International Civil Aviation Organization

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

Video Teleconference, 23 – 27 August 2021

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

DATA LINK PERFORMANCE REPORT FOR CHINA

(Presented by China)

SUMMARY

This report presents data link performance data in 2020 for the Lanzhou FIR and Urumqi FIR for the period from Jan. 2020 to Dec. 2020.

1. INTRODUCTION

1.1 Data link communications and data link performance requirements have been applied for CPDLC and ADS-C for a long period of time, during which relevant specifications and standards were also published in ICAO Doc 9869 and ICAO Doc 10037. States are invited to ensure that the appropriate data link performance monitoring is undertaken and reported to CRAs/FITs, as required, in a timely manner.

1.2 According to ICAO's requirement, PBCS was formally implemented in China on 29 March 2018. In the China mainland airspace, the data link technologies, including FANS 1/A CPDLC/ADS-C, are applied in L888 (SANLI-XKC), Y1 and Y2, operated by Lanzhou and Urumqi Air Control Center (ACC). RCP 240 and RSP 180 specifications were adopted for the monitoring.

1.3 This report provides observed performance of the operational data link systems for the above-mentioned routes, collected from Lanzhou (ZLLL) and Urumqi (ZWWW) FIR for the period from Jan. 2020 to Dec. 2020.

		ADS-C		CPDLC	
Performance Measure	Percentage of Messages Required to Meet Criteria	**RSP180 Criteria(sec)**	RSP400 Criteria(sec)	**RCP240 Criteria(sec)**	RCP400 Criteria(sec)
ASP	95%	**90**	300		
	99.90%	**180**	400		
ACTP	95%			**120**	260
	99.90%			**150**	310
ACP	95%			**180**	320
	99.90%			**210**	370
PORT	95%			60	60

1.4 The CPDLC and ADS-C systems performance were measured respectively against the RCP 240 specification and RSP 180 (please refer to the table above and the criteria highlighted in red).

2. DISCUSSION

2.1 **Attachment A** presents the data link performance monitoring result in Lanzhou and Urumqi FIR for the year of 2020.

2.2 The analysis in Attachment A provides the following analysis:

- ADS-C performance for Lanzhou and Urumqi FIR
- CPDLC performance for Lanzhou and Urumqi FIR
- ADS-C performance analyzed by media type for Lanzhou and Urumqi FIR
- ADS-C performance analyzed by operator for Lanzhou and Urumqi FIR
- CPDLC performance analyzed by media type for Lanzhou and Urumqi FIR
- CPDLC performance analyzed by operator for Lanzhou and Urumqi FIR

2.3 No problem report was received in 2020. On one hand, this may be resulted by the reduction of passenger flights. On the other hand, China RMA will strengthen the reporting mechanism and keep on collecting and reporting the problems. China RMA keeps in touch with FIRs involved routinely to keep track of the problems reported in virtual meetings, if offline meeting is not preferred due to the COVID-19.

2.4 The Table A demonstrates that the data link communication message number for 2019 and 2020. Affected by COVID-19, both the number of flights data link messages decreased notably, especially in 2020. Additionally, in Urumqi ACC, most CPDLC routes have been covered by ADS-B and VHF Voice, so the CPDLC1 message count has been dropping in the recent years.

2.5 The Table B and Table C demonstrate the implementation status of RSP 180 and RCP 240 respectively. As we can see, while the 95% requirements for both of the two specifications were met, the 99.9% requirements were not, especially for the RCP 240. The results will be reported to the CAAC (Civil Aviation Administration of China) to take corrective actions as appropriate, after an investigation to identify and address the deficiency.

Table A Message Number of 2019 and 2020

Year	ADS-C		CPDLC	
	ZLLL	ZWWW	ZLLL	ZWWW
2019	645696	367188	5885	1345
2020	323547	175067	3587	575

Table B ADS-C Downlink Latency Comparison against RSP 180

Title	DT/OT value comparison in 2019 and 2020 in ZLLL and ZWWW evaluated by RSP 180							
Time	2019 First Half		2019 Second Half		2020 First Half		2020 Second Half	
Criteria	95%	99.9%	95%	99.9%	95%	99.9%	95%	99.9%
ZLLL	97.92	99.55	97.83	99.47	98.5	99.60	97.90	99.50
ZWWW	98.08	99.57	98.08	99.55	98.60	99.60	97.80	99.60

Table C CPDLC Downlink Latency Comparison against RCP 240

Title	TT/ET value comparison between 2019 and 2020 in ZLLL and ZWWW evaluated by RCP 240							
Time	2019 First Half		2019 Second Half		2020 First Half		2020 Second Half	
Criteria	95%	99.9%	95%	99.9%	95%	99.9%	95%	99.9%
ZLLL	99.14	99.35	99.22	99.41	97.99	98.32	97.10	97.28
ZWWW	97.83	98.22	98.74	99.28	95.90	96.76	97.29	98.19

2.6 China RMA has been focusing on the tasks below to improve the overall data link performance since 2020:

a) Upgrade of the PBCS data analysis mechanism: the post-implementation analysis mechanism is to secure that the general PBCS performance compliance in a regional basis.

b) Improvement of the PBCS problem reporting system: the system to transmit the reports submitted by ATMB and operators to China RMA in a standardized PR format.

c) Upgrade of a PR tracking and resolution mechanism for the ATMB: when administering the PBCS monitoring programs, the ANSPs should consider investigating the problem reports. The China RMA is strengthening the establishment of the problem report and the resolution mechanism, boosting the corrective action in a regional basis.

d) Improvement of a PBCS monitoring system: the PBCS monitoring system under development is designed to be capable of real time monitoring, data link performance analysis, PR reporting transmitting, PBCS monitoring report publishment for Chinese ATC units and operators implemented PBCS operation.

e) Improvement of PBCS operational monitoring mechanism in China: in 2020, China RMA assisted CAAC and ATMB to draft the regulation for stakeholders involved PBCS implementation, which would greatly enhance and standard the PBCS monitoring mechanism. We will continue the work until it is finished.

2.7 As a result, reflected by the improvement of Table A and Table B, the efforts made last year improved the PBCS capacities in Lanzhou FIR and Urumqi FIR in general. China RMA will complete the on-going actions as soon as possible to further strengthen the PBCS capacities in the FIRs.

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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ATTACHMENT A – MONITROING RESULTS ANALYSIS

1. ADS-C DOWNLINK LATENCY

Table 1 present ADS-C Downlink Latency for messages sent within Lanzhou FIR (ZLLL) and Urumqi FIR (ZWWW) for the period from Jan. 2020 to Dec. 2020.

The green cells demonstrate that the performance meets the requirements; the yellow cells demonstrate that it is slightly below the requirements, and the red cells demonstrate that it is under the requirements.

Table 1 ADS-C Downlink Latency

REQUIRED SURVEILLANCE PERFORMANCE						
Region	**FIT-Asia**					
Performance Criteria	**RSP180**					
Time Period	**2020 January-June**			**2020 July-December**		
Colour Key Meets Criteria 99.0%-99.84% Under Criteria	**No. Messages**	**Criteria**		**No. Messages**	**Criteria**	
		95% **% < = 90sec**	**99.90%** **% <= 180sec**		**95%** **% < = 90sec**	**99.90%** **% <= 180sec**
Aggregate	***336059***			***162555***		
ZLLL	217307	98.5	99.6	106240	97.9	99.5
ZWWW	118752	98.6	99.6	56315	97.8	99.6

2. CPDLC COMMUNICATION PERFORMANCE

Table 2 presents the CPDLC actual communications performance (ACP) and CPDLC actual communication technical performance (ACTP) for messages sent within Lanzhou FIR and Urumqi FIR for the period from Jan. 2020 to Dec. 2020.

Table 2 CPDLC Communication Performance

REQUIRED COMMUNICATIONS PERFORMANCE										
Region	**FIT- Asia**									
Performance Criteria	**RCP240**									
Time Period	**2020 January-June**					**2020 July December**				
Colour Key Meets Criteria 99.0%-99.84% Under Criteria	**No. Messages**	**ACP Criteria**		**ACTP Criteria**		**No. Messages**	**ACP Criteria**		**ACTP Criteria**	
		95% **% <= 180sec**	**99.90%** **% <= 210sec**	**95%** **% <= 120sec**	**99.90%** **% <= 150sec**		**95%** **% <= 180sec**	**99.90%** **% <= 210sec**	**95%** **% < = 120sec**	**99.90%** **%<= 150sec**
Aggregate	***2911***					***1251***				
ZLLL	2447	97.99	98.32	98.4	98.81	1140	97.1	97.28	98.42	98.68
ZWWW	464	95.9	96.76	93.31	96.98	111	97.29	98.19	96.39	96.39

3. ADS-C PERFORMANCE BY MEDIA TYPE / RGS /GES

Table 3 presents ADS-C Downlink Latency for messages sent within Lanzhou FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

FIR	**ZLLL**					
Criteria	**RSP180**					
Period	**Jan-June 2020**			**July-December 2020**		
Colour Key Meets Criteria 99.0%-99.84% Under Criteria	**Message Counts**	**95%** **% < = 90sec**	**99.90%** **% <= 180sec**	**Message Counts**	**95%** **% < = 90sec**	**99.90%** **% <= 180sec**
By Media Type						
VHF	**121830**	99.16	99.67	**56531**	98.34	99.63
SAT	**95442**	97.73	99.57	**49680**	97.45	99.56
HF	**35**	31.42	65.71	**29**	37.93	62.06
By Remote Ground Station (RGS) Ground Earth Station (GES)						
Designator	**Type**	(only RGS/GES with message counts >100 recorded)				

AAT	VHF	/	/	/	606	98.51	99
ABA	VHF	/	/	/	281	100	100
ADA7	VHF	128	99.21	100	/	/	/
ADD	VHF	187	98.93	100	/	/	/
AER1	VHF	119	97.47	99.15	647	99.69	100
AKU	VHF	199	99.49	99.49	1083	100	100
AKX	VHF	183	98.9	100	1146	98.34	98.95
ALA	VHF	131	98.47	100	385	98.7	99.22
ALA1	VHF	1541	99.35	99.87	2816	99.04	99.36
AMS1	VHF	/	/	/	115	100	100
AMS5	VHF	/	/	/	123	100	100
AOE2	SAT	/		/	267	97	100
APK1	SAT	48032	98.51	99.68	66238	97.79	99.47
APK2	VHF	5553	97.46	99.65	9481	97.66	99.47
ASB1	VHF	1485	99.73	99.86	2693	99.29	99.74
ASF1	VHF	577	98.78	99.65	492	97.35	98.57
AUH	VHF	268	99.62	100	249	99.59	100
AUH7	VHF	/	/	/	136	100	100
AUH8	VHF	/	/	/	127	100	100
AVK	VHF	599	100	100	3131	99.87	99.96
BAH1	VHF	/	/	/	228	99.56	100
BAH2	VHF	/	/	/	262	100	100
BAH8	VHF	/	/	/	196	99.48	100
BAV	VHF	1097	99.63	100	3271	99.84	99.84
BER	VHF	/	/	/	304	99.01	99.67
BFJ	VHF	985	99.49	99.79	/	/	/
BFJV	VHF	499	100	100	/	/	/
BOJ	VHF	/	/	/	104	100	100
BOJ7	VHF	/	/	/	411	99.27	100

BRU	VHF	/	/	/	244	100	100
BUD	VHF	/	/	/	118	98.3	99.15
BXH1	VHF	1411	98.65	99.14	/	/	/
CAN	VHF	1998	98.49	99.34	6032	97.76	99.15
CANV	VHF	774	98.83	99.09	823	98.9	100
CDG	VHF	/	/	/	139	98.56	100
CEK1	VHF	229	99.12	99.12	173	97.68	99.42
CGN7	VHF	136	94.85	97.05	148	98.64	99.32
CGN8	VHF	/	/	/	124	98.38	99.19
CGNW	VHF	/	/	/	123	100	100
CGO	VHF	/	/	/	123	99.18	100
CJU1	VHF	/	/	/	273	99.63	99.63
CKG	VHF	2878	99.23	99.79	7019	99.17	99.6
CKGV	VHF	139	100	100	735	100	100
CTU	VHF	4679	99.2	99.55	13961	99.25	99.62
CTUV	VHF	1445	99.93	100	1343	100	100
DCY	VHF	/	/	/	853	98.82	99.06
DLC	VHF	/	/	/	145	100	100
DME	VHF	1033	99.61	99.9	/	/	/
DME1	VHF	160	99.37	99.37	376	96.8	98.67
DME2	VHF	262	98.09	99.61	128	97.65	98.43
DNH	VHF	2293	99.73	99.82	6565	99.4	99.64
DOH2	VHF	/	/	/	342	98.83	99.7
DOH7	VHF	/	/	/	129	100	100
DOH9	VHF	116	100	100	/	/	/
DOY	VHF	142	99.29	100	245	99.59	100
DRS	VHF	/	/	/	121	100	100
DRS7	VHF	/	/	/	122	98.36	100
DSN	VHF	293	99.65	100	466	99.78	100

DWC	VHF	/	/	/	121	99.17	100
DXB	VHF	665	100	100	663	99.69	100
DXB7	VHF	/	/	/	123	100	100
DZN1	VHF	2244	99.06	99.64			
ERZ	VHF	/	/	/	130	97.69	99.23
ESB1	VHF	/	/	/	180	99.44	100
ESB7	VHF	103	100	100	303	100	100
EUA1	SAT	10120	94.66	99.17	15962	92.6	98.37
EUA2	VHF	1354	97.56	99.77			
EVN1	VHF	/	/	/	135	100	100
FCO	VHF	/	/	/	152	99.34	99.34
FMOT	VHF	242	100	100	/	/	/
FOC	VHF	183	99.45	100	/	/	/
FRA	VHF	164	98.78	98.78	/	/	/
FRAT	VHF	214	100	100	/	/	/
FRAV	VHF	261	99.23	99.61	210	100	100
GDN7	VHF	/	/	/	150	100	100
GDNT	VHF	306	99.34	99.67	/	/	/
GMP1	VHF	411	99.75	100	855	99.53	100
GOJ1	VHF	473	98.73	99.78	485	98.76	99.79
GOQ	VHF	6509	99.23	99.5	16710	99.09	99.44
GOT	VHF	/	/	/	132	100	100
GUW1	VHF	1213	97.93	99.25	1570	99.55	99.8
GYD1	VHF	1584	99.62	99.87	1989	98.29	98.94
GYS	VHF	1446	99.37	99.65	1709	98.01	99.12
HAK	VHF	160	98.75	99.37	250	98	99.6
HAN1	VHF	/	/	/	401	98.5	99.75
HAN7	VHF	164	99.39	99.39	/	/	/
HET	VHF	436	99.31	99.77	1152	99.82	100

HKG	VHF	912	99.01	99.56	4744	97.66	98.75
HKG1	VHF	259	95.75	96.13	338	78.1	79.88
HKG2	VHF	513	98.83	100	1250	96.96	97.92
HKG7	VHF	1501	100	100	1829	98.3	98.68
HKG8	VHF	1034	99.9	100	1373	98.32	99.19
HKGV	VHF	1378	99.7	99.92	1225	100	100
HMI	VHF	3440	99.41	99.73	4066	99.65	99.85
HMIV	VHF	647	99.84	100	/	/	/
HTN	VHF	889	99.77	99.77	1765	99.94	100
HUZ	VHF	427	98.59	99.53	/	/	/
HZG	VHF	117	98.29	99.14	190	98.94	99.47
ICN	VHF	383	98.95	99.73	1167	99.74	99.74
ICN2	VHF	260	99.61	100	706	98.58	99.29
IFN1	VHF	348	98.56	99.42	/	/	/
IG1	SAT	3195	90.17	97.9	9779	90.8	98.38
IGW1	SAT	6720	98.25	99.4	11724	98.3	99.31
INC	VHF	664	99.69	99.84	898	99.88	100
IOR2	SAT	/	/	/	16087	98.07	99.57
IOR6	VHF	/	/	/	407	96.8	98.52
IST7	VHF	/	/	/	315	100	100
IST8	VHF	/	/	/	264	100	100
ISTW	VHF	/	/	/	190	98.42	99.47
IXJ1	VHF	/	/	/	326	100	100
JGN	VHF	4278	99.57	99.78	7435	99.66	99.83
JZH	VHF	709	98.87	99.71	1779	98.81	99.38
KBP	VHF	487	100	100	745	98.79	99.06
KBP1	VHF	/	/	/	212	94.81	99.05
KBPV	VHF	421	100	100	/	/	/
KCA	VHF	269	98.51	98.88	1697	99.7	99.94

KGT	VHF	252	99.2	99.2	/	/	/
KHG	VHF	539	100	100	822	100	100
KHH	VHF				248	95.56	99.59
KHH1	VHF	150	100	100	283	99.64	100
KJH	VHF	991	99.29	99.49	/	/	/
KJHV	VHF	542	100	100	/	/	/
KLVT	VHF	238	99.15	99.15	/	/	/
KMG	VHF				168	98.8	100
KRL	VHF	3037	99.57	99.83	8796	99.3	99.6
KRLV	VHF	1195	100	100	/	/	/
KRY	VHF	173	100	100	/	/	/
KTW7	VHF	/	/	/	220	99.54	99.54
KTWT	VHF	989	99.39	99.49			
KUF1	VHF	160	98.75	100	128	98.43	100
KUN1	VHF	177	98.87	100	/	/	/
KUNT	VHF	521	99.61	100	/	/	/
KWE	VHF	/	/	/	734	96.32	99.18
KWL	VHF	592	97.46	99.83	451	99.33	100
KWLV	VHF	475	99.36	100	118	100	100
KZN1	VHF	293	99.65	100	412	99.75	100
KZO	VHF	/	/	/	826	96.61	97.82
LCA	VHF	/	/	/	122	99.18	99.18
LEJ	VHF	142	100	100	104	100	100
LEJ7	VHF	/	/	/	131	100	100
LHW	VHF	5302	98.92	99.28	9083	98.61	99.13
LLV	VHF	211	98.57	99.52	/	/	/
LLVV	VHF	147	100	100	/	/	/
LZH	VHF	/	/	/	802	98.5	99.62
MCT	VHF	382	100	100	114	97.36	99.12

MCT1	VHF	140	97.85	100	111	99.09	99.09
MCT7	VHF	/	/	/	280	100	100
MFM	VHF	587	98.46	98.8	1597	97.62	98.99
MHD1	VHF	286	99.65	99.65	264	98.1	99.24
MRV1	VHF	114	97.36	98.24			
MSQ1	VHF	514	98.83	99.61	241	98.34	98.75
MUX1	VHF	268	97.38	100	/	/	/
MXP	VHF	/	/	/	126	99.2	99.2
NNG	VHF	2055	99.07	99.51	6995	98.99	99.51
NNGV	VHF	333	99.69	100	468	99.78	100
NRTv	VHF	103	100	100	184	100	100
OMS1	VHF	/	/	/	321	98.44	98.75
OVB1	VHF	111	98.19	99.09	138	89.13	90.57
PEE1	VHF	/	/	/	134	97.76	100
PEK	VHF	1014	99.8	100	2337	99.7	100
PKX	VHF	325	97.84	100	/	/	/
POR1	SAT	/	/	/	1221	97.46	98.93
POZ7	VHF	/	/	/	290	99.65	99.65
PRGV	VHF	104	100	100	/	/	/
PUS1	VHF	/	/	/	152	100	100
PVG	VHF	/	/	/	156	99.35	100
PWQ1	VHF	164	98.78	98.78			
REN1	VHF	275	98.18	99.63	235	99.57	100
RNB	VHF	/	/	/	134	100	100
ROV1	VHF	290	97.93	99.31	220	96.81	97.72
RZE7	VHF	/	/	/	167	99.4	100
RZEV	VHF	/	/	/	114	100	100
SCO1	VHF	725	99.17	99.44	995	99.19	99.59
SEL	VHF	159	100	100	354	100	100

SHJ8	VHF	130	100	100	/	/	/
SLL	VHF	194	99.48	99.48	/	/	/
SOF	VHF	/	/	/	139	98.56	99.28
SVO	VHF	1287	99.68	99.84	1382	98.04	99.42
SVO1	VHF	/	/	/	184	98.36	99.45
SVO2	VHF	159	98.11	99.37	187	98.93	99.46
SVX1	VHF	/	/	/	122	100	100
SXB	VHF	/	/	/	235	99.57	100
SXF7	VHF	/	/	/	123	99.18	100
SXFT	VHF	597	99.49	100	/	/	/
SXR1	VHF	111	100	100	295	100	100
SYZ1	VHF	113	99.11	100	116	97.41	99.13
SZF	VHF	/	/	/	186	100	100
SZX	VHF	1599	98.68	99.49	4719	97.47	99.02
SZXV	VHF	480	97.91	100	374	98.12	100
SZZT	VHF	146	100	100	/	/	/
TAO	VHF	171	99.41	100	484	100	100
TAS	VHF	/	/	/	139	100	100
TAS1	VHF	2152	99.62	99.76	3779	99.92	99.97
TBS1	VHF	109	100	100	284	99.64	100
TCG	VHF	1390	99.71	99.92	2075	98.84	99.32
TCGV	VHF	142	100	100	/	/	/
TEN	VHF	/	/	/	760	97.63	99.21
TJM1	VHF	/	/	/	220	100	100
TLQ	VHF	343	99.7	100	1409	99.57	99.71
TLV8	VHF	105	99.04	100	/	/	/
TMJ1	VHF	188	100	100	/	/	/
TNA	VHF	123	100	100	284	100	100
TPE	VHF	429	99.76	100	344	99.7	100

TPE2	VHF	/	/	/	155	100	100
TPE7	VHF	154	100	100	/	/	/
TSA	VHF	/	/	/	126	100	100
TSE	VHF	145	100	100	515	99.02	99.61
TSE1	VHF	715	98.46	99.44	1961	99.79	99.84
TSN	VHF	/	/	/	483	98.75	99.37
TXL	VHF	1122	100	100	626	99.36	99.68
TXL8	VHF	/	/	/	155	100	100
TYN	VHF	106	100	100	/	/	/
TZX1	VHF	/	/	/	526	100	100
UFA1	VHF	129	98.44	100	129	100	100
URC	VHF	1190	98.99	99.57	3028	99.43	99.6
UYN	VHF	/	/	/	230	100	100
VIE	VHF	/	/	/	220	99.54	99.54
VKO1	VHF	178	98.87	100	124	97.58	100
VNO	VHF	1024	99.8	99.9	1573	99.17	99.49
VNO1	VHF	163	99.38	100	366	99.72	99.72
VNO7	VHF	749	99.59	99.59	1169	99.4	99.82
VOG1	VHF	1105	99.27	99.72	883	98.75	99.2
WAW	VHF	211	100	100	384	99.21	99.73
WAW7	VHF	/	/	/	483	99.37	99.58
WAWV	VHF	235	99.57	100	212	100	100
WEH	VHF	/	/	/	203	99.01	100
XIY	VHF	/	/	/	102	99.01	100
XMN	VHF	/	/	/	197	100	100
XNN	VHF	558	99.28	99.46	903	99.66	99.88
XXA	SAT	8387	97.37	99.8	18078	93.65	99.76
XXF	SAT	7314	98.66	99.79	7036	96.27	99.5
XXI	SAT	4863	98.76	99.85	15536	95.51	98.88

XXP	SAT	6811	98.5	99.67	2128	92.01	98.54
XXQ	VHF	249	98.79	100	/	/	/
YGJv	VHF	/	/	/	153	100	100
YIN	VHF	665	99.24	99.84	1508	99.6	99.66
ZQZ	VHF	117	99.14	100	/	/	/
ZRH	VHF	/	/	/	137	99.27	99.27

Table 4 presents ADS-C Downlink Latency for messages sent within Urumqi FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

Table 3 ADS-C Performance by Media Type in ZLLL

FIR		**ZLLL**					
Criteria		**RSP180**					
Period		**Jan-June 2020**			**July-December 2020**		
Colour Key Meets Criteria 99.0%-99.84% Under Criteria		**Message Counts**	**95%** **% < = 90sec**	**99.90%** **% <= 180sec**	**Message Counts**	**95%** **% < = 90sec**	**99.90%** **% <= 180sec**
By Media Type							
VHF		**121830**	99.16	99.67	**56531**	98.34	99.63
SAT		**95442**	97.73	99.57	**49680**	97.45	99.56
HF		**35**	31.42	65.71	**29**	37.93	62.06
By Remote Ground Station (RGS) Ground Earth Station (GES)							
Designator	**Type**	(only RGS/GES with message counts >100 recorded)					
AAT	VHF	/	/	/	606	98.51	99
ABA	VHF	/	/	/	281	100	100
ADA7	VHF	128	99.21	100	/	/	/
ADD	VHF	187	98.93	100	/	/	/

AER1	VHF	119	97.47	99.15	647	99.69	100
AKU	VHF	199	99.49	99.49	1083	100	100
AKX	VHF	183	98.9	100	1146	98.34	98.95
ALA	VHF	131	98.47	100	385	98.7	99.22
ALA1	VHF	1541	99.35	99.87	2816	99.04	99.36
AMS1	VHF	/	/	/	115	100	100
AMS5	VHF	/	/	/	123	100	100
AOE2	SAT	/		/	267	97	100
APK1	SAT	48032	98.51	99.68	66238	97.79	99.47
APK2	VHF	5553	97.46	99.65	9481	97.66	99.47
ASB1	VHF	1485	99.73	99.86	2693	99.29	99.74
ASF1	VHF	577	98.78	99.65	492	97.35	98.57
AUH	VHF	268	99.62	100	249	99.59	100
AUH7	VHF	/	/	/	136	100	100
AUH8	VHF	/	/	/	127	100	100
AVK	VHF	599	100	100	3131	99.87	99.96
BAH1	VHF	/	/	/	228	99.56	100
BAH2	VHF	/	/	/	262	100	100
BAH8	VHF	/	/	/	196	99.48	100
BAV	VHF	1097	99.63	100	3271	99.84	99.84
BER	VHF	/	/	/	304	99.01	99.67
BFJ	VHF	985	99.49	99.79	/	/	/
BFJV	VHF	499	100	100	/	/	/
BOJ	VHF	/	/	/	104	100	100
BOJ7	VHF	/	/	/	411	99.27	100
BRU	VHF	/	/	/	244	100	100
BUD	VHF	/	/	/	118	98.3	99.15
BXH1	VHF	1411	98.65	99.14	/	/	/
CAN	VHF	1998	98.49	99.34	6032	97.76	99.15

CANV	VHF	774	98.83	99.09	823	98.9	100
CDG	VHF	/	/	/	139	98.56	100
CEK1	VHF	229	99.12	99.12	173	97.68	99.42
CGN7	VHF	136	94.85	97.05	148	98.64	99.32
CGN8	VHF	/	/	/	124	98.38	99.19
CGNW	VHF	/	/	/	123	100	100
CGO	VHF	/	/	/	123	99.18	100
CJU1	VHF	/	/	/	273	99.63	99.63
CKG	VHF	2878	99.23	99.79	7019	99.17	99.6
CKGV	VHF	139	100	100	735	100	100
CTU	VHF	4679	99.2	99.55	13961	99.25	99.62
CTUV	VHF	1445	99.93	100	1343	100	100
DCY	VHF	/	/	/	853	98.82	99.06
DLC	VHF	/	/	/	145	100	100
DME	VHF	1033	99.61	99.9	/	/	/
DME1	VHF	160	99.37	99.37	376	96.8	98.67
DME2	VHF	262	98.09	99.61	128	97.65	98.43
DNH	VHF	2293	99.73	99.82	6565	99.4	99.64
DOH2	VHF	/	/	/	342	98.83	99.7
DOH7	VHF	/	/	/	129	100	100
DOH9	VHF	116	100	100	/	/	/
DOY	VHF	142	99.29	100	245	99.59	100
DRS	VHF	/	/	/	121	100	100
DRS7	VHF	/	/	/	122	98.36	100
DSN	VHF	293	99.65	100	466	99.78	100
DWC	VHF	/	/	/	121	99.17	100
DXB	VHF	665	100	100	663	99.69	100
DXB7	VHF	/	/	/	123	100	100
DZN1	VHF	2244	99.06	99.64			

ERZ	VHF	/	/	/	130	97.69	99.23
ESB1	VHF	/	/	/	180	99.44	100
ESB7	VHF	103	100	100	303	100	100
EUA1	SAT	10120	94.66	99.17	15962	92.6	98.37
EUA2	VHF	1354	97.56	99.77			
EVN1	VHF	/	/	/	135	100	100
FCO	VHF	/	/	/	152	99.34	99.34
FMOT	VHF	242	100	100	/	/	/
FOC	VHF	183	99.45	100	/	/	/
FRA	VHF	164	98.78	98.78	/	/	/
FRAT	VHF	214	100	100	/	/	/
FRAV	VHF	261	99.23	99.61	210	100	100
GDN7	VHF	/	/	/	150	100	100
GDNT	VHF	306	99.34	99.67	/	/	/
GMP1	VHF	411	99.75	100	855	99.53	100
GOJ1	VHF	473	98.73	99.78	485	98.76	99.79
GOQ	VHF	6509	99.23	99.5	16710	99.09	99.44
GOT	VHF	/	/	/	132	100	100
GUW1	VHF	1213	97.93	99.25	1570	99.55	99.8
GYD1	VHF	1584	99.62	99.87	1989	98.29	98.94
GYS	VHF	1446	99.37	99.65	1709	98.01	99.12
HAK	VHF	160	98.75	99.37	250	98	99.6
HAN1	VHF	/	/	/	401	98.5	99.75
HAN7	VHF	164	99.39	99.39	/	/	/
HET	VHF	436	99.31	99.77	1152	99.82	100
HKG	VHF	912	99.01	99.56	4744	97.66	98.75
HKG1	VHF	259	95.75	96.13	338	78.1	79.88
HKG2	VHF	513	98.83	100	1250	96.96	97.92
HKG7	VHF	1501	100	100	1829	98.3	98.68

HKG8	VHF	1034	99.9	100	1373	98.32	99.19
HKGV	VHF	1378	99.7	99.92	1225	100	100
HMI	VHF	3440	99.41	99.73	4066	99.65	99.85
HMIV	VHF	647	99.84	100	/	/	/
HTN	VHF	889	99.77	99.77	1765	99.94	100
HUZ	VHF	427	98.59	99.53	/	/	/
HZG	VHF	117	98.29	99.14	190	98.94	99.47
ICN	VHF	383	98.95	99.73	1167	99.74	99.74
ICN2	VHF	260	99.61	100	706	98.58	99.29
IFN1	VHF	348	98.56	99.42	/	/	/
IG1	SAT	3195	90.17	97.9	9779	90.8	98.38
IGW1	SAT	6720	98.25	99.4	11724	98.3	99.31
INC	VHF	664	99.69	99.84	898	99.88	100
IOR2	SAT	/	/	/	16087	98.07	99.57
IOR6	VHF	/	/	/	407	96.8	98.52
IST7	VHF	/	/	/	315	100	100
IST8	VHF	/	/	/	264	100	100
ISTW	VHF	/	/	/	190	98.42	99.47
IXJ1	VHF	/	/	/	326	100	100
JGN	VHF	4278	99.57	99.78	7435	99.66	99.83
JZH	VHF	709	98.87	99.71	1779	98.81	99.38
KBP	VHF	487	100	100	745	98.79	99.06
KBP1	VHF	/	/	/	212	94.81	99.05
KBPV	VHF	421	100	100	/	/	/
KCA	VHF	269	98.51	98.88	1697	99.7	99.94
KGT	VHF	252	99.2	99.2	/	/	/
KHG	VHF	539	100	100	822	100	100
KHH	VHF				248	95.56	99.59
KHH1	VHF	150	100	100	283	99.64	100

KJH	VHF	991	99.29	99.49	/	/	/
KJHV	VHF	542	100	100	/	/	/
KLVT	VHF	238	99.15	99.15	/	/	/
KMG	VHF				168	98.8	100
KRL	VHF	3037	99.57	99.83	8796	99.3	99.6
KRLV	VHF	1195	100	100	/	/	/
KRY	VHF	173	100	100	/	/	/
KTW7	VHF	/	/	/	220	99.54	99.54
KTWT	VHF	989	99.39	99.49			
KUF1	VHF	160	98.75	100	128	98.43	100
KUN1	VHF	177	98.87	100	/	/	/
KUNT	VHF	521	99.61	100	/	/	/
KWE	VHF	/	/	/	734	96.32	99.18
KWL	VHF	592	97.46	99.83	451	99.33	100
KWLV	VHF	475	99.36	100	118	100	100
KZN1	VHF	293	99.65	100	412	99.75	100
KZO	VHF	/	/	/	826	96.61	97.82
LCA	VHF	/	/	/	122	99.18	99.18
LEJ	VHF	142	100	100	104	100	100
LEJ7	VHF	/	/	/	131	100	100
LHW	VHF	5302	98.92	99.28	9083	98.61	99.13
LLV	VHF	211	98.57	99.52	/	/	/
LLVV	VHF	147	100	100	/	/	/
LZH	VHF	/	/	/	802	98.5	99.62
MCT	VHF	382	100	100	114	97.36	99.12
MCT1	VHF	140	97.85	100	111	99.09	99.09
MCT7	VHF	/	/	/	280	100	100
MFM	VHF	587	98.46	98.8	1597	97.62	98.99
MHD1	VHF	286	99.65	99.65	264	98.1	99.24

MRV1	VHF	114	97.36	98.24			
MSQ1	VHF	514	98.83	99.61	241	98.34	98.75
MUX1	VHF	268	97.38	100	/	/	/
MXP	VHF	/	/	/	126	99.2	99.2
NNG	VHF	2055	99.07	99.51	6995	98.99	99.51
NNGV	VHF	333	99.69	100	468	99.78	100
NRTv	VHF	103	100	100	184	100	100
OMS1	VHF	/	/	/	321	98.44	98.75
OVB1	VHF	111	98.19	99.09	138	89.13	90.57
PEE1	VHF	/	/	/	134	97.76	100
PEK	VHF	1014	99.8	100	2337	99.7	100
PKX	VHF	325	97.84	100	/	/	/
POR1	SAT	/	/	/	1221	97.46	98.93
POZ7	VHF	/	/	/	290	99.65	99.65
PRGV	VHF	104	100	100	/	/	/
PUS1	VHF	/	/	/	152	100	100
PVG	VHF	/	/	/	156	99.35	100
PWQ1	VHF	164	98.78	98.78			
REN1	VHF	275	98.18	99.63	235	99.57	100
RNB	VHF	/	/	/	134	100	100
ROV1	VHF	290	97.93	99.31	220	96.81	97.72
RZE7	VHF	/	/	/	167	99.4	100
RZEV	VHF	/	/	/	114	100	100
SCO1	VHF	725	99.17	99.44	995	99.19	99.59
SEL	VHF	159	100	100	354	100	100
SHJ8	VHF	130	100	100	/	/	/
SLL	VHF	194	99.48	99.48	/	/	/
SOF	VHF	/	/	/	139	98.56	99.28
SVO	VHF	1287	99.68	99.84	1382	98.04	99.42

SVO1	VHF	/	/	/	184	98.36	99.45
SVO2	VHF	159	98.11	99.37	187	98.93	99.46
SVX1	VHF	/	/	/	122	100	100
SXB	VHF	/	/	/	235	99.57	100
SXF7	VHF	/	/	/	123	99.18	100
SXFT	VHF	597	99.49	100	/	/	/
SXR1	VHF	111	100	100	295	100	100
SYZ1	VHF	113	99.11	100	116	97.41	99.13
SZF	VHF	/	/	/	186	100	100
SZX	VHF	1599	98.68	99.49	4719	97.47	99.02
SZXV	VHF	480	97.91	100	374	98.12	100
SZZT	VHF	146	100	100	/	/	/
TAO	VHF	171	99.41	100	484	100	100
TAS	VHF	/	/	/	139	100	100
TAS1	VHF	2152	99.62	99.76	3779	99.92	99.97
TBS1	VHF	109	100	100	284	99.64	100
TCG	VHF	1390	99.71	99.92	2075	98.84	99.32
TCGV	VHF	142	100	100	/	/	/
TEN	VHF	/	/	/	760	97.63	99.21
TJM1	VHF	/	/	/	220	100	100
TLQ	VHF	343	99.7	100	1409	99.57	99.71
TLV8	VHF	105	99.04	100	/	/	/
TMJ1	VHF	188	100	100	/	/	/
TNA	VHF	123	100	100	284	100	100
TPE	VHF	429	99.76	100	344	99.7	100
TPE2	VHF	/	/	/	155	100	100
TPE7	VHF	154	100	100	/	/	/
TSA	VHF	/	/	/	126	100	100
TSE	VHF	145	100	100	515	99.02	99.61

TSE1	VHF	715	98.46	99.44	1961	99.79	99.84
TSN	VHF	/	/	/	483	98.75	99.37
TXL	VHF	1122	100	100	626	99.36	99.68
TXL8	VHF	/	/	/	155	100	100
TYN	VHF	106	100	100	/	/	/
TZX1	VHF	/	/	/	526	100	100
UFA1	VHF	129	98.44	100	129	100	100
URC	VHF	1190	98.99	99.57	3028	99.43	99.6
UYN	VHF	/	/	/	230	100	100
VIE	VHF	/	/	/	220	99.54	99.54
VKO1	VHF	178	98.87	100	124	97.58	100
VNO	VHF	1024	99.8	99.9	1573	99.17	99.49
VNO1	VHF	163	99.38	100	366	99.72	99.72
VNO7	VHF	749	99.59	99.59	1169	99.4	99.82
VOG1	VHF	1105	99.27	99.72	883	98.75	99.2
WAW	VHF	211	100	100	384	99.21	99.73
WAW7	VHF	/	/	/	483	99.37	99.58
WAWV	VHF	235	99.57	100	212	100	100
WEH	VHF	/	/	/	203	99.01	100
XIY	VHF	/	/	/	102	99.01	100
XMN	VHF	/	/	/	197	100	100
XNN	VHF	558	99.28	99.46	903	99.66	99.88
XXA	SAT	8387	97.37	99.8	18078	93.65	99.76
XXF	SAT	7314	98.66	99.79	7036	96.27	99.5
XXI	SAT	4863	98.76	99.85	15536	95.51	98.88
XXP	SAT	6811	98.5	99.67	2128	92.01	98.54
XXQ	VHF	249	98.79	100	/	/	/
YGJv	VHF	/	/	/	153	100	100
YIN	VHF	665	99.24	99.84	1508	99.6	99.66

ZQZ	VHF	117	99.14	100	/	/	/
ZRH	VHF	/	/	/	137	99.27	99.27

Table 4 ADS-C Performance by Media Type in ZWWW

FIR	ZWWW					
Criteria	RSP180					
Period	Jan-June 2020			July-December 2020		
Colour Key: Meets Criteria; 99.0%-99.84%; Under Criteria	Message Counts	95% % < = 90sec	99.90% % <= 180sec	Message Counts	95% % < = 90sec	99.90% % <= 180sec
By Media Type						
VHF	65624	99.28	99.73	31783	98.4	99.66
SAT	53103	97.82	99.56	24527	97.22	99.66
HF	25	56	76	5	0	20
By Remote Ground Station (RGS) Ground Earth Station (GES)						
Designator	**Type**	(only RGS/GES with message counts >100 recorded)				
AAT	VHF	/	/	/	609	99.67	99.67
ADD	VHF	135	100	100	/	/	/
AER1	VHF	/	/	/	351	99.71	100
AKU	VHF	884	99.54	99.77	3833	99.42	99.55
AKX	VHF	/	/	/	575	98.95	99.82
ALA	VHF	110	100	100	527	99.81	100
ALA1	VHF	1677	99.22	99.64	3743	99.54	99.75
AOE2	SAT	/	/	/	166	92.77	100
APK1	SAT	25724	98.56	99.69	40503	97.88	99.42
APK2	VHF	2148	98.32	99.67	4787	97.59	99.26
ASB1	VHF	710	99.57	100	1383	99.06	99.56
ASF1	VHF	270	99.62	99.62	255	98.43	99.21

AUH	VHF	171	100	100	194	100	100
AUH7	VHF	/	/	/	114	100	100
AVK	VHF	190	99.47	100	898	100	100
BAH1	VHF	/	/	/	111	94.59	99.09
BAH2	VHF	/	/	/	150	100	100
BAH8	VHF	/	/	/	114	100	100
BAV	VHF	785	99.87	100	1949	99.58	99.74
BER	VHF	/	/	/	112	100	100
BFJ	VHF	381	99.73	100	/	/	/
BFJV	VHF	166	100	100	/	/	/
BOJ7	VHF	/	/	/	235	99.57	100
BRU	VHF	/	/	/	119	100	100
BXH1	VHF	951	99.26	99.78	/	/	/
CAN	VHF	857	99.18	99.88	2250	97.33	98.88
CANV	VHF	286	98.95	99.3	155	98.06	100
CGO	VHF	/	/	/	170	97.64	99.41
CJU1	VHF	/	/	/	242	98.76	99.58
CKG	VHF	1016	99.11	99.7	2511	99.4	99.84
CKGV	VHF	/	/	/	154	100	100
CTU	VHF	1700	99.11	99.64	4787	99.28	99.66
CTUV	VHF	444	100	100	293	100	100
DCY	VHF	/	/	/	130	100	100
DLC	VHF	/	/	/	163	99.38	100
DME	VHF	420	99.76	100	/	/	/
DME1	VHF	/	/	/	165	95.15	96.96
DME2	VHF	127	98.42	99.21	/	/	/
DNH	VHF	1308	99.61	99.92	3829	99.5	99.71
DOH2	VHF	/	/	/	180	99.44	100
DOY	VHF	140	98.57	99.28	292	99.65	99.65

DSN	VHF	142	99.29	100	392	100	100
DWC	VHF	/	/	/	101	100	100
DXB	VHF	569	99.47	100	606	99.66	100
DXB7	VHF	/	/	/	101	100	100
DZN1	VHF	1093	99.54	99.9	/	/	/
ESB7	VHF	/	/	/	170	100	100
EUA1	SAT	6526	95.72	99.23	12380	94.49	98.63
EUA2	VHF	1039	98.17	100	/	/	/
FMOT	VHF	103	100	100	/	/	/
FRAT	VHF	103	100	100	/	/	/
FRAV	VHF	104	100	100	/	/	/
GDNT	VHF	122	99.18	100	/	/	/
GMP1	VHF	384	99.21	99.73	852	99.06	99.76
GOJ1	VHF	162	100	100	168	97.02	100
GOQ	VHF	2156	98.88	99.44	5402	98.94	99.4
GUW1	VHF	580	97.58	98.62	761	99.21	99.6
GYD1	VHF	778	99.48	99.87	971	97.94	98.45
GYS	VHF	543	98.52	99.44	635	98.58	99.84
HAK	VHF	/	/	/	111	99.09	100
HAN1	VHF	/	/	/	119	96.63	96.63
HET	VHF	369	99.45	99.72	916	100	100
HKG	VHF	425	99.05	99.29	1814	97.68	98.62
HKG1	VHF	114	96.49	97.36	152	77.63	78.28
HKG2	VHF	249	99.59	100	450	96.22	97.55
HKG7	VHF	471	99.57	99.78	684	98.24	98.53
HKG8	VHF	351	99.71	100	503	99.6	99.8
HKGV	VHF	418	99.76	99.76	229	100	100
HMI	VHF	2083	99.37	99.75	2997	99.83	99.86
HMIV	VHF	523	99.61	99.61	/	/	/

HTN	VHF	1257	99.92	100	3342	99.91	99.94
HUZ	VHF	128	99.21	100	/	/	/
ICN	VHF	381	99.21	99.73	1327	99.77	100
ICN2	VHF	240	98.33	99.16	717	98.88	99.72
IFN1	VHF	165	98.18	100	/	/	/
IG1	SAT	1713	91.82	98.13	3987	91.42	98.54
IGW1	SAT	3213	98.63	99.34	4859	98.14	99.34
INC	VHF	232	100	100	445	99.1	99.55
IOR2	SAT	/	/	/	8307	97.73	99.53
IOR6	VHF	/	/	/	450	97.55	98.88
IST7	VHF	/	/	/	142	99.29	100
IST8	VHF	/	/	/	153	98.69	100
ISTW	VHF	/	/	/	106	97.16	99.05
IXJ1	VHF	/	/	/	348	100	100
JGN	VHF	1593	99.49	99.81	3083	99.7	99.8
JZH	VHF	192	99.47	99.47	583	97.59	99.14
KBP	VHF	176	99.43	100	353	98.3	99.15
KBP1	VHF	/	/	/	105	99.04	100
KBPV	VHF	183	100	100	/	/	/
KCA	VHF	497	98.79	99.19	2687	99.4	99.7
KHG	VHF	927	100	100	1673	99.82	99.88
KJH	VHF	420	99.28	99.76	/	/	/
KJHV	VHF	172	100	100	/	/	/
KLVT	VHF	116	100	100	/	/	/
KRL	VHF	3775	99.36	99.62	9587	99.24	99.5
KRLV	VHF	1236	99.67	99.83	/	/	/
KRY	VHF	237	99.57	100	/	/	/
KTW7	VHF	/	/	/	116	100	100
KTWT	VHF	499	99.59	99.79	/	/	/

KUNT	VHF	216	100	100	/	/	/
KWE	VHF	/	/	/	260	99.23	100
KWL	VHF	251	98.4	99.2	163	99.38	100
KWLV	VHF	163	98.77	100	/	/	/
KZN1	VHF	129	100	100	141	100	100
KZO	VHF	/	/	/	460	96.73	97.39
LHW	VHF	1797	99.1	99.61	3400	98.44	99.14
LZH	VHF	/	/	/	318	98.74	99.68
MCT	VHF	279	100	100	/	/	/
MCT7	VHF	/	/	/	213	100	100
MFM	VHF	211	99.05	99.05	629	98.25	99.68
MHD1	VHF	150	98.66	100	166	100	100
MSQ1	VHF	247	99.59	99.59	101	100	100
MUX1	VHF	192	98.43	100	/	/	/
NNG	VHF	802	99.25	99.62	2599	98.8	99.38
NNGV	VHF	101	100	100	113	100	100
NRTv	VHF	124	100	100	200	100	100
PEK	VHF	1060	99.81	100	2417	99.42	99.87
PKX	VHF	301	98.33	100	/	/	/
POR1	SAT	/	/	/	822	97.56	98.9
POZ7	VHF	/	/	/	150	100	100
PUS1	VHF	/	/	/	162	98.76	100
PVG	VHF	104	100	100	166	98.79	99.39
REN1	VHF	147	100	100	133	99.24	100
ROV1	VHF	113	97.34	99.11	108	99.07	100
SCO1	VHF	341	99.7	99.7	519	99.8	99.8
SEL	VHF	165	99.39	99.39	425	99.76	99.76
SLL	VHF	132	100	100	/	/	/
SVO	VHF	544	100	100	558	97.13	99.28

SXFT	VHF	291	100	100	/	/	/
SXR1	VHF	147	100	100	423	99.76	100
SZX	VHF	638	98.9	99.68	1637	98.04	99.08
SZXV	VHF	165	97.57	99.39	/	/	/
TAO	VHF	191	99.47	99.47	547	100	100
TAS1	VHF	1069	99.71	99.9	1938	99.89	99.89
TBS1	VHF	/	/	/	128	100	100
TCG	VHF	1111	99.45	99.81	1883	99.09	99.52
TCGV	VHF	256	100	100	/	/	/
TEN	VHF	/	/	/	220	96.81	98.18
TLQ	VHF	415	99.51	100	1429	99.58	99.65
TNA	VHF	157	99.36	99.36	334	99.7	100
TPE	VHF	151	100	100	128	99.21	100
TSE	VHF	/	/	/	310	98.38	98.7
TSE1	VHF	339	98.23	98.52	1107	99.81	99.9
TSN	VHF	/	/	/	467	98.71	100
TXL	VHF	504	100	100	205	99.51	99.51
TZX1	VHF	/	/	/	234	99.14	100
URC	VHF	1256	99.76	99.92	3993	99.64	99.82
UYN	VHF	/	/	/	126	99.2	99.2
VNO	VHF	475	99.57	99.78	698	99.57	99.71
VNO1	VHF	/	/	/	162	100	100
VNO7	VHF	361	99.44	99.72	598	99.16	99.83
VOG1	VHF	526	98.66	99.23	461	98.91	99.13
WAW	VHF	/	/	/	146	99.31	99.31
WAW7	VHF	/	/	/	248	99.59	100
WAWV	VHF	/	/	/	129	100	100
WEH	VHF	/	/	/	284	99.29	100
XNN	VHF	263	99.23	100	361	99.72	99.72

XXA	SAT	4879	97.35	99.73	9884	93.15	99.75
XXF	SAT	5008	98.28	99.7	5190	96.97	99.67
XXI	SAT	2958	98.51	99.89	6298	95.17	98.98
XXP	SAT	3070	98.07	99.51	1233	94.07	98.86
XXQ	VHF	258	96.12	99.22	/	/	/
YGJv	VHF	/	/	/	155	100	100
YIN	VHF	1066	99.34	99.81	2701	99.59	99.85
ZQZ	VHF	156	100	100	/	/	/

4. ADS-C PERFORMANCE BY OPERATOR

Table 5 presents ADS-C Downlink Latency for messages sent within Lanzhou FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

5. FIR	ZLLL					
Criteria	RSP180					
Period	Jan-June 2020			July-December 2020		
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)						
AAI/B744	1066	97.37	98.21	495	94.94	98.38
AAR/B772	178	98.87	100	/	/	/
ABD/B744	113	96.46	98.23	/	/	/
ABW/B744	152	98.02	98.02	/	/	/
ABW/B748	482	99.58	99.79	285	95.78	98.94
AEA/B788	266	99.62	100	/	/	/
AFL/B773	188	95.21	97.87	/	/	/
AFR/B772	244	95.9	100	/	/	/
AFR/B77W	956	96.23	99.89	117	93.16	100
AZG/B744	814	97.78	99.14	456	96.92	99.12
AZG/B748	9262	99.13	99.88	8639	98.62	99.94
BAW/A388	197	100	100	/	/	/
BAW/B772	128	100	100	/	/	/
BAW/B77W	102	99.01	100	/	/	/
BOX/B77L	10918	99.67	99.95	6491	98.87	99.95
CCA/A333	204	98.52	99.5	113	99.11	100

CES/A319	1477	97.42	99.93	1199	96.49	99.83
CFG/B763	803	99.25	99.62	/	/	/
CKS/B744	1093	98.44	99.72	/	/	/
CLX/B744	4312	97.58	98.21	2057	98.05	99.27
CLX/B748	9498	99.14	99.93	4762	98.34	99.89
CPA/A359	4237	99.29	99.95	423	100	100
CPA/B744	827	99.63	100	1070	98.31	99.81
CPA/B748	1441	98.88	99.51	648	96.29	98.61
CPA/B773	365	94.52	97.8	/	/	/
CPA/B77W	18035	96.85	98.97	854	98	99.53
CRK/A332	1492	99.46	99.79	750	98.8	99.73
DLH/A333	101	100	100	/	/	/
DLH/A359	331	99.39	100	/	/	/
DLH/A388	1388	98.27	100	/	/	/
DLH/B744	206	98.54	100	/	/	/
DLH/B748	6394	99.12	99.85	/	/	/
DTA/B773	1540	99.8	100	154	99.35	100
ELY/B772	3019	99.2	100	/	/	/
ETD/A388	854	100	100	/	/	/
ETD/B773	1249	99.59	99.91	217	96.77	96.77
ETD/B789	928	99.03	99.78	816	99.26	100
ETH/A359	500	99.6	100	/	/	/
ETH/B772	483	98.75	99.58	313	99.04	100
ETH/B773	375	100	100	/	/	/
ETH/B777	1280	99.14	99.92	1433	97.41	99.65
ETH/B788	3087	99.02	99.67	668	98.65	99.85
EVE/A333	281	100	100	/	/	/
FDX/B77L	20152	96.94	98.95	14034	95.9	98.86

FIN/A359	1931	99.68	99.84	601	99.66	100
GEC/B77L	4475	98.34	99.82	3198	97.21	99.65
GTI/B744	975	98.87	99.79	1594	97.3	99.93
HKC/A332	452	99.55	99.77	306	99.67	100
HVN/B789	495	98.58	98.78	/	/	/
ICL/B744	687	97.96	99.27	148	99.32	100
ICV/B744	2453	98.77	99.51	1082	98.42	99.72
IGA/A320	2614	99.12	99.92	3644	97.77	99.89
IGA/A321	284	100	100	/	/	/
IGA/B744	127	97.63	99.21	/	/	/
IGA/GLEX	109	100	100	/	/	/
KAL/A332	345	99.71	100	/	/	/
KAL/B772	3929	98.7	99.79	/	/	/
KAL/B77L	255	99.21	100	/	/	/
KAL/B77W	199	98.99	100	/	/	/
KLM/B744	140	96.42	97.85	1522	97.43	99.14
KLM/B772	5148	95.55	99.74	402	98.25	100
KLM/B77W	6759	97.91	99.86	1520	97.43	99.8
KLM/B789	3268	99.17	99.87	688	99.56	99.85
LOT/B788	998	99.29	99.89	287	98.6	100
NCR/B744	305	97.04	100	/	/	/
NWS/B772	285	95.78	98.24	/	/	/
PAC/B744	321	100	100	519	98.07	100
PIA/B772	163	100	100	/	/	/
PIA/B77L	121	100	100	/	/	/
PLM/B744	581	99.13	99.65	/	/	/
QTR/A332	956	98.64	98.74	/	/	/
QTR/A359	307	100	100	/	/	/

QTR/B77L	2668	98.98	99.88	1214	99.09	99.42
QTR/B77W	8814	98.15	99.47	6660	97.29	99.23
RUN/B744	421	98.81	98.81	1294	97.83	98.6
SDM/B773	185	98.37	100	118	100	100
SOO/B77L	1444	99.23	99.86	1992	97.03	99.29
SWR/A343	345	99.42	100	137	100	100
SWU/B77W	260	99.23	100	179	99.44	100
TAM/B773	1571	99.49	100	/	/	/
TAM/B77W	237	95.78	100	/	/	/
TAR/A332	358	100	100	/	/	/
THY/A332	12215	99.77	99.9	9516	99.13	99.83
THY/A333	1878	99.14	99.73	/	/	/
THY/B77W	6813	99.08	99.91	5160	98.95	99.74
TUB/B788	170	100	100	/	/	/
UAE/A388	10939	99.55	99.93	/	/	/
UAE/B773	3202	99.4	100	2430	98.8	99.95
UAE/B77L	125	100	100	/	/	/
UPS/B744	9305	98.26	99.7	9190	97.82	99.83
UZB/B763	886	98.41	100	900	97.88	99.11
VIR/B789	2856	99.82	99.92	2742	98.72	99.63
VJT/GLEX	731	99.31	99.72	407	98.52	99.75
WGN/B744	129	97.67	99.22	/	/	/
HYP/GLEX	/	/	/	109	100	100
GTI/B748	/	/	/	265	93.96	95.09
CLH/A343	/	/	/	163	95.7	100
WGN/MD11	/	/	/	244	99.59	100
CCA/A332	/	/	/	142	98.59	100
TFL/B788	/	/	/	248	99.19	99.59

DLH/A343	/	/	/	131	95.41	100

Table 6 presents ADS-C Downlink Latency for messages sent within Urumqi FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

Table 5 ADS-C Performance by Operator in ZLLL

FIR	ZLLL					
Criteria	RSP180					
Period	Jan-June 2020			July-December 2020		
Colour Key Meets Criteria 99.0%-99.84% 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)						
AAI/B744	1066	97.37	98.21	495	94.94	98.38
AAR/B772	178	98.87	100	/	/	/
ABD/B744	113	96.46	98.23	/	/	/
ABW/B744	152	98.02	98.02	/	/	/
ABW/B748	482	99.58	99.79	285	95.78	98.94
AEA/B788	266	99.62	100	/	/	/
AFL/B773	188	95.21	97.87	/	/	/
AFR/B772	244	95.9	100	/	/	/
AFR/B77W	956	96.23	99.89	117	93.16	100
AZG/B744	814	97.78	99.14	456	96.92	99.12
AZG/B748	9262	99.13	99.88	8639	98.62	99.94
BAW/A388	197	100	100	/	/	/
BAW/B772	128	100	100	/	/	/
BAW/B77W	102	99.01	100	/	/	/
BOX/B77L	10918	99.67	99.95	6491	98.87	99.95

CCA/A333	204	98.52	99.5	113	99.11	100
CES/A319	1477	97.42	99.93	1199	96.49	99.83
CFG/B763	803	99.25	99.62	/	/	/
CKS/B744	1093	98.44	99.72	/	/	/
CLX/B744	4312	97.58	98.21	2057	98.05	99.27
CLX/B748	9498	99.14	99.93	4762	98.34	99.89
CPA/A359	4237	99.29	99.95	423	100	100
CPA/B744	827	99.63	100	1070	98.31	99.81
CPA/B748	1441	98.88	99.51	648	96.29	98.61
CPA/B773	365	94.52	97.8	/	/	/
CPA/B77W	18035	96.85	98.97	854	98	99.53
CRK/A332	1492	99.46	99.79	750	98.8	99.73
DLH/A333	101	100	100	/	/	/
DLH/A359	331	99.39	100	/	/	/
DLH/A388	1388	98.27	100	/	/	/
DLH/B744	206	98.54	100	/	/	/
DLH/B748	6394	99.12	99.85	/	/	/
DTA/B773	1540	99.8	100	154	99.35	100
ELY/B772	3019	99.2	100	/	/	/
ETD/A388	854	100	100	/	/	/
ETD/B773	1249	99.59	99.91	217	96.77	96.77
ETD/B789	928	99.03	99.78	816	99.26	100
ETH/A359	500	99.6	100	/	/	/
ETH/B772	483	98.75	99.58	313	99.04	100
ETH/B773	375	100	100	/	/	/
ETH/B777	1280	99.14	99.92	1433	97.41	99.65
ETH/B788	3087	99.02	99.67	668	98.65	99.85
EVE/A333	281	100	100	/	/	/

FDX/B77L	20152	96.94	98.95	14034	95.9	98.86
FIN/A359	1931	99.68	99.84	601	99.66	100
GEC/B77L	4475	98.34	99.82	3198	97.21	99.65
GTI/B744	975	98.87	99.79	1594	97.3	99.93
HKC/A332	452	99.55	99.77	306	99.67	100
HVN/B789	495	98.58	98.78	/	/	/
ICL/B744	687	97.96	99.27	148	99.32	100
ICV/B744	2453	98.77	99.51	1082	98.42	99.72
IGA/A320	2614	99.12	99.92	3644	97.77	99.89
IGA/A321	284	100	100	/	/	/
IGA/B744	127	97.63	99.21	/	/	/
IGA/GLEX	109	100	100	/	/	/
KAL/A332	345	99.71	100	/	/	/
KAL/B772	3929	98.7	99.79	/	/	/
KAL/B77L	255	99.21	100	/	/	/
KAL/B77W	199	98.99	100	/	/	/
KLM/B744	140	96.42	97.85	1522	97.43	99.14
KLM/B772	5148	95.55	99.74	402	98.25	100
KLM/B77W	6759	97.91	99.86	1520	97.43	99.8
KLM/B789	3268	99.17	99.87	688	99.56	99.85
LOT/B788	998	99.29	99.89	287	98.6	100
NCR/B744	305	97.04	100	/	/	/
NWS/B772	285	95.78	98.24	/	/	/
PAC/B744	321	100	100	519	98.07	100
PIA/B772	163	100	100	/	/	/
PIA/B77L	121	100	100	/	/	/
PLM/B744	581	99.13	99.65	/	/	/
QTR/A332	956	98.64	98.74	/	/	/

QTR/A359	307	100	100	/	/	/
QTR/B77L	2668	98.98	99.88	1214	99.09	99.42
QTR/B77W	8814	98.15	99.47	6660	97.29	99.23
RUN/B744	421	98.81	98.81	1294	97.83	98.6
SDM/B773	185	98.37	100	118	100	100
SOO/B77L	1444	99.23	99.86	1992	97.03	99.29
SWR/A343	345	99.42	100	137	100	100
SWU/B77W	260	99.23	100	179	99.44	100
TAM/B773	1571	99.49	100	/	/	/
TAM/B77W	237	95.78	100	/	/	/
TAR/A332	358	100	100	/	/	/
THY/A332	12215	99.77	99.9	9516	99.13	99.83
THY/A333	1878	99.14	99.73	/	/	/
THY/B77W	6813	99.08	99.91	5160	98.95	99.74
TUB/B788	170	100	100	/	/	/
UAE/A388	10939	99.55	99.93	/	/	/
UAE/B773	3202	99.4	100	2430	98.8	99.95
UAE/B77L	125	100	100	/	/	/
UPS/B744	9305	98.26	99.7	9190	97.82	99.83
UZB/B763	886	98.41	100	900	97.88	99.11
VIR/B789	2856	99.82	99.92	2742	98.72	99.63
VJT/GLEX	731	99.31	99.72	407	98.52	99.75
WGN/B744	129	97.67	99.22	/	/	/
HYP/GLEX	/	/	/	109	100	100
GTI/B748	/	/	/	265	93.96	95.09
CLH/A343	/	/	/	163	95.7	100
WGN/MD11	/	/	/	244	99.59	100
CCA/A332	/	/	/	142	98.59	100

TFL/B788	/	/	/	248	99.19	99.59
DLH/A343	/	/	/	131	95.41	100

Table 6 ADS-C Performance by Operator in ZWWW

FIR	ZWWW					
Criteria	RSP180					
Period	Jan-June 2020			July-December 2020		
Colour Key Meets Criteria 99.0%-99.84% 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)						
AAI/B744	488	98.15	98.97	214	92.99	96.26
AAR/A333	108	100	100	/	/	/
AAR/B772	167	98.8	100	113	97.34	100
ABW/B744	106	97.16	97.16			
ABW/B748	278	99.64	100	317	98.42	99.68
AEA/B788	233	98.28	99.14	/	/	/
AFR/B772	134	97.01	100	/	/	/
AFR/B77W	601	96.33	99.66	/	/	/
AZG/B744	764	98.03	98.69	367	97	98.36
AZG/B748	4408	98.97	99.86	3793	98.44	99.92
BAW/A388	147	96.59	97.95	/	/	/
BAW/B77W	242	99.58	100	220	97.27	100
BOX/B77L	4325	99.58	99.95	2276	98.59	99.91
CCA/A332	393	99.49	100	268	97.38	100
CCA/A333	416	99.27	100	/	/	/
CFG/B763	752	99.33	99.6	/	/	/
CKS/B744	511	98.63	99.8	/	/	/
CLX/B744	1720	98.6	99.18	605	97.85	99.33
CLX/B748	4171	98.99	99.88	1972	98.32	99.94
CPA/A359	2224	99.68	100	/	/	/

CPA/B744	370	99.72	100	392	98.21	99.74
CPA/B748	652	99.07	100	171	95.9	97.07
CPA/B773	180	96.66	99.44	/	/	/
CPA/B77W	8665	97.03	98.92	464	97.62	98.92
CRK/A332	851	99.29	99.88	464	98.49	100
DLH/A333	227	100	100	/	/	/
DLH/A359	153	99.34	100	/	/	/
DLH/A388	481	99.37	100	/	/	/
DLH/B748	2406	99.33	99.87	159	92.45	94.96
DTA/B773	1030	99.7	100	/	/	/
ELY/B772	1256	99.92	100	/	/	/
ETD/A388	517	100	100	/	/	/
ETD/B773	890	99.66	100	162	96.91	97.53
ETD/B789	779	98.84	99.61	572	98.95	99.82
ETH/A359	332	99.09	99.69	/	/	/
ETH/B772	431	99.3	100	496	97.98	99.59
ETH/B773	508	99.6	100	/	/	/
ETH/B777	1759	98.8	99.82	1484	98.31	99.66
ETH/B788	2698	98.62	99.55	997	98.49	99.89
EVE/A333	299	100	100	/	/	/
FDX/B77L	8744	96.9	98.76	6954	95.94	99.05
FIN/A359	748	99.86	99.86	218	99.54	100
GEC/B77L	2073	99.17	100	1211	98.43	99.75
GTI/B744	1315	99.31	99.92	1459	97.12	99.79
HKC/A332	330	98.78	100	188	99.46	100
ICL/B744	385	97.92	98.96	143	100	100
ICV/B744	975	99.28	99.69	393	98.21	99.74
IGA/A320	1128	99.11	100	1242	98.38	99.83
KAL/A332	325	99.07	100	/	/	/
KAL/B772	2681	98.35	99.77	/	/	/
KAL/B77L	109	97.24	100	/	/	/
KLM/B772	2220	95.94	99.54	144	95.13	99.3
KLM/B77W	2958	98.2	99.89	515	97.47	99.8

KLM/B789	1450	99.31	99.86	259	99.61	100
LOT/B788	584	98.45	99.65	247	97.97	100
MNB/A332	119	99.15	100	/	/	/
MSR/B773	106	100	100	/	/	/
NCR/B744	152	99.34	100	/	/	/
PAC/B744	665	98.34	100	387	97.93	100
PIA/B772	146	99.31	99.31	/	/	/
PIA/B77L	166	100	100	/	/	/
PLM/A332	101	100	100	/	/	/
PLM/B744	404	98.51	99.5	/	/	/
QTR/A332	626	99.2	99.2	/	/	/
QTR/A359	163	99.38	100	/	/	/
QTR/B77L	1719	98.77	99.76	778	98.84	100
QTR/B77W	5801	98.13	99.6	4386	97.44	99.47
RUN/B744	458	99.34	99.78	420	98.09	98.33
SOO/B77L	739	98.24	99.32	881	96.93	99.09
SWR/A343	309	100	100	/	/	/
SWU/B77W	253	97.62	99.2	134	100	100
TAM/B773	665	99.54	99.84	154	97.4	100
TAR/A332	135	100	100	/	/	/
THY/A332	5725	99.66	99.89	4042	98.96	99.97
THY/A333	1288	98.68	99.68	/	/	/
THY/B77W	6306	99.19	99.96	3082	98.57	99.96
UAE/A388	7065	99.17	99.85	/	/	/
UAE/B772	117	98.29	99.14	168	98.21	100
UAE/B773	3150	98.79	100	4262	97.98	99.95
UAE/B77L	148	100	100	/	/	/
UPS/B744	4218	98.05	99.54	3952	97.97	99.87
UZB/B763	1199	99.24	99.91	1184	98.05	99.66
VIR/B789	1644	99.69	99.93	1198	99.08	99.91
VJT/GLEX	620	98.7	100	313	98.4	99.68
WGN/MD11	172	98.83	100	249	99.19	100
KLM/B744	/	/	/	507	96.64	99.21

PAC/B748	/	/	/	184	96.73	99.45

CPDLC PERFORMANCE BY MEDIA TYPE / RGS /GES

Table 7 presents the CPDLC actual communications performance (ACP) and CPDLC actual communication technical performance (ACTP) for messages sent within Lanzhou FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

Table 8 presents the CPDLC actual communications performance (ACP) and CPDLC actual communication technical performance (ACTP) for messages sent within Urumqi FIR by different media type and GES for the period from Jan. 2020 to Dec. 2020.

Table 7 CPDLC Performance by Media Type in ZLLL

FIR		**ZLLL**								
Criteria		**RCP240**								
Period		Jan - Jun 2020				Jul - Dec 2020				
Colour Key Meets Criteria 99.0%-99.84% 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**
By Media Type											
SAT		1718	98.02	98.77	98.31	99.12	953	97.58	98.84	97.79	99.05
VHF		494	99.19	98.98	99.39	98.98	153	94.77	97.38	94.77	97.38
SV		211	98.1	99.05	98.57	99.05	/	/	/	/	/
By Remote Ground Station (RGS) Ground Earth Station (GES)											
Designator	**Type**	(RGS/GES with message counts >100)									
SAT	APK1	1186	97.8	98.73	98.14	99.07	719	97.49	98.74	97.63	98.88
SAT	XXP	269	99.62	99.62	99.62	99.62	167	98.8	99.4	99.4	100
SAT	IGW1	111	95.49	100	95.49	100	/	/	/	/	/
VHF	LHW	233	99.57	99.14	99.57	99.14	/	/	/	/	/
SAT	XXA	113	100	100	100	100	/	/	/	/	/
SV	XXA	126	100	100	100	100	/	/	/	/	/
VHF	JZH	163	99.38	99.38	99.38	99.38	/	/	/	/	/

Table 8 CPDLC Performance by Media Type in ZWWW

FIR		ZWWW									
Criteria		RCP240									
Period		Jan - Jun 2020					Jul - Dec 2020				
Colour Key: Meets Criteria / 99.0%-99.84% / 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
By Media Type											
SAT		337	99.4	96.14	99.4	99.7	/	/	/	/	/
	By Remote Ground Station (RGS) Ground Earth Station (GES) ``										
Designator	Type	(RGS/GES with message counts >100)									
SAT	APK1	178	98.87	97.19	98.87	99.43	/	/	/	/	/

6. CPDLC PERFORMANCE BY OPERATOR

Table **9** presents the CPDLC actual communications performance (ACP) and CPDLC actual communication technical performance (ACTP) for messages sent within Lanzhou FIR by operator/type for the period from Jan. 2020 to Dec. 2020.

7. FIR	ZLLL											
Criteria	RCP240											
Period	Jan - Jun 2020						Jul - Dec 2020					
Colour Key: Meets Criteria / 99.0%-99.84% / 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
By Aircraft Operator / Type (only message counts >100 recorded)												
THY/A332	164	98.17	99.39	98.17	99.39	96.95	124	99.19	99.19	99.19	99.19	99.19

DLH/B748	112	100	99.1	100	99.1	100	/	/	/	/	/	/
CPA/B77W	175	97.14	96.57	97.71	97.14	97.71	/	/	/	/	/	/
CLX/B748	170	98.82	100	99.41	100	98.82	/	/	/	/	/	/
BOX/B77L	156	99.35	99.35	99.35	99.35	99.35	/	/	/	/	/	/
AZG/B748	136	100	100	100	100	100	119	99.15	100	99.15	100	99.15
/	966	97.61	98.44	97.92	98.75	97.61	506	96.64	98.61	96.83	98.81	96.64

Table 10 presents the CPDLC actual communications performance (ACP) and CPDLC actual communication technical performance (ACTP) for messages sent within Urumqi FIR by operator/type for the period from Jan. 2020 to Dec. 2020.

Table 9 CPDLC Performance by Operator/Type in ZLLL

FIR	**ZLLL**											
Criteria	**RCP240**											
Period	**Jan - Jun 2020**						**Jul - Dec 2020**					
Colour Key Meets Criteria 99.0%-99.84% 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**
By Aircraft Operator / Type (only message counts >100 recorded)												
THY/A332	164	98.17	99.39	98.17	99.39	96.95	124	99.19	99.19	99.19	99.19	99.19
DLH/B748	112	100	99.1	100	99.1	100	/	/	/	/	/	/
CPA/B77W	175	97.14	96.57	97.71	97.14	97.71	/	/	/	/	/	/
CLX/B748	170	98.82	100	99.41	100	98.82	/	/	/	/	/	/
BOX/B77L	156	99.35	99.35	99.35	99.35	99.35	/	/	/	/	/	/
AZG/B748	136	100	100	100	100	100	119	99.15	100	99.15	100	99.15
/	966	97.61	98.44	97.92	98.75	97.61	506	96.64	98.61	96.83	98.81	96.64

Table 10 CPDLC Performance by Operator/Type in ZWWW

FIR	**ZWWW**

Criteria	RCP240												
Period	Jan - Jun 2020						Jul - Dec 2020						
Colour Key Meets Criteria 99.0%-99.84% 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	
By Aircraft Operator / Type (only message counts >100 recorded)													
/	161	91.92	90.68	91.92	92.54	92.54	/	/	/	/	/	/	/