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

Nadi, Fiji, 1-2 March 2012

Agenda Item 4: AI 21-3 DARP Expansion

THE FUTURE OF OCEANIC TRAJECTORY BASED OPERATIONS (OTBO) AND THE PLANNED OPERATIONAL TRIALS

Presented by the Federal Aviation Administration

SUMMARY

This paper presents current work on the concept for Oceanic Trajectory Based Operations and the planned operational trial for the Oceanic Conflict Advisory Trial (OCAT).

1. INTRODUCTION

1.1 Information was provided to ISPACG/25 on the concept for Oceanic Trajectory Based Operations (OTBO) and the planned operational trial for the Oceanic Conflict Advisory Trial (OCAT). This information paper provides an update on these programs.

1.2 The Next Generation Air Transportation System (NextGen) is evolving the present-day Air Traffic Management (ATM) system to provide greater precision, predictability, efficiency, and productivity, while reducing aviation's impact on the environment by reducing emissions and fuel burn. The OTBO concept provides operational improvements to address the NextGen goals of improved flight efficiency and reduced environmental impact. It does this by enabling interactive flight plan collaboration capabilities between airspace users and the Federal Aviation Administration (FAA), and allowing the users to fly closer to their preferred four-dimensional trajectories (4DT) while in oceanic airspace controlled by the United States (U.S.).

1.3 Benefits to the FAA and airspace users include improved flight efficiency, reduced controller and pilot workload, increased capacity, and increased trajectory predictability for the user, as well as environmental benefits.

2. DISCUSSION

2.1 One of the two components of the OTBO concept is a set of trajectory coordination capabilities enabling interactive flight plan collaboration between the airspace users and the FAA. One of these capabilities, the OCAT, will allow personnel in the

airspace user's Flight Operations Center (FOC) to check if their proposed oceanic clearance change appears to be free of conflicts with other flights in the airspace prior to a flight crew request for the change.

2.2 OCAT is a year-long FAA operational trial designed to help airlines fly more of their preferred oceanic routings. OCAT makes the Advanced Technologies and Oceanic Procedures (ATOP) conflict probe capabilities available via a standard web service. OCAT partner airlines will make use of the OCAT web service to pre-probe desired flight profile changes (any valid combination of vertical, lateral, and/or speed changes) during the trial period. The OCAT system will assist users in determining which of their potential flight profile changes are currently conflict-free and, therefore, more likely to be acceptable to oceanic air traffic control.

2.3 OCAT is an advisory service to the airlines and does not interact with the operational environment. Clearance requests will continue to be made, and responded to, in accordance with existing air traffic control and pilot procedures. The tentative trial start date will be the third quarter 2012.

2.4 The complementary component of the oceanic OTBO concept is a set of trajectory execution capabilities, described below, that will enable U.S. oceanic controllers to respond to flight crew requests more efficiently and effectively, thereby enabling the aircraft to fly as close as possible to the airspace user's preferred trajectory.

2.4.1 Oceanic Auto Re-Probe – This capability will enable the controller to easily keep track of previously-denied clearance change requests and automatically check if they have become available. This will provide an opportunity, that otherwise might have been missed, to grant a clearance change that is closer to the user's preferred trajectory.

2.4.2 Oceanic Conflict Resolution Advisory – This capability will offer resolutions to the oceanic controller that address conflicts found with a flight crew's clearance change request. The resolution may allow the flight to fly closer to its preferred profile than a denied request will.

2.4.3 Oceanic Auto Route Planner – This capability will calculate a wind-efficient reroute in situations where an oceanic controller wants to offer a reroute to a flight that is closer to their preferred profile. For example, sometimes a controller will offer a reroute when an airspace constraint (e.g., Special Activity Airspace [SAA]) is unexpectedly removed. In today's environment, the controller manually creates the reroute, which can be time-consuming and potentially inefficient. The introduction of Oceanic Auto Route Planner will automate the process for creating and plotting reroutes. It will factor in the current wind model, eliminating an underlying assumption that the shortest distance route is the most efficient.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information provided.