Web-Based Surface Metering Display (SMD)
User Manual

Airspace Technology Demonstration 2 (ATD-2) Team

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Abstract

This document serves as a manual for the ATD-2 Web-Based Surface Metering Display (SMD) Version 4.6.0. It describes the elements of the full SMD interface and provides explanations for how to interact with the SMD. The document provides instructions for selecting the type of metering, entering specific metering parameters, and setting excess queue time variables. There are instructions for submitting system feedback and bug reports as well.

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1 Getting Started

The one-pixel wide green bar (Figure 1.1) provides access to a number of different system views. To get started, first make sure that “My Desktop” is displayed.

To access My Desktop:

Step 1: Hover over the green bar to populate the menu.

Step 2: Select “My Desktop” from the top of the menu.

Figure 1.1. Use the green bar tool to navigate to “My Desktop”.

To launch the Web-Based Surface Metering Display (SMD):

Step 1: Make sure both the Surface Trajectory Based Operations (STBO) Client and the Ramp Traffic Console/Ramp Manager Traffic Console (RTC/RMTC) are launched and running. If not, follow Steps 2-4 to select and load each of those programs, prior to following these steps for the SMD.

Step 2: Click on the NASA icon on the bottom left corner to launch the menu on the toolbar (Figure 1.2).

Step 3: Select the option for the Web-Based Surface Metering Display (SMD).

Step 4: Wait for the SMD to load. This may take a few minutes.

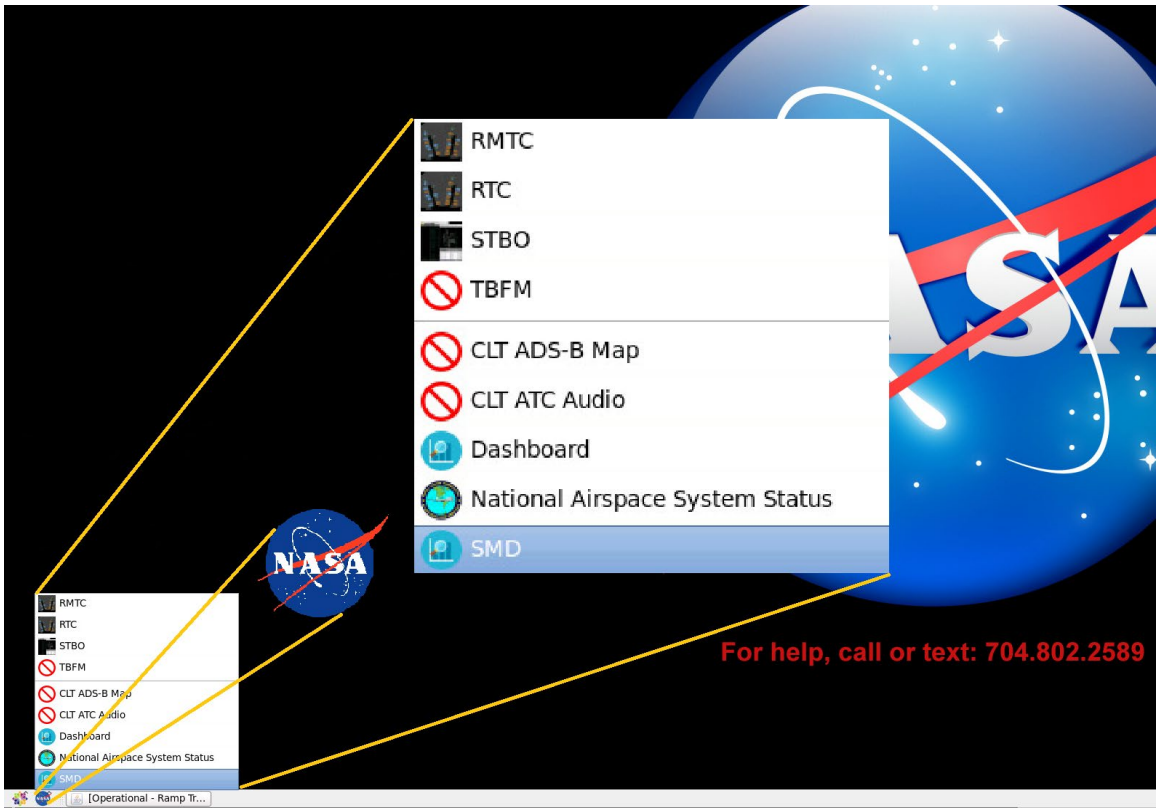


Figure 1.2. Loading Web-Based Surface Metering Display (SMD).

2 Web-Based Surface Metering Display (SMD) Interface

This section describes the ATD-2 surface metering capability and the elements of the SMD main interface. Currently, the strategic metering mode is active, rather than the previously used tactical mode. At this time, all NASA meatballs are set to point to the strategic metering links.

Several status icons and buttons are shown in the center of the toolbar along the top of the SMD window (Figure 2.1).

- **Configuration:** Specifies the airport configuration currently in use.
- **Scenario:** Identifies the current runway utilization.
- **Time:** displays the current date and time.
- **Page Toggle:** The SMD interface consists of two pages: The Metering Parameters page and the Excess Queue Time page. Use the page toggle to navigate between these two pages.
- **Feedback:** Use to access the User Feedback Form. This serves as an access point to submit immediate feedback on the SMD system, discussed further in Section 2.3.

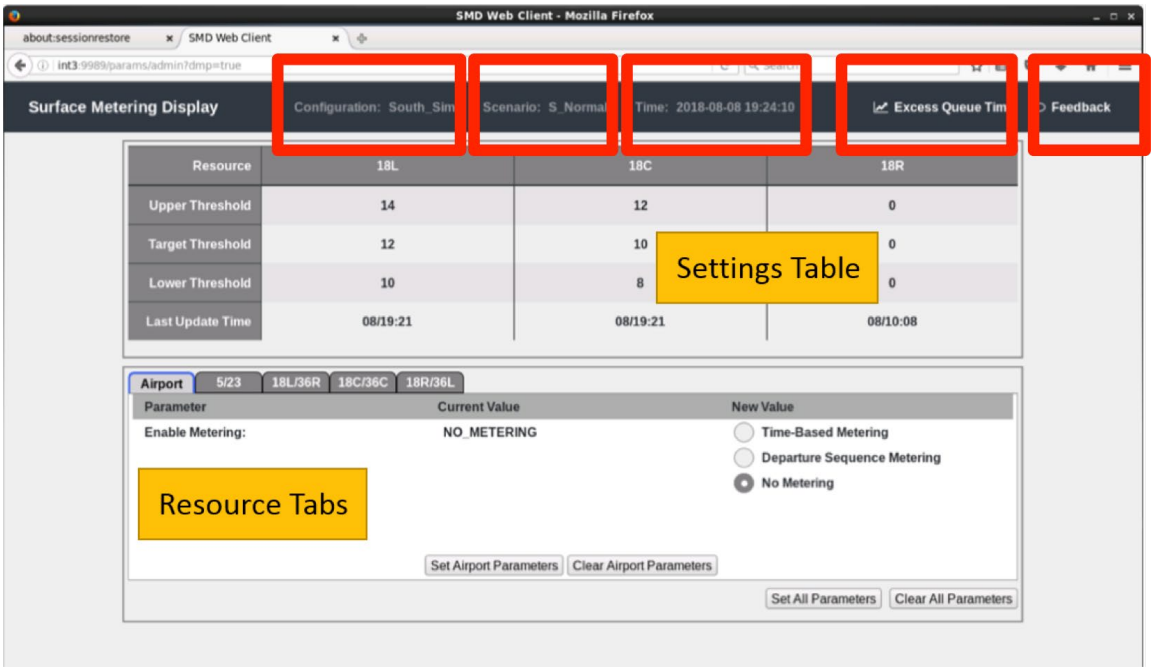


Figure 2.1. Surface Metering Display Interface: Toolbar

2.1 Metering Parameters Page

Surface Metering settings are displayed on the Metering Parameters page in the Settings Table and on Resource Tabs (Figure 2.2).

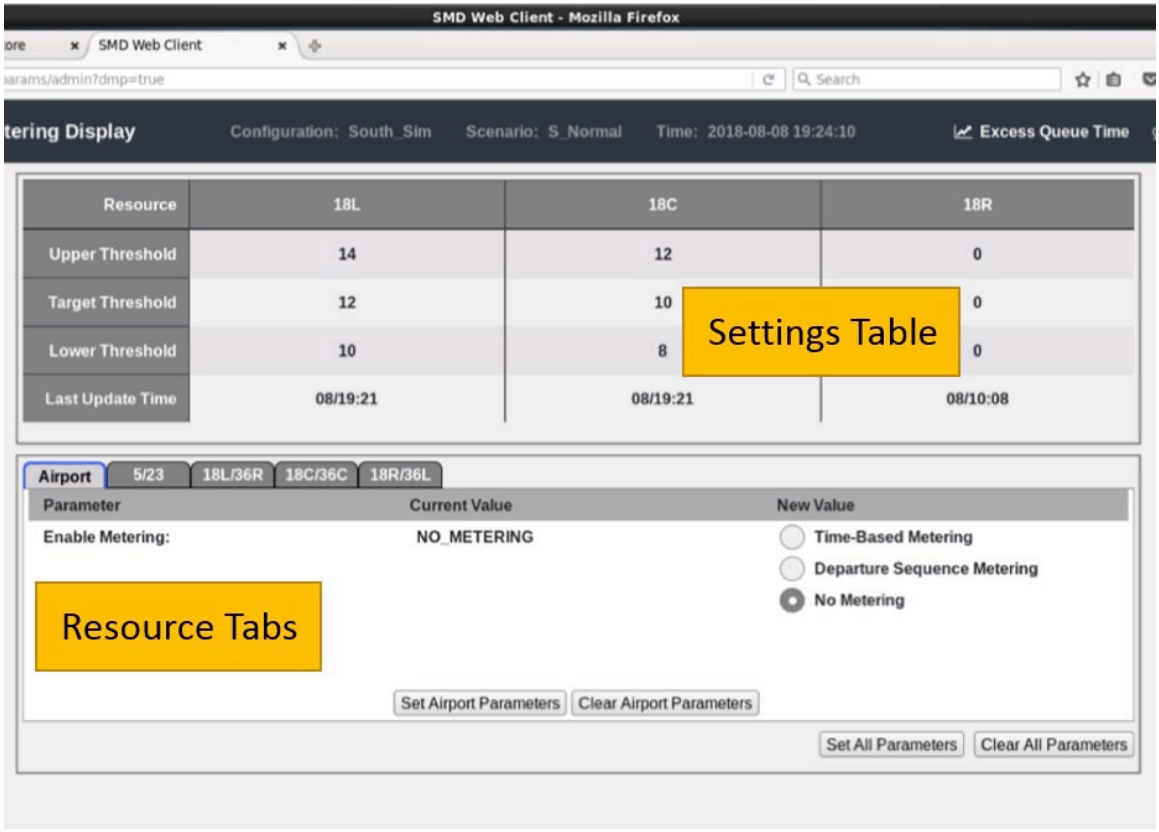


Figure 2.2. Surface Metering Display Interface: Metering Parameters page.

2.1.1 Settings Table

Current threshold settings, in minutes, are displayed in the Settings Table on the top half of the Metering Parameters page (Figure 2.2). The settings for each "Resource", that is, each runway, are displayed according to the current airport configuration set in the STBO Client. Only active runways are included in the Settings Table. Excess Queue Time is defined as the amount of time a flight spends in the departure runway queue beyond unimpeded taxi time.

The "Upper", "Lower", and "Target Excess Queue Time" Threshold values are displayed for each runway.

- **Upper Threshold** represents the largest acceptable amount of Excess Queue Time, in minutes. This threshold is used to determine when to start surface metering.
- **Target Threshold/Target Excess Queue Time (TEQT)** represents the desired amount of Excess Queue Time. This threshold is used to determine when to turn metering on and how much gate hold to assign to each flight.
- **Lower Threshold** represents the least acceptable amount of Excess Queue Time during surface metering, in minutes. This threshold is used to determine when to end surface metering.

"Last Update Time" refers to the time that the parameters in this table were last updated, with the date in the *dd/hh:mm* format.

2.1.2 Resource Tabs

On the bottom half of the Excess Queue Time page, Resource Tabs allow changes to be made for the entire airport and/or for individual/paired runways. Each tab is organized with the following headings/columns:

- **Parameter:** Identifies the different parameters that may be set
- **Current Value:** Displays the current setting of each parameter.
- **New Value:** Lists the possible parameter options or values that can be altered.

This section describes the options and functionality available for each resource tab.

2.1.2.1 Airport Tab

The "Airport" tab provides options for type of metering and associated parameters for the entire airport, including enabling metering, setting lead times for Time-Based Metering, and setting a queue size for Departure Sequence Metering.

For the "Enable Metering" parameter, the default setting is "No Metering". Alternate options include "Time-Based Metering" and "Departure Sequence Metering".

2.1.2.1.1 Time-Based Metering

When operating in Time-Based Metering, the ATD-2 system will predict the need for metering, and then assign gate holds to meet metering criteria. The ATD-2 system proposes a new Surface Metering Program (SMP) for a specific runway when the following conditions are predicted to be met at a point of time within the Lead Time. The tactical conditions for turning metering on are:

1. The predicted excess queue time is above the Target Threshold for at least one flight off the gate.
2. The predicted excess queue time is above the Upper Threshold for at least one departure predicted to push back within the next 10 minutes.

When "Time-Based Metering" is selected, "Lead Time" and "Static Time Horizon" are displayed as configurable parameters. The "Current Value" setting is shown, followed by up/down arrows under "New Value", for selecting different values for these parameters in integer minutes (Figure 5).

- **Lead Time** specifies how far into the future the system evaluates the need for an SMP. The default "Lead Time" is 60 min. The larger the lead time, the more in advance the notice is of the need for metering.
- **Static Time Horizon** determines how far in advance the scheduler will automatically freeze a metered flight's Target Off-Block Time (TOBT). Set to zero, the scheduler freezes the metered flight's TOBT when the flight calls ready for pushback. A longer STH may allow airlines to leverage a gate hold for additional benefit (e.g., letting a connecting passenger that previously would have barely missed the flight to catch the flight instead). But freezing TOBTs in advance also means the scheduler has less flexibility to make last minute changes

to the metered schedule to handle very tactical situations. The STH does not affect TMI flights, i.e., flights with an EDCT or APREQ.

The ATD-2 system ends an active Surface Metering Program (SMP) either when a user manually rejects the SMP or when the following criteria are met:

1. The predicted Excess Queue Time for all departure flights off the gate is below the Lower Threshold, and
2. The predicted excess queue time for all departure flights predicted to push back in the next 10 minutes is below the Lower Threshold.

To enable Time-Based Metering from the Airport tab:

Step 1: Select the "Time-Based Metering" radio button under the "New Value" heading. The radio button will turn green when selected (see Figure 2.3) and an orange box will outline the "Airport" tab, indicating that a potential change has been selected but has not yet been set.

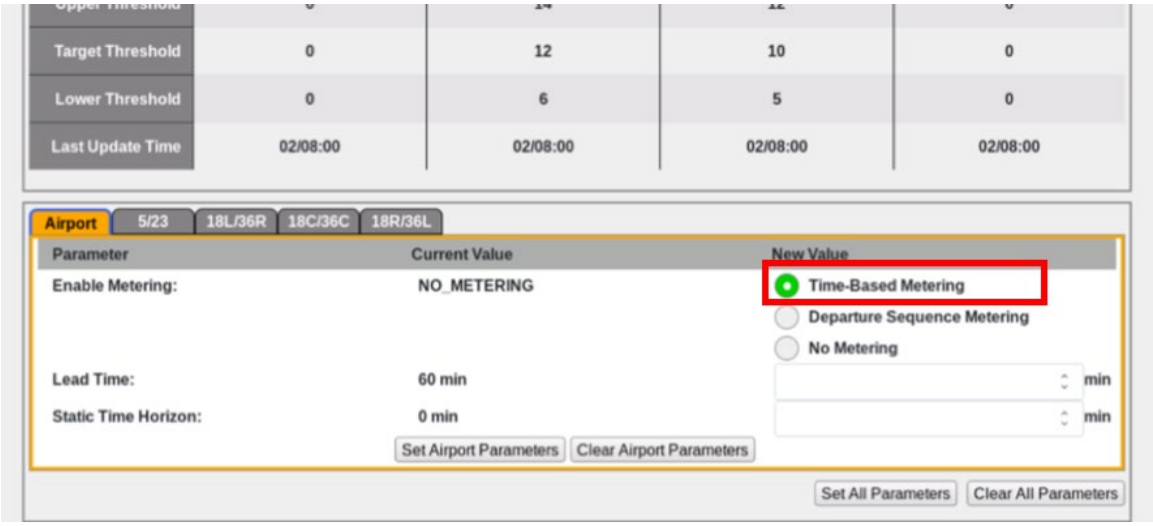


Figure 2.3. Select Time-Based Metering on the "Airport" tab.

Step 2: Use the up and down arrows in the text box beside lead time in the "New Value" column to enter a new lead time value, or click in the text box and manually type in a new lead time value. The selected "New Value" for lead time will appear at the right side of the window until the parameter has been set (see Figure 2.4).

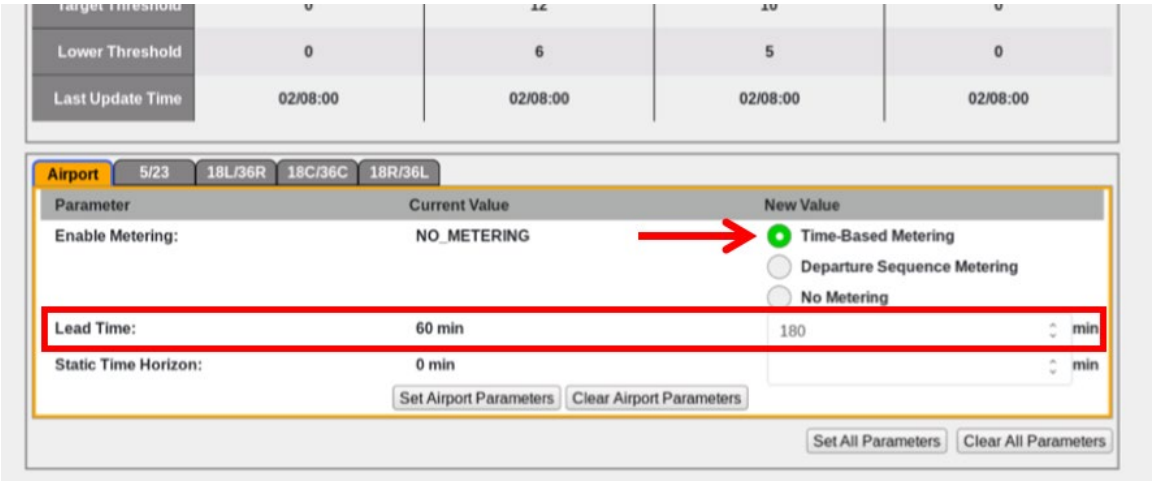


Figure 2.4. Select a new value for Lead Time in Time-Based Metering.

Step 3: When the Static Time Horizon is being applied, use the up and down arrows in the text box beside "Static Time Horizon" in the "New Value" column to enter a new value, or click in the text box and manually type in a new value. The selected "New Value" for static time horizon will appear at the right side of the window until the parameter has been set by clicking the "Set Airport Parameters" at the bottom of the Airport resource tab window (see Figure 2.5).

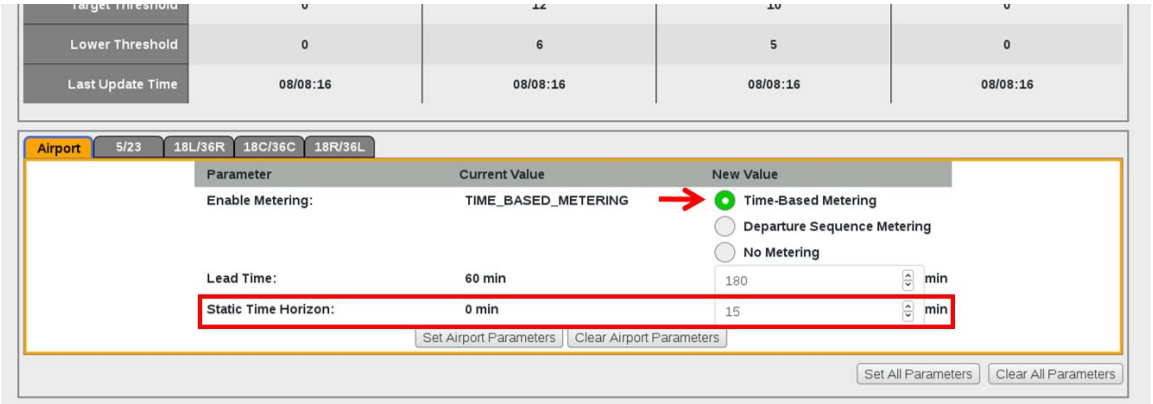


Figure 2.5. Select a new value for Static Time Horizon (STH) in Time-Based Metering.

Step 4a: Click on the "Clear Airport Parameters" button at the bottom of the Airport resource tab to clear all un-set changes in the "Airport" tab only. Alternately, the "Clear All Parameters" button (below the resource tabs) can be selected to do the same for all unset changes across all tabs. In either case, when the parameters are set, the entries and the orange box around the tab will disappear.

Note: Neither of the "Clear" button options will clear the set changes, only the changes that have not yet been set. To change the parameters, one must enter new values and press the "Set" button again.

Step 4b: Click on the "Set Airport Parameters" button to accept all changes in the "Airport" tab only.

Alternately: The "Set All Parameters" button (below the resource tab windows) can be selected to accept all changes across all tabs. In either case, when time based-metering is set along with all its parameters, the "Current Value" will change to display "Time-Based Metering" with the newly set lead time, and both the lead time entry under the "New Value" column and the orange outline will disappear.

2.1.2.1.2 Departure Sequence Metering

When operating in Departure Sequence Metering (no longer used at CLT but relevant for other airports), a value is selected for the target airport queue (total number of active departure flights on the airport surface that are in any state between pushing back from the parking gate to pre-runway departure). This value is displayed on the STBO Client and RTC/RMTC interfaces.

When "Departure Sequence Metering" is selected, "Target Queue" will appear as another parameter (see Figure 2.6). The "Current Value" setting is shown, followed by up/down arrows under "New Value", for selecting a different number of flights for the "Target Queue" size.

To enable Departure Sequence Metering from the Airport tab:

Step 1: Click on the "Departure Sequence Metering" radio button under the "New Value" heading.

Note: The radio button will turn green when selected (Figure 2.6) and an orange box will outline the Airport tab, indicating that a potential change has been selected but has not yet been set.

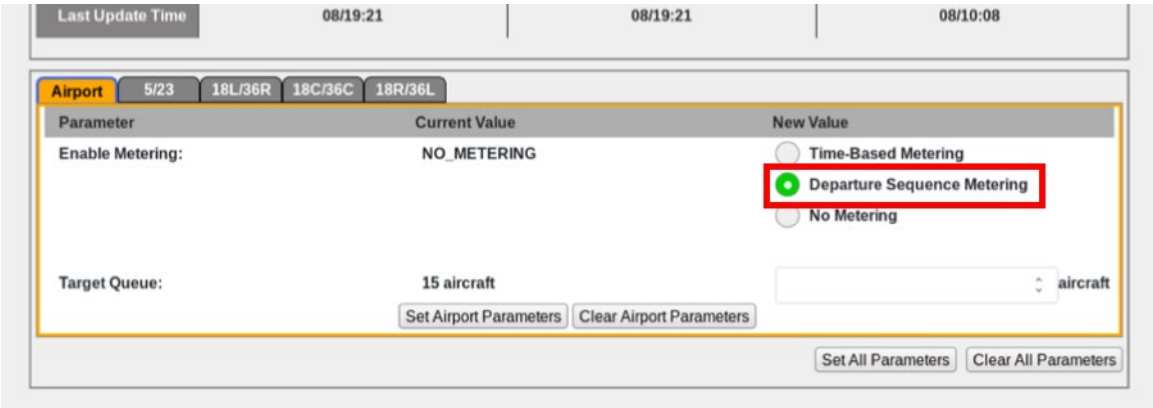


Figure 2.6. Selecting "Departure Sequence Metering" for the airport.

Step 2: Use the up and down arrows in the text box under the target queue "New Value" column to enter a new target queue value, or click in the text box and manually type in a new target queue value. The selected New Value for target queue number will appear at the right side of the window, as seen in Figure 2.7, until the parameter has been set.

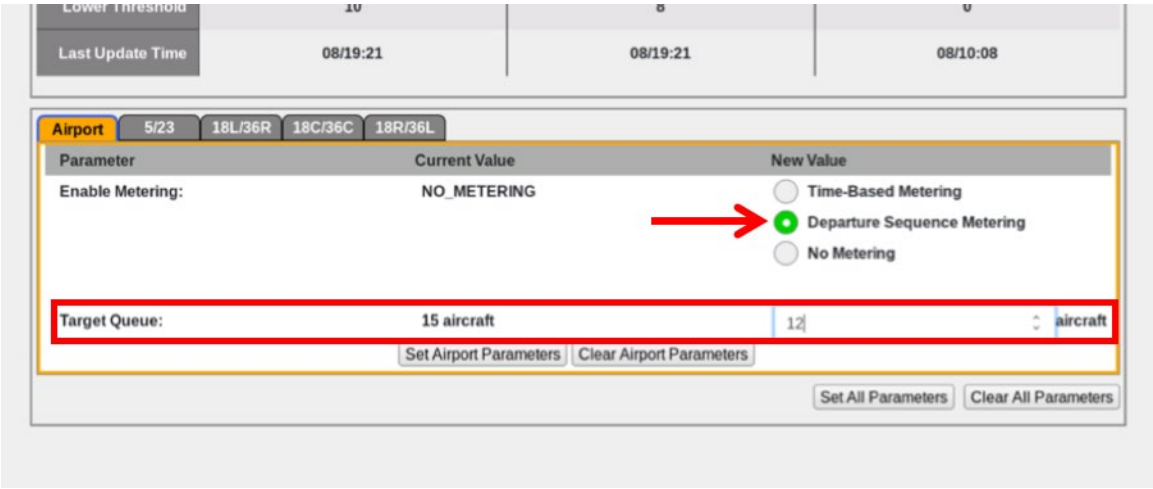


Figure 2.7. Select an integer value for the number of flights in the Target Queue.

Step 3a: Click on the "Clear Airport Parameters" button to reject all changes in the "Airport" tab only. Alternately, the "Clear All Parameters" button (below the resource tabs) can be selected to reject all unset changes across all tabs. In either case, when the parameters are cleared, the entries and the orange box around the tab will disappear.

Note: Neither "Clear" button options will clear the set changes, only those changes that have not yet been set. To change the parameters, one must enter new values and press the "Set" button again.

Step 3b: Click on the "Set Airport Parameters" button to accept all changes in the "Airport" tab only. Alternately, the "Set All Parameters: button (below the resource tabs) can be selected to accept all changes across all tabs. In either case, when "Departure Sequence Metering" is set, the "Current Value" will change to display "Departure Sequence Metering".

2.1.2.1.3 No Metering

When this mode is selected for the airport, it removes all gate holds due to surface metering, ends any existing SMPs, and stops the recommendation of new SMPs. It also turns off Departure Sequence Metering.

Step 1: Click on the "No Metering" radio button under the "New Value" heading. The radio button will turn grey when selected (see Figure 2.8) and an orange box will outline the Airport tab, indicating that a potential change has been selected but has not yet been set.

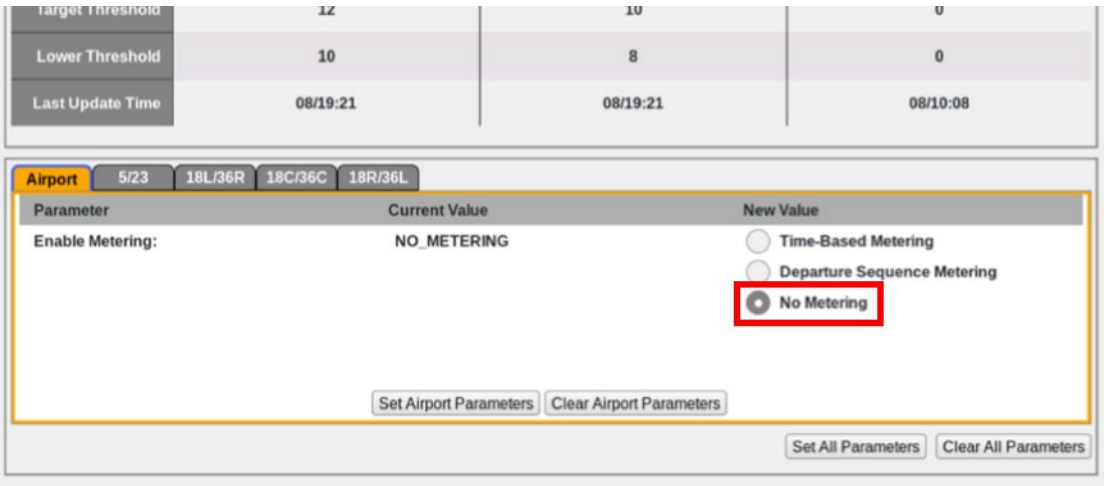


Figure 2.8. Select "No Metering" to turn off Metering manually for the airport.

Step 2a: Click on the "Clear Airport Parameters" button to reject all changes in the "Airport" tab only. Alternately, the "Clear All Parameters" button (below the resource tabs) can be selected to reject all unset changes across all tabs. When the parameters are cleared, the entries and the orange box around the tab will disappear.

Note: Neither "Clear" button options will clear the set changes, only those changes that have not yet been set. To change the parameters, one must enter new values and press the "Set" button again.

Step 2b: Click on the "Set Airport Parameters" button to accept all changes in the "Airport" tab only. Alternately, the "Set All Parameters" button (below the resource tabs) can be selected to accept all changes across all tabs. In either case, after "No Metering" has been selected and when this parameter is set, the "Current Value" will change to display "No Metering" and the orange outline will disappear.

2.1.2.2 Runway Tabs

The "Runway" tabs provide options for setting the "Upper Threshold", the "Target Excess Queue Time", and the "Lower Threshold" for each individual runway (e.g., 5, 23, 18L, 36R). For each parameter, the "Current Value" setting is shown, followed by up/down arrows under "New Value" for selecting a different value (Figure 2.9).

The "Upper", "Lower", and "Target Excess Queue Time" Threshold values are displayed for each runway. See definitions in Section 2.1.1.

2.1.2.2.1 Target Excess Queue Time and Threshold Values

To set a parameter value for an individual runway from the "Runway" tab:

Step 1: Use the up and down arrows in the text box under the "New Value" column to enter a new upper or lower threshold or target excess queue time value, or click in the text box and manually type in a new value. The selected "New Value" for upper or lower threshold or target excess queue time will appear at the right side of the window, as seen in Figure 2.9, until the parameter has been set.

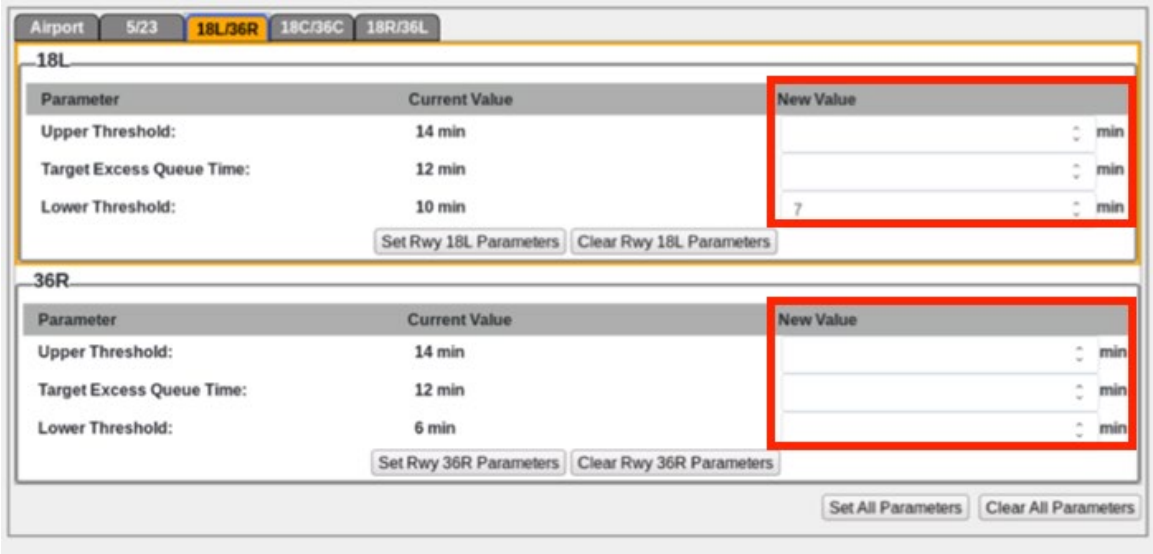


Figure 2.9. Set Upper and Lower Thresholds and Target Excess Queue Time (TEQT) values for Runway 18L/36R.

Step 2a: Click on the "Clear <Runway> Parameters" button to reject all changes in the specified "Runway" tab only. Alternately, the "Clear All Parameters" button (below the resource tabs) can be selected to reject all unset changes across all tabs. In either case, when the parameters are cleared, both the entries and the orange box around the tab will disappear, shown in Figure 2.10.

Note: Neither "Clear" button options will clear the set changes, only those changes that have not yet been set. To change the parameters, one must enter new values and press the "Set" button again.

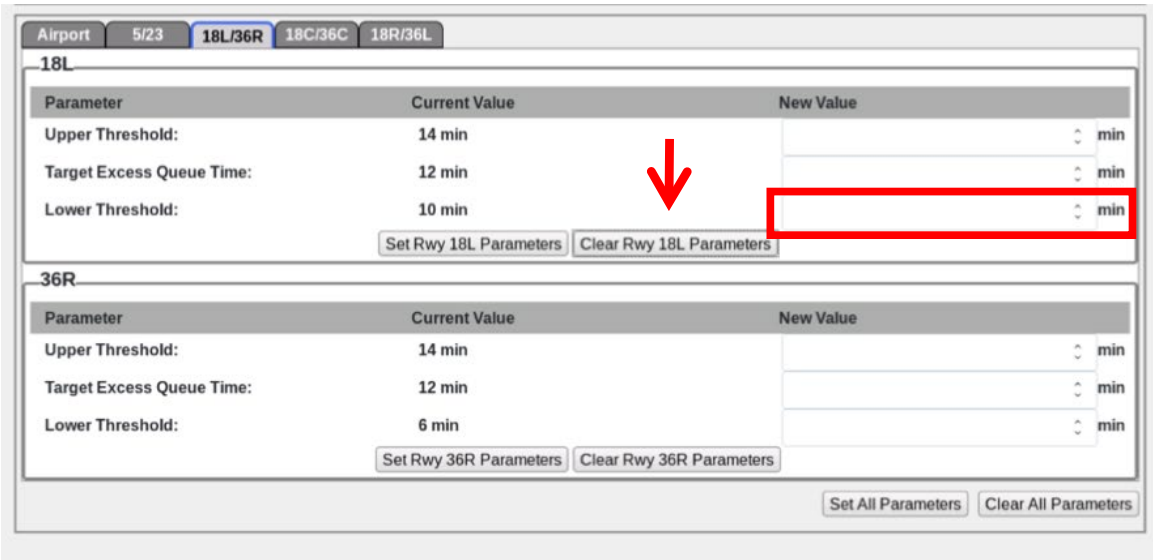


Figure 2.10. Select "Clear Rwy 18L Parameters" to clear any new entries from the "New Value" fields.

Step 2b: Click on the "Set <Runway> Parameters" button to accept all changes in the "Runway" tab only. Alternately, the "Set All Parameters" button (below the resource tabs) can be selected to accept all changes across all tabs. An example of multiple tabs with changes specified is shown in Figure 2.11. When the "New Value" is set, the "Current Value" will change to display the specified value.

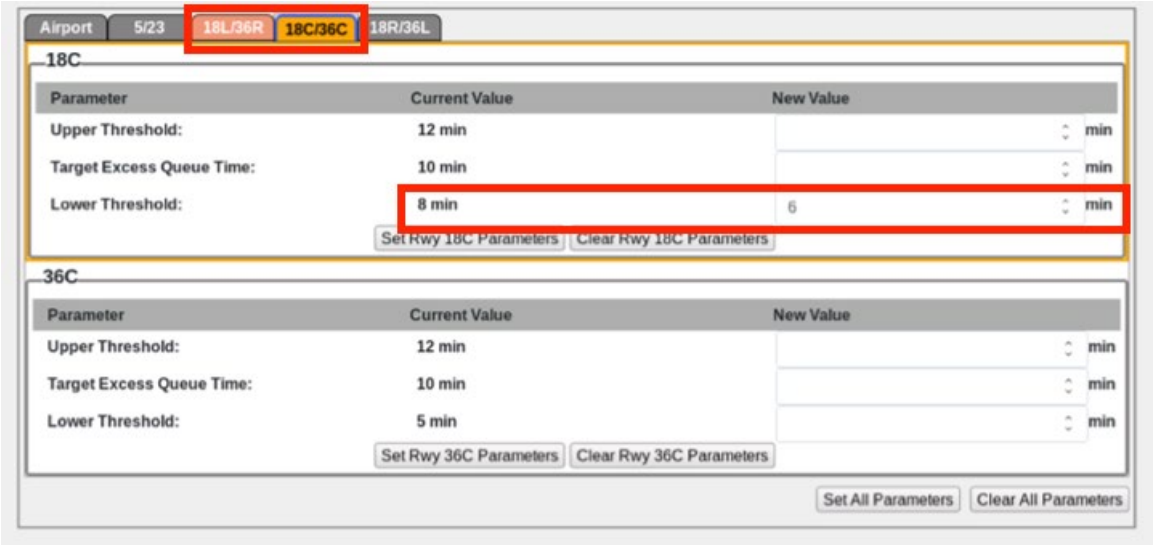


Figure 2.11. Multiple orange tabs show that changes have been entered for multiple runways but have not yet been set.

Figure 2.12 shows the values after the multiple tabs have been set.

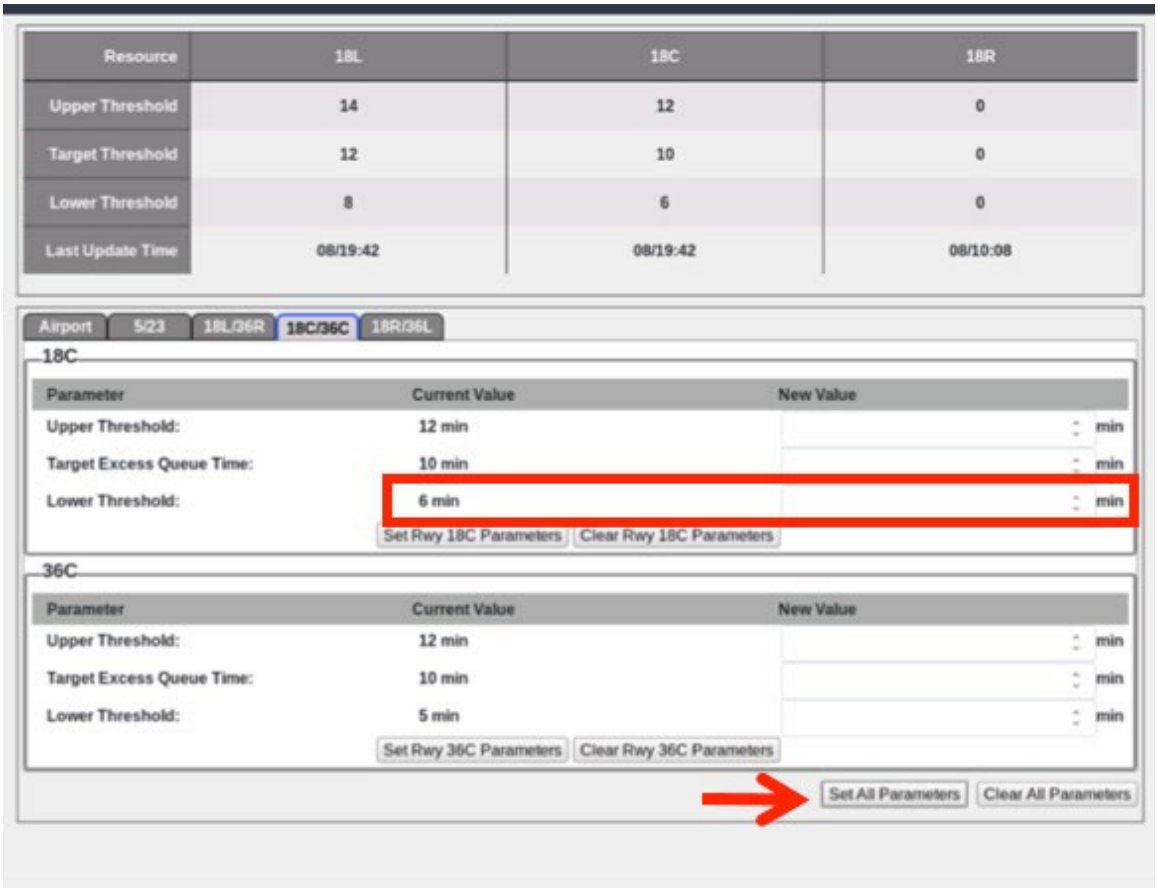


Figure 2.12. Select "Set All Parameters" to change parameters for multiple runways.

2.2 Excess Queue Time Page

The current status of each Surface Metering Program (SMP) and Excess Queue Time scatter plots for the airport/individual runways are available on the Excess Queue Time page (Figure 2.13).

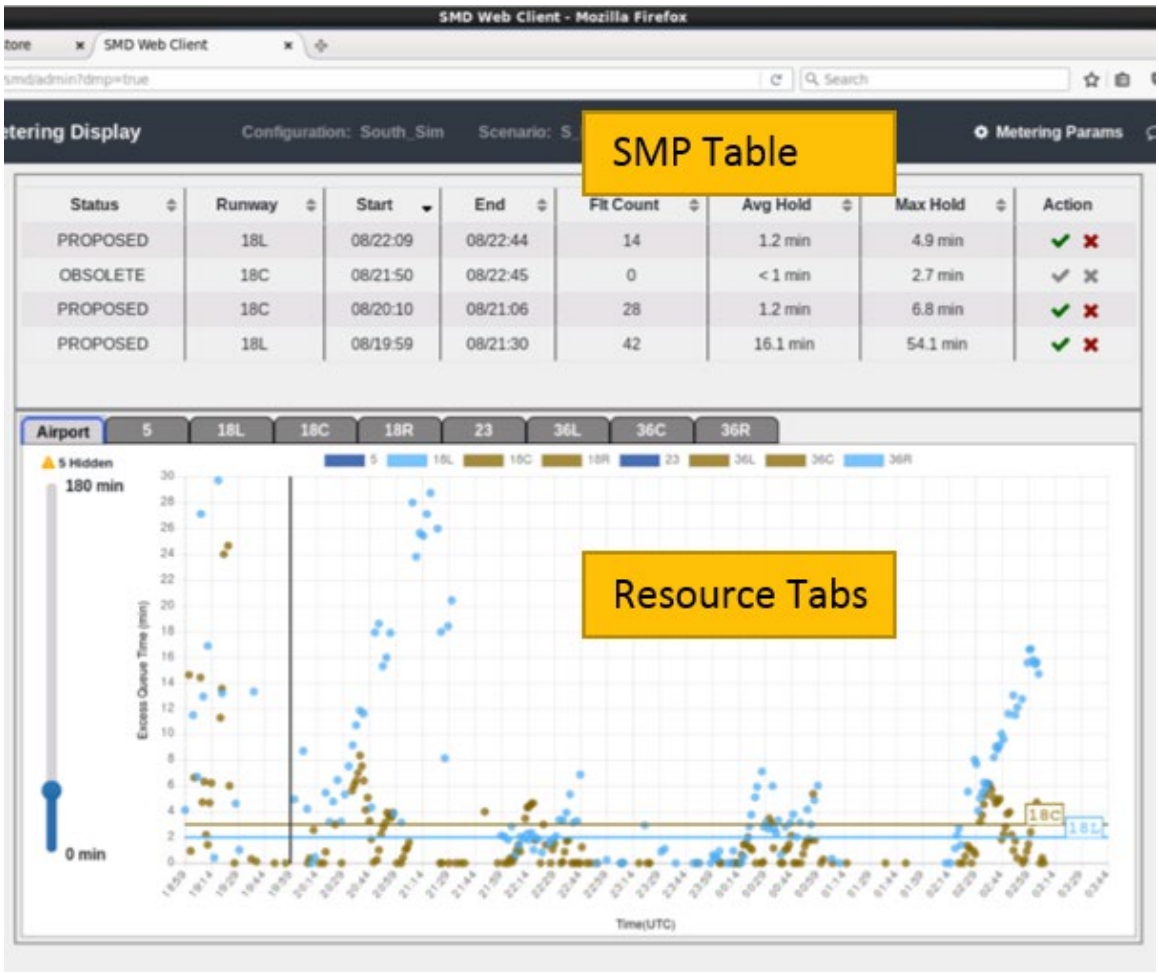


Figure 2.13. Excess Queue Time page with the "Airport" tab selected.

2.2.1 SMP Table

The top half of the Excess Queue Time page shows the current status for each SMP, including runway affected, start time, end time, flight count, average hold, and max hold, along with action buttons to make inputs.

Descriptions of these columns are:

- **Status:** Current metering status for the defined SMP.
- **Runway:** The resource being metered.
- **Start**: The specified start time of the SMP in *dd/hh:mm* format.
- **End**: The specified end time of the SMP in *dd/hh:mm* format.
- **Flt Count**: The number of flights affected by metering.
- **Avg Hold:** Average hold time expected for all flights that are a part of the SMP, in minutes.
- **Max Hold:** The maximum hold expected for flights that are a part of the SMP, in minutes.

- **Action:** Either a checkmark or an X. Actions will be discussed further in Sections 2.2.1.2.1 and 2.2.1.2.2.

2.2.1.1 SMP Status

The possibilities for current metering status are described in Table 1, with examples shown in Figure 2.14.

Table 1. Possible states for SMP, shown under Status heading

STATUS	DEFINITION
PROPOSED	The ATD-2 system is recommending that metering be used between the start and end time of the SMP, but no action has been taken on the SMP.
AFFIRMED	The recommended SMP has been accepted.
REJECTED	The recommended SMP was not accepted.
OBSOLETE	The ATD-2 system is no longer recommending metering. A PROPOSED, AFFIRMED, or REJECTED SMP can transition into this state.
ACTIVE	An affirmed SMP has started and RTC is now showing metering advisories for that runway.
COMPLETED	An active SMP is now finished.

In strategic metering, all of the states are possible. SMPs are created in response to identified needs and actions are enabled. States in the Status column will update quickly to reflect changes in status.

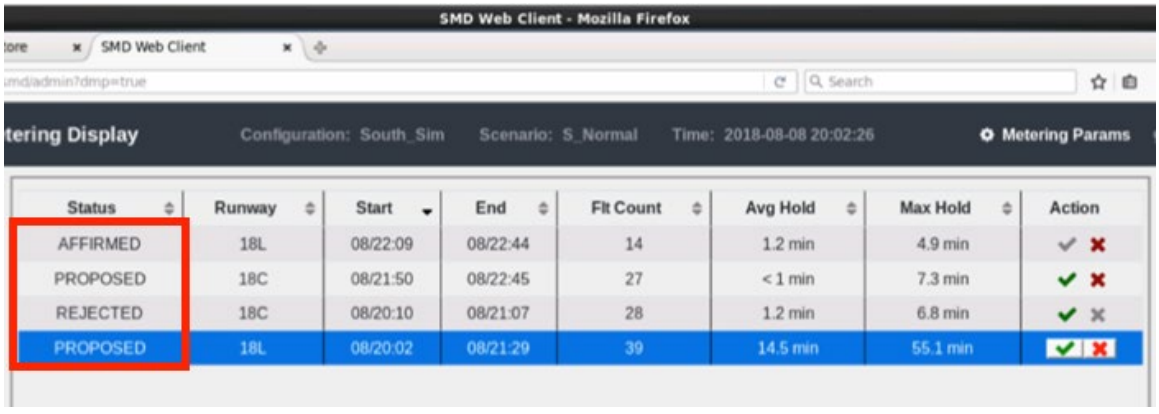


Figure 2.14. SMP table shows SMPs in various states.

The state of the SMP affects the start and end times reported, as follows:

- **Proposed**, **Affirmed**, or **Rejected SMP:** The scheduler continually updates the predicted SMP start and end time, based on the latest data.
- **Active SMP:** Only the end time is updated.
- **Completed SMP:** Actual start and end time are known and do not change. The flight count and hold statistics reflect the actual values for the SMP.
- **Obsolete SMP:** The start and end time are the last start and end time prior to the SMP becoming obsolete.

An "Obsolete" SMP will be removed once the end time expires, but SMPs can become "Obsolete" even when their scheduled timeframe is still in the future. A "Completed" SMP will be removed an hour after the end time.

Selecting an SMP will highlight the timeframe on the scatter plot for that specific SMP. The shaded range indicates the predicted time range for the SMP. Depending on which runway is selected, the timeframe will either be shaded blue for eastbound runways (Figure 2.15), or shaded brown (Figure 2.16) for the westbound runways.

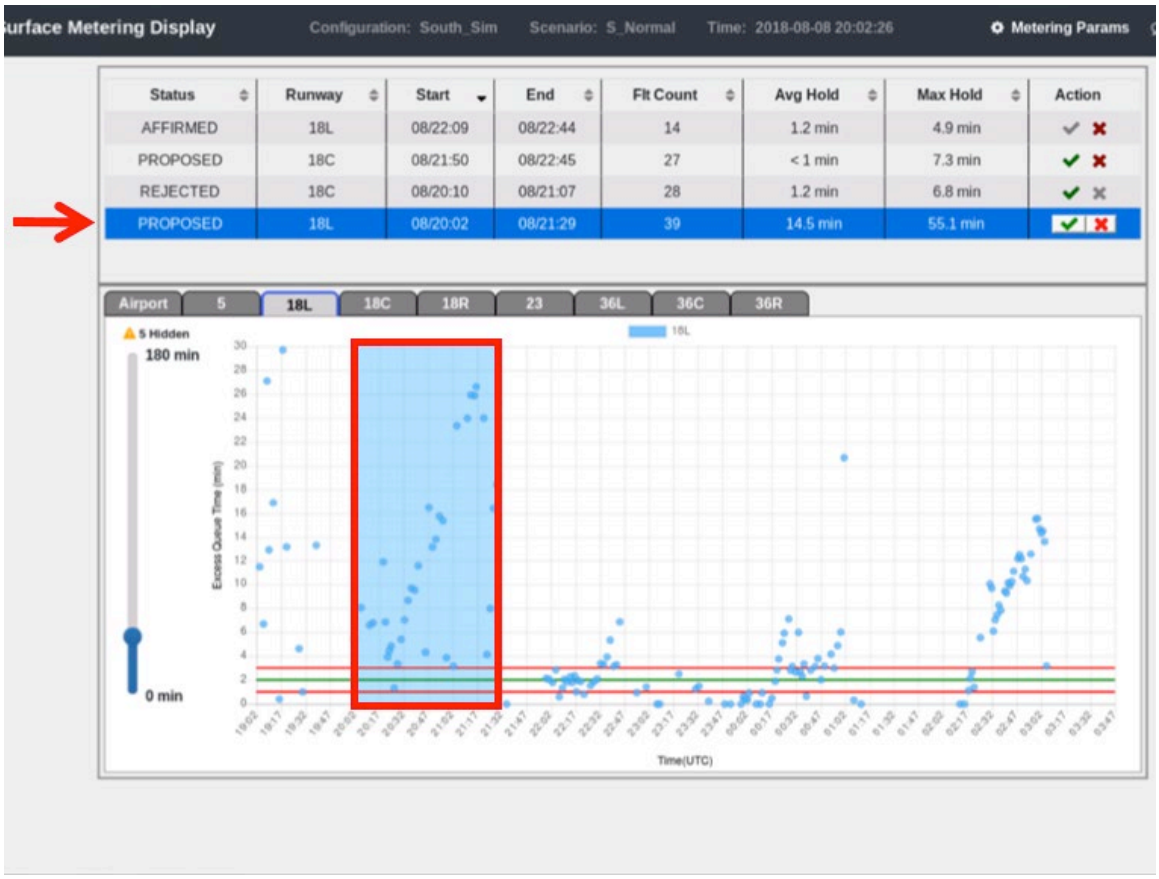


Figure 2.15. Selected SMP (red arrow pointing to blue row) and its associated time frame (blue shading) on the scatter plot below for an eastbound runway.

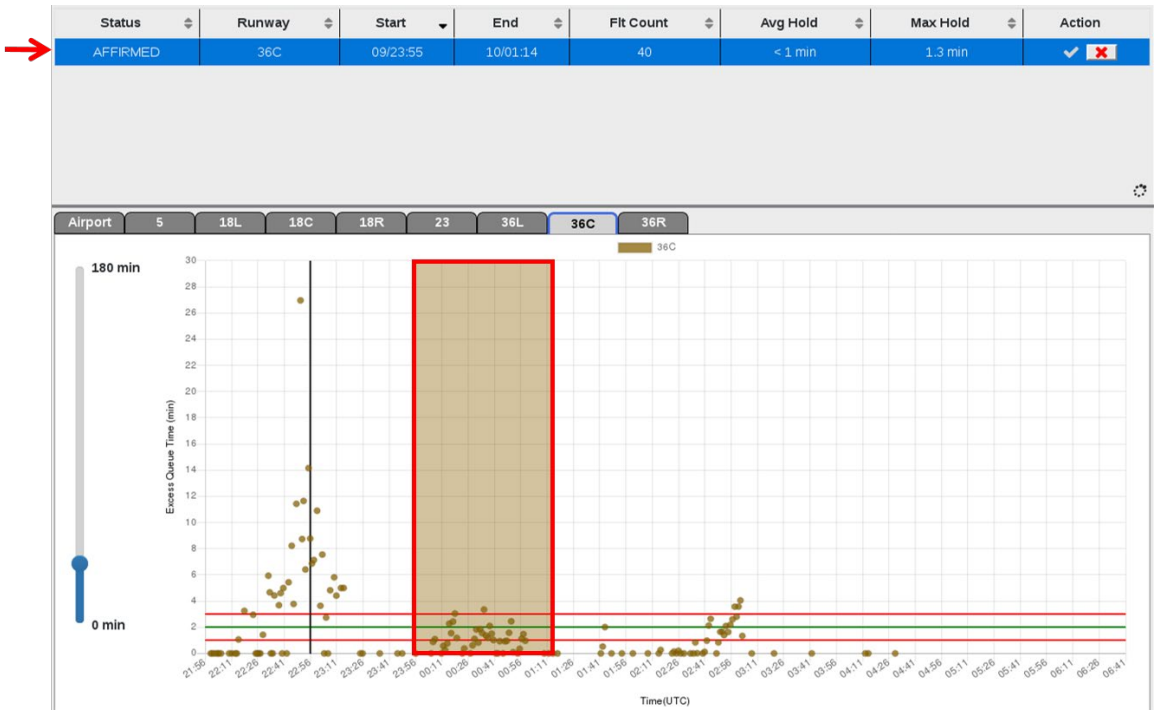


Figure 2.16. Selected SMP (red arrow pointing to blue row), and its associated timeframe (brown shading) on the scatter plot for a westbound runway.

2.2.1.2 Act on an SMP

To act on an SMP, the checkmark and/or X under "Action" must be selectable. A selectable checkmark is shown in green; a selectable X is shown in red. Examples are shown in Figure 2.17.

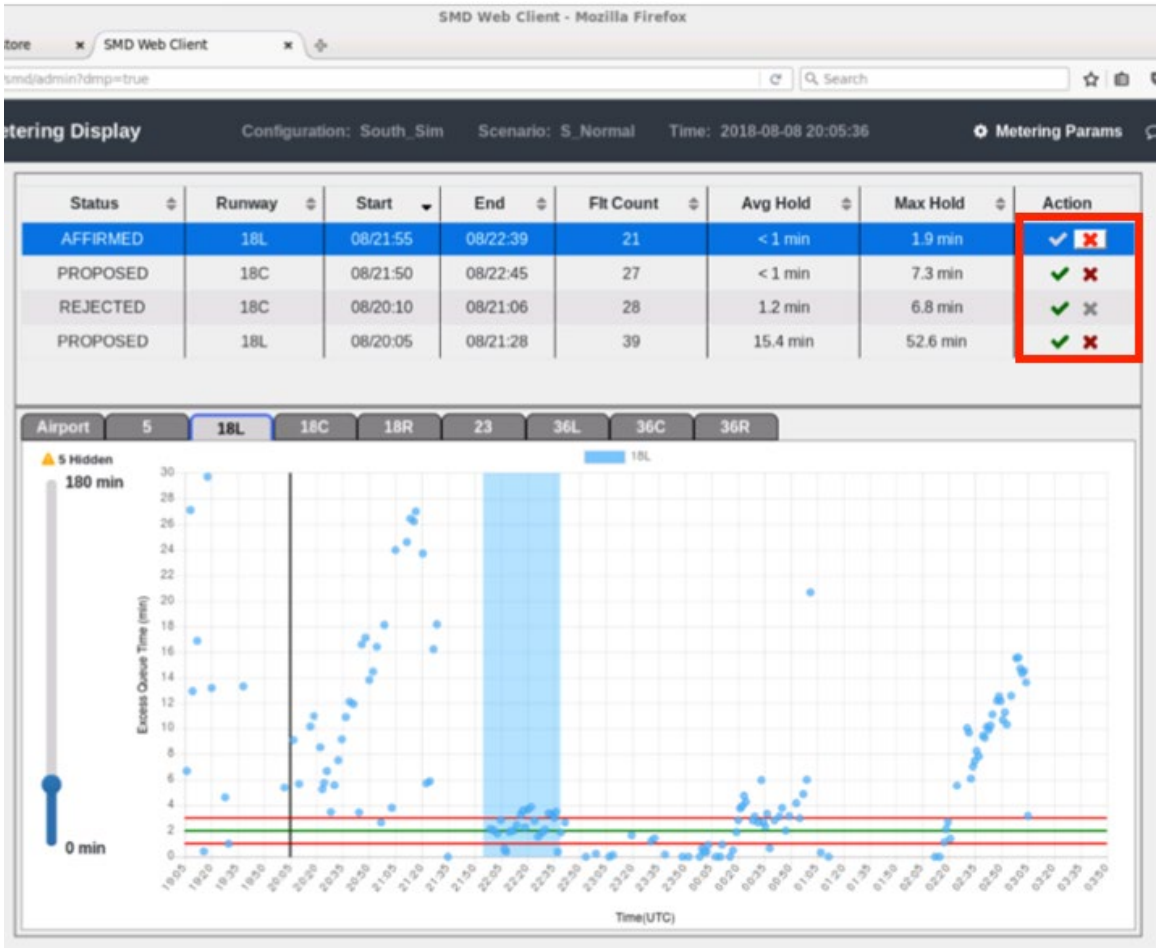


Figure 2.17. Action items are selectable if shown in red or green in the SMP table.

For either the checkmark or X to be selectable, the SMP must be in a state for which that button is active:

- Select the **Checkmark** to affirm the selected SMP, if the current state is "Proposed" or "Rejected".
- Select the "**X**" to reject the selected SMP, if the current state is "Proposed", "Affirmed", or "Active".

The checkmark and X under "Action" are not selectable (i.e., grayed-out) once an SMP is "Completed" or "Obsolete" (example shown in Figure 2.18).

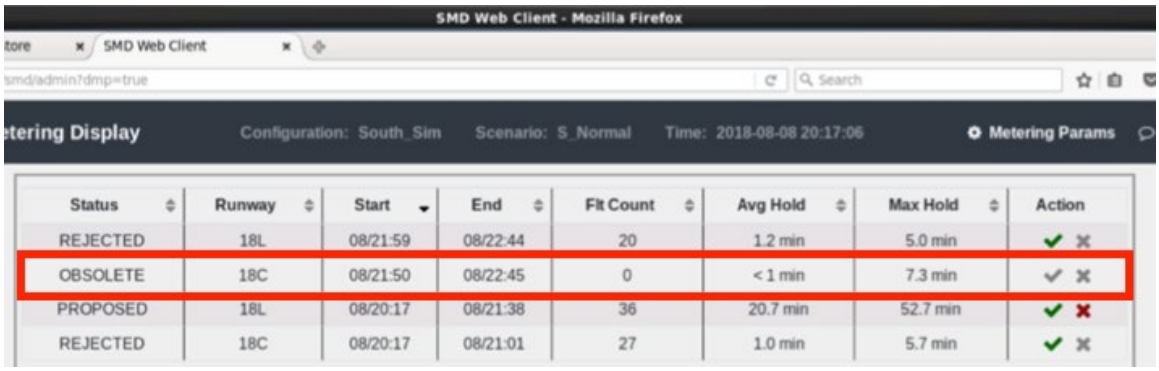


Figure 2.18. An Obsolete SMP has no selectable actions.

2.2.1.2.1 Affirm

To affirm an SMP:

Step 1: Click on an SMP row in the SMP table to highlight that row and the specified SMP timeframe on the data plot.

Step 2: Once a row is highlighted, the "Action" column will display a selectable green checkmark if the current status is "Proposed" or "Rejected". For any other status, the checkmark will remain gray and will not be selectable.

Step 3: Click on the green checkmark to affirm the SMP.

Step 4: A highlighted message appears at the bottom of the window stating that the SMP was affirmed, as shown in Figure 2.19.

Step 5: The status in the SMP table will change to "Affirmed".

Step 6: Click that SMP again or click on another chart tab to deselect the row and clear the highlighting.

Note: SMPs may be auto-affirmed depending the software configuration. If an SMP is auto-affirmed, it is possible to manually reject the SMP by clicking the "X" in its row. It is also possible to manually accept the SMP by clicking the checkmark in its row.

Figure 2.19. When the green checkmark under Action is selected, an "SMP Affirm" message is shown highlighted in green.

2.2.1.2.2 Reject

Once an SMP is rejected, no surface metering will happen for that runway during that time frame. Any currently assigned gate holds will be removed.

To reject an SMP:

Step 1: Click on an SMP row in the SMP table to highlight that row and the specified SMP timeframe on the data plot.

Step 2: Once a row is highlighted, the "Action" column will display a selectable red "X" if the current status is "Proposed", "Affirmed", or "Active". For any other status, the X will remain gray and will not be selectable.

Step 3: Click on the red "X" to reject the SMP.

Step 4: A highlighted message appears at the bottom of the window stating that the SMP was rejected, as shown in Figure 2.20.

Step 5: The status in the SMP table will change to "Rejected".

Step 6: Click that SMP again or click on another chart tab to deselect the row and clear the highlighting.

Figure 2.20. When the red "X" under Action is selected, an "SMP Reject" message is shown highlighted in green.

2.2.2 Resource Tabs

The bottom half of the Excess Queue Time page shows resource tabs that allow data to be seen for the entire airport or for individual runways. These tabs can be seen in Figure 2.21 directly below the SMP table. This section describes the options and functionality available for each resource tab.

2.2.2.1 Airport Tab

The "Airport" tab displays scatter plot data for the entire airport (Figure 2.21). These data are plotted by Excess Queue Time (in minutes) on the vertical axis by predicted/actual Takeoff Time (in UTC) on the horizontal axis. Each departure flight is represented by a data point, color-coded by runway. Only active or scheduled runways are included on the Airport scatterplot.

All data points to the left of the vertical black line show actual data for flights that have departed. All data points to the right show predicted data for flights that have not yet departed. Each data point is plotted along the x-axis at either the actual or predicted takeoff time of the flight. The height of the data point represents either the actual or predicted time in queue (i.e., the actual or predicted amount of time taxiing beyond unimpeded taxi time). These plots consist of flights that are not constrained by an APREQ, fix closure, or ground stop. The lines in the Airport scatter plot indicate the Target Threshold for each active runway, color-coded by runway as seen in Figure 2.21.

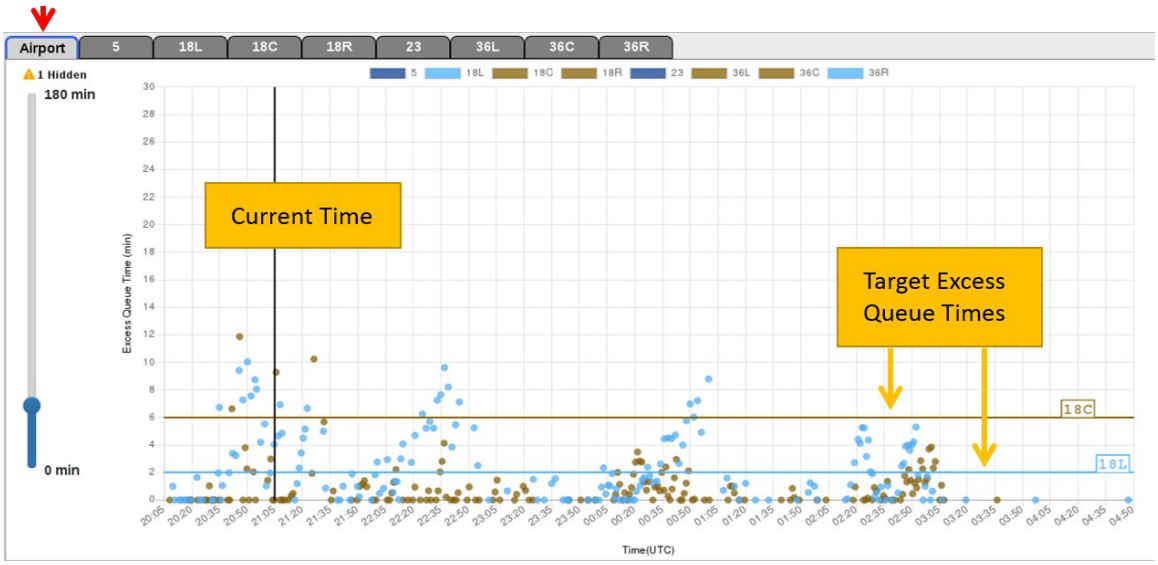


Figure 2.21. Target Excess Queue Time (TEQT) (brown and blue horizontal lines) for each runway as well as the current time (vertical line).

Hovering over a data point reveals a data tag with information about that particular flight.

To see specific flight information for a data point from the Airport tab:

Step 1: Hover over a data point.

Step 2: A data tag will temporarily appear with information about that flight (Figure 2.22).

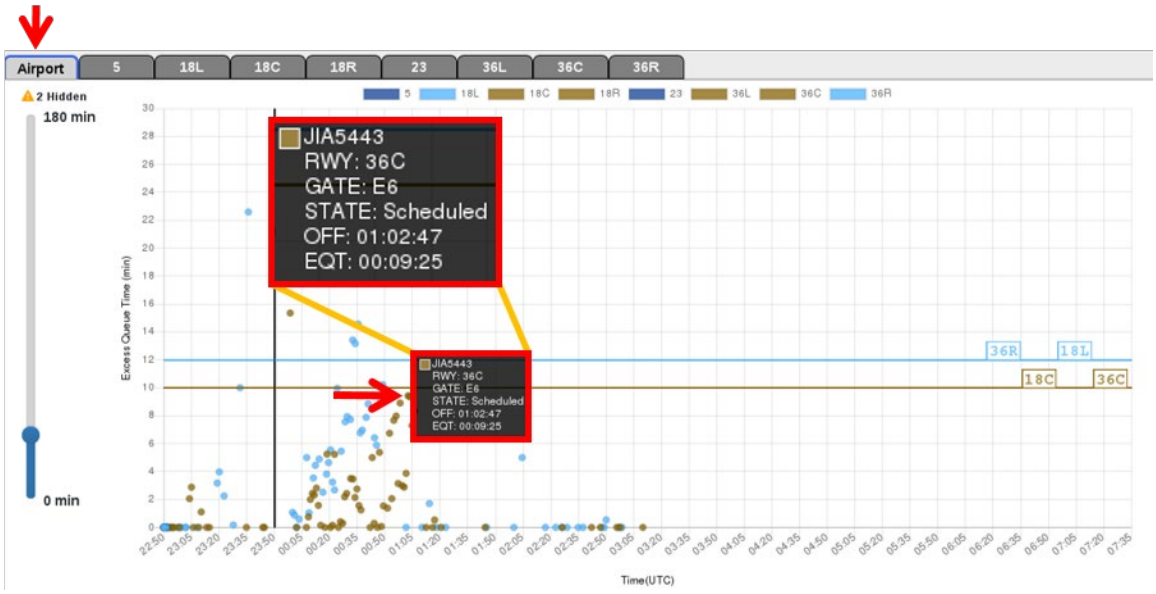


Figure 2.22. Hover over a data point in the Airport tab to show a data tag for the specific flight.

The vertical time slider to the left of the plot can be set from 0 to 180 min. This slider sets the maximum time shown on the vertical axis of the plot. The yellow triangle with "# Hidden" above the slider indicates the number of flights that are not showing because they are outside of the range set by the slider (Figure 2.23).

To change the maximum time shown on the data plot from the Airport tab:

Step 1: Click and hold the circle of the slider and move up or down to modify the maximum Excess Queue Time in minutes shown on the vertical axis of the scatter plot.

Note: The scatter plot updates to reflect the new maximum time on the vertical axis (see Figure 2.23).

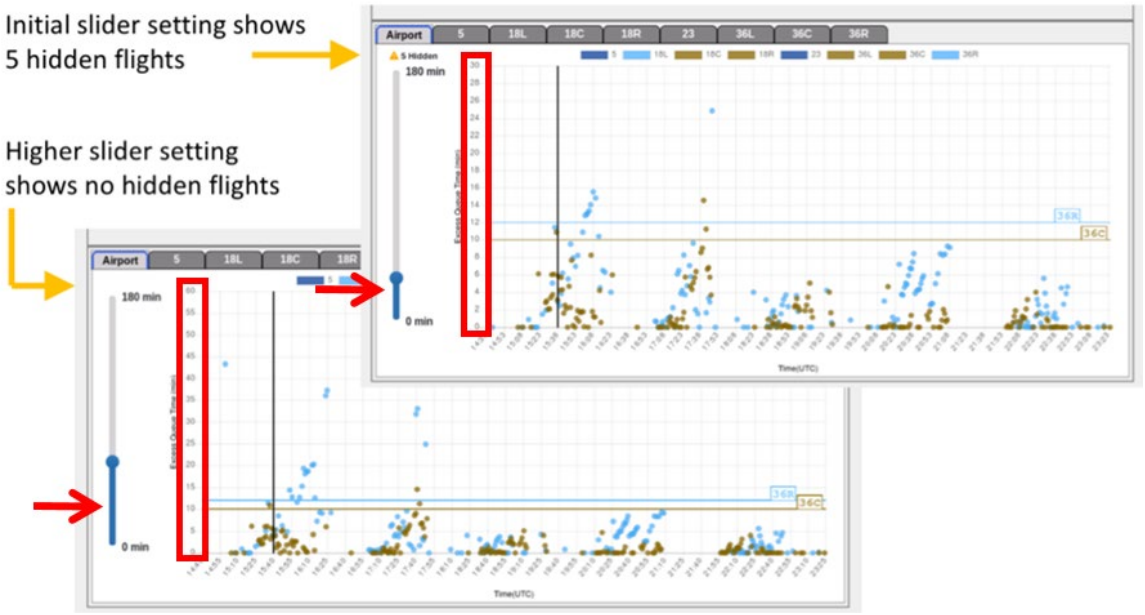


Figure 2.23. Use the slider to increase/decrease the maximum Excess Queue Time (in minutes) on the vertical axis.

2.2.2.2 Runway Tabs

The Runway tabs show scatter plot data for an individual runway (see an example in Figure 2.24). These data are plotted by Excess Queue Time (in minutes) on the vertical axis by Takeoff Time (in UTC) on the horizontal axis. Each data point is a departure flight, which is color-coded to that runway. Data points are shown only if the runway is active or scheduled to be active.

Each data point is plotted along the x-axis at either the actual or predicted takeoff time of the flight. The vertical position of the data point represents either the actual or predicted time in queue (i.e., the actual or predicted amount of time taxiing beyond unimpeded taxi time). These plots include only flights not constrained by an APREQ, EDCT, fix closure, or ground stop.

The vertical black line represents Current Time:

- All data points to the left of that line represent *actual* Excess Queue Time for departure flights that have departed. These points are shown at the flight's actual take off time.
- All data points to the right of that line represent *predicted* Excess Queue Time for flights that have not yet departed. These points are shown at the flight's predicted take off time.

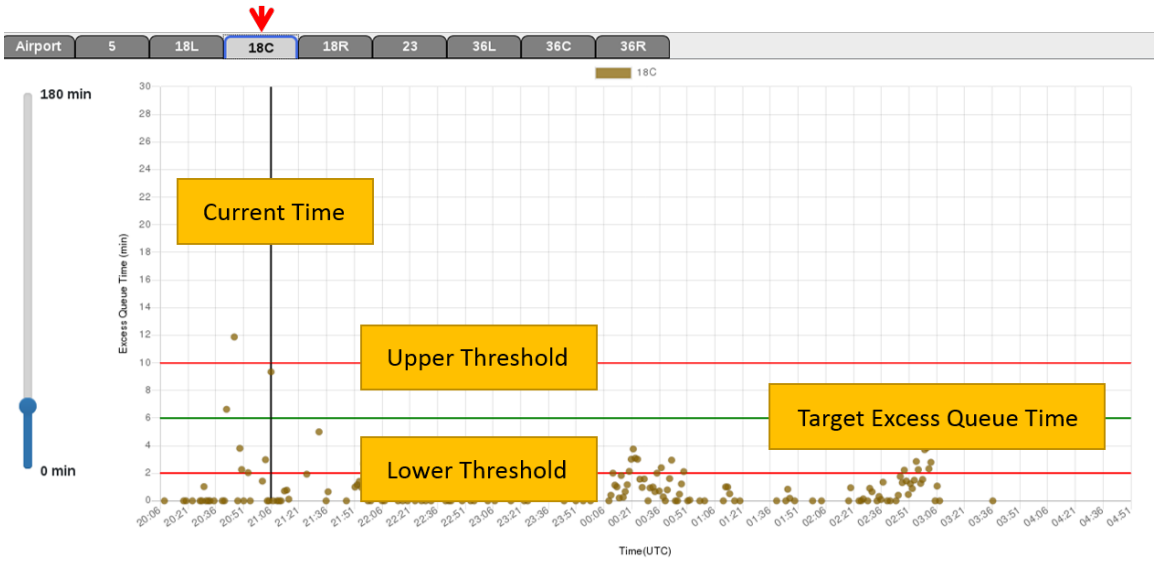


Figure 2.24. Target Excess Queue Time (green horizontal line), Upper and Lower Threshold (red threshold lines), and Current Time (vertical line).

Hover over a data point to reveal a data tag with information about the flight.

To see specific flight information for a data point from a Runway tab:

Step 1: Hover over a data point.

Note: A data tag will temporarily appear with information about that flight, as shown in Figure 2.25.

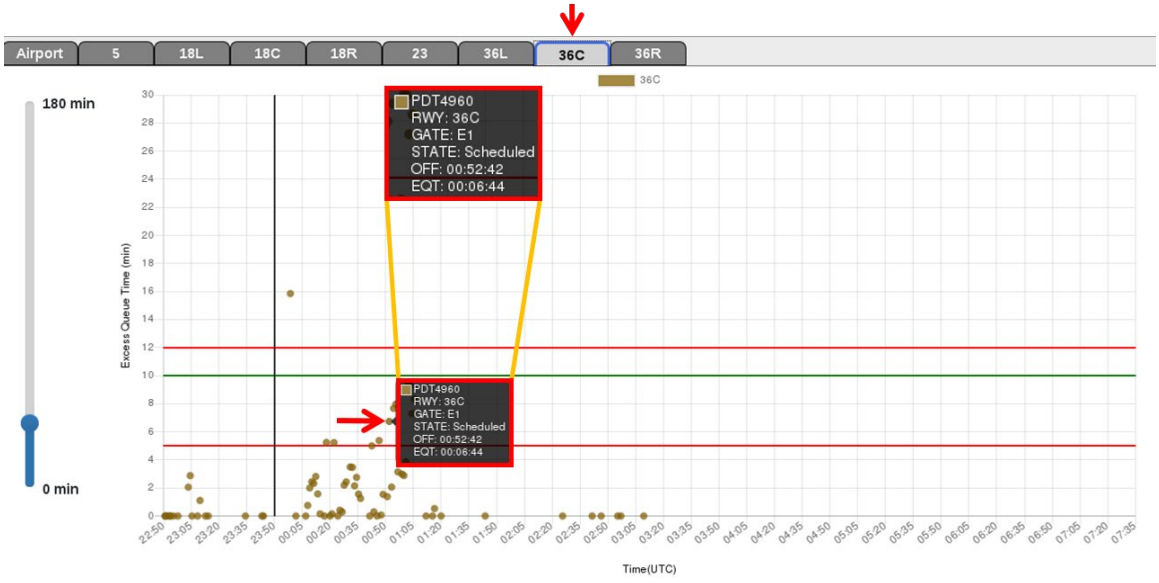


Figure 2.25. Hovering over a data point in a runway tab will show a data tag for the specific flight.

The time slider to the left of the plot can be set from 0 to 180 min. This slider sets the maximum time shown on the vertical axis of the plot. The yellow triangle with "# Hidden" that displays above the slider indicates the number of flights that are not showing because they are outside of the range set by the slider.

To change the maximum time shown on the data plot in a "Runway" tab:

Step 1: Click on the circle of the slider and move the ball up or down to modify the maximum time shown on the scatter plot.

Step 2: The scatter plot will update to reflect the new maximum time selected (see Figure 2.26).

Figure 2.26. Slider changes maximum y-axis value shown on runway scatter plot.

2.3 Feedback

Selecting the "Feedback" button in the upper right corner of the SMD window brings up the Feedback Form page (see Figure 2.27).

To submit feedback on the ATD-2 system:

Step 1: Select the "Feedback" button in upper toolbar of the SMD window (Figure 2.27) to open the User Feedback Form (Figure 2.28).

Figure 2.27. The "Feedback" button is in the upper toolbar of the SMD window.

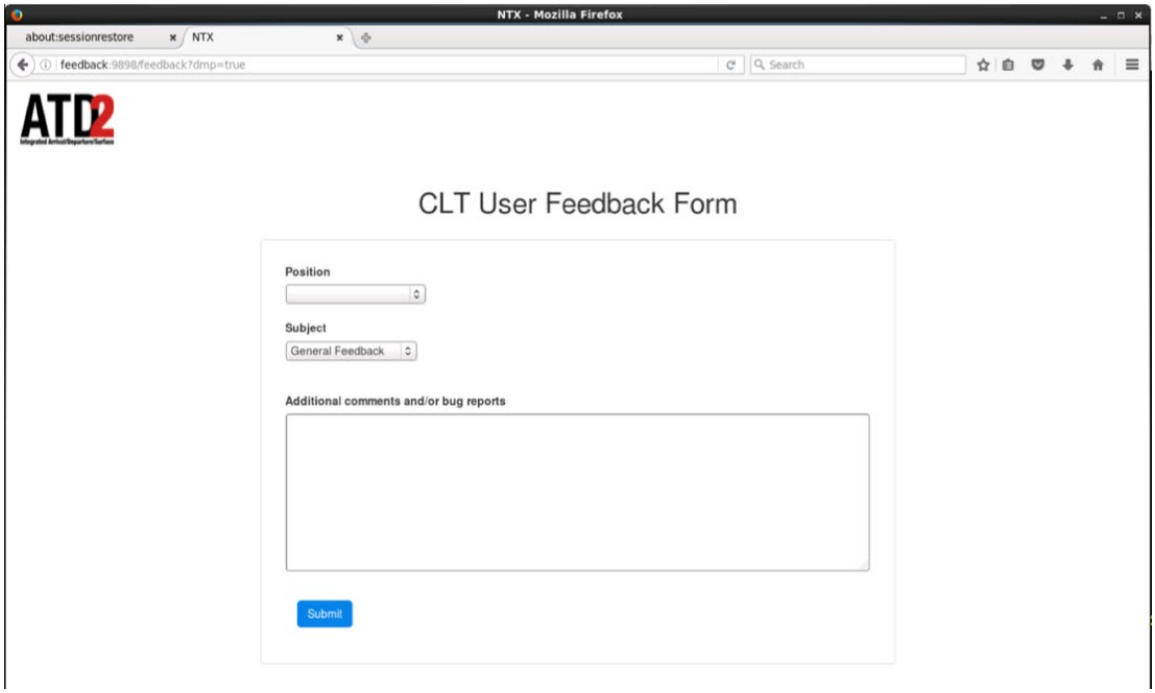


Figure 2.28. User Feedback Form page.

Step 3: Under "Position" in the Feedback Form page, select the up/down arrows to bring up a list of job positions.

Step 4: Select the appropriate position in the drop-down list (Figure 2.29).

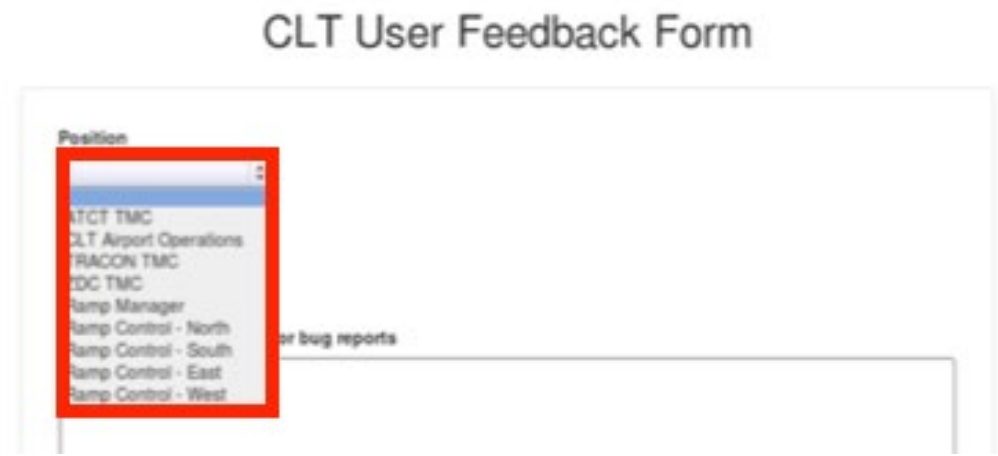


Figure 2.29. Position drop-down list.

Step 5: Under "Subject" in the Feedback Form page, select the up/down arrows to specify the general subject of the feedback being submitted (see Figure 2.30).

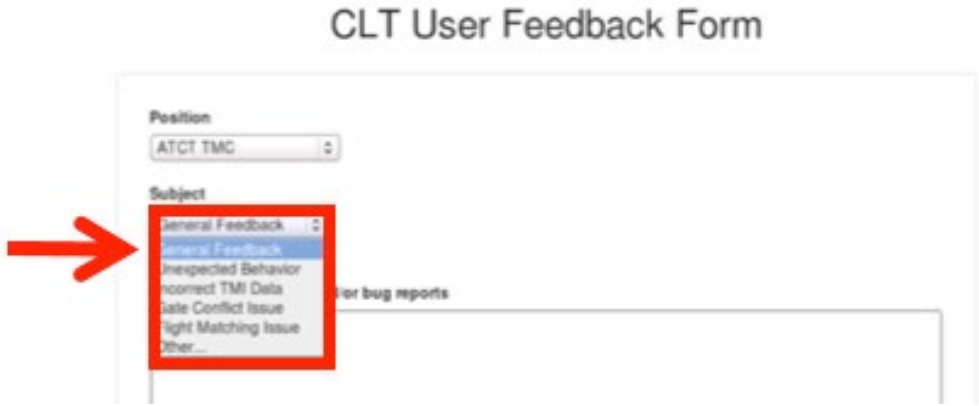


Figure 2.30. Subject drop-down list.

Step 6: Under "Subject" in the Feedback Form page, if "Other …" is chosen, an additional line will appear under Other that says "Enter subject:" Type in the subject of the feedback in the box on that line (Figure 2.31).

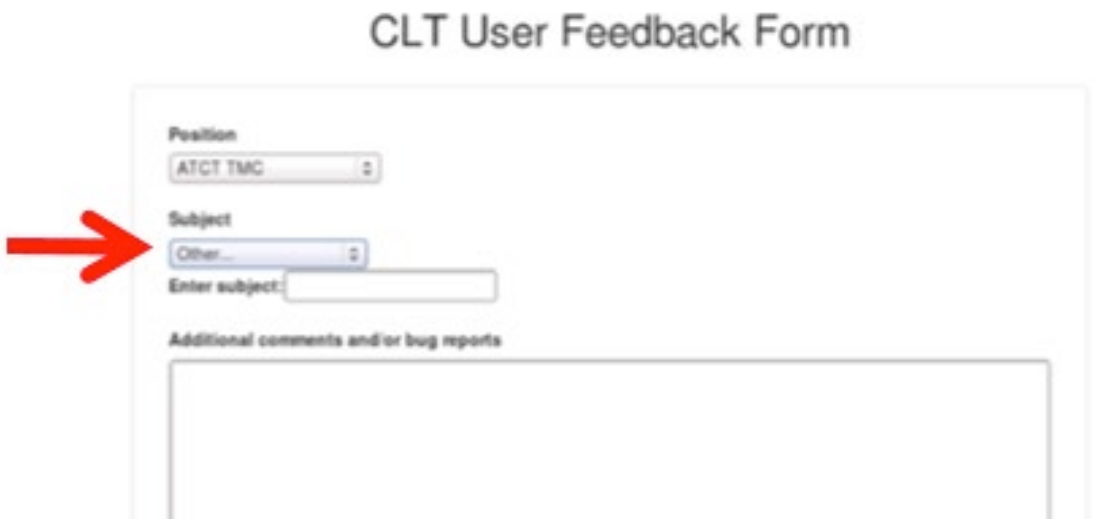


Figure 2.31. "Other..." type in box.

Step 7: Enter additional comments in the larger box in the bottom half of the Feedback Form page (Figure 2.32). If you are reporting a bug, please indicate the day, time, and specific flight numbers, if possible, so the issue can be investigated from the data archives.

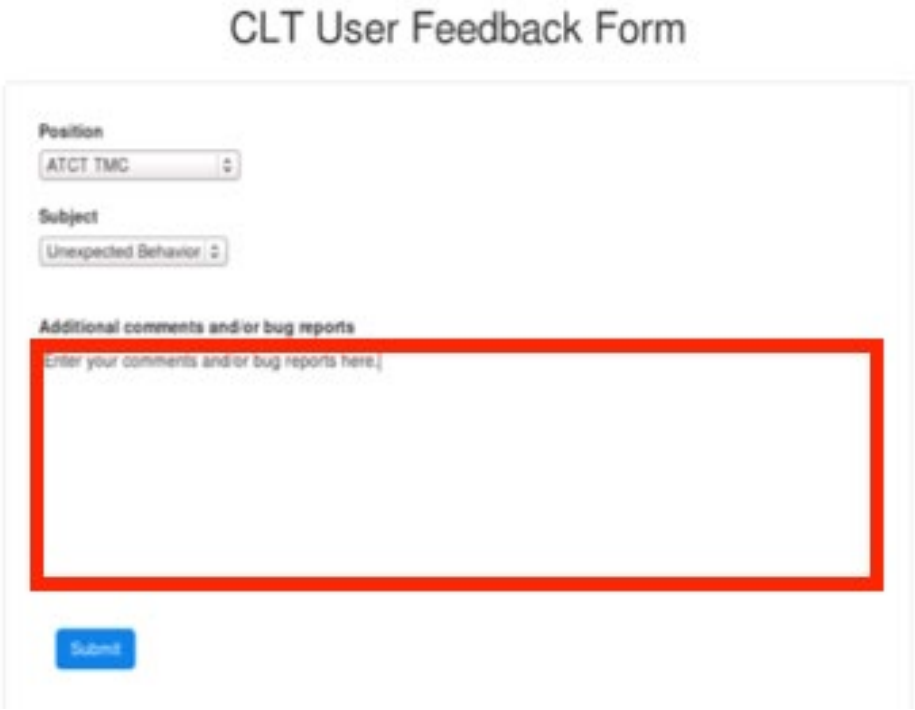


Figure 2.32. Additional comments can be entered after selecting Position and Subject.

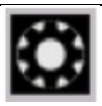
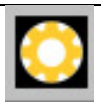
Step 8: Once the Position and Subject are selected and all additional comments/information are entered, click "Submit" in the Feedback Form page (see Figure 2.32). The information will be transmitted to the ATD-2 team for review and action.

Thank you for taking the time to provide system feedback.

3 SMP Icons in ATD-2 Tools

ATD-2 strives to make consistent information available to every user interface. Both the STBO Client and the RTC/RMTC contain icons that show the current state of metering being used by the system. Changes in the metering state are immediately reflected on all systems. SMP icons are shown in Table 2.

Table 2. Legend for Metering Icons

Icon	Symbology
	No Active SMP on Runway <36C>.
	Current Active SMP on Runway <36C>.
	No proposed SMP.
	A proposed SMP is available.
	No metering.

Appendix A: Acronyms

This appendix defines acronyms and terms that are used repeatedly throughout ATD-2 and this SMD User Manual.

Acronym	Term
AAL	American Airlines
AC	Aircraft
ACID	Aircraft Identifier
ACK	Acknowledge
ADW	Arrival / Departure Window
AFP	Airspace Flow Program
AIBT	Actual In-Block Time
ALDT	Actual Landing Time
AMA	Airport Movement Area
AMAT	Actual Movement Area entry Time
AOBT	Actual Off-Block Time
APREQ / CFR	Approval Request / Call For Release
ARR / DEP	Arrival / Departure
ARRFIX	Arrival Fix
ARTCC	Air Route Traffic Control Center
ASDE-X	Airport Surface Detection Equipment - Model X
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
ATD-2	Airspace Technology Demonstration 2
ATOT	Actual Takeoff Time
BOS	Boston Logan International Airport
CC	Configuration Change (Runway)
CDM	Collaborative Decision Making
CDR	Coded Departure Route
CLT	Charlotte Douglas International Airport
CSV	Comma-Separated Values (file type)
CTOP	Collaborative Trajectory Options Program
CTOT	Controlled Takeoff Time

Acronym	Term
DAL	Delta Air Lines
DB	DataBlock
DEPFIX	Departure Fix
DEST	Destination
DFW	Dallas / Fort Worth International Airport
DMP	Departure Metering Programs (synonymous to SMP)
EDCT	Expected Departure Clearance Time
EFTT	Earliest Feasible Takeoff Time
EOBT	Earliest Off-Block Time
ESTIBT	Estimated In-Block Time
ESTOBT	Estimated Off-Block Time
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
FAA	Federal Aviation Administration
FDX	FedEx
FUSION	Consolidates all available airport surveillance to simulate a single-sensor radar display system
GDP	Ground Delay Program
GS	Ground Stop
ICAO	International Civil Aviation Organization
ID	Identification
IDAC	Integrated Departure Arrival Capability
IOBT	Initial Off-Block Time
LGA	LaGuardia International Airport
LIBT	Airline In-Block Time
LOB	Long On Board
LOBT	Airline Off-Block Time
MIT	Miles-In-Trail
NASA	The National Aeronautics and Space Administration
nmi	Nautical miles
OIS	FAA Operational Information System

Acronym	Term
OPNEC	Operational Necessity
REQ	Request
RMTC	Ramp Manager Traffic Console
RTC	Ramp Traffic Console
RWY	Runway
SDT	Scheduled Departure Time
SIBT	Scheduled In-Block Time
SID	Standard Instrument Departure
SLDT	Scheduled Landing Time
SMA	Surface Movement Advisor
SMD	Surface Metering Display
SMP	Surface Metering Programs
SOBT	Scheduled Off-Block Time
STA	Scheduled Time of Arrival
STAR	Standard Terminal Arrival Route
STARS	Standard Automation Replacement System
STBM	Surface Time-Based Metering
STBO	Surface Trajectory-Based Operations
STOT	Scheduled Takeoff Time
SWIM	System-Wide Information Management
TBD	To Be Determined
TBFM	Time-Based Flow Management System
TEQT	Target Excess Queue Time
TFDM	Terminal Flight Data Manager
TFM	Traffic Flow Management
TFMS	Traffic Flow Management System
TIBT	Target In-Block Time
TLDT	Target Landing Time
TM	Traffic Management
TMA	Traffic Management Advisor

Acronym	Term
TMAT	Target Movement Area entry Time
TMI	Traffic Management Initiative(s)
TOBT	Target Off-Block Time
TRACON	Terminal RADAR Approach Control
TTOT	Target Takeoff Time
TZ	Track data from TFMS
UAL	United Airlines
UIBT	Undelayed In-Block Time
ULDT	Undelayed Landing Time
UMAT	Undelayed Movement Area entry Time
UNK	Unknown
UOBT	Undelayed Off-Block Time
UTOT	Undelayed Takeoff Time