



**Twenty Fifth Meeting of the  
Informal South Pacific ATS Co-ordinating Group (ISPACG/25)**

**FANS Interoperability Team Meeting (FIT/18)  
Honolulu, Hawaii, USA, 22-23 March 2011**

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**Agenda Item 7; INMARSAT, Iridium**

**CPDLC and ADS-C Data Link Performance Monitoring for FANS 1/A  
Over Iridium (FOI)**

**Presented by the Federal Aviation Administration**

**SUMMARY**

This paper provides observed performance of the data link operations conducted within Oakland FIR as part of the FANS 1/A over Iridium (FOI) evaluation project. The performance is measured against the criteria specified in the Global Operational Data Link Document (GOLD). This analysis includes performance of the Automatic Dependent Surveillance – Contract (ADS-C) of data link operations through the Iridium satellite network.

**1. INTRODUCTION**

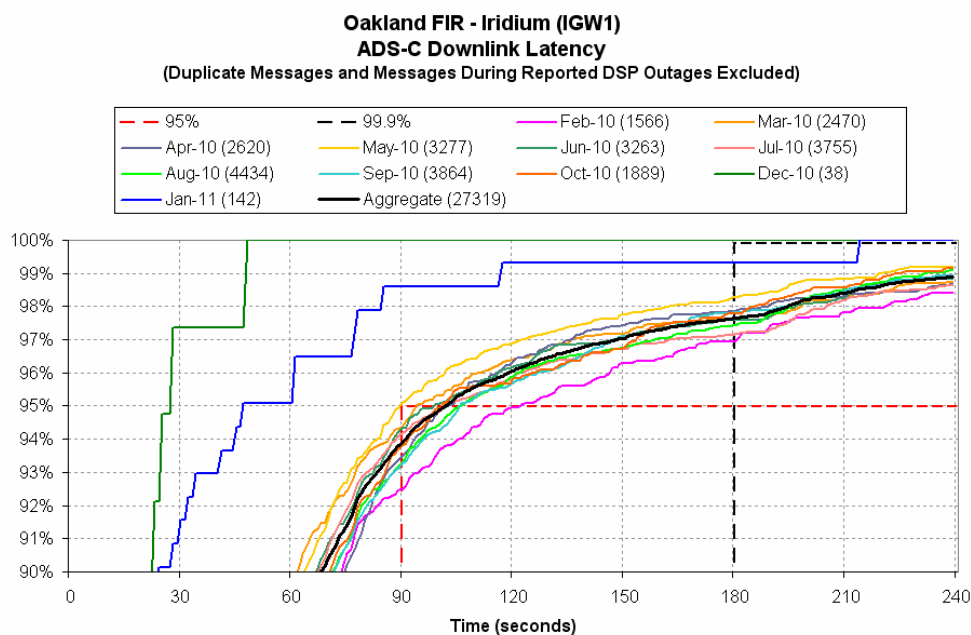
- 1.1 This paper provides observed performance of FANS 1/A over Iridium (FOI) data link operations conducted within the Oakland oceanic Flight Information Region (FIR). The purpose of this analysis is to present the most recent performance observed for FOI and to aid in the evaluation of the viability of FOI for global use in data link operations.
- 1.2 The performance data observed from the Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance - Contract (ADS-C) systems are measured against the appropriate Required Communication Performance (RCP) and Required Surveillance Performance (RSP) specification to demonstrate that safety objectives which rely on the communications infrastructure can be met by the aircraft and ground systems.
- 1.3 This paper presents the FOI data link performance for operations conducted within the Oakland FIR. In addition, the accompanying Microsoft power point presentation contains FOI data link performance for operations conducted within the Anchorage and New York FIRs, as well as a comparison of performance by operators using FOI within the three US oceanic FIRs.

## 2. DISCUSSION

2.1 The Global Operational Data Link Document (GOLD) provides the guidance material describing the required data points from the FANS 1/A aircraft communications addressing and reporting system (ACARS) messages. The GOLD also describes the calculation process for the actual communication performance (ACP), actual communication technical performance (ACTP), pilot operational response time (PORT), and surveillance latency.

### 2.2 Observed FOI Data Link Performance in the Oakland FIR

2.2.1 Figure 1 presents the ADS-C (Type 240) measurements for the FOI data link messages conducted within the Oakland FIR by month for the time period of February 2010 through January 2011. The numbers of ADS-C reports included in the analysis are shown in the legend of Figure 1.



**Figure 1.** ADS-C (Type 240) – FOI Data Link Performance by Month

2.2.2 Figure 1 does not present FOI performance data for November 2010. There were no ADS-C transactions over Iridium during the month of November 2010. This was due to the temporary discontinuation of FOI in middle of October 2010 by the one of main operators participating in the evaluation, Continental Micronesia (CMI).



- 2.2.3 The data in Figure 1 show the 95 percent criteria for ADS-C (Type 240) were met in May 2010, December 2010, and January 2010. While CMI had still not resumed their FOI operations in December 2010 and January 2011, a new operator, Hawaiian Airlines (HAL), began FOI operations during these months.
- 2.2.4 The accompanying presentation contains additional FOI performance observed by month in the Anchorage and New York FIRs. In addition, comparisons are made by operator and aircraft type for operations conducted within all three US oceanic FIRS.

### **3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to:
- a) Review and comment on the information contained within this paper and the accompanying power point presentation file.