

Jul – Dec, 2019

PBCS Monitoring Report in Fukuoka FIR

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Central Reporting Agency in Japan

IPACG46/FIT33
15 - 16 Oct 2020

- 1) **PBCS Monitoring report in Fukuoka FIR (RJJJ) for July 1 to December 31, 2019.**

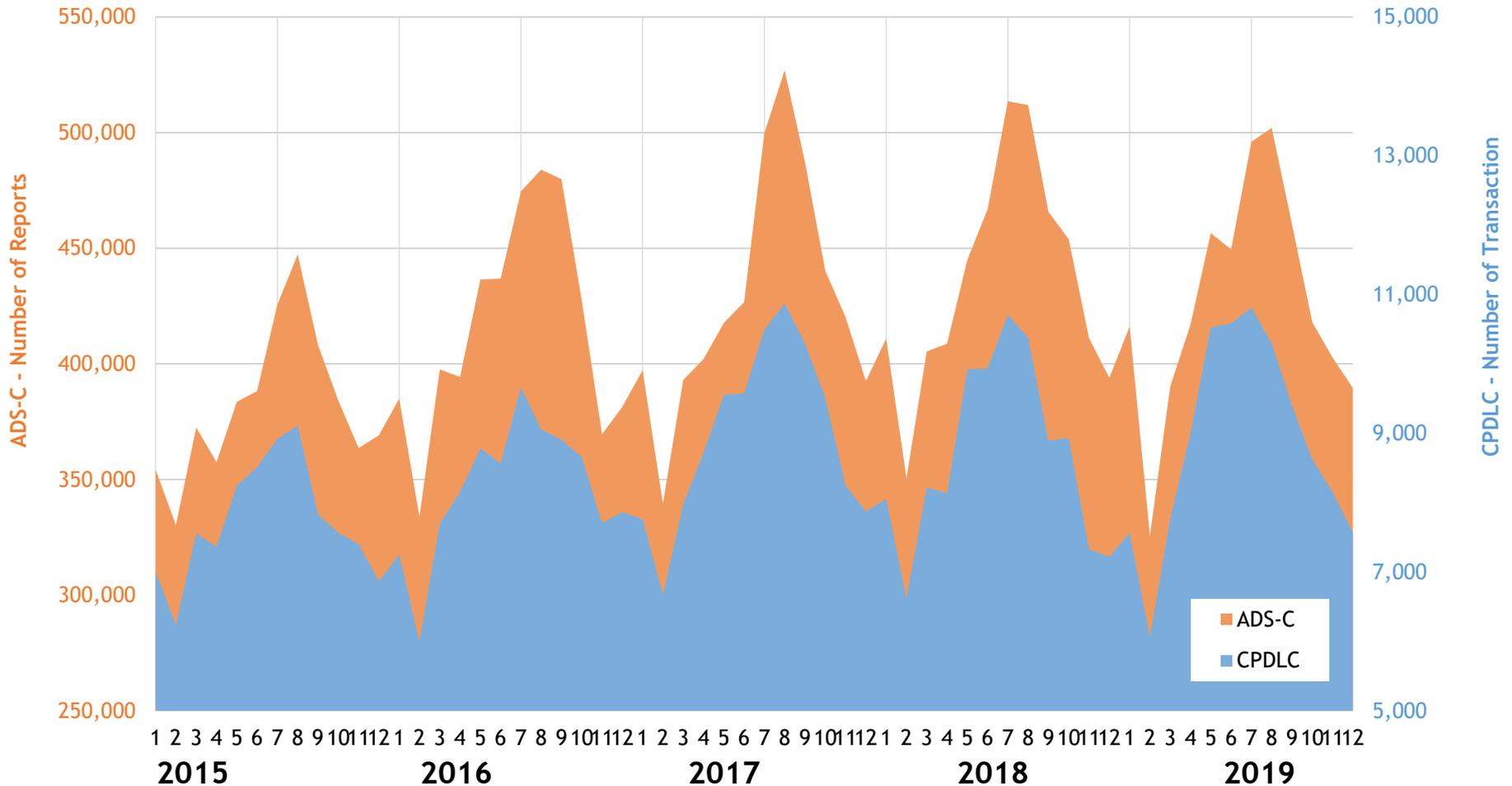
- 2) **This report contains:**
 - Availability and unplanned outage report
 - Continuity analysis
 - FANS 1/A over Iridium (FOI)
 - Analysis for poor performance

Datalink Usage in RJJJ



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Amount of Traffic - CPDLC/ADS-C Fukuoka FIR - Jan 2015 to Dec 2019



Availability

Availability (July – December 2019)



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DSP	Location	Availability	Number of Unplanned Outage	Number of Unplanned Outages > 10min	Accumulated Unplanned Outage Time (min)
SITA	Global	100.00%	0	0	0
	MTS1	100.00%	0	0	0
	APK2	99.99%	1	1	26
	IOR2	100.00%	0	0	0
	APK1	99.99%	2	2	36
	IGW1	99.98%	2	1	40
ARINC	Global	100.00%	0	0	0
	XXP	99.99%	1	1	27
	XXI	100.00%	0	0	0
	XXA	99.96%	3	2	103
	XXS	100.00%	0	0	0
	IG1	99.98%	2	2	46
AVICOM	Global	100.00%	0	0	0

RCP240/RSP180 Criteria					
Safety	99.90%	---	---	48	520
Efficiency	99.99%	---	---	4	52

Unplanned Outages (1 of 2)

Start Date	Start Time	Duration (min)	CSP	Service Involved	Location Involved	Reason	Comment (Operational Impact)
27 Aug 2019	22:05	30	SITA	Iridium	IGW1	Iridium experienced intermittent SBD	No operational impact
27 Aug 2019	22:05	30	ARINC	Iridium	IG1	Iridium has completed the maintenance activity on SBD Services During the maintenance window time frame provided, Iridium performed maintenance upgrade on SBD ACARS services.	No operational impact
26 Sep 2019	19:11	64	ARINC	I4	XXA	Inmarsat is currently experiencing a network service degradation.	No operational impact
26 Sep 2019	21:12	16	SITA	I4	APK1	Inmarsat notified us of a service degradation	No operational impact
14 Nov 2019	22:35	27	ARINC	I3	XXP	Inmarsat is currently experiencing a network service degradation.	No operational impact
14 Nov 2019	22:39	26	SITA	I3	APK2	Inmarsat Satellite services over the Asia Pacific I4 Region APK2 is experiencing an outage.	No operational impact
20 Nov 2019	16:28	10	SITA	Iridium	IGW1	SATELLITE AIRCOM - Iridium Datalink ACARS Service	No operational impact

Unplanned Outages (2 of 2)



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Start Date	Start Time	Duration (min)	CSP	Service Involved	Location Involved	Reason	Comment (Operational Impact)
20 Nov 2019	16:29	16	ARINC	Iridium	IG1	Collins Aerospace GL/IRIDIUM outage	No operational impact
08 Nov 2019	15:08	1	ARINC	I4	XXA	Inmarsat experienced a network service degradation.	No operational impact
25 Dec 2019	21:43	20	SITA	I4	APK1	SATELLITE AIRCOM - Iridium Datalink ACARS Service	No operational impact
25 Dec 2019	21:49	38	ARINC	I4	XXA	Inmarsat is currently experiencing a network service degradation	No operational impact

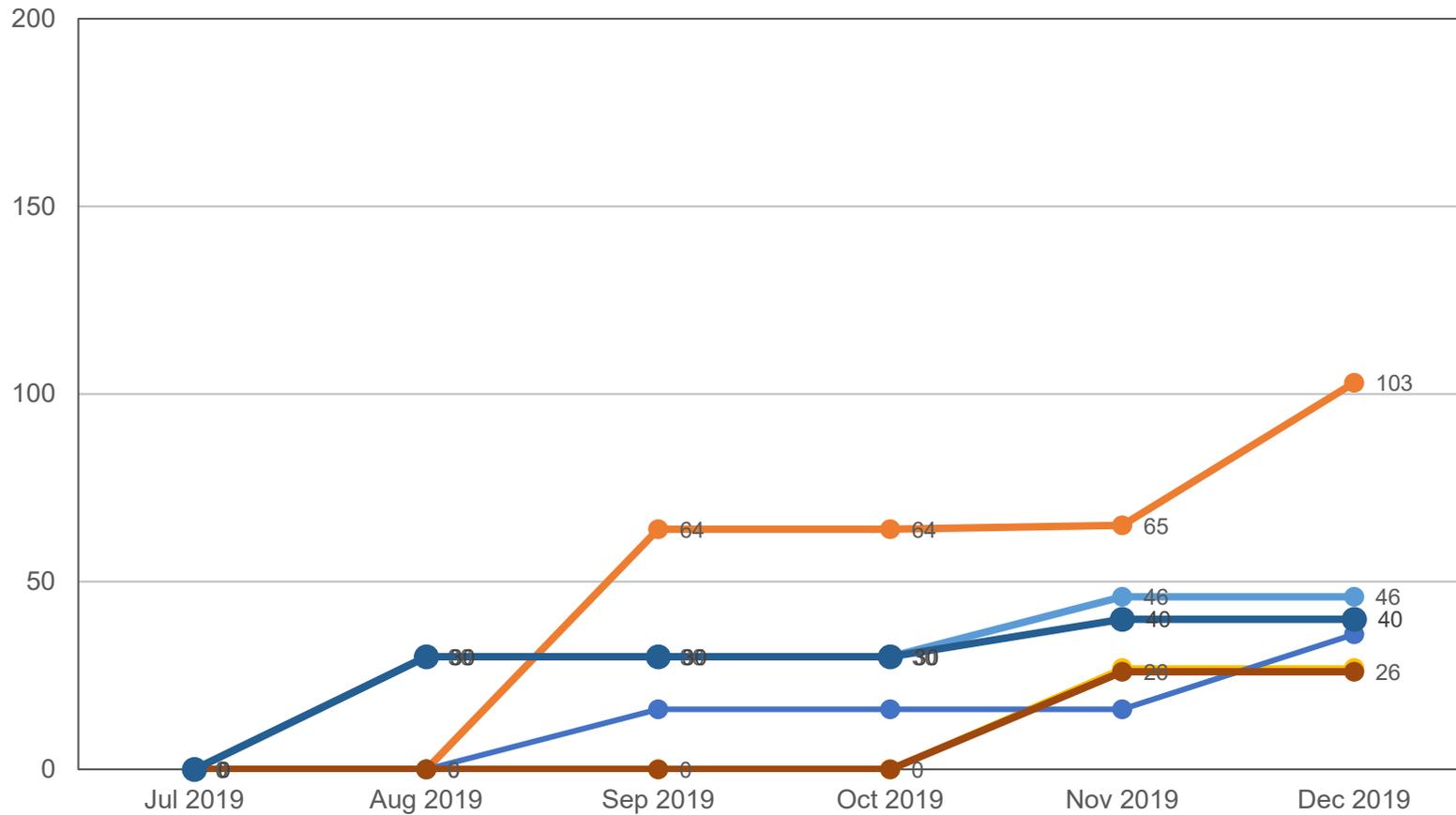
Accumulated Unplanned Outage



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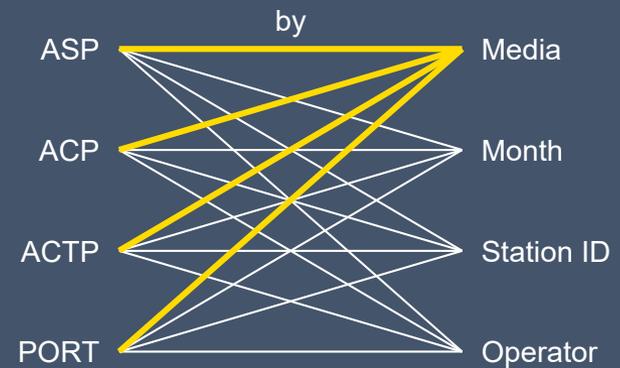
CSP/Path Outages (Jul – Dec, 2019)

(minutes)



- ARINC-IG1
- ARINC-XXA
- ARINC-XXP
- SITA-APK1
- SITA-APK2
- SITA-IGW1

Observed Performance by Media Type



Observed Performance by Media Type

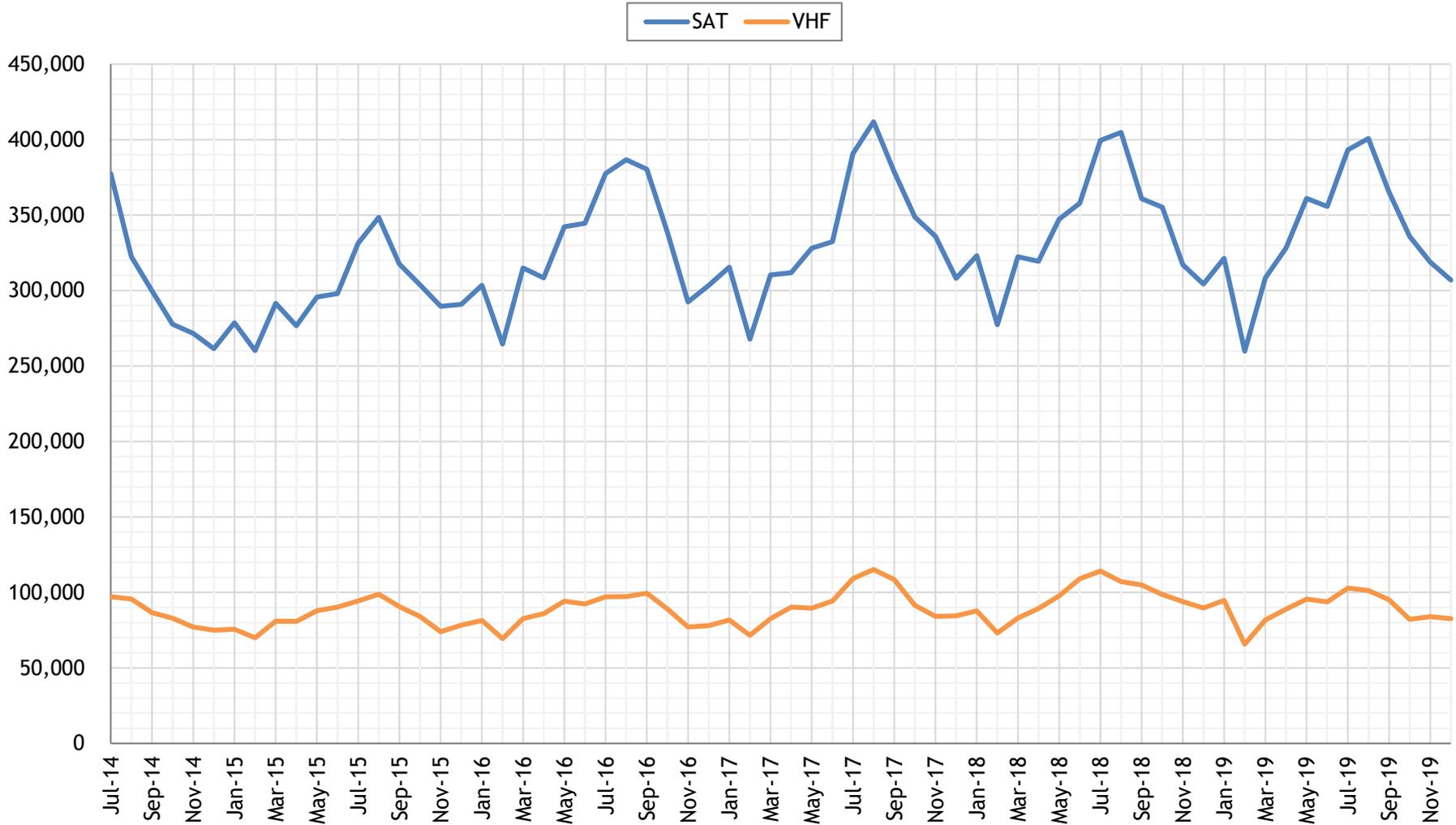
Media Type	RSP180			RCP240					
	Count of ADS-C	ASP		Count of CPDLC	ACTP		ACP		PORT
		95%	99.9%		95%	99.9%	95%	99.9%	95%
Aggregate	2,668,737	98.44%	99.52%	54,855	99.50%	99.64%	99.47%	99.70%	99.19%
SAT	2,120,835	98.26%	99.46%	50,217	99.50%	99.63%	99.47%	99.72%	99.22%
VHF	547,902	99.14%	99.73%	4,226	99.79%	99.91%	99.74%	99.76%	99.20%
SAT/VHF	---	---	---	221	98.19%	99.10%	96.83%	97.74%	94.57%
VHF/SAT	---	---	---	191	96.34%	98.95%	96.86%	96.86%	94.76%

Legend:

- Meets criteria
- Under criteria but above 99.0%
- Under criteria

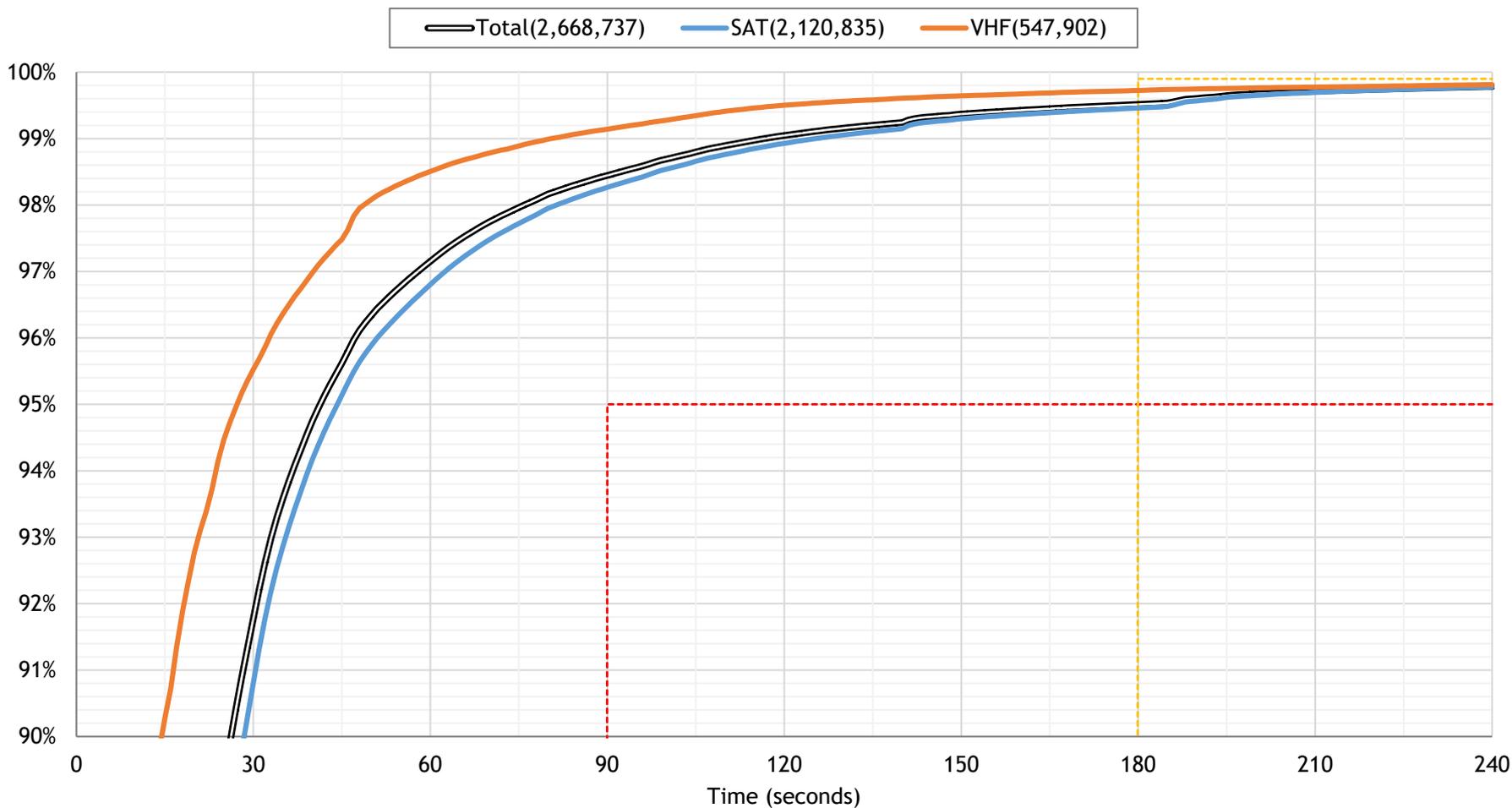
ADS-C Usage by Media Type

Fukuoka FIR - Count of ADS-C Reports - Jul 2014 to Dec 2019



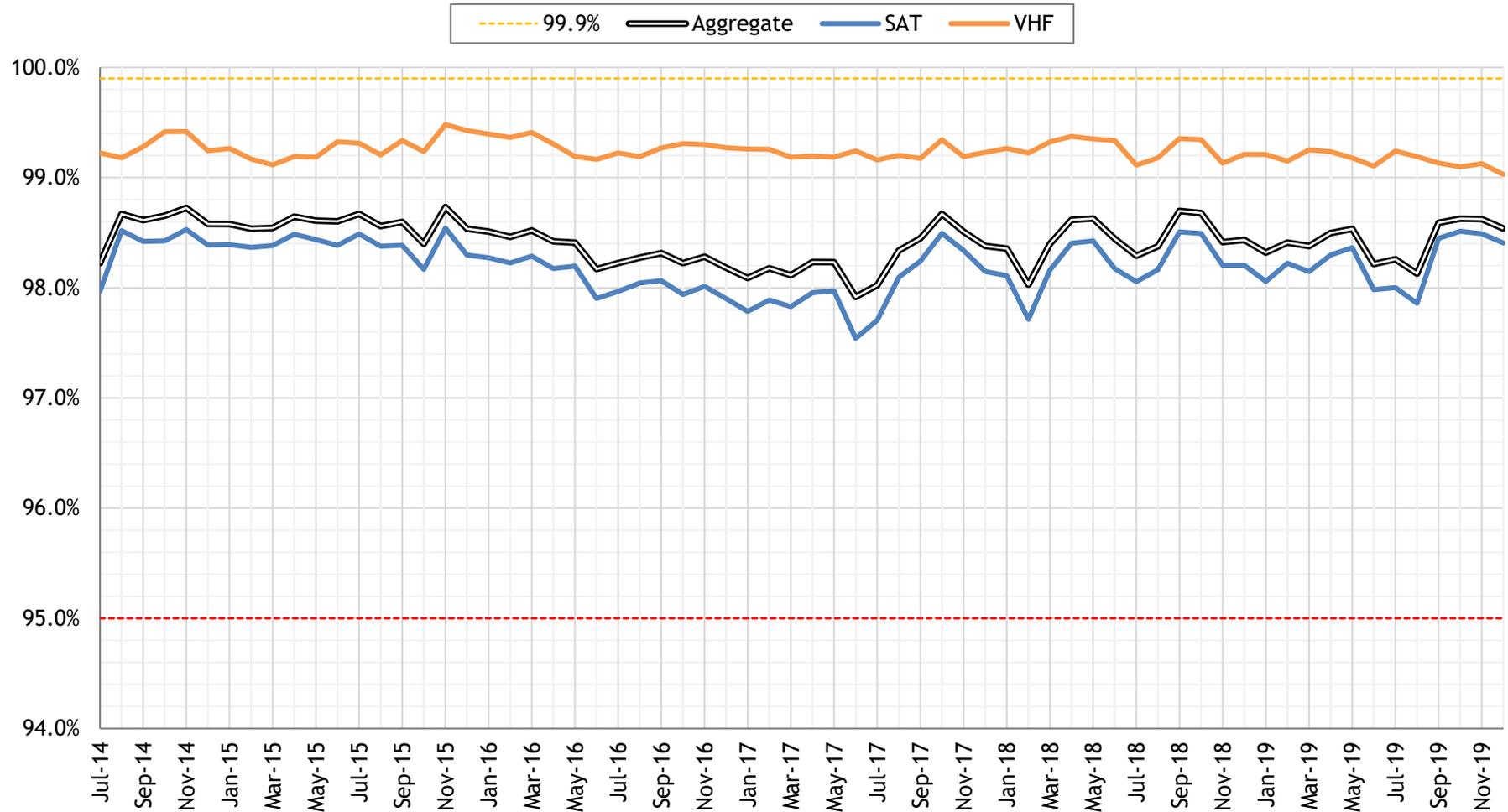
ASP by Media Type

Fukuoka FIR - By Media Type - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



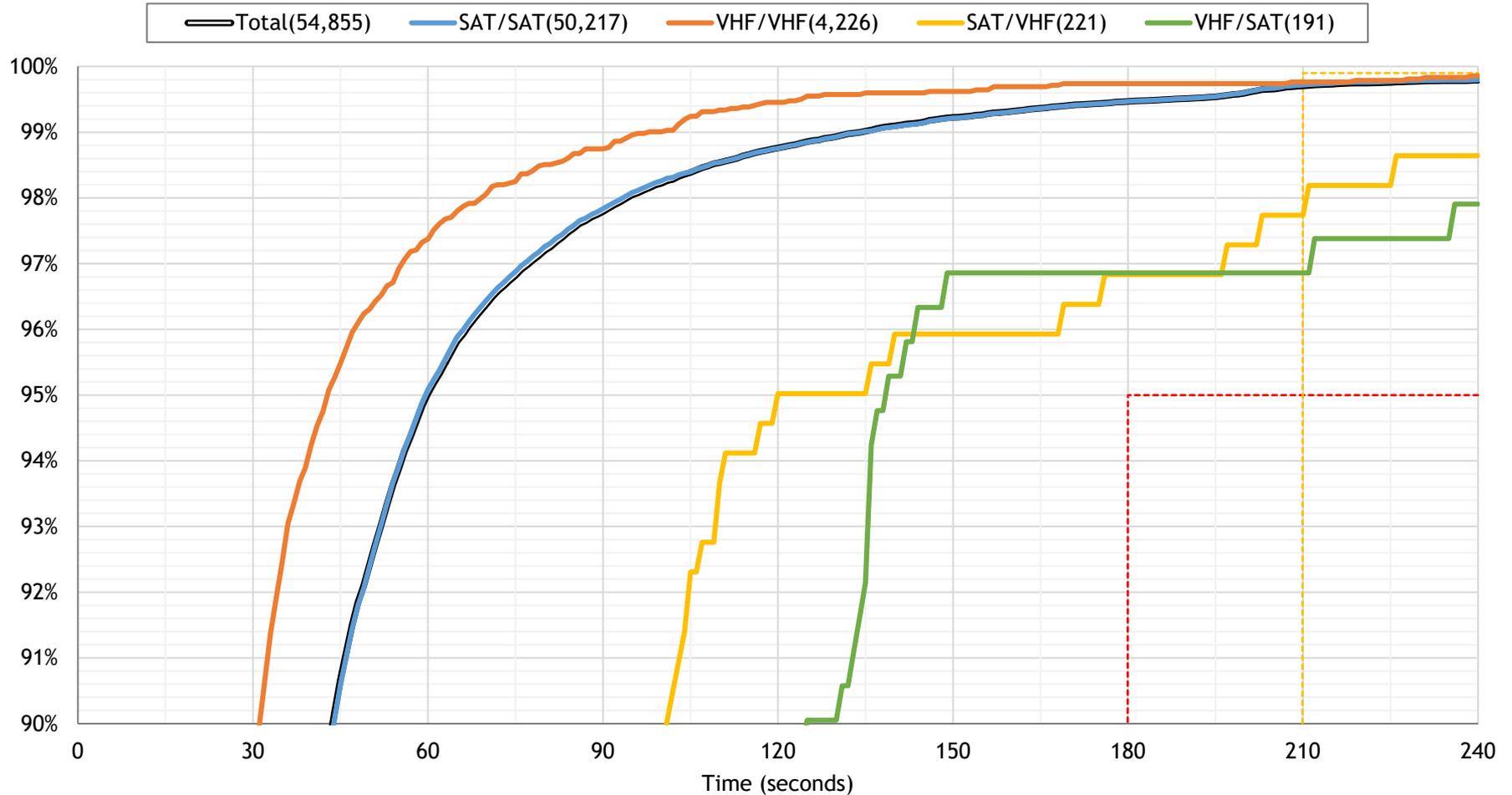
ASP 95% (90s) values for each month

Fukuoka FIR - By Media Type - Jul 2014 to Dec 2019 ADS-C Actual Surveillance Performance 95% (90s)



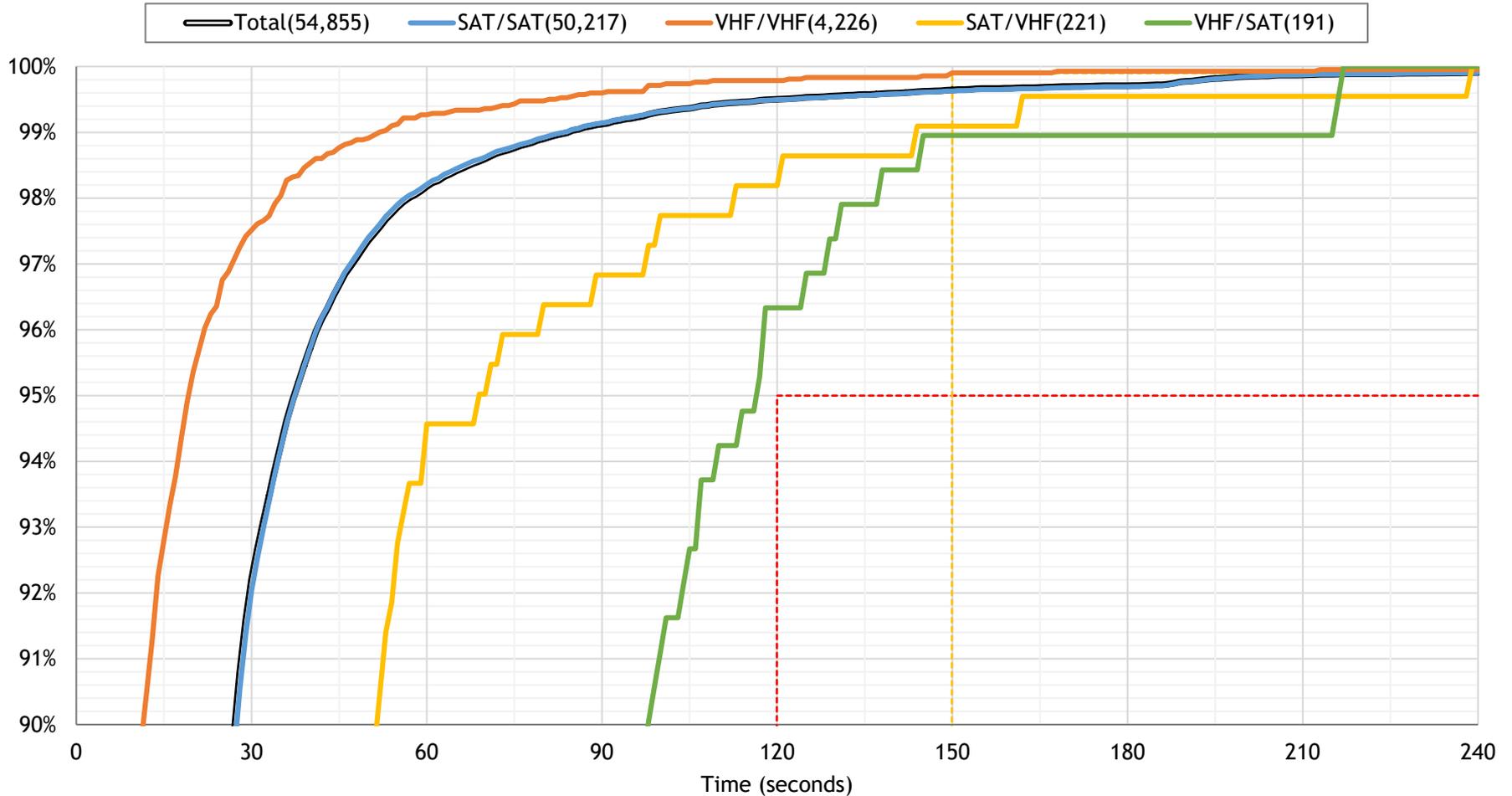
ACP by Media Type

Fukuoka FIR - By Media Type - July to December 2019 CPDLC Actual Communication Performance (ACP)



ACTP by Media Type

Fukuoka FIR - By Media Type - July to December 2019 CPDLC Actual Communication Technical Performance (ACTP)

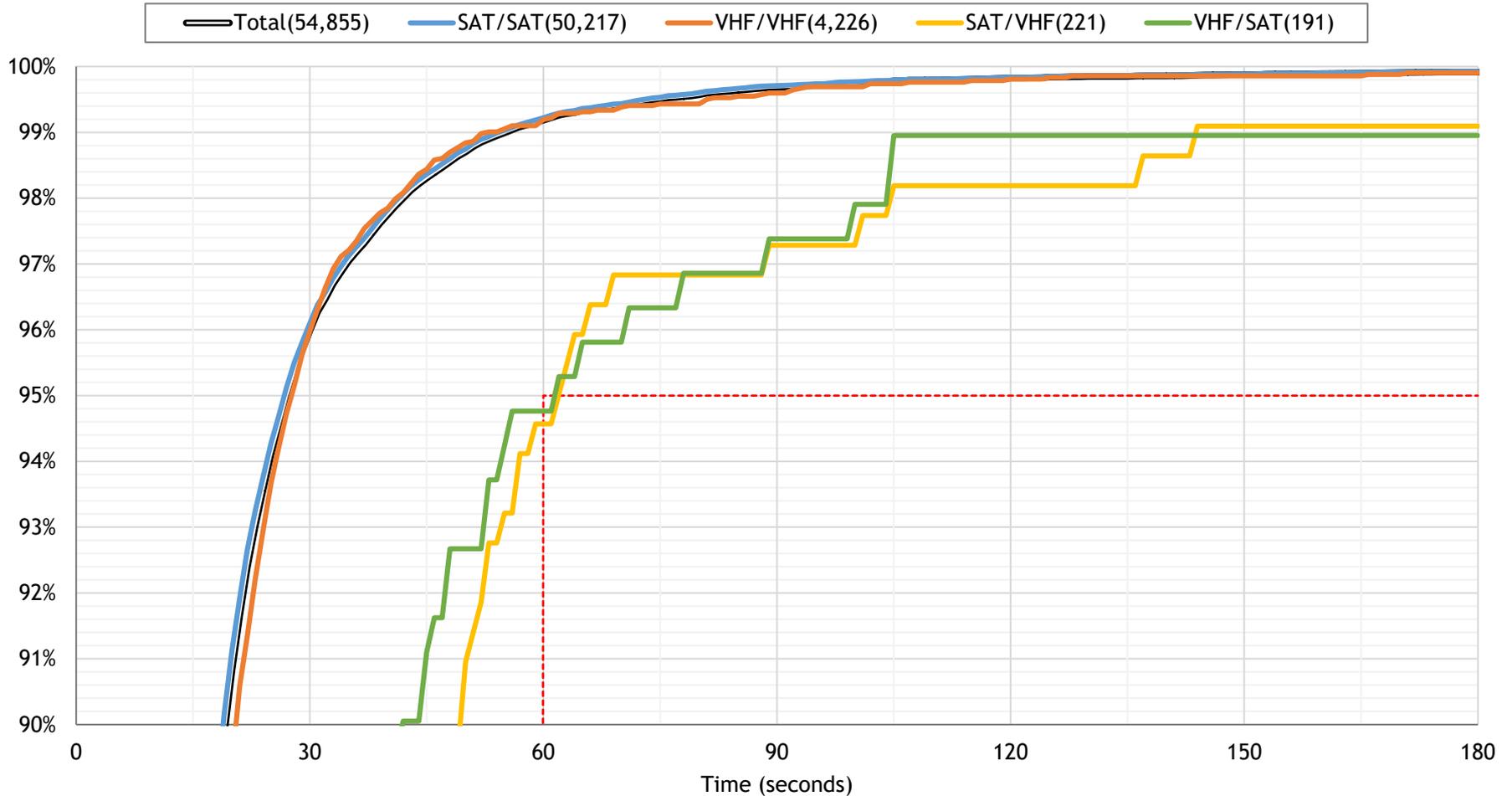


PORT by Media Type

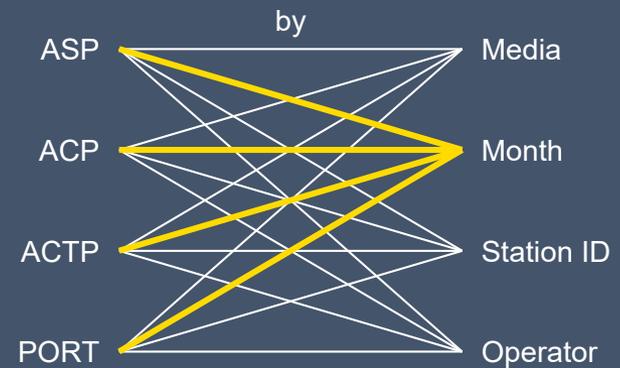


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Fukuoka FIR - By Media Type - July to December 2019 CPDLC Pilot Operational Response Time (PORT)



Observed Performance by Month



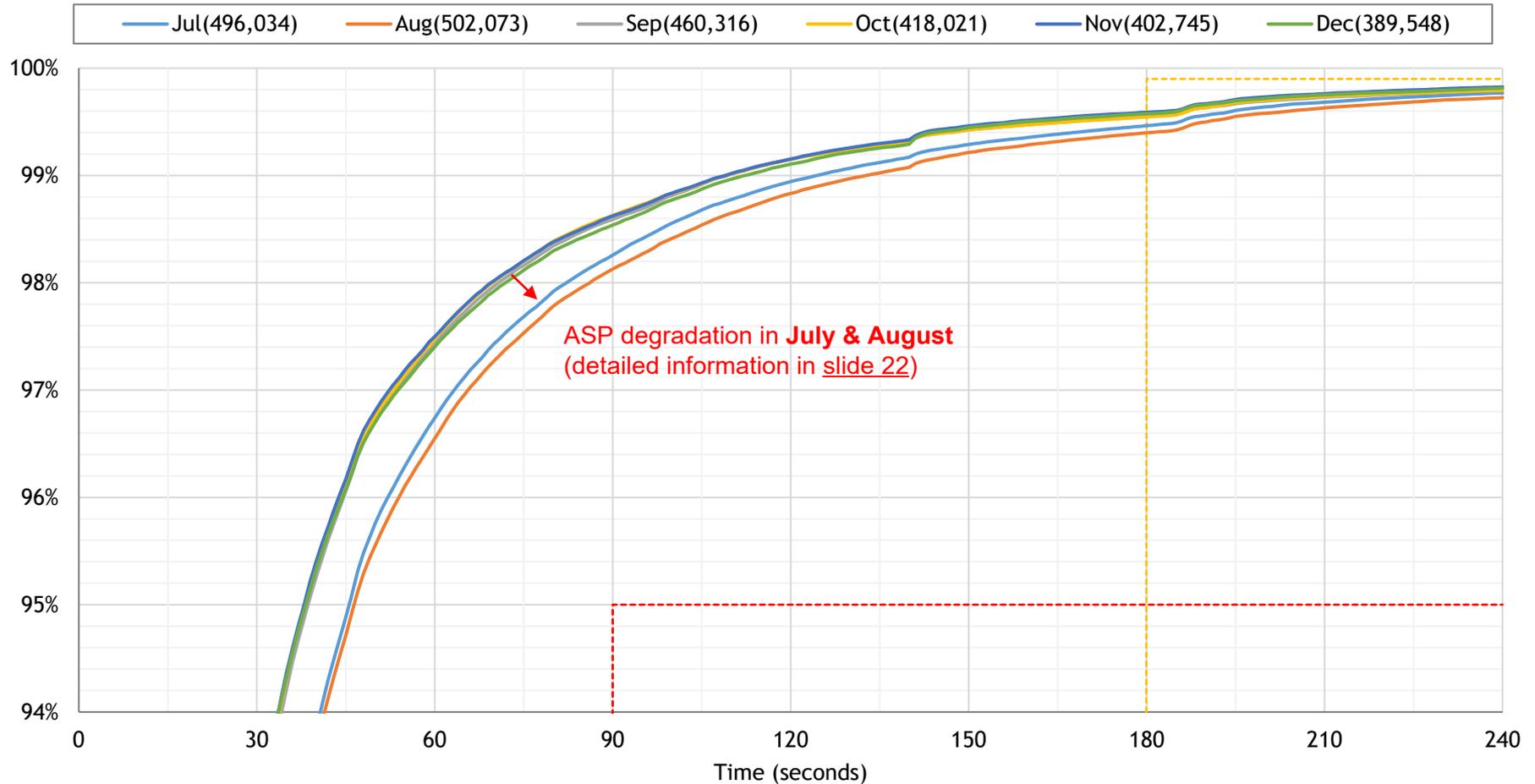
Observed Performance by Month

Month	RSP180			RCP240					
	Count of ADS-C	ASP		Count of CPDLC	ACTP		ACP		PORT
		95%	99.9%		95%	99.9%	95%	99.9%	95%
Jul	496,034	98.26%	99.46%	10,811	99.52%	99.65%	99.47%	99.69%	99.19%
Aug	502,073	98.13%	99.40%	10,295	99.36%	99.53%	99.37%	99.61%	99.22%
Sep	460,316	98.59%	99.55%	9,404	99.39%	99.61%	99.44%	99.73%	99.10%
Oct	418,021	98.63%	99.55%	8,621	99.55%	99.66%	99.50%	99.72%	99.22%
Nov	402,745	98.62%	99.59%	8,158	99.66%	99.73%	99.55%	99.79%	99.14%
Dec	389,548	98.54%	99.58%	7,566	99.60%	99.72%	99.52%	99.71%	99.26%

Legend:

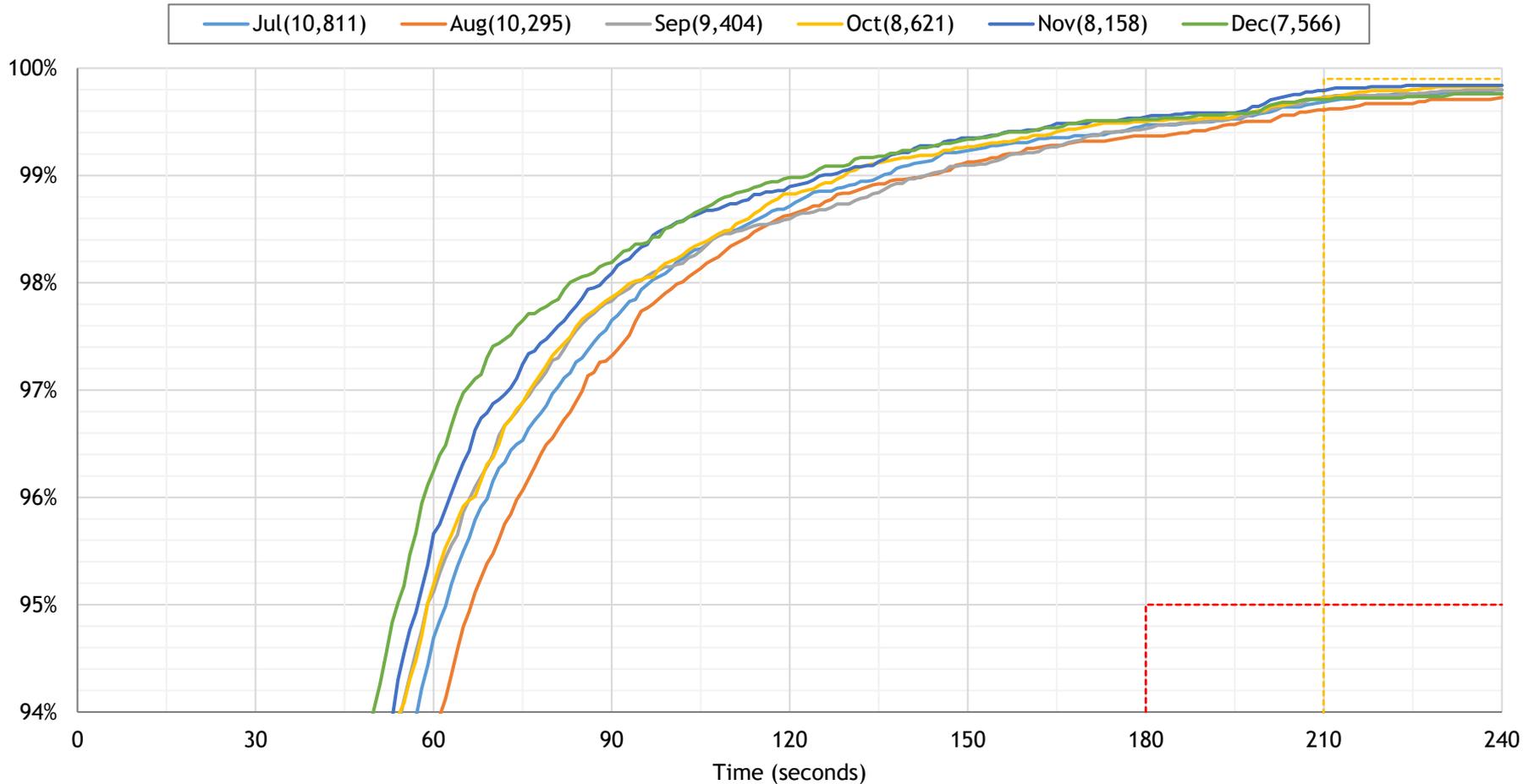
- Meets criteria
- Under criteria but above 99.0%
- Under criteria

Fukuoka FIR - By Month - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



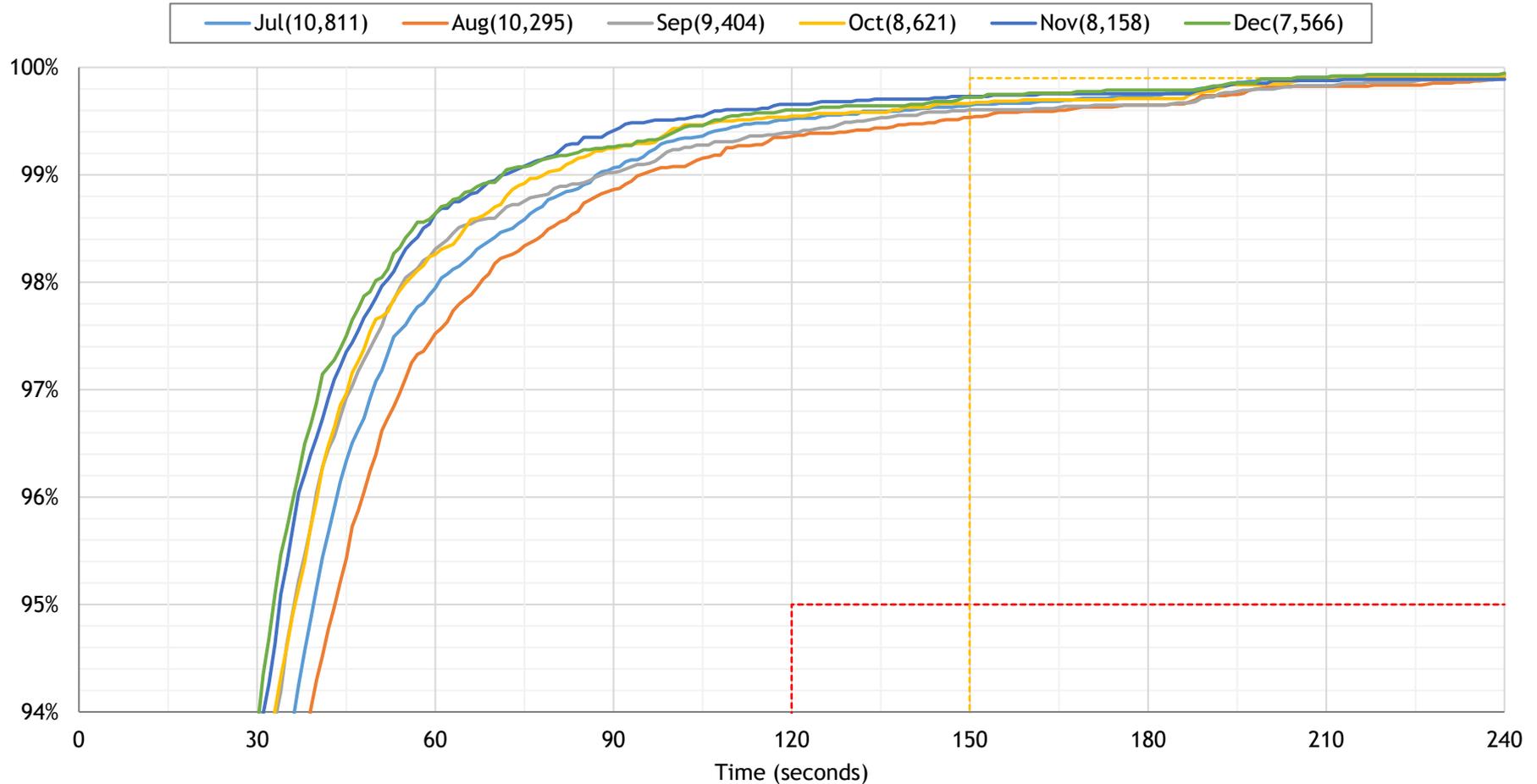
ACP by Month

Fukuoka FIR - By Month - July to December 2019 CPDLC Actual Communication Performance (ACP)

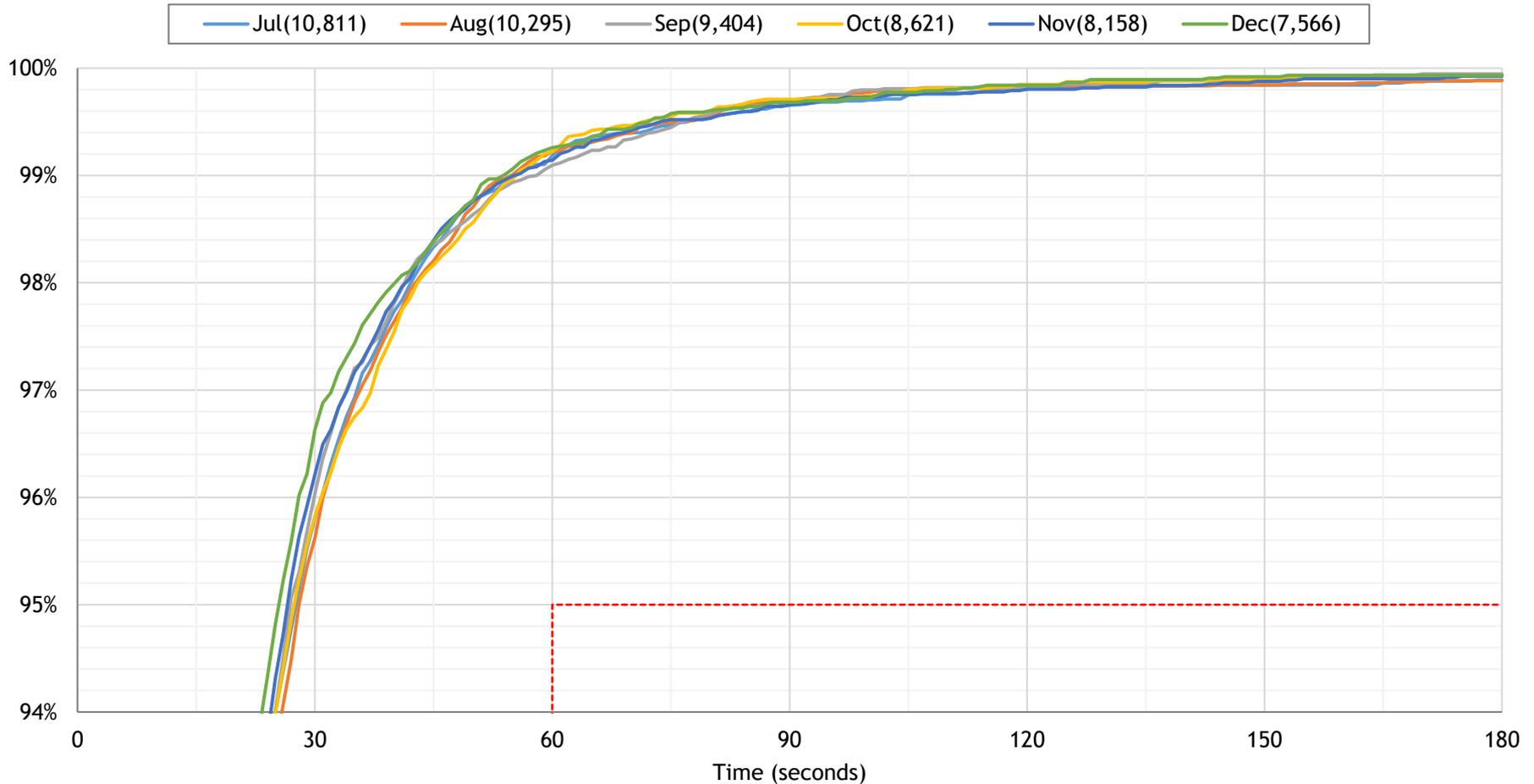


ACTP by Month

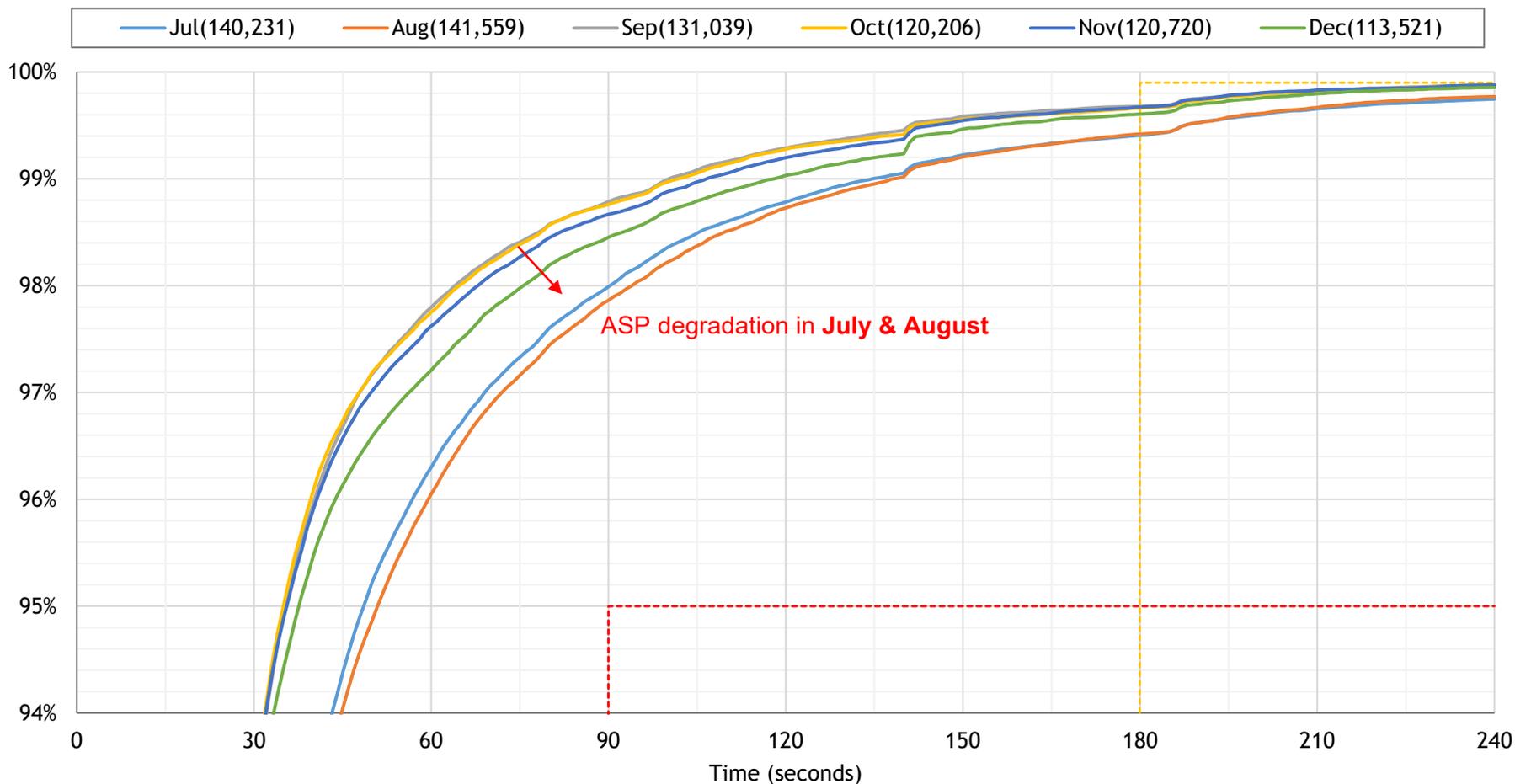
Fukuoka FIR - By Month - July to December 2019 CPDLC Actual Communication Technical Performance (ACTP)



Fukuoka FIR - By Month - July to December 2019 CPDLC Pilot Operational Response Time (PORT)

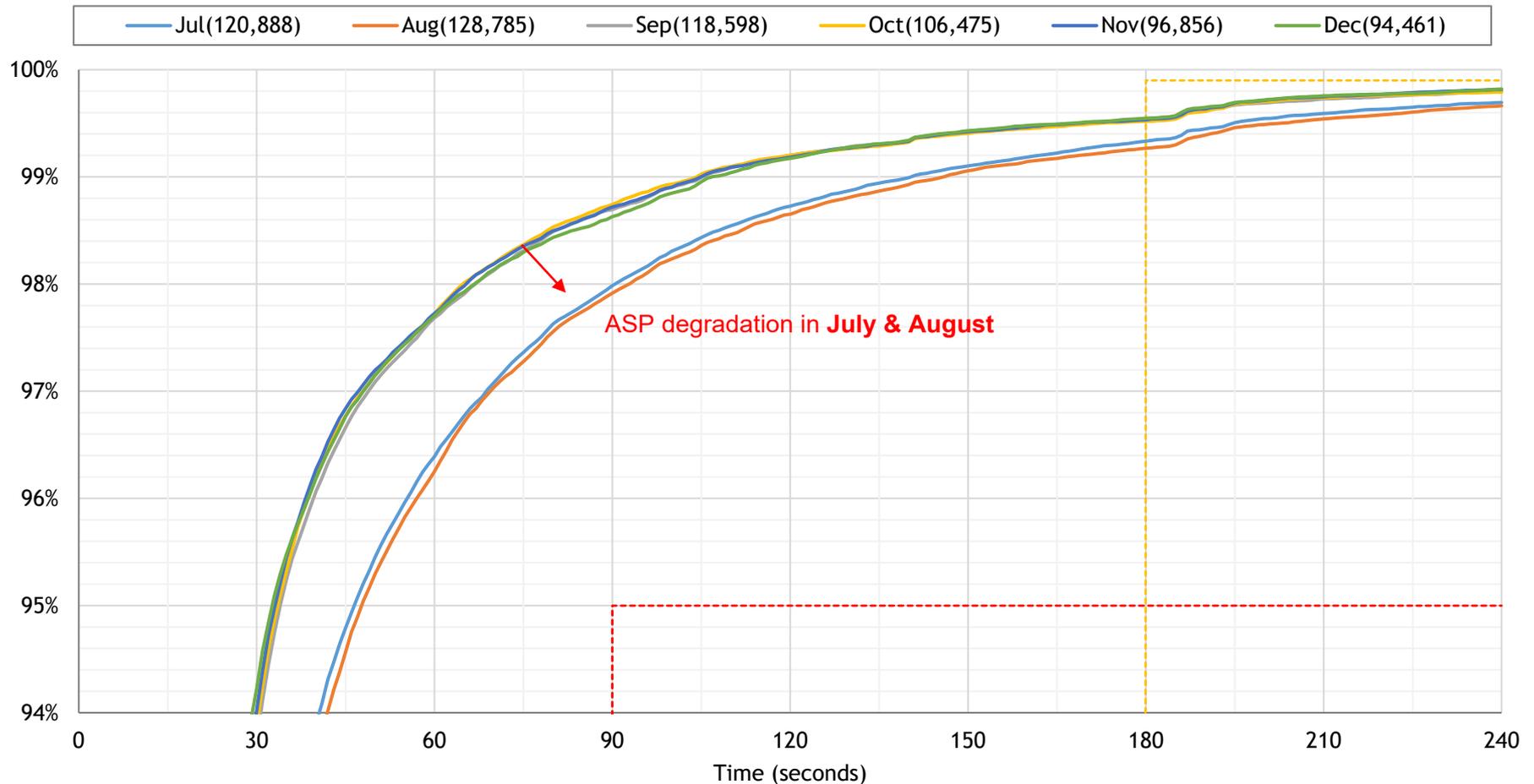


Fukuoka FIR - APK1 - By Month - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



I-4 APAC(APK1) ASP has degraded in July & August.

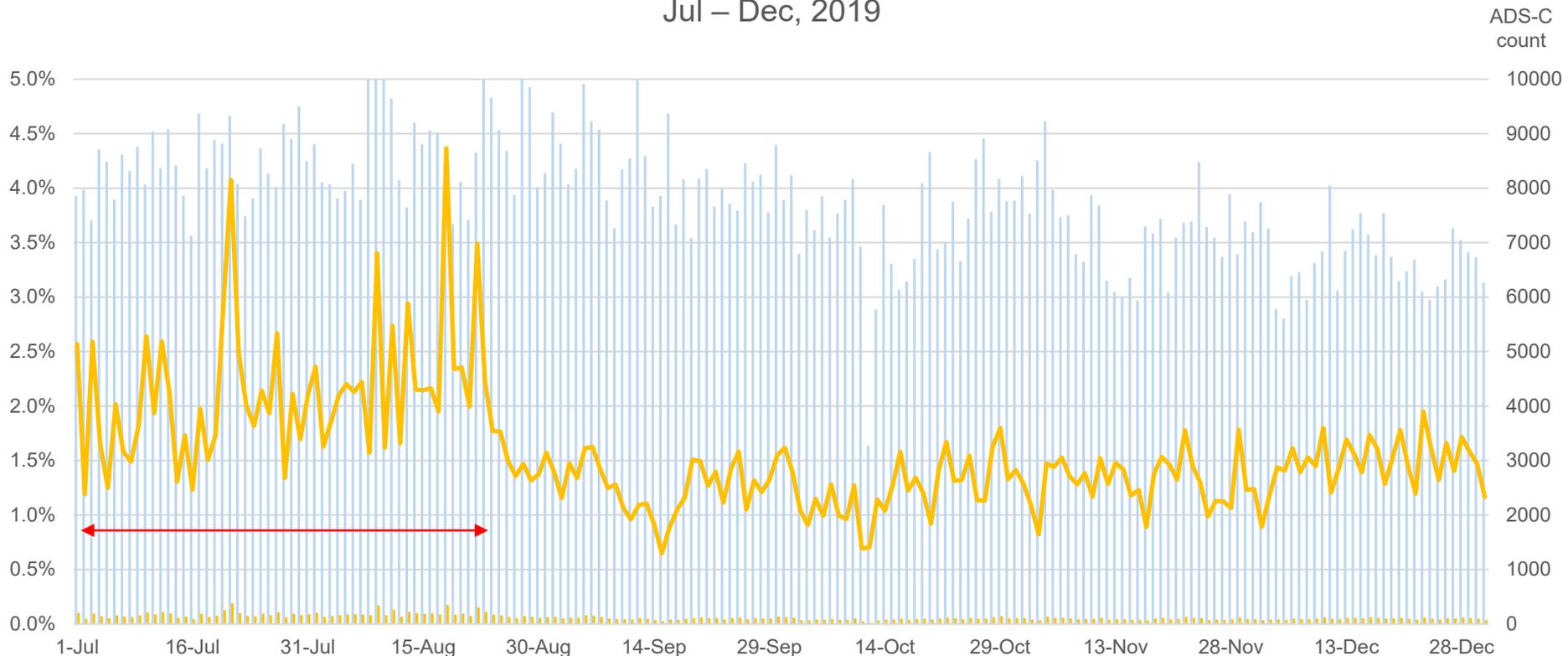
Fukuoka FIR - XXA - By Month - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



I-4 APAC(XXA) ASP has degraded in July & August.

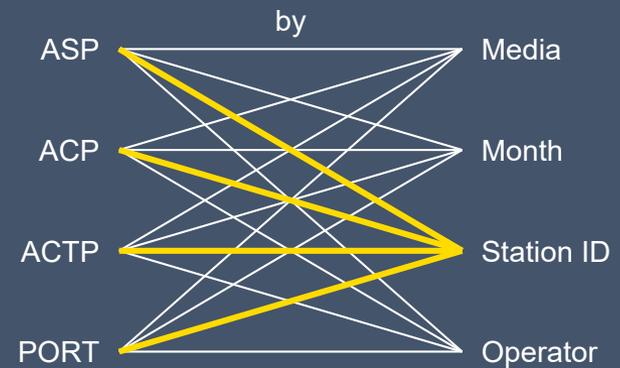
Investigation for I-4 APAC ASP degradation

**Inmarsat I-4 APAC(APK1&XXA)
ADS-C down link deliver time > 90sec
Jul – Dec, 2019**



Number of ADS-C downlink (deliver time > 90 sec) increased from July to August
Has “Inmarsat-4 APAC Satellite” have some problem?

Observed Performance by Station ID



Station/Gateway Identifiers

Satellite	GES Location	Region	SITA	ARINC
Inmarsat I-3	Borum, Netherlands	AOR-E	AOE2	XXN
		AOR-W	AME2	XXW
	Perth, Australia	IOR	IOR2	XXI
		POR	APK2	XXP
Inmarsat I-4	Fucino, Italy	EMEA	EUA1	XXF
	Borum, Netherlands	EMEA (SBB)	EME9	XXB
	Paumalu, Hawaii	Americas	AME1	XXH
		Americas (SBB)	AMR9	XXU
		Asia-Pacific	APK1	XXA
		Asia-Pacific (SBB)	PAC9	XXS
MTSAT	Kobe and Hitachi-Ota	Japan	MTS1	—
Iridium	Phoenix, Arizona	Global	IGW1	IG1

Observed Performance by Station ID

Station ID	RSP180			RCP240					
	Count of ADS-C	ASP		Count of CPDLC	ACTP		ACP		PORT
		95%	99.90%		95%	99.90%	95%	99.90%	95%
MTS1	111,043	98.63%	99.50%	1,958	99.28%	99.39%	99.34%	99.80%	99.44%
XXP	233,276	98.03%	99.39%	6,085	99.51%	99.57%	99.42%	99.69%	99.31%
APK2	131,117	98.77%	99.57%	3,033	99.77%	99.87%	99.74%	99.97%	99.18%
XXI	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%	0.00%
IOR2	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%	0.00%
XXA	666,063	98.42%	99.45%	16,229	99.48%	99.58%	99.51%	99.77%	99.46%
APK1	767,276	98.40%	99.57%	17,723	99.66%	99.76%	99.65%	99.82%	99.50%
IG1	136,488	96.60%	98.94%	3,601	98.78%	99.31%	98.42%	98.94%	96.83%
IGW1	75,224	97.88%	99.43%	1,802	99.11%	99.39%	98.89%	99.22%	98.06%
XXS	128	100.00%	100.00%	4	100.00%	100.00%	100.00%	100.00%	100.00%

Legend:

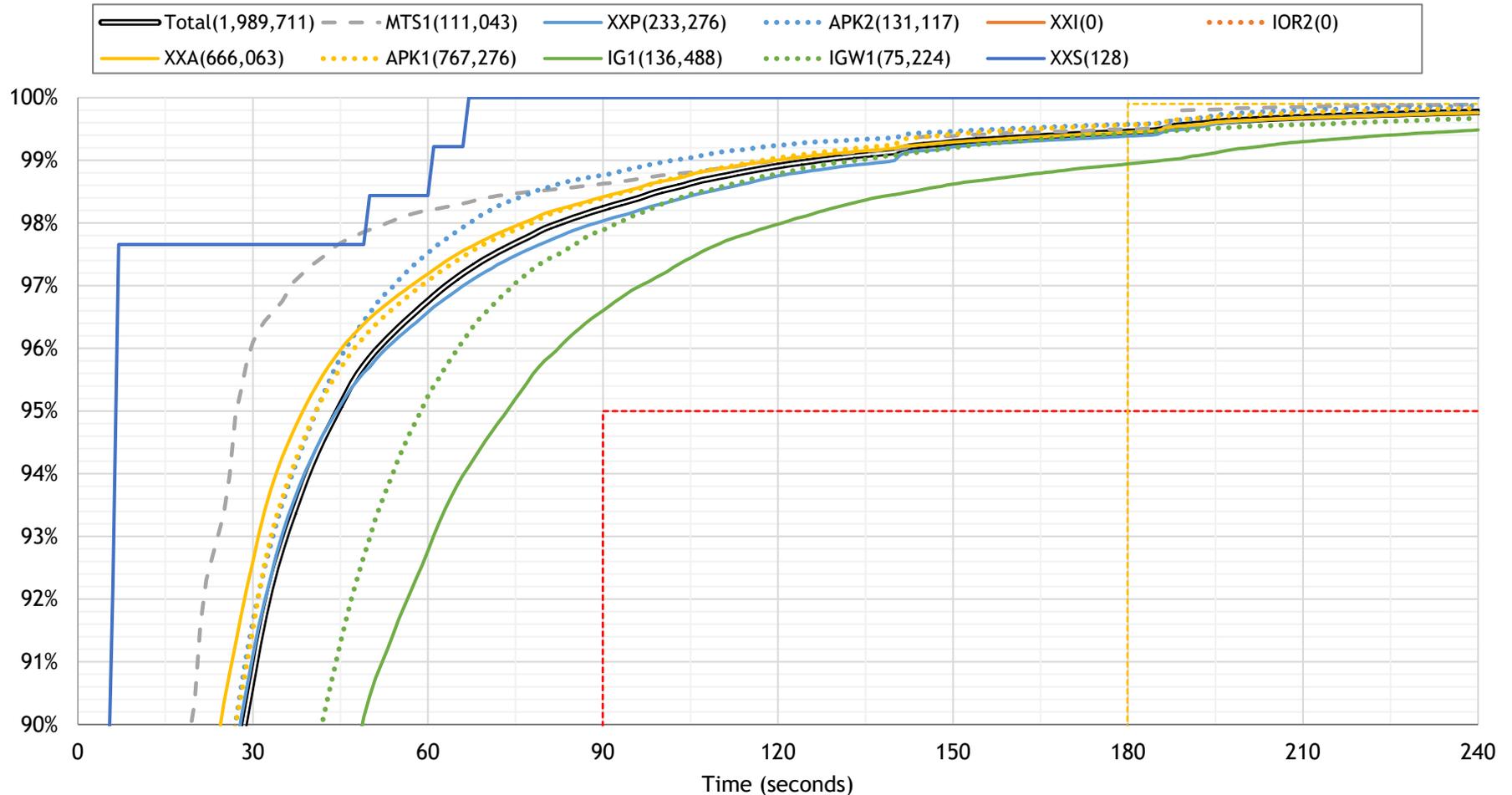
- Meets criteria
- Under criteria but above 99.0%
- Under criteria

ASP by Station ID



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Fukuoka FIR - By Station Identifier - July to December 2019 ADS-C Actual Surveillance Performance (ASP)

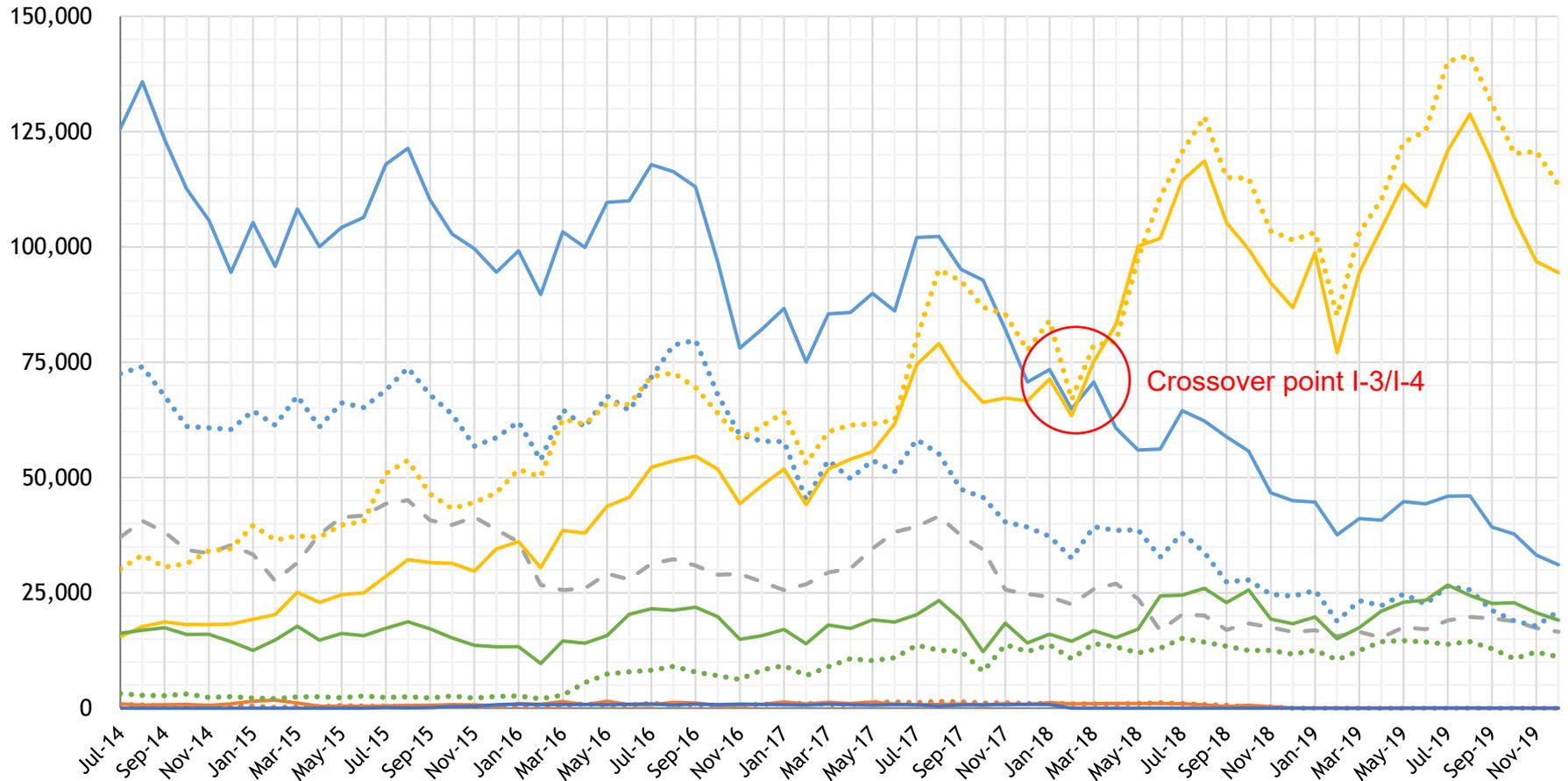


ADS-C Usage by Station ID



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Count of ADS-C Reports

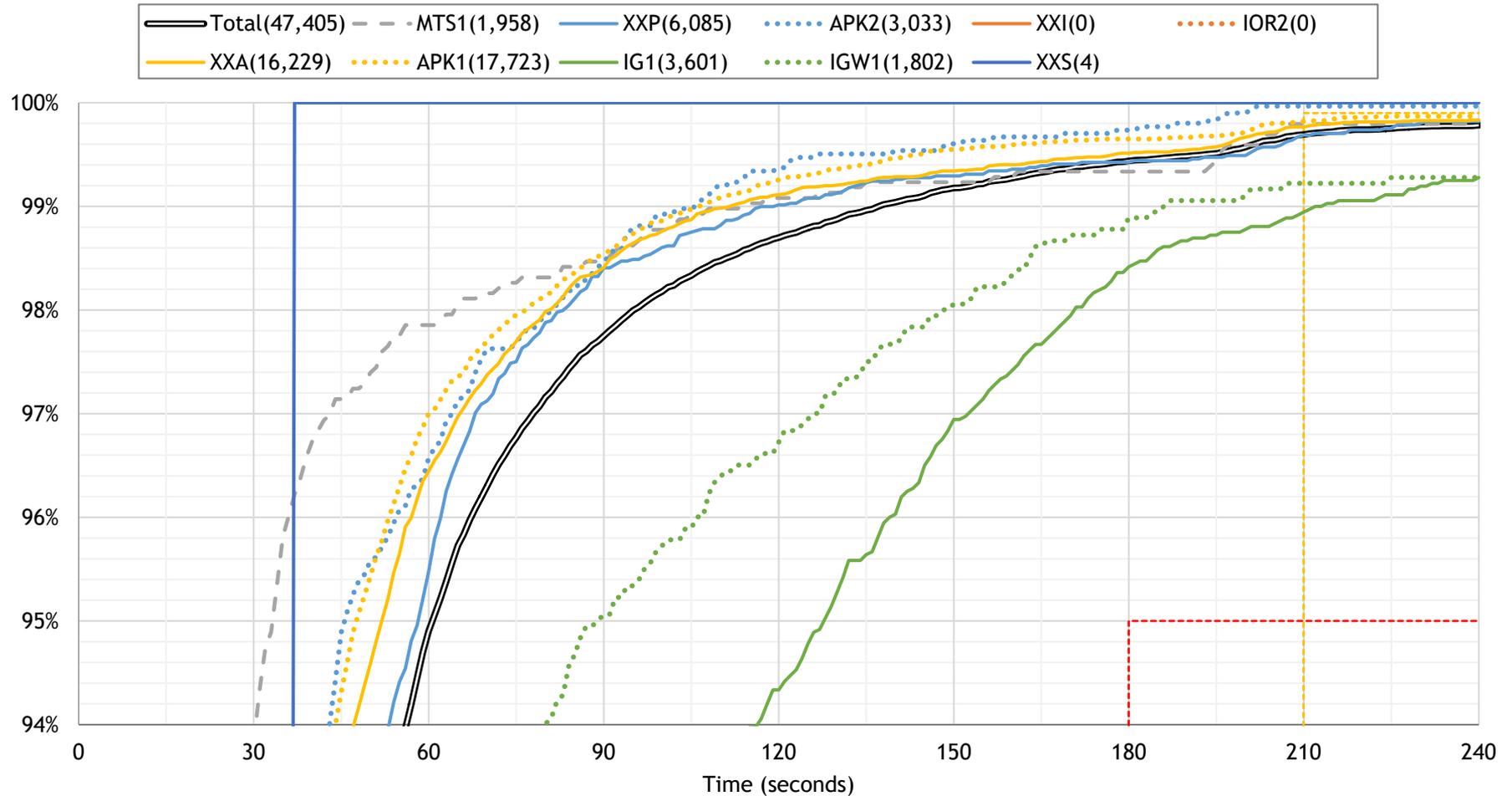


ACP by Station ID



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Fukuoka FIR - By Station Identifier - July to December 2019 CPDLC Actual Communication Performance (ACP)

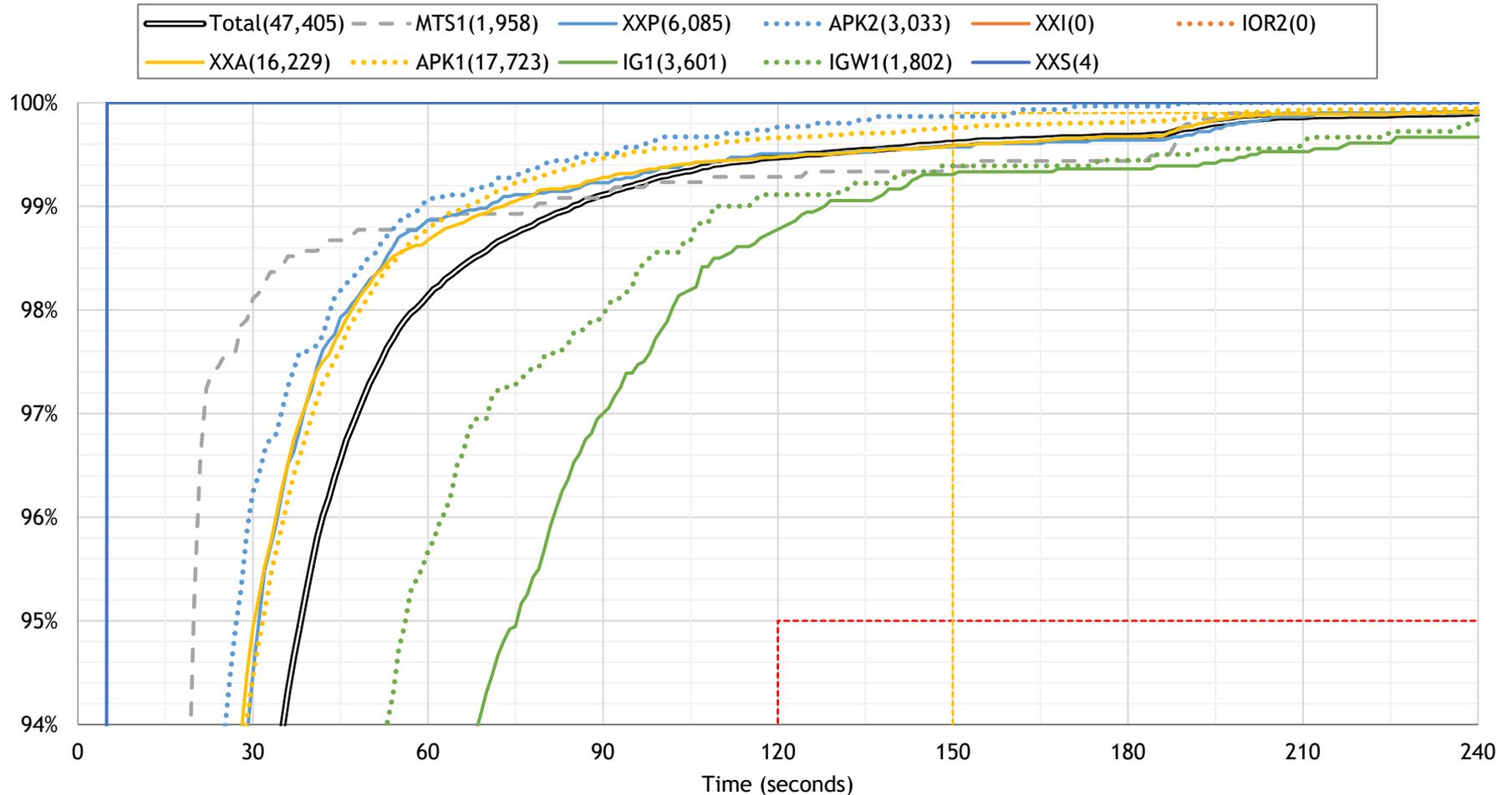


ACTP by Station ID



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Fukuoka FIR - By Station Identifier - July to December 2019 CPDLC Actual Communication Technical Performance (ACTP)

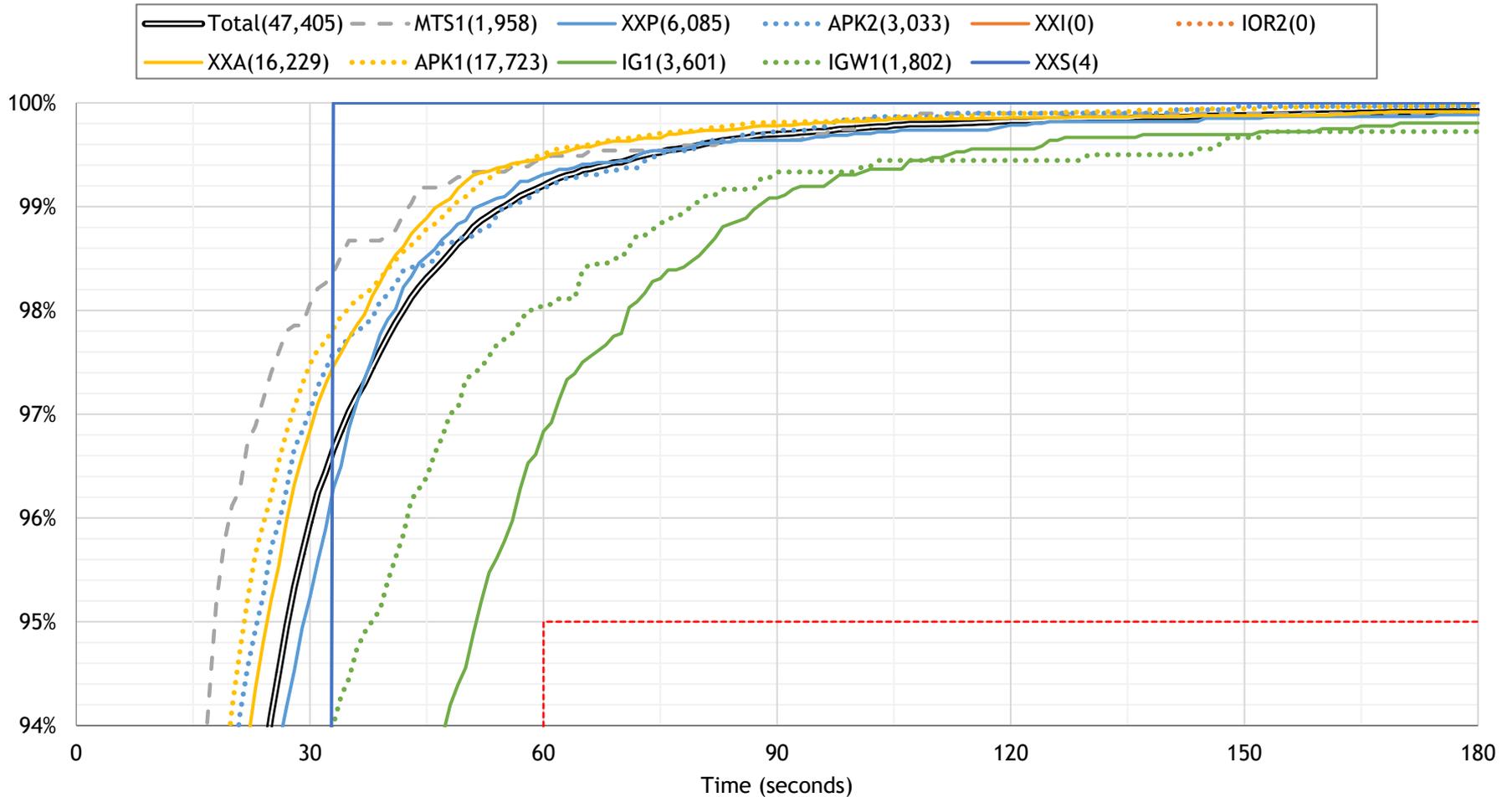


PORT by Station ID



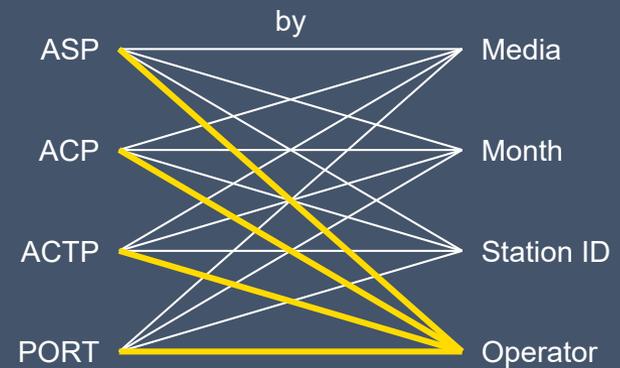
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Fukuoka FIR - By Station Identifier - July to December 2019 CPDLC Pilot Operational Response Time (PORT)



Observed Performance by Operator

Table only, Percentile graph not contained



Summary of Performance by Operator

- ◆ 70 operators with at least 100 ADS-C messages
 - All operator meets ACP95% criteria.
 - 6 operators were below 99.0% at ASP99.9% criteria.

- ◆ 36 operators with at least 100 RCP transactions
 - All operator meets ACP95% criteria.
 - All operators were above 99.0% at ACP99.9% criteria.

	RSP180		RCP240				
	ASP		ACTP		ACP		PORT
	95%	99.9%	95%	99.9%	95%	99.9%	95%
Meets Criteria	70	12	36	12	36	16	35
Under criteria but above 99.0%	---	52	---	23	---	19	---
Under criteria	0	6	0	1	0	1	1

Operator Not Meeting RSP180/RCP240

OP Code	RSP180				RCP240						
	Count of ADS-C	% of Total ADS-C	ASP		Count of CPDLC	% of Total CPDLC	ACTP		ACP		PORT
			95%	99.9%			95%	99.9%	95%	99.9%	95%
CPA	147,062	5.51%	97.42%	98.90%	4,190	7.64%	98.62%	99.07%	98.76%	99.12%	98.50%
CKS	13,870	0.52%	96.62%	98.51%	196	0.36%	98.98%	99.49%	98.47%	98.98%	94.39%
JNA	7,785	0.29%	95.77%	98.91%	93	0.17%	98.92%	98.92%	98.92%	98.92%	100.00%
WGN	679	0.03%	96.61%	98.09%	18	0.03%	94.44%	94.44%	94.44%	94.44%	100.00%
QQE	612	0.02%	96.73%	98.86%	8	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
NCR	252	0.01%	97.22%	98.41%	3	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%

*No-colored where under 100 data points.

Legend:

	Meets criteria
	Under criteria but above 99.0%
	Under criteria

Summary of Performance by Operator/AC-Type

- ◆ 190 operator/AC-type pairs with at least 100 ADS-C messages
 - 4 pairs not meet ASP95% criteria.
 - 29 pairs were below 99.0% at ASP99.9% criteria.
- ◆ 85 operator/AC-type pairs with at least 100 RCP transactions
 - All operator meets ACP95% criteria.
 - 3 pairs were below 99.0% at ACP99.9% criteria.

	RSP180		RCP240				
	ASP		ACTP		ACP		PORT
	95%	99.9%	95%	99.9%	95%	99.9%	95%
Meets Criteria	186	45	85	35	85	41	84
Under criteria but above 99.0%	---	116	---	47	---	38	---
Under criteria	4	29	0	3	0	6	1

Operator/AC-Type Not Meeting RSP180/RCP240 (1/2)

OP Code	Aircraft Type	RSP180				RCP240						
		Count of ADS-C	% of Total ADS-C	ASP		Count of CPDLC	% of Total CPDLC	ACTP		ACP		PORT
				95%	99.9%			95%	99.9%	95%	99.9%	
CPA	B77W	87,753	3.29%	96.49%	98.65%	2,809	5.12%	98.22%	98.86%	98.50%	98.93%	98.08%
UAL	B772	63,735	2.39%	97.05%	98.63%	1,548	2.82%	98.90%	99.16%	98.77%	99.42%	98.58%
CPA	B748	33,752	1.26%	98.28%	98.94%	742	1.35%	99.06%	99.19%	98.79%	99.06%	99.33%
QFA	A333	27,950	1.05%	98.69%	99.04%	407	0.74%	98.03%	98.28%	97.54%	98.77%	95.09%
AAL	B772	16,743	0.63%	97.41%	98.98%	409	0.75%	99.02%	99.02%	99.02%	99.76%	99.76%
PAL	A333	14,947	0.56%	97.82%	99.73%	187	0.34%	99.47%	100.00%	98.93%	98.93%	97.33%
CKS	B744	13,820	0.52%	96.62%	98.52%	194	0.35%	98.97%	99.48%	98.45%	98.97%	94.33%
UPS	B763	13,118	0.49%	98.31%	99.73%	133	0.24%	98.50%	100.00%	97.74%	98.50%	96.24%
GIA	B77W	9,324	0.35%	96.64%	98.68%	170	0.31%	100.00%	100.00%	100.00%	100.00%	100.00%
JNA	B772	7,785	0.29%	95.77%	98.91%	93	0.17%	98.92%	98.92%	98.92%	98.92%	100.00%
PAL	A21N	7,356	0.28%	95.32%	98.14%	105	0.19%	96.19%	96.19%	96.19%	97.14%	96.19%
DAL	A332	5,454	0.20%	97.43%	98.61%	164	0.30%	99.39%	99.39%	99.39%	100.00%	99.39%
ACA	B788	4,248	0.16%	98.02%	98.73%	82	0.15%	98.78%	98.78%	98.78%	100.00%	100.00%
PAL	A321	4,221	0.16%	85.50%	90.90%	58	0.11%	94.83%	96.55%	96.55%	96.55%	100.00%
RCH	C17	3,681	0.14%	98.42%	98.91%	71	0.13%	95.77%	95.77%	94.37%	95.77%	97.18%
PAC	B763	3,310	0.12%	96.83%	98.67%	53	0.10%	100.00%	100.00%	100.00%	100.00%	100.00%

*No-colored where under 100 data points.

Legend:

- Meets criteria
- Under criteria but above 99.0%
- Under criteria

Operator/AC-Type Not Meeting RSP180/RCP240 (2/2)

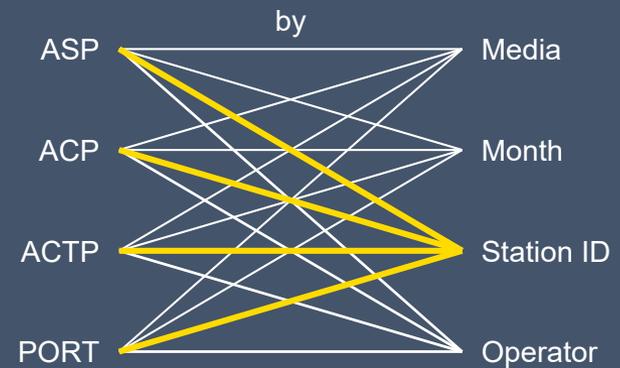
OP Code	Aircraft Type	RSP180				RCP240						
		Count of ADS-C	% of Total ADS-C	ASP		Count of CPDLC	% of Total CPDLC	ACTP		ACP		PORT
				95%	99.9%			95%	99.9%	95%	99.9%	
MAS	B738	1,275	0.05%	96.00%	98.98%	10	0.02%	100.00%	100.00%	100.00%	100.00%	100.00%
ANA	B763	1,245	0.05%	94.62%	99.28%	21	0.04%	100.00%	100.00%	100.00%	100.00%	100.00%
FDX	B763	981	0.04%	95.82%	98.06%	9	0.02%	100.00%	100.00%	100.00%	100.00%	88.89%
RCH	C5	627	0.02%	96.81%	98.56%	16	0.03%	100.00%	100.00%	100.00%	100.00%	100.00%
CHH	B788	618	0.02%	96.93%	98.54%	4	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
RKS	GLEX	556	0.02%	96.58%	98.74%	10	0.02%	100.00%	100.00%	100.00%	100.00%	100.00%
QQE	GLF6	537	0.02%	96.46%	98.70%	8	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
RCH	DC10	505	0.02%	85.74%	87.13%	7	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
RCH	C5M	426	0.02%	98.59%	98.83%	19	0.03%	100.00%	100.00%	100.00%	100.00%	100.00%
GIA	A332	341	0.01%	95.60%	96.77%	1	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GTI	B748	275	0.01%	94.18%	97.45%	6	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
NCR	B744	227	0.01%	96.92%	98.24%	3	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
TBJ	GLF6	226	0.01%	96.46%	98.67%	3	0.01%	100.00%	100.00%	100.00%	100.00%	100.00%
CSC	A332	191	0.01%	97.38%	98.43%	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TWY	GLF6	188	0.01%	98.94%	98.94%	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CAO	B744	174	0.01%	96.55%	97.13%	2	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%

*No-colored where under 100 data points.

Legend:

- Meets criteria
- Under criteria but above 99.0%
- Under criteria

FOI (FANS 1/A Over Iridium)

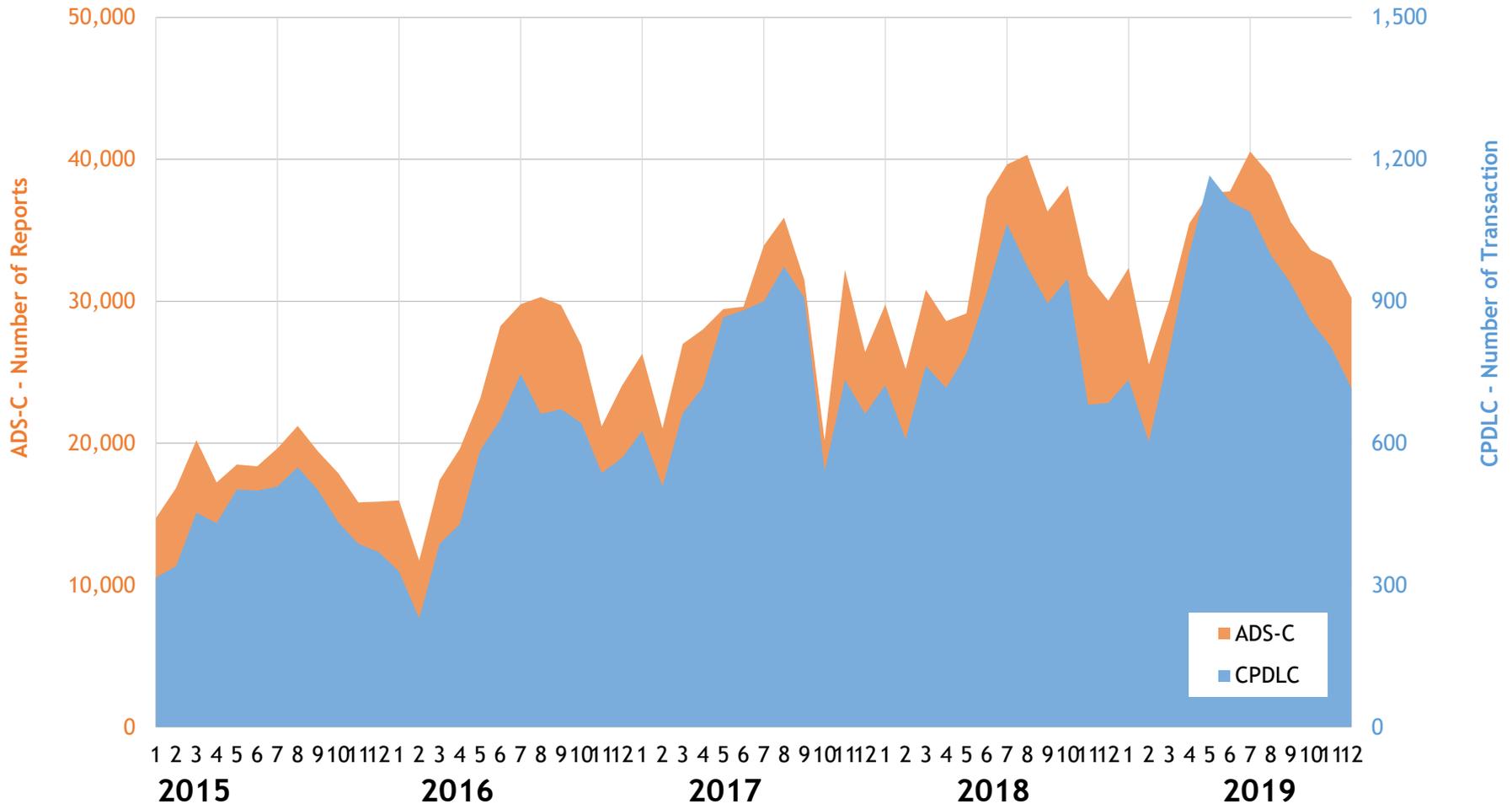


Iridium Data Link Usage in RJJJ



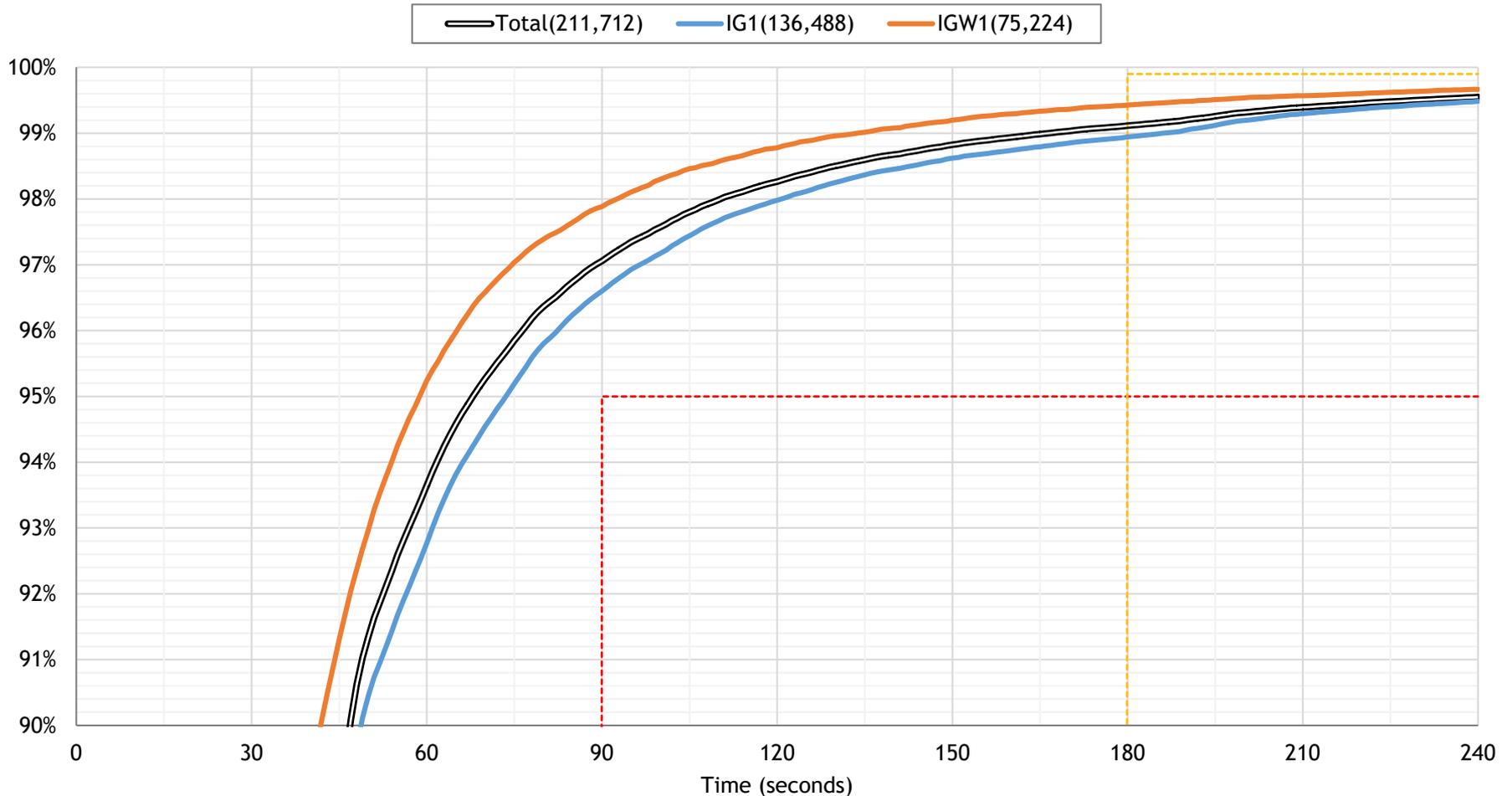
CRA JAPAN
Central Reporting Agency in Japan

Amount of Traffic - CPDLC/ADS-C over Iridium Fukuoka FIR - Jan 2015 to Dec 2019



FOI: ASP by Station ID

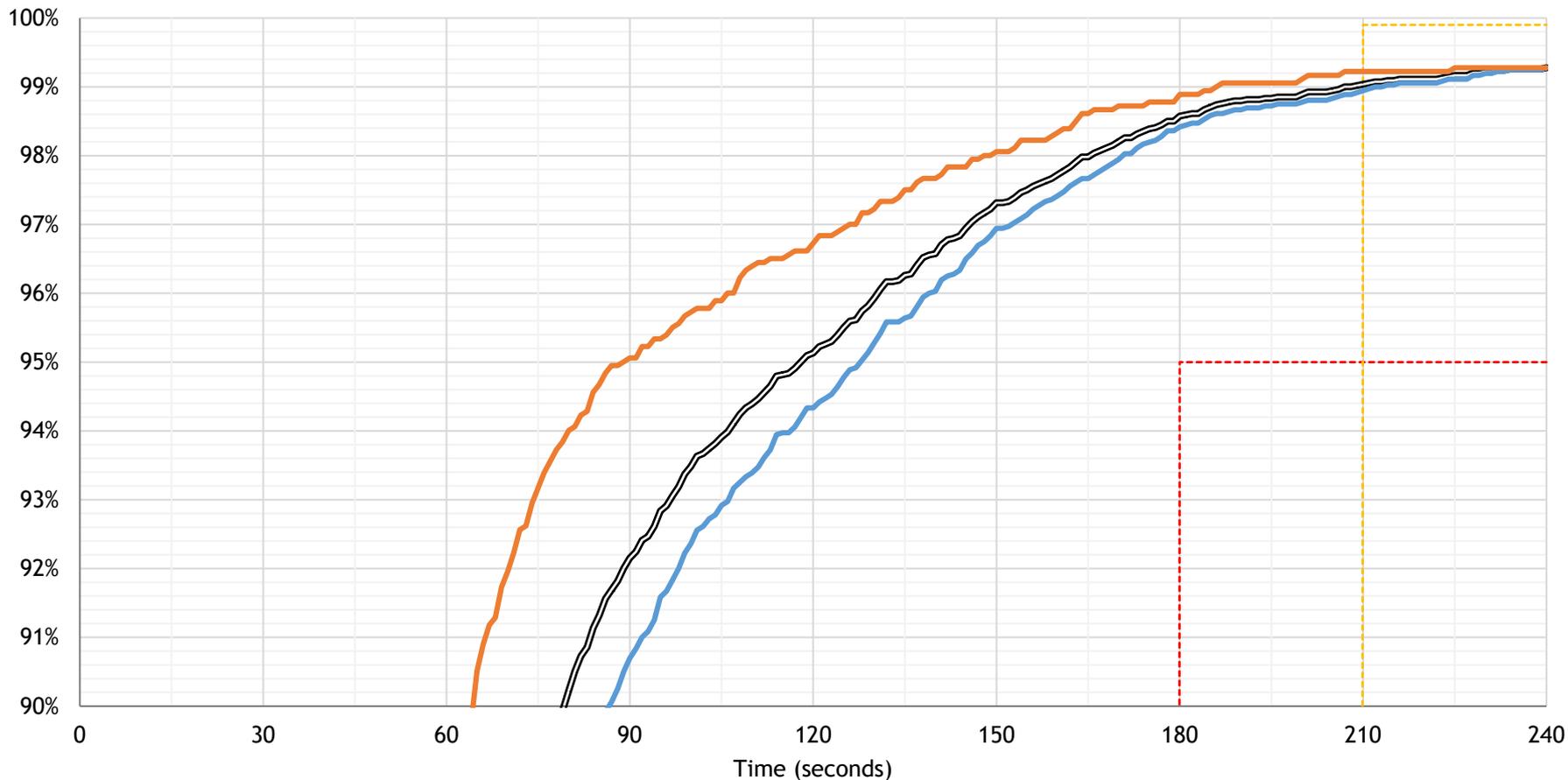
Fukuoka FIR - Iridium - By Station ID - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



FOI: ACP by Station ID

Fukuoka FIR - Iridium - By Station ID - July to December 2019 CPDLC Actual Communication Performance (ACP)

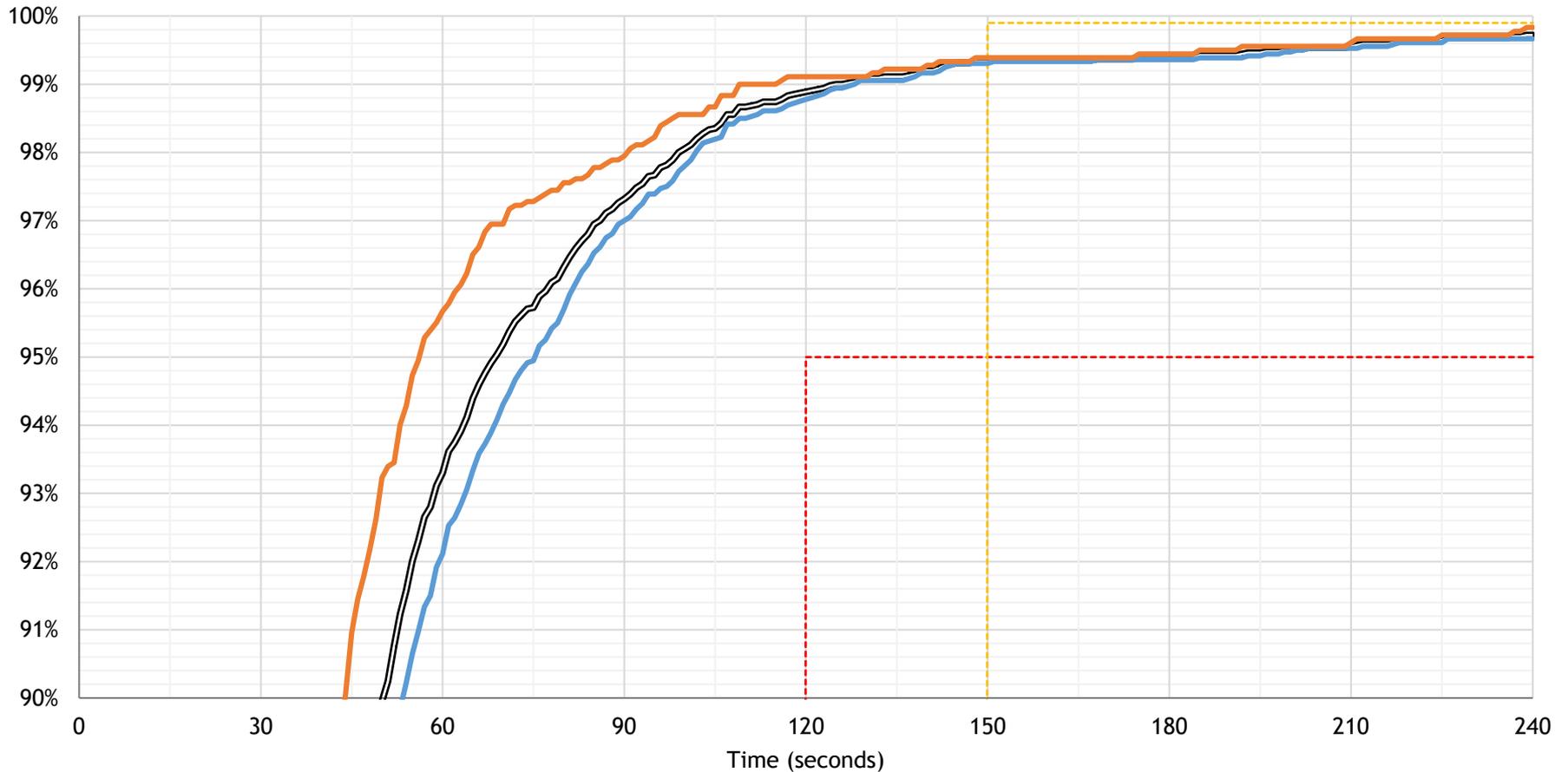
— Total(5,403) — IG1(3,601) — IGW1(1,802)



FOI: ACTP by Station ID

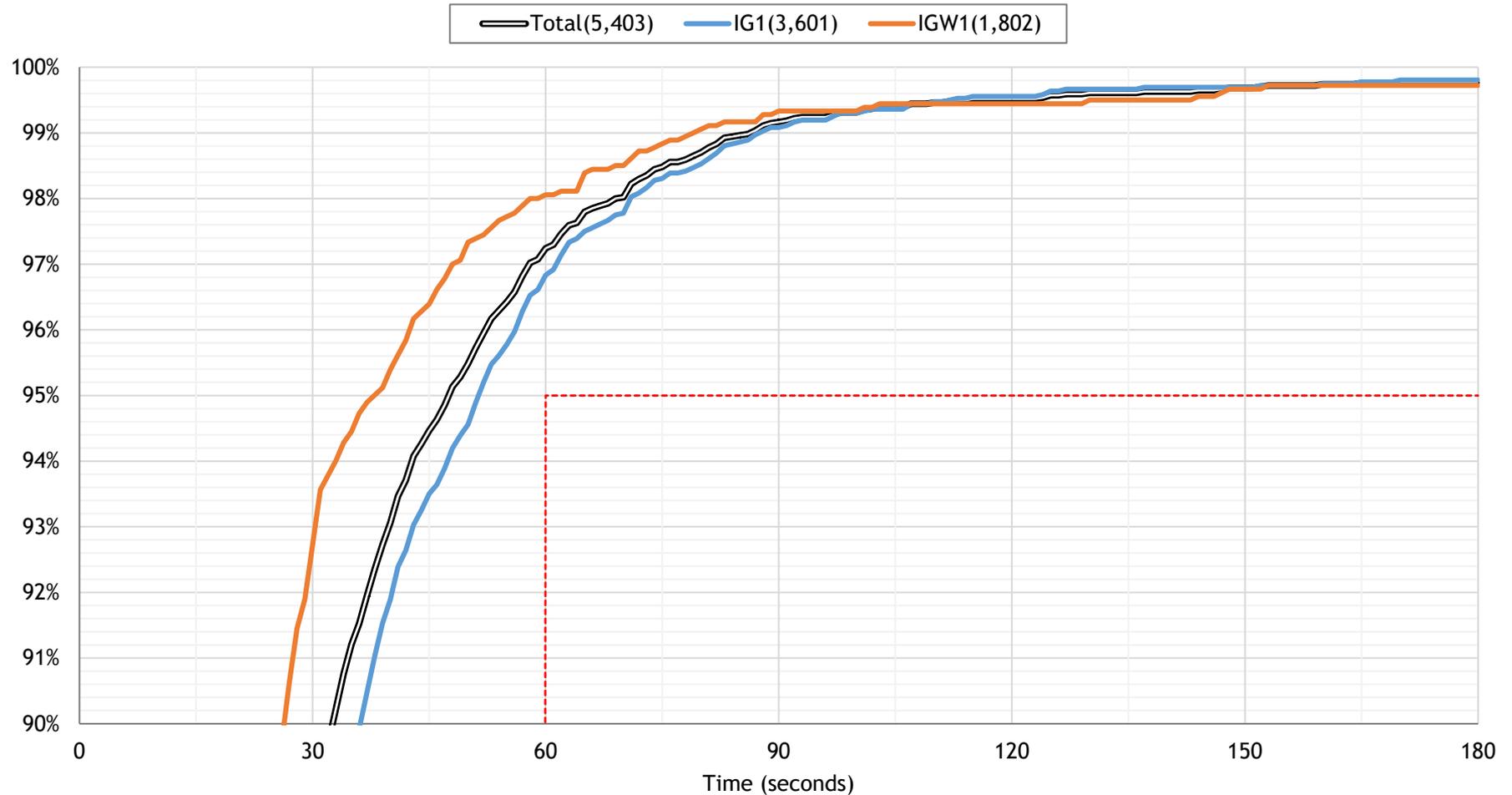
Fukuoka FIR - Iridium - By Station ID - July to December 2019 CPDLC Actual Communication Technical Performance (ACTP)

— Total(5,403) — IG1(3,601) — IGW1(1,802)

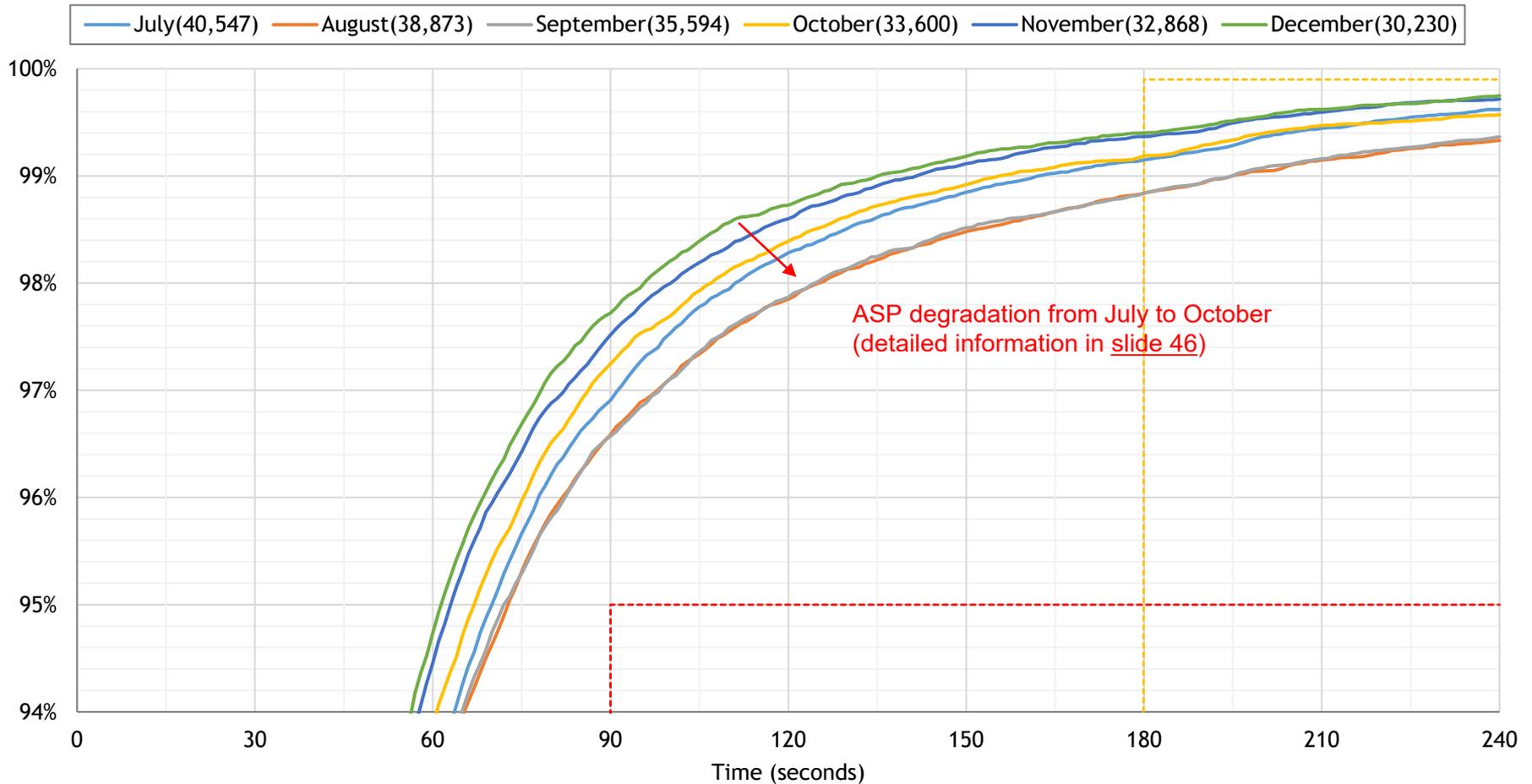


FOI: PORT by Station ID

Fukuoka FIR - Iridium - By Station ID - July to December 2019 CPDLC Pilot Operational Response Time (PORT)

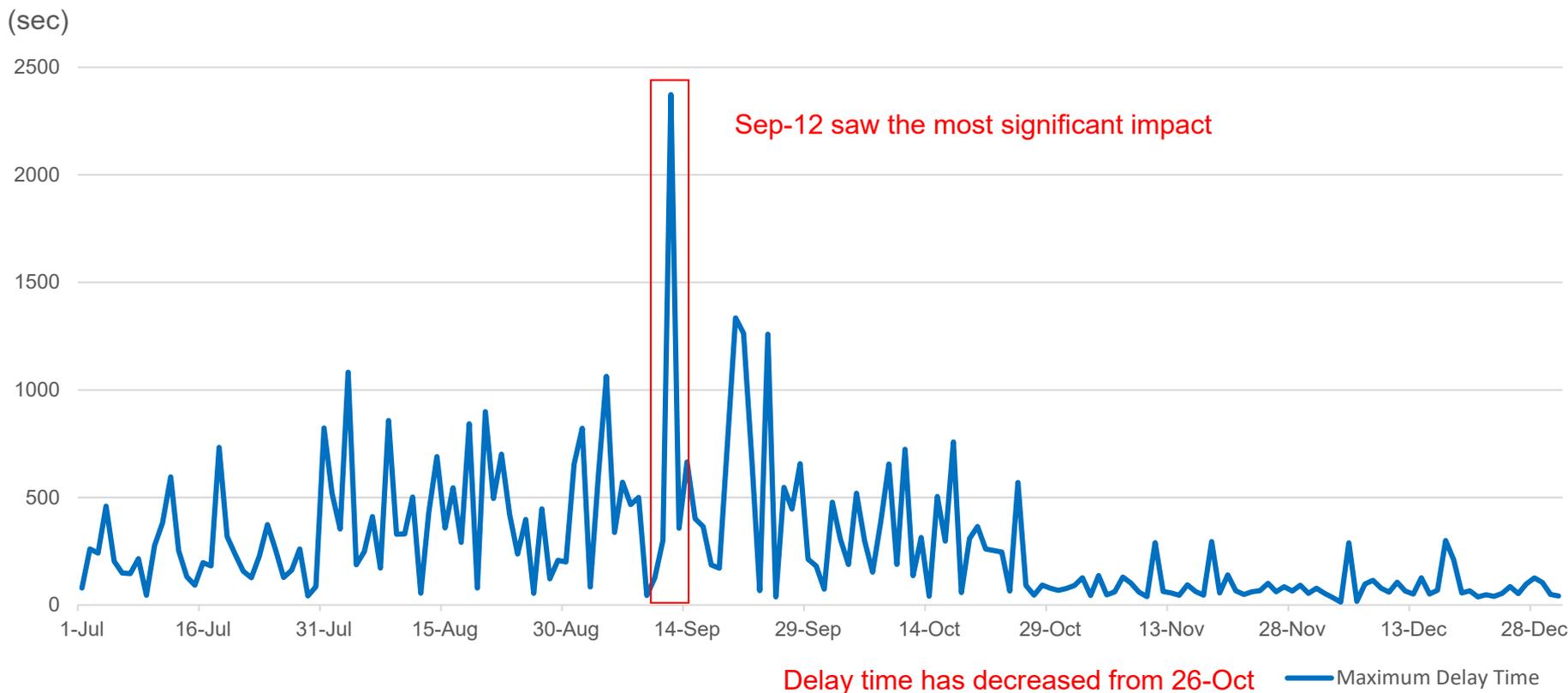


Fukuoka FIR - Iridium - By Month - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



Investigation for Iridium ASP degradation

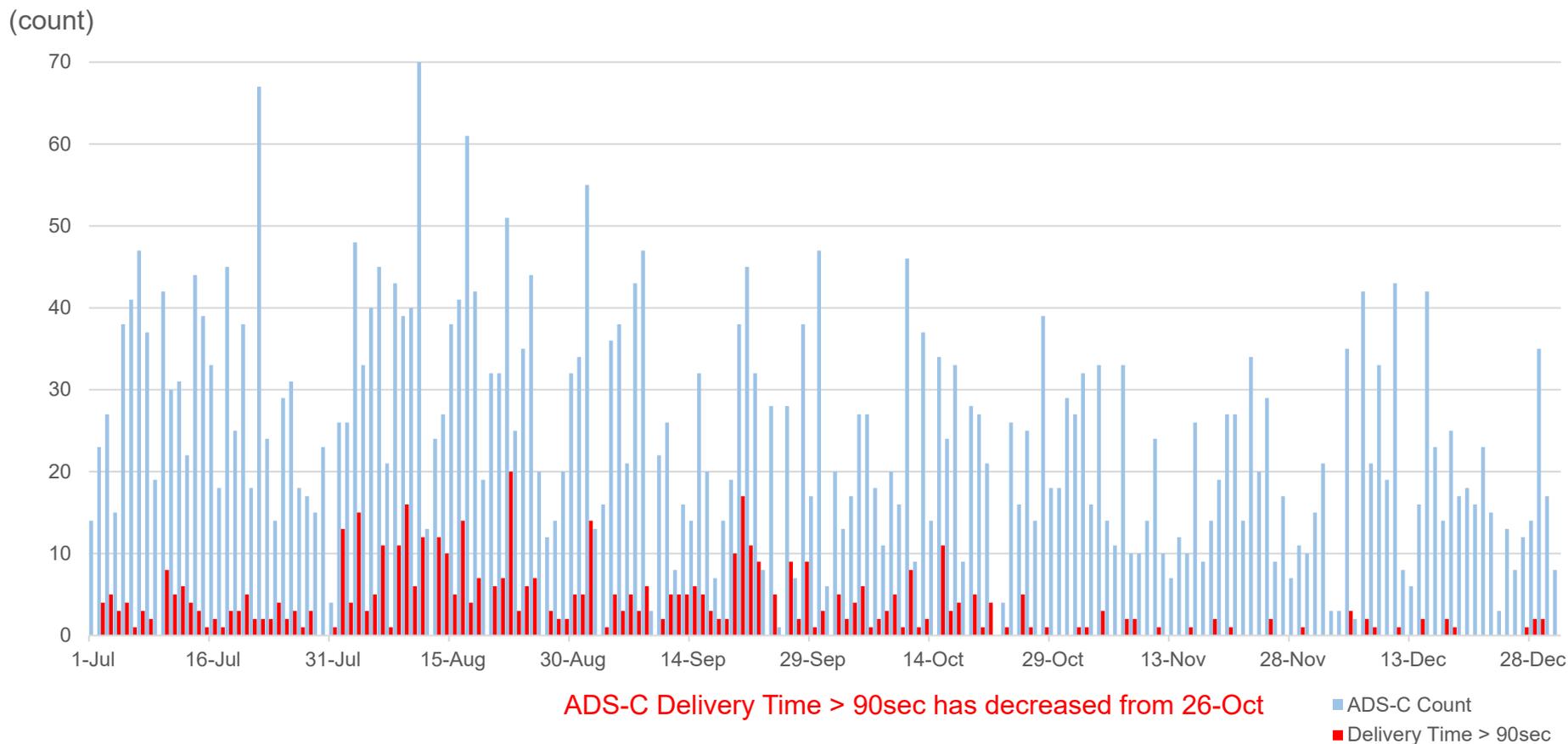
Iridium ADS-C Maximum Delivery Time Jul – Dec, 2019 00:00 – 01:00(UTC)



ADS-C Maximum delivery time has increased from July to October

Investigation for Iridium ASP degradation

Iridium ADS-C Delivery Time > 90sec Jul – Dec, 2019 00:00 – 01:00(UTC)



ADS-C delivery time > 90sec has increased from July to October

PR 2942 ~Delayed position reports and MAS failures via Iridium~

Report ▼ De-identified Reports Performance Data and Administration PBCS Charter Contact Us Manual Japan Air Navigation Service ▼

CRA Feedback

MM 17-Sep-2019: Assigned to Iridium to investigate.

MM 26-Nov-2019: Iridium made database update processing and satellite load balancing improvements that Oakland Oceanic confirmed resolved the problem.

Originator: FAA (United States)	Originator's Reference Number: ZOA-2019-003
Title: Delayed position reports and MAS failures via Iridium	
Date UTC (YYYY-MM-DD): 2019-09-12	Time UTC: 0005
Registration: multiple	Flight Identifier: multiple
Departure and Arrival Airports:	Aircraft Type:
Active Center: KZAK	Next Center:
Position: NOPAC	
Description:	

PR2942 was reported by FAA.

“From 0000z - 0100z, 43 ADS-C reports delivered via IG1/IGW1 were delayed”

MM 26-Nov-2019:Iridium made database update processing and satellite load balancing improvements that Oakland Oceanic confirmed resolved the problem.

FOI: Operator/AC-Type Not Meeting RSP180/RCP240



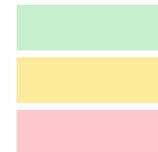
CRA JAPAN
Central Reporting Agency in Japan

OP Code	Aircraft Type	RSP180				RCP240						
		Count of ADS-C	% of Total ADS-C	ASP		Count of CPDLC	% of Total CPDLC	ACTP		ACP		PORT
				95%	99.9%			95%	99.9%	95%	99.9%	
CPA	B77W	52,517	24.81%	96.20%	98.57%	1,636	30.28%	98.11%	98.72%	98.17%	98.66%	97.19%
UAL	B738	22,129	10.45%	95.70%	99.27%	520	9.62%	99.42%	99.81%	98.08%	98.85%	96.15%
CKS	B744	9,049	4.27%	95.70%	98.20%	157	2.91%	98.73%	99.36%	98.09%	98.73%	92.99%
PAL	A21N	3,329	1.57%	91.20%	96.58%	37	0.68%	89.19%	89.19%	89.19%	91.89%	94.59%
CPA	B748	1,313	0.62%	92.38%	96.19%	32	0.59%	96.88%	100.00%	96.88%	100.00%	93.75%
FDX	B763	889	0.42%	96.18%	98.09%	7	0.13%	100.00%	100.00%	100.00%	100.00%	85.71%
MAS	B738	303	0.14%	88.78%	96.70%	3	0.06%	100.00%	100.00%	100.00%	100.00%	100.00%
UAL	B772	263	0.12%	92.02%	96.96%	12	0.22%	83.33%	100.00%	66.67%	83.33%	25.00%
NCR	B744	183	0.09%	96.72%	97.81%	3	0.06%	100.00%	100.00%	100.00%	100.00%	100.00%

→ Detailed investigation for PAL/A21N (see [slide 51](#))

*No-colored where under 100 data points.

Legend:

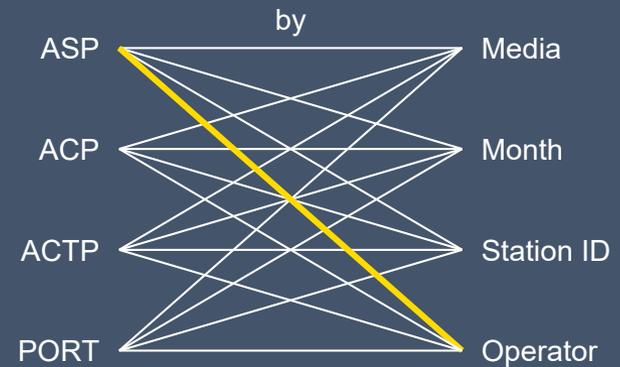


Meets criteria

Under criteria but above 99.0%

Under criteria

Specific issues: **Poor performance report**



PAL/A21N Poor performance

PAL A321neo has showed poor ASP.

OP Code	Aircraft Type	Reg	RSP180			
			Count of ADS-C	% of Total ADS-C	ASP	
					95%	99.9%
PAL	A21N	RPC9930	352	4.79%	98.30%	99.72%
PAL	A21N	RPC9932	499	6.78%	91.58%	96.39%
PAL	A21N	RPC9933	448	6.09%	99.78%	100.00%
PAL	A21N	RPC9934	624	8.48%	99.52%	100.00%
PAL	A21N	RPC9935	527	7.16%	98.86%	99.43%
PAL	A21N	RPC9936	818	11.12%	98.78%	99.27%
PAL	A21N	RPC9937	4,088	55.57%	93.25%	97.33%

Legend:

	Meets criteria
	Under criteria but above 99.0%
	Under criteria

RPC9932 and RPC9937 have shown poor performance.

The analysis for proportion of MED.

■ RPC9937

	August	September	October	November	December
SAT Lost	4	6	30	28	38
VHF Lost	0	0	573	1020	984
HF Lost	708	733	1002	1104	1006
SAT Establish	121	211	106	55	66
VHF Establish	0	0	943	1734	1699
HF Establish	675	676	721	675	598

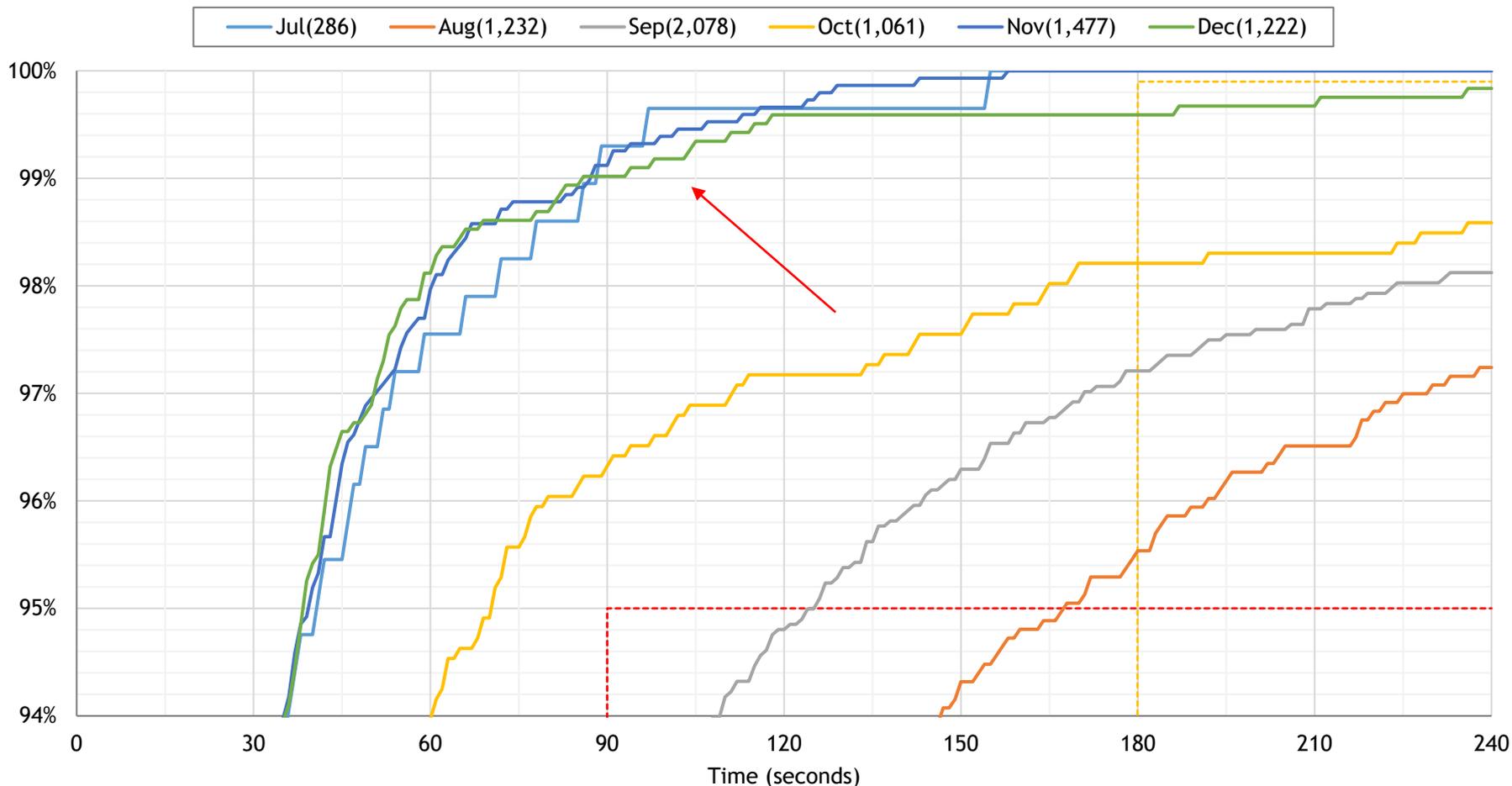
From the analysis result of RPC9937:

- RPC9937 has not used VHF until September.
- Count of “SAT Establish” has been decreasing from October.
(SAT connection stability has improved)

Has PAL changed the airborne setting ?

PAL/A21N Poor performance

Fukuoka FIR - PAL A21N- By Month - July to December 2019 ADS-C Actual Surveillance Performance (ASP)



PAL A321neo ASP has improved from October.

PAL/A21N Poor performance

PAL A321neo has been improving gradually.

Month	RSP180		
	Count of ADS-C	ASP	
		95%	99.9%
Jul	286	99.30%	100.00%
Aug	1,232	89.94%	95.54%
Sep	2,078	92.59%	97.21%
Oct	1,061	96.32%	98.21%
Nov	1,477	99.12%	100.00%
Dec	1,222	99.02%	99.59%

Legend:

- Meets criteria
- Under criteria but above 99.0%
- Under criteria

PAL A321neo ASP has improved from October.

Summary of the report

- 1) No significant change from 2019 H1.
- 2) The number of datalink communication in RJJJ had been increased by 2017, but this time the number did not increase.
- 3) Some operators/aircraft types showed poor performance. We will track their performance and feedback.
- 4) Performance degradation has observed in Inmarsat-4 Asia Pacific in July and August.
- 5) FOI users have been increasing.
- 6) Performance degradation has observed in Iridium from July to October.

Any Questions?

Thank you!



Technical Management
Center



Kobe Aeronautical Satellite
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