



## Overview

This document is a compilation of the New Releases/New Features training materials accompanying various software releases during ATD-2 Phase 1.

## Table of Contents

(Click on a row to navigate to that training.)

<b>ATD-2 Software Version</b>	<b>Document</b>	<b>Date</b>
V3.0.6	RTC New Features Training	Oct 2017
V3.0.8	ATD-2 Release 3.0.8 Updates	Jan 2018
V3.1.0	ATD-2 Release 3.1.0 Updates	Feb 2018
V3.1.1	Release 3.1.1 New Features	Mar 2018
V3.1.1.2	Surface Metering Features on RTC	Mar 2018
V3.1.1.2	STBO Client Updates Since September 2017	Mar 2018

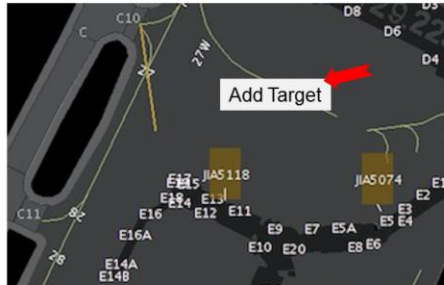
# RTC New Features Training

Release 3.0.6

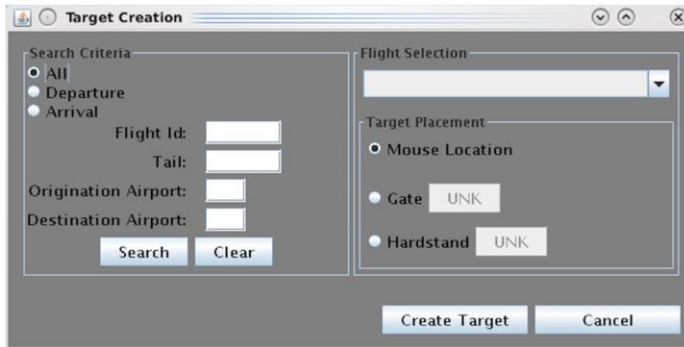


- Create a Target Feature
- Updated Flight Menu for arrivals departures
  - This includes a new Reposition option
- 757 aircraft type display
- Show Frequencies and Display ADW added to Map Options

## Create a Target



- Right mouse click anywhere on the map, and the “Add Target” button appears at location of right mouse click.
- Click on the “Add Target button to confirm, and open the Create Target Menu.



Use the Target Creation menu to create a target based on flights in the system in next 24 hours.

Use the Target Creation menu to create a target based on flights in the system in next 24 hours

Enter Search Criteria, then click on "Search"

Enter Search criteria: \*not all criteria are required

- All, Departure or Arrival flights
- Flight ID
- Tail number
- Origination airport
- Destination airport

**Target Creation**

Search Criteria

- All
- Departure
- Arrival

Flight Id:

Tail:

Origination Airport:

Destination Airport:

Flight Selection

- Gate
- Hardstand

Click on the little down arrow to open drop list to view all search results, then select flight from results.

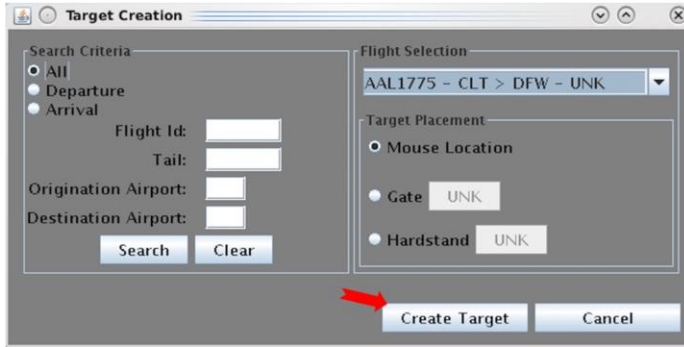
Select from the search results shown in the drop list. A valid search result must be selected to proceed.



Select Target Placement: Mouse Location, Gate or Hardstand

- Select Target Placement
  - Select Mouse Location to place target at location of right click
  - Select Gate to place target at the gate. Click to open gate assignment menu. If the gate chosen is different that the assigned gate (Gate Manager/Ascent), then it will be overwritten on the RTC display only. This change is local to RTC, the gate change should still be assigned using Gate Manager.
  - Select Hardstand, then click to open hardstand assignment menu to place the target in the North or West hardstand

Select "Create Target"



**Target Creation**

Search Criteria

- All
- Departure
- Arrival

Flight Id:

Tail:

Origination Airport:

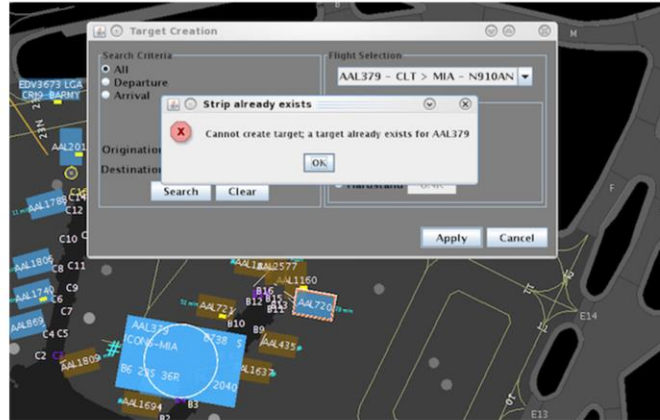
Destination Airport:

Flight Selection

AAL1775 - CLT > DFW - UNK

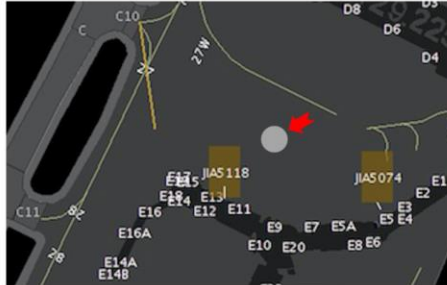
Target Placement

- Mouse Location
- Gate
- Hardstand



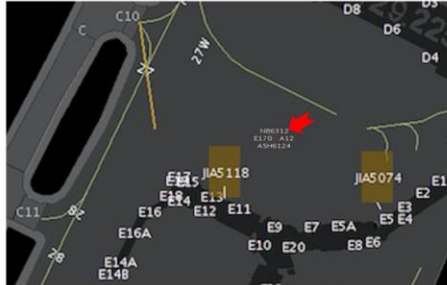
When “Create Target” is selected, if the flight is already in the system and is displayed on RTC, the flight will bloom (enlarge) to alert to its location on the display, and a prompt will be provided; “This already flight exists”.

Also, If Target Placement selection is at a gate and there is already a flight at the selected gate, when “Create Target” is selected, then a confirmation prompt is provided; “There is a flight at that gate, are you sure you want to create the target at that gate?”. If “yes” is selected at this prompt, then the created flight strip will be placed over the existing flight strip.



- Created Target displayed as a grey disc if it is more than an hour prior to scheduled departure
- Click on disc to display flight data

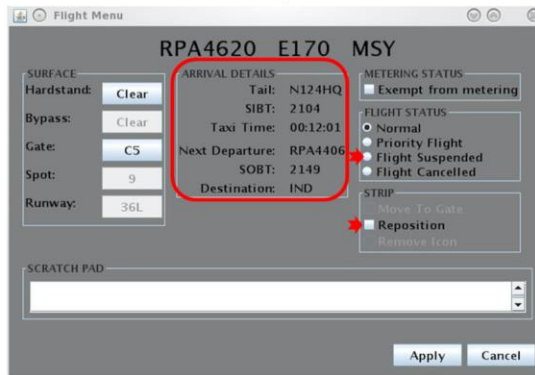
- After clicking on “Create Target”, the target will be created as:
  - A grey disc if it is more than an hour prior to departure time. (click on disc to see flight info).
  - A hollow departure icon if the departure has no gate assigned
  - A strip at the gate if it is within an hour of scheduled departure time and a gate is assigned.
- Click on grey disc to display flight data as shown in next slide



Selected grey disc displays the associated flight data

## Updated Flight Menu Arrivals and Departures

- Inactive Temporarily has been replaced with Suspend Flight in the Flight Status section
- Taxi Time details as well as Next Departure have been added to Arrival Details section
- Reposition has been added to the Strip section



- Scratchpad entry is now along the bottom, and the sections have been slightly rearranged
- Flight Suspended replaces “Inactive Temporarily” in the previous design
- Select “Flight Suspended” to remove a flight from the tactical scheduler algorithm
- SIBT and Taxi Time are now also available here
- Next Departure call sign and its Scheduled Off Block Time (SOBT) and destination are also displayed
- Reposition is a new option, also available on the new departure flight menu described on next slide

- Tail number added to Departure Details Section
- Flight Suspended replaces Inactive Temporarily in the Flight Status section
- Reposition has been added to the Strip Section



Flight Menu

AAL1932 A321 PHX

**SURFACE**

Hardstand:

Bypass:

Gate:

Spot:

Runway:

**DEPARTURE DETAILS**

Tail: N183UW

P-Time: 2145

FOBT: 2145

TOBT: 2145

TMAT: 2150

APREQ:

EDCT:

MIT:

Departure fix: BOBZY

Previous fix:

**METERING STATUS**

Exempt from metering

**FLIGHT STATUS**

Normal

Priority Flight

Flight Suspended

Flight Cancelled

**STRIP**

Return To Gate

Reposition

Remove Icon

SCRATCH PAD

Apply Cancel

- Scratchpad entry is now along the bottom, and the sections have been slightly rearranged
- Tail number is now provided in Departure Details section
- “Flight Suspended” in the new design replaces “Inactive Temporarily” from the previous design in the Flight Status section. “Flight Suspended”, is meant to be used in case a flight has a short term mechanical issue (i.e. a broken tow bar or tire replacement) such that it should be temporarily removed from the tactical scheduler algorithm. This for the case that is not a true mechanical issue where a aircraft is removed from service on a longer term basis or canceled.
- Reposition Option has been added to the Strip Section, see next slide for explanation of Reposition



- From the Flight Menu, select Reposition and then Apply
- The flight strip or icon will display “Repo” in place of the gate
- The strip or icon may be placed anywhere on the map
- Deselect “Reposition” on flight menu to revert to assigned gate
- When moving a flight back to the gate, it is preferred to use the “Return to Gate” option in the Flight Menu rather than “Reposition”

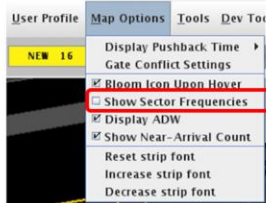


If “Reposition” has been selected and applied using the flight menu, then “Repo” is written in place of the gate on the flight strip or icon, and may be placed anywhere on the map.

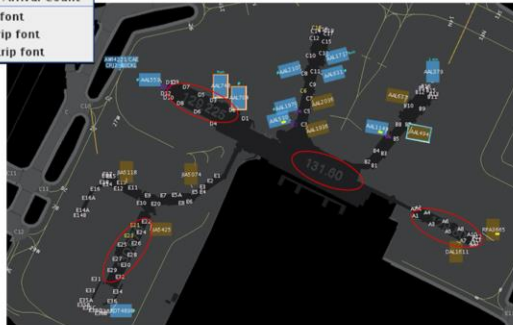
## **New Map Options**

Show Sector Frequencies  
&  
Display (Arrival Departure Window) ADW

## Show Sector Frequencies Map Option

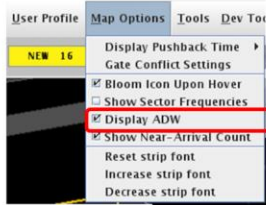


- Select Show Sector Frequencies in Map Options to display frequencies on the RTC display

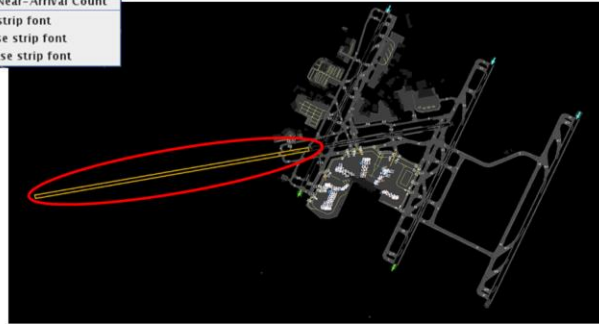


New options have been added to Map Options Menu.

- Select “Show Sector Frequencies” to display the sector frequencies in grey on the concourse buildings on the map.



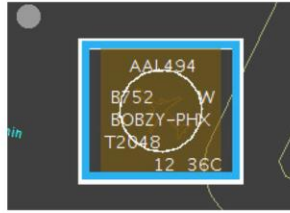
- Deselect "Display ADW" to remove (Arrival Departure Window) ADW marker



- Display ADW has also been added to Map Options, deselect this to remove the yellow "Arrival Departure Window" (ADW) marker on the map display

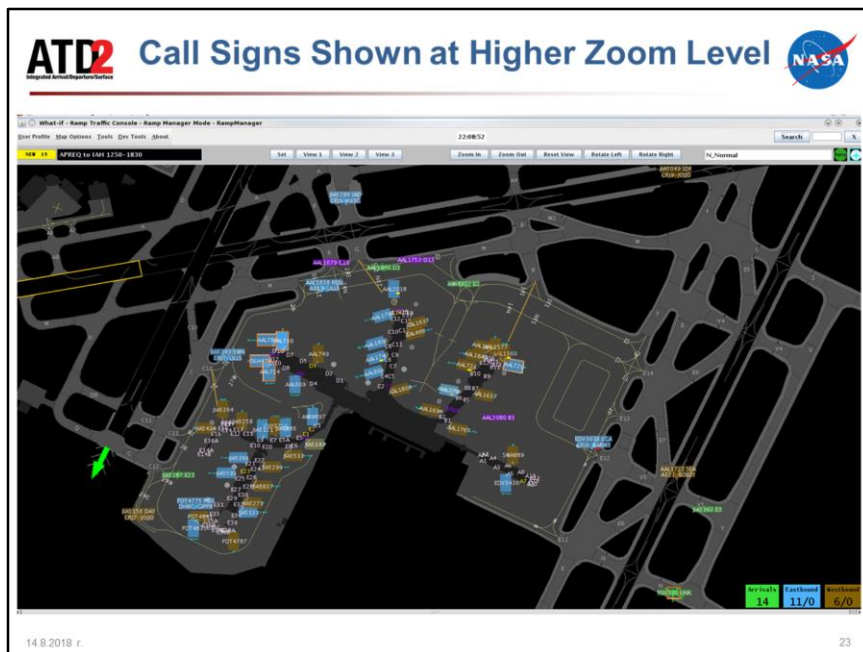
## Display of 757 Aircraft Type

Blue and white border displayed on 757 aircraft type



The 757 aircraft type display designator on the map is a blue and white border. This is similar to the Heavy type having the orange and white border

## Call Signs Shown at Higher Zoom Level



- Call signs now display one higher zoom level than on the previous release of the RTC/RMTC



## Extra Slides



- Open menu with right click on map to create a target based on flights in the system in next 24 hours
- Enter Search criteria: \*not all criteria are required
  - Choose from All, Departure or Arrival flights
  - Flight ID
  - Tail number
  - Origination airport
  - Destination airport
- Select from search results to create the target
- Choose placement of flight
  - Mouse Click location
  - Gate
  - Hardstand
- Select “Create Target”
  - If the flight is already represented on the display, it will bloom to alert to the current location of the flight along with a prompt that the flight exists

## ATD-2 Release 3.0.8 Updates

January 8, 2018

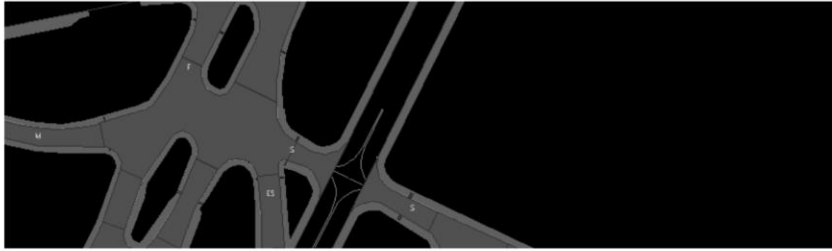


- Updates to both RTC and STBO Client
- RTC Updates
- Tactical Scheduler Updates
- STBO Client Updates

## RTC and STBO Client Updates

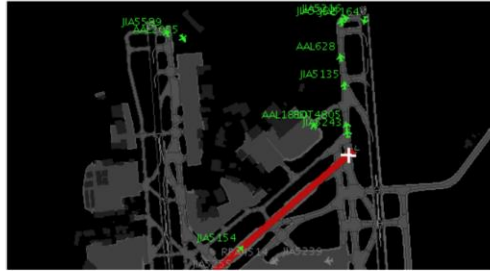


If an airport configuration is added as a future configuration change and then removed before it takes effect, the notification will now show with "Cancelled" in the details and have its end time updated to be the time of the cancellation.



For an APREQ, MIT, or fix closure removed from OIS page before its expiration time and is identified as removed in STBO, the corresponding notification in the notification window in STBO and RTC will be highlighted in blue and CXL will be appended to notification in the banner details. The same behavior will happen for ground stops that have a PURGED message received from TFM before the expiration time.

STBO Client:



RTC:




Red color used on the map to signify runway closures has been darkened.



## RTC Updates



- Undo- pushback behavior improved
- Relocating strip improved
- Runway count boxes
- Improved bloom when zoomed out
- Hardstand: Reduction of false detection
- Improvements made to the display of flights (tips of B, C, and E)
  
- Return to gate moved to flight status section
- Move To Gate handling was improved
- Reposition handling was improved
  
- Search result improved
- Suspended flights by automation
- Suspended flights by Controller
- Arrivals: no longer able to suspend

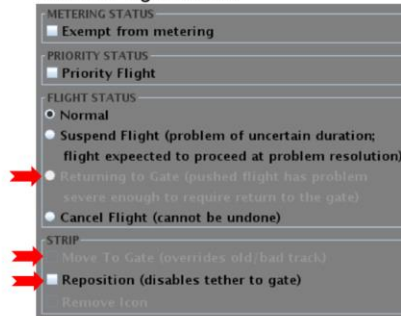
- Corrected behavior to allow a pushback to be undone
- Relocating strips: When the strip is still at the gate, i.e. not pushed back yet, if the controller drags the strip, the strip location change will not be reflected on other sector displays
- Runway Count boxes: blue on left, brown on right 
- Improved "bloom" when the map is zoomed out
- Reduction of false detection of flights entering the hardstand
- Improvements made to the display of flights at the tips of B, C, and E concourses that showed flights as pushed when they weren't.

- **Corrected behavior** to allow a pushback to be undone: Undo Pushback wasn't always working for all flight conditions. We think we have captured them all now so that it *should* always work. Thank the controllers for their field reports, because it is these reports that help us find these kinds of problems.
- **Relocating Strips:** When the strip is still at the gate, i.e. not pushed back yet: if the controller drags the strip, the location change will stay local to his/her display. The strip location change will not be reflected on other sector displays
- **Runway Count boxes:** This has been fixed to put blue back on the left and brown on the right.
- **Improved "bloom"** when the map is zoomed out: Previously if the user was zoomed out far enough that only the disk was shown, then mousing over the disk didn't always bloom it, i.e. it was hard to bloom zoomed-out disks. The behavior to bloom moused-over disks was correctly to bloom properly
- **Hardstand Detection:** Reduction of false detection of flights entering the hardstand, caused by jumpy tracks near the edge of the hardstand. I.e., the controllers should see fewer yellow hardstand boxes falsely assigned when the flight isn't actually in the hardstand
- **Improvements made to the display** of flights at the tips of B, C, and E concourses that showed flights as pushed when they weren't.

- the Return To Gate case has been moved up in to the Flight Status section of the flight menu.
- Move To Gate handling was improved
- Reposition handling was improved.



Detail of flight menu:



- **Return To Gate** case has been moved up in to the FLIGHT STATUS section. \*The Return to Gate case is intended to be used when the flight has left the gate but had some sort of mechanical problem that requires a return to the gate. The Return To Gate clears Actual OUT and other events; It is NOT supposed to be used to correct erroneous pushbacks. Return To Gate was removed from the right mouse menu so that users aren't selecting it by mistake when they really want to use Move To Gate
- **Move To Gate handling** was improved: The Move To Gate case is intended to be used when tracks cause the flight to display away from the gate before it has pushed back (departures) or when it has already pulled in to the gate (arrivals). For departures in particular, the Move To Gate sets a flight back into the Scheduled state. So if STBO marks a flight as pushed due to bad tracks, the controller can use this to undo the pushback when the right mouse menu of "Undo Pushback" doesn't work. Once the controller has selected Move To Gate for a flight, "under the hood" the tracks are now ignored and the flight is forced to display at the gate. That means the controller needs to issue the Pushback or Proceed To Spot command to clear the forced display at the gate.
- **Reposition handling was improved:** The Reposition case is intended to be used when the flight should be relocated away from its gate, such as parking a flight in the hardstand to get it out of the way or moving a flight to maintenance.

- "Search" for a flight that exists in the system but currently is not displayed
  - Forces display of the strip or provide a notice as to why it can not be displayed
- Suspended (by automation) Flights:
  - Search to force display of flight
  - Suspend will be selected in flight menu
  - Select Normal to take the flight out of suspended state.
- Suspended Flights (not by automation): New behavior
  - if the controller selects Suspend, the flight will retain the same state information, but now it will be removed from the runway schedule.
- Arrivals can no longer be suspended



- **Search:** If "Search" for a flight and the flight exists in the system but currently is not displayed, previously the Search field stayed white indicating a flight was found but nothing happened since the strip is not displayed. The new behavior is to either, force display of the strip or provide a notification of why the strip can't be displayed. Note: We haven't been able to track down all cases when there is no response, so, please provide feedback in this case
- **\*Updates to Suspended Flights:** The controller won't be able to tell the difference between suspended by automation and suspended by controller; they will both be gray with the red Suspended title. If a flight is suspended by automation, it will disappear to reduce clutter; the controller will have to create it or search for it if they need to see it / interact with it. At that point, it will show with as gray with the red label. Once the automatically-suspended flight is created/searched for, it will not disappear again, so if they don't want to see it after all, they will have to use "Remove Icon"
- **Suspended Flight(by automation):** New behavior: as stated in the Search feature bullet item above, if the controller executes a Search for that flight, it should display. Also, if the controller opens the Flight Menu, suspend will be selected. The controller can click Normal to take the flight out of suspended state. Note that once the controller clicks Normal, the flight will always be

displayed; if the controller decides he doesn't want to see it any more, Choose Suspend (again) and then select Remove Icon

- **Suspended Flights (Not by automation):** Up until now, for a flight NOT suspended by automation, if the controller clicked Suspend in the Flight Menu, the flight would be set into the same suspended state as if it was suspended by automation.

\*New behavior: If the controller clicks Suspend, the flight will retain the same state information as it had before but now it will be removed from the runway schedule. \*So note that there is only one Suspend checkbox on the Flight Menu, but its behavior is different based on whether the original flight was suspended by automation vs suspended manually by a controller.

\*The Suspended case is intended to be used when there is a short-term delay of an uncertain duration where the flight will need to give up its current slot on the timeline but is expected to continue eventually. An example is a fuel spill. Once the flight is ready to continue, the controller should go back into the Flight Menu and click Normal.

## Tactical Scheduler Updates

## STBO Client Updates





- If an RTC controller drags a flight that has been put into the "reposition" state, the flight's position will be updated on the STBO Client map *if that target is displayed*.
- When the user manually enters an APREQ release time, the time must be within 2 hours of the "now" time.

Suspended by Automation:

What-If STBO All: Results: 976 at 18:27 GMT

Flight ID	Origin	Dest	AC Type	Rwy	RwyOpNec	Rwy Time	Flight Status	Gate	Gate Time	Spot
SR18011	CLT	UST	E145	E36R		E04/19:31	Scheduled_Out	UNK	E04/19:15	24
SWA1594	CLT	MDW	B738	E36C			Scheduled_Out	UNK		125
SWA252	CLT	DAL	B737	E36C			Scheduled_Out	A6		ESTR
AAL1489	CLT	EWR	B738				Suspended	UNK		
AAL1682	CLT	PWM	A319				Suspended	B8		BARN
AAL1719	BOS	CLT	A319				Suspended	B1		
AAL1735	BOS	CLT	A321				Suspended	D9		
AAL1756	CLT	BDL	A319				Suspended	UNK		BARN
AAL1762	PVD	CLT	A319				Suspended	C2		
AAL1801	CLT	PHL	A321				Suspended	C14		KILN

Suspended by RTC User:



Flight ID	Origin	Dest	Flight Status	Sched Suspended
RPA4705	PNS	CLT	Scheduled_In	
RPA4715	BNA	CLT	Scheduled_In	
RPA4746	CMH	CLT	Scheduled_In	
SR1181	UST	CLT	Scheduled_In	
SR18011	LWB	CLT	Scheduled_In	
SWA105	BNA	CLT	Scheduled_In	
SWA1508	MDW	CLT	Scheduled_In	
UAL1594	ORD	CLT	Scheduled_In	
AAL1151	CLT	IND	Scheduled_Out	
AAL1187	CLT	MIA	Scheduled_Out	Suspended
AAL1242	CLT	BOS	Scheduled_Out	

If a flight is suspended by automation, the Flight Status field will show Suspended. If a flight is suspended by a controller, the Flight Status field will show the same state the flight previously had but now the Sched Suspended field will show "Suspended".

## ATD-2 Release 3.1.0 Updates

February 12, 2018



- Tactical Scheduler Updates
- RTC/RMTC Updates
- STBO Client Updates



- **Tactical Scheduler Updates**
- RTC/RMTC Updates
- STBO Client Updates



- AMA taxing flights will have a higher order of scheduler order of consideration, basically highest among the departures. Previously controlled flight (flights with APREQ or EDCT) has the highest.
- Controlled (APREQ, EDCT or both) flights (with or without a controlled time) in the AMA will be treated in the first come first serve instead of highest order
- The new order of consideration is as follows: AMA taxi, APREQ, EDCT, Ramp taxi, Exempt, Ready, Planning, Uncertain

Previously controlled flight (flights with APREQ or EDCT) has the highest, which causes some of the late controlled flight with controlled time to drift to the bottom of the timeline. (become very unrealistic)

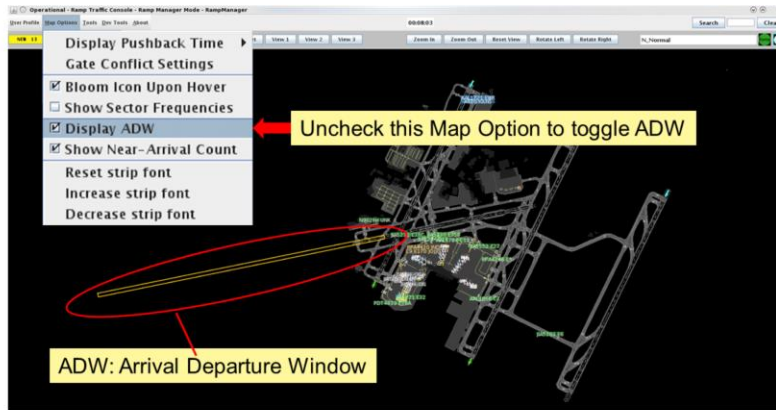
- Bugs related to flights scheduled to a departure fix closure were fixed. Earlier flights were scheduled about 2 hours out with a Dep fix closure, now they are removed from the scheduled. However a Flight with new Dep fix (CDR) that is open will show correctly on the STBO Client timeline.

Fixes a bug that when a departure fix is closed (with no CDR alternate specified) with no end-time, the affected flights get pushed back on the timeline by 2+ hours. They should get removed from the schedule entirely. Also fixed a bug that when a dep fix is closed (WITH a CDR alternate specified), with or without an end-time, the affected flights are still pushed back on the timeline (2+ hrs if no end-time or after the end-time if it is specified) even though everything else indicates that the flights are now going through the CDR alternate fix. The flights should stay in the same place on the schedule/timeline since they have a new fix that isn't closed

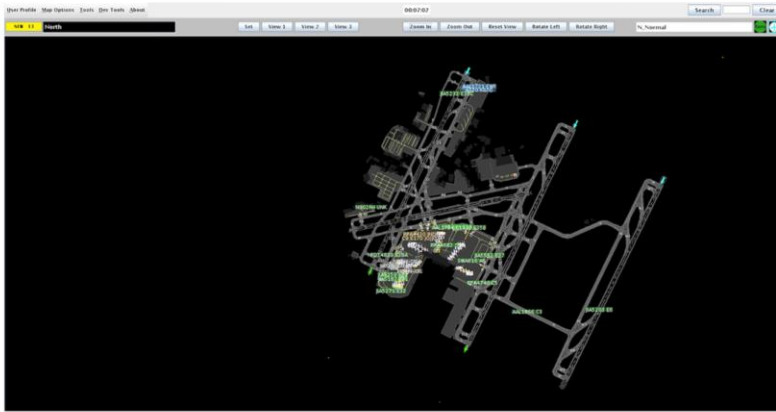


- Tactical Scheduler Updates
- **RTC/RMTC Updates**
- STBO Client Updates

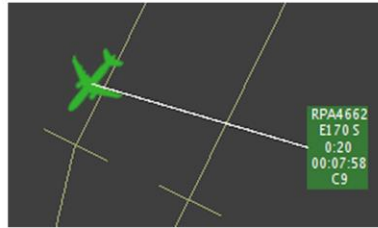
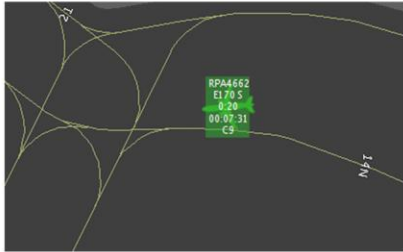




Toggle Display of ADW window on Map



- Left click on flight to select and then click and drag data block to separate it from the icon



Drag Data Blocks of Tracked Flights



- Tactical Scheduler Updates
- RTC/RMTC Updates
- **STBO Client Updates**

- Added the ability to swap the APREQ times of two flights:
  - in the same super stream class and
  - In the same APREQ mode (semi-automatic or automatic)
- <https://crtzdv.axshare.com>

A user viewing the Client in Observer mode has the capability to see the APREQ swap candidates for an APREQ flight.


When swapping, be sure to complete the swap procedures before clicking on other parts of the display (e.g., map, flights table, etc.)

- Added the super stream data to the Flights Table.

What-if STBO All; Results: 1091 at 16:06 GMT

Search  Clear

Flight ID	Origin	Dest	Super Stre...	AC Type	Rwy	RwyOpNec	Rwy Time	Flight Status	Gate	Gate Time
N2288A	CLT	TEB	TEB	G280	E18L			Scheduled_Out	UNK	
N6528A	CLT	TEB	TEB	GLF6	E18L		E12/16:17	Scheduled_Out	UNK	E12/16:05
AAL1928	CLT	PVD	PVD_ZNY	A320	E18L		E12/17:05	Scheduled_Out	C6	E12/16:50
JIAS528	CLT	PIT	PIT	CRJ9	18C		12/15:38	Departed	E31	12/15:02
JIAS623	CLT	PIT	PIT	CRJ9	E18C		E12/16:58	Scheduled_Out	E27	E12/16:40
AAL1979	CLT	PIT	PIT	A319	18C		12/13:20	Departed	C11	12/13:00
PDT9950	CLT	PHL	PHL_TER	E145	18L		12/13:55	Departed	E4	12/13:42
FFT1688	CLT	PHL	PHL_TER	A319	18L		12/15:28	Departed	A8	12/15:08
AAL657	CLT	PHL	PHL_TER	A319	18L		12/13:03	Departed	C4	12/12:49
AAL1839	CLT	PHL	PHL_TER	A321	18L		12/13:04	Departed	C6	12/14:53
N73DB	CLT	PHL	PHL_TER	E50P	18L		12/13:29	Departed	UNK	12/13:12
AAL648	CLT	PHL	PHL_TER	A321	E18L		E12/16:25	Scheduled_Out	C10	E12/16:16
AAL1931	CLT	MDT	OTHR	A319	E18C		E12/16:33	Scheduled_Out	C18	E12/16:18
JIAS360	CLT	YYZ	OTHR	CRJ9	18C		12/14:47	Departed	F11	12/14:35

**ATD2** **Departure Delays Table** 

---

**Delays**
Time and Runway

All departures in AMA  
 Time Interval: Current time +  minutes
 

 18C/36C  18L/36R  
 18R/36L  23/5

18L/36R			
Flight ID	AMA Time	Dep Fix	Dest
AAL879	00:27:44	KWEH	PLS
EW3759	00:18:03	BOBY	SGF
JAS545	00:02:38	BOBY	ATL
AAL859	00:27:03	KWEH	NAS
JAS305	00:16:30	BOBY	TYS
JAS530	00:22:53	ESTR	JAN
N602CV	00:15:17	KCGS	BCT
AAL486	00:07:52	KWEH	SJH
AAL605	00:15:23	KCON	FLL
AAL2046	00:35:12	BEAV	RSW
DAL2609	00:09:41	BOBY	ATL
JAS445	00:16:56	KRTR	ROA

18C/36C			
Flight ID	AMA Time	Dep Fix	Dest

Departures Count: **12**

Departures + Arrivals Count: **12**

Departures Count: **0**

Departures + Arrivals Count: **0**

**AMA Time Legend (mins of delay)**

No Delay	w/13	15	30	45	60	75	90	105	120	135	150	165	180+
----------	------	----	----	----	----	----	----	-----	-----	-----	-----	-----	------

14-08-2018
13

An ARMT-like departure delay table was added to the Client via the Delays button on the main toolbar. Entries in the table are color-coded based on amount of delay and whether the flight is subject to a TMI. The user can sort columns by clicking the column header.



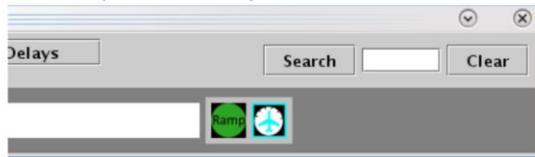
- Updated the Client's early/late/on-time indicator on the timeline to use TTOT (instead of UTOT) to compare with Controlled time.
- The early/late indicator on the controlled flight will be comparing Controlled time with TTOT.
- The arrivals are separate all way into the future, you should see far less arrival on top of each other. We still have some cases we are not covered.



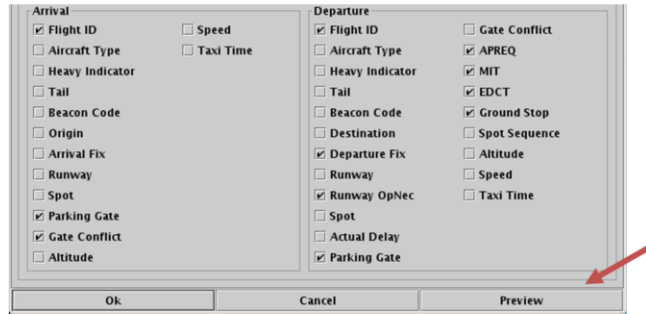
- The ability to change a flight's gate on the Client was removed.

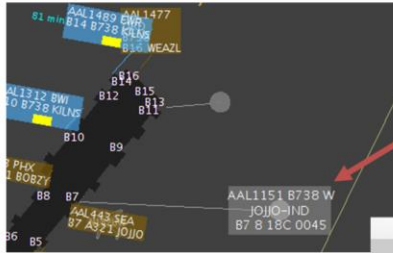


- Improved Search user interface (replace X with Clear plus subtle improvements)



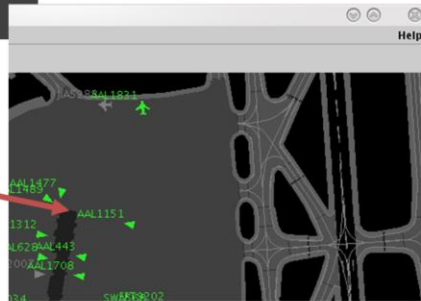
- In the Timeline and Map Settings, added a "Preview" button
  - Settings changes can be previewed directly on the interface without actually applying them





Flight created on RTC

Created flight will display on STBO Client if "Show Flights at Gate" is enabled in map datablock settings



If the target for a flight is created on RTC, that target will also be displayed on the Client, subject to the Client's map setting for Show Flights At Gate.



- Panning on the STBO Client map is now uses left-click and drag, instead of right-click and drag.
  - Panning functions now match on STBO Client and RTC

- APREQ flights with no acknowledged release time and tracked by surface surveillance has a box around map datablock



- Single flight exclusions from a Ground Stop TMI and Departure Fix Closure TMI now available

What-if STBO All; Results: 1190 at 18:20 GMT

Search  Clear

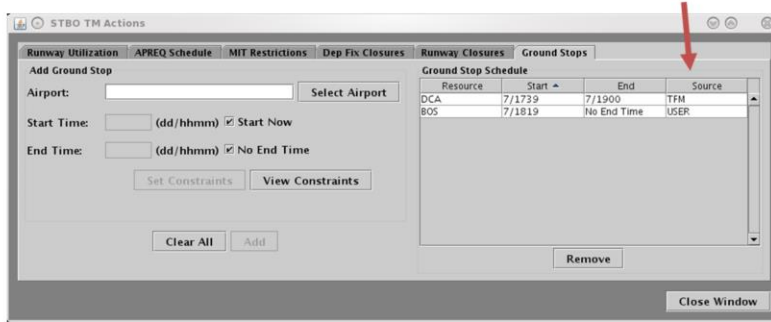
Flight ID	Origin	Dest	AC Type	Rwy	RwyOpNec	RwyTime	Flight Status	Gate	Gate Time	Spot	
AAL1694	CLT	BNA	A319	E18C			Scheduled_Out	C18		8W	BOB2
AAL1867	CLT	BNA	A319	E18C			Scheduled_Out	B1		8W	BOB2
JBU1446	CLT	BOS	E190	E18L			Scheduled_Out	UNK		26S	BARH
AAL1982	CLT	BOS	A319	18L		07/15:16	Departed	C18	07/15:05	26S	BARH
AAL1530	CLT	BOS	R73R	F18I			Scheduled_Out	B15		26S	BARH
AAL1783	CLT	BOS	AAL1530				Scheduled_Out	C13		26S	BARH
AAL400	CLT	BOS					Scheduled_Out	C15		26S	BARH
AAL1805	CLT	BOS			07/16:38		Departed	C13	07/16:32	26S	BARH
AAL1806	CLT	BOS					Scheduled_Out	C12		26S	BARH
AAL1242	CLT	BOS					Scheduled_Out	B14		26S	BARH
ASQ2843	CLT	BTR			07/15:30		Departed	E7	07/14:59	10W	BOB2
JIAS074	CLT	BTR					Scheduled_Out	E38B		8W	ESTR
ASQ2846	CLT	BTR	CRJ7	E18C			Scheduled_Out	ESA		8W	ESTR
JAC624	CLT	BTV	CRJ7	E18C			Scheduled_Out	E22		8W	ESTR

Context menu for AAL1530:

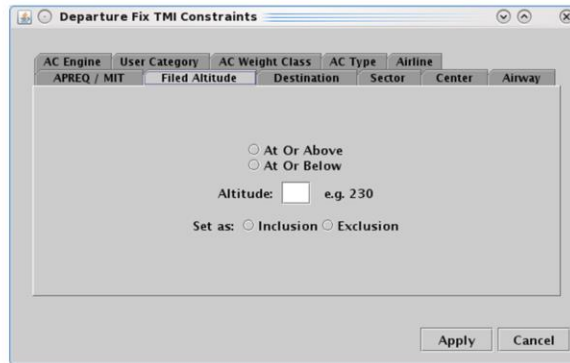
- Exclude from GS
- Change Runway
- Change Departure Fix
- Schedule Config Change
- Properties

Allows the specification of single flight exclusions from a Ground Stop TMI and Departure Fix Closure TMI from the STBO Client interface.

- Added the source for MITs, Ground Stops, and Departure Fix Closures to the TM Actions panel and the Notification Table's Details.



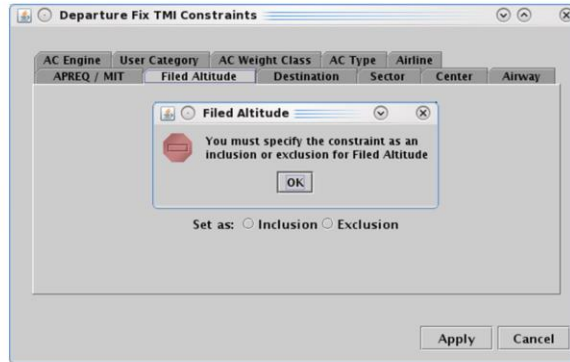
- Added the ability to select either inclusion or exclusion action types when applying constraints to a TMI



Added the ability to select either inclusion or exclusion action types when applying constraints to a TMI via the TM Action panel. Also, greater error handling was added so that the user can't navigate away from a tab if the inclusion/exclusion radio was unset or if the TMI constraint was not added or cleared.

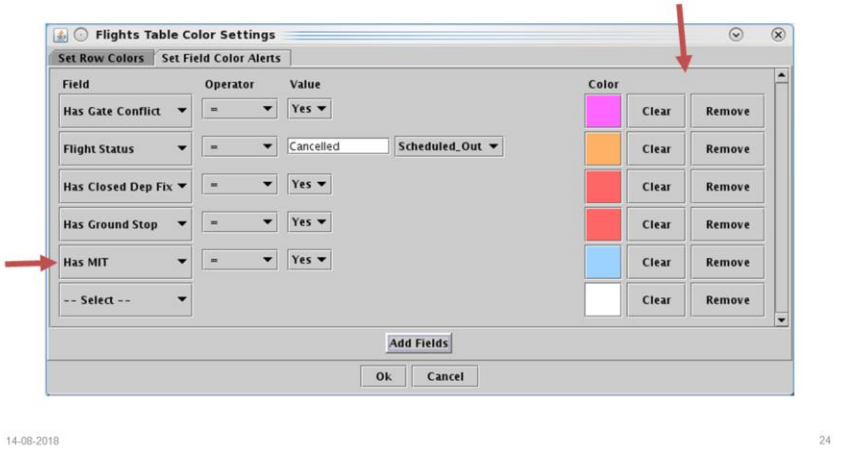


- Greater error handling was added



Added the ability to select either inclusion or exclusion action types when applying constraints to a TMI via the TM Action panel. Also, greater error handling was added so that the user can't navigate away from a tab if the inclusion/exclusion radio was unset or if the TMI constraint was not added or cleared.

- Added ability to clear and remove a color alert
- Added color field alerting for MIT



In the Flights Table Color Alerts settings, the ability to clear and remove a color alert was added.

Added color field alerting for MIT in the Flights table.

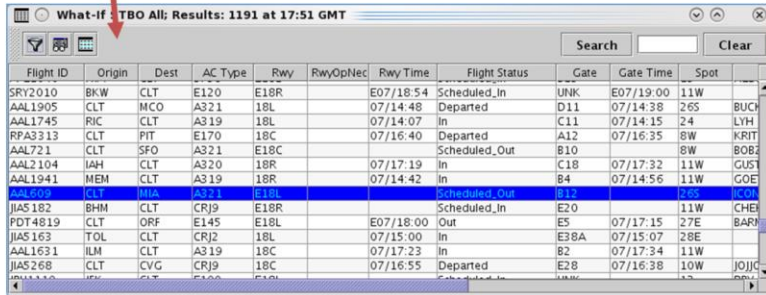
- Allows the ability to filter by ZULU time in addition to the current relative time
- Added ability to remove a specific row and the ability to clear boolean and time fields



In the Flight Table filter, allows the ability to filter by ZULU time in addition to the current relative time.

In the Flights Table Filter settings, the ability to remove a specific row was added and the ability to clear boolean and time fields was added.

- Removed Close button from Flights Table



What-if : TBO All; Results: 1191 at 17:51 GMT

Flight ID	Origin	Dest	AC Type	Rwy	RwyOpNec	Rwy Time	Flight Status	Gate	Gate Time	Spot
SRY2010	BKW	CLT	E120	E18R		E07/18:54	Scheduled_In	UNK	E07/19:00	11W
AAL1905	CLT	MCO	A321	18L		07/14:48	Departed	D11	07/14:38	265
AAL1745	RIC	CLT	A319	18L		07/14:07	In	C11	07/14:15	24
RFA3313	CLT	PIT	E170	18C		07/16:40	Departed	A12	07/16:35	8W
AAL721	CLT	SFO	A321	E18C			Scheduled_Out	B10		8W
AAL2104	IAH	CLT	A320	18R		07/17:19	In	C18	07/17:32	11W
AAL1941	MEM	CLT	A319	18R		07/14:42	In	B4	07/14:56	11W
AAL609	CLT	MIA	A321	E18L			Scheduled_Out	B12		265
JIA5182	BHM	CLT	CRJ9	E18R			Scheduled_In	E20		11W
PDT4819	CLT	ORF	E145	E18L		E07/18:00	Out	E5	07/17:15	27E
JIA5163	TOL	CLT	CRJ2	18L		07/15:00	In	E38A	07/15:07	28E
AAL1631	ILM	CLT	A319	18C		07/17:23	In	B2	07/17:34	11W
JIA5268	CLT	CVG	CRJ9	18C		07/16:55	Departed	E28	07/16:38	10W

Removed Close button from Flights Table

- For departure fix closures, in the Flights Table:
  - the departure fix field only has the "old" fix it
  - "Awaiting CDR" is renamed to "Swap" and contains the CDR fix.

What-If STBO All; Results: 1094 at 16:09 GMT

Flight Status	Gate	Gate Time	Spot	Dep Fix	Swap	Long On B...	APREQ	EDCT	Route of Flight
led_Out	E31	E12/16:30	29	JOJO	KILNS				KCLT JOJO3 CUBIM J...
led_Out	C3	E12/16:22	265	JOJO	KILNS				KCLT JOJO3 DOOGE...
led_Out	A5	E12/16:13	265	JOJO	KILNS				KCLT JOJO3 CUBIM....
led_Out	E36	E12/16:43	29	JOJO	KILNS				KCLT JOJO3 CUBIM....
led_Out	E1	E12/16:08	27E	JOJO	KILNS				KCLT JOJO3 DOOGE...
led_In	B11		13	BIGGY					KLGA BIGGY J75 GV...
ed	E28	12/12:48	29	BUCKL		00:09:03			KCLT KWEEB3 UNJA...
led_In	A11		11W	LCH					KIAH MMUG54 LCH L...
led_Out	B12	E12/17:03	265	ICONS					KCLT ICONS3 NOOKS...
led_Out	D10	12/14:53	27E	ARKES		00:05:10			KFL / 2855N/0811...
ed	E9		8W	KRTR					KCLT KRTR4 FILDS L...
led_Out	C8	12/12:39	265	CANTS		00:09:02			KCLT KILNS3 AUDII F...
led_Out	UNK		265	KILNS					
led_Out	B11	12/15:28	24	BIGGY		00:11:01			KFEWR / DCA244029

In the Flights Table, right now the flights table has a field "Awaiting CDR". If a fix has a CDR, the flights table currently has "old fix -> cdr fix" in the Departure Fix column and "Awaiting CDR" if the CDR fix has not been set.

**Release 3.1.1**  
**New Features**

March 8, 2018



- Adaptation
- Surface Metering Display
- RTC
- Scheduler
- STBO
- DASH updates



- **Adaptation**
- Surface Metering Display
- RTC
- Scheduler
- STBO
- DASH updates





- Airport surface route updates around A-con
- Runway detection polygons trimmed for North flow operations to reduce false detections
- Departure runway decision tree expanded to include aircraft type

- Departure runway decision tree. From user feedback. Runway for BUCKL flights is determined using aircraft type



This is what we're modeling

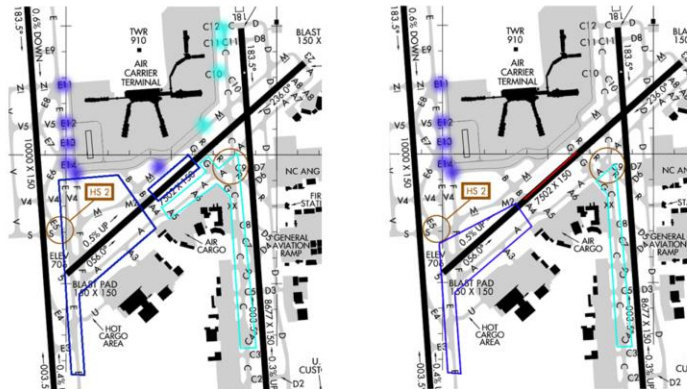
AMA/ramp boundary shifted (orange lines)

RTC flights will show spots 8E (from gates A1-A9) or 8S (all other gates)

Should operate as usual

Expecting release (March 12) to coincide with the construction, otherwise we'll have to patch it to reflect actual operations. Please let us know if the schedule changes.

- Removed rwy 36R detection along twy C @ ramp boundary
- Removed rwy 36C detection at twy M @ ramp boundary
- Reduced size of detection on AMA
  - Departure to LGA with APREQ might taxi via G.23.A4.A to wait



Feedback from the field

Our runway detection logic was intended to identify runway changes early and update accordingly, to provide the best predictions and schedule possible.

However, there have been reports that we were changing the runway assignment when the controller did not intend to. For example, in North Flow, a La Guardia departure with an APREQ may be taxied on Gulf, runway 23, Alpha 4, then Alpha to wait, before continuing on to Gulf, Charlie, and runway 36R.

When it entered the dark blue rectangle on runway 23, our logic would assume it's going to 36C. And then we would update the runway and change the icon color. Then, when it got into the light blue polygon on Alpha, our logic would switch the runway assignment back to 36R and change the color again. However, you guys indicated that you'd rather see the aircraft icon color stay blue instead of turn brown, to make it easier for you to identify that it's going in the "wrong" direction.

So, to that end, we've cut back on our detection zones – we shrunk the polygons on the movement area, and we also removed some of the capture zones (the fuzzy dots)

that kicked in when aircraft transitioned from the ramp to the movement area.



- Adaptation
- **Surface Metering Display**
- RTC
- Scheduler
- STBO
- DASH updates

Surface Metering Display Configuration: North Scenario: N Normal Time: 2023-02-26 12:07:13 Excess Queue Time Feedback

**Airport**

Parameter	Current Value	New Value
Enable Metering:	TIME_BASED_METERING	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
<a href="#">Set New Parameters</a>   <a href="#">Clear All Parameters</a>		

**S**

Parameter	Current Value	New Value
Upper Threshold:	12 min	- min
Target Excess Queue Time:	10 min	- min
Lower Threshold:	7 min	- min
<a href="#">Set New Parameters</a>   <a href="#">Clear All Parameters</a>		

**1RL**

Parameter	Current Value	New Value
Upper Threshold:	12 min	- min
Target Excess Queue Time:	10 min	- min
Lower Threshold:	7 min	- min
<a href="#">Set New Parameters</a>   <a href="#">Clear All Parameters</a>		

**1BC**

Parameter	Current Value	New Value
Upper Threshold:	12 min	- min
Target Excess Queue Time:	10 min	- min
Lower Threshold:	7 min	- min
<a href="#">Set New Parameters</a>   <a href="#">Clear All Parameters</a>		

Scroll  
Down to  
see all  
runways

Click  
here to  
go to  
graphs

- Scroll down to see all runways to set or clear parameters.
- Click on “Excess Queue Time” to go back to the graphs page



## Surface Metering Display (Set Parameters continued)



23		
Parameter	Current Value	New Value
Upper Threshold:	12 min	<input type="text"/> : min
Target Excess Queue Time:	10 min	<input type="text"/> : min
Lower Threshold:	7 min	<input type="text"/> : min
<input type="button" value="Set New Parameters"/> <input type="button" value="Clear All Parameters"/>		

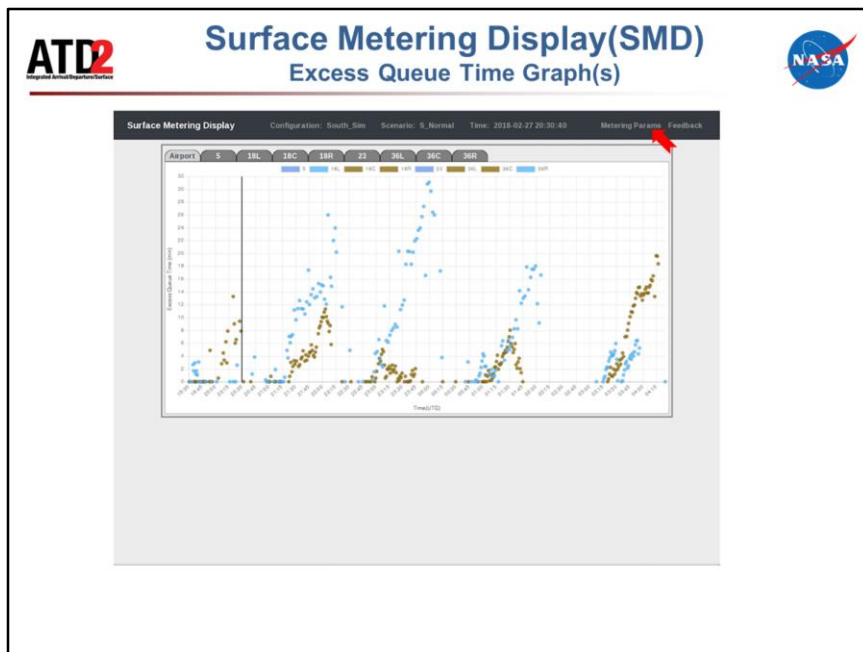
36L		
Parameter	Current Value	New Value
Upper Threshold:	12 min	<input type="text"/> : min
Target Excess Queue Time:	10 min	<input type="text"/> : min
Lower Threshold:	7 min	<input type="text"/> : min
<input type="button" value="Set New Parameters"/> <input type="button" value="Clear All Parameters"/>		

36C		
Parameter	Current Value	New Value
Upper Threshold:	12 min	<input type="text"/> : min
Target Excess Queue Time:	10 min	<input type="text"/> : min
Lower Threshold:	7 min	<input type="text"/> : min
<input type="button" value="Set New Parameters"/> <input type="button" value="Clear All Parameters"/>		

36R		
Parameter	Current Value	New Value
Upper Threshold:	12 min	<input type="text"/> : min
Target Excess Queue Time:	10 min	<input type="text"/> : min
Lower Threshold:	7 min	<input type="text"/> : min
<input type="button" value="Set New Parameters"/> <input type="button" value="Clear All Parameters"/>		



Transferred the setting of metering mode to Surface Metering Display (SMD).

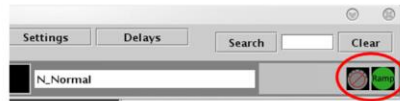
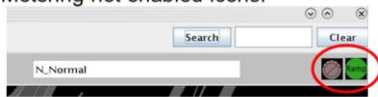
- Web based
- Opens to this Excess Queue Time Graph, click tabs along top to view graph for each resource (runway)
- Click Metering Parameters on upper right side to open the parameters page to set parameters for each resource (runway)



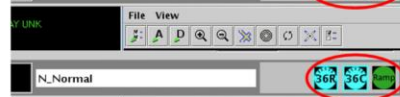
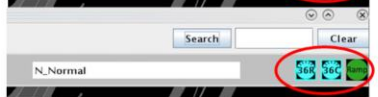
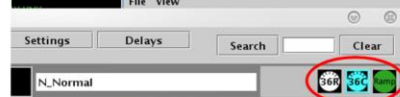
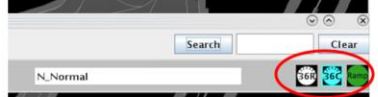
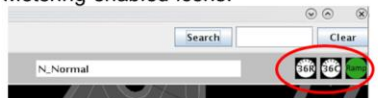
## RTC

## STBO

Metering not enabled icons:



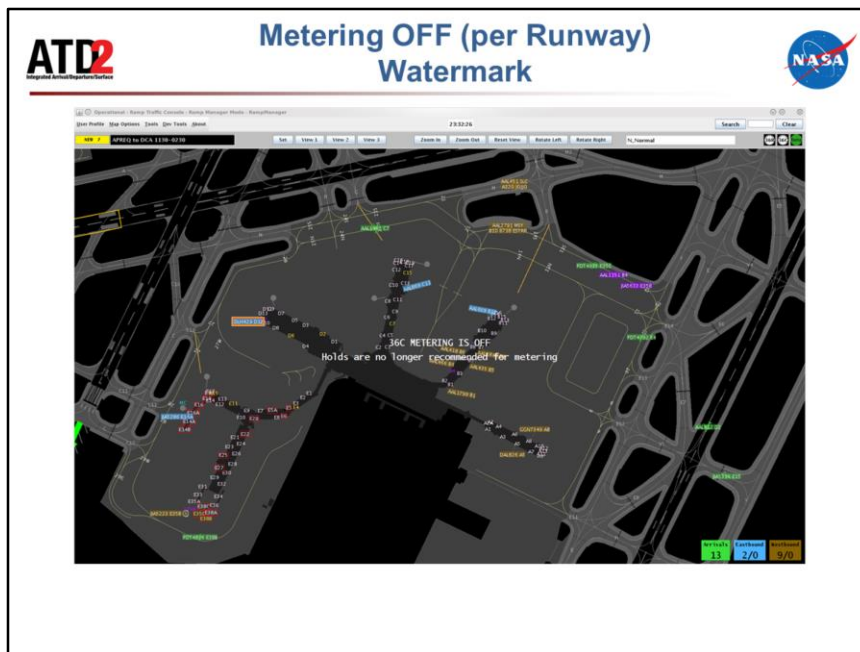
Metering enabled icons:



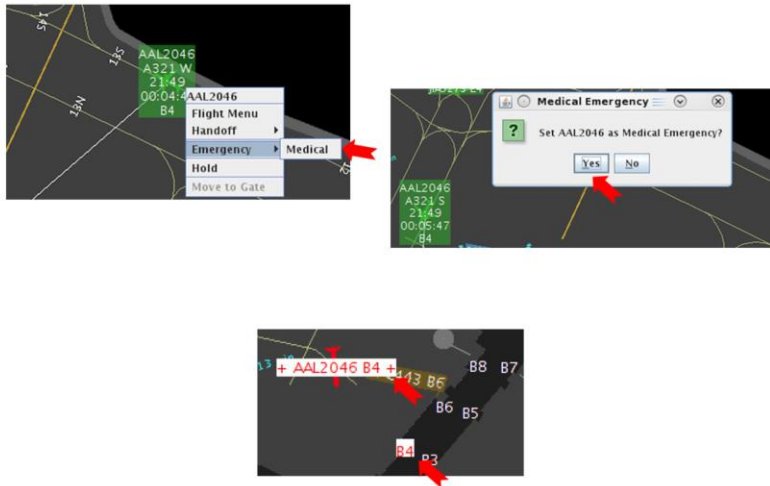
- New metering mode icons: metering by runway displayed on RTC and STBO
- Top of slide shows the icon for metering not enabled
- Below are the icons on RTC and STBO for metering enabled
  - Black and white icon for each runway indicating no metering
  - Black and cyan icon for each runway indicating metering is currently ongoing for that runway



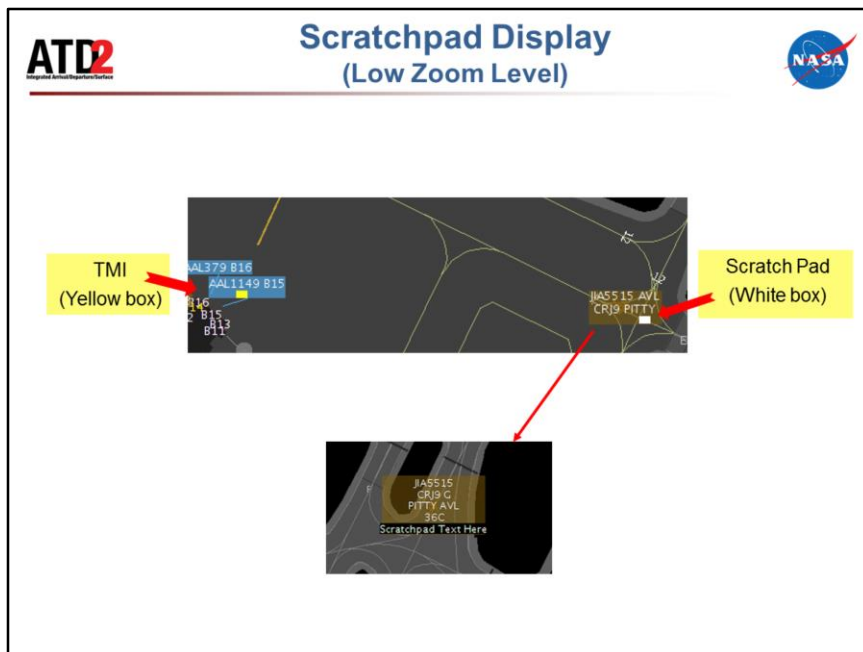
- Adaptation
- Surface Metering Display
- **RTC**
- Scheduler
- STBO
- DASH updates



- This “alert will appear on the display to make controllers aware that metering is now off for a runway. The alert will fade away after five seconds, or if the controller clicks anywhere on their display.
- This was implemented to provide situation awareness that flights that were holding for metering, no longer need to hold for metering.
- \*\*Also it is important to note that the flights that had been held for metering will at this point look like any other held flight with a red border and count up timer indicating the duration of the hold thus far. These flights may be release as soon as is operationally possible, taking safety and all other operational concerns into account.

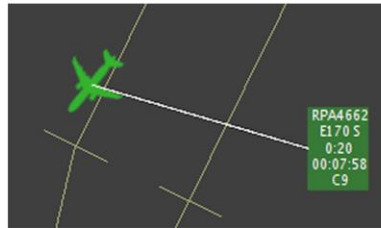
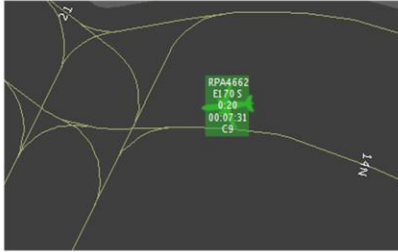


1. Right click on a flight to open menu, select Emergency, and then Medical
2. Select Yes on Confirmation prompt to Apply the Medical Emergency status
3. Flight and Gate now marked as Medical Emergency



- White box is displayed to indicate the presence of scratchpad text entry on a flight when zoomed out
- Similar to yellow box to indicate TMI present when zoomed out
- Select flight of interest or increase zoom to display the entire scratchpad entry

Left Click on flight to select and then click and drag data block to separate it from the icon



## ATD2 Indications on Gate for Push 10 and Hold



Bug fix to mention before moving onto the Scheduler slide:

- Fixed MC showing on flights past the spot on RTC



- Adaptation
- Surface Metering Display
- RTC
- **Scheduler**
- STBO
- DASH updates





- Pushback duration times updated based on data from the field
- Added metering parameters to control the size of the OUT queue
- Meter flights on a per-runway bases



- Adaptation
- Surface Metering Display
- RTC
- Scheduler
- **STBO**
- DASH updates



- Right click on a flight on timeline to select medical emergency
- Select “Yes” on the Confirmation Prompt
- Flight now displayed in red on timeline and red in flights table as well

Operational STBO Toolbar

TM Actions Create Show Window Settings Delays Search  Clear

Create Map

Create Table Flights Table

Create Timeline+ Aircraft Table

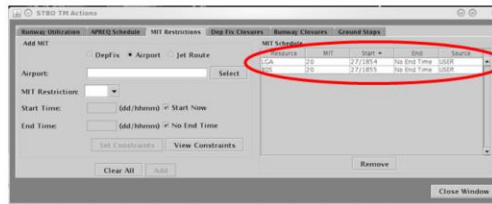
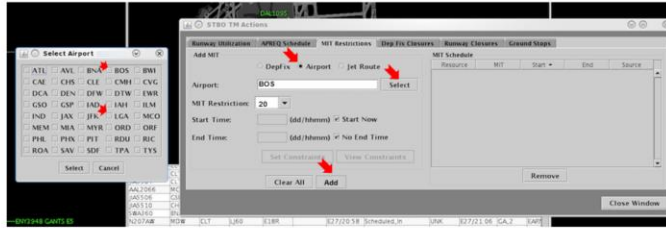
Departure Fix Status Table

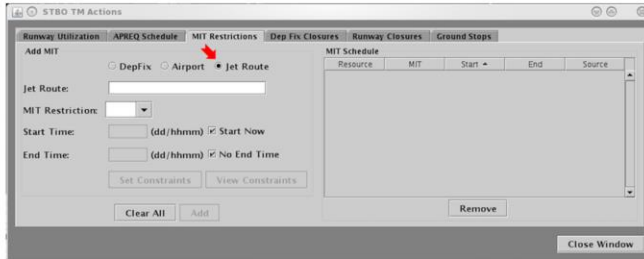
Operational STBO Departure fix status window - 10:57 GMT

	ANDYS	BARMY	BEAVY	BOBZY	BUCKL	CEGAL	DEBIE	ESTRR	FLYYN	GANTS	GIPPR	HAMLN	HARAY	ICONS	JO
MIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fix Status	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Count	0	1	1	3	0	0	0	0	0	1	0	0	0	3	
Avg Dly	0	0	13	0	0	0	0	0	0	4	0	0	0	2	
Max Dly	0	0	13	1	0	0	0	0	0	4	0	0	0	6	
0-15 min		N628GB	N28R	AAL1698 AAL1708						N345DM				AAL860 SRY9011 N16CS	JIAS
16-30 min				N750JT											
31-45 min		JIA5417	RPA4662	JIA5037 JIA5390					SRY2120					AAL1784	
46-60 min		AAL1530		AAL1769 JIA5178 RPA4463		PDT4915	PDT4822							AAL581 AAL1760 AAL1399	JIAS

There is an extra feature: if you going into the settings and set the time interval to display flights for X amount of time (by default it's set to 0), then it will display a list of flights that are projected to depart the runway in the next X minutes and cross over those fixes. There is a bug with this that's known. For some reason, the list redraws itself every 2 seconds and when it redraws, it flashes.

# MIT Enter by Destination





Bug Fix to cover before moving onto DASH section

- No H indication for 757s on STBO



- Adaptation
- Surface Metering Display
- RTC
- Scheduler
- STBO
- **DASH updates**



Browser window: Welcome! - Mozilla Firefox  
URL: localhost:8080/superset/welcome

Superset | Security | Manage | Sources | Slices | Dashboards | SQL Lab

### Dashboards

Dashboard	Creator	Modified
System Monitor	ATD2 Admin	24 days ago
Feedback Form	ATD2 Admin	24 days ago
Departure/Arrival Monitor	ATD2 Admin	24 days ago
Quick Look	ATD2 Admin	24 days ago
Taxi In/Out Monitor	ATD2 Admin	24 days ago

Previous | Next

- RTC
- STBO Observer
- Web-Based Dashboard**



Superset Security Storage Search Charts Dashboards SQL Lab

### System Monitor

Data Quality Report Last Update: 20:44

										
---	---	---	---	---	---	---	---	---	---	---

ATD<sup>2</sup> **CLT User Feedback Form**

Profile:

Subject:

Additional comments and/or log reports:

[dashboard] Quick Look - Mozilla Firefox

localhost:8080/superst/dashboard/2/?preselect\_filters={"104"%3A{"runway"%3

### APREQ

Dest	Start	End
LGA	2018-03-05T12:00:00	2018-03-06T03:00:00
EWR	2018-03-05T12:00:00	2018-03-06T02:30:00
DCA	2018-03-05T12:30:00	2018-03-06T03:00:00
JFK	2018-03-05T17:00:00	2018-03-06T03:00:00

### Ground Stops

No data.

### Taxi Status

Resource	Taxi In	Taxi Out
Full	7	2
Ramp	6	1
AMA	1	1

### MIT

No data.

### Arrival/Departure Rates

Category	Rate	Actual
Departure	64/h	46
Arrival	64/h	64

### Throughput

Resource	Arrival	Departure
18L/08R	26	21
18R/08L	37	0
18C/08C	1	24
23/5	0	0

### Predicted Excess Queue Time

Bin	Count
30	3
15	7

### Fix Closures

No data.

### Metering Summary

Parameter	Value
Start Time	"2018-03-05 08:03:04"
Program Type	"NO_METERING"
Average taxi out time for metered flights	N/A minutes



## General

- Removed setting of metering mode from RMTD (transferred to Surface Metering Display; SMD)
- Display metering mode icons in the status bar on a *per-runway* basis
- “Show Frequencies” and “Display ADW” controls added to Map Options
- Notification of airport configuration shown as “Cancelled” in Details if it was added as a future configuration change and then removed before it takes effect
- Readability, search, flight-specific handling, usability, and display improvements have been added to the RTC

## Flight Management

- New Create a Target Feature has been added

## Flight-specific

- Added ability to mark flights as medical emergencies
- When relocating strips, the strip location change will *no longer* be reflected on other sector displays (flights not tracked by surveillance)
- Data tags can now be moved independently from the icon when the flight is away from the gate (flights tracked by surveillance)
- Added a white rectangle that indicates the flight has a scratchpad entry to flight icon/disk when at low level of zoom (similar to the TMI yellow box)
- Updated Flight Menu for arrivals and departures, which includes a new Reposition option
- 757 aircraft type now displays with a blue border

## Flight Status (affects scheduler)

- Return to gate moved to flight status section of flight menu
- Unlike flights suspended by a user, flights suspended by automation are removed from the display to reduce clutter, but can be brought back by creating a target for that flight or searching for the flight and updating its state to “Normal” in the flight menu.
- Arrivals can no longer be suspended
- Pushbacks can now be undone
- Hardstand false detections have been reduced

## Tactical Scheduler Updates

- Updated order of consideration: AMA taxi, APREQ, EDCT, Ramp taxi, Exempt, Ready, Planning, Uncertain
- Controlled (APREQ, EDCT or both) flights in AMA will be treated in the first come first serve instead of highest order
- Pushback duration times updated based on data from the field
- Added metering parameters to control the size of the OUT queue
- Now metering flights on a per-runway basis

## SMD and WebDASH

- Both the Surface Metering Display (SMD) and WebDASH are completely new
- WebDASH replaces previous Dashboard



The following is intended to provide a list of features for the use of RTC during surface metering.

- When metering is enabled but not triggered, the white metering icon for each runway displays on the top right. However, the gate advisories will not appear until there is sufficient demand to the runway to trigger metering of flights.
- When metering is enabled and triggered, the cyan metering icon for the triggered runway displays on the top right and the gate advisories will appear.
- **After the pilot calls requesting pushback, look at the flight on RTC to see if there is an advisory.**
- Advisories, when they are present, will be either a hashtag, a PUSH, or an X-min hold time.
  - **#**: If there is a hashtag on the flight, when the pilot calls, click on the hashtag to get either a PUSH or an X-min hold time and then proceed as outlined above.
    - Clicking on the hashtag places that flight into the Ready State and consequently, the metering tool's calculation. The tool then considers that flight to be "READY".
  - **PUSH**: Pushback Approved, expect runway XX
  - **X min**: Hold X minutes for metering (place flight on hold, timer will count down)
    - **It will not negatively impact the scheduler to pushback a flight when its countdown timer is 2 minutes or less (count down timer changes to amber/yellow color when flight is put on hold).**

*\*It is important to not click on the hashtags before the flight has called for pushback.*

*\*It is important to only click on hashtags that have called to push in your own sector.*

*\*If a hashtag is clicked on by mistake, use the right click menu to "Undo Ready", this places the flight back into the "UNREADY" Group*

- Once a metered flight is put on hold, the hold timer will count down, then within 2 minutes of PUSH, the timer turns amber/yellow.
- When the countdown timer reaches zero, if the flight has not yet been pushed back, the timer will be replaced with a red blinking **PUSH** along with a 13-minute red countdown timer. This new countdown timer is a buffer to allow the flight to push back from the gate without being considered Uncertain and consequently removed from the Ready State and a **#** will be placed on the flight.
  - For flights with controlled times, when the countdown timer reaches zero, if the flight has not yet been pushed back, the timer will be replaced with a red blinking **PUSH** and a count-up timer. These flights are not part of metering, so no buffer time is needed.
- If more than 13 minutes of buffer time is needed, use the right click menu to add time (2, 5, or 10 minutes) to the hold. *Adding this time to the hold is important to "inform" the metering tool that more time is required to allow for the pushback of that flight.*
- On some occasions, there may be large hold times at the gate for some flights. These large hold times may be a result of the flight calling early and that there is already a lot of demand or there is expected to be a large queue at the runway.



### General

- Added the ability to mark flights as medical emergencies
- Removed the ability to change a flight's gate on the Client
- Improved Search function and interface
- In the Timeline and Map Settings, added a "Preview" button:
  - Settings changes can be previewed directly on the interface without actually applying them
- Display metering mode icons in the status bar on a *per-runway* basis

### Flights Table

- In the Flights Table Color Alerts settings:
  - Added the ability to clear and remove a color alert
  - Added color field alerting for MIT
- In the Flight Table Filter settings:
  - Added the ability to filter by ZULU time in addition to the current relative time
  - Added the ability to clear and remove a specific row
- Removed the "Close" button
- Added the super stream data
- In the Flights Table, "Awaiting CDR" field was removed. Now, if a flight has a departure fix closed, the new CDR fix (including "TBD") will be populated in the "Swap" column
- Suspended flights:
  - If a flight is suspended by automation, the Flight Status field will show "Suspended".
  - If a flight is suspended by a ramp controller, the Flight Status field will not change, but now the Sched Suspended field will show "Suspended".

### Map

- Panning on the STBO Client map now uses left-click and drag, instead of right-click and drag (STBO Client and RTC now match)
- If an RTC controller drags a repo flight, the flight's position will be updated on the STBO Client map (if that target is displayed)
- If the target for a flight is created on RTC, that target will also be displayed on the Client (subject to the Client's map setting for Show Flights At Gate)

### New TMU Features

- Added ARMT-like Taxi List (delays) table to the Client via the "Taxi List" button on the Toolbar
- Updated the arrival count in the Taxi List to count arrivals within the Terminal Airspace; the time interval is now only applied to departures
- Added a "Total Runway Demand" to the Taxi List displays
- Updated the Departure Fix Status Table via the "Create" → "Create Table" menu on the Toolbar:
  - Improved table's algorithm
  - Added flight list for each fix
  - Added ability to specify a relative time interval for the table via the table settings

## Timelines

- The early/late indicator on controlled flights now compares Controlled Takeoff Time (CTOT) with Target Takeoff Time (TTOT) instead of Undelayed Takeoff Time (UTOT)
- Departures are now displayed referencing the start of roll time instead of OFF time
- Arrivals are separated further into the future; fewer arrivals should be stacked
- Flights through a closed departure fix are now removed from the scheduler and Timeline.
  - However, a flight assigned a new, open dep fix (CDR) is scheduled and displayed on the timeline.

## TMI

- When manually entering an APREQ release time, the time must now be within 2 hours of the current time
- Added the ability to swap the APREQ times of two flights if both flights are:
  - in the same super stream class *and*
  - in the same APREQ mode (semi-automatic or automatic)
- Surveillance-tracked APREQ flights with no acknowledged release time have boxes around their map datablocks
- Single flight exclusions from a Ground Stop TMI and Departure Fix Closure TMI are now available
- Editing constraints was updated: Added the ability to select either inclusion or exclusion action types when applying constraints to a TMI via the TM Action panel.
- Expanded MIT Restrictions to allow restrictions based on destination or jet route

## Tactical Scheduler Updates:

- Updated order of consideration: AMA taxi, APREQ, EDCT, Ramp taxi, Exempt, Ready, Planning, Uncertain
- Controlled (APREQ, EDCT or both) flights in AMA will be treated in the first come first serve instead of highest order
- Pushback duration times updated based on data from the field
- Added metering parameters to control the size of the OUT queue
- Now metering flights on a per-runway basis

## SMD and WebDASH

- Both the Surface Metering Display (SMD) and WebDASH are completely new
- WebDASH has replaced the previous Dashboard

## Adaptation

- Airport surface route updates around A-con
- Departure runway decision tree expanded to include aircraft type
- Runway detection polygons trimmed for North flow operations to reduce false detections