

[FIGMA Presentation Link:](https://www.figma.com/proto/PRnDCTdBX32M8abe5NXnZQ/TFM?type=design&node-id=1020-15233&scaling=min-zoom&page-id=1020%3A15232&starting-point-node-id=1020%3A15233&mode=design)

<https://www.figma.com/proto/PRnDCTdBX32M8abe5NXnZQ/TFM?type=design&node-id=1020-15233&scaling=min-zoom&page-id=1020%3A15232&starting-point-node-id=1020%3A15233&mode=design>

CONTROL MADE SIMPLE



AVA DASHBOARD

Ferdi Agusta
Tessa Board
Jon Crescenzo
Patrice Reynolds
Ian Pollock, Advisor



Agenda



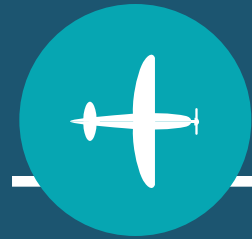
Agenda



Introduction



Problem Scope



Prototype Demo



Design Rationale



Challenges



Hello!

Meet our Team

-Illuminating Creativity at
California State University, East Bay



Ian Pollock,
Advisor



Ferdi Agusta,
Graduate Student



Tessa Board,
Graduate Student



Jon Crescenzo,
Graduate Student



Patrice Reynolds,
Graduate Student



02 PROBLEM & SOLUTION

Death by a Thousand Windows
Lack Integrated Capabilities
Complex & Inefficient
Inconsistent UI



02 PROBLEM & SOLUTION

Death by a Thousand Windows
Lack Integrated Capabilities
Complex & Inefficient
Inconsistent UI



Interactive Dashboard
Integrated System
Efficient Data Visualization
Consistent Design





Alice

Age: 33
Location: ORD
Occupation: Traffic Manager

"Focus on being productive instead of busy."

PERSONAL CHARACTERISTICS

- Focused
- Driven
- Independent

HOBBIES AND INTERESTS

- Playing Video Games
- Competing in Triathalons

GOALS

- To proactively manage the NAS without over control.
- To maximize throughput, and balance capacity with demand
- To ensure a safe enroute environment.

CHALLENGES

- Traffic Management Initiatives (TMIs) that Affect Airspace Flow Programs (AFPs)
 - Grounds Delay Programs (GDPs)
 - Reroutes
 - Capping

NEEDS

- A way to easily collaborate AFP needs with other Traffic Managers
- A streamlized, modernized way to balance air traffic demand with system capacity
- To ensure a safe, orderly, and expeditious flow of traffic while minimizing delays.



Stephen

Age: 45
Location: JFK
Occupation: Traffic Manager

"Efficiency is doing things right. Effectiveness is doing the right things."

PERSONAL CHARACTERISTICS

- Determined
- Motivated
- Inspired

HOBBIES AND INTERESTS

- Restoring Classic Cars
- Through-Hiking

GOALS

- To proactively manage the NAS without over control.
- To maximize throughput, and balance capacity with demand
- To ensure a safe enroute environment.

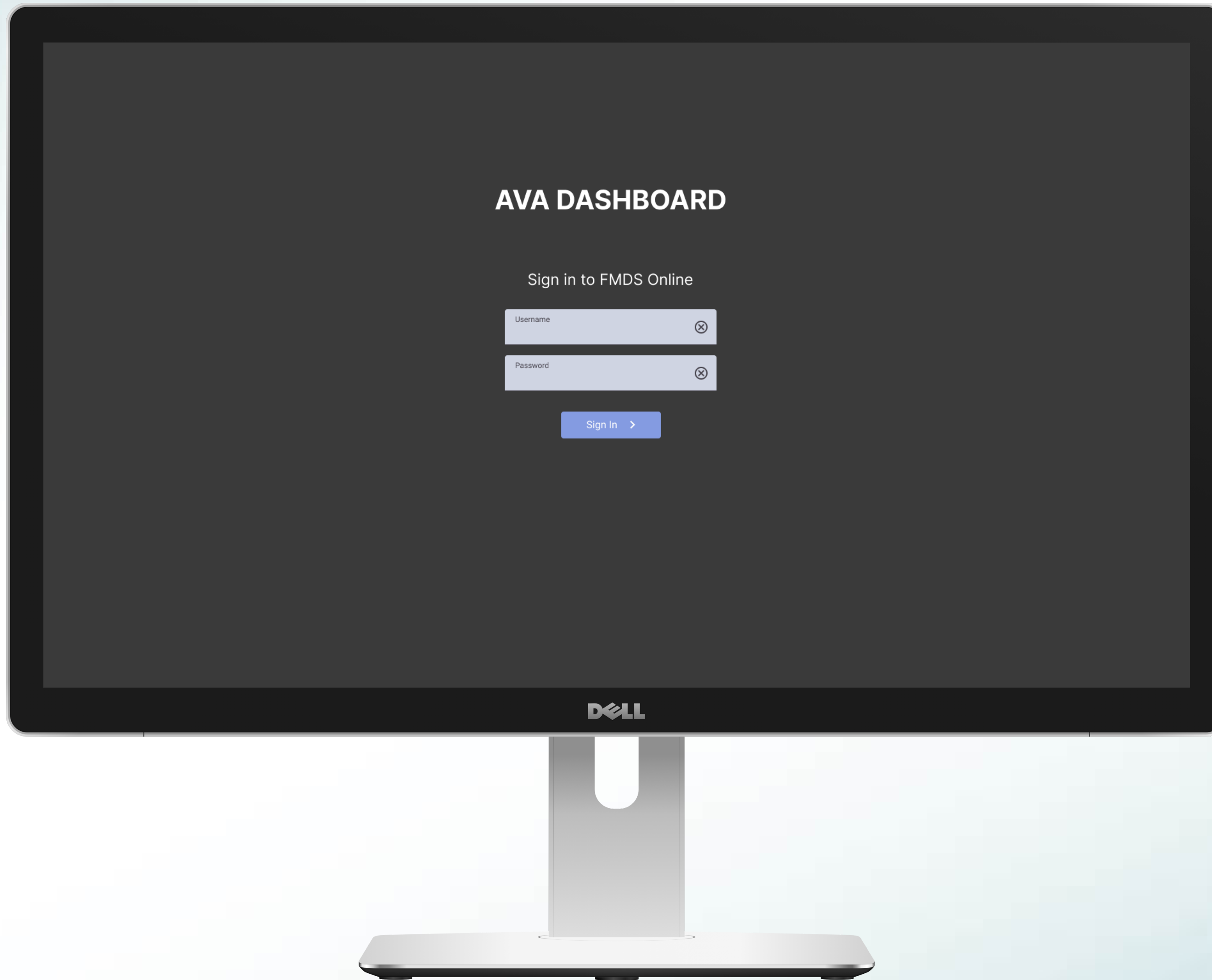
CHALLENGES

- Traffic Management Initiatives (TMIs) that Affect Airspace Flow Programs (AFPs)
 - Severe Weather Events (SWE)
 - Tunneling
 - Military Airspace

NEEDS

- A way to easily collaborate AFP needs with other Traffic Managers
- A new GUI that that supports traffic managers but minimalizes user training requirements



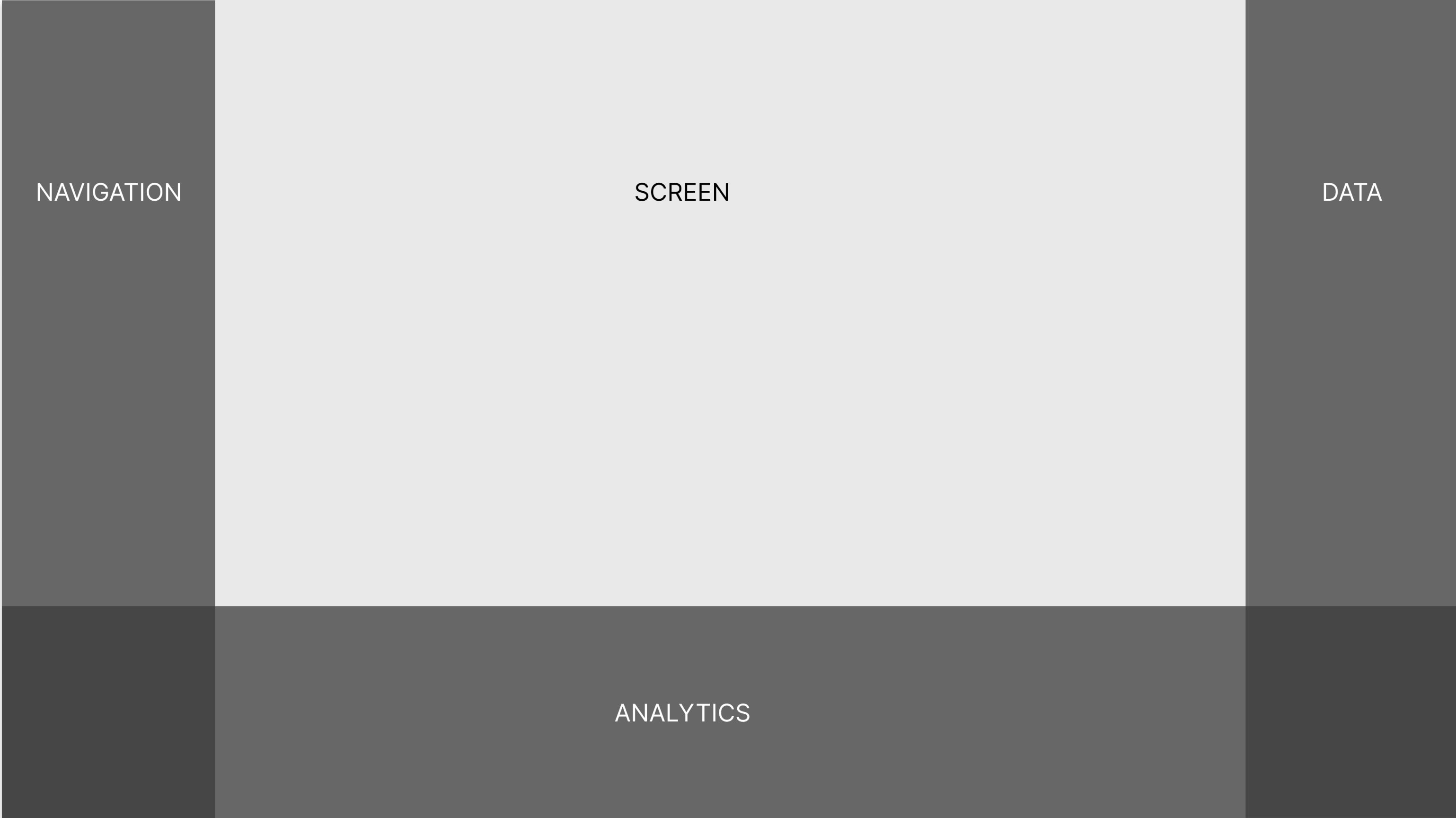


05 STRUCTURE

Spatial Mapping

As an integrated system, FDSM will have a complex and massive architecture.

Using spatial mapping in the design system, the left side is used for navigation, the right side is used for displaying data, and the bottom part is used for analytics and calculations.



AVA DASHBOARD



Jane Smith

[sign out](#)

Your favorites

[EDIT](#)

Webinar

Share

Traffic Control Display

Flight Schedule Monitor

National Traffic Management Log

Applications

[EDIT](#)

TCD FSM NTML ESIS

RMT SV MAP RVR >

TCA Webinar Share CIWS

Settings

Support & Learn

Settings

Display settings ▼

User settings ▼

Format and Units ▼

[Reset to default](#)

[Cancel](#)

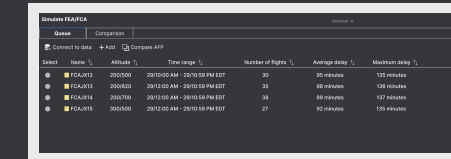
[Save](#)

Share

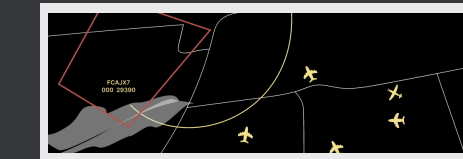
People with access

ZJX ZMA ZTL ZHU ZDC

Module



Analytics



Weather

[Cancel](#)

[Share](#)

Edit your favorites

Favorites provide quick access to what you do most on FDSM. Your shortcuts are sorted automatically unless you customized it.

Webinar

Share

Traffic Control Display

Flight Schedule Monitor

National Traffic Management Log

[Reset to default](#)

[Cancel](#)

[Save](#)

06 NAVIGATION

1 Sign in
Allow personalization and security.

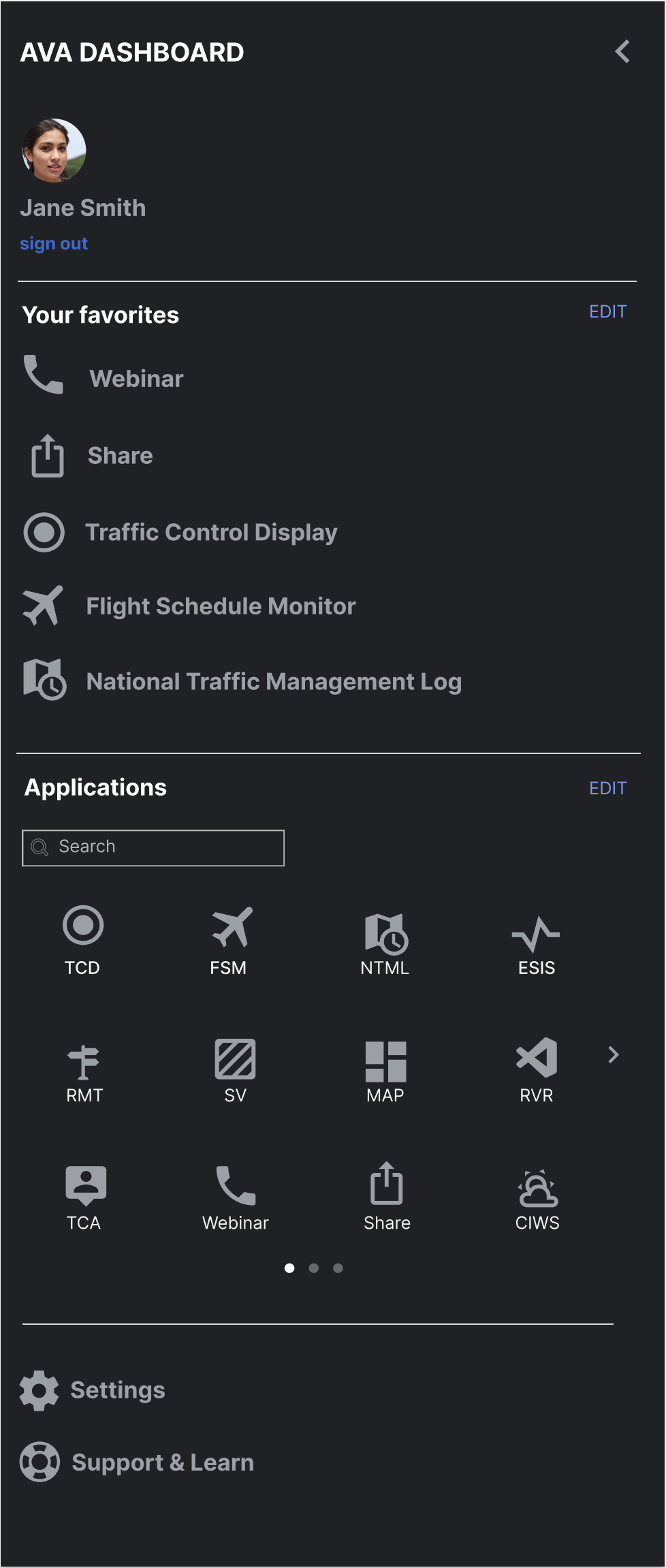
2 Favorites
Allow users to open or switch between application efficiently.

3 Applications
Applications provide convenient access to services, information, and functionalities.

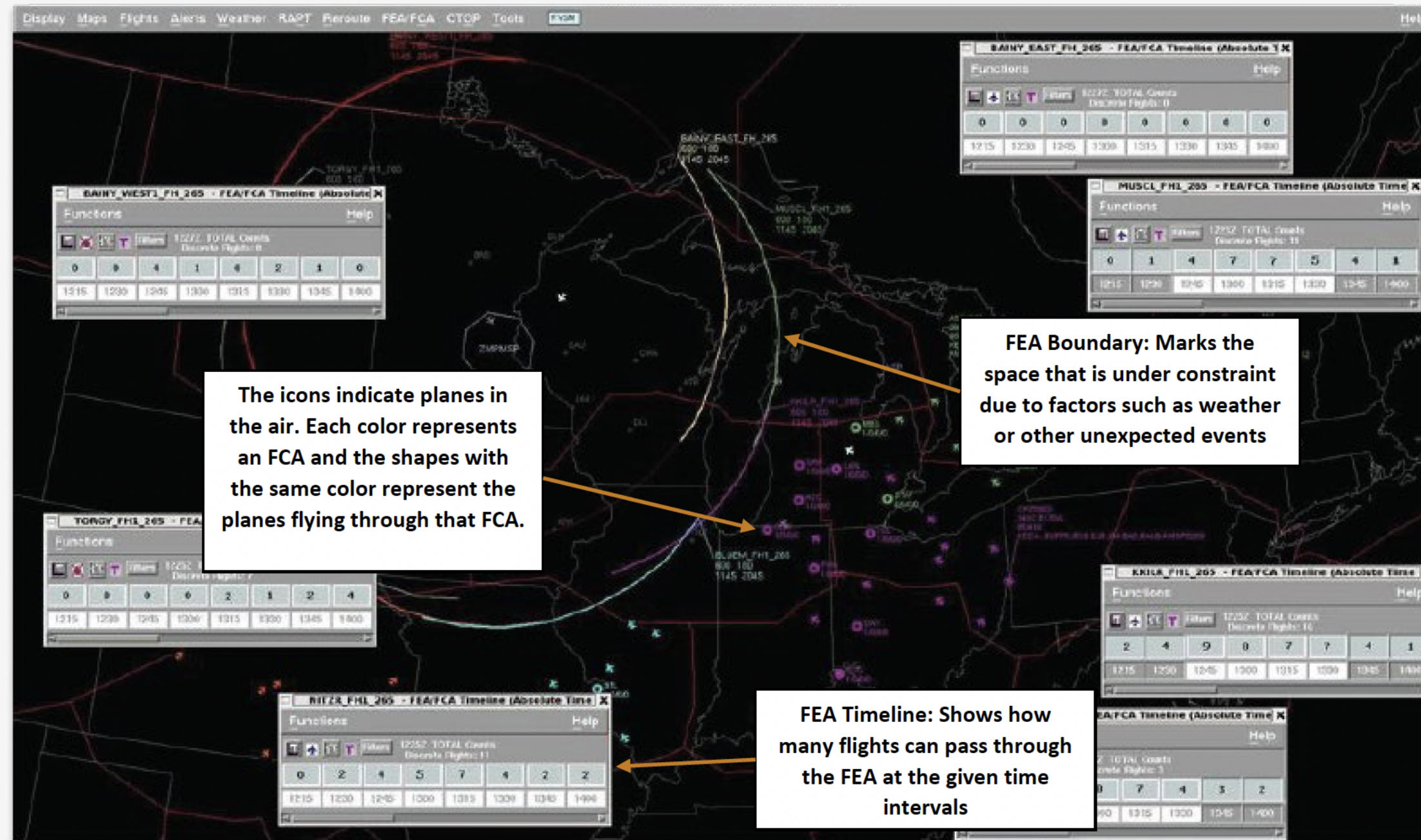
4 Search
Helps users find applications quickly, saving them from scanning through a long list of options.

5 Settings
Configurable options and preferences that allow users to customize.

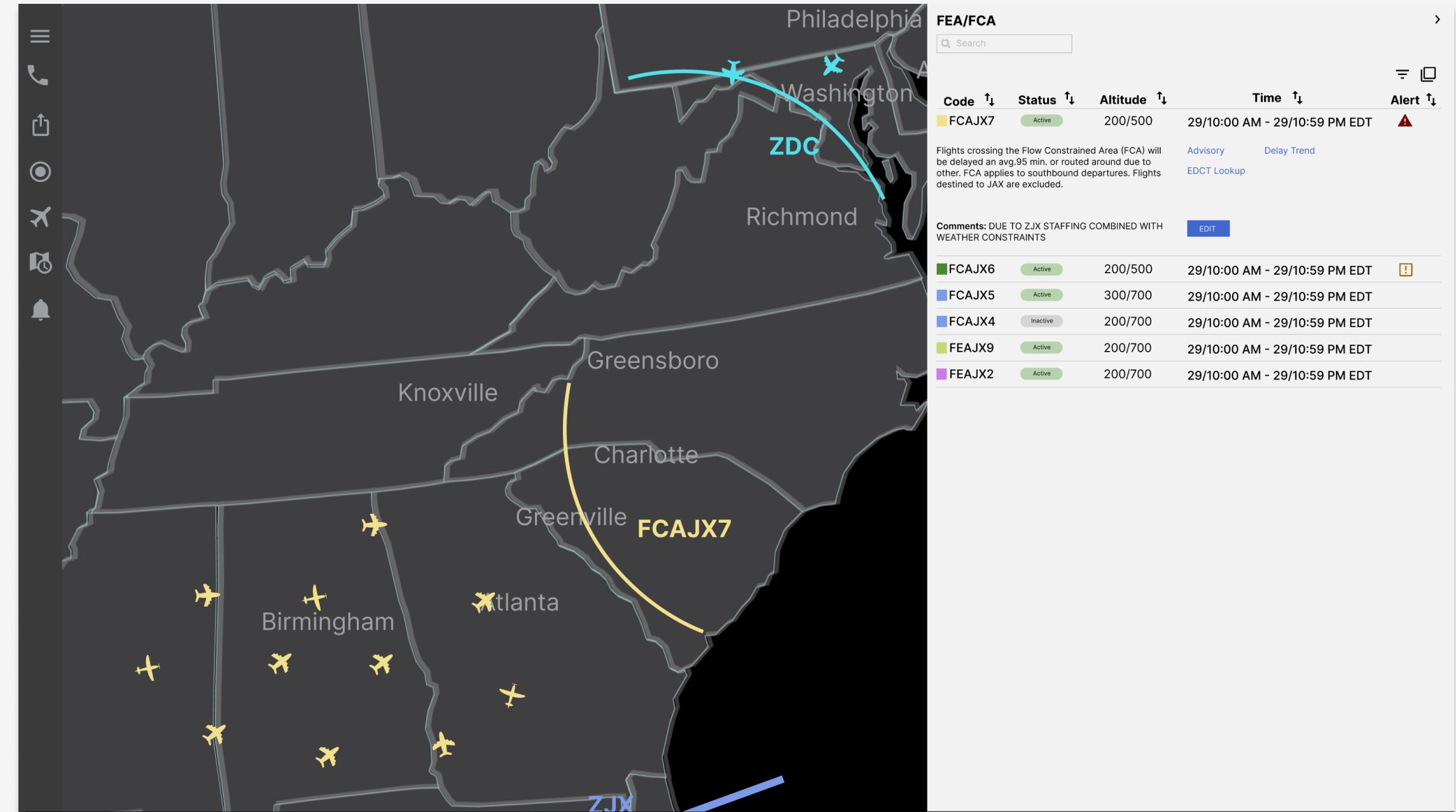
6 Shortcuts
Keyboard & voice



Current



New Design



FEA/FCA





Code ↑↓ Status ↑↓ Altitude ↑↓ Time ↑↓ Alert ↑↓

■ FCAJX7	Active	200/500	29/10:00 AM - 29/10:59 PM EDT	⚠
--	--------	---------	-------------------------------	------------------------------------

Flights crossing the Flow Constrained Area (FCA) will be delayed an avg.95 min. or routed around due to other. FCA applies to southbound departures. Flights destined to JAX are excluded.

[Advisory](#) [Delay Trend](#)
[EDCT Lookup](#)

Comments: DUE TO ZJX STAFFING COMBINED WITH WEATHER CONSTRAINTS

[EDIT](#)

■ FCAJX6	Active	200/500	29/10:00 AM - 29/10:59 PM EDT	!
■ FCAJX5	Active	300/700	29/10:00 AM - 29/10:59 PM EDT	
■ FCAJX4	Inactive	200/700	29/10:00 AM - 29/10:59 PM EDT	
■ FEAJX9	Active	200/700	29/10:00 AM - 29/10:59 PM EDT	
■ FEAJX2	Active	200/700	29/10:00 AM - 29/10:59 PM EDT	

Flow Evaluation Area





Code ↑↓ Status ↑↓ Altitude ↑↓ Time ↑↓ Alert ↑↓

▶ 12:00 12:15 12:30 12:45 13:00 13:15 13:30 13:45

FCAJX7	2	0	3	1	2	1			⚠
FCAJX6	0	1	2	1	0	3	1	1	!
FCAJX5	3	1	3	1	1	2	2	1	
FEAJX9	3	1	3	1	1	2	2	1	
FCAJX2			3	1	1	2	2	1	

07 FEA/FCA

1 Data Visualization

The FEA(s) are organized by code, status, altitudes, time, and alert status.



2 Filter



Focus on specific subsets of data, making it easier to analyze and interpret information.

3 Viewing options

Provide alternative representations of data. Better decision-making by compare different scenarios, and assess the impact.

FEA/FCA

Code ↑↓	Status ↑↓	Altitude ↑↓	Time ↑↓	Alert ↑↓
FCAJX7	Active	200/500	29/10:00 AM - 29/10:59 PM EDT	
<p>Flights crossing the Flow Constrained Area (FCA) will be delayed an avg.95 min. or routed around due to other. FCA applies to southbound departures. Flights destined to JAX are excluded.</p>			Advisory Delay Trend EDCT Lookup	
<p>Comments: DUE TO ZJX STAFFING COMBINED WITH WEATHER CONSTRAINTS</p>			EDIT	
FCAJX6	Active	200/500	29/10:00 AM - 29/10:59 PM EDT	
FCAJX5	Active	300/700	29/10:00 AM - 29/10:59 PM EDT	
FCAJX4	Inactive	200/700	29/10:00 AM - 29/10:59 PM EDT	
FEAJX9	Active	200/700	29/10:00 AM - 29/10:59 PM EDT	
FEAJX2	Active	200/700	29/10:00 AM - 29/10:59 PM EDT	



Create FEA/FCA



Parameters Primary Filter Secondary Filter Shared Sites Lat/Lot Pref

Polygon Line Circle NAS

Name FCAJX7

Time Range

Start Time: 05/29/13 17:15

End Time: 00/00/00 00:00

Extended Look Ahead Time Range 00 Hrs

Altitude Range

Ceiling: 200

Floor: 500

Moving Parameters

Heading:

Speed:

Characteristics

Domain Private Local Shared Public

Type FEA FCA

FSM Eligible Reason: NONE

Drawing Control

Drawn at start time position

Color Undo Erase

Add to analytics Cancel Apply

Create FEA/FCA



Parameters Primary Filter Secondary Filter Shared Sites Lat/Lot Pref

Polygon Line Circle NAS

Name FCAJX7

Time Range

Start Time: 05/29/13 17:15

End Time: 00/00/00 00:00

Select Date 06 / 29 / 23 Hrs

Calendar widget showing May 2023 with date 29 selected.

Altitude Range

Ceiling: 200

Floor: 500

Moving Parameters

Heading:

Speed:

Characteristics

Domain Private Local Shared Public

Type FEA FCA

FSM Eligible Reason: NONE

Drawing Control

Drawn at start time position

Color Undo Erase

Add to analytics Cancel Apply

Create FEA/FCA



Parameters Primary Filter Secondary Filter Shared Sites Lat/Lot Pref

Polygon Line Circle NAS

Name FCAJX7

Time Range

Start Time: 05/29/13 17:15

End Time: 05/29/13 00:00

Extended Look Ahead Time Range 00 Hrs

Altitude Range

Ceiling: 200

Floor: 500

Select Time widget showing 22:15.

Moving Parameters

Heading:

Speed:

Characteristics

Domain Private Local Shared Public

Type FEA FCA

FSM Eligible Reason: NONE

Drawing Control

Drawn at start time position

Color Undo Erase

Add to analytics Cancel Apply

07 FEA/FCA - Parameters

1 Design

Flexible design for both touch typing as well as hunt and peck.

2 Date & Time

Mobile style date and time is more intuitive, giving individuals multiple solutions to imputing desired content.

Create FEA/FCA

Parameters Primary Filter Secondary Filter Shared Sites Lat/Lot Pref

Polygon Line Circle NAS

Name

Time Range
Start Time: 05/29/13 17:15
End Time: 00/00/00 00:00
 Extended Look Ahead Time Range Hrs

Altitude Range Ceiling: <input type="text" value="200"/> Floor: <input type="text" value="500"/>	Moving Parameters Heading: <input type="text"/> Speed: <input type="text"/>
---	--

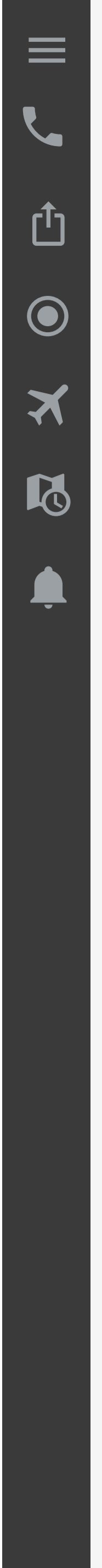
Characteristics
Domain Private Local Shared Public
Type FEA FCA

FSM Eligible Reason:

Drawing Control
 Drawn at start time position
Color

[Add to analytics](#)





Flight Schedule Monitor GDT

Connect to data Monitor

ATL-GDT Mode Add to analytics

GDP Setup

GDP Map | Reload | Model | Run Proposed | Run Actual | SUB OFF Reset

Program Type: AFP - DAS SUBS: ALL ON

Parameters | Scope | Modeling Options

Program Time Options

Start: 02 17:36 | End: 03 17:59 | Data Time: 02 17 : 36

Purge Flights: Before Revision Start Compress to Last CTA After Revision Start

Program Rate (Applicable Only to Included Flights)

Load Times | Load ADL AAR | Historical Pop-Ups Fill

Fill Program Rate

From Hour: 16 | Through Hour: 05 | PR: 33 | Pop-Up: 0

Hour	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	0
PR	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0	0	0
Pop-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

AAR: Set AAR to Program Rate Retain Current AAR

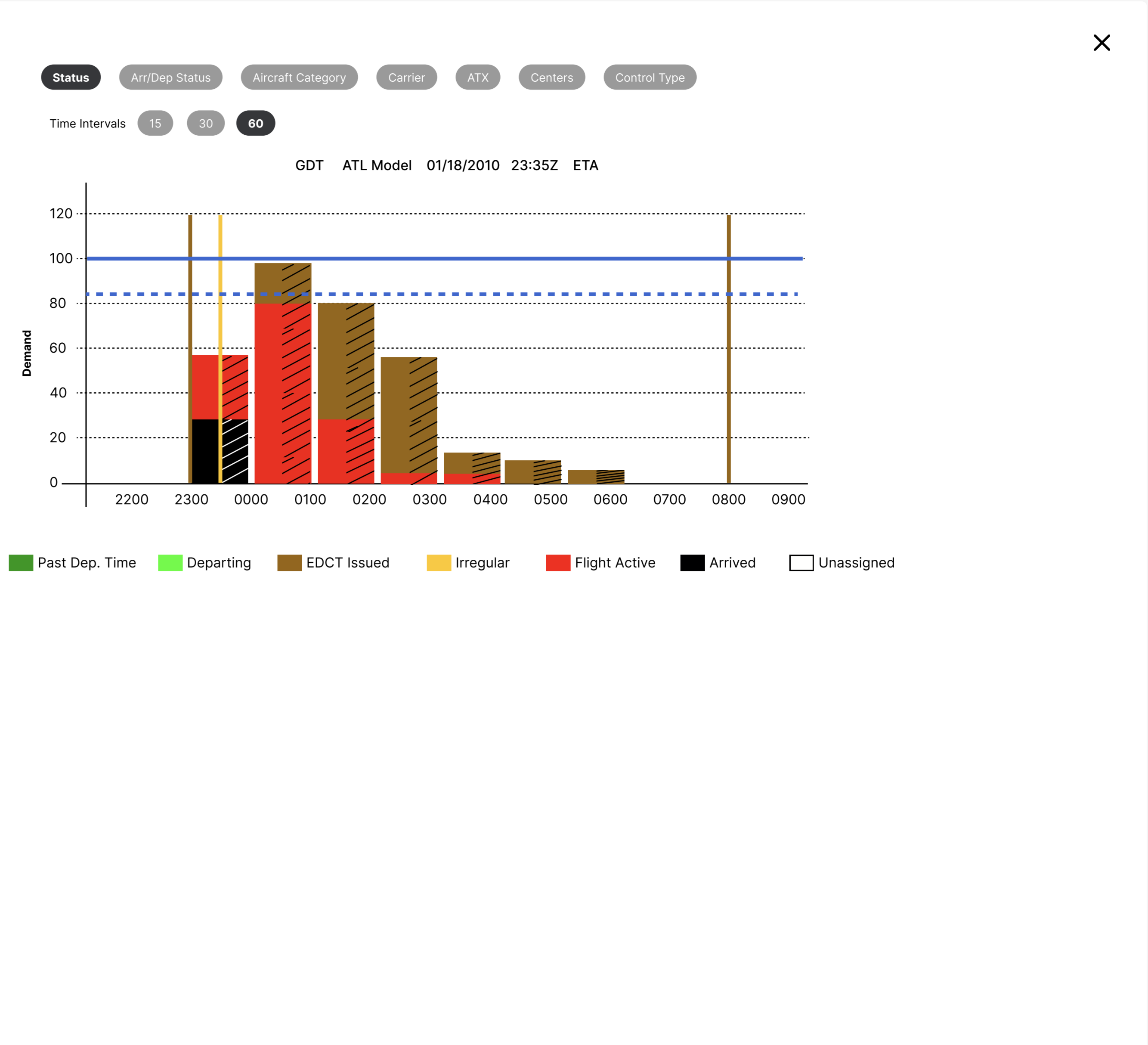
General Options

AFP Override: Enabled

Slot Hold Override: Cancel Select..

Include Only Options

Save



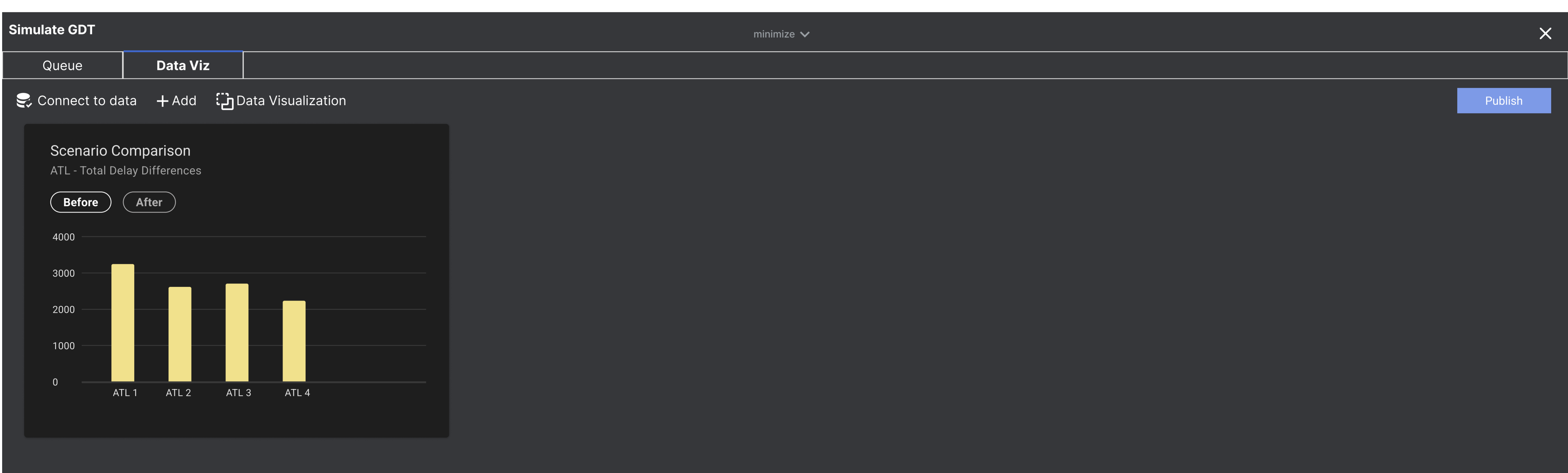
Simulate GDT

Queue | Data Viz

Connect to data + Add Data Visualization Publish

Select	Name	Status	Time range	Total Flights	Total affected flights	Flights in Stack
<input checked="" type="radio"/>	ATL 1	Inactive	29/10:00 AM - 29/10:59 PM EDT	180	93	0
<input type="radio"/>	ATL 2	Inactive	29/12:00 AM - 29/10:59 PM EDT	175	88	0
<input type="radio"/>	ATL 3	Inactive	29/12:00 AM - 29/10:59 PM EDT	170	86	0
<input type="radio"/>	ATL 4	Inactive	29/12:00 AM - 29/10:59 PM EDT	182	93	0

	Before	After	Difference
Minimum Delay(Minutes)	0	0	0
Average Delay(Minutes)	59	31	-28
Maximum Delay(Minutes)	336	268	-68
Total Delay(Minutes)	5504	2887	-2617



GDP Setup ⊗

GDP MAP Reload Model Run Proposed Run Actual SUB OFF **Reset**

Program Type **AFP - DAS** **SUBS: ALL ON**

Parameters Scope Modeling Options

Program Time Options

Start 02 17:36 Data Time **02** 17 : 36

End 02 17:59

Purge Flights Before Revision Start Compress to Last CTA After Revision Start

Program Rate (Applicable Only to Included Flights)

Load Times Load ADL AAR Historical Pop-Ups **Fill**

Fill Program Rate

From Hour 16

Through Hour 05

PR 33

Pop-Up 0

Hour	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08
PR	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0	0	0
Pop-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

AAR Set AAR to Program Rate Retain Current AAR

General Options ⌵

AFP Override Enabled

Slot Hold Override Cancel **Select..**

Include Only Options ⌵

Save

GDP Setup ⊗

GDP MAP Reload Model Run Proposed Run Actual SUB OFF

Program Type **AFP - DAS** **SUBS: ALL ON**

Parameters **Scope** Modeling Options

Select By Tier

Scope **ALL** **Total Centers Selected: 36** **Clear**

Centers - Origin (Non-Exempt / Exempt)

Search Centers Origin (Non-Exempt/Exempt)

- ZAB(L/L)
- ZAN(L/L)
- ZAU(L/L)
- ZBW(L/L)
- ZDC(L/L)
- ZDV(L/L)

Non-Exempt Search Non-Exempt Origin

Airports - Destination

Exempt Search Exempt Origin

Flights

Exempt Active Flights Only (By Status)

Exempt All Flights Departing Within Minutes

Reset Save

GDP Setup ⊗

GDP MAP Reload Model Run Proposed Run Actual SUB OFF

Program Type **AFP - DAS** **SUBS: ALL ON**

Parameters **Scope** Modeling Options

Select By Tier

Scope **ALL** **Total Centers Selected: 36** **Clear**

Centers - Origin (Non-Exempt / Exempt)

Search Centers Origin (Non-Exempt/Exempt)

Airports - Origin

Exempt

- ZAB(L/L)
- ZAN(L/L)
- ZAU(L/L)
- ZBW(L/L)
- ZDC(L/L)
- ZDV(L/L)

Non-Exempt Search Non-Exempt Origin

Exempt Search Exempt Origin

Flights

Exempt Active Flights Only (By Status)

Exempt All Flights Departing Within Minutes

Reset Save

GDP Setup ⊗

GDP Map Reload Model Run Proposed Run Actual SUB OFF

Program Type **AFP - DAS** **SUBS: ALL ON**

Parameters Scope Modeling Options

Program Time Options

Start 02 17:36 Data Time **02** 17 : 36

End 03 17:59

Purge Flights Before Revision Start Compress to Last CTA After Revision Start

Program Rate (Applicable Only to Included Flights)

Load Times Load ADL AAR Historical Pop-Ups **Fill**

Fill Program Rate

From Hour 16

Through Hour 05

PR 33

Pop-Up 0

Select Time

03 22 : 59

Hour	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08
PR	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0	0	0
Pop-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

AAR Set AAR to Program Rate Retain Current AAR

General Options ⌵

AFP Override Enabled

Slot Hold Override Cancel **Select..**

Include Only Options ⌵

Reset Save

Current

ATL 01/19/2010 22:02Z ETA

Status	Arr/Dep Status	Aircraft Category	Carrier	A/B/C	D/E	Centers	Control Type
192100	192200	192300	200000	200100	200200	21	CMX & DO FRs ARR (DEP) (DO)
9491	9496	9499	9491	9496	9493		0 (0) (0)

New Design

ATL

- Status
- Arr/Dep Status
- Aircraft Category
- Carrier
- ATX
- Centers
- Control Type

ATL Model 01/18/2010 23:35Z ETA

	192100 9491	192200 9491	192300 9491	192400 9491	200100 9491
00	7 ✈️	3 ✈️ 2 +	4 ✈️ 2 +	1 ✈️ 2 +	2 +
05	7 ✈️	3 ✈️ 2 +	4 ✈️ 2 +	1 ✈️ 2 +	4 ✈️ 2 + 2 +
10	7 ✈️ 2 +	3 ✈️ 2 +	4 ✈️ 2 +	1 ✈️ 2 +	3 ✈️ 2 +
15	10 ✈️	3 ✈️ 2 +	4 ✈️ 2 +	1 ✈️ 2 +	3 ✈️ 2 +
20	7 ✈️	3 ✈️ 2 +	4 ✈️ 2 +	1 ✈️ 2 +	2 + 2 +
	7 ✈️	3 ✈️ 2 +	4 ✈️	1 ✈️	3 ✈️ 2 +



08 GDT - Parameters

1 Organization

Dropdown menus create a clean layout by condensing required options and necessary information.

2 Date & Time

Mobile style date and time is more intuitive, giving individuals multiple solutions to imputing desired content.

3 Tool Assist

Adjustable sliders and dropdown menus assist in filling out data.

GDP Setup

GDP Map | Reload | Model | Run Proposed | Run Actual | SUB OFF

Program Type: AFP - DAS | SUBS: ALL ON

Parameters | Scope | Modeling Options

Program Time Options

Start: 02 17:36 | Data Time: 02 17 : 36
End: 03 17:59

Purge Flights: Before Revision Start | Compress to Last CTA | After Revision Start

Program Rate (Applicable Only to Included Flights)

Load Times | Load ADL AAR | Historical Pop-Ups | Fill

Fill Program Rate

From Hour: 16
Through Hour: 05
PR: 33
Pop-Up: 0

Hour	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08
PR	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0	0	0
Pop-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

AAR: Set AAR to Program Rate | Retain Current AAR

General Options

AFP Override: Enabled

Slot Hold Override: Cancel

Include Only Options

Reset



09 GDT - Analysis

1 Data Analysis

Optimize operational processes by analyzing data and provide informed decision making.

2 Flexibility

Allow users to choose parameters and compare.

3 Share

Share to various stakeholders before publish.



Flight Schedule Monitor GDT

Connect to data Monitor

ATL-GDT Mode Add to analytics

GDP Setup ⊗

GDP Map | Reload | Model | Run Proposed | Run Actual | SUB OFF Reset

Program Type: AFP - DAS SUBS: ALL ON

Parameters | Scope | Modeling Options

Program Time Options

Start: 02 17:36 | End: 03 17:59 | Data Time: 02 17 : 36

Purge Flights: Before Revision Start Compress to Last CTA After Revision Start

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PR	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0	0	0
Pop-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

AAR: Set AAR to Program Rate Retain Current AAR

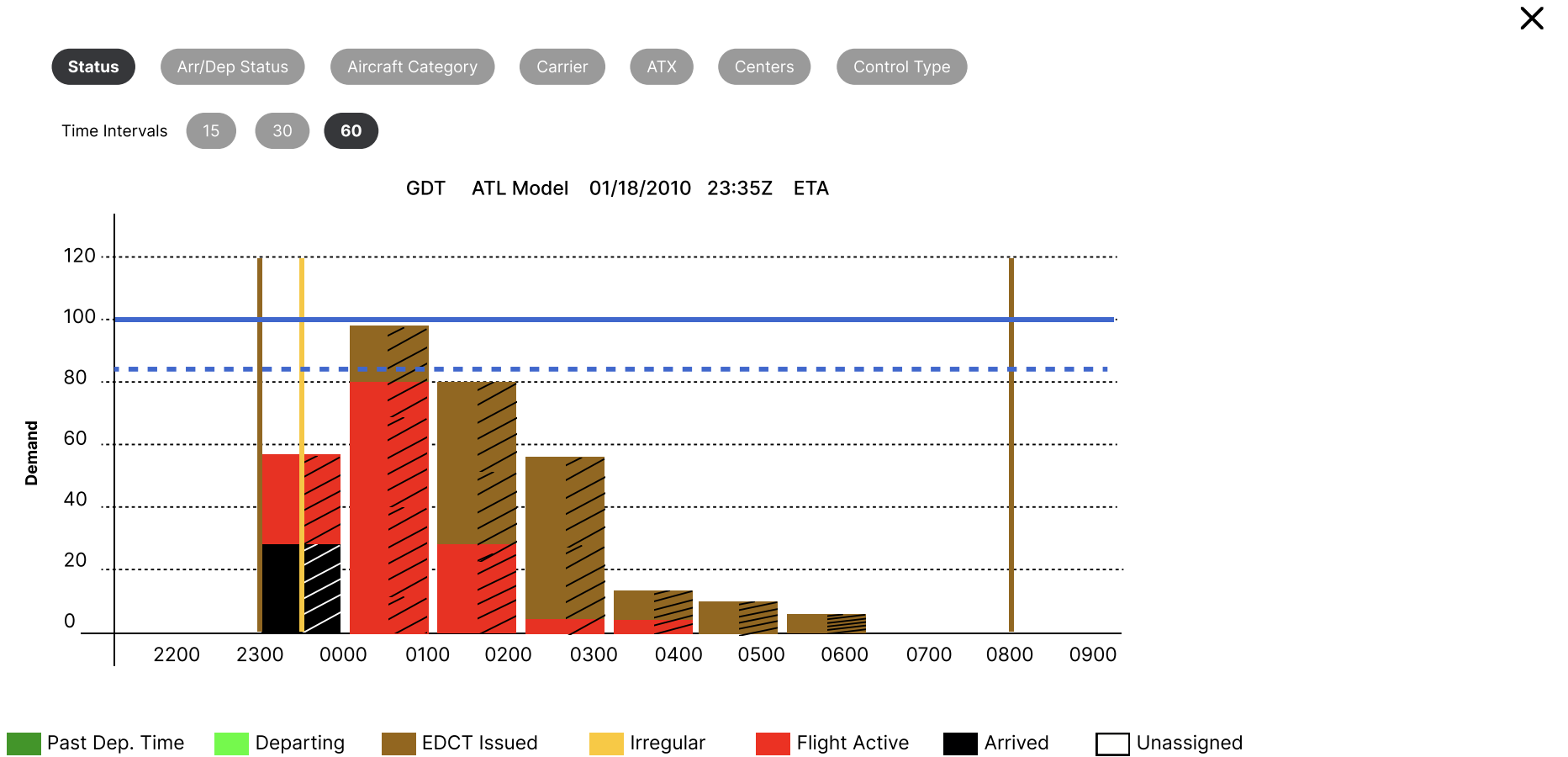
General Options ⌵

AFP Override: Enabled

Slot Hold Override: Cancel Select..

Include Only Options ⌵

Save



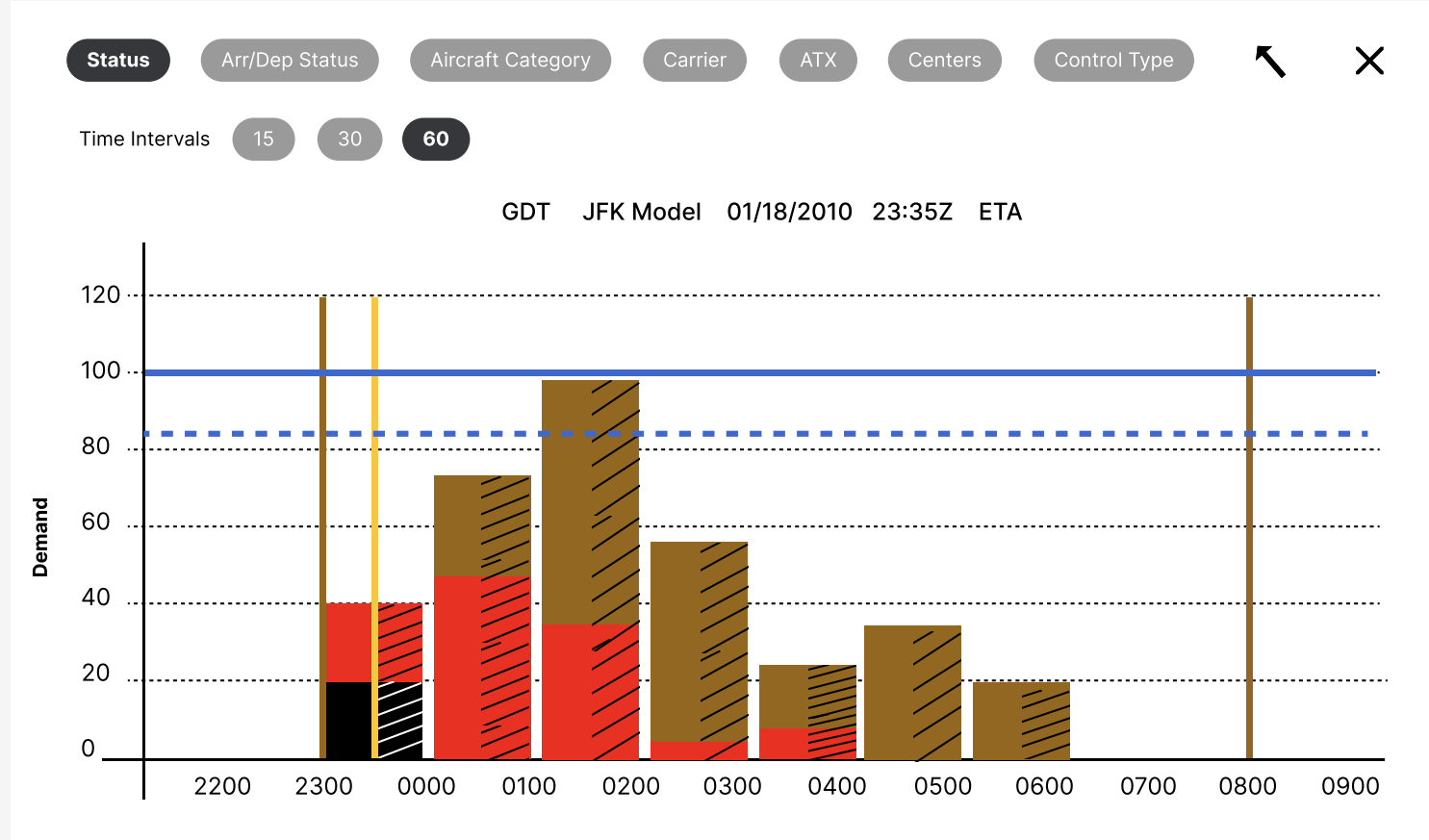
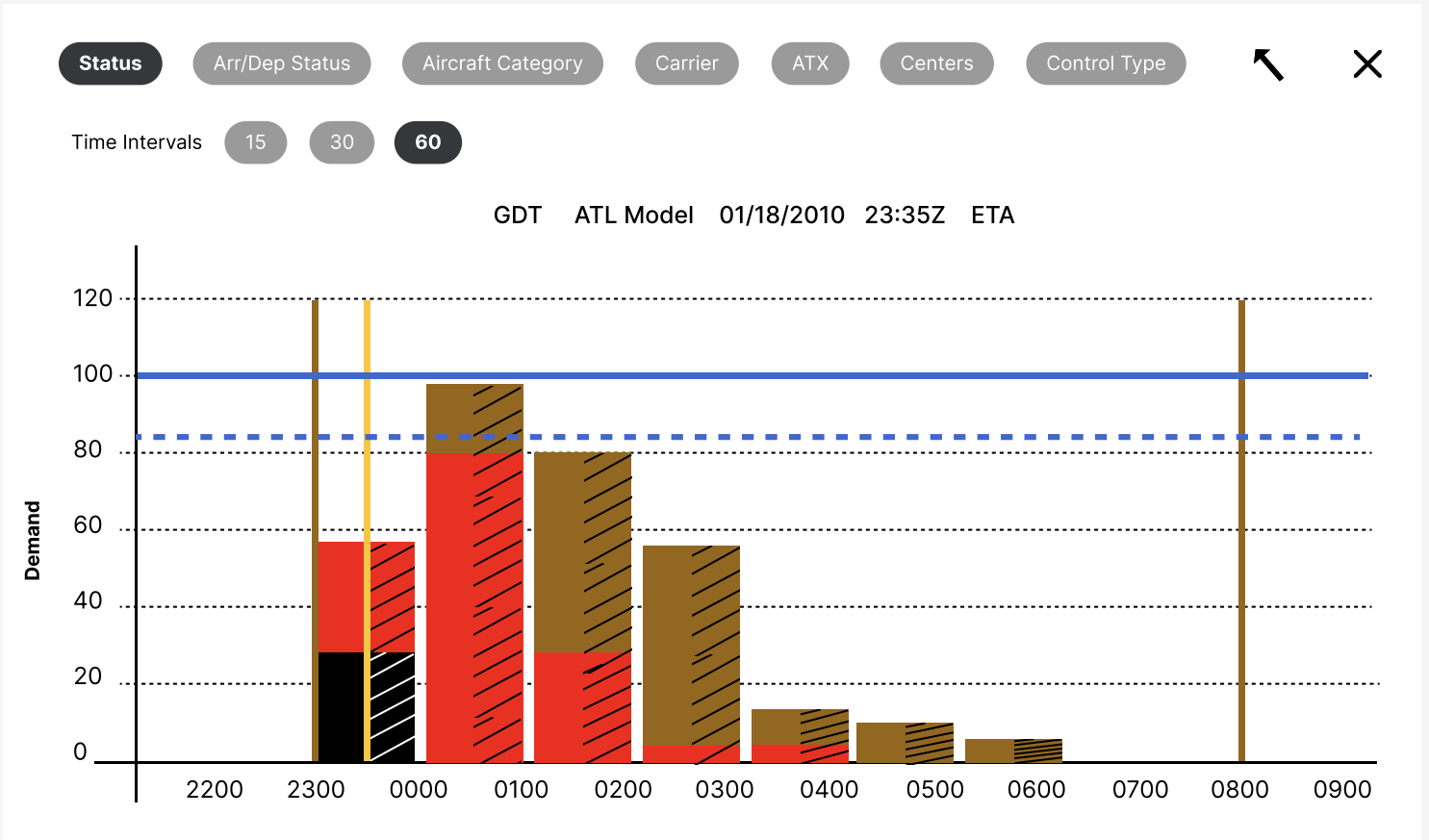
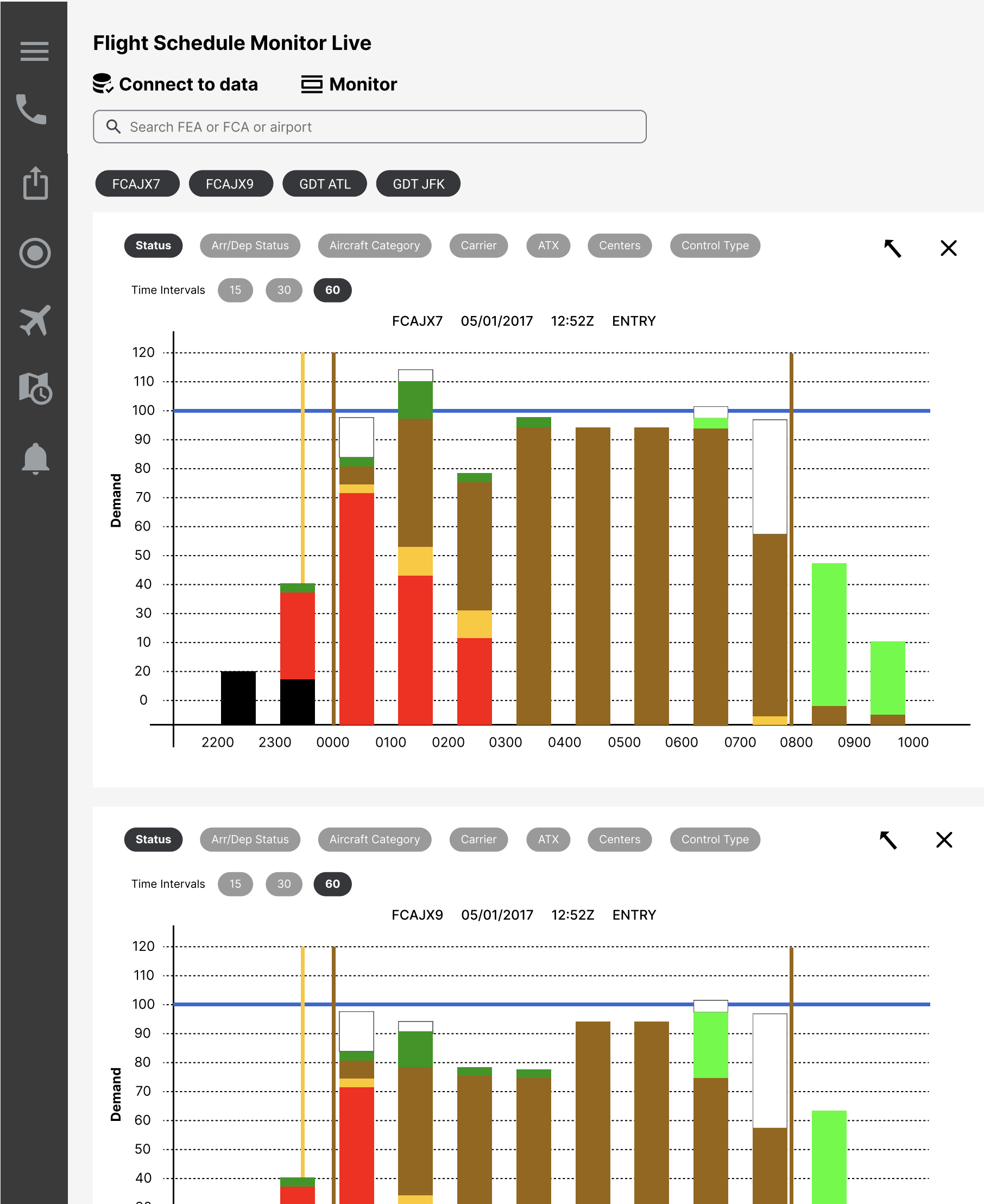
10 Monitor

1 Integrated

Avoid thousands of windows. Monitoring process is streamlined.

2 Interactive

Hide low priority, call out whenever needs.



Flight Schedule Monitor Live

Connect to data Monitor

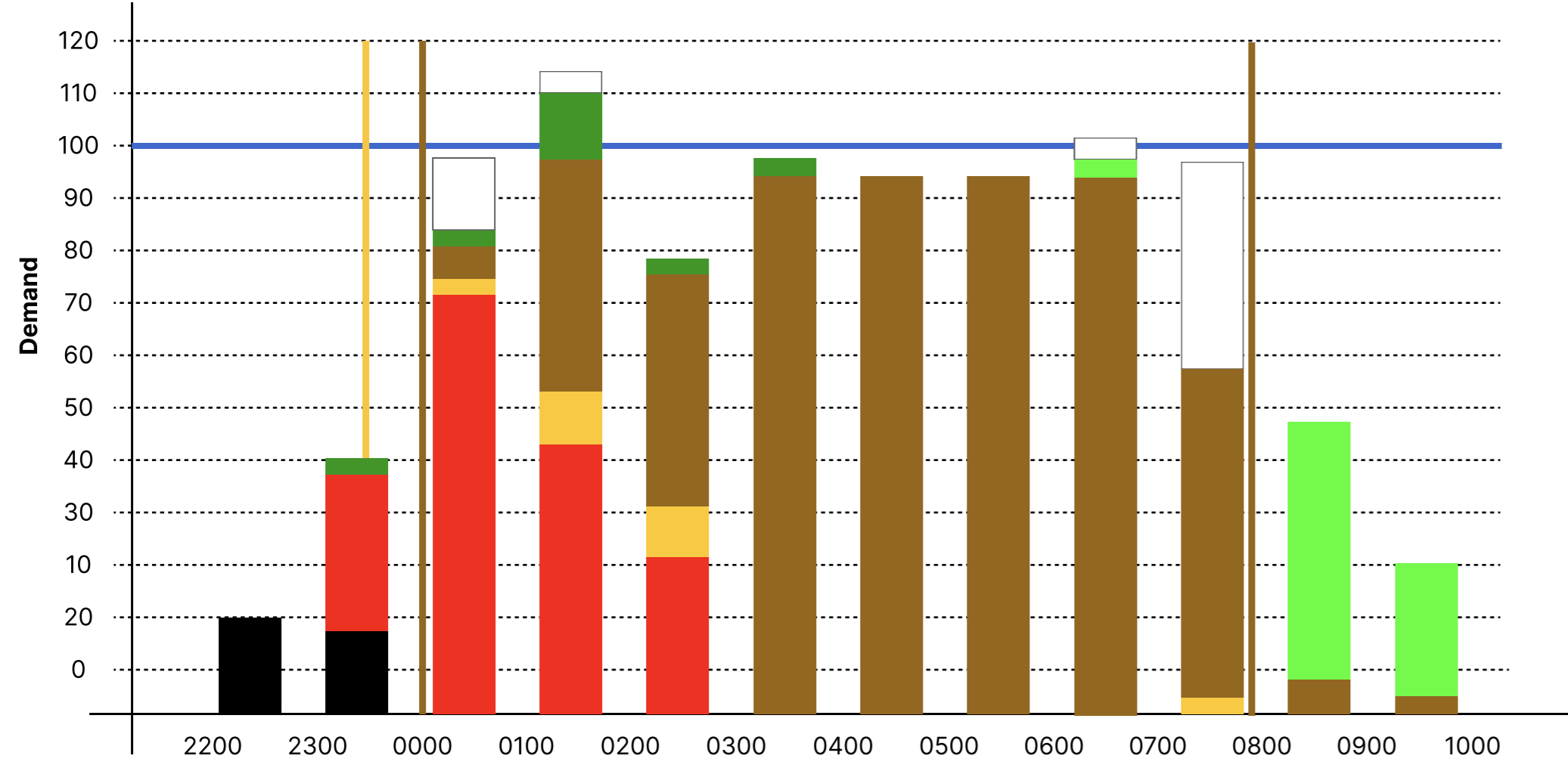
Search FEA or FCA or airport

FCAJX7 FCAJX9 GDT ATL GDT JFK

Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

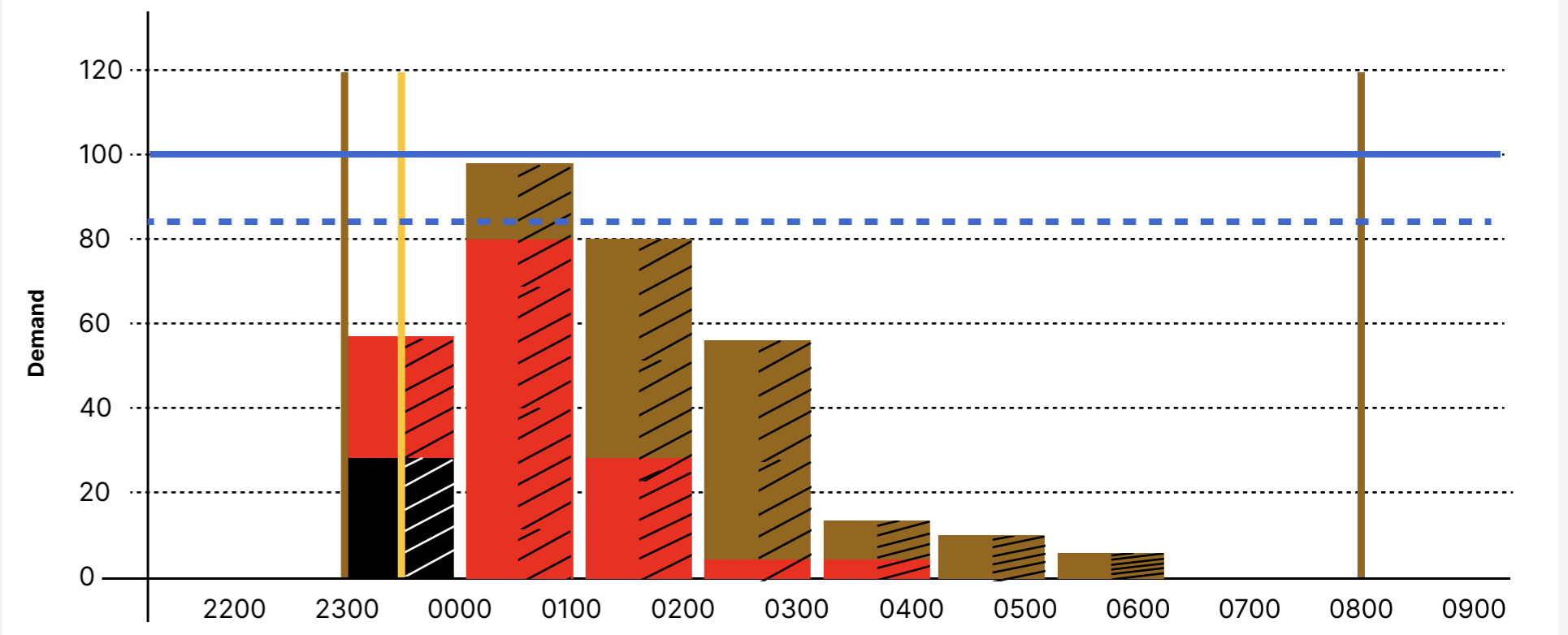
FCAJX7 05/01/2017 12:52Z ENTRY



Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

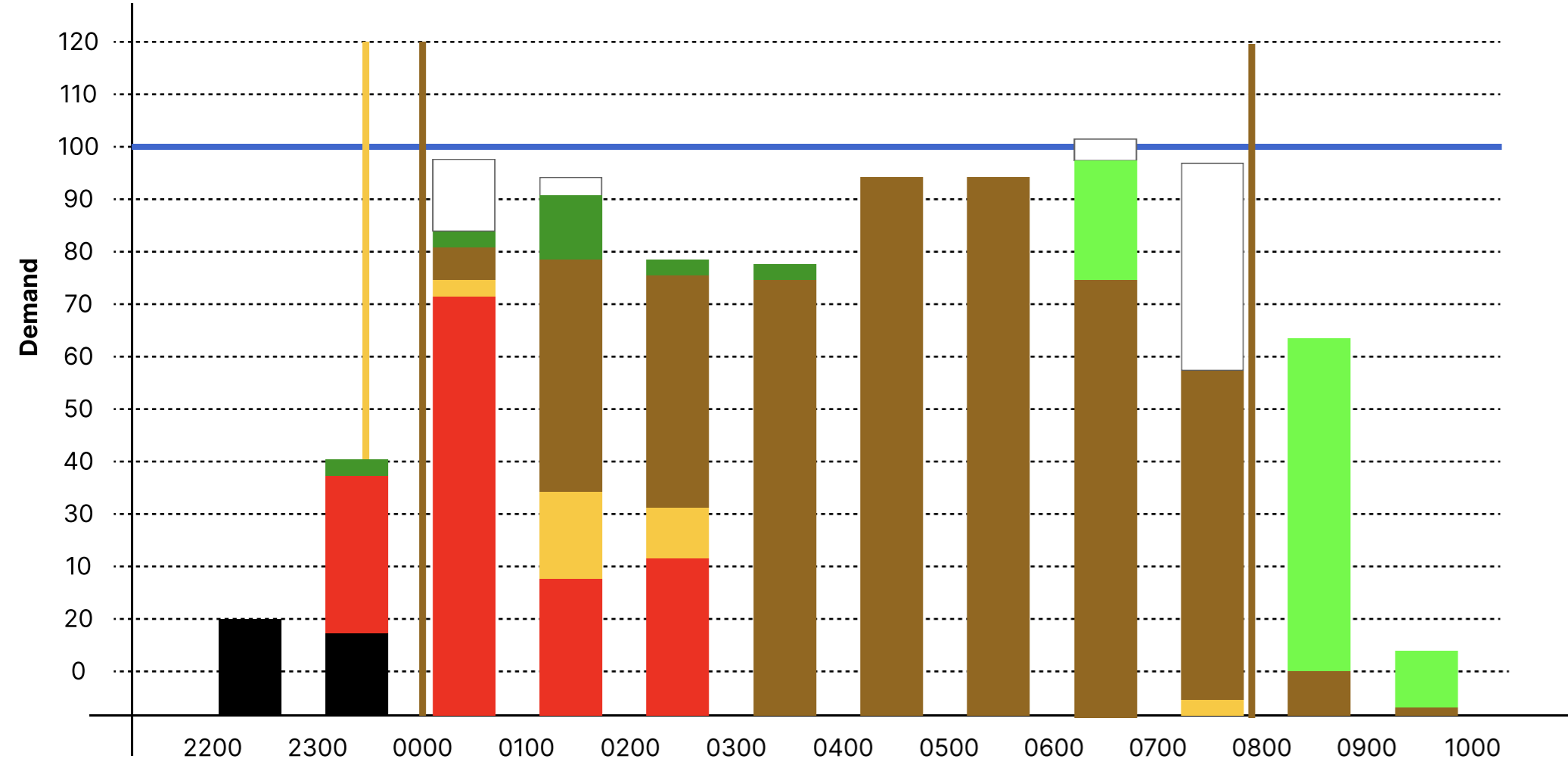
GDT ATL Model 01/18/2010 23:35Z ETA



Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

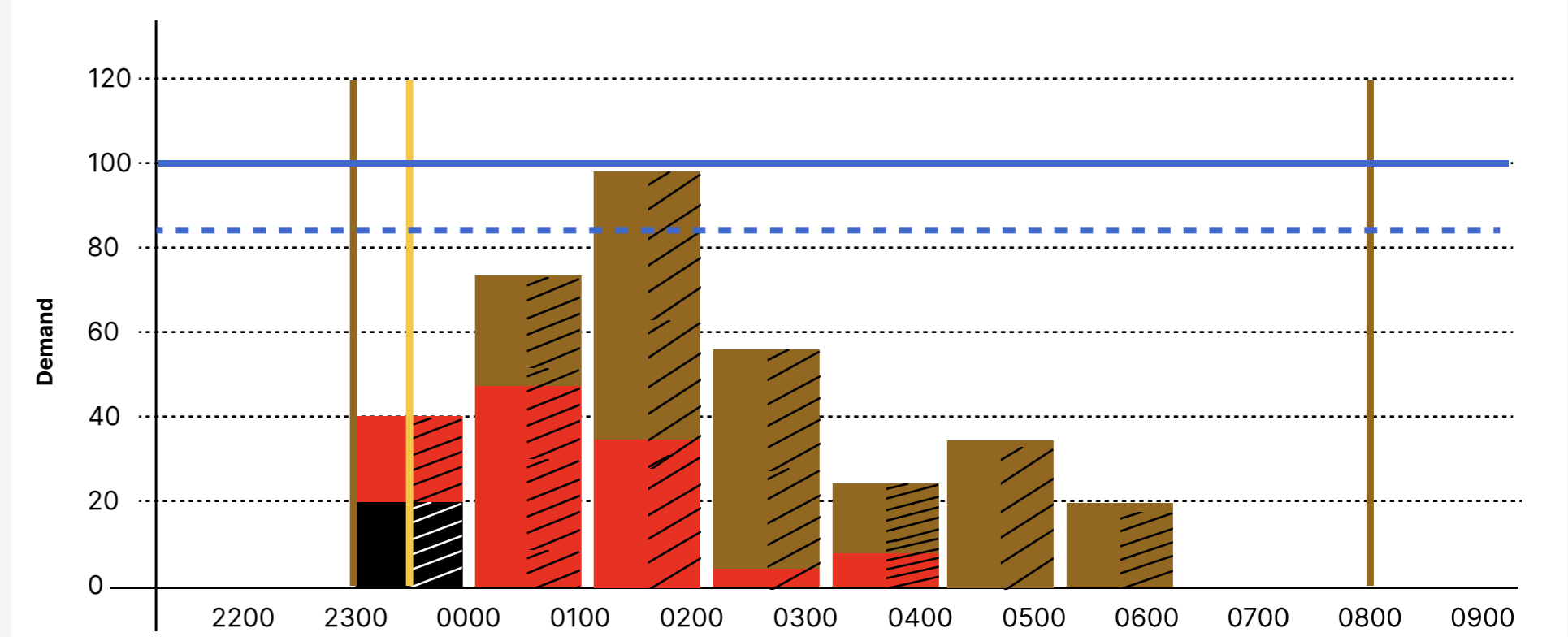
FCAJX9 05/01/2017 12:52Z ENTRY



Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

GDT JFK Model 01/18/2010 23:35Z ETA



Flight Schedule Monitor Live

Connect to data Monitor

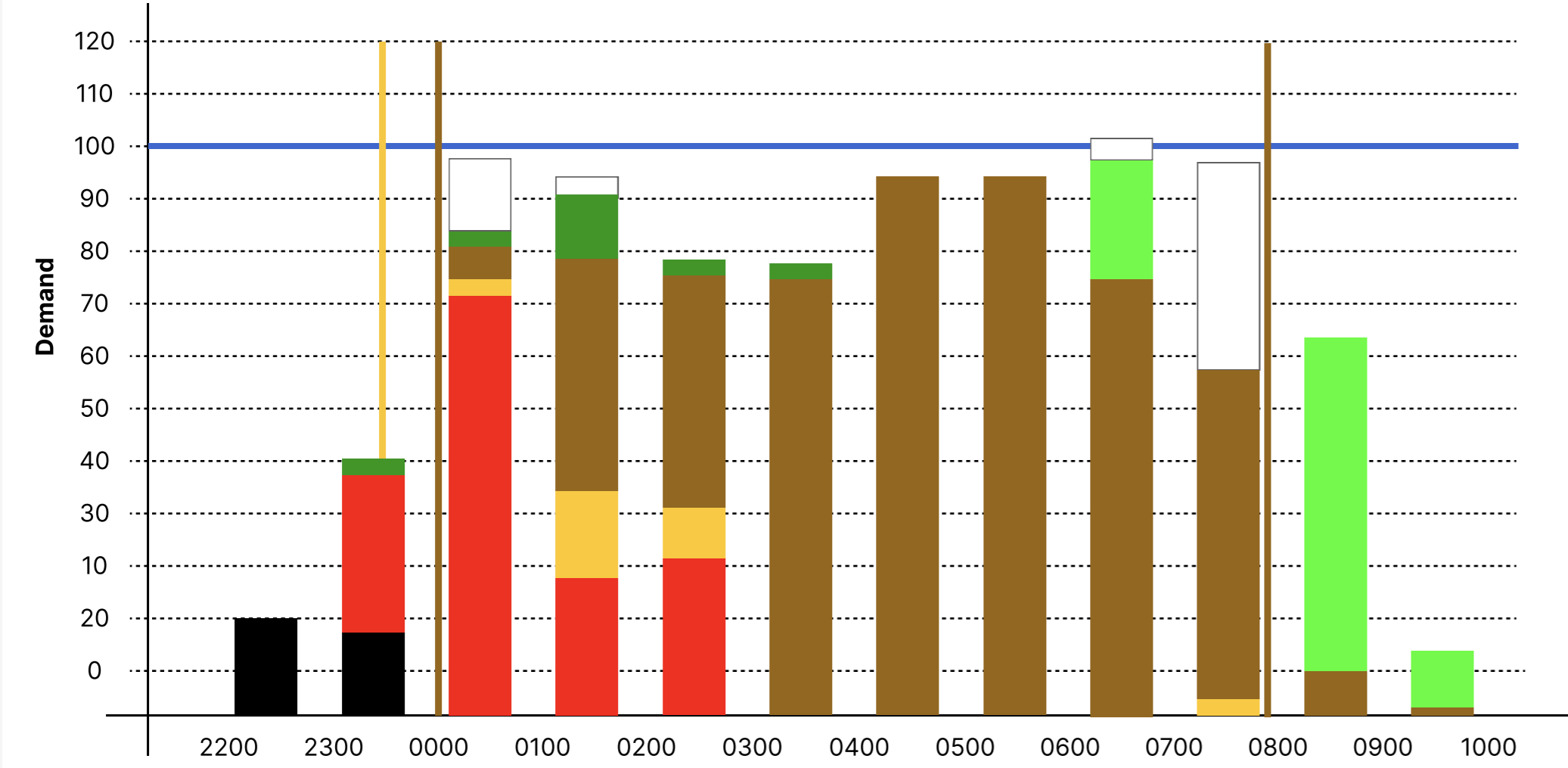
Search FEA or FCA or airport

FCAJX7 FCAJX9 GDT ATL GDT JFK

Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

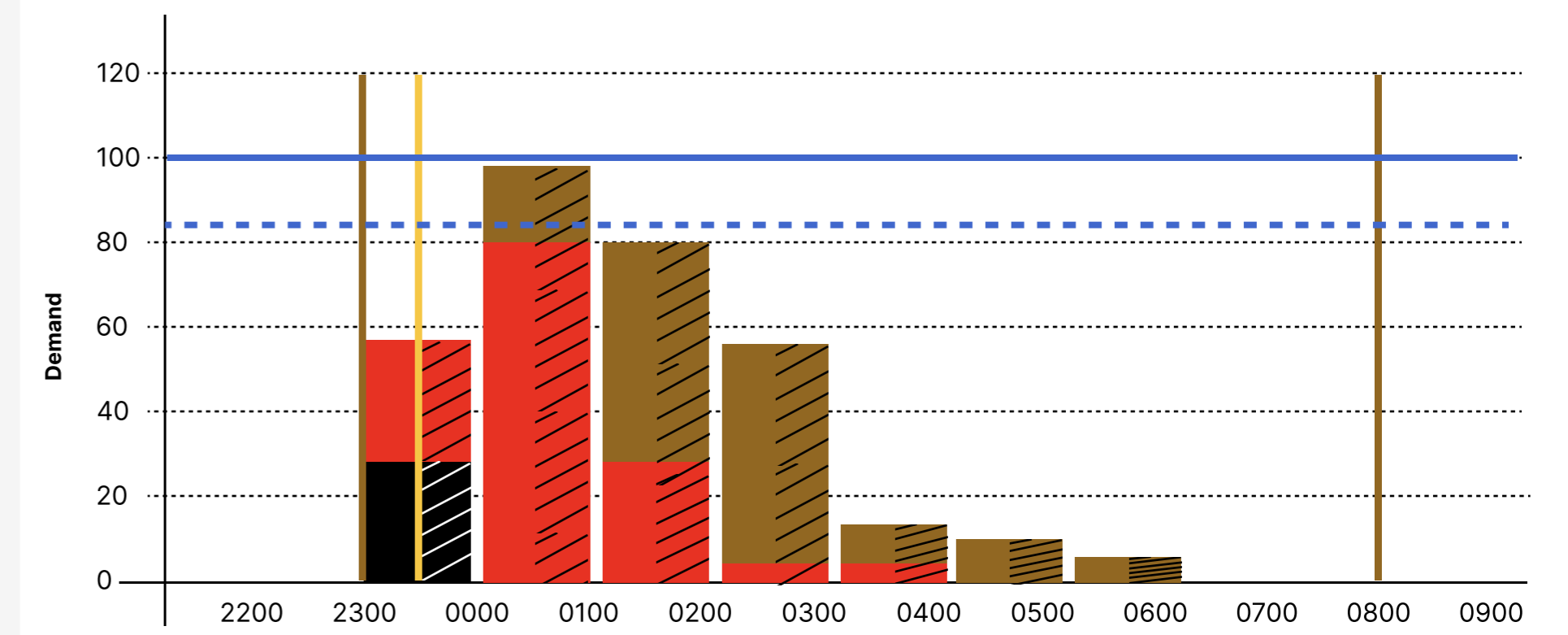
FCAJX9 05/01/2017 12:52Z ENTRY



Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

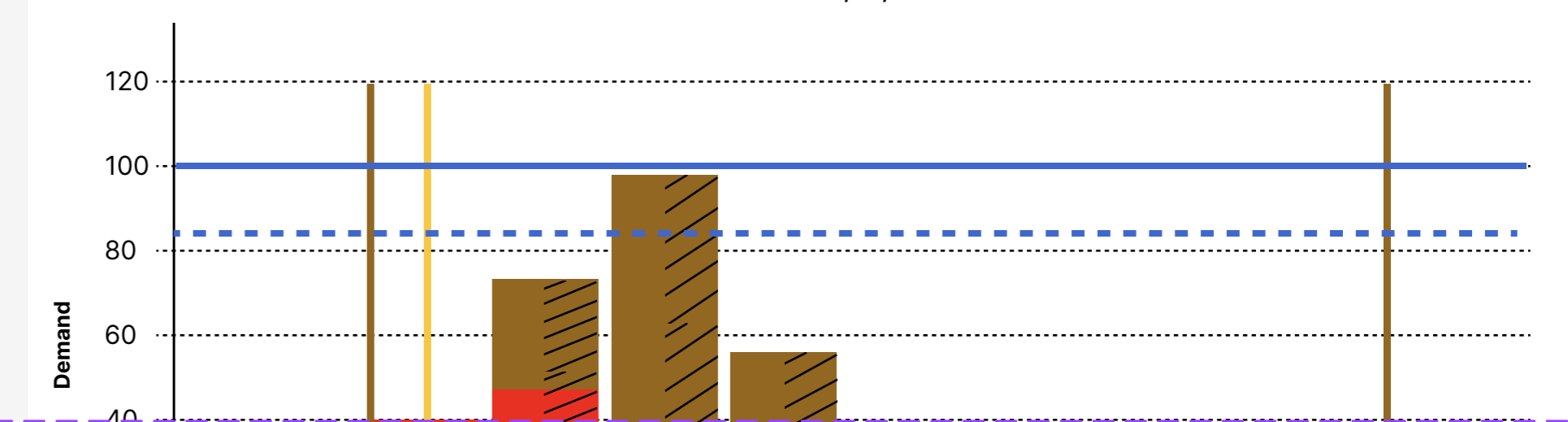
GDT ATL Model 01/18/2010 23:35Z ETA



Status Arr/Dep Status Aircraft Category Carrier ATX Centers Control Type

Time Intervals 15 30 60

GDT JFK Model 01/18/2010 23:35Z ETA



Current

New Design

ATCSCC Advisory

ATCSCC ADVZY 060 FCAJX7 06/29/2022 CDM AIRSPACE FLOW PROGRAM

MESSAGE: CTL ELEMENT: FCAJX7 ← AFP applies to JX7 FCA
 ELEMENT TYPE: FCA
 ALTITUDES INCLUDED: FL200 TO FL500 ← Includes flights operating between 20,000-50,000 ft
 ADL TIME: 1945Z
 DELAY ASSIGNMENT MODE: UDP
 ENTRY ESTIMATED FOR: 29/2030Z - 30/0259Z
 CUMULATIVE PROGRAM PERIOD: 29/1400Z - 30/0259Z ← AFP active between 1400 UTC on 6/29 to 0259 UTC on 6/30
PROGRAM RATE: 80/80/80/80/80/100/100 ← # flights that can be scheduled each hour
FLT INCL: ALL FLIGHTS IN FCAJX7 DYNAMIC FLIGHT LIST
DEP SCOPE: (ALL) ZLA ZAU ZLC ZTL ZDC ZNY ZHU ZJX ZFW ZOB ZDV ZOA ZSE ZBW ZMA ZKC ZME ZID ZAB ZMP ← AFP includes flights departing from all ARTCCs
CANADIAN DEP ARPTS INCLUDED: NONE
MAXIMUM DELAY: 495 ← Largest delay (minutes)
AVERAGE DELAY: 95 ← allocated to any flight
IMPACTING CONDITION: OTHER / OTHER
COMMENTS: DUE TO ZJX STAFFING COMBINED WITH WEATHER CONSTRAINTS

EFFECTIVE TIME: 291946 - 300359
SIGNATURE: 22/06/29 19:46

ATCSCC Advisory ✕

ATCSCC ADVZY 060 FCAJX7 06/29/2022 CDM AIRSPACE FLOW PROGRAM

Message

CTL Element:	FCAJX7
Element type:	FCA
Altitudes included:	FL200 to FL 500
ADL Time:	1945Z
Delay assignment mode:	UDP
Entry estimated for:	29/2030Z - 30/0259Z
Cumulative program period:	29/1400Z - 30/0259Z
Program rate:	80/80/80/80/80/100/100
Flight included:	All flights in FCAJX7 dynamic flight list
DEP scope:	(All) ZLA ZAU ZLC ZTL ZDC ANY ZHU ZJX ZFW ZOB ZDV ZOA ZSE ZRW ZKC ZME ZLD ZAB ZMP
Canadian DEP airports included:	None
Maximum delay:	495
Average delay:	95
Impacting condition:	Other/Other
Comments:	Due to ZJX staffing combined with weather constraints
Effective Time:	291946 - 300359
Time Signature:	22/06/29 19:46



12 Log activities

1 Verification
 Tabs validate status of work flow

2 Quick Access
 Easy finding information by task

3 Summary
 Enables them to swiftly quantify and reflect on their activities at the end of their shift.

NTML

32 Completed tasks 2 Notifications 4 Reports

Overview **Pending**

Select	Approval ↑↓	Time ↑↓	Type ↑↓	FAC ↑↓	Message	Status ↑↓
●		1849	RWY	ZKC	EWR VMC ARR:22R AAR(Strat/Dyn): 34/34 (updated at 1849 by ZKC)	
●	📞	1849	RWY	ZAU	DCA Arrivl via WHITE 30 Mit 1900-2330,EX:Thunderstorms ZAU:ZDC, RSTN:REQ	ZDC:!
●	⚠️	1907	PROP	ZAU	BWI D/D,+30/1908 WX:Thunderstorms	
●		1907	DELAY	ZAU	MDW Dept via COATE 20 Mit JETS 2000-2030,EX:Thunderstorms ZAU:ZDC, RSTN REQ	ZDC:!
●		1911	PROP	DCC	ORD Dept via WHITE 30 Mit JETS 2000-2100, EX:Thunderstorms ZAU: ZDC, RSTN:APVD 1912/DCC:99/PH	ZDC: Y
●	?	1913	RWY	ZDC	DISAPPROVING 2130-2200, EX:Low Ceilings ZDC:ZAU, RSTN: 1914/DCC:99?PH	BWI:?
●	✖️	1912	RSTN	ZAU	BWI VMC ARR:33L-SINGLE RWY DEP:15R AAR(Strat/Dyn):36/0 ADJ:Braking Action ADR:36 (updated at 1913 by ZLC)	
●		1914	RSTN	DCC	EWR in deicing at 1849	ZAU: Y
●		1914	RWY	ZKC	ZLA Entered SWAP at 1105 2008 1849	

Log Passbk Accept Conf Open Refresh Remove



13 Challenges

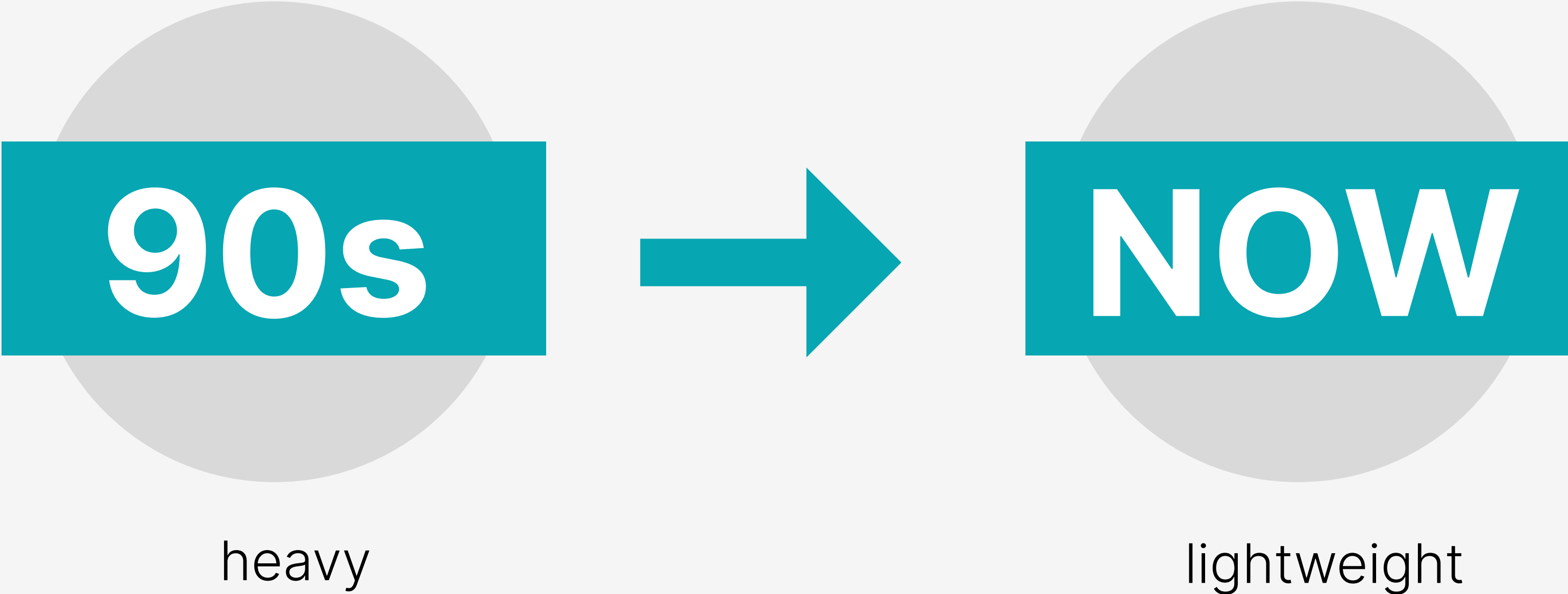
1 **AWT**
1995

2 **JAVA SWING**
1998

3 **JAVA FX**
2008

Implementation: GUI Tool Kits

Desktop Application Feasibility



Limits & Risks

- Lack access to applications
- Unable to conduct Cognitive Walkthrough(s)
- No User Testing on FAA Officials
- Modernized functionality and flow might require additional training

Research

- Developing a Real-Time Monitoring and Alerting Capability for Traffic Flow Management (2016)
- National Airspace System (NAS) Traffic Flow Management (TFM) Collaboration: Building Collaboration into Dashboard Design (2020)
- Decision Space Visualization: Lessons Learned and Design Principles (2013)
- The effect of interactive analytical dashboard features on situation awareness and task performance (2020)



14 Summary



Integration

Application
Analysis



14 Summary



Integration

Application
Analysis



Interactivity

Search
Unhide/Hide Callout
Filter
Shortcut



14 Summary



Integration

Application
Analysis



Interactivity

Search
Unhide/Hide Callout
Filter
Shortcut



Efficiency

Data Visualization
Viewing option
Clarity

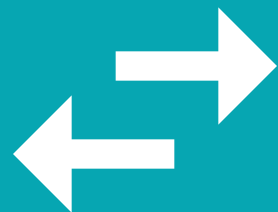


14 Summary



Integration

Application
Analysis



Interactivity

Search
Unhide/Hide Callout
Filter
Shortcut



Efficiency

Data Visualization
Viewing option
Clarity



Consistent

Design System



THANK YOU



CONTROL MADE SIMPLE

AVA DASHBOARD

Ferdi Agusta
Tessa Board
Jon Crescenzo
Patrice Reynolds
Ian Pollock, Advisor

