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

Eighteenth Meeting of the
FANS Interoperability Team (FIT/18)

Honolulu, Hawaii, USA, 22-23 March 2011

Agenda Item 7: INMARSAT, Iridium

Performance-Based Operations Aviation Rulemaking Committee (PARC) FANS 1/A over Iridium (FOI) and Performance-Based Concept Recommendations

Presented by Federal Aviation Administration

SUMMARY

This paper provides the *FANS 1/A over Iridium (FOI) and Performance-Based Concept Recommendations* report developed by the Performance Based Operations Aviation Rulemaking Committee's Communications Working Group (PARC CWG).

1 INTRODUCTION

1.1 On 17 September 2010, the PARC submitted to FAA the *FANS 1/A over Iridium (FOI) and Performance-Based Concept Recommendations* report. The report is provided at Appendix A.

1.2 The PARC appreciates the support from the South Pacific on this project.

2 DISCUSSION

2.1 The FOI and Performance-Based Concept Recommendations report supports widespread use of the future air navigation system (FANS 1/A) Controller-Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance–Contract (ADS-C). For more than a decade, CPDLC and ADS-C have demonstrated advances in safety with operational and environmental benefits through increases in airspace capacity, reduced separations, user preferred routes, dynamic airborne reroute procedure and trajectory operations, such as tailored arrivals.

2.2 Incentives continue to justify fleet equipage and expansion of data link services worldwide. However, the North Atlantic (NAT) Region is planning to mandate data link operations beginning in 2013, coincident with the European implementing rule for data link services. The data link operations in the NAT are intended to minimize the effects of operational errors and pilot deviations to meet target levels of safety, and eventually support reduced separations. The PARC has been looking at optimum solutions to meet immediate and near to mid term critical needs, while staying on the path to the Next Generation Air Transportation System (NextGen).

2.3 Significant operational and safety benefits will be lost unless actions are taken to sustain current communications and surveillance capabilities. Furthermore, NextGen operational improvements will depend on appropriate and operationally acceptable communications and surveillance capabilities together with performance based navigation (PBN). Implementing the recommendations provided in the attached report will promote expansion of data link services, provide incentives for fleet equipage and enable performance-based operations consistent with NextGen objectives.

2.4 FOI is a significantly lower cost solution than other aeronautical mobile satellite (route) service (AMS(R)S) alternatives. Iridium-based equipment is easier to retrofit on aircraft, draws less power, is lighter in weight, and provides global coverage, including the Polar Region. The global air transportation system will benefit from FOI as it provides a practical alternative for air navigation service providers (ANSPs) to expand data link service, and for commercial and business aviation markets to equip their fleets more quickly.

3 CONCLUSION

3.1 The PARC has found that Iridium is viable for CPDLC/RCP 240 and ADS-C/type 180 operations. Therefore, the PARC is requesting the FAA to expedite the steps necessary to remove restrictions on current FOI operations to realize immediate gains in operational and safety benefits.

3.2 In addition, the PARC is requesting the FAA to plan for and implement in the near and mid terms a performance-based framework for required communication performance (RCP) and surveillance performance specifications. A performance-based framework will enable ANSPs to apply different service levels to eligible operators and leverage “less capable” aircraft in the same airspace. More importantly, implementation of this framework will ensure continued operational safety of current performance-based operations, such as reduced separations in oceanic and remote airspace, and facilitate seamless operations worldwide as the FAA expands data link implementation in its domestic airspace. The performance-based framework is flexible to add performance specifications when they are needed for new applications, such as the use of satellite voice communications and to transition to NextGen.

3.3 Implementation of a performance-based framework can begin now. Based on ICAO Doc 9869, Manual on Required Communication Performance (RCP), initial performance specifications are already provided in the ICAO Global Operational Data Link Document (GOLD), First Edition, issued in June. The NAT Region, the Asia-Pacific Region, and the South Atlantic Sub-Region have formally accepted the GOLD, and have begun planning and implementation for its application.

4 ACTION BY THE MEETING

4.1 The meeting is invited to note the information in this paper.

Appendix A. PARC FANS 1/A over Iridium and Performance Based Concept Recommendations

[provided as separate file]

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