

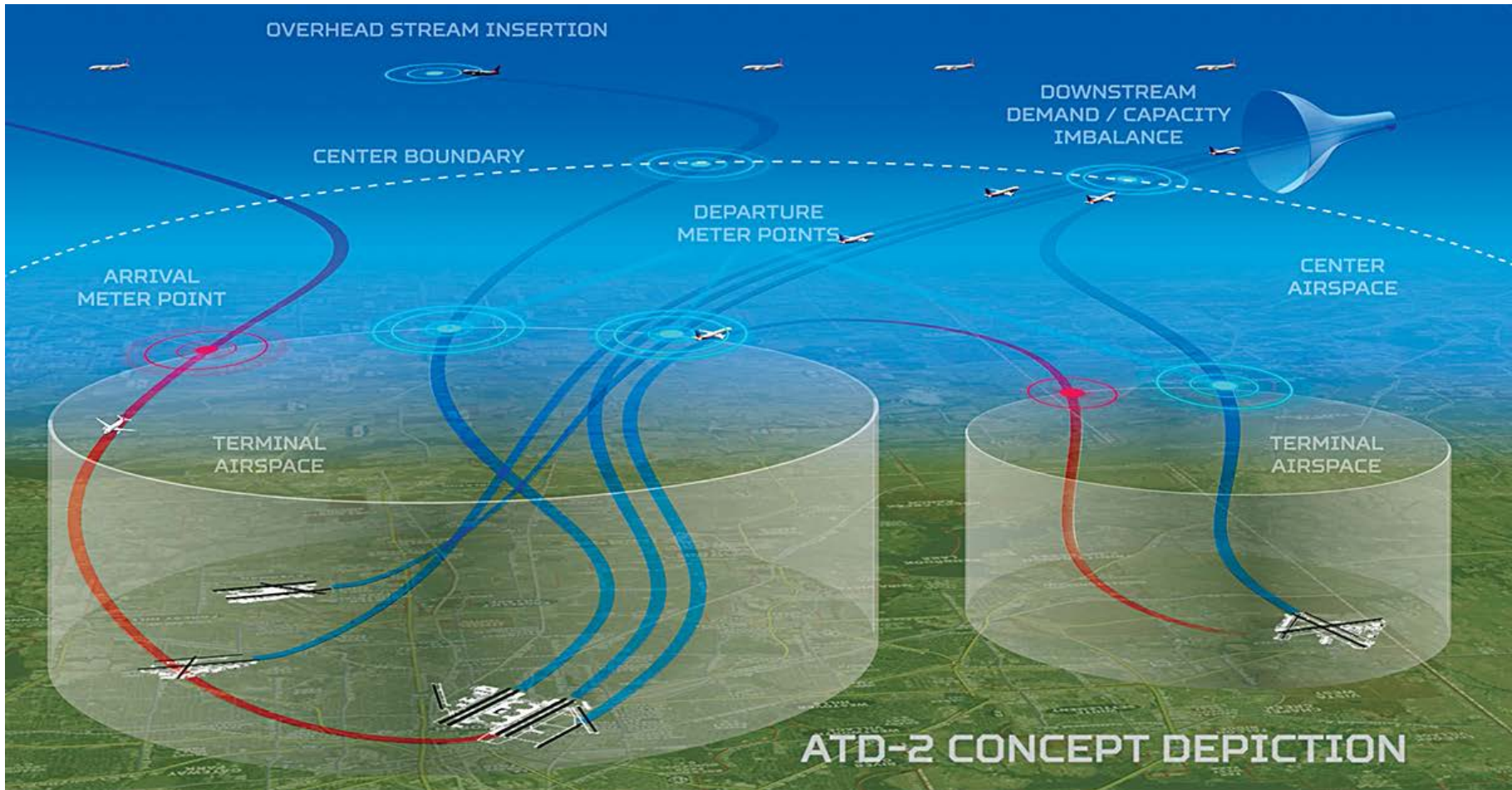
Benefits of pre-scheduling into the overhead stream with EOBTs (analytical focus)

Airspace Technology Demonstration 2 (ATD-2)
Industry Workshop

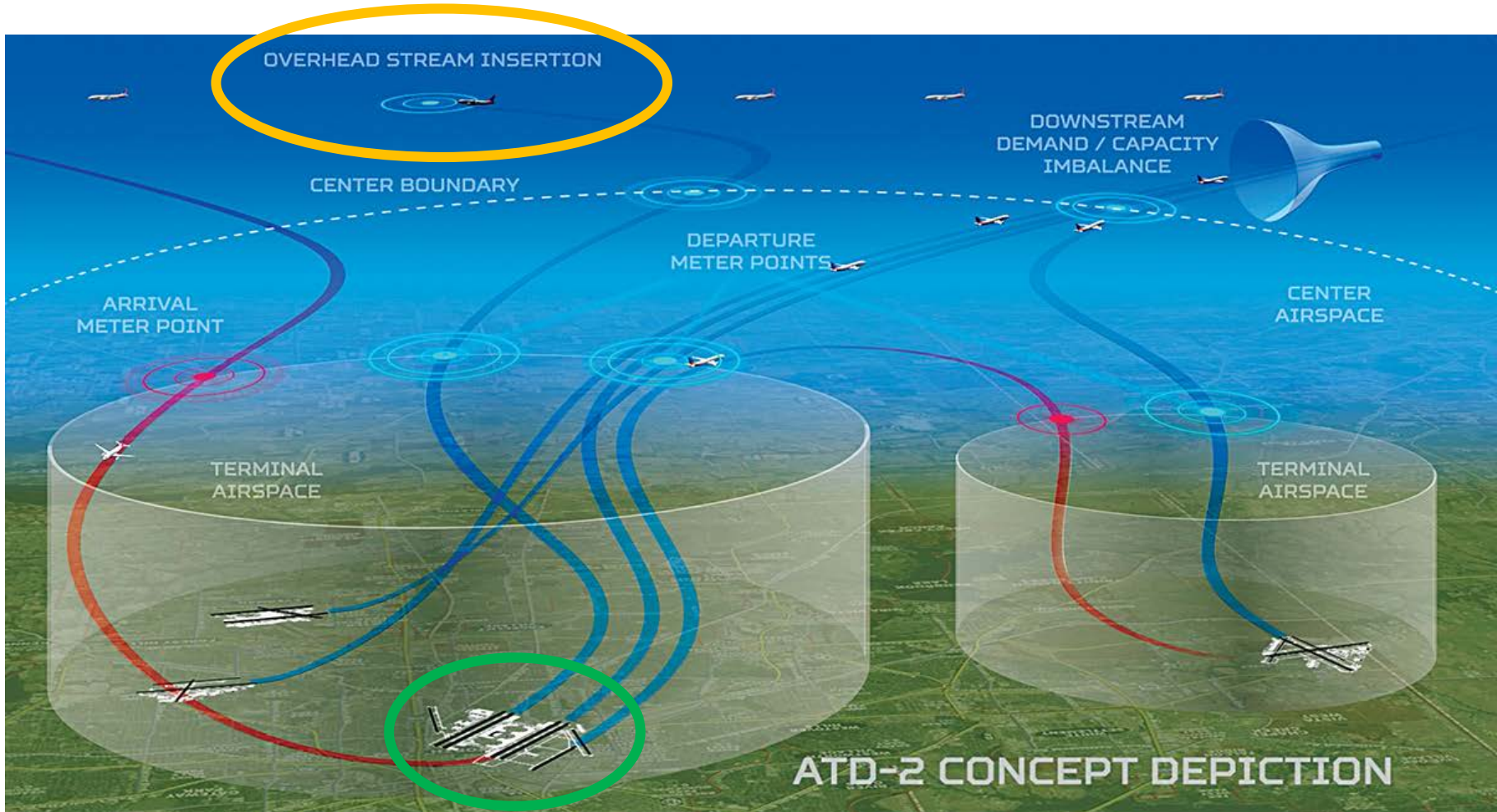
September 4, 2019

Jeremy Coupe (NASA ATD-2)
Email: william.j.coupe@nasa.gov

APprove REQuest (APREQ) for overhead stream insertion



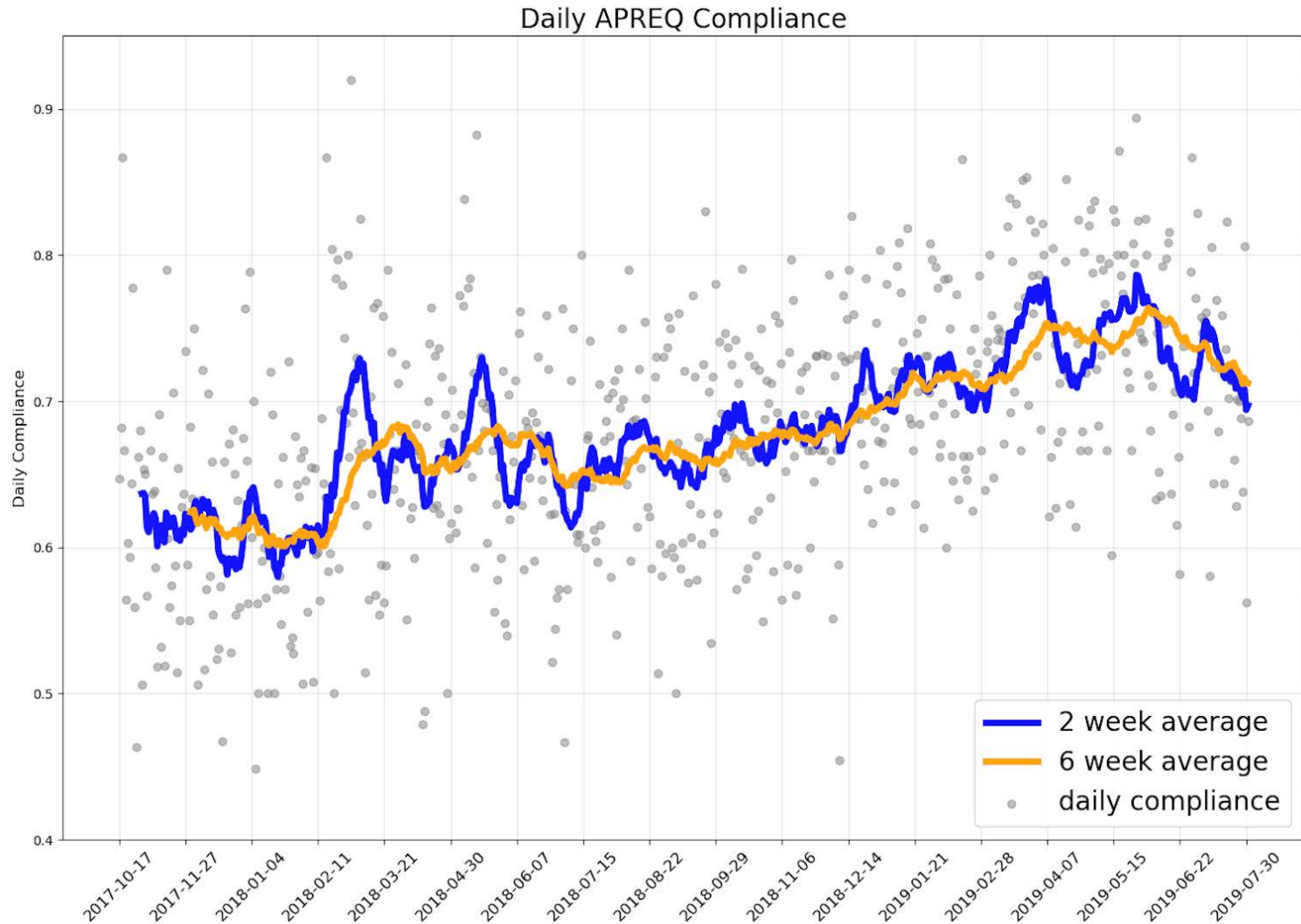
APprove REQuest (APREQ) for overhead stream insertion



APREQ Compliance Window at Runway:

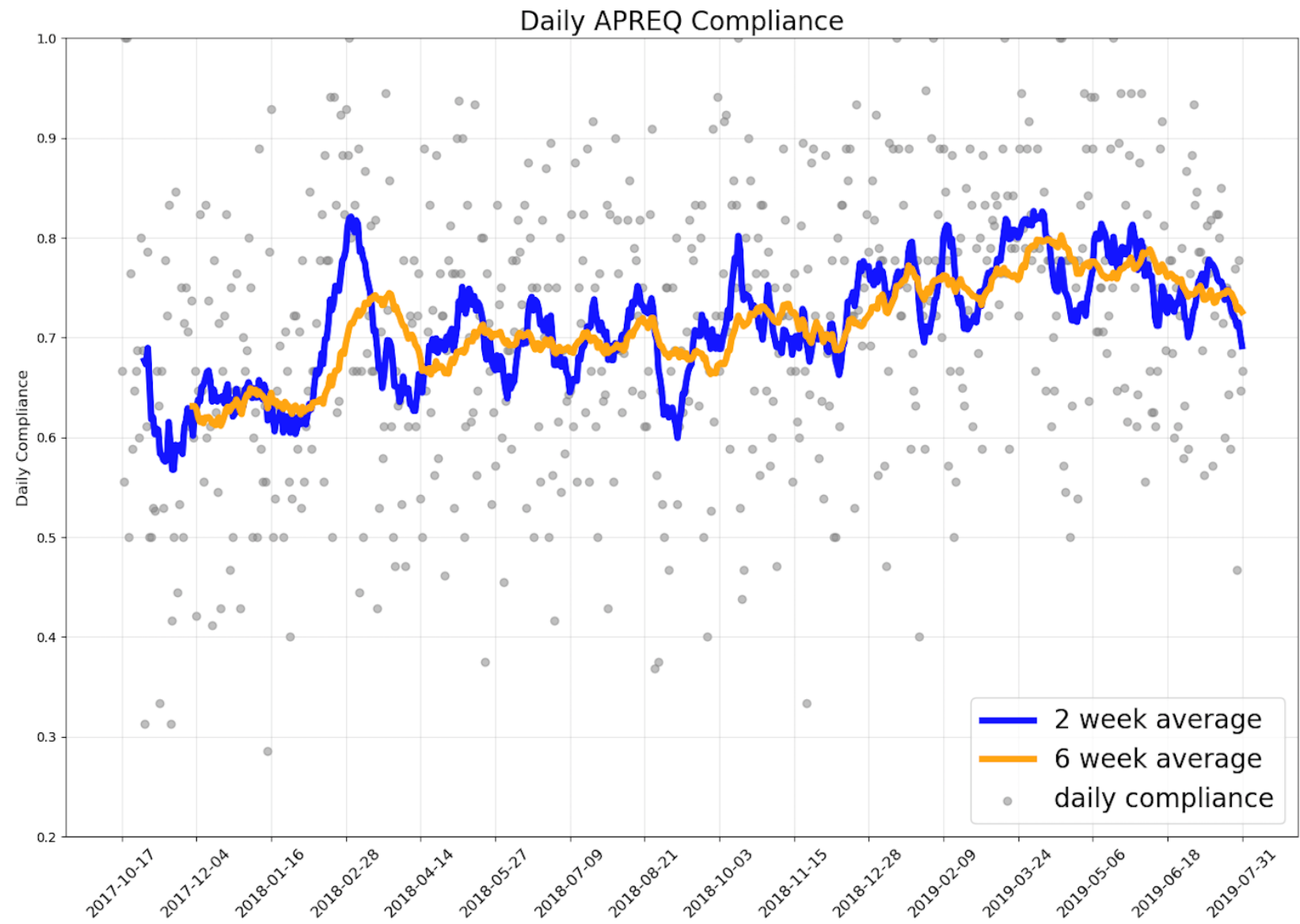
Two minutes earlier to one minute later

KCLT APREQ Daily Compliance (Compliance Improvement Since ATD-2 Start)



Steady increase of APREQ compliance over the life of the project.
Reduced variation in compliance leading to improved predictability.

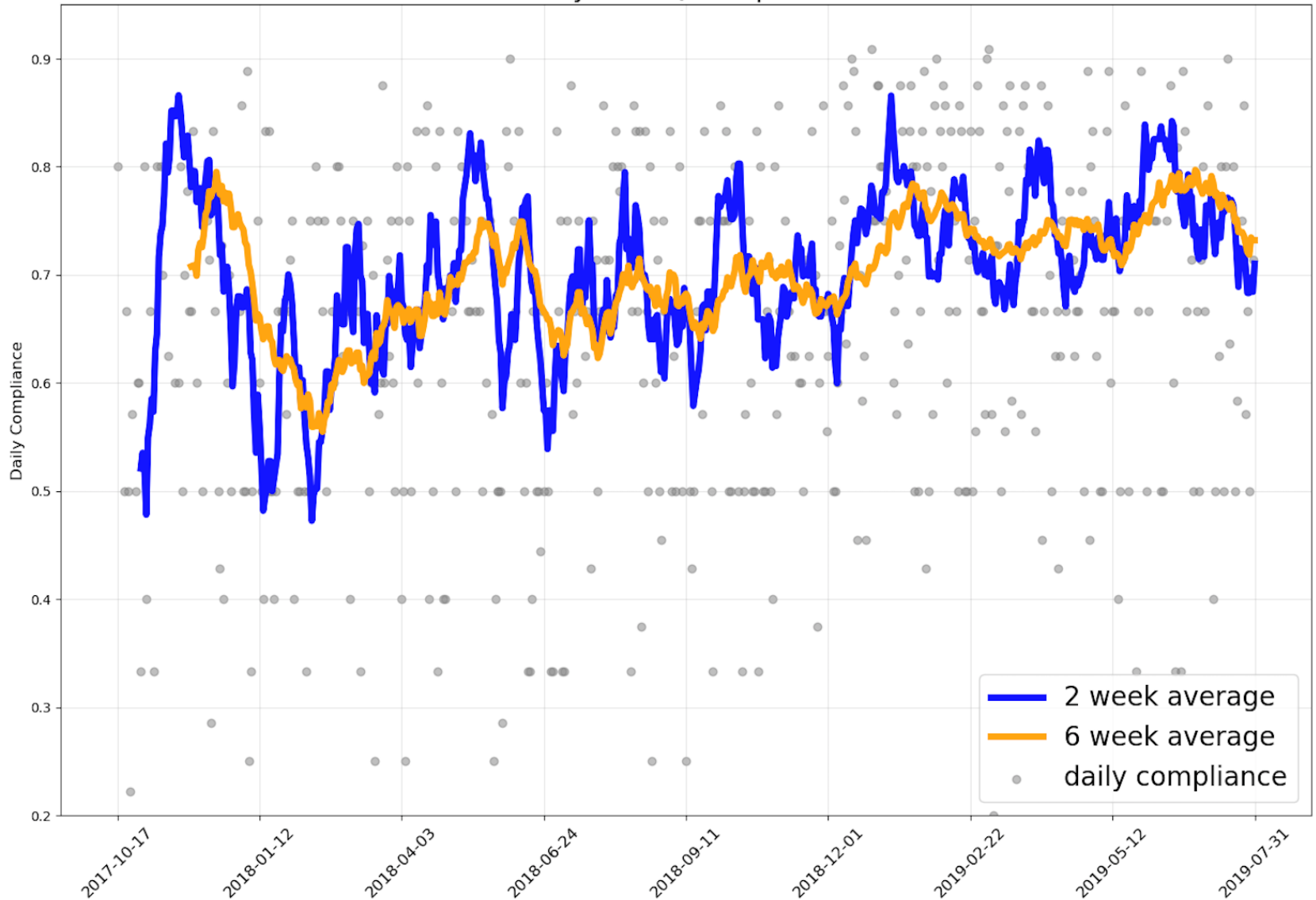
KCLT APREQ Daily Compliance (Destination KATL only)

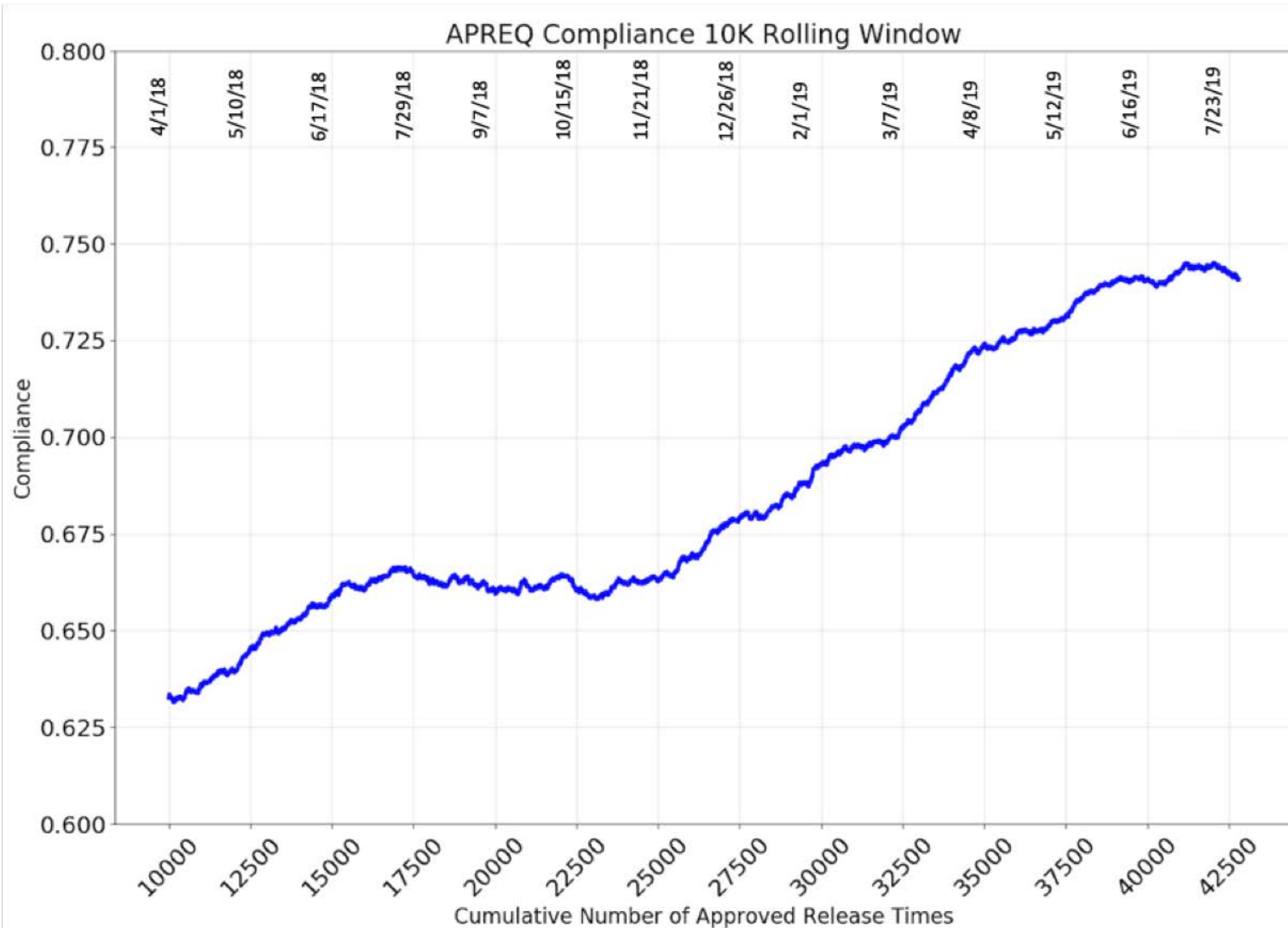


KCLT APREQ Daily Compliance (Destination KORD only)



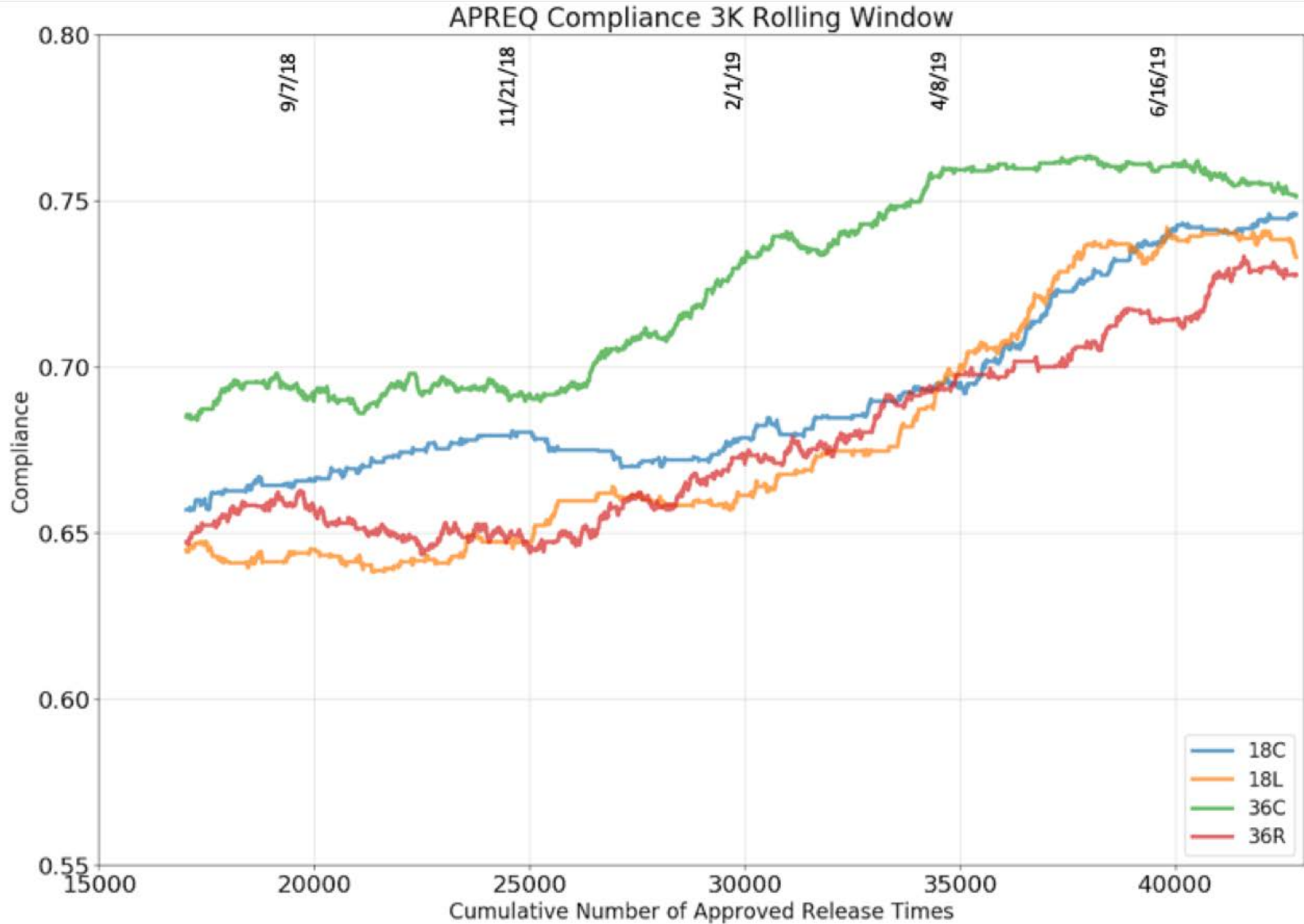
Daily APREQ Compliance

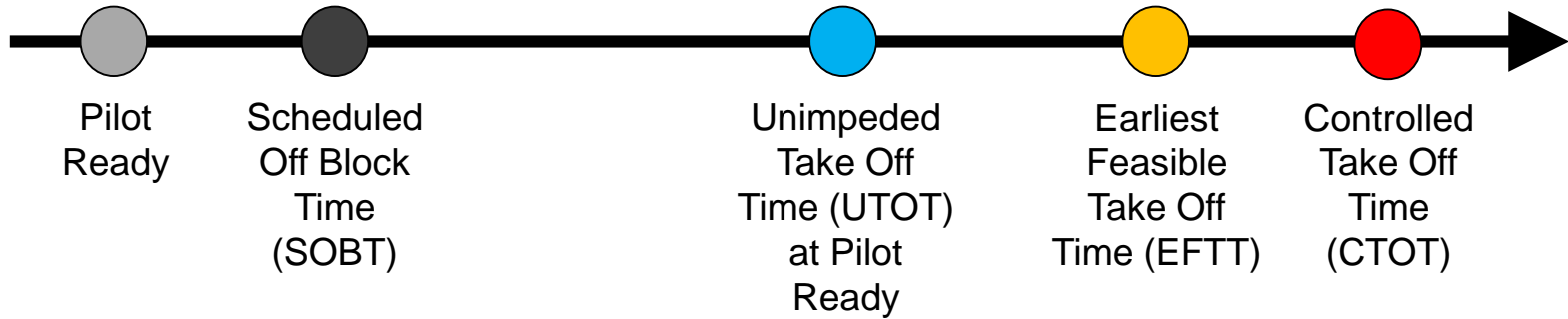


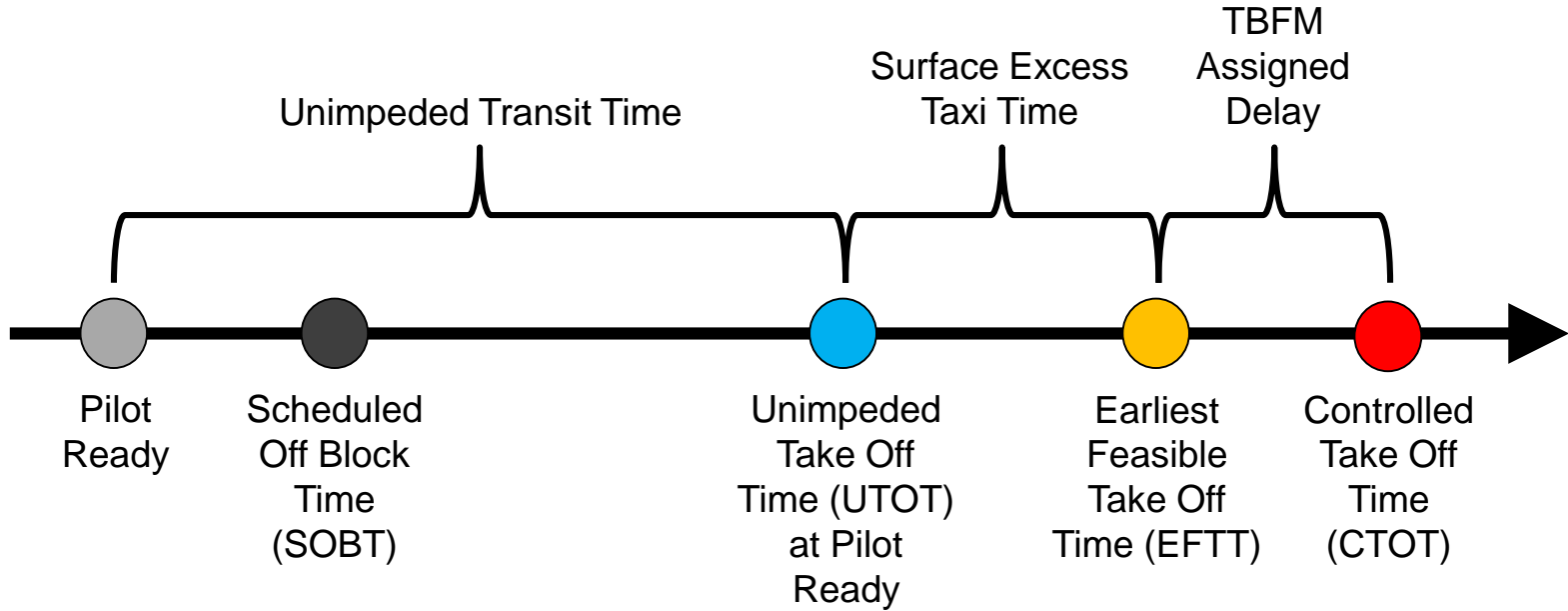


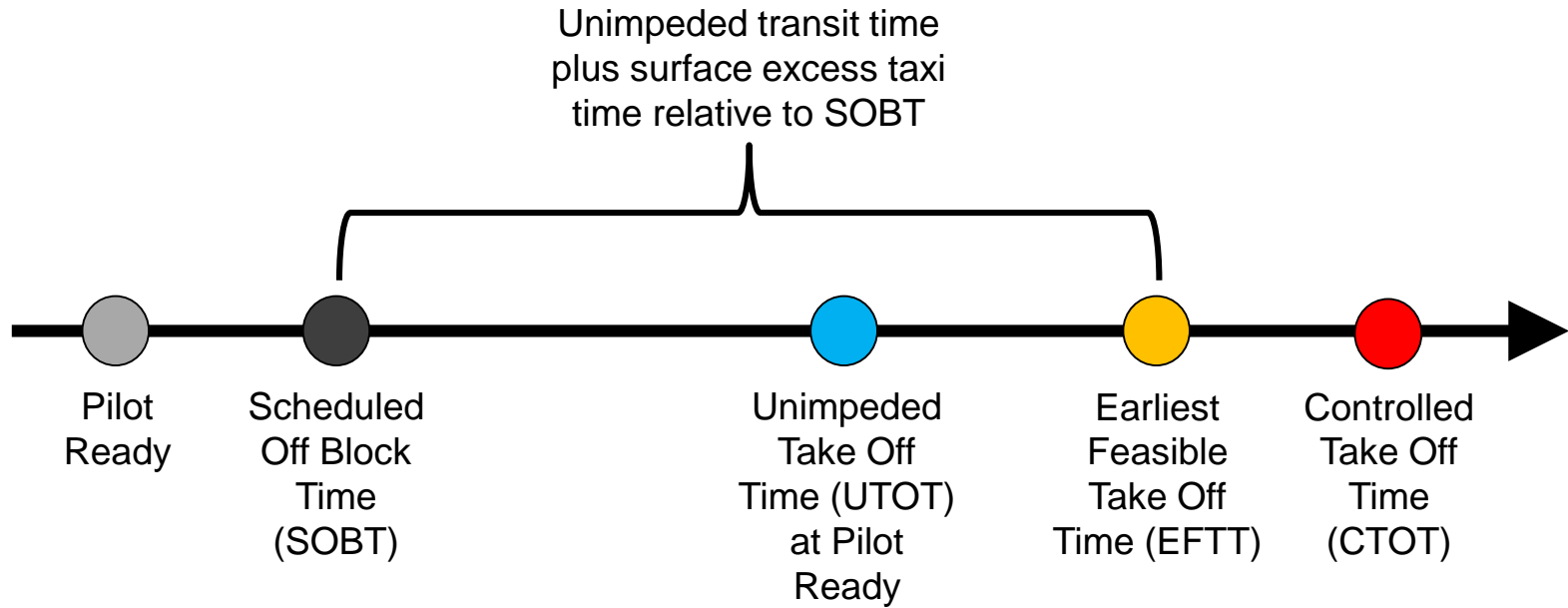
The most substantial APREQ compliance improvements started with Phase 2 capability (AEFS integration, ZTL IDAC, pre-scheduling and scheduler updates)

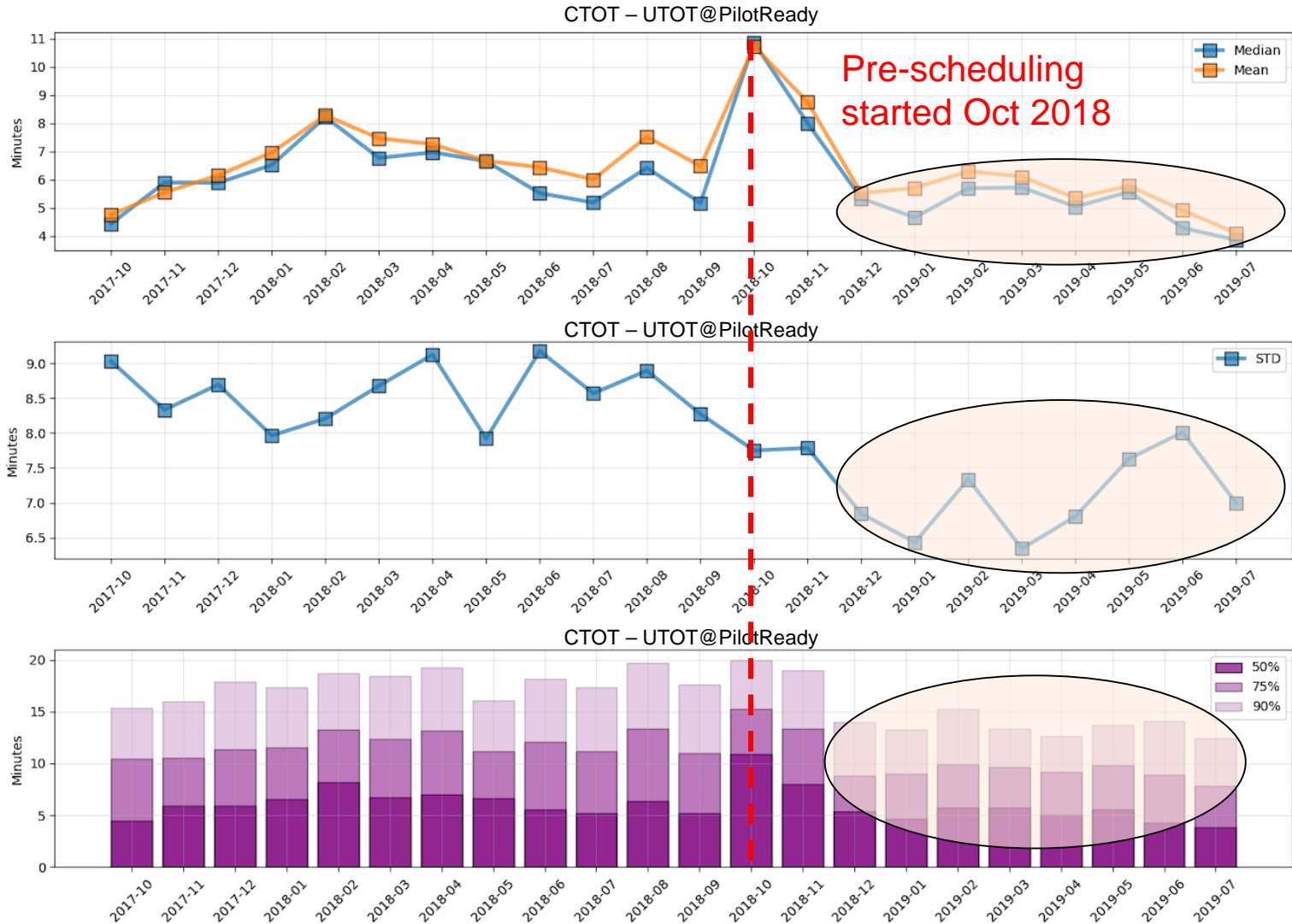
APREQ Compliance 3K Rolling Window By Runway



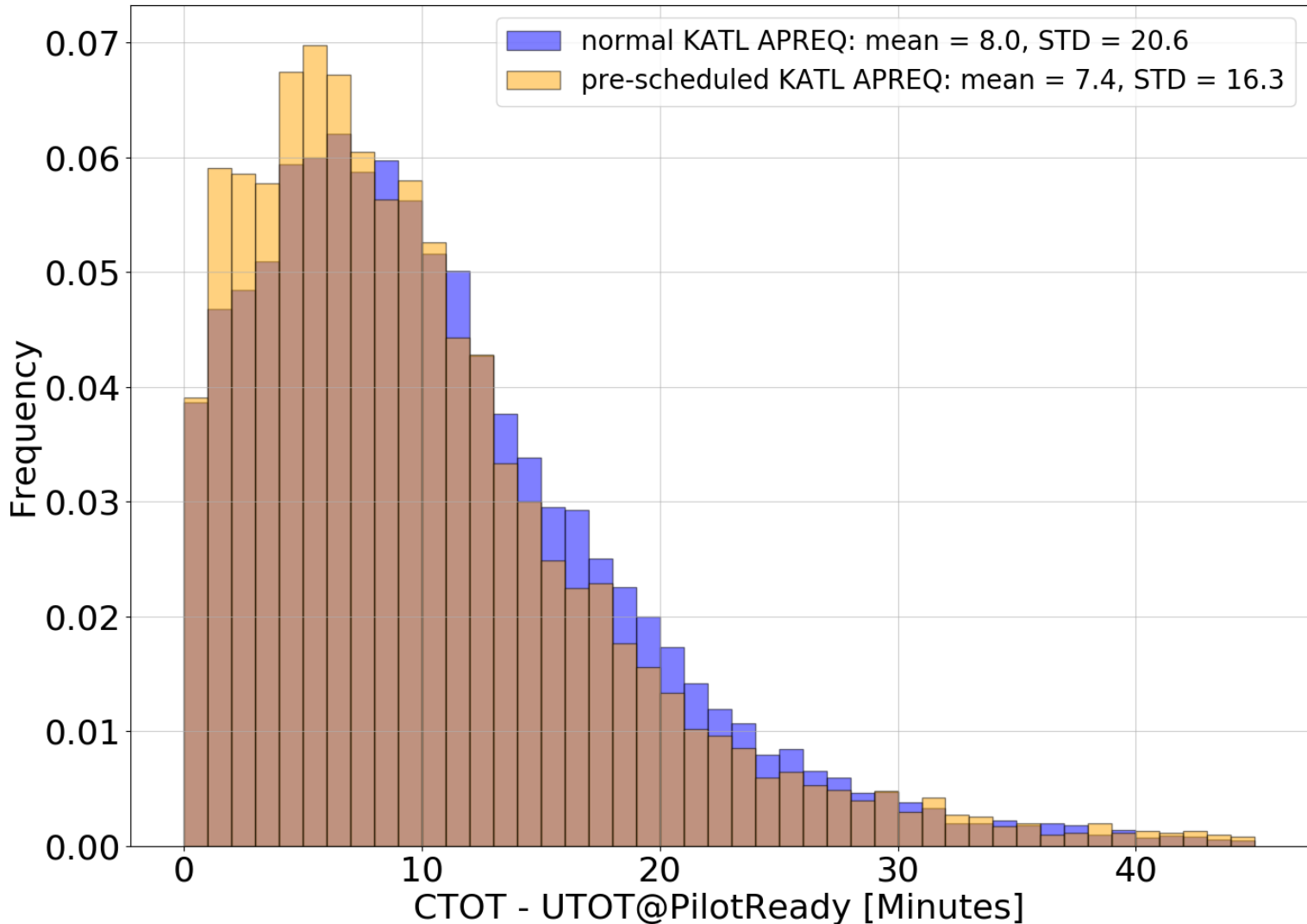




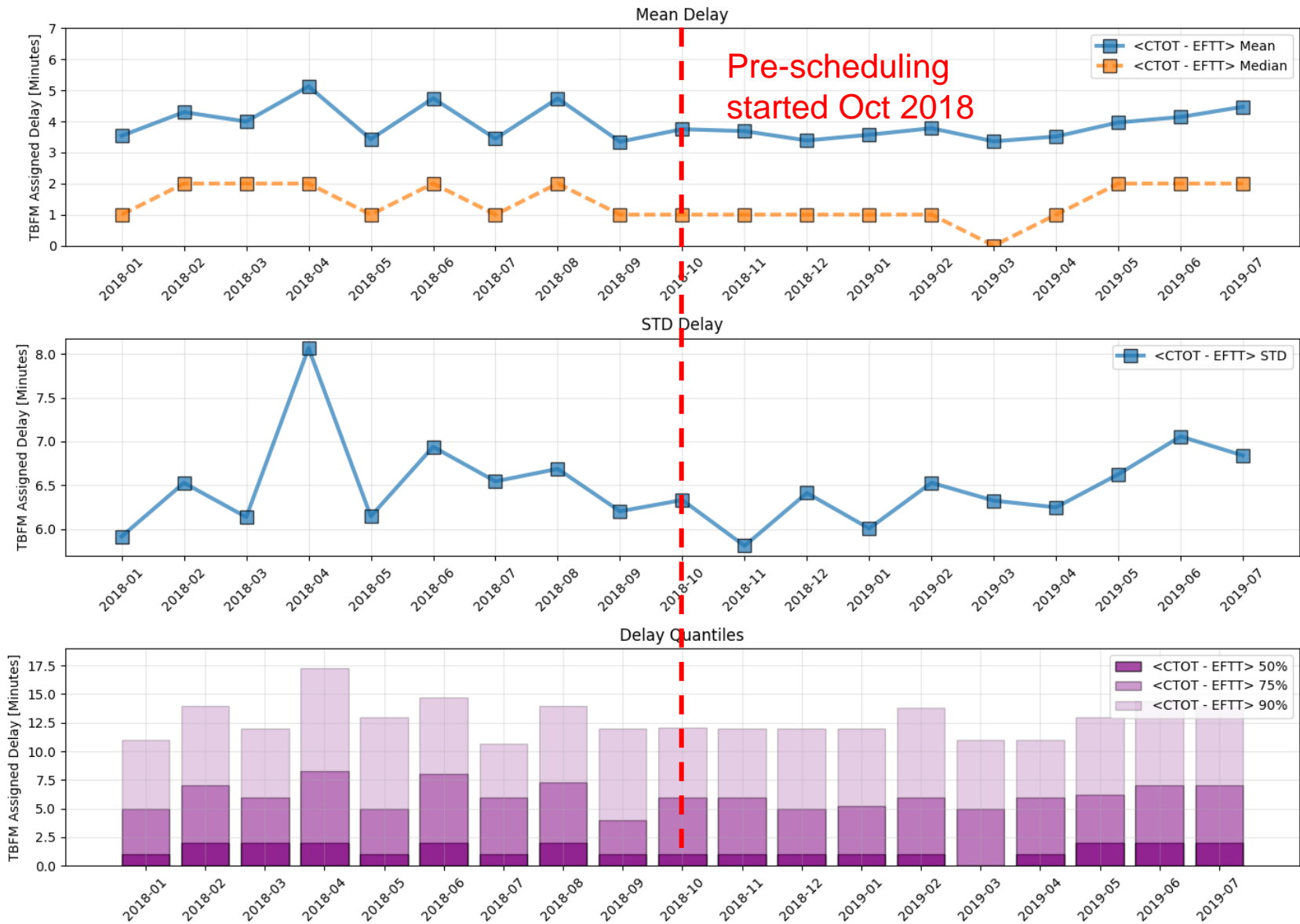


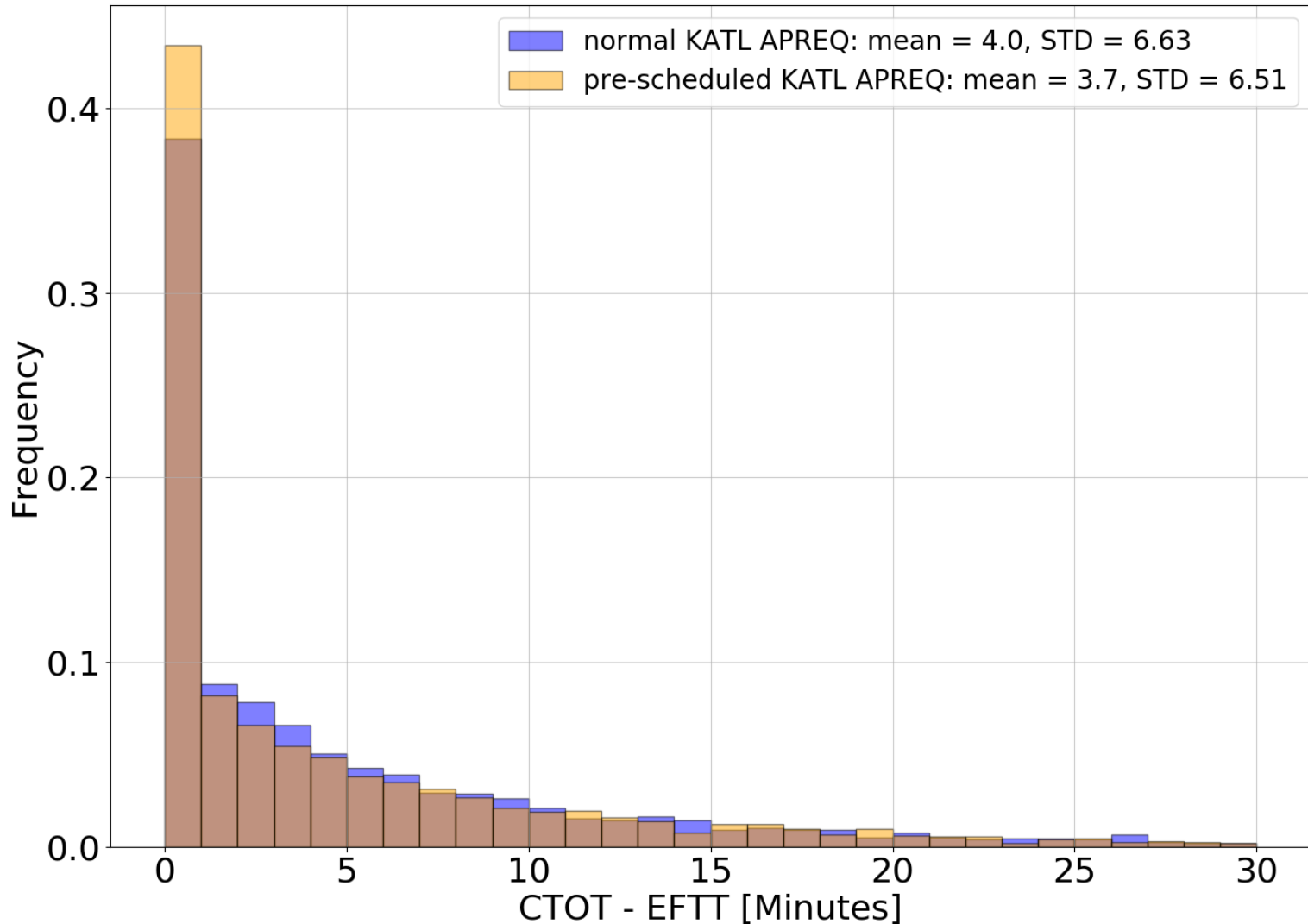


<CTOT – UTOT@PilotReady> improved mean and standard deviation for pre-scheduled flights into KATL

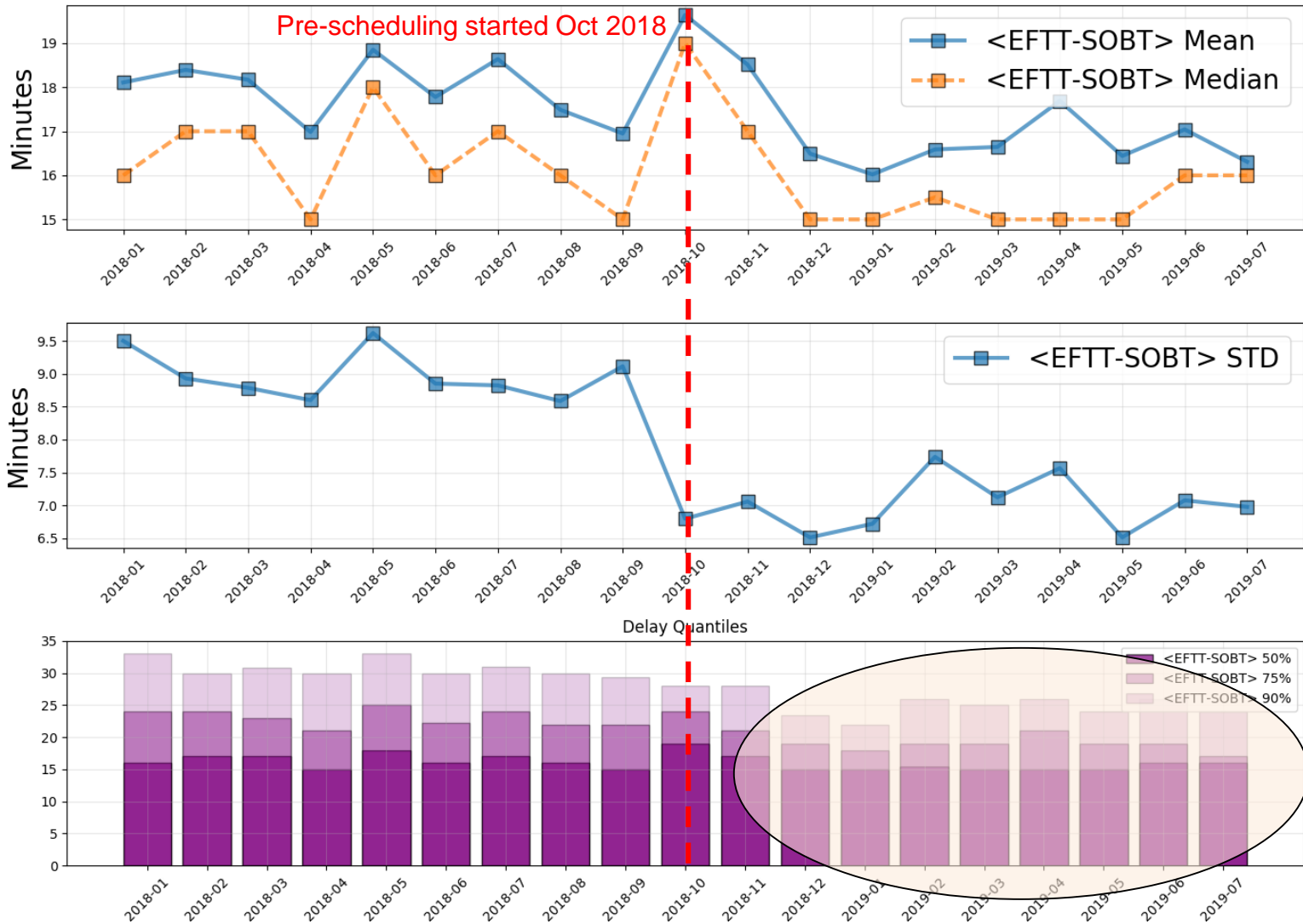


<CTOT – UTOT@PilotReady> for pre-scheduled APREQ into KATL show 0.6 minute improvement in mean and 4.3 minute improvement in standard deviation

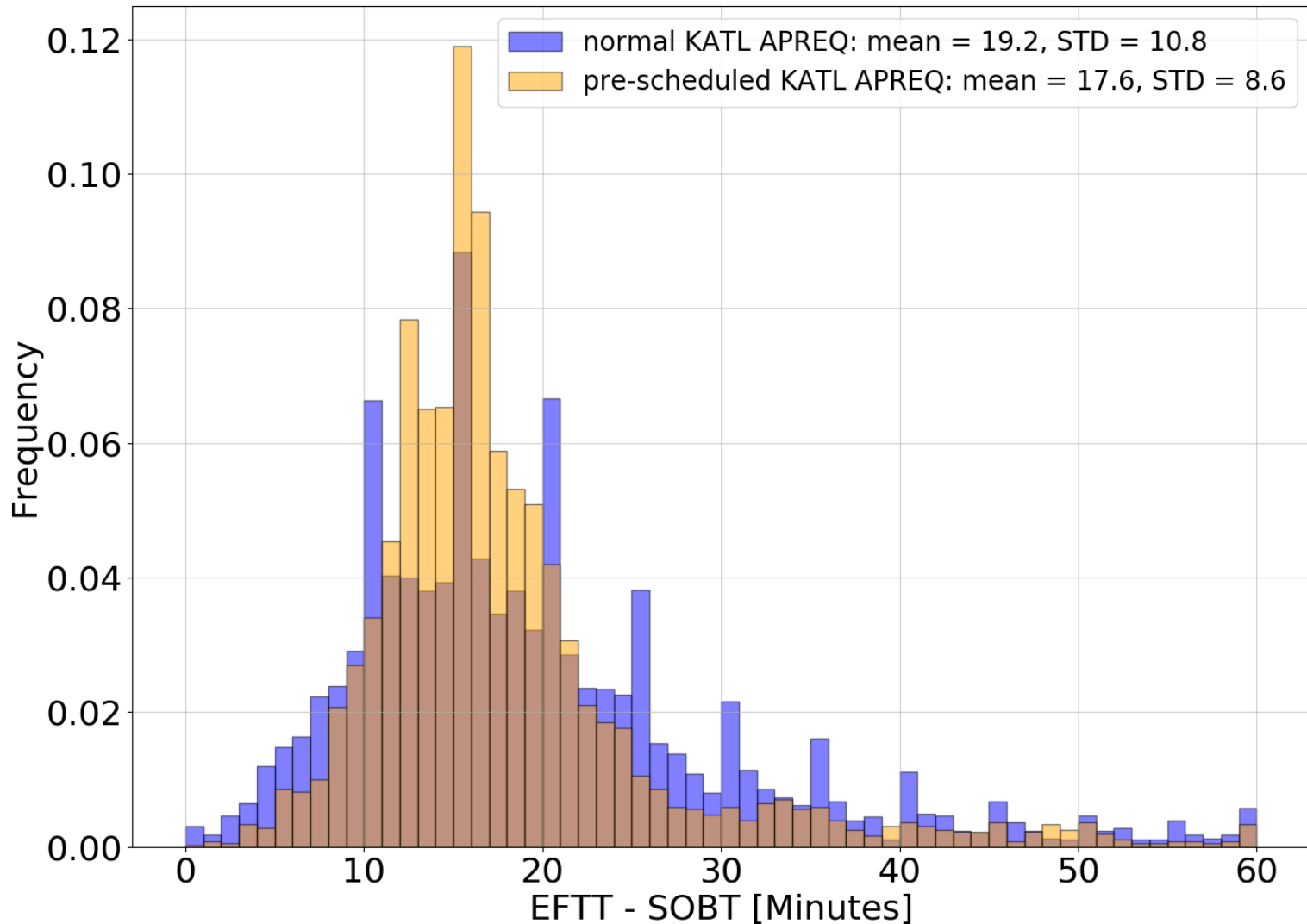




<CTOT – EFTT> for pre-scheduled APREQ into KATL show 0.3 minute improvement in mean and 0.12 minute improvement in standard deviation



Improved predictability for <EFTT – SOBT> during pre-scheduling

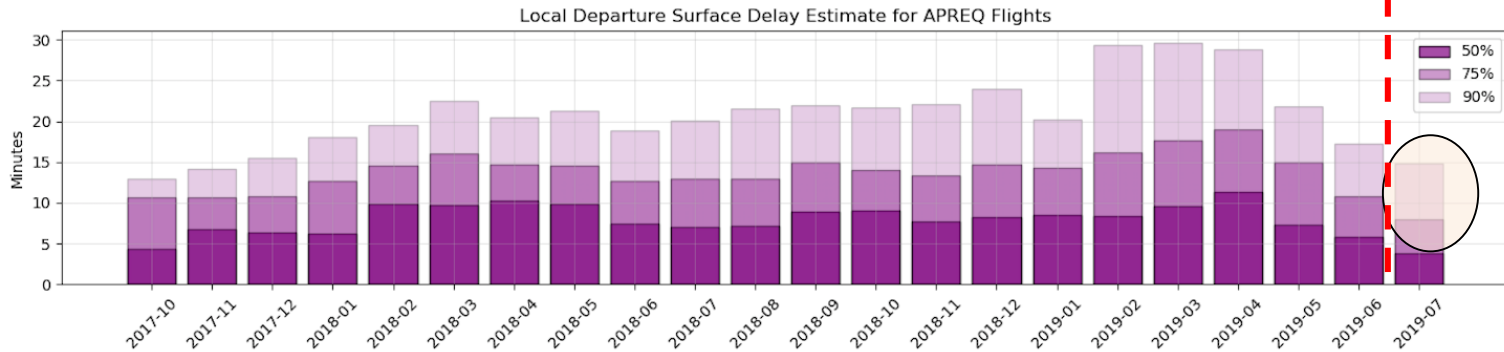
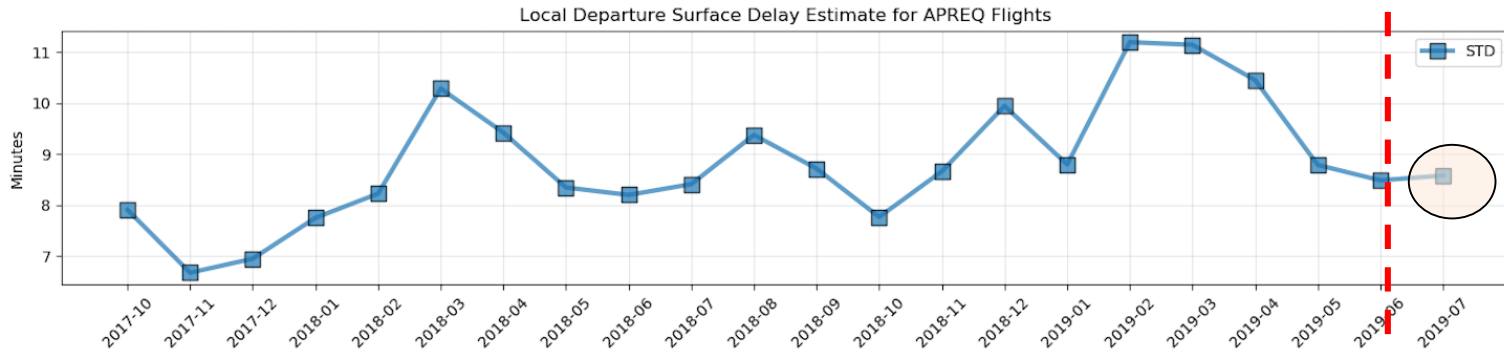
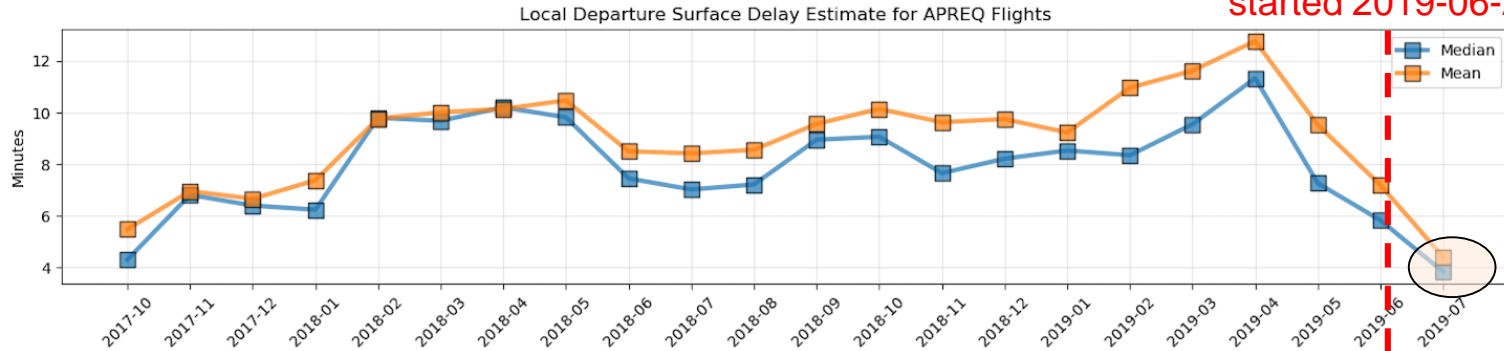


<EFTT – SOBT> for pre-scheduled APREQ into KATL show 1.6 minute improvement in mean and 2.2 minute improvement in standard deviation

APREQ Delay For Flights into KORD



Pre-scheduling
started 2019-06-26

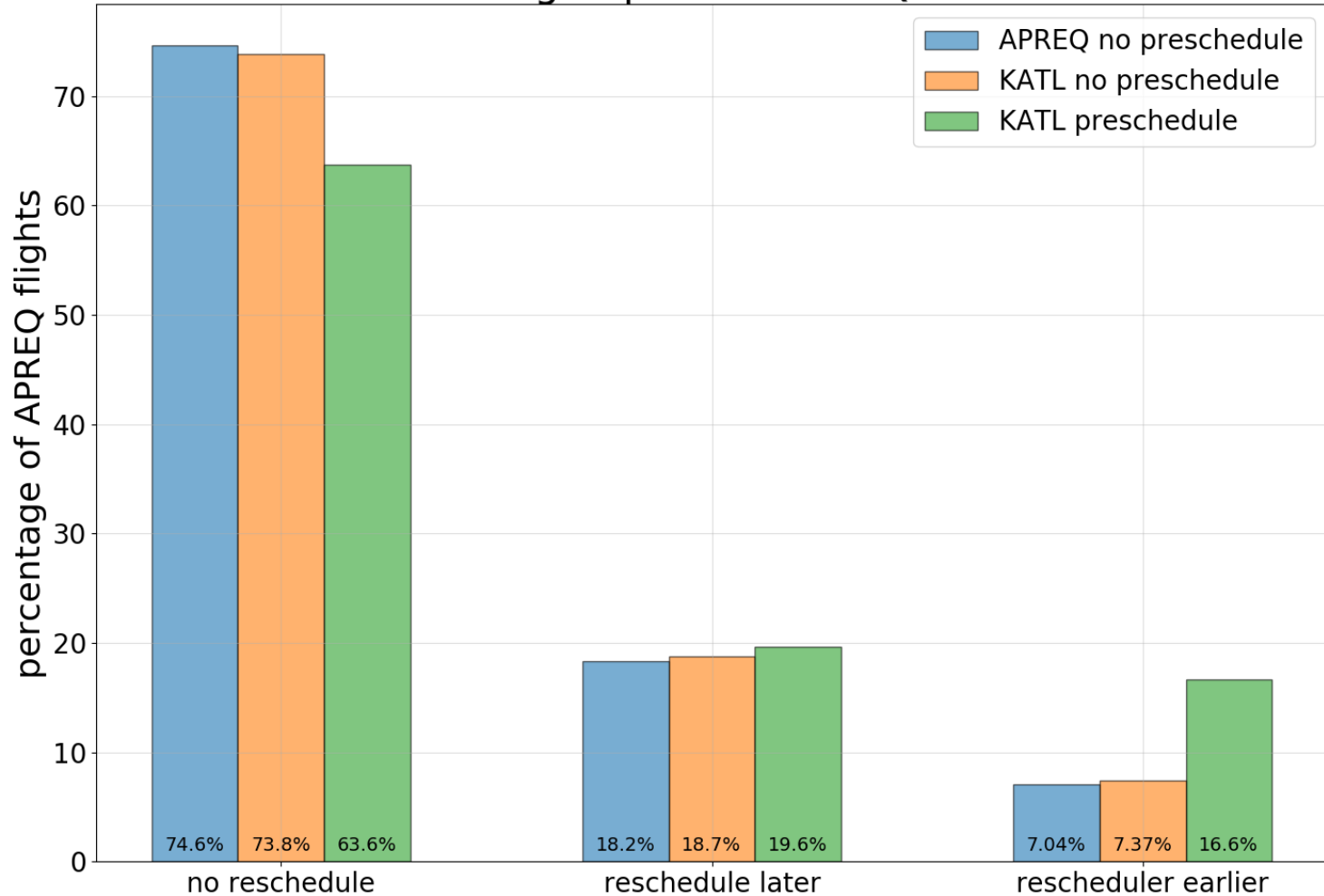


Early data from pre-scheduled APREQ into KORD show encouraging results similar to pre-scheduled flights into KATL

Rescheduling APREQ before and after KATL prescheduling

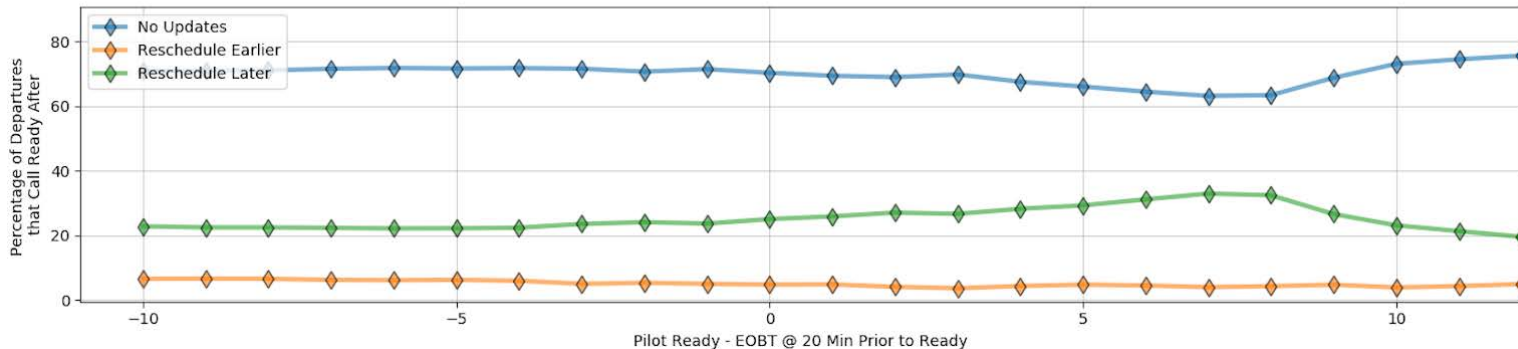
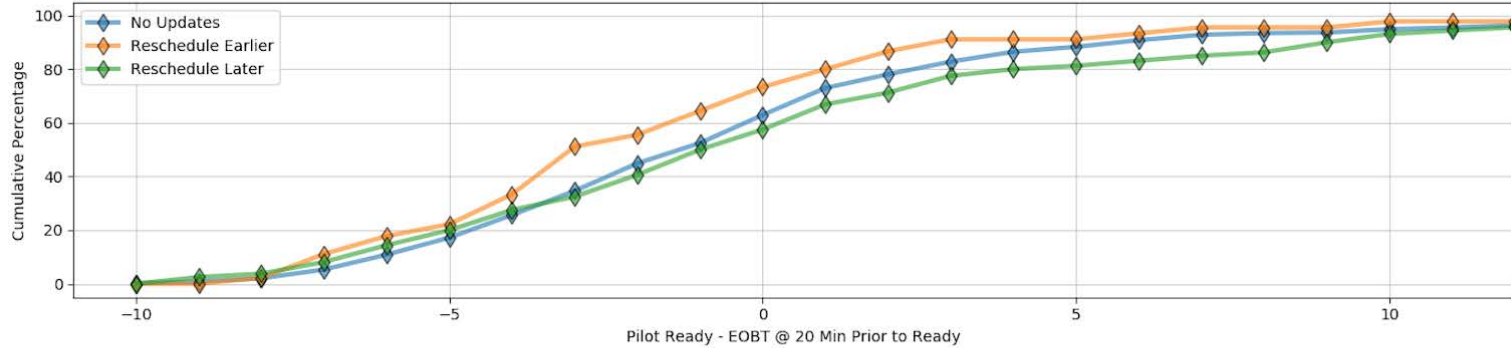
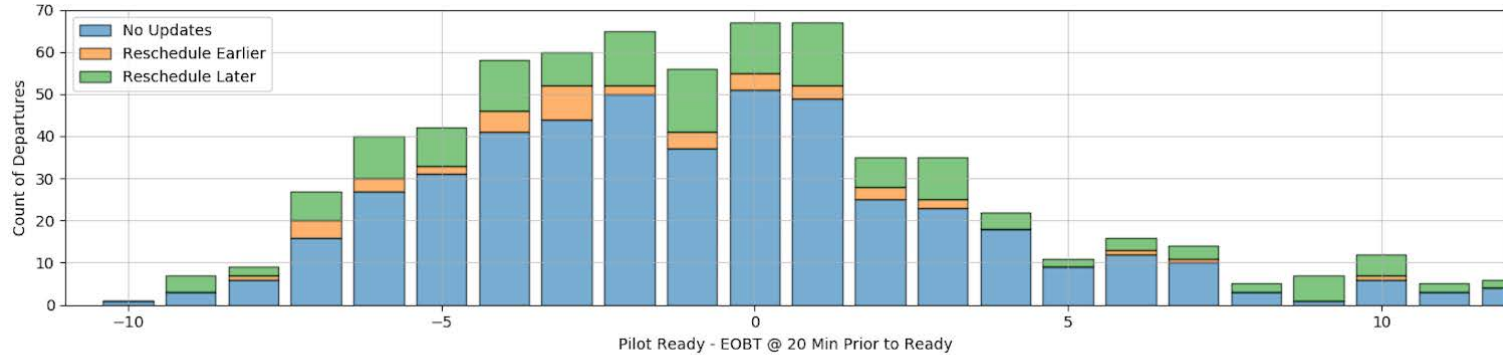


Prescheduling Impact to APREQ reschedule



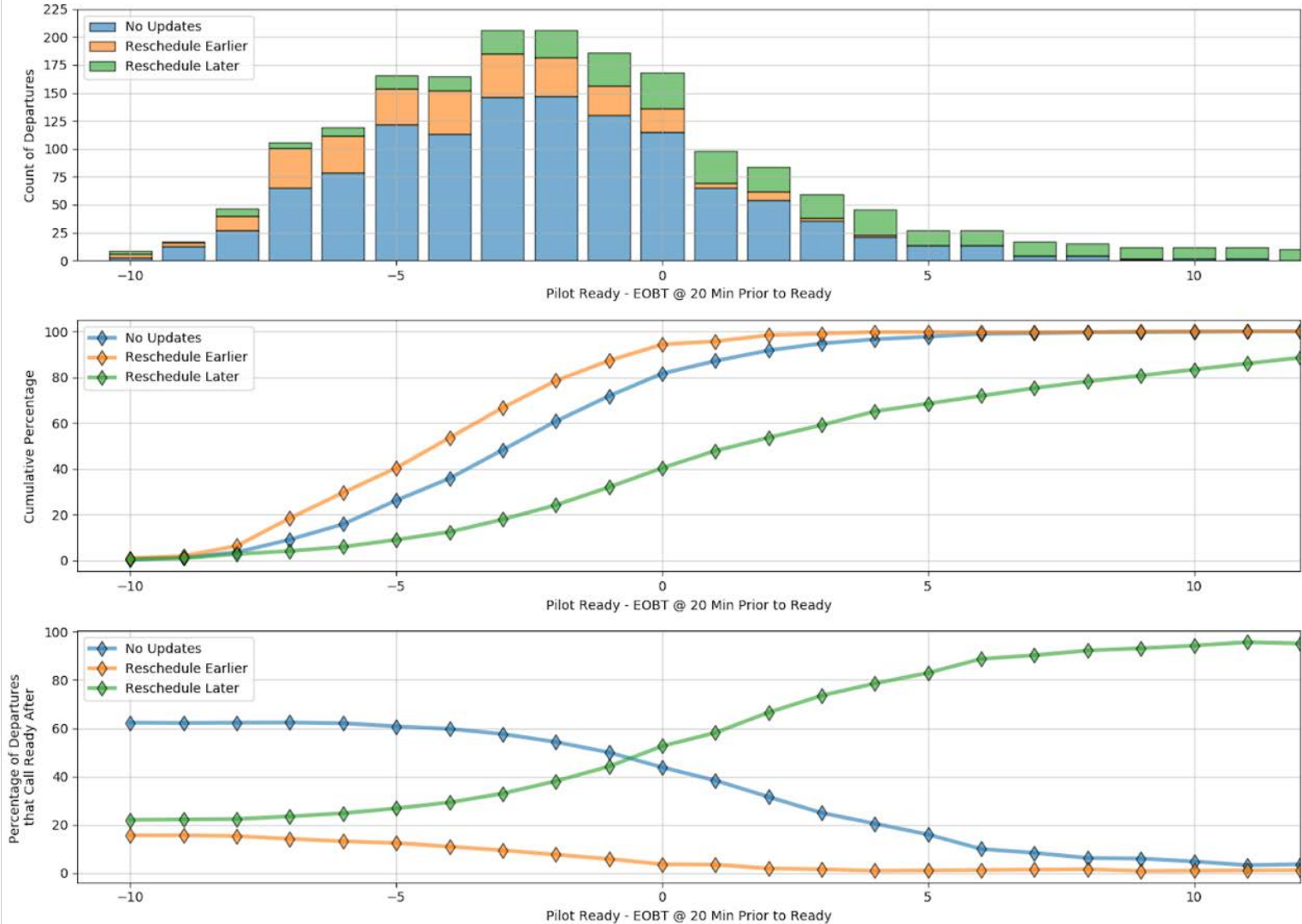
Percentage of flights that reschedule for later times were similar before and after pre-scheduling into KATL

EOBT Compliance Before Pre-Scheduling Flights into KATL



Before pre-scheduling: no relationship between EOBT compliance and rescheduling APREQ time

EOBT Compliance After Pre-Scheduling Flights into KATL



After pre-scheduling: relationship between EOBT compliance and rescheduling, e.g., flights that are late with respect to EOBT reschedule more often for later times

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