ground systems performed correlation of the aircraft and flight identification to ensure that messages were being directed to the correct aircraft (details on correlation procedures were contained in the POM, paragraph 4.3.4.4).

5.12 In considering the period of the trial and based on the experience of the ATS providers in the Pacific Region, the meeting agreed to keep the period open-ended as the performance of ADS/CPDLC systems would vary, and the readiness dates of ATS providers to commence operational ATC services following the trial period would also vary, and it would not be possible to adopt a common time. The meeting agreed that the commencement date of the trial would be on 19 February 2004. For ATS providers already operating ADS/CPDLC on a trial basis, this would be the date from which they would submit their reports to the CRA as described in 6.1 below.

5.13 The meeting noted a list of reference material to be used by States when planning for implementation of ADS and CPDLC services as shown in **Appendix F**.

5.14 The meeting recognized that operators need to have a clear definition of the operational trial area with the FIRs, routes and entry exit points specified. The meeting agreed to compile a table containing this information to be included in the report of this meeting. Accordingly, India, Indonesia and Thailand provided the information requested as shown in **Appendix G**. For those States not present, the Secretariat would obtain the information and distribute this to participants by e-mail as soon as possible. The meeting emphasized the importance of ATSUs to provide ADS/CPDLC services during the notified period of service, as pilots would be attempting to logon. Failed logon attempts would be recorded as fault reports, and pilots would also experience frustration if services were disrupted without prior notification.

Agenda Item 6: Data link monitoring requirements

6.1 The meeting noted that the reporting procedures required by the CRA to assess data link performance and to analyze fault reports were contained in the POM. For ease of reference, the forms required for FANS-1/A periodic status report, problem report and request for change to the POM are provided in **Appendices H, I and J.**

6.2 Boeing requested the ATS providers and operators to nominate a contact person (in addition to the main contact person if this was different) with appropriate technical expertise on ADS/CPDLC system operation to work with the CRA and to include this information on the status form at Appendix C. This was particularly important when trying to trace the cause of problems and to quickly effect remedial action. The meeting urged all parties involved to keep this list up to date, and notify the CRA of changes to the contact person.

6.3 The meeting was encouraged to note that in the Pacific Region over 96 percent of air/ground data link messages using the FANS-1/A system were being successfully completed within the established performance time limit. India advised the meeting that since the Chennai ACC introduced a trial of their ADS/CPDLC in September 2002, approximately 60 to 70 percent of aircraft operating across the Bay of Bengal in the Chennai FIR were FANS-1/A equipped. The meeting was advised that about 15 airlines were operating in the Bay of Bengal with FANS-1/A equipped aircraft and this number was expected to be higher. The meeting noted that based on the Pacific results and the number of FANS-1/A aircraft operating in the Bay of Bengal area, substantial benefits would be expected for ATS providers and users with the introduction of ADS/CPDLC services. To better assess the benefits being derived from the introduction of ADS/CPDLC, the meeting agreed to keep a record of the number of aircraft operating on the Bay of Bengal routes and those FANS-1/A equipped. Accordingly, the meeting requested IATA and ATS providers to compile the data and provide this to the next FIT-BOB/4 meeting.

Agenda Item 7: Any other business

7.1 Thailand informed the meeting that in follow-up to BBACG/13, which addressed the need for RMA services to carry out safety assessments for the planned implementation of reduced separation using ADS and CPDLC in Bay of Bengal area, the Aeronautical Radio of Thailand, Ltd (AEROTHAI) had considered whether the Monitoring Agency for the Asia Region (MAAR) could undertake these services.

7.2 The meeting was reminded that MAAR had been established by AEROTHAI under the approval of APANPIRG, to assume the duties and responsibilities of the RMA to support the implementation of RVSM in the Asia Region. These services had been transferred on 2 September 2003 from the Asia/Pacific Approvals Registry and Monitoring Organization (APARMO) operated by the FAA. With the experience in providing the RVSM RMA services, MAAR was in a position to carry out the safety assessment work to support ADS/CPDLC operations involving a reduction in aircraft separation in the Asia Region. To expand its work to include this task, MAAR would require funding. At this stage, an estimate of the cost was not available but this could be provided to a future meeting if there was an interest in MAAR providing these services.

7.3 The meeting expressed its appreciation to AEROTHAI for its offer and noted that safety assessment work would need to be carried out prior to ATS providers introducing a reduction in separation using ADS and CPDLC. The Secretariat informed the meeting that the Regional Airspace Safety Monitoring Advisory Group (RASMAG) was being set up under APANPIRG and would hold its inauguration meeting on 26-30 April 2004. RASMAG would be assessing airspace safety requirements including establishment of RMAs in the Asia/Pacific Region. Therefore, it would be appropriate for this matter to be referred to RASMAG.

Agenda Item 8: Date and venue for the FIT-BOB/4 meeting

8.1 The meeting agreed that in the early stages of operational trial, it would be necessary to evaluate the results of the data collection on the ADS/CPDLC system performance and fault reports. Accordingly, the next meeting of FIT-BOB/4 should be held in 6 months at Bangkok at a date to be determined by the Regional Office.

**FANS IMPLEMENTATION TEAM (FIT-BOB)
FOR THE BAY OF BENGAL**

TERMS OF REFERENCE

Composition of FANS Implementation Team (FIT)

The FANS Implementation Team (FIT) will consist of representatives from aircraft and ancillary equipment manufacturers, airlines, data communication service providers (DSP), ATS providers, IATA, ICAO, IFALPA, and IFATCA. Contact details of the FIT members are provided in Attachment A.

Terms of Reference

The FANS Implementation Team for the Bay of Bengal (FIT-BOB) shall be responsible for system configuration and oversee the end-to-end monitoring process to ensure the FANS 1/A systems are implemented and continues to meet its performance, safety, and interoperability requirements.

FIT-BOB shall:

a) Determine the common operational architecture to support CPDLC and ADS;

b) Support the implementation and operational benefits of CPDLC and ADS;

c) Authorize and coordinate system testing and operational trials;

d) Develop interim operational procedures to mitigate the effects of problems until such time as they are resolved;

e) Review de-identified problem reports and determine appropriate resolution;

f) Monitor the progress of problem resolution; and

g) Assess system performance based on information in Central Reporting Agency periodic reports.

Preparation of Reports

The Central Reporting Agency (CRA) will report, as required, to FIT-BOB. FIT-BOB will report to the Bay of Bengal ATS Co-coordinating Group (BBACG). ICAO will submit reports to appropriate sub-groups of APANPIRG.

FIT-BOB/3 WORK PLAN

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
1.	ATS providers to adopt the FOM and to review and update their ATSU operating procedures to align with the FOM.	Prior to commencement of trial on 19 Feb 04	All States	Ongoing	Important all ATSU adopt common operating procedures
2.	ATS providers to coordinate with adjacent ACCs to review and update letters of agreement for introduction of ADS/CPDLC services on a trial basis	Prior to commencement of trial on 19 Feb 04	All States	Ongoing	Ensure common ATC procedures applied
3.	Issue NOTAM on the commencement of the operational trail in line with the model NOTAM provided by FIT-BOB/3	Immediate	All States		Some States have already issued NOTAM on their operational trial.
4.	Coordinate with BOB States not present at FIT-BOB/3 on implementation of the operational trial.	As soon as practicable	ICAO, Malaysia. Sri Lanka, Myanmar, Bangladesh		Determine status on trial participation
5.	Coordinate with Indian Ocean States on harmonizing implementation of operational trial	As soon as practicable	ICAO APAC BOB and Indian Ocean States		Operational trail underway and to harmonize implementation
6.	Coordinate with Middle East and East African Regional Offices on implementation of operational trial in the Arabian Sea and Indian Ocean	As soon as practicable	ICAO APAC	Ongoing	To harmonize inter-regional implementation of ADS/CPDLC and to ensure common operating procedures established
7.	Collecting of ADS/CPDLC problem reports and submit to CRA	Immediate	States, operators	Ongoing	To be submitted as soon as practicable to facilitate analyzing the reports
8.	Establish provision of monthly monitoring date ADS/CPDLC system performance data to be submitted to the CRA	Monthly	States	Ongoing	Essential for evaluating overall system performance within the trial airspace.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
9.	Compile data on aircraft ADS/CPDLC equipped in the trial airspace	6 monthly	States, IATA	Ongoing	To keep record of aircraft participating in the trial and determine overall benefits derived by population of aircraft operating in the trial airspace.
10.	Training of controllers and technical staff on ADS/CPDLC operational procedures based on the FOM.	As soon as practicable	States	Ongoing	
11.	Nominate contact person (ATS and technical) and keep details updated	As soon as practicable	States, operators		Important that CRA has contact with engineering personnel to analyze problem reports and performance data.
12.	Establish data confidentiality agreements with States and operators participating in the trial airspace	Immediate	CRA, States and operators	As required	Necessary to establish agreement with data providers for release of data and to de-identify reports.
13.	Include on aeronautical charts logon address of ATSUs providing ADS/CPDLC services	As soon as practicable	ICAO	Ongoing	Annex 4 amendment to be considered
14.	Update ICAO Guidance material on CNBS/ATNM Operations in APAC Region	As soon as practicable	ICAO	Ongoing	Part III harmonized with FOM.
15.	Inform operators of the implementation of the operational trial.	IATA RCG Meeting, Feb 04	IATA		
16.	Coordinate with FOM editorial group on request for change to the FOM	As required	BOB FOM editor	Ongoing	BOB FOM editor to be nominated

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Bay of Bengal FANS 1/A Operational Trial, ATS Status and Contacts

STATE/ ORGANIZATION	FIR	LOGON CODE	APPLICATIONS AVAILBLE	Ground Station Manufacturer	DSP	AIDC	FDP	TEST, OPS TRIAL OR OPERATIONAL	PROCEDURES PUBLISHED	CONTACTS	REMARKS
INDIA Airport Authority of India	Chennai	VOMM	ADS, CPDLC	ECIL	SITA	No	Yes	Ops Trial	A1783/03	Sh. B.M.N. Rao GM (CNS) ACS, Chennai Tel: 044-22560444; E-mail: gmcnschen_aai@vsnl.net Sh. N.U.B. Rao GM (ATC) Chennai Tel: 044-22561740; E-mail: gmasr_aai@vsnl.net	ADS-C Stand alone system
	Kolkata	VECC	ADS, CPDLC	ECIL	SITA	No	Yes	Ops Trial	A1278/00	Sh. P.K. Bandopadhaya Addl. G.M. (CNS) ACS, Kolkata Tel: 33-25118722 E-mail: gmce_aai@vsnl.net Sh. Raj Kumar Addl. G.M. (ATC) Kolkata Tel: 033-25119428; Mob: 9830354337 E-mail: gmae_aai@vsnl.net agm_snp_kol@indiatimes.com	ADS-C Stand alone system
INDONESIA Directorate General of Air Communications	Jakarta	WIII	ADS, CPDLC	ARINC	ARINC	No (Sep 04)	Yes	Ops Trial	AIP Sup Nr:03/01 17May01	Mr. Nanang S. Taruf Deputy Director System & Procedure Air Navigation Directorate of Aviation Safety E-mail: cns-atm@telkom.net Wi Yono Tel: 6221 5506178 E-mail: dss97@centrin.net.id	
MALAYSIA Department of Civil Aviation	Kuala Lumpur	WMKK			ARINC	Yes	Yes	Test for CPDLC		Mr. Ir Dato Kok Soo Choon E-mail: vausuv@yahoo.com	2005 New Equip
	Kota Kinabalu	WBKK			ARINC	Yes	Yes	Test for CPDLC			2005 New Equip
MYANMAR Department of Civil Aviation	Yangon	VYYY	ADS, CPDLC	Thales	SITA	No	No	Ops Trial	AIC A1/99 (10.1.99)	U Yoa Shu Director ATS Myanmar Tel: 95 1 663838 E-mail dca.myanmar@mptmail.net.mn	Stand alone
SRI LANKA Airport & Aviation Services (S.L.) Ltd	Colombo	VCCC	ADS, CPDLC	Thales	SITA	No	Yes	Ops Trial	AIC-A020F-2001		Stand alone

THAILAND AEROTHAI	Bangkok	VTBB	ADS, CPDLC	ARINC	ARINC	Yes	Yes	Ops Trial		Bangkok ACC Director	
ARINC										Mr. Sarawut Assawachaichit Program Manager, Globalink Asia Tel: 66 2 2859435-6 Fax: 66 2 2859437 E-mail: sassawac@arinc.com	
CENTRAL REPORTING AGENCY										Mr. Bradley Cornell Boeing Tel: 1 525 2668206 E-mail: bradley.d.cornell@boeing.com	
IATA										Soon Boon Hai Assistant Director Safety Operations & Infrastructure Tel: 65 62397267 Fax: 65 65366267 E-mail: soonbhd@iata.org	
IFALPA										Capt. Toby Gursanscky Regional Vice President South Pacific Tel: 61 2 99487532 E-mail: gursanscky@bigpond.com	
SITA										Ms. Karen Stephenson Business Manager ATS Tel: 61 2 92401427 Fax: 61 2 92479330 E-mail: karen.stephenson@sita.aero	
ICAO										Mr. David Moores Regional Officer ATM Tel: 66 2 5378189, ext. 151 Fax: 66 2 537 8199 E-mail: dmoores@bangkok.icao.int icao_apac@bangkok.icao.int	

SITA FANS/1/A STATUS

Future Air Navigation Systems (FANS) 1/A Status

1. Purpose

The purpose to this document is to provide a quick reference for airlines and ATS Providers wishing to ascertain the status of the implementation of FANS 1/A by ATS Providers and their applications available. ATS Providers are listed by country and then Flight Information (FIR).

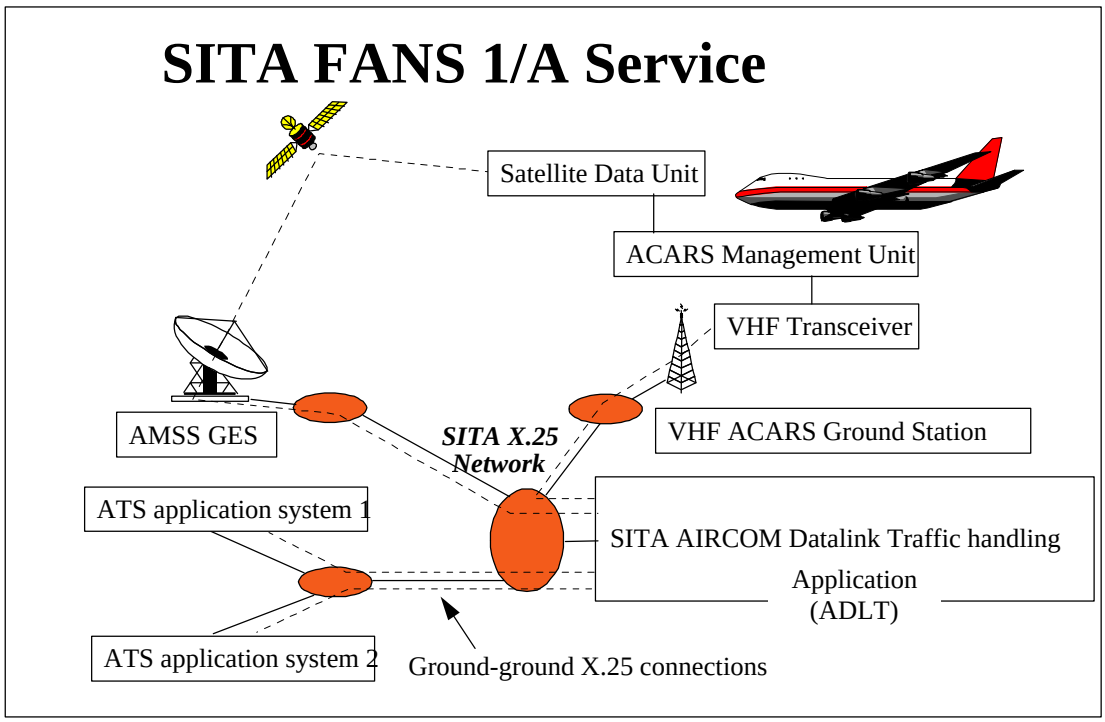
Table 1 lists the majority of ATS Providers in the world who have their FANS 1/A application systems connected to SITA and utilize SITA's FANS 1/A Service.

Table 2 lists SITA customers who utilize SITA's FANS 1/A Service but for avionics and other testing.

Table 3 lists ATS Providers connected to other Datalink Service Providers.

SITA has several proprietary documents that are available to our customers on request to assist with learning about FANS, such as, SITA AIRCOM FANS 1/A Service Description, Version 1.3; 22 August 2000.

SITA also provides some FANS 1/A training to support airlines taking their first steps using FANS.



2. Key to tables

FIR = Flight Information Region

TEST= Not available for operational use. Some testing of FANS 1/A Services.

Tech = Not available for operational use. Initial Testing such as Site or User Acceptance Testing **OR** Available on request by prior arrangement with the ATS Provider.

Pre-Op = Pre-Operational Testing, normally with the expectation of progressing to an Operational FANS 1/A Service for that FIR. FANS 1/A is not the primary means of communication or surveillance. Please refer to the relevant AIC/ AIP/ NOTAM publication for procedures.

Operational = FANS 1/A is the primary means of communication and/ or surveillance. Refer to the relevant AIC/ AIP/ NOTAM publication or Manual for procedures.

TBC = To Be Confirmed by the ATS Provider.

AVB = Available.

PLN = Planned by the ATS Provider.

Please note that due to FANS 1/A application services being under the control of the respective ATS Providers, SITA is not responsible for any delays in the commissioning of Services.

TABLE 1

Country	ATS Provider	FIR	Log On Code	Applica tions avbl	TEST		Operatio al	System vendo	Contacts	Procedures published in
					Tech	Pre-Op				
Algeria	Etablissement National de la Navigation Aerienne (ENNA), Algerie			AFN ADS CPDLC	1Q 2004		ENNA: Mr. Lafraoui: Tel: +213 21 68 11 90 or +213 21 68 17 90	Thales ATM	SITA: Pieter Olckers pieter.olckers@sita.aero SITA Customer Support aircom.customer.support.europe@sita.aero or Eduard Blasi eduard.blasi@sita.aero	.
Australia	Airservices Australia	Brisbane (Northern) Melbourne (Southern and Indian Ocean)	YBBB YMMM	AFN ADS CPDLC PDC. AFN ADS CPDLC PDC			Fully operational AFTN-based AIDC with Auckland FIR and between Brisbane & Melbourne FIRs. Also, with Nadi FIR soon.	Thales ATM	Airservices: Bob Brown Robert.Brown@airservicesaustralia.com SITA: karen.stephenson@sita.aero SITA Customer Support peter.alexander@sita.aero	Brisbane and Melbourne FIRs: Pacific Operations Manual (POM) in use and it was agreed in Nov 2003 at the Informal Indian Ocean ATS Coordination Meeting for the Indian Ocean Operations Manual (IIOM) to be merged with the POM. Other news: ADS-B trials in Burnett Basin, Queensland. User Preferred Routes being used in the Indian Ocean Region. Contact Airservices.
Brazil	DECEA	Recife Atlantico ACC	SBAO	AFN ADS CPDLC		AVB See Notes			DECEA: atm3-7@decea.gov.br and atm3-9@decea.gov.br and fax: + 55 21 3814-6088 SITA: adriana.mattos@sita.aero SITA Customer Support: Eduard Blasi eduard.blasi@sita.aero	FANS configured at Recife in October 2003 AIC N15/03 30 August 2003 Trial is being conducted from 1 Nov 2003 to 1 Nov 2004 between the hours of 0200 & 1000 UTC.

Country	ATS Provider	FIR	Log On Code	Applications avbl	TEST		Operational	System vendor	Contacts	Procedures published in
Cabo Verde	Empresa Nacional de Aeroportos e Segurança Aére (ASA), Cabo Verde	Amilcar Cabral International, Ilha Do Sal, Cabo Verde	GVSC	AFN ADS CPDLC	2004				ASA: Sr. José Rodrigues Phone: +238-411372 admtasna@asa.cv SITA: adriana.mattos@sita.aero	FANS trial planned for 2004. Contact the ATS Provider for further details.
China, Hong Kong SAR	Civil Aviation Department Hong Kong (CADHK)	Hong Kong	VHHH	AFN ADS CPDLC	Contact the ATS Provider			CAE Adacel	CADHK: W.Y. Leung wyleung@cad.gov.hk Peter Yeung phwyeung@cad.gov.hk SITA: David Fung david.fung@sita.aero SITA Customer Support eric.so@sita.aero	Intermittent trials of ADS & CPDLC. FANS log on address currently unavailable.
Congo RD	Regie des Voies Aeriennes, Republique Democratique de Congo,	Kinshasa		AFN ADS CPDLC	2004			Thales ATM	SITA: Pieter Olckers pieter.olckers@sita.aero SITA Customer Support aircom.customer.support.europe@sita.aero	FANS implemented planned for 2004. Details TBA.
Egypt	National Air Navigation Services Company (NANSC formerly EHAC)	Cairo	HECA HECC	AFN ADS CPDLC	Contact the ATS Provider	PLN		Thales	EHAC: Mohamed Elkady Tel: +202-2657849 Raouf Moharram eng_raoufm@yahoo.com SITA Customer Support corinne.lefebvre@sita.aero aircom.customer.support.europe@sita.aero	FANS workstation is connected and configured for FANS. Formal implementation yet to be announced by the ATS Provider.

Country	ATS Provider	FIR	Log On Code	Applications available	TEST		OPS	System vendor	Contacts	Procedures published in
					Tech	Pre-op				
Europe	Eurocontrol	Maastricht	EDYY	AFN CPDLC (NB. ADS excluded)		AVB		SITA (was Skyware)	Eurocontrol: Alex Wandels alex.wandels@eurocontrol.int Mr. Gustaaf Janssens Tel: +(31) 43 366 1252; or gustaaf.janssens@eurocontrol.int SITA Customer Support alain.godec@sita.aero aircom.customer.support.europe@sita.aero	ATN/VDL Mode 2 trials conducted in Aug/ Sept 2001. FANS 1/A trial restarted in June 2003. Appendix to AIC 09/2003 (SITA has a copy)
Fiji	Airports Fiji Limited	Nadi	NFFN	AFN ADS CPDLC			Fully operational	Thales	AFL: Moagrava Elaisa moagravae@afl.com.fj SITA: karen.stephenson@sita.aero SITA Customer Support peter.alexander@sita.aero	Pacific Operations Manual (POM).
French Polynesia (Tahiti)	STNA, SEAC	Papeete	NTTT	AFN ADS CPDLC			Fully operational	Thales	SEAC: Jean-Pierre Carle carle_jean-pierre@seac.pf SITA: karen.stephenson@sita.aero SITA Customer Support peter.alexander@sita.aero	Pacific Operations Manual (POM). Discussions underway with adjacent centres for AFTN-based AIDC.

Country	ATS Provider	FIR	Log On Code	Applications available	TEST		OPS	System vendor	Contacts	Procedures published in
					Tech	Pre-op				
Iceland	Icelandic Civil Aviation Authority (ICAA)	Reykjavik		AFN ADS CPDLC	2004				ICAA: Mr Liefur Hákonarson leifur@caa.is Mr. Arnor Bergur Kristinsson Tel: +354-5694293 or +354-5694100 Email: arnork@caa.is SITA: vaughn.maiolla@sita.aero	OCL also being implemented in 2004.
India	Airports Authority of India (AAI)	Calcutta Madras	VECC VOMM	AFN ADS CPDLC			AVB	ECIL ECIL	AAI: TBA SITA Customer Support: Chin_Pin.Ng@sita.aero	ADS/CPDLC in Kolkkata & Chennai FIRs was declared operational in NOTAM A0700/03 and A1177/03.
Iran	Civil Aviation Organisation – IR Iran	Tehran	OIII	AFN ADS CPDLC	TBC			Thales	CAO: Mr Majid Kargaran ais_ir of iran@iricao.org SITA: Akhil Sharma akhil.sharma@sita.aero SITA Customer Support alain.godec@sita.aero aircom.customer.support.europe@sita.aero	Satellite communications only .
Korea	Korea Airports Corporation (KAC)	Seoul Incheon Airport	RKTT	AFN ADS CPDLC	Contact the ATS Provider				SITA: David Fung david.fung@sita.aero SITA Customer Support eric.so@sita.aero	FANS connection relocated to Incheon Airport in October 2003.
Lao PDR	DCA Laos	Vientiane	PLN						SITA: David Fung david.fung@sita.aero	

Country	ATS Provider/ Manufacturer	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
Madagascar	ASECNA Madagascar	Antananarivo	FMMM	AFN ADS CPDLC		AVB			ASECNA:M. Andrianierenana Simon asecna@simicro.mg ASECNA Madagascar: M. Didier Garbies garbies@dts.mg SITA: pieter.olckers@sita.aero corinne.lefebvre@sita.aero aircom.customer.support.europe@sita.aero	Indian Ocean Operations Manual (IIOM) to be merged with the Pacific Operations Manual (POM)
Mauritius	Department of Civil Aviation Mauritius	Mauritius	FIMM	AFN ADS CPDLC		AVB		Thales	DCA Mauritius: Mr. Ahmed Mosaheb SITA: pieter.olckers@sita.aero SITA Customer Support corinne.lefebvre@sita.aero aircom.customer.support.europe@sita.aero	Indian Ocean Operations Manual (IIOM) to be merged with the Pacific Operations Manual (POM). AIP Supplement AIRAC S001/03 7 January 2003
Myanmar	Department of Civil Aviation Myanmar	Yangon	VYYY VYYF	AFN ADS CPDLC		AVB		Thales	SITA: david.fung@sita.aero SITA Customer Support chin.pin.ng@sita.aero aircom.customer.support.asiapacific@sita.aero	AIC A 1/99 10 January 1999 (SITA has a copy)

Country	ATS Provider/ Manufacturer	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
Philippines	Air Transport Office – Republic of the Philippines	Manila			Site Acceptance Testing Completed		PLN 2008	NEC, Japan	SITA : aircom.ats@sita.aero	Log on code was RPHI. FANS trial was completed in 2003 and FANS workstation has been removed. Operational implementation possibly 2008.
Singapore	Civil Aviation Authority of Singapore	Singapore	WSJC	AFN ADS CPDLC			AVB	Thales	CAAS: Yeo_Cheng_Nam@caas.gov.sg SITA: david.fung@sita.aero SITA Customer Support chin.pin.ng@sita.aero aircom.customer.support.asiapacific@sita.aero	
South Africa	ATNS – South Africa	Johannesburg	FAJO	AFN ADS CPDLC			AVB	Thales	ATNS: Mr Arthur Bradshaw arthurb@atns.co.za SITA: Pieter Olckers pieter.olckers@sita.aero SITA Customer Support eduard.blasi@sita.aero aircom.customer.support.europe@sita.aero	Indian Ocean Operations Manual (IIOM) to be merged with the Pacific Operations. New FANS workstation installed in September 2003. AIDC status TBC.

Country	ATS Provider/ Manufacturer	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
Spain	AENA	Canarias, Las Palmas	GCCC	AFN ADS CPDLC		Second SACCAN trials started 10 Nov '03 for 6 months.		Indra	AENA: David Fernadez Diez ddiez@aena.es SITA: adriana.mattos@sita.aero SITA Customer Support: eduard.blasi@sita.aero	SACCAN TRIALS AIC to be published. ADS & CPDLC 2230 to 0330 UTC Daily. Changes to be notified by NOTAM. Guidance Material on SACCAN FANS 1/A Trials in Canarias Airspace. Available on request from satma@aena.es
Sri Lanka	AASL – Sri Lanka	Colombo	VCCC	AFN ADS CPDLC		AVB		Thales	Mr Winmalshanti wipula@airport.lk SITA Customer Support chin.pin.ng@sita.aero	FANS trials on 24 hour basis. Refer to AIC-A020F-2001
USA	Federal Aviation Administration	Anchorage Oakland New York	PAZA. PAZB KZAK KZWY	AFN CPDLC ADS via CADS			AVB AVB	Hughes	FAA: Kevin Grimm kevin.grimm@faa.gov SITA: Kathy Kearns kathleen.kearns@sita.aero sylvain.laviolette@sita.aero	Pacific Operations Manual (POM). New York CPDLC started 20 March 2003. New York CADS started Sept 03.
Uzbekistan	CAA Uzbekistan	Tashkent	UTTT	TBC				Thales	TBC	

TABLE 2

Country	ATS Provider/ Manufacturer	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
France	STNA	No FIR Test only for VIVO system Toulouse	LFBR	AFN ADS CPDLC	By prior arrange-ment			Thales		
France	Aerospatiale	No FIR Test only Toulouse	Several addresses	AFN ADS CPDLC						
USA	Boeing	No FIR Seattle	FMCA FMCB	AFN ADS CPDLC	By prior arrange-ment					

TABLE 3

Country	ATS Provider	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
Canada	NavCanada	Gander Shanwick Reykjavik Santa Maria All NAT FIRs for crews not trained on CPDLC but who wish to use ADS for WPR. Edmonton	CZQZ EGGX BIRD LPPO CADS CZEG	Via Central ADS Server ("CADS") AFN ADS WPR CPDLC AOC WPR AFN ADS WPR CPDLC	 PLN August 2003 Dec 2003	 AVB June 2003	ADS WPR in NAT ADS airspace AVB AVB Operational trial planned for 3Q 2003. CPDLC & ADSmid April 2004	GAAATS by NavCanada CADS by ARINC CFRS by SITA	NavCanada: Engineering: Norm Dimock dimockn@navcanada.ca Operations Don Harris harrisd@navcanada.ca FANS Central Monitoring Agency: Tom Cole fcma@navcanada.ca SITA as DSP: Vaughn Maiolla vaughn.maiolla@sita.aero Kathy Kearns kathleen.kearns@sita.aero	http://www.nat-pco.org NAT ADS WPR (Way-point Position Reporting) trials have progressed to operational use. NAT CPDLC trials Phases 1 & 2 in Gander/ Shanwick FIRs restarted 17 November 2002. AIP published. Confirmation /any changes by NOTAM. Reykjavik & Santa Maria are *not* currently offering CPDLC. NAT FMC WPR trial using NavCanada's Central FMC waypoint Reporting System (CFRS) to start August 2003. HFDL trial currently underway.
China	CAAC	Beijing Chendu Kunming Langzhou Urumqhi	ZBPE ZUUU ZPPP ZLLL ZWWW	TBC	TBC AFN ADS CPDLC		 TBC TBC TBC TBC			Support FANS route north of the Himalayas L888. HFDL Trial conducted for use in Western China. AIDC being implemented between ACCs in China.
Iceland	ICAA	Reykjavik	BIRD		ADS via CADS					Reykjavik & Santa Maria are *not* currently offering CPDLC.
Indonesia	PAP II	Jakarta Ujung Pandang	WIII	AFN ADS CPDLC	PLN PLN				SITA: david.fung@sita.aero	AFTN-based AIDC planned between Brisbane & Jakarta in 2004.

TABLE 3 continued

Country	ATS Provider	FIR	Log On Code	Applications available	TEST		Operationa	System Vendor	Contacts	Procedures published in
					Tech	Pre-Op				
Japan	Japan Civil Aviation Bureau	Tokyo	RJTG	AFN ADS CPDLC			AVB		SITA: yasuo.saji.sita.aero vaughn.maiolla@sita.aero SITA Customer Support: Chris Kok aircom.customer.support.asiapacific	Pacific Operations Manual (POM) Service presently available through AVICOM. Direct connection to SITA in 2004.
Malaysia	DCA Malaysia	Kuala Lumpur	WMFC	TBC						
Mexico	SENEAM	Mexico City	MMMD	TBC					Connected to ARINC	
Mongolia	DCA Mongolia	Ulan Bataar	ZMUA	AFN ADS CPDLC		AVB		ARINC		
New Zealand	Airways New Zealand	Auckland	NZZO	AFN ADS CPDLC			Fully operational AIDC with Brisbane FIR	CAE Adacel		AIDC via AFTN with Australia.
Portugal	NAV-EP Portugal	Santa Maria	LPPO	ADS via CADS FMC WPR						Reykjavik & Santa Maria are *not* currently offering CPDLC. FMC Waypoint Position Reporting (WPR) commenced 9 Dec 2002.
Russian Far East	TBC	Magadan	GDXB	AFN ADS CPDLC			AVB	ARINC		4 new polar routes implemented between Anchorage ARTCC and Magadan ACC. AIC issued.
Thailand	Aerothai	Bangkok	VTBB	AFN ADS CPDLC			TBC	ARINC		

MODEL NOTAM FOR ADS/CPDLC OPERATIONAL TRIAL

(A1298/03) NOTAMR (A1179/03)
A) (ORIGINATOR)
B) 0309261200 (26SEP03 1200U)
C) 0312312030 (31DEC03 2030U) EST
D) BTN (……) TO (……) DAILY
E) 1. ADS/CPDLC SYS IS AVBL WI (…..) FIR.

2. THE SER IS AVBL TO ALL ACFT SUITABLY EQUIPPED WITH DATA LINK CAPABILITY.

3. THE INTRODUCTION OF ADS AND CPDLC SER WILL NOT AFFECT THE CURRENT PROC FOR NON-DATA LINK CAPABLE ACFT OPR WI (…..) FIR.

4. THE DATA LINK CAPABLE ACFT SHALL FLW THE PROC GIVEN BLW.

I. DATA LINK AND ADS CAPABILITY SHALL BE INDICATED IN THE FPL BY INSERTING APPROPRIATE DESIGNATORS IN ITEM 10 AND 18.

II. THE AFN LOGON ADDRESS OF (…….) FIR IS " (…….)" .

III. THE ACFT SHALL LOGON 10 MIN PRIOR TO ENTERING THE FIR. ACFT DEPARTING FM WI THE FIR SHALL LOGON WI 5 MIN OF DEPARTURE.

IV. PILOTS WHO ARE UNA TO ESTABLISH DATA LINK CONNECTION SHALL INFORM APPROPRIATE ATC UNIT THRU VOICE.

V. ADS WILL BE THE PRIMARY MEANS OF SURVEILLANCE FOR SUITABLY EQUIPPED AND DATALINK ESTABLISHED ACFT WI (……) FIR, AND VOICE POSITION REPORTING WILL BE A BACKUP

VI. CPDLC WILL BE THE PRIMARY MEANS OF COMMUNICATION WI (……..) FIR AND HFRT/VHFRT WILL BE BACKUP FOR COM.

VII. IF DATALINK COM IS ESTABLISHED, PSN REPORTING USING HFRT/VHFRT IS NOT REQUIRED
VIII. SELCAL CHECKING IS REQUIRED TO VERIFY THE HFRT SERVICEABILITY.

IX. PILOT RECOGNIZING A FAILURE OF DATA LINK CONNECTION SHALL IMT ESTABLISH COM USING APPROPRIATE VOICE FREQ. THE VOICE COM SHALL CONTINUE TILL CPDLC CONNECTION IS RE-ESTABLISHED AND THE CONTROLLER HAS AUTH RETURN TO DATA LINK COM)

*Delete text in blue

**SELECTED REFERENCE MATERIAL FOR THE
BAY OF BENAGL ADS/CPDLC OPERATIONAL TRIAL**

1. Annex 10 – Aeronautical Communicaiotns
   Volume 11 – Communication Procedures
   - Chapter 4 : Aeronautical Fixed Services (AFS)
   - Chapter 8: Aeronautical Mobile Services – Data Link Communications

2. Annex 11 – Air Traffic Services
   - Chapter 2: ATS Safety Management
   - Appendix B: Establishment of a target level of safety and lateral separation minima

3. The *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444)
   - Chapter 2: ATS Safety Management
   - Chapter 5: Separation minima using ADS and CPDLC
   - Chapter 13 and 14: Procedures for use of ADS and CPDLC
   - Appendix 5: CPDLC message Set

4. *Regional Supplementary Procedures(Doc 7030)*
   - MID/ASIA procedures for application of reduced separation minima
   - TLS for en-route

5. *Air Traffic Services Planning Manual (Doc 9426)*
   - Part II, Chapter 4, Appendices A and C: Collision risk modelling

6. *Manual of Air Traffic Services Data Link Applications (Doc 9694)*
   - Establishing a data link based service in an airspace in accordance with regional and national plans

7. *Manual on Airspace Planning Methodology for the Determination of Separation Minima* (Doc 9689)
   - Deriving performance criteria for ADS and CPDLC separation minima
   - Appendix 1: A General Collision Risk Model for Distance-based Separation on Intersecting and Coincident Tracks
   - Appendix 5: Assessment of Longitudinal Separation in the Asia/Pacific Regions
   - Appendix 15: Navigation Performance Requirements for the Introduction of 30 NM Lateral Separation in Oceanic and Remote Airspace
   - Appendix 16: A Method of Deriving Performance Standards for ADS Systems

8. ICAO Regional *Guidance Material on CNS/ATM Operations in the Asia/Pacific Region* (Part III and *Pacific Operations Manual* harmonized)

9. *Pacific Operations Manual*, Version 2.1 (10 October 2003)

BAY OF BENGAL OPERATIONAL TRIAL AREA

ATC Authority	FIR/LOGON	ATS Route	Entry point	Exit Point	Remarks
INDIA					
Chennai ACC	Chennai VOMM	N563	AKMIL	MEMAK	
		P574	GIRHA	NOPEK	
		B466	AVAOS	ANOKO	
		N571	IDASO	IGOGU	
		P628	PPB	IGREX	
		L759	NISUN	MIPAK	
		P762	DUGOS	PPB	
Kolkata ACC	Kolkata VECC	L759	NISUN	LEMEX	
		P628	PPB	LARIK (ASOPO)	
		N877	LAGOG	RIBRO	
		M770	LALAT	BUBKO	
		P762	LALAT	PPB	
		G477/N895	BUBKO	SAGOD	
		P646	LEGOS	IBITA	
		L301	VVZ	RINDA	
INDONESIA					
Jakarta ACC	Jakarta WIII	B470/A585	ANITO	SAPDA	
		B470/B469	ANITO	LAMOB	
		N752	ATMAL	PARDI	
MALAYSIA					
Kuala Lumpur ACC	Kuala Lumpur WMKK				
MYANMAR					
Yangon ACC	Yangon VYYY				
SRI LANKA					
Colombo ACC	Colombo VCCC				
THAILAND					
Bangkok ACC	Bangkok VTBB	L759	Bangkok/ Kuala Lumpur FIR Boundary		H24, 6 Feb 04
		M770/L515	Bangkok/ Kuala Lumpur FIR Boundary		

FANS-1/A Periodic Status Report Form			
Originating Organization			
Date of submission		**Originator**	
Status for [Month/Year]			
Performance Measure	**Data**		
DELAY	**All times will be calculated "less than" < the time band to the right.**		
Uplinks: **Round-trip transit delay time** (ATS Provider - delay between the time a message is sent and the time the Message Assurance (MAS) referring to this message is received) (Network provider - delay between the time a message arrives at the router and the time the MAS referring to this message arrives back at the router) **Downlinks:** (ATS Provider - difference between embedded message time stamp and time message received from Network provider) Lost messages determined by: • Message assurance failure is received. After trying both VHF and SATCOM. Depending on reason code received, the message might, in fact, have made it to the aircraft. • No message assurance or flight crew response is received by ATSU after 900 seconds	**Number of messages with a round trip transit delay time of less than X seconds:** X= 10s 20s 30s 60s 90s 120s 180s ≥180s Total number of uplink messages: Total number of **lost** uplink messages: **Number of messages with a downlink transit delay time of less than Y seconds:** Y= 10s 15s 30s 45s 60s 90s ≥ 90s Total number of downlink messages: Total number of **lost** downlink messages:		

FANS-1/A Problem Report	**Number**

Date UTC		**Time UTC**	
Registration		**Flight Number**	
Sector			
Originator		**Aircraft Type**	
Organization			
Active Center		**Next Center**	
Position			
Description			

1.1.1 Description of fields

Field	Meaning
Number	A unique identification number assigned to this problem report. Organizations writing problem reports are encouraged to maintain their own internal list of these problems for tracking purposes. Once the problems have been reported to the CRA and incorporated in the database, a number will be assigned by the CRA and used for tracking by the FIT.
Date UTC	UTC date when the event occurred.
Time UTC	UTC time (or range of times) at which the event occurred..
Registration	Registration number (tail number) of the airplane involved. This should be in exactly the same format as was used for the logon to the ATC Center, including any dashes used.
Flight Number	Flight identifier (call sign) of the flight involved. This should be in exactly the same format as was used for the logon to the ATC Center, including any leading zeros in the number.
Sector	The departure airport and destination airport for the sector being flown by the airplane involved in the event. These should be the ICAO identifiers of those airports.
Originator	Point of contact at the originating organization for this report (usually the author).
Aircraft Type	The airplane model involved (e.g. B777 or MD11). Where a dash number records a significant change to the equipment fit (e.g. B747-400), the dash number should be provided as well.
Organization	The name of the organization (airline, ATS provider or datalink service provider) that created the report.
Active Center	ICAO identifier of the ATC Center controlling the airplane at the time of the event.
Next Center	If the problem involves a handover between ATC Centers, or occurs close to the time of a handover, then this should contain the ICAO identifier of the Center to which control was being handed over.
Position	Location of the airplane at the time of the event. This could be the latitude and longitude, but could also be specified relative to a waypoint on the route or an FIR boundary.
Description	This should provide as complete a description of the situation leading up to the problem as is possible. Where the organization reporting the problem is not able to provide all the information (e.g. the controller may not know everything that happens on the airplane), it would be helpful if they would coordinate with the other parties to obtain the necessary information. The description should include: • A complete description of the problem that is being reported • The route contained in the FMS • Any flight deck indications, including EICAS messages that occurred • Any MCDU scratchpad messages that occurred

	• Any indications provided to the controller when the problem occurred • Any problems being experienced with other datalink systems (such as AOC), or indications that those other systems were unaffected • Any additional information that the originator of the problem report considers might be helpful but is not included on the list above IF NECESSARY TO CONTAIN ALL THE INFORMATION, ADDITIONAL PAGES MAY BE ADDED, AND IF THE ORIGINATOR CONSIDERS IT MIGHT BE HELPFUL, DIAGRAMS AND OTHER ADDITIONAL INFORMATION (SUCH AS PRINTOUTS OF MESSAGE LOGS) MAY BE APPENDED TO THE REPORT.

Request For Change form

RFC Nr:

To be used whenever requesting a change to any part of FOM. This form may be photocopied as required.

1. SUBJECT:	
2. REASON FOR CHANGE:	
3. DESCRIPTION OF PROPOSAL: [attach additional pages if necessary]	
4. REFERENCE(S):	
5. PERSON INITIATING:	**DATE:**
ORGANISATION:	
TEL/FAX/EMAIL:	

6. CONSULTATION		**RESPONSE DUE BY DATE:**	
Organisation	**Name**	**Agree/Disagree**	**Date**

7. ACTION REQUIRED:	
8. FOM EDITOR	**DATE REC'D:**
9. FEEDBACK PASSED	**DATE:**

REPORT OF THE BBACG/14 MEETING

Agenda Item 1: Adoption of Provisional Agenda

1.1 The meeting adopted the following agenda as the Agenda for the meeting:

Agenda Item 1: Adoption of Agenda

Agenda Item 2: Review status of recommended actions as agreed at the BBACG/13 Meeting

Agenda Item 3: Review current operations across the Bay of Bengal and identify problem areas

Agenda Item 4: Implementation of the new CNS/ATM systems in the Bay of Bengal airspace

Agenda Item 5: Develop a methodology for a coordinated implementation of ADS/CPDLC in the Bay of Bengal

Agenda Item 6: Any other business

Agenda Item 7: Date and venue for the BBACG/15 meeting

Agenda Item 2: Review status of recommended actions as agreed at the BBACG/13 Meeting

2.1 The meeting reviewed and updated the Work Plan agreed upon at the BBACG/13 meeting held at Bangkok, Thailand on 8-12 September 2003. The Work Plan is shown at **Appendix A**

2.2 In regard to the ATS action items (ATS 1-14), the routes already approved and implemented were deleted from the list, and those routes approved and not yet implemented would require further follow-up by ICAO. Those routes that had not yet been approved would be referred to the APANPIRG ATS Route Review Task Force (ARR/TF), which was scheduled to hold its first meeting on 7-11 June 2004. The meeting was informed that the Task Force had been set up to conduct a thorough review of the ATS route network in the Asia/Pacific Region including proposals pending on new routes, routes approved but not yet implemented, as well as considering future route requirements. At future BBACG meetings, an update on progress by ARR/TF with route developments concerning the Bay of Bengal area would be presented by the Secretariat.

2.3 The meeting noted that IATA had requested at the EMARSSH One Year Review (OYR) Meeting held at Bangkok, Thailand on 12-16 January 2004 that the following route segments be implemented:

a) PRA – SERKA – SOKAM
b) GASIR – BIRJAND
c) NH – ZAHEDAN

The States concerned had noted this request and the routes would also be referred to the ARR/TF for follow-up.

2.4 The meeting noted that Nepal had presented to the EMARSSH-OYR (Appendix C to the Report of EMARSSH/OYR refers) the outstanding EMARSSH routes in the Kathmandu FIR that had not been implemented. The meeting agreed to refer these routes to the ARR/TF.

2.5 In regard to search and rescue (SAR) matters, the meeting was advised by the Secretariat that an ICAO SAR Seminar was hosted by the Civil Aviation Department of Hong Kong, China in conjunction with its annual SAREX on 24-29 November 2003. At that event, participants indicated their support for a similar seminar and SAREX to be held in the Bay of Bengal area in 2004. The meeting was reminded that APANPIRG/10 (September 1999) noted that an international SAREX/Seminar involving States of the Bay of Bengal area had been deferred due to Y2K matters, which required urgent attention and significant resources. Since then, it had not been possible to hold the event. At the Hong Kong SAREX/Seminar, the representative of India agreed to look into the matter.

2.6 The meeting was advised by India that they would take further action to determine whether such an event could be held this year. The Secretariat informed India that at the Hong Kong SAREX/Seminar, offers of support had been made by the CAD Hong Kong and the United States Coastguard to participate and provide assistance with the arrangements for the Bay of Bengal SAREX/Seminar. The meeting expressed its appreciation to India. IFALPA endorsed the event and would be interested to participate.

2.7 In regard to the communications action items (COM 15-22), the meeting noted the progress made by India to improve its communication facilities and services which would greatly enhance their air navigation services. However, there were a number of outstanding matters to be resolved with adjacent States and ICAO was requested to assist with coordination, urge the States concerned to complete their planned implementation of communications improvements, and update the status for the BBACG/15 meeting.

2.8 In regard to Myanmar, the meeting expressed its disappointment with the lack of progress by Myanmar to improve its communications infrastructure. There continued to be frequent pilot reports that indicated no significant improvements had been made. It was recognized, as an interim measure to support RVSM implementation in the Yangon FIR on 27 November 2003, that Yangon ACC was making use of the Mandalay ATSU VHF frequency 133.2MHz for the northern part of the Yangon FIR. However, while some improvement in air traffic service had occurred in the northern airspace, the overall communications situation remained seriously deficient.

2.9 The Secretariat informed the meeting that the Regional Office had conducted an ATM and CNS mission to Myanmar in July and October 2003 respectively. It was noted that although Myanmar had plans in place to undertake remedial work, funding had not been provided to commence the projects. The Asia and Pacific Office was continuing its effort to assist Myanmar where possible, and had urged them to take immediate action to overcome the communications problems. The offer made by IATA at the FIT-BOB/3 meeting to seek ways to provide assistance to Myanmar was appreciated, and this would be brought to their attention, along with the comments expressed at this meeting.

2.10 In regard to Action Item 22 concerning Myanmar's unreliable VHF communications, IATA stated that the communications problems were not confined to VHF radio, but should include the entire communications infrastructure, including the remote control air/ground stations and relay network, which were unreliable. This was one of the primary causes of the poor VHF communications performance affecting the entire Yangon VHF coverage area. Frequent outages of the network were being experienced due to unreliable power supplies and the age of the equipment. In IATA's view, there was an urgent need to evaluate the entire communications system and for Myanmar to take immediate remedial action. The meeting was reminded that the IATA In-flight Broadcast Procedure (IFBP) using 128.95 MHz for pilot/pilot communications was still in force, as pilots could not rely upon Myanmar's ATS communications. The meeting endorsed IATA's views, and agreed that this should be brought to the attention of the Myanmar Government as a matter of urgency.

Agenda Item 3: Review current operations across the Bay of Bengal and identify problem areas

3.1 The meeting noted that the extension of EMARSSH route P628 from ASOPO to VIKIT (Delhi/Karachi FIR boundary position) was announced by India at the 20th RVSM Task Force Meeting at Delhi, India on 27-31October 2003, and subsequently Pakistan agreed to extend the route to Rahim Yar Khan (RK) VOR. Both States implemented the route extension on 22 January 2004. At the same time, the minimum enroute altitude (MEA) on P628 was reduced by India to FL 300. Pakistan continued to operate a MEA of FL 310 with the lowest level available westbound of FL 320. India also reduced the MEA on L333 to FL 300. Further reductions to the MEA by Pakistan would require approval from the military authority and this was under consideration.

3.2 IATA expressed its appreciation for the improvements made to the routes by India and Pakistan. To further enhance the efficiency of the westbound traffic flow, IATA had requested the route segment RK direct Kandahar be implemented as soon as possible. This would provide a viable alternative routing via V390 through the Kabul FIR and relieve traffic congestion on L759. The Secretariat advised the meeting that following the EMARSSH/OYR meeting, the Middle East Regional Office who had responsibility for Afghanistan, had been requested to pursue this issue as a matter of priority. Significant progress had been made and all parties concerned had been contacted and there was general support for the implementation of the route segment RK-Kandahar. An Inter-regional Coordination Meeting to be hosted by Pakistan at Islamabad was under consideration for late April 2004 to deal with this matter, and other operational issues related to the operation of Afghanistan airspace. The meeting was pleased to note the progress being made and supported the proposed IRC meeting.

3.3 The meeting was also pleased to note that after considerable coordination and discussion, FL 280 had been approved by the Coalition Forces for use on N644, A466 and L750 in the Kabul FIR from 2000 to 2400 UTC to cater for the westbound peak traffic flow. IATA requested that consideration be given by India and Pakistan to lowering the MEA on their routes concerned to FL 280 to harmonize the MEA for the entire routes, thereby enhancing efficiency of operations. India indicated that there would be difficulties obtaining military approval, and it was unlikely this could be achieved in the near term but the matter would be pursued. Without Pakistan in attendance, it was not possible to determine whether this was feasible in Pakistan airspace, and this would be coordinated by ICAO.

3.4 In regard to the issuing of NOTAMs for Afghanistan airspace, IATA pointed out that this was not being done in compliance with ICAO AIS requirements. The meeting noted that the Afghanistan AIP had not been issued in the ICAO format and AIP aeronautical information was being published on the Coalition Forces Regional Air Movement Control Center (RAMCC) website. The meeting recognized that this was not in line with Annex 15 and the matter should be brought to the attention of the authorities concerned, and could be raised at the proposed IRC meeting on Afghanistan.

3.5 The meeting reviewed the Action Plan of the SCM/RVSM/IND-PAK meeting, which had included non-RVSM ATM operational matters related to the Bay of Bengal area. IATA acknowledged that significant improvements had been made to the routes and airspace associated with the main traffic flows form Asia to Europe through Afghanistan airspace as described above. Recognizing that the Kabul FIR had significant ATS and airspace constraints, there was however, sufficient capacity to meet the peak traffic demand especially with the availability of FL 280 and the extension of P628 linking it with V390. In spite of these capacity improvements, ground delays were still occurring at departure airports in the region. In IATA's view, the fundamental problem was air traffic control operating practices, which were not making the most efficient use of the flight levels and route system. The meeting noted that in the past, ground delays were significantly reduced when aircraft spread their flights over available EMARSSH routes. However, IATA pointed out that the routes were unequal in distance, hence it was difficult for operators to make full use of the route network and operate on longer routes, especially in the case of performance limited flights. IATA further commented that until an integrated ATFM Plan was put in place, significant delays and inefficiencies would continue to occur from time to time. Considerable effort involving many meetings by all parties had

been made to resolve these longstanding problems. But in spite of all our best efforts, greater operational efficiencies were required.

3.6 The meeting noted IATA's concerns and recognized that the Bay of Bengal ATM system lacked a cohesive plan and enhanced technology to allow for a system wide ATFMP. At the present stage of development, fine tuning the present procedures and making better use of existing ATM tools was still the best option. With the absence of Malaysia and Myanmar at this meeting, it was not possible to make any substantial progress. Thailand advised the meeting that following the SCM/RVSM/IND-PAK meeting where it was agreed to make more flexible use of FL300, which was a NO-PDC level reserved for crossing traffic on L301, this had been put into effect on Monday, 2 February 2004. It was too soon to assess how this was working and further discussion to optimize the use of FL300 was required. IATA reminded the meeting that in using FL300 for the parallel routes, crossing traffic should not be penalized, and should retain priority for the level in line with the No-PDC arrangement.

3.7 The meeting recalled the discussions at previous meetings regarding the No-PDC practices and recognized the limitations in rigidly adhering to this arrangement. Whilst operators were looking for maximum flexibility on flight level assignment, the meeting recognized there were still too many operational constraints and uncertainties in being able to predict aircraft actual departures times and adjust to the dynamics of aircraft in flight. The meeting agreed that a dynamic and flexible approach to ATM was desirable but this was difficult to achieve in practice in the present ATM environment. Whilst the No-PDC arrangement would remain in effect, States agreed to continue their coordination effort to achieve a more flexible assignment of flight levels.

3.8 The meeting recalled that much discussion had taken place concerning the use of a fixed Mach number (M0.84) on L759, which had been introduced to overcome the problem of optimizing the traffic flow with a faster aircraft following when applying 10 minute longitudinal separation using the Mach number technique. The issue of aircraft types such as the B777 and Airbus 330/340 having a maximum IAS of 330 kts (M0.83) at FL 280 and being restricted to fly M0.84 had not been resolved. The meeting noted that in recent years the demographics of aircraft types operating across the Bay of Bengal had shifted from the B747 to wide-bodied twin aircraft such as the B777 and A330/340, and this trend was expected to continue. In this regard, the option of de-linking FL 280 from the speed restriction should be considered.

3.9 Thailand advised the meeting that, in the absence of representation from Malaysia, the ATFMP could be discussed at the Aviation Consultative Committee Meeting between Thailand and Malaysia, date and venue to be notified. In this regard, Thailand would further coordinate with the committee members to arrange a side meeting with Singapore and IATA in order to work out a dynamic ATFMP for westbound departures from Kuala Lumpur/Singapore and Bangkok under the No-PDC procedures.

3.10 In light of the above, to resolve the issues of certain aircraft types (all B777 family of aircraft and Airbus 320, 330, 340 family) that had difficulty conforming to M0.83/0.84, IATA made the following proposal for consideration at the Phuket meeting:

a) KL/SIN to consider dispatching flights at FL 320 (with speed control at M0.83/0.84) and use FL 280 as a back-up level with no fixed speed restrictions;

b) use of the non-standard FL 310 for L759 over the Bay of Bengal for flights ex-KL/SIN up to the eastern seaboard of India, applicable for a specific time window to cater for the nightly rush hours, with FL 280 de-linked from the fixed speed requirement;

c) use of non-standard FL 310 (or FL 330 whichever was appropriate) for crossing routes over the Bay of Bengal for a specific time window to cater for the nightly rush hours and thus releasing FL 300 for use on all the parallel routes;

d) review the use of FL 340 as opposed to FL 300 as the No-PDC level on the crossing routes and thus releasing FL 300 for the parallel routes. Thailand would have to provide data to support either a change or no change scenario; and

e) use 320 kts in place of M0.83 for FL 280.

3.11 The meeting agreed that the ATS providers attending the Phuket meeting should explore all possible options to improve the efficiency of the flight level assignment arrangements.

3.12 The Secretariat reminded States that the next opportunity to follow-up on the Bay of Bengal operational matters would be at the RVSM 90-Day Review meeting to be held at Bangkok, Thailand on 8-12 March 2004. In this regard, States were reminded to provide that meeting with detailed traffic movement data for the Bay of Bengal routes for the period 19-25 January and 16-22 February 2004. Also, monthly large height deviation reports including NIL reports were required to be submitted to MAAR.

Agenda Item 4: Implementation of the new CNS/ATM systems in the Bay of Bengal airspace

4.1 The meeting noted the results of the FIT-BOB/3 meeting which preceded this meeting and was satisfied with the arrangements put in place to implement the ADS/CPDLC operational trial. However, the non-attendance of key States responsible for a significant portion of the Bay of Bengal airspace and beyond was highly disappointing, and adversely affected the outcome of the meeting.

4.2 The meeting noted that planning and implementation of other elements of the "Asia/Pacific Regional Plan for the New CNS/ATM Systems" such as the ATN, AIDC, automated AIS systems, GNSS and ADS-B were progressing slowly. States were urged to give appropriate priority to progressing their implementation planning, in particular in the area of data link communications and ATM automated systems.

4.3 In regard to ADS-B, the meeting was reminded that the ADS-B/TF/2 meeting would be held at Bangkok, Thailand on 22-26 March 2004.

Agenda Item 5: Develop a methodology for a coordinated implementation of ADS/CPDLC in the Bay of Bengal

5.1 The meeting noted that this matter was being pursued by the FIT-BOB and no further action was required under this agenda item, and it would be deleted from the agenda of future meetings.

Agenda Item 6: Any other business

6.1 The meeting was presented by the Secretariat with a proposed amendment to the *Regional Supplementary Procedures* (Doc 7030), MID/ASIA-RAC-9 to include under the *Area of applicability*, paragraph 6.5.1, the FIRs in the Bay of Bengal area and beyond where RVSM was implemented on 27 November 2003. This amendment had been overlooked and the SUPPs need to be updated. The FIRs concerned: Chennai, Colombo, Delhi, Dhaka, Karachi, Kathmandu, Kolkata, Lahore, Male, Mumbai and Yangon were included in the RVSM Implementation Plan approved by APANPIRG and the States concerned. This follow-up action was necessary to meet a procedural requirement to amend the SUPPs. The States present agreed to the proposal and the Regional Office would coordinate with the other States concerned to obtain their approval to submit the proposal. A draft proposed amendment is at **Appendix B.**

Agenda Item 7: Date and Venue for the BBACG/15 meeting

Venue for the Meeting

7.1 In considering the next meeting of BBACG/15, it was noted that the FIT-BOB/3 meeting had decided to hold their next meeting in six months to follow-up on the implementation of the ADS/CPDLC operational trial to commence on 19 February 2004. The meeting agreed to hold a combined meeting of BBACG/15 and FIT-BOB/4, as this would maximize efficient use of resources, and provide timely follow-up on important ATM operational matters. The meeting would be held at the ICAO Asia/Pacific Office, Bangkok at a date to be determined by the Regional Office.

Closing of the meeting

8.1 Mr. Moores in closing the meeting, thanked the participants for their excellent cooperation and concern to progress the matters raised. There had been some notable improvements and benefits arising from the concerted effort of all parties in recent times to address operational difficulties in the Bay of Bengal area. However, as highlighted at this meeting, there still remained a number of problem areas. The States concerned were urged to continue in the excellent spirit of cooperation so admirably demonstrated with the implementation of the EMARSSH and RVSM projects, to overcome the problems and realize the full benefits of these projects. Also, early implementation of the Asia/Pacific CNS/ATM Plan was highly desirable. It was regretted that not all of the States involved could attend this meeting, and they were encouraged to renew their effort to participate at these important ICAO meetings dealing with airspace efficiency and safety matters. The new ICAO conference facilities were a great asset, and the meeting highly praised the Royal Thai Government for its generous contribution to ICAO and the international civil aviation community.

BBACG/14 ? WORK PLAN

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~1. (ATS)~~	~~RNAV route N625~~	~~Mid-Term~~	~~India, Malaysia, Myanmar, Singapore, Thailand~~	~~Closed.~~	~~ded by implementation of SSH routes on 27 November~~
2. (ATS)	ATS route B203 (Amendment Proposal APAC 93/8-ATS)	Mid-Term	ICAO, Myanmar, China	ing	93/8 approved on 9/2/99 and o implement the route. ICAO dinate with States on entation progress.
3. (ATS)	CNS/ATM route Gawahati - Kunming ICAO will, advise China of the need for a CNS/ATM route Gawahati to Kunming, in addition to the Imphal - Kunming route, and request China to investigate the feasibility of such a route.	Long-Term	ICAO, China, India, Myanmar,	On-going Referred to ATS Route Review Task Force	India has approved implementation. ICAO to coordinate with other States on implementation progress .
4. (ATS)	Yangon/Chennai FIR boundary 3.4.1	Immediate	ICAO, India, Myanmar	On-going	ICAO to coordinate with States

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
5. (ATS)	Chennai/Colombo FIR boundary **3.4.2** 3.4.3 India and Sri Lanka will advise ICAO of the result of a bi-lateral meeting regarding: a) the withdrawal of delegation of airspace in the western portion of Chennai FIR; and b) the realignment of the FIR boundary between the Colombo and Chennai FIRs so that all the domestic airspace of Sri Lanka is encompassed by the Colombo FIR.	Immediate	ICAO, India, Sri Lanka	On-going	ICAO to coordinate with States for update.
6. (ATS)	Chiang Rai - PONUK - SAGAG route - A581 **3.4.4** a) Lao PDR will continue co-ordinating with China for implementation of the Chiang Rai - PONUK - SAGAG route; and b) ICAO will, recognizing difficulties in implementing this route segment, assist Lao PDR in co-ordination as required.	Mid-Term	Lao PDR, China and ICAO	On-going Referred to ATS Route Review Task Force .	Chiang Rai-PONUK sector implemented

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	Status	REMARKS
7. (ATS)	.ATS route B345, Beijing - Huairou - Huailai - Baotou - Yinchuan - Lanzhou - Yushu - Lhasa - Kathmandu – Delhi	Long-Term	China, Nepal and ICAO	~~Discussions to be held in the short term to progress implementation~~ ~~n~~ ~~Ongoing~~ Closed Referred to ATS Route Review Task Force	ICAO to coordinate with China and Nepal for implementation of the Baotou - Kathmandu route segment of B345.
8. (ATS)	ATS routes B579 and R209 ~~a) ICAO will co-ordinate with Malaysia for replacing the route indicator W525 of the Langkawi - Penang route with B579; and,~~ ~~b) ICAO will draft an amendment proposal for ANP, on behalf of Thailand and Malaysia, to include the new requirement for R209 and to delete the requirement for the Penang - Kuala Lumpur from B579.~~	~~Mid-Term~~	~~ICAO~~	~~ANP amendment APAC 98/2 ATS approved 9/3/99. States to implement the route~~	a) and b) completed Subject to ICAO confirmation with States that routes are implemented, the item closed.
9. (ATS)	ATS route G211 Penang - ANOKO .	Mid-Term	ICAO	On-going	ICAO to co-ordinate with Malaysia for implementation of ATS route G211

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
10. (ATS)	Contingency Planning a) ~~in the light of events which have occurred subsequent to the formulation of a Framework for Contingency Plans, agreed to at a Special ATS Coordination Meeting held at the ICAO Bangkok Office in June 1997, ICAO will revise the document where necessary and distribute to States for their comment; and,~~ b) each State in co-ordination with its neighbouring State, develop a contingency plan or plans for their airspace, taking into account the ICAO Framework for Contingency Plans mentioned in a) above.	Immediate	ICAO and all States	On going.	Action in a) completed.
11. (ATS)	Search and Rescue Agreements between States a) States, in conjunction with their neighbouring State (s), will develop Search and Rescue Agreements, for the purpose of providing a more efficient response to a search and rescue action and increase the possibility of a successful search and rescue mission; States conduct joint training and exercises, as appropriate, to maximize proficiency; b) a State, together with a neighbouring State, establish common SAR procedures, where practicable; and	Long-Term	All States and ICAO	On-going	Regional Office maintains a SAR register of agreements between States who are requested to notify the APAC Office when agreements are signed. A Seminar/SAREX planned for the Bay of Bengal area in Nov 2004. ~~An ICAO Seminar will be held in conjunction with the Hong Kong, China annual SAREX, 24-28 November~~

	c) a State, together with a neighbouring State, establish common SAR procedures, where practicable.				~~2003.~~
~~12. (ATS)~~	~~Revised ATS Route Structure - Southeast Asia - Middle East/Europe, South of the Himalayas~~ ~~EMARSSH routes implemented 28 November 2002~~	~~Long Term~~	~~ICAO, IATA and All States~~	~~Closed~~	Referred to the ATS Route Review Task Force for future developments.
~~13. (ATS)~~	~~Interim Revised Route Structure over the Bay of Bengal Area~~	~~Mid-Term (AIRAC 2 Nov 2000)~~	~~India, Myanmar and Thailand~~	~~Closed.~~	~~EMARSSH routes implemented 28 November 2002.~~
~~14. (ATS)~~	~~ATS route A473~~ ~~India will co-ordinate with Nepal for implementation of JALALABAD-NEPALGUNJ-KATHMANDU as A473 with necessary adjustment.~~	~~Immediate~~	~~India and Nepal~~	~~On-going~~ Closed	India unable to implement and Nepal has developed new route. ICAO to coordinate with States. Referred to the ATS Route Review Task Force
15. (ATS)	Update the meeting on ARR/TF route developments involving the Bay of Bengal area	BBACG/15	ICAO	On-going	
16. (ATS	Refer route requirements identified at BBACG/14 to ARR/TF	ARR/TF/1	ICAO	On-going	
17. (ATS)	Coordinate with India on ICAO SAREX/Seminar for the Bay of Bengal area	As soon as practicable	ICAO and India	On-going	SAREX/Seminar planned for November 2004
18. (ATS)	Coordinate holding an Inter-regional Coordination Meeting on Afghanistan airspace operations	As soon as practicable	ICAO ASIA/MID Offices	On-going	Meeting planned for late April 2004 tentatively hosted by Pakistan in Islamabad

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
19. (ATS)	Matters arising from BBACG/14 regarding ATM operations to be referred to the Thailand/Malaysia Aviation Consultation Committee Meeting in Phuket, Thailand	As scheduled	Malaysia and Thailand	On-going	IATA Mach Number proposal to be reviewed by the meeting
20. (ATS)	Provide traffic movement data on the Bay of Bengal routes to the RVSM 90-Day Review meeting	8 March 2004	All States	On-going	
21. (COM)	Myanmar's communication infrastructure problems to be bought to the attention of the Myanmar Government	Immediate	ICAO		Urgent action required to overcome deficiencies in the reliability and availability of ATS communications
22. (COM)	Kolkata/Dhaka ATS Direct Speech Circuits	Immediate	Bangladesh and India	On-going	AFTN 64 Kbps circuit implemented. ICAO to coordinate with Bangladesh to use circuit for DSC.
~~23. (COM)~~	~~Kolkata/Dhaka ATS Direct Speech Circuit IDD Hotline~~ ~~Bangladesh and India take urgent action to enhance the performance of the existing IDD service used for the Calcutta/Dhaka ATS direct speech communication by providing a dedicated telephone and automatic dialling capability – IDD Hotline at both ends.~~	~~Immediate~~	~~Bangladesh and India~~	~~Closed~~	~~Dhaka/Kolkata ATS DSC has been implemented with a dedicated telephone and automatic dialing capability.~~ ~~IDD Hotline at both ends since May 2003. The communications can be established within 15 seconds.~~

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
~~24. (COM)~~	~~Agartala/Dhaka and Dhaka/Guwahati ATS Direct Speech Communication~~ ~~That, Bangladesh and India provide IDD service at Agartala, Dhaka and Guwahati to support ATS direct speech communication until requirements justify for establishment of dedicated ATS direct speech circuits between Agartala/Dhaka and Dhaka/Guwahati.~~	~~Mid-Term~~	~~Bangladesh and India~~	~~Closed~~	~~IDD hotlines established between Agartala/Dhaka and Dhaka/Guwahati using dedicated telephones and automatic dialing capability and the links are operating satisfactorily.~~
25. (COM)	Kunming/Yangon ATS Direct Speech and AFTN Circuits Myanmar take action to reactivate the Kunming/Yangon ATS direct speech circuits and implement the Kunming/Yangon AFTN circuit using the existing VSAT link between China and Myanmar. Since China had expressed readiness to implement the circuit Myanmar to initiate coordination action with China for implementation without further delay. ICAO to co-ordinate with Myanmar for update.	Mid-Term	Myanmar	On-going	VSAT link between China and Myanmar reactivated and Kunming/Yangon ATS speech circuit also reactivated. AFTN circuit between Beijing and Yangon has been tested with satisfactory result. AFTN circuit will be in normal operations from/on 10 September 2003.

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
26. (COM)	VSAT Application to Upgrade AFS Communications ~~India pursue with their telecommunication regulatory authority, the possibility of VSAT application to upgrade AFTN and ATS direct speech circuits with neighboring countries availing the service of the Indian VSAT service providers or AEROTHAI or any other VSAT service providers.~~ ICAO to coordinate on establishment of services between India and adjacent States.	Mid-Term	India	On-going	~~Ground/ground AFS communications are established and improved with International Private Leased Circuits (IPLC).~~ Indian VSAT service provider agreement in place with other service providers and action in-hand to provide VSAT links with neighbouring States.
27. (COM)	Implementation of Noted Shortcomings and Deficiencies Reliable communications between Kolkata-Dhaka.	Long-Term	Bangladesh and India	~~On-going~~ Closed	Reliable air/ground VHF. Reliable ground/ground data circuit. 64 kbps direct circuit implemented as primary channel. Reliable backup circuit via Mumbai and Bangkok in operation as secondary circuit (previous primary circuit). Reliable speech circuit. IDD hotline established and working satisfactorily. ~~AFTN communications established and back-up system being installed to be~~

					~~completed by November 2003..~~
	ACTION ITEM	**TIME FRAME**	**RESPONSIBLE PARTY**	**Status**	**REMARKS**
28. (COM)	Bangladesh ER VHF desh takes urgent action to implement an ER VHF station to provide adequate VHF coverage in the southern part of Dhaka FIR by June 2001.	Mid-Term	Bangladesh	On-going	Bangladesh installing one RCAG station in southern Dhaka FIR by end of 2003. To expedite implementation of RCAG stations an interim agreement made for implementation of one RCAG site in southern part of Dhaka FIR. Technical arrangement being finalized with service provider. ICAO to obtain update.
29. (COM)	~~Reliable VHF communication~~ Unreliable communications infrastructure.	Immediate	Myanmar	On-going	Further action required by Myanmar to improve reliability of VHF communications in the Yangon FIR. ICAO to coordinate and seek urgent action.
30. (Admin)	Determine date for the FIT-BOB/4 and BBACG/15 joint meeting and inform participants.	As soon as practicable	ICAO	On-going	Meeting to be arranged in about 6 months
31. (Admin)	Progress MID/ASIA SUPP amendment on the FIRs in the Bay of Bengal area where RVSM was implemented on 27 November 2003	As soon as practicable	ICAO	On-going	Coordinate agreement for the proposal with States not present at BBACG/14

DRAFT PROPOSAL FOR AMENDMENT OF
REGIONAL SUPPLEMENTARY PROCEDURES (DOC 7030/4)
(Serial No. APAC-S 04/XX-MID/ASIA/PAC RAC)

a) **Regional Supplementary Procedures, Doc 7030/4**: MID/ASIA/RAC

b) **Proposing States**: Bangladesh, India, Maldives, Myanmar, Nepal, Pakistan, Sri Lanka

c) **Proposed amendment**: Editorial note: Amendments are arranged to show "deleted text" using strikeout (~~text to be deleted~~), and "added text" with grey shading (text to be inserted).

On page MID/ASIA/RAC-9 dated 20/2/02 **amend** Section 6.5 (Vertical separation) as follows:

6.5 Vertical Separation

The minimum vertical separation that shall be applied between FL 290 and FL 410 inclusive is 300 m (1 000 ft)

6.5.1 *Area of applicability*

6.5.1.1 The reduced vertical separation minimum (RVSM) shall be applied for flights within the *Amman, Auckland Oceanic, *Bahrain, Bali, Bangkok, *Beirut Brisbane, *Cairo, Chennai, Colombo, Damascus, Delhi, Dhaka, *Emirates, Hanoi, Ho Chi Minh, Hong Kong, Honiara, Jakarta, Jeddah, Karachi, Kathmandu, Kolkata, Kota Kinabalu, Kuala Lumpur, *Kuwait, Lahore, Male, Manila, Melbourne, Mumbai, *Muscat, Naha, Nauru, New Zealand, Phnom Penh, Port Moresby, *Sana'a, Singapore, Taibei, *Teheran, Tokyo, Ujung Pandang,, Vientiane and Yangon flight information regions (FIRs).

d) **Proposer's reason for amendment:**

This amendment proposal updates the MID/ASIA Regional Supplementary Procedures to include the area of applicability for the MID/Asia reduced vertical separation minimum (RVSM) airspace and transition airspace.

e) **Proposed implementation date of the amendment:**

On approval by Council

d) **The proposal circulated to the following States and International Organizations**:

Afghanistan
Argentina
Australia
Austria
Bahrain
Bangladesh
Belgium
Bhutan
Brazil
Brunei Darussalam
Cambodia
Canada
Chile
China
Cook Islands
Democratic People's Republic of Korea
Denmark
Egypt
Ethiopia
Federated States of Micronesia
Fiji
Finland
France
Germany
Hong Kong, China
Hungary
India
Indonesia
Iran, Islamic Republic of
Iraq
Israel
Italy
Japan
Jordan
Kenya
Kiribati
Kuwait
Lao People's Democratic Republic
Lebanon
Libyan Arab Jamahiriya
Luxembourg
Madagascar
Malaysia
Maldives
Marshall Islands
Mauritius
Mexico
Mongolia
Myanmar
Nauru
Nepal
Netherlands, Kingdom of the
New Zealand
Norway
Oman
Pakistan
Palau
Papua New Guinea
Peru
Philippines
Poland
Portugal
Qatar
Republic of Korea
Russian Federation
Samoa
Saudi Arabia
Seychelles
Singapore
Solomon Islands
South Africa
Spain
Sri Lanka
Sweden
Switzerland
Syrian Arab Republic
Thailand
Tonga
Turkey
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States
Vanuatu
Viet Nam
Yemen
IATA
IFALPA
IFATCA

g) **Secretariat comments:**

The proposal for amendment has been developed in close coordination with the Asia/Pacific RVSM implementation programme and all States concerned. It is necessary to update the Regional Supplementary Procedures to include the FIRS where RVSM was implemented on 27 November 2003.

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FIT-BOB/3 – LIST OF PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	-	Provisional Agenda for FIT-BOB/3	Secretariat
2	4	Report of the Special ATS Coordination Meeting on the Central Reporting Agency Funding for the Bay of Bengal (SCM/CRA)	Secretariat
3	3	Pacific Operations Manual, Version 2.1, 10 October 2003	Secretariat
4	5	Establishment of the Operational Plan for ADS/CPDLC Implementation in the Bay of Bengal	Secretariat
5	2	FIT-BOB TOR and Work Plan	Secretariat
6	7	MAAR in supporting RMA services for the reduction of longitudinal separation using ADS and CPDLC in Asia region	Thailand

INFORMATION PAPER

IP/No.	Agenda Item	Subject	Presented by
1	3	Implementation of ADS/CPDLC services in Jakarta Flight Information Region	Indonesia

BBACG/14 – LIST OF PAPERS

WORKING PAPERS

WP/No.	Agenda Item	Subject	Presented by
1	-	Provisional Agenda for BBACG/14	Secretariat
2	2	Proposal for Amendment of *Regional Supplementary Procedures* (Doc 7030/4 – MID/ASIA/RAC, Part 1)	Secretariat
3	3	Action Plans	Secretariat
4	3	Report of EMARSSH One-Year Review Meeting	Secretariat
