Twenty-Second Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group (CPWG/22)

(Paris, France 25-27 October 2016)

Agenda Item 5: Status on Action Items

Implementation Automatic Dependent Surveillance- Contract (ADS-C) Climb/Descent Procedure (CDP)
(Action Item # CP14-12)

Presented by the United States (U.S.) Federal Aviation Administration (FAA)

SUMMARY

This paper presents information on development of automation and procedures to support use of the ADS-C CDP in the FAA's Oceanic Flight Information Regions (FIRs).

1 Introduction

1.1. The Automatic Dependent Surveillance – Contract Climb/Descend Procedure (ADS-C CDP) is designed to improve service to properly equipped aircraft by allowing an oceanic air traffic controller to have an option for granting an altitude change request when other standard separations, such as ADS-C distance-based 30 nautical miles (NM) longitudinal separation minima, do not allow for a climb or descent through the altitude of a blocking aircraft. ADS-C CDP is an air traffic control (ATC) tool to be applied between maneuvering and blocking aircraft pairs utilizing 15 NM with matching speeds or faster aircraft in front or 25 NM longitudinal separation with an aircraft maximum overtake of up to 10 knots or Mach 0.02.

1.2. The United States (U.S.) Federal Aviation Administration (FAA) developed the ADS-C CDP to utilize existing user equipage and ATC capabilities to allow more oceanic flights to achieve their preferred vertical profiles.

1.3. This procedure is based on in-trail Distance Measuring Equipment (DME/GNSS) rules in ICAO Doc 4444, paragraph 5.4.2.3. The Aircraft pair distance verification is performed by the FAA Advanced Technologies and Oceanic Procedures (ATOP) automation system, using near simultaneous ADS-C demand contract reports. As with the existing DME procedure, responsibility for separation assurance remains with ATC.

2 Discussion

2.1. Implementation of the ADS-C CDP automation will benefit ADS-C equipped aircraft. Non-equipped aircraft will continue to receive the current level of service. ADS-C CDP separation calculations will be performed by the ATOP automation system. The controller will either issue the clearance for the climb/descend or UNABLE; thus, from the controller's standpoint there will be minimal change in operations. From a systems efficiency perspective, the proposed ADS-C CDP system will allow for increased efficiency and improved flow for properly equipped aircraft.

2.2. The automation enhancements to ATOP include capabilities for a controller to select the ADS-C CDP option when standard separations will not allow the aircraft to climb/descend through blocking traffic. The ATOP system will check that the two aircraft are eligible for ADS-C CDP, send near simultaneous on-demand ADS-C position report requests to the two aircraft, determine if the minimum separation distance between the two aircraft is greater than the ADS-C CDP separation distance (e.g., greater than 15 NM), display the ADS-C CDP conflict probe results to the controller, and build an uplink clearance message to the ADS-C CDP requesting aircraft.

2.3. ICAO has issued the State Letter announcing the ADS-C CDP procedure will be included in the November 10, 2016 Change 7 ammendment to the PANS-ATM, Doc 4444. After receiving the ICAO State letter announcing Change 7, the FAA has began an ADS-C CDP trial. The FAA ADS-CDP trial use of the procedure will continue until until November 10, 2016 when change 7 to the PANS ATM becomes effective. Oakland Center enabled the ATOP CDP capability on August 31, 2016. During the first month of September 2016, Oakland was able to use the CDP procedure 96 times to allow an aircraft to achieve their desired profile altitude. Anchorage Center plans to enable the the ATOP CDP capability on October 12, 2016, after controller training has been completed. New York Center will begin using the CDP procedure later this year after controller training is completed.

3 Recommendation

3.1. The Meeting is invited to note the information provided in this paper.