



WP/xx **BOBCAT Operational Updates**

BOBCAT



ATFM/SG/10
4 – 8 May 2020



**Introduction & Benefits of BOBCAT
Operations**

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

**Traffic Sample Data
for Post-Operational Analysis**

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

**Distribution of Flight Level Operated in
Afghanistan Airspace**

Iraq / Iran Airspace Conflict

COVID-19 Impact



Introduction & Benefits of BOBCAT Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

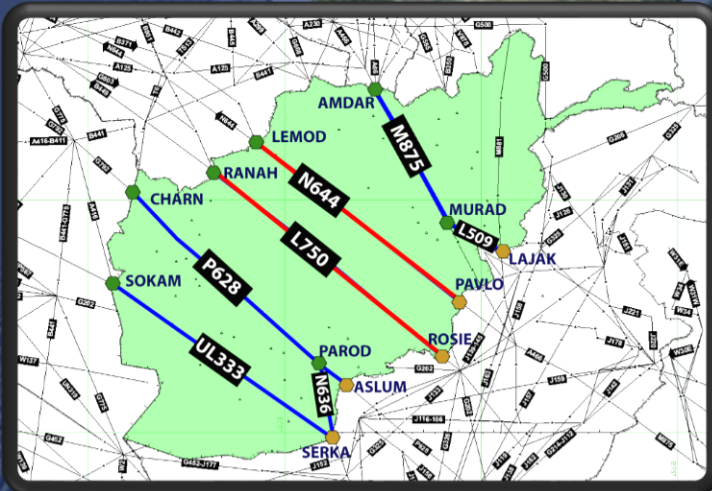
Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

South/Southeast Asia – Europe Route Structure

BOBCAT



Images/Spot Image
 State Geographer
 U.S. Navy, NGA, GEBCO
 Google Technologies

©2010 Google

21°16'31.77" N 83°43'22.17" E elev 282 m

Eye alt 5121.36 km

Benefit of BOBCAT Operations

Thailand and International
CNS/ATM SYSTEM



\$155
million

**Estimated
Airline Cost
Savings**



155
Million kg

**Estimated
Fuel
Savings**



635
Million kg

**Estimated
CO₂ Emissions
Savings**



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

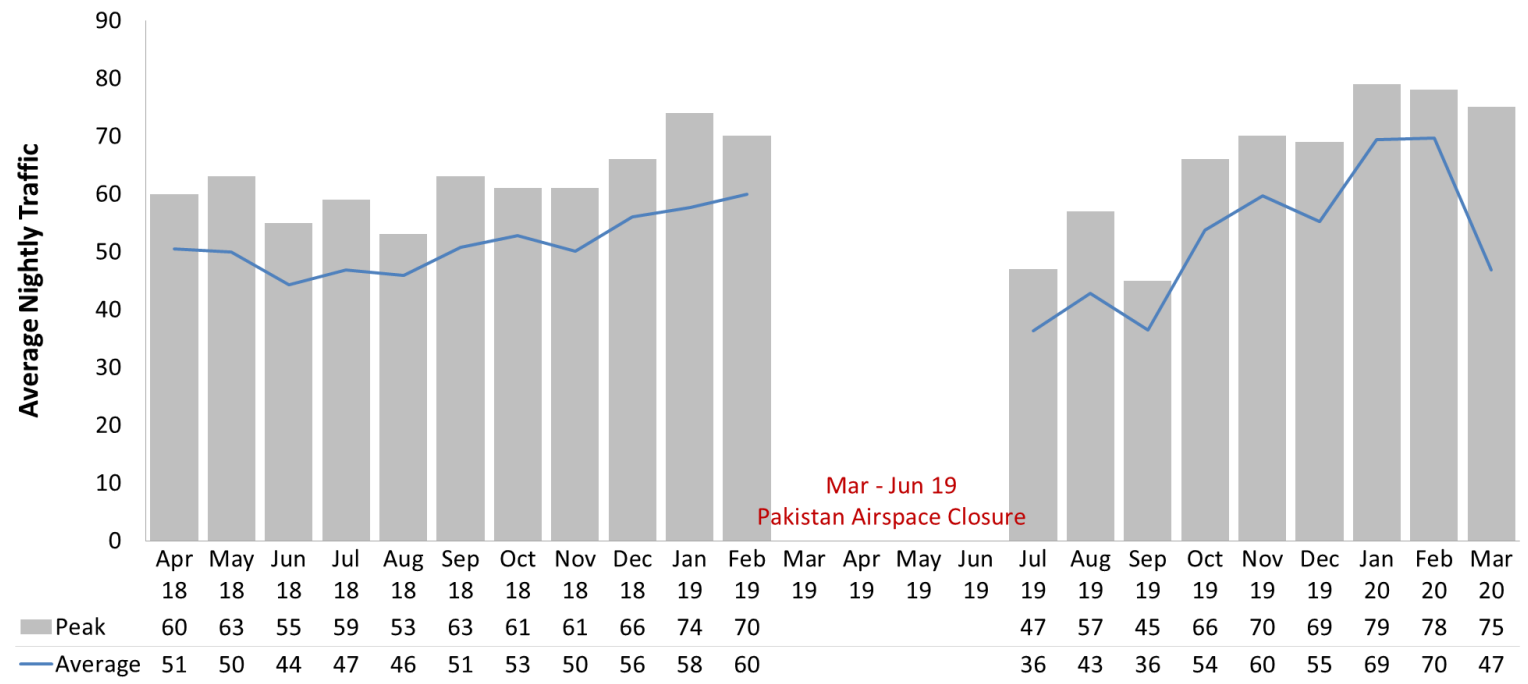
Iraq / Iran Airspace Conflict

COVID-19 Impact



44 Requests/Night

Average of Slot Request



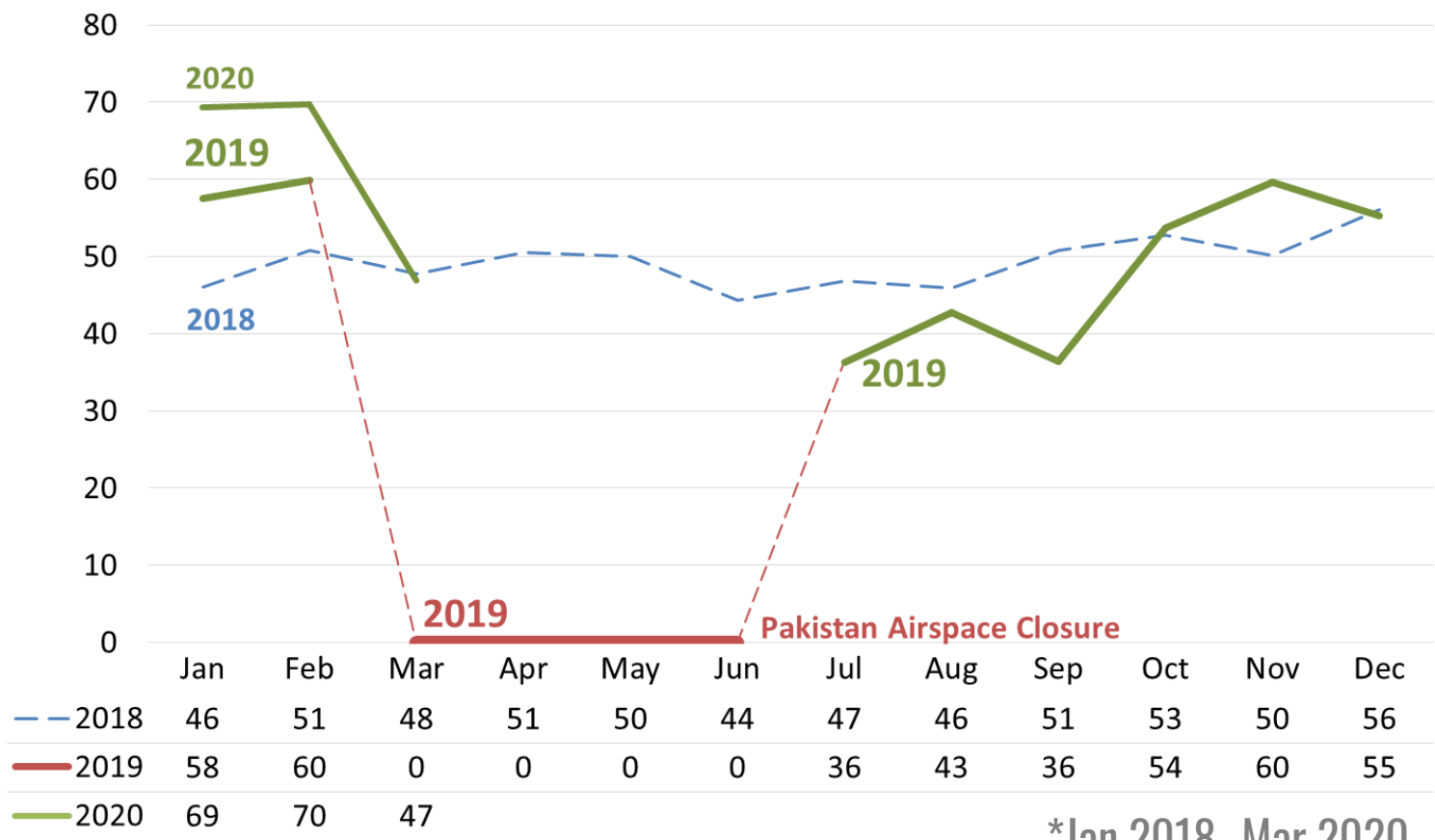
Mar - Jun 19
Pakistan Airspace Closure

*Apr 2018- Mar 2020

BOBCAT Traffic Demand from Slot Request



Comparison of BOBCAT Traffic Demand from Slot Request after Pakistan reopens airspace

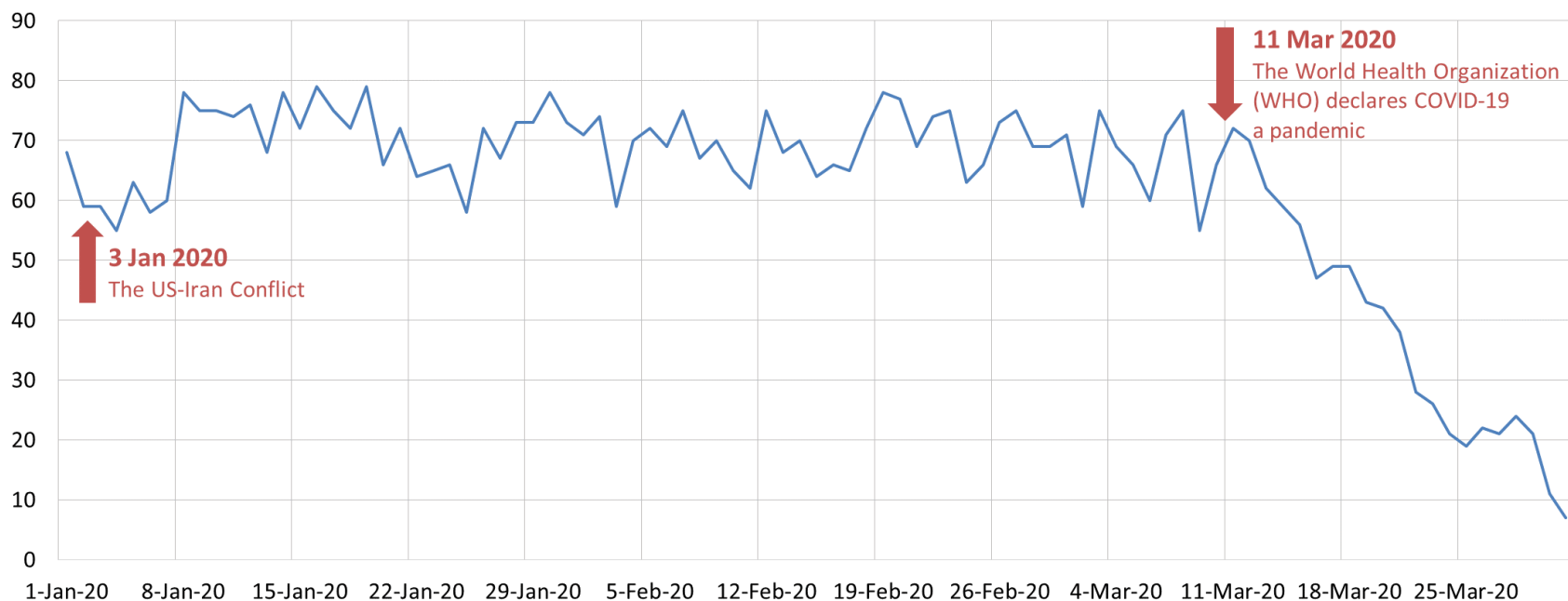


*Jan 2018- Mar 2020

BOBCAT Traffic Demand from Slot Request



Overview of BOBCAT Traffic Demand from Slot Request between Jan - Mar 2020



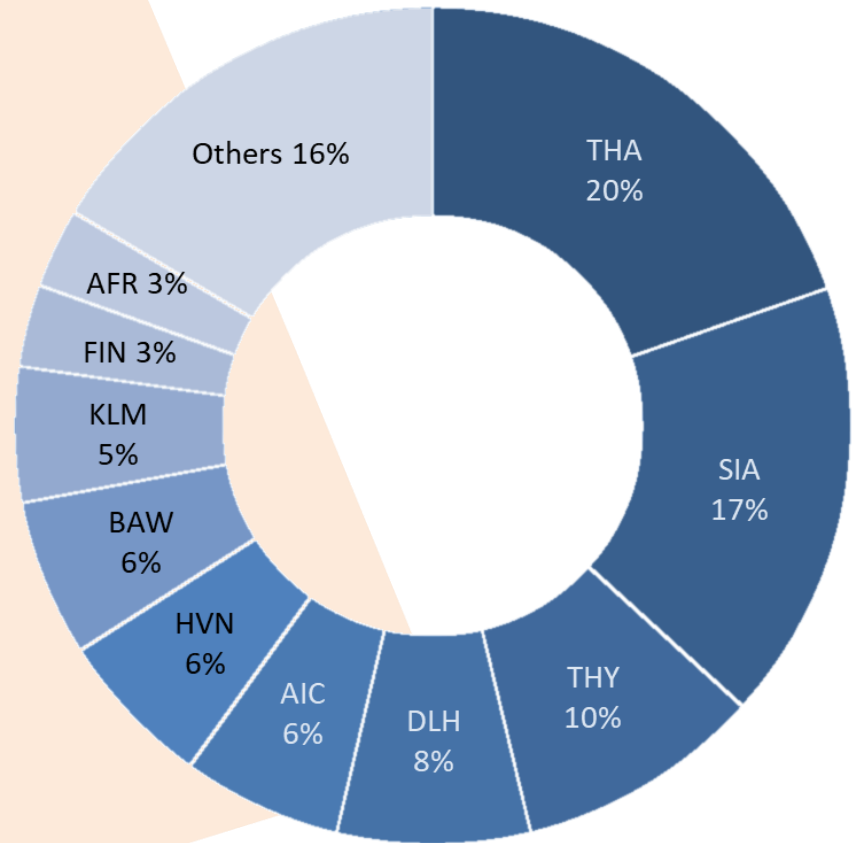
*Jan - Mar 2020

BOBCAT Slot Request by Airlines



40

Airlines Participation



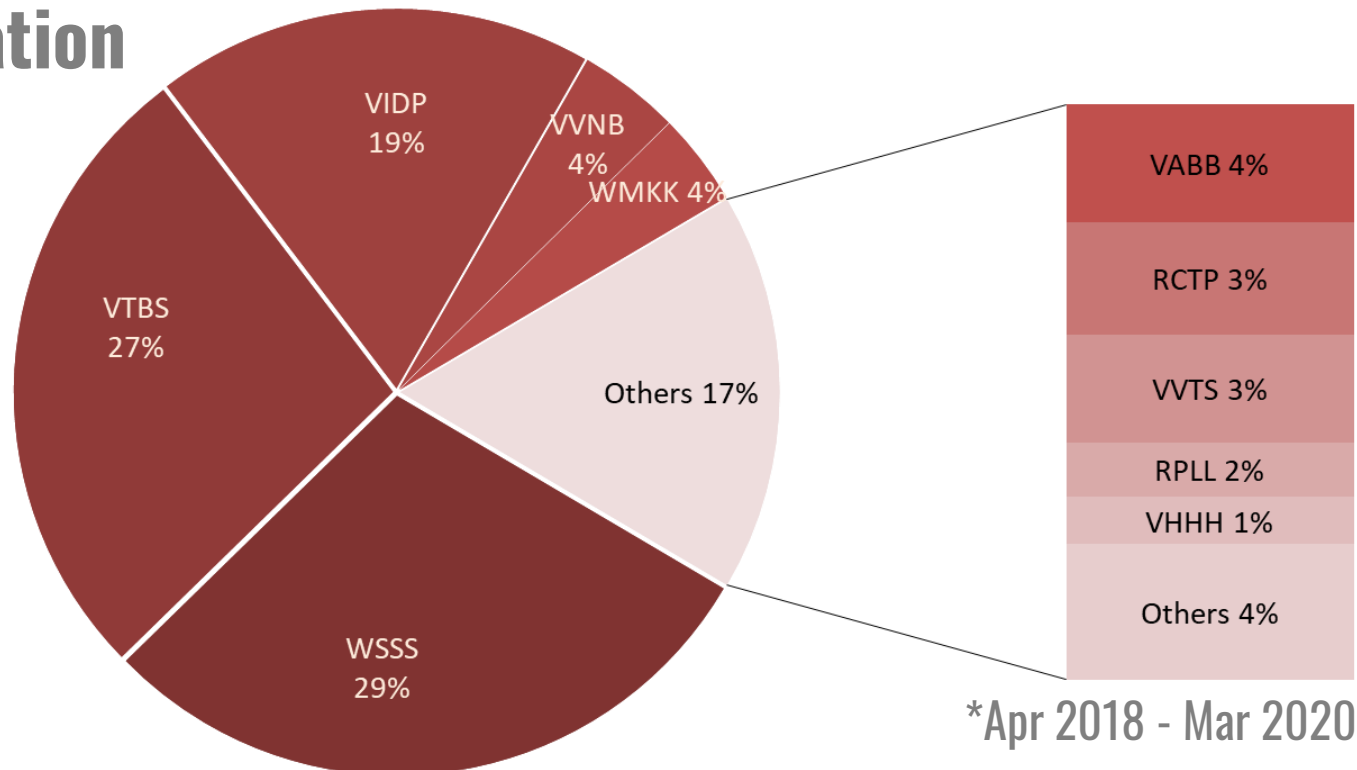
*Apr 2018 - Mar 2020

BOBCAT Slot Request by Departure Airports



42

Airports Participation



*Apr 2018 - Mar 2020



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

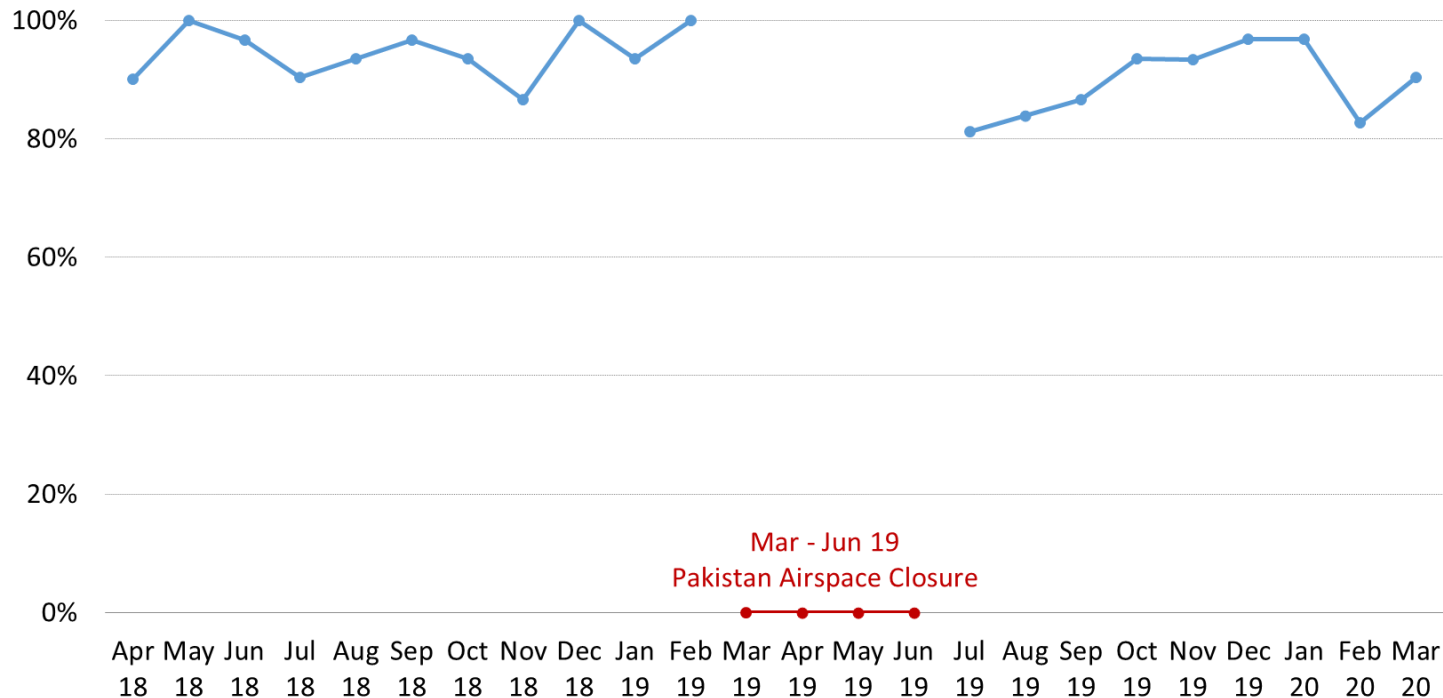
COVID-19 Impact

10-Minutes Cut-Off Time Slot Allocation Release Performance



92%

10-Minutes Cut-Off Time Slot Allocation Release Performance



Mar - Jun 19
Pakistan Airspace Closure

*Apr 2018 - Mar 2020



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

**Traffic Sample Data
for Post-Operational Analysis**

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

Traffic Sample Data for Post-Operational Analysis



**1 Week Traffic Sample Data is collected
Starting with the 3rd Sunday of each month**





Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

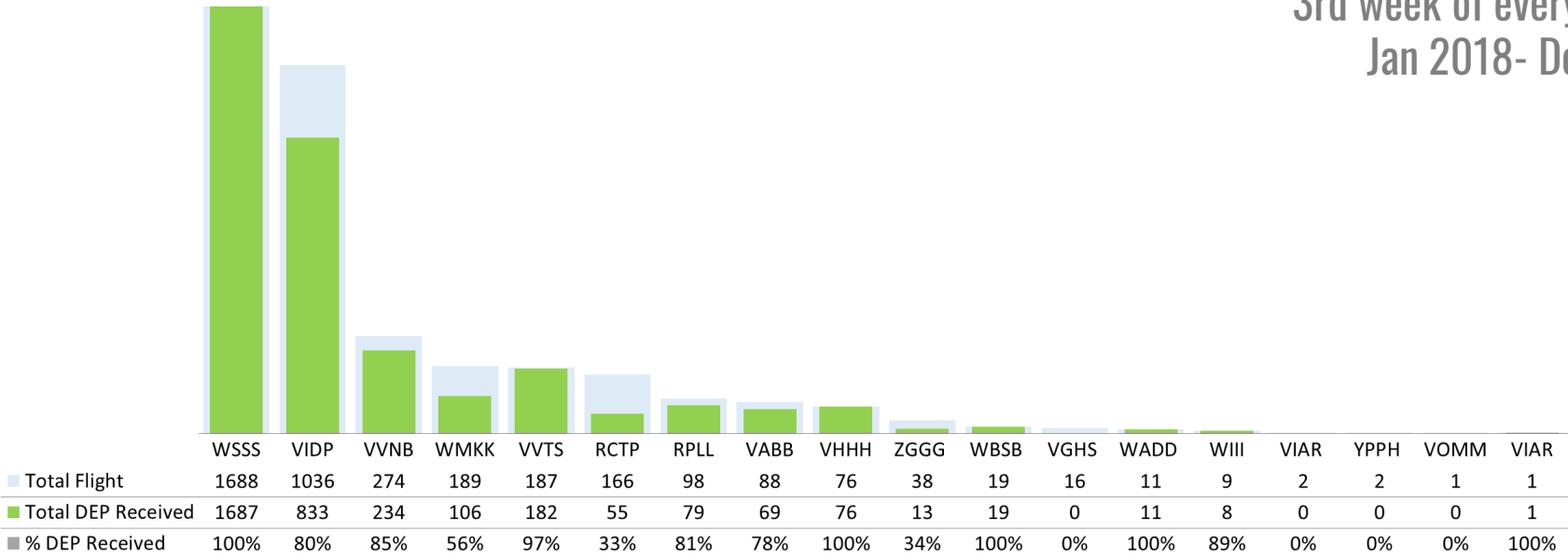
Iraq / Iran Airspace Conflict

COVID-19 Impact

Average Percentage of Flights with DEP Messages



*3rd week of every month
Jan 2018- Dec 2019



*Jan 2018 - Dec 2019



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

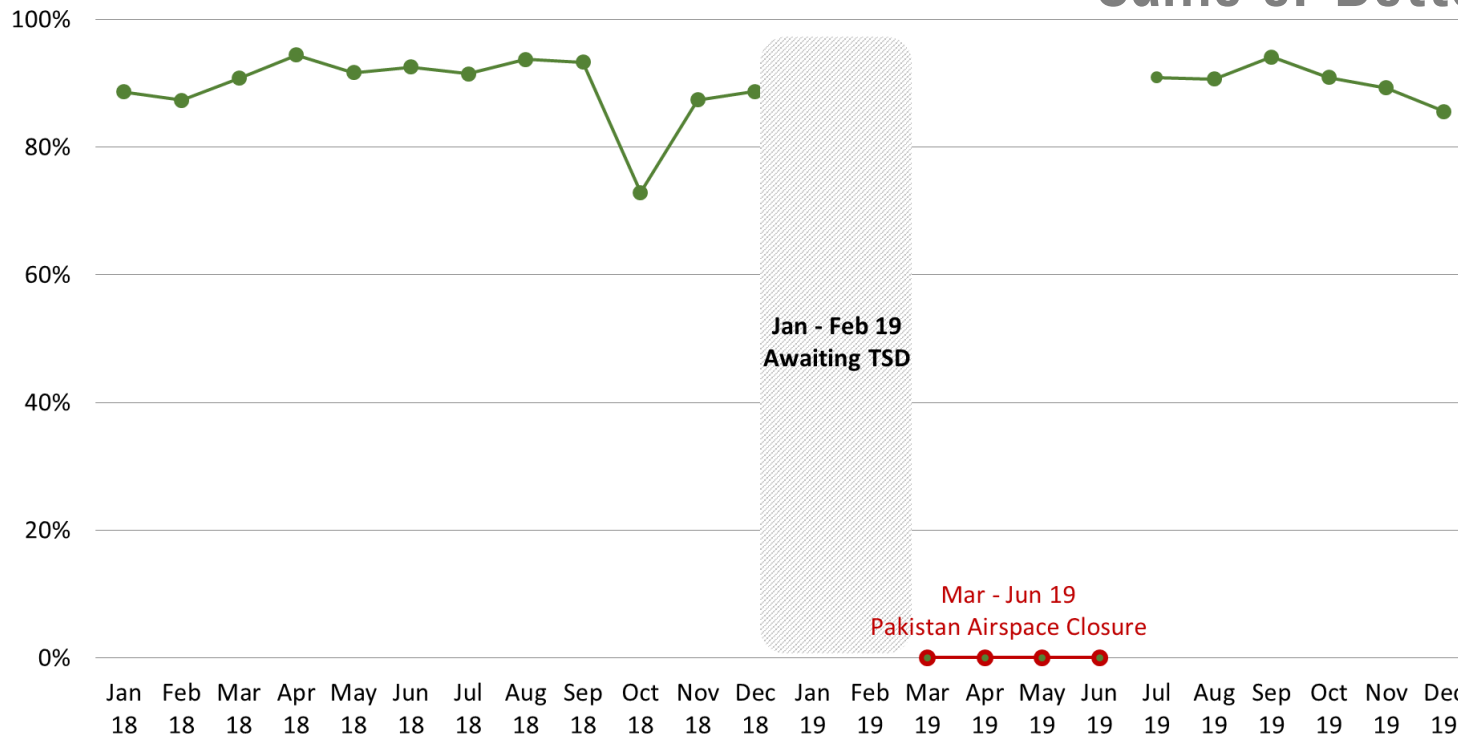
Percentage of Flights Achieving Same or Better FL

and Protection of
FL ATM SYSTEM



90%

Percentage of Flights Achieving Same or Better FL



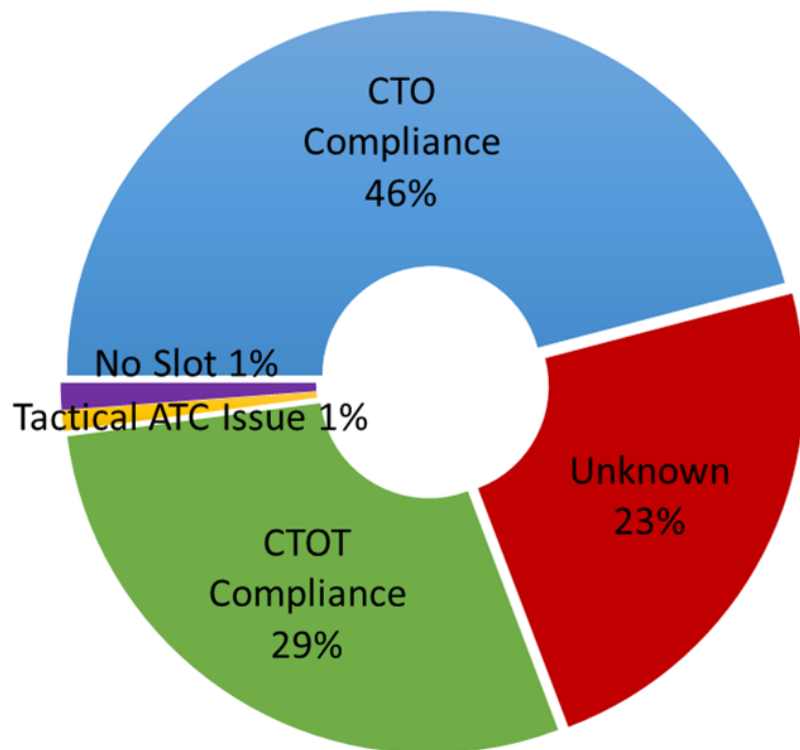
*3rd week of every month
Jan 2018- Dec 2019

Causes of Flights Not Enter Kabul FIR at Allocated FL



46% Kabul FIR entry time (CTO compliance)

Flights are expected to cross waypoint within the window of 5 mins after CTO



23%
Unknown (more data required)

29%
Departures punctuality (CTOT Compliance)

1%
Tactical ATC issues

1%
Departure without Slot Allocation

*3rd week of every month
Jan 2018- Dec 2019



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

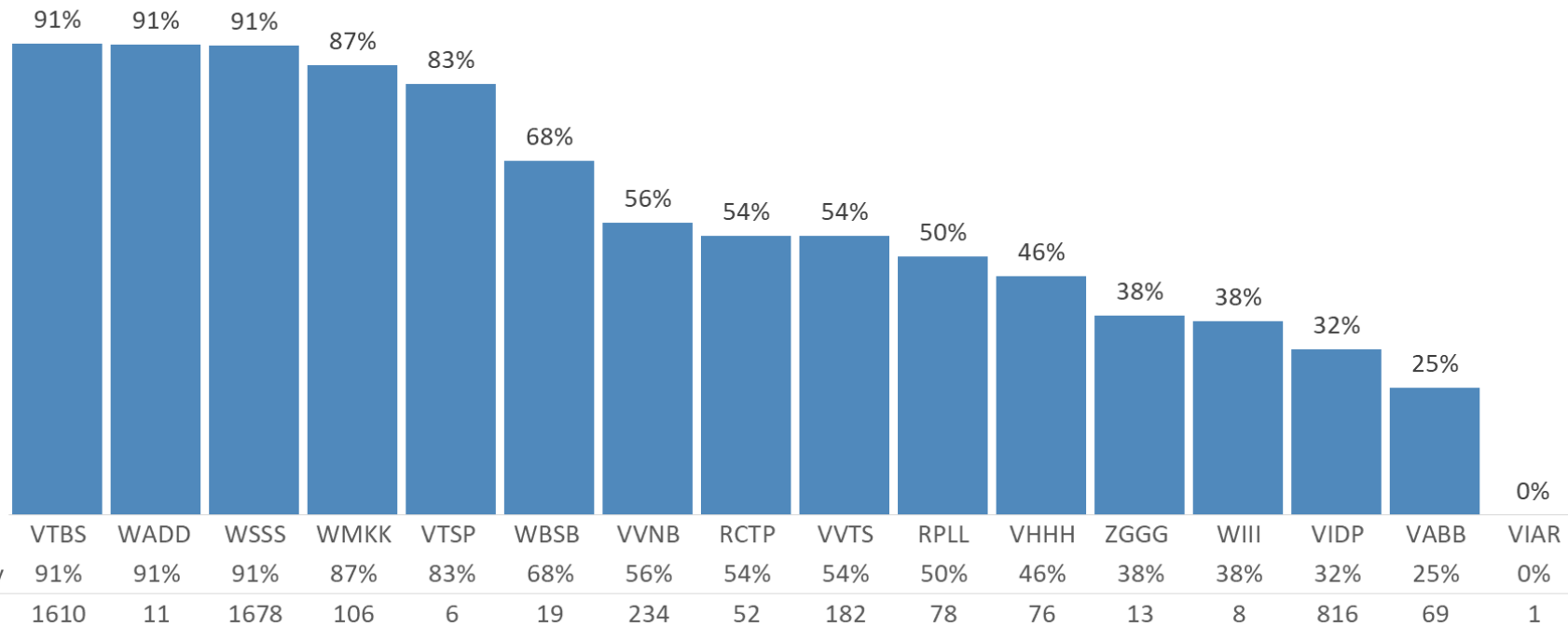
Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

CTOT Compliance

Thailand's Mission
CNS/ATM SYSTEM



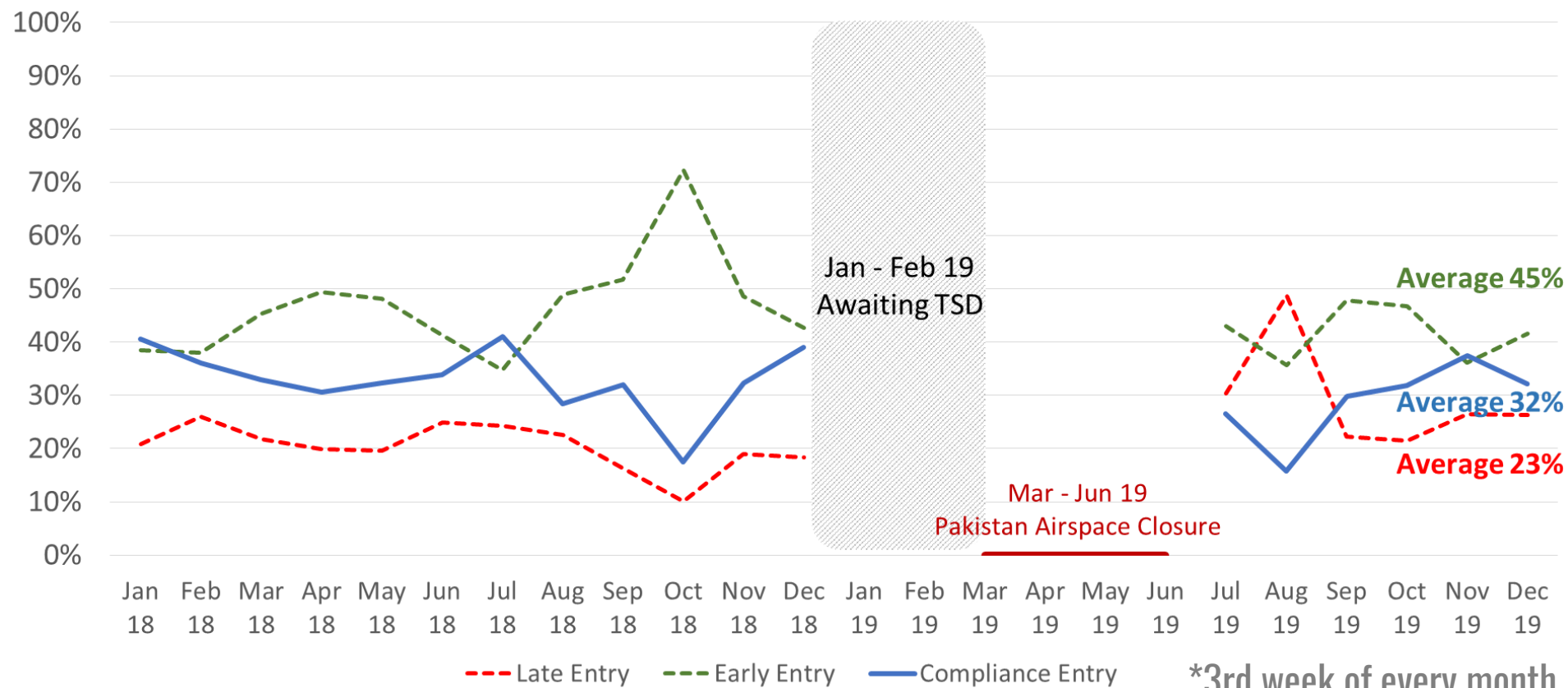
*3rd week of every month
Jan 2018- Dec 2019

CTO Compliance

Thailand Air Navigation Authority
CNS/ATM SYSTEM



Only 32% of flights can cross waypoint within the window of 5 mins after CTO



*3rd week of every month
Jan 2018- Dec 2019



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

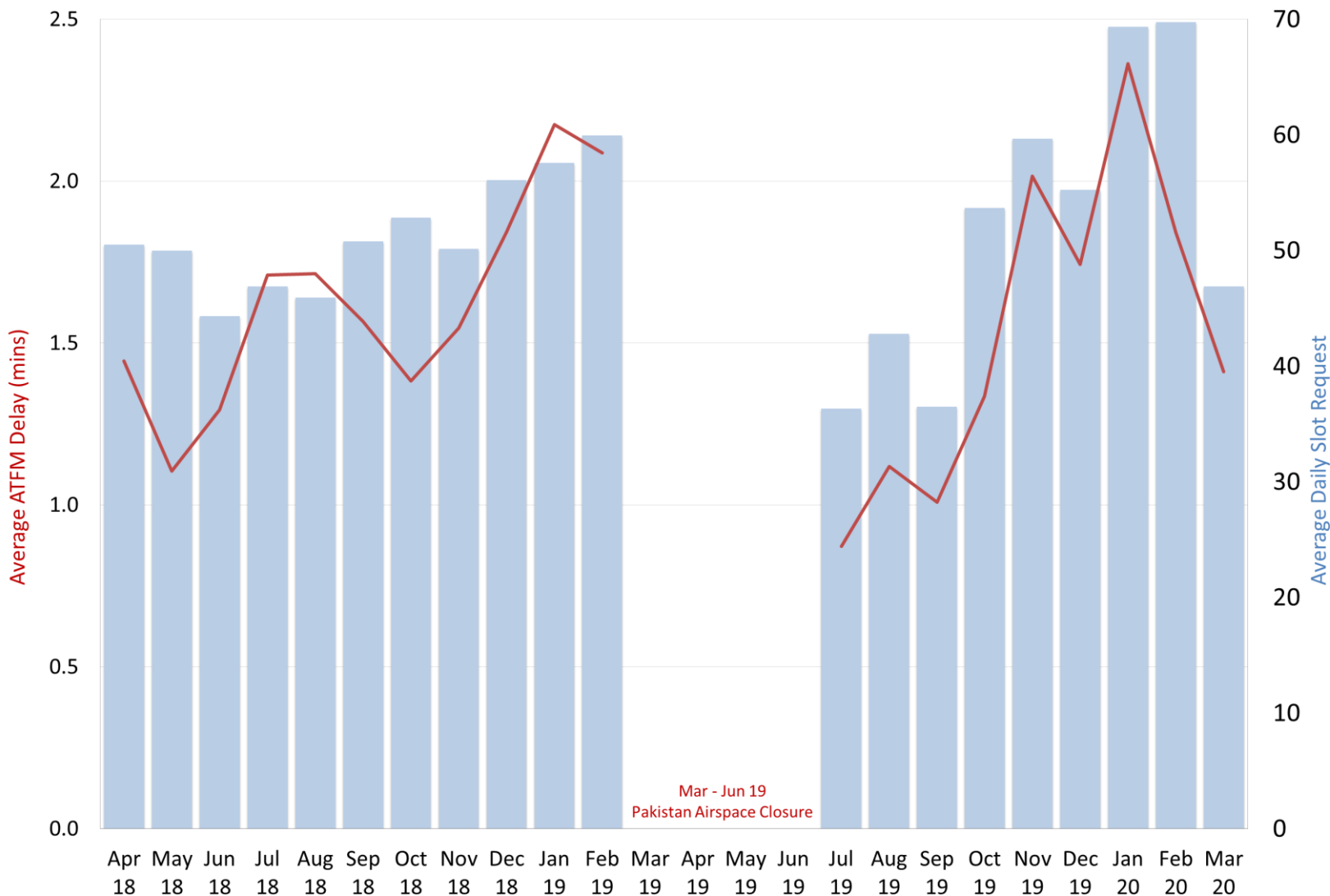
ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

ATFM Delay



*Apr 2018- Mar 2020



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

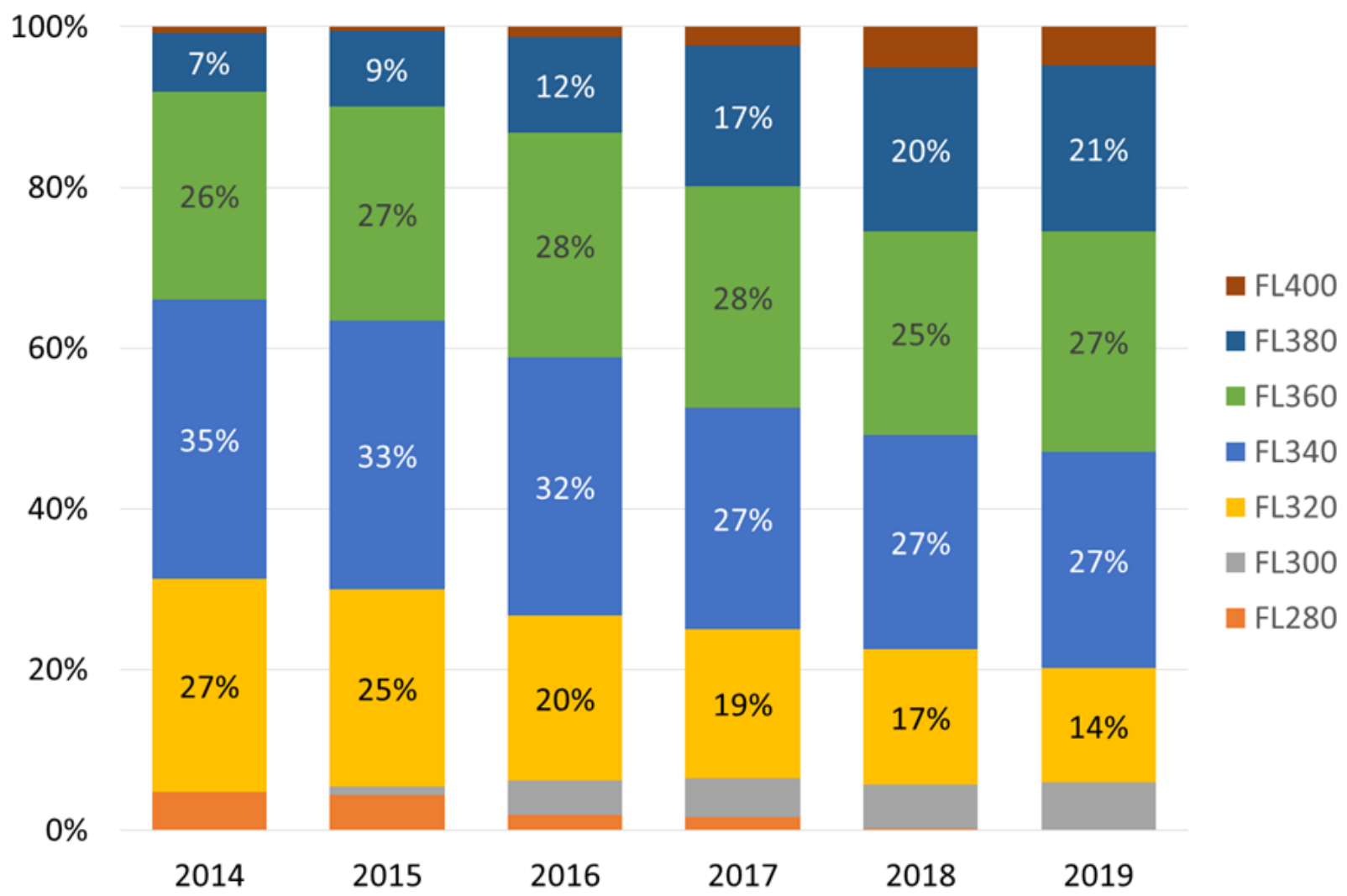
ATFM Delay

**Distribution of Flight Level Operated in
Afghanistan Airspace**

Iraq / Iran Airspace Conflict

COVID-19 Impact

Distribution of Flight Level Operated in Afghanistan Airspace



*Jan 2014- Dec 2019



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact

Iraq / Iran Airspace Conflict (1)



- **3 Jan 2020 – Assassination of Iranian Major General in Iraq**
 - ICAO MID activated CCT Iraq to monitor situation / exchange information
- **8 Jan 2020 – Iran ballistic missile attack & Ukrainian airplane crash**
 - Airlines start avoiding Iranian airspace
 - BOBCAT slot requests increased to 78 flights/night
 - Average of slot requests for the remainder of Jan 2020 : 72 flights/night
 - Max slot requests for the remainder of Jan 2020 : 79 flights/night

Iraq / Iran Airspace Conflict (2)



- **10 Jan 2020 – Contingency BOBCAT Systems deployed**
 - Upon request from ICAO APAC Regional Office, AEROTHAI deployed two contingency BOBCAT systems to support additional traffic
 - Westbound Daytime Flights
 - Eastbound Flights
- **Feb 2020 – tension continue to thaw...**
 - Airlines continue to avoid Iranian airspace
 - Average of slot requests for Feb 2020 : 70 flights/night
 - Max slot requests for Feb 2020 : 78 flights/night
 - No flight with BOBCAT slot entered Iranian airspace



Introduction & Benefits of BOBCAT
Operations

BOBCAT Slot Request Volume Analysis

Slot Allocation Release Performance

Traffic Sample Data
for Post-Operational Analysis

Flight Movement Message Analysis

Flight Level Performance

CTOT & CTO Compliance

ATFM Delay

Distribution of Flight Level Operated in
Afghanistan Airspace

Iraq / Iran Airspace Conflict

COVID-19 Impact



- **Jan 2020**
 - Chinese authorities reported spike in 2019-nCoV leading to unprecedented quarantine of Wuhan and surrounding cities
 - Human-to-human transmission of the virus confirmed
 - WHO declared 2019-nCoV "public health emergency of international concern"
- **Feb 2020**
 - First COVID-19 death outside China reported
 - Travel restrictions for people with travel history to China
 - Coordinated international humanitarian support into China
 - First COVID-19 death outside Asia reported in France



- **Mar 2020**
 - COVID-19 declared pandemic
 - Europe and North America becomes epicenter of pandemic
 - Further passenger flight restrictions
 - Schengen Zone declared close to non-citizens
 - BOBCAT slot request started to fall
 - Airlines begin significant schedule cancellations
 - 31 Mar 2020 : in response to Thai government Work from Home policy, Bangkok ATFMU reduced operational hours to 0100-1300UTC
 - Emergency phone number provided outside those hours



- **Apr 2020**
 - COVID-19 pandemic continues
 - Significant schedule cancellations continue with some airlines temporarily suspend operations
 - Cargo operations dominate air traffic
 - Average Slot Request (1-19 Apr 2020) : 5 flights/night
 - Max Slot Request (1-19 Apr 2020) : 11 flights/night
 - No Slot Request submitted on 15 Apr 2020



- **Apr 2020**
 - Bangkok ATFMU operates at reduced staffing
 - Social Media group setup to feed idle staff with operational procedures and quizzes
 - Training, if conducted, to move to web conference platforms



Thank you for your attention