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FIT-SEA/11  
Appendix F to the Report  
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**CIVIL AVIATION AUTHORITY OF THE PHILIPPINES**  
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**AIP Supplement**

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**ADS CPDLC TRIAL OPERATIONS TRIAL (PHASE 2-A)**  
**IN THE MANILA FIR**

**1. INTRODUCTION**

- 1.1.** Manila Area Control Center is currently conducting a limited time ADS/CPDLC Trial Operations since November 8, 2010 over the East Oceanic airspace of the Manila FIR. It involves the air routes A582, A590, M501 and G467.
- 1.2.** From November 8, 2010 to February 11, 2011 the Phase 1A of the trial operations was conducted. The trial period was from 0300 UTC to 0900 UTC. Four airlines participated in the data link trial. HF was the primary means of communication while CPDLC was secondary.
- 1.3.** From February 14, 2011 up to the present, Phase 1B trial operations is ongoing. The trial period is from 0100utc to 1300utc. Seven airlines are taking part in the trial. CPDLC is the primary means of communication and HF is only secondary.

**2. IMPLEMENTATION OF THE ADS/CPDLC TRIAL OPERATIONS Phase 2-A.**

2.1 The operational trial is open to all FANS-1/A equipped aircraft which will take effect on **(DATE)** from **0100UTC- 1300UTC (Mondays through Fridays)** on East Oceanic and South China Sea airspace of the Manila FIR.

**3. Data Link Airspace**

3.1ATS routes **A582/A590/G578/M501/G467** on EAST Oceanic Airspace and ATS routes **M767/N884/M772** on South China Sea airspace.

**4. ADS/CPDLC LOGON Procedures**

4.1 The ATS Facility Notification (AFN) logon is prerequisite to any ADS/CPDLC connection.

4.1.1 The AFN log on is performed by the pilot:

- a) manually sending an **AFN CONTACT** message (FN\_CON) containing the 4 character ICAO code of the ATSU;
- b) when instructed by ATC for situations such as an unsuccessful data link transfer or;
- c) when preparing to depart from an airport and the first logon to a ground system is executed, or
- d) by an ATSU using the address forwarding process.

4.1.2 The AFN logon address of MANILA ACC is “**RPHI**”.

4.1.3 Aircraft should log on to “RPHI” prior to departing from MANILA Airport or between **15-45** minutes prior to entering the MANILA FIR.

4.1.4 To avoid an automatic rejection of the logon, the pilot shall ensure that the flight identification and registration numbers contained in the FN\_CON message are exactly the same as the flight identification and registration numbers filed in the flight plan.

## 5. ADS/CPDLC Procedures

5.1 Aircraft with ADS/CPDLC connection with RPHI shall send CPDLC position report upon entering the FIR boundary.

5.2 CPDLC will be the primary means of communication, and HF will be used as the backup communication.

5.3 The response to a CPDLC message should be via CPDLC, and a response to voice should be via voice.

5.4 Exchange of CPDLC messages

5.4.1 The ATS system will receive a network acknowledgment (MAS Message Assurance) to an uplink message indicating that the message has been delivered to the aircraft’s ACARS Management Unit (MU) , and

5.4.2 The avionics will receive a network acknowledgment to a downlink message indicating that the message has been delivered to the communication service provider’s system.

5.4.3 A controller or pilot having any doubt as to the intent of a message, or if any other ambiguity exists, clarification shall be sought through the use of voice communication.

5.4.4 Read back for ATC clearances/instructions issued via CPDLC is not required.

5.4.4 If a CPDLC dialogue is interrupted by a system shutdown, the entire dialogue shall be re-commenced by voice communication.

5.5 Uplink/Downlink Messages

5.5.1 The **WILCO** downlink message indicates that the pilot will comply fully with the clearance/instruction contained in the associated uplink message.

5.5.2 The **ROGER** or **AFFIRM** uplinks are not appropriate responses and shall not be used as a response to a clearance request. The controller shall approve a clearance request by sending an uplink message containing the actual clearance.

5.5.3 **AFFIRM** is an appropriate response to an uplinked negotiation request message that is acceptable (e.g. **CAN YOU ACCEPT [altitude] AT [time]**).

5.5.4 **UNABLE** will be used as a negative response to a clearance request. It also applies as a negative response to all elements of a multi-element request. The clearance shall not be re-stated.

5.6 Use of **Pre Formatted** and **Free Text** Messages

5.6.1 Creation of a clearance request and the issuing of a clearance shall be performed by the use of pre-formatted message elements.

5.6.2 Free text messages shall be used only when an appropriate pre-formatted message element does not exist.

5.6.2 When a free text message is required, standard ICAO phraseology, abbreviations and format shall be used.

## 5.7 CPDLC Connection Transfer and End of Service

### 5.7.1 CPDLC Connection Transfer from RPHI to RJJJ. *(to be discussed w/ ATMC)*

5.7.1.1 RPHI shall terminate the CPDLC connection by

a) an uplink message of “MONITOR (OR CONTACT) [icaounitname] [frequency] and

b) an uplink message of “END SERVICE” 5 minutes prior to the FIR.

5.7.1.2 The avionics will downlink a “DISCONNECT “message.

5.7.1.3 Then pilot will manually log on to **RJJJ**.

### 5.7.2 CPDLC Connection Transfer from RPHI to KZAK. *(to be discussed w/ KZAK)*

5.7.2.1 RPHI uplinked NDA (Next Data Authority) “**KZAK**” message to CPDLC aircraft at least thirty (30) minutes prior to Oakland FIRB.

5.7.2.2 and five (5) minutes before FIRB, RPHI shall send uplink message of “MONITOR (OR CONTACT) [**KZAK**] [frequency].

### 5.7.3 CPDLC Connection Transfer from RPHI to WSJC. *(to be discussed w/ WSJC)*

5.7.2.1 RPHI uplinked NDA (Next Data Authority) “**WSJC**” message to CPDLC aircraft at least thirty (30) minutes prior to Singapore FIRB.

5.7.2.2 and five (5) minutes before FIRB, RPHI shall send uplink message of “MONITOR (OR CONTACT) [**WSJC**] [frequency].

### 5.7.4 CPDLC Connection Transfer from RPHI to VVTS. *(to be discussed w/ VVTS)*

5.7.2.1 RPHI uplinked NDA (Next Data Authority) “**VVTS**” message to CPDLC aircraft at least thirty (30) minutes prior to Ho Chi Minh FIRB.

5.7.2.2 and five (5) minutes before FIRB, RPHI shall send uplink message of “MONITOR (OR CONTACT) [**VVTS**] [frequency].

## 5.8 Aircraft from East Oceanic (Data link Airspace) to VHF/Radar Airspace to South China Sea (Data link Airspace)

5.8.1 CPDLC aircraft will be instructed to contact Manila Control 120.5(VHF for East Sector)/ 118.9 (VHF for West Sector) for radar and air -ground services.

5.8.2 CPDLC aircraft shall not terminate the data link connection with RPHI.

## 6. Flight Plan Procedures

6.1. ATS systems use Item 10 (Equipment) of the standard ICAO flight plan to identify an aircraft’s data link capabilities. The operator is responsible for inserting the following items in the ICAO flight plan:

- Item 10 – The letter “J” to indicate data link capability;
- Item 10 – The letter “D” in the Surveillance field to indicate ADS-C capability;
- Item 18 – the letters DAT/ followed by one or more letters as appropriate to indicate the type of data link equipment carried when “J” is entered in Item 10.(Refer ICAO PANS/ATM)

Example:

ICAO Item 10: .....**J**...../....**D**

ICAO Item 18: **REG**/.....**DAT**/SV (for a satellite and VHF data link equipped aircraft)

## 7. EMERGENCY PROCEDURES

- 7.1 Pilot on emergency condition shall notify ATC by the most appropriate means (voice or CPDLC).
- 7.2 When an ADS emergency accompanied by a CPDLC emergency message is received, the controller shall immediately acknowledge receipt of the emergency with the pilot by the most appropriate means (voice or CPDLC)
- 7.3 A CPDLC acknowledgment shall be in the form of a free text message using the words ROGER MAYDAY or ROGER PAN. This uplink free text message requires a response from the pilot to close the CPDLC exchange. Depending on the nature of the emergency, the free text message may or may not be acknowledged by the pilot.
- 7.4 When emergency is acknowledged by CPDLC, controllers may also attempt to make voice contact with the aircraft.
- 7.5 If the emergency situation no longer exists, the pilot should cancel the ADS emergency mode (if activated).
- 7.6 Special and other non-routine aircraft observations of moderate or severe turbulence, volcanic activity, etc should be reported by voice to ATS.

## 8. Data Link Failure

### 8.1 Detected by the controller.

8.1.1 When the controller recognizes a failure of the data link connection, the controller shall instruct the pilot to terminate the connection, by selecting ATC Com Off, and then initiate another AFN logon. Once the AFN logon established, the ATS system should send a **CONNECTION REQUEST** message to re-establish the connection.

The voice phraseology to be used shall be:

<b>Controller:</b>	Data link failed
	Select ATC Com Off then Logon to [RPHI]
<b>Pilot:</b>	Roger

### 8.2 Detected by the pilot.

8.2.1 When CPDLC connection cannot be established successfully, the pilot should select "ATC Com off" if possible and then initiate another AFN logon. If the pilot continues experiencing the inability to establish CPDLC connection; the pilot shall inform HF of the situation.

8.2.1 When the pilot recognizes a failure of the CPDLC connection, the pilot should inform ATC of the situation via appropriate voice frequency and terminate the CPDLC connection, by selecting "ATC Com Off".

### 8.3 Data link System Shutdowns

#### 8.3.1 Unexpected data link shutdowns

In the event of an unexpected data link shutdown:

##### 8.3.1.1 RPHI shall inform:

- a) currently connected FANS-1/A equipped aircraft via voice;

The voice phraseology to be used shall be:

<b>Controller:</b>	Data link failed
	Select ATC Com Off. Continue on voice
<b>Pilot:</b>	Roger

- b) the adjacent ATSU's by direct coordination; and
- c) all relevant parties via the publication of a NOTAM, if appropriate.

8.3.1.2 Pilots shall terminate the data link connection and use voice until informed by the ATSU that the data link system has resumed normal operations.

8.3.2 Planned data link shutdowns

When a planned data link system shutdown of the communications network or of the ATS system occurs, a NOTAM shall be published to inform all affected parties of the shutdown period. During that time period, voice shall be used.

The following voice or data phraseology shall be used to advise airborne aircraft prior to the commencement of the shutdown.

Controller:	Data link will be shutdown. Select ATC Com Off. Continue on voice <i>(The pilot shall select ATC Com Off when the message is received)</i>
Pilot:	Roger

8.4 Resumption of data link operations

The following voice phraseology shall be used to advise pilots that the data link system has resumed operations

Controller:	Data link operational Log on to <b>RPHI</b>
Pilot:	Log on to <b>RPHI</b>

**8. Addressee for Problem Reports**

8.1 Pilots or operators who have encountered problems with data link service shall report to:

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