



 **CIVIL AVIATION BUREAU of JAPAN**

Facility Updates from ATMC

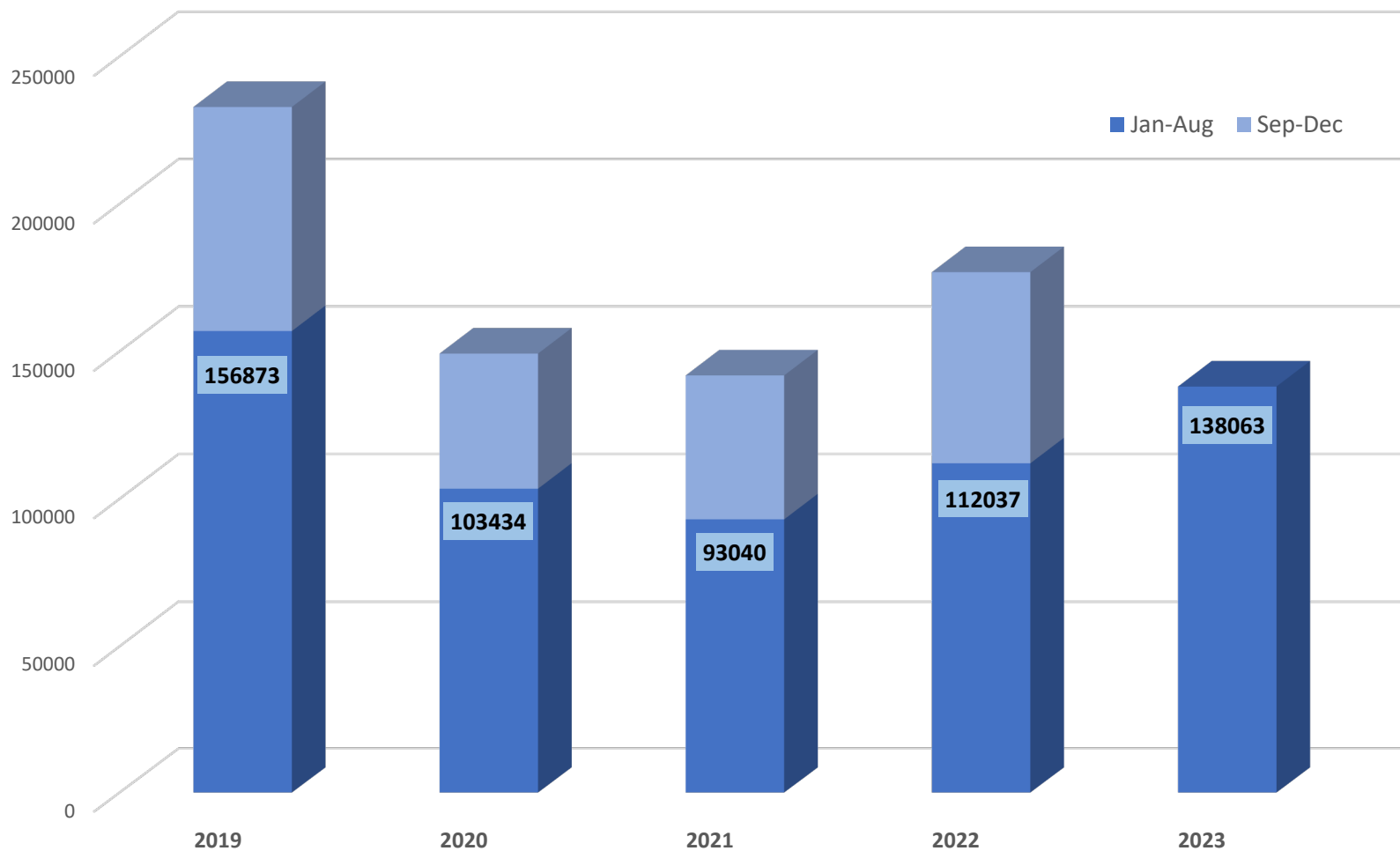
Air Traffic Management Center
(ATMC)

IPACG48
Sep 2023

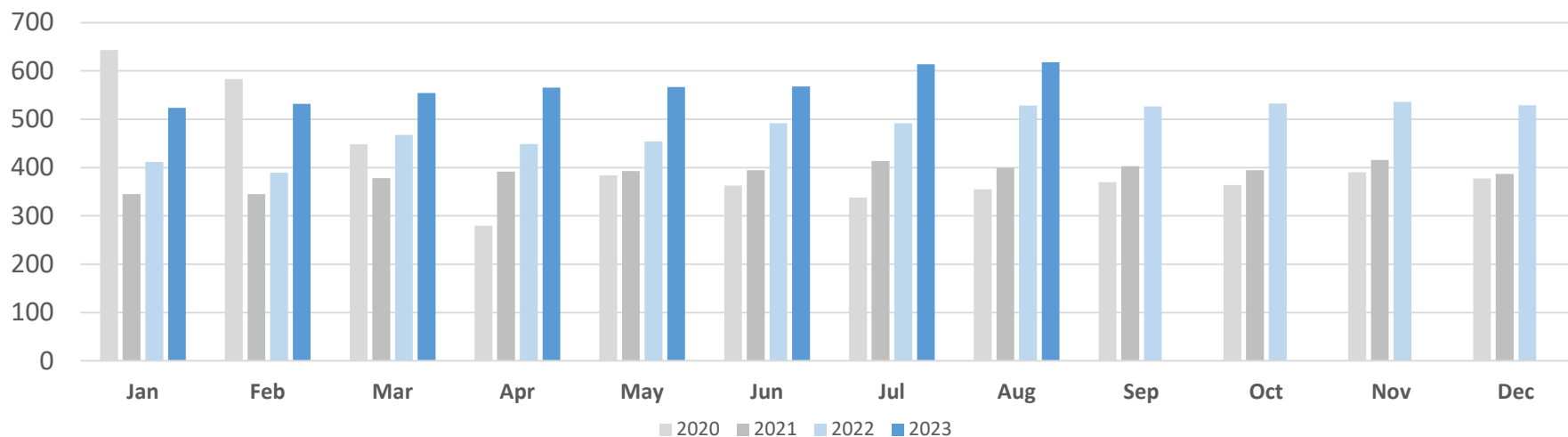
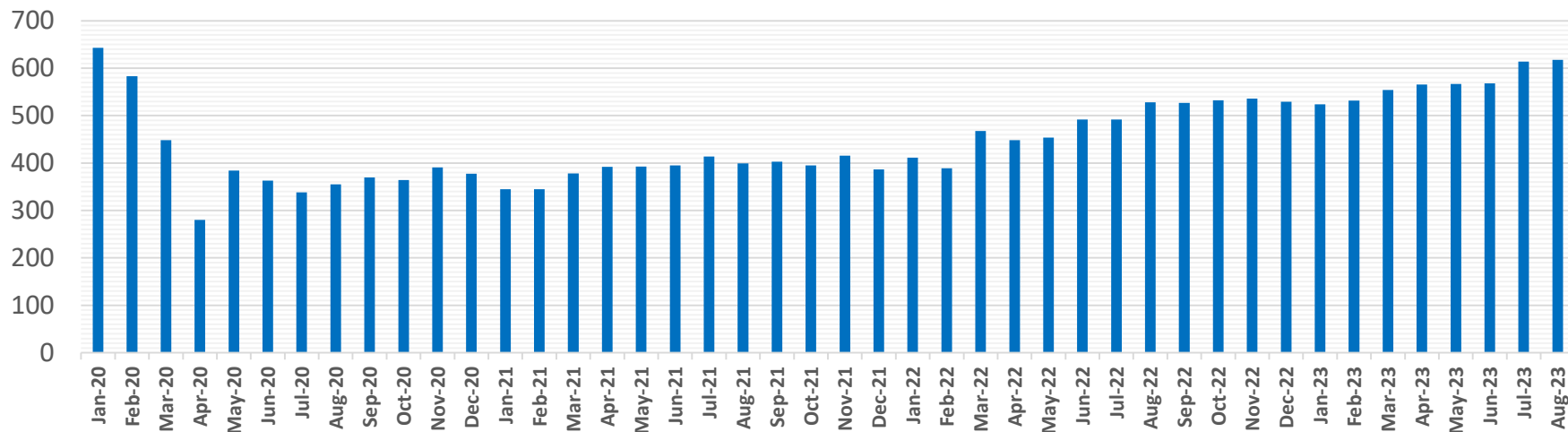
ATMC Update

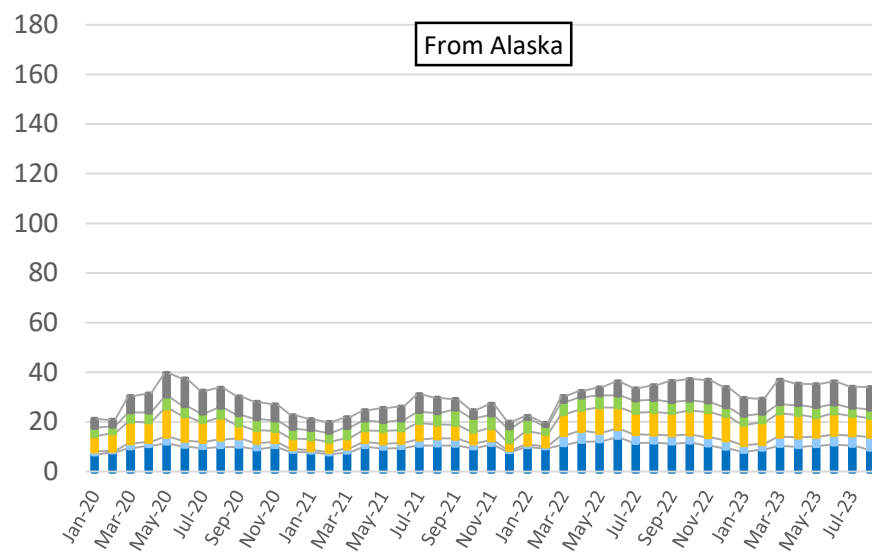
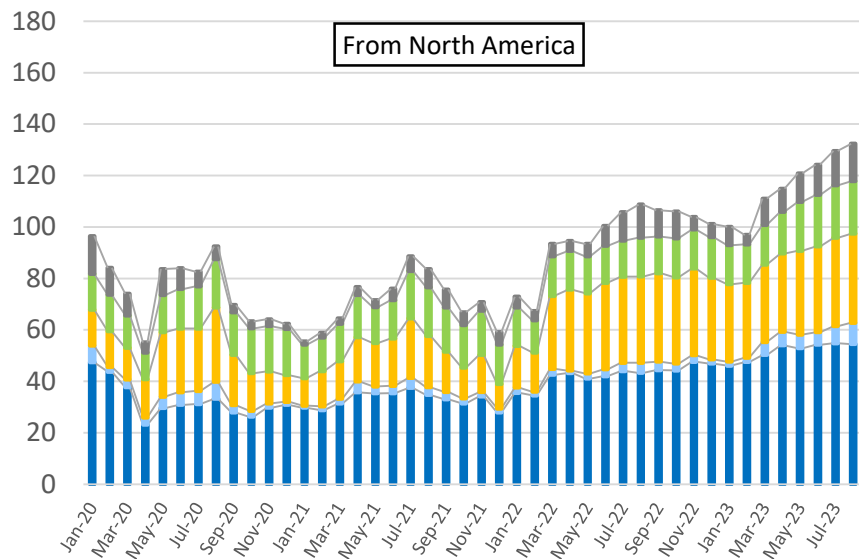
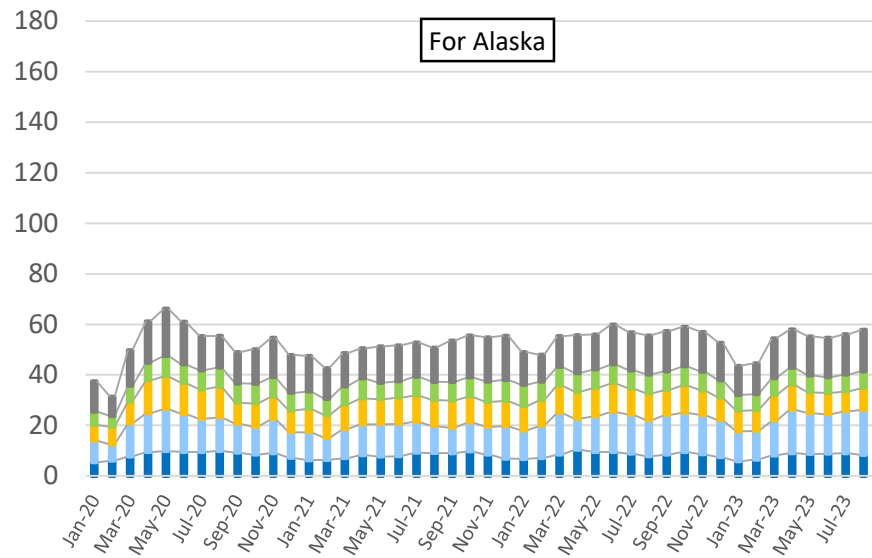
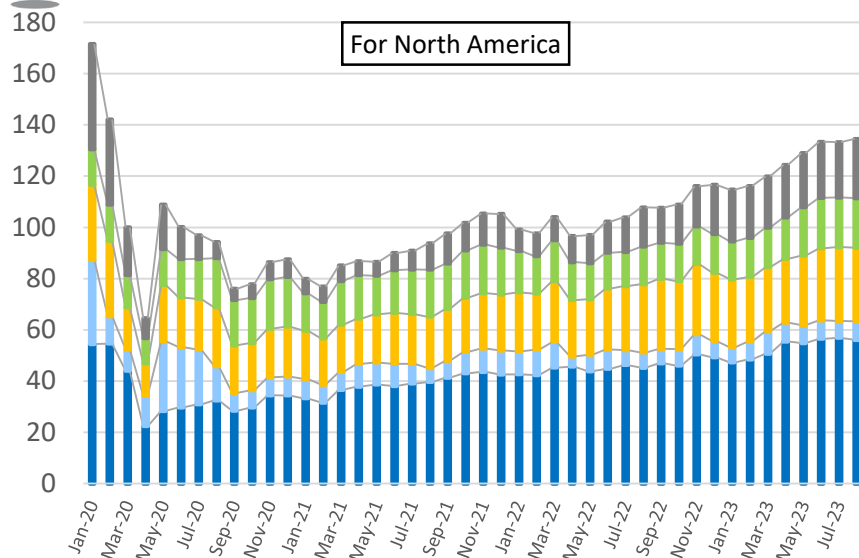
- Oceanic Traffic Volume
- NOPAC Usage Data
- ADS-C CDP Usage Data
- Inmarsat satellite outage

Annual Traffic Volume in Fukuoka FIR Oceanic Airspace

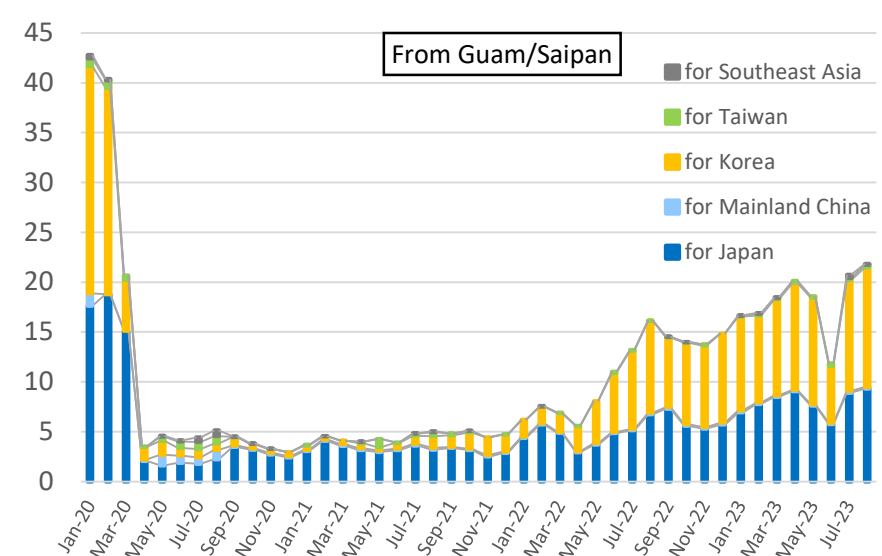
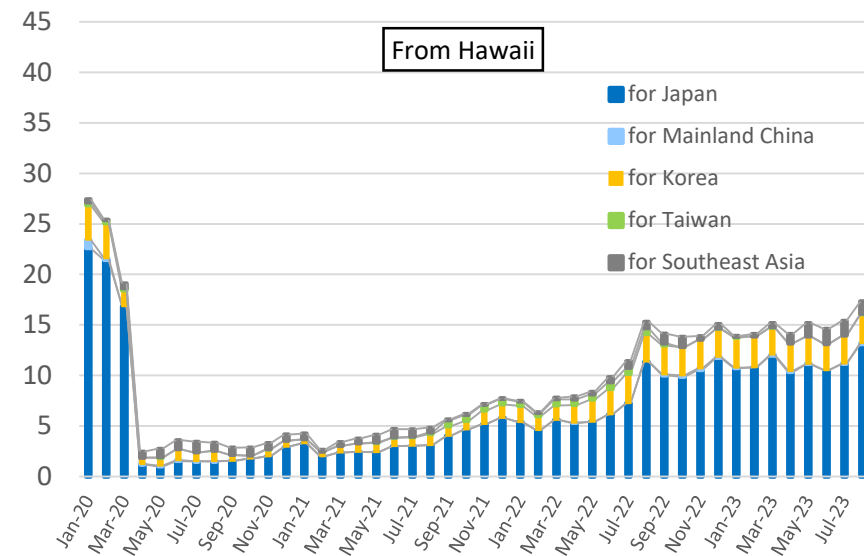
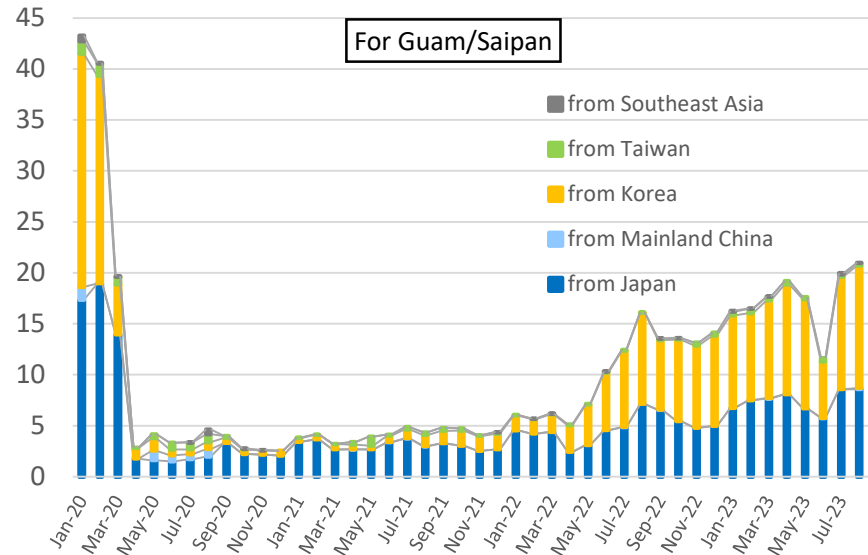
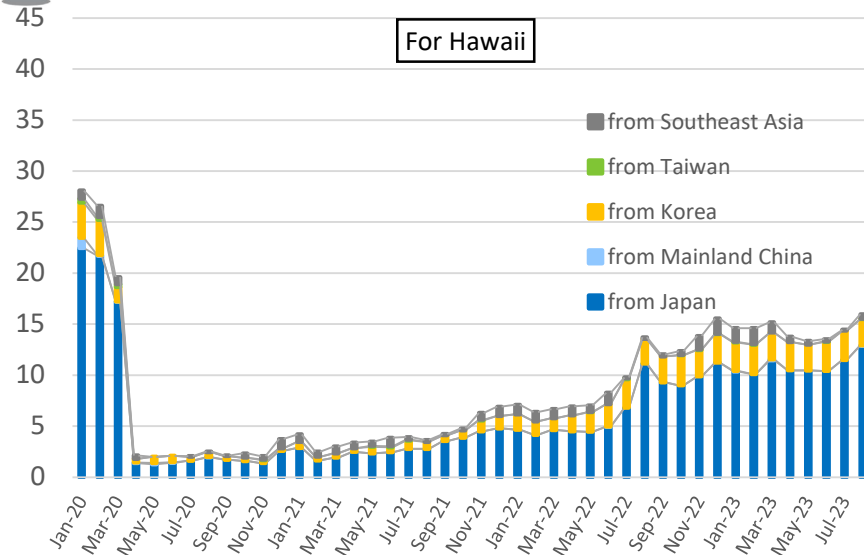


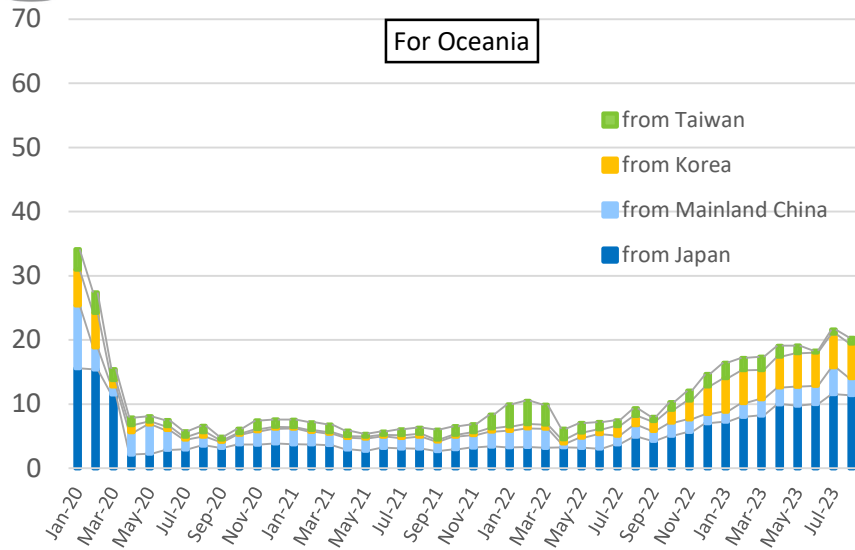
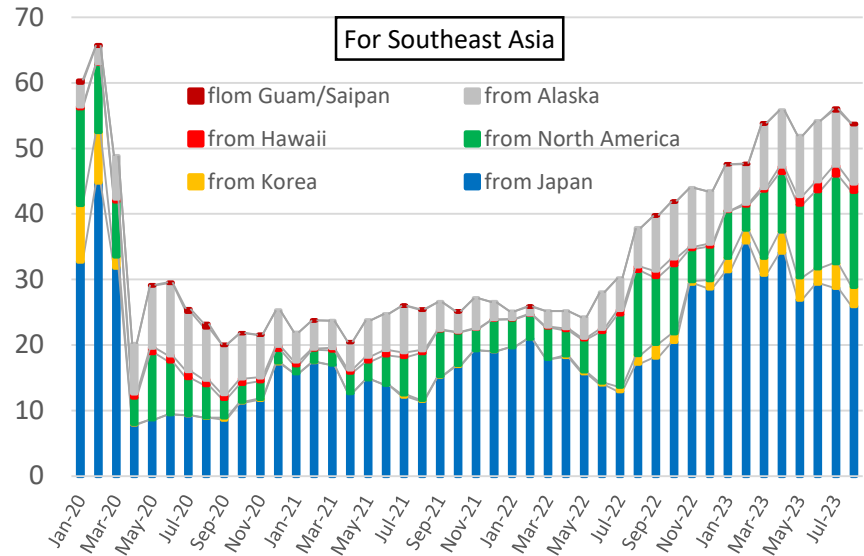
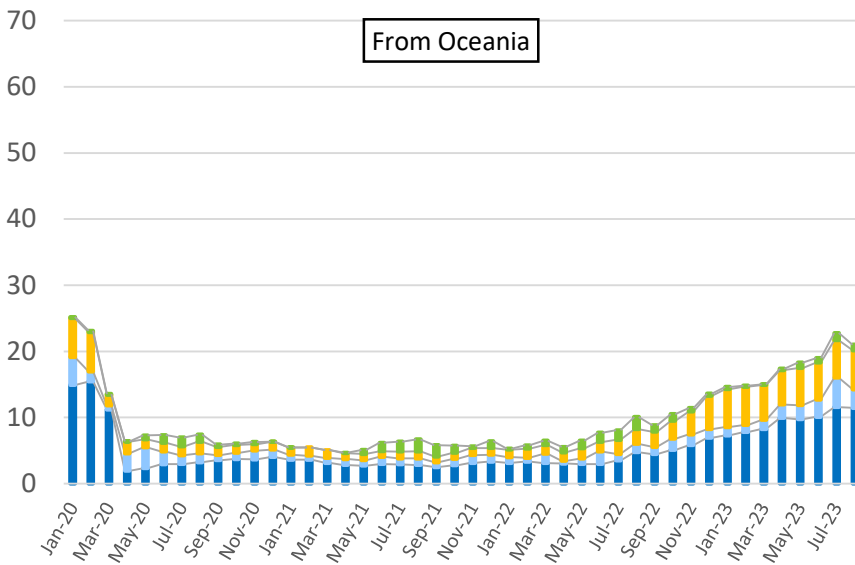
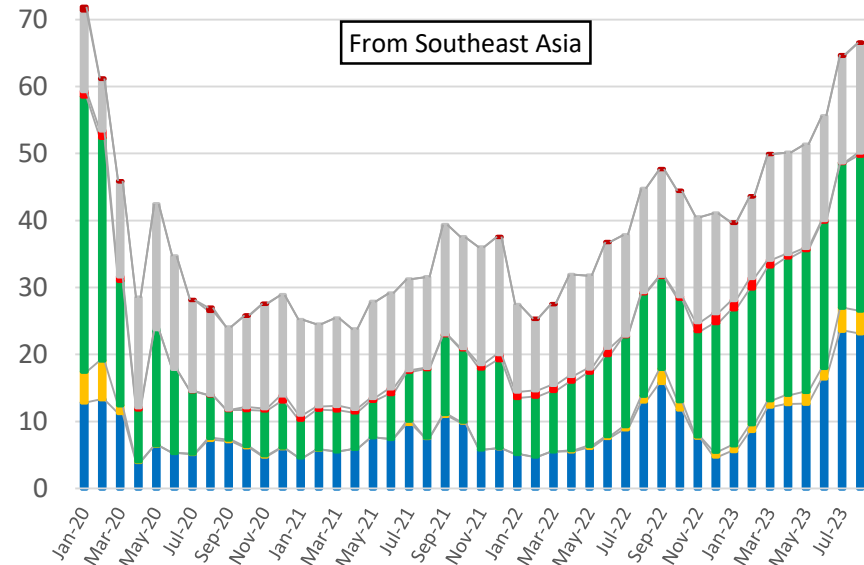
Daily Traffic Volume in Fukuoka FIR Oceanic Airspace





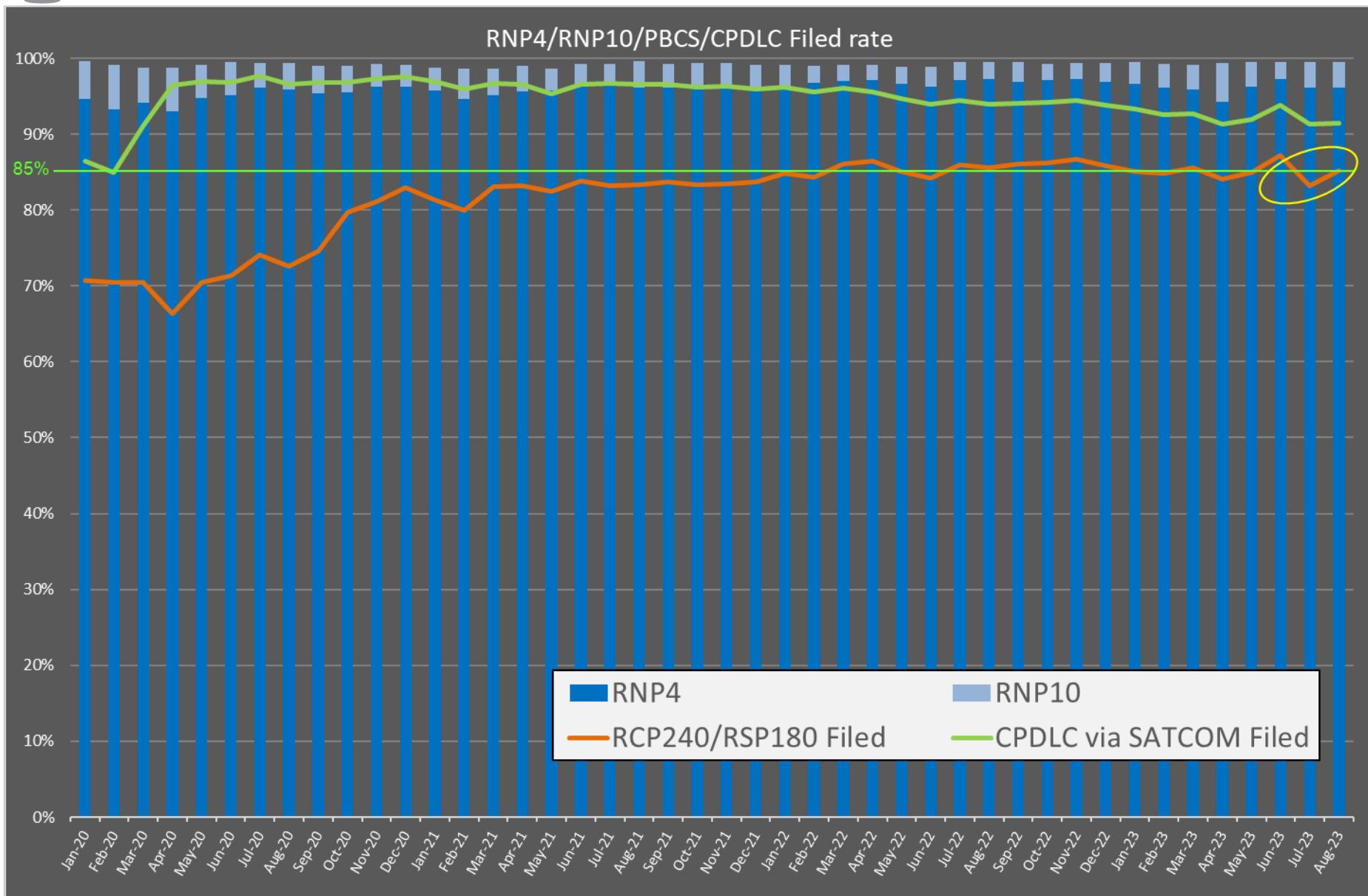
■ for Japan
 ■ for Mainland China
 ■ for Korea
 ■ for Taiwan
 ■ for Southeast Asia



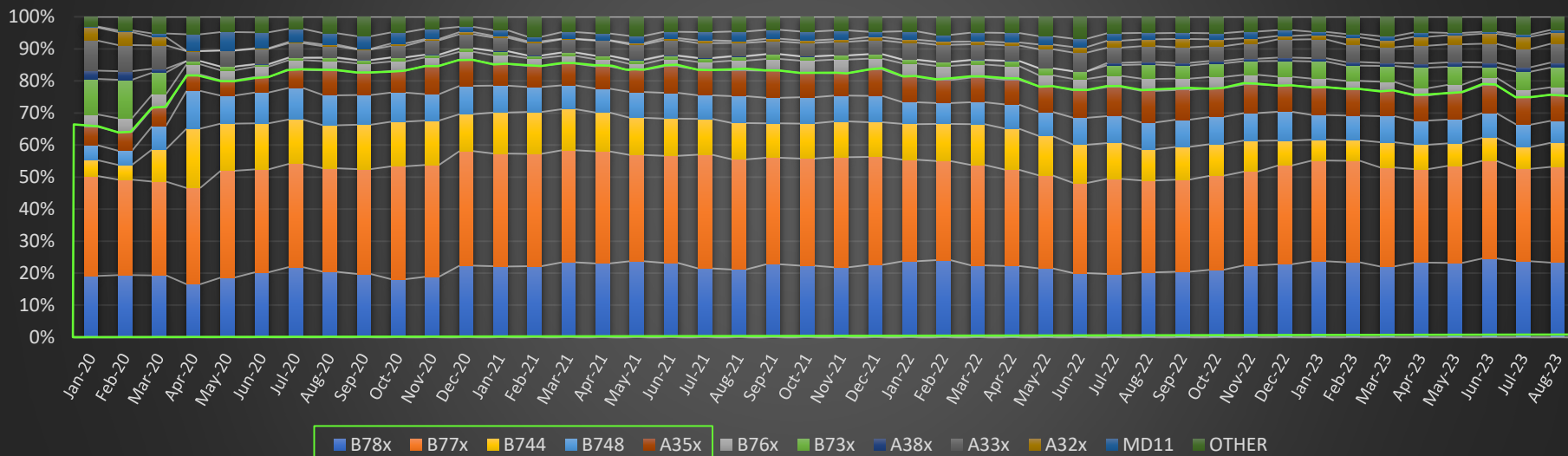
For Oceania

For Southeast Asia

From Oceania

From Southeast Asia


■ for Japan ■ for Mainland China ■ for Korea ■ for Taiwan

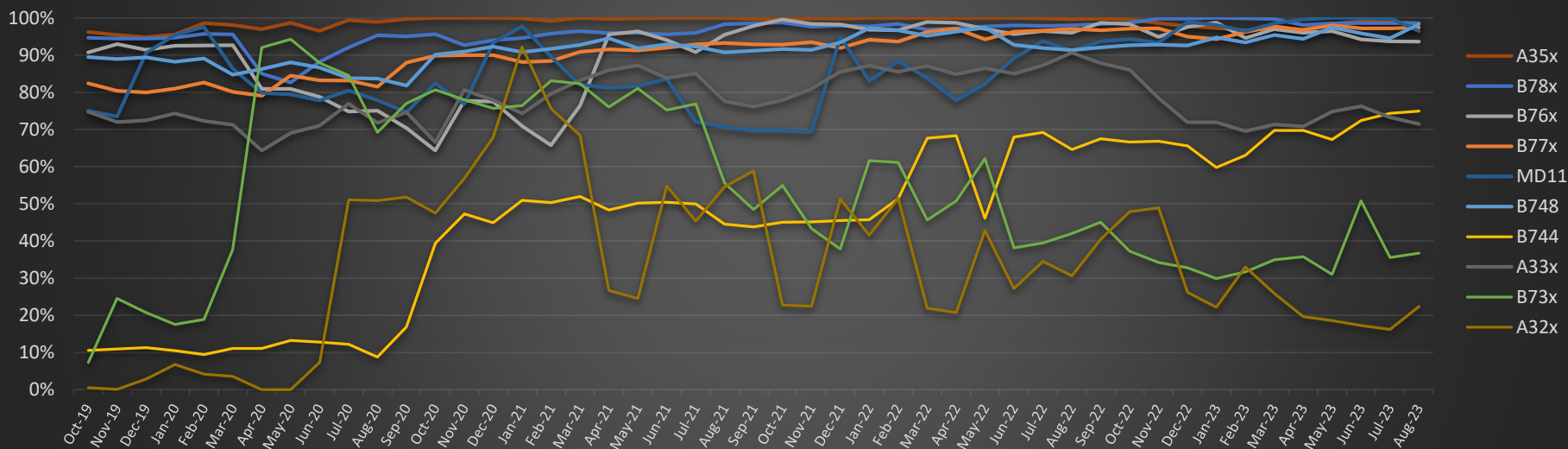
■ for Japan ■ for Korea ■ for North America ■ for Hawaii ■ for Alaska ■ for Guam/Saipan



Proportion of aircraft types in Fukuoka FIR oceanic airspace

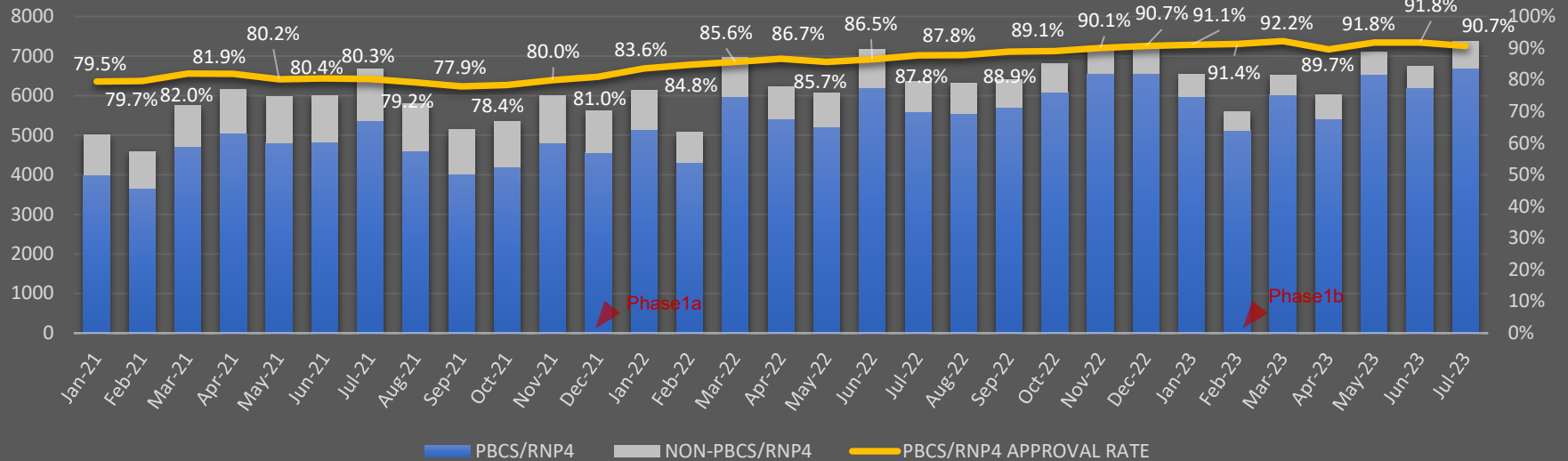


PBCS approved rate by aircraft type

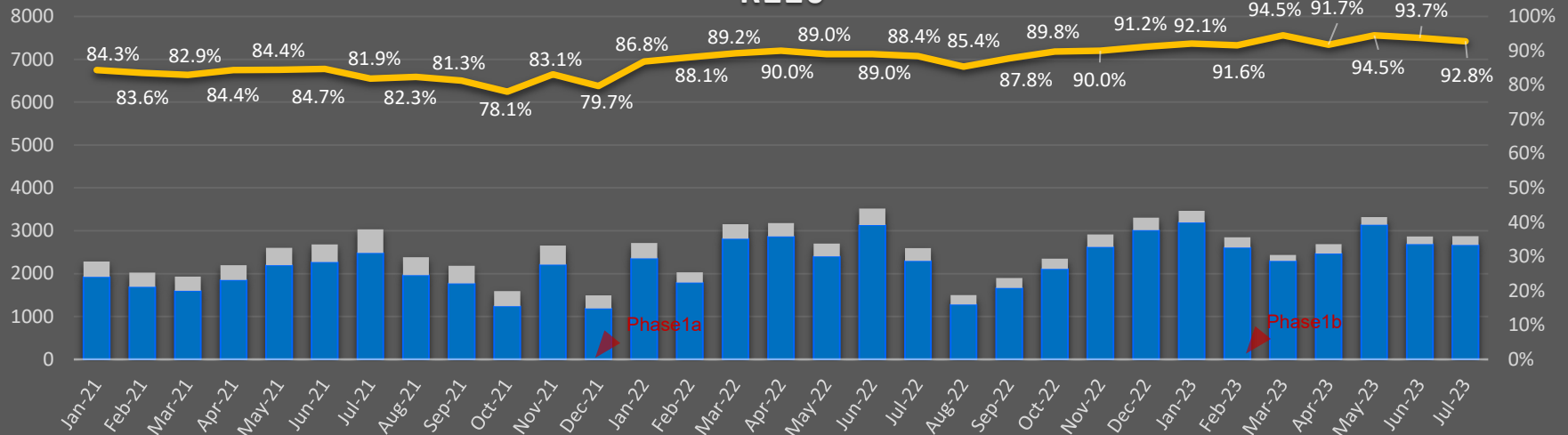


Monthly traffic volume and PBCS/RNP4 approval rate

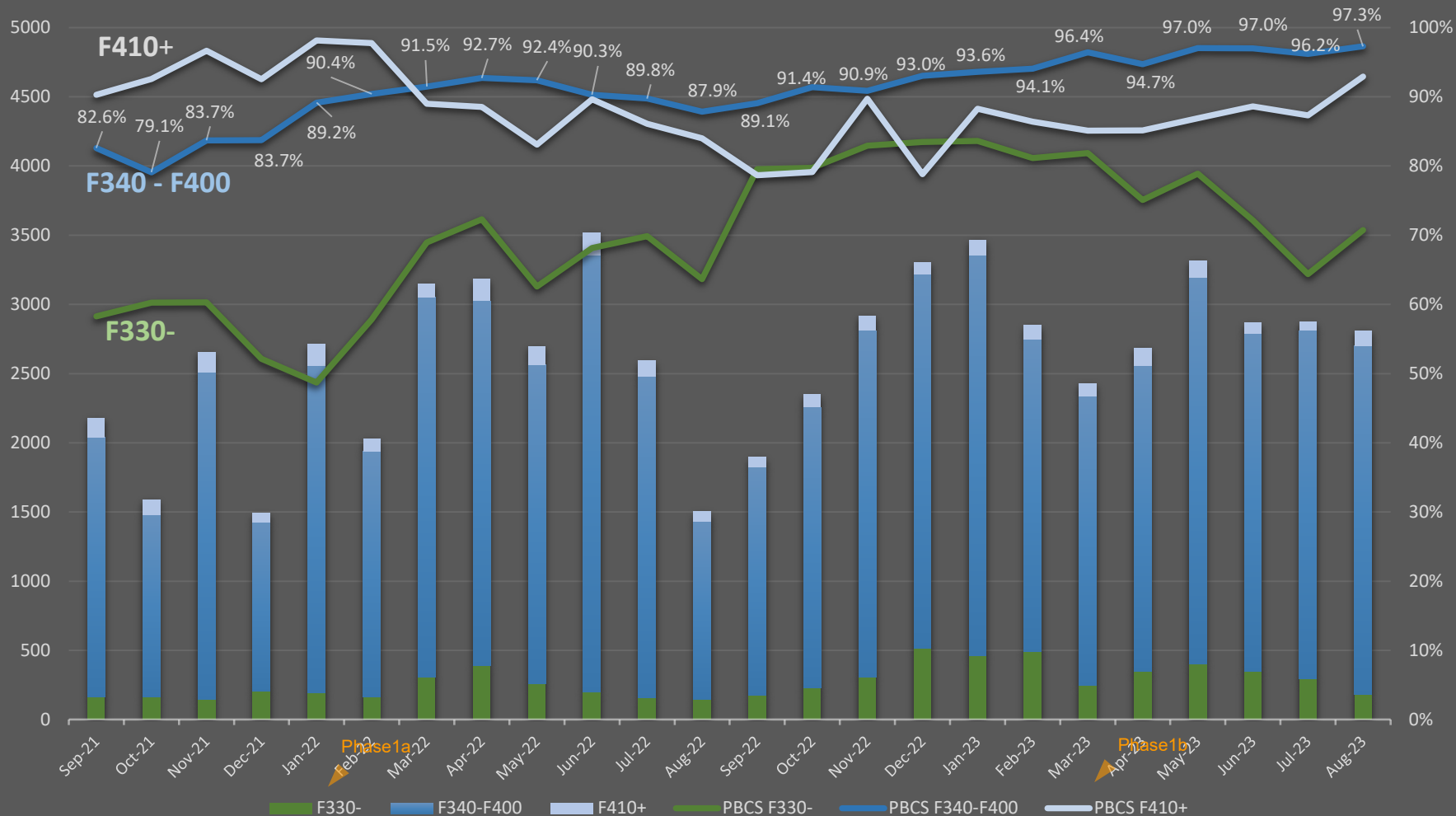
NOPAC



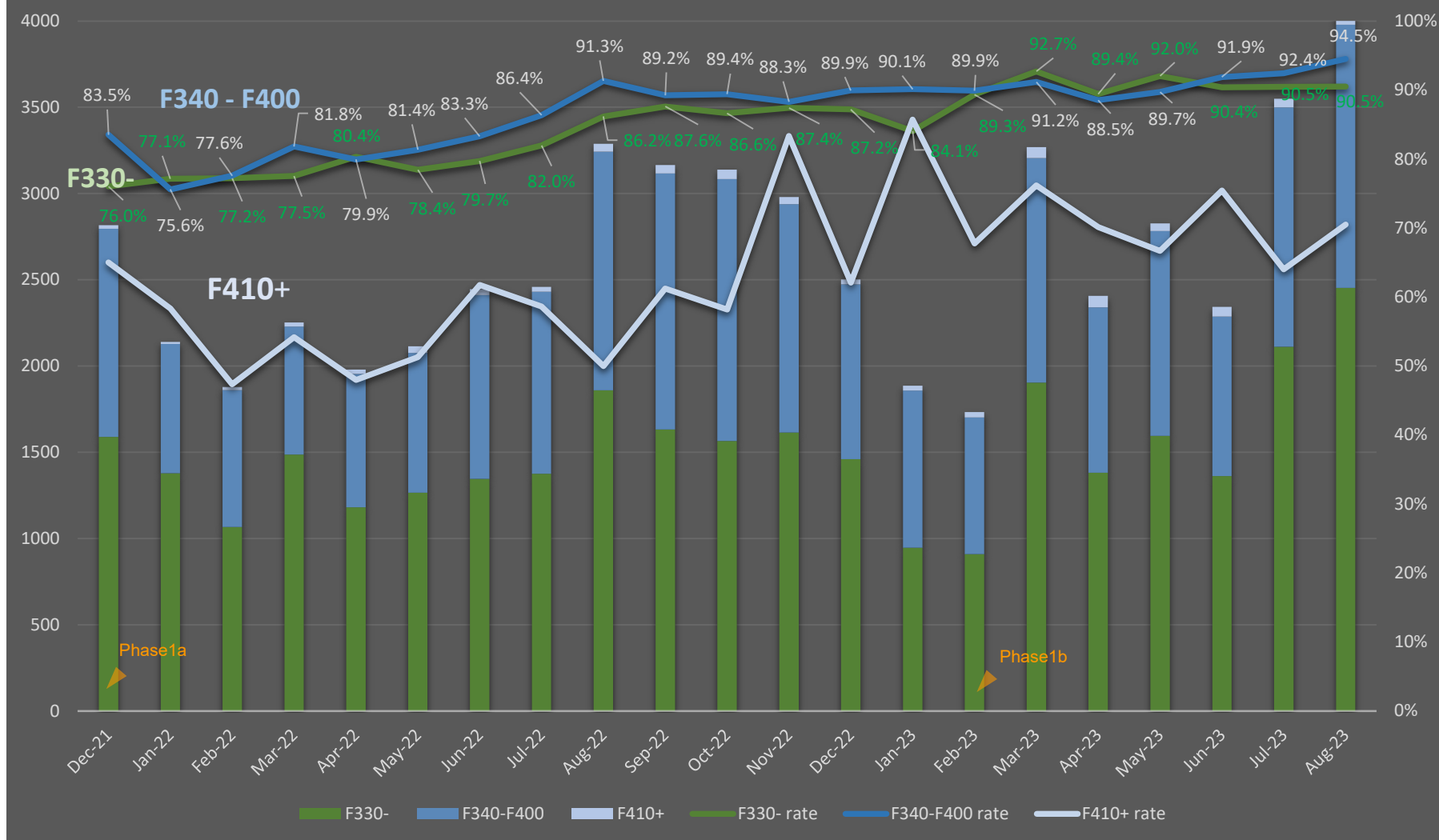
R220



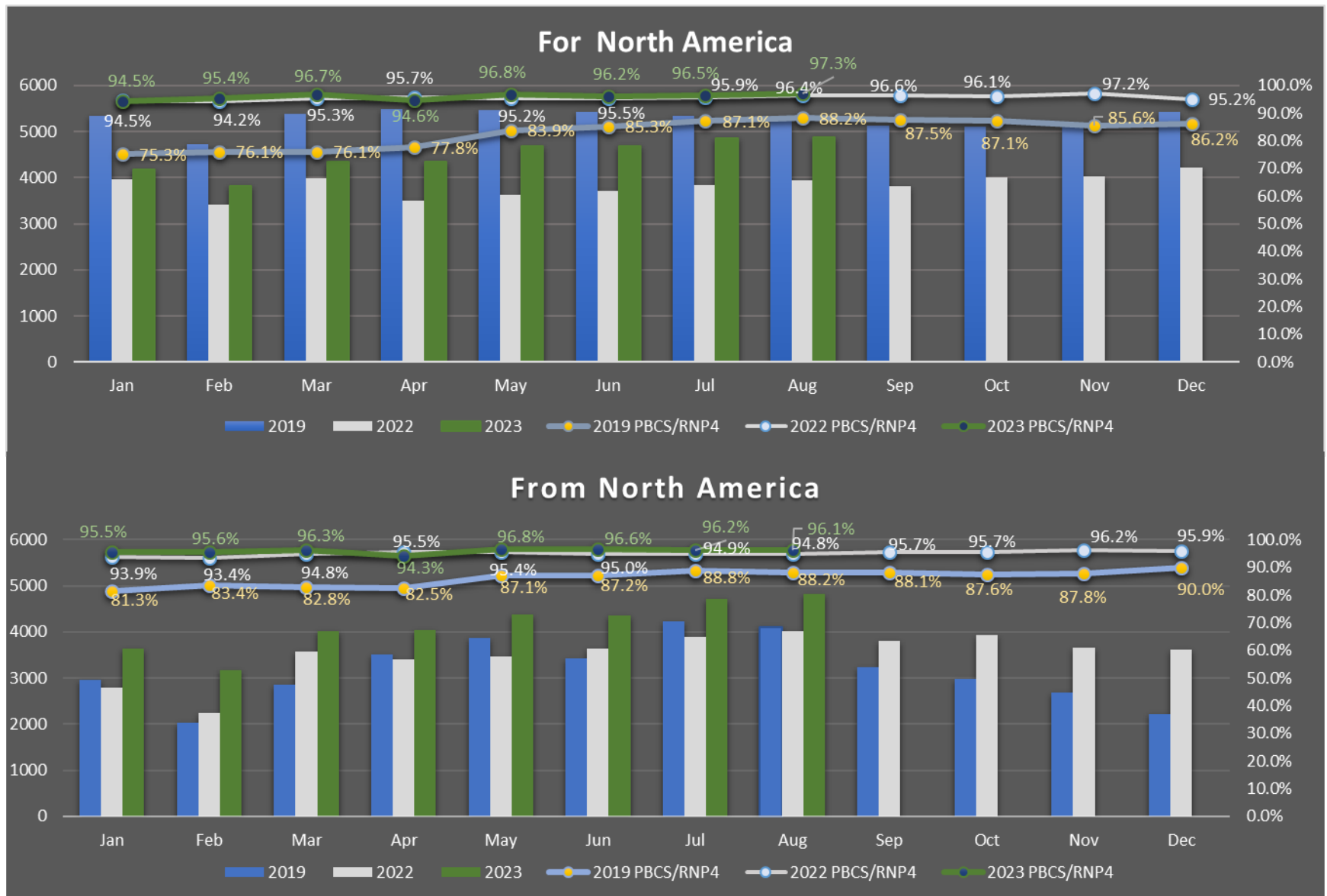
Monthly traffic Volume & PBCS/RNP4 approval rate on R220



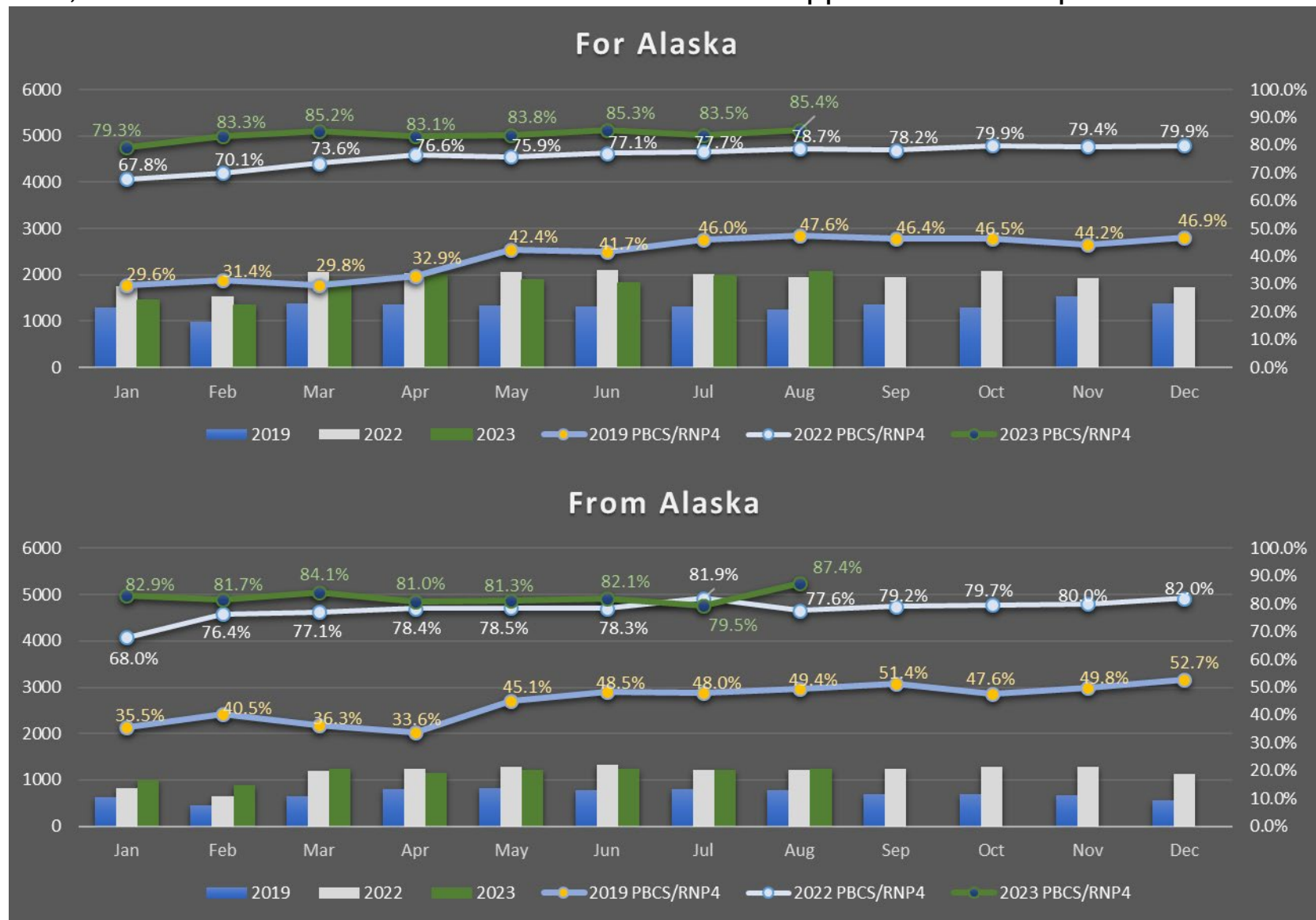
Monthly traffic volume & PBCS/RNP4 approval rate on A590



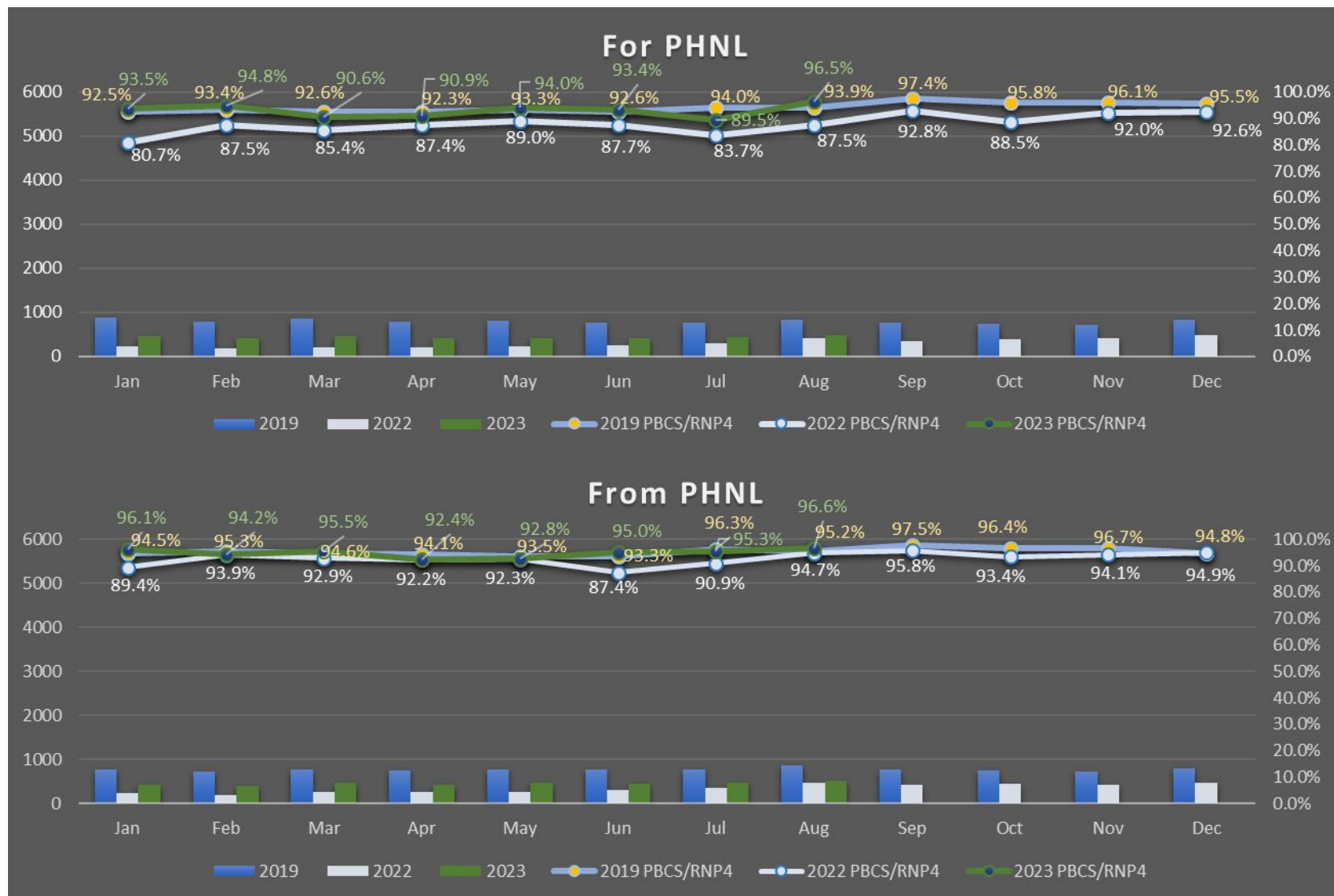
2019,2022 and 2023 traffic volume and PBCS/RNP4 approval rate comparison for North America



2019,2022 and 2023 traffic volume and PBCS/RNP4 approval rate comparison for Alaska

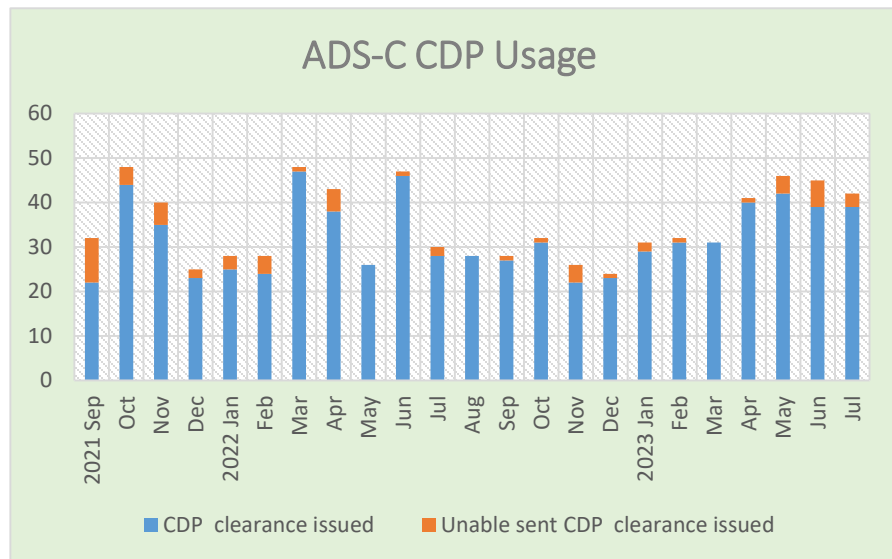


2019,2022 and 2023 traffic volume and PBCS/RNP4 approval rate comparison for PHNL

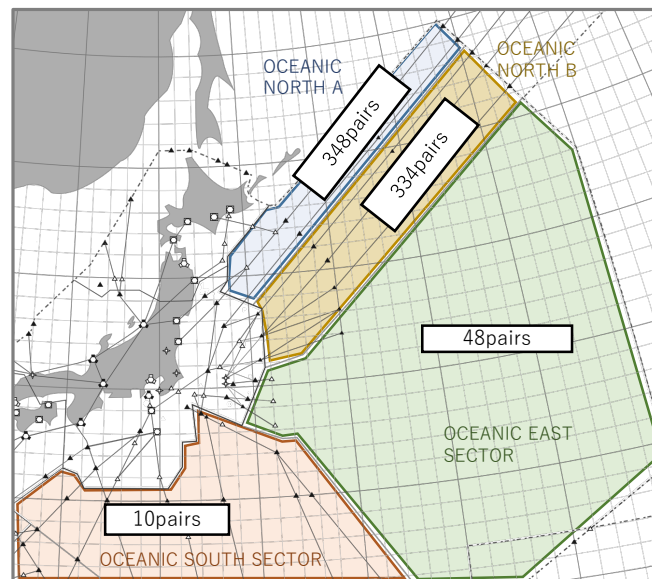


ADS-C CDP usage

- The target period is from Sep,2021 to Jul,2023.



Monthly ADS-C CDP usage data



CDP applicable area

Blocking aircraft Requesting aircraft	PBCS approved	non-PBCS approved
	PBCS approved	non-PBCS approved
PBCS approved	53.9%	22.6%
non-PBCS approved	18.1%	5.4%

ADS-C CDP Applicable Percentage(PBCS approved aircraft)

- The most common reason for not applying ADS-C CDP was that the following aircraft was faster than the preceding aircraft. (Regulation; 15-25nm, within 0.02 of Mac difference)
- There were many applications at NOPAC
- There was about 75% application to PBCS approved aircraft.

- ADS-C CDP's actual operation started on the 15th of June.

Inmarsat satellite outage

- ◆ On April 16, 2023, INMARSAT satellite outage occurred in the Pacific region and data link communications were disrupted for about two days.

【Timeline】

04/16/2023

2253z : Inmarsat satellite failure occurred

04/17/2023

Data link via Inmarsat satellite outage throughout the day

04/18/2023

0110z : Received information from DSP that restoration may be expected at 1000z on 18th

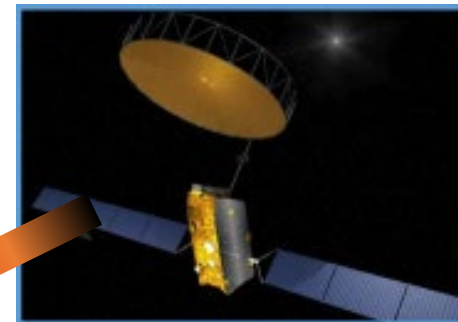
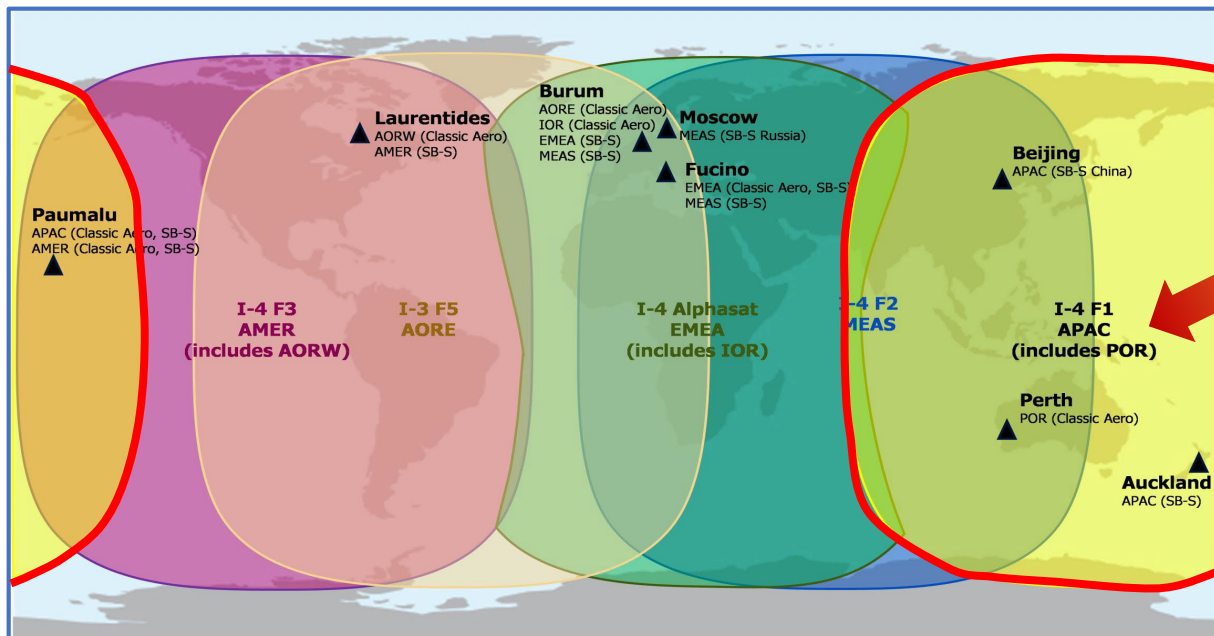
0117z : Received information that it will take about 12 hours from 1000z to restart the satellite

2127z : Received information from DSP about Classic Aero service restoration

2253z : Received information from DSP about the recovery of data link via Inmarsat satellite

The cause of Inmarsat satellite outage

It was mainly due to a power outage in Inmarsat I-4 F1 APAC over the Pacific Ocean



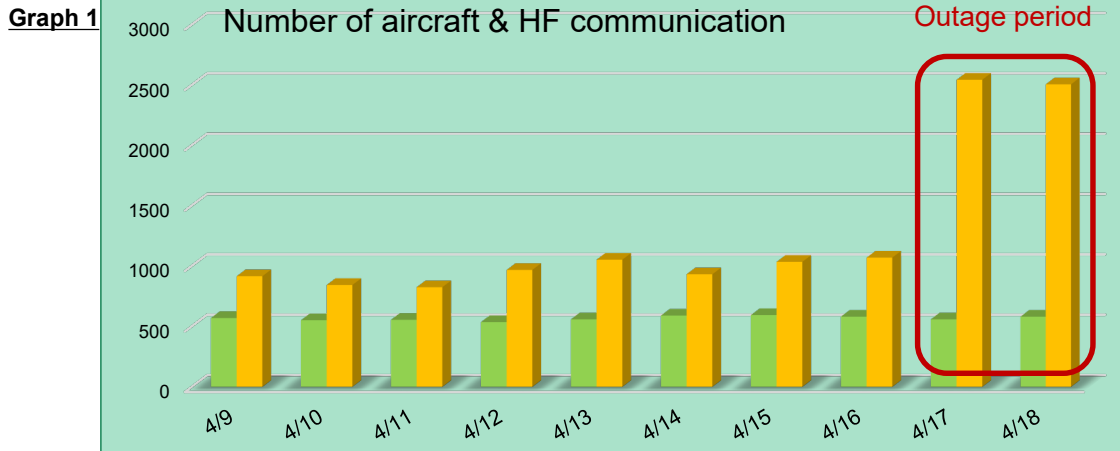
Inmarsat I-4 F1

◆ Impact on aircraft

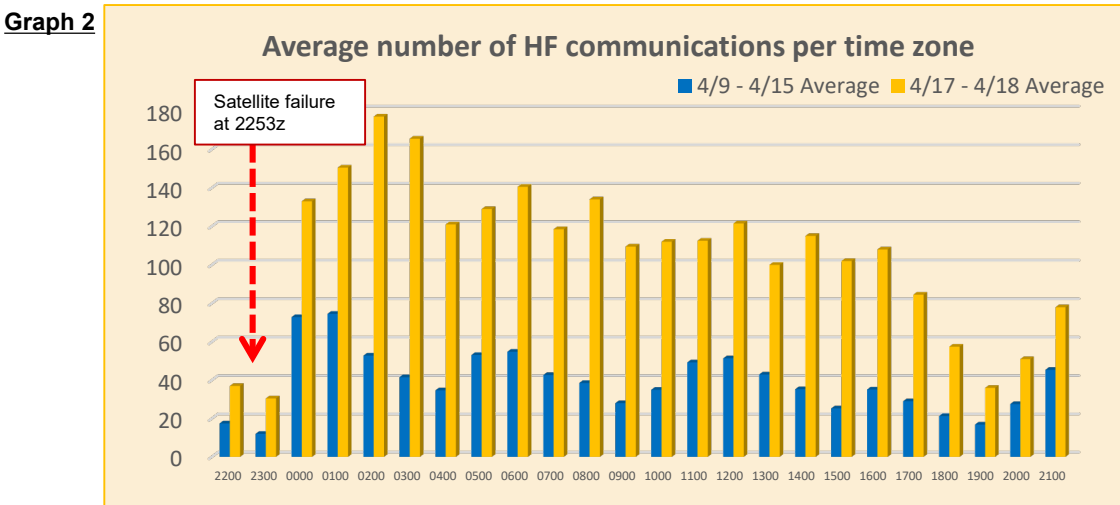
- The area : The Pacific airspace
- The number changed from CPDLC to HF voice communication : 13 aircraft
- The number of aircraft changing altitude in oceanic airspace : 3 aircraft in oceanic airspace
- The number of aircraft changing route : 34 aircraft
- The number of aircraft supported by HF voice communication : about 780 aircraft

◆ HF voice communication comparison

The following graph compares HF communication data before and after the outage.



Graph 1 shows the number of aircraft and HF communication by the day. Green bar is number of aircraft and Yellow bar is number of communications. Number of HF communications during the data link outage increased by about 2.5 times compared with the number before the outage.



Graph 2 shows average number of HF communications per time zone. Blue bar is average number of communications per week before the outage. Yellow bar is average number of communications during 2 days of the outage.

The timing of data link outage was before the busy of traffic.

◆ The separation between aircraft had to be changed since the use of “Reduced separation minima using ADS-C” was no longer possible. However, owing to the low volume of traffic at the time of the outage, the separation could be changed without delay.

The end

