INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY NINTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/29)

Bangkok, Thailand, 3 to 5 September 2018

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.4: **CNS**

SPACE BASED AUGMENTATION SYSTEM in AUSTRALIA

(Presented by Australia)

SUMMARY

This Information Paper summarises recent activities in the Aviation domain associated with implementation of a Space Based Augmentation System (SBAS) capability in Australia.

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

1. INTRODUCTION

1.1. Based on preliminary results from the joint Australian / New Zealand Space Based Augmentation System (SBAS) testbed, described in more detail in CNS SG/22 – IP/29, the Australian Federal Government announced funding of $160.9m for Australia to acquire an SBAS capability certified for Safety-of-Life applications.

1.2. The view adopted was that the benefits of an SBAS capability to the community across multiple industry sector, including aviation, was of such a magnitude that it should be pursued as an item of National Infrastructure.

1.3. Consistent with this view Geoscience Australia, having led the conduct of the SBAS testbed activities, has been identified as the lead government agency for the procurement of an SBAS capability for Australia.

2. AVIATION CONTEXT

2.1. In addressing the requirements of ICAO Resolution A37-11 Australia has made available Approach with Vertical Guidance procedures based on barometric augmentation for airfields served by Baro-VNAV capable aircraft as a priority and as part of routine procedure maintenance for others.

2.2. The Australian GNSS fitment mandate of 2016 (contained in CASA CAO 20.18) has resulted in a high percentage of IFR aircraft being equipped with (E)TSO-C145/-C146 avionics and therefore capable of conducting SBAS-enabled Localizer Performance with Vertical guidance (LPV) procedures. By virtue of this equipage most regional turboprops, twin pistons, single pistons, and some regional turbofan aircraft have a currently un-utilised LPV capability.

2.3. Availability of a certified SBAS signal-in-space will enable the deployment of APV based on SBAS to regional and remote airfields served by aircraft not capable of utilising Baro-VNAV. The two technologies in combination will enable an APV capability to be provided to all runway ends of certified aerodromes across Australia, thus fulfilling the intent of Resolution 37-11.

2.4. Further, the availability of a certified SBAS signal will allow Airservices to disable geometry screening in the currently deployed SLS-4000 GBAS network. Along with minor changes to the SBAS ground segment this may allow CAT-II operations using existing GBAS Approach Service Type C (GAST C) avionics. Most Australian-registered B737-800s, A380, B787, and A330 aircraft are equipped with GAST C avionics and operators have expressed a preference for GBAS approaches over ILS where available. Australia's relatively benign weather patterns means that CAT-III is rarely required.

3. RECENT ACTIVITIES

3.1. Recognising the particular requirements of a certified aviation system an aviation specific Program Executive Board, comprising representatives of Geoscience Australia, Airservices Australia and the Civil Aviation Safety Authority, has been established to address associated programmatic and implementation issues.

3.2. Geoscience Australia has begun establishment of project resources tasked specifically with the SBAS acquisition.

4. ACTION BY THE MEETING

4.1. The Meeting is invited to:

a) Note the information contained in this paper, and

b) Discuss, as appropriate, any relevant matters.

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