International Civil Aviation Organization

Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6)

Video Teleconference, 24 – 27 August 2021

Agenda Item 8: Update on surveillance activities and explore potential cooperation opportunities.

a) States/Administrations

UPDATE ON ATC SURVEILLANCE ACTIVITIES IN AUSTRALIA

(Presented by Australia)

SUMMARY

This paper provides information on air traffic control surveillance activities in Australia. The paper is an update of the reports previously provided.

1. INTRODUCTION

1.1 This paper provides information on air traffic management surveillance activities in Australia.

2. GENERAL DISCUSSION

2.1 Much of Australia's civil radar network is at the midpoint in its operational life. It has proved to be reliable and stable with no major programs of works planned at this time.

2.2 Surveillance radars operated by the Australian Department of Defense are in the process of being replaced with the first of the new radars expected to be operational by the end of 2021. As with the existing radars, the data from these radars will be shared with the civil ANSP, Airservices Australia, to augment surveillance coverage used for air traffic separation services. On competition of the replacement project, estimated to be in 2024, nine new radars will be in operation with both Primary and Mode S Secondary capabilities.

2.3 Data transport from the radar sites to the ATC centers will migrate from dedicated serial lines to an IP based network design over the next 2 to 4 years, with this already in place for some of the newer radars.

2.4 WAM systems in Tasmania and Sydney are expected to reach the end of their useful operational life around 2025/26. These WAM systems are not planned for replacement with an expectation that more reliance will be placed on ADS-B in Tasmania and a combination of ADS-B and Radars in Sydney.

2.5 A-SMGCS systems continue to be operational at major airports around Australia. Sydney is in the process of upgrading to same ground display system used at other capital city locations in

Australia where A-SMGCS is integrated into the tower automation system and operates as a "fused display" with the associated terminal area radar, ADS-B and multilateration data.

2.6 Australia's network of over 50 ADS-B installations will be replaced over the next 4 years with the latest generation ground stations. Consideration is also being given to the need for additional lower level coverage is some areas to support operational requirements and improve safety and efficiency. This could include anywhere from one to twenty-five new sites with the requirements and cost/benefits of each location currently being considered.

2.7 Australia's ADS-B data sharing with Indonesia continues with benefits for both states. The ADS-B Collaboration agreement was updated in June 2014 such that if either nation has or installs a ground station that provides coverage within 150 NM of the shared FIR boundary, then the data will be offered to the other party. The agreement was reviewed, updated, and signed in August 2018. A total of 10 sites are currently shared between the 2 countries – 6 sites in Indonesia and 4 sites in Australia.

3. OTHER PROJECTS

3.1 A trial ground surface movement situational awareness system, based on ADS-B, has been deployed at Canberra Airport. This system includes a single ADS-B installation with a dedicated ground display screen installed at the ATC Tower. Whist this system has been deployed for a number of months, progress on validating the performance of ADS-B for surface movement situational awareness has been hindered by staff availability and the ongoing pandemic. It is hoped that this work will be further progress over the coming 12 months.

3.2 Australia's ANSP (Airservices Australia) continues to word with the Australia's civil aviation regulator (CASA) on low cost ADS-B avionics for VFR. To date a number of trails have been conducted and relevant standards have been updated to allow for these devices to be operated under certain conditions. The use of these devices may have implications for both the current and future air traffic management systems and this is currently being considered.

3.3 The future joint Civilian/Military Australia wide ATM system, called CMATS and delivered within Airservices Australia under the OneSKY program, will provide a "Multi Sensor" surveillance tracking function, incorporating ADS-B, radar and WAM inputs, and will make greater use of Mode S DAPs for safety net alerting and for display to the controller. Planning for the implementation of this new system continues with the selected vendor (Thales) with Batch One of the Preliminary Design Review (PDR) recently completed.

3.4 Airservices Australia is about to approach the market with a request for proposal for an Integrated Drone Surveillance System Trial. The aim of this project is to deploy a multi sensor system at a nominated airport for a 6 month trial period. The trial will demonstrate existing market capability in drone detection and surveillance along with associated data management, tracking and display and control systems.

4. CONCLUSION

4.1 Australia continues to make greater use of ADS-B and Mode S following investment by airspace users and the air navigation service providers. Australia will continue to assess the viability of new surveillance technologies and innovations as they approach maturity.

5. ACTION BY THE MEETING

5.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matter as appropriate

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