



ICAO

*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 opportunity
a) States/Administrations

NEW ZEALAND SURVEILLANCE UPDATE

(Presented by New Zealand)

SUMMARY

This information paper presents a continuing overview of current and planned surveillance activities in New Zealand.

1. INTRODUCTION

1.1 New Southern Sky (NSS) began in 2014 as a ten-year government led programme to modernise New Zealand's aviation systems. A crucial element of NSS is the replacement of ground-based radar technology with a modern, satellite-based system for surveillance. As a result of this ADS-B will become the prime component of the New Zealand surveillance system, for all controlled airspace within the NZCC FIR, from DEC 31, 2022.

1.2 NSS highlights a potential risk having a surveillance system depending solely on ADS-B, therefore ADS-B will be backed up by a contingency cooperative surveillance system which is non-reliant on GNSS to maintain operations. The contingency system will provide surveillance coverage to maintain operations over the Main Trunk airports (NZAA, NZWN and NZCH) and to ensure the international routes into and out of NZAA are maintained.

1.3 NSS also identified a risk around non-cooperative targets and recommended that a non-cooperative surveillance system (e.g., PSR) is provided in areas which are considered high density and complex airspace with "Regular Public Transport operators" (RPT) such as NZAA, NZWN and NZCH. It was noted that future ICAO ASBUs see less and less reliance on systems such as PSR from 2024 onwards and from 2030 mainly for specialised services such as military operations.

1.4 In 2019 Airways submitted an RFP to market for a surveillance system comprising a cooperative contingency surveillance system, and a non-cooperative surveillance system. An announcement is expected shortly on the preferred vendor and the selected systems to meet these needs.

2. DISCUSSION

2.1 The New Zealand Civil Aviation Authority (NZCAA) has mandated the use of ADS-B in two phases:

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- Phase one: NZZC FIR – all controlled airspace FL245 and above, applicable since DEC 31, 2018
 - Phase two: NZZC FIR – all controlled airspace from DEC 31, 2022 (initially 2021, but delayed one year due to the impact of Covid 19)
- 2.2 To meet these mandates:
- Airways completed an initial installation of 12 ADS-B sites in 2017, ensuring surveillance coverage over all controlled airspace 10,000ft and above.
 - This initial installation was followed up with a further 14 ADS-B sites in 2018, ensuring surveillance coverage over all controlled airspace, and to the surface around regional airports including some which lie in uncontrolled airspace.
 - All these sites are fully functional, and the data from them is being used operationally within the ATM system, for the provision of 3NM and 5NM surveillance separation as approved by NZCAA.
- 2.3 Current Surveillance in New Zealand consists of:
- 5 MSSRs, 1 MSSR/PSR and 2 PSRs (all reaching the end of economic and functional life).
 - 26 ADS-B sites with either DUAL or SINGLE antennae
 - 1 Wide Area Multilateration system
 - 1 Airport Multilateration surface movements system
 - 6 ADS-B Airport (ADSB APT) systems
- 2.4 Future Surveillance Systems in New Zealand will consist of:
- 26 ADS-B sites with either DUAL or SINGLE antennae as the PRIME Surveillance source
 - 3 MSSR for contingency operations, combined (where required) with PSR for non-cooperative coverage
 - 1 Wide Area Multilateration system
 - 1 Airport Multilateration surface movements system
 - 6 ADS-B Airport (ADSB APT) systems
 - 1 Southern Positioning Augmentation Network (SouthPAN) - Satellite Based Augmentation System (SBAS), currently proposed to begin fully certified operations in 2025. This is a joint project between Australia and New Zealand.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) note the information contained in this paper; and
 - b) discuss any relevant matter as appropriate
