



International Civil Aviation Organization

The Combined Sixth Meeting of the FANS Implementation Team, Bay of Bengal (FIT-BOB/6) and the Third Meeting of the FANS Implementation Team, South- East Asia (FIT-SEA/3)

Bangkok, Thailand, 22 – 25 November 2005

Agenda Item 2: Review Bay of Bengal ADS/CPDLC Operational Trial

UPDATE OF ADS/CPDLC OPERATIONAL TRIALS

(Presented by India)

SUMMARY

The purpose of this working paper is to give an update on the present status of the operational trials of ADS/CPDLC in Indian FIRs.

1. Introduction

1.1 India started its ATS automation project in 1991-92 as a joint venture between equipment supplier Electronic Corporation of India Ltd (ECIL) and the Airports Authority of India (AAI). The system was upgraded to provide a total FDPS solution for all ATS units at Chennai, Kolkatta, and at four other major Area Control Centres viz. Trivandrum, Varanasi, Ahamadabad and Nagpur. ADS/CPDLC is in operation at Chennai and Kolkota since 2001.

2. Current Status

2.1 India has been participating in the ADS/CPDLC operational trials from 19th February 2004. 19 airlines are participating in the trial operations. The trial activities served 13 routes in the Bay of Bengal portions of the Chennai and Kolkata FIRs, including P574, N571, N563, P762, L645, P628, N877, L759, M770, L507, L301, N895 and P646.

2.2 ADS services are available round the clock at Kolkatta and Chennai (from 12th September 2005). India has adopted the FANS 1/A Operations Manual as the operational procedures applicable to the trial.

2.3 Sampling during September/October2005 had indicated that the daily number of uplink/downlink messages at Chennai had varied from 500 to 2100 per day and 500 to 1000 at Kolkata during the period. CPDLC messages averaged about 200 per day, because our NOTAM on ADS/CPDLC requires no position report on CPDLC or HF, once an ADS contract had been established.

2.4 AS desired by IATA during the earlier BOB FIT meetings, India is changing AFN Logon address of Chennai and Kolkatta CPDLC to VOMF and VECF respectively with effect from 24th November 2005.

2.5 Chennai participated in the CPDLC trials conducted by Airbus Company, France from the test bench of A380 equipment. The message exchange was satisfactory.

3. Problem Reports

3.1 India would very much appreciate assistance from a CRA in order to analyse and correct the problem reports received so far during the trial. With reference to the issue of authorizing IATA to collect a nominal charge from the airlines as operating cost for CRA, IATA has been requested to give the break up of charges in order to obtain approval from Government of India. Reply from IATA is still awaited.

3.2 Total number of problem reports has reduced considerably. 5 reports have been logged from April 2005 to September 2005 at Chennai and similar number at Kolkatta.

3.3 In October 2005, Software up-gradation of ground systems at Chennai, followed by receipt of messages from SITA with different Flight Identifiers caused some operational problems and the number of problem reports had increased to 35 and hence the system went on NOTAM for major period.

3.4 Transfer of Control for CPDLC between Yangoon and Kolkata is not taking place since LOA is silent on ADS/CPDLC transfers.

4. Problem Analysis

4.1 The problem reports were mostly classified as:

- related to ground system problems;
- related to an inability to receive downlink or send uplink even though the link-Status was normal; and
- related to avionics
- Taking long time to log on some occasions
- SITA LINK failure (Frequent and unplanned)

4.1.1 Other problem reports were categorized as miscellaneous and include error code received in contact advisory, unsuccessful connection, no message exchange in spite of CPDLC contact etc.

4.2 All problem reports are being forwarded to CRA (bradly.d.cornell@boeing.com) for record and analysis.

4.3 From 28th September until 10th October 2005, the system at Chennai faced a peculiar problem due to the dual logging instructions. Information was received that both log-on “VOMM” and “VOMF” would remain valid for one month. But aircraft were unable to log-on as “VOMF”. Some aircraft logged-on but could not continue their connectivity.

4.4 Recently, ADS/CPDLC systems have been facing problems with respect to MAS messages. The messages were received with padding of zeroes in the FI in some messages and without padding in some of them.

5. Problem resolution

5.1 With reference to 4.2, after coordination with service provider SITA, it was decided to continue with “VOMM” until 24th November 2005 (date promulgated for change).

5.2 With reference to 4.3, after interaction with SITA, it was decided to modify the application in the ground system to remove the anomaly. (This is a temporary measure.) The NOTAM regarding non-availability of ADS/CPDLC at Chennai was withdrawn from 11th November 2005, after effecting the required modifications to the ground system. Presently the system is working satisfactorily.

5.3 While revising LOAs between ACCs/FICs provision for ADS/CPDLC transfers should also be incorporated.

6. Future System Enhancements

6.1 An enhancement planned for the system will enable the automatic relay of MET data contained in ADS reports directly to the MET department via an automatic message switching system.

6.2 Mumbai and Delhi Automation systems are now being armed with ADS/CPDLC component to handle ADS/CPDLC service over Arabian Sea. Installation is complete and system will be ready for trial operations from January 2006.

7. Conclusion

7.1 Trials have been proceeding positively, with confidence increasing amongst pilots and controllers. Unfortunately the number of participating airlines has not increased significantly.

7.2 As far as reduction of longitudinal separation minima is concerned, it can be applied only when a simultaneous coordinated implementation of reduced separation applications by all participating ATS service providers in the Bay of Bengal is taken up.

7.3 India would prefer to work strictly with one CRA for both the Bay of Bengal and the Arabian Sea.

7.4 Modification of ground system to solve network related problem was a temporary one. However it needs to be assured that introduction of different service providers should in no way affect the delivery of messages.

8. Action by the Meeting

8.1 The meeting is invited to:

- a. Review the outcomes of the operational trials and agree upon a common date for issue of AIP supplement pending establishment of CRA.
- b. look into the network service related problems.

.....