*International Civil Aviation Organization*

**Tenth Meeting of the Surveillance Implementation Coordination Group (SURICG/10)**

*Bangkok, Thailand, 21 - 23 April 2025*

Agenda Item 7: Report on surveillance ground system and avionics performance monitoring and improvement in compliance

# UPDATE ON IP/18 SURICG/9 CHALLENGES FINDING THE CAUSE OF NON-COMPLIANT ADS-B DATA

(Presented by New Zealand)

**SUMMARY**

This paper presents a brief update on the challenges finding the cause of Non-Compliant ADS-B data in New Zealand.

## 1. INTRODUCTION

1.1 In 2024 Airways presented a paper that identified several issues in finding the cause of non-compliant ADS-B data and resolving these issues. This paper provides an update on the progress to find a resolution and identifies another issue found in late 2024.

## 2. DISCUSSION

2.1 ADS-B transponder type "Y" is being detected outputting NACp, NIC and NACv ZERO with a SIL of THREE. This is non-compliant ADSB data under NZCAA rule 91and cannot be used for Surveillance Separation. When the non-compliant ADS-B data occurs, an ADS-B alert is generated to controllers – either a yellow starfish RPS for targets in ADSB-only airspace or a Degraded ADSB Data (DAD) alert for aircraft in airspace covered by both ADSB and either MLAT or MSSR.


Example of a degraded alert on ADS-B only target


Example of a DAD alert on a non-correlated target

2.1.1 Transponder type "Y" makes up approximately 450 or 14% of the identified transponders equipping New Zealand registered aircraft. Of these 450 units, approximately 275 or 66% have shown this issue at least once, 152 or 36 % twice, and 81 or 19% multiple times. The issue is not seen on other transponder types.

2.1.2 Airways have informed both the FAA and Air Services Australia of the issue. In the 4th quarter of 2024, the FAA advised they had now found the same issue and advised the OEM of transponder type "Y". The OEM now acknowledge the transponder has an issue, however as of today, no resolution has occurred.

- On a positive note, the OEM has recently been in contact with Airways seeking examples of the issues being noted to enable them to track down the cause.

2.2 Loss of GPS coverage was detected at Invercargill (NZNV) regional airport in September 2024. The loss of coverage was occurring on short finals to Runway 04, affected multiple aircraft, but was intermittent. Some form of GPS interference was suspected, possibly from a GPS jammer.

2.2.1 Airways reported the issue to the Ministry of Business, Innovation and Employment (MBIE), Radio Spectrum Division as per NZCAA reporting requirements.

2.2.2 After a number of days of investigation by the MBIE radio inspector, it was found that the cause of the interference was a GPS jammer installed in a caravan recently purchased from overseas. The new owner was storing the caravan in a shed, and when he pulled the caravan out of the shed to do some maintenance on it, the interference started. When the caravan was put back in the shed the interference stopped. The new owner had no idea there was a GPS jammer in the caravan.

2.3 The detection of ADS-B issues such as GPS interference or jamming is often easy to determine, but difficult to resolve.

2.3.1 Airways has found that there is a reluctance by some OEMs to acknowledge issues with their equipment and to work speedily to resolve these issues.

2.3.2 Additionally government channels designed to fix day to day issue for the general population are not always suitable for the needs of the Aviation community, which is looking for a quick resolution to enable normal operations to recommence.

## 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

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