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**INTERNATIONAL CIVIL AVIATION ORGANIZATION  
ASIA AND PACIFIC OFFICE**



**REPORT OF THE SPECIAL ATS COORDINATION MEETING ON THE  
CENTRAL REPORTING AGENCY FUNDING FOR THE BAY OF BENGAL  
(SCM/CRA)**

BANGKOK, THAILAND

8 – 10 DECEMBER 2003

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

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1.1           **Introduction**

1.1.1           The Special ATS Coordination Meeting on the Central Reporting Agency Funding for the Bay of Bengal (SCM/CRA) was held at the ICAO Asia/Pacific Regional Office, Bangkok, Thailand from 8 to 10 December 2003.

1.2           **Attendance**

1.2.1           The meeting was attended by 19 participants from Bangladesh, India, Malaysia, Singapore, Thailand and IATA. A complete list of participants is at **Appendix A**.

1.3           **Officers and Secretariat**

1.3.1           Mr. David Moores, Regional Officer ATM, ICAO Asia and Pacific Office, Bangkok served as the Moderator and Secretary for the meeting. He was assisted by Dr. Paul Hooper, Regional Officer AT, ICAO Asia and Pacific Office.

1.4           **Opening of the Meeting**

1.4.1           Mr. David Moores, on behalf of Mr. Lalit B. Shah, Regional Director, ICAO Asia and Pacific Regional Office welcomed all participants to the meeting. He stressed the importance for this meeting to reach agreement on a funding arrangement for the establishment of the Central Reporting Agency (CRA) essential for the commencement of the ADS/CDLC operational trial being planned by the FANS Implementation Team for the Bay of Bengal area (FIT-BOB) on 19 February 2004. The implementation of ADS/CPDLC is in line with the *Asia Pacific Regional Plan for the New CNS/ATM Systems* and had been endorsed by the Thirteenth Meeting of the Bay of Bengal ATS Coordination Group (BBACG/13) in September 2003. All stakeholders involved had recognized the importance of improving the air traffic management over the Bay of Bengal by implementing ADS/CPDLC and the funding of the CRA remained the main obstacle to overcome. A successful outcome and recommendations of this meeting would make a significant contribution to advancing the ADS/CPDLC implementation process for the Bay of Bengal area.

1.5           **Documentation and Working Language**

1.5.1           The working language of the meeting and all documentation was in English.

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**Agenda Item 1: Adoption of Provisional Agenda**

1.1 The meeting reviewed the provisional agenda and adopted it as the agenda for the meeting.

- Agenda Item 1: Adoption of Provisional Agenda
- Agenda Item 2: Consider and identify a means to fund CRA
- Agenda Item 3: Financial arrangements
- Agenda Item 4: Any Other Business

1.2 The meeting noted that the SCM/CRA reports to the Bay of Bengal ATS Coordination Group (BBACG) and the FANS Implementation Team for the Bay of Bengal (FIT-BOB), which set up this meeting to consider the funding issues related to the Central Reporting Agency (CRA).

**Agenda Item 2: Consider and identify a means to fund CRA**

2.1 The meeting reviewed the outcomes of the BBACG/13 and the FAT-BOB/2 meetings held at the ICAO Asia/Pacific Regional Office, Bangkok, Thailand on 8/12 September 2003, regarding the need to establish a CRA to evaluate the performance of the airborne and ground ADS/CPDLC systems for the operational trial to be carried out in the Bay of Bengal area. In this regard, FAT-BOB/2 and BBACG/13 identified the need for the CRA to be funded and noted that implementation of the ADS and CPDLC operational trial could not be progressed as planned on 19 February 2004 until this matter was resolved.

2.2 The meeting noted that the BBACG/13 meeting had changed the name of the FANS Action Team for the Bay of Bengal (FAT-BOB) to the FANS Implementation Team (FIT) for the Bay of Bengal (FIT-BOB) to better reflect the primary objective to develop and implement the operational plan for ADS and CPDLC.

ICAO requirements for airspace safety management

2.3 The meeting recalled that Annex 11, Chapter 2, 2.26 *inter alia* required States to implement systematic and appropriate ATS safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces. Further, Annex 11, paragraph 2.26.5 requires that any significant safety-related change to the ATC system, including implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. Detailed provisions on safety management programmes, implementation of reduced separation minima and the application of ADS and CPDLC systems are contained in the *Procedures for the Air Navigation Services* <sup>3/4</sup> *Air Traffic Management* (PANS-ATM, Doc 4444).

Need to establish a Central Reporting Agency

2.4 The BBACG/13 recognized that the establishment of a CRA was critical to enabling States to implement operational ADS and CPDLC systems. The CRA performs the essential technical analysis of the performance of these systems and undertakes the investigation of system failures and other technical malfunctions. This was essential to trace the cause of problems whether in the aircraft or ground systems, and to initiate remedial action by the responsible parties. In this regard, the tasks performed by a CRA were highly specialized and required test equipment and simulation capability that was not readily available. Also, it was important that expertise was continuously available to

support the FIT-BOB programme. The meeting noted that Boeing who provided the CRA services for the Pacific Region, indicated to BBACG/13 that they would be willing to provide the CRA services for FIT-BOB to support the operational trial and subsequently for States in the Bay of Bengal area to implement ADS and CPDLC services. However, to undertake this work, it would be necessary for Boeing's cost to provide CRA services to be funded.

2.5 The meeting recognized that, as the CRA contributed to the safety requirements for implementation and ongoing operation of ADS and CPDLC services by the ATS providers, the setting up and operation of the CRA for the Bay of Bengal area was the responsibility of the States participating in the FIT-BOB. The meeting further recognized that ADS and CPDLC operations were safety critical, and the performance of the airborne and ground systems, and their potential contribution to operational risk, must be thoroughly evaluated by the CRA prior to the commencement of the ATC operational phase. In addition, airspace safety monitoring and safety assessments would need to be carried out by a regional monitoring agency to be established by FIT-BOB.

#### Establishment of operational trial

2.6 The FAT-BOB/2 agreed to commence an operational trial of the airborne and ground ADS and CPDLC systems performance in the Bay of Bengal area on AIRAC date 19 February 2004. This was endorsed by BBACG/13 and was in line with the APANPIRG implementation plan for CNS/ATM systems in the Asia/Pacific Region. As a requirement to participate in the trial, the meeting agreed that the ATS providers must have ADS/CPDLC systems that could be evaluated with the objective of bringing these systems into full operational use at the end of the trial period.

#### Models of international cooperation for provision of air navigation services

2.7 The meeting considered various models available for States to cooperate with each other to provide shared, multinational infrastructure and services. The establishment and operation of a CRA for the Bay of Bengal area exemplified a CNS/ATM systems element that required international cooperation to ensure provision of a multinational service. In some cases, it would be possible to make progress on the simple basis of a coordination and harmonization process initiated as a sub-regional activity between a limited number of States. But in those cases where a formal mechanism needed to be established, the broad options were:

- a) International Operating Agency;
- b) Joint Charges Collection Agency; or
- c) ICAO Joint Financing Agreement.

2.8 The meeting noted the main characteristics of the funding arrangements above:

- a) an international operating agency was a separate entity assigned the task of providing air navigation services, principally route facilities and services, within a defined area on behalf of two or more sovereign States;
- b) a joint charges collection agency was a less encompassing means for States to benefit from international cooperation. A joint collections agency collects route air navigation service charges on behalf of all of the participating States, including those that were over-flown; and
- c) Joint Financing (JF) involved two or more States agreeing to share in the costs of implementing and operating air navigation facilities and services for international air transport operations. Several agreements for the JF of air

navigation facilities and services were administered by ICAO on behalf of the contracting governments concerned.

2.9 The meeting noted that the traditional approach to funding air navigation services has been for each State to calculate, bill and collect itself such air navigation services charges as it might levy. However, the establishment and operation of a CRA for the Bay of Bengal FIRs was an example of a service requiring cooperation among several States. It was further recognized that each of the established models had relative advantages and disadvantages considering the scale and scope of the proposed CRA, but no one model provided a solution of its own. Accordingly, the meeting set about developing a tailor-made arrangement to be implemented on at least a trial basis. The meeting agreed that the trial should be for one year, at which time, the FIT-BOB should review the arrangement.

#### IATA proposal to collect funds for the CRA

2.10 IATA informed the meeting that in the interest of making progress on ADS/CPDLC implementation, which had already been delayed, it was prepared to consider collecting a levy directly from the airlines to fund the CRA services. This arrangement would be in line with the recommendation made by the Asia Pacific Airspace Safety Monitoring Task Force (APASM/TF) set up by APANPIRG/12 (August 2001, Decision 12/44 refers) to establish a regional airspace safety monitoring agency. In its plan for the establishment of RASMAG endorsed by APANPIRG/14 (August 2003, Decision 14/49 refers), the APASM/TF recognized that the cost of many of the safety monitoring and assessment services would need to be recovered either directly or indirectly from the users of the airspace in accordance with ICAO provisions. It was agreed that in regard to collecting funding by direct payment, the preferred collection mechanism would be through a levy on the airlines to be collected by IATA.

2.12 The meeting expressed its appreciation to IATA and agreed that this would be the simplest and most efficient way to obtain funding for the CRA, and would not involve any cost or participation by States in the collection process.

### **Agenda Item 3: Financial arrangements**

3.1 The meeting having reviewed the options in detail under Agenda Item 2, agreed that the model that best met the needs of obtaining funds for the CRA was based on the Joint Financing arrangements. 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. Details of this arrangement are contained in Appendix B to the report.

3.2 The meeting agreed that the funding arrangement should meet the immediate need to establish the CRA and operational trial of the ADS/CPDLC systems implementation. The meeting noted that the success of the operational trial would require the commitment of all States involved in the Bay of Bengal area with ADS and CPDLC systems to participate in the operational trial, and to take appropriate follow-up action on the performance information provided by the CRA. The meeting further 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 would need to undertake a detailed review of the participating States and the extent of their commitment to implement ADS/CPDLC services.

3.3 In light of the foregoing, the meeting formulated the following recommendation:

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 arrangements 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.

#### **Agenda Item 4: Any Other Business**

4.1 A question was raised as to whether operators in the Bay of Bengal area who were not participating in the operational trial would be charged for operating in the trial airspace. IATA advised the meeting that there were many examples of States charging all operators in an airspace when new services were introduced, which all operators were not able to use. In the case of the ADS/CPDLC operational trial in the Bay of Bengal, experience has shown elsewhere, that in airspace where ADS/CPDLC was introduced there were substantial benefits to all airspace users. For example, the reduction of HF radio transmissions by using ADS automatic position reporting and CPDLC for direct controller-pilot communications greatly reduced HF frequency congestion, the reduction in horizontal separation made possible by ADS and CPDLC improved airspace capacity and ATC flexibility, and ATC situational awareness was improved for the overall traffic situation. In this regard, the meeting recognized that ADS/CPDLC operations benefited all operators in the airspace, and it would be appropriate for all users of the airspace to pay the costs associated with the operational trial. Likewise, all service providers involved would derive benefits and they should be encouraged to contribute to the cost of the operational trial.

4.2 IATA commented that FIT-BOB would need to clearly define the airspace where the operational trial would take place so that operators would be aware of the area where charges would apply.

4.3 In regard to the distribution of the report of this meeting, the Secretariat advised that the report would be attached to the invitation to be sent to States and international organizations to attend the next FIT-BOB/3 and BBACG/14 meetings scheduled to be held on 2-6 February 2004 at the Asia and Pacific Regional Office, Bangkok. The invitation would also draw participants' attention

to the need to attend the meeting prepared to make a decision on the budget and funding arrangements for the CRA. The invitation should be issued next week.

**5. Closing of the Meeting**

5.1 In closing the meeting, Mr. Moores thanked the participants for their cooperation in reaching agreement to recommend a funding arrangement for consideration by FIT-BOB.

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SCM/CRA  
Appendix A to the Report

**LIST OF PARTICIPANTS**

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**PROPOSED FINANCING ARRANGEMENT FOR A CENTRAL REPORTING AGENCY FOR  
THE IMPLEMENTATION OF ADS AND CPDLC AIR TRAFFIC CONTROL SERVICES IN THE  
BAY OF BENGAL AREA**

**1. Objectives and Scope**

1.1 The overall objective is to implement ADS and CPDLC services by States for ATC operations in the Bay of Bengal Area in line with the *Asia Pacific Regional Plan for the New CNS/ATM Systems*.

1.2 As a step to achieve this objective, it is necessary to ensure that a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. To this end, BBACG/13 recognized that the establishment of a Central Reporting Agency (CRA) was critical to enabling States to implement operational ADS and CPDLC systems. It is therefore necessary to have the CRA to perform the essential technical analysis of the performance of these systems and to undertake the investigation of system failures and other technical malfunctions. This is essential to trace the cause of any problems whether in the aircraft or ground systems and to initiate remedial action by the responsible parties.

1.3 This clearly requires a commitment by States, but also requires highly specialized test equipment and simulation capability that is not readily available. Boeing provides a CRA service for the Pacific Region and indicated it would be willing to provide CRA services to FIT-BOB to support States in the Bay of Bengal area implement ADS and CPDLC systems. The proposed arrangement addresses the need to finance this service.

**2. General Principles**

2.1 Various options exist for financing air navigation services on a cooperative basis provided by two or more States, including informal agreements, international operating agencies, joint collections agencies and joint financing agreements. Each has its relative strengths and weaknesses as a model for financing a CRA. At the same time, no single existing model provides a unique match to the requirements of the CRA and it is necessary to develop a tailor-made arrangement incorporating the best features of the existing models, particularly the informal agreements because of their simplicity and flexibility and the joint financing agreements.

2.2 Accordingly, it is proposed that the key features to incorporate in the arrangement include:

- i. States, under the auspices of ICAO (FIT-BOB), should maintain overall control and oversight of the arrangement;
- ii. Efficiency be achieved by assigning tasks to the parties most suited to carry out the task (efficient division of labour)
- iii. The best possible methods should be used in the analysis and reporting;
- iv. The task should be performed at the lowest cost;
- v. Effectiveness as reflected in achievement of the objectives;
- vi. The provision of the service should be sustainable for the duration of the trials and as long as is required by FIT-BOB;
- vii. The arrangement must be simple and workable;

- viii. The arrangement should be capable of being adapted to changing circumstances; and
- ix. The system should be fair to all participating parties.

### **3. Assignment of Responsibilities**

3.1 The States maintain primary oversight and control over the arrangement. Through FIT-BOB they specify the requirements of the Central Reporting Agency (CRA) and they arrange for funding the CRA. The reports of the CRA come directly to FIT-BOB and these are provided to the States concerned and to other relevant parties (users and related service operators).

3.2 On a trial basis of one year, it is recommended that FIT-BOB arranges for the establishment of a CRA, to accept IATA's offer to collect funds for the CRA, to seek additional support from other interested parties, and to keep the funding situation under review.

3.3 To initiate the trial, FIT-BOB should specify the tasks to be performed and the reports it expects to receive. In consultation with the CRA service provider, the participating States, service providers, and the users, FIT-BOB should develop a budget for the first year. FIT-BOB should then provide the specifications to IATA and request it to establish an arrangement for the provision of CRA services subject to the available funds. The CRA service provider provides its reports to FIT-BOB.

3.4 FIT-BOB distributes the reports to each of the States concerned and to other relevant parties. After a period of nine months, FIT-BOB should review the arrangement and assess its success. A decision should be made to continue the arrangement on the same basis into the second year at least two months prior to the end of the twelve month trial.

