Twenty Sixth Meeting of the
Informal South Pacific ATS Co-ordinating Group (ISPACG/26)

Nineteenth Meeting of the FANS Interoperability Team (FIT/19)

Nadi, Fiji, 28-29 February 2012

Agenda Item 4: Working Papers

FAA response to PARC FANS 1/A over HFDL recommendations

Presented by the Federal Aviation Administration

Summary

This paper provides status and the FAA response to the recommendations from the Performance-based operations Aviation Rulemaking Committee (PARC) regarding use of FANS 1/A over High Frequency Data Link (HFDL), referred to as FOH.

1   INTRODUCTION

1.1   At ISPACG/25 FIT/18, the FAA provided the PARC *Future Air Navigation System (FANS) 1/A over High Frequency Data Link (HFDL) Recommendations* report.

1.2   On 12 January 2012, the FAA provided a response agreeing with the recommendations. The FAA response is provided at **Attachment A** to this paper.

2   DISCUSSION

2.1   FANS 1/A typically operates over satellite communications (SATCOM).   However, FANS 1/A will operate over HFDL.   The FAA found that FANS 1/A dedicated over HFDL is viable for RCP400/RSP400 operations, but it does not meet RCP240/RSP180 specifications.

2.2   The FAA accepts FANS 1/A traffic over HFDL after SATCOM attempt fails.   In Oakland, Anchorage and New York airspace, the FAA experiences on the order of 1 - 2%

of Computer Pilot Data Link Communication (CPDLC) Required Communication Performance (RCP) and Automatic Dependent Surveillance - Contract (ADS-C) Required Surveillance Performance (RSP) traffic over HDFL.

2.3   If the aircraft experiences a non-recoverable failure of the SATCOM capability, the flight crew needs to advise ATC, and ATC should apply appropriate separations. ATC should not rely solely on Required Navigation Performance 4 (RNP4) indication, active CPDLC connection, and ADS contracts to make this determination.

2.4   During the evaluation with Hawaiian Airlines (HAL) using dedicated FOH aircraft in Oakland FIR, the controller procedurally would not apply reduced separations, e.g., 30/30 and 50 long, even though the aircraft were RNP4 capable. For operational implementation, the ground system will need to automatically recognize when aircraft are eligible to operate at RCP240/RSP180, and when not eligible, apply appropriate separation minima, e.g., 10 minute longitudinal, 50 NM lateral, similar to RNP4 recognition.

2.5   While FOH evaluations were continuing in Oakland Flight Information Region (FIR) after PARC submitted the report to FAA, in November 2011, Oakland Center and HAL ceased FOH operations owing to FOH performance degraded below RCP400/RSP400. Controllers and flight crew began using the HF voice via radio operator, which was providing better performance.

2.6   In January, at PARC CWG/26, ARINC agreed to lead an investigation to determine causes, e.g., increased solar activity, undetected failure with the system, congestion on the network, and make the necessary changes to reinstate compliance of FOH to RCP400/RSP400 specifications.

3   ACTION BY THE MEETING

3.1   The Meeting is invited to:

a)   Note the information provided in this paper;

Attachment A. FAA Response to PARC Recommendations on FANS 1/A over HFDL

U.S. Department
of Transportation
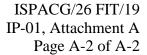**Federal Aviation
Administration**

January 12, 2012

Mr. Dave Nakamura
The Boeing Company
CNS Technical Standards and Requirements
P.O. Box 3707, MS 07-25
Seattle, WA 98124

Dear Mr. Nakamura:

Thank you for the Performance-Based Aviation Rulemaking Committee (PARC) recommendations on Future Air Navigation System (FANS 1/A) over High Frequency Data Link (HFDL) (FOH), dated March 3, 2011. I have coordinated my response with Air Traffic Organization (ATO) and we agree with these recommendations and will work with PARC toward implementation.

The Federal Aviation Administration (FAA) agrees FANS 1/A over HFDL FOH will provide an effective means of Air Traffic Control (ATC) communications and position reporting in applications comparable to required HF voice capability. The FAA accepts FOH as a viable means of air traffic service communications, particularly in accordance with required communications performance (RCP) 400 and required surveillance performance (RSP) 400 specifications provided by the Global Operational Data Link Document (GOLD). The FAA will also advocate appropriate use of FOH within International Civil Aviation Organization (ICAO) and regional ATS coordinating groups.

To enable the use of FOH operations, the FAA agrees that parts of the performance-based framework will need to be implemented. These parts will require changes to operational specifications, flight planning requirements, ATC automation and procedures to ensure safe application of reduced separations. We will need to coordinate with ICAO to assign new indicators provided by 2012 flight plan format, defined in Amendment 1 to the 15th Edition of ICAO Doc 4444, Procedures for Air Navigation Services/Air Traffic Management (PANS/ATM), to the RCP and surveillance performance specifications, defined by the GOLD. We will also need to define the specific changes needed to our Ocean 21 system to use the new indicators to determine the appropriate separation to apply. The earliest these changes could potentially be made will be after we implement the revised flight plan format expected by November 2012.

Currently, under certain conditions, we have been able to accommodate the use of FOH operations and we will continue to work with the PARC to explore options to support FOH operations until we have implemented necessary parts of the performance-based framework.

Finally, you recommend that we work with industry in appropriate standards organizations to ensure that the future automatic dependent surveillance–contract (ADS-C) application can be used also for aeronautical operational control (AOC). The standards for the data link applications, including ADS-C, are currently being revised jointly by RTCA Inc. Special Committee 214 and the European Organization for Civil Aviation Equipment Working Group 78 in cooperation with the ICAO Operational Data Link Panel. RTCA can consider AOC needs in developing standards for the data link applications.

Thank you again for all of the PARC's hard work.

Sincerely,

/s/ John J. Hickey for

Ms. Margaret Gilligan
Associate Administrator for Aviation Safety

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