Fuze Virtual Meeting and Telecon

1-866-398-2885
Passcode 151869#

Oceanic Work Group Meeting

Date: January 22, 2014

Oakland Center Update

Dennis Addison

SM Oceanic Airspace and Procedures

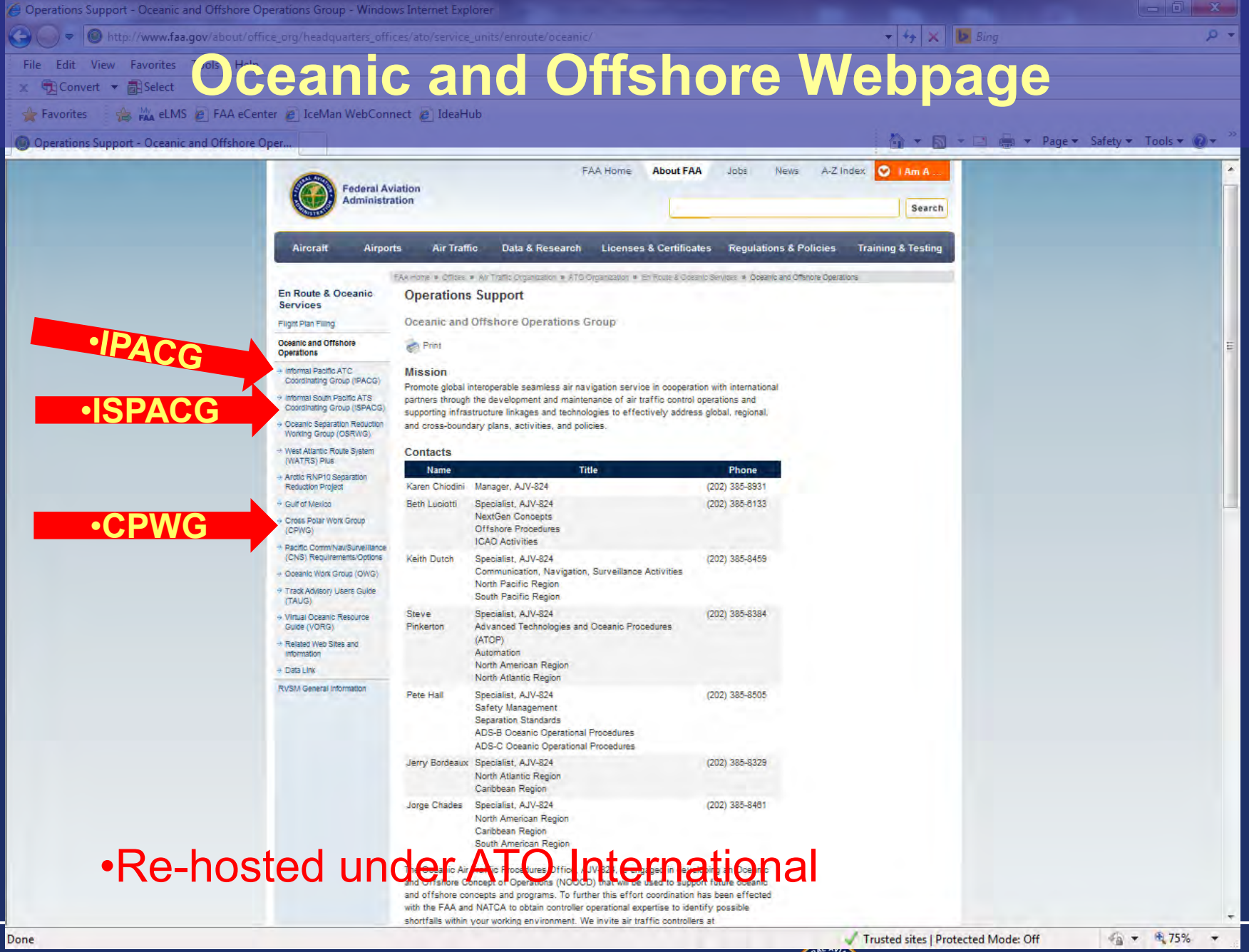
January 22, 2014

Oceanic Webpages

Oceanic and Offshore Webpage

- Date TBD

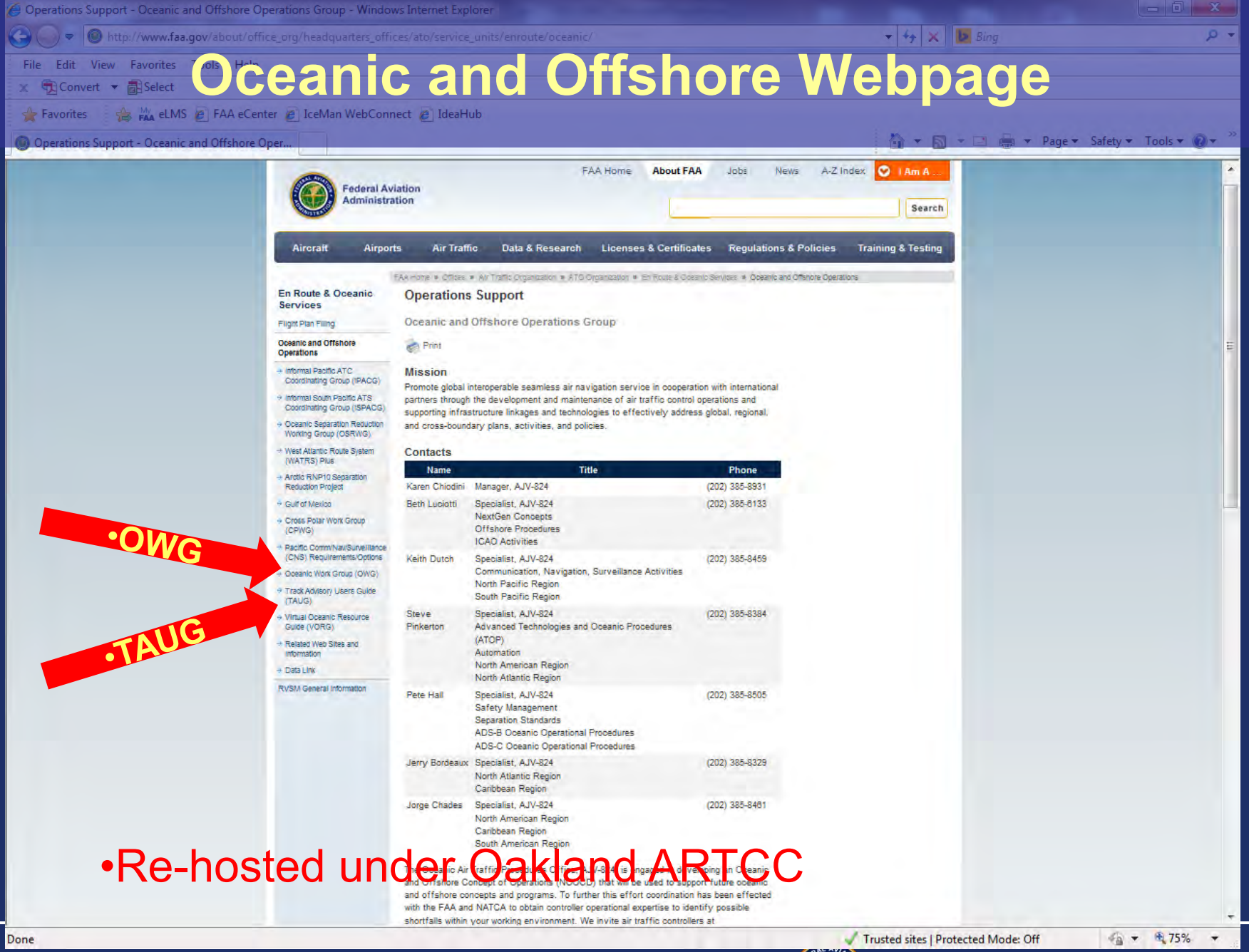
Oceanic and Offshore Webpage



- IPACG
- ISPACG
- CPWG

- Re-hosted under ATO International

Oceanic and Offshore Webpage



- OWG
- TAUG

- Re-hosted under Oakland ARTCC

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Air Traffic Organization

- ATO Organization
- **Air Route Traffic Control Centers (ARTCC)**
- Airport Traffic Control Towers (ATCT)
- Terminal Radar Approach Control Facilities (TRACON)

Oakland Air Route Traffic Control Center (ZOA)

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At the heart of Oakland ARTCC is a team of Air Traffic and Technical Operations Professionals. Oakland Center is unique in that two distinctly different air traffic control functions are handled here. There is the normal en route air traffic control as well as an oceanic air traffic operation that manages the largest volume of international airspace in the world at one facility.

- KZOA Domestic ATC Operations
- KZAK Oceanic ATC Operations
- NOTAMs, TFRs, SUAs

Oakland ARTCC

Oakland ARTCC
5125 Central Ave.
Fremont, CA. 94536
Phone: (510) 745-3000

Rohitkumar Desai,
Web POC
ZOA Web Site
Feedback

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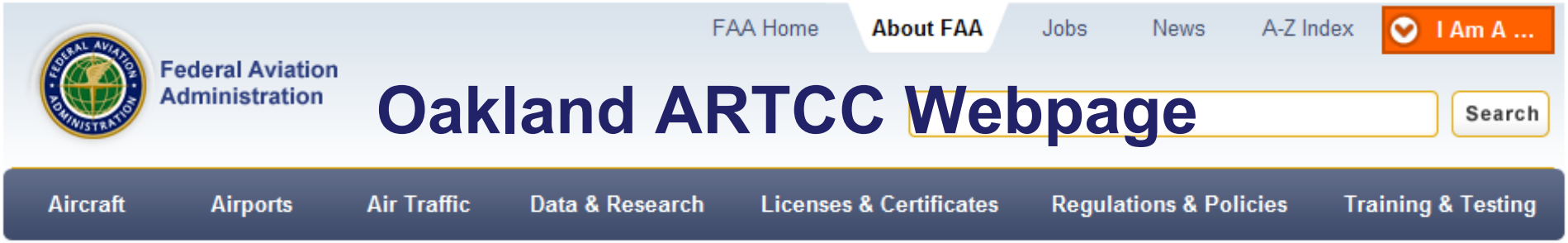

Oakland ARTCC Webpage

KZAK Oceanic ATC Operations

- Print

KZAK Watch Desk (24/7):

- Oceanic Operations Supervisor
  510-745-3342 (24 hours/day—7 days/week)
- Oceanic Non-RVSM Aircraft
  510-745-3342
- Oceanic Operations
  fax: 510-745-3414
- Oakland Oceanic AFTN
  address: KZAKZQZX

KZAK Track Advisory

- Traffic Management Unit (TMU)
  510-745-3771
  fax: 510-745-3339

Oakland ARTCC International Airspace & Procedures Support Manager

- Dennis Addison
- 510-745-3258 (Monday through Friday business hours)

•Oakland ARTCC Webpage

UPR_KZAK_Website_Flight_Planning_Guidance.doc [Read-Only] [Compatibility Mode] - Microsoft Word

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UPR Flight Planning Guidance

UPRs

USER PREFERRED ROUTE (UPR) GUIDELINES

1. General Information

a. Geographical Boundary. UPRs may be utilized within the specified FIRs as detailed below

b. Where UPRs are Supported

(1) Oakland/Anchorage ARTCC and Japan Civil Aviation Bureau Air Traffic Management Center (JCAB ATMC) support the use of UPRs in association with PACOTS Track 1, 3, and 14/15 between Asia and North America.

(2) Oakland ARTCC/HCF and JCAB ATMC support the use of UPRs in association with PACOTS Track 11/12 between Japan and Hawaii.

(3) Oakland ARTCC/HCF and JCAB ATMC support the use of UPRs in association with PACOTS Track A/B between Hawaii and Japan.

(4) Oakland/Anchorage ARTCC and JCAB ATMC support the use of UPRs in association with PACOTS Track H/I and K between North America and Asia.

(5) Oakland ARTCC, Guam CERAP, Port Moresby ATSC, Brisbane ATSC, Nadi ATMC, Auckland OAC and JCAB ATMC support the use of UPRs between RJAA and Oceania destinations.

(6) Oakland ARTCC, Tahiti ACC, Auckland OAC, Nadi ATMC and Brisbane ATSC support the use of UPRs between North America/Hawaii and the South Pacific.

(7) Oakland ARTCC and JCAB ATMC support the use of UPRs between Asia and Koror (PTRO).

c. Flight Planning

(1) The UPR must utilize a published standard departure routing where applicable.

(2) Operators must utilize acceptable gateways and fixed routes within Fukuoka FIR, applicable to the particular PACOTS track UPR being flown. The gateways and fixed routes authorized are contained in a JCAB Aeronautical Advisory Circular pertinent to the particular PACOTS track UPR.

(3) Operators must utilize acceptable transition routings when transiting Anchorage FIR.

(a) Eastbound transition routes.

1. A590 transition route: PASRO A590 POWAL

2. R591 transition route: AKISU R591 ASPIN

3. G344 transition route:

a. CUTEE G344 CARTO; or

b. CUTEE 48N170E 49N180E (or point north of 49N180E); or

c. CUTEE 49N170E; or

d. CUTEE 50N170E

(b) Westbound transition routes.

1. Join R220 at any named point at or east of NATES

2. Join R580 at any named point at or east of ONEIL

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PACOTS_KZAK_Website_Flight_Planning_Guidance.doc [Read-Only] [Compatibility Mode] - Microsoft Word

PACOTS Flight Planning Guidance

PACOTS

PACIFIC ORGANIZED TRACK SYSTEM (PACOTS) GUIDELINES

1. General Information

a. Geographical Boundary. PACOTS tracks may be established within the Oakland Oceanic, Fukuoka, and Anchorage FIRs.

b. Track Definition Message (TDM). Oakland ARTCC is using the TDM format for PACOTS track publication. Questions regarding published PACOTS tracks should be directed to Oakland ARTCC Traffic Management Unit (TMU), at (510) 745-3771.

c. Number and Designator of PACOTS Tracks

(1) Oakland ARTCC or Fukuoka Air Traffic Management Center (ATMC) may develop more or fewer tracks according to user needs, military activity, significant weather, or other limitations.

(2)

ROUTES	TRACK DESIGNATORS
Hawaii to Japan	A
Hawaii to Japan	B (optional)
Japan to Hawaii	11
Japan to Hawaii	12 (optional)
North American West Coast to Japan	C
North American West Coast to Japan	D (optional)
North American West Coast to Japan	E & F
Japan to North American West Coast	1, 2, & 3
Japan to North American West Coast	4 (optional)
Texas to Japan	M
Japan to Texas	8
North American West Coast to Asia	H & I (optional)
North American West Coast to Asia	J & K
Asia to North American West Coast	14
Asia to North American West Coast	15 (optional)

d. Usable Flight Levels

(1) All IFR flight levels at or above FL290 except the Westbound North America-Japan PACOTS which also includes FL280 in the Oakland OCA/FIR. The Westbound North America-Japan PACOTS are included in the Track Advisory Program. Certain restrictions may apply for non-PACOTS traffic operating in the opposite direction to the published PACOTS system.

e. Lateral Spacing of Tracks

(1) PACOTS Tracks are established at least 50 NM apart. Tracks are defined using latitude/longitude expressed in whole degrees or named waypoints with the possible exception of FIR crossing points.

f. Flight Planning

(1) The following flight planning restrictions and rules only apply within the oceanic control areas of the respective FIRs. Furthermore, these restrictions do not affect aircraft filing on ATS routes in the CEP route system or the NOPAC Composite Route System unless individual routes within these systems are specifically identified as unusable in NOTAMs.

(a) Participating Aircraft

•Changed Westbound PACOTS North America – Japan effective times to 0000Z -0600Z crossing 160E.

CEP Flight Planning Guidance

CENTRAL EAST PACIFIC (CEP)

1. The Central East Pacific (CEP) is the organized route system between Hawaii and California. Seven ATS routes, R463, R464, R465, R585, R576, R577, R578, and associated transition waypoints are within the CEP. Reduced Vertical Separation Minimum (RVSM) and Required Navigation Performance 10 (RNP-10) are required for aircraft operating within the CEP at FL290 through FL410. Non-approved aircraft can expect FL280 and below or FL430 and above, traffic permitting.
2. Applicable ATC procedures can be found in Order JO 7110.65 and ICAO Document 7030 - PAC/RAC.

COMPOSITE SEPARATION FOR NON-RNP10 AIRCRAFT

Composite separation is achieved by using a combination of at least 50 NM lateral and 1000 feet vertical separation. Composite separation may only be applied to aircraft established within the CEP and/or aircraft leaving/joining the CEP.

•Oakland ARTCC Webpage

CPDLC_Basic_Oceanic_CNS_Requirements.doc [Read-Only] [Compatibility Mode] - Microsoft Word

Basic Oceanic CNS Requirements

CPDLC

CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)

Oakland ARTCC has full CPDLC capability and normal service in the entire Oakland OCA/FIR for FANS-1/A capable aircraft. The Oakland OCA/FIR log-on address is "KZAK"; the facility is "OAKODYA."

1. HF Communications Requirement

Prior to entering the Oakland OCA/FIR, contact ARINC on HF and identify the flight as CPDLC equipped. Provide SELCAL, departure and destination, aircraft registration number and advise whether SATVOICE equipped. Expect to receive primary and secondary HF frequency assignments from ARINC for the entire route of flight within the Oakland OCA/FIR. Pilots must maintain HF communications capability with ARINC at all times within the Oakland OCA/FIR.

2. Log-On

a. For aircraft departing from airports along the west coast of North America, Guam and Hawaii, Oakland Oceanic Control requires that data-link aircraft not logon to Oakland oceanic (KZAK) until after leaving 10,000' MSL. This request is made to eliminate ADS periodic reports for aircraft that are still on the ground which will assist in the transition from the domestic airspace automation environment. Additionally, this should reduce operator cost.

b. Aircraft entering the Oakland OCA/FIR CPDLC service area from non-CPDLC airspace: Log on to CPDLC at least 15 but not more than 45 minutes prior to entering the Oakland OCA/FIR CPDLC service area. Contact ARINC on HF and inform them you are a CPDLC flight.

c. Aircraft entering the Oakland OCA/FIR CPDLC service area from adjacent CPDLC airspace: Pilots should determine the status of the CPDLC connection. If KZAK is the active center, the pilot shall contact ARINC on HF, identify the flight as a CPDLC flight, and send a position report via CPDLC. If KZAK is not the active center, the pilot shall, within 5 minutes after the boundary is crossed, terminate the CPDLC connection, then log on to KZAK, contact ARINC on HF and inform them you are a CPDLC flight. Send a position report when CPDLC ATC COM is established.

3. CPDLC Position Report Message Format

Oakland OCA/FIR (KZAK) cannot accept position reports containing latitude and longitude (Lat/Long) in the ARINC 424 format, which is limited to five characters (e.g. 40N50). Position reports in the KZAK CPDLC service area containing Lat/Long waypoints will be accepted in complete latitude and longitude format only. Flights unable to send position reports in complete latitude and longitude format must accomplish position reporting via HF voice communications.

4. Aircraft Over-Flying Honolulu Control Facility (HCF) Airspace.

Prior to entering HCF airspace, aircraft will receive an END SERVICE message that will result in termination of CPDLC. Aircraft shall re-log on to CPDLC prior to reentering Oakland OCA/FIR (KZAK) airspace when HCF advises to contact en route communications or ARINC.

5. Aircraft Entering Guam CERAP Airspace.

Contact Guam CERAP 250 miles out on 118.7, squawk 2100.

6. Aircraft Over-Flying Guam CERAP Airspace.

The CPDLC and ADS connection with Oakland ARTCC may be terminated within the Guam CTA. If the CPDLC connection with KZAK is not terminated, do not use CPDLC for ATC COM until Guam CERAP

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Flight Planning Guidance

GUAM AREA

GUAM AREA PREFERENTIAL ROUTING

1. Due to traffic congestion within the Oakland OCA/FIR north, south and west of the airspace delegated to Guam CERAP (A 250NM radius of 13°32'N/144°55'E) preferred routings have been established. This notice applies to all turbojet aircraft at or above FL280 operating within the Oakland OCA/FIR north, south or west of the Guam CTA. The following are the Guam area preferential routings within the Oakland OCA/FIR. Aircraft operators must ensure that these preferential routes are indicated in Field 15 of the ICAO standard flight plan unless following published UPR Procedures. The acronym FPRD in the descriptions below means flight plan route to destination.

2. Southbound aircraft en route from the Fukuoka OCA/FIR and terminating within Guam CERAP delegated airspace:

a. OVER KEITH	-	KEITH R584 OTTRE FPRD
b. OVER PADKO	-	PAKDO G339 RIDLL FPRD
c. OVER MONPI	-	MONPI A597 REEDE FPRD
		MONPI A216 RIDLL FPRD
d. OVER OMLET	-	OMLET B586 WINZR FPRD
e. OVER TEGOD	-	TEGOD G205 GUYES FPRD
		TEGOD A337 SNAPP W21 HIRCH FPRD

3. Northbound aircraft originating within Guam CERAP delegated airspace, en route to destinations within the Fukuoka OCA/FIR:

a. OVER MIKYY	-	MIKYY R584 KEITH FPRD
b. OVER NATSS	-	NATSS G339 PAKDO FPRD
c. OVER OATSS	-	OATSS A216 MONPI FPRD
d. OVER RICHH	-	RICHH A597 MONPI FPRD
e. OVER TOESS	-	TOESS B586 OMLET FPRD
f. OVER TERYY	-	TERYY G205 TEGOD FPRD
g. OVER TEEDE	-	TEEDE A337 TEGOD FPRD

NOTE 1: Aircraft within the Oakland OCA/FIR and transiting Guam CERAP delegated airspace must flight plan to enter/exit Guam Center airspace on an appropriate ATS route(s) or other established compulsory reporting points (e.g. FATUM or JOBSS).

NOTE 2: With the exception of aircraft flight planned via Oceania UPR procedures, operators flight planning at or above FL280 with filed routes other than those described above should expect to be re-routed to the preferential route. Requests for alternate routes will be considered on a real-time basis as traffic conditions permit. However, aircraft should file for and be prepared to fly the entire preferential route. Aircraft operating EAST of 150E longitude will not be affected.

•Oakland ARTCC Webpage

Pacific Meetings

- Informal Pacific Coordinating Group (IPACG)
- Informal South Pacific Coordinating Group (ISPACG)
- Oceanic Workgroup Meeting (OWG)

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Oakland Air Route Traffic Control Center (ZOA) - Windows Internet Explorer

http://www.faa.gov/about/office_org/headquarters_offices/ato/artcc/oakland/

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Air Traffic Organization

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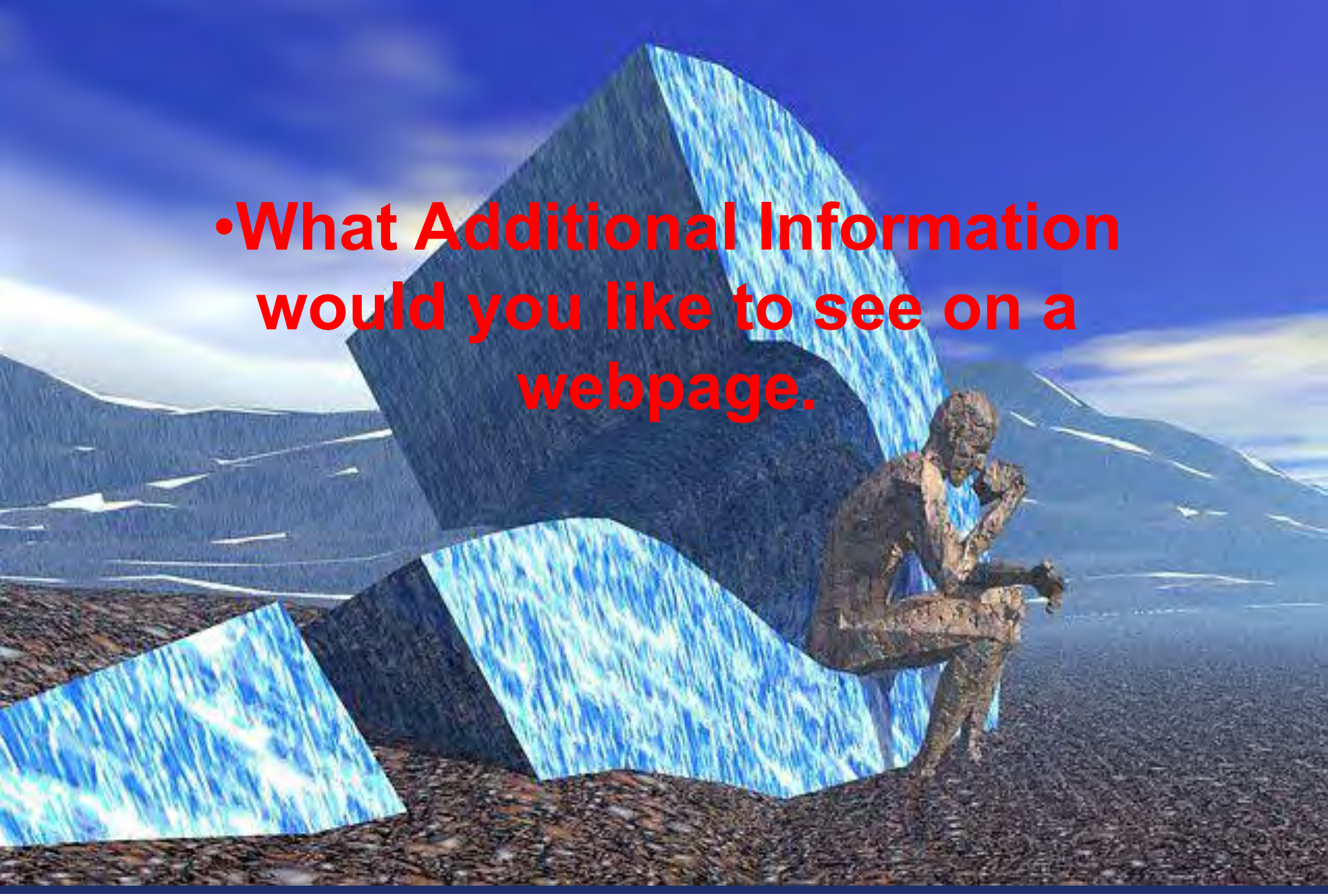
- KZAK Oceanic ATC Operations
- NOTAMs, TFRs, SUAs

Oakland ARTCC

Oakland ARTCC
5125 Central Ave.
Fremont, CA. 94536
Phone: (510) 745-3000

Rohitkumar Desai,
Web POC
ZOA Web Site
Feedback

- http://www.faa.gov/about/office_org/headquarters_offices/ato/artcc/oakland/


•What Additional Information would you like to see on a webpage.

ADS-B In Trail Procedure (ITP)

Status Update

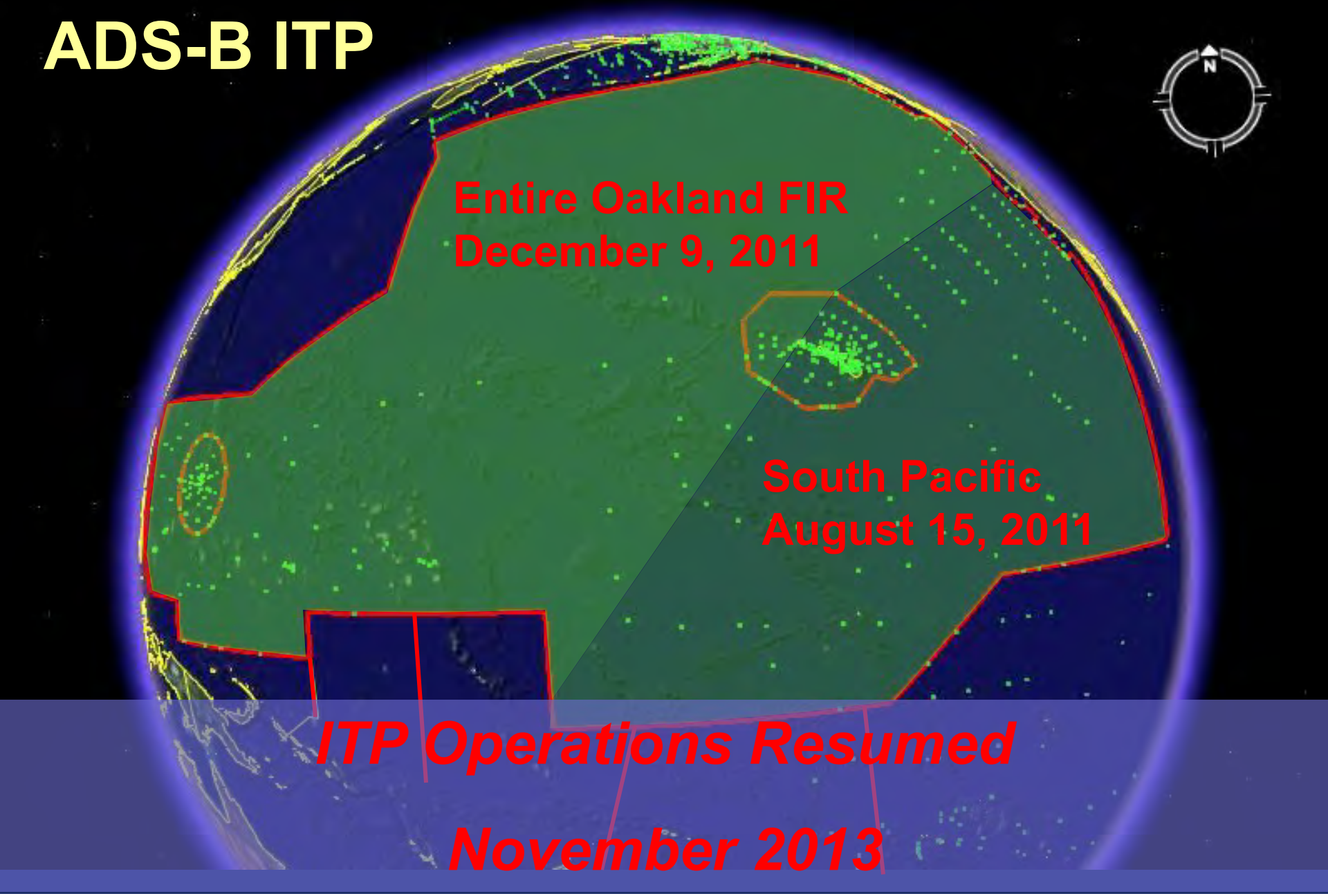
Operational Evaluation Partnership Agreement

- **Partnership**
  - FAA and United Airlines agreement signed in April 2009

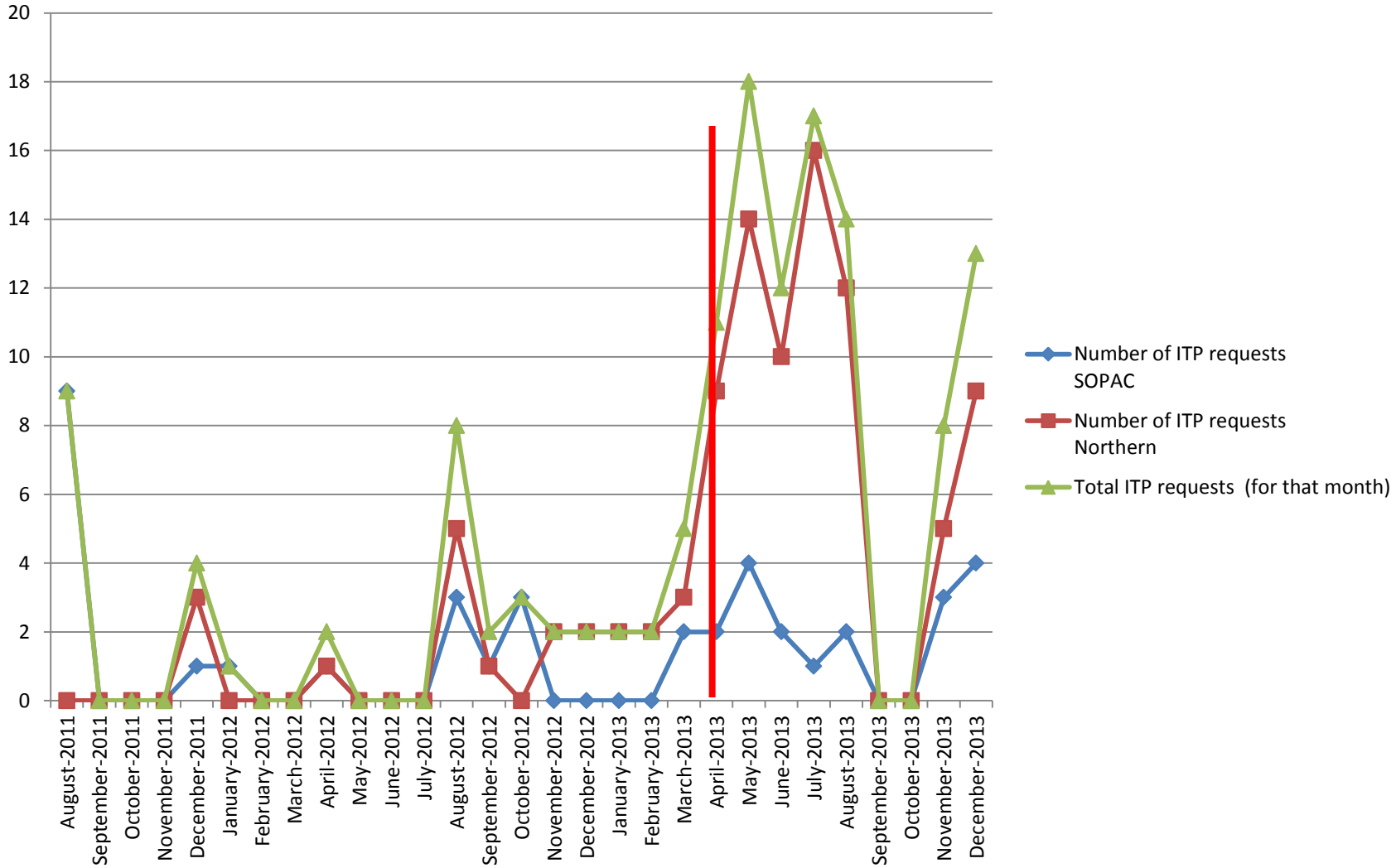
- Retrofit 12 UAL 747-400 aircraft with certified ITP systems
- Gather data on use of systems in SOPAC for a year starting in 2011

★ April 18, 2013 = 100 percent Pilots Trained

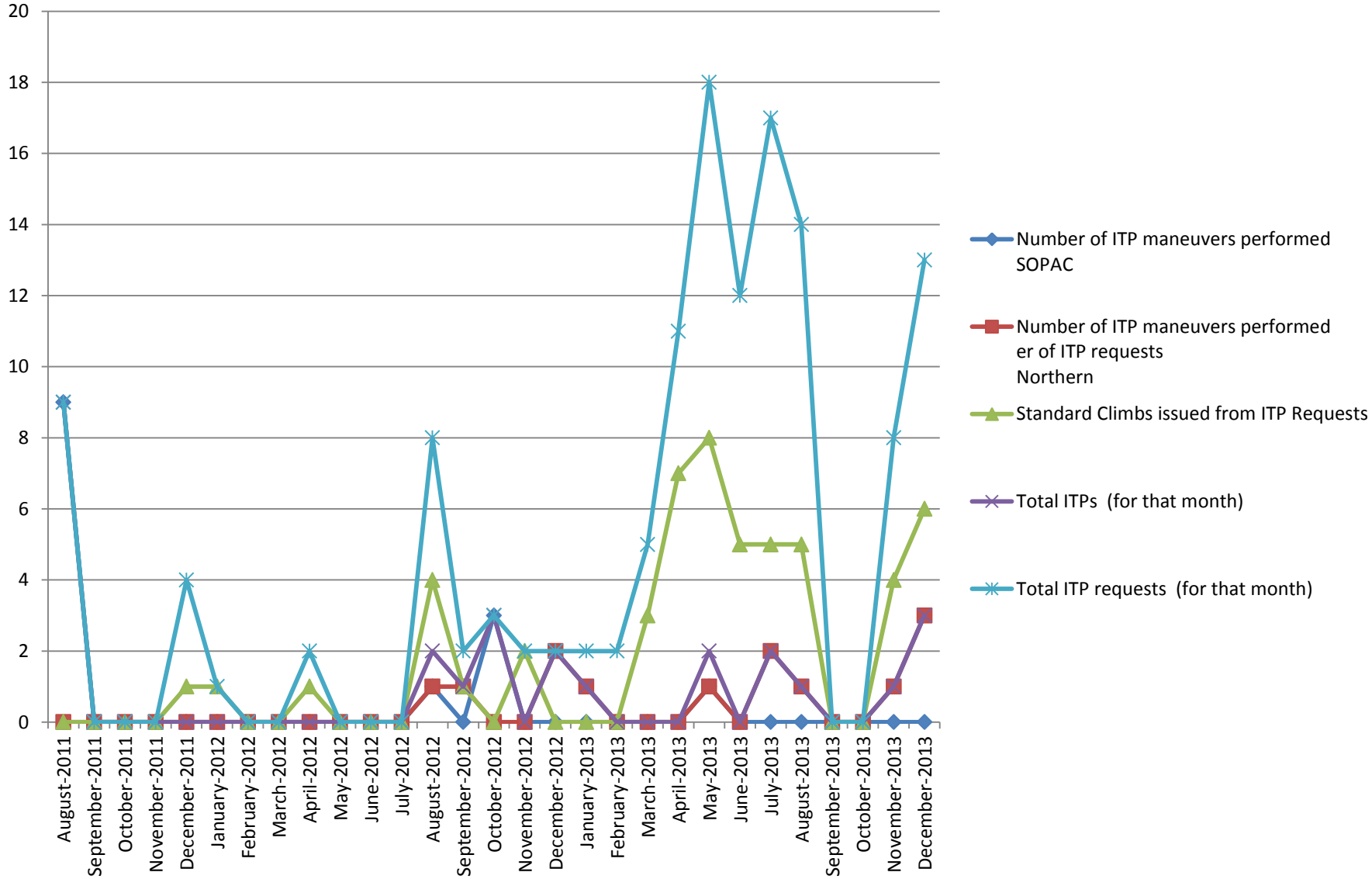
ADS-B ITP


Entire Oakland FIR
December 9, 2011
South Pacific
August 15, 2011
ITP Operations Resumed
November 2013

ITP Requests



ITP Maneuvers



ADS-B ITP Checklist

- Manual Checklist is being automated in Ocean21.
- Automation is planned to be delivered 2016

ADS-B ITP CONTROLLER PROCEDURE

This procedure must be initiated by an ITP request

If any of the following steps are not true, advise the aircraft UNABLE

Validate ITP Request

- ☐ The pilot reports on CPDLC a distance between the ITP aircraft and any referenced aircraft that is **at least 18nm**.

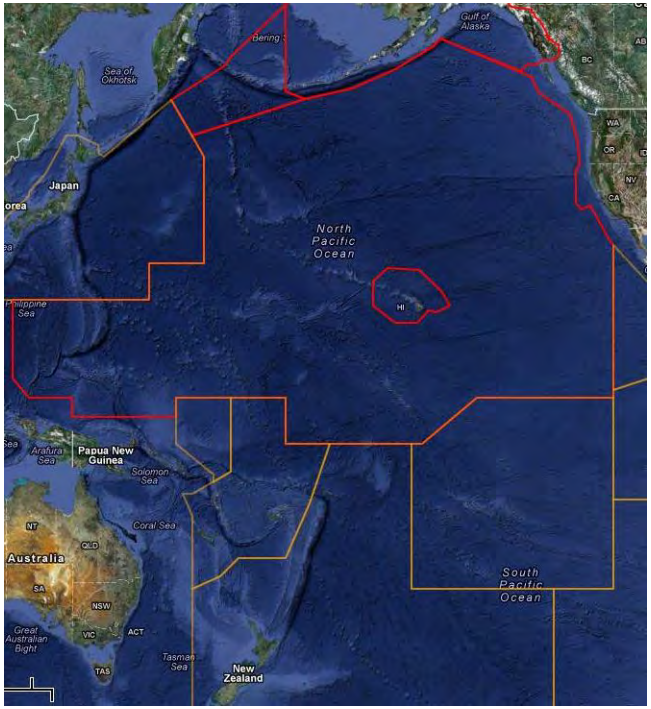
Initiate probe on ITP aircraft

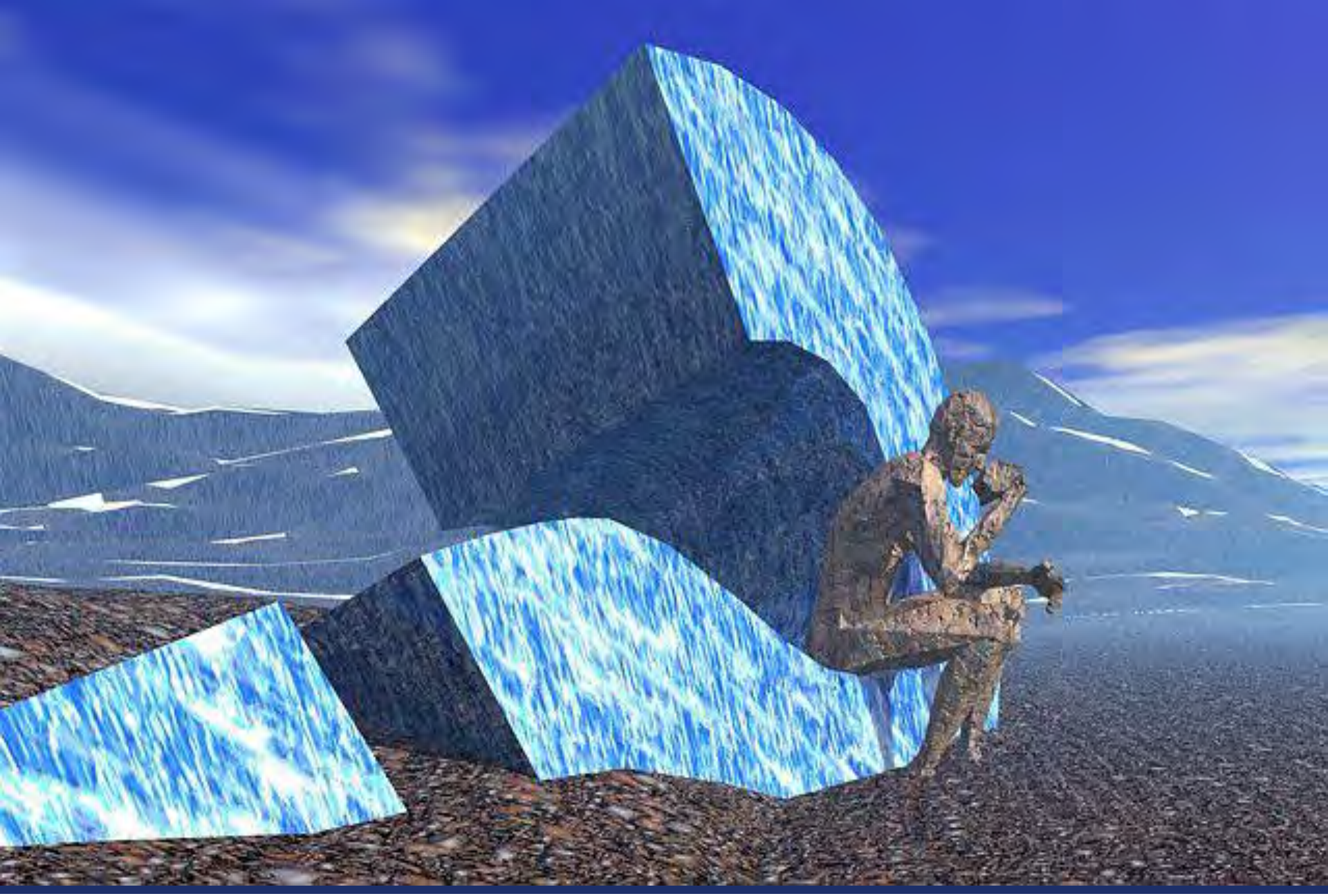
- ☐ Maximum of 1 or 2 conflicts exist
- ☐ All call signs in conflict report(s) are included in the ITP request
- ☐ All conflict aircraft are same direction traffic as ITP aircraft until vertical separation is reestablished
- ☐ Closing mach difference of ITP aircraft and any referenced aircraft is ≤ .06.
- ☐ All conflict aircraft are within 2000' of the ITP aircraft
- ☐ All conflict aircraft are at a single-assigned altitude
- ☐ No conflict exists at the requested altitude.
- ☐ No aircraft involved are cleared for or requesting a route deviation
- ☐ ITP aircraft and Reference aircraft are not part of another ITP operation at the same time

Issue ITP Altitude Change Clearance (message examples are listed on the back side of this form)

Activity Status

- ITP Expansion
  - Fiji
    - Restarted Operational ITP Trial on January 6, 2014
  - New Zealand
    - Trial ends in February, making a request to extend.
  - Japan
    - Presented ITP OpEval results; talked to Japanese about ITP plans



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NEW MESSAGES
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ROUTE CLEARANCE
ORIGIN:PGUM
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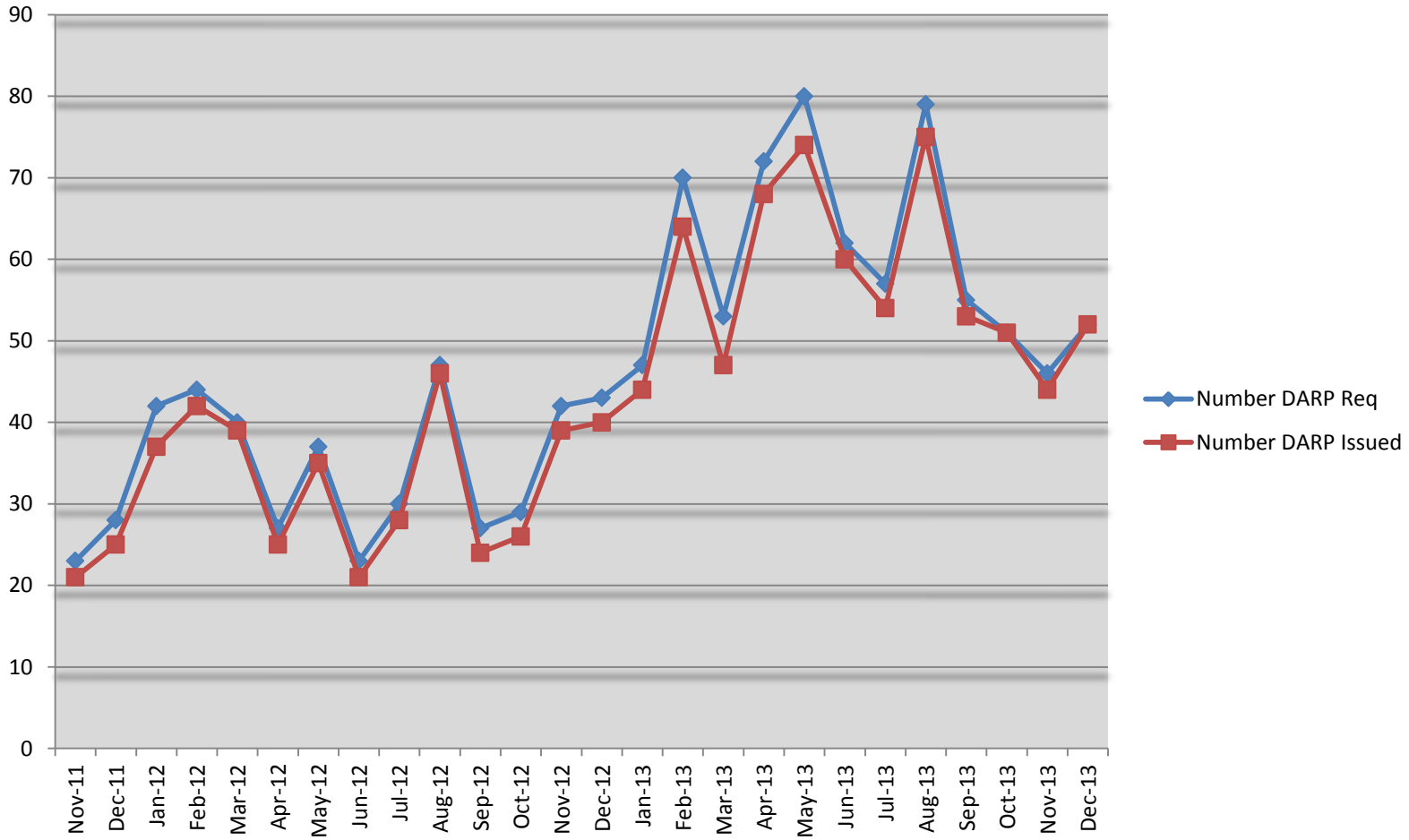
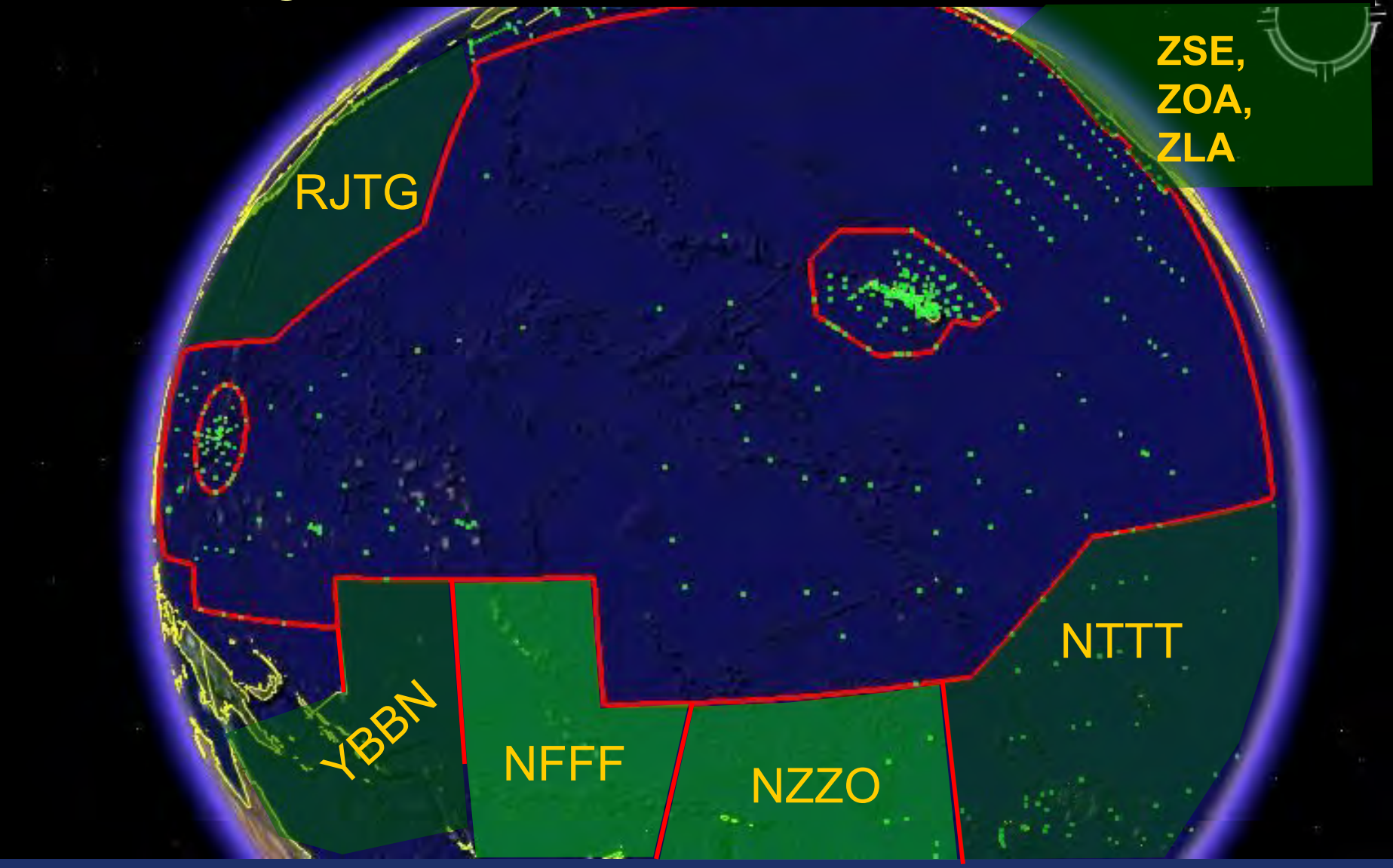
DARPS

Oakland FIR DARP Usage



Dynamic Airborne Reroutes



OPERATIONAL TRIAL FOR DYNAMIC AIRBORNE REROUTE PROCEDURE (DARP) IN THE FUKUOKA FIR

WEF 19 September 2013 0000UTC,

~~WEF 22 August 2013~~ 0000UTC, Operational Trial for DARP issued in the Fukuoka FIR will be underway. The following procedures must be adhered to when planning DARP.

*DARP is to allow Operational Control to initiate the process for an airborne aircraft to be issued an amended route clearance by ATC.

Regardless of AIP GEN3.3.3.7.5 3), DARP request and clearance must be made via CPDLC, after the pre-coordination with Air Traffic Management Center (ATMC).

1. Operational requirements for DARP trial

a. DARP clearance is limited to aircraft bound for Hawaii.
b. Operational CPDLC is required for aircraft requesting DARP.
c. DARP request must be made:
    i. at or east of 145E.
    ii. by the pilot at least 20 minutes before the divergence waypoint to allow processing time by ATC and pilot.
    iii. at least 1 hour prior to crossing the Fukuoka/Oakland FIR boundary.
d. ATMC issue clearance the identical route with the requested route from aircraft, or uplink "UNABLE". (ATMC shall not issue clearance with any modification to the requested route.)
e. Operators wishing to employ DARP trial initiated in the Fukuoka FIR must pre-coordinate with ATMC office by email (atmc_ocean@cab.mlit.go.jp).

2. Other FIRs

For the details on DARP procedures within other FIRs, refer to aeronautical information published by the state associated with the FIR.

3. For further questions

The Fukuoka Air Traffic Management Center (The Fukuoka AMTC)

- Office atmc_ocean@cab.mlit.go.jp TEL : +81-92-608-8869
- Oceanic supervisor TEL : +81-92-608-8890
  Note: Operational questions should be directed to the oceanic supervisor.

JCAB DARP Operations

- **Requirements for DARP usage on flights to Hawaii.**

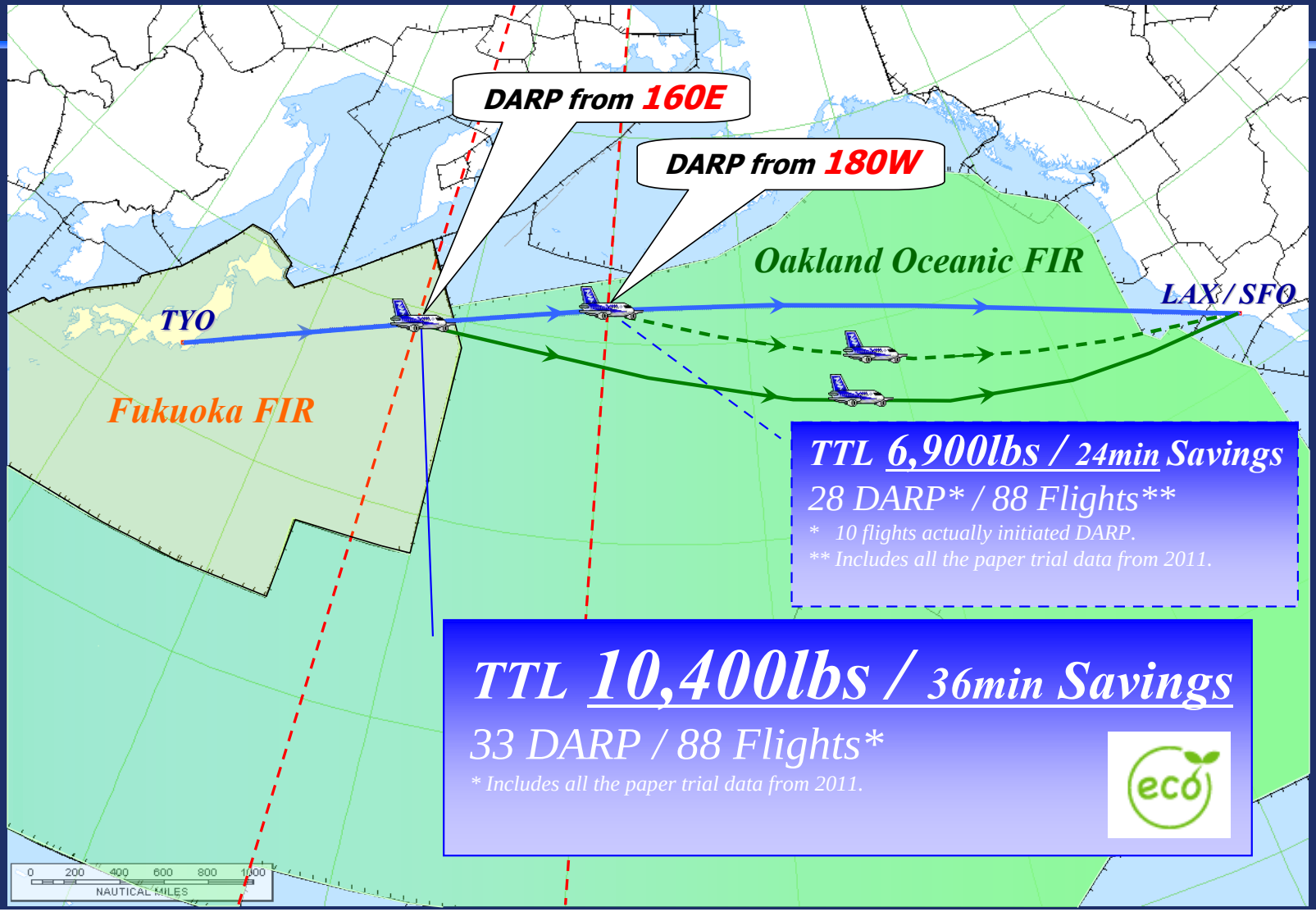
- **Pre-Coordinate DARP Flight Requests with ATMC:**
  - atmc_ocean@cab.mlit.go.jp

- **Operational CPDLC is required for aircraft requesting airborne DARP reroutes.**

DARP Pacific Operations

- **Requirements for DARP usage on flights to Hawaii.**
- **ATMC DARP Request must be made:**
  - at or East of 145E
  - at least 20 minutes before the divergence waypoint to allow processing time by controller and pilot.
  - At least 1 hour prior to crossing the Fukuoka/Oakland FIR Boundary.
- **ATMC issue clearance the identical route with the requested route from aircraft, or uplink "UNABLE". (ATMC shall not issue clearance with any modification to the requested route.)**

•Actual & Potential Result (TYO – LAX / SFO)



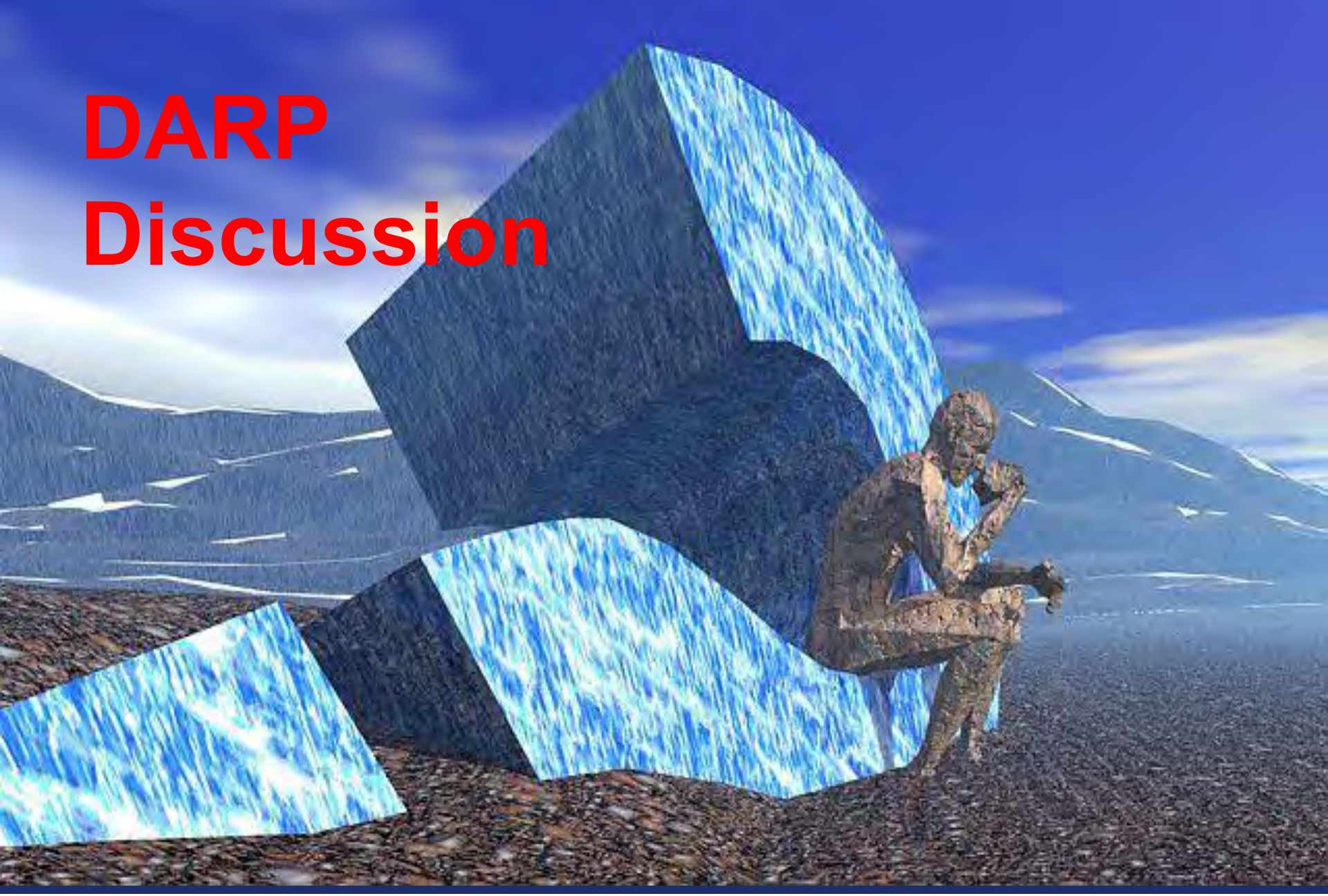
DARP Updates

- **IPACG Papers**
  - IP16_Feedback on the advantages of DARP operation ANA
  - IP01_DARPs_Operations_Joint IP

Dynamic Airborne Reroutes

- DARP Procedure requires AIDC.
- AIDC is required between all facilities to destination.
- Do not request a DARP Reroute into FIRs that do not support the procedure.

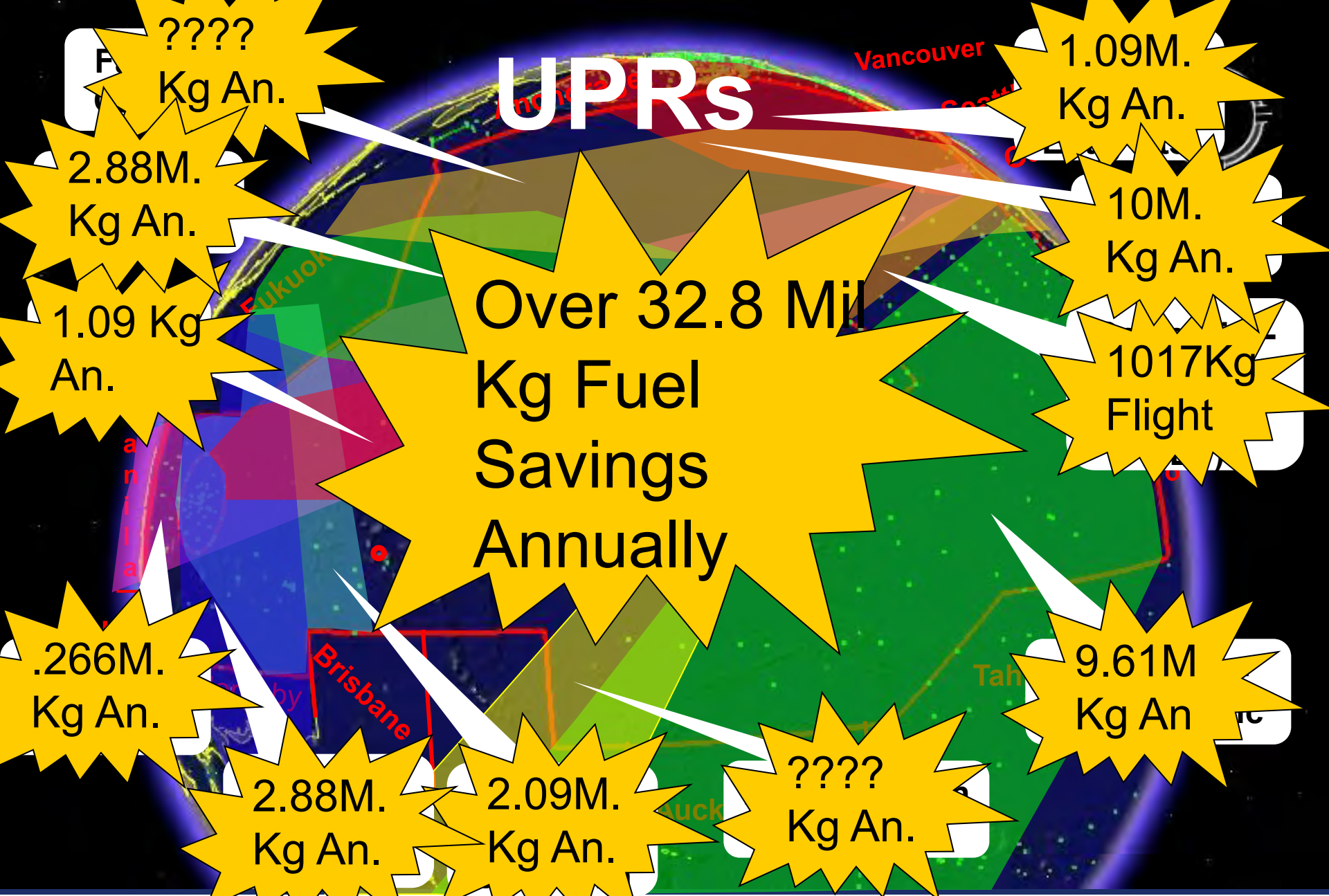
DARP Discussion



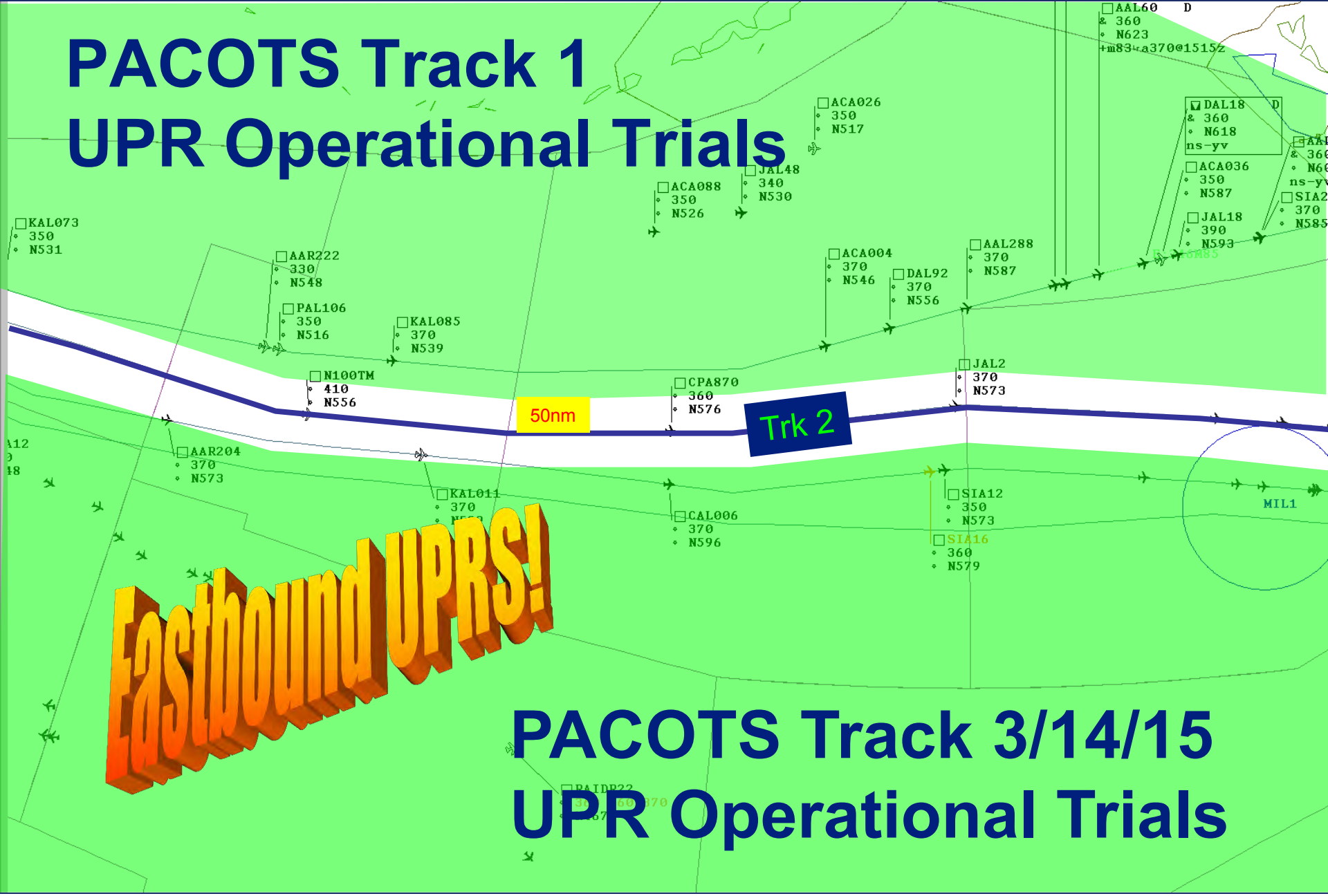
User Preferred Routes

Presented By: FAA, Oakland ARTCC
Airspace and Procedures

Federal Aviation Administration


UPRs
???? Kg An.
1.09M. Kg An.
2.88M. Kg An.
10M. Kg An.
1.09 Kg An.
Over 32.8 Mil Kg Fuel Savings Annually
1017Kg Flight
.266M. Kg An.
9.61M Kg An
2.88M. Kg An.
2.09M. Kg An.
???? Kg An.
Vancouver
Brisbane

PACOTS Track 1
UPR Operational Trials

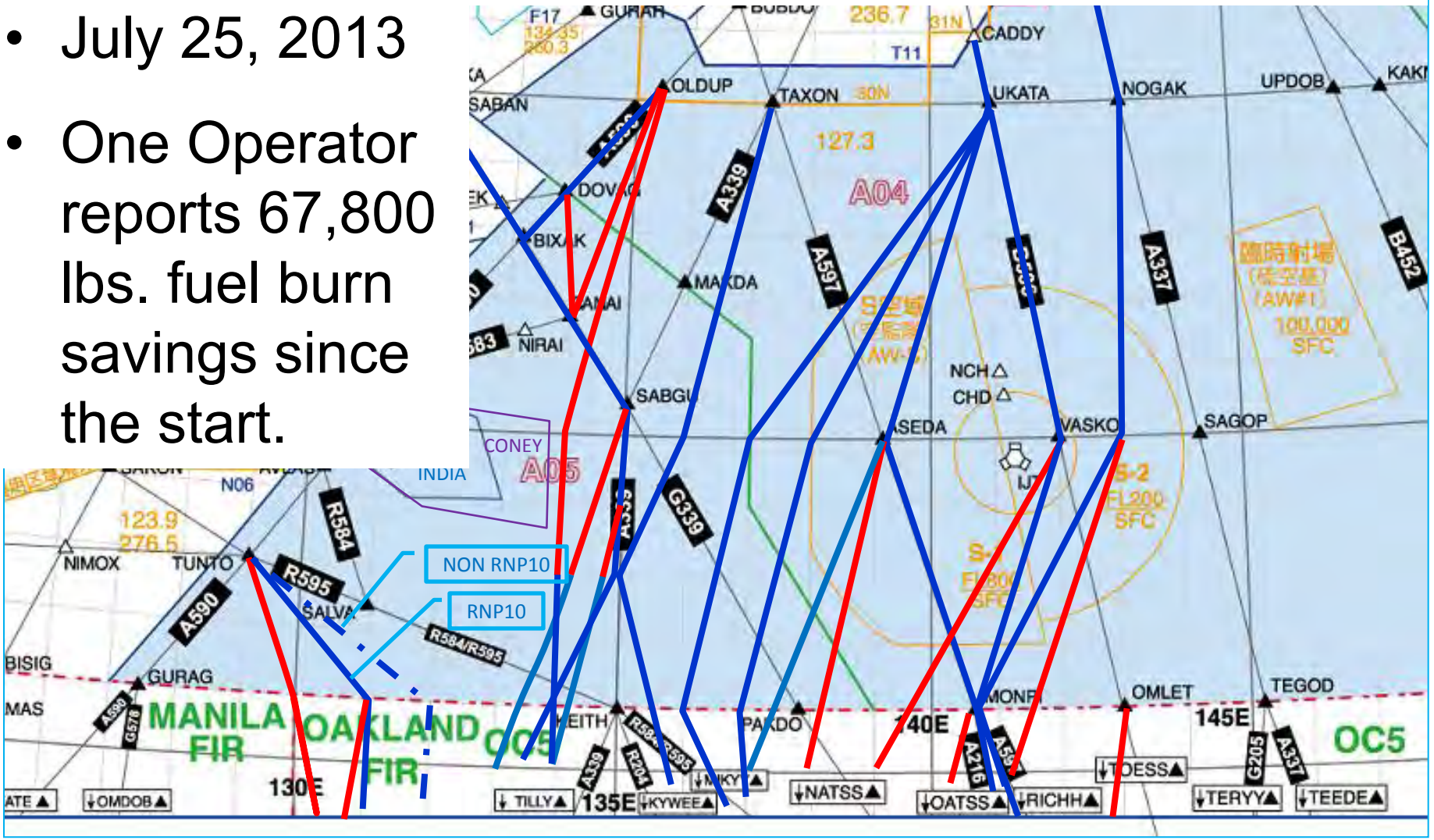


Eastbound UPRS!

PACOTS Track 3/14/15
UPR Operational Trials

PTRO UPRS

- July 25, 2013
- One Operator reports 67,800 lbs. fuel burn savings since the start.



PACOTS Track F UPR Trial

- Operational Trial began July 25, 2013, to allow Track F UPRs at least 50nm south of PACOTS Tracks C & E.
- Remain 50nm South of Track E and Normal UPR Guidelines.
- Guidelines published in KZAK NOTAM A3212/13 and Oakland Website.

Merging PACOTS Tracks C and E

Operational Trial

- **March 13, 2013 began a 1 year operational trial of Merging Tracks C and E when it provided an advantage.**

Procedural Proposal

- This operational trial was a hybrid of different Pacific Oceanic Procedures.
- Allow the merging of PACOTS Tracks C and E in the Oakland or Anchorage FIRs when it provides a savings advantage.
- IPACG: Only merge PACOTS when there is at least a 200 lbs fuel savings.

Track Advisory

- When PACOTS Tracks C and E are merged;
- Track Advisory is used to manage the merging traffic at the point where the routes converged.
- http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/oceanic/pacific_track_advisory

Track Advisory

- **When PACOTS Tracks C and E are not merged:**
  - Oceanic Gateway Fix is the Start of the PACOTS Track as is currently done.
- **When PACOTS Tracks C and E are merged:**
  - Oceanic Gateway Fix is the Merge point of Tracks C and E
    - If the merge point is a Waypoint, that will be the Gateway Fix.
    - If the merge point is a Lat/Long, the Gateway Fix for Track Advisory will be coded.
      - 41W40 = 41N/140W
    - The Latitude is always North and the leading 1 is dropped from the Longitude.

•Implementing Merged Track C and E Tracks

- When Track C and E are merged, the TDM will have "RMK/MERGE USE (point) FOR TRK ADVISORY GRL"

A0284/13 - (TDM TRK E 130122190001 1301221900 1301230800 BOXER FULMR FASEL 52N140W 55N150W 56N160W 56N170W ALDOZ ONEIL OPAKE OLCOT OPHET OGDEN OMOTO RTS/KSFO MOLEN BOXER KLAX RZS LIBBO BRINY BOARS BOXER OMOTO R580 OATIS RMK/MERGE USE ONEIL FOR TRK ADVISORY GRL).

•Implementing Merged Track C and E Tracks

A0284/13 - (TDM TRK E 1301221900001 1301221900 1301230800 BOXER FULMR FASEL 52N140W 55N150W 56N160W 56N170W ALDOZ ONEIL OPAKE OLCOT OPHET OGDEN OMOTO RTS/KSFO MOLEN BOXER KLAX RZS LIBBO BRINY BOARS BOXER OMOTO R580 OATIS RMK/MERGE USE 52W40 FOR TRK ADVISORY GRL).

Track Advisory

- Operators flight planning a merged Track C/E from the starting point would request a Gateway reservation (TKF) prior to 1650 UTC.

Merged Track C and E Operational Trial

- OF THE FIRST 38 DAYS OF THE OPERATIONAL TRIAL;
- TRACKS C & E MERGED 14 DAYS.

- AVERAGE FUEL SAVINGS PER FLIGHT WAS 1120 LBS (10 DAYS)

Merging Tracks C & E Difficulties

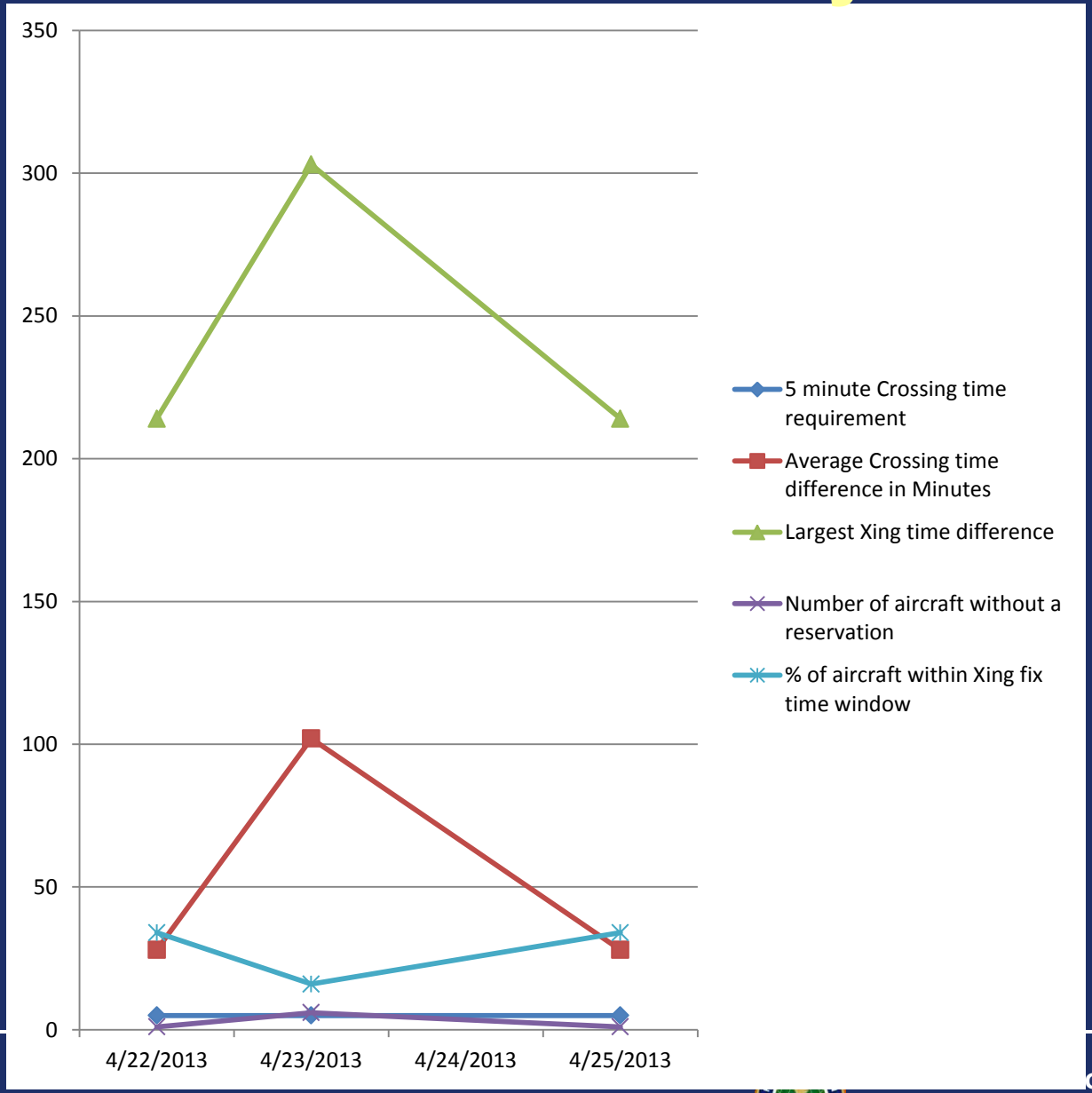
- April 22-25, 2013 Oakland encountered difficulties with merging traffic on PACOTS Tracks C and E.
- There were numerous traffic conflictions that required Oakland to negotiate with Japan and Anchorage for the use of Non-standard altitudes.
- If traffic did not permit the use on Non-standard altitudes in Anchorage or Fukuoka FIRs, altitude assignments would have been significantly affected

Merging Tracks C & E Difficulties

- On April 26, 2013, Oakland suspended the Operational Trial to merge PACOTS Tracks C and E.

- Oakland discovered several irregularities with the Track Advisory requested reservations:

4/22-25 Track Advisory Issues



Moving Forward C/E Trial

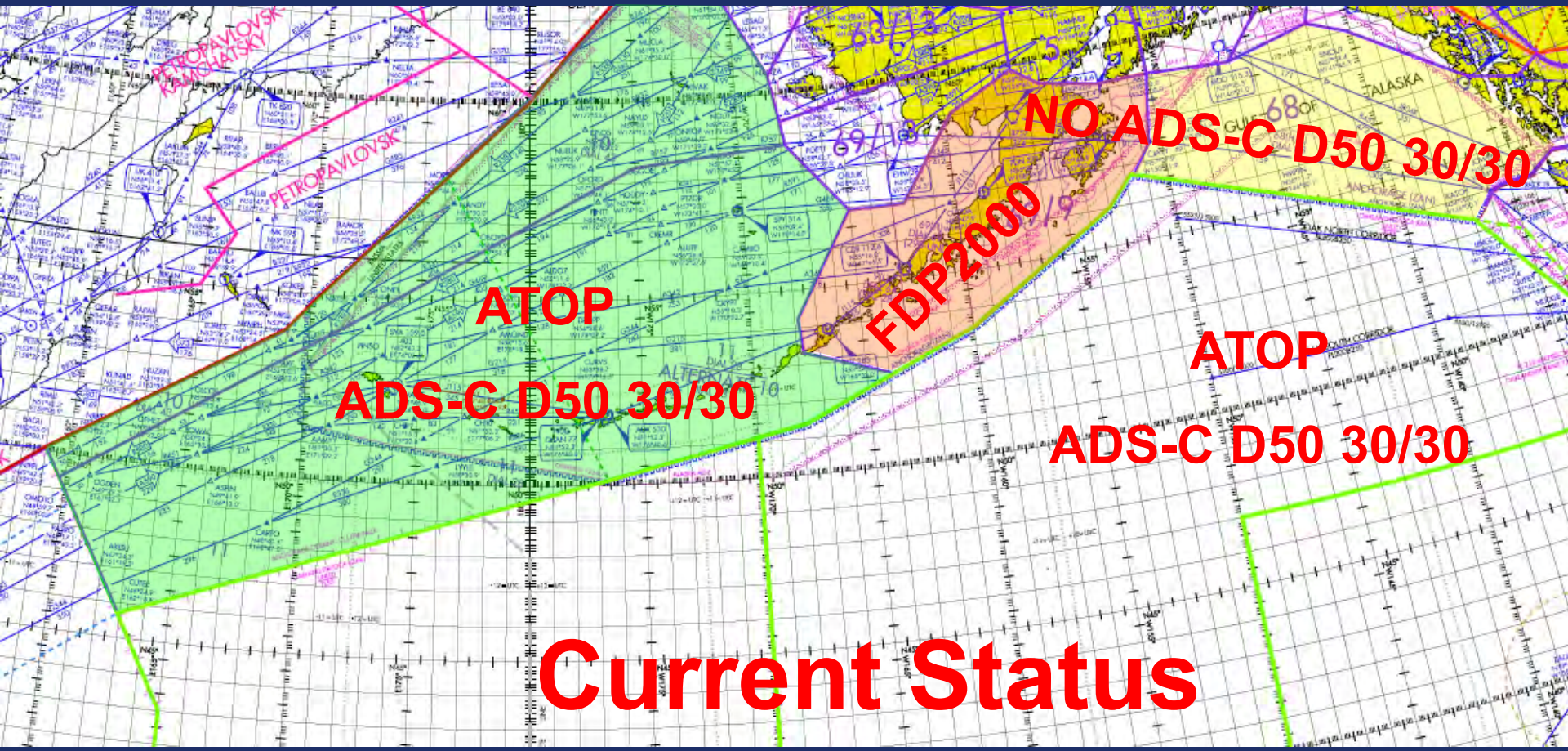
- **Operators must be better at meeting their Gateway Fix reservation times.**

- **Merging C/E requires the use of Non-Standard Altitudes.**
  - Not an issue for NOPAC
  - Mix of Aircraft types
  - Gateway time errors

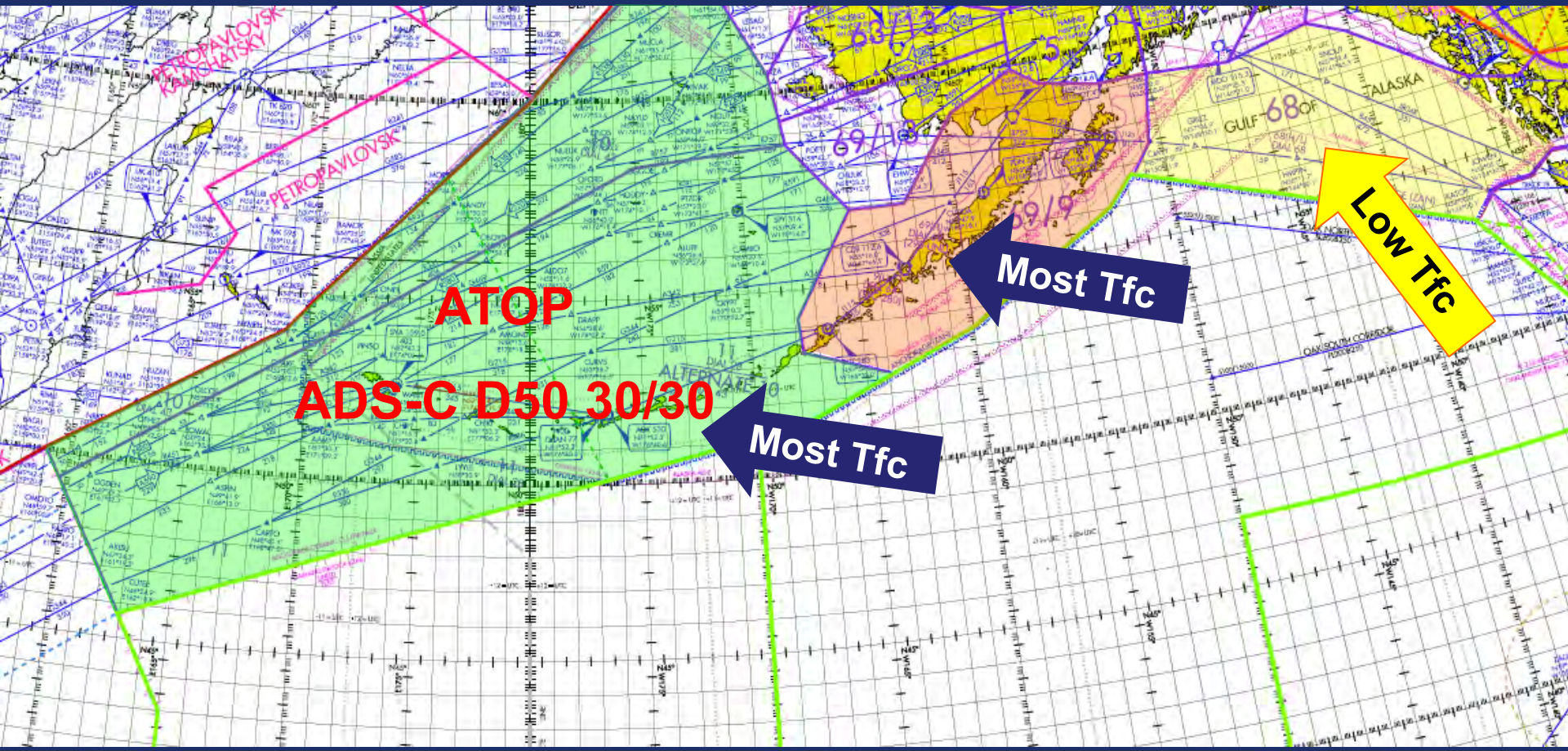
Moving Forward C/E Trial

- When the PACOTS Tracks C and E would merge, Oakland will coordinate with the next facility for the use of Non-Standard Altitudes for the next day.
- If approval for the use of the necessary Non-Standard altitudes can be obtained, the tracks will be published with a merge.
- If approval for the use of the necessary Non-Standard altitudes cannot be obtained, the tracks will be published without a merge in the Oakland FIR.

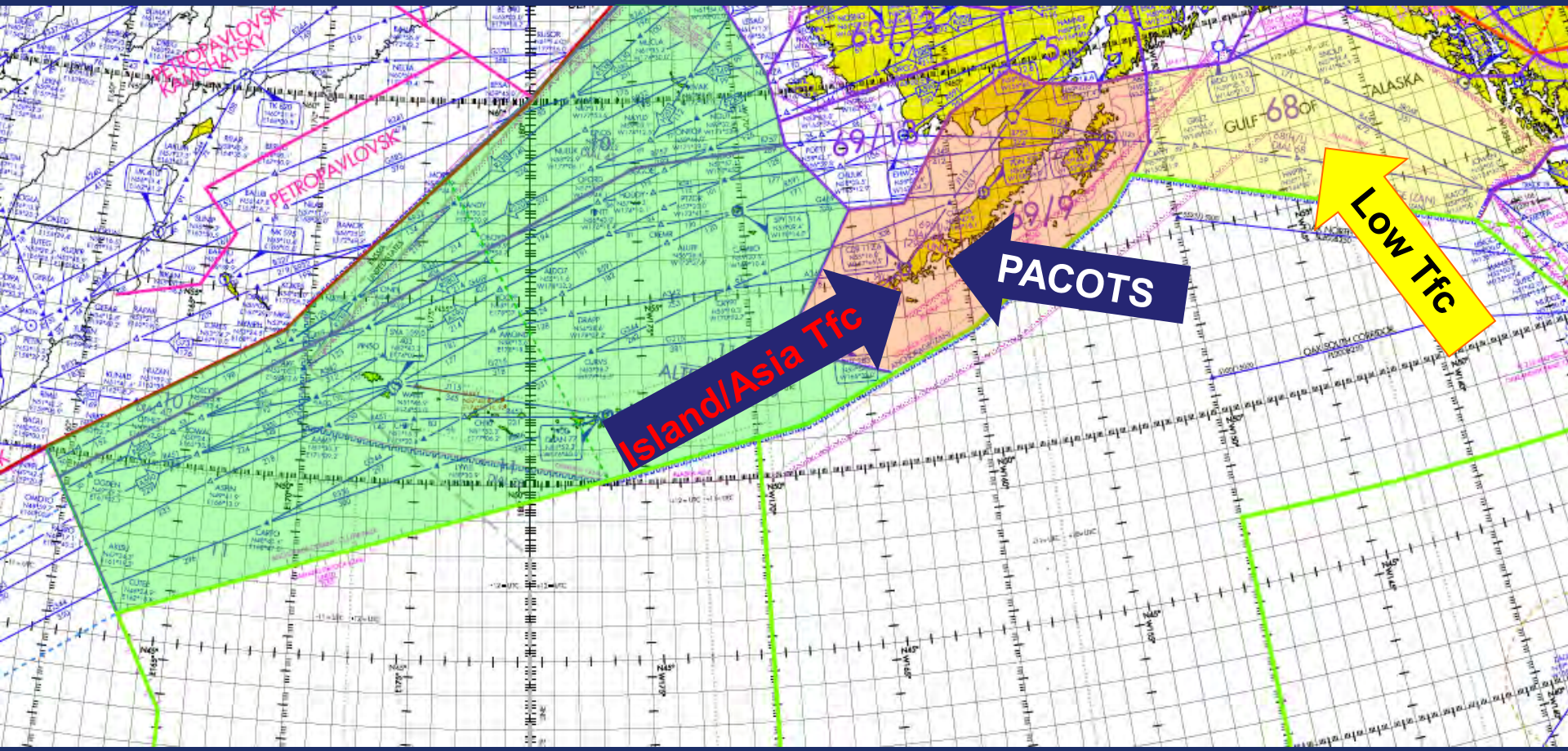
Anchorage ADS-C Distance Based Separation



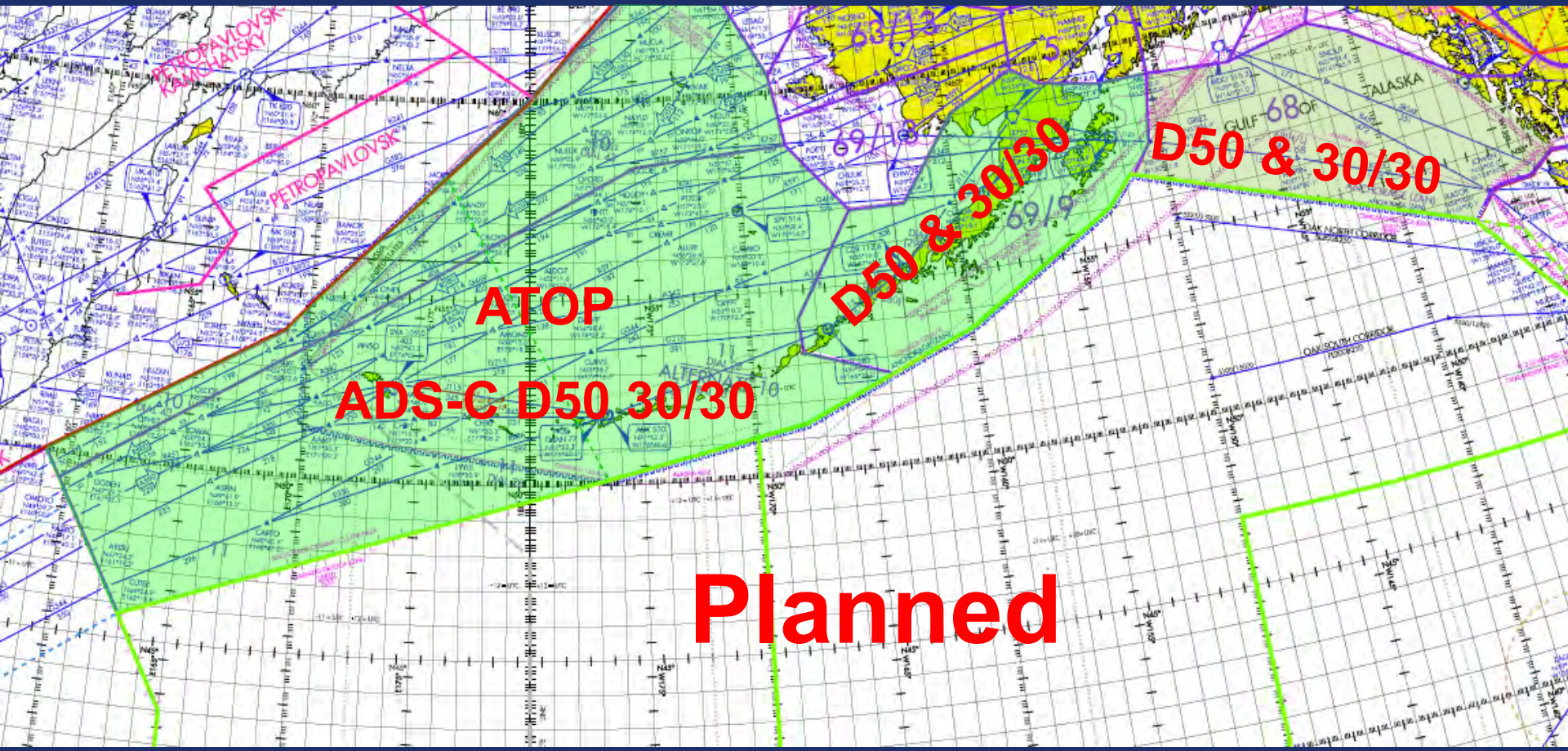
Anchorage ADS-C Distance Based Separation



Anchorage ADS-C Distance Based Separation



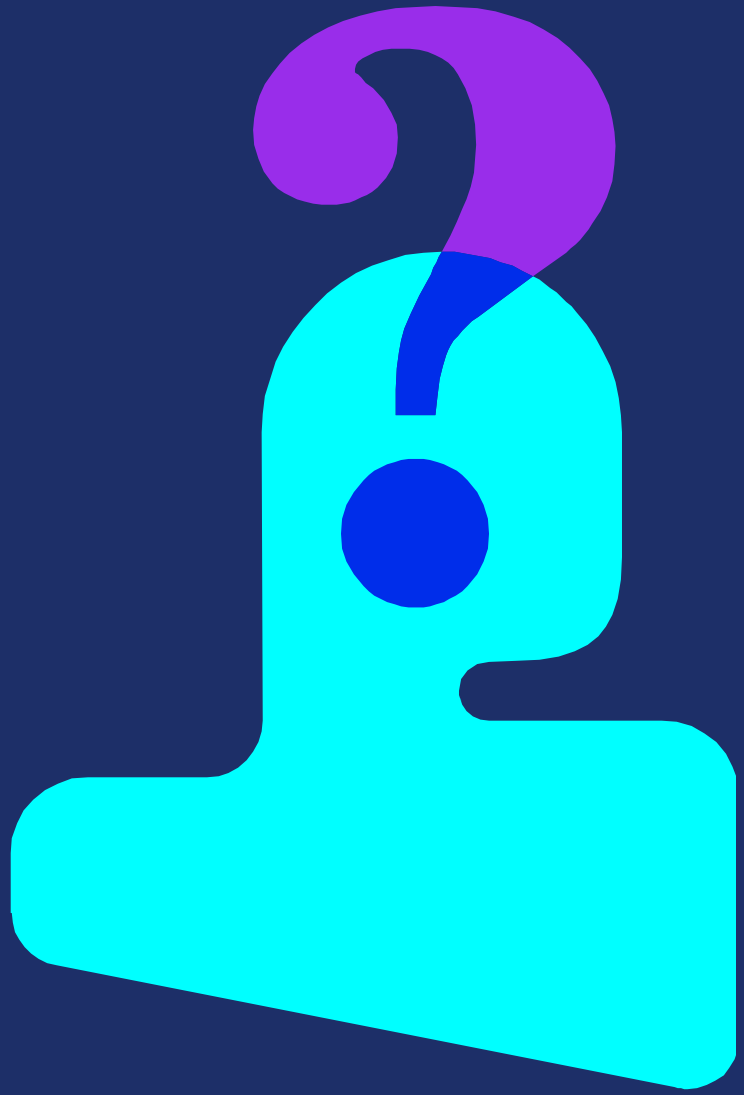
Anchorage ADS-C Distance Based Separation



Moving Forward C/E Trial

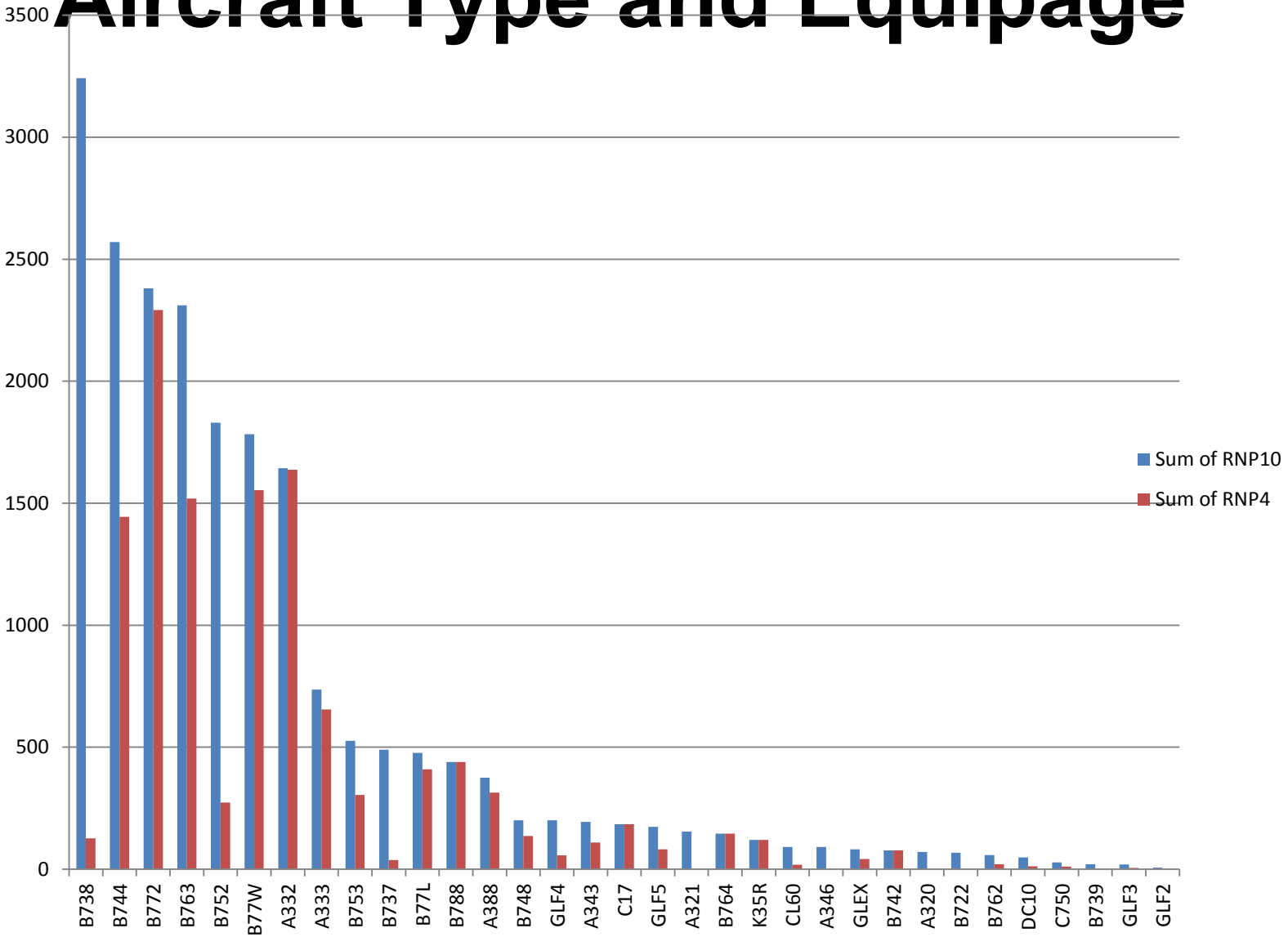
- **Tentative Resume Date 02/12/2014**

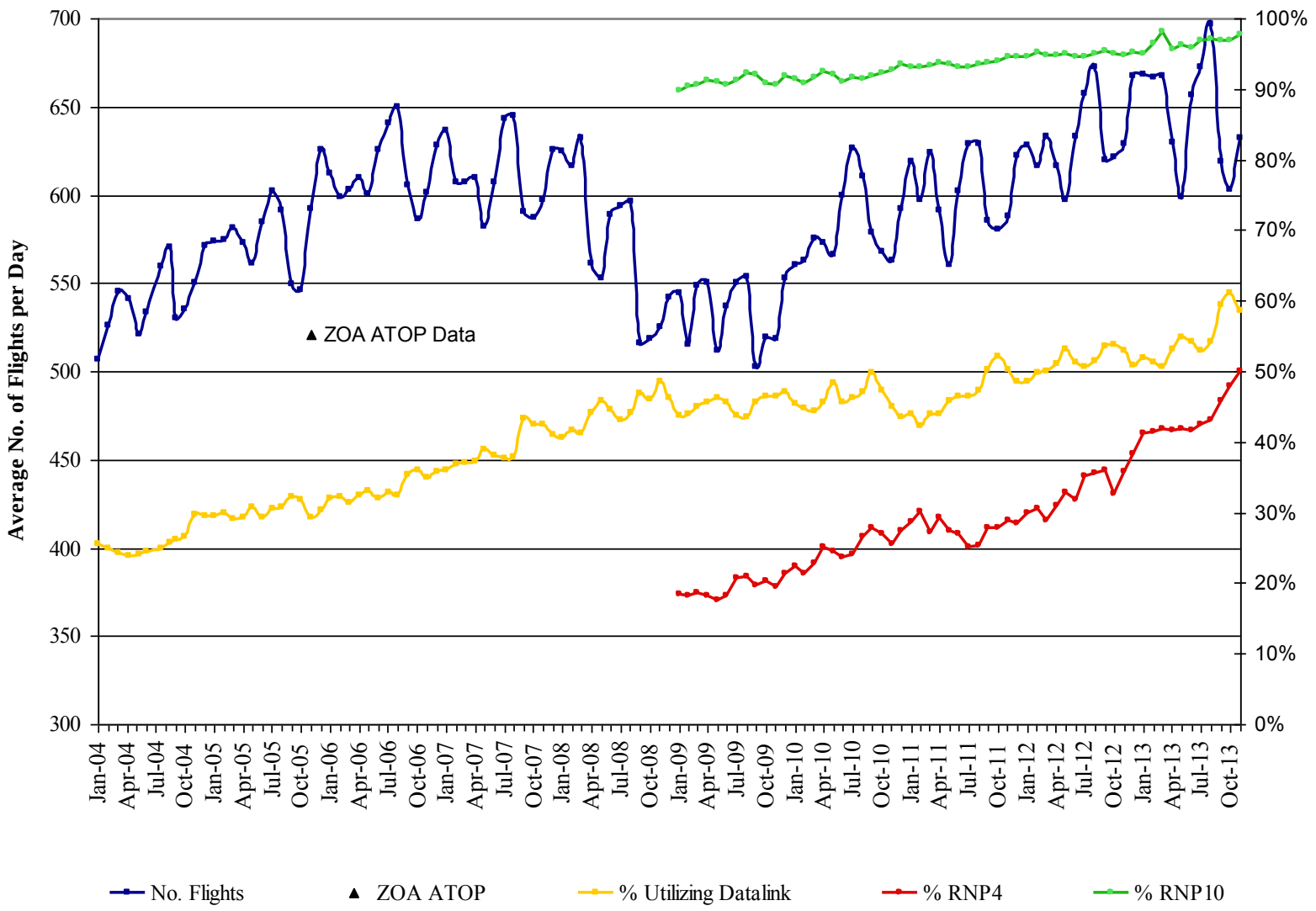
PACOTS MERGED TRACK DISCUSSION

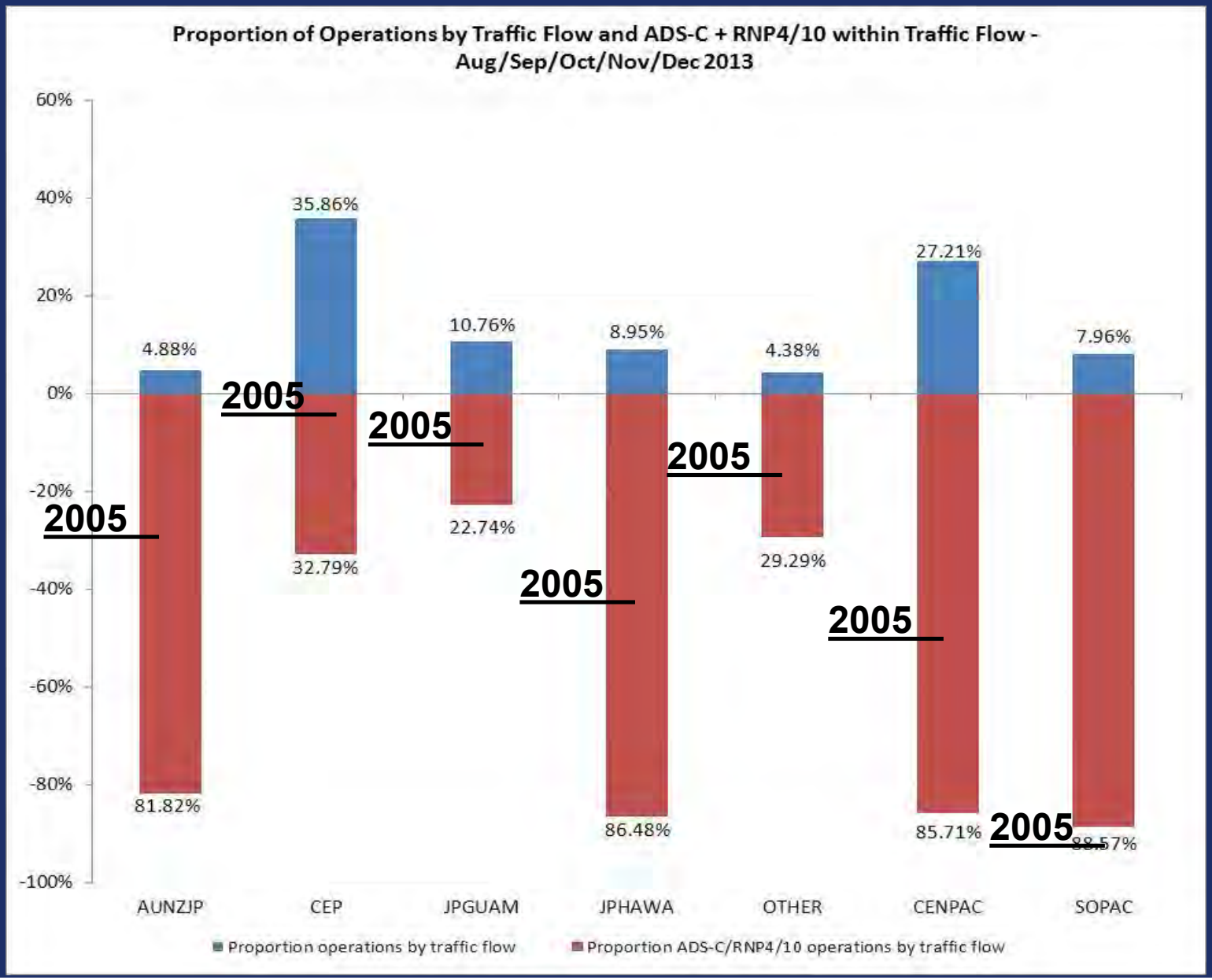


Oceanic Equipage and Separation Standards

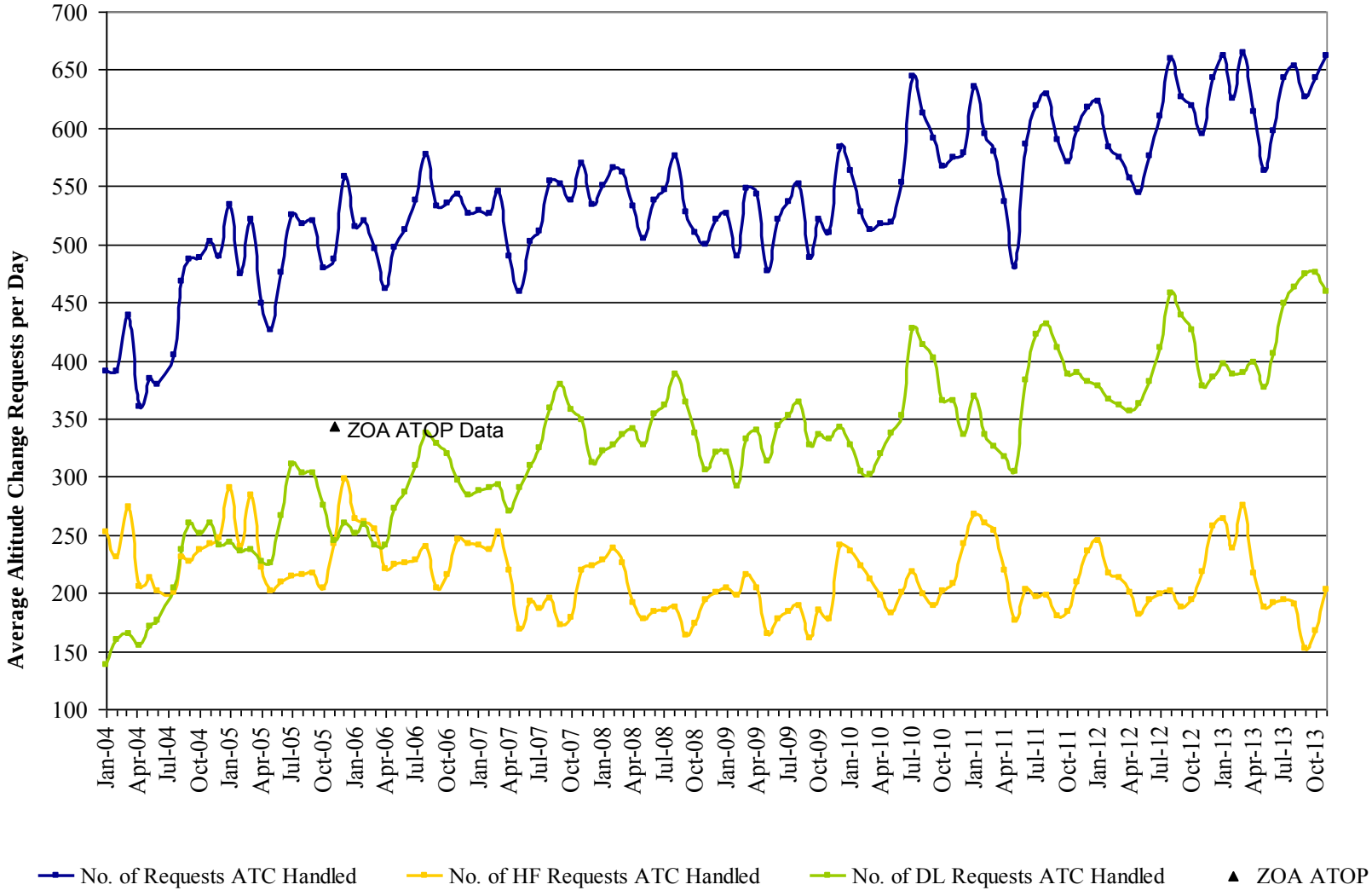
Aircraft Type and Equipage



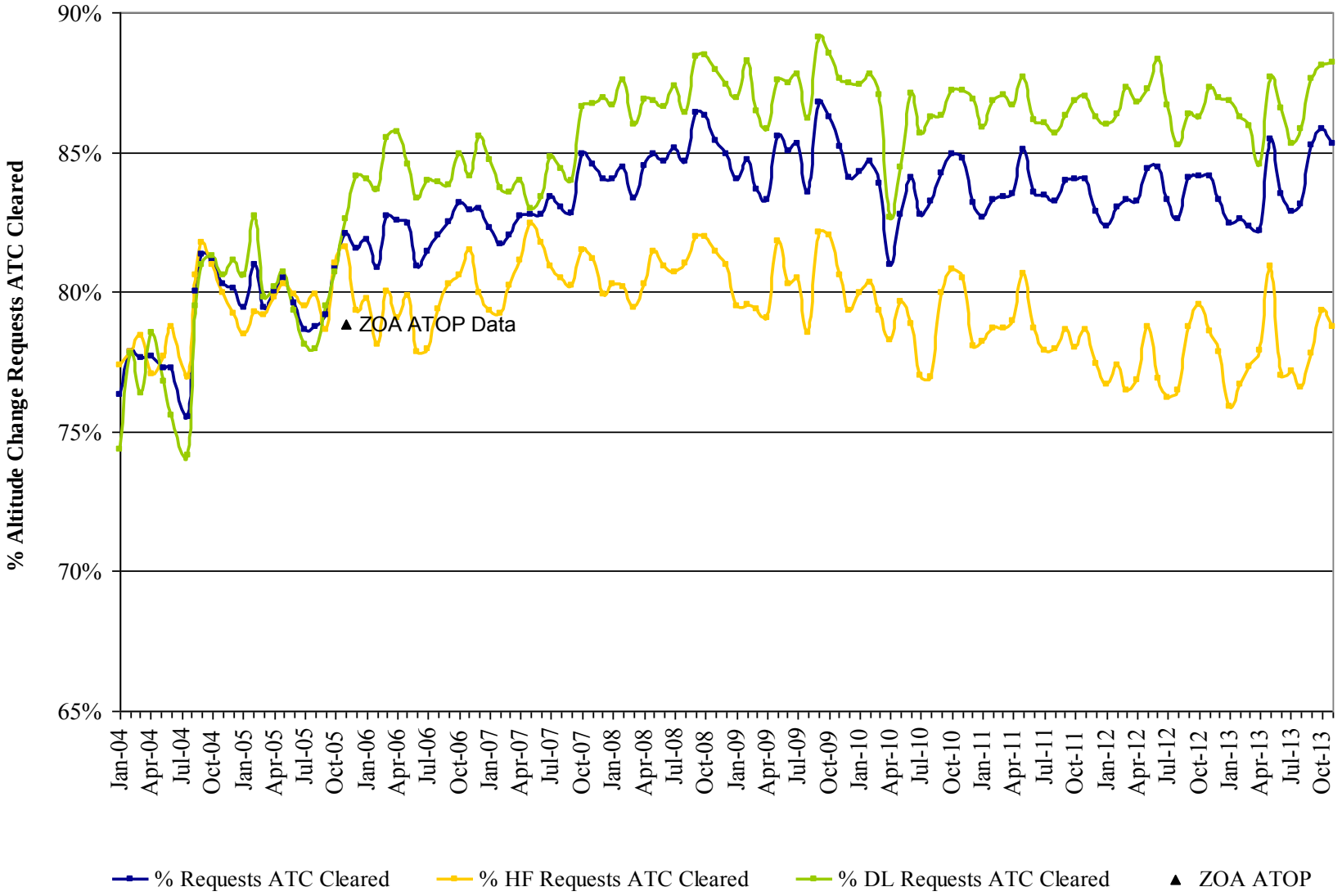

ZOA Flights & Equipment Utilization
Average No. of Flights per Day
700
650
600
550
500
450
400
350
300
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
▲ ZOA ATOP Data
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Apr-05
Jul-05
Oct-05
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Apr-09
Jul-09
Oct-09
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
No. Flights
▲ ZOA ATOP
% Utilizing Datalink
% RNP4
% RNP10

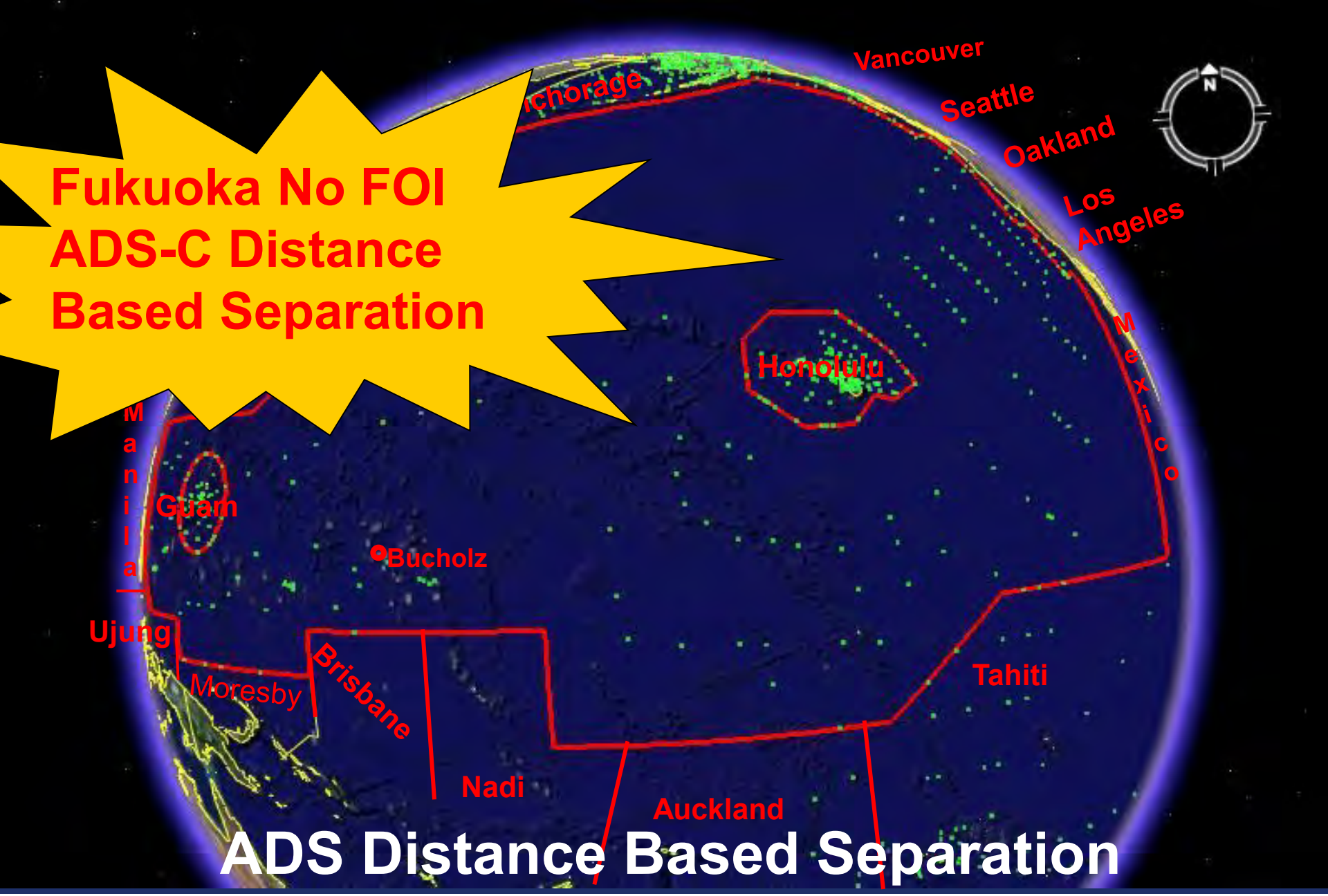

Proportion of Operations by Traffic Flow and ADS-C + RNP4/10 within Traffic Flow - Aug/Sep/Oct/Nov/Dec 2013
60%
40%
20%
0%
-20%
-40%
-60%
-80%
-100%
4.88%
81.82%
35.86%
32.79%
10.76%
22.74%
8.95%
86.48%
4.38%
29.29%
27.21%
85.71%
7.96%
2005
AUNZJP
CEP
JPGUAM
JPHAWA
OTHER
CENPAC
SOPAC
Proportion operations by traffic flow
Proportion ADS-C/RNP4/10 operations by traffic flow

ZOA Altitude Change Requests ATC Handled



ZOA % Altitude Change Requests ATC Cleared

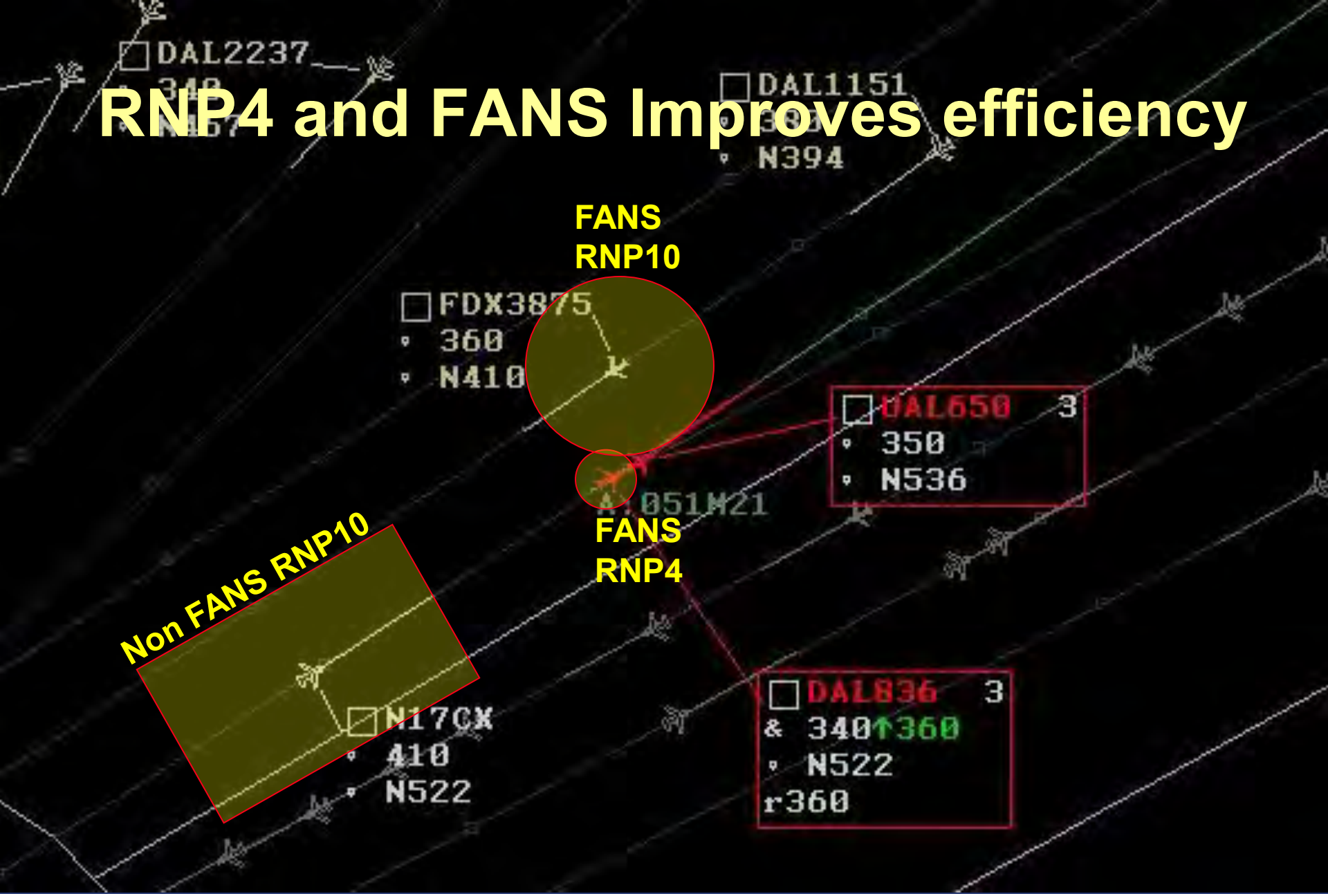



Fukuoka No FOI
ADS-C Distance
Based Separation
Vancouver
Seattle
Oakland
Los Angeles
Mexico
Honolulu
Manila
Guam
Bucholz
Ujung
Moresby
Brisbane
Nadi
Auckland
Tahiti
N
ADS Distance Based Separation

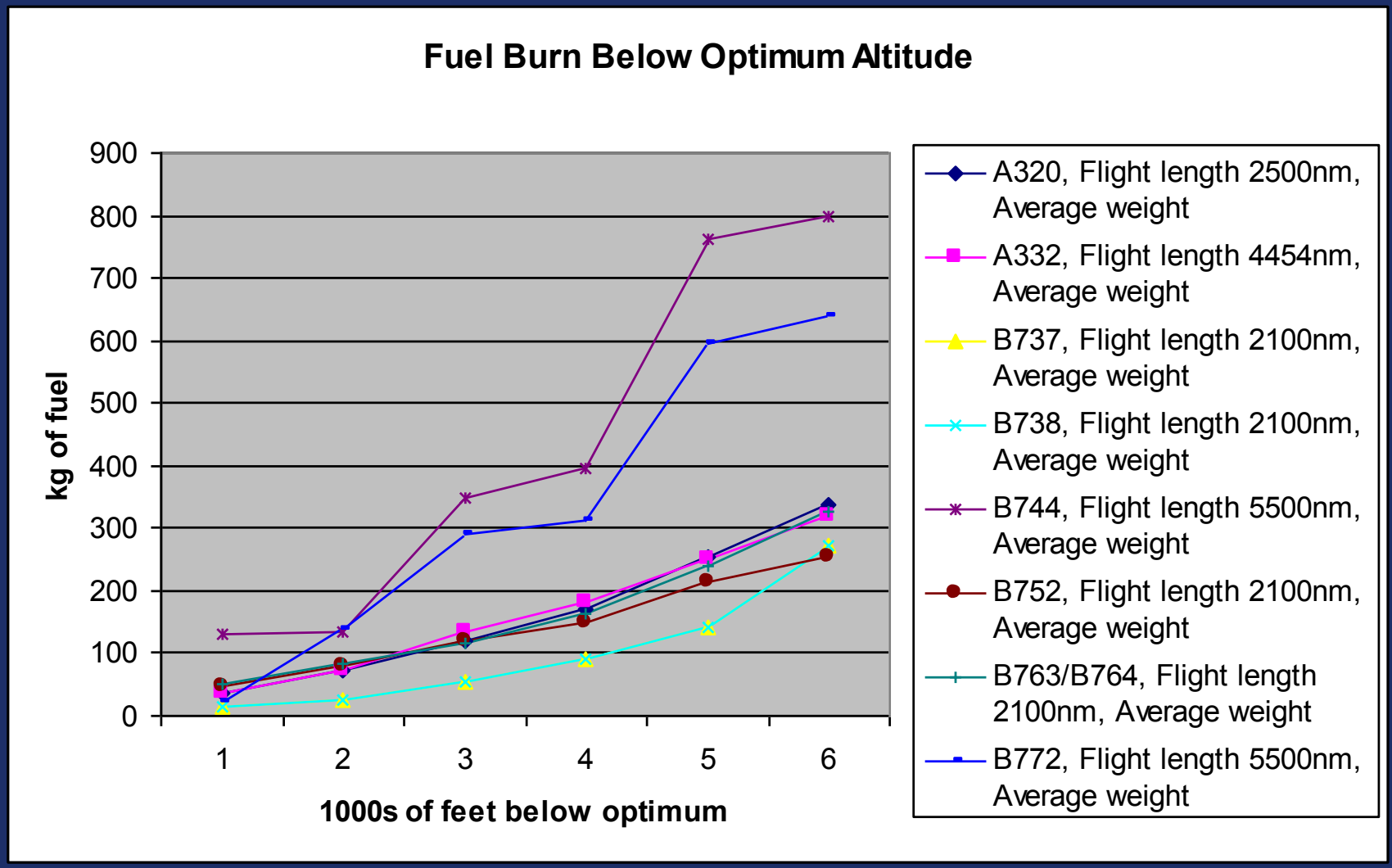
Lost Fuel Burn Savings

The following slides identify denied aircraft requests for climb to optimum altitudes and places a value on the increased fuel burn due to lack of FANS equipment and RNP certification

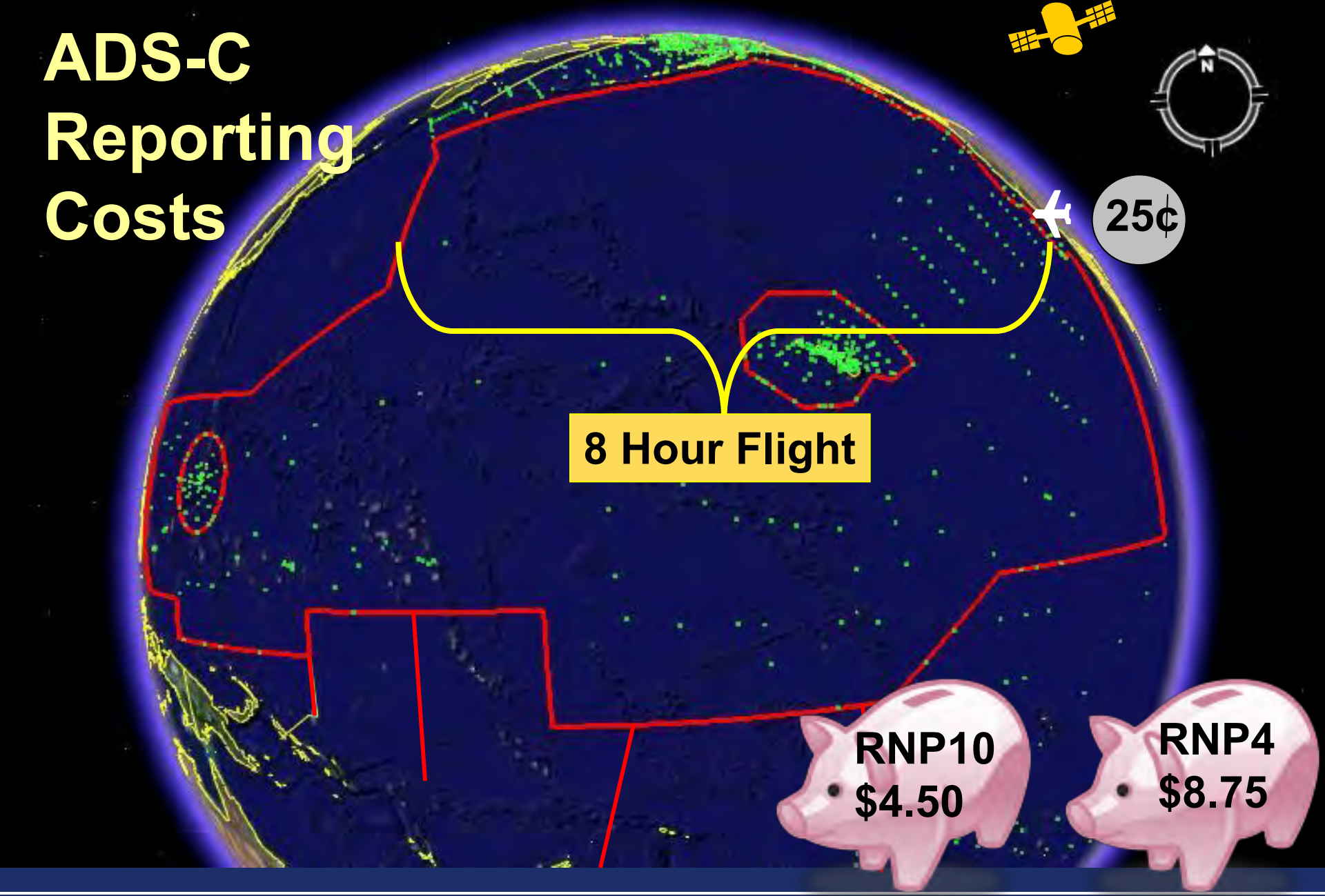
RNP4 and FANS Improves efficiency



Impact of Denied Altitude Change Requests



ADS-C Reporting Costs



ADS-C Reporting Costs

Request F330

F320

F310

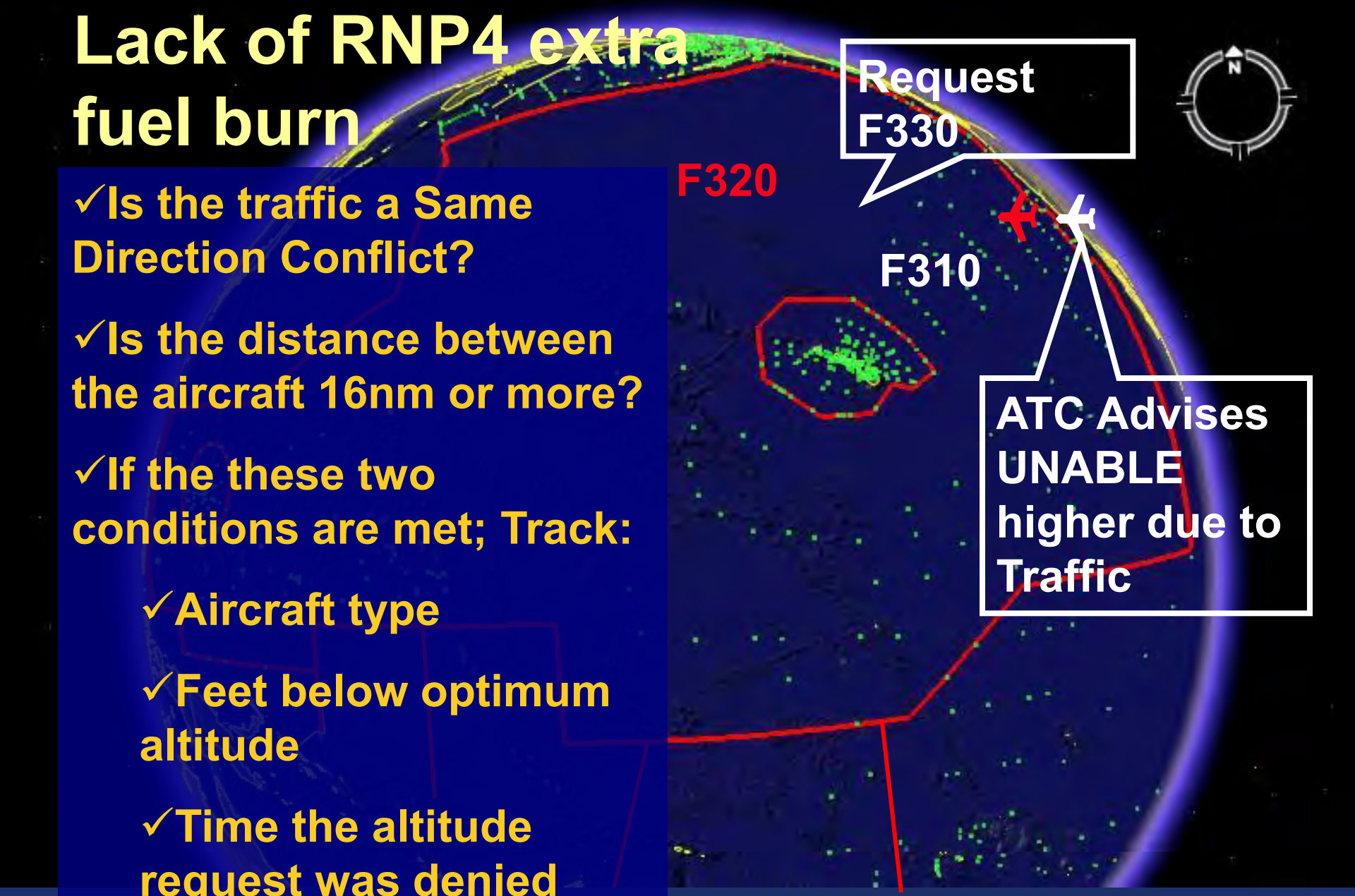
16 nm

ATC Advises UNABLE higher due to Traffic

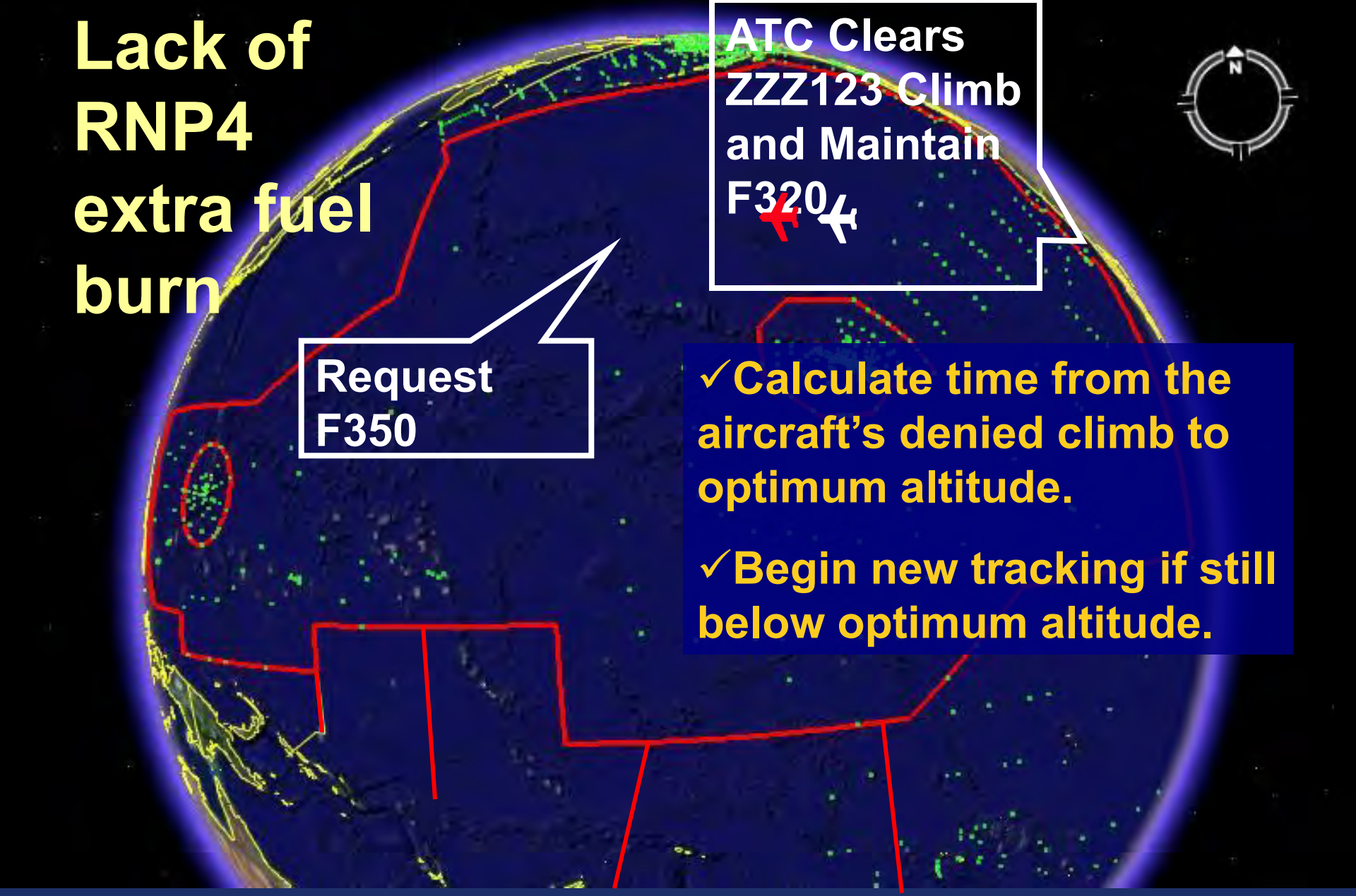
ADS Savings $4.25

Lack of RNP4 extra fuel burn

- ✓Is the traffic a Same Direction Conflict?
- ✓Is the distance between the aircraft 16nm or more?
- ✓If the these two conditions are met; Track:
  - ✓Aircraft type
  - ✓Feet below optimum altitude
  - ✓Time the altitude request was denied

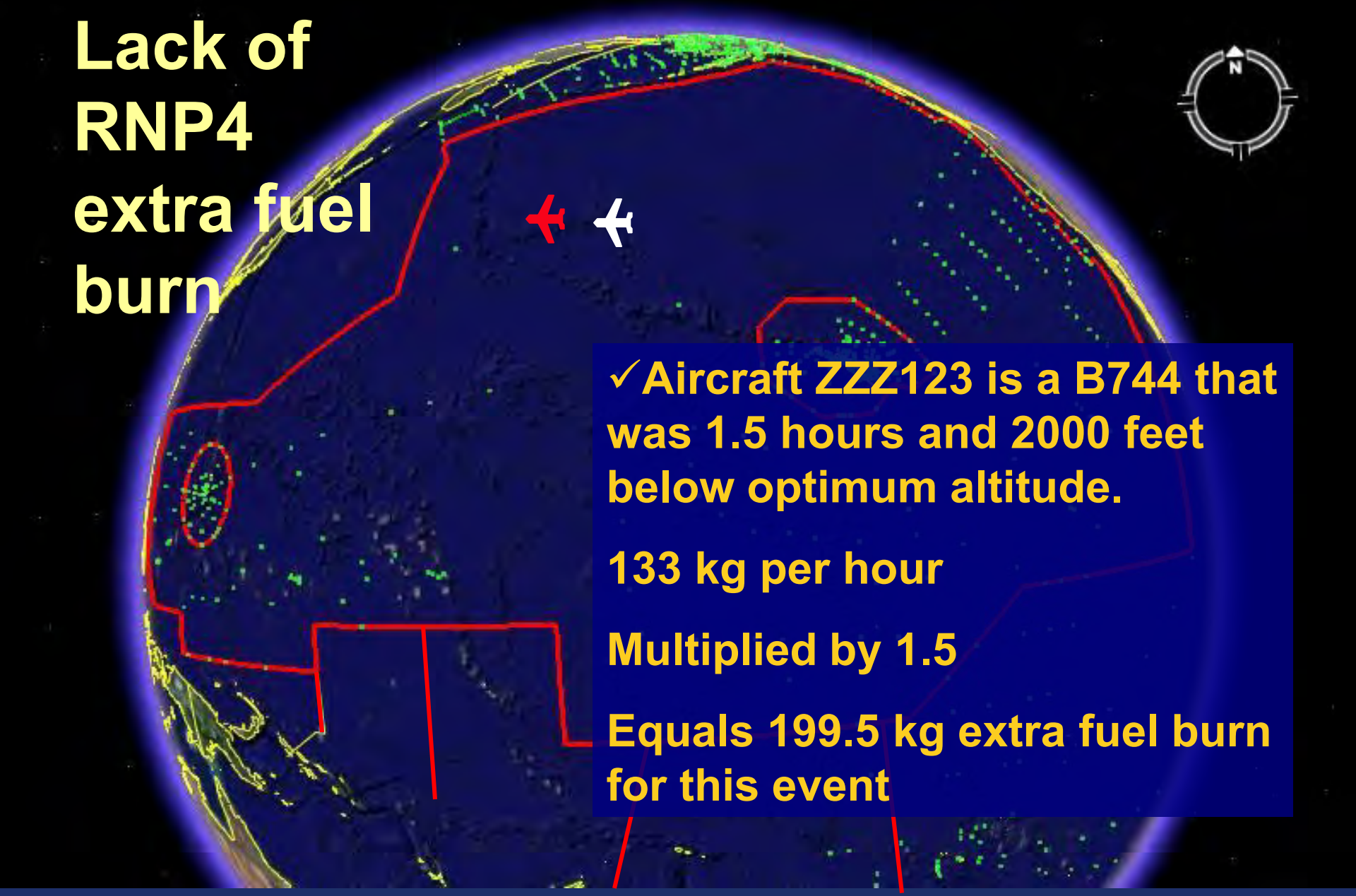


Lack of RNP4 extra fuel burn

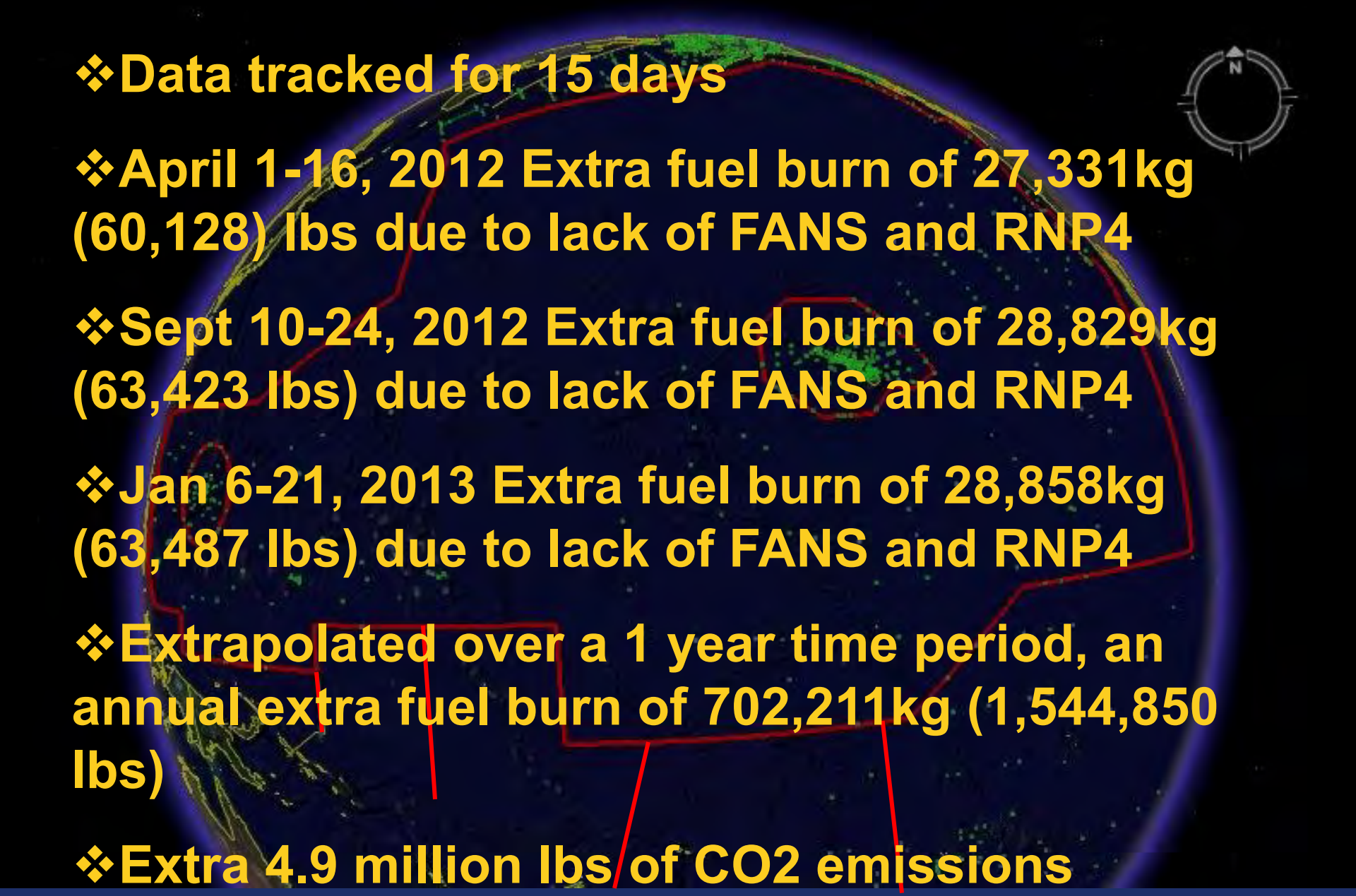


- ✓Calculate time from the aircraft's denied climb to optimum altitude.
- ✓Begin new tracking if still below optimum altitude.

Lack of RNP4 extra fuel burn



- ✓Aircraft ZZZ123 is a B744 that was 1.5 hours and 2000 feet below optimum altitude.
- 133 kg per hour
- Multiplied by 1.5
- Equals 199.5 kg extra fuel burn for this event



- Data tracked for 15 days
- April 1-16, 2012 Extra fuel burn of 27,331kg (60,128) lbs due to lack of FANS and RNP4
- Sept 10-24, 2012 Extra fuel burn of 28,829kg (63,423 lbs) due to lack of FANS and RNP4
- Jan 6-21, 2013 Extra fuel burn of 28,858kg (63,487 lbs) due to lack of FANS and RNP4
- Extrapolated over a 1 year time period, an annual extra fuel burn of 702,211kg (1,544,850 lbs)
- Extra 4.9 million lbs of CO_2 emissions

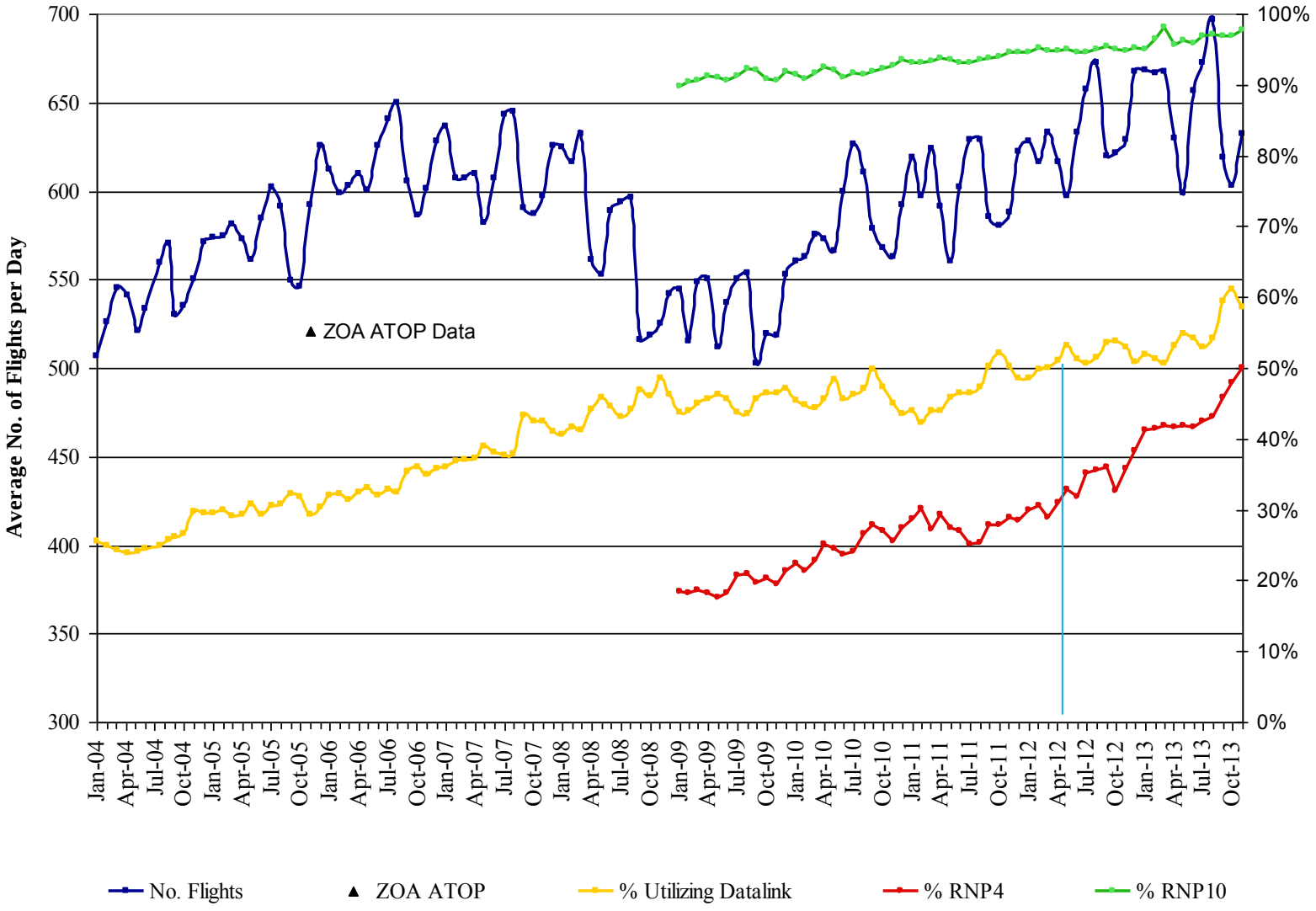
Lack of RNP4 extra fuel burn

- Data tracked for 15 days (Sept 1-16, 2013)
- Extra fuel burn of 21,310 kilograms (kg) (46,882 lbs) due to lack of FANS and RNP4
- Extrapolated over a 1 year time period, an annual extra fuel burn of 518,543 kg (1,140,795 lbs)
- Extra 1.6 million kg of CO_2 emissions

RNP4 Aircraft extra fuel burn

- Data tracked for 15 days (Sept 1-16, 2013)
- Extra fuel burn of 13,534 kilograms (kg) (29,744 lbs) due to lack of FANS and RNP4
- Extrapolated over a 1 year time period, an annual extra fuel burn of 329,282 kg (724,420lbs)

ZOA Flights & Equipment Utilization



Additional benefits are not tracked

- 30nm separation after two opposite direction aircraft have passed

- If an aircraft is held below optimum altitude because of traffic and does not make requests for a new optimum altitude.

Additional benefits are not tracked

- Savings that could be realized by developing route systems based on a 30nm lateral standard.

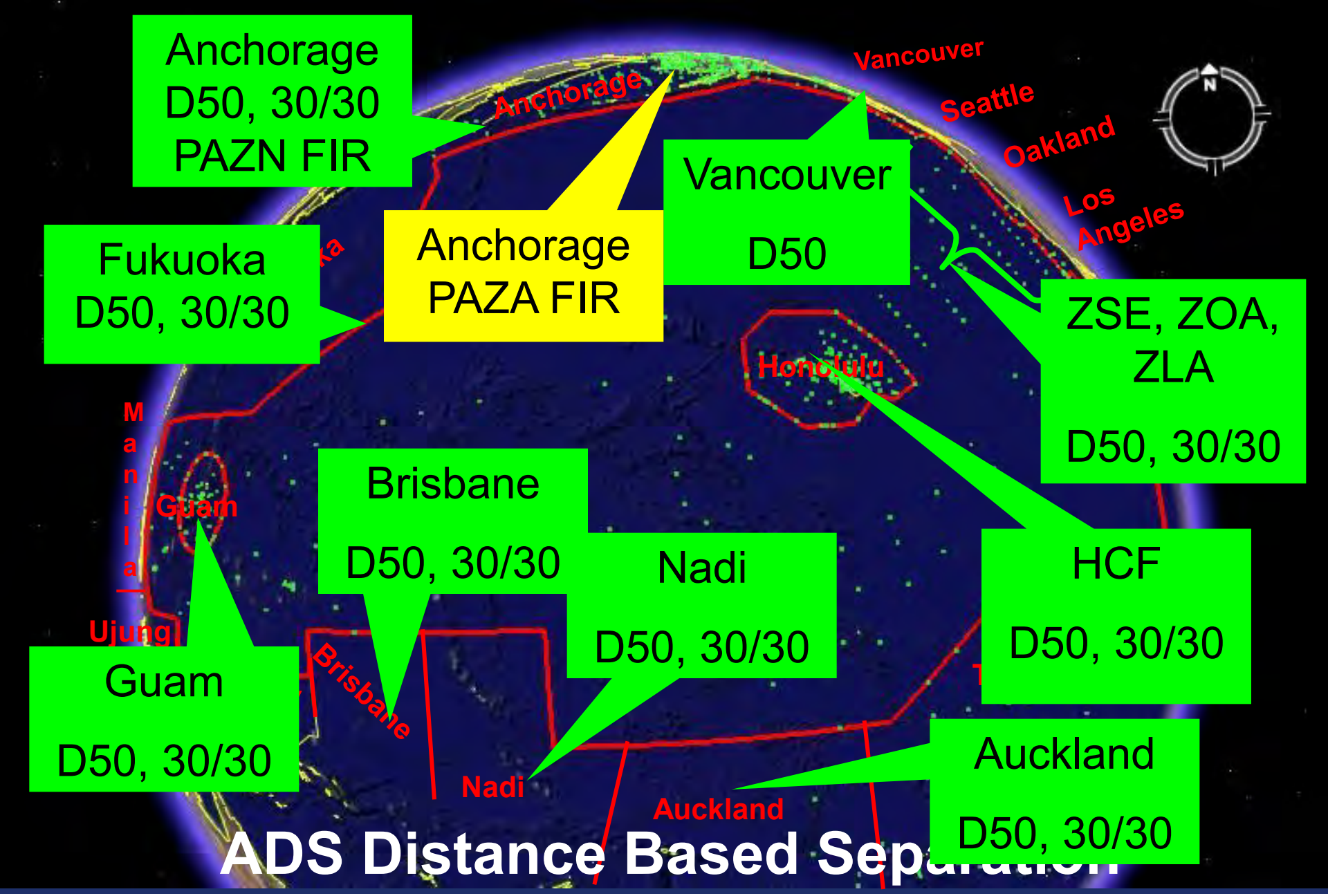
- This paper only captures the lost savings for the Oakland FIR. It would be much higher if calculated for all FIRs

Conclusion

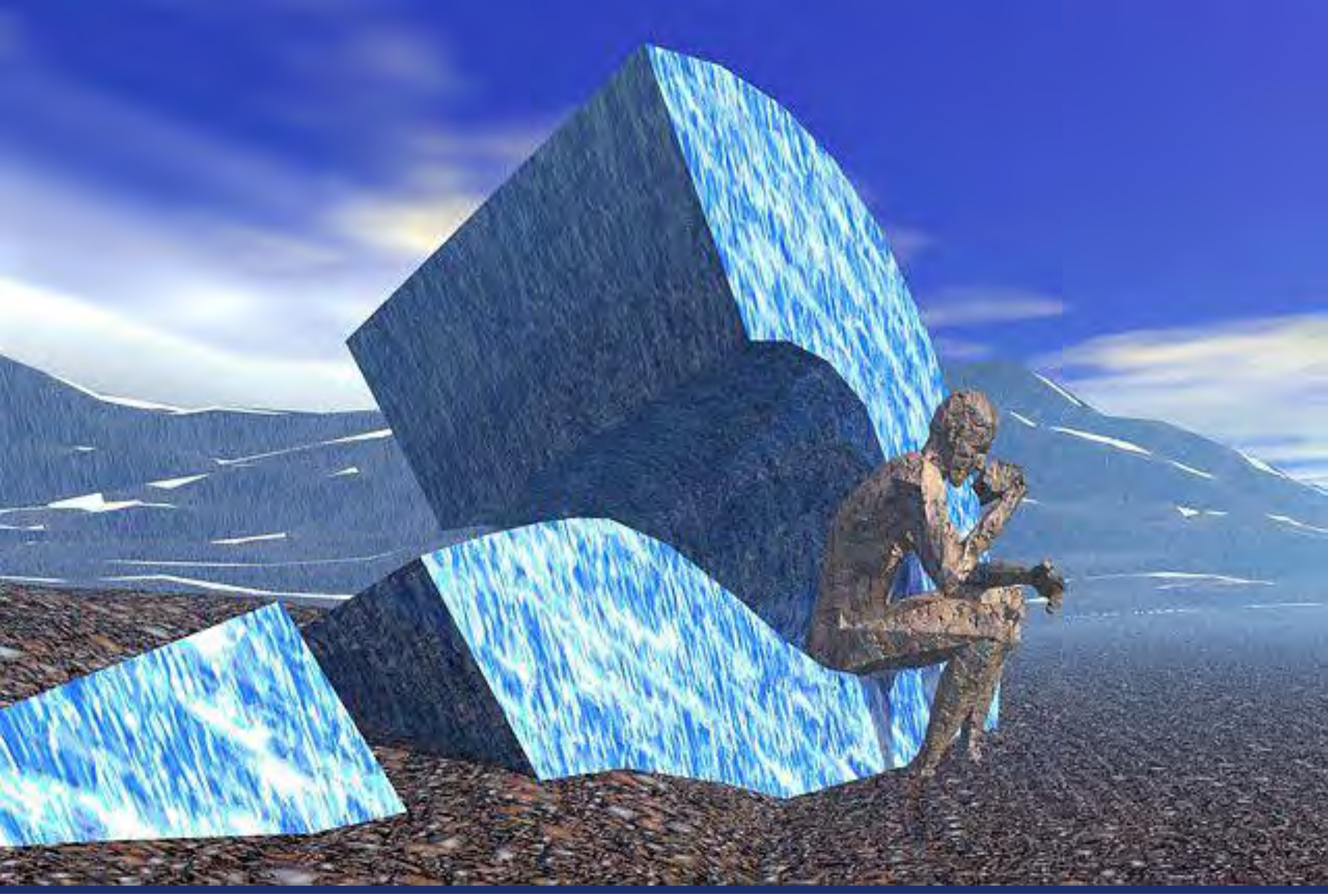
- The meeting is requested to:
  - Recognize the benefits of RNP 4 and FANS equipage; and
  - Consider certifying FANS equipped aircraft as RNP 4; and
  - Consider equipping aircraft with satellite FANS and RNP 4 certification.

Seamless Airspace Chart

ANSP	FIR	RVSM	Surveillance			Comm				RNAV/ RNP 10		10 MIN LONG NMC	RNP 4		RNP2			ADS-C CDP	ADS-B ITP	Lat Offsets for Climb or Descent	UPR	DARP		AIDC											Network Optimisation			
			Radar	ADS-C	ADS-B	CPDLC	FMC WPR	SCV	HFDL	50 NM LAT	50 NM LONG		30 NM LAT	30 NM LONG	30nm Climb-Descend	15nm VHF Lateral	8nm VHF Climb-					Accept	Initiate	CPLIEST	CDN	Weather Deviation	Offset	Block Level	Mach Speed	FANFCN	ADS forwardfill	TRU Msg	Enhanced CDM	Enhanced ABI	A-CDM	Enroute CFM	ODP/ Tailored Arrival	Optimised Climb
AirNav Indonesia	Jakarta	X	X	X																															
	Ujung Pandang	X	X	X																															
AFL Ltd	Nadi	X		X	O	X	X			X	X	X	X	X							X	X	X	X	X	X	X	X							
AirServices Australia	Brisbane (Honiara & Nauru)	X	X	X	X	X	O			X	X	X	X	X						X	X	X		X				X							
	Melbourne	X	X	X	X	X				X	X	X	X	X						X				X				X							
Airways NZ	Auckland Oceanic	X	X	X		X	X	X	X	X	X	X	X	X							X	X	X	X	X		X	X						O	O
CAAP	Manila	X	X							X																									
CAAS	Singapore	X	X	X	O	X				X	X	X																						X	
DGAC	Santiago	X																			X														
FAA	Anchorage Oceanic	X	X	X		X				X	X	X	X	X							X		X	X	X	X	X	X							
	Oakland Oceanic	X		X		X		X	X	X	X	X	X	X				O	X	X	X	X	X	X	X	X	X	X					X		X	
JCAB	Fukuoka	X	X	X		X		X		X	X	X	X	X							X	X	X	X	X	X	X	X	X	X			X	X	X	
PNG ASL	Port Moresby	X	X																		X														
SEAC-PF	Tahiti	X	X	X		X				X	X										X	X	X		X			X						X		
FAA	Anchorage Domestic FIR	X	X		X					X		X											X	X											
	Anchorage Arctic FIR	X																																	
	Guam CERAP	X	X							X	X	X	X	X								X	X	X			X								
	Honolulu Control Facility	X	X							X	X	X	X	X								X	X	X			X								
	Oakland Domestic, Seattle and Los Angeles ARTCC	X	X							X	X	X	X	X						X	X	X											X	X	X	
NavCanada	Vancouver ACC	X	X			X				X	X	X																							
SENEAM	Mazatlan FIR	X	X																																
DGAC Ecuador	Guayaquil FIR	X																																	



ADS Distance Based Separation



Flight Planned Mach Speeds

Mach Speed Variation

- Aircrews predominantly do not monitor their flown speed versus the flight planned speed.
- It does not matter whether an ATC system uses the first speed in field 15 of the FPL or accounts for the speed changes imbedded in the route of flight.

Mach Speed Variation

- The FAA has presented papers at IPACG and ISPACG which outline the dangers of unannounced speed changes.

- This issue needs attention by ICAO and a Global or Regional Procedure developed.

ICAO Annex 2 3.6.2.2 change

- *3.6.2.2 Inadvertent changes. In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:*
- *a) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.*
- *b) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.*
- *c) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 minutes from that notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.*
-
- *3.6.2.2.1 Additionally, when an ADS agreement is in place, the air traffic services unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.*

Mach Speed Variation

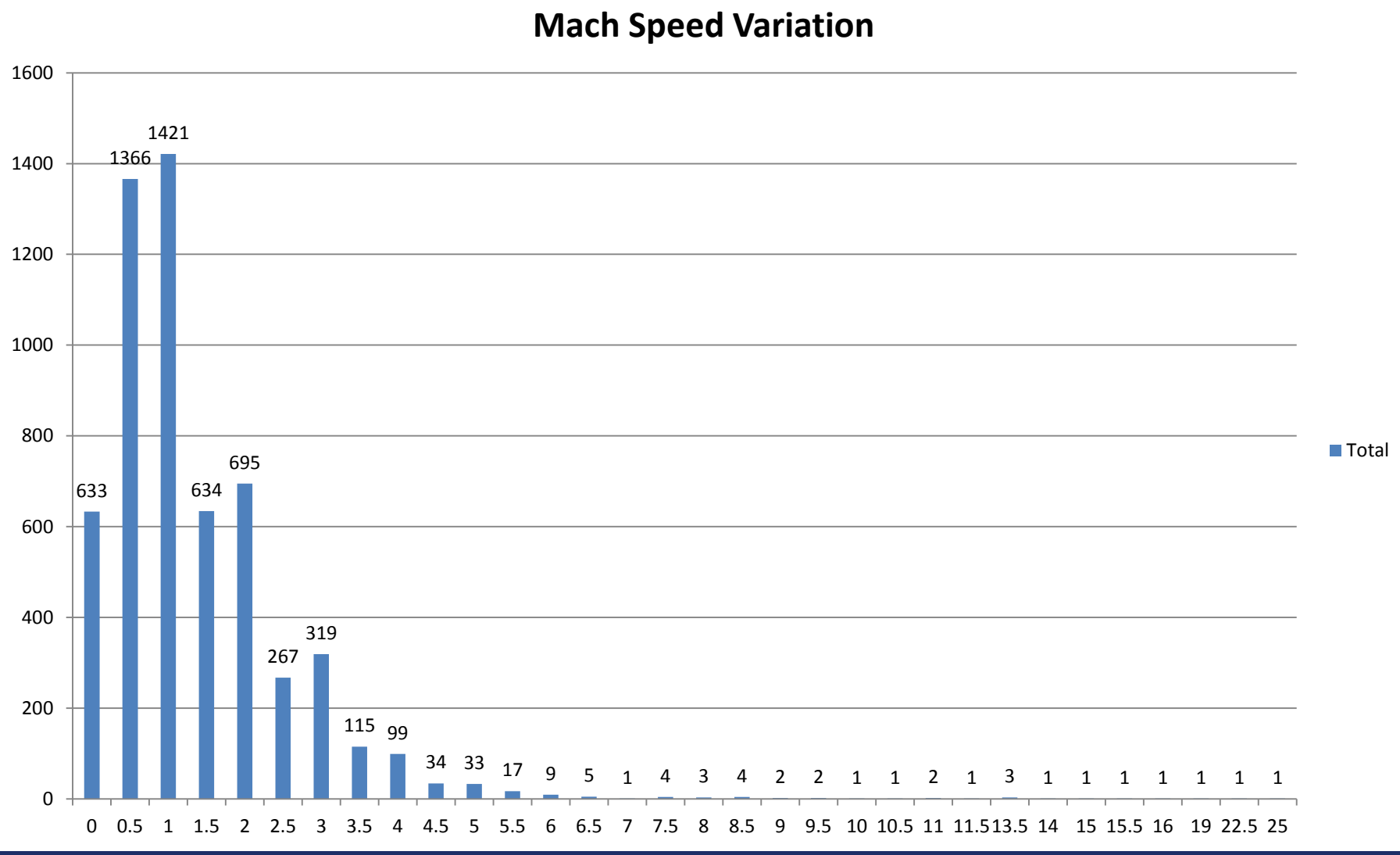
- Annex 2 change fails to fully address the issue.

- An en route aircraft at 500 knots only has to inform ATC when its true airspeed changes by 25 knots or more from the speed given in the flight plan. This allows for speed changes of 48 knots without informing ATC.

Mach Speed Variation

- In the Pacific many FIRs are applying 30nm longitudinal separation standard using an ADS-C reporting rate of 14 minutes. A 48 knot speed change by 1 aircraft could result in an 11nm closure between two aircraft between ADS-C reports.

Mach Speed Variation



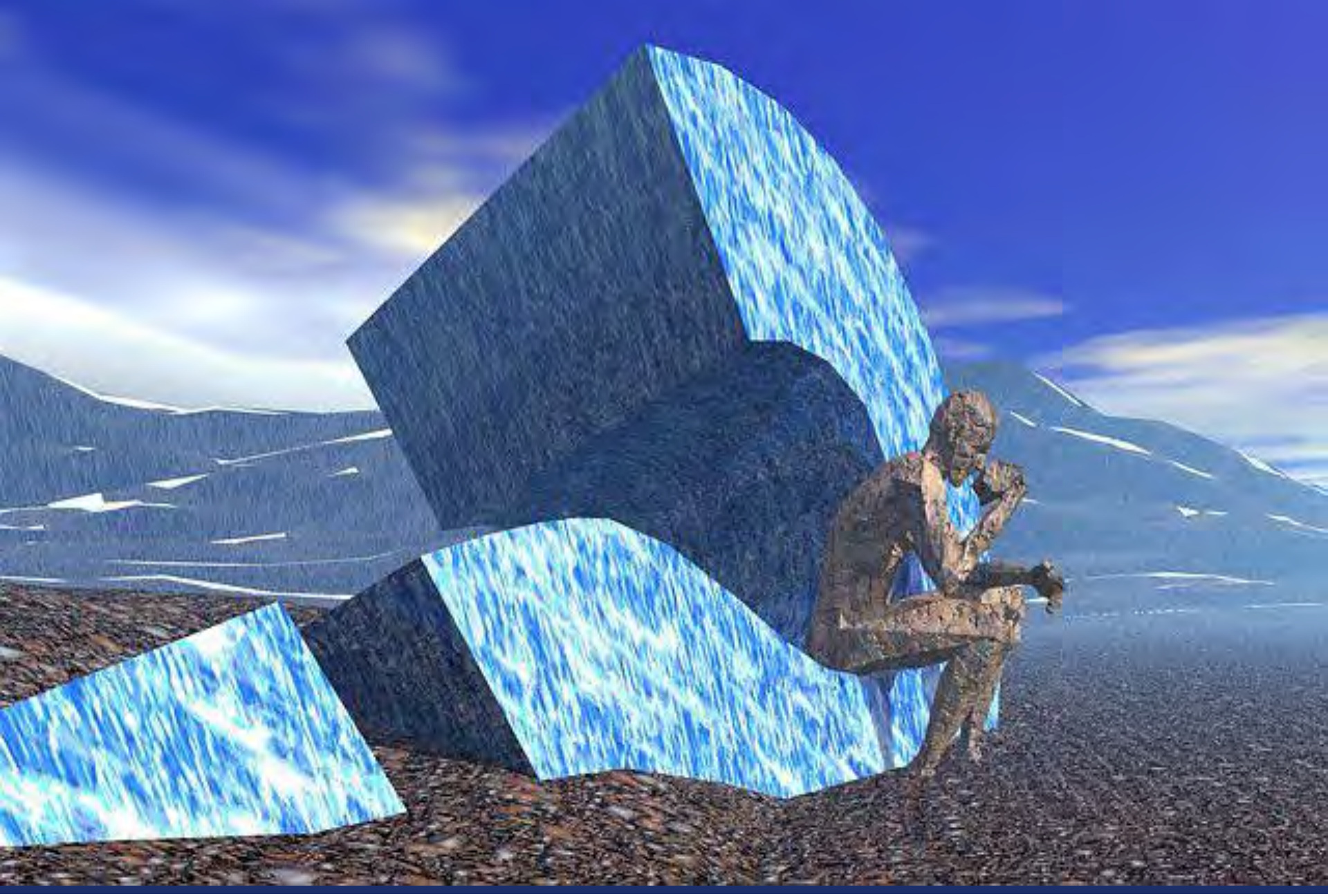
Australia AIP Amendment

- *AIP ENR 1.1 para 21:*
- *A pilot must inform ATS if the average cruising speed, either TAS or Mach whichever is applicable, between reporting points, varies or is expected to vary, by a value equal to or greater than:*
- *a. 5% TAS*
- *b. 0.01 Mach from that given in the flight plan.*

Speed Change Proposal

- Procedurally when an aircraft wanted to change by .01 Mach number, they could downlink DM18 with the requested speed (Mach number).
- If ATC required a speed assignment for separation, an appropriate speed assignment would be assigned ie UM106 MAINTAIN *Speed.*

- If ATC did not require a speed assignment, the following could be Uplinked:
- UM169 Speed change to M0.84 approved
- UM222 NO SPEED RESTRICTION
- This advises the aircraft that the requested speed change is approved and UM222 should close the DM message sequence.



PARMO

Pacific Approvals Registry and Monitoring Organization

Presented By: Christine Falk

Federal Aviation Administration

PARMO

- Who? … Operated by the Separation Standards Group at the FAA Technical Center located in New Jersey
- What? …. An ICAO-endorsed EMA and RMA for Oakland and Anchorage Airspace
- Why? … EMAs and RMAs support ICAO emphasis on safety management systems, RMAs initially established to support RVSM introduction (Pacific airspace - year 2000)

PARMO

- **Regional Monitoring Agency (RMA)**
- **ICAO established RMAs to support the introduction and continued-safe use of the RVSM**
- **RMA basic responsibilities**
  - Performance Monitoring
    - Monitor aircraft height keeping performance (EGMU, AGHME, ADS-B)
  - Event Reports
    - Collect reports of any vertical deviation of 300 ft or more from expected or cleared FL from ANSPs, operators, and other sources
  - Maintain data base of operator-aircraft RVSM approvals

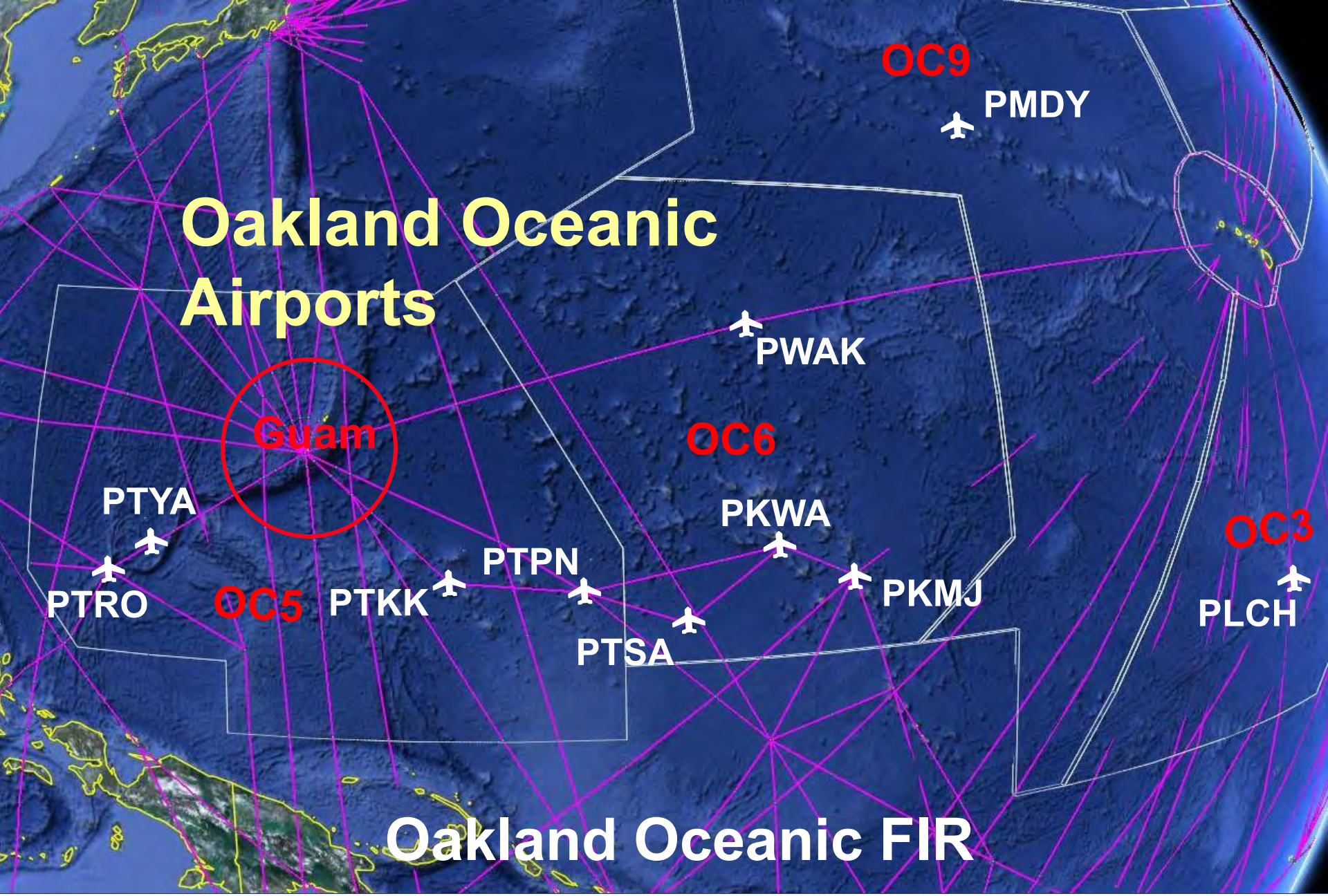
PARMO

- **Enroute Monitoring Agency (EMA)**
- **ICAO Asia Pacific Region established EMAs to support the introduction and continued-safe use of reduced horizontal separations**
- **EMA basic responsibilities**
  - Performance Monitoring
    - Lateral, longitudinal, data link performance
  - Event Reports
    - Collect reports lateral deviations of at least ½ separation standard and longitudinal time errors of 2 minutes or more from ANSPs, operators and other sources
  - Maintain data base of operator-aircraft Performance Based Navigation, Communication, Surveillance (PBNCS) approvals

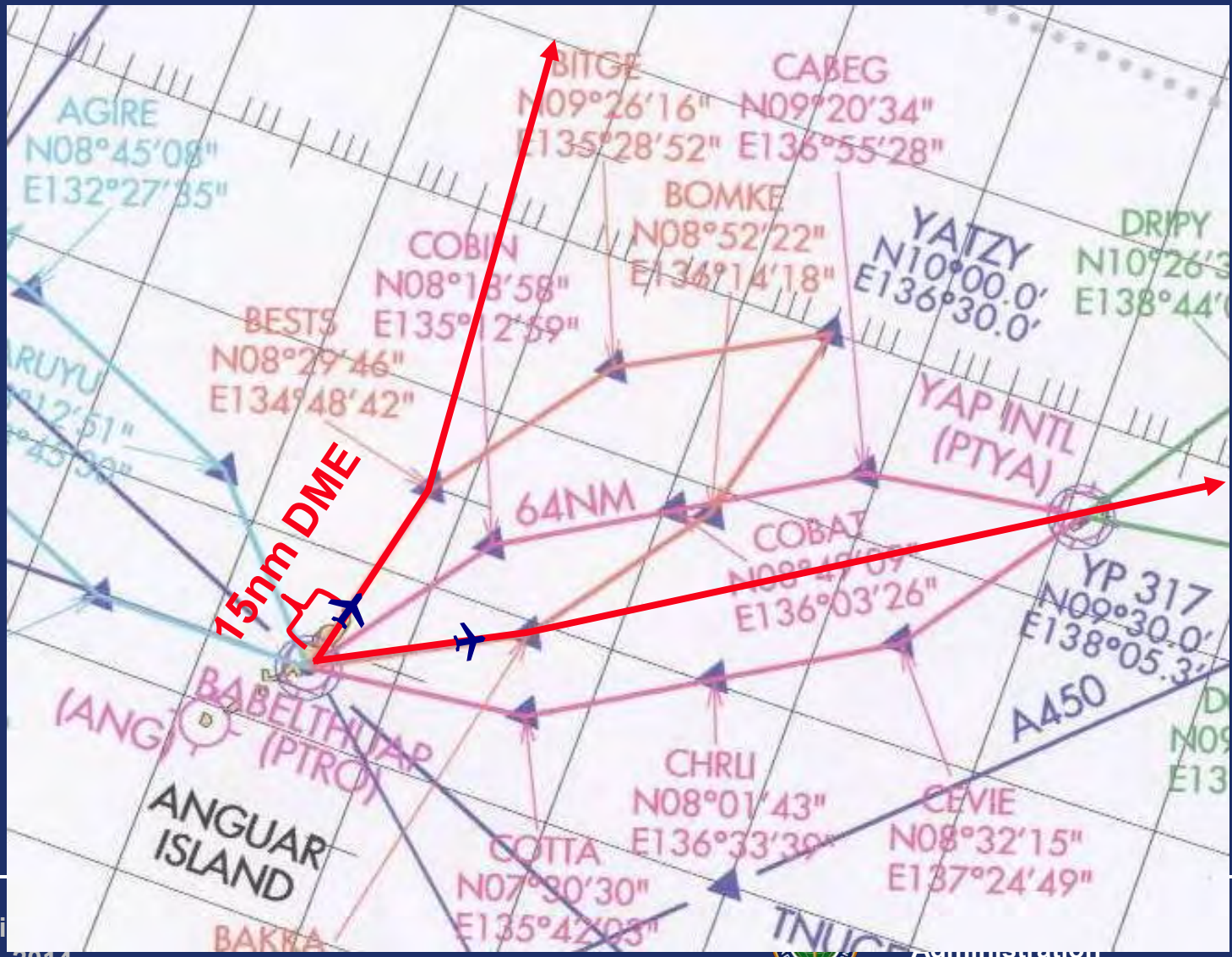
PARMO

- **Assist operators with Annex 6 height monitoring requirements**
- **Annual report to ICAO Asia Pacific Regional Airspace Safety Monitoring Advisory Group (RASMAG)**
  - Performance monitoring summary
  - High level summary of de-identified event reports
  - Current risk estimate of airspace taking into account most recent traffic information and event reports
- **RASMAG provides the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) with a consolidate report from all Asia Pacific EMAs and RMAs**

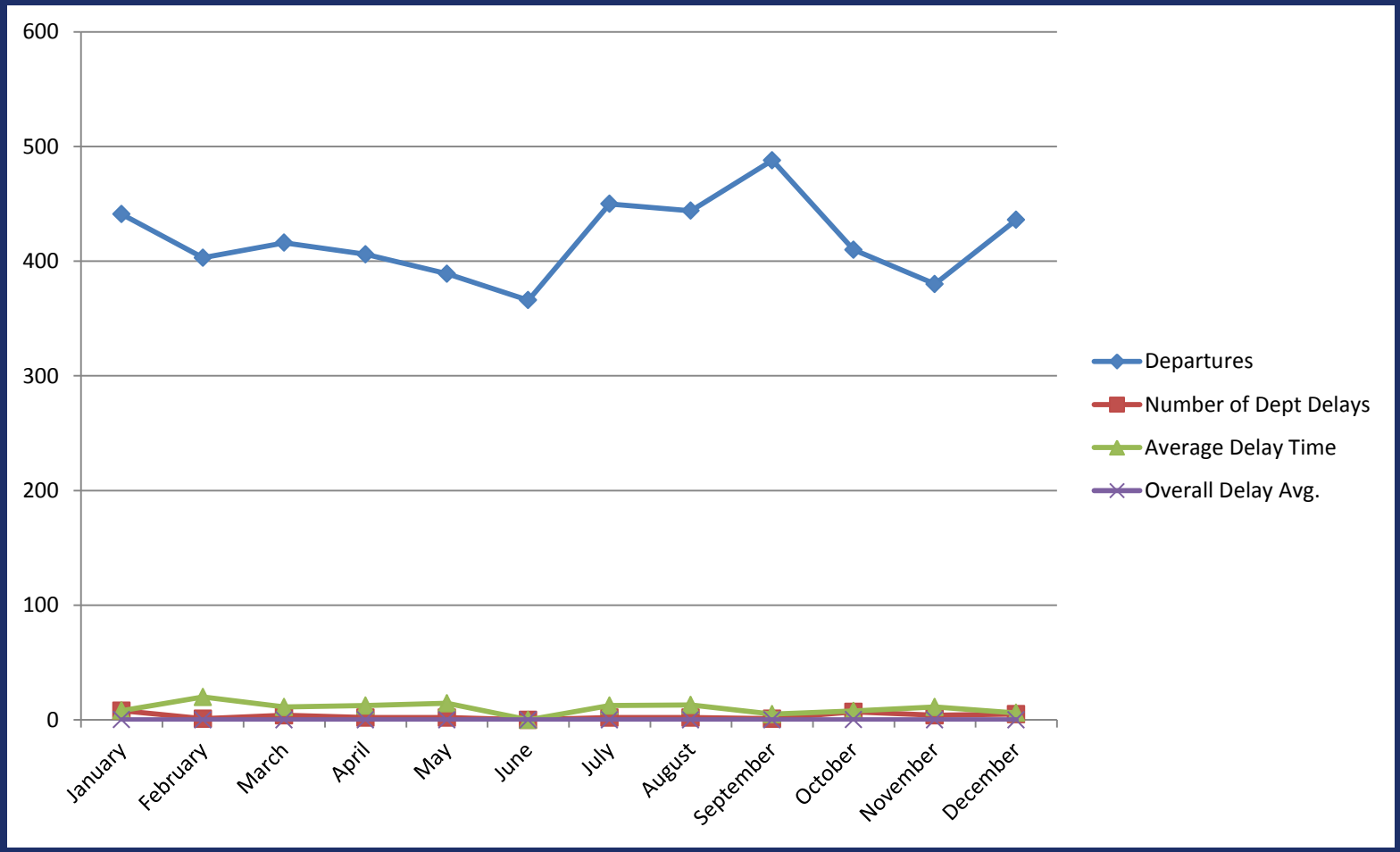
Pacific Island Traffic


OC9
PMDY
Oakland Oceanic Airports
PWAK
Guam
OC6
PTYA
PKWA
OC3
PTPN
PTRO
OC5
PTKK
PKMJ
PLCH
PTSA
Oakland Oceanic FIR

Pacific Island Airport Waypoints
Dead Reckoning Lateral Separation



2013 Island Departure Delays

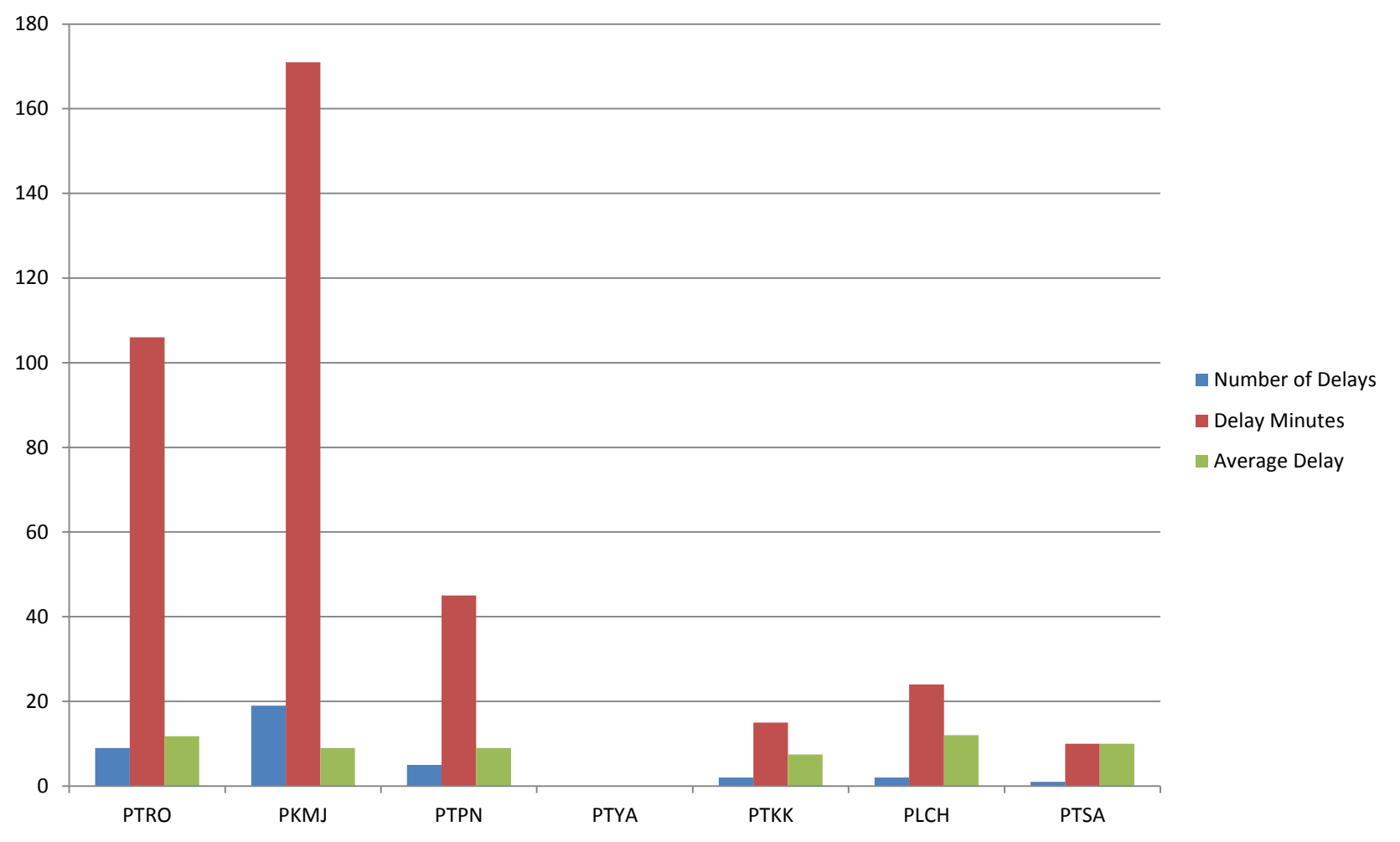


Overall average flight delay was less than a minute

Island Departure Delays

- **Departure Delays, October 2010 to March 9, 2011**
  - About 4% of departures are delayed.
  - Delayed flight average = 18 minutes
- **Departure Delays, 2013**
  - 0.007% of departures were delayed
  - Delayed flight average = 9.76 minutes

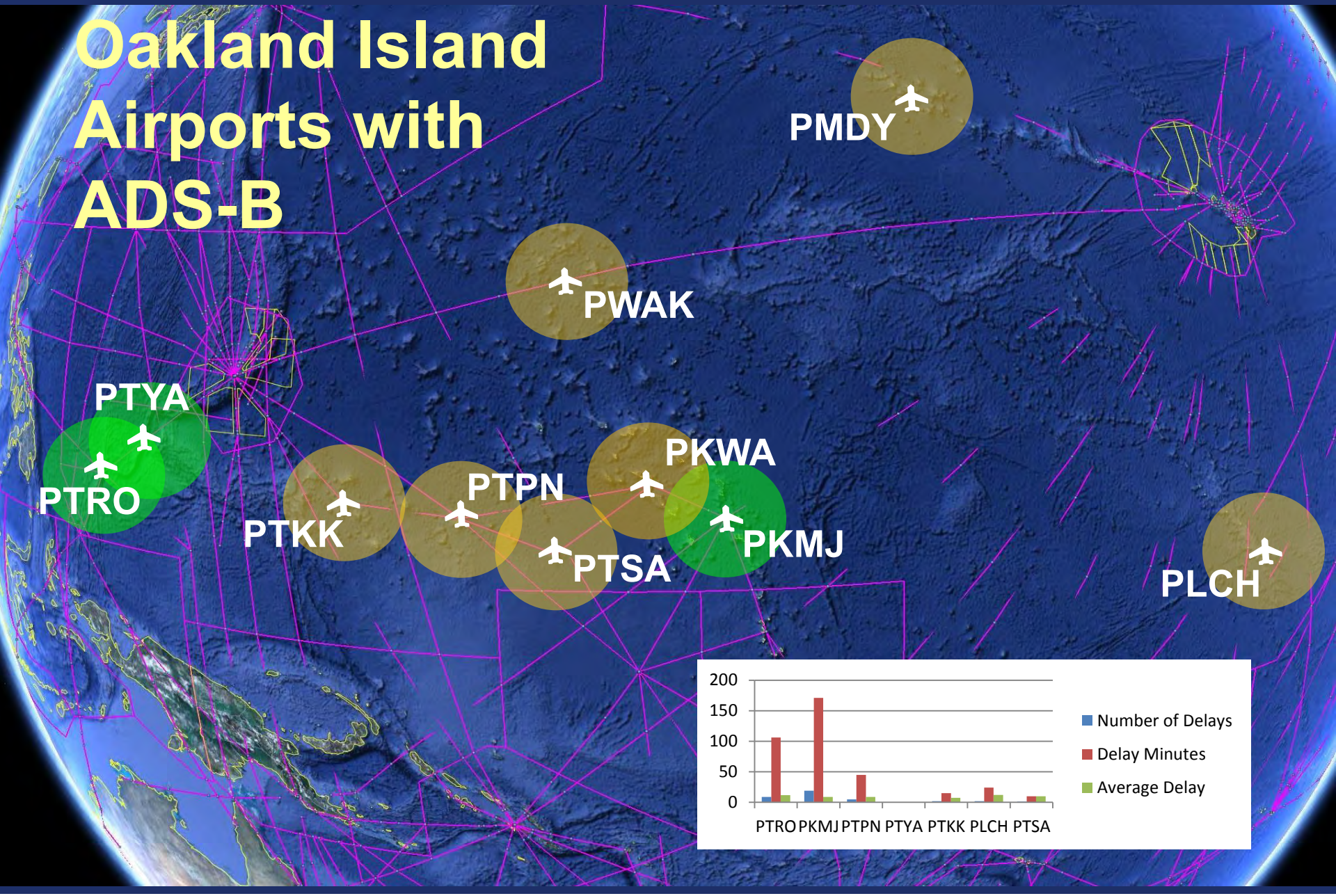
2013 Island Departure Delays



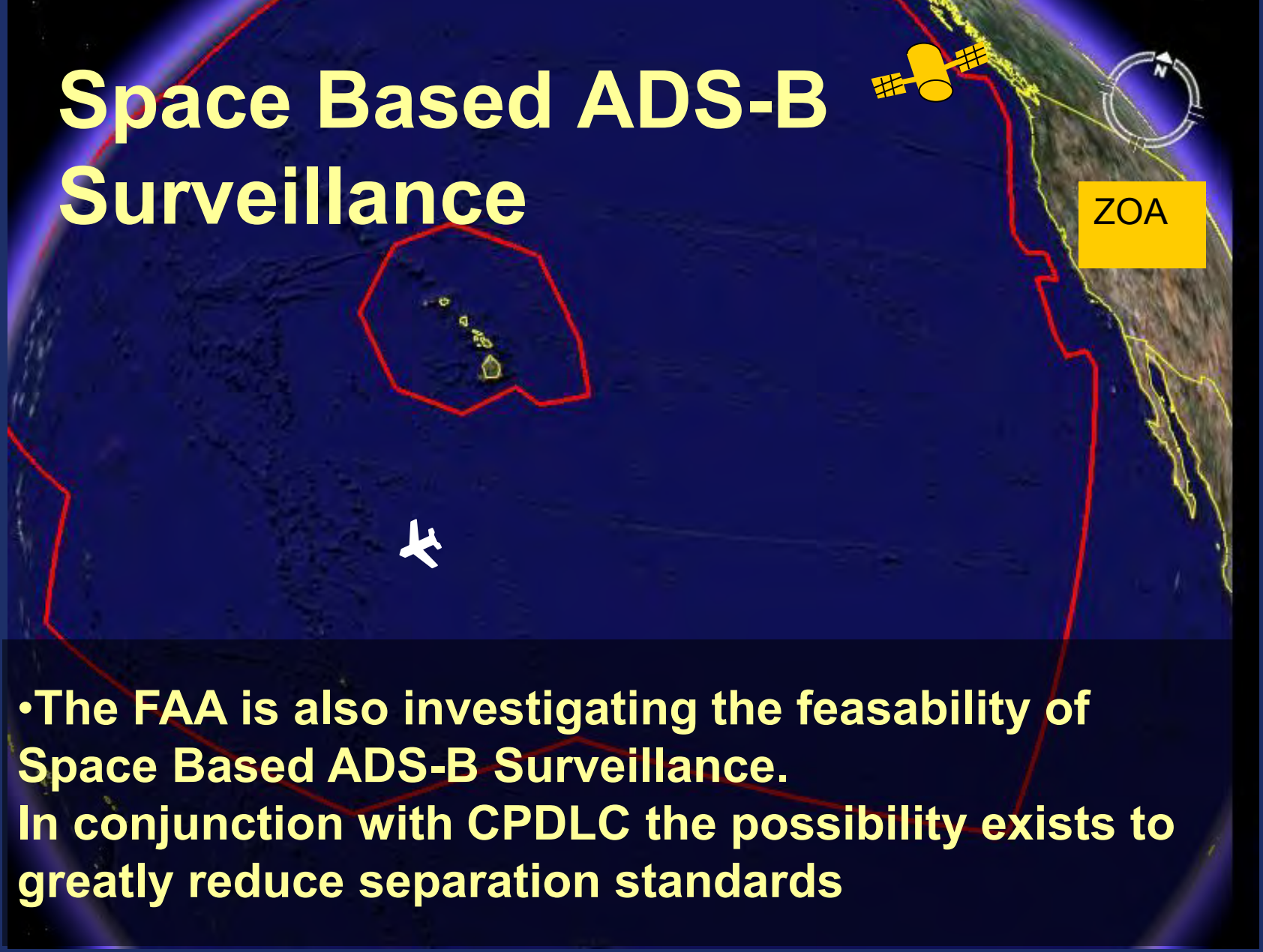
ADS-B

- The FAA is investigating the possibility of using ADS-B at selected oceanic island airports to facilitate improved aircraft operations.

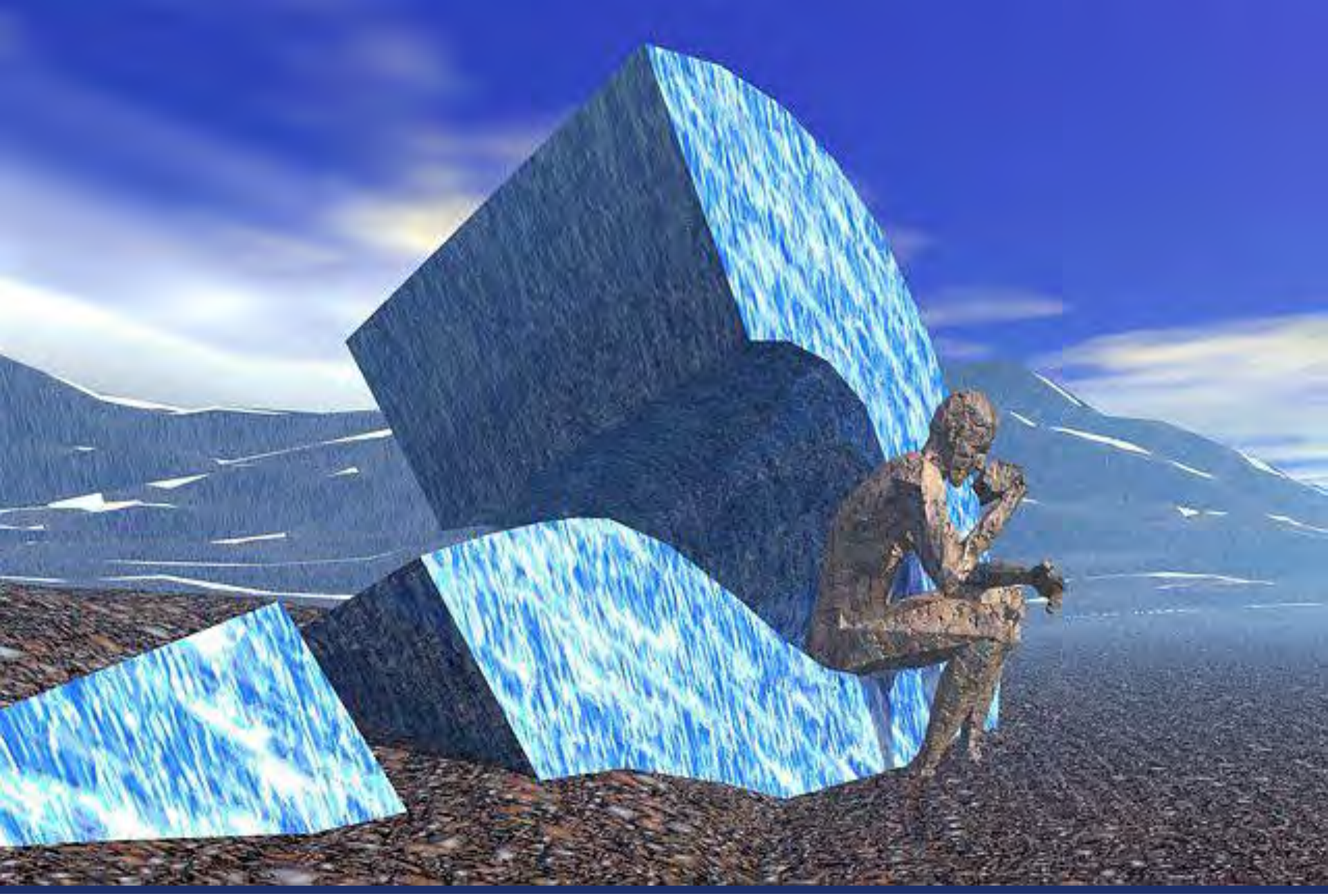
Oakland Island Airports with ADS-B



Space Based ADS-B Surveillance

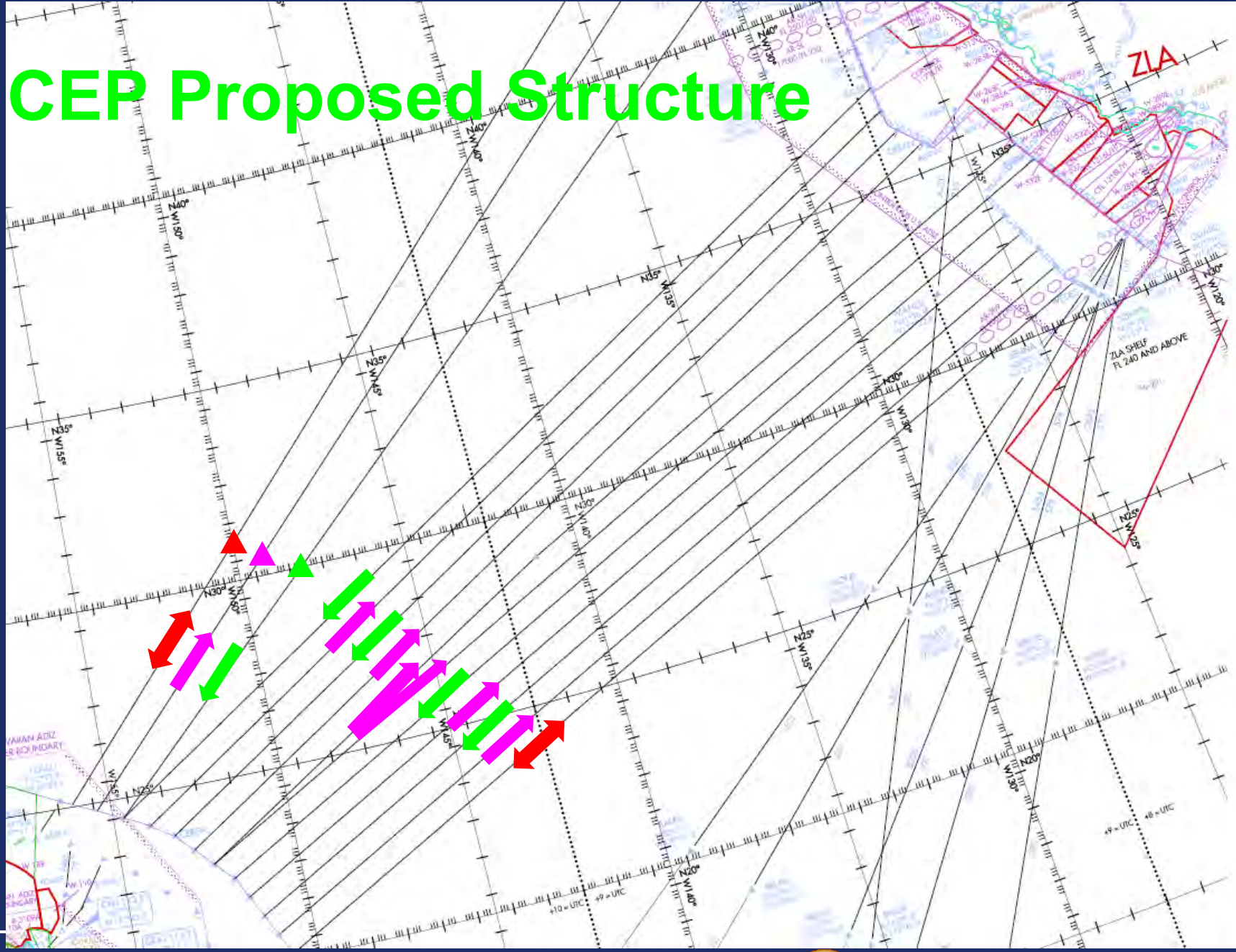


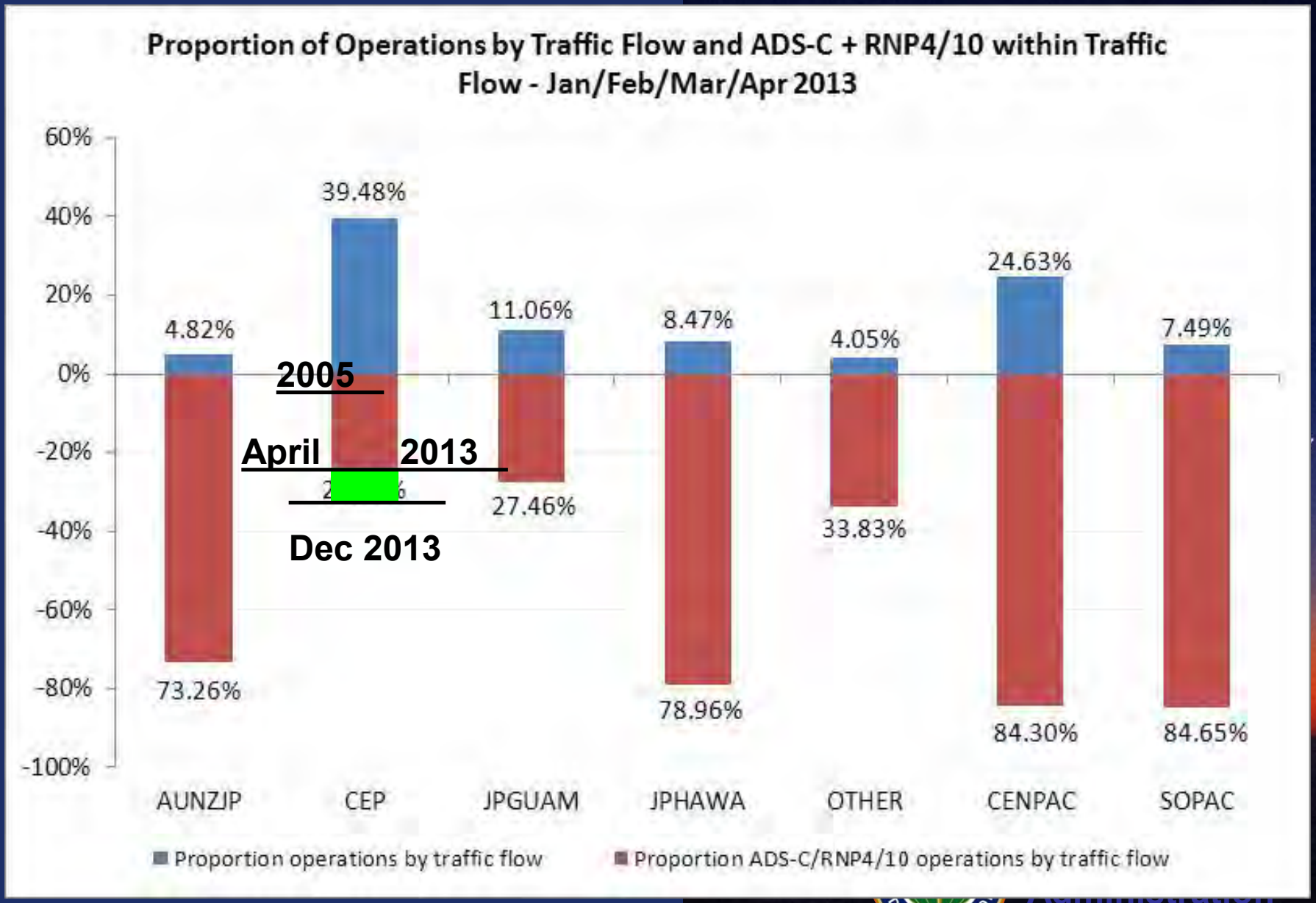
- The FAA is also investigating the feasability of Space Based ADS-B Surveillance.
In conjunction with CPDLC the possibility exists to greatly reduce separation standards



CEP Route Structure

CEP Proposed Structure

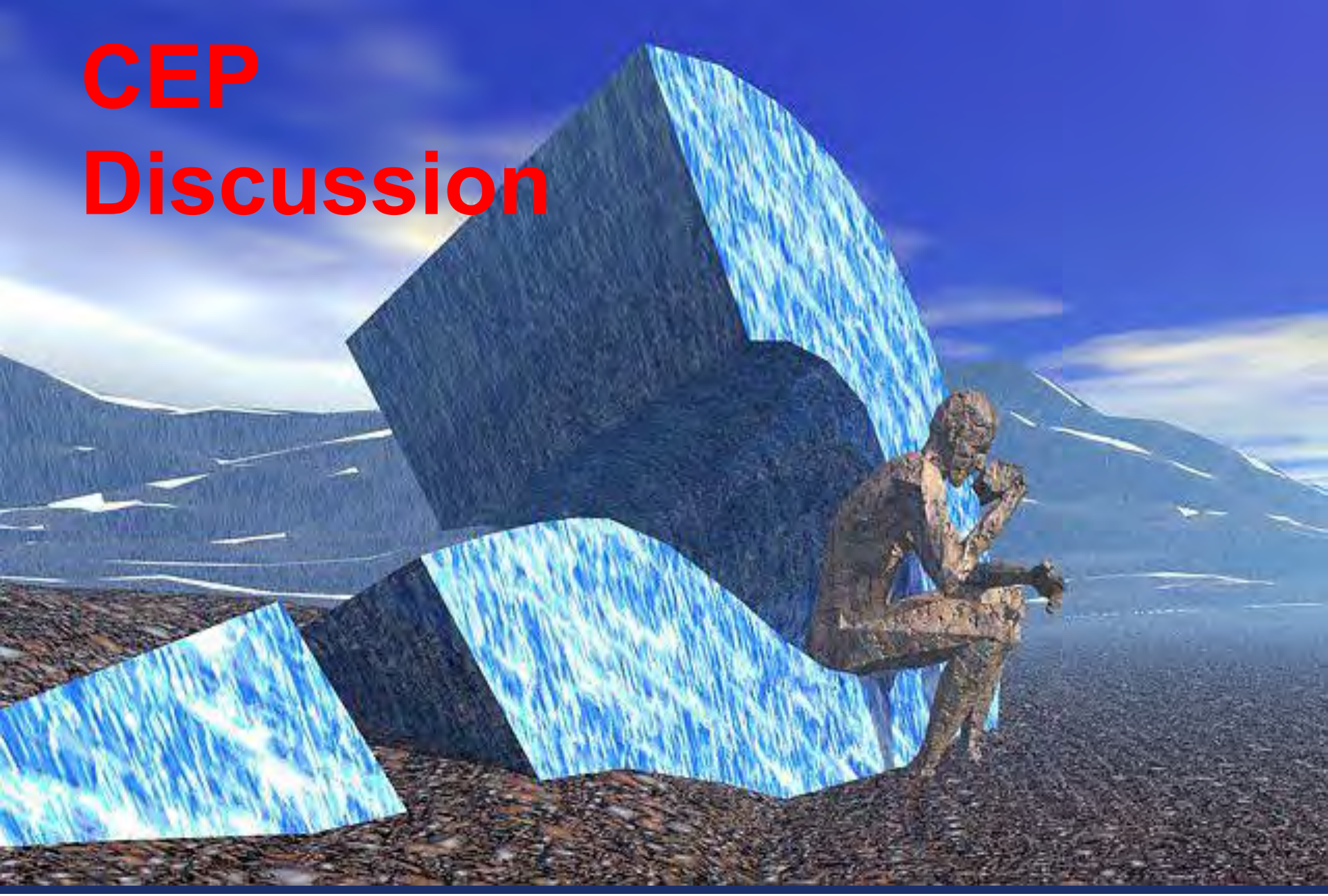



Proportion of Operations by Traffic Flow and ADS-C + RNP4/10 within Traffic Flow - Jan/Feb/Mar/Apr 2013
60%
40%
20%
0%
-20%
-40%
-60%
-80%
-100%
4.82%
73.26%
39.48%
2005
April 2013
Dec 2013
11.06%
27.46%
8.47%
78.96%
4.05%
33.83%
24.63%
84.30%
7.49%
84.65%
AUNZJP
CEP
JPGUAM
JPHAWA
OTHER
CENPAC
SOPAC
Proportion operations by traffic flow
Proportion ADS-C/RNP4/10 operations by traffic flow

30nm CEP Track Discussion

- Aircraft Lifespan.
- At a certain point it makes sense to switch to 30nm separated CEP Routes.
- Drawing a line in the sand.

CEP Discussion

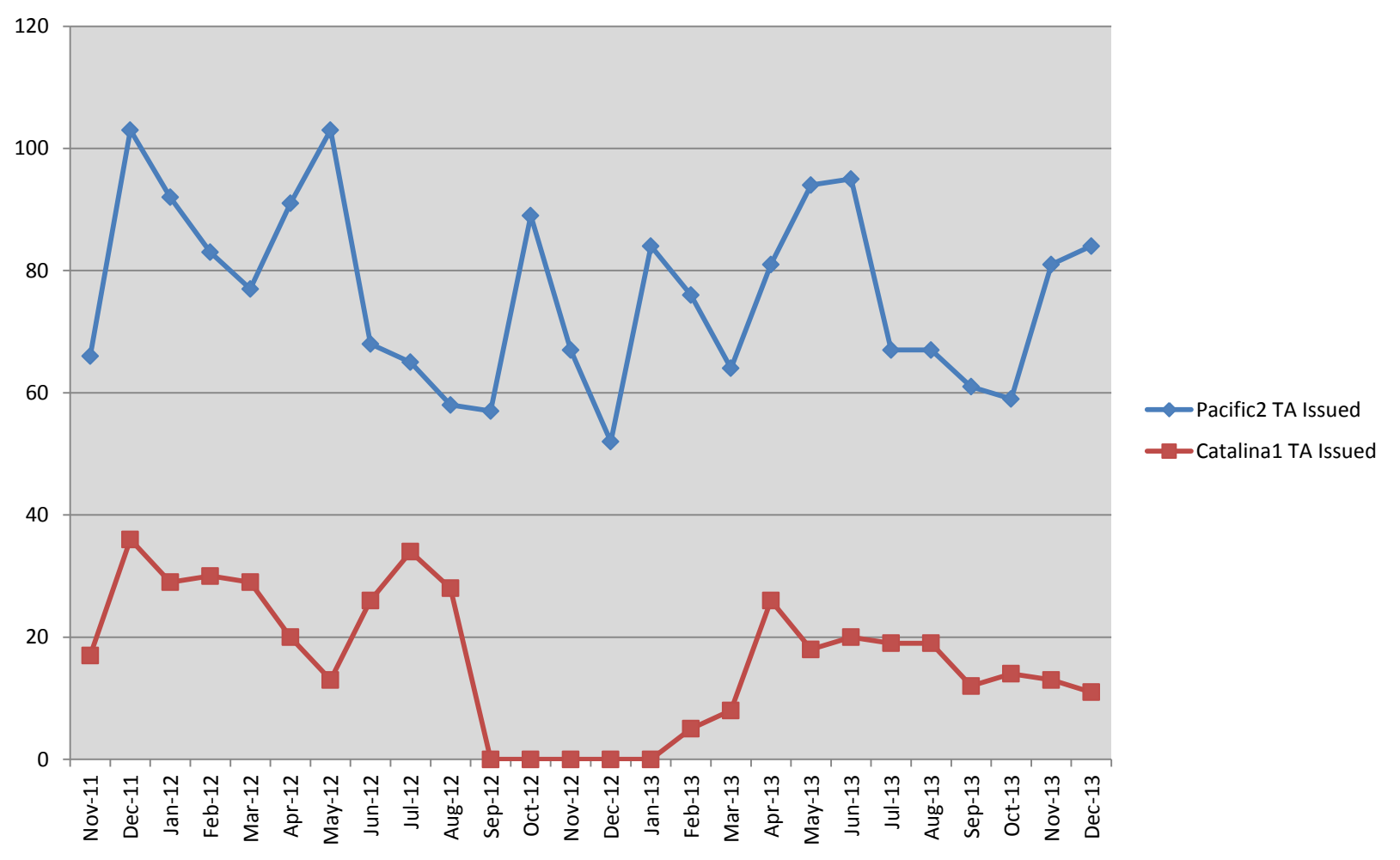


OWG Meeting
January 22, 2014

Federal Aviation Administration

Tailored Arrivals

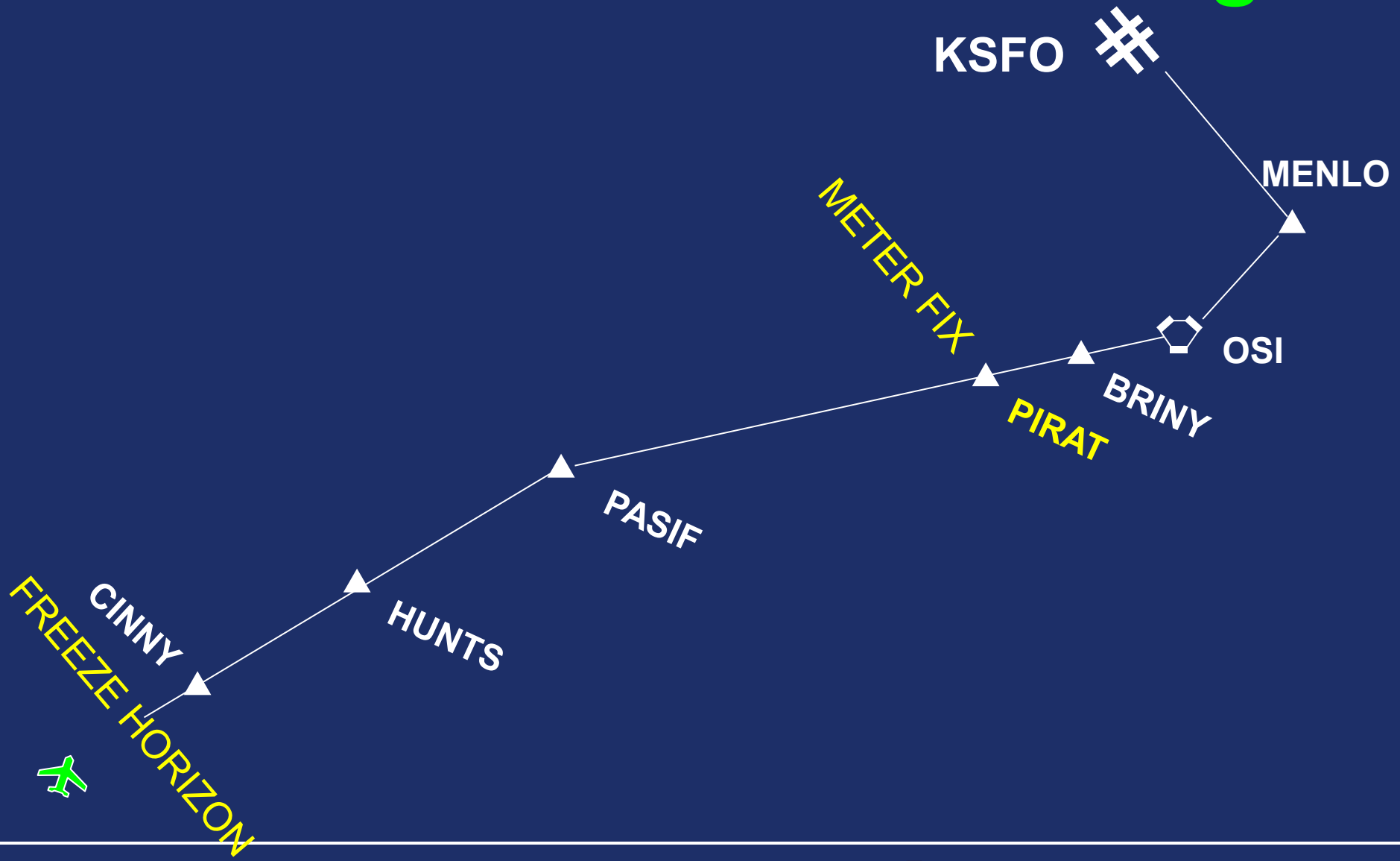
Tailored Arrival Clearances



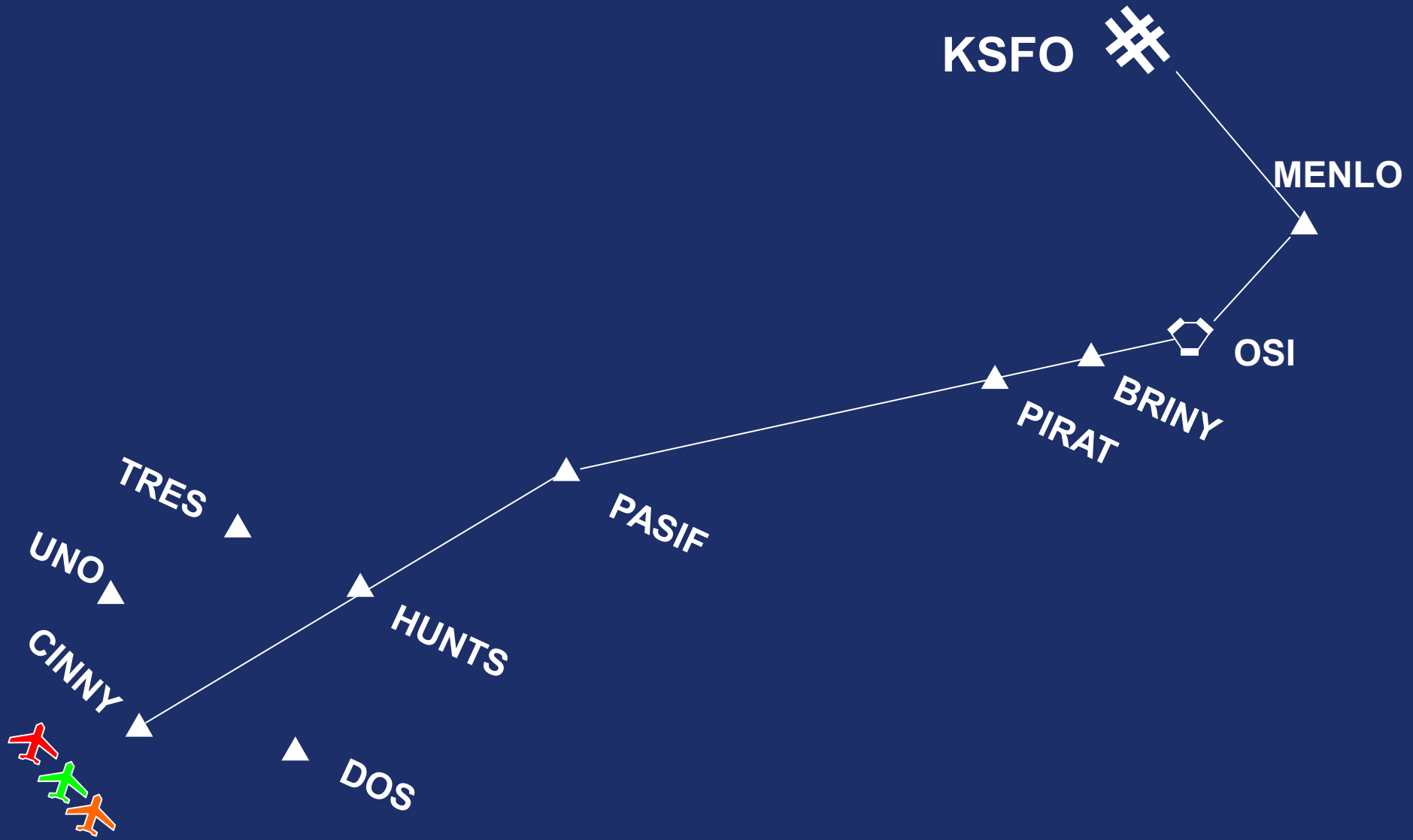
KSFO Tailored Arrivals

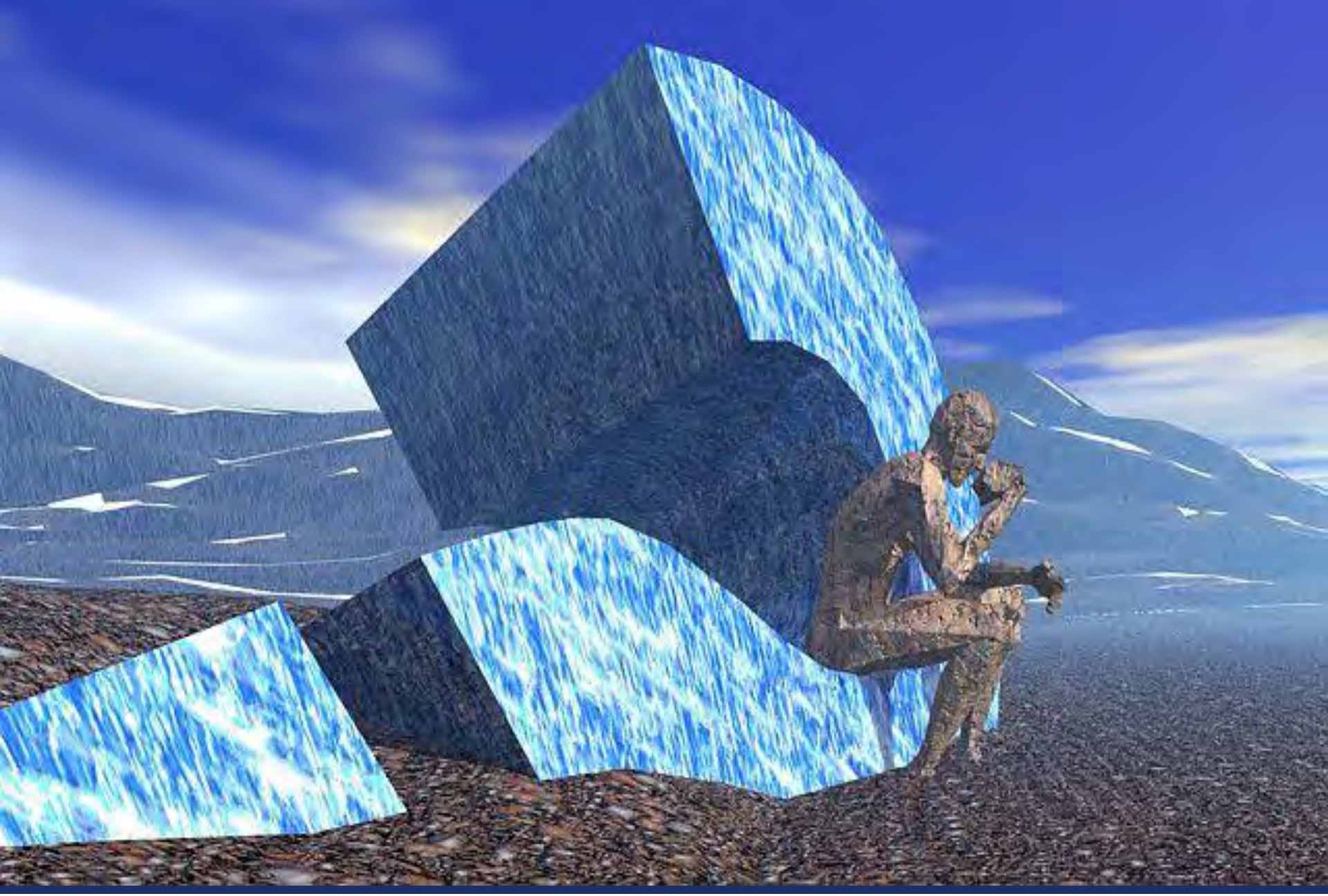
- A new RNAV PIRAT1 STAR is being developed to mirror the KSFO Pacific 2 TA.
- The PIRAT1 STAR would provide an OPD for non FANS aircraft.
- The Target Date for implementation is February 6, 2014

KSFO Time Based Metering



"Tailored" Arrivals





ADS-C Climb/Descent Procedure (CDP)

Status Update

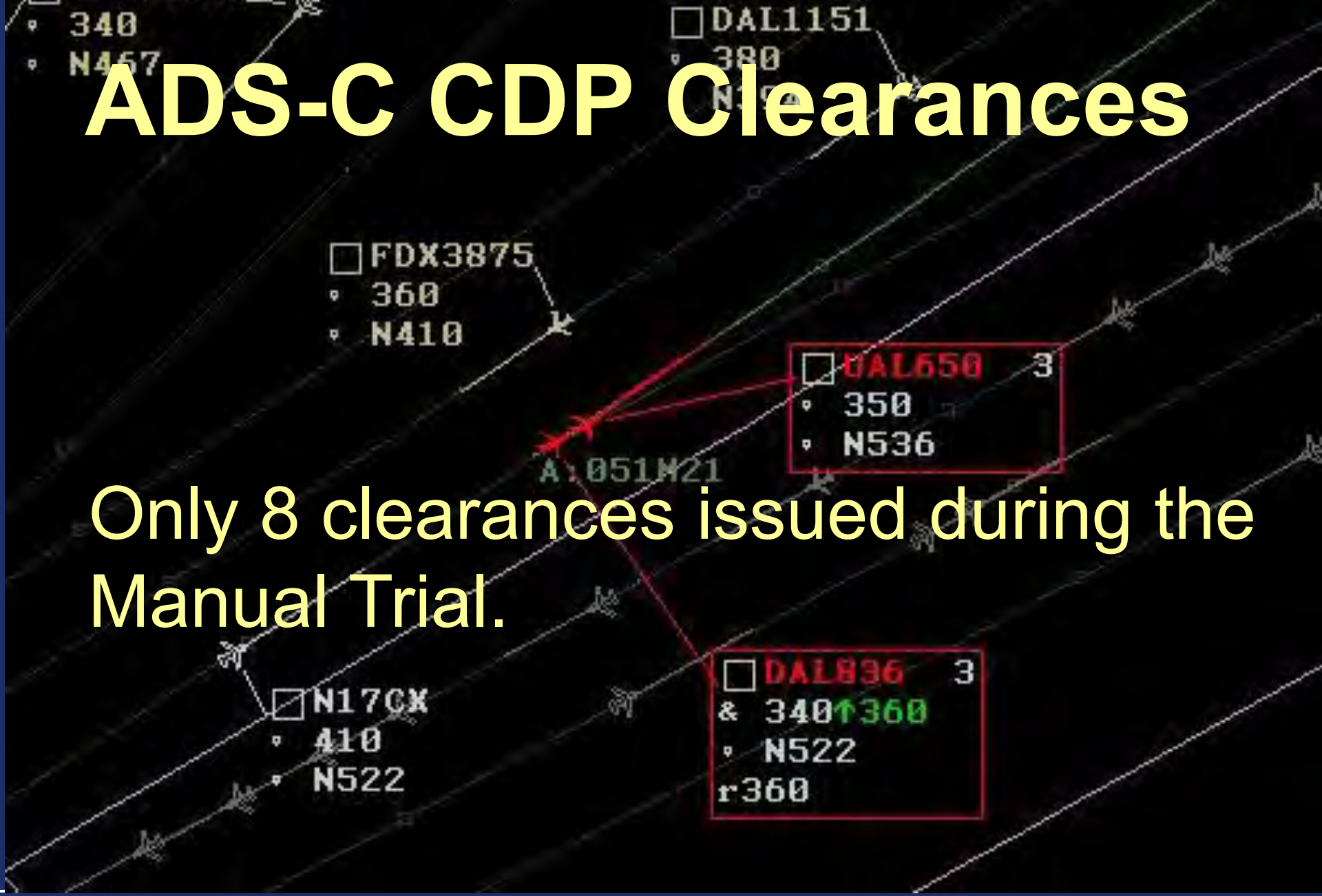
Federal Aviation Administration

ADS-C CDP

Procedure is based on in-trail Distance Measuring Equipment (DME) rules in ICAO Doc 4444

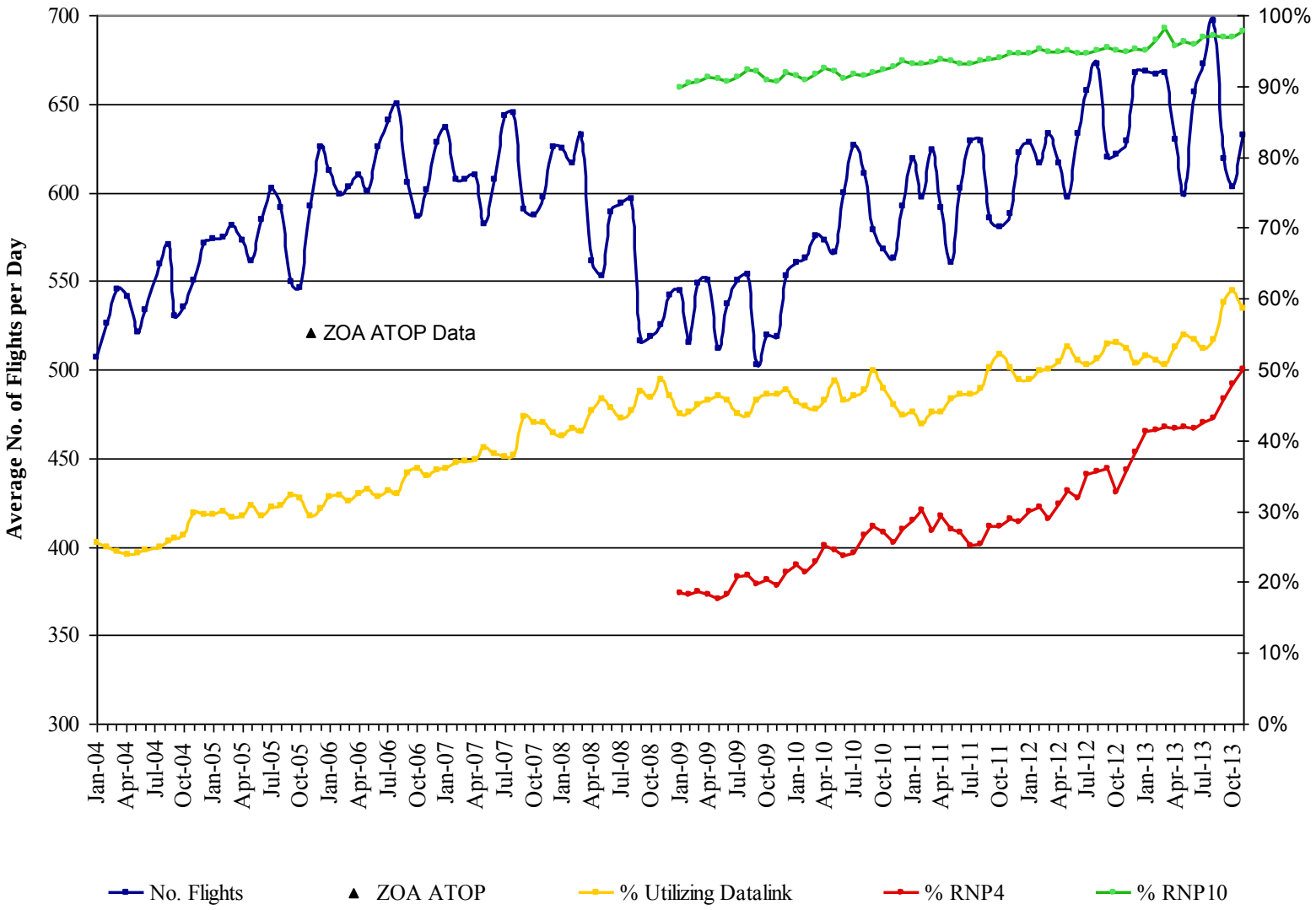
- Near Simultaneous ADS-C Demand Reports
- Climb/Descend an aircraft through the altitude of a blocking aircraft

ADS-C CDP Clearances

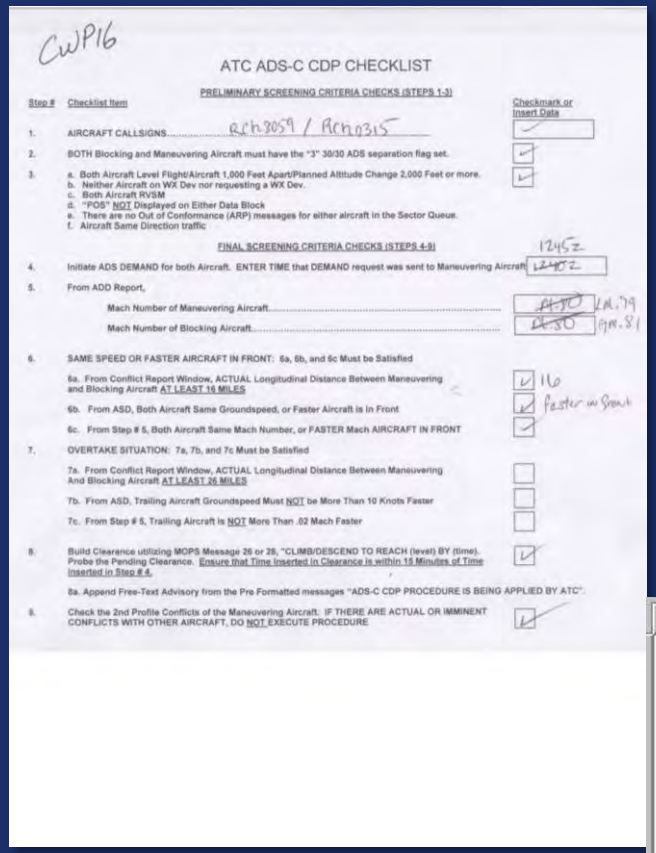


Only 8 clearances issued during the Manual Trial.

ZOA Flights & Equipment Utilization



Automated Procedure



CWP16

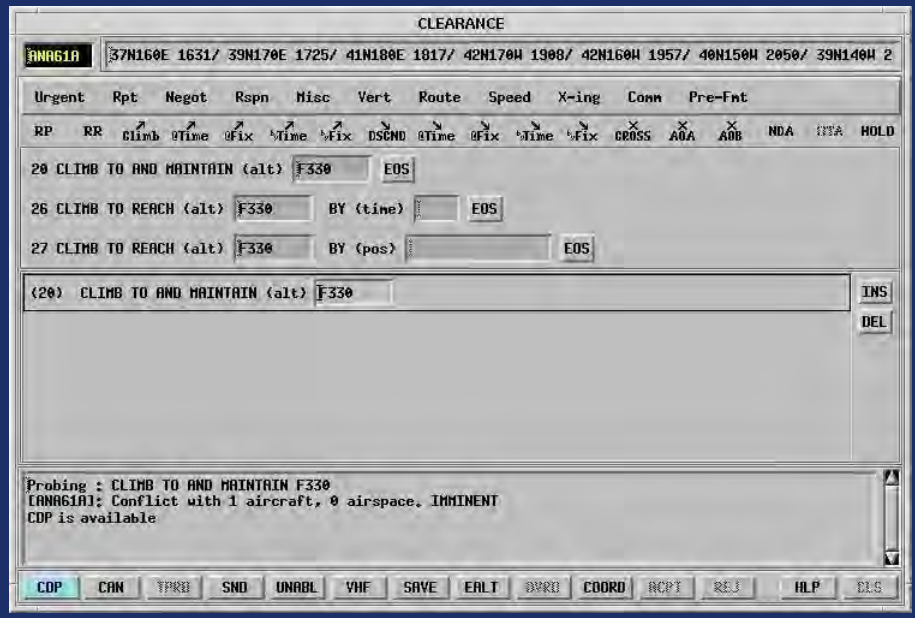
ATC ADS-C CDP CHECKLIST

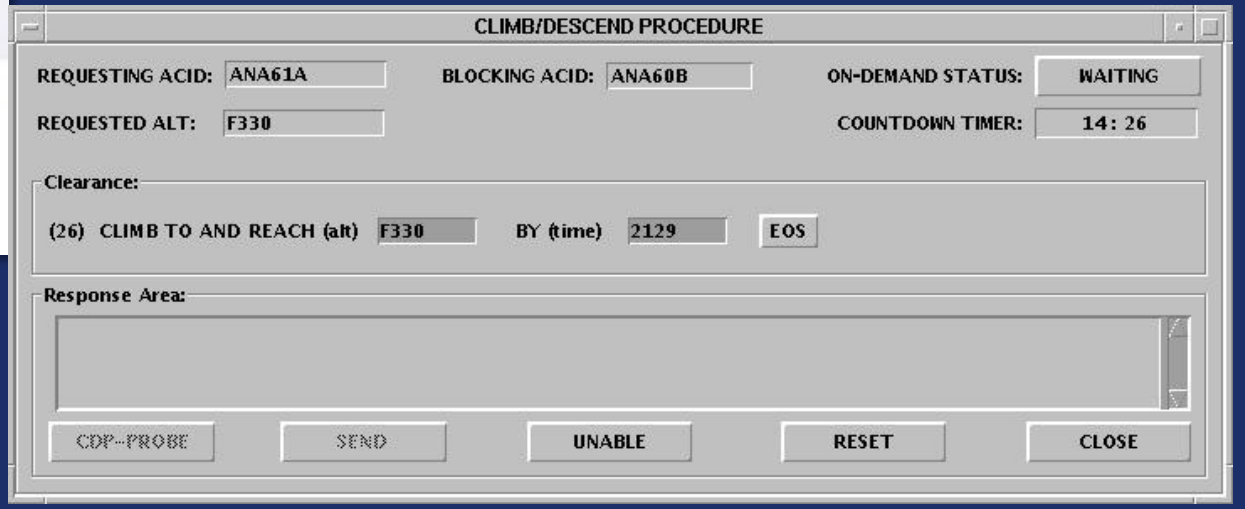
PRELIMINARY SCREENING CRITERIA CHECKS (STEPS 1-3)

Step #	Checklist Item	Checkmark or Insert Data
1.	AIRCRAFT CALLSIGNS..... ACH3059 / ACH0315	✓
2.	BOTH Blocking and Maneuvering Aircraft must have the "3" 30/30 ADS separation flag set.	☑
3.	a. Both Aircraft Level Flight/Aircraft 1,000 Feet Apart/Planned Altitude Change 2,000 Feet or more. b. Neither Aircraft on WX Dev nor requesting a WX Dev. c. Both Aircraft RVSM d. "POS" NOT Displayed on Either Data Block e. There are no Out of Conformance (ARP) messages for either aircraft in the Sector Queue. f. Aircraft Same Direction traffic	☑

FINAL SCREENING CRITERIA CHECKS (STEPS 4-9) 1245z

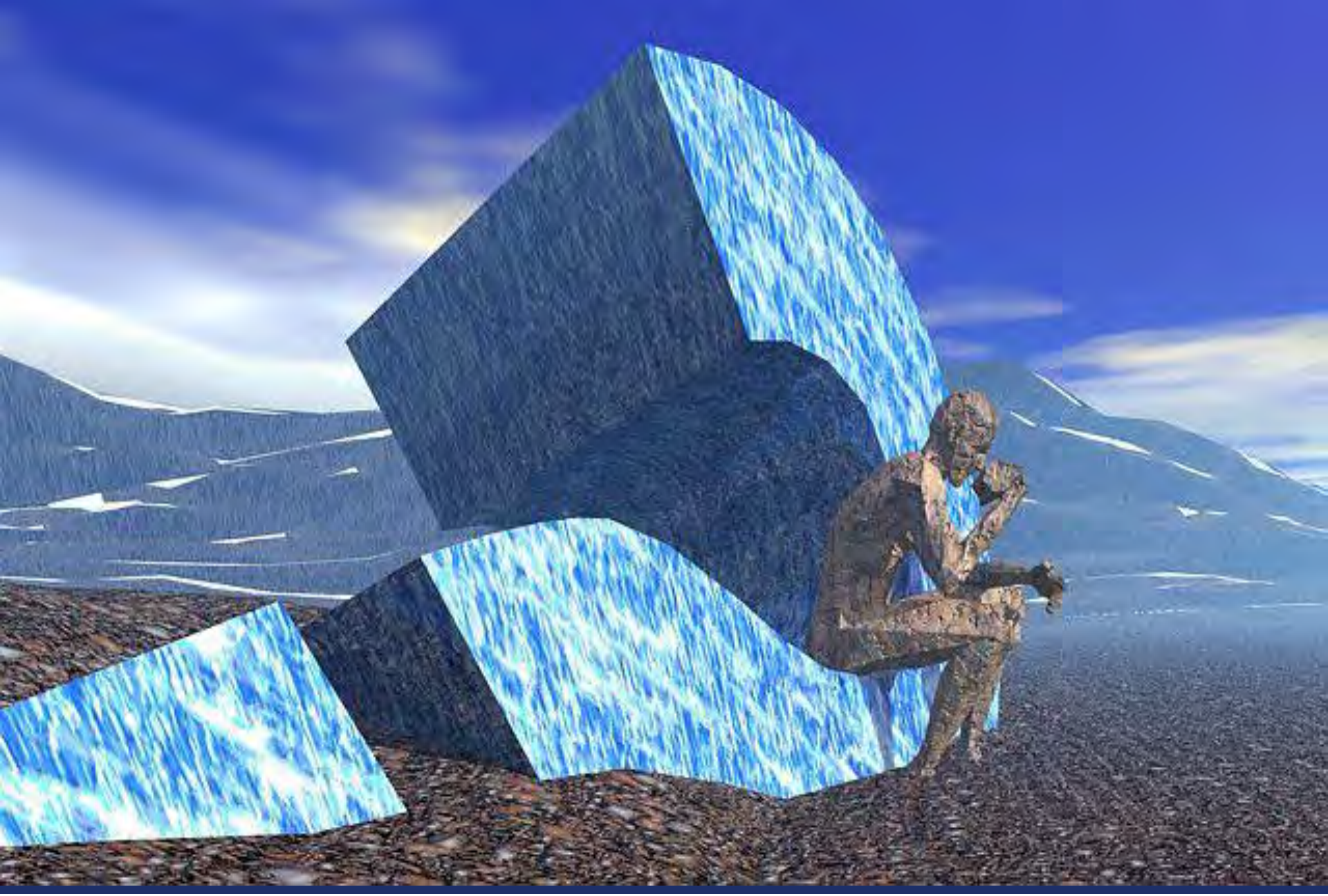
4.	Initiate ADS DEMAND for both Aircraft. ENTER TIME that DEMAND request was sent to Maneuvering Aircraft	1245Z
5.	From ADD Report,	
	Mach Number of Maneuvering Aircraft.....	A320 M.79
	Mach Number of Blocking Aircraft.....	A330 M.81
6.	SAME SPEED OR FASTER AIRCRAFT IN FRONT: 6a, 6b, and 6c Must be Satisfied	
	6a. From Conflict Report Window, ACTUAL Longitudinal Distance Between Maneuvering and Blocking Aircraft AT LEAST 16 MILES	☑ 16
	6b. From ASD, Both Aircraft Same Groundspeed, or Faster Aircraft is in Front	☑ Faster in Front
	6c. From Step # 5, Both Aircraft Same Mach Number, or FASTER Mach AIRCRAFT IN FRONT	☑
7.	OVERTAKE SITUATION: 7a, 7b, and 7c Must be Satisfied	
	7a. From Conflict Report Window, ACTUAL Longitudinal Distance Between Maneuvering And Blocking Aircraft AT LEAST 26 MILES	☐
	7b. From ASD, Trailing Aircraft Groundspeed Must NOT be More Than 10 Knots Faster	☐
	7c. From Step # 5, Trailing Aircraft is NOT More Than .02 Mach Faster	☐
8.	Build Clearance utilizing MOPS Message 26 or 28, "CLIMB/DESCEND TO REACH (level) BY (time). Probe the Pending Clearance. Ensure that Time Inserted in Clearance is within 15 Minutes of Time Inserted in Step # 4.	☑
	8a. Append Free-Text Advisory from the Pre Formatted messages "ADS-C CDP PROCEDURE IS BEING APPLIED BY ATC".	
9.	Check the 2nd Profile Conflicts of the Maneuvering Aircraft. IF THERE ARE ACTUAL OR IMMINENT CONFLICTS WITH OTHER AIRCRAFT, DO NOT EXECUTE PROCEDURE	☑

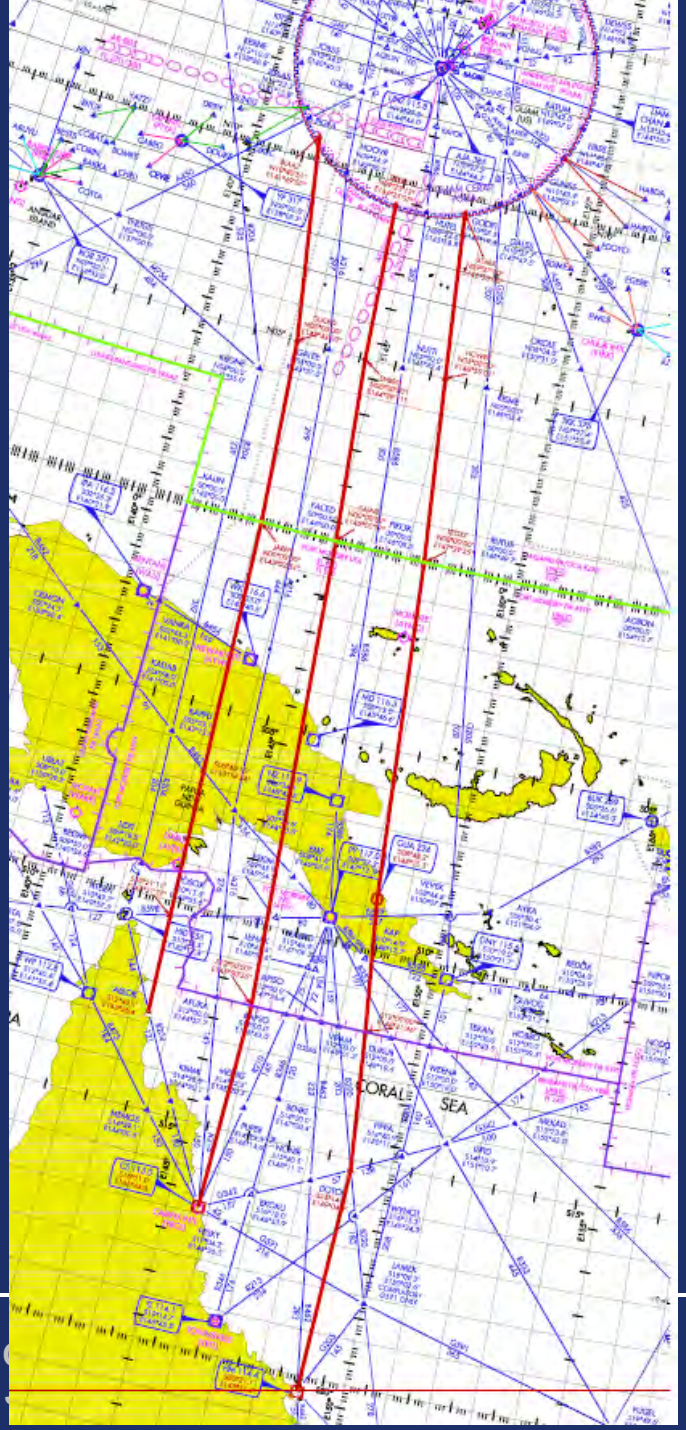




Ocean21 Automation Platform

- Manual trial ended 2/15/2013
- CDP procedure is seen as a benefit.
- T24 software update January of 2015



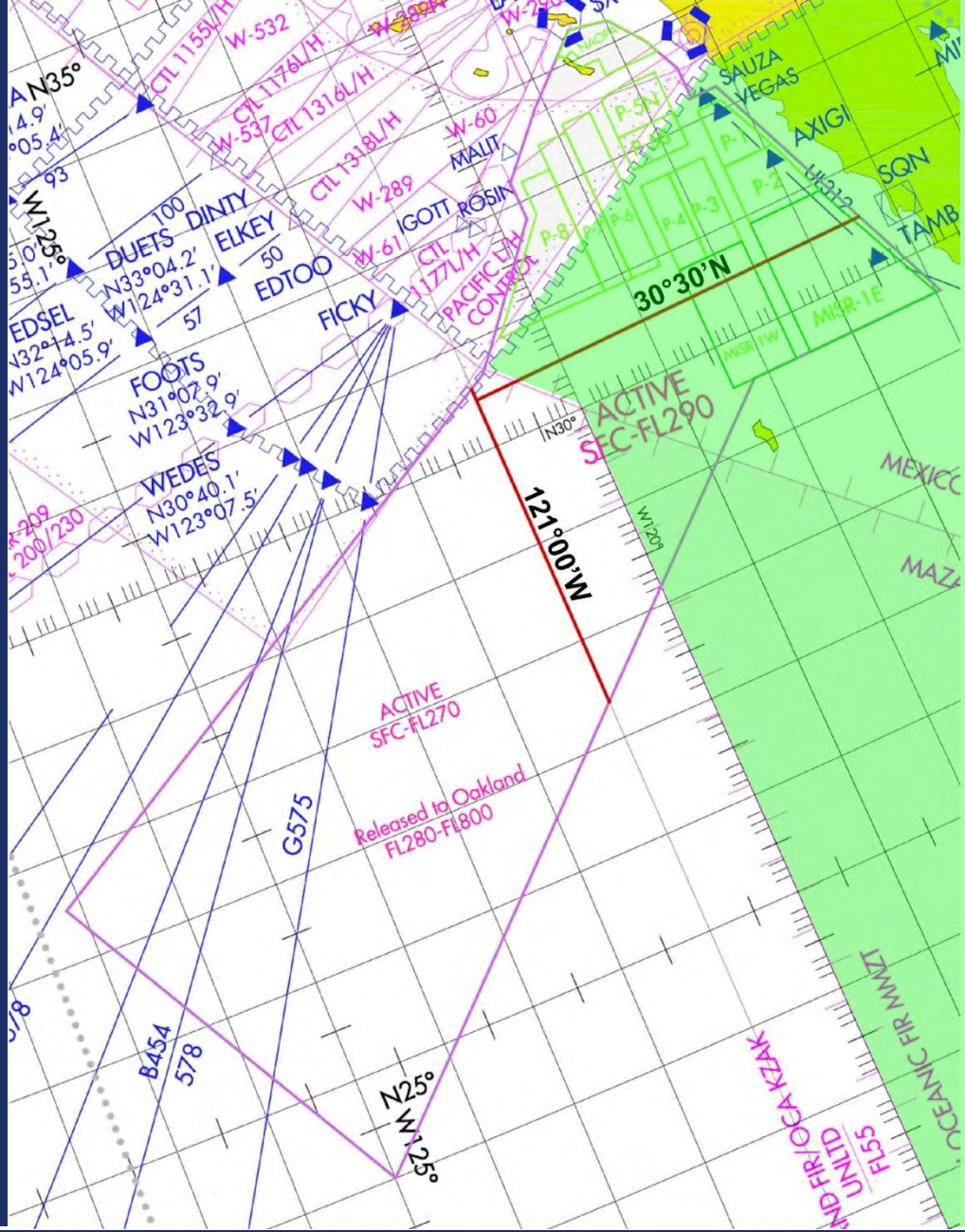


Port Moresby 50nm RNP10 Lateral Separation

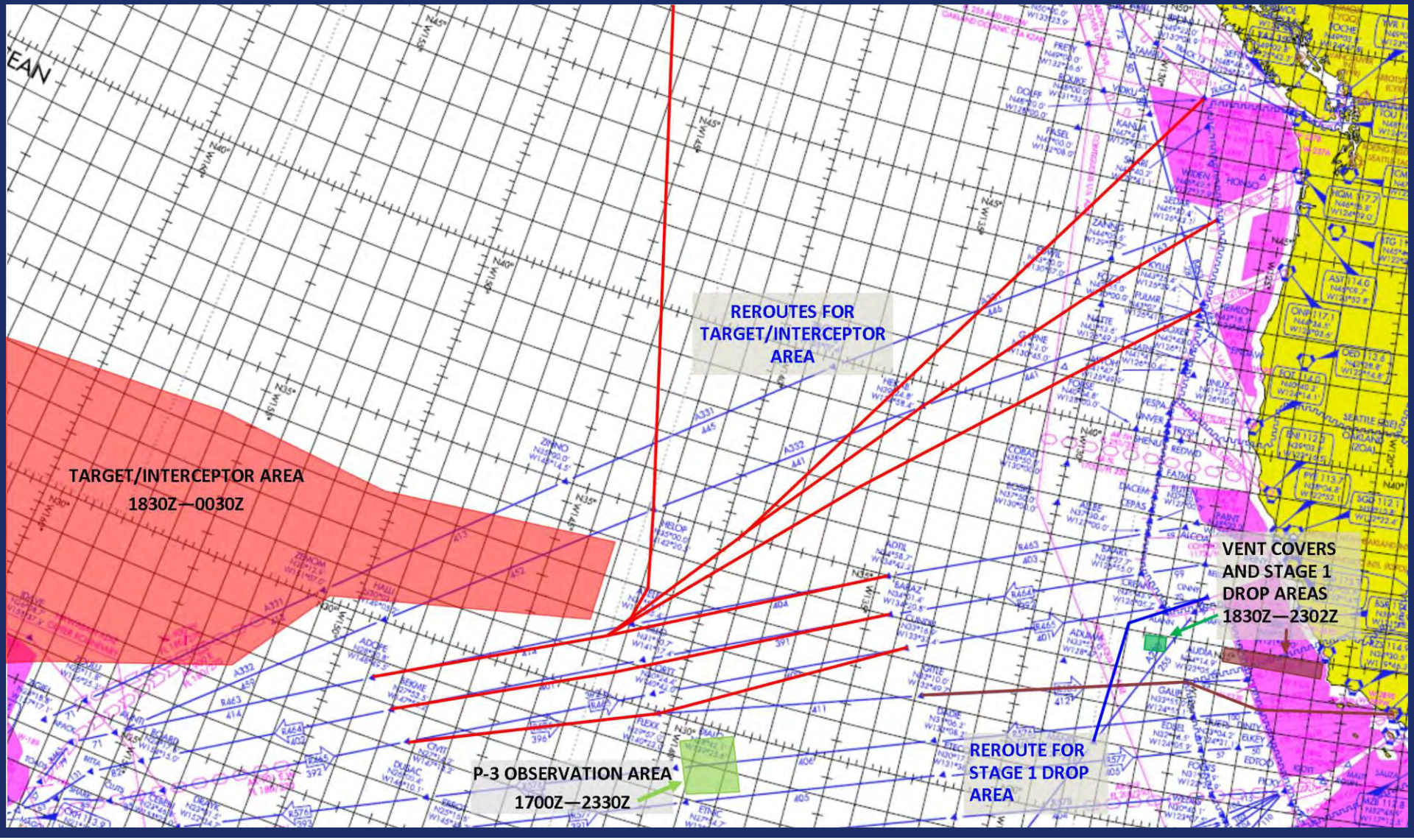
- Began November 14, 2013
- Investigating New Routes
- D50 Longitudinal Separation

Mazatlan ACC

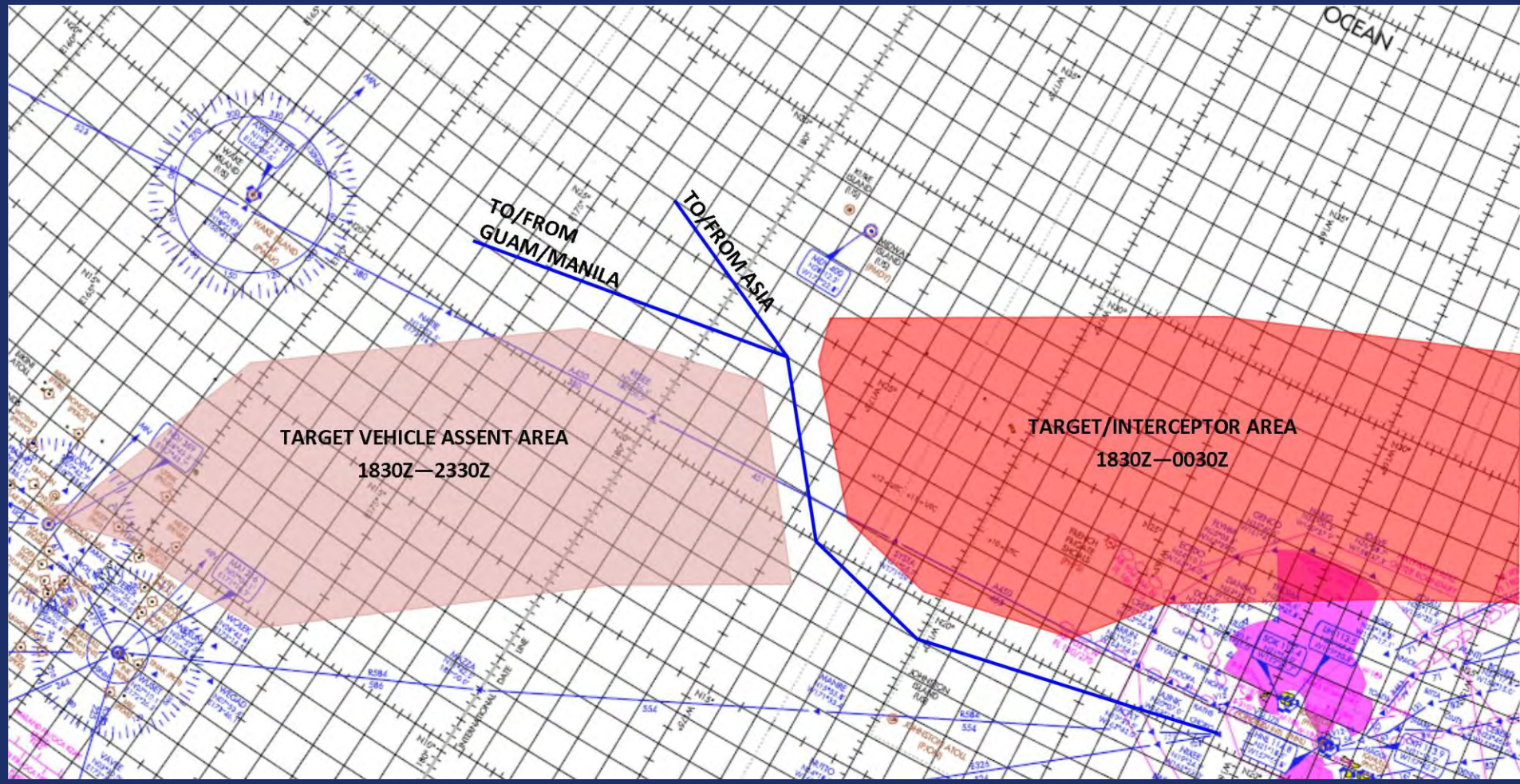
- FAA working to establish an AIDC connection between Oakland and Mazatlan.
- Mazatlan announced they are working to convert their Class G Airspace to Controlled Airspace.



Impacts From Missile Defense Testing

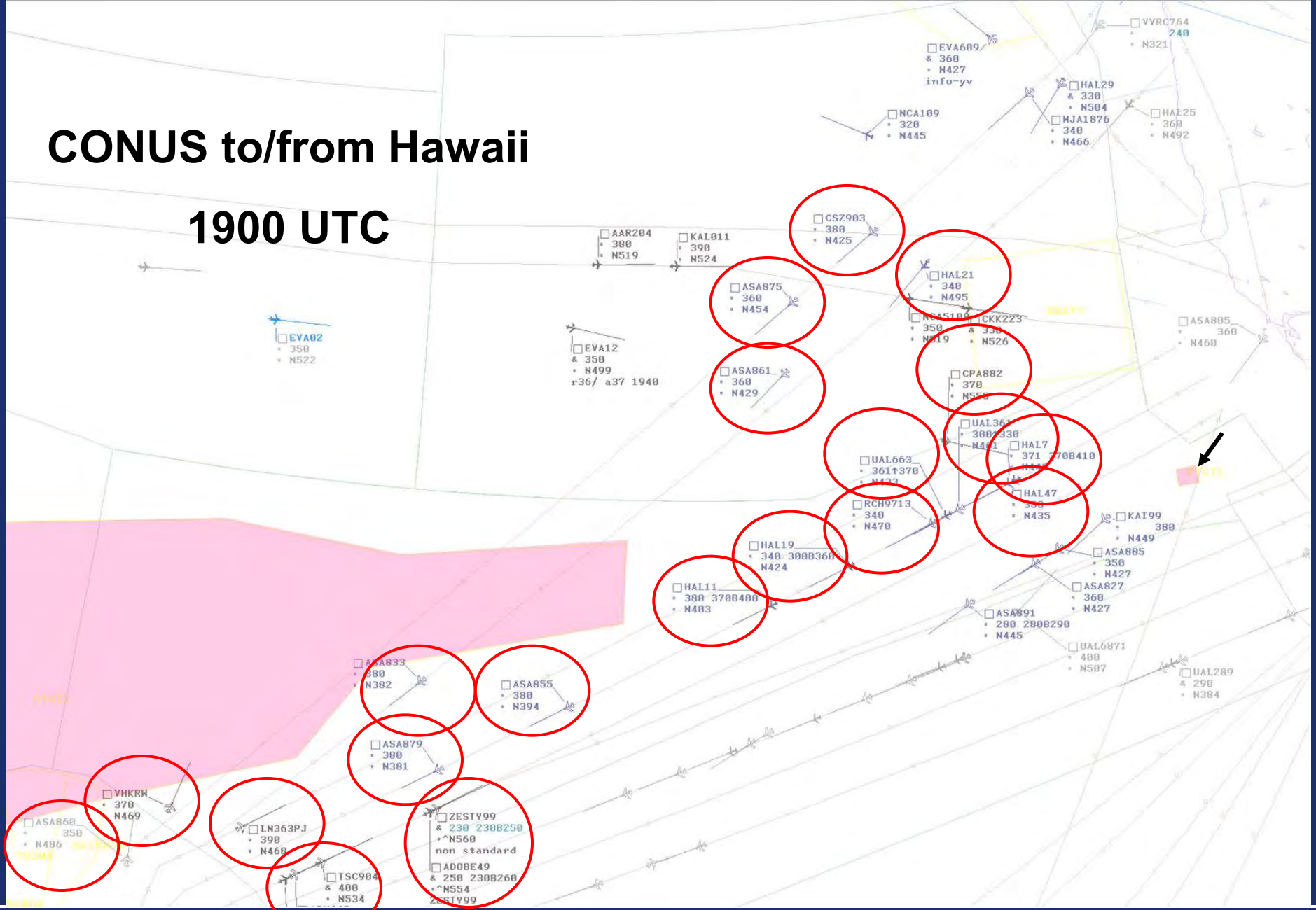


Impacts From Missile Defense Testing



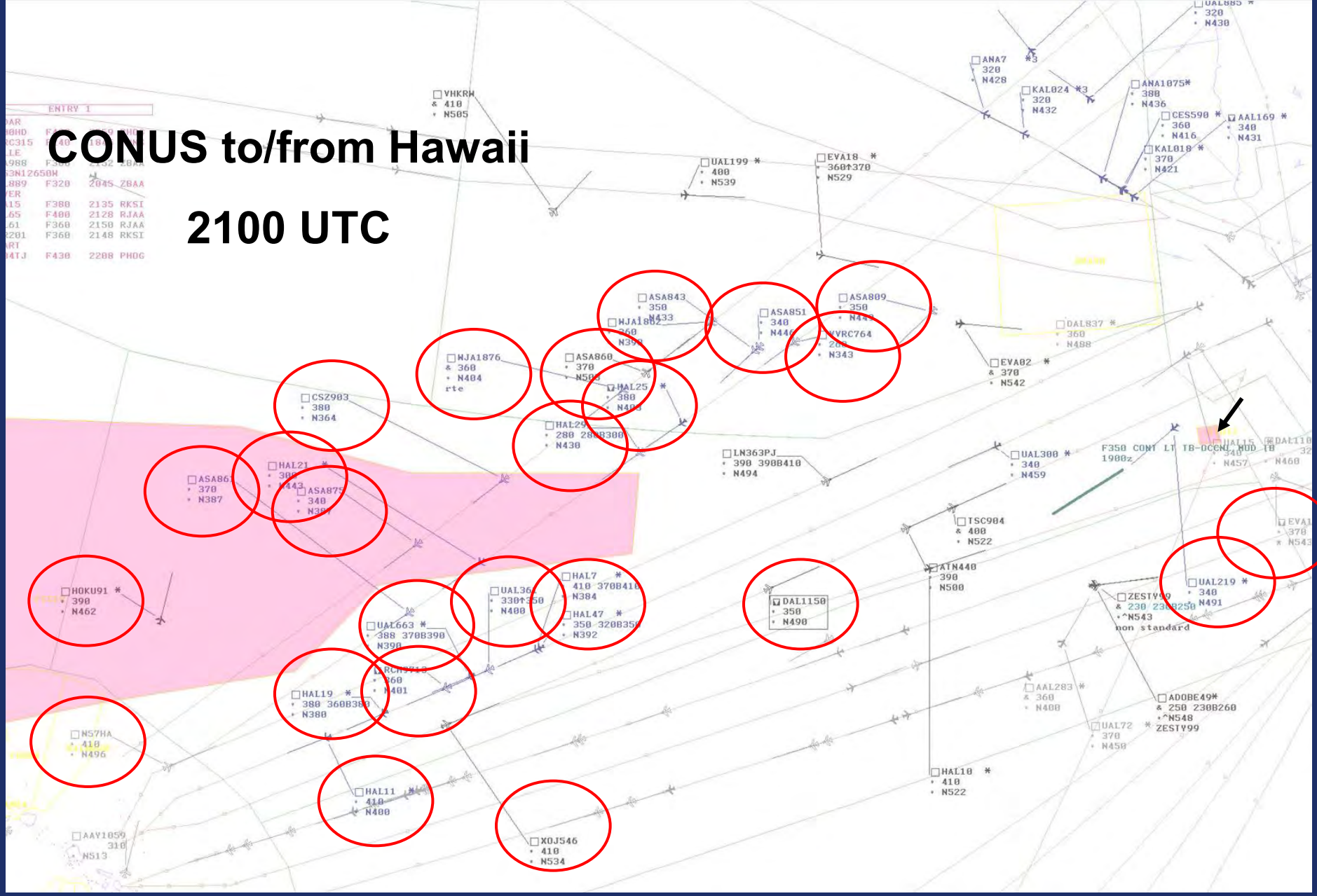
CONUS to/from Hawaii

1900 UTC



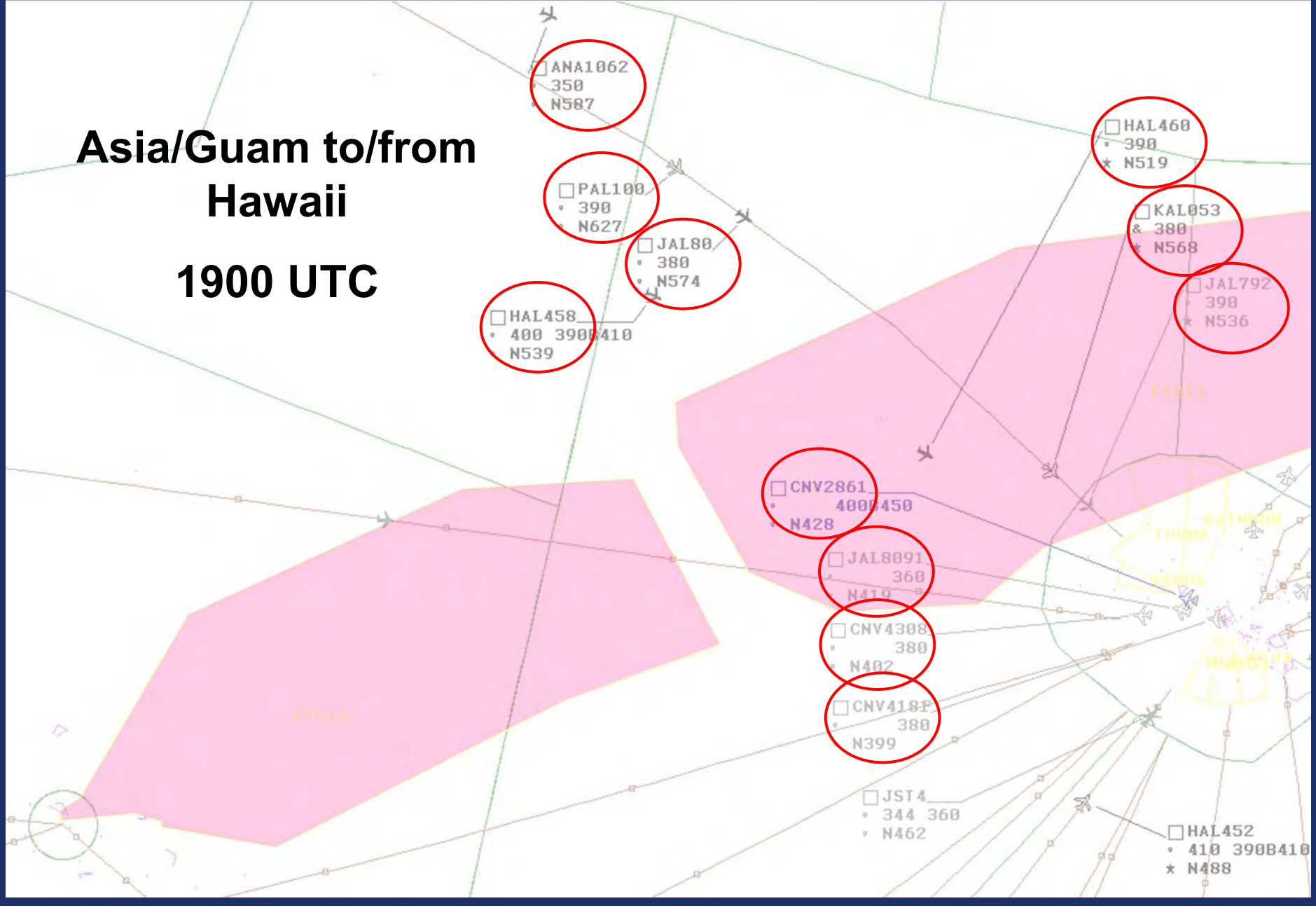
CONUS to/from Hawaii

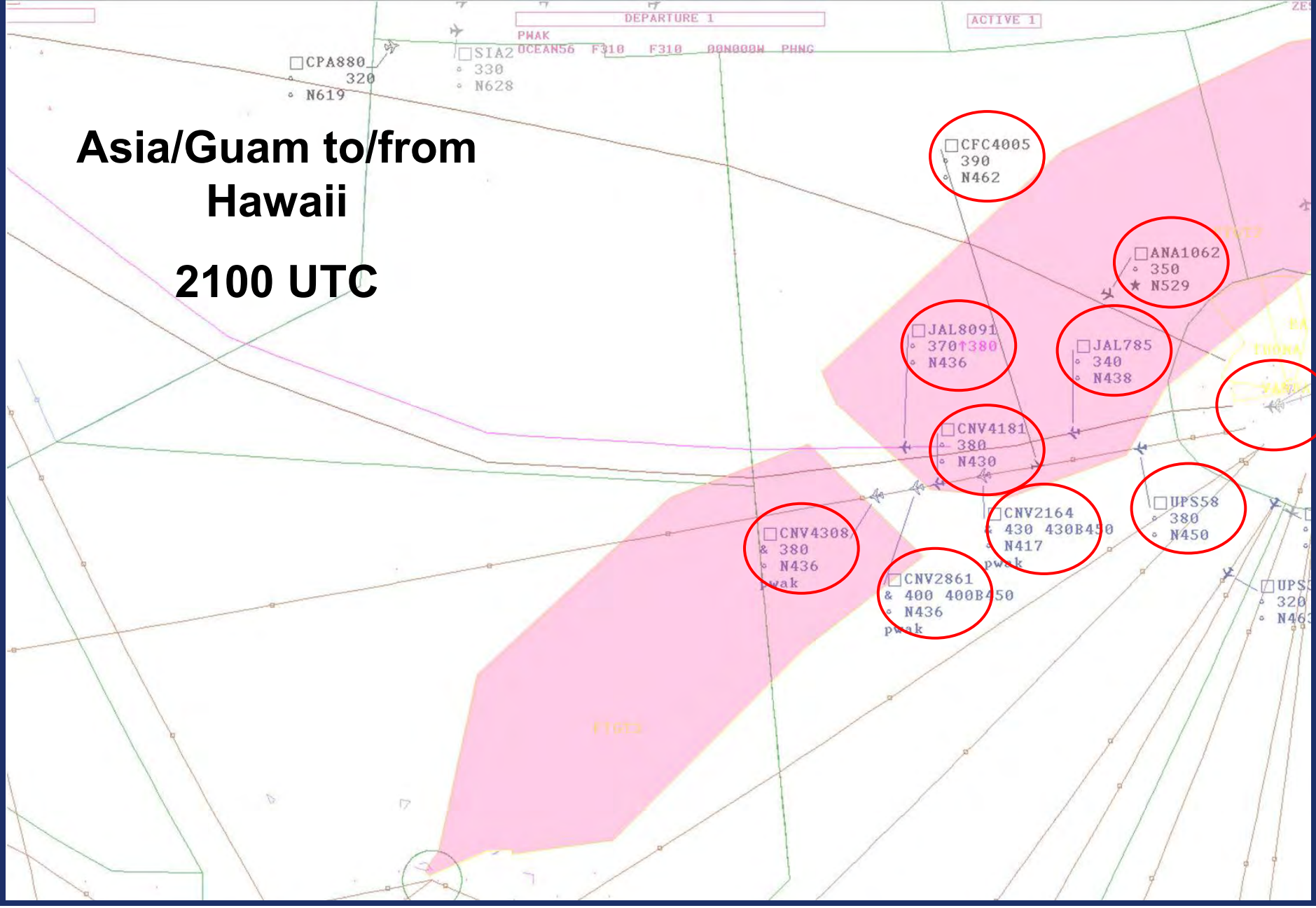
2100 UTC



Asia/Guam to/from Hawaii

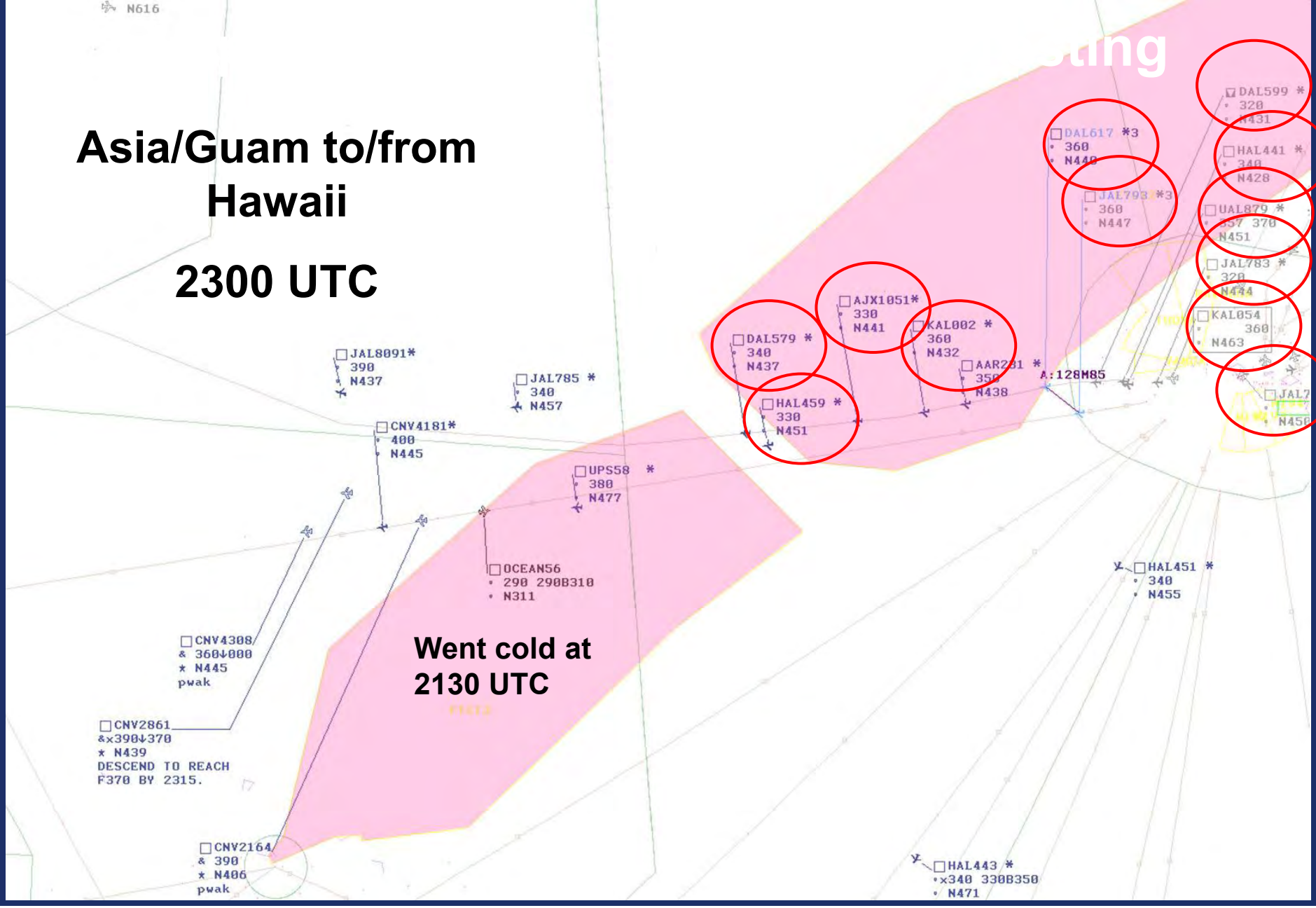
1900 UTC



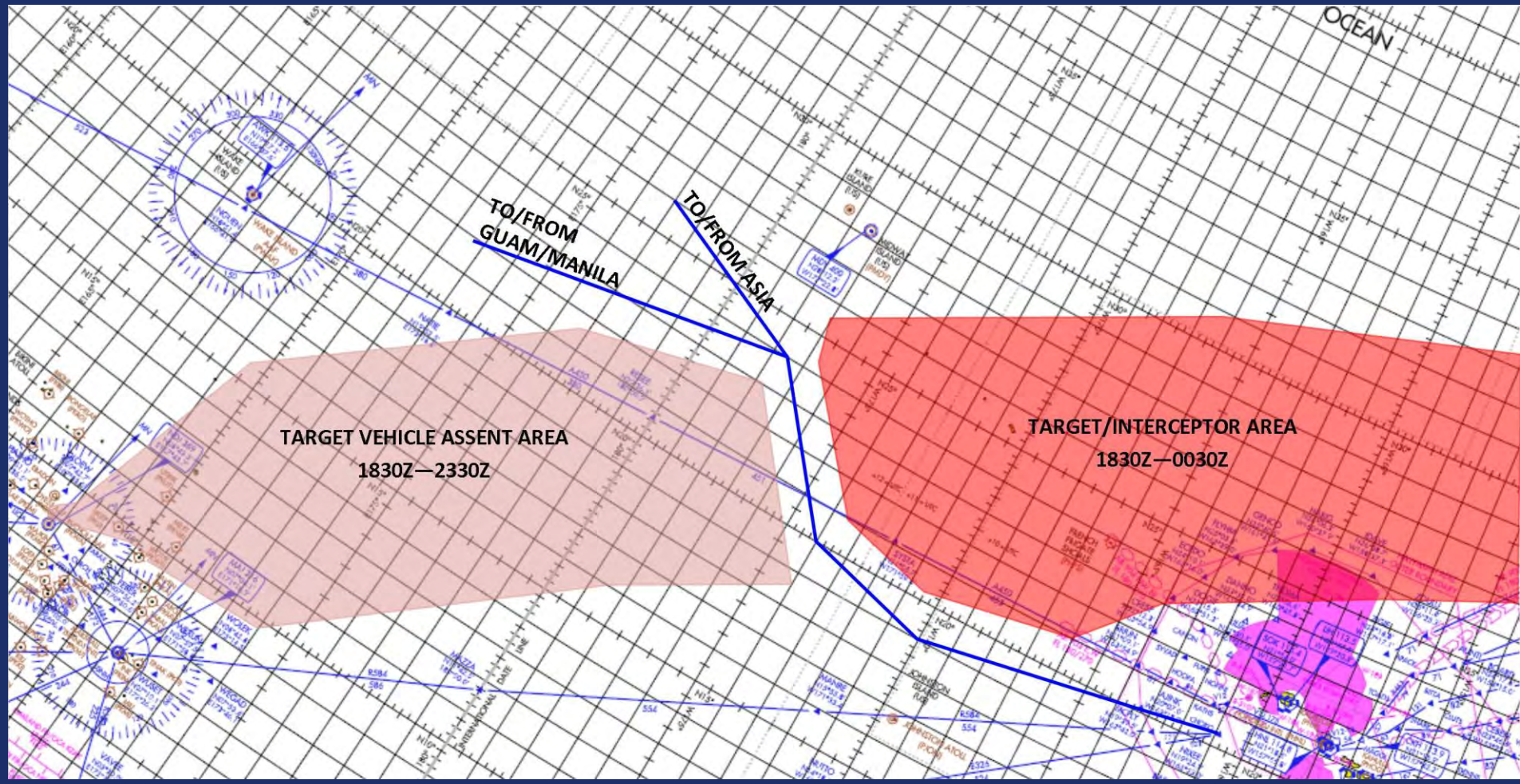

DEPARTURE 1
ACTIVE 1
PHAK
OCEAN56 F310 F310 00N000W PHNG
CPA880
320
N619
SIA2
330
N628
CFC4005
390
N462
ANA1062
350
★ N529
JAL8091
370↑380
N436
JAL785
340
N438
CNV4181
380
N430
CNV4308
& 380
N436
pwak
CNV2164
& 430 430B450
N417
pwak
CNV2861
& 400 400B450
N436
pwak
UPS58
380
N450
Asia/Guam to/from Hawaii
2100 UTC

Asia/Guam to/from Hawaii

2300 UTC



Impacts From Missile Defense Testing



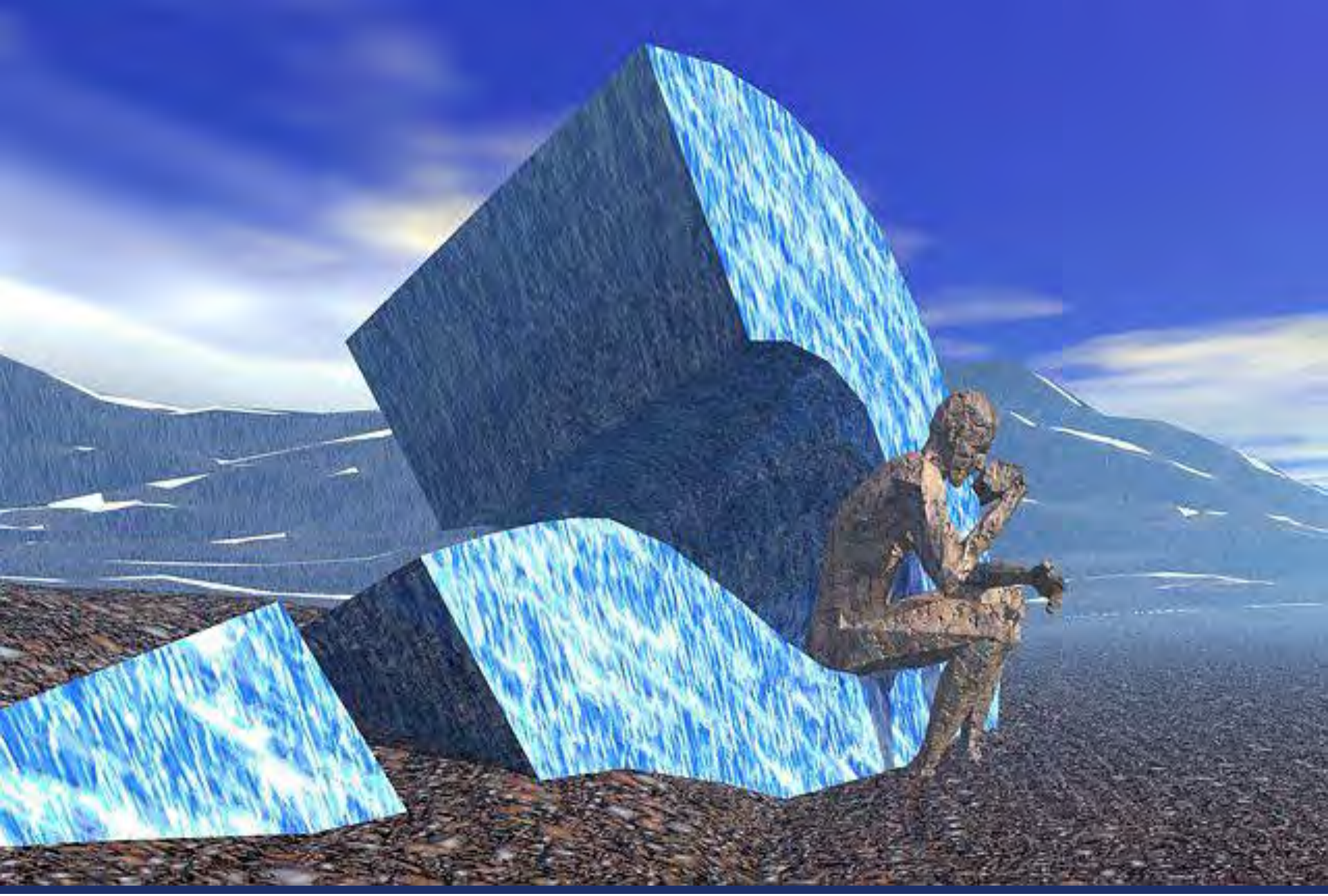
Impacts From Missile Defense Testing

1800Z-0000Z

	10 NM	48 NM	184 NM	300 NM	437 NM	TOTALS		Fuel Cost
AAL	240					240	B767	$ **110.53**
AAR			4968			4968	A330	$ **2,287.89**
AAY		864				864	B757	$ **397.89**
AJX			4416			4416	B767	$ **2,033.68**
ANA			4416			4416	B767	$ **2,033.68**
ASA	150	10080			6555	16785	B737	$ **7,729.93**
CAL			7728			7728	B747	$ **3,558.95**
CNV				18000		18000	B737	$ **8,289.47**
DAL	690		23184			23874	various	$ **10,994.61**
HAL	1290	3888	17664			22842	various	$ **10,519.34**
JAL			39008			39008	various	$ **17,964.21**
KAL			25392			25392	various	$ **11,693.68**
PAL				10500		10500	A340	$ **4,835.53**
UAL	980		7728			8708	various	$ **4,010.26**
UPS				4500		4500	B747	$ **2,072.37**
WJA		1440				1440	B737	$ **663.16**
						193,681	**pounds**	Assumptions
						28,316	**gallons**	6.84 lbs/gal
					Fuel Cost	$ **89,195.20**		$3.15/gal

1800Z-2200Z

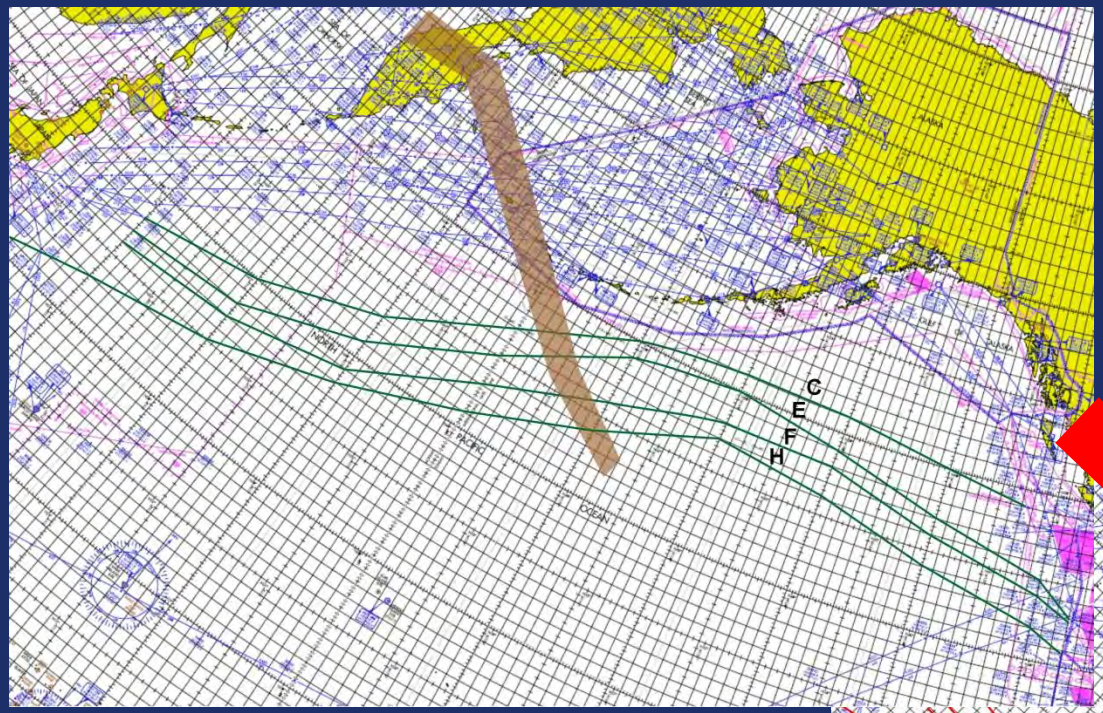
	10 NM	48 NM	184 NM	300 NM	437 NM	TOTALS		Fuel Cost
AAL						0	B767	
AAR						0	A330	
AAY		864				864	B757	$ **397.89**
AJX			4416			4416	B767	$ **2,033.68**
ANA			4416			4416	B767	$ **2,033.68**
ASA	150	5760				5910	B737	$ **2,721.71**
CAL						0	B747	
CNV				18000		18000	B737	$ **8,289.47**
DAL	690		13800			14490	various	$ **6,673.03**
HAL	1020	3888	13248			18156	various	$ **8,361.32**
JAL			29440			29440	various	$ **13,557.89**
KAL			12696			12696	various	$ **5,846.84**
PAL				8100		8100	A340	$ **3,730.26**
UAL	980		7728			8708	various	$ **4,010.26**
UPS				4500		4500	B747	$ **2,072.37**
WJA		1440				1440	B737	$ **663.16**
						131,136	**pounds**	Assumptions
						19,172	**gallons**	6.84 lbs/gal
					Fuel Cost	$ **60,391.58**		$3.15/gal
						$ **28,803.62**	**savings**	

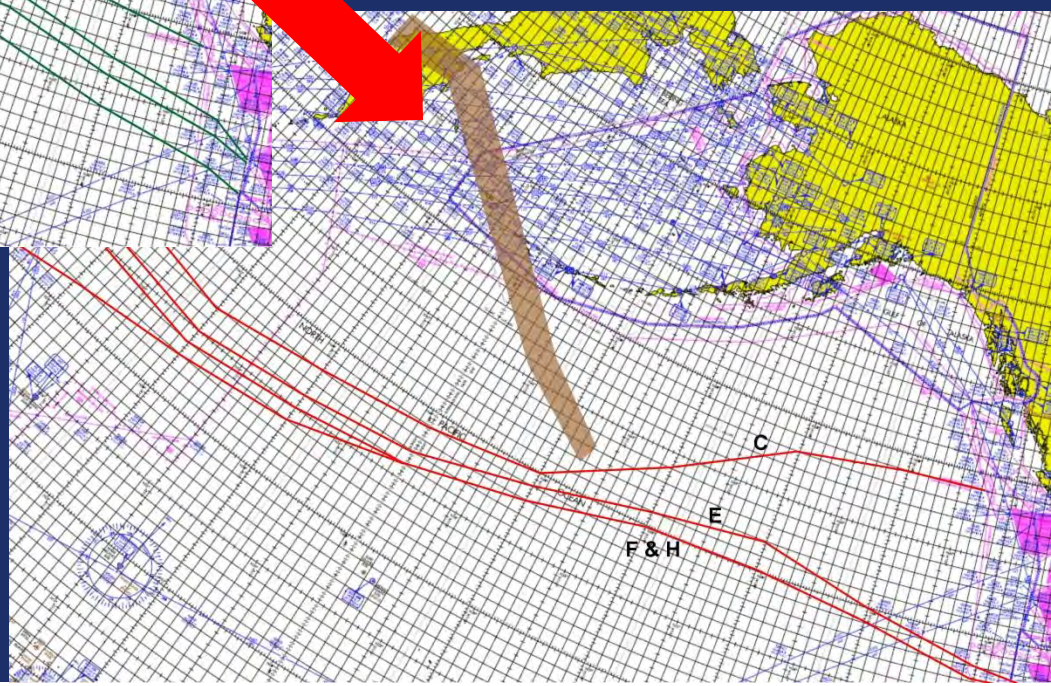


Volcanic Ash & PACOTS Generation

- **VOLKAM13 (IPACG39 Paper IP11)**
- **October 2013, Kamchatka Volcano Klyuchevskoy Eruption.**
- **Ad-hoc telecon to discuss PACOTS and Ash Plume**
  - Need for international dispatchers on telecon.
- **Decision was made to move PACOTS south around Ash Plume**
- **Ash Plume was found to be lower than forecast**

Volcanic Ash & PACOTS Generation





Volcanic Ash & PACOTS Generation

- ICAO Doc 9974 Chapter 2 states:
- THE AIRCRAFT OPERATOR
- 2.3 ICAO's generic safety risk assessment process is described in the *Safety Management Manual* (SMM) (Doc 9859). An approach, aligned with an operator's SMS, would be equally appropriate. The material in this document is designed to provide States with information to support operators in developing the safety risk assessment, within their SMS, covering the volcanic cloud hazard.
-
- 2.4 Responsibilities
- The operator is responsible for the safety of its operations.
- In order to decide whether or not to operate into airspace forecast to be, or aerodromes known to be, contaminated with volcanic ash, the operator should have in place an identifiable safety risk assessment within its SMS.
- *Note.— Guidance on the production of a safety risk assessment is provided in Appendices 1 (Guidelines for completing a safety risk assessment), 2 (Procedures to be considered when conducting a safety risk assessment) and 3 (Hazards and risks to be considered by aircraft operators). Each operator should develop its own list of procedures and hazards since these have to be relevant to the specific equipment, experience and knowledge of the operator, and to the routes to be flown.*

Volcanic Ash & PACOTS Generation

- ICAO's safety risk assessment process is described in the *Safety Management Manual* (SMM) (Doc 9859). An approach, aligned with an organization's SMS, would be equally appropriate.

- 2.10 The State is advised that the CAA exercising oversight of an operator that intends to undertake operations into airspace forecast to be, or aerodromes known to be, contaminated with volcanic ash should establish a methodology for evaluating the safety risk assessment process of the operator's SMS particular to volcanic ash. The operator should not be prevented from operating through, under or over, airspace forecast to be affected by a VAA, VAG or SIGMET provided it has demonstrated in its SMS the capability to do so safely. The guidance set out in Appendix 6 indicates a process that the CAA can use to achieve this outcome.

The ATC responsibilities are covered in ICAO Doc 4444 par 15.8:

15.8 PROCEDURES FOR AN ATC UNIT WHEN A VOLCANIC ASH CLOUD IS REPORTED OR FORECAST

15.8.1 If a volcanic ash cloud is reported or forecast in the FIR for which the ACC is responsible, the controller should:

a) relay all information available immediately to pilots whose aircraft could be affected to ensure that they are aware of the ash cloud's position and the flight levels affected;

b) suggest appropriate re-routing to the flight crew to avoid an area of known or forecast ash clouds;

c) inform pilots that volcanic ash clouds are not detected by relevant ATS surveillance systems;

d) if the ACC has been advised by an aircraft that it has entered a volcanic ash cloud the controller should:

1) consider the aircraft to be in an emergency situation;

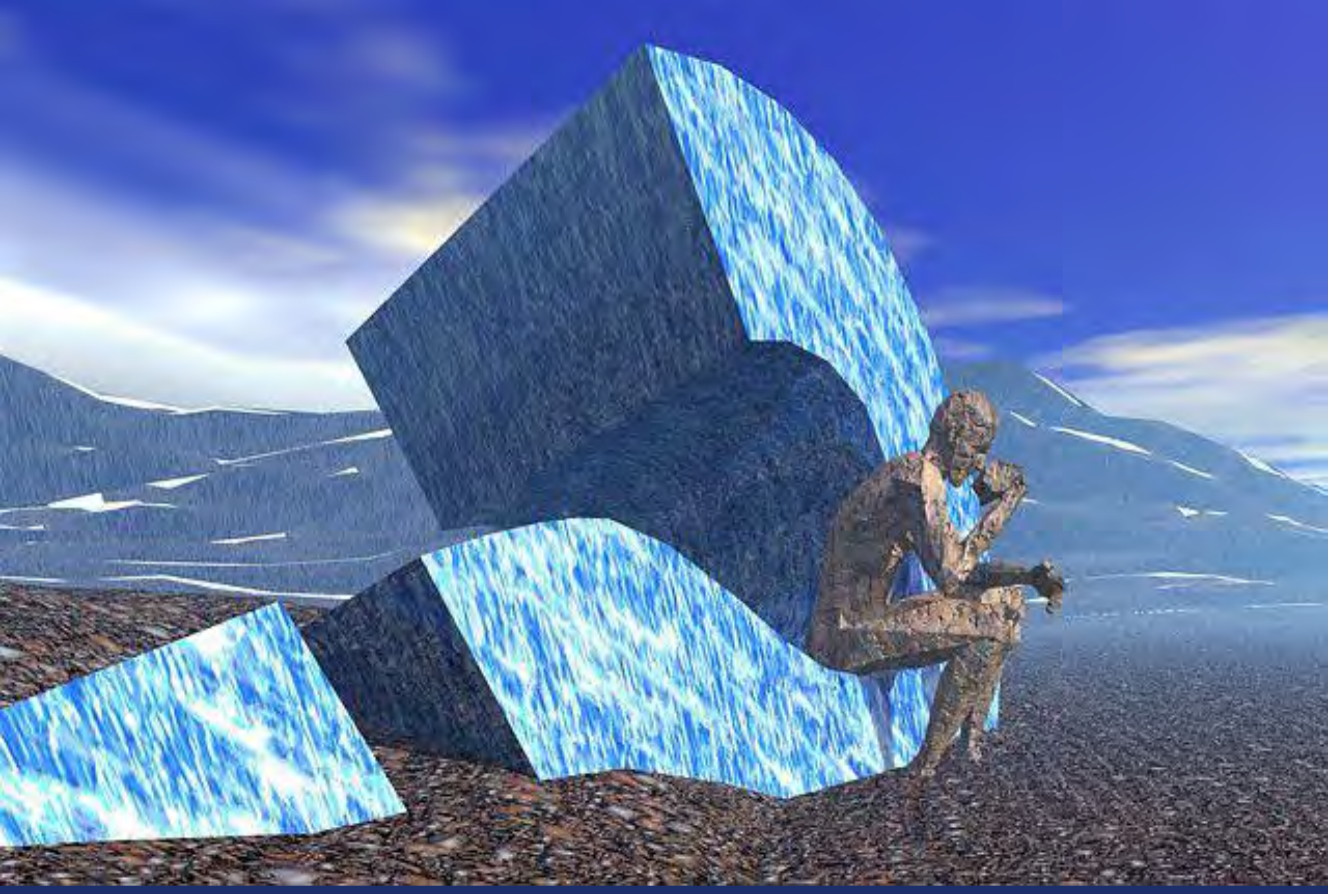
2) not initiate any climb clearances to turbine-powered aircraft until the aircraft has exited the ash cloud; and

3) not initiate vectoring without pilot concurrence.

Note.— Experience has shown that the recommended escape manoeuvre for an aircraft which has encountered an ash cloud is to reverse its course and begin a descent if terrain permits. The final responsibility for this decision, however, rests with the pilot.

Volcanic Ash & PACOTS Generation

- In the event of an Ash Plume:
- Teleconference with International dispatchers
- Reach Agreement on the affected airspace
- When there is no agreement on affected airspace but credible evidence exists that the PACOTS will be affected by the Ash Plume, the PACOTS will be moved so that they are clear of the Ash Plume.
- This is a more conservative approach that keeps aircraft clear of volcanic ash.
- Operators that have completed their SMS analysis and determined that there is no risk could flight plan a route through the affected area.
- ATC would give advisories as required.



ICAO Annex 2 3.6.2.2 change

- *3.6.2.2 Inadvertent changes. In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:*
- *a) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.*
- *b) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.*
- *c) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 minutes from that notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.*
-
- *3.6.2.2.1 Additionally, when an ADS agreement is in place, the air traffic services unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.*

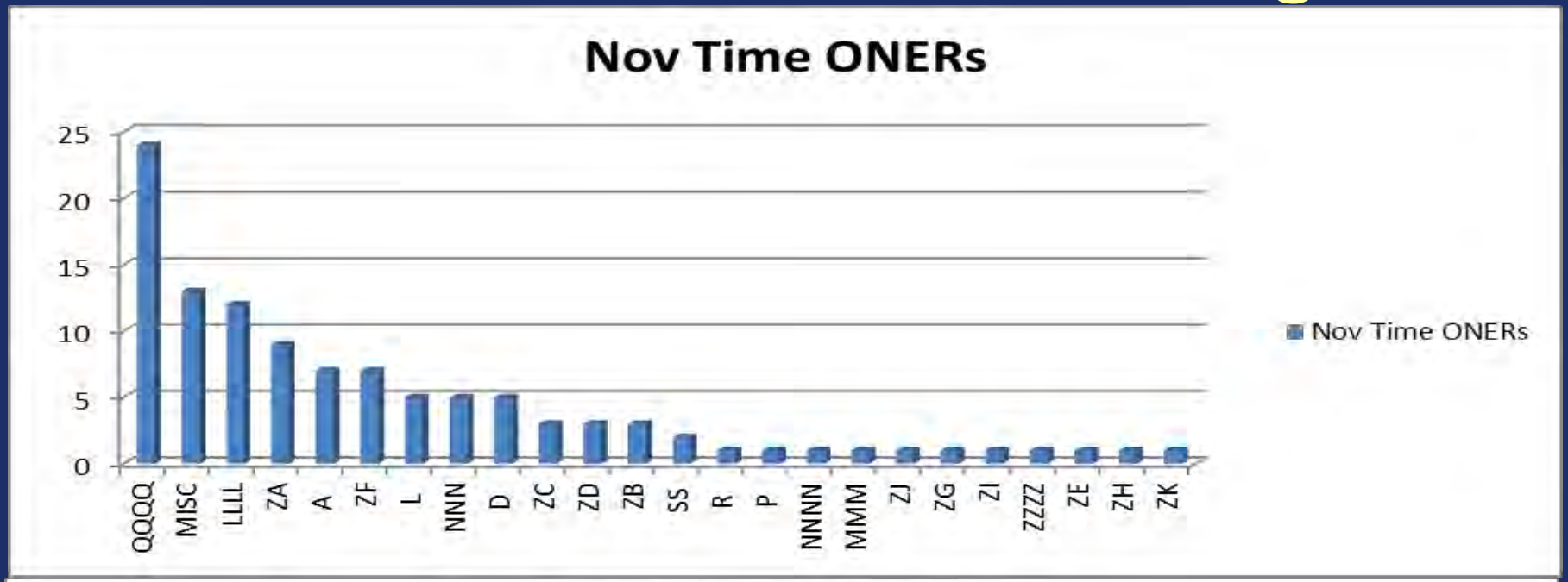
Oceanic Navigation Error Reporting

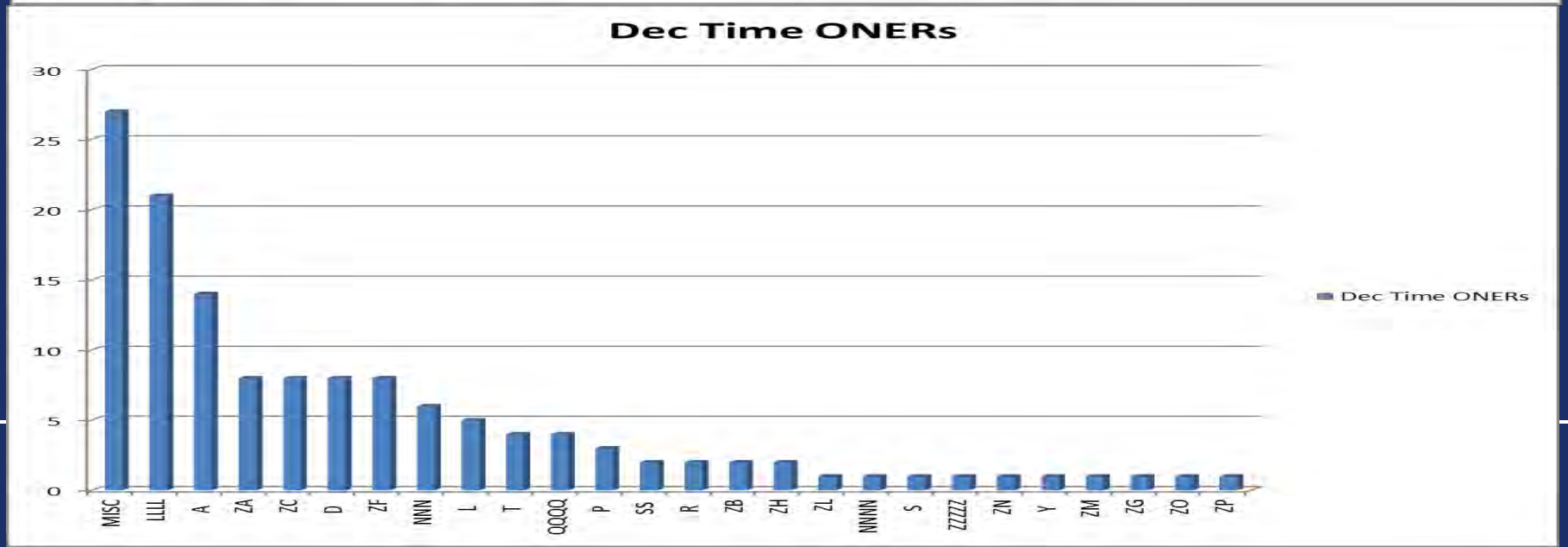
- **FAA requires reporting of Oceanic Navigation Errors:**
  - GNE (Gross Navigation Error) 25nm or more.
  - Intervention: Aircraft on different route than ATC.
  - Height Error: 300 feet or more.
  - Time Errors: Pacific = More than 3 minutes
- **ONER Reports are forwarded to:**
  - Flight Standards
  - Technical Center, Airspace Safety Calculations.
- **Oakland has automated Time Error tracking and reporting.**

Oceanic Weather Deviations

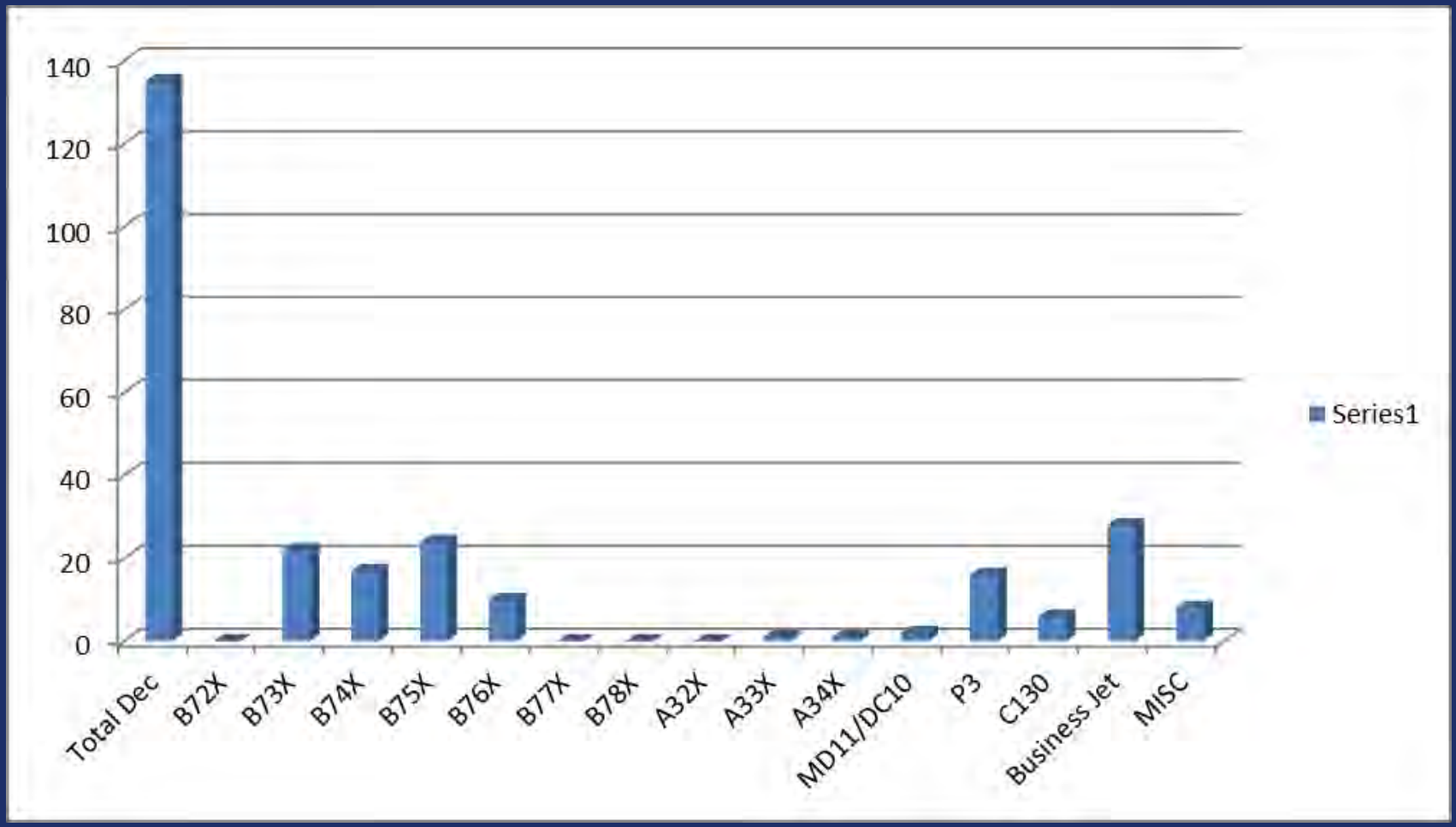
- Oakland has recently experienced a few aircraft deviating off course without making a weather deviation request or receiving a clearance.
- Please make weather deviation requests prior to deviating off course for weather.

ONER Time Errors Tracking





ONER Time Errors December 2013



Dennis Addison

Support Manager

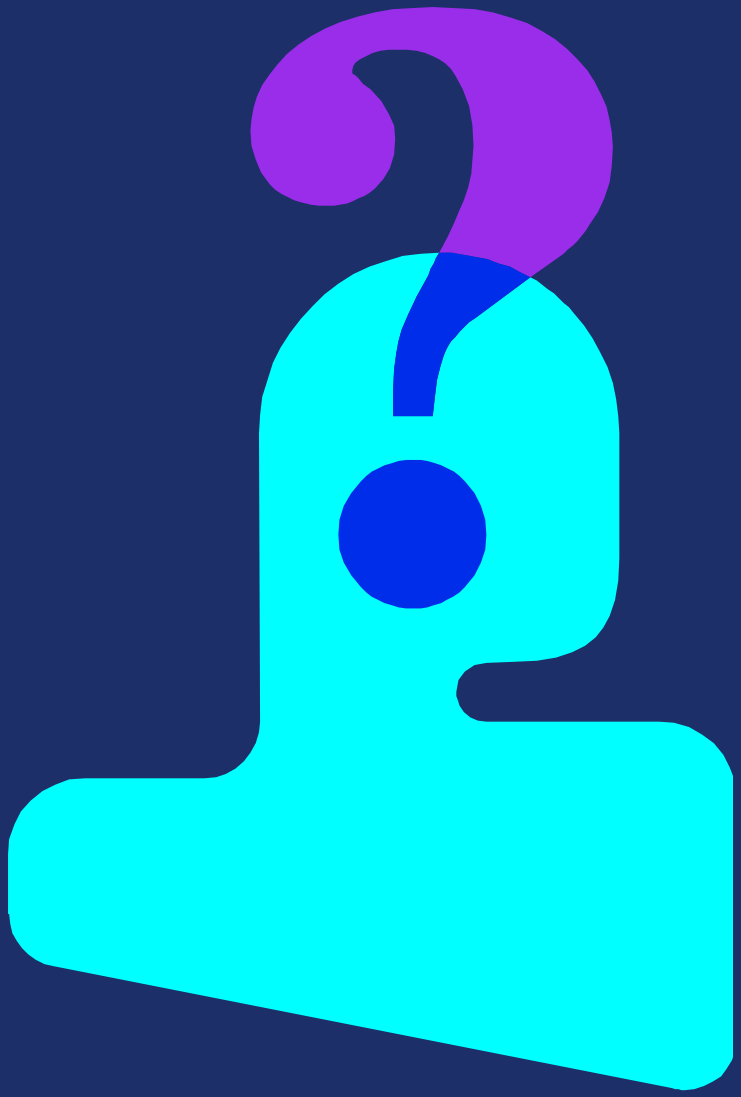
Oakland Center

Oceanic Airspace &

Procedures

510-745-3258

Dennis.Addison@faa.gov



•Oceanic and Offshore Operations

•AJV-824

Presented By: Steve Pinkerton, FAA

Federal Aviation Administration

Cross Polar Work Group (CPWG)

- **CPWG/16- Held in Ottawa, Canada 3-6 December 2013**
  - Hosted by NAVCANADA. Attendees included JCAB, State ATM, Isavia, Avinor, FAA, IATA, Jeppesen, and representatives from numerous international air carriers
- **Sochi Olympic and Para-Olympic Winter Games 2014**
  - State ATM provided a briefing on plans and traffic flow management initiatives
  - Peak traffic demand is expected on 24 February with approximately 470 operations expected.
    - Previous busiest day was 260 operations.
  - Slot times-
    - 45 minutes for long-haul flights
    - 30 minutes for short to medium range flights
  - Sochi International constraints
    - Can only accommodate 2 wide-body aircraft on the airport at a time
    - Aircraft have a two hour time limit on the ground to deplane and depart the airfield
  - Satellite airport constraints
    - Not all are international airports
      - Requires special permit
    - Can't accommodate wide-body aircraft
      - Wide-body aircraft requiring diversion will need to go to Ankara, Turkey or appropriate airports in the Ukraine

Cross Polar Work Group (CPWG)

- **Sochi Games 2014 (Cont.)**
  - No impact expected to US air traffic operations
  - Impact on aircraft operators could be significant due to constraints at Sochi and satellite airports
  - Accurate departure time information is requested by State ATM to help manage flow into airports
- **Volcanic Activity**
  - American Airlines presented a working paper regarding a volcanic event on the Kamchatka Peninsula on 16 October 2013
  - The event highlighted a need for improved communications between stakeholders during events
    - FAA currently evaluating processes
- **Route Development**
  - Elimination of BAGLI and new route from KUNAD to OTLER being developed by State ATM
  - Fukuoka and Petropavlovsk-Kamchatski working to develop routes between the two facilities
    - Issues highlighted during VOLKAM/13 exercise

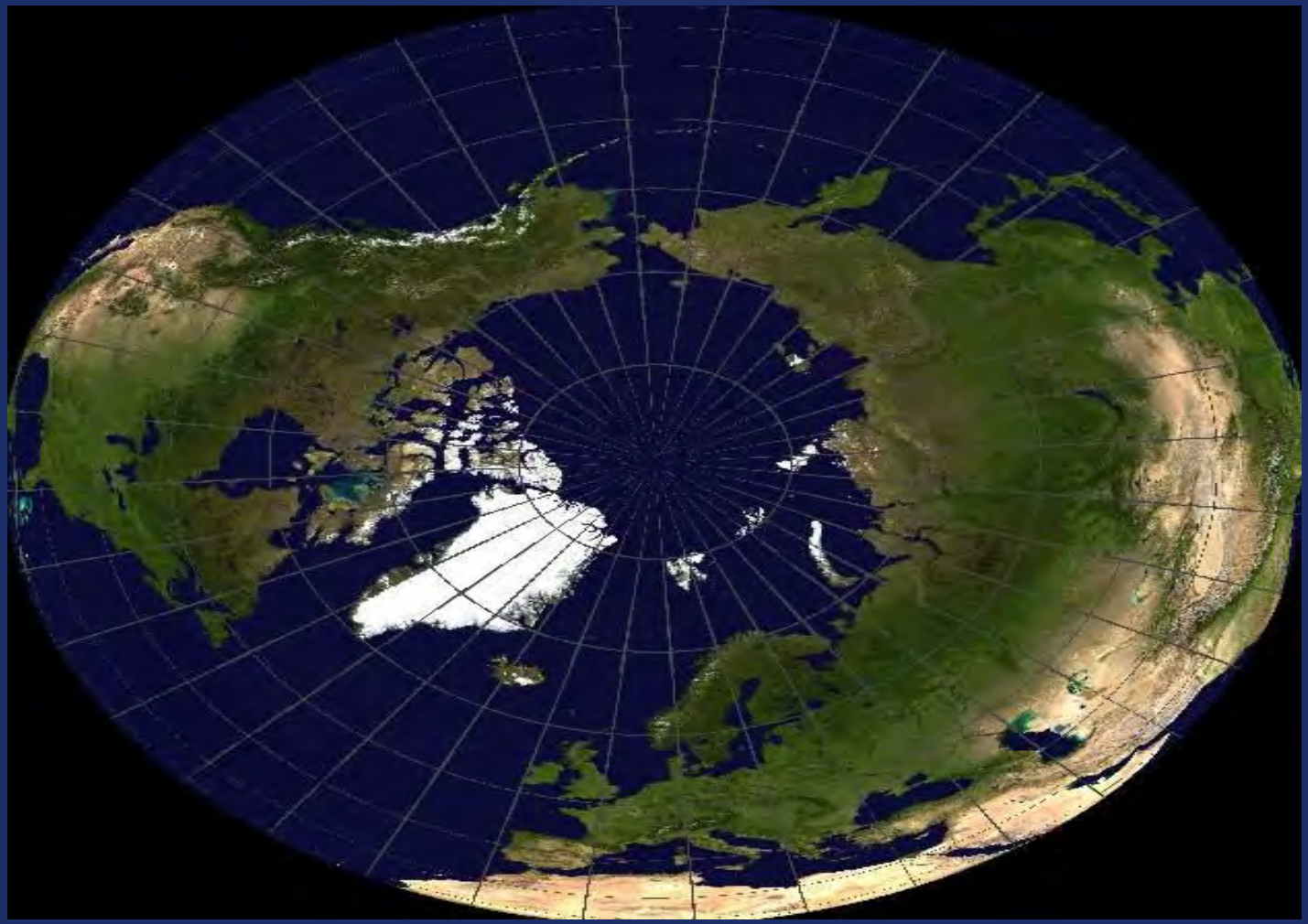
Cross Polar Work Group (CPWG)

- **User Trajectory Planning**
  - Certain enhancements and data, such as early intent information, from DOTS+ system were requested by airline operators
    - DOTS+ in a maintenance mode, so requested information not available
  - FAA currently developing User Trajectory Planning
    - Part of NextGen
    - Interactive flight plan collaboration
    - Provides feedback about likelihood of achieving a planned trajectory prior to oceanic entry, whether pre-flight or in-flight
    - Operators would request a User Preferred Trajectory (UPT) with acceptable variations. System designed to recognize and equitably handle variations
    - Support of increased UPT's by encouraging de-confliction, even in complex airspace
  - Prototype in development
    - Operational trials and implementation TBD

Pacific Project Team Meeting

- **Held 3 December 2013**
  - Blair Cowles, IATA and Keith Dutch, FAA Co-chaired the meeting
- **Track Generation Times**
- **Exclusionary "Flex Tracks"**
- **NOPAC Route Structure**
  - R220 and R580

Questions?




NAV CANADA

Anchorage ARTCC

Presented to: OWG

By: Steve Kessler, Traffic Management Officer
Anchorage ARTCC

Date: January, 22 2014

Federal Aviation Administration

ATOP and Anchorage ARTCC Sector “64”

- Planning / development work continues to bring the Anchorage Arctic FIR under the ATOP / Ocean21 Automation platform.

- Requires re-sectorizing existing Sector 4

- Possible configurations:

ANCHORAGE ARTIC
FLIGHT INFORMATION REGION

1)	N90°0'0"	W141°0'0"
AA1)	N72°0'0"	W141°0'0"
AA2)	N72°0'0"	W158°0'0"
AA3)	N68°0'0"	W168°58'23"

to the Point of Beginning

ANCHORAGE OCEANIC
FLIGHT INFORMATION REGION

11)	N50°08'0"	W176°34'0"
12)	N45°42'0"	E162°55'0"
13)	N50°05'0"	E159°0'0"
14)	N54°0'0"	E169°0'0"
15)	N54°40'0"	E170°0'0"
A01)	N51°30'0"	E170°0'0"
A02)	N51°05'0"	E173°44'0"
A03)	N50°37'0"	E179°35'0"

to the Point of Beginning

ANCHORAGE FLIGHT INFORMATION REGION

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2)	N60°18–24.29"	W141°0'0"

thence along the Alaska–Canada border to

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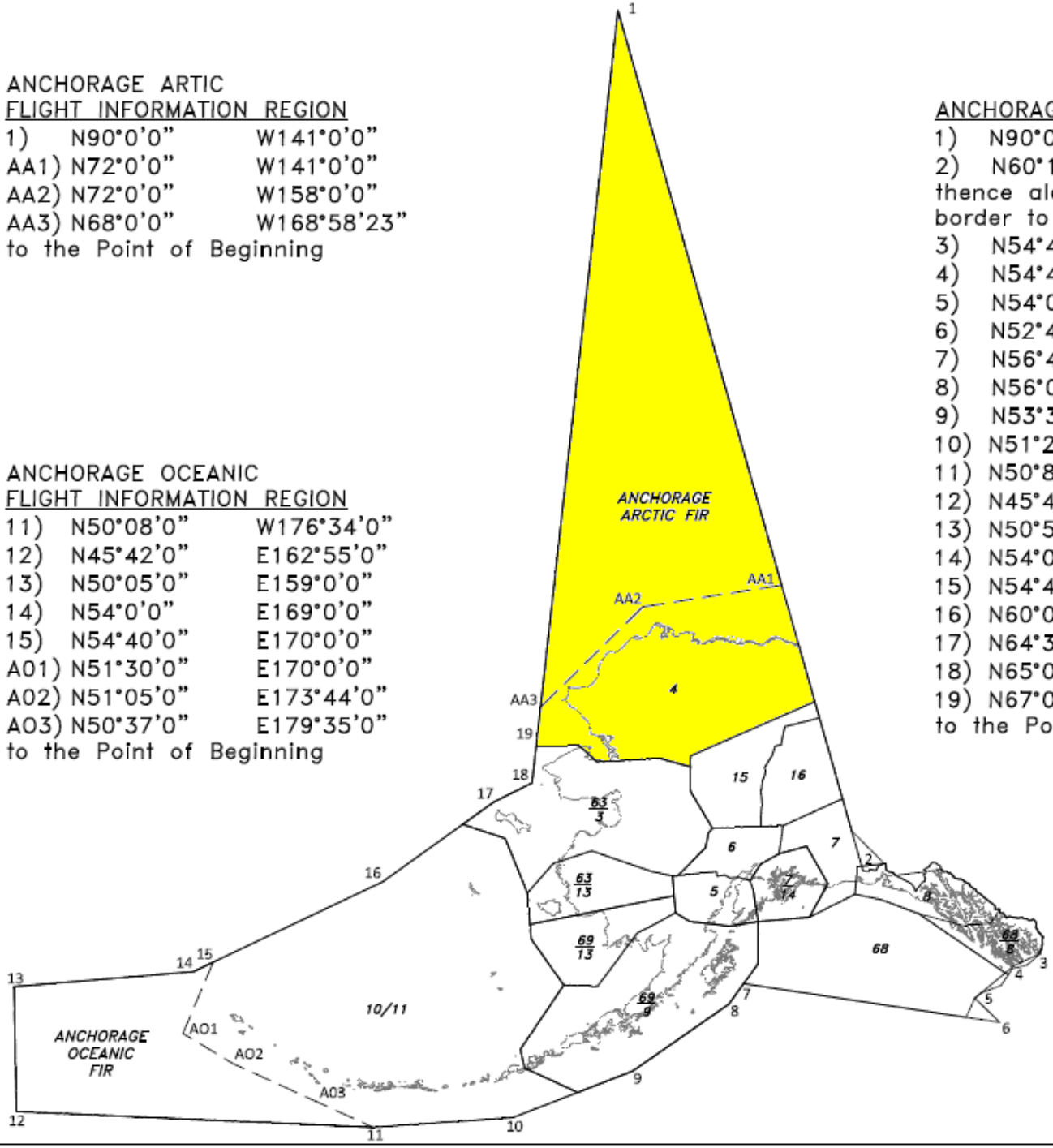

NOTE: STRATIFIED SECTORS ARE DENOTED BY $\frac{XX}{X}$ WHERE THE TOP NUMBER CORRESPONDS WITH THE SECTOR AT AND ABOVE FL290 WHILE THE BOTTOM NUMBER INDICATES THE SECTOR BELOW FL290

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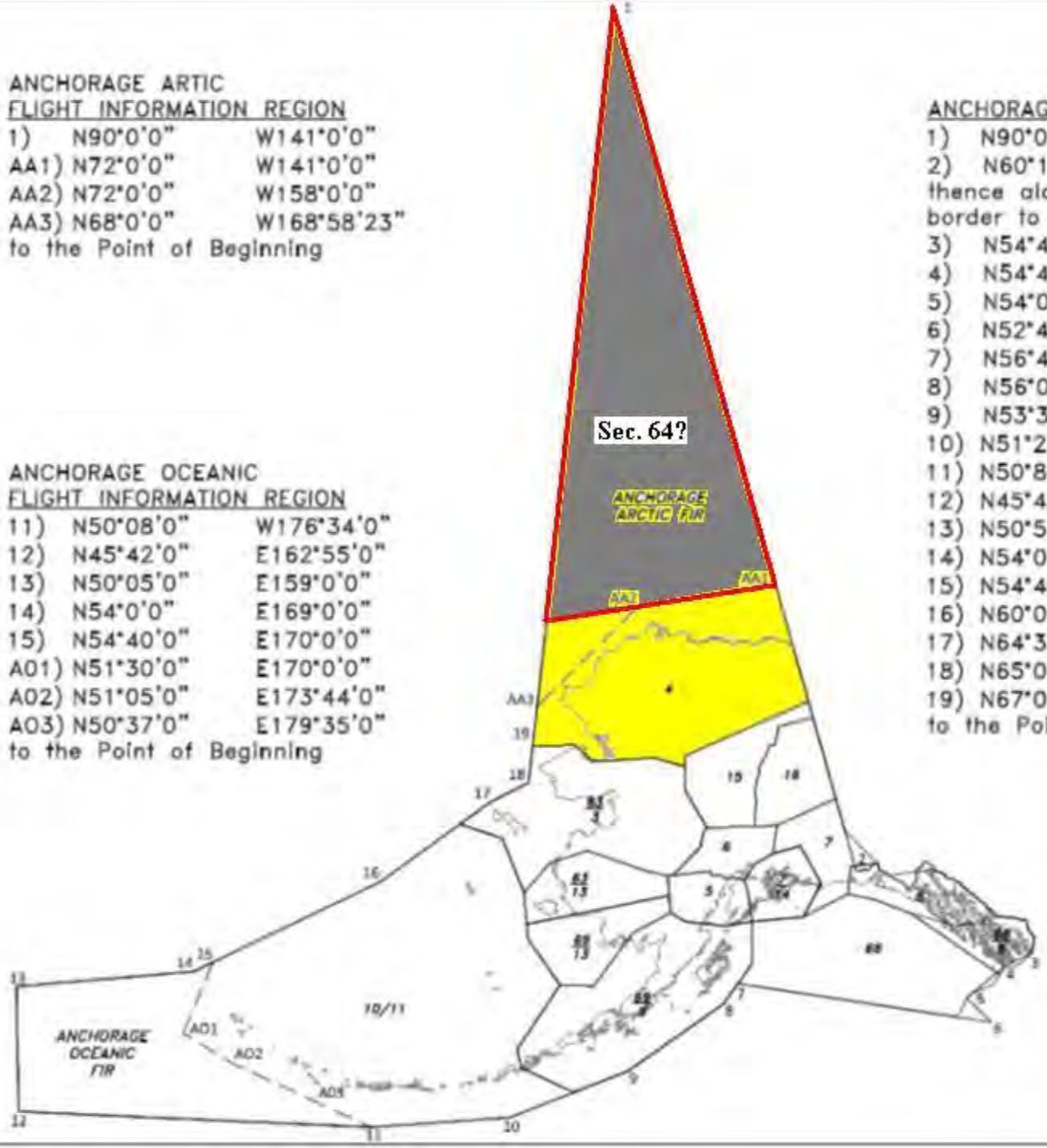

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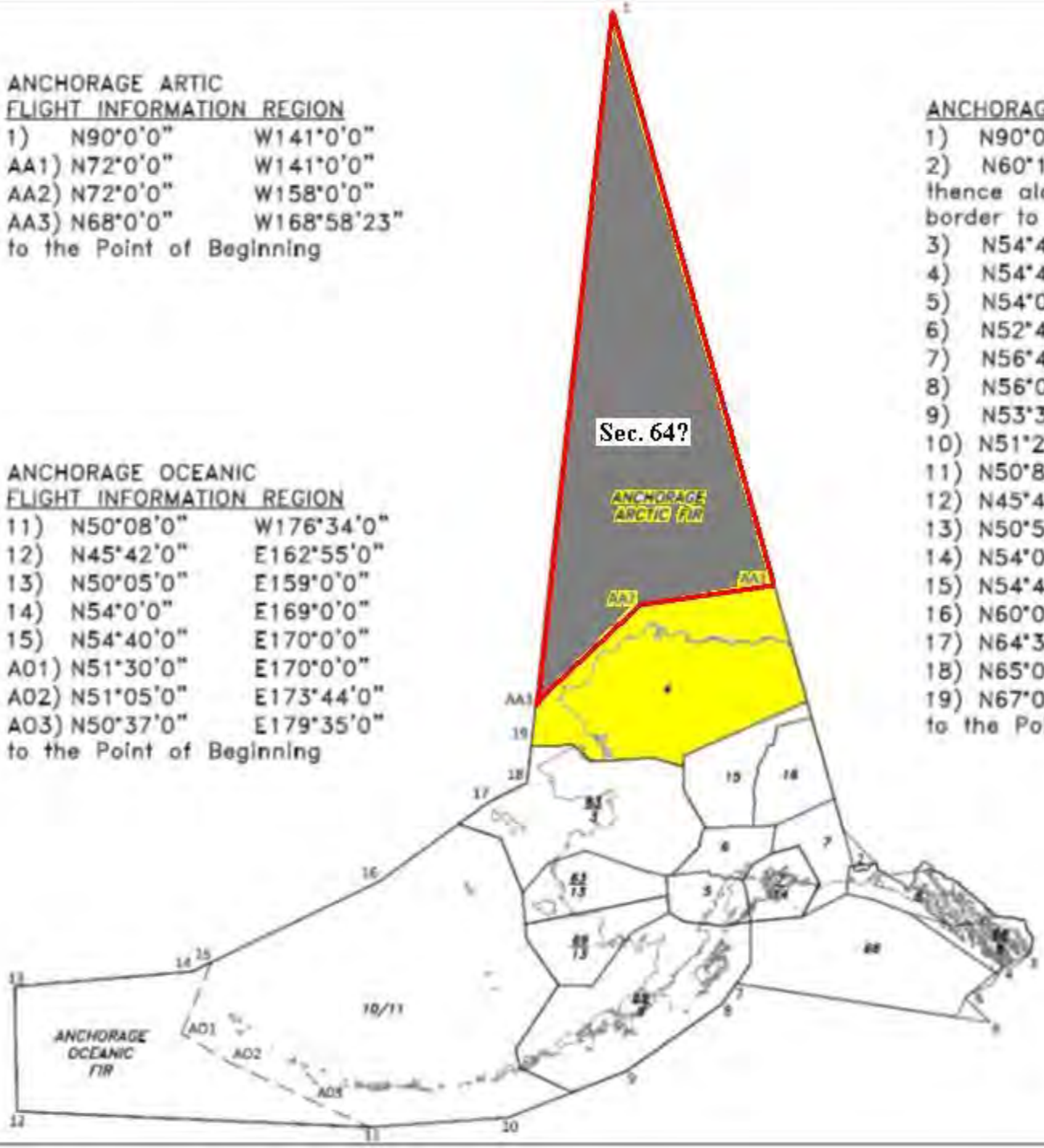

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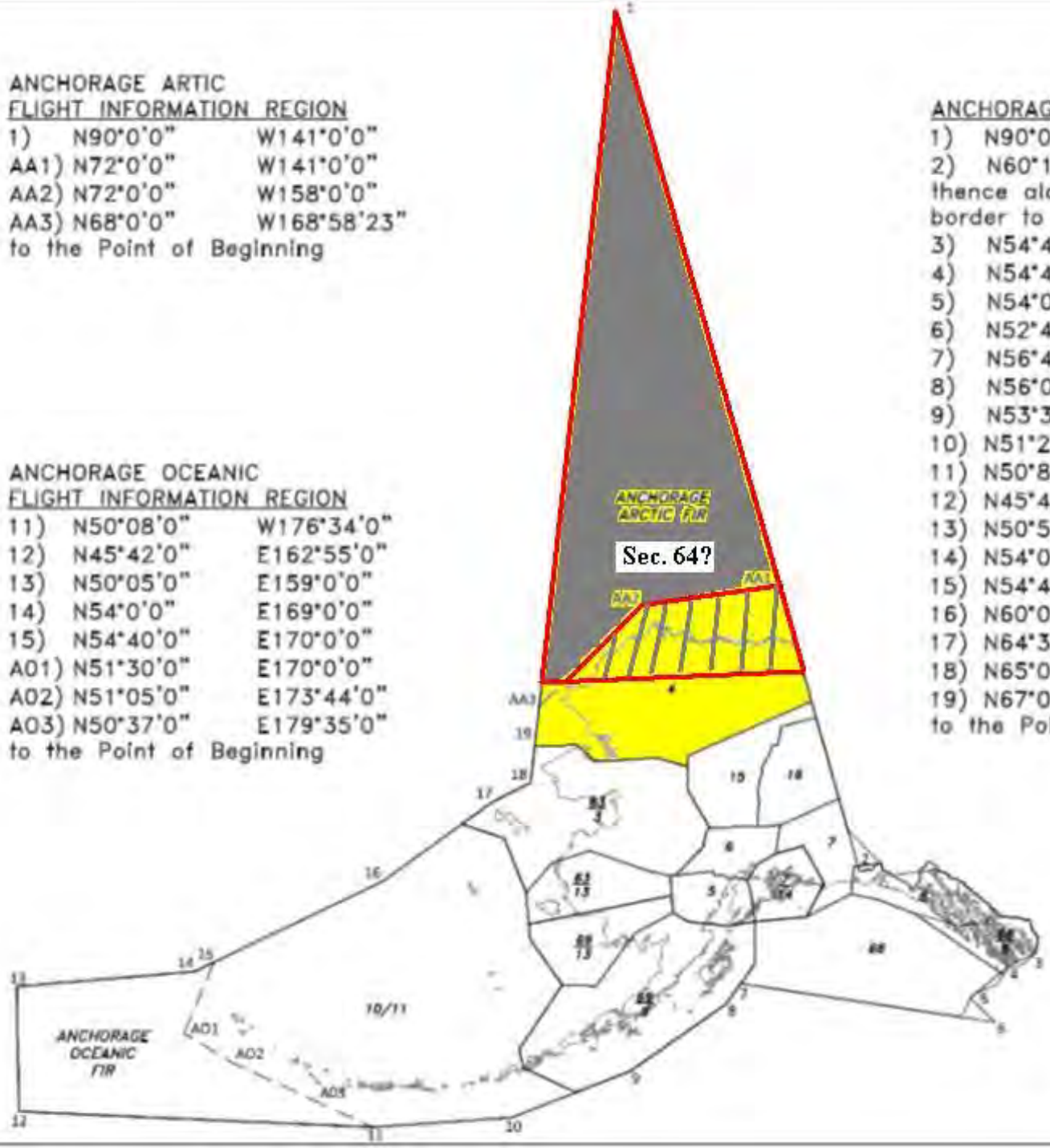

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ATOP and Anchorage ARTCC Sector “64”

- Require controller training and possible work force re-balancing.
- *Planned implementation 3rd QTR 2015*.

CNS Sector 4 or Sector 64

Current

- Surveillance
  - Radar below 72º N
  - None above 72º N
- Navigation
  - GNSS / INS
  - No land based
- Communication
  - HF via Nav Canada's "Gander Radio"
  - CPDLC (dependent on equipage / coverage)
  - SATCOM (dependent on equipage / coverage)
- ATC Separation
  - Vertical – RVSM
  - Lateral – Based on RNAV 10 (RNP-10)
  - Longitudinal – 15' standard w/out MACH

With ATOP/Ocean21

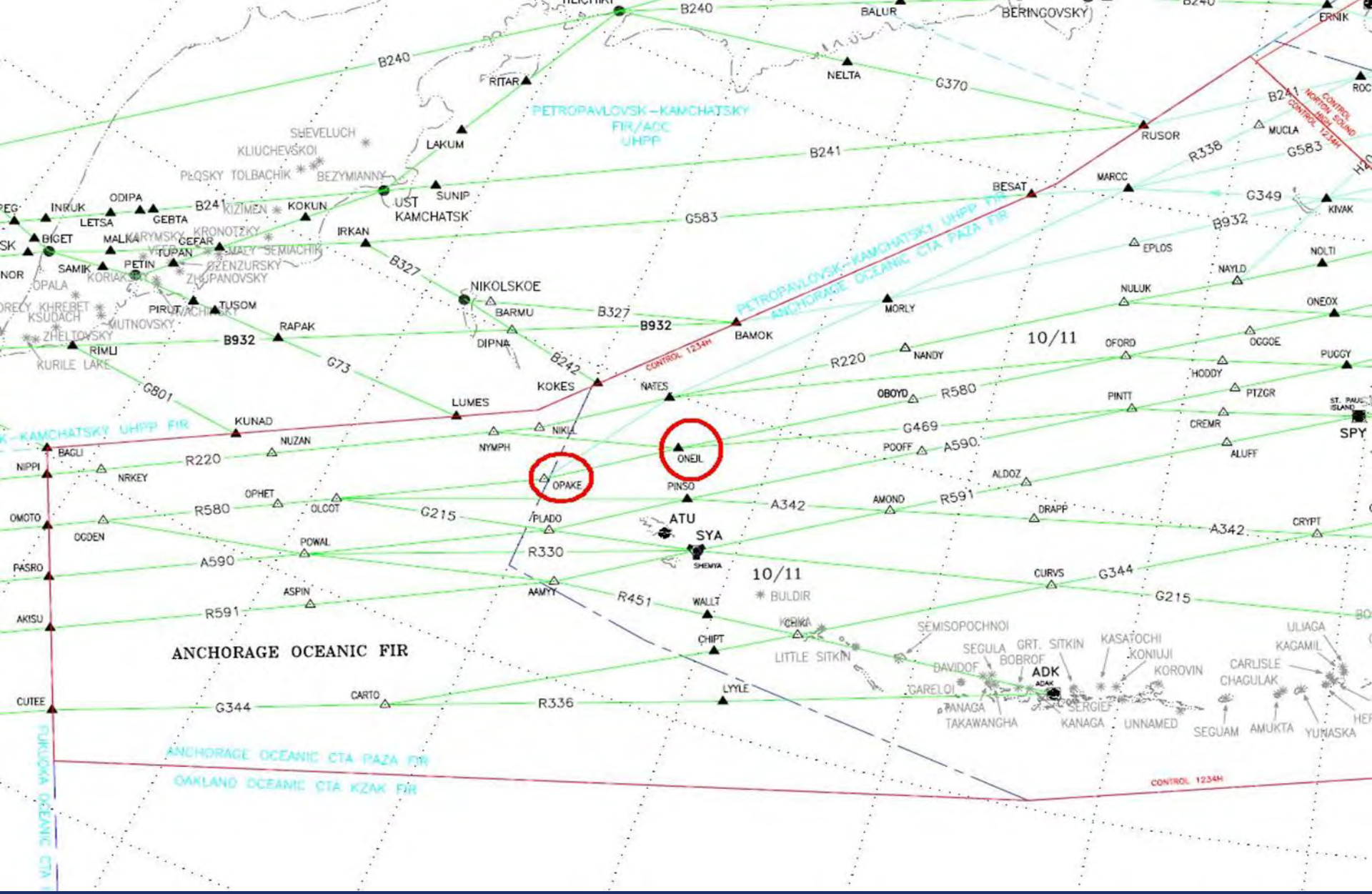
- Surveillance
  - Radar below 72º N
  - ADS-C throughout (depending on equipage)
- Navigation
  - GNSS / INS
  - No land based
- Communication
  - HF via Nav Canada's "Gander Radio"
  - CPDLC (dependent on equipage / coverage)
  - SATCOM (dependent on equipage / coverage)
- ATC Separation
  - Vertical – RVSM
  - Lateral – Based on RNAV 10 (RNP-10)
  - Longitudinal – 15' standard w/out MACH

ATOP and Anchorage ARTCC Sector “64”

- Primary benefit to ATC will be ADS-C surveillance and enhanced Controller tools – e.g. electronic situation display, route readout, conflict probe.
- Potential benefits for airspace users
  - Near term
    - Improved Alerting Service
    - Improved access to altitude change
    - Improved routing options (i.e. Lifting of 141° W crossing restrictions)
  - Long term
    - Separation minima reduction
- Potential impacts for airspace users
  - Flight plan filing address change

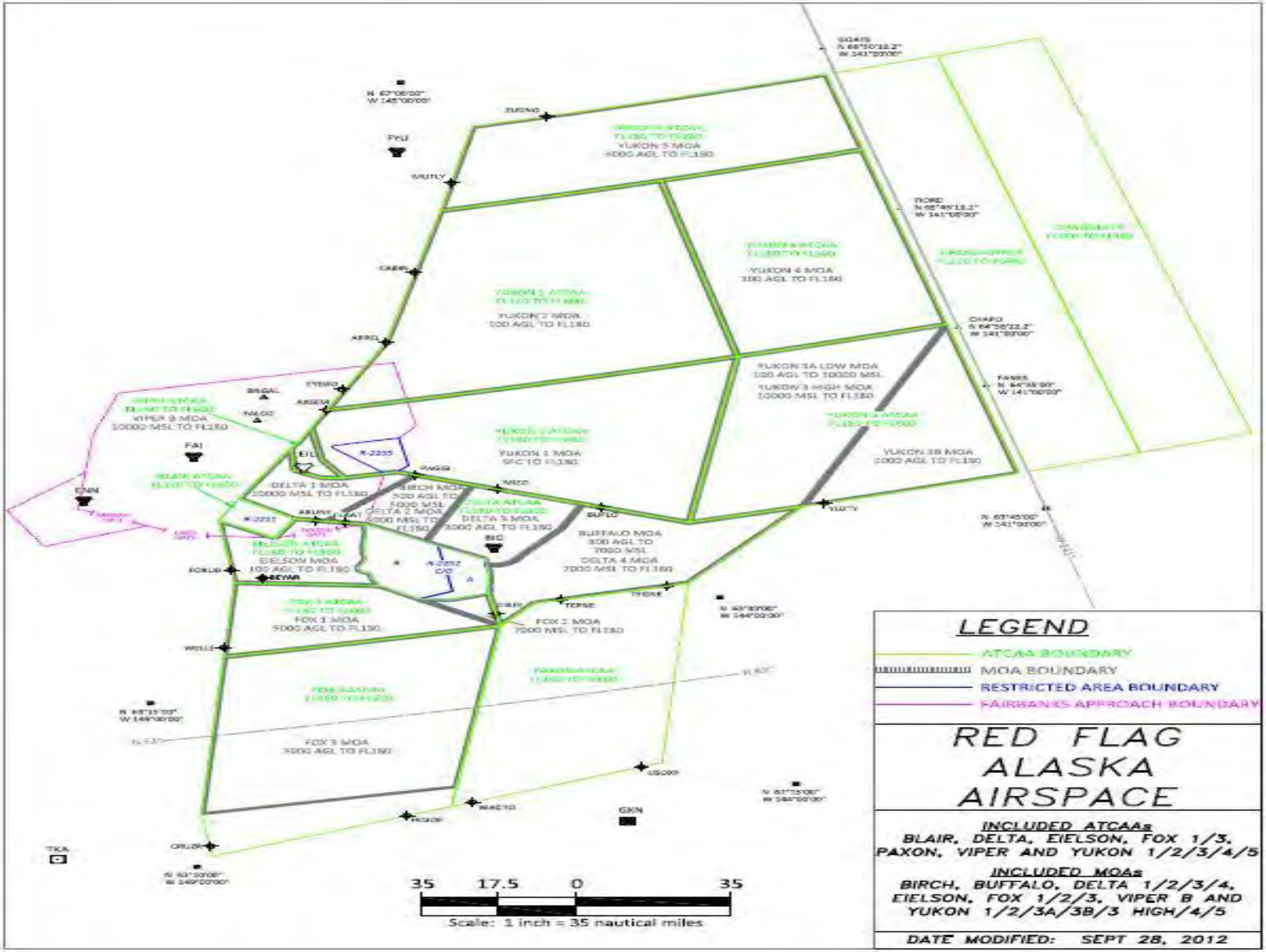
Anchorage ARTCC User Preferred Routings

- Published in Alaska Chart Supplement ("Supplement Alaska") and via NOTAM
- Current NOTAM is PAZA A0211/13
- Current UPR restriction for flights joining NOPAC route R580 is to join no further west than ONEIL.
- Effective 2/12/14, restriction will change to require joining R580 no further west than OPAKE.


B240
BALUR
BERINGOVSKY
ERNIK
RITAR
NELTA
G370
PETROPAVLOVSK-KAMCHATSKY
FIR/ACC
UHPP
SHEVELUCH
KLIUCHEVSKOI
PLOSKY TOLBACHIK
BEZYMIANNY
LAKUM
B241
RUSOR
MUCLA
R338
G583
H40
SUNIP
UST
KAMCHATSK
BESAT
MARCC
G349
KIVAK
INRUK
ODIPA
LETSA
GEBTA
B241
KIZIMEN
KOKUN
BIGET
MALKA
KARYMSKY
GEFAR
TUPAN
PETIN
SAMIK
KORIAKSKY
ZHUPANOVSKY
IRKAN
G583
EPLOS
B932
NOLTI
NAYLD
B327
NIKOLSKOE
BARMU
PIRUT
TUSOM
RAPAK
B932
DIPNA
B242
BAMOK
MORLY
NULUK
ONEOX
OCGOE
PUGGY
RIMU
G73
G801
KUNAD
LUMES
KOKES
NATES
CONTROL 1234H
R220
NANDY
10/11
OFORD
HODDY
PTZGR
OBOYD
R580
PINTT
CREMR
ST. PAUL ISLAND
SPY
ALUFF
G469
POOFF
A590
ALDOZ
NUZAN
NIKUL
NYMPH
ONEJL
OPAKE
PINSO
BAGLI
NIPPI
NRKEY
R220
OPHET
OLCOT
G215
PLADO
ATU
SYA
A342
AMOND
R591
DRAPP
CRYPT
OMOTO
OGDEN
R580
POWAL
R330
SHEMYA
PASRO
A590
ASPIN
AAMYY
R451
WALLT
10/11
BULDIR
CURVS
G344
G215
AKISU
R591
CHIPT
CHIKA
SEMISOPOCHNOI
LITTLE SITKIN
SEGULA
GRT. SITKIN
BOBROF
KASATOCHI
KONIUJI
DAVIDOF
ADK
KOROVIN
ULIAGA
KAGAMIL
CARLISLE
CHAGULAK
GARELOI
PANAGA
TAKAWANGHA
SERGIEF
KANAGA
UNNAMED
SEGUAM
AMUKTA
YUNASKA
CUTEE
G344
CARTO
LYYLE
R336
ANCHORAGE OCEANIC FIR
ANCHORAGE OCEANIC CTA PAZA FIR
OAKLAND OCEANIC CTA KZAK FIR
CONTROL 1234H

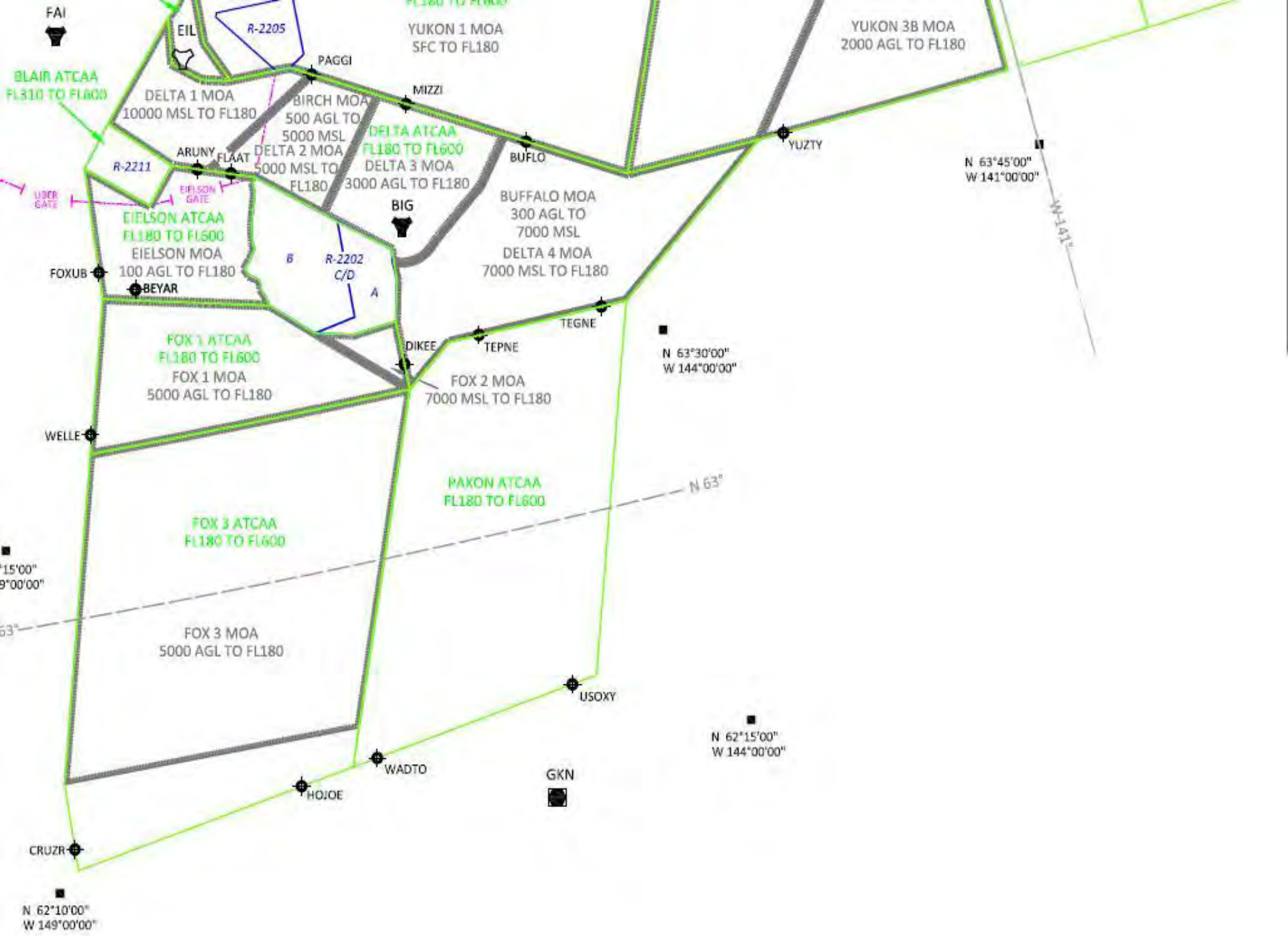
Special Military Exercises / Airspace

- 4 “Red Flag” Large Scale Exercises planned for 2014
  1. May 9-23
  2. Jun. 13-27
  3. Aug. 8-22
  4. Oct. 3-17
- Normal routing restrictions will apply.
- Monitor http://sua.faa.gov/sua for other daily training airspace.



YUKON 5 MOA
5000 AGL TO FL180
YUKON 4 MOA
100 AGL TO FL180
YUKON 2 MOA
100 AGL TO FL180
YUKON 3A LOW MOA
100 AGL TO 10000 MSL
YUKON 3 HIGH MOA
10000 MSL TO FL180
YUKON 3B MOA
2000 AGL TO FL180
YUKON 1 MOA
SFC TO FL180
VIPER B MOA
10000 MSL TO FL150
DELTA 1 MOA
10000 MSL TO FL180
BIRCH MOA
500 AGL TO
5000 MSL
DELTA 2 MOA
5000 MSL TO
FL180
DELTA 3 MOA
3000 AGL TO FL180
BUFFALO MOA
300 AGL TO
7000 MSL
DELTA 4 MOA
7000 MSL TO FL180
EIELSON MOA
100 AGL TO FL180
FOX 1 MOA
5000 AGL TO FL180
FOX 2 MOA
7000 MSL TO FL180
FOX 3 MOA
5000 AGL TO FL180
FYU
FAI
EIL
ENN
BIG
GKN
TKA
LEGEND
ATCAA BOUNDARY
MOA BOUNDARY
RESTRICTED AREA BOUNDARY
FAIRBANKS APPROACH BOUNDARY
RED FLAG ALASKA AIRSPACE
INCLUDED ATCAAs
BLAIR, DELTA, EIELSON, FOX 1/3, PAXON, VIPER AND YUKON 1/2/3/4/5
INCLUDED MOAs
BIRCH, BUFFALO, DELTA 1/2/3/4, EIELSON, FOX 1/2/3, VIPER B AND YUKON 1/2/3A/3B/3 HIGH/4/5
DATE MODIFIED: SEPT 28, 2012
35 17.5 0 35
Scale: 1 inch = 35 nautical miles


GOATS
N 66°50'10.2"
W 141°00'00"
N 67°00'00"
W 145°00'00"
ZUDNO
FYU
YUKON 5 ATCAA
FL180 TO FL600
YUKON 5 MOA
5000 AGL TO FL180
MUTLY
FIORD
N 65°46'13.2"
W 141°00'00"
DRAGONFLY
FL260 TO FL490
GRASSHOPPER
FL210 TO FL490
YUKON 4 ATCAA
FL180 TO FL600
YUKON 4 MOA
100 AGL TO FL180
CABIN
YUKON 2 ATCAA
FL180 TO FL600
YUKON 2 MOA
100 AGL TO FL180
CHAPO
N 64°58'22.2"
W 141°00'00"
APPEL
YUKON 3A LOW MOA
100 AGL TO 10000 MSL
YUKON 3 HIGH MOA
10000 MSL TO FL180
FANES
N 64°35'00"
W 141°00'00"
EYEGO
BNGAL
AXSEM
FALCO
YUKON 3 ATCAA
FL180 TO FL600
YUKON 1 ATCAA
FL180 TO FL600
YUKON 1 MOA
SFC TO FL180
YUKON 3B MOA
2000 AGL TO FL180
FAI
EIL
R-2205
PAGGI
MIZZI
BLAIR ATCAA
FL310 TO FL600
DELTA 1 MOA
10000 MSL TO FL180
BIRCH MOA
500 AGL TO
5000 MSL
DELTA ATCAA
FL180 TO FL600
DELTA 2 MOA
5000 MSL TO
DELTA 3 MOA
3000 AGL TO FL180
ARUNY
FLAAT
R-2211
BUFLO
YUZTY
N 63°45'00"
W 141°00'00"


FAI
EIL
R-2205
YUKON 1 MOA
SFC TO FL180
YUKON 3B MOA
2000 AGL TO FL180
PAGGI
MIZZI
BLAIR ATCAA
FL310 TO FL600
DELTA 1 MOA
10000 MSL TO FL180
BIRCH MOA
500 AGL TO
5000 MSL
DELTA 2 MOA
5000 MSL TO
FL180
DELTA ATCAA
FL180 TO FL600
DELTA 3 MOA
3000 AGL TO FL180
ARUNY
FLAAT
BUFLO
YUZTY
N 63°45'00"
W 141°00'00"
W-141°
R-2211
USER GATE
EIELSON GATE
EIELSON ATCAA
FL180 TO FL600
EIELSON MOA
100 AGL TO FL180
BIG
BUFFALO MOA
300 AGL TO
7000 MSL
DELTA 4 MOA
7000 MSL TO FL180
FOXUB
BEYAR
B
R-2202
C/D
A
TEGNE
DIKEE
TEPNE
N 63°30'00"
W 144°00'00"
FOX 1 ATCAA
FL180 TO FL600
FOX 1 MOA
5000 AGL TO FL180
FOX 2 MOA
7000 MSL TO FL180
WELLE
PAXON ATCAA
FL180 TO FL600
N 63°
FOX 3 ATCAA
FL180 TO FL600
15'00"
9°00'00"
63°
FOX 3 MOA
5000 AGL TO FL180
USOXY
N 62°15'00"
W 144°00'00"
WADTO
GKN
HOJOE
CRUZR
N 62°10'00"
W 149°00'00"

Red Flag Routing Restrictions

Effective times and altitudes:

SFC - FL600, 1700-2100, 2300-0300 WEEKDAYS, 12 MAY 17:00 2014 UNTIL 22 MAY 0300 2014

Restrictions:

1) ALL WESTBOUND FLIGHTS ENTERING THE ANCHORAGE FIR NORTH OF 62N141W MUST BE ESTABLISHED ON ONE OF THE FOLLOWING ROUTES:

(A) ON OR NORTH OF NCA30

(B) OVER OR SOUTH OF ORT. IF ROUTING VIA ORT, UTILIZE ONE OF THE FOLLOWING TRANSITIONS:

(1) ORT J124 BGQ NODLE R220

(2) ORT J124 BGQ NODLE NICHO R580

(3) ORT J124 GKN 6140N151W MCG

Red Flag Routing Restrictions

2) ALL EASTBOUND FLIGHTS TRANSITING THE ANCHORAGE FIR SHALL FLIGHT PLAN VIA ONE OF THE FOLLOWING:

(A) ON OR NORTH OF FYU J167 POTAT NCA30

(B) OVER OR SOUTH OF ANC J511 GKN J124 ORT

Red Flag Routing Restrictions

3) THE FOLLOWING ROUTES ARE **NOT AVAILABLE**:

(A) NCA28, NCA24, NCA19 AND NCA22

(B) J167 BETWEEN GKN AND FYU

(C) J502/J515 BETWEEN FAI AND ORT

(D) V481 BETWEEN BIG AND FYU

(E) J507 BETWEEN ORT AND FYU

Red Flag Routing Restrictions

4) FROM 1700-1800 UTC, 2030-2100 UTC, 2300-0000 UTC AND 0230-0300 UTC WEEKDAYS: AIRCRAFT LANDING/DEPARTING FAI AND LOW ALTITUDE AIRCRAFT FILED BETWEEN BIG AND ORT OR BIG AND GKN WILL BE RESTRICTED AT OR BELOW 17000 MSL.

5) FROM 1800-2030 UTC AND 0000-0230 UTC WEEKDAYS, THE FOLLOWING ROUTES ARE **NOT AVAILABLE**:

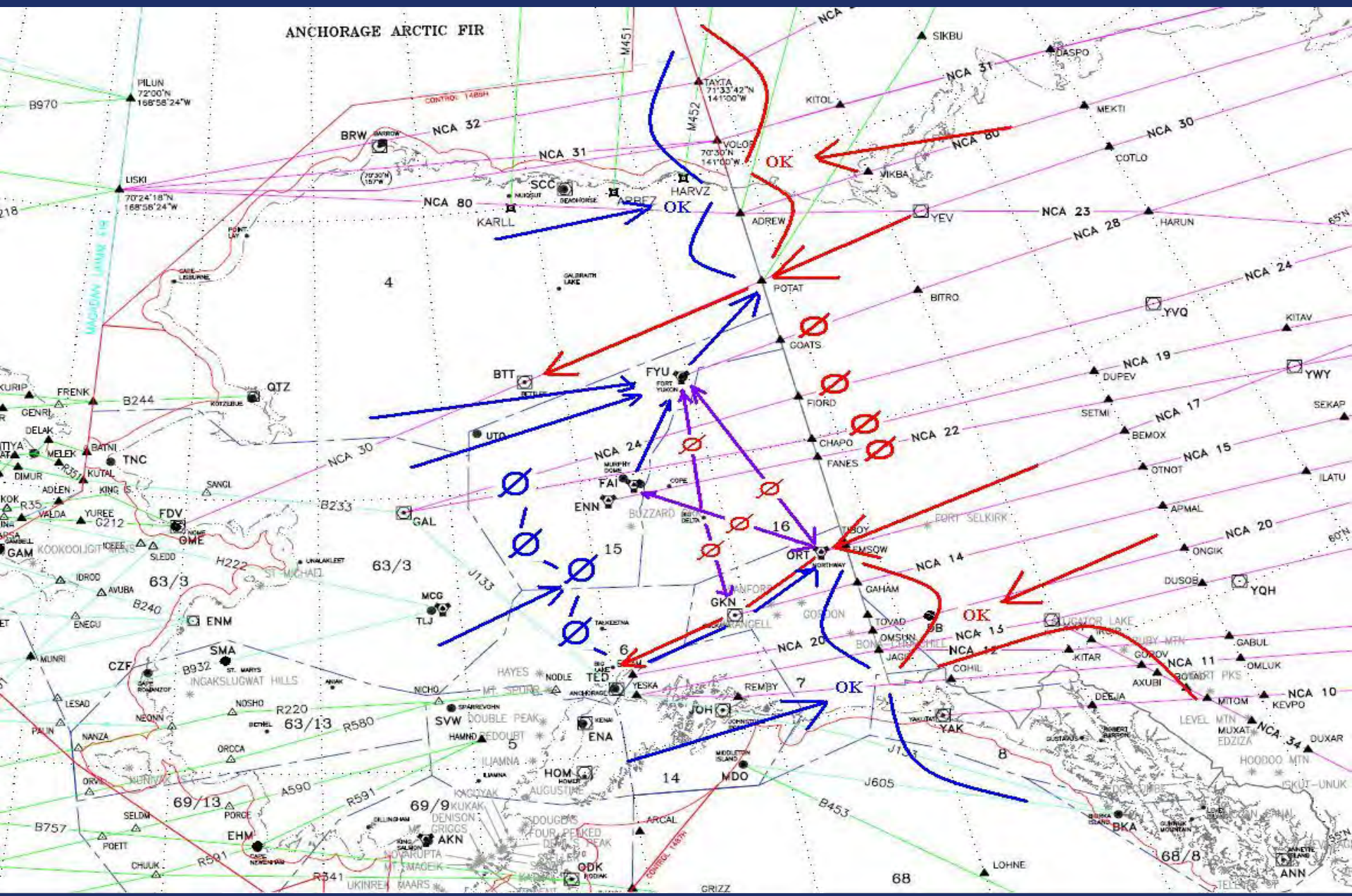
(A) A2, A15 AND B25

(B) V444, V481 AND V515

(C) T232 AND T226

(D) DIRECT ROUTES OVER OR IN THE VICINITY OF BIG.

6) FROM 1800-2030 UTC AND 0000-0230 UTC, IFR ARRIVALS/DEPARTURES TO/FROM ALLEN AAF ARE UNAVAILABLE.


ANCHORAGE ARCTIC FIR
PILUN
72°00'N
168°58'24"W
LISKI
70°24'18"N
168°58'24"W
BRW
SCC
KARLL
HARVZ
TAYTA
71°33'42"N
141°00'W
VOLOZ
70°30'N
141°00'W
SIKBU
DASPO
KITOL
MEKTI
COTLO
VIKBA
ADREW
YEV
HARUN
POTAT
BITRO
YVQ
KITAV
GOATS
FIORD
DUPEV
YWY
SETMI
SEKAP
BEMOX
CHAPO
FANES
OTNOT
ILATU
APMAL
ONGIK
YQH
DUSOB
GAHAM
TABOY
LEMSOW
ORT
FORT SELKIRK
BTT
FYU
FAI
ENN
GAL
UTO
QTZ
FRENK
GENRI
DELAK
MELEK
BATNI
TNC
KUTAL
KING IS.
ADLEN
VALDA
YUREE
FDV
OME
SLEDO
GAM
IDROD
AVUBA
ENM
ENEGU
MUNRI
SMA
CZF
LESAD
NOSHO
NEONN
PALIN
NANZA
ORCCA
SELDM
POETT
EHM
CHUJK
AKN
ODK
KODIAK
MCG
TLJ
GKN
TED
YESKA
NCHO
SVW
HAMND
ENA
HOM
HOMER
MDO
JOH
REMBY
YAK
KITAR
OMSIN
TOVAD
COHIL
JAGIS
AXUBI
DEEJA
GABUL
OMLUK
KEVPO
MTOM
MUXAT
DUXAR
BKA
ANN
LOHNE
ARCAL
GRIZZ
NCA 31
NCA 32
NCA 80
NCA 30
NCA 23
NCA 28
NCA 24
NCA 19
NCA 17
NCA 22
NCA 15
NCA 20
NCA 14
NCA 12
NCA 11
NCA 10
NCA 34
OK
B970
B244
B233
B240
B932
B757
R220
R580
R591
R341
A590
J133
J605
B453
M451
M452
63/3
63/13
69/13
69/9
68/8
H222
CONTROL 14BSH
CONTROL 14BSH

Kodiak Launch Facility

- **No launch activity planned for CY 2014**

Courtesy www.akerospace.com

Questions?

Honolulu Control Facility

Operations

Honolulu Control Facility

Oceanic Workgroup Meeting

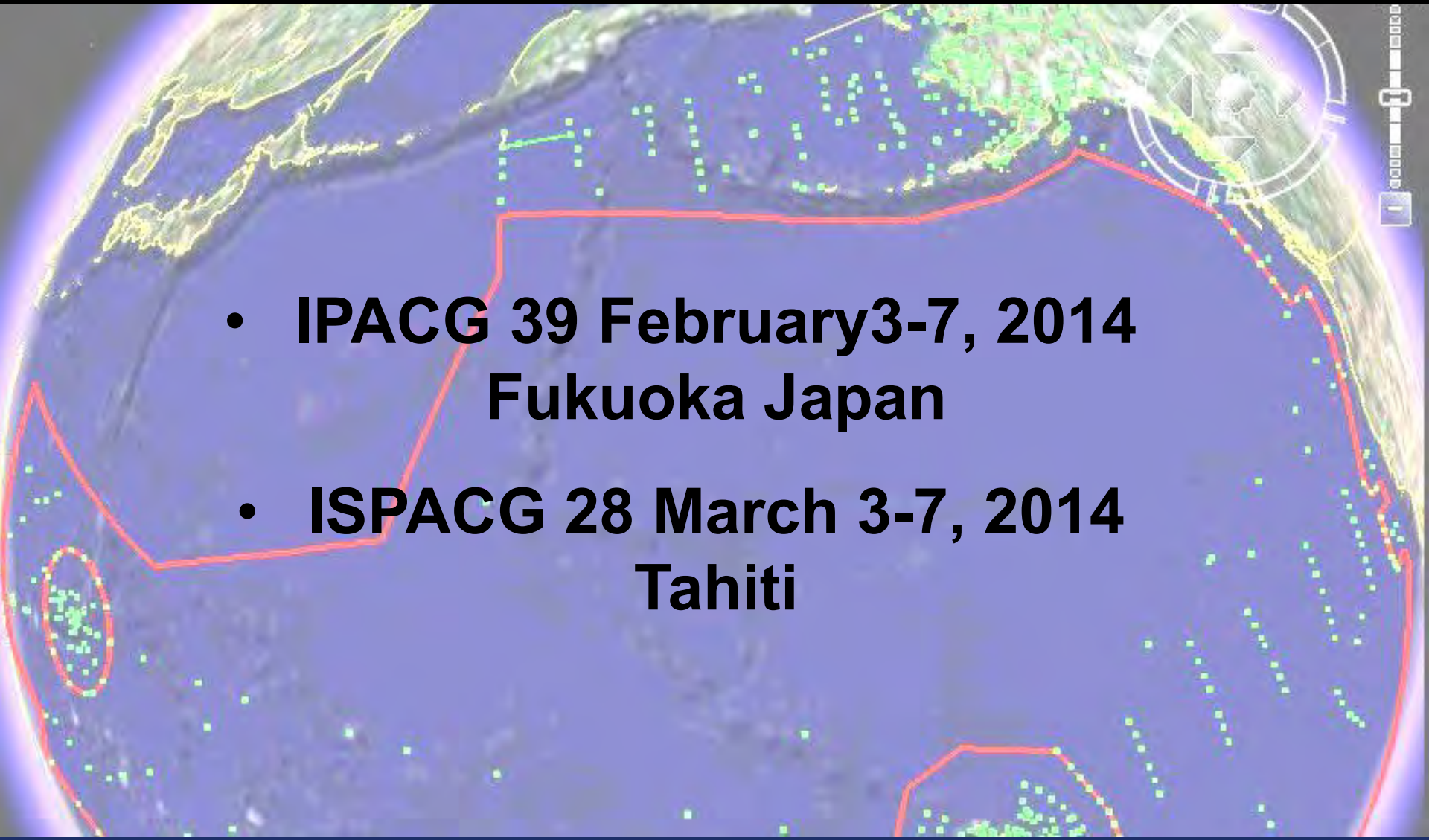
Ron Fischer, International Operations

Federal Aviation Administration

Action Item 03-06

- OWG members to provide known status on island airport.

Other Meetings



- IPACG 39 February3-7, 2014
  Fukuoka Japan
- ISPACG 28 March 3-7, 2014
  Tahiti

Next OWG Meeting