



International Civil Aviation Organization

ICAO

Eleventh Meeting of the FANS Interoperability Team – Asia  
(FIT-Asia/11)

Video Teleconference, 23 – 27 August 2021

---

### Agenda Item 3: PBCS Developments and Implementation

#### LATENCY MONITOR REJECT ANALYSIS

(Presented by Airways New Zealand)

##### SUMMARY

This paper presents an analysis of Latency Monitor reject messages received from Airbus aircraft operating in NZZO during the period July 2020 to June 2021.

## 1. INTRODUCTION

1.1 Airways implemented the latency monitor on 21 June 2018 to support PBCS safety requirement #15 and mitigate the effects of late CPDLC uplink messages received at the aircraft.

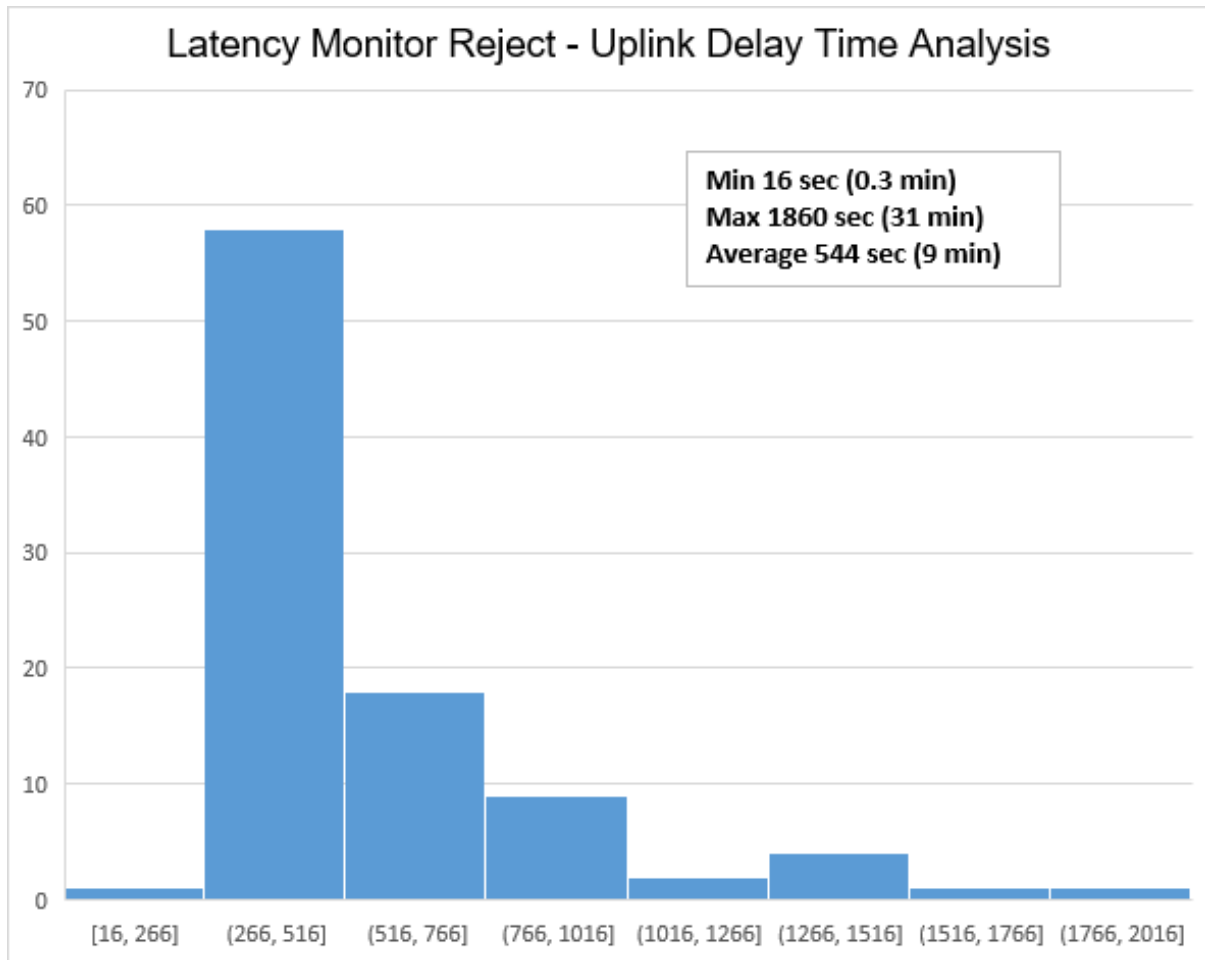
1.2 On receipt of a CPDLC uplink message whose latency exceeds the 300 second monitored value Airbus aircraft do not present the uplink to the flight crew and send a reject message to ATC.

1.3 This paper provides an analysis of latency reject messages received at NZZO during the period July 2020 to June 2021.

## 2. DISCUSSION

2.1 We initiated 1200 latency monitor uplinks in July 2020 and 2000 in June 2021. Five percent of aircraft are responding as unable to set the latency monitor.

2.2 During the 12-month review period a total of 83,376 CPDLC uplinks were initiated, with 24,266 sent to Airbus aircraft. A total of 12 reject messages were received from Airbus aircraft. This is a latency reject rate of 1 in 2022 messages or 0.05%. An analysis of the reject messages and the delays observed since implementation is shown in **Figure 1**. Airways raised a problem report on an uplink message which was rejected with an uplink latency of 16 seconds. We have been advised by Airbus that this reject was due to a known fault in their CSB/CLR9 software package and have a fix scheduled in the CSB/CLR10 software scheduled for release late 2022.



**Figure 1:** Uplink Delay Analysis

2.3 **Table 1** provides a monthly breakdown of the number of reject messages and their classification.

| Month         | # Rejects | Latency Reject Classification |             |          |          |                |                    |                       |
|---------------|-----------|-------------------------------|-------------|----------|----------|----------------|--------------------|-----------------------|
|               |           | Unknown                       | Time Source | Inmarsat | Iridium  | HFDL no SATCOM | Inmarsat sent HFDL | Unable SATCOM via VDL |
| Jul-20        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Aug-20        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Sep-20        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Oct-20        | 2         | 0                             | 0           | 1        | 0        | 0              | 1                  | 0                     |
| Nov-20        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Dec-20        | 2         | 0                             | 0           | 2        | 0        | 0              | 0                  | 0                     |
| Jan-21        | 6         | 0                             | 0           | 5        | 1        | 0              | 0                  | 0                     |
| Feb-21        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Mar-21        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| Apr-21        | 0         | 0                             | 0           | 0        | 0        | 0              | 0                  | 0                     |
| May-21        | 1         | 0                             | 0           | 0        | 1        | 0              | 0                  | 0                     |
| Jun-21        | 1         | 0                             | 0           | 0        | 1        | 0              | 0                  | 0                     |
| <b>Totals</b> | <b>12</b> | <b>0</b>                      | <b>0</b>    | <b>8</b> | <b>3</b> | <b>0</b>       | <b>1</b>           | <b>0</b>              |

**Table 1:** Latency reject messages by month and classification.

**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 matters as appropriate.

.....