

**Twenty Fourth Meeting of the  
Informal South Pacific ATS Co-ordinating Group (ISPACG/24)**

**FANS Interoperability Team Meeting (FIT/17)  
Brisbane, Australia, 9-10 March 2010**

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**Agenda Item 8: SATCOM System Performance**

**Interim Analysis of FOI Performance**

**Presented by Civil Aviation Bureau of JAPAN**

**SUMMARY**

This paper provides preliminary information, procedures and performance analysis, regarding an ongoing FOI trial in RJJJ.

**1. INTRODUCTION**

1.1 Fans Over Iridium (FOI) trial started in December 2009 in Fukuoka FIR and Oakland FIR. There are 6 FOI capable Continental Airlines aircraft as of February 2010. JCAB conducted an interim assessment of performance data of Iridium on ATC communications in Fukuoka FIR from the start date to end of January.

**2. PROCEDURES**

2.1 In Fukuoka FIR, CMI pilots are required to down link free text message "FOI" when entering oceanic airspace for outbound flight or crossing FIR boundary for inbound flight. Because ATC should clearly identify that the flight has a data-link connection via Iridium.

2.2 Pilots should down link their position reports by using CPDLC, not use only ADS reports. CPDLC reports are only used as instead of HF voice reports.

2.3 ATC should NOT apply ADS separation, distance-based separation in Fukuoka FIR. ATC apply only 15 minutes or 10 minutes with Mach Number Technique separation between FOI's aircraft and other aircraft.

### 3. DISCUSSION

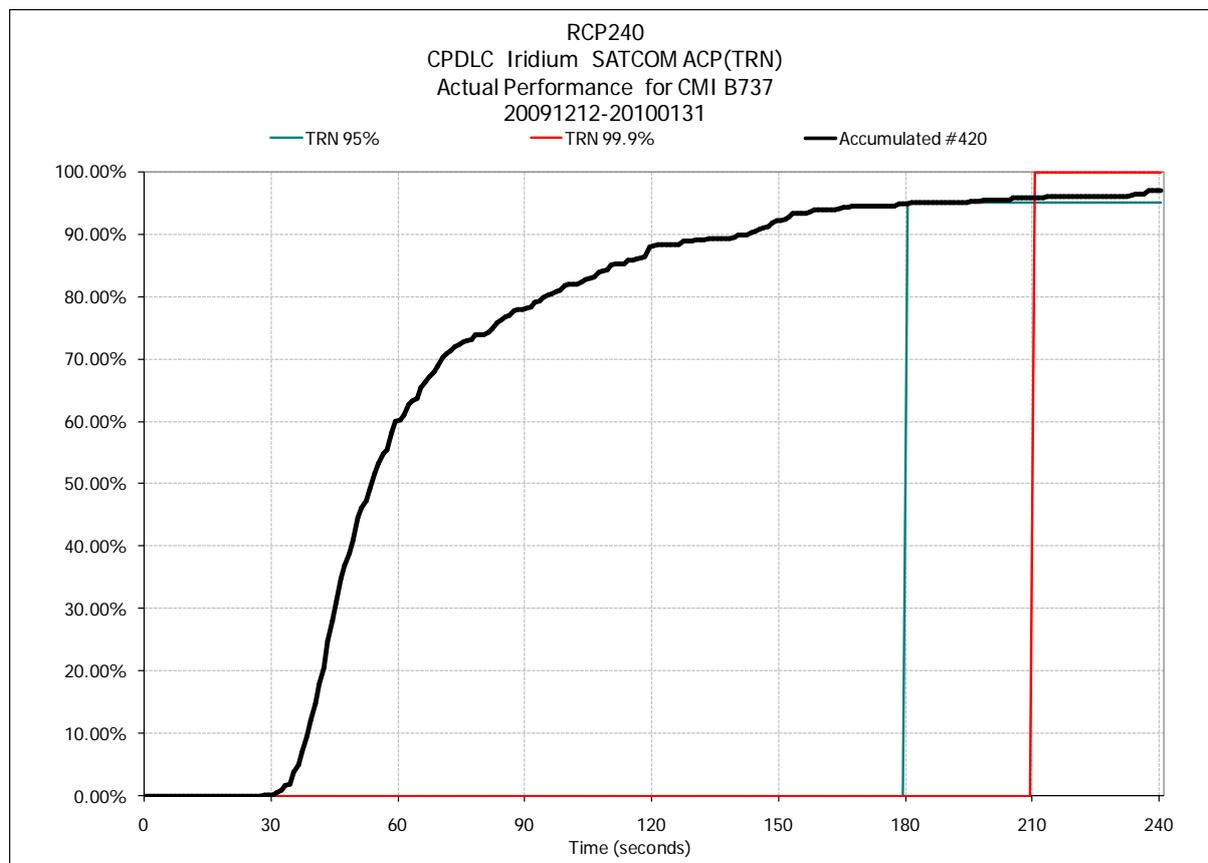
3.1 The performance data collected are Monitored operational performance (TRN) and Required Communication Technical Performance (RCTP). TRN and RCTP are shown in pink shades in the Annex 1. It is noted that Responder (flight crew HMI) is derived by subtracting RCTP from TRN.

3.2 Table.1 shows excerpt of RCP240/D specification from GOLD.

Transaction time parameter	ET (sec) C = 99.9%	TT (sec) C = 95%
TRN	210	180
Responder	60	60
RCTP	150	120

Table.1: RCP240/D (excerpt)

3.3 The performance data were taken in the period from 12 December 2009 to 31 January 2010 for the 420 FOI flights in RJJJ. Figure.1 shows TRN, Responder and RCTP. It is assumed that process times of ATSU System and Aircraft System are ignorable.



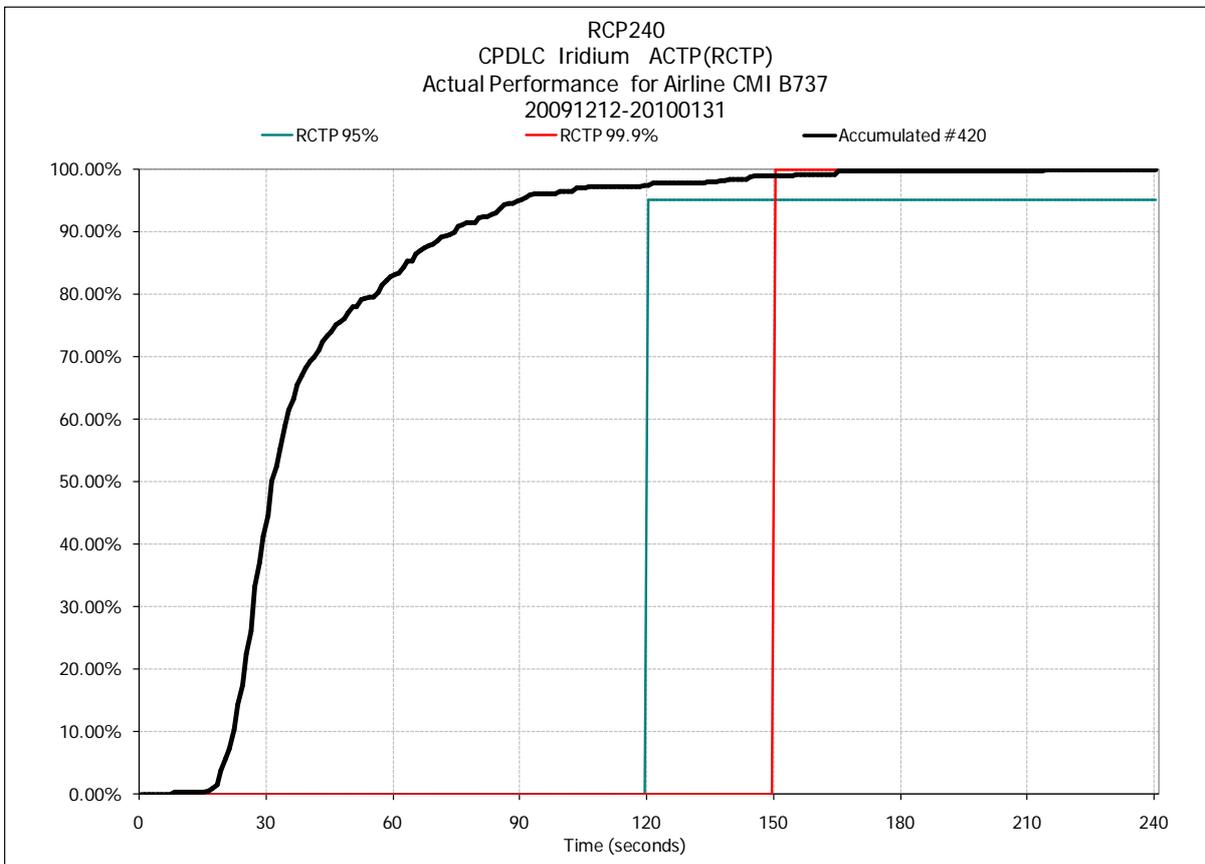
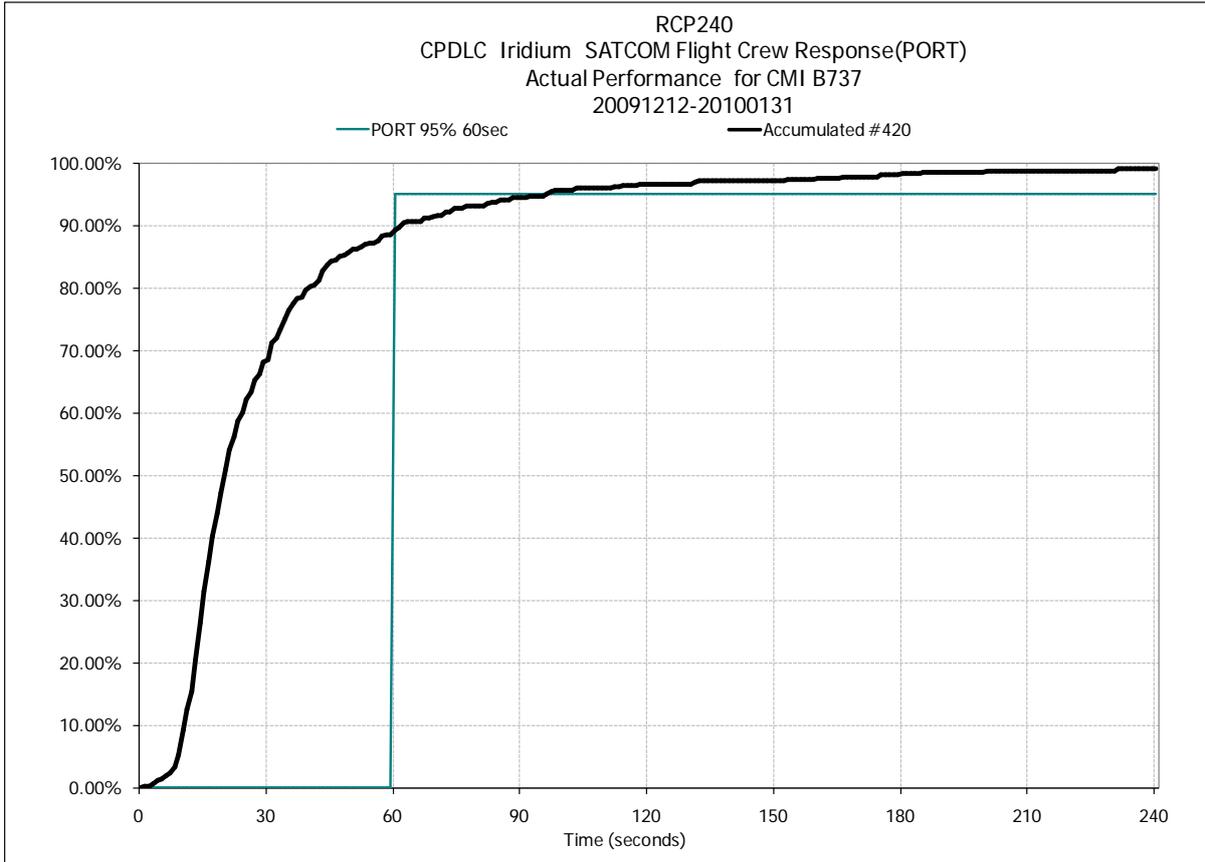


Figure.1: TRN, Responder and RCTP

- 3.4 The analysis of result is as follows:
- ✧ TRN marginally reaches 95%. The curve line goes nearly flat above 95% because of Responder.
  - ✧ Responder does not satisfy 95%.
  - ✧ RCTP surpasses 95% while it falls short of 99.9%.
- 3.5 The result shows that Iridium is near to satisfy RCP240/D as a CSP System in terms of RCTP. However, it is premature to race to judgment since the number of sample is small. JCAB will continue collecting and analyzing the FOI's performance data.

#### **4. ACTION BY THE MEETING**

- 4.1 The meeting is invited to:
- 4.2 note the interim findings of the FOI trial in Fukuoka FIR,
- 4.3 discuss and analyze this performance data in Fukuoka FIR, and
- 4.3 compare the performance data which will be submitted by FAA.

Annex 1: Performance parameters in GOLD

