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<b>03 / 2008</b>
<b>31 JAN</b>

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## **ADS CPDLC OPERATIONAL TRIAL IN BAY OF BENGAL AREA WITHIN KUALA LUMPUR FIR**

### **1. INTRODUCTION**

- 1.1 Malaysia is in the process of installing an Automatic Dependent Surveillance and Controller Pilot Data Link Communication (ADS/CPDLC) system at the Kuala Lumpur Area Control Centre (ACC).
- 1.2 Automatic Dependent Surveillance and Controller Pilot Data Link Communication (ADS/CPDLC) data link applications will be used to provide services to FANS 1/A equipped aircrafts beyond the range of existing radar and VHF voice communications in the Bay of Bengal area within Kuala Lumpur FIR.
- 1.3 The purpose of the operational trials is to familiarise controllers with ADS/CPDLC applications on specific routes in Kuala Lumpur FIR and to resolve any problems arising.

### **2. Implementation of Operational Trials**

- 2.1 The operational trials are targeted to take effect from 0001UTC on 15 April 2008.
- 2.2 ADS/CPDLC data link services are available to FANS 1/A equipped aircraft (which are compliant to RCTA DO-258A or ED EUROCAE 100A) on Airways P628, L510, L645, N571, B466, P574 and A327 in the Kuala Lumpur FIR daily on a 24 hour basis.
- 2.3 As Chennai ACC is currently providing data link services within the Chennai FIR, close coordination between Kuala Lumpur and Chennai ACC for address forwarding function is necessary for a seamless ADS/CPDLC services within the two FIRs.
- 2.4 The introduction of data link services does not affect current procedures for non-data link equipped aircraft.

### **3. LOGON Procedures**

- 3.1 The AFN LOGON address for the Kuala Lumpur FIR is WMFC.

- 3.2 To avoid automatic rejection of the LOGON, the flight identification number used by the pilot in the LOGON process must be identical to the flight identification number filed in the flight plan.
- 3.3 A LOGON must be received from the aircraft before any data link connections can be initiated by the ground system. This is achieved via the ATS facility notification (AFN) LOGON process to be initiated by the pilot in accordance with company procedures.
- 3.4 Data link capable aircraft inbound to Kuala Lumpur FIR are required to manually LOGON onto WMFC 10 minutes prior to the estimate time of entering Kuala Lumpur FIR. West bound aircraft within Kuala Lumpur FIR entering Bay of Bengal Area are required to manually LOGON onto WMFC at reporting point VAMPI (N571) or GIVAL (P628 and L510).
- 3.5 Pilots who are unable to establish a data link connection are to inform ATC on VHF or HF RTF,

#### **4. Application of ADS**

- 4.1 ADS Periodic contracts will be established automatically on receipt of a LOGON.
- 4.2 The Periodic reporting rate is at the current position reports procedures (reporting points).
- 4.3 ADS contracts will be terminated automatically at a system parameter time after the aircraft has left the Kuala Lumpur FIR.

#### **5. Application of CPDLC**

- 5.1 Aircraft that have established data link communications may transmit their position reports by CPDLC instead of VHF or HF RTF. When using CPDLC, the primary and secondary HF voice frequencies will be used as back-up communications medium.
- 5.2 To ensure the correct synchronisation of messages, controller/pilot dialogues opened by CPDLC must be closed by CPDLC. Controller/pilot dialogues opened by voice must be closed by voice.
- 5.3 The down link response "WILCO" indicates that the pilot accepts the full terms of the whole uplink message.
- 5.4 A down link response "AFFIRM" is not an acceptable acknowledgement or reply to a clearance issued via CPDLC.
- 5.5 To avoid ambiguity in message handling and response, a CPDLC down link message should not contain more than one clearance request.
- 5.6 Standard pre-formatted message elements must be used whenever possible.
- 5.7 Free text messages should be used only when an appropriate pre-formatted message element does not exist or to supplement the pre-formatted message element. The use of free text should be kept to a minimum.

5.8 When CPDLC connection is established, pilots will be instructed to transfer from voice to CPDLC. The phraseology used is:

**TRANSFER TO LUMPUR CONTROL ON DATA LINK at (Position);  
MONITOR (HF Frequency Primary/Secondary)**

5.9 Pilots are also required to make AIREPS at compulsory reporting points using CPDLC regardless of ADS connection.

5.10 CPDLC connections will be terminated at the FIR boundary position or when entering radar coverage.

5.11 The **CONTACT (unit name) (frequency)** message will be sent as soon as possible after receipt of the WILCO response to the CONTACT message.

**6. Data Link Failure.**

6.1 When CPDLC connection cannot be established successfully, the Pilot should select "ATC Com Off" and then initiate another AFN logon. If still unable to establish CPDLC connection then the Pilot must immediately establish communication on the appropriate voice frequency.

6.2 When the Pilot recognised a failure of CPDLC connection then the Pilot must immediately establish communication on the appropriate voice frequency.

6.3 In the event of an unexpected CPDLC shutdown, the controller will immediately advise all data link connected aircraft of the failure by voice. When the system return to an operational state, a new AFN LOGON is required.

**7. Flight Plan Notification**

7.1 Flight Planning to utilise data link communications must annotate their ICAO flight plan as follows:

- a) Item 10 – Insert the designator "J" to indicate data link capability
- b) Item 10 – Insert the designator "D" to indicate ADS-C capability
- c) Item 18 – Use the prefix "DAT/" followed by one or more letters as follows:
  - i) DAT/S for Satellite data link
  - ii) DAT/V for VHF data link
  - iii) DAT/H for HF data link
  - iv) DAT/M for SSR Mode S data link
- d) Aircraft registration must be inserted in item 18 as the ground system uses the information during AFN LOGON.

**8. Problems Reports**

- 8.1 Pilots or operators who encounter problems with data link service shall report to the Air Traffic Services division at the following address:

**Director  
Air Traffic Service Division  
Department of Civil Aviation  
27 Persiaran Perdana  
Level 4, Block Podium B  
Precinct 4  
62618 PUTRAJAYA  
MALAYSIA**

**Tel: + 60 3 8871 4000  
Fax: + 60 3 8881 0530  
E-mail: [adscpdlc@dca.gov.my](mailto:adscpdlc@dca.gov.my)**

**DATO' AZHARUDDIN ABDUL RAHMAN  
Director-General  
Department of Civil Aviation  
Malaysia**