

JCAB UPDATE

(Outline of Oceanic control in Japan)

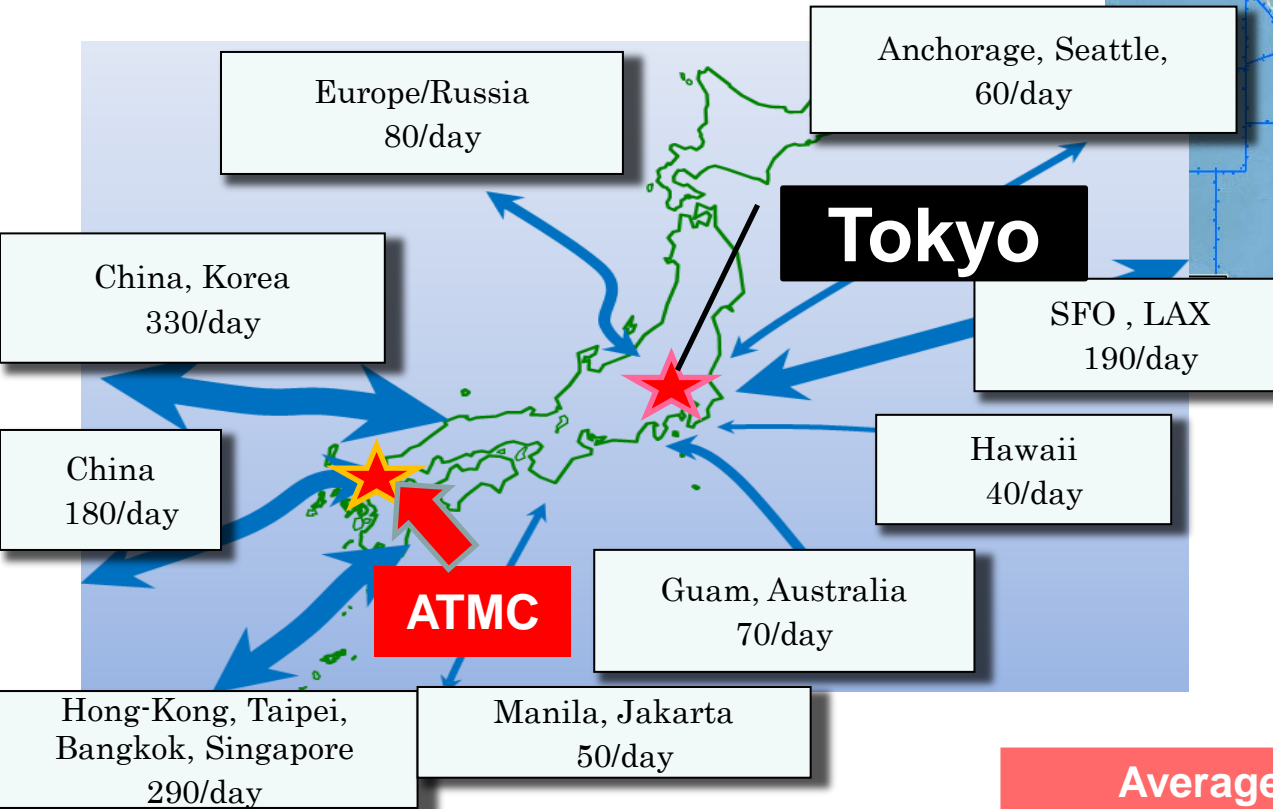
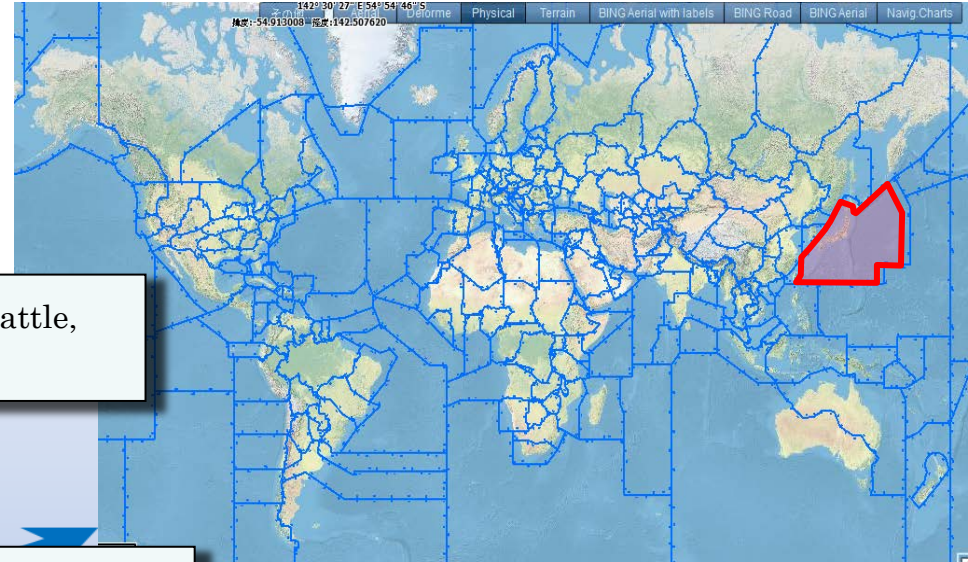
Presented by Japan Civil Aviation Bureau
05 March 2014

Contents

- Overview of Fukuoka FIR
- UPRs and DARPs UPDATE
- 10M separation without MNT
- PBCS schedule
- Assistance to avoid conflict by OCAP

Overview – Fukuoka FIR

- Location and Traffic Flow
- 1 FIR, 1 ATMC, 4 ACCs,
- Oceanic ATC by ATMC (5 sectors)

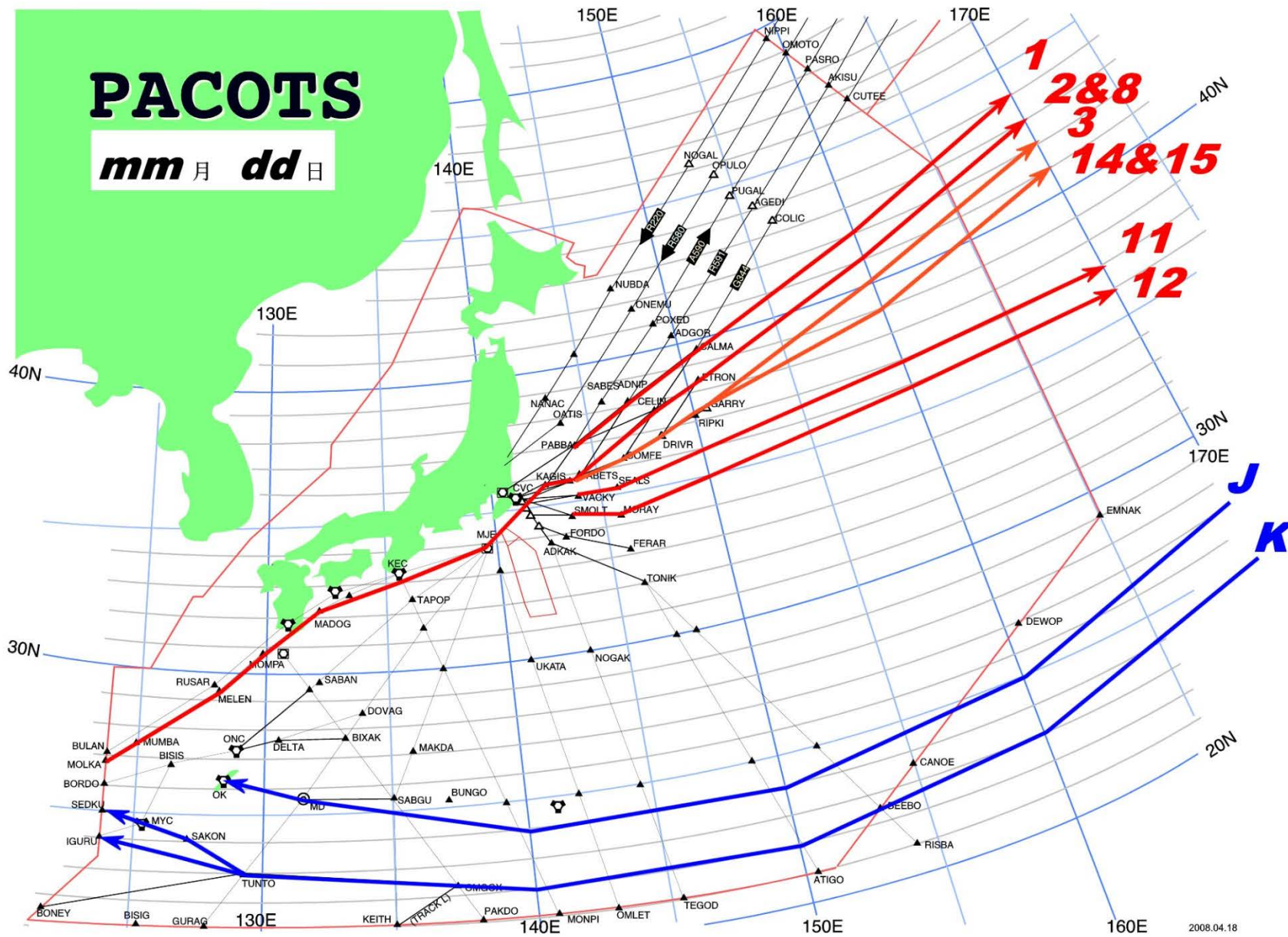


Average flight counts per day	
RJTT (Haneda) airport	1060 (ARR & DEP)
RJAA (Narita) airport	570 (ARR & DEP)

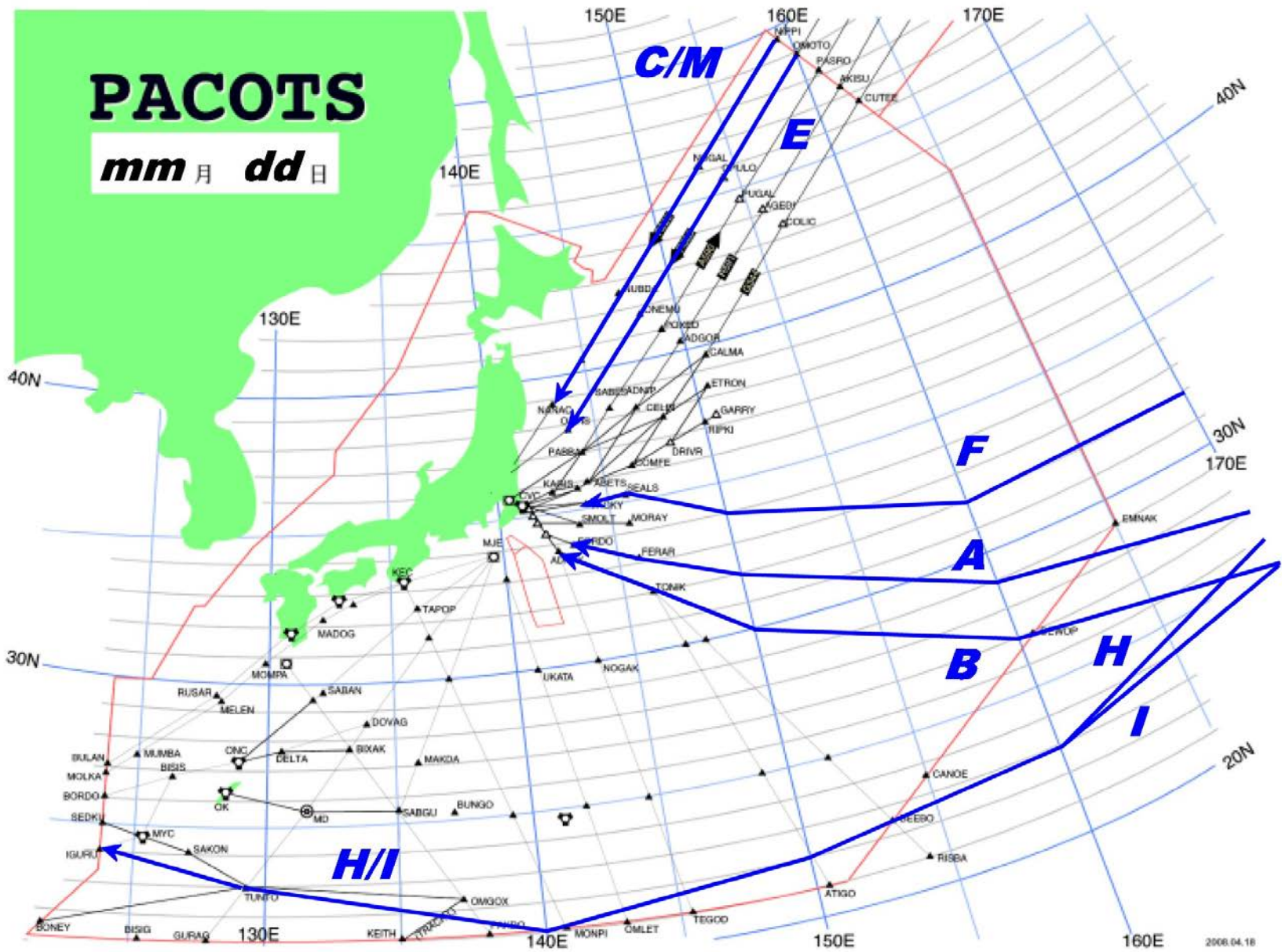
Data Source :1week of November 2012

Average flight counts per day (IFR only)			
Total	Domestic flight	International flight	Over flight
4,110	2,300	1290	520

Eastbound PACOTS

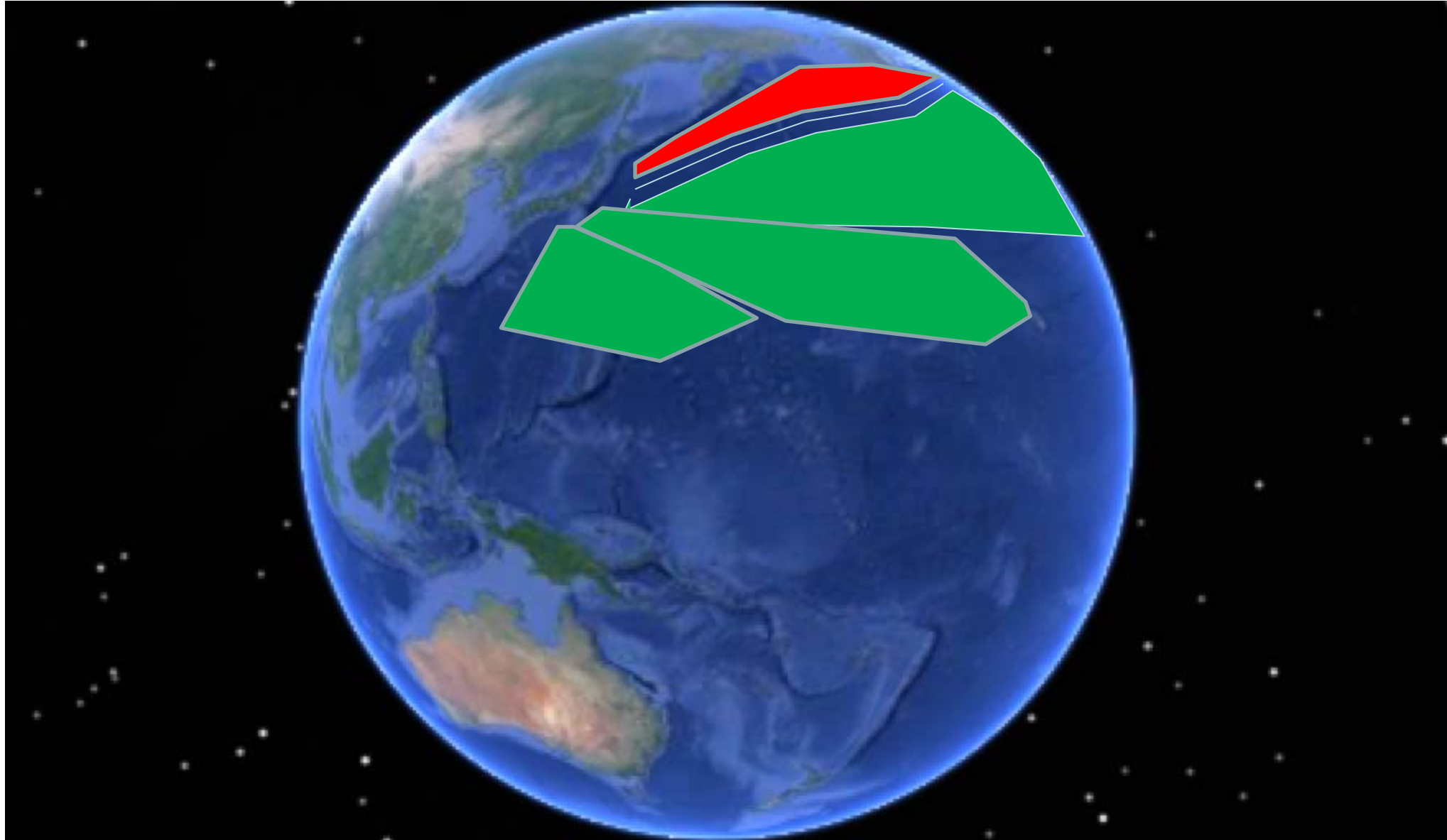


Westbound PACOTS

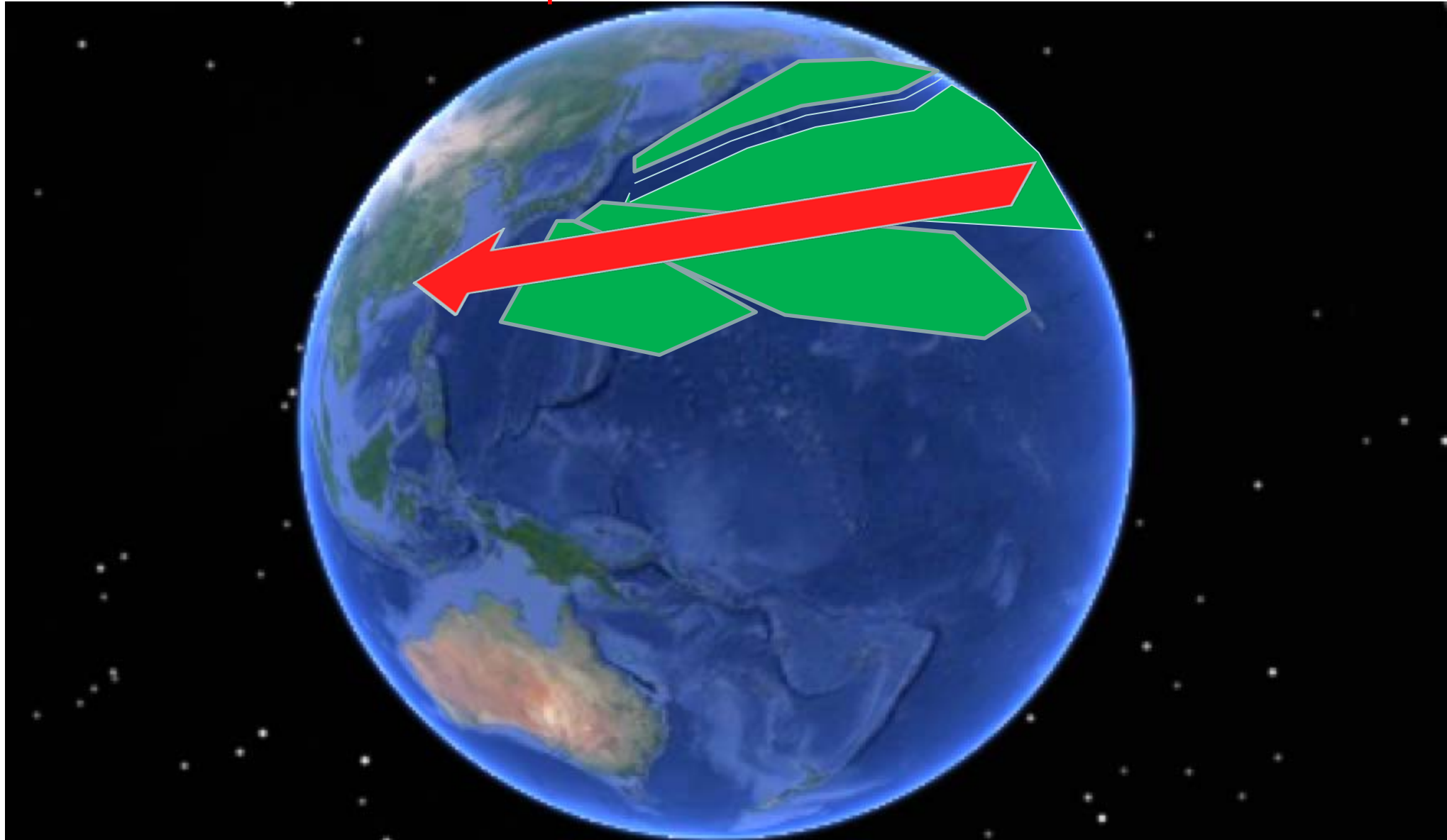


□ UPRs and DARPs UPDATE after ISPACG27

- March 2013 Track1 UPR (Asia to North America) Normal operation started



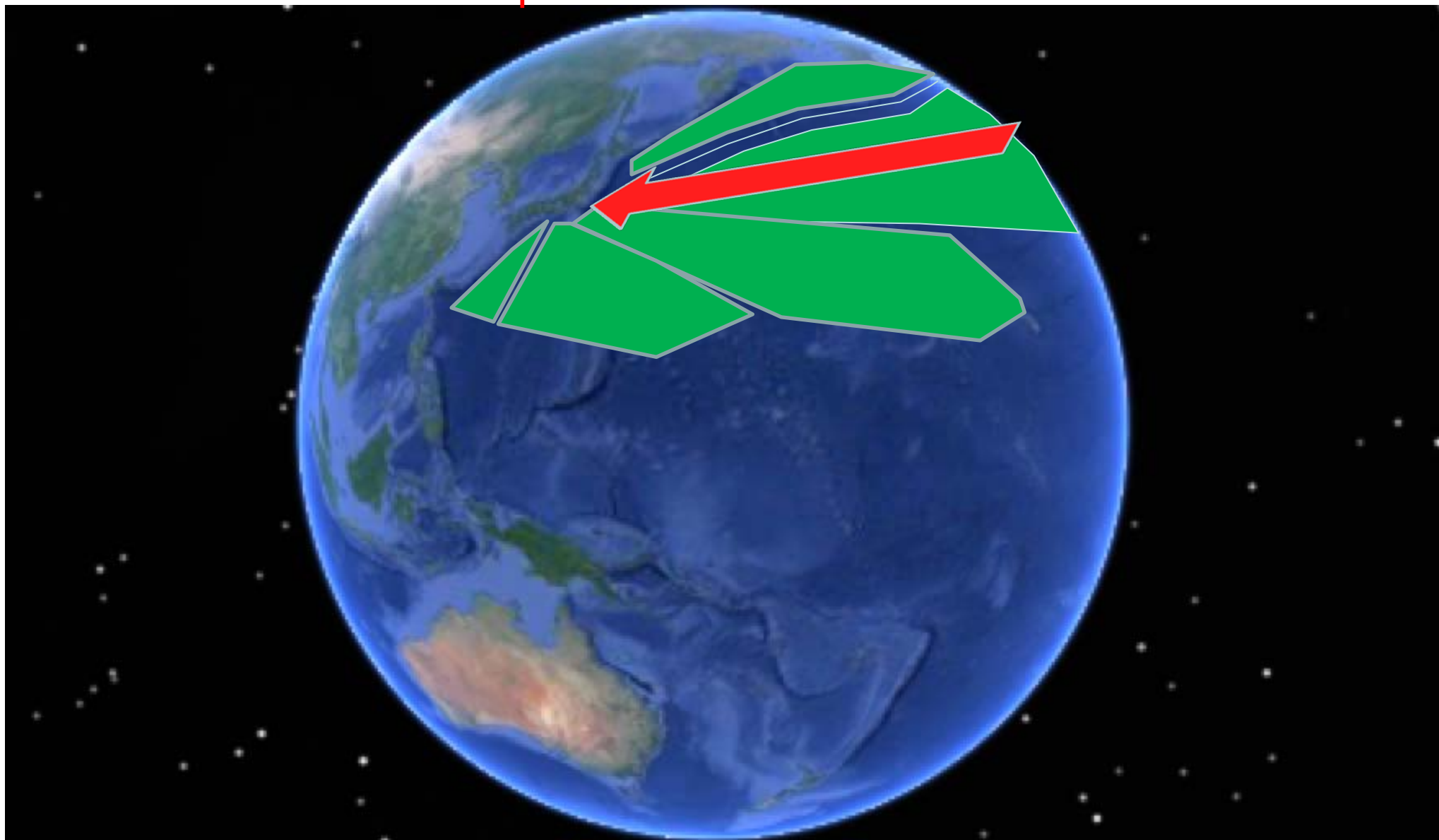
- March 2013 Track K UPR (North America-Southeast Asia)
Normal operation started



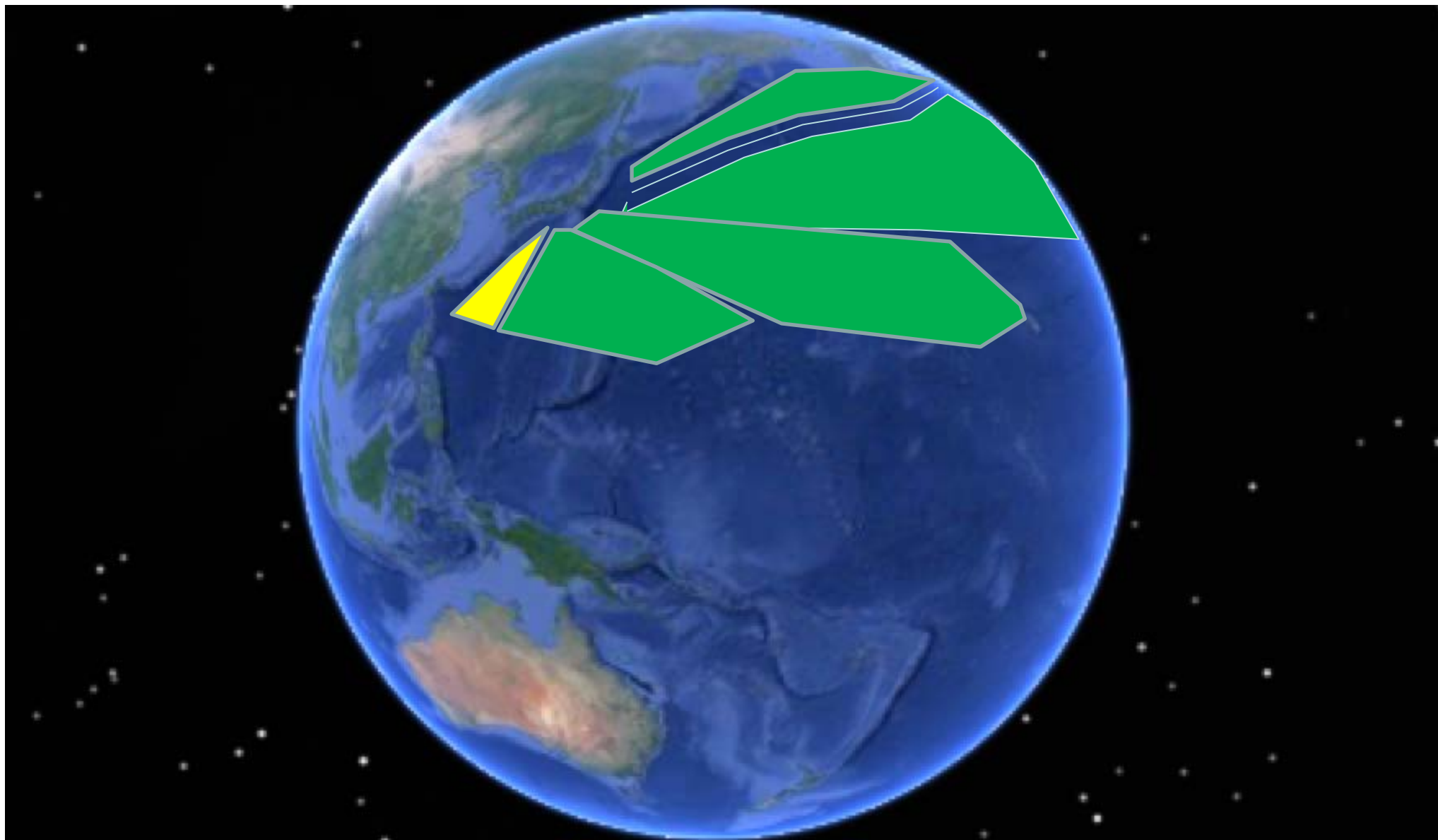
- March 2013 UPR between Japan and Oceania
Normal operation started



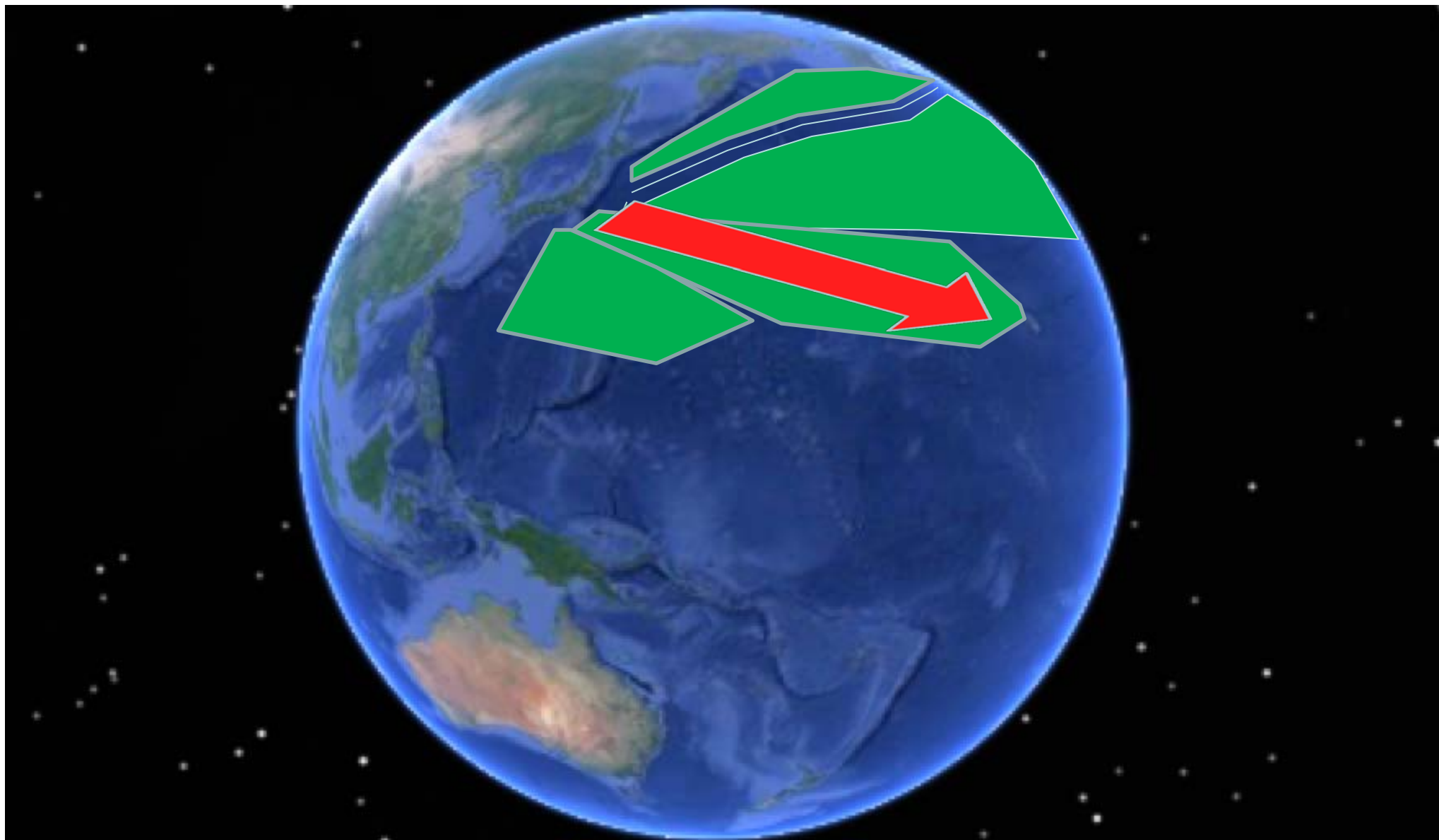
- July 2013 Track F UPR (North America-Asia)
Normal operation started



- July 2013 UPR between Asia and Koror Trial started



- September 2013 DARP Trial started (bound for Hawaii)



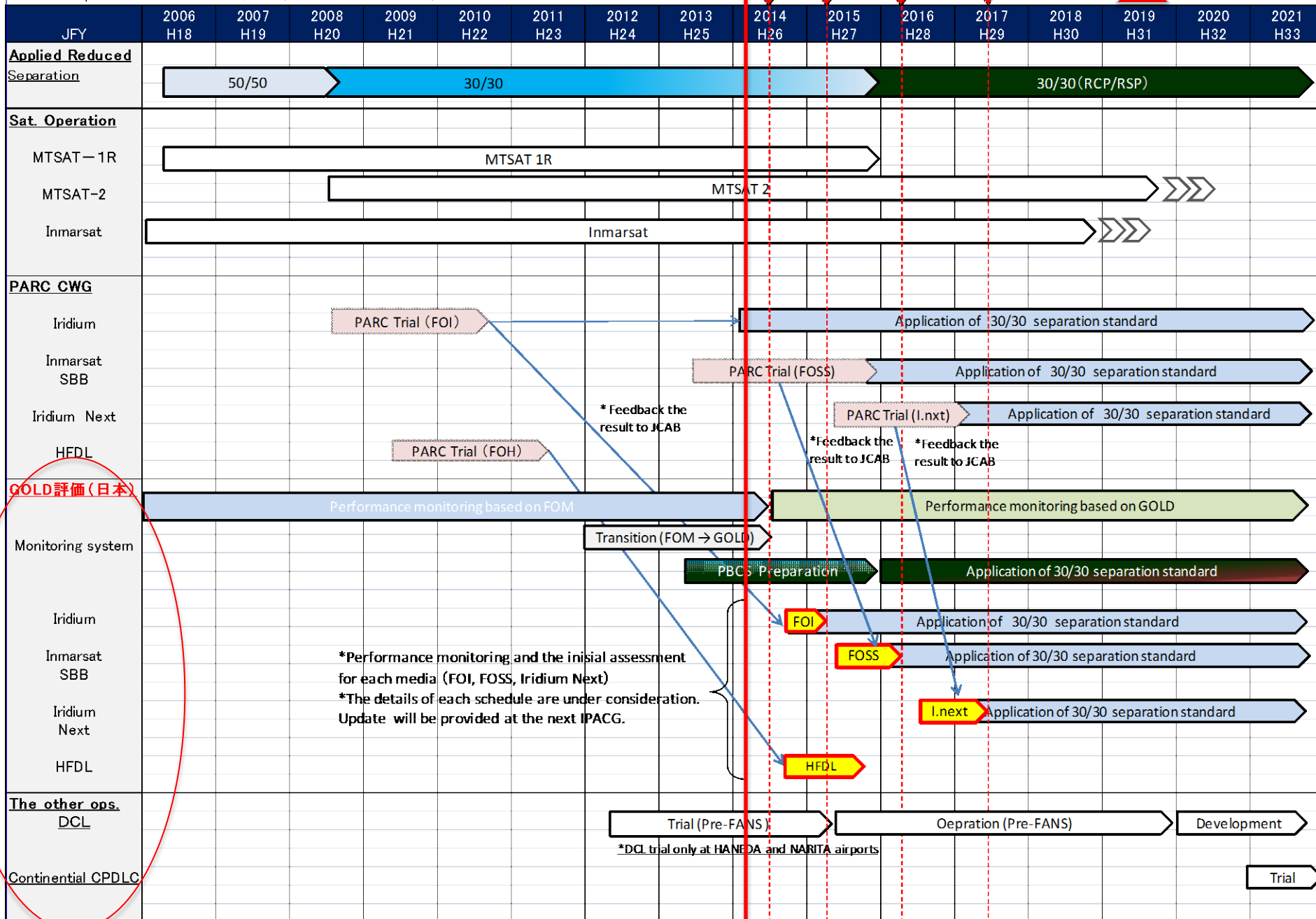
Reduced Separation Minima

- December 2013 10Minutes longitudinal Separation without MNT



PBCS Schedule

PBCS Implementation Plan (draft) (as of Feb. 2014)



□ Assistance to avoid conflict by OCAP

Outline of OCAP

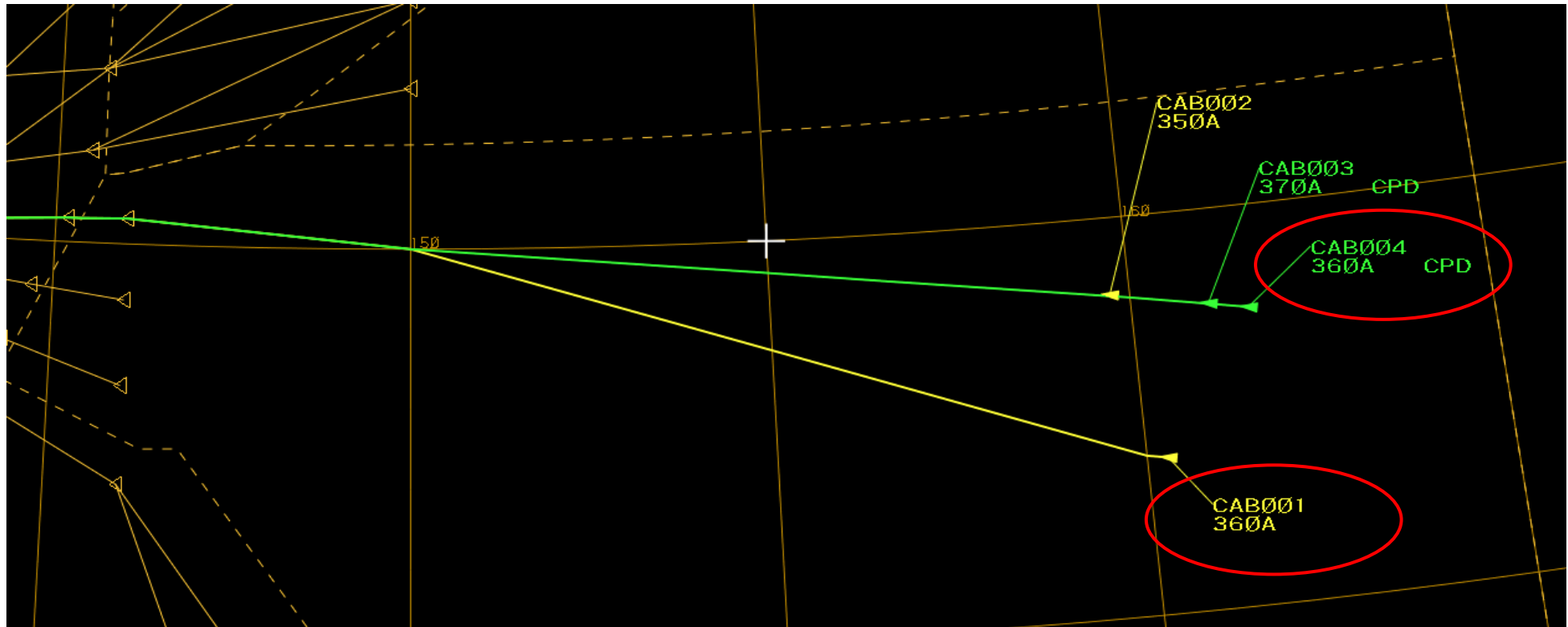
□ Oceanic Conflict detection and Assistance Processor

- OCAP provides following functions
 - Detect predicted conflict several hours in advance between aircraft and aircraft, or between aircraft and restricted airspace. (0-6hours variable by parameter)
 - Present and manage the procedure to avoid conflict
 - Assistance to avoid conflict by OCAP has utilized at Air Traffic Management Center (ATMC) since 27 February, 2014. Last week!

Presentation of the way to avoid conflict

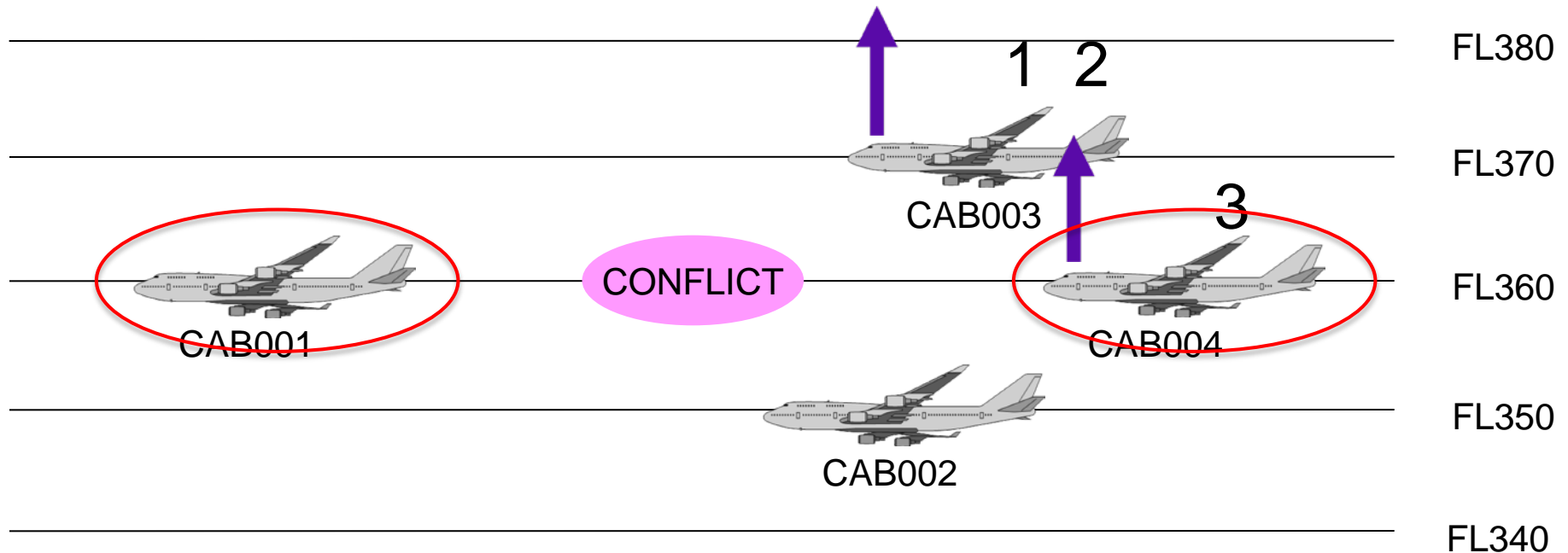
- OCAP can present to the controller how to avoid the predicted conflict.
- The procedures to avoid conflict provided by OCAP are as follows,
 - by changing altitude
 - by assigning mach number
(to apply mach number technique)
 - no change route
- Let's show demonstration

Presentation of the way to avoid conflict



Situation that CAB001 and CAB004 will conflict 1 hour later

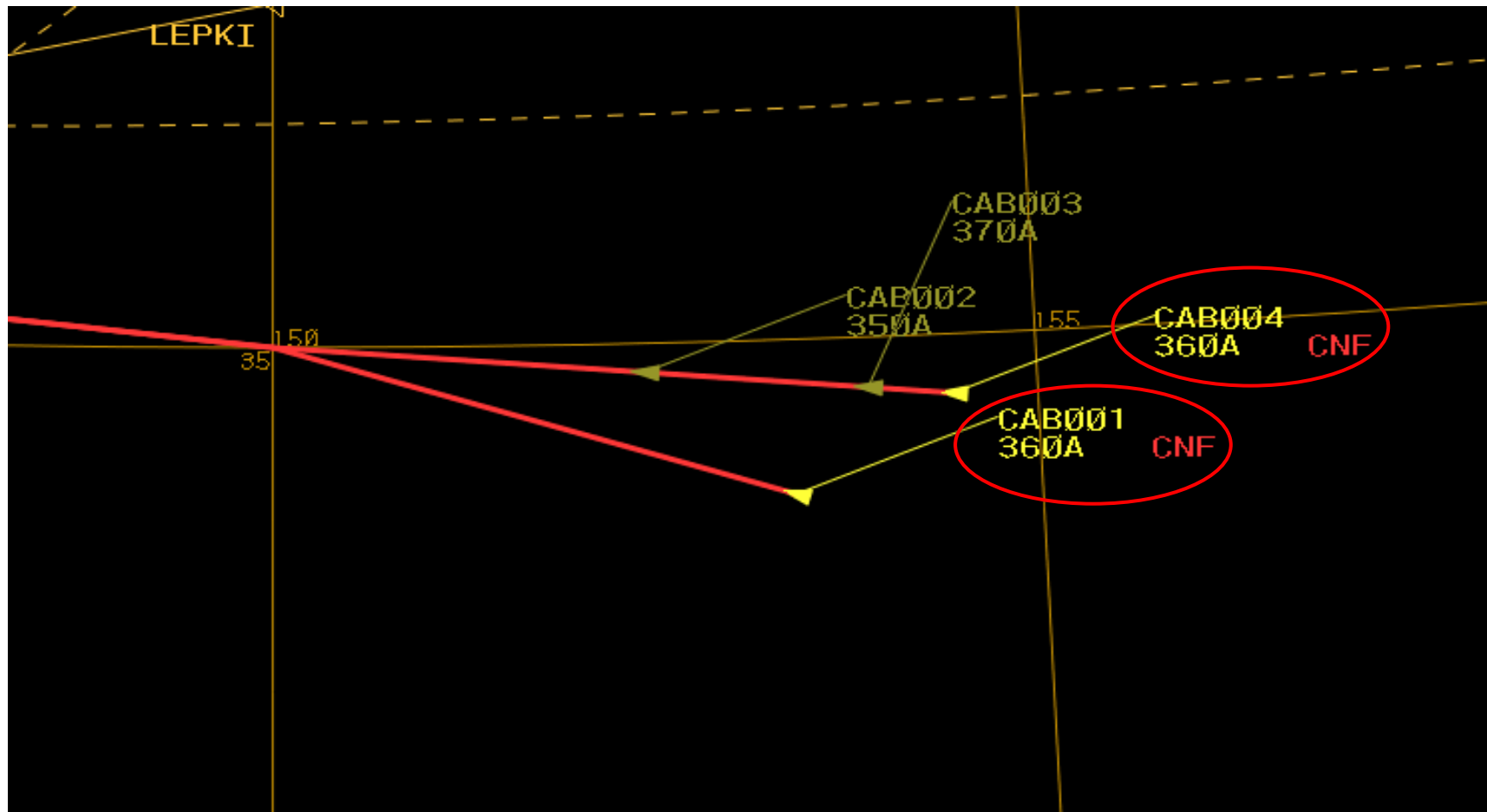
Management of the way to avoid conflict



In this procedure, OCAP provides the step to -

1. issue the clearance for CAB003 to climb to FL380
2. receive the report CAB003 has reached FL380
3. issue the clearance for CAB004 to climb to FL370

Presentation of the way to avoid conflict



Predicted situation when ATC separation between CAB001 and CAB004 is going to be below minimum

Presentation of the way to avoid conflict

FPCP LIST
FPCP/Warning List Assist Status 33S 29S 34S 31S 35S 37S 39S

ADS	CNF	* Callsign	Status	No	Feasible	Plan List
08:13		CAB001 -CAB004		1	NOW	CAB001 FL380↑
				2	NOW	CAB003 FL380↑, CAB001 FL370↑
				3	NOW	CAB003 FL380↑, CAB004 FL370↑
				4	NOW	CAB003 FL390↑, CAB001 FL370↑
				5	NOW	CAB003 FL390↑, CAB004 FL370↑
				6	NOW	CAB003 FL390↑, CAB004 FL380↑
				7	NOW	CAB001 FL340↓
				8	NOW	CAB002 FL340↓, CAB001 FL350↓
				9	NOW	CAB002 FL340↓, CAB004 FL350↓
				10	NOW	CAB002 M083, CAB004 M082 FL350↓
				11	NOW	CAB002 M082+, CAB004 M081 FL350↓
				12	NOW	CAB002 FL330↓, CAB001 FL350↓
				13	NOW	CAB002 FL330↓, CAB004 FL350↓
				14	NOW	CAB002 M084, CAB004 M082 FL350↓
				15	NOW	CAB002 M083, CAB004 M081 FL350↓

Chk Turn Assure Time Callsign Uplink Comm Sector

DISPLAY CLOSE << START SEND UPLINK

Zoom up in next

OCAP alerts controller to predicted conflict between CAB001 and CAB004, and presents the procedure to avoid.

Presentation of the way to avoid conflict

No	Feasible	Plan List
1	NOW	CAB001 FL380↑
2	NOW	CAB003 FL380↑, CAB001 FL370↑
3	NOW	CAB003 FL380↑, CAB004 FL370↑
4	NOW	CAB003 FL390↑, CAB001 FL370↑
5	NOW	CAB003
6	NOW	CAB003
7	NOW	CAB001 FL340↓
8	NOW	CAB002 FL340↓, CAB001 FL350↓
9	NOW	CAB002 FL340↓, CAB004 FL350↓
10	NOW	CAB002 M083, CAB004 M082 FL350↓
11	NOW	CAB002 M082+, CAB004 M081 FL350↓
12	NOW	CAB002 FL330↓, CAB001 FL350↓
13	NOW	
14	NOW	CAB002 M084, CAB004 M082 FL350↓
15	NOW	CAB002 M083, CAB004 M081 FL350↓

Procedure can be completed with 1 step

Procedure can be completed with 2 steps

Procedure to apply mach number technique

Management of the way to avoid conflict

Example for executing procedure No.3

FPCP LIST

FPCP/Warning List Assist Status 33S 29S 34S 31S 35S 37S 39S

ADS	CNF	* Callsign	Status	No	Feasible	Plan List
08:13		CAB001 -CAB004		1	NOW	CAB001 FL380↑
				2	NOW	CAB003 FL380↑, CAB001 FL370↑
				3	NOW	CAB003 FL380↑, CAB004 FL370↑
				4	NOW	CAB003 FL390↑, CAB001 FL370↑
				5	NOW	CAB003 FL390↑, CAB004 FL370↑
				6	NOW	CAB003 FL390↑, CAB004 FL380↑
				7	NOW	CAB001 FL340↓
				8	NOW	CAB002 FL340↓, CAB001 FL350↓
				9	NOW	CAB002 FL340↓, CAB004 FL350↓
				10	NOW	CAB002 M083, CAB004 M082 FL350↓
				11	NOW	CAB002 M082+, CAB004 M081 FL350↓
				12	NOW	CAB002 FL330↓, CAB001 FL350↓
				13	NOW	CAB002 FL330↓, CAB004 FL350↓
				14	NOW	CAB002 M084, CAB004 M082 FL350↓
				15	NOW	CAB002 M083, CAB004 M081 FL350↓

Chk	Turn	Assure Time	Callsign	Uplink	Comm	Sector
■	1	NOW -07:43	CAB003	FL380↑		
■	2	WAIT -07:53	CAB004	FL370↑		

DISPLAY CLOSE << **START** SEND UPLINK

Management of the way to avoid conflict

1. Procedure No.3 was started.

The screenshot displays the 'FPCP LIST' interface. At the top, there are status indicators for various sectors: Assist Status (orange), 33S, 29S, 34S, 31S, 35S (orange), 37S, and 39S. The main display is divided into two panes. The left pane shows a table with columns: ADS, CNF, *, Callsign, and Status. The right pane shows a table with columns: No, Feasible, and Plan List. A green text box is overlaid on the right pane, stating: 'Status of step 1 is "available now", and step 2 is "wait"'. Below this, a table shows the details of the flight plan steps.

ADS	CNF	*	Callsign	Status
08:13			CAB001 -CAB004	START

No	Feasible	Plan List
3	NOW	CAB003 FL380↑, CAB004 FL370↑

Status of step 1 is "available now",
and step 2 is "wait".

Chk	Turn	Assure Time	Callsign	Uplink	Comm	Sector
<input type="checkbox"/>	1	NOW -07:43	CAB003	FL380↑	CPDLC	
<input type="checkbox"/>	2	WAIT -07:53	CAB004	FL370↑	CPDLC	

Buttons at the bottom: DISPLAY, CLOSE, <<, CANCEL, SEND, UPLINK.

Management of the way to avoid conflict

2. Controller issued the clearance to climb to FL380 for CAB003.

The screenshot displays the 'FPCP LIST' interface. At the top, there are status indicators for various sectors: Assist Status (orange), 33S, 29S, 34S, 31S, 35S (orange), 37S, and 39S. The main display is divided into two panes. The left pane shows a table with columns: ADS, CNF, *, Callsign, and Status. The right pane shows a table with columns: No, Feasible, and Plan List. A light green text box is overlaid on the right pane, containing the text: 'Next step is not available until CAB003 reaches FL380.' At the bottom of the interface, there are several buttons: DISPLAY, CLOSE, <<, CANCEL, SEND (circled in green), and UPLINK. A white circle highlights the 'WAIT' text in the bottom right pane, with an arrow pointing to the 'SEND' button.

ADS	CNF	*	Callsign	Status
08:13			CAB001 -CAB004	START

No	Feasible	Plan List
3	NOW	CAB003 FL380↑, CAB004 FL370↑

Ch	mm	Sector
Z	WAIT	-07:53 CAB004 FL370↑ CPDLC

Management of the way to avoid conflict

3. ODP system received the report CAB003 has reached FL380

The screenshot displays the 'FPCP LIST' interface. At the top, there are status indicators for various sectors: Assist Status (orange), 33S, 29S, 34S, 31S, 35S (orange), 37S, and 39S. The main display is divided into two panes. The left pane shows a table with columns ADS, CNF, *, Callsign, and Status. The right pane shows a table with columns No, Feasible, and Plan List. A green text box is overlaid on the right pane with the text 'Next step is enabled to execute.' Below this box, a table shows two entries. The first entry is checked and the second is not. The 'SEND' button at the bottom right is circled in green.

ADS	CNF	*	Callsign	Status
08:13			CAB001 -CAB004	START

No	Feasible	Plan List
3	NOW	CAB003 FL380↑, CAB004 FL370↑

<input checked="" type="checkbox"/>	1	NOW	07:43 CAB003	FL380↑	LEVEL
<input type="checkbox"/>	2	NOW	-07:53 CAB004	FL370↑	CPDLC

Buttons: DISPLAY, CLOSE, <<, CANCEL, SEND, UPLINK

Management of the way to avoid conflict

4. Controller issued the clearance to climb to FL370 for CAB004

The screenshot displays the 'FPCP LIST' software interface. The title bar reads 'FPCP LIST'. Below it, there is a menu bar with 'FPCP/Warning List' and several radio buttons for flight levels: Assist Status, 33S, 29S, 34S, 31S, 35S, 37S, and 39S. The main display area is divided into two panes. The left pane has a header with columns 'ADS', 'CNF', '*', and 'Callsign'. The right pane has a header with columns 'No', 'Feasible', and 'Plan List'. A large green text box is overlaid on the center of the screen, containing the text: 'All steps of the procedure were done, and the conflict was resolved.' At the bottom of the interface, there is a control bar with buttons labeled 'DISPLAY', 'CLOSE', '<<', 'START', 'SEND', and 'UPLINK'.

All steps of the procedure were done, and the conflict was resolved.

Parameter setting for presentation

□ Order of the procedures to avoid conflict indicated in list is based on following items. The weights of each items are defined in parameter setting.

- Number of steps in the procedure
- Kind of the way to avoid (change altitude or mach number)
- Range of changing altitude or mach number
- Distance from departure airport
- Distance to destination airport

and others (more than 30 items)

Parameter setting for presentation

- OCAP records following data as statistic data.

Detected conflict

└ Presented procedures to avoid conflict

└ Procedure which selected by controller

- Person in charge of ODP system sets the parameter of OCAP while referring to the statistic data for optimizing order of the procedures in list.

Questions?

