THE THIRTY-SIXTH MEETING OF THE INFORMAL SOUTH PACIFIC ATS CO-ORDINATING GROUP (ISPACG/36)
FANS Interoperability Team Meeting (FIT/29)
(Virtual, 10-11 August 2022)

Presented by: Federal Aviation Administration

Federal Aviation Administration

FAA PBCS Monitoring Report

Oceanic Data Link

Overview

- **PBCS summary report for Oakland oceanic airspace – aggregate and by media type**
- **Summary report for individual aircraft compliance and most recent results**
- **Analysis of performance issues observed by media delivery path**
- **Summary**

PBCS monitoring – airspace report

July – December 2021

Oakland

113697
data link flights
(↑ 26% from Jan-Jun 2021)

Media Type	ADS-C			CPDLC				
	Count of ADS-C Downlink Messages	ADS-C 95%	ADS-C 99.9%	Count of CPDLC Transactions	ACTP 95%	ACTP 99.9%	ACP 95%	ACP 99.9%
Performance Criteria		**RSP 180**			**RCP 240**			
Aggregate	4,305,637	98.6%	99.5%	236,799	99.2%	99.5%	99.0%	99.3%
SAT	3,747,611	98.6%	99.6%	210,585	99.3%	99.6%	99.1%	99.4%
VHF	547,285	98.8%	99.5%	21,556	99.7%	99.8%	99.5%	99.6%
HF	10,660	60.3%	74.5%	186	34.4%	44.6%	41.4%	46.8%
SAT-VHF				2,275	96.2%	97.8%	95.0%	95.8%
VHF-SAT				1,197	94.4%	97.0%	96.6%	97.6%
SAT-HF				313	82.8%	87.5%	82.4%	86.9%
HF-SAT				627	97.0%	98.9%	98.9%	99.5%
VHF-HF				7	57.1%	71.4%	71.4%	85.7%
HF-VHF				53	92.5%	94.3%	92.5%	94.3%

PBCS monitoring – airspace report

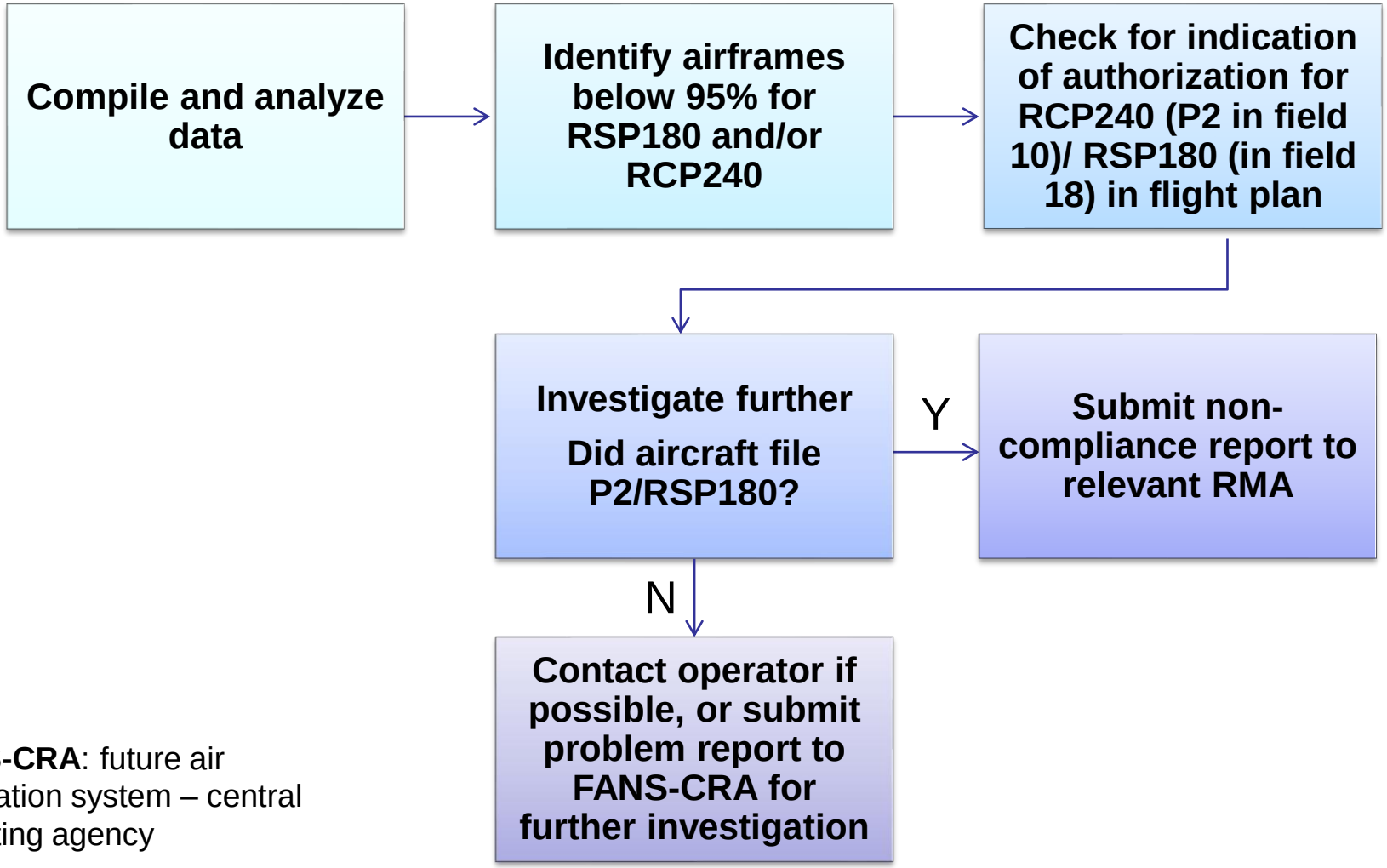
January – June 2022

Oakland

112500
data link flights
(↓ 1% from Jul-Dec 21)

Media Type	ADS-C			CPDLC				
	Count of ADS-C Downlink Messages	ADS-C 95%	ADS-C 99.9%	Count of CPDLC Transactions	ACTP 95%	ACTP 99.9%	ACP 95%	ACP 99.9%
Performance Criteria		**RSP 180**			**RCP 240**			
Aggregate	4,301,850	98.8%	99.7%	246,180	99.4%	99.6%	99.2%	99.5%
SAT	3,764,800	98.9%	99.7%	219,193	99.5%	99.7%	99.3%	99.6%
VHF	527,719	99.1%	99.7%	22,579	99.7%	99.9%	99.5%	99.6%
HF	9,289	58.4%	73.5%	158	31.7%	43.0%	36.7%	44.3%
SAT-VHF				2,343	96.3%	98.3%	95.5%	96.6%
VHF-SAT				1,300	95.7%	98.5%	97.8%	98.5%
SAT-HF				320	83.4%	86.3%	85.9%	89.1%
HF-SAT				231	92.2%	96.5%	97.8%	98.7%
VHF-HF				3	66.7%	66.7%	66.7%	66.7%
HF-VHF				53	77.4%	79.3%	83.0%	83.0%

Monthly non-compliance monitoring



FANS-CRA: future air navigation system – central reporting agency

PBCS monitoring – aircraft report

Monitoring period: December 2021	
Airspace:	**Oakland**
Total aircraft observed using data link	3216
Have 100 or more ADS-C downlink reports and/or CPDLC transactions	2166
Observed below 95% for RSP180 and/or RCP240	56
Filed P2/RSP180	27
# Aircraft reported to applicable regional monitoring agency (RMA)	9*

*8 ASA B39M and 1 UAL B738

Performance by media delivery path – observed below 95%

FAA-Oakland Oceanic Reporting on ADS-C Actual Surveillance Performance (ASP) by Message delivery path ID

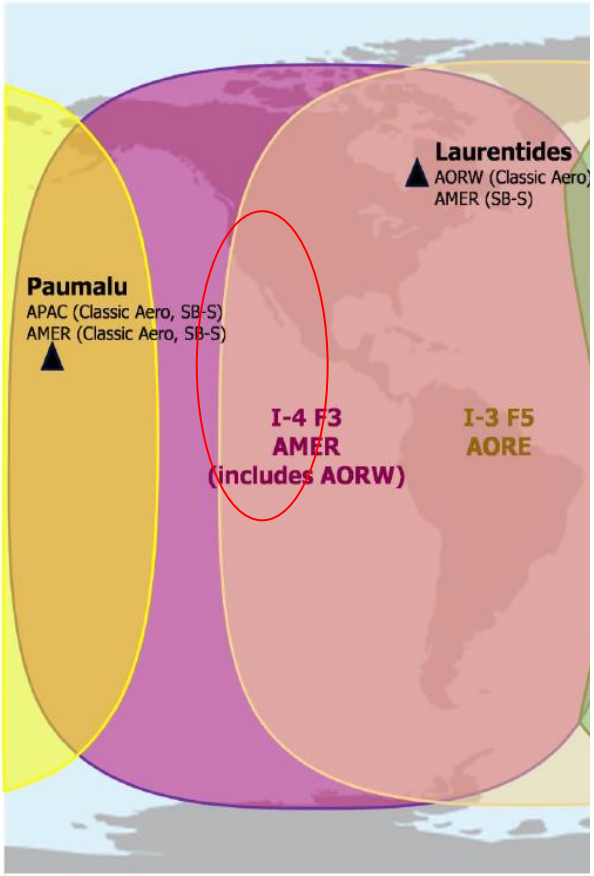
Period: Jan - Jun 2022

Color key:
- Meets criteria
- 99.0%-99.9%
- Under criteria

Path ID		Message Counts	95% RSP 180 Benchmark RSP <=90 sec	99.9% RSP 180 Benchmark RSP <=180 sec
HF	H02	5,919	62.34%	76.48%
VHF	STS7	3,278	93.93%	97.16%
HF	H01	2,334	55.31%	71.68%
VHF	STS1	1,660	93.67%	96.39%
VHF	STS8	953	91.08%	95.70%
SAT	AOE6	886	94.58%	98.31%
SAT	XXN	842	88.72%	93.47%
VHF	CRQ	567	94.18%	96.83%
VHF	UIL8	514	92.80%	98.83%
HF	H16	342	43.86%	61.99%
HF	H04	212	41.98%	62.26%
HF	H09	146	45.21%	65.07%
HF	H13	143	33.57%	48.25%
HF	H05	126	48.41%	66.67%
VHF	YZT	110	94.55%	95.45%

Locations of ADS-C positions delivered via XXN/AOE6

Inmarsat Operational Coverage Map (Classic Aero and SB-Safety)



BUILT TO FLY

 NAT TIG/11 – 01 Mar 2021 v1

- **Maximising access to the Classic Aero Ground Earth Station (GES) services:**
- **In the Inmarsat SATCOM system, there are a multitude of transmission paths available via the different ground stations and satellites. If one path fails, the aircraft may be able to switch to an alternate path provided the Operator Requirement Table (ORT) in the SATCOM terminal is correctly configured.**
- **Proper configuration of the ORT table is therefore vital for maximizing availability of SATCOM services.**
- **Below are some links to the SATCOM manufacturers' information portals:**
  - Cobham: https://sync.cobham.com/satcom/
  - Honeywell: https://myaerospace.com/
  - Thales: https://www.thalesgroup.com/en/customer-online
  - Rockwell Collins: https://www.shopcollins.com

Oper/ACT	Total ADS-C downlinks via STS	% > 90 sec
UAL	2307	5%
B789	628	0%
B772	551	0%
B77W	397	0%
B752	351	29%
B788	113	1%
B763	85	4%
B78X	64	0%
B764	61	3%
B738	49	18%
B739	4	25%
B753	4	100%
HAL	1470	0%
A21N	865	1%
A332	605	0%
CAL	1085	1%
B77W	483	2%
A359	334	0%
B77L	266	0%
B744	2	0%
ASA	727	21%
B738	499	21%
B739	189	23%
B39M	36	11%
H25B	3	0%
FDX	615	2%
MD11	389	2%
B77L	224	0%
B744	2	0%
AAR	548	0%
A359	438	0%
B744	107	1%
A333	3	0%

Oper/ACT	Total ADS-C downlinks via STS	% > 90 sec
EVA	479	2%
B77W	323	2%
B77L	156	1%
KAL	472	1%
B77W	228	0%
B748	139	2%
B77L	55	0%
B789	33	0%
A333	15	0%
B744	2	0%
DAL	472	6%
A333	271	10%
B763	101	0%
B753	34	3%
A332	20	10%
B752	19	0%
B739	19	0%
B764	7	0%
A339	1	0%
JAL	419	0%
B789	230	0%
B77W	108	1%
B788	81	0%
AAL	307	0%
B789	246	0%
A21N	55	2%
B788	6	0%
CCA	293	0%
A359	135	0%
B77W	131	0%
B789	27	0%
ANA	273	0%
B789	168	0%
B77W	51	0%
B788	50	0%
B77L	4	0%
SIA	264	0%
A359	228	0%
B77W	36	0%

Summary

- **The ASP in Oakland was observed to meet the RSP180 95% and 99.9% values at the aggregate level and also for the messages delivered via SAT and VHF**
  - Not met for HF
- **The ACTP in Oakland was observed to meet the RCP240 95% and 99.9% values at the aggregate level and also for the messages delivered via SAT and VHF**
  - Not met for HF or any mixed media except 95% met for HF-SAT mixed media
- **The ACP in Oakland was observed to meet the RCP240 95% values at the aggregate level and also for the messages delivered via SAT and VHF**
  - 99.9% value met for VHF, but not quite met for SAT and aggregate
  - Not met for HF or mixed media, except 95% met for HF-SAT

Summary (cont)

- **The AOE6/XXN SAT delivery paths continue to be associated with lower performance for those aircraft that utilize them, although not a significant number of messages observed**
- **The underperformance observed for ADS-C messages delivered via STS VDL paths appears to be impacting specific operator/aircraft types. Further analysis is needed to determine if a FANS-CA report will be submitted.**
- **After further investigation there are a negligible number of aircraft with performance issues found to be significant enough to report**
  - Some repeat offenders are being observed making it unclear if reports are getting to the State and/or Operator
  - Most common problems are delays in VHF/SAT transition areas, HF data link, Inmarsat satellite to satellite transition (aircraft) or satellite problems (network), and Iridium avionics (aircraft) or satellite problems (network)