



International Civil Aviation Organization  
**ICAO Sixteenth Meeting of the FANS Interoperability Team – Asia (FIT-Asia/16)**

Bangkok, Thailand, 9 – 11 June 2026

**Agenda Item 4: Review of ADS/CPDLC Operations and Performance**

**DATA LINK PERFORMANCE REPORT FOR UJUNG PANDANG FIR**

(Presented by Indonesia)

**SUMMARY**

This paper presents data link performance data for 2025 for the Ujung Pandang FIR, and information on actions taken to identify and rectify the causes of performance issues.

**1. INTRODUCTION**

1.1 **Tables 1 to 4B** summarize Automatic Dependent Surveillance – Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) performance where the Required Surveillance Performance (RSP) and Required Communications Performance (RCP) criteria stipulated in ICAO Doc 4444 – Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) were not met. Actions taken to address performance not meeting the criteria are discussed, together with the outcomes of such actions.

**2. DISCUSSION**

Ujung Pandang FIR ADS-C RSP180 Performance – Media Type, RGS and GES

2.1 **Table 1** summarizes overall ADS-C performance per media type, Remote Ground Station (RGS) and Ground Earth Station (GES) for downlinks sent within the Ujung Pandang FIR during 2025, where performance did not meet the RSP180 performance criteria.

**Table 1:** Ujung Pandang FIR ADS-C Downlink Latency per Media Type, RGS and GES

FIR	Ujung Pandang FIR					
Criteria	RSP180					
Period	Jan-Jun 2025			Jul-Dec 2025		
<b>Colour Key</b> Meets Criteria 99.0%-99.84% Under Criteria	Message Counts	95%	99.90%	Message Counts	95%	99.90%
		% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec
By Media Type						
SATCOM	65354	99,48%	99,88%	73813	99,51%	99,88%
HF	170	39,41%	58,82%	260	34,62%	57,44%
VHF	234625	99,04%	99,50%	252590	98,99%	99,45%

ALL		300149	99,10%	99,56%	326663	99,09%	99,51%
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(only RGS/GES with message counts >100 recorded)					
AMQ1	VHF	7676	97,20%	97,92%	7720	95,94%	96,83%
BIK1	VHF	882	98,21%	98,27%	1136	98,61%	98,83%
CGK1	VHF	196	100,00%	100,00%	136	95,97%	97,89%
DPS1	VHF	6073	98,23%	98,44%	5220	97,76%	98,16%
IG1	SAT	15166	95,33%	98,81%	15057	95,98%	99,00%
IGW1	SAT	531	97,98%	99,48%	647	98,10%	98,87%
KDI1	VHF	4113	98,72%	99,16%	2186	97,78%	98,36%
KOE1	VHF	2883	97,78%	98,55%	3500	98,90%	99,15%
LOP1	VHF	261	98,58%	98,73%	272	98,76%	99,54%
PLM	VHF	370	97,06%	98,37%	219	98,56%	100,00%

2.2 In summary, ADS-C performance by SATCOM and VHF were able to meet the 95% criterion but failed for 99,90% criterion for both January – June period and July – December period, as shown in Table 1 above. However, ADS-C performance by HF failed to meet the 95% and 99% criterion. For ADS-C differentiated by RGS/GES, eight stations had failed to meet 99,9% criteria either in one semester or throughout the year (AMQ1, BIK1, DPS1, IG1, IGW1, KDI1, KOE1, and LOP1).

2.3 The assessment for ADS-C performance by HF could not be statistically significant due to the low number of data points. As HF does not meet the performance required by PBCS, Indonesia has reminded airline operators to use SATCOM and VHF in Ujung Pandang FIR.

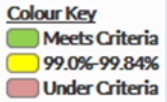
2.4 To recognize the causes of the issue, ANSP has monitored RGS/GES performance since beginning until the latest 2025 period. The SSP is expected to initiate close coordination with ANSP as a follow-up action to address the connection issues that have occurred.

2.5 Based on the monitoring activities, no improvement in performance was recorded. The SSP expected to identify the root causes of poor ADS-C performance attributed to RGS/GES, particularly for IG1, which have shown no reported improvement since the previous year.

Ujung Pandang FIR ADS-C RSP180 Performance – Aircraft Operator/Type

2.6 **Table 2** summarizes overall ADS-C performance per Aircraft Operator/Type for downlinks sent within the Ujung Pandang FIR during 2025, where performance did not meet the RSP180 performance criteria.

**Table 2:** Ujung Pandang FIR ADS-C Downlink Latency per Aircraft Operator/Type

FIR	Ujung Pandang FIR					
Criteria	RSP180					
Period	Jan-Jun 2025			Jul-Dec 2025		
 Colour Key Meets Criteria 99.0%-99.84% Under Criteria	Message Counts	95%	99.90%	Message Counts	95%	99.90%
		% <= 90sec	% <= 180sec		% <= 90sec	% <= 180sec
By Aircraft Operator / Type (only message counts >100 recorded)						

CAL/A359	4072	98,68%	99,07%	5268	95,79%	97,06%
CCA/B77W	588	96,94%	98,67%	209	97,72%	99,67%
CES/B77W				221	96,17%	98,04%
CPA/B77W	13758	95,78%	98,90%	12673	96,26%	99,12%
GIA/A332				187	89,13%	90,25%
GIA/A339	165	97,25%	98,19%	546	99,63%	100,00%
MAS/A333	6658	99,17%	99,41%	2695	98,42%	98,93%
MAS/A339	2999	97,90%	98,37%	12449	99,85%	99,91%
MXD/A333	1705	98,06%	98,85%			
PAL/A21N	4390	95,56%	98,23%	5430	96,69%	98,69%
PAL/A321	1011	98,17%	98,53%	971	98,23%	98,85%
SJV/A320	390	95,11%	96,19%	315	94,16%	95,95%
TAX/A333	388	91,79%	93,48%	303	97,32%	98,71%
UAE/ B77L	615	97,18%	98,65%	881	98,47%	99,85%
VJC/A333	8958	96,15%	97,28%	7822	93,38%	95,10%

2.7 In summary, there were one aircraft operator/type which failed the 95% and 99% RSP180 criteria during the first half of 2025 and three aircraft operators/types which failed the 95% and 99% RSP180 criteria during second half of 2025 as shown in Table 2.

2.8 Aircraft identified with low performance indicated issues with the data link connection, generally associated with CSP or SSP-related problems.

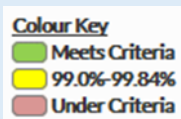
2.9 The ANSP will assess whether the observed issue pertains to an isolated flight event or reflects a persistent problem. Absence of similar occurrences in later monitoring periods may indicate that the issue has been resolved.

2.10 The ANSP will continue the monitoring to determine the problem, if it still occurred the ANSP will take action to notify the aircraft operator.

#### Ujung Pandang FIR CPDLC RCP240 Performance – Media Type, RGS and GES

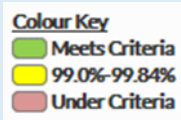
2.11 **Tables 3A and 3B** summarize overall CPDLC performance per Media Type, RGS and GES for messages sent within the Ujung Pandang FIR during 2025, where performance did not meet the RCP240 performance criteria.

**Table 3A:** Ujung Pandang FIR CPDLC Performance Latency per Media Type, RGS and GES – Jan-Jun 2025.

FIR	Ujung Pandang FIR					
Criteria	RCP240					
Period	Jan-Jun 2025					
	Message Counts	95% benchmark		99.9% Benchmark		95%
		ACP	ACTP	ACP	ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	% < 60sec

By Media Type							
SATCOM	13.400	99,51%	99,90%	99,63%	99,90%	97,26%	
SV	986	99,24%	100,00%	99,33%	100,00%	96,86%	
VHF	44.252	99,39%	99,77%	99,52%	99,77%	97,95%	
ALL	58638	99,42%	99,78%	99,54%	99,81%	97,78%	
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(RGS/GES with message counts >100)					
DPS	VHF	676	99,10%	98,87%	99,28%	98,93%	98,22%
DPSV	VHF	199	97,84%	100,00%	97,95%	100,00%	97,37%
IG1	SAT	3770	98,81%	99,88%	99,37%	99,92%	93,10%
IOR5	SAT	194	100,00%	100,00%	100,00%	100,00%	94,59%
IGW1	VHF	106	98,63%	100,00%	99,15%	100,00%	91,51%
XXI	SV	104	96,64%	100,00%	97,47%	100,00%	90,67%

**Table 3B:** Ujung Pandang FIR CPDLC Performance Latency per Media Type, RGS and GES – Jul-Dec 2025.

FIR	Ujung Pandang FIR						
Criteria	RCP240						
Period	Jul-Dec 2025						
	Message Counts	95% benchmark		99.9% Benchmark		95%	
		ACP	ACTP	ACP	ACTP	PORT	
		% < =180sec	% <= 120sec	% <= 210sec	% <= 150sec	% <60secs	
By Media Type							
SATCOM	12758	99,39%	99,89%	99,55%	99,91%	97,39%	
SV	1043	98,51%	99,90%	98,86%	99,91%	96,40%	
VHF	41059	99,29%	99,77%	99,40%	99,80%	97,78%	
ALL	54860	99,30%	99,80%	99,43%	99,82%	97,66%	
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(RGS/GES with message counts >100)					
IG1	SAT	3144	98,87%	99,84%	99,22%	99,89%	94,31%
IOR5	SAT	224	98,75%	100,00%	99,85%	100,00%	91,07%
IGW1	VHF	101	98,68%	100,00%	100,00%	100,00%	86,47%
PNK1	VHF	276	96,53%	99,52%	96,58%	99,62%	96,11%
SRG	VHF	110	98,50%	99,02%	98,71%	99,21%	97,54%
XXI	SV	117	96,67%	100,00%	99,15%	100,00%	93,06%
XXQ	SV	511	98,78%	100,00%	98,85%	100,00%	97,13%

2.12 The Actual Communications Performance (ACP) measurement for CPDLC messages performance that sent within Ujung Pandang FIR for the period from 1 January 2025 to 31 December 2025 are categorized by data link media type, RGS/GES, and Aircraft Operator/Type. The ACP for

messages sent over Satellite and VHF meet the 95% criteria but marginally fall below the 99,9% criteria. As for CPDLC differentiated by RGS and GES, six stations had failed to meet 99,9% criteria as follows DPS, DPSV, XXI (from period of January to June 2025) and PNK1, SRG, XXQ (from period of July to December 2025) had failed to meet 99,9% criteria.

2.13 The CPDLC differentiations from both of RGS/GES stations were caused by the delay related to specific VHF station, it happened when the delayed CPDLC messages are observed via a specific VHF ground station. In conjunction with RSP 180, the performance criteria for RCP 240 experienced failures due to connection issues from numerous ground stations.

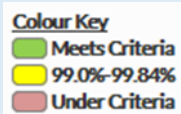
2.14 Indonesia has identified the differentiations based on the observation during the period of 2025, the result also showed the ACP which did not meet the criteria is caused by the low percentages from pilot operational response time (PORT).

2.15 According to the results, the ANSP expects the CSP to identify the causes of the RGS/GES delays.

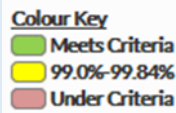
Ujung Pandang FIR CPDLC RCP240 Performance – Aircraft Operator/Type

2.16 **Tables 4A and 4B** summarize overall CPDLC performance per Aircraft Operator/Type for messages sent within the Ujung Pandang FIR during 2025, where performance did not meet the RCP240 performance criteria.

**Table 4A:** Ujung Pandang FIR CPDLC Performance Latency per Aircraft Operator/Type – Jan-Jun 2025

FIR	Ujung Pandang FIR					
Criteria	RCP240					
Period	Jan-Jun 2025					
	Message Counts	95% benchmark		99.9% Benchmark		95%
		ACP	ACTP	ACP	ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	% < 60s ecs
<b>By Aircraft Operator / Type (only message counts &gt;100 recorded)</b>						
ABL/A21N	228	98,42%	99,85%	98,65%	100,00%	92,81%
ACI/A339	112	97,34%	100,00%	97,38%	100,00%	95,44%
CAL/A359	1243	98,84%	99,45%	98,95%	99,66%	97,81%
CBJ/A332	373	96,80%	97,45%	96,90%	97,65%	94,72%
CCA/A333	138	98,70%	100,00%	98,81%	100,00%	97,17%
CPA/B77W	2895	99,03%	99,97%	99,63%	99,97%	93,82%
CSN/B789	3577	98,57%	99,28%	98,65%	99,43%	97,65%
CSN/B77L	125	98,28%	100,00%	98,59%	100,00%	97,76%
CXA/B789	897	99,19%	98,80%	99,22%	98,92%	98,18%
EVA/B78X	167	98,28%	100,00%	98,41%	100,00%	98,08%
PAL/A332	213	98,70%	99,73%	98,78%	99,81%	97,18%
RBA/A320	157	99,07%	100,00%	99,43%	100,00%	94,59%

**Table 4B:** Ujung Pandang FIR CPDLC Performance Latency per Aircraft Operator/Type – Jul-Dec 2025

FIR	Ujung Pandang FIR					
Criteria	RCP240					
Period	Jul-Dec 2025					
	Message Counts	95% benchmark		99.9% Benchmark		95%
		ACP	ACTP	ACP	ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	% < 60secs
<b>By Aircraft Operator / Type (only message counts &gt;100 recorded)</b>						
CAL/A359	1207	97,72%	98,61%	98,06%	98,94%	95,82%
CHH/A332	165	98,89%	100,00%	98,09%	100,00%	95,61%
CPA/A333	536	98,83%	100,00%	99,07%	100,00%	94,03%
CPA/B77W	2347	98,87%	99,73%	99,27%	99,75%	94,46%
CSC/A332	165	98,45%	100,00%	98,71%	100,00%	96,71%
CSC/A333	472	98,67%	100,00%	98,82%	100,00%	96,19%
CSN/A359	1865	99,16%	98,02%	99,25%	98,30%	97,50%
CSN/B789	2370	98,74%	99,17%	98,54%	99,35%	97,59%
FDX/B77L	177	98,91%	100,00%	99,01%	100,00%	94,63%
HVN/B789	112	99,38%	98,50%	99,60%	98,62%	97,25%
PAL/A21N	948	97,49%	98,43%	97,68%	98,64%	95,36%
PAL/A321	344	99,49%	100,00%	99,53%	100,00%	99,17%
QTR/A35K	152	98,31%	100,00%	98,40%	100,00%	98,05%
RBA/A320	213	99,37%	100,00%	99,79%	100,00%	94,68%
THA/A359	1708	98,77%	99,79%	98,78%	99,84%	98,13%
UAE/A388	292	98,68%	99,77%	98,71%	99,81%	96,92%

2.17 The Actual Communications Performance (ACP) measurement for CPDLC messages performance that sent within Ujung Pandang FIR for the period from 1 January 2025 to 31 December 2025 are categorized by aircraft operator type, there are nine aircraft operators/types which failed 99,9% criteria for the period from January 2025 to June 2025 and nine aircraft operators/types which failed 99,9% criteria for the period July to December 2025.

2.18 The CPDLC issues at both aircraft operator/type occurred due to delays at certain VHF ground stations. Therefore, the ACP which did not meet the criteria also caused by the low percentages from pilot operational response time (PORT).

2.19 Based on the performance monitoring, we analyzed that the delayed CPDLC transactions are caused by high large pilot operational response time (PORT). It was reported that during this period, there were involving eight different aircraft operators/types.

2.20 ANSP will notify the airline operators especially local ones, therefore they are expected to review procedures to reduce the pilot operational response time (PORT).

Additional Information

2.21 Indonesia has submitted the survey of the status of current and planned implementation of performance-based separation based on the revised template and submission dates.

**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.

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**APPENDIX A**

**SURVEY OF THE STATUS OF CURRENT AND PLANNED IMPLEMENTATION OF PERFORMANCE-BASED HORIZONTAL SEPARATION MINIMA**

<b>1. Has your State completed any of the following preparations for PBCS implementation?</b>					
<b>PBCS Implementation Task List</b>	<b>Task Group</b>	<b>Task ID</b>	<b>TASK descriptor</b>	<b>Y/N</b>	<b>If NO, Planned Date</b>
	Group A	A-1	AIP (Prescription of an RCP/RSP specification. Also see B-3 below)	Y	
		A-2	PBCS policies, objectives supporting safety oversight of ANSP PBCS operations	Y	
		A-3	PBCS policies, objectives supporting safety oversight of Aircraft Operator and Aircraft System PBCS operations	Y	
		A-4	Proposal for Amendment to ICAO Doc 7030 - <i>Regional Supplementary Procedures</i> for PBCS operations, if applicable	Y	
	Group B	B-1	PBCS Implementation Plan	Y	
		B-2	Target dates for PBCS and relevant ATM operations	Y	
		B-3	RCP/RSP specifications	Y	
		B-4	PBCS awareness	Y	
	Group C	C-1	Operational concepts and procedures for PBCS operations	Y	
		C-2	ATM automation system changes to use flight plan RCP/RSP indicators	Y	
		C-3	ATM automation changes for PBCS monitoring	Y	
		C-4	Confirm initial ANSP compliance with RCP/RSP specifications	Y	
	Group D	D-1	Aircraft operator readiness	Y	
		D-2	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP	Y	
	Group E	E-1	PBCS monitoring, analysis and reporting - post implementation	Y	

				Y/N	If NO, Planned Date
<b>2. Does your State submit data link problem reports to a recognized Central Reporting Agency (CRA)</b>				Y	
<b>3. Does your State monitor and analyze data link performance in accordance with the following specifications and report the analysis to a recognized FANS Interoperability Team (FIT)?</b>					
Communication Specifications & Interoperability Standards	Normal	RCP240	FANS1/A CPDLC	Y	
	Alternate	RCP400	SATVOICE	N	
Surveillance Specifications & Interoperability Standards		RCP400	HF	N	
	Normal	RSP180	FANS1/A ADS-C	Y	
Alternate	RSP400	SATVOICE	N		
	RSP400	HF	N		
<b>4. Has your State implemented or planned to implement the following performance-based horizontal separation minima?</b>					
Navigation Specifications & Applicable ATM Operations	RNAV/RNP	RNAV/RNP 10, RNP 4, RNP 2	50 NM Lateral Separation <i>Communication other than direct controller-pilot voice</i>	Y	
		RNAV/RNP 10, RNP 4	50 NM Longitudinal Separation <i>RCP/240 and RSP/180</i>	Y	
		RNP 4 or RNP 2	30 NM Longitudinal Separation	Y	
			30 NM Lateral Separation <i>In cases where the ANSP has considered there is insufficient operational benefit to justify the investment in the change from 30 NM to 23 NM.</i>	Y	
		23 NM Lateral Separation	Y		
		<i>Other planned or implemented separations dependent on RCP240/RSP180. Please also provide the DOC 4444 PANS-ATM reference.</i>	N		