

# NZZO Latency Monitor Implementation WP 03



FIT-Asia/12  
Virtual meeting  
25-28 July, 2022



# Latency Monitor

- NZZO implemented the latency monitor uplink on 21 June 2018.
- The latency monitor supports PBCS safety requirement #15 on aircraft - mitigating late message receipt at the aircraft.
- The latency monitor message is sent by CPDLC free text when NZZO is confirmed as CDA requesting aircraft set the latency monitor at 300 seconds.
- On receipt of an uplink exceeding the 300 second monitored value Airbus aircraft send a reject message to ATC.
- The 300 second latency value has been used in NZZO for four years. No significant issues have been found since implementation, and we consider our implementation has been successful

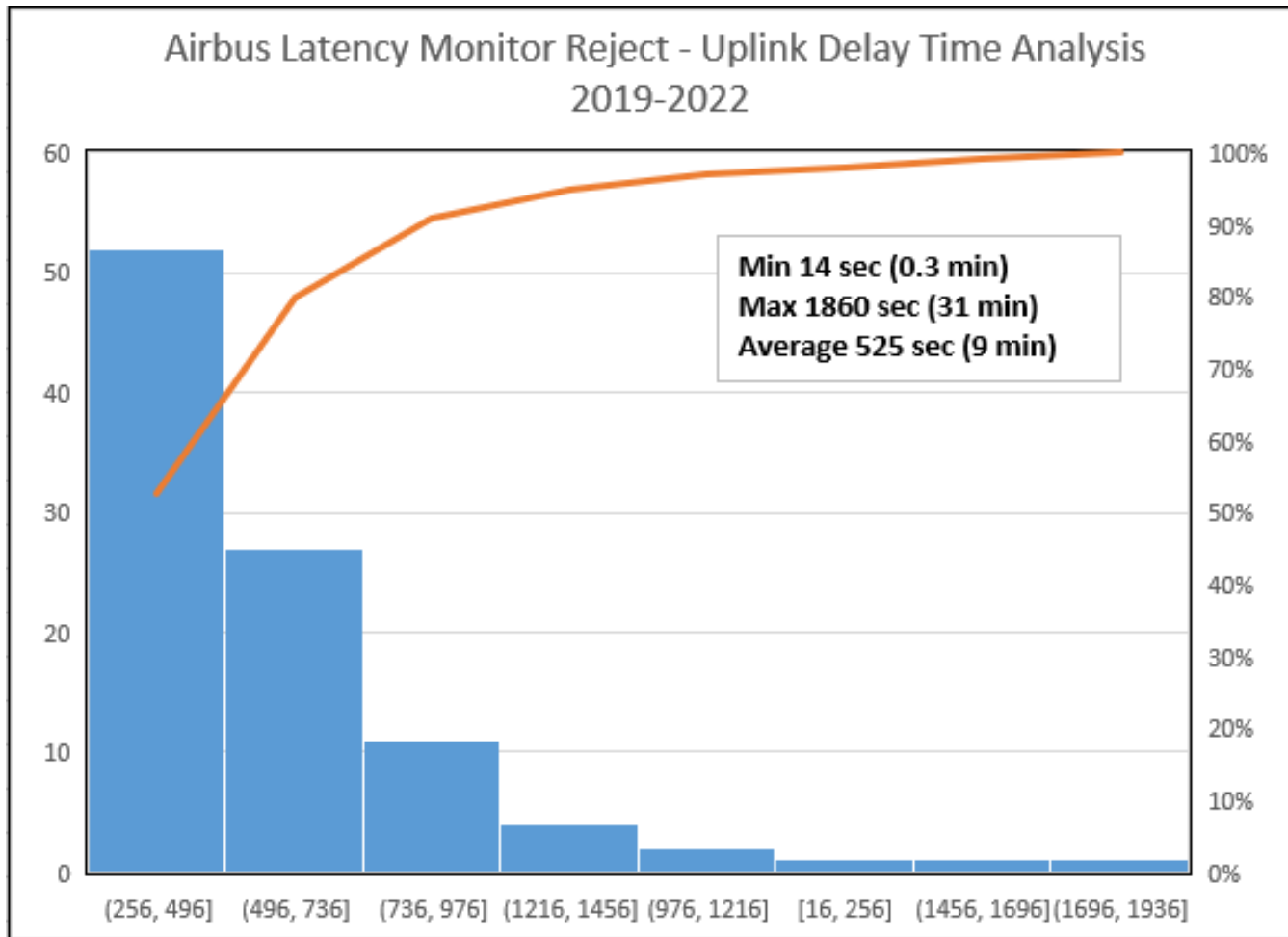
# Latency Monitor

- In the year to June 2022, we sent 22,633 latency monitor messages.
- 5% of traffic is responding as unable to set the latency monitor.
- In the 12-month period 106,378 CPDLC messages were initiated with 34,975 (33%) sent to Airbus aircraft.

Month	# Set Latency Monitor	# Monitor not Available	# Rejects
Jul-21	1,908	125	0
Aug-21	1,594	96	0
Sep-21	1,411	83	1
Oct-21	1,537	74	0
Nov-21	1,708	69	0
Dec-21	1,867	62	3
Jan-22	1,709	53	1
Feb-22	1,721	62	3
Mar-22	2,192	100	0
Apr-22	2,319	109	2
May-22	2,384	91	0
Jun-22	2,283	97	10
<b>Total</b>	<b>22633</b>	<b>1021</b>	<b>20</b>
<b>Average</b>	<b>1886</b>	<b>85</b>	<b>2</b>

*Note: Two reject messages have been received that had an uplink latency of less than 300 seconds (one with a latency of 14 seconds, the other 16 seconds). These rejects are caused by a software bug where the uplink is sent across the hour and Airbus have confirmed that this bug will be fixed in their software with the CSB10 release scheduled late 2022 or early 2023.*

# Latency Monitor



*Note: Histogram depicts all latency rejects received since implementation in August 2018.*

# Latency Monitor

- Latency rejects by month and classification

Month	# Rejects	Latency Reject Classification						
		Unknown	Time Source	Inmarsat	Iridium	HFDL no SATCOM	Inmarsat sent HFDL	Unable SATCOM via VDL
Jul-21	0	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0	0
Sep-21	1	0	0	0	0	0	1	0
Oct-21	0	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0	0
Dec-21	3	0	0	1	0	0	0	2
Jan-22	1	0	0	1	0	0	0	0
Feb-22	3	0	0	2	0	0	1	0
Mar-22	0	0	0	0	0	0	0	0
Apr-22	2	0	0	0	1	0	1	0
May-22	0	0	0	0	0	0	0	0
Jun-22	10	0	0	5	0	0	5	0
<b>Totals</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>2</b>

The significant number of rejects in June 2022 is because HFDL was used to uplink the CPDLC messages. A CRA problem report determined the cause as a CSP software issue which is now resolved.

## Action by the Meeting

The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate; and
- c) formalize the use of the 300 second latency value in the Asia Pacific region.



# Draft Conclusion

Draft Conclusion FIT-Asia/12-X: CPDLC Latency Monitor value	
<p><b>What:</b> That, recognizing:</p> <p>1. the need for aircraft to provide an appropriate indication when the age of the time stamp of a received CPDLC message exceeds a defined value (latency timer value), in accordance with ICAO Doc 9869 PBCS Manual safety requirement SR-15; 2. the need for a single, standardized global value.</p> <p>The Asia-Pacific region adopts a latency timer value of 300 seconds for use in oceanic airspace.</p>	<p><b>Expected impact:</b></p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p><b>Why:</b> To implement a standardized global value for latency timer in the APAC region, in alignment with the value of 300 seconds specified in the ICAO NAT Region <i>North Atlantic Operations and Airspace Manual</i> (NAT Doc 007).</p>	<p><b>Follow-up:</b> <input type="checkbox"/> Required from States</p>
<p><b>When:</b> 25-Aug-22</p>	<p><b>Status:</b> Draft to be adopted by Subgroup</p>
<p><b>Who:</b> <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: Aircraft operators</p>	