



International Civil Aviation Organization

The 2nd Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/2)

Bangkok, Thailand, 28 – 29 March 2013

Agenda Item 3: Review of ADS/CPDLC Operations

FANS1/A HIGH FREQUENCY DATA LINK (HF DL) PERFORMANCE IN NZZO

(Presented by Airways New Zealand)

SUMMARY

This paper presents the observed performance of FANS1/A HF DL operations in the NZZO oceanic FIR.

This paper relates to –

Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

Global Plan Initiatives:

GPI-17 Data link applications

GPI-22 Communication infrastructure

1. INTRODUCTION

1.1 HF data link is observed in operational use in NZZO by some Airbus aircraft where it is employed in a tertiary role often referred to as “next on busy” where HF DL is not used unless the SATCOM is busy sending another message.

1.2 No pure HF DL only operations were observed in 2012 in NZZO.

2. DISCUSSION

HF DL Performance in “next on busy” role

2.1 When HF DL is used in a “next on busy” role by A388 aircraft some 10-15% of ADS-C downlinks are received via HF DL. With a fleet that is observed to have 10% of their ADS-C downlinks sent via HF DL the performance difference at 180 seconds is 0.35% with SATCOM delivering 99.69% of messages while SATCOM+HF delivers 99.34%. This performance difference increases as more HF DL is used. Another A388 fleet was observed to send 15% of its downlinks via HF DL in 2012. The performance difference at 180 seconds for this fleet was 0.61%. This performance difference between SATCOM and SATCOM+HF is shown in **Figure 1** below.

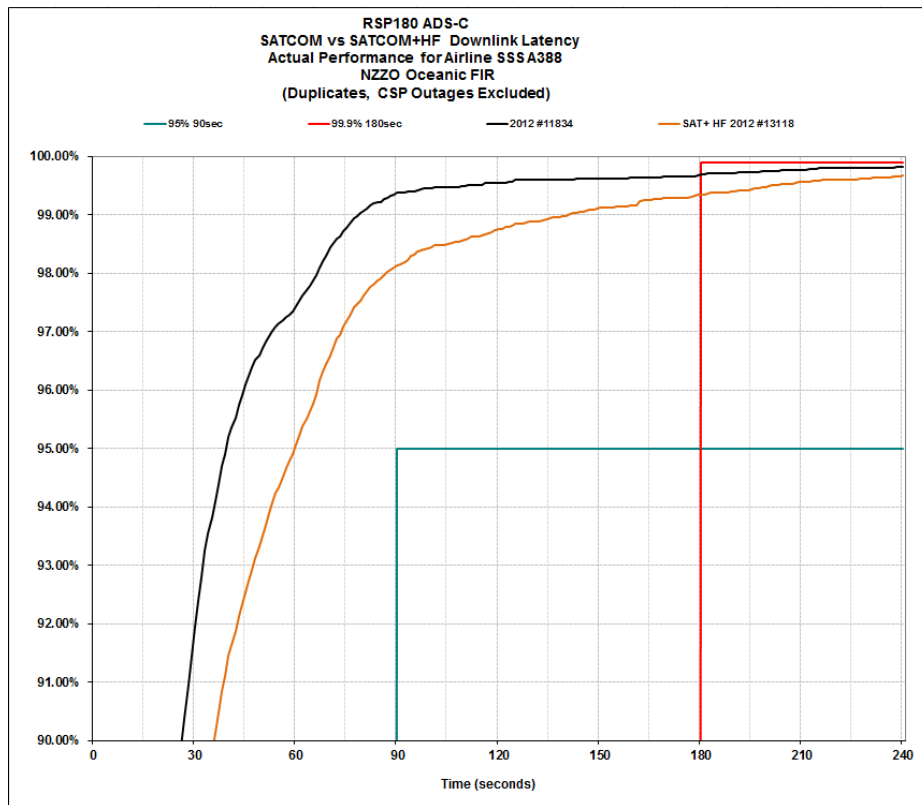


Figure 1: Performance difference between SATCOM and SATCOM+HF

HFDL latency RSP180

2.2 When HFDL ADS-C reports are extracted from the SATCOM+HF data and their performance analyzed they do not meet the RSP180 latency requirement falling well below the 95% normal operating level. This is illustrated in **Figure 2**.

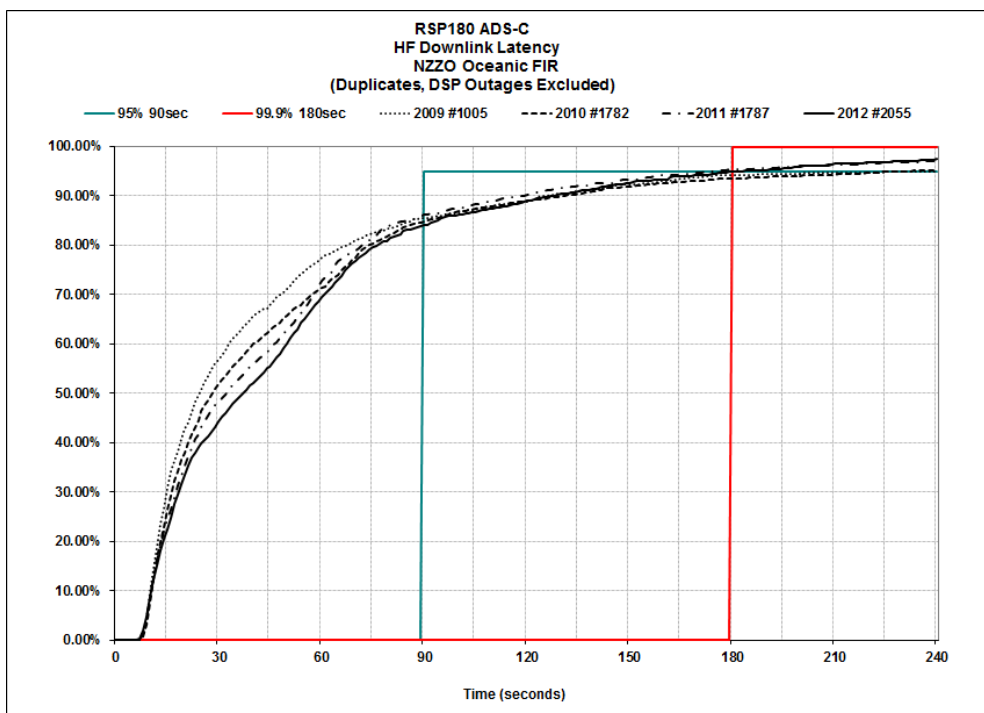
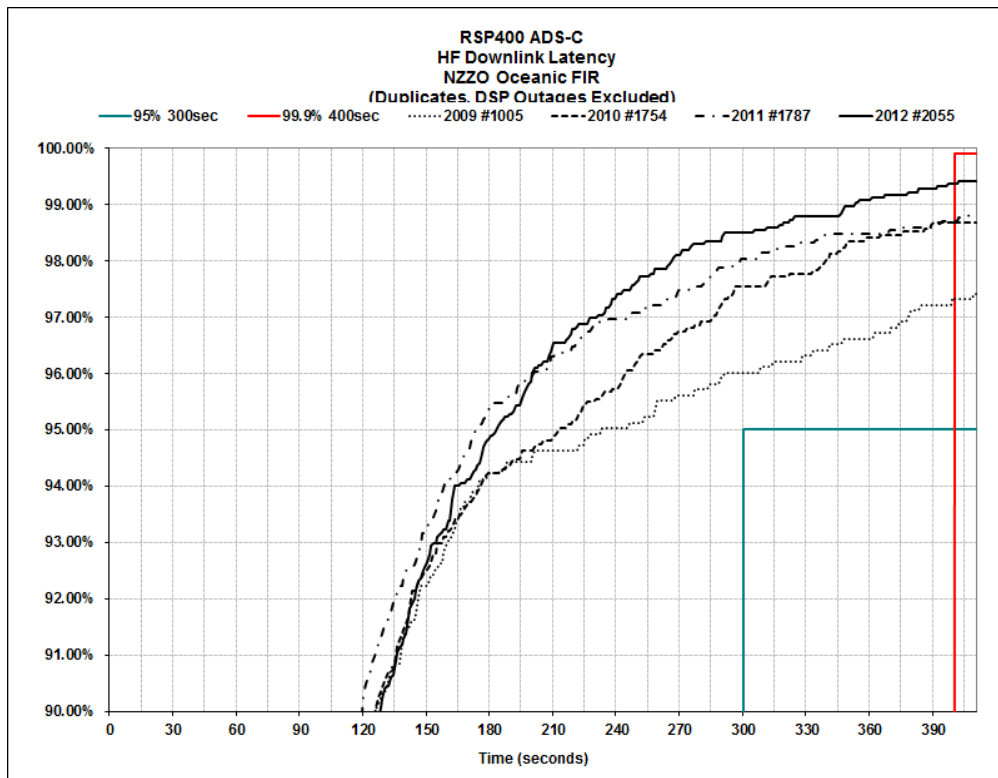


Figure 2 : HFDL measured against RSP180

HFDL latency RSP400

2.3 HFDL is meeting the RSP400 95% requirements and has shown significant improvement in 2012 towards achieving the 99.9% requirements. This is depicted in Figure 3.



3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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