



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 January to December 2019.

**1. INTRODUCTION**

1.1 The performance data for Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance - Contract (ADS-C) is measured against the appropriate Required Communication Performance (RCP240) and Required Surveillance Performance (RSP180) respectively.

1.2 CPDLC performance is measured by Actual Communication Performance (ACP) and Actual Communication Technical Performance (ACTP). This paper presents ADS/CPDLC performance differentiated by operator performance.

1.3 The ADS-C performance is measured by its Downlink Latency.

**2. DISCUSSION**

VCCF FIR RSP180 ADS-C Downlink Latency

2.1 This section covers the Downlink Latency measurement for ADS-C messages sent within VCCF FIR from January to December 2019. The performance is measured against RSP180 performance criteria of 90 seconds and 180 seconds for 95% and 99.9% criterion respectively. The Downlink Latency for messages sent via Satellite and VDL meet the 95% criterion but marginally fall below the 99.9% criterion. ADS-C is provided through FANS 1/A

service by SITA. Therefore, RGS/GES data and Satellite & VDL media data are not available separately.

There is a significant reduction in ADS-C downlink messages when compared to 2018 ADS-C downlink report. This is due to disconnection of ADS-C connection in VHF and surveillance range.

**2.2** **Table 1** summarizes RSP180 ADS-C Downlink Latency for messages sent within the VCCF FIR.

FIR	VCCF					
Criteria	RSP180					
Period	Jan-June 2019			July-December 2019		
Colour Key <span style="color: green;">■</span> Meets Criteria <span style="color: yellow;">■</span> 99.0%-99.84% <span style="color: red;">■</span> Under Criteria	Message Counts	95% % <= 90sec	99.90% % <= 180sec	Message Counts	95% % <= 90sec	99.90% % <= 180sec
<b>By Media Type</b>						
SATCOM + VHF	598937	98.45	99.46	563087	98.53	99.49
VHF	This Data is Not Available.					
HF	N/A	N/A	N/A	N/A	N/A	N/A
ALL	598937	98.45	99.46	563057	98.53	99.49
<b>By Remote Ground Station (RGS) Ground Earth Station (GES)</b>						
<b>Designator</b>	<b>Type</b>	(only RGS/GES with message counts >100 recorded)				
ADS-C Provided through FANS 1/A Service by SITA. These details are not available.						

**Table 1:** VCCF FIR ADS-C Downlink Latency for the year 2019- Satellite + VDL

**2.3** **Table 2** presents the ADS-C Downlink Latency per operator for the period January 2019 to December 2019. All the operator /Type wise data is provided for the year 2019.

FIR	VCCF					
Criteria	RSP180					
Period	Jan-June 2019			July-December 2019		
Colour Key <span style="color: green;">■</span> Meets Criteria <span style="color: yellow;">■</span> 99.0%-99.84% <span style="color: red;">■</span> Under Criteria	Message Counts	95% % <= 90sec	99.90% % <= 180sec	Message Counts	95% % <= 90sec	99.90% % <= 180sec
<b>By Aircraft Operator / Type (only message counts &gt;100 recorded)</b>						
ALK/A320N	2759	97.21%	99.18%	2890	97.43%	99.34%
ALK/A321N	9614	98.15%	99.43%	9502	98.48%	99.62%
ALK/A332	5433	98.34%	99.41%	5667	98.41%	99.56%
ALK/A333	5878	98.51%	99.67%	5716	98.24%	99.15%
CPA/B77W	5568	98.61%	99.51%	5439	98.23%	99.31%
ETD/A332	1429	98.97%	99.63%	1639	97.92%	99.17%
ETD/A388	4524	98.45%	99.34%	4304	98.87%	99.64%
ETD/B77W	2523	98.39%	99.35%	2156	98.25%	99.26%
ETD/B789	12957	98.87%	99.74%	13373	98.54%	99.31%
MAS/B738	6879	97.54%	99.27%	7099	98.35%	99.58%
QFA/B789	9948	98.74%	99.62%	9643	98.47%	99.52%
QTR/A359	5512	98.26%	99.09%	5203	98.83%	99.56%
QTR/A388	5120	98.57%	99.36%	5361	98.32%	99.28%
QTR/B77W	10958	97.87%	99.24%	11314	98.21%	99.45%
QTR/B788	9856	98.44%	99.61%	9727	98.31%	99.49%
SIA/A359	3227	98.47%	99.25%	3517	98.24%	99.38%
SIA/B77W	3025	98.12%	99.26%	2716	98.43%	99.53%
SLK/B738	14892	98.78%	99.60%	15134	98.87%	99.58%
SVA/B77W	12108	98.58%	99.46%	11604	99.14%	99.71%
UAE/A388	18765	99.46%	99.83%	19194	99.34%	99.69%
UAE/B77W	10567	99.75%	99.87%	10095	99.43%	99.68%

**Table 2 :** ADS-C Downlink Latency per operator for 2019.

2.4 **Table 3** summarizes overall CPDLC Actual Communications Performance (ACP) and Actual Communication Technical Performance (ACTP) for messages sent within the VCCF FIR for the year 2019. As CPDLC is provided through FANS 1/A service of SITA, separate media data is not available.

FIR		VCCF								
Criteria		RCP240								
Period		Jan - Jun 2019				Jul - Dec 2019				
<b>Colour Key</b> <span style="color: green;">■</span> Meets Criteria <span style="color: yellow;">■</span> 99.0%-99.84% <span style="color: red;">■</span> Under Criteria	Message Counts	95% benchmark		99.9% Benchmark		Message Counts	95% benchmark		99.9% Benchmark	
		ACP	ACTP	ACP	ACTP		ACP	ACTP	ACP	ACTP
		<= 180sec	<= 120sec	<= 210sec	<= 150sec		<= 180sec	<= 120sec	<= 210sec	<= 150sec
<b>By Media Type</b>										
SATCOM + VDL	29676	98.31	99.27	99.24	99.69	32594	98.12	99.21	99.39	99.68
VHF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HF	-	-	-	-	-	-	-	-	-	-
ALL	29676	98.31	99.27	99.24	99.69	32594	98.12	99.21	99.39	99.68
<b>By Remote Ground Station (RGS) Ground Earth Station (GES)</b>										
Designator	Type	(RGS/GES with message counts >100)								
CPDLC Provided through FANS 1/A Service by SITA. These details are not available.										

**Table 3: VCCF FIR ACP by Media type - Satellite + VDL**

2.5 **Table 4** summarizes CPDLC Actual Communications Performance (ACP), Actual Communications Technical Performance (ACTP) and Pilot Operational Response Time (PORT) per Operator for messages sent within the VCCF FIR. All the operator /Type wise data is provided for the year 2019.

FIR		VCCF												
Criteria		RCP240												
Period		Jan - Jun 2019					Jul - Dec 2019							
<b>Colour Key</b> <span style="color: green;">■</span> Meets Criteria <span style="color: yellow;">■</span> 99.0%-99.84% <span style="color: red;">■</span> Under Criteria	Message Counts	95% benchmark		99.9% Benchmark		95%	Message Counts	95% benchmark		99.9% Benchmark		95%		
		ACP	ACTP	ACP	ACTP			PORT	ACP	ACTP	ACP		ACTP	PORT
		% <= 180sec	% <= 120sec	% <= 210sec	% <= 150sec			% < 60secs	% <= 180sec	% <= 120sec	% <= 210sec		% <= 150sec	% < 60secs
<b>By Aircraft Operator / Type (only message counts &gt;100 recorded)</b>														
ALK/A320N	201	98.91%	99.30%	99.10%	99.60%	98.06%	537	98.23%	99.44%	99.11%	99.67%	97.44%		
ALK/A321N	964	98.83%	99.56%	99.42%	100.00%	97.66%	1063	98.40%	99.20%	99.20%	100.00%	97.11%		
ALK/A332	749	95.65%	99.42%	99.13%	99.86%	96.15%	746	97.51%	99.59%	99.17%	99.86%	98.34%		
ALK/A333	669	96.73%	99.32%	99.09%	99.75%	97.32%	707	96.21%	98.87%	99.11%	99.54%	98.31%		
CPA/B77W	244	98.60%	98.95%	99.10%	99.35%	96.61%	437	96.69%	99.34%	99.03%	99.51%	97.79%		
ETD/A332	153	99.35%	99.75%	99.50%	99.91%	98.99%	138	98.78%	100.00%	99.23%	100.00%	99.04%		
ETD/A388	398	98.64%	99.21%	99.10%	99.65%	98.23%	407	99.54%	99.54%	99.67%	99.93%	98.76%		
ETD/B77W	457	97.23%	98.87%	99.43%	99.45%	98.54%	478	97.57%	98.78%	99.52%	99.34%	98.36%		
ETD/B789	1419	97.67%	98.92%	99.28%	99.53%	98.78%	1439	97.76%	98.84%	99.41%	99.89%	98.87%		
MAS/B738	776	98.35%	99.12%	99.08%	99.74%	98.87%	824	98.46%	99.11%	99.14%	99.67%	98.81%		
QFA/B789	367	97.18%	99.17%	99.24%	99.64%	98.98%	485	97.84%	99.34%	99.59%	99.85%	98.23%		
QTR/A359	539	96.89%	98.47%	99.12%	99.36%	98.75%	592	97.12%	98.34%	99.17%	99.75%	97.55%		
QTR/A388	691	97.58%	98.87%	99.00%	99.53%	98.81%	756	97.69%	98.47%	99.36%	99.26%	97.97%		
QTR/B77W	423	99.12%	99.54%	99.77%	100.00%	98.72%	464	99.08%	99.48%	99.39%	100.00%	99.24%		
QTR/B788	607	97.89%	99.38%	99.68%	99.79%	98.54%	641	97.65%	99.45%	99.53%	99.87%	98.32%		
SIA/A359	379	98.75%	98.96%	99.43%	99.25%	98.98%	455	98.89%	98.25%	99.21%	99.53%	98.19%		
SIA/B77W	555	98.84%	98.85%	99.12%	99.34%	97.85%	674	99.10%	99.10%	99.57%	99.78%	98.25%		
SLK/B738	1483	98.87%	99.21%	99.39%	99.69%	98.25%	1527	98.24%	99.21%	99.20%	99.79%	97.91%		
SVA/B77W	1219	99.18%	99.76%	99.57%	99.92%	98.35%	1279	98.17%	99.37%	99.27%	99.69%	97.86%		
UAE/A388	1989	99.41%	99.30%	99.85%	99.62%	98.99%	2090	99.14%	99.52%	99.85%	99.78%	99.33%		
UAE/B77W	847	99.21%	99.25%	99.34%	99.68%	99.10%	873	99.51%	99.68%	99.62%	99.91%	99.19%		

**Table 4: VCCF FIR ACP/ACTP/PORT per operator**

**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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