



ICAO

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

DATA LINK PERFORMANCE REPORT FOR SRI LANKA

(Presented by Sri Lanka)

SUMMARY

This paper presents data link performance of the ADS-C/CPDLC data in Colombo FIR (VCCF) for the period May – December 2024.

1. INTRODUCTION

1.1 **Tables 1 to 4** 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).

1.2 Media type data (SATCOM/VHF/HF) and Aircraft operator/type data were presented from May to December 2024. Data for the months of January to April 2024 was unavailable due to a system upgrade.

2. DISCUSSION

VCCF 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 VCCF FIR during 2024, where messages met RSP180 95% criterion but marginally fall below the RSP180 99.9% criterion.

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

FIR	VCCF					
Criteria	RSP180					
Period	May-June 2024			July-December 2024		
Colour Key ■ Meets Criteria ■ 99.0%-99.89% ■ Under Criteria	Message Counts	95% % <= 90sec	99.90% % <= 180sec	Message Counts	95% % <= 90sec	99.90% % <= 180sec
By Media Type						
SATCOM	79822	98.50%	99.82%	318548	98.22%	99.59%
VHF	22782	99.85%	99.93%	84348	99.69%	99.86%
HF	-	-	-	-	-	-
ALL	102604	98.83%	99.84%	402896	98.53%	99.65%
By Remote Ground Station (RGS) Ground Earth Station (GES)						
Designator	Type	(only RGS/GES with message counts >100 recorded)				
CMB1	VHF	21148	99.89%	99.96%	81184	99.76%
MAA1	VHF	876	99.08%	99.54%	2688	97.79%
MLE1	VHF	758	99.60%	99.74%	476	97.06%
APK1	SAT	61545	99.40%	99.93%	238346	99.38%
APK2	SAT	5568	97.72%	99.28%	11850	93.72%
EUA1	SAT	3529	96.05%	99.83%	9865	95.13%
IGW1	SAT	9180	93.86%	99.44%	58487	95.16%

VCCF FIR ADS-C RSP180 Performance – Aircraft Operator/Type

2.2 **Table 2** summarizes overall ADS-C performance per Aircraft Operator/Type for downlinks sent within the VCCF FIR during 2024.

Table 2: VCCF FIR ADS-C Downlink Latency per Aircraft Operator/Type

FIR	VCCF					
Criteria	RSP180					
Period	May-June 2024			July-December 2024		
Colour Key ■ Meets Criteria ■ 99.0%-99.89% ■ Under Criteria	Message Counts	95% % <= 90sec	99.90% % <= 180sec	Message Counts	95% % <= 90sec	99.90% % <= 180sec
By Aircraft Operator / Type (only message counts >100 recorded)						
AIC_B788	2581	99.65%	100.00%	8506	99.37%	99.92%
ALK_A21N	2904	98.59%	99.14%	6785	98.91%	99.47%
ALK_A332	823	99.76%	99.88%	3345	99.61%	99.88%
ALK_A333	4498	99.93%	99.98%	16299	99.97%	99.99%
ETD_B77W	3533	98.90%	99.86%	12221	99.09%	99.84%
ETD_B789	4775	99.66%	99.92%	21492	99.67%	99.98%
GIA_B77W	10334	99.13%	100.00%	34003	99.13%	99.96%
LNI_A333	-	-	-	15434	98.59%	99.65%
LNI_A339	-	-	-	16261	99.88%	99.96%
MAS_B738	4372	99.04%	99.84%	20029	98.34%	99.70%
MAU_A339	-	-	-	220	99.09%	100.00%
OMA_B788	-	-	-	1449	99.93%	100.00%
OMA_B789	1445	99.58%	100.00%	2727	99.62%	100.00%
QFA_B789	2290	99.52%	100.00%	16158	99.67%	99.98%
QTR_A359	3135	99.65%	99.71%	14876	99.81%	99.90%
QTR_A35K	2760	99.93%	100.00%	3598	99.76%	99.91%
QTR_A388	2878	99.93%	99.97%	10280	99.77%	99.87%
QTR_B77W	11909	97.78%	99.81%	41128	97.07%	99.33%
QTR_B788	207	100.00%	100.00%	1485	99.80%	100.00%
REU_B77W	929	98.60%	99.89%	4180	98.64%	99.98%
SIA_A359	5762	99.84%	99.90%	21695	99.71%	99.79%
SIA_B744	180	99.44%	100.00%	254	99.61%	100.00%
SVA_B744	2584	99.26%	99.77%	1879	99.04%	99.57%
SVA_B77W	11655	99.00%	99.95%	36334	99.18%	99.96%
SVA_B789	373	99.73%	99.73%	3630	99.59%	99.94%
SVA_B78X	1406	99.72%	99.86%	7648	99.90%	100.00%
UAE_A388	12374	99.91%	99.97%	45076	99.67%	99.87%
UAE_B77W	6875	99.17%	99.96%	24744	98.32%	99.91%

VCCF FIR CPDLC RCP240 Performance – Media Type, RGS and GES

2.3 **Tables 3A and 3B** summarize overall CPDLC performance per Media Type messages sent within the VCCF FIR during 2023, where performance met RCP240 95% criterion but unable to meet 99.9% criterion.

Table 3A : VCCF FIR CPDLC Performance Latency per Media Type, RGS and GES – May-Jun 2024

FIR	VCCF						
Criteria	RCP240						
Period	May - Jun 2024						
<div>Colour Key</div> <div><div></div> Meets Criteria</div> <div><div></div> 99.0%-99.89%</div> <div><div></div> Under Criteria</div>	Message Counts	95% benchmark		99.9% Benchmark		95%	
		ACP	ACTP	ACP	ACTP	PORT	
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	%<60sec	
By Media Type							
SATCOM	5590	97.70%	99.41%	98.65%	99.71%	97.96%	
VHF	88	95.45%	96.59%	96.59%	98.85%	96.59%	
HF	-	-	-	-	-	-	
ALL	5678	97.68%	99.36%	98.66%	99.70%	97.94%	
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(RGS/GES with message counts >100)					
APK1	SAT	3778	99.02%	99.89%	99.10%	99.92%	99.25%
APK2	SAT	282	98.23%	98.94%	98.23%	98.94%	99.64%
IGW1	SAT	1530	94.33%	98.23%	97.65%	99.35%	94.44%

Table 3B : VCCF FIR CPDLC Performance Latency per Media Type, RGS and GES – Jul-Dec 2024

FIR		VCCF					
Criteria		RCP240					
Period		Jul - Dec 2024					
<div>Colour Key</div> <div><div></div> Meets Criteria</div> <div><div></div> 99.0%-99.89%</div> <div><div></div> Under Criteria</div>	Message Counts	95% benchmark		99.9% Benchmark		95%	
		ACP	ACTP	ACP	ACTP	PORT	
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	%<60sec	
By Media Type							
SATCOM	19809	96.85%	99.22%	99.01%	99.47%	96.36%	
VHF	528	96.59%	99.62%	99.21%	99.81%	97.61%	
HF	-	-	-	-	-		
ALL	20337	96.84%	99.22%	99.01%	99.48%	96.38%	
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	Type	(RGS/GES with message counts >100)					
APK1	SAT	15343	98.22%	99.92%	99.27%	99.89%	99.18%
APK2	SAT	739	96.89%	99.19%	99.05%	99.32%	97.46%
IGW1	SAT	3446	95.11%	96.20%	96.37%	97.94%	95.14%
CMB1	VHF	402	96.52%	99.50%	99.12%	99.75%	97.92%

2.4 In summary, the CPDLC performance by SATCOM and VHF were able to meet the 95% criterion but failed to meet 99.9% criterion as shown in Table 3A and 3B. There is no message count for HF in 2024.

2.5 For CPDLC performance differentiated by RGS/GES, all stations met the 95% threshold, except IGW1 during the first half of the reporting period. However, several stations failed to meet the 99.9% performance criterion. Instances of poor RGS/GES performance were reported to the service provider, and Sri Lanka will continue to monitor RGS/GES performance closely.

VCCF FIR CPDLC RCP240 Performance – Aircraft Operator/Type

2.6 **Tables 4A and 4B** summarize overall CPDLC performance per Aircraft Operator/Type for messages sent within the VCCF FIR during 2024.

Table 4A: VCCF FIR CPDLC Performance Latency per Aircraft Operator/Type –May-Jun 2024

FIR	VCCF					
Criteria	RCP240					
Period	May - Jun 2024					
<div>Colour Key</div> <div><div></div> Meets Criteria</div> <div><div></div> 99.0%-99.89%</div> <div><div></div> Under Criteria</div>	Message Counts	95% benchmark		99.9% Benchmark		95%
		ACP	ACTP	ACP	ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	%<60secs
By Aircraft Operator / Type (only message counts >100 recorded)						
ALK/A21N	206	97.57%	97.57%	97.57%	98.06%	97.57%
ALK/A333	254	98.43%	100.00%	99.43%	100.00%	98.03%
ETD/B77W	207	97.58%	100.00%	99.07%	100.00%	96.62%
ETD/B789	186	98.92%	99.46%	99.46%	99.46%	98.39%
GIA/B77W	373	100.00%	100.00%	100.00%	100.00%	99.20%
MAS/B738	283	98.94%	99.65%	99.04%	100.00%	97.88%
QTR/A359	192	97.40%	99.48%	97.40%	99.48%	97.40%
QTR/A35K	139	100.00%	100.00%	100.00%	100.00%	98.56%
QTR/A388	208	97.12%	100.00%	98.12%	100.00%	95.67%
QTR/B77W	454	97.80%	99.34%	99.08%	99.78%	97.36%
SIA/A359	386	99.48%	100.00%	99.48%	100.00%	99.48%
SIA/B78X	137	99.27%	100.00%	99.27%	100.00%	98.54%
SVA/B77W	474	99.79%	100.00%	99.79%	100.00%	98.95%
UAE/A388	634	98.74%	99.84%	99.14%	100.00%	98.26%
UAE/B77W	179	98.88%	100.00%	99.08%	100.00%	97.77%

Table 4B: VCCF FIR CPDLC Performance Latency per Aircraft Operator/Type-Jul-Dec 2024.

FIR	VCCF					
Criteria	RCP240					
Period	July - Dec 2024					
<div>Colour Key</div> <div><div></div> Meets Criteria</div> <div><div></div> 99.0%-99.89%</div> <div><div></div> Under Criteria</div>	Message Counts	95% benchmark		99.9% Benchmark		95%
		ACP	ACTP	ACP	ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec	%<60secs
By Aircraft Operator / Type (only message counts >100 recorded)						
ALK/A21N	380	97.95%	99.44%	99.14%	99.63%	97.21%
ALK/A333	881	98.43%	99.91%	99.00%	99.94%	97.31%
ETD/B77W	562	97.28%	99.85%	99.28%	99.85%	96.22%
ETD/B789	1076	97.42%	99.82%	99.60%	99.91%	97.07%
GIA/B77W	1357	98.77%	100.00%	99.07%	100.00%	98.10%
MAS/B738	1028	96.47%	98.70%	98.83%	99.47%	96.17%
QTR/A359	1163	96.90%	99.91%	99.21%	99.91%	96.30%
QTR/A35K	323	98.58%	100.00%	99.13%	100.00%	98.35%
QTR/A388	645	97.72%	100.00%	99.28%	100.00%	96.64%
QTR/B77W	2117	95.98%	98.96%	99.06%	99.53%	95.18%
SIA/A359	1615	98.82%	99.81%	99.09%	99.88%	98.70%
SIA/B78X	664	99.25%	99.85%	99.25%	99.85%	98.80%
SVA/B77W	1788	98.55%	99.94%	99.31%	100.00%	97.32%
UAE/A388	3423	96.64%	99.56%	99.37%	99.62%	96.23%
UAE/B77W	816	96.87%	100.00%	99.24%	100.00%	96.36%

2.7 All the performance reports were sent to CAA for further action and will continue to monitor the performance.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- note the information contained in this paper; and
- discuss any relevant matters as appropriate.

— END —