

**Thirty Eighth Meeting of the
Informal South Pacific ATS Coordinating Group
(ISPACG/38)**

**Thirty First Meeting of the
FANS Interoperability Team
(FIT/31)**

**Santiago, Chile
4-6 June 2024**

Agenda Item 1: CRA Problem Report Briefings

Future Air Navigation System (FANS) Problem Report (PR) Briefing

Presented by the Central Reporting Agency (CRA)

SUMMARY

This paper describes recent investigation and disposition of submitted FANS PRs that are relevant to the ISPACG FIT.

1 INTRODUCTION

- 1.1 FANS stakeholders may submit PRs for investigation via the <http://www.fans-cra.com/> website.
 - a) Airways New Zealand graciously hosts and maintains this website.
 - b) Stakeholders from multiple areas use this website, including the South Pacific area (ISPACG FIT), the North and Central Pacific area (IPACG FIT), the Asia area (FIT-Asia), and the North Atlantic area (NAT TIG).
- 1.2 Between preparation of the previous FANS PR briefing for the FIT/30 meeting held in April 2023 and preparation of this FANS PR briefing in May 2024, FANS stakeholders submitted 183 PRs via the website, of which 26 PRs (14%) occurred in the South Pacific area. For comparison, the previous FANS PR briefing indicated that FANS stakeholders submitted 98 PRs, of which 21 PRs (21%) occurred in the South Pacific area.
- 1.3 Figure 1 illustrates the number of PRs that FANS stakeholders submitted per calendar year starting in 2006. The dotted line and associated number in the figure represent a linear projection of the number of PRs that will be submitted in 2024.

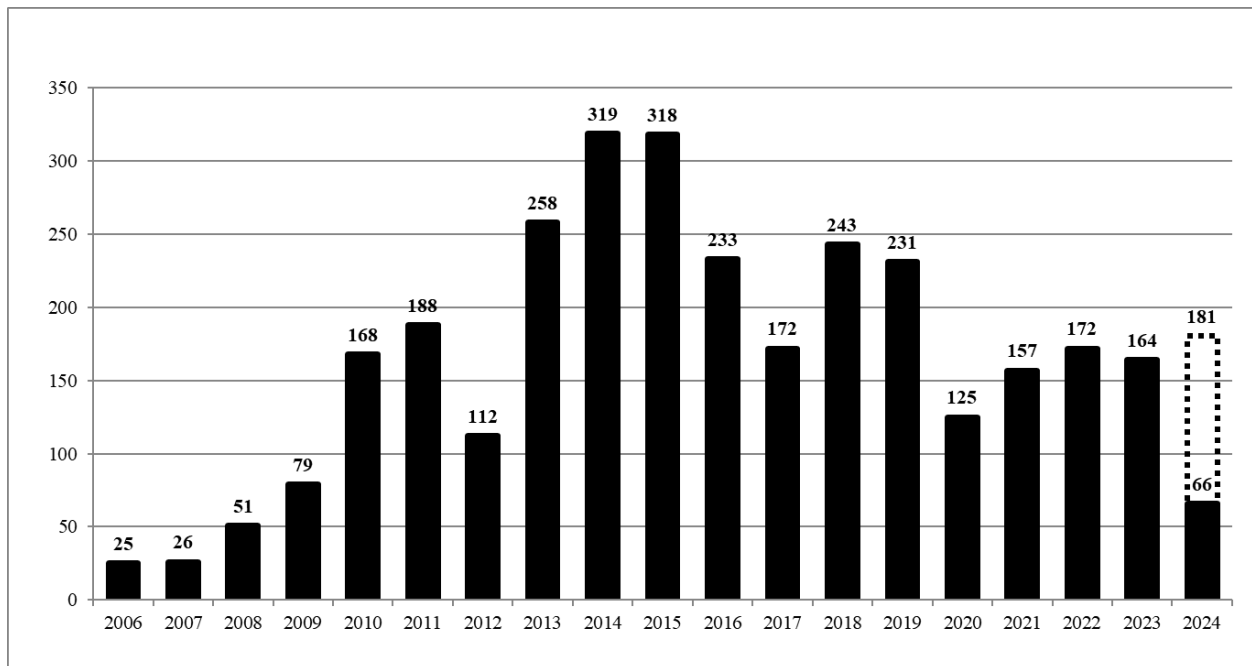


Figure 1 FANS PRs Per Year

1.4 PR status definitions include the following:

- **Raised:** The PR originator submitted the PR but the CRA has not yet processed it.
- **Active:** The CRA processed the PR and assigned it for investigation.
- **Open:** The CRA completed the PR investigation but some form of corrective action is required before the CRA can close it..
- **Open – Fix Available:** The appropriate stakeholder implemented corrective action and a fix is available for installation.
- **Closed:** The appropriate stakeholder implemented corrective action.
- **Closed As Duplicate:** The CRA is already tracking the same problem with another PR.
- **Closed – Monitoring:** The CRA cannot determine the corrective action and will monitor future PRs for any recurrences of the problem.

1.5 PR type definitions include the following:

- **TBA:** To be assigned
- **Air – Procedural:** Flight crew issue
- **Air – Technical:** Avionics issue
- **Ground – Procedural:** Air traffic controller issue
- **Ground – Technical:** ATS unit system issue
- **Network:** Communication service provider or SATCOM service provider issue

- **Multiple:** Multiple types of issues
- **None:** Report is a non-problem

2 DISCUSSION

2.1 The CRA notes the following updates to old PRs which are relevant to the ISPACG FIT:

- a) 757/767 Pegasus I FMC BP11 software became available in October 2023. This software resolves PRs 1516-GS (redisplay of old CPDLC uplink messages) and 2123-GS (inability to send CPDLC downlink report messages).
- b) 777 AIMS BPV18 software is currently expected to become available in the third quarter of 2024. This software will resolve PRs 2292-SN (inability to initiate logon), 2821-SH (no timestamp in CPDLC downlink message with dM63 NOT CURRENT DATA AUTHORITY), and 3090-SH (inability to initiate logon) and also implement the ACARS RAT1 function (to improve PBCS time performance in VHF-to-SATCOM transition areas).
- c) 747 NG FMC BP4.1 software is currently expected to become available in the first quarter of 2025 due to certification-related delays. This software will resolve PRs 2892-KS (inability to initiate logon) and 3251-GM (incorrect rounding of certain Mach speeds on ATC LOG page and printouts).
- d) 787 CMF BPv7 software is currently expected to become available in the first quarter of 2026. This software will resolve PRs 2685-MM (inability to send downlink messages), 3119-MM (truncated CPDLC position reports when wind direction is between 0.0° and 0.9°), 3264-MM (incorrect rejection of CPDLC connection requests), 3344-MM (incorrect rejection of CPDLC connection requests), and 3534-MM (incorrect wind direction in ADS-C reports when wind direction is between 126° and 234°) and also implement the ACARS RAT1 function (to improve PBCS time performance in VHF-to-SATCOM transition areas).
- e) 3445-NI, Closed / TBA. NiuSky Pacific reported multiple ADS-C disconnects with a Qantas Airbus A330. The CRA assigned Airbus to investigate this PR, but Airbus could not investigate it due to the lack of necessary data.
- f) 3468-CJ, Closed / TBA. NiuSky Pacific reported an inability to establish an ADS-C connection with a Qantas Airbus A330. The CRA assigned this PR to Airbus to investigate, but Airbus could not investigate it due to the lack of necessary data.
- g) 3469-CJ, Open / TBA. NiuSky Pacific reported intermittent issues establishing CPDLC and ADS-C connections with a China Airlines Airbus A350. Analysis by Airbus indicated that the issues were caused by temporary unavailability of SATCOM media. Airbus contacted the operator regarding maintenance actions

and their installed SATCOM configuration. The CRA will keep this PR open pending operator response.

- h) 3474-CJ, Closed / None. Airservices Australia reported receiving duplicate CPDLC downlink requests from China Airlines A330 and A350 aircraft. Analysis by Airbus indicated that the duplicates were retransmissions due to VHF to SATCOM transitions. The CRA closed this PR as a non-problem on the basis that the aircraft correctly rerouted the downlink to SATCOM according to the ACARS protocols and that occasional duplicate downlinks are an unavoidable consequence of mobile RF (wireless) data communications. The CRA also recommends that ATS providers consider detecting and discarding duplicate downlinks like avionics detect and discard duplicate uplinks; please see ICAO Doc 10037 (GOLD) 1st Edition Section 1.2.1.1.5 (including Note 1) and Appendix C.20 as well as problem G6 in the FANS Problem-Solution Tracker (available at https://www.fans-cra.com/performance/list/all_regions).
- i) 3476-MM, Open / Air – Technical. An Air New Zealand Airbus A321 flight crew reported that they were unable to send CPDLC messages. Airbus indicated that this problem corresponds to an anomaly in ATSU standard CSB/CLR9.x and that it will be corrected in a future evolution of the standard.
- j) 3486-RA, Open / Air – Technical. Airways New Zealand (and also the FAA) reported that several Boeing 777s operated by the same aircraft operator simultaneously used both Inmarsat SATCOM and Iridium SATCOM, which resulted in poor ACP (because uplink messages evidently succeeded only via Iridium SATCOM) as well as duplicate ADS-C reports (because the avionics transmitted the reports via both Inmarsat SATCOM and Iridium SATCOM). The aircraft operator, which added the Iridium SATCOM avionics, indicated that it plans to install avionics software to address this issue by the end of 2024. Iridium also notes that simultaneous Inmarsat SATCOM and Iridium SATCOM radiofrequency transmissions can permanently damage the receiver front end of the Iridium SATCOM avionics and degrade Iridium SATCOM performance.
- k) 3489-MM, Closed / TBA. NiuSky Pacific reported that it lost an ADS-C connection with a Qantas Airbus A330. The CRA assigned this PR to Airbus to investigate, but Airbus could not investigate it due to the lack of necessary data.
- l) 3491-CJ, Closed as Duplicate / Air – Technical. A Royal Australian Air Force Dassault Falcon 7X flight crew reported issues logging on to YMMM and YBBB. The crew reported an inability to establish a CPDLC connection (ATC COMM ESTABLISHED was never displayed). The CRA assigned this PR to Honeywell for investigation, but they were unable to provide feedback. The CRA closed this PR as a duplicate of PR 3180-MM.
- m) 3511-MM, Open / Ground – Technical. An Air New Zealand Boeing 787 flight crew reported that they received eleven MONITOR uplinks during an eight-

minute period. The ATS provider indicated that it plans to deploy a technical solution to this problem in May 2024.

- 2.2 The CRA received the following significant new PRs which occurred in the South Pacific region:
- a) 3533-MM, Closed / TBA. NiuSky Pacific reported that a Jetstar Boeing 787 failed to receive two CPDLC uplinks. The CRA closed this PR without investigation because SITA would not provide the CSP logs, even though SITA and Jetstar are both PBCS Charter stakeholders.
 - b) 3534-MM, Open / Air – Technical. Airways New Zealand (and also the FAA) reported receiving ADS-C reports from multiple Boeing 787 aircraft with incorrect wind directions. Boeing and Honeywell will resolve this problem (which occurs when the actual wind direction is between 126° and 234°) in 787 CMF BPv7 software that is currently expected to become available in the first quarter of 2026.
 - c) 3551-RP, Active / TBA. Airways New Zealand reported that it did not receive a WILCO response to a climb clearance, nor an expected CPDLC level report from a Fiji Airways Boeing 737 MAX, even though it received confirmation from the CSP that the uplink was delivered to the aircraft. Boeing is investigating this PR.
 - d) 3568-NI, Closed / Air – Procedural. Airservices Australia reported an inability to receive ADS-C downlinks from an Emirates Airbus A380, despite CPDLC operating normally. Investigation by Airbus determined that the flight crew had manually set the FMS clock function to “internal mode” prior to entering a known area of GNSS interference, which downgraded the ADS-C Figure of Merit (FOM) Level to 0 (complete loss of navigational capabilities). Upon exiting the interference area, the flight crew did not set the FMS clock back to “GPS mode”, resulting in ADS-C reports continuing to be sent with the downgraded FOM. These reports were not processed by the ground system due to the indicated FOM.
 - e) 3571-RP, Active / TBA. Airways New Zealand reported consecutive delays to ADS-C reports over a 100-minute period from an American Airlines Boeing 777 on Inmarsat SATCOM media. Boeing is investigating this PR.
 - f) 3575-MM, Active / TBA. Airways New Zealand reported that an Air New Zealand Airbus A321 did not respond to ADS-C contract requests or send requested ADS-C reports. The CRA assigned Airbus to investigate this PR.
 - g) 3631-RP, Active / TBA. Airservices Australia reported a loss of datalink connectivity and extensive delays for multiple aircraft. This PR is under investigation by Boeing and Airbus.
 - h) 3656-CJ, Active / TBA. Airways New Zealand reported PBCS performance degradation below 95% RSP 180 requirements for a Fiji Airways Airbus A330 utilizing SATCOM media. The CRA assigned Airbus to investigate this PR.

- i) 3658-CJ, Closed / Air – Technical. Airways New Zealand reported PBCS performance below 95% RSP 180 requirements for an Air Asia X Airbus A330 utilizing SATCOM media. Airbus determined that the SATCOM unavailability was due to low signal power caused by a loose coaxial connection and provided troubleshooting recommendations to the operator.
 - j) 3664-RA, Closed As Duplicate / Air – Technical. Airways New Zealand reported that a Boeing 777 simultaneously used both Inmarsat SATCOM and Iridium SATCOM, which resulted in poor ACP (because uplink messages evidently succeeded only via Iridium SATCOM) as well as duplicate ADS-C reports (because the avionics transmitted the reports via both Inmarsat SATCOM and Iridium SATCOM). Iridium also notes that simultaneous Inmarsat SATCOM and Iridium SATCOM radiofrequency transmissions can permanently damage the receiver front end of the Iridium SATCOM avionics and degrade Iridium SATCOM performance. The CRA closed this PR as a duplicate of PR 3486-RA.
 - k) 3665-CJ, Active / TBA. Airways New Zealand reported PBCS performance degradation below 95% RSP 180 requirements for a Fiji Airways Airbus A330. The CRA assigned Airbus to investigate this PR.
 - l) 3688-RA, Open / TBA. An Air New Zealand Boeing 777 flight crew reported that a CPDLC transfer from Tahiti to Oakland Oceanic failed. The CRA assigned SEAC-PF to investigate this PR (which may be the result of a short sector transit).
- 2.3 The CRA received the following significant new PRs which occurred outside the South Pacific region but which are relevant to the ISPACG FIT:
- a) 3550-MM, 3599-RA, 3659-MM, and 3572-RP, Closed / Network. The FAA reported downlink message delays and uplink message failures with multiple aircraft using Iridium SATCOM via ARINC in June 2023, September 2023, December 2023, and January 2024. These problems were due to an interface problem between Iridium and ARINC that was resolved in February 2024.
- 2.4 The CRA received the following less-significant new PRs which occurred in the South Pacific region:
- a) 3527-MM, Active / TBA. An Air New Zealand Boeing 787 flight crew reported that a CPDLC transfer from Port Moresby to Ujung Pandang failed. CSP log analysis by the CRA indicates that Port Moresby attempted to perform AFN address forwarding to Ujung Pandang but Ujung Pandang never responded with an AFN acknowledgement message, whether positive or negative. The same is true for the flight crew's attempts to manually perform an AFN log on to Ujung Pandang. The CRA assigned AirNav Indonesia to investigate this PR.
 - b) 3543-MM, Closed / TBA. An ATS provider reported that it lost an ADS-C connection with a Jetstar Boeing 787. CSP log analysis by the CRA does not

indicate that a loss of ADS-C occurred or the reason for the reported indication to the controller, however – the aircraft promptly sent all expected ADS-C reports to SITA and SITA promptly forwarded them to the ATS provider.

- c) 3557-MM, Closed as Duplicate / Ground – Technical. An Air New Zealand Boeing 787 flight crew reported that they received 39 MONITOR uplinks. The CRA closed this PR as a duplicate of PR 3511-MM because the same ATS provider was involved.
- d) 3561-MM, Closed / Air – Technical. Airports Fiji reported excessive delays to ADS-C reports that a particular Boeing 787 aircraft sent via SATCOM during transitions between satellites in July 2023. Boeing was unable to obtain SATCOM avionics logs from the aircraft in order to investigate the problem, but performance data for the Pacific during the second half of 2023 shows acceptable performance by the aircraft.
- e) 3562-NI, Active / TBA. Airways New Zealand reported receiving ADS-C reports from an Emirates Airbus A380 with a Figure of Merit Level of 0 (complete loss of navigational capabilities), although assessment of the predicted route estimates indicated they were in conformance with the aircraft's filed flight plan. The CRA assigned Airbus to investigate this PR.
- f) 3570-MM, Closed / None. An Air Tahiti Nui Boeing 787 flight crew reported that the pilot flying attempted to load the altitude from a CPDLC climb clearance into the autoflight system at the same time that the pilot monitoring removed the clearance from the flight deck displays, which meant that the flight crew had to manually select the altitude in the autoflight system.
- g) 3583-CJ, Active / TBA. Airways New Zealand reported receiving significantly delayed ADS-C reports from an Air Asia X Airbus A330. The CRA assigned Airbus to investigate this PR.
- h) 3592-CJ, Active / TBA. Airways New Zealand reported delays to messages from a Jetstar Airbus A321 utilizing SATCOM media. The CRA assigned Airbus to investigate this PR.
- i) 3595-MM, Active / TBA. Airservices Australia reported multiple CPDLC transfer failures with a particular Philippine Airlines Airbus A321. The CRA assigned Airbus to investigate this PR.
- j) 3657-CJ, Active / TBA. Airways New Zealand reported PBCS performance degradation below 95% RSP 180 requirements for a Fiji Airways Airbus A330 utilizing SATCOM media. The CRA assigned Airbus to investigate this PR.
- k) 3663-MM, Active / TBA. Airways New Zealand reported delays to messages from an Air New Zealand Airbus A320 that it sent via Iridium SATCOM. The CRA assigned Airbus to investigate this PR.
- l) 3667-RA, Active / TBA. Airways New Zealand reported that it received delayed ADS-C reports from multiple Boeing 777 aircraft operated by a particular aircraft

operator and configured to use a particular CSP when the aircraft were operating in VHF datalink coverage offered only by a different CSP. Boeing is investigating this PR.

- m) 3668-RP, Active / TBA. NiuSky Pacific reported receiving a duplicate CPDLC downlink response from a China Airlines Airbus A350. The CRA assigned Airbus to investigate this PR.
- n) 3691-MM, Closed As Duplicate / Air – Technical. A Gulfstream G550 flight crew reported that they were unable to send a CPDLC downlink to Brisbane. The CRA closed this PR as a duplicate of PR 2976-MM for the same behavior, which Gulfstream previously indicated that it plans to fix in the “Cert India” avionics software update.

3 ACTION BY THE MEETING

3.1 The CRA invites the ISPACG FIT to:

- a) note the content of this paper; and
- b) promote expeditious resolution of Active and Open PRs.