



UltraAPEX User Guide

Draft Document 0.1, for UltraAPEX Version 1.9

© Ultra Electronics Limited 2013

All rights reserved. No part of this document may be reproduced, duplicated, distributed or sold in any form or by any means without prior permission in writing from Ultra Electronics Limited

Ultra Electronics Airport Systems is a trading name of Ultra Electronics Limited

Table of Contents

ABOUT ULTRAAPEX	5
Accessing UltraAPEX.....	8
Using This Document.....	8
Next Steps.....	9
GETTING STARTED WITH ULTRAPORTAL.....	10
Requirements	10
Starting.....	10
Trying.....	10
What is the Layout Browser?	11
How do I use different views?	11
Can I switch between views?	14
How do I go back?	15
Navigating	15
Can I get quick access to Layouts?	15
Can I easily move forwards and backwards?	16
Can I save and access shortcuts?	16
Where's my Home Layout?.....	16
Can I set my start-up Layout?.....	17
How do I search for Layouts?	17
Can I change user settings?	17
How do I get online help?	17
How do I review system-activity?.....	18
How do I check my Portal-version?	18
How else can I get information?.....	18
Can I close the Navigation Panel?.....	18
Exiting.....	18
How do I log out?	19
What if there is no Logout option?	19
Next Steps.....	19
USING LAYOUTS.....	20
Selecting	20
Which can I use?	20
Viewing.....	21
How do I view a Chart?	21
How do I view a Report?	23
How do I view other UltraAPEX utilities?..	24
How do I view a Private Layout?.....	24
Creating.....	25
How do I access the Layout Editor?	25
How do I customize?	26
How do I save?	31
Editing	32
How do I specify a Layout for editing?	32
How do I delete?	33
How do I modify?.....	33
How do I move?	34
How do I resize?.....	34
How do I get quick access for viewing?	34
Managing	34
Can I view several Layouts at once?	35
How do I view my navigation history?	35
How do I save shortcuts?	35
Can I list and access related Layouts?	35
How do I save a Layout's URL?	35
How do I delete a Layout or Folder?	36
How do I edit a Layout?	36
How do I rename a Layout Folder?.....	36
How do I open a Layout in a New Tab?....	36
Can I add a Layout to my Shortcuts?.....	36
Can I change a Layout's icon?	36
What if a menu item is not available?	36
How do I relocate Layouts?	37
Next Steps.....	37
USING CHARTS.....	38
Basic Interactions	38
How do I access?.....	38
How do I modify?.....	38
How do I resize?.....	40
How do I zoom and pan?.....	41
How do I change time-periods?.....	43
Using QuickTools	45
How do I filter data?	45
How do I reposition the Legend?.....	48
How do I display annotations?.....	49
Drilling Down	50
How do I drill down?	50
How do I resurface?	51
How do I add my own Drill-Down?	52
Other kinds of Drill-Down	53
Using Display Features	53
Using Menu Features	55
Next Steps.....	55
USING REPORTS.....	56
Basic Interactions	56
How do I view?	56
How do I modify?.....	58

<i>How do I navigate?</i>	59	<i>Using QuickTools</i>	102
<i>How do I preserve?</i>	60	<i>Using Strategic Dashboards</i>	
Next Steps.....	61	<i>Effectively</i>	103
USING DATA VIEWERS.....		<i>Next Steps.....</i>	104
Basic Interactions		HANDLING EVENTS.....	
<i>How do I access?</i>	62	105	
<i>How is data presented?</i>	62	Layout Preparation	
<i>Can I make changes to data?</i>	63	<i>How do I create an Event Management Layout?</i>	105
<i>Does the data itself change?</i>	64	<i>Which tools should I include?</i>	106
Using the Grid Interface	64	Receiving and Responding	
<i>Can I change column-order?</i>	64	<i>How do I receive Events?</i>	106
<i>Can I change row-order?</i>	64	<i>How should I respond to Events?</i>	107
<i>Can I sort across multiple columns?</i>	65	<i>How do I receive Tasks?</i>	108
<i>What is “grouping” and how do I use it?</i>	66	<i>How should I respond to Task Cards?</i>	109
<i>How do I change or remove groupings?</i>	70	<i>What happens if I take no action?</i>	112
<i>Can I search for data-values?</i>	70	<i>What happens if I accept a Task?</i>	112
<i>Can I hide columns?</i>	74	<i>What other features are available?</i>	113
<i>Can I change the default airport?</i>	75	<i>What if I complete all my Tasks?</i>	115
<i>What other changes can I make?</i>	76	<i>How do I check progress?</i>	116
<i>What is Advanced Filtering?</i>	77	<i>Might I receive multiple Task Cards?</i>	118
<i>How do I export?</i>	81	<i>Can I download and add attachments?</i>	120
<i>How do I handle animated alerts?</i>	81	<i>Can I filter Events?</i>	122
<i>How do I create a new flight leg?</i>	82	Handling Notifications.....	
<i>How do I link and unlink flights?</i>	84	<i>How am I notified?</i>	124
<i>How do I handle checkboxes?</i>	84	<i>How do I respond?</i>	125
Using the Filter Interface.....	86	<i>How do I clear the queue?</i>	126
<i>How does the Filter relate to the Grid?</i>	86	Next Steps.....	127
<i>How does the Filter relate to other tools?</i>	87	USING AIRPORT MAPS	
<i>How do I use the Filter?</i>	87	128	
<i>How do I populate fields?</i>	87	Getting Started	128
<i>How do I filter Grid-data?</i>	88	<i>How do I access?</i>	128
<i>Can I apply multiple filters?</i>	89	<i>How do I use?</i>	129
<i>Can I access the Data interface?</i>	89	<i>How do I get oriented?</i>	129
Using the Details Interface.....	89	<i>How do I scroll my immediate area?</i>	129
<i>How do I access the Details panel?</i>	90	<i>How do I scroll my outlying areas?</i>	131
<i>How do I change names?</i>	92	<i>How do I zoom and pan?</i>	132
<i>How do I change dates and times?</i>	94	<i>How do I hide the Navigation Controls?</i>	134
<i>How do I change integers?</i>	94	<i>What are the numbers at the lower-left?</i>	134
Next Steps.....	94	Observing Airport Conditions ...	
USING STRATEGIC		135	
DASHBOARDS		<i>How do I observe airport features?</i>	135
Basic Concepts		<i>What does movement signify?</i>	135
Basic Interactions		<i>How do I distinguish between gates?</i>	135
<i>How do I access?</i>	96	<i>How do I distinguish between aircraft?</i>	136
<i>What are the basic elements?</i>	97	<i>How do I pin the tooltip?</i>	136
<i>How do I inspect an item?</i>	97	<i>How do I raise an Event?</i>	137
<i>What do the colours mean?</i>	98	Changing Display Settings	
<i>How do colours relate to time?</i>	98	<i>How do I access?</i>	137
<i>How do Intervals relate to Time-Points?</i>	99	<i>What settings are available?</i>	138
<i>What do the subcomponents represent?</i>	100	Understanding States.....	
<i>How do I respond to warnings?</i>	100	<i>What is a State?</i>	139
<i>How do I examine Value Items?</i>	101	<i>How do I interpret colour-codes?</i>	140
Next Steps.....	140		

HANDLING DELAY CODES .. 141

- How do I access?* 141
What are the features? 142

How do I enter a Delay Code? 143

INDEX **146**



About UltraAPEX

UltraAPEX is an *Airport Performance Expert System*, providing a centralized, fully integrated view of the contents of an *Airport Operational Database*. UltraAPEX provides customizable graphical utilities, which make all such data exceptionally easy to inspect, cross-reference, and modify.

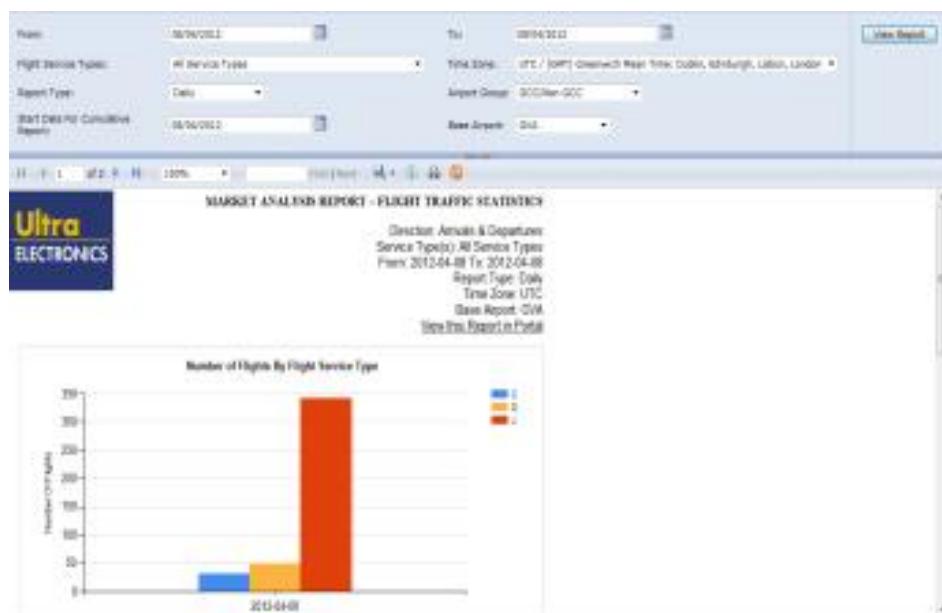
These utilities include:

- ⊕ **Charts** — Visual representations of *Key Performance Indicators (KPIs)*, which communicate the degrees of efficiency with which an airport is functioning:

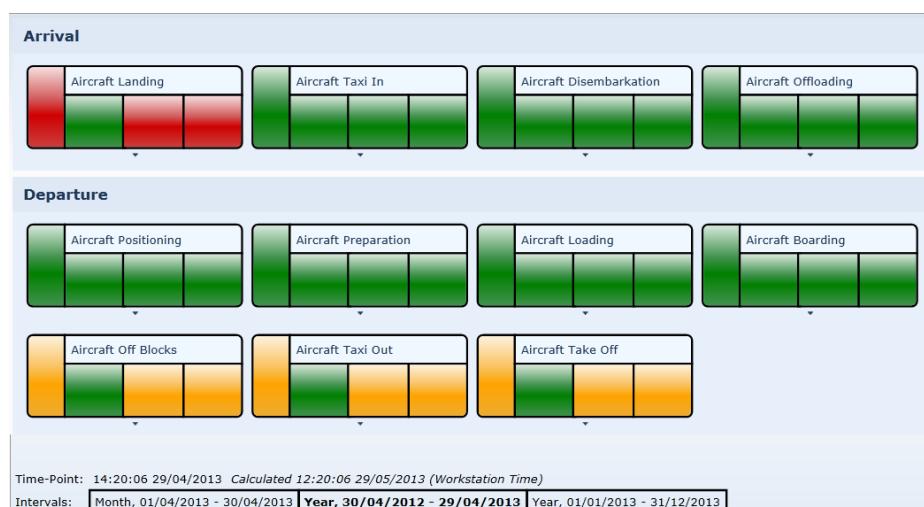


- ⊕ **Reports** — Detailed, distributable accounts of an airport's operational activities:

ABOUT ULTRAAPEX



- Strategic Dashboards** — Displays that summarize performance levels for critical indicators; provide immediate warnings whenever efficiency-thresholds are exceeded; and help users to diagnose root-causes:



- Data Viewers** — Representations of data related to flights. These often employ their own Grid-based display format, as shown here; but can also be made to apply to other utilities, so that flight-based data selection occurs even more generally:

ABOUT ULTRAAPEX

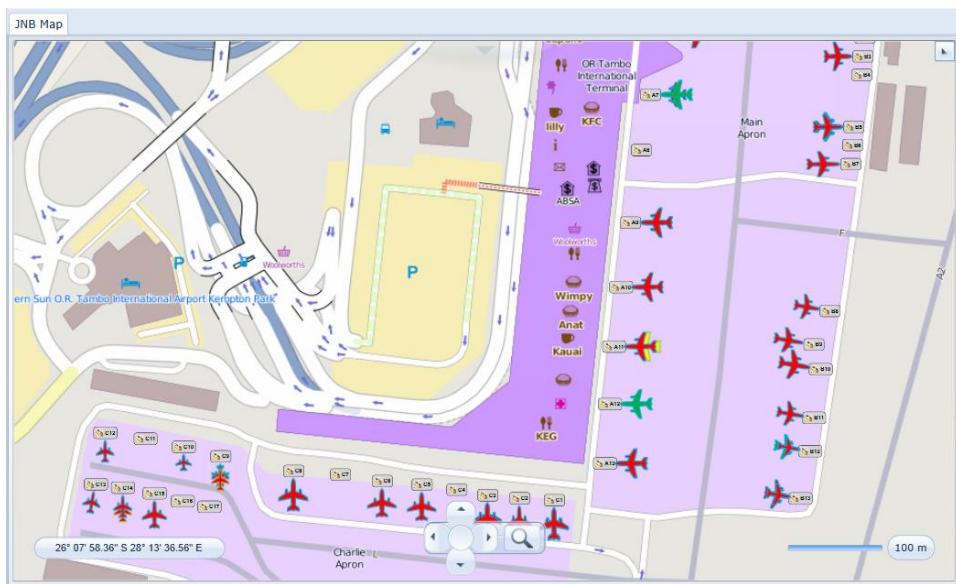
The screenshot shows two windows side-by-side. The left window is titled 'My Flight Viewer' and contains a table with columns: ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name. The table lists several flight entries with details like date, time, aircraft type, and destination. The right window is titled 'Filter - My Flight Viewer' and contains four input fields: ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name, each with a clear button.

- Event and Task Card Viewers** — Graphical facilities for tracking Events and Task Sequences that have been raised.

The screenshot shows a window titled 'Selected Task Card' containing two task cards. The top card is green and titled 'Notify outbound airport.' It includes fields for Estimated Time (0 Minutes), Actual Time (8 Minutes), Last updated time (10:58), Note, Actions Taken, and Lessons Learnt. The bottom card is red and titled 'Notify passengers.' Both cards have a 'Mandatory' status indicator with a yellow warning icon. Each card has a set of icons for back, forward, and checkmark actions.

- Airport Maps** — Interactive, dynamically updated representations of airports' physical characteristics, including animations of aircraft that are taxiing, landing, or taking off.

ABOUT ULTRAAPEX



 **Delay Code Assignment** — A facility for assigning appropriate *Delay Codes* to recorded instances of flight-delay, such that appropriate responsibility can be declared, submitted, and approved.

Delay Code Assignment										
Start:	10/12/2013	End:	10/12/2013	Airport:	JNB					
Drag a column header and drop it here to group by that column										
Created at	Carrier	Flight Number	Flight Callsign	Delay time	Scheduled	Actual	Delay Code			
10/12/2013 12:44:26	FN	202	FTZ202	29	10/12/2013 12:15:00	10/12/2013 12:44:00	29			
10/12/2013 10:20:17	SA8	220	LNK220	53	10/12/2013 08:40:00	10/12/2013 09:33:00	53			
10/12/2013 10:15:09	SA	050	SAA050	81	10/12/2013 08:10:00	10/12/2013 09:31:00	81			
10/12/2013 12:54:37	MN	901	CAW901	19	10/12/2013 12:35:00	10/12/2013 12:54:00	19			
10/12/2013 12:16:58	SA	559	SAA559	10	10/12/2013 11:55:00	10/12/2013 12:05:00	10			
10/12/2013 12:32:26	PM	101	PM101	17	10/12/2013 12:15:00	10/12/2013 12:32:00	17			

Each of these visual forms of data-representation is supported by its own specially purposed software *Module*. Data itself is organized around areas of user-need: for example, aircraft, baggage, passengers, and so on.

UltraAPEX can be continuously extended with new supportive software Modules, and with incremented sets of data.

Accessing UltraAPEX

UltraAPEX is accessed by means of *UltraPortal*. This is a web-based user interface that represents the content of appropriate Modules to its users.

Using This Document

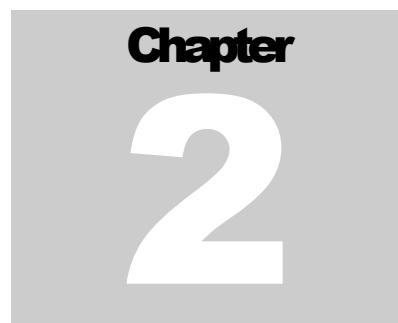
This document, the *UltraAPEX User Guide*, provides a detailed introduction to the UltraAPEX user-experience. As such, it includes instructions on how to use Layouts to examine Charts, Reports, and other utilities.

The document assumes that the reader is indeed a *user*, and so has at most a limited responsibility for *configuring* UltraAPEX. Additional, highly detailed information on advanced configuration, including how to establish roles for users, and how to set up specific graphical utilities for general use, is provided in the *UltraAPEX Administrator Guides*.

The illustrations provided in this document indicate the likely appearance of UltraAPEX tools, folder hierarchies, and airport data. Note, however, that since your own environment is likely to possess its own special characteristics, these illustrations may sometimes differ in appearance from what appears on your computer.

Next Steps

Chapter 2 describes how to get started with UltraPortal, and how to use it to access data provided by UltraAPEX.



Getting Started with UltraPortal

UltraPortal presents data to the user in the form of *Layouts*. This chapter explains how to access UltraPortal, and how to browse and select Layouts.

Requirements

In order to bring up and use UltraPortal, make sure you have a standard desktop or laptop computer that has access to your site's intranet, and is equipped with a modern browser.

Then, make sure your systems administrator has fully configured UltraPortal. Obtain the appropriate network address and authentication information.

Starting

Open a browser, and type the network address into the address bar. Hit return.

If an authentication dialogue now appears, enter the appropriate user name and password:

A rectangular dialog box with a thin black border. Inside, there are two text input fields: one labeled "Username" and another labeled "Password", both with blue placeholder text. Below the fields is a blue "Login" button with white text.

Note that if UltraPortal has been configured to use your standard desktop authentication details, your login may occur automatically — in which case no dialogue appears.

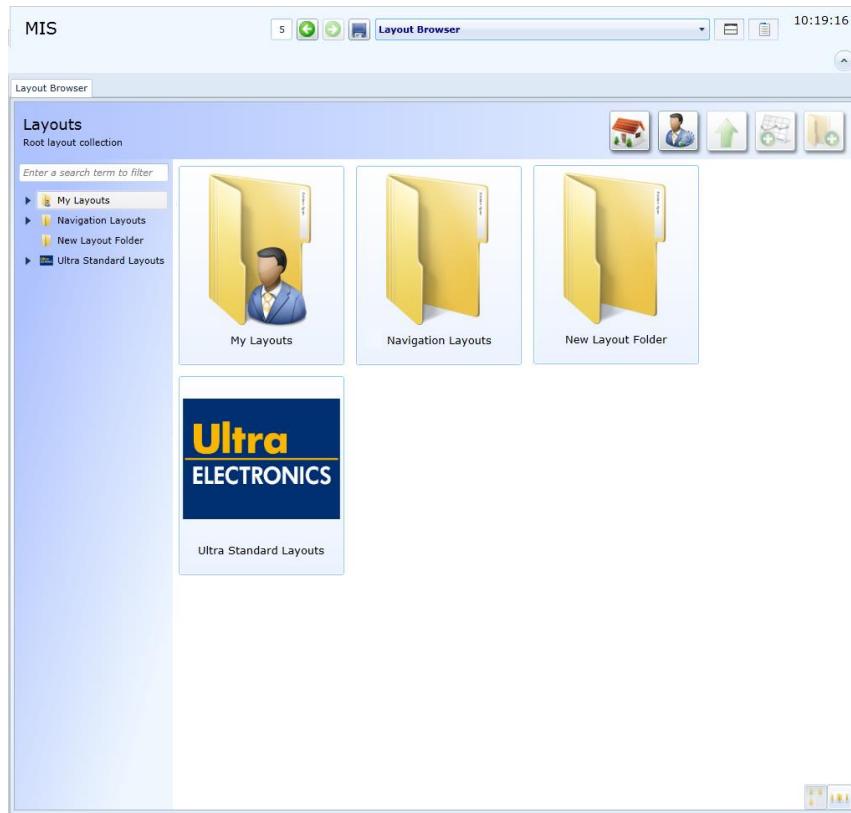
UltraPortal now appears, and presents you with the *Layout Browser*.

Trying

UltraPortal allows you to review and modify data by means of graphical elements known as *Layouts*. You manage your interactions with them by means of the *Layout Browser*, which is where your experiences with UltraPortal now begin.

What is the Layout Browser?

The **Layout Browser**, which typically appears when you log into UltraPortal, is a tool that lets you browse, select, and view available Layouts and all data they contain:



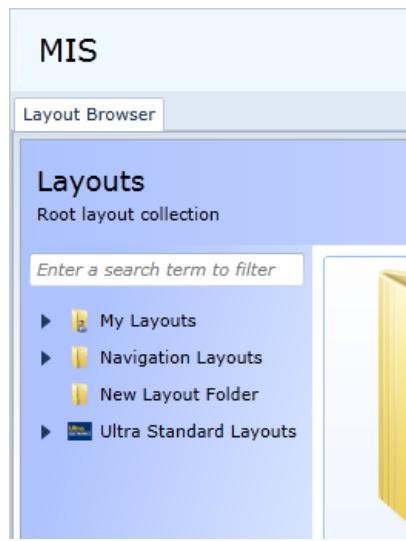
The graphical elements displayed by the Layout Browser include representations of *Layouts* and *Layout Folders*: you access Layouts by clicking on Layout Folders, which duly open to reveal their contents. The elements are displayed as a *Tree View* at the left, and can also be displayed as either a *Tile View* or a *Carousel View* to the right, in the main display pane. Note that the number, names, and types of elements vary, depending on your site.

How do I use different views?

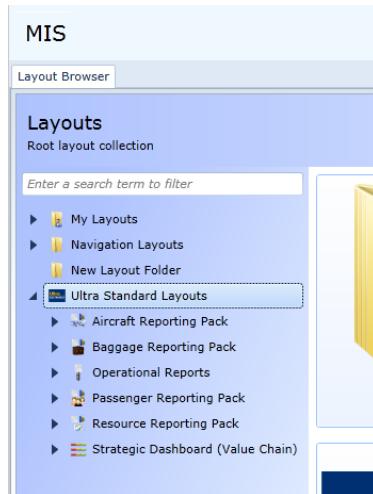
All of the **Layout Browser's** views serve the same purpose: they allow you to navigate through the visual content provided by the **Layout Browser**. Each view offers a slightly different mode of interaction, allowing you to select whichever is most comfortable for you.

Tree View

The *Tree View* is located at the left-hand side of the **Layout Browser**:



The elements you initially see are *Layout Folders*. To open a folder, click on the arrowhead that appears to its immediate left. For example, here, if you were to click on the arrowhead next to **Ultra Standard Layouts**, the folder would open, revealing a number of sub-folders:



Each of these can be opened in the same way: by clicking on the adjacent arrowhead.

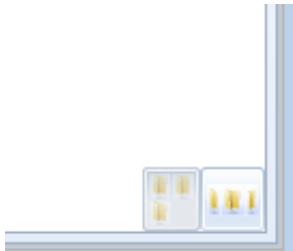
Alternatively, you can double-click on the folder-name to open it. (For example, double-click on the words **Ultra Standard Layout** or their accompanying logo, to reveal that folder's contents.)

Tile View

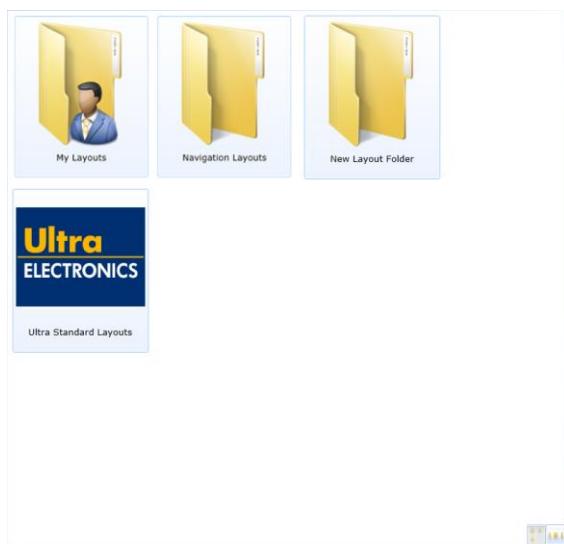
The *Tile View* is located to the right of the Tree View, in the main display panel of the **Layout Browser**.

The *Tile View* is, in fact, the default view of the main display panel; so it is probably visible to you from the moment the Layout Browser first comes up. However,

whenever that is *not* the case, you can bring up the Tile View by accessing the two buttons at the bottom-right of the main window, and clicking on the *left* of these:



The main display panel now shows a series of tiles, each of which represents an available Layout Folder or Layout



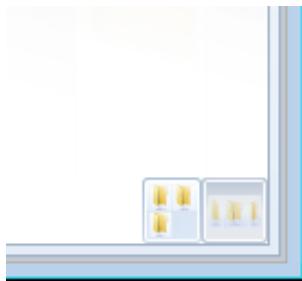
If you click on any tile, the main display window changes as follows:

- ✚ If the tile represents a Layout Folder, the main display shows a new series of tiles, which represents the contents of the selected Layout Folder. Each of these tiles can also be clicked on.
- ✚ If the tile represents a Layout, then clicking on it displays that Layout in the main display pane.

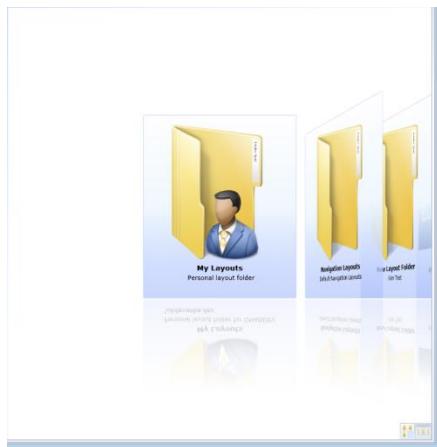
Carousel View

The *Carousel View* is provided at the right of the Tree View, in the main display panel of the Layout Browser — as such, it shares its display-space with the Tile View.

To bring up the Carousel View, access the two buttons at the bottom-right of the main window, and click on the button to the *right*.



The main display panel now shows a carousel of tiles, which can be scrolled to the left and right. Each tile represents an available layout:



To select a Layout or Layout Folder, click on the untilted tile that appears at the centre of the display:

- If the tile represents a Layout Folder, a new carousel appears, whose tiles represent the contents of the selected folder.
- If the tile represents a Layout, that Layout is displayed.

To scroll the carousel, either:

- Click on one of the tilted tiles that appear to either side of the display. The carousel scrolls so as to place that tile in the centre of the display.
- Press the left mouse button down on one of the tilted tiles that appear to either side of the display. Drag the tile to the centre, and release the mouse button.

Can I switch between views?

You can switch between views at any time.

To switch between the Tile and Carousel View, access the buttons at the lower-right of the main display panel.

Note that if you click or double-click on a text element (rather than an arrowhead) in the Tree View, you change the display in the main panel, so that it shows a tile for the selected element, along with tiles for all other elements at that level.

Clicking on the tiles themselves changes the Tree View in an equivalent way.

How do I go back?

When you are using UltraPortal, you should *not* attempt to use the standard browser's *Back* button to go to a previous Layout Folder (if you do so, you are attempting to exit UltraPortal: therefore, a warning notification appears, asking you to confirm or cancel).

Instead, use the *Up Arrow* button in the **Layout Browser** header. This takes you from your current folder into its parent folder.



Navigating

The **Layout Browser** makes available a variety of shortcuts and other convenience tools that allow ease-of-navigation.

Can I get quick access to Layouts?

You can navigate quickly to any Layout that you have previously opened, by means of the **Navigation History** control, in the UltraPortal header:



This control stores each of the Layouts you have visited during your current session, up to a maximum of 10 (duplicate visits appear as single entries). Note that at the beginning of each session, the control displays the 5 Layouts that you have most frequently visited during your past sessions.

Can I easily move forwards and backwards?

To the left of the **Navigation History** control are two buttons, each of which features a white arrowhead on a green background:



These buttons allow you to move *backwards* (the left-pointing arrowhead) and *forwards* (the right-pointing) through the sequence of Layouts in your Navigation History, one Layout at a time..

Can I save and access shortcuts?

You can save shortcuts to your favourite Layouts by means of the **Layouts** menu in the UltraPortal header, which is accessed via the icon immediately to the right of the **Navigation History** control:



Click on the **Layouts** icon, and a menu appears that contains the following items:



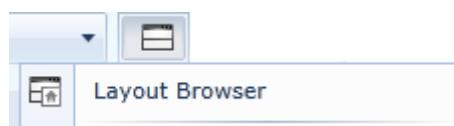
Use these items to save the current Layout to your shortcuts list and access the shortcuts list itself.

Where's my Home Layout?

Click on the **Home** button in the **Layout Browser** header, to open your Home Layout:



Alternatively, your Home Layout may be accessible from the **Layouts** menu in the UltraPortal header:



Can I set my start-up Layout?

You can set your start-up Layout by left-clicking on the icon that appears between the **navigation buttons** and the **Navigation History** control:



Left-clicking on this icon makes the current Layout appear first, whenever you access the Layout Browser. (Note that your start-up Layout is not necessarily the same as your Home Layout.)

How do I search for Layouts?

Enter either all or part of a Layout-name in the search box at the top of the Tree View of the **Layout Browser**:



The tree now displays all Layouts whose names match the characters you have entered.

Can I change user settings?

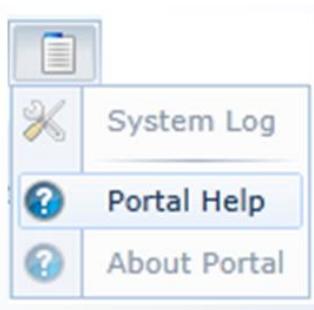
You can access and change your user settings by clicking on the **User Settings** button in the **Layout Browser** header:



Available settings relate to the inclusion of a digital *clock* in the header of the Layout Browser, the showing of notifications and whether they feature sound, the number of Layouts to preload, and specification of the Default Airport to be used by UltraAPEX.

How do I get online help?

Click on the **Portal Options** button in the Portal header, and select the **Portal Help** option:



How do I review system-activity?

Click on the **Portal Options** button in the Portal header: if you have appropriate permissions, the **System Log** option is visible. You can click on this to read an account of recent system-activity.

How do I check my Portal-version?

Click on the **Portal Options** button in the Portal header, and select the **About Portal** option.

How else can I get information?

UltraAPEX provides a system of *alarms* and other notifications to ensure that you receive essential information on system-status. These appear at the lower-edge of the portal. You can modify the alarm colour-scheme, and add sound, by means of the **User Settings** button, described above.

Can I close the Navigation Panel?

The **Navigation Panel**, which appears across the top of the Layout Browser, can be closed, by means of the **Panel Closure button**, which appears just below it, at the upper right:



This closes the panel, and so saves space within your browser-display. To re-open the **Navigation Panel**, simply left-click on the **Panel Closure button** again.

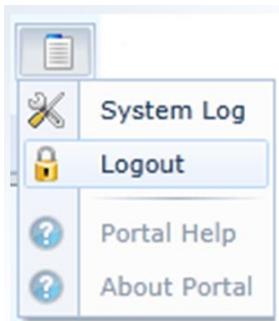
Exiting

The way in which you exit your UltraPortal session varies, according to how your administrator has set up the system: you may or may not need explicitly to log out.

If UltraPortal has been configured to use your Windows desktop authentication details, no explicit logout is required.

How do I log out?

If you *do* need to log out of UltraPortal, you can click on the **Portal Options** button in the Portal header. If you see the **Logout** option in the menu, select it:



When asked for confirmation, select **OK** to log out, or **Cancel** to stay logged in.

Logging out terminates your current session, and redisplays the **Login** screen.

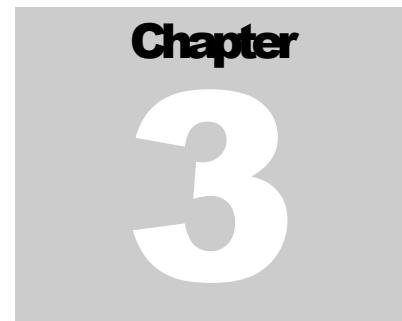
What if there is no Logout option?

If you do not see the **Logout** option in the **Portal Options** menu, this is indeed because UltraPortal has been configured to use your Windows desktop authentication details — which means that no explicit logging out is necessary.

Instead, exit UltraPortal simply by closing the web browser tab or window.

Next Steps

Now that we have completed our introduction to using UltraPortal, Chapter 3 provides more detailed information on how to use *Layouts*, which constitute the means whereby users access airport operational data, organized in different ways by UltraAPEX utilities.



Using Layouts

Layouts are the visual means whereby UltraPortal communicates data to users.

Chapter 2, *Getting started with UltraPortal*, has already provided a basic introduction to viewing Layouts with UltraPortal. The current chapter now provides additional information on the different forms they can take, and explains how users with appropriate permissions can customize their own.

Selecting

There are two types of Layout, which are:

- *Public Layouts*, each of which represents a subset of important data — related, say, to passengers, or baggage, or aircraft. Layouts very often constitute groupings of Charts, Reports, and Data Viewers, from which users can make specific selections; either to view the content directly, or to use it in the creation of additional Layouts.
- *Private Layouts*, which are user-created, based on different combinations of Charts, Reports, and Data Viewers selected from those available as *Public Layouts*. This allows users to combine and co-locate the informational resources they personally find most useful.

Which can I use?

UltraAPEX is designed to be highly customizable, so that users can indeed be presented with a range of options precisely suited to their role. Therefore, some users will have access to more Layouts than others.

This chapter assumes that the user has permissions for the following:

- Viewing a wide range of Charts and Reports, accessible from within the **Layout Browser** as *Public Layouts*.
- Creating new, *Private Layouts* from existing Charts, Reports, and other utilities.

(If you are not sure whether you have all necessary permissions, check with your administrator. It may be that some, but not all, of the information in this chapter relates to you.)

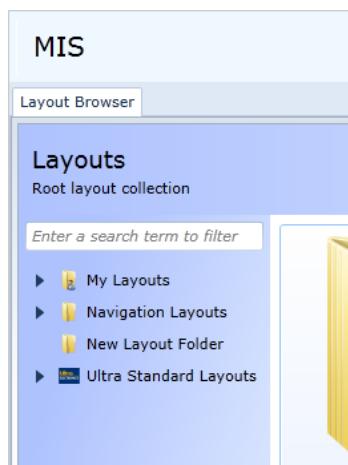
Note: Basic information on using the **Layout Browser** has already been provided in Chapter 2. Make sure you are familiar with this before proceeding.

Viewing

As a user, you can use the **Layout Browser** to gain access to a variety of *Public Layouts* that have been prepared for you by an administrator.

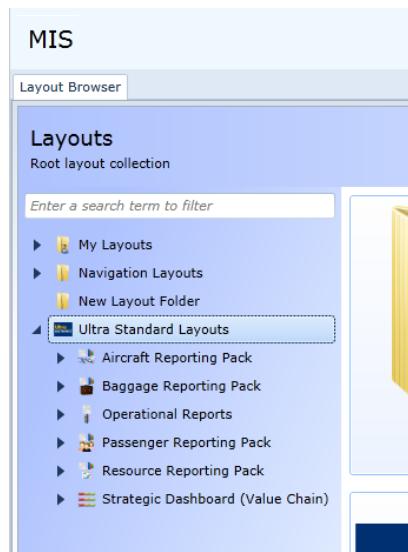
How do I view a Chart?

Charts and Reports, provided as *Public Layouts*, may be visible to users in the navigation tree of the **Layout Browser**. For example:



The folder-names under which Charts and Reports are organised as Public Layouts vary from system to system: either check with your systems administrator, or simply try opening different folders in turn. In our current example, individual Public Layouts are provided in the **Ultra Standard Layouts** folder.

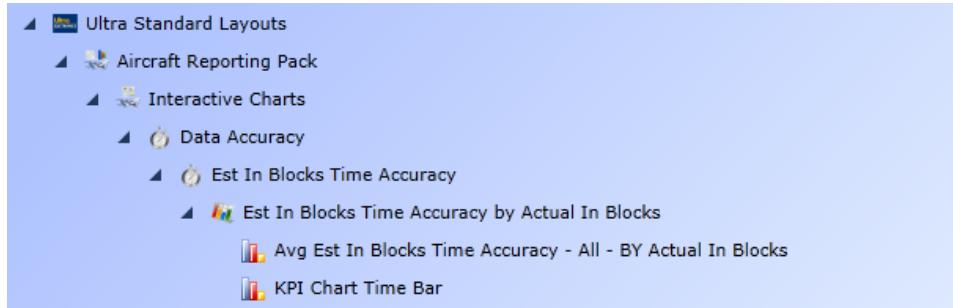
To open this, click on the adjacent arrowhead:



Now, open the **Airport Reporting Pack** in the same way, to observe its contents:



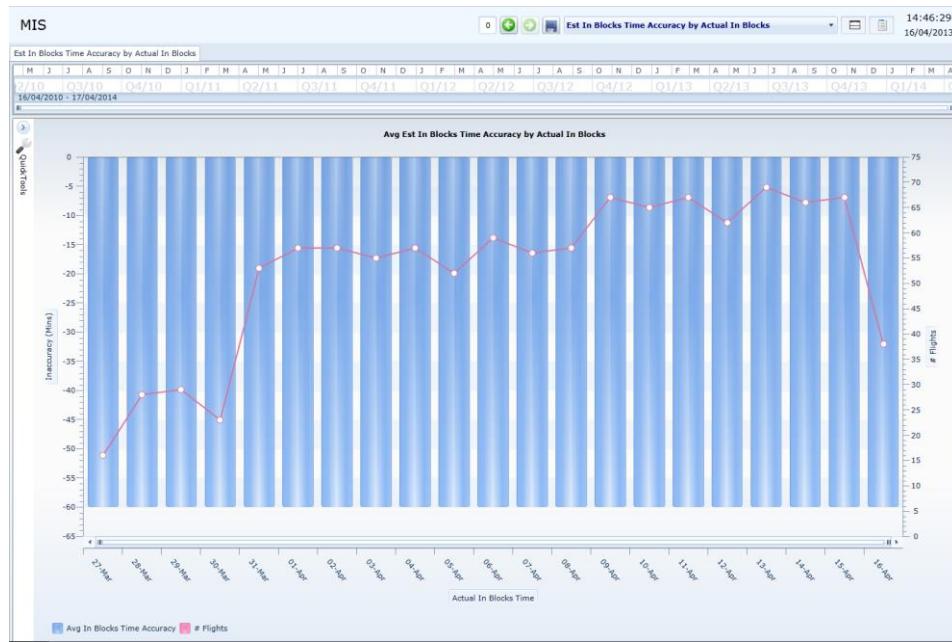
If you now open the **Interactive Charts** element, and then continue opening the folders that successively appear at the top of each emerging list, you eventually see the following:



Your navigation has revealed a Layout entitled **Est In Blocks Time Accuracy by Actual In Blocks**. This itself contains a Chart named **Avg Est In Block Time Accuracy – All – BY Actual In Blocks**, and an instance of the **KPI Chart Time Bar**, which allows data to be represented in accordance with user-specified time-periods.

To view the Chart, left-click on the text or logo for its Layout, **Est In Blocks Time Accuracy by Actual In Blocks**. The Layout Browser now changes correspondingly, to appear as follows:

USING LAYOUTS



The Chart represents the average degrees of accuracy with which *In Blocks* times have been estimated.

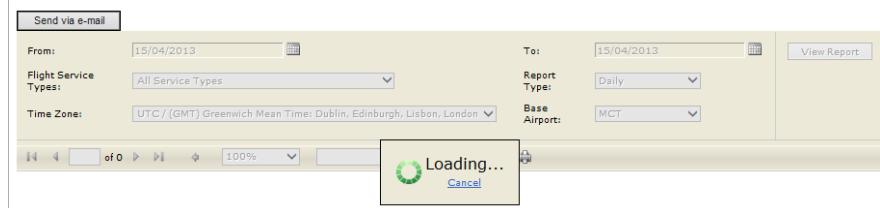
Use the user interface controls described in Chapter 2 to navigate away from the Chart, when you are ready to do so.

How do I view a Report?

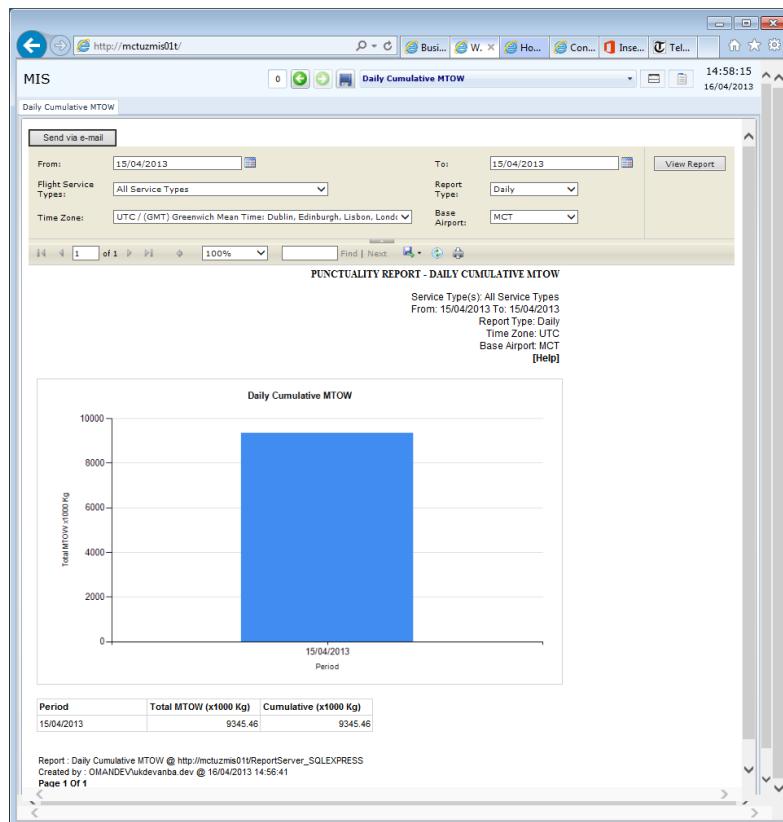
To view an individual Report, return to the **Reports** element under **Aircraft Navigation Packs**, and open successive elements as you did before. Eventually, you obtain the following view:

This makes available the report on **[SSRS] Daily Cumulative MTOW**. Double-click on the Layout-name. The **Layout Browser** now changes, to show the header for the report. If necessary, click on **View Report** to make the Report-content load:

USING LAYOUTS



The Report itself now appears beneath the header, as follows:



Again, use the standard user interface facilities to navigate away from the Report, at your convenience.

How do I view other UltraAPEX utilities?

Other UltraAPEX utilities, such as *Data Viewers*, *Strategic Dashboards*, and *Event Viewers* are also accessed as Layouts from the navigation tree. This will be exemplified in later chapters.

How do I view a Private Layout?

Private Layouts are created by administrators and by users (if they have appropriate permissions). Since the navigation tree for UltraAPEX is itself customizable, Private Layouts might reside in multiple different locations. However, all users possess a folder named **My Layouts**, which is intended as the principal repository for Private Layouts.

Creating

All **Layouts** are created by means of the **Layout Editor**, and you indeed use this to create *Private* Layouts for your own use. To use the **Layout Editor**, you must be granted permission by your administrator.

How do I access the Layout Editor?

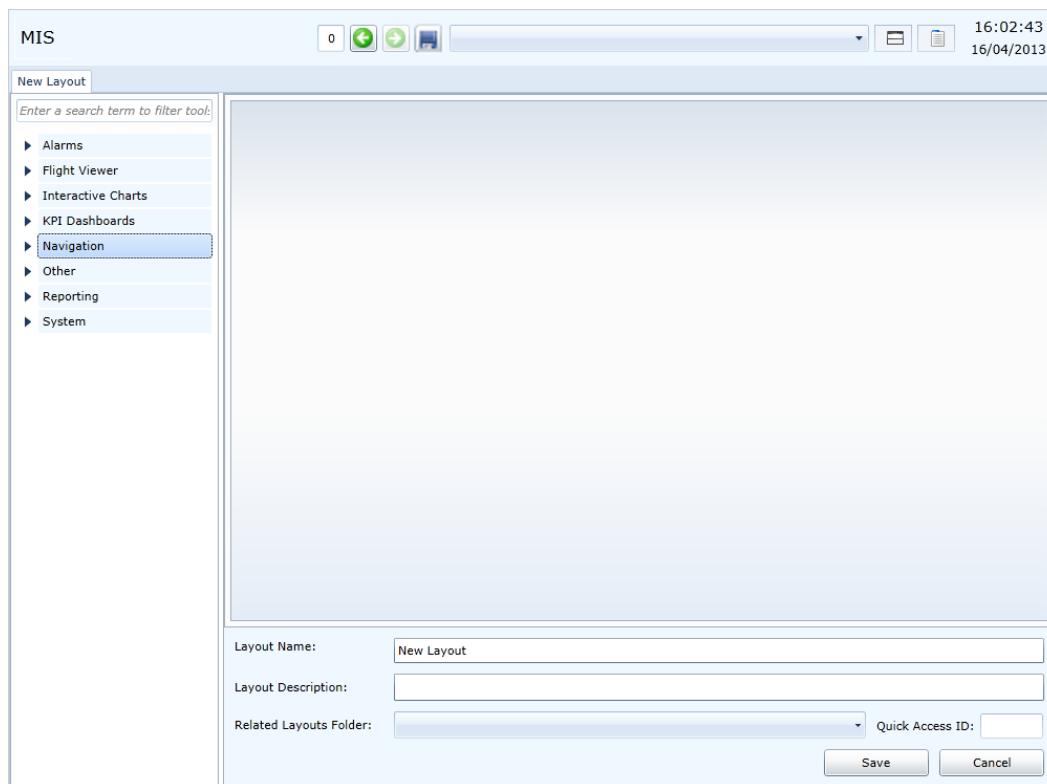
To access the **Layout Editor**, bring up the **Layout Browser**, then do either of the following:

- ⊕ Click on the **Create Layout** button, which is among the controls in the Layout Brower header:



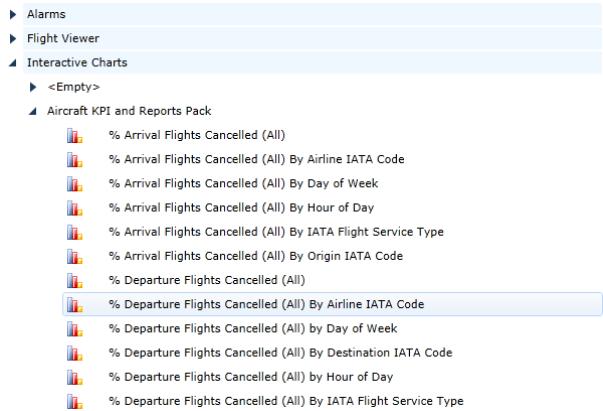
- ⊕ In the main display of the **Layout Browser**, click on a folder appropriate for saving the new Layout (in this case we will use the folder **My Layouts**), and select **New Layout** from the menu.

The **Layout Editor** now appears:



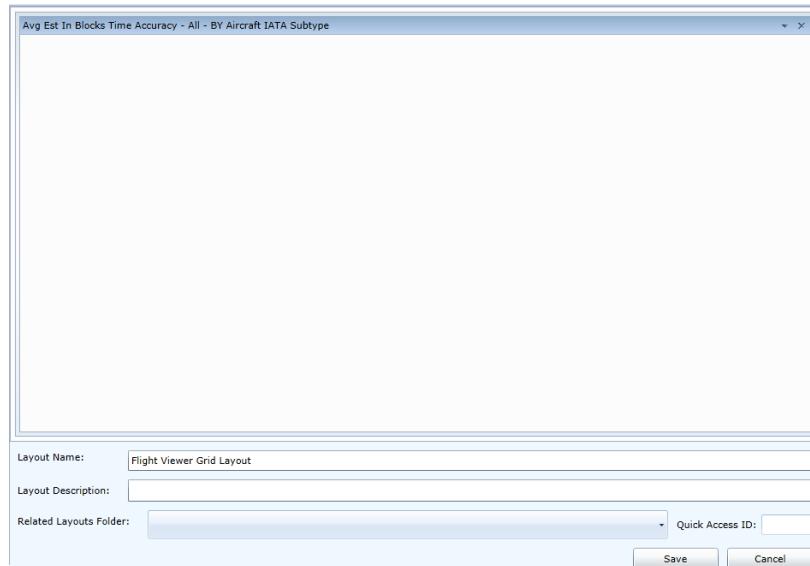
How do I customize?

At the left hand side of the **Layout Editor** appears a navigational view, which features a number of top-level folders. If these are not initially open, you can open them by left-clicking on the arrowhead adjacent to each name. In our current example, we can do this for **Interactive Charts**; and in consequence, its contents are displayed. Next, we can click on the arrowhead adjacent to the **Aircraft KPI and Reports Pack** folder. Its own contents are now displayed, and the tree appears as follows:



Each of the exposed Layout items is an interactive chart that can be included in your custom Layout. In this example, we locate the element **Avg Est In Blocks Time Accuracy – All – BY Aircraft IATA Subtype**.

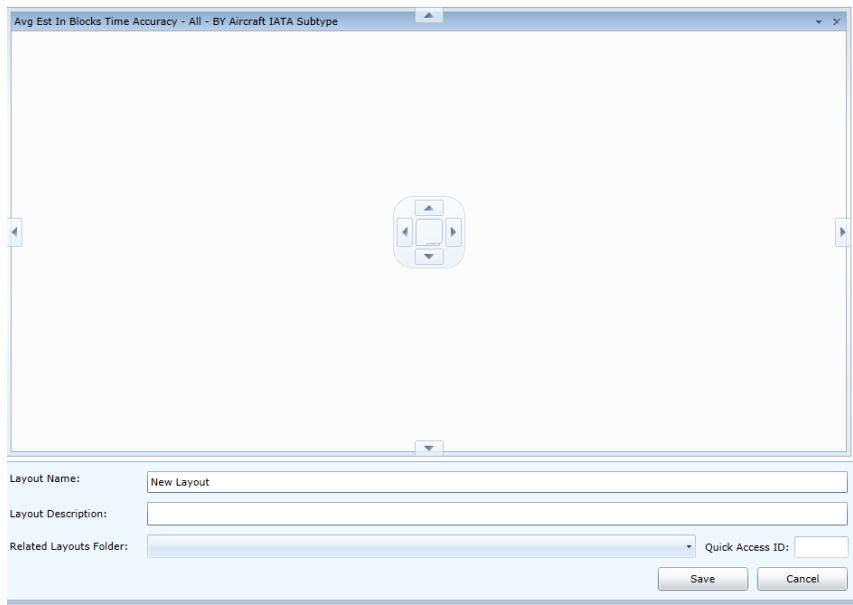
With the mouse, left-click and hold on the Chart's icon or text, and then drag it onto the main display pane of the **Layout Editor** – which is known as the *Layout Canvas*. Finally, release the mouse button. The *Layout Canvas* is now occupied by a single *Layout Pane*, which has the name of the selected Chart at its top:



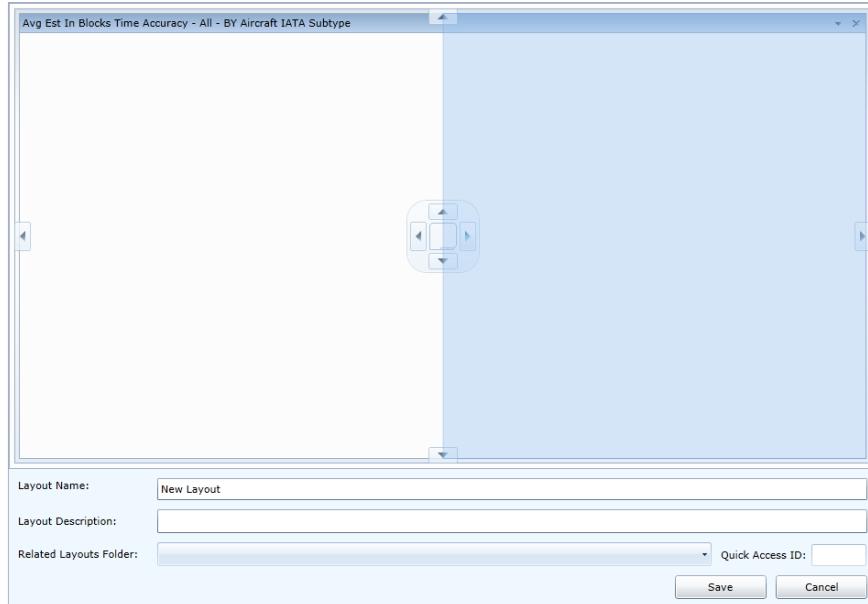
Now, return to the navigational view at the left hand side of the **Layout Editor**, and repeat the process. This time, we locate **Average Taxi In Time Difference**

USING LAYOUTS

To Std/Est (All) By Act In Blocks, and, in the same way as before, select and drag it over the existing Layout Pane. As we do so, the pane changes, to provide directional arrows, both at the centre of the pane and at the display edges, as follows:

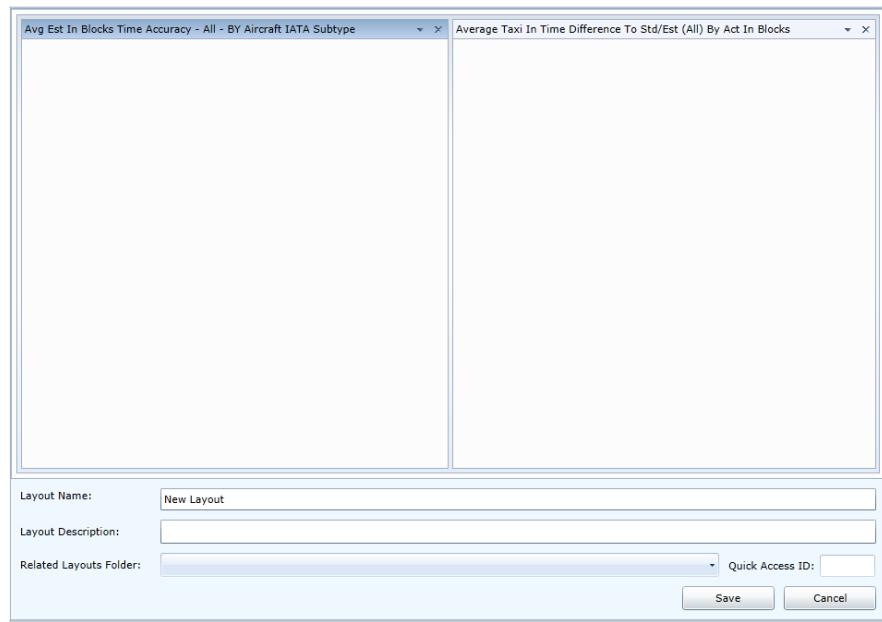


The arrows indicate the regions of the pane that are available for your locating of a new Chart. If you now drag your selected element over the right-hand arrow of the central arrow-group, the pane appears shaded, to indicate the portion of the pane that will be occupied by the new chart:



Drop the element in this location. The Layout Canvas now displays *two* panes, with the new title over the right-hand pane:

USING LAYOUTS



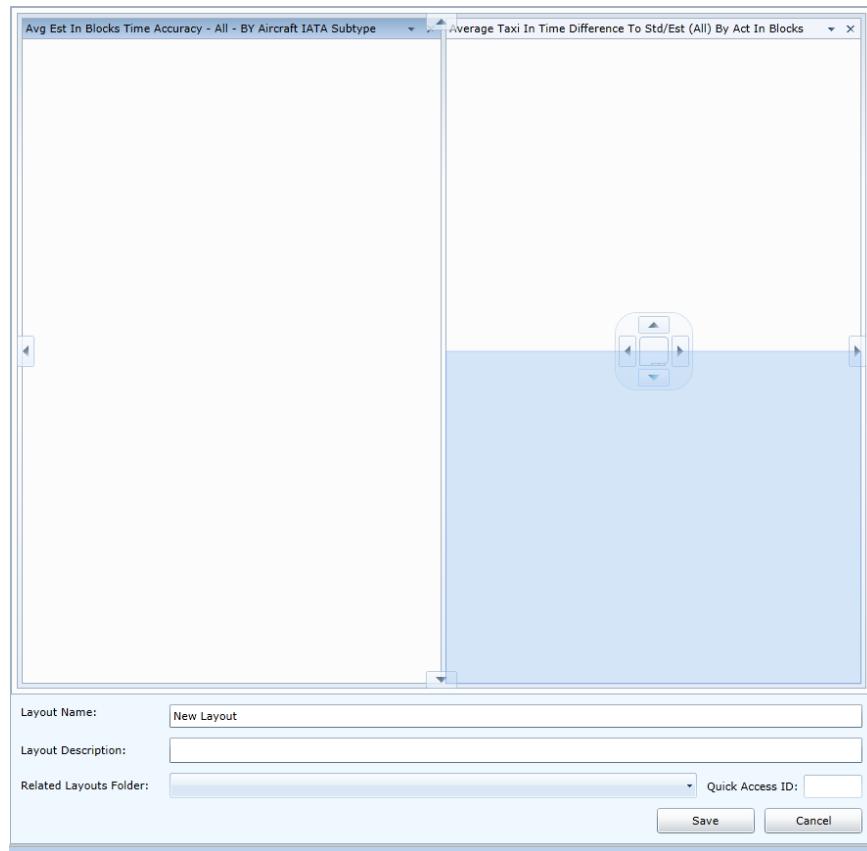
Now return again to the navigational view at the left hand side of the **Layout Editor**: you will now repeat the process two more times.

Firstly, select **Interactive Charts** → **Aircraft KPI and Reports Pack** → **Avg Arr + Dep Delay + Flights – Curr Day**. This should be dragged and dropped into the lower area of the Layout Pane on the right.

Note that as you drag the element into this region, the display changes, such that the guidance arrows appear in whichever of the two existing panes you are currently dragging the element over. By dropping the element as the arrows indicate, you can further sub-divide an existing pane. A maximum of *four* panes overall is recommended for most kinds of content.

Accordingly, when you position the element at the lower right, the guidance arrows appear in the right-hand pane, as follows:

USING LAYOUTS

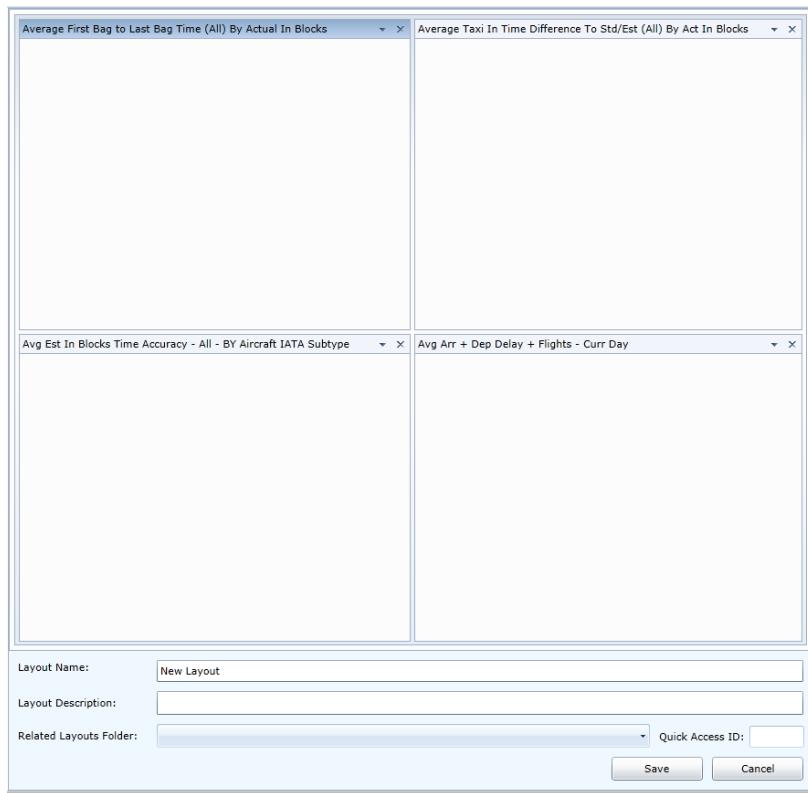


Drop the element, and so establish it in the shaded region.

Next, select **Interactive Charts** → **Baggage KPI and Reports Pack** → **Avg First Bag to Last Bag Time (All) By Actual In Blocks**, and drag-and-drop it into the upper region of the left-hand pane.

The Layout Canvas now appears as follows:

USING LAYOUTS



Finally, to create a **tabbed panel** within the Layout, select **Avg Est In Block Time Accuracy – All – BY Airline IATA Code**, and drag it directly over the centre rectangle of the directional arrow-group of the pane at the lower left (which is **Avg Est In Blocks Time Accuracy – All – BY Aircraft IATA Subtype**):



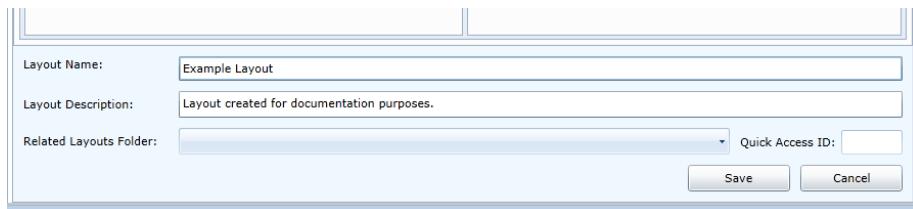
This incorporates the new Chart as a tabbed element within the selected pane. The initial appearance is therefore as follows:



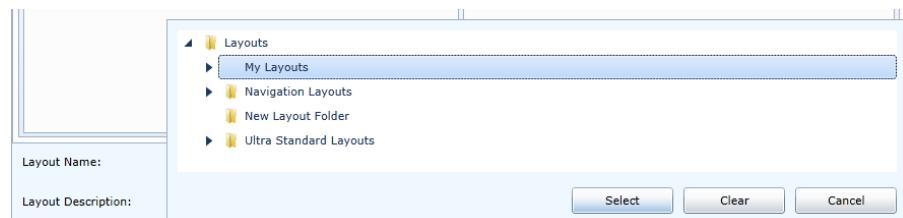
Each tabbed Chart is thus represented by a named tab at the foot of the shared pane. To select a Chart for display in the pane, left-click on the corresponding tab.

How do I save?

To save your custom Layout, enter an appropriate name and description into the fields at the lower-right:



Then, optionally specify a **Related Layouts Folder** by means of the pull-down menu (for information on how a **Related Layouts Folder** can be used, see the section below entitled **Error! Reference source not found.**) Then, click on **Save**.



At this point, you automatically exit the **Layout Editor**, and the default display for the **Layout Browser** returns to your screen. Use the navigation tree at the left, in order to access **My Layouts**; then, click on the name of the custom Layout you created, in order to view it. Your display now appears as follows:

USING LAYOUTS

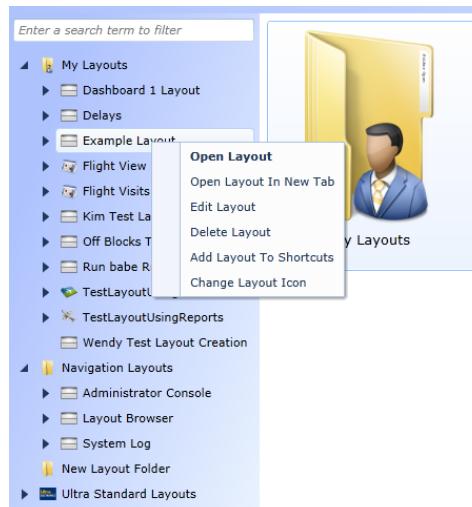


Editing

If you have been granted appropriate permissions, you can edit Layouts from the **Layout Browser**.

How do I specify a Layout for editing?

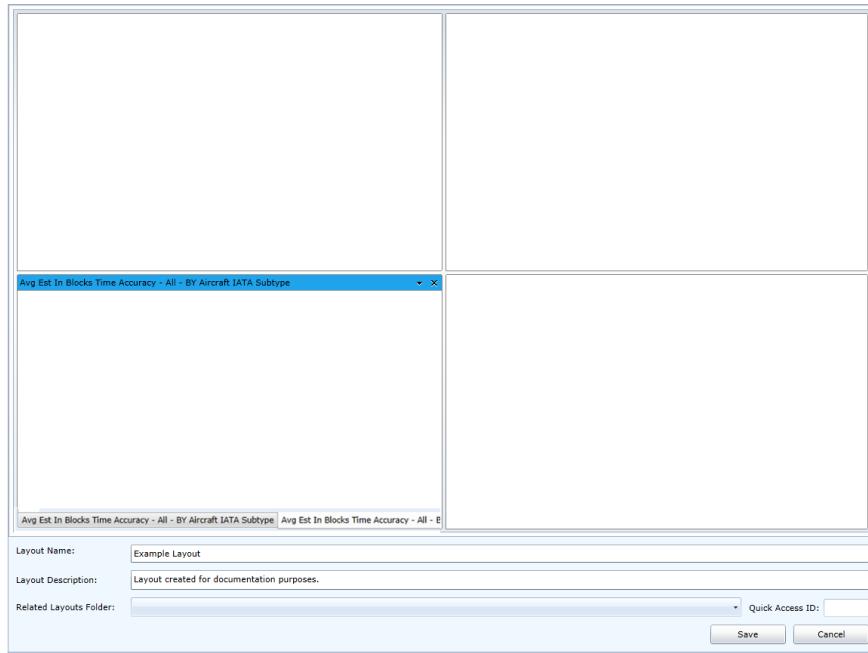
First, access the Layout in the navigation tree presented by the **Layout Browser**. Then, right-click on the Layout name, to reveal the **Layout Context Menu**, as follows:



Select **Edit Layout**. This opens the **Layout Editor**.

When the **Layout Editor** opens, it shows the four panels that were previously defined for the selected Layout. It also shows the Layout's name and description

at the bottom. If you move the mouse cursor towards the upper edge of each panel, the header for the selected element appears, as follows:

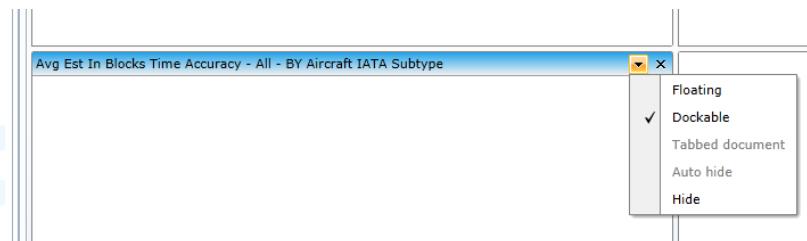


How do I delete?

To *delete* a particular pane, click on the **X** at the right of its header: this particular pane will then be empty, and suitable for a different element to be dragged and dropped into it.

How do I modify?

To *modify* the appearance of the Chart when its Layout is shown in the **Layout Browser**, left-click on the downwards-pointing arrow next to the **X**. This produces the following pull-down menu:



As the menu indicates, the selected Chart can be shown within the **Layout Browser** as **Dockable** (meaning it maintains its fixed position in the overall display panel) or **Floating** (meaning it appears in an independent window). You can also elect to **Hide** the Chart.

How do I move?

To move a Layout Pane to a different position, left-click and hold on the pane's header, then drag-and-drop the pane into its new location. When you perform this action, the guidance arrows reappear to assist you.

(Note that if you wish to switch the positions of two elements, this requires two drag-and-drop operations: the initial one moves the first element to share space with the second, leaving the former position of the first element blank; the subsequent one moves the second pane away from the first, to occupy the blank position now available.)

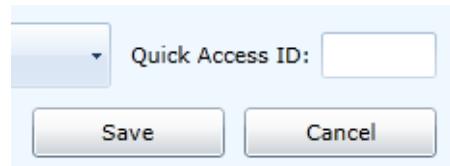
How do I resize?

To resize elements within the display, left-click and hold on the pane-edge that you wish to move, and then drag it into the desired position. Release the mouse-button: the affected panes now retain the dimensions you have specified.

When you have completed your edits, save the modified Layout as previously described.

How do I get quick access for viewing?

As previously shown, you access available Layouts for viewing by means of the navigation tree at the left-hand side of the Layout Browser. However, you can also bring up a Layout through Quick Access. This is provided by the interactive field at the lower-right of the Layout Editor:



To set up Quick Access, prior to saving the Layout that you have been creating or editing, enter into this field a *unique three integer ID* (such as 123, 548, or 003). Then, save your Layout as described previously.

From this point, anytime you are working with the Layout Browser, you can access your Layout by specifying the ID with which it was saved. To do this, you must make use of your system's *keypad* (note indeed that even if your system has a full computer keyboard, only the *keypad* to the right can be used for these purposes). Enter the **plus sign** twice, then the three digits of the ID (for example, **++123**, **++548**, or **++003**). The main panel of your Layout browser is then immediately populated with the corresponding Layout.

Managing

Your work may require you routinely to use a significant number of different Layouts. Consequently, the **Layout Browser** provides tools whereby you can optimize navigation-efficiency.

Can I view several Layouts at once?

You can view several Layouts at once by means of the **Layout Context Menu**.

Bring up this menu by navigating to the Layout you wish to select for simultaneous viewing, and then right-clicking on it.

From the menu, select **Open Layout In New Tab**. A new tab now appears in the **Layout Browser**, bearing the name of the selected Layout, which can now be viewed at any time, simply by selecting the tab with the mouse. You can create as many such tabs as you wish, to enable quick access to all your most critical Layouts.

To re-order tabs, click on each tab-header you wish to move, and drag it to an appropriate location.

To close a tab, click the **X** in the tab-header. (If multiple tabs are open, a white cross in a red circle is displayed when you hover over the tab-header.)

How do I view my navigation history?

You can view your navigation history by accessing the **Navigation History** control, which appears to the upper right of the **Layout Browser**, and was described in Chapter 2.

Note that the displayed history refers to the current tab only. Note also that the history is automatically edited, to ensure that no Layout appears more than once.

How do I save shortcuts?

You can save shortcuts whereby Layouts can be accessed, as described above, in Chapter 2.

Can I list and access related Layouts?

If you are able to create Layouts, you may find that some are related to others, in terms of the significance of their content. Therefore, you may need an easy way of cross-referencing between them.

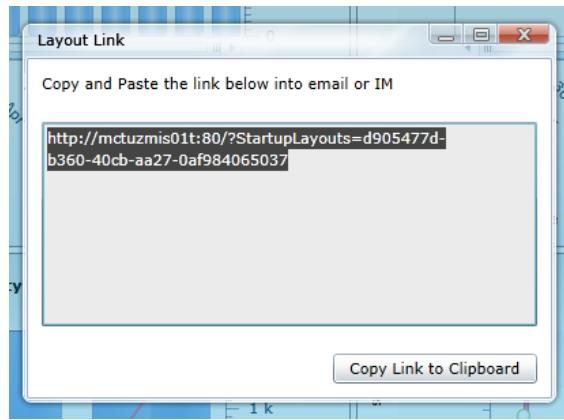
Relations between Layouts are established at creation time, by means of the **Related Layouts Folder** option that appears in the **Layout Editor**. This was described above.

To see related Layouts for the currently displayed Layout, access the Layout Menu at the upper right of the **Layout Browser**, and select the **Related Layouts** item.

How do I save a Layout's URL?

You can save a Layout's URL by means of the **Layouts Menu** at the top right of the **Layout Browser**, which was described in Chapter 2.

Select the **Create URL Link...** menu item. A dialog appears that shows the URL of the current Layout, so that it can be copied and pasted — potentially into an email or Instant Message:



How do I delete a Layout or Folder?

Use the **Layout Context Menu** explained above, selecting either the item **Delete Layout**, or the item **Delete Layout Folder**. Note that **Delete Layout Folder** deletes both the folder itself and all of its sub-folders and Layouts.

How do I edit a Layout?

Use the **Layout Context Menu**. Select the item **Edit Layout**.

How do I rename a Layout Folder?

Use the **Layout Context Menu**. Select the item **Delete Layout Folder**.

How do I open a Layout in a New Tab?

Use the **Layout Context Menu**. Select the item **Open Layout In New Tab**.

Can I add a Layout to my Shortcuts?

Yes – by using the **Layout Context Menu**. Select the item **Add Layout To Shortcuts**.

Can I change a Layout's icon?

Use the **Layout Context Menu**. Select the item **Change Layout Icon**. Windows Explorer appears, allowing you to select a suitable graphics file, which will subsequently be used as the icon for this Layout.

What if a menu item is not available?

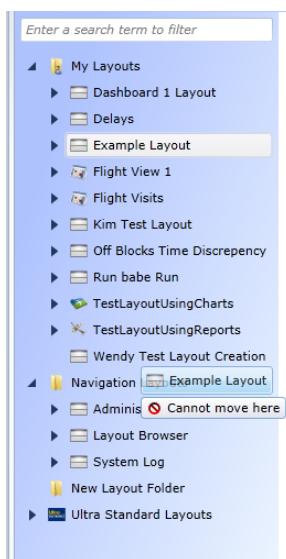
Note that since the **Layout Browser** is highly customizable, your system administrator may have decided not to implement certain features, or to restrict their availability. If you cannot access a feature listed here that you believe you need, contact your administrator.

How do I relocate Layouts?

You can relocate Layouts and their folders to different positions in the navigation tree — or make copies of them — by using procedures commonly used on the Windows desktop.

To move a *Layout or folder*, first make sure the navigation tree is fully open, to show the points of origin and destination. Then, left-click and hold on the icon for the element you wish to move, and drag it from the origin to the destination. Then release the mouse-button, to drop the element into its new location.

Note that if the new location is prohibited, an error notification is made visible over the new location prior to your release of the mouse-button:



In such a case, the operation fails, and the element continues to reside in its original location.

To copy a *Layout or folder* into a different position, drag-and-drop in the same way, but hold down the *Control* keyboard-key throughout.

To create a shortcut to a *Layout or folder*, hold down both the *Control* and the *Shift* keyboard-keys.

Next Steps

Now that we have completed our examination of Layouts, we can take a closer look at the data elements they contain. Chapter 4 begins this process by taking a look at *Charts*, which provide graphical representations of *Key Performance Indicators*, grouped according to category.



Using Charts

Charts are one of the most essential and frequently used features of UltraAPEX. They are accessed by means of UltraPortal. This chapter explains how to interact with them, and how to modify Chart-appearance.

Basic Interactions

A *Chart* is an interactive graphical display. It provides a visual representation of one or more *KPIs* (or *Indicators*). Each *Indicator* may be broken down according to an applied *Category*, which is often a unit of time. For example, the total number of flights delayed in departure for a given year may be broken down per month.

Charts may reveal their data in successive stages. Thus, by clicking with the mouse on a given month, you might reveal the flights that were delayed in departure for that specific month, *further* broken down – this time by airline. Then, clicking on one particular airline might break down the data yet again – this time, by day of the week, or by airport terminal.

How do I access?

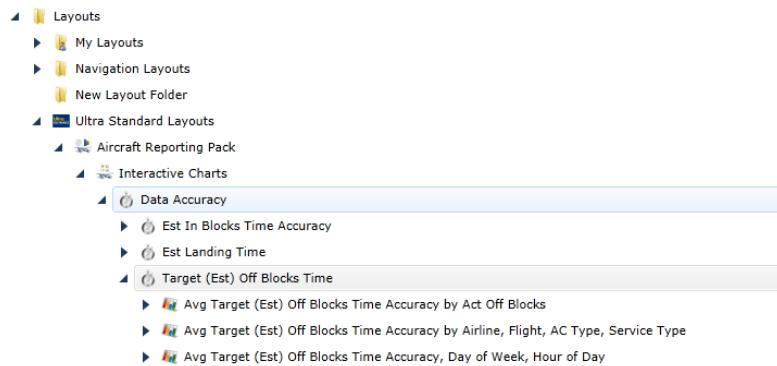
Charts are available in Layouts that can be accessed from the navigation tree of the **Layout Browser**. An individual Layout may contain multiple Charts.

How do I modify?

If your administrator has granted you permission, you can modify Chart-appearance by means of **QuickTools**, which are displayed alongside the Chart.

To demonstrate, access the Layout named **Avg Target (Est) Off Blocks time Accuracy by Airline, Flight, AC Type, Service Type**, located as follows:

USING CHARTS



Left-click on the arrowhead next to the Layout **Avg Target (Est) Off Blocks time Accuracy by Airline, Flight, AC Type, Service Type**. This itself now opens to reveal the following sub-elements:



Note that these sub-elements are not accompanied by arrowheads. This signifies that they cannot be expanded further: the first four are entries that constitute chart-data, and are opened when you click on their parent-element – a Layout that *is* accompanied by an arrowhead.

The fifth of the entries, **KPI Chart Time Bar**, signifies the software *Module* used in this instance to display the chart-data: it allows information to be displayed as bars or lines in accordance with a timeline. This is the most frequently used method for displaying chart-data.

Now, left-click on the icon or text for **Avg Target (Est) Off Blocks time Accuracy by Airline, Flight, AC Type, Service Type**. The Chart-data is now displayed as follows:

USING CHARTS



The four principal areas of the main display-pane are each occupied by the Chart for one of the data sets. The upper region of the panel is devoted to the **KPI Time Chart**, which allows data sets to be selected according to different time-periods (as will be demonstrated below).

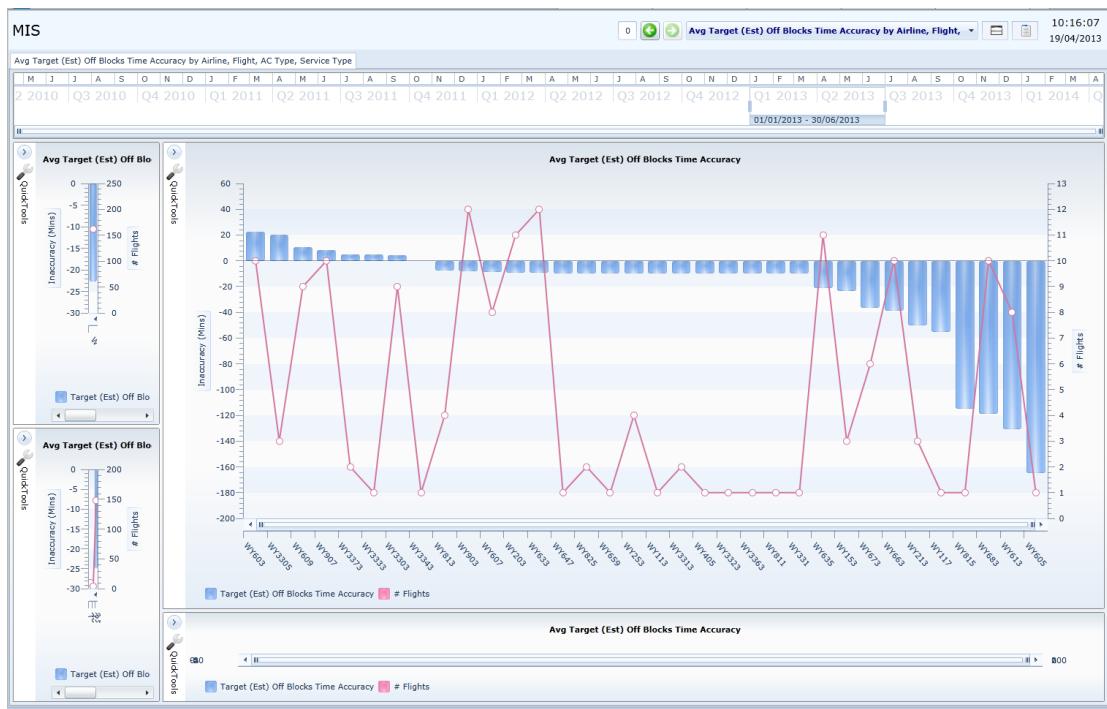
How do I resize?

You can resize any individual Chart within a composite Layout of Charts, simply by adjusting the appropriate vertical and horizontal frames.

For example, to focus on the Chart in the upper right, **Avg Target (Est) Off Blocks Time Accuracy**, move your mouse-cursor over the vertical frame at the centre of the main display panel: the cursor changes to a double-arrow when it is directly over the frame. Then, left-click and hold on the frame, and drag it to the left. When your cursor arrives at the appropriate point, release the mouse-button: the vertical frame of your Chart now occupies the horizontal position at which you dropped it.

Repeat this operation for your Chart's horizontal frame. Your overall display might now look as follows:

USING CHARTS

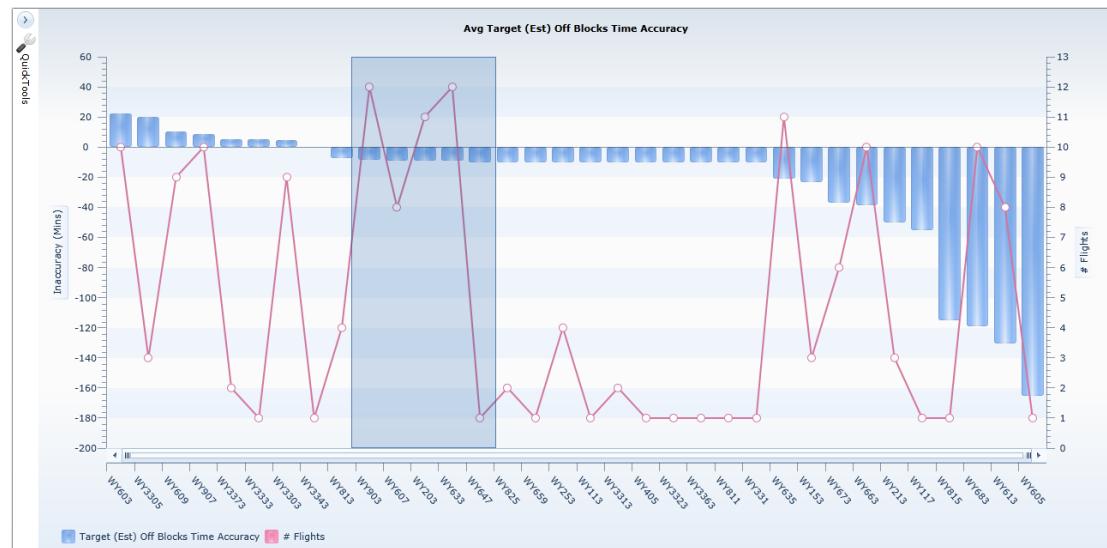


Thus, the upper-right Chart now occupies a larger portion of the screen area, and is easier to interact with.

How do I zoom and pan?

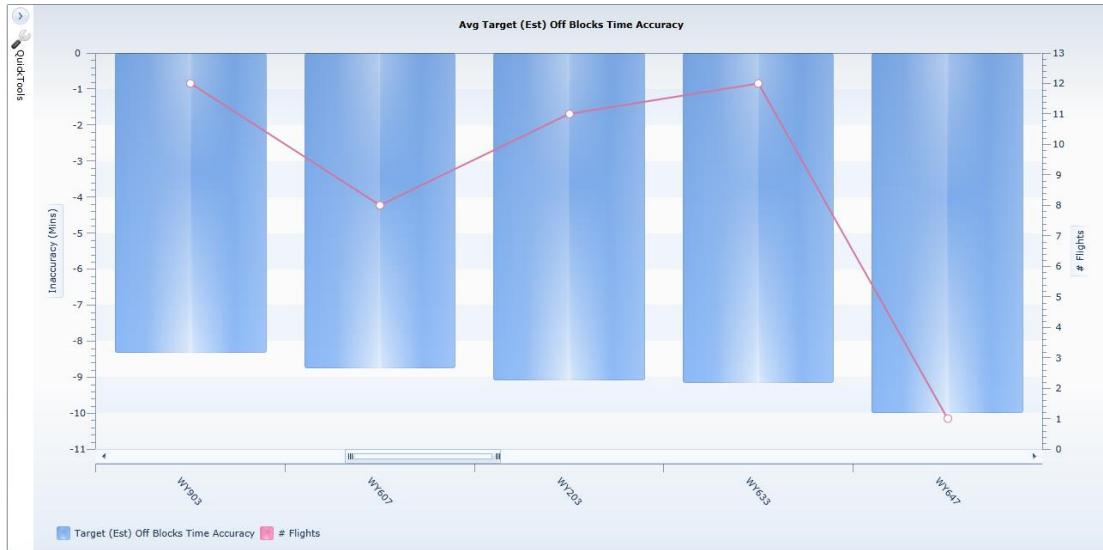
If you wish to zoom in on a region of a Chart, you have two ways of proceeding.

Firstly, use the mouse to select a region of the display. For example, left-click and hold on the upper-left corner of the region in which you are interested, and drag the mouse to the right. As you do so, the region you are selecting appears as a shaded rectangle:



USING CHARTS

Release the mouse. The area you highlighted is focused on, and becomes expanded, to occupy the entire panel:



To *pan* back to your original view, you can use the *slide bar*, which is at the foot of the Chart, and currently shows the region into which you previously zoomed:

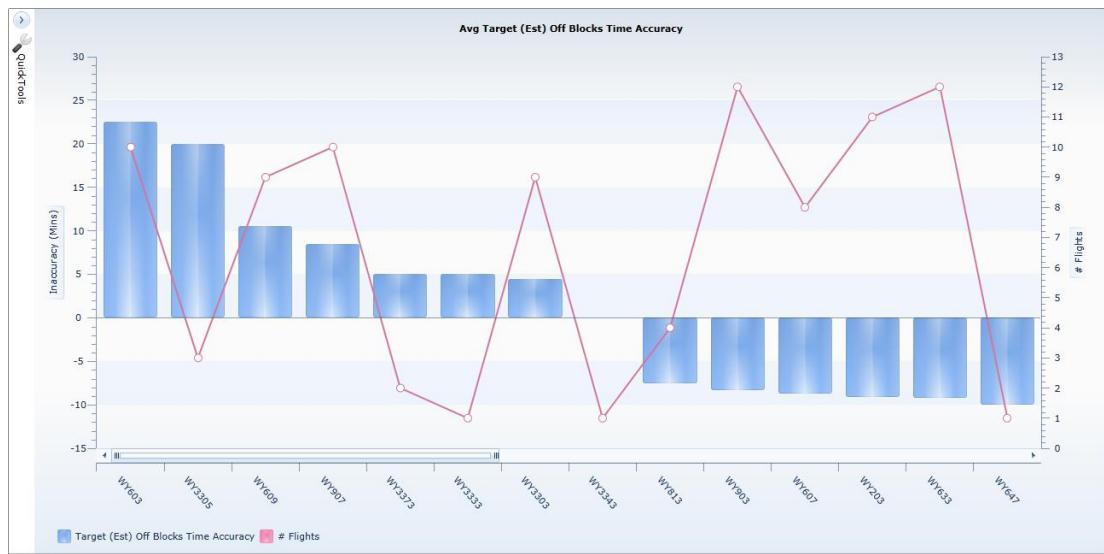


Move your mouse cursor over the left-end of the slide bar: its appearance changes to that of a double-cursor. Left-click and hold at this point:



Now drag the left-end of the slide bar to the left-extreme. As you do so, the Chart is resized, to display content for the additional areas over which you are dragging:

USING CHARTS

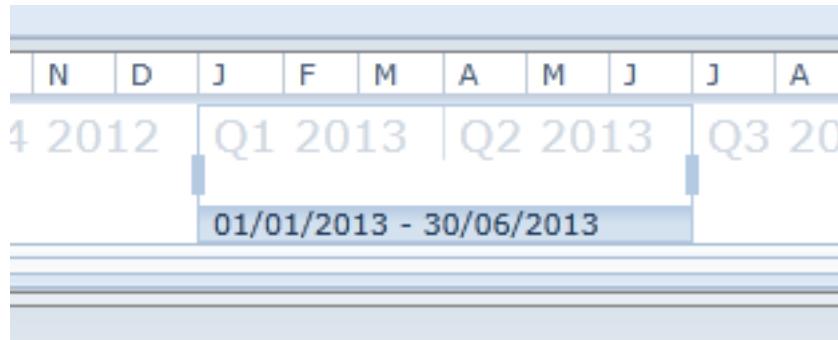


Now repeat the procedure, dragging the right-end of the slide bar to the right-extreme. The Chart is resized to its original dimension and content-coverage.

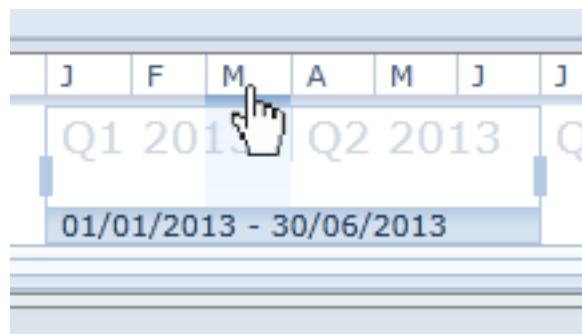
How do I change time-periods?

If one or more Charts are displayed with a **Date Bar** along the top edge, you can use the **Date Bar** to select the time-periods whose data you wish to review.

The Charts you are currently reviewing contain data for two particular quarters, which are represented on the **Date Bar**:

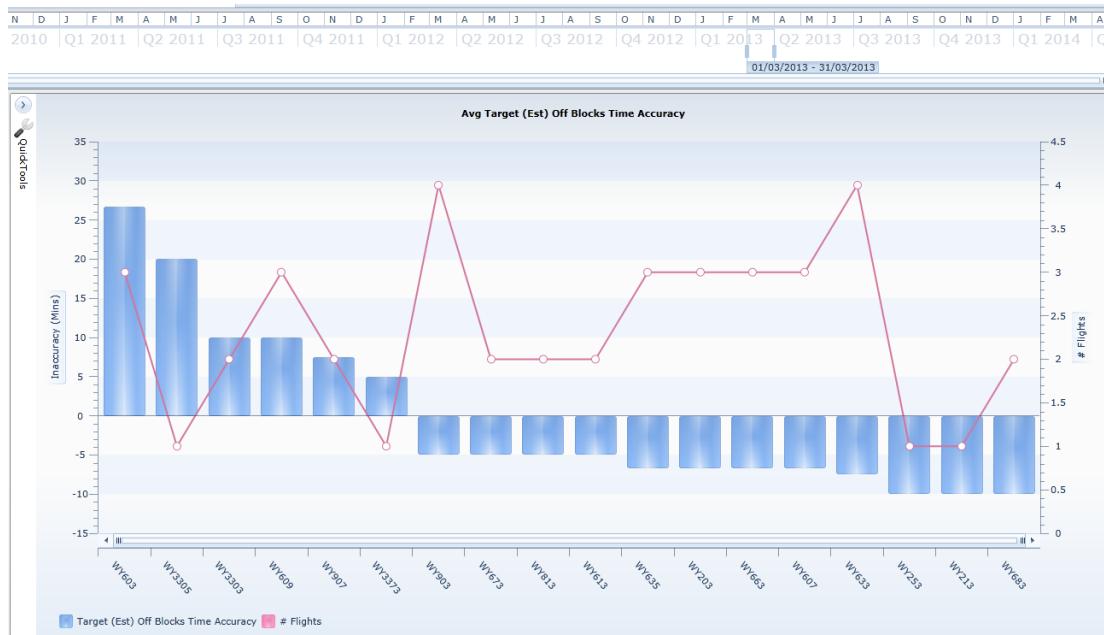


If you wish to review data that is specific to, say, March of Q1 2013, click on the **M** symbol above **Q1 2013**:

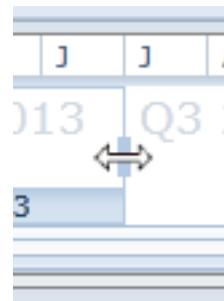


USING CHARTS

The Chart is now modified to display data pertinent to the specific month you have selected:

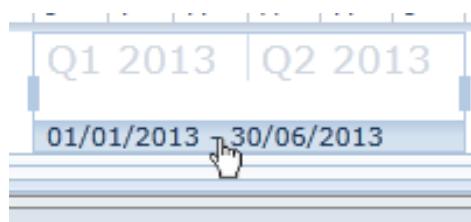


Note that if you wish to widen the period of time for which the Chart displays data – say, to *three* quarters instead of *two* – you can do this by left-clicking on either of the *handlebars* that appear on the **Date Slider**. If you click on the *left* handlebar and drag to the left, or if you click on the *right* handlebar and drag to the right, the **Date Slider** expands correspondingly:



The **Date Slider** can similarly be compressed. The period of time horizontally covered by the **Date Slider** constitutes the time period represented by the Chart.

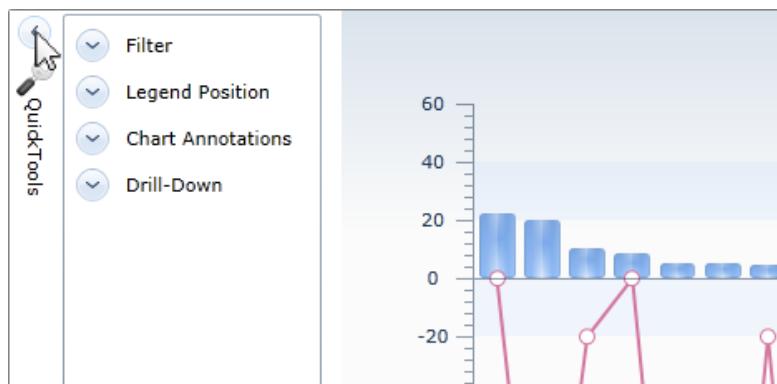
To *change* the time period while maintaining its duration, left-click on the **Date Slider**'s horizontal bar, and slide either to the left or to the right:



Using QuickTools

QuickTools, which are sometimes provided as a pull-down menu available from the upper left of each Chart, are user-interface options that allow you further to modify a Chart, both in terms of its contents and how they are displayed.

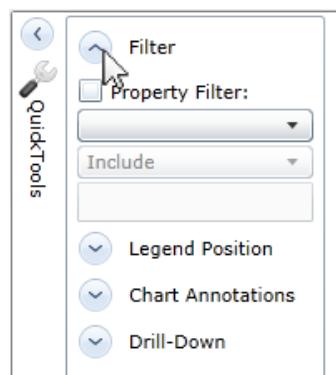
Restore the current chart to its original time period, by mean of the **Date Bar**. Then, to access the pull-down menu, click on the **QuickTools** button:



How do I filter data?

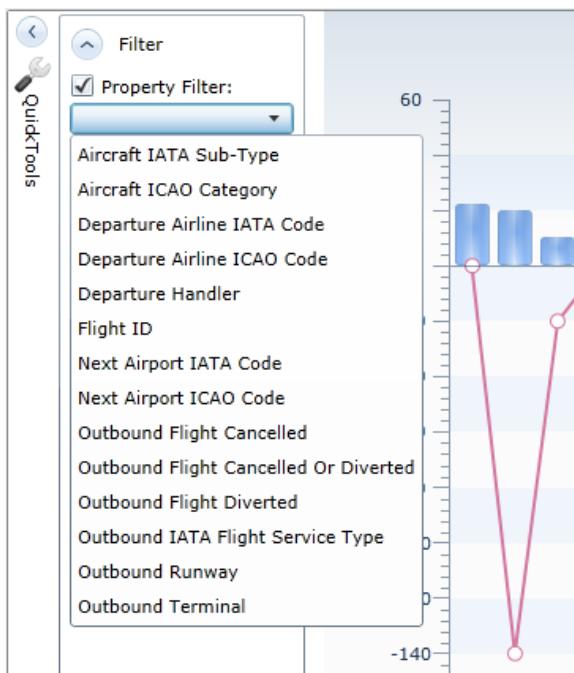
You can *filter* data — which is to say, elect to view only a subset of what is provided by default in the current Chart — by using the **Filter** option in the **QuickTools** pull-down menu.

Click on the adjacent control-button to expand the **Filter** menu-item:



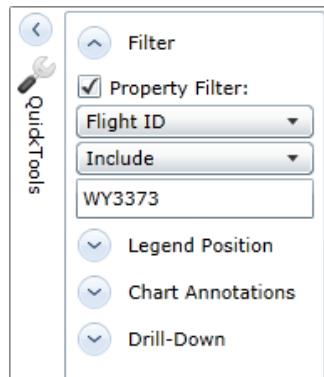
To employ a filter, firstly click on the check-box adjacent to the words **Property Filter**. Then, expand the menu bar immediately beneath the words, and examine the options at your disposal:

USING CHARTS



Each of the options in the submenu is a data category that will be used to filter your data. You will be able to specify whether the filter is *inclusive* (meaning that only data so classified is shown) or *exclusive* (meaning that only data *not* so classified is shown).

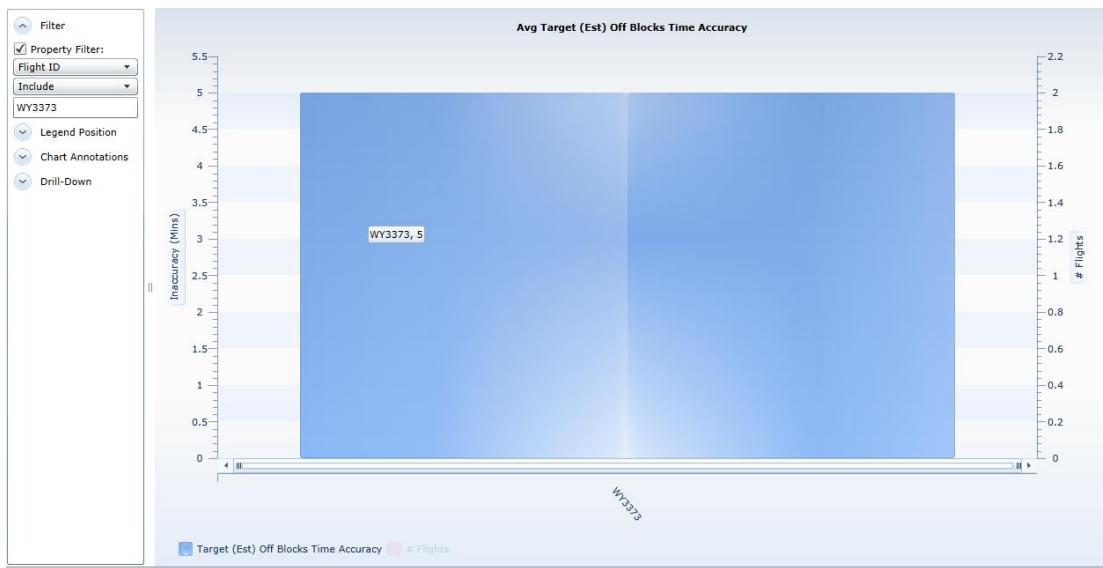
Select **Flight ID**. When the **Property Filter** menu disappears, access the text field that is the last of the **Filter** menu items. Type **WY3373** into this field:



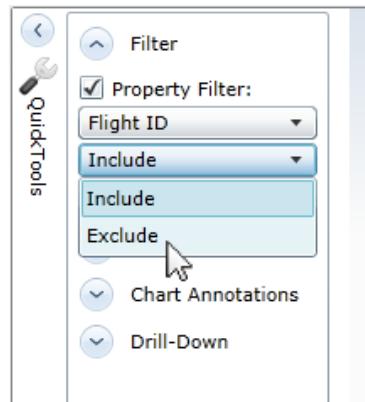
Finally, access the menu-selection field that is immediately above the text field. Currently, it reads **Include**. Click on this field.

The Chart is now modified to display only that subset of data pertinent to flight ID WY3373, and so appears as follows:

USING CHARTS



To *exclude* data for flight ID WY3373, access the central menu-selection field, and by means of the pull-down menu, change it to read **Exclude**:



The Chart is again redisplayed — this time, to *exclude* data from flight ID WY3373:

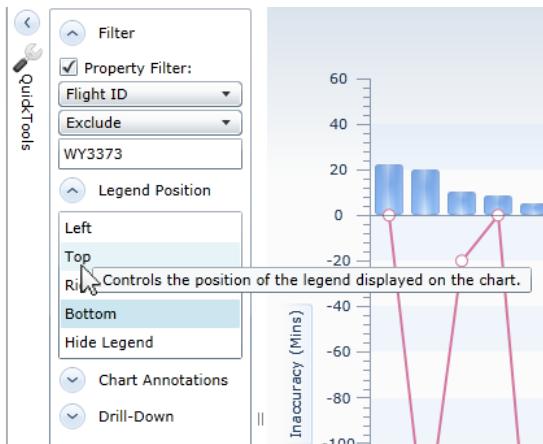
USING CHARTS



Note that for a *composite Chart*, where more than one data set is displayed, more than one set of **Property Filter** interactive elements might be included in the **Quick Tools** menu.

How do I reposition the Legend?

Legend Position can also be changed by means of the **QuickTools** menu. Access the **Legend Position** option on the menu, and select a new position — for example, **Top**:



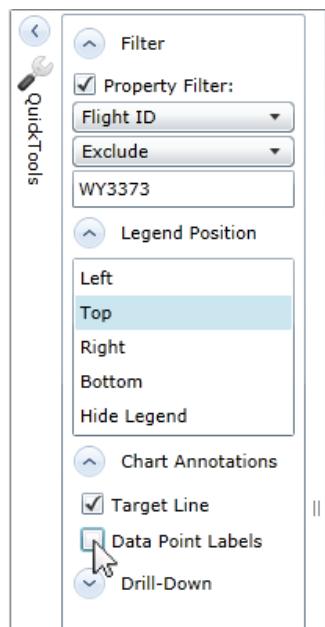
The Chart is now redisplayed so that the legend appears at the top, rather than at the **Bottom**, as by default:

USING CHARTS



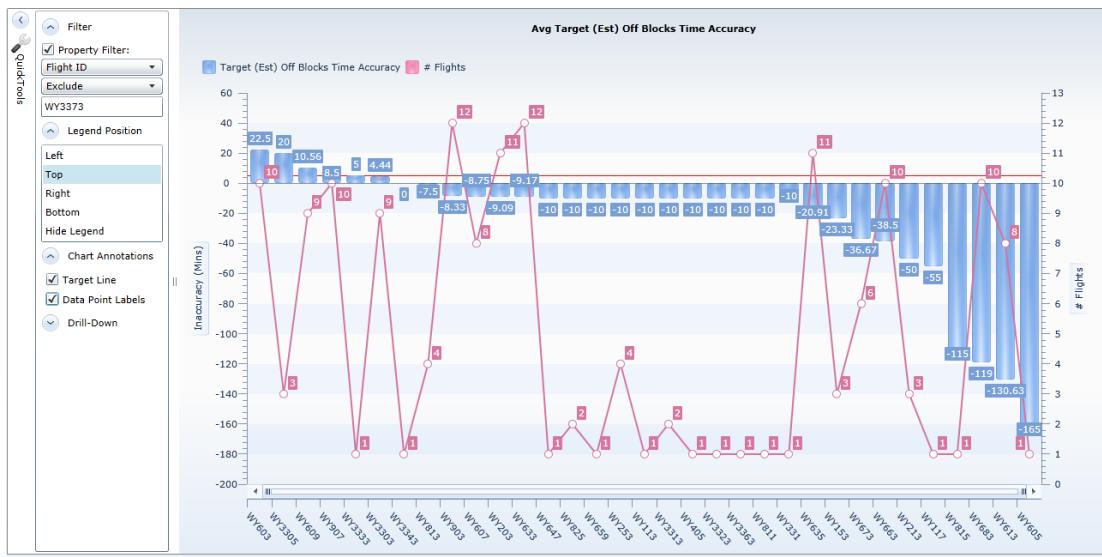
How do I display annotations?

The **Chart Annotations** menu item allows you to display an explicit **Target Line** and multiple individual **Data Point Labels**, to assist in describing how information has been arranged. Click on both of the appropriate check boxes:



The main display now appears as follows:

USING CHARTS

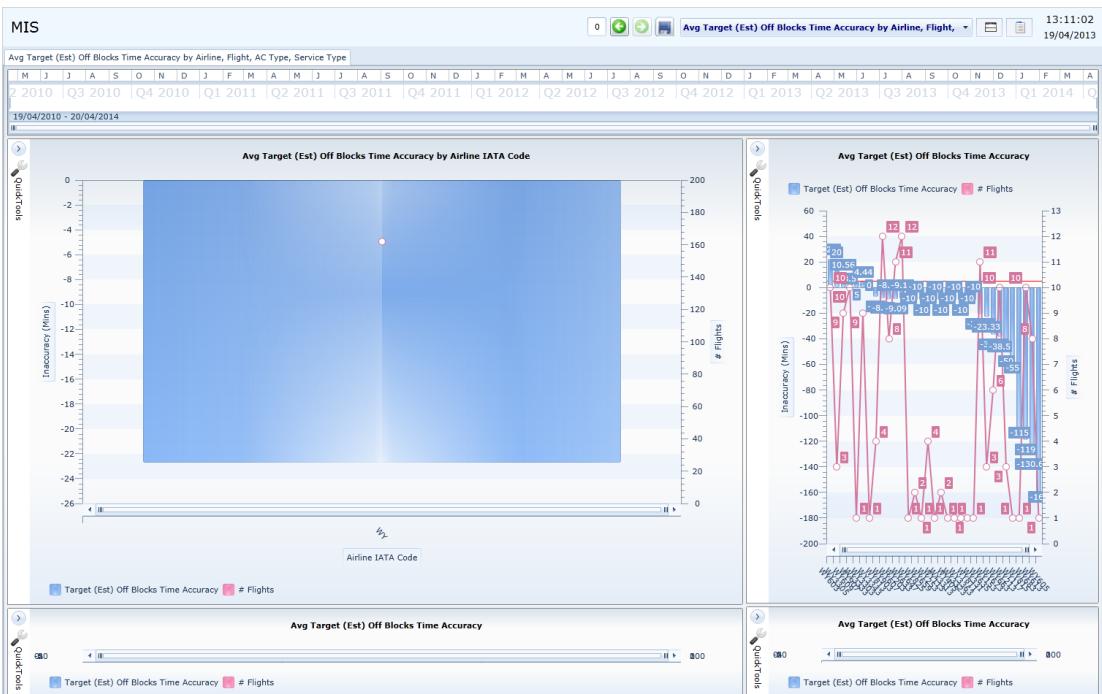


Drilling Down

To *drill down* on a Chart or displayed data element means to *click on it* so as to reveal a further level of data-organization. For example, if a Chart displays information according to IATA code, and the Chart features a **Flight ID Drill-Down**, then clicking on an element representing a given IATA code causes that data to be further broken down, by flight ID numbers.

How do I drill down?

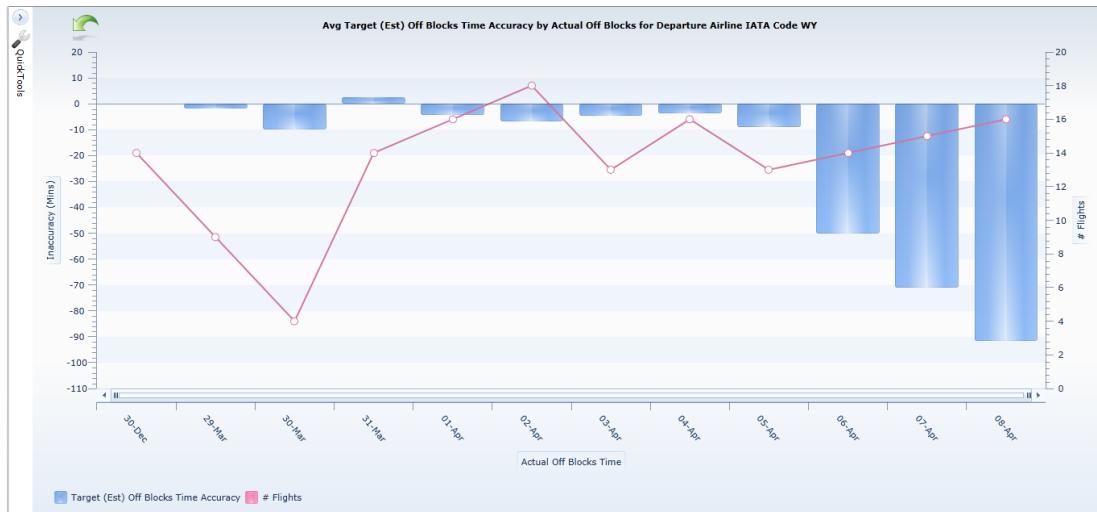
Expand the top-left Chart in your current display (**Avg Target (Est) Off Blocks Time Accuracy by Airline IATA Code**), by dragging frame boundaries appropriately:



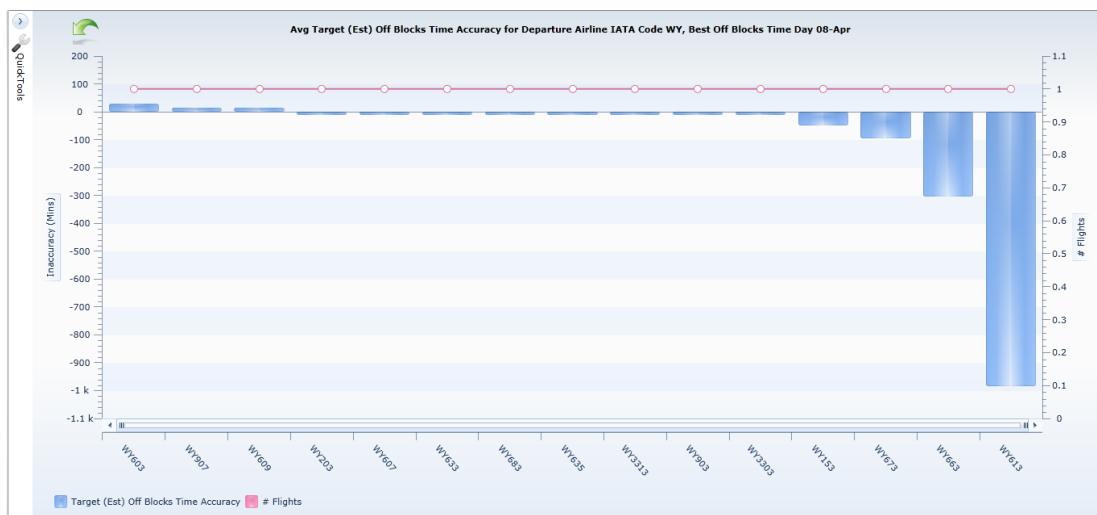
USING CHARTS

The single red data-point on this Chart indicates a total of 162 flights. The average inaccuracy of their predicted Off Blocks times is represented by the single blue bar, as 22.69. The flights are grouped according to IATA code, which is WY for all flights. Consequently, the Chart is initially quite simple. However, by clicking on elements, you can expose the **Drill-Downs** that have been built into it.

For example, left-click on the single blue bar. The display changes as follows:



The information for WY has thus been broken down and redisplayed by date. Now, left-click on the bar to the extreme right, representing the data for 08 April:



The information for 08 April has now been further broken down, this time by Flight ID.

How do I resurface?

Each time you drill down, the following icon appears towards the upper left of the current Chart:



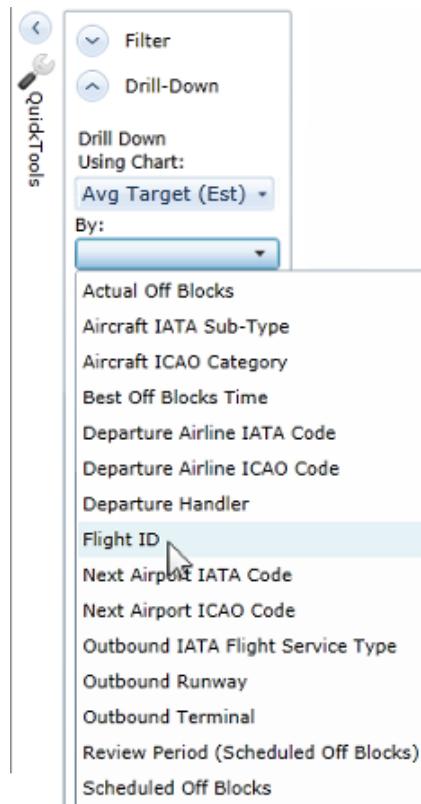
By clicking on this, you go back successively through the **Drill-Downs** you have viewed, until you regain your starting-point.

How do I add my own Drill-Down?

You yourself may be able to control which **Drill-Down** is applied to a given Chart display, by means of the **QuickTools** menu.

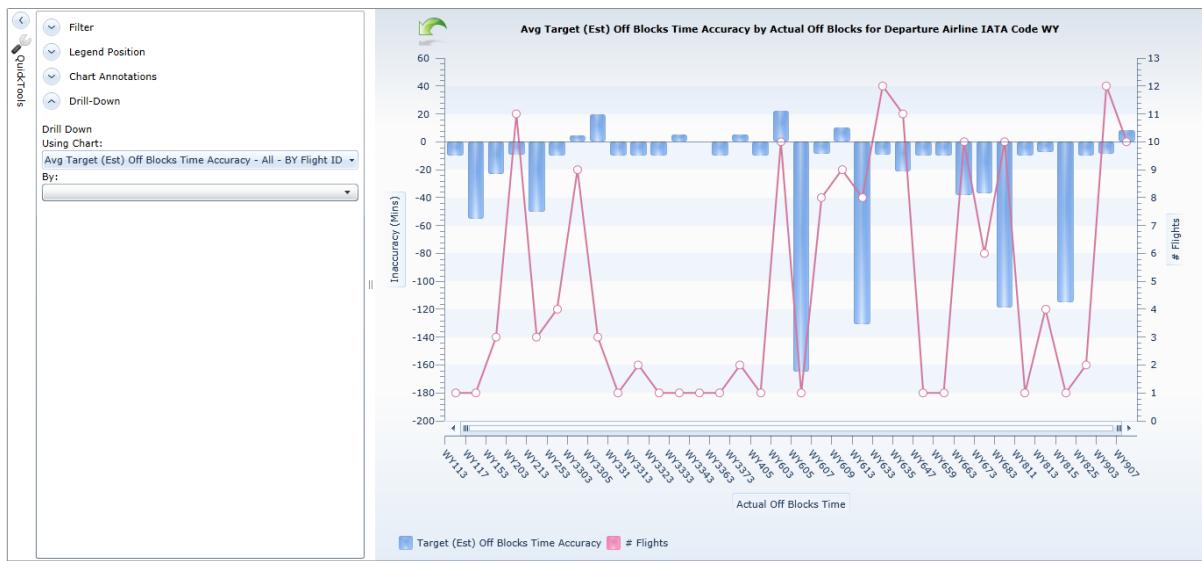
Use the green **Back** arrow to return to the initial, simple display for the current Chart — which is **Avg Target (Est) Off Blocks Time Accuracy by Airline IATA Code**.

Next, access the **Quick Tools** menu at the top-left of the chart, click on the **Drill-Down By** option, access the pull-down menu, and select **Flight ID**:



Now, left-click on the main blue bar on the display. The display now changes, specifying the data according to individual flight IDs:

USING CHARTS



Note that you may also select an alternative Chart, by means of the **Drill-Down Using Chart** option. This causes the current data-set to be drilled-down on, according to whatever series returned by the **Drill-Down By** option appear on the selected alternative Chart.

Other kinds of Drill-Down

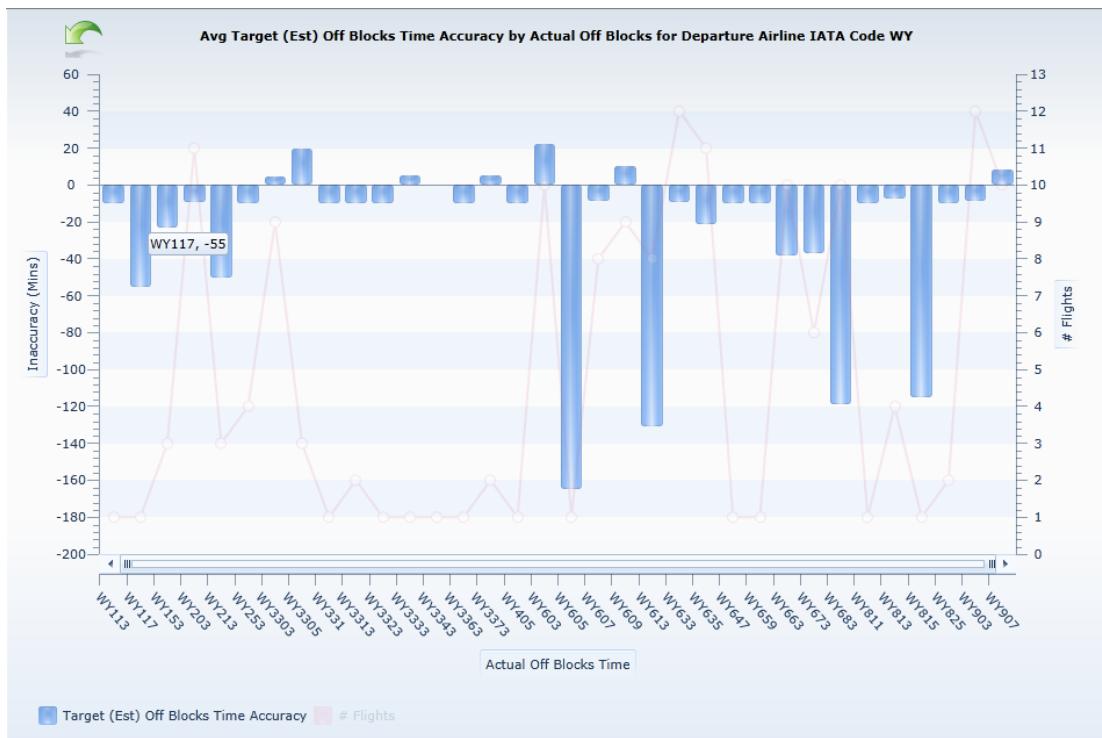
Two other kinds of **Drill-Down** exist:

- ⊕ **Controller/Receiver Drill-Down.** This may be encountered when multiple Charts can be viewed simultaneously. When you left-click on one Chart, another Chart changes its appearance, and thereby represents the results of your drill-down.
- ⊕ **Tooltip Drill-Down.** When you move your mouse-cursor over a Chart, a Tooltip appears, within which the **Drill-Down** data is displayed.

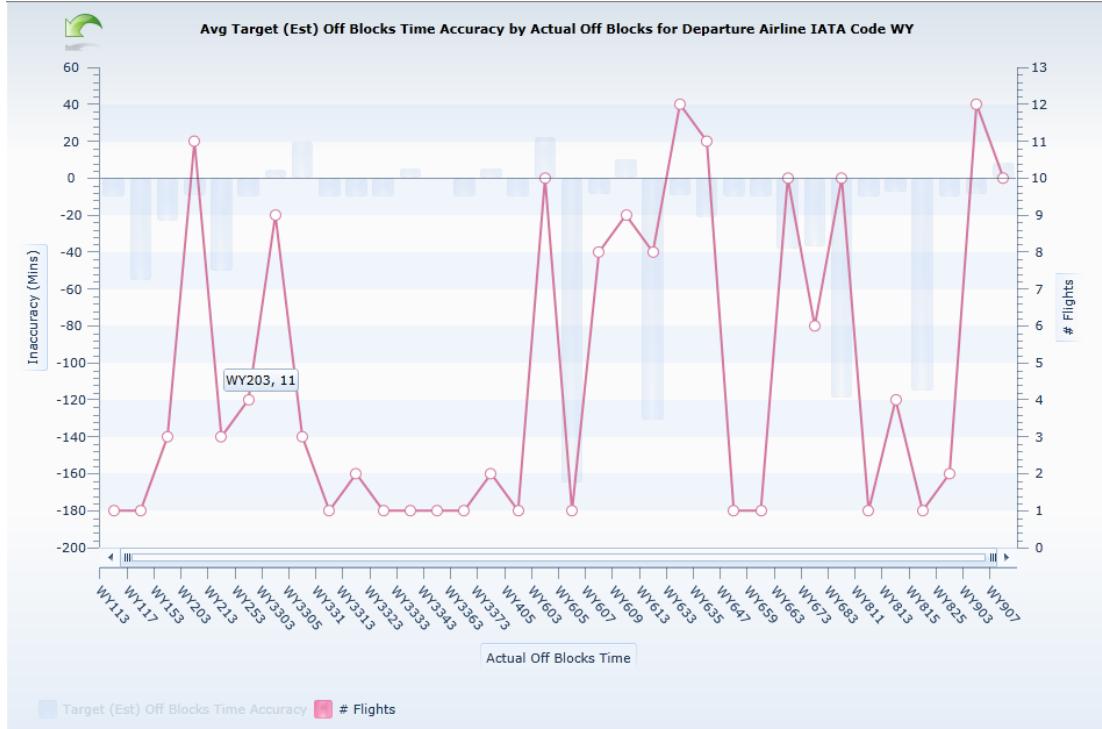
Using Display Features

Note that Charts change their appearance based on the position of the mouse-cursor. For example, if you wish to study only the blue bars in the Chart above, position the mouse-cursor above any one of them: the red lines, which represent the second data source, are now faded out, to assist in visibility:

USING CHARTS



Conversely, by positioning the mouse cursor over any of the red lines, you cause the blue bars to be faded out:



Note that in both cases, a Tooltip appears for the element you are directly hovering over. Tooltips appear for all of the principal elements in Charts and menus, to assist comprehensibility.

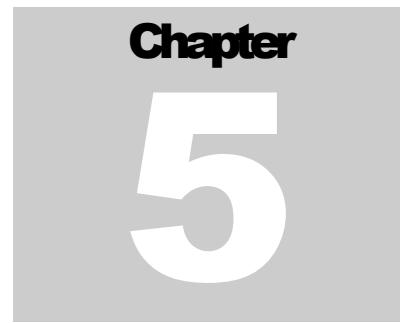
Using Menu Features

By right-clicking on the basic pane of a Chart, you bring up a menu that contains the following options:

- **Edit Chart.** If you have appropriate permissions, this opens the **Chart Editor**. If you do not have such permissions, this option may not be available.
See the document *UltraAPEX Administrator Guide – Charts*, for information on the **Chart Editor**.
- **View Chart Data.** This opens an independent window, in which the raw statistical data used to create the Chart becomes visible.
- **Open Chart In New Window.** This opens the selected Chart in a new, independent window that can be easily resized, and viewed full-screen. Note that the panes in the main browser window are not available, as long as this new window is in the foreground.
- **Help.** This brings up the online help for this particular Chart.

Next Steps

In Chapter 5, we will examine how you can access and interact with *Reports*, which constitute a mechanism for gathering important operational status and disseminating it to interested parties.



Using Reports

Like Charts, *Reports* are accessed by means of UltraPortal, and are one of the principal forms in which UltraAPEX makes data available to users.

Chapter 2, *Getting started with UltraPortal*, has already provided a basic introduction to viewing Reports with UltraPortal and the **Layout Browser**. The current chapter provides additional information, to ensure users get the most out of Reports and the data they contain.

Basic Interactions

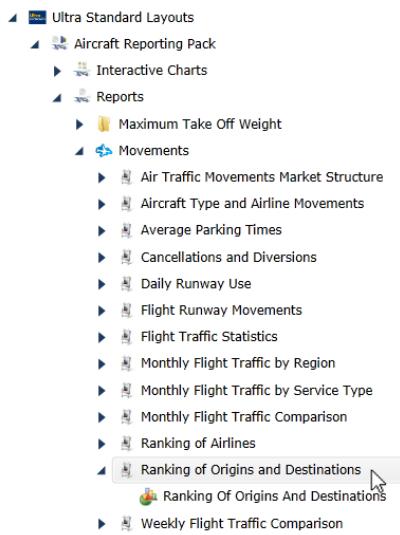
Reports are data-summaries on specific topics. The information within each Report varies, according to definitions made by your administrator. Each Report can be reviewed, customized, saved, and forwarded via email.

The top portion of each Report is an interactive *header*, which allows modifications to be made to the Report's appearance and to the subset of data it contains. The lower portion consists of the main body of the Report, which is typically formed from the combination of graphs and tables.

How do I view?

Reports can be viewed in the Layout Browser; for example, by navigating to **Ultra Standard Layouts → Movements → Ranking of Origins and Destinations**:

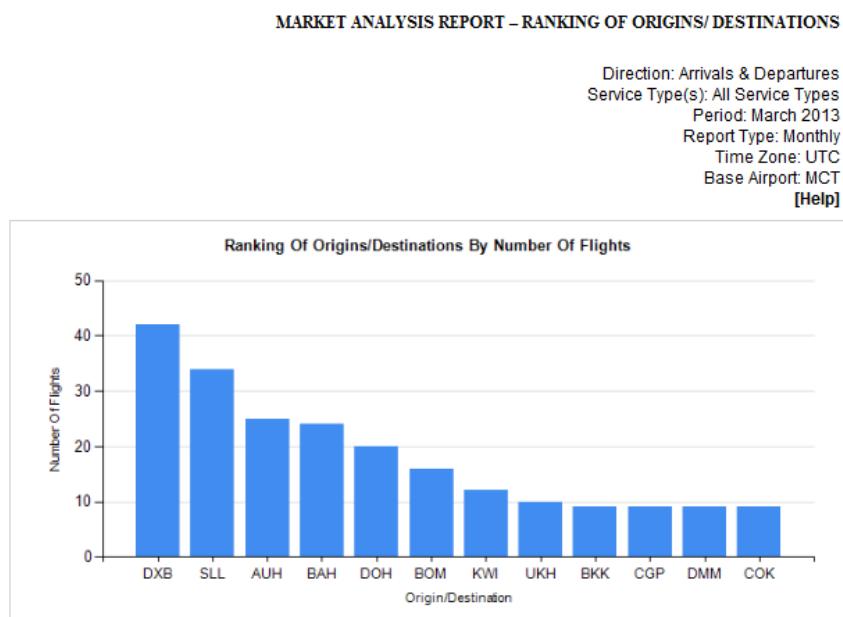
USING REPORTS



To open this Report, click on the icon or text. When it appears, the Report displays two main sections. At the top is the Report Header:

A screenshot of the report header interface. It contains fields for Year (2013), Month (March), Direction (Arrivals & Departures), Flight Service Types (All Service Types), Time Zone (UTC / (GMT) Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London), Sort By (Total Flights), Show Top N On Chart (10), and Base Airport (MCT). There are also buttons for 'Send via e-mail' and 'View Report'. Below the header is a toolbar with navigation icons and a search bar.

The fields in this header have been determined by your administrator: They establish a default set of parameters, defining the Report's initial contents. In the lower part of the header is an arrowhead control, which can be used to hide the header, and so make room for what is beneath it: which is the Report Body:



How do I modify?

By changing fields in the Report Header, you can modify a Report's data set, and consequently, its appearance.

The fields in the header vary from one Report to another. In the current example, they include the following (each of which is, unless otherwise stated, a field completed by means of a pull-down menu):

- ⊕ **Year** — The year whose data you are interested in.
- ⊕ **Direction** — Whether you are interested in *Arrivals*, *Departures*, or both.
- ⊕ **Time Zone** — The time zone whose information you require.
- ⊕ **Show Top N On Chart** — Specified by your entering an integer from the keyboard, this indicates the maximum number of rankings you wish to be included on the chart.
- ⊕ **Month** — The month whose data you are interested in.
- ⊕ **Flight Service Types** — The specific type or types you are interested in. A range is provided from which you can choose.
- ⊕ **Sort By** — Options are *Total Flights* and *Total Passengers*.
- ⊕ **Base Airport** — This is typically the airport at which UltraAPEX is currently installed, and for which the report is being run.

Additional fields, commonly found in the Report Header, include the following:

- ⊕ **From and To, Start Time and End Time, and Time Frame** — Dates, times, and durations that determine the period of time covered by the Report.
- ⊕ **Airport Group** — Options for grouping airport-data: for example, by continent, country, region.
- ⊕ **Flight Service Types** — Options for grouping flight-data: for example, charter, scheduled, freighter.
- ⊕ **Report Types** — Options for determining whether daily, weekly, yearly, or other Reports are displayed.
- ⊕ **Aircraft Type** — Whether data for *all* or *specified* aircraft types is included.
- ⊕ **Scheduled Turn Around Time** — Whether flight-data for *all* or *specified* turn around times is included.
- ⊕ **Registration** — A specific aircraft registration, which can be used to limit the data included.

- ⊕ **Origin/Destination Airport** — Whether flight-data for *all* or *specified* origin/destination airport combinations is included.

Once you have changed parameters, redisplay the Report by left-clicking on the **View Report** button, at the upper-right:



This causes a revised Report to be loaded and displayed.

How do I navigate?

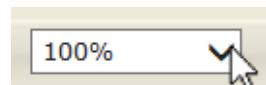
The lower-region of the Report Header features controls that make it easy to view Report-content:

- ⊕ The **Find | Next** text field allows you to enter a text string. Left-clicking on **Find** causes a search to occur:

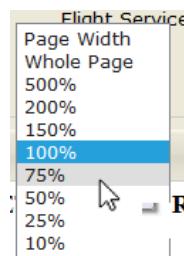


If part or all of the string can be matched in the current Report, the first instance is highlighted and displayed. Subsequently, left-clicking on **Next** causes a further search for the next match.

- ⊕ The **Zoom** control allows the Report to be displayed at higher or lower resolution:



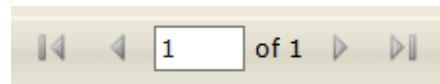
When left-clicked on, the field provides a pull-down menu, from which an appropriate resolution can be selected:



- ⊕ The **Go back to the parent Report** control returns the viewer to the parent-Report, if the current Report is a child-Report.



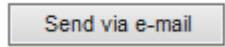
- ⊕ The **First**, **Previous**, **Next**, and **Last** controls, along with the editable **Current Page** text field, allow you to navigate through the Report by page. Either left-click on the arrows, or enter an integer in the text field and hit **Return** on the keyboard.



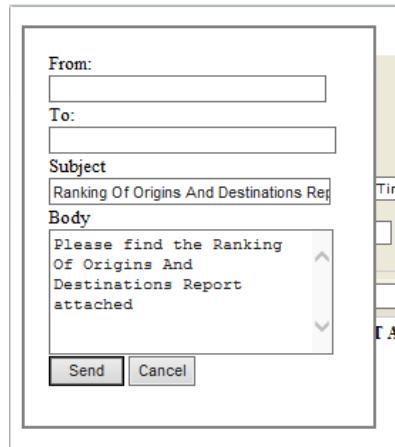
How do I preserve?

UltraAPEX gives you several options for preserving a given Report, all of which are accessible from the Report user interface:

- ⊕ *Send via e-mail.* This option is made available by a button at the upper left:



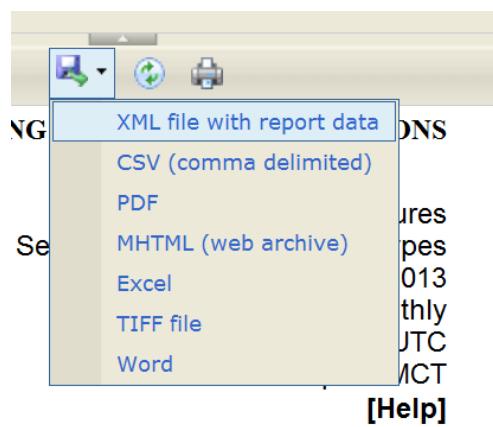
When you click on this, a user interface dialogue appears, allowing you to specify sender and recipient, and duly send the report as e-mail:



- ⊕ *Export to a suitable file-format.* This option is provided by the following icon, located near the bottom of the Report Header:



Click on the arrowhead to reveal the options for exporting:



As this menu indicates, the report can be saved in XML, CSV, PDF, MHTML, Excel, Tiff, and Word formats.

- *Print.* The Report can be printed, by means of the Print Icon, which is also located at the bottom of the Report Header:



Next Steps

Next, in Chapter 6, we examine how to make use of UltraAPEX *Data Viewers*.



Using Data Viewers

Data Viewers contain data related both to *flights* and to other kinds of information. Each Data Viewer represents information as a *Grid*, which is an arrangement of *rows* and *columns*. You can search, filter, and reorganize the data: this chapter explains how to do so.

Basic Interactions

First, we summarize the ways in which you interact with Data Viewers by means of UltraPortal and the **Layout Browser**.

How do I access?

You access Data Viewers in the same way as Charts and Reports: as Layouts, from the navigation tree to the left of the **Layout Browser**. For example:



Thus, left-clicking on **My Flight Viewer Grid Layout** brings up the Data Viewer so named.

How is data presented?

Within a Layout, Flight Grid data can be presented in three ways: *Grid*, *Filter*, and *Details*.

The *Grid* is the Data Viewer's principal interface for displaying data: each Data Viewer *must* provide a Grid. The Grid organizes the data into *rows* and *columns*. Each column represents a *property* – such as *arrival time*, *departure time*, *airport*, *terminal*, or *runway*. Each row features a different, specific data-value for that property:

My Flight Viewer			
Drag a column header and drop it here to group by that column			
ScheduledToArrive	ScheduledToDepart	Description	Outbound Airport Name
Enter date <input type="text"/>	Enter date <input type="text"/>	aA <input type="button"/>	aA <input type="button"/>
18/06/2013 13:34:00	18/06/2013 14:15:00	Piper PA-42 Cheyenne 400	Wonderboom
18/06/2013 10:00:00	18/06/2013 11:00:00	Piper PA-31/Navajo Chieftain	
25/06/2013 12:40:00	25/06/2013 13:30:00	Piper light aircraft	Wonderboom
11/06/2013 09:25:00	11/06/2013 09:45:00	Piper light aircraft	Ulusaba Airstrip
10/06/2013 18:40:00	10/06/2013 19:40:00	Piper light aircraft	
29/06/2013 09:55:00	29/06/2013 10:10:00	Piper light aircraft	
10/06/2013 13:20:00	10/06/2013 14:40:00	Piper light aircraft	
09/06/2013 10:22:00	09/06/2013 10:36:00	Piper light aircraft	
28/06/2013 15:25:00	28/06/2013 16:00:00	Pilatus PC-12	Wonderboom
07/06/2013 16:40:00	07/06/2013 17:30:00	Pilatus PC-12	Wonderboom
28/06/2013 10:18:00	28/06/2013 10:30:00	Pilatus PC-12	Ulusaba Airstrip
01/07/2013 09:35:00	01/07/2013 10:00:00	Pilatus PC-12	Ulusaba Airstrip
10/06/2013 10:35:00	10/06/2013 10:50:00	Pilatus PC-12	Ulusaba Airstrip
17/06/2013 07:45:00	17/06/2013 08:45:00	Pilatus PC-12	Pietermaritzburg
15/06/2013 10:40:00	15/06/2013 10:50:00	Pilatus PC-12	Maputo

The columns **ScheduledToArrive**, **ScheduledToDepart**, **Description**, and **Outbound Airport** all correspond to *properties*. Each row presents specific data-values (including *null* values) for those properties. Thus, the Data Viewer shown here represents scheduled times for arrivals and departures for the current airport. Also provided are descriptions of aircraft-types, and information on outbound airports.

The *Filter* and *Details* interfaces can be used in addition to the Grid. When incorporated into a Layout *along with a Grid*, a Filter provides additional ways of selecting and organizing data. Details allow specific row-entries to be viewed and edited.

These two additional interfaces are described later in this chapter.

Can I make changes to data?

Yes, potentially – depending on the permission allocated to you by your administrator. You may find that some or all Data Viewer Grids are *read only*. These will allow you to reorganize the way in which data is displayed, but not make changes to it.

However, if you do have appropriate permissions, you can use a *Details* interface to make changes to Data Viewer data, row by row. This is described later in the current chapter.

Does the data itself change?

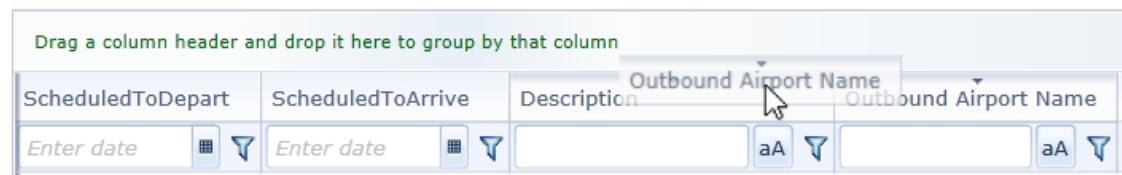
Yes. Data is refreshed periodically, and the values that appear in row and columns may change in consequence. Notifications and *animated alerts* may also be presented during the course of your interactions. These are described later in this chapter.

Using the Grid Interface

The *Grid* interface to the Data Viewer provides its own options for changing the appearance of data. This section describes those options.

Can I change column-order?

Yes. You can change the order in which columns appear by drag-and-dropping column-headers to the left or to the right. For example, you could move the **Outbound Airport Name** column to the left of the **Description** column: to do so, left-click and hold on the title-cell at the top of the **Outbound Airport Name** column, drag the cell to the left, and drop it directly over the current position of the **Description** column's title-cell:



When the operation is complete, the columns appear rearranged as follows:

ScheduledToDepart	ScheduledToArrive	Outbound Airport Name	Description
Enter date	Enter date		
15:00	18/06/2013 13:34:00	Wonderboom	Piper PA-42 Cheyenne 400
00:00	18/06/2013 10:00:00		Piper PA-31/Navajo Chieftain
30:00	25/06/2013 12:40:00	Wonderboom	Piper light aircraft

Can I change row-order?

Yes. You can change row-order using the arrowheads at the top of the uppermost cell of each column. The arrowhead allows you to arrange rows in **Ascending**, **Descending**, or **Random** order.

Here, for example, by default, the **Description** column features a downwards-pointing arrowhead – this is shown in the illustration above. Left-click on this arrowhead to dismiss it:

Description
Piper PA-42 Cheyenne 400
Piper PA-31/Navajo Chieftain
Piper light aircraft
Piper light aircraft
Piper light aircraft

After this left-click, the column appears as follows:

Description
De Havilland DHC-8-400 Dash 8Q
Embraer RJ135
Boeing 737-800 pax
Boeing 737-800 pax
Boeing 737-400 pax

Thus, the arrowhead has been dismissed, and the rows of the column are now presented in a *random* order.

To restore the arrowhead as *upwards*-pointing, left-click again on the space where the arrowhead formerly appeared. Subsequently, the column appears as follows:

Description
AC Group 737
Aerospatiale/Alenia ATR 42-500

Thus, the arrowhead has returned, and is upwards-pointing. Correspondingly, the row-data of the column is now presented in *ascending* sequence, with null fields appearing first.

Can I sort across multiple columns?

Yes, you can sort across multiple columns: this means that a *sort order* must be defined, so that each column is sorted in relation to the others.

When columns are surmounted by arrowheads by default, a sort order has already been established for them by the administrator who designed the Layout. By inspecting how the row-values are arranged, you can deduce this sort order. For example:

USING FLIGHT VIEWERS

ScheduledToArrive	ScheduledToDepart	Description	Outbound Airport Name
Enter date  	Enter date  	aA 	aA 
30/06/2013 17:20:00	30/06/2013 19:20:00	Airbus A330-200	Heathrow
20/06/2013 16:10:00	20/06/2013 19:05:00	Airbus A330-200	Heathrow
28/06/2013 07:40:00	28/06/2013 09:40:00	Airbus A330-200	Harare Intl
08/06/2013 06:25:00	08/06/2013 12:45:00	Airbus A330-200	Harare Intl
15/06/2013 06:25:00	15/06/2013 09:25:00	Airbus A330-200	Guarulhos Gov Andre Franco Montou
20/06/2013 06:50:00	20/06/2013 09:25:00	Airbus A330-200	Guarulhos Gov Andre Franco Montou

When we look at the **Description** and **Outbound Airport Name** columns, we see that each is surmounted by a downwards-pointing arrowhead. This means that by default, this Grid presents the row-data for these columns in *descending* order. Looking at the data itself, we see that against a single **Description** value, multiple **Outbound Airport Name** values have been presented – in *descending* order. This indicates that the **Description** column is number 1 in the sort order, and **Outbound Airport Name** number 2: the **Description** values are sorted first, into descending order; then, for each recurrent **Description** value, corresponding **Outbound Airport Name** values are themselves sorted in descending order.

You can redefine both *sort order* and *sort direction* at will:

- ⊕ If you wish to specify a column as number 1 in a sort order, simply left-click on its arrowhead-position (and where necessary, continue clicking until the arrowhead has the orientation you desire).

When you do so, any other existing arrowheads disappear, and your selected column becomes the only one sorted.

- ⊕ If you wish to specify some other column as number 2 in the sort order, *hold down the Shift key*, and then left-click on its arrowhead-position.

While the number 1 column retains its arrowhead and corresponding sort, the current column acquires its own arrowhead and corresponding sort. This sort is a *nested* sort: when the number 1 column's data elements recur over multiple rows, their order is determined by a sort performed on the corresponding number 2 column-elements.

- ⊕ If you wish to specify other columns in your sort order, again hold down the Shift key and left-click on the column's arrowhead-positions. Sort order-position is assigned incrementally to each column, according to the sequence in which you left-click.

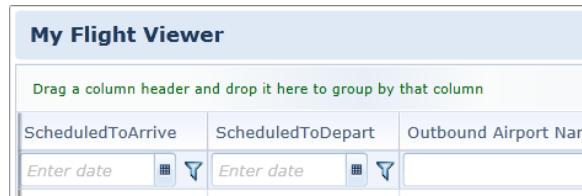
What is “grouping” and how do I use it?

Grouping is a way of organizing Grid data as a hierarchy: it allows you to place one property inside another. This helps to narrow data-searches, and so provides a particularly efficient way of locating required flight-information.

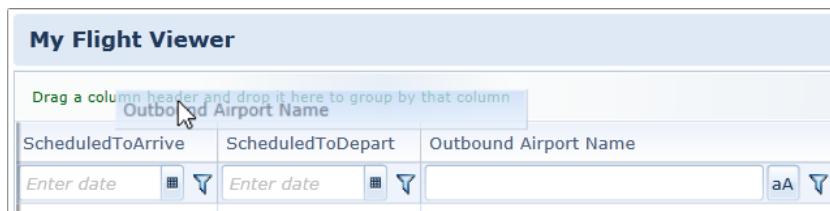
USING FLIGHT VIEWERS

Grouping changes Grid-appearance such that, rather than seeing all available rows simultaneously, you see a vertical list, whose entries are the row-data of the column you have elected to group by. By opening an entry, you reveal each row of which it is a member.

The **Grouping** facility resides in the horizontal field immediately below the Data Viewer-name. This bears the label **Drag a column header and drop it here to group by that column**:



Therefore, to establish **Outbound Airport Name** as the top-level group, left-click and hold on the column-header, then drag-and-drop the column-header into the **Grouping** field:



When the operation is complete, the appearance is as follows:

My Flight Viewer		
Grouped by: Outbound Airport Name		
ScheduledToArrive	ScheduledToDepart	Outbound Air
Enter date	Enter date	
▼		
▼ Abidjan Felix Houphouet Boigny Intl		
▼ Abu Dhabi Intl		
▼ Ataturk		
▼ Beira		
▼ Ben Gurion		
▼ Bloemfontein Intl		
▼ Bole Intl		

Note that the **Grouping** field now contains the label **Grouped by**, and is followed by a rectangular **Outbound Airport Name** element, which is itself surmounted by an upwards-pointing arrowhead – this indicates that all data is now presented according to the row-values of the **Outbound Airport Name** column, and that these row-values are presented in *ascending* sequence. This can indeed be confirmed by inspecting the main data-display area of the Data Viewer, which no longer has multiple rows and columns available: instead, a single column of data

USING FLIGHT VIEWERS

values is presented. These data-values are indeed those of **Outbound Airport Name**, and are indeed in ascending sequence.

Note that each of these new row-names is accompanied, to its left, by a downwards-pointing caret. Click on any of these to *open* the row, and inspect the data-values inside. For example:

My Flight Viewer				
Grouped by: Outbound Airport Name				
ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description	
Enter date	Enter date		aA	
▼				
▼				
▼ Abidjan Felix Houphouet Boigny Intl				
▼ Abu Dhabi Intl				
▼ Ataturk				
▲ Beira				
29/06/2013 13:00:00	29/06/2013 13:40:00	Beira		
18/06/2013 10:20:00	18/06/2013 11:30:00	Beira		
	15/06/2013 11:30:00	Beira		
	30/06/2013 10:30:00	Beira		
16/06/2013 09:10:00	16/06/2013 09:35:00	Beira		
09/06/2013 09:10:00	09/06/2013 09:35:00	Beira		
14/06/2013 09:10:00		Beira		
08/06/2013 10:20:00	08/06/2013 11:30:00	Beira		
05/07/2013 14:25:00	05/07/2013 15:05:00	Beira		
11/06/2013 10:20:00	11/06/2013 11:30:00	Beira		

Thus, all the Data Viewer rows that have **Beira** as **Outbound Airport Name** have been co-located under **Beira**.

Optionally, you can now group another property *within* **Outbound Airport Name**. For example, drag-and-drop the title-cell of the **Description** column into the **Groupings** field, just to the right of the **Outbound Airport Name** element:

My Flight Viewer				
Grouped by: Outbound Airport Name Description				
ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description	
Enter date	Enter date		aA	

When the operation is complete, the field appears as follows:

My Flight Viewer				
Grouped by: Outbound Airport Name Description				
ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description	
Enter date	Enter date		aA	

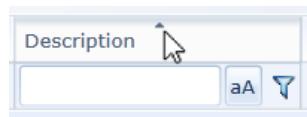
USING FLIGHT VIEWERS

The rightwards-pointing arrowhead between the **Outbound Airport Name** and **Description** elements confirms that the latter is now grouped within the former. This can be further verified by inspecting the main data display of the Data Viewer:

The screenshot shows a data viewer titled "My Flight Viewer". At the top, there is a search bar with the placeholder "Outbound Airport Name" and a dropdown menu labeled "Grouped by: Outbound Airport Name ▶ Description". Below the search bar is a table with the following columns: "ScheduledToArrive", "ScheduledToDepart", "Outbound Airport Name", and "Description". The "Outbound Airport Name" column contains expandable entries for "Doha Intl", "Douala", "Dubai Intl", and "Durban Intl". The "Durban Intl" entry is expanded, showing sub-entries for aircraft models: "Airbus A319", "Airbus A320-100/200", "Boeing 737-200 Freighter", "Boeing 737-200 pax", and "Boeing 737-300 Freighter". Each aircraft model has a corresponding list of flight records. For example, under "Boeing 737-300", there are six flights listed with dates ranging from June 15, 2013, to June 29, 2013.

Thus, the **Outbound Airport Name** row-values are now organized according to an ascending order of **Description** row-values.

Note that within the **Grouping** mechanism, the order of row-values can also be established as *descending* or *random*, by left-clicking on the arrowhead that surmounts the **Grouping** element. For example:



If the **Description** arrowhead is left-clicked into a downwards orientation, the effect on row-grouping is as follows:

USING FLIGHT VIEWERS

The screenshot shows a Data Viewer titled "My Flight Viewer". At the top, there is a toolbar with a "Grouped by:" dropdown set to "Outbound Airport Name", and two buttons: "Description" and a search/filter icon. Below the toolbar is a table header row with columns: "ScheduledToArrive", "ScheduledToDepart", "Outbound Airport Name", and "Description". Under "ScheduledToArrive" and "ScheduledToDepart", there are date input fields with calendar icons and dropdown arrows. Under "Outbound Airport Name", there are dropdown arrows labeled "aA" and "aA". The main area displays a hierarchical tree view of airports under "Grouped by: Outbound Airport Name". The tree includes nodes for "Doha Intl", "Douala", "Dubai Intl", and "Durban Intl". "Durban Intl" has expanded to show aircraft types: "CRJ 200", "CRJ 100", "Boeing 737-800 pax", "Boeing 737-400 pax", "Boeing 737-300 pax", "Boeing 737-300 Freighter", "Boeing 737-200 pax", "Boeing 737-200 Freighter", "Airbus A320-100/200", and "Airbus A319". A table below the tree lists flight details for the "Boeing 737-300 Freighter" group:

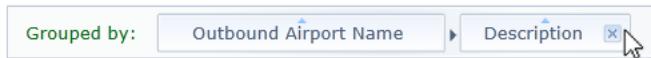
ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description
15/06/2013 23:10:00	16/06/2013 00:10:00	Durban Intl	Boeing 737-300 Freighter
02/07/2013 22:55:00	03/07/2013 00:05:00	Durban Intl	Boeing 737-300 Freighter
27/06/2013 14:55:00	27/06/2013 16:55:00	Durban Intl	Boeing 737-300 Freighter
26/06/2013 10:00:00	26/06/2013 15:00:00	Durban Intl	Boeing 737-300 Freighter
28/06/2013 22:55:00	29/06/2013 00:05:00	Durban Intl	Boeing 737-300 Freighter
29/06/2013 22:55:00		Durban Intl	Boeing 737-300 Freighter

Thus, the aircraft **Description** row-values now appear under their respective **Outbound Airport Name** groupings in *descending* order.

How do I change or remove groupings?

In order to change an existing sequence of groupings, within the **Groupings** field, you can drag-and-drop elements to the left or right (just as you did with column-headers), and so change their position and grouping-precedence.

If you wish to eliminate a grouping, left-click on the **X** symbol that appears to the right of each grouping element, when the mouse-cursor hovers over it. For example:



Can I search for data-values?

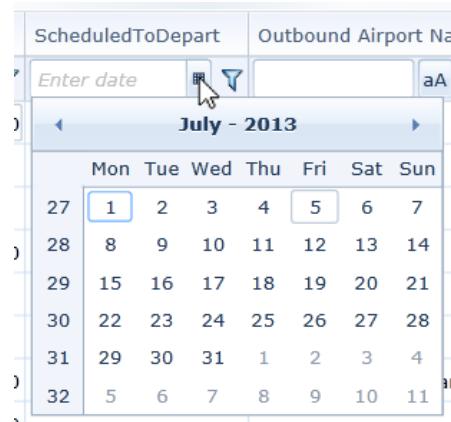
You can search for data-values in every column of the Data Viewer, by using the **Search and Filter** mechanism, provided just below the column header:

This can be most easily demonstrated by removing the **Groupings** previously established, by clicking on the elements' **X** symbols, as described previously. The top of the Data Viewer now appears as follows:

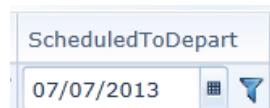
USING FLIGHT VIEWERS

ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description
Enter date <input type="text"/>	Enter date <input type="text"/>		aA
14/06/2013 16:35:00	14/06/2013 17:35:00		
	26/06/2013 20:10:00		
	18/06/2013 15:35:00	Bloemfontein Intl	
12/06/2013 15:30:00	12/06/2013 17:30:00		
	11/06/2013 07:00:00		
	15/06/2013 21:40:00	Durban Intl	
10/06/2013 10:50:00	10/06/2013 12:35:00	Sir Seewoosagur Ramg	
03/07/2013 11:25:00			
28/06/2013 05:55:00			
14/06/2013 08:55:00	14/06/2013 11:10:00	Windhoek Hosea Kutako	
	02/07/2013 23:40:00	Jomo Kenyatta Internati	

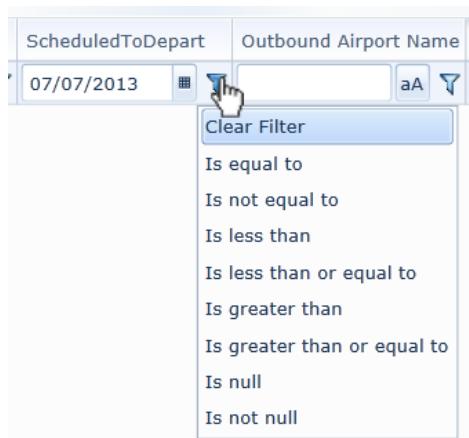
The **Search and Filter** utility at the top of each column includes a text field and a **Filter Icon**. The text field, if accompanied by the **aA** label, accepts alphanumeric input; and, if accompanied by an interactive calendar symbol and marked with the **Enter date** prompt, accepts a date, whose format must be **dd/mm/yyyy**. By clicking on the interactive calendar symbol, you bring up an interactive calendar, which can be used in date-specification:



For example, by selecting an appropriate year and month, and left-clicking on the desired integer, we place a date in the **Enter date** field:



Now, by left-clicking on the **Filter Icon**, we bring up a menu that contains options for applying an appropriate filter to our search:



The filter-options provided by this menu are as follows:

- ⊕ **Clear Filter** – Removes any value and/or filter already established.
- ⊕ **Is equal to** – Returns all column-values that are equal to the value specified.
- ⊕ **Is not equal to** – Returns all column-values that are *not* equal to the value specified.
- ⊕ **Is less than** – Returns all column-values that are less than the value specified.
- ⊕ **Is less than or equal to** – Returns all column-values that are less than or equal to the value specified.
- ⊕ **Is greater than** – Returns all column-values that are greater than the value specified.
- ⊕ **Is greater than or equal to** – Returns all column-values that are greater than or equal to the value specified.
- ⊕ **Is null** – Returns all column-values that are null.
- ⊕ **Is not null** – Returns all column-values that are *not* null.

Note that in this context, **less than**, **equal to**, and **greater than** mean that the date is prior to, identical to, or subsequent to that specified.

By selecting **Is less than**, we change column-appearance as follows:

USING FLIGHT VIEWERS

ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description
Enter date <input type="text"/>	07/07/2013 <input type="text"/>		aA
14/06/2013 16:35:00	14/06/2013 17:35:00		aA
	26/06/2013 20:10:00		
	18/06/2013 15:35:00	Bloemfontein Intl	
12/06/2013 15:30:00	12/06/2013 17:30:00		
	11/06/2013 07:00:00		
	15/06/2013 21:40:00	Durban Intl	
10/06/2013 10:50:00	10/06/2013 12:35:00	Sir Seewoosagur Ramg	
14/06/2013 08:55:00	14/06/2013 11:10:00	Windhoek Hosea Kutako	
	02/07/2013 23:40:00	Jomo Kenyatta Internati	
05/07/2013 04:50:00	05/07/2013 08:35:00	Murtala Muhammed	
	19/06/2013 00:05:00	Durban Intl	

Thus, column-values for **ScheduledToDepart** now exclude any that are equal to or greater than the specified value.

Note that the **Search and Filter** mechanism for *text* is very similar to that for *dates*, but several additional filter-options are provided:

- + **Starts with** – Returns all column-values whose commencement is identical to the specified value.
- + **Ends with** – Returns all column-values whose ending is identical to the specified value.
- + **Contains** – Returns all column-values that provide an internal match to the specified value.

Note: This is the default operation. Thus, if you enter text into the text field, and simply hit return without left-clicking on the **Filter Icon**, the **Contains** operation is performed, using the text you have entered.

- + **Does not contain** – Returns all column-values that do not provide an internal match to the specified value.
- + **Is contained in** – Returns all column-values that are a textual-subset of the specified value.
- + **Is not contained in** – Returns all column-values that are *not* a textual-subset of the specified value.

For example, we can search for a sub-string of a particular airport, as follows:

USING FLIGHT VIEWERS

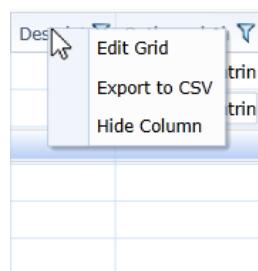
ScheduledToArrive	ScheduledToDepart	Outbound Airport Name	Description
Enter date	07/07/2013	loemfon	aA
18/06/2013 15:35:00	Bloemfontein Intl		Clear Filter
16/06/2013 08:00:00	Bloemfontein Intl		Is equal to
05/07/2013 13:55:00	Bloemfontein Intl		Is not equal to
03/07/2013 10:20:00	Bloemfontein Intl		Starts with
05/07/2013 15:35:00	Bloemfontein Intl		Ends with
28/06/2013 07:00:00	Bloemfontein Intl		Contains
03/07/2013 17:30:00	Bloemfontein Intl		Does not contain
16/06/2013 10:20:00	Bloemfontein Intl		Is contained in
12/06/2013 13:55:00	Bloemfontein Intl		Is not contained in
28/06/2013 05:00:00	Bloemfontein Intl		Is less than
03/07/2013 15:35:00	Bloemfontein Intl		Is less than or equal to
30/06/2013 10:20:00	Bloemfontein Intl		Is greater than
30/06/2013 07:00:00	Bloemfontein Intl		Is greater than or equal to
15/06/2013 05:00:00	Bloemfontein Intl		Is null
02/07/2013 10:50:00	Bloemfontein Intl		Is not null

Thus, the rows returned all feature the specified value as a substring of the row-data for the specified column.

Note that you can also use an **Advanced** search mechanism, which allows you to specify *two* criteria on which to search, rather than just one. This is described below.

Can I hide columns?

You can hide columns individually, by accessing the **Data Viewer Column Header Menu**. To do so, right-click on the header of the column you wish to hide:

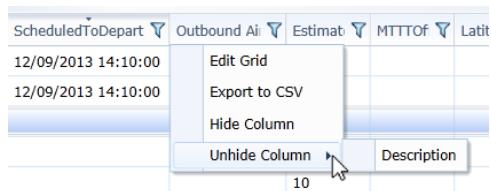


Select **Hide Column** to hide the current column.

To *unhide* a column, place the mouse cursor on the vertical border of the two visible columns that surround the location of the hidden column. The cursor changes to a horizontal, double-arrowed appearance:

ScheduledToDepart	Outbound Air
12/09/2013 14:10:00	Geneva Cointrin
12/09/2013 14:10:00	Geneva Cointrin

Then, right-click to bring up the **Data Viewer Column Header Menu** again. It now contains an additional option, which is **Unhide Column**. Left-click on this to expose a further menu, which contains the name of every column that is hidden at this point.



Select the name of the column you wish to unhide. The column is duly revealed.

Can I change the default airport?

The default airport, which is the context for all values that appear in the Data Viewer, can itself be changed. Naturally, this populates the Data Viewer with an entirely different data-set.

To change the default airport, left-click on the large downwards-pointing arrowhead, at the very top of the Data Viewer:

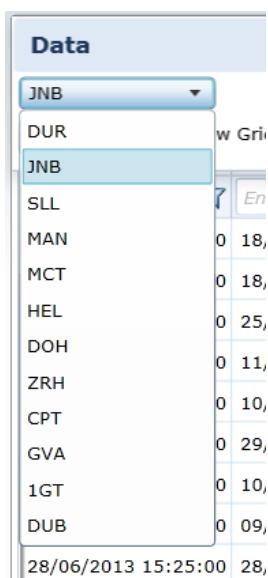


This reveals the **Data** interface:



The interactive graphical elements in this area can be used to modify data and data-representation. The **Set Airport** interface is the pull-down menu field towards the upper-left, currently reading **JNB** (which is indeed the default airport, data for which we have until now been using).

To change the airport setting, you can expose the menu options, and select as appropriate:



What other changes can I make?

The **Data** interface provides several other options, which are:

Clear Filters — Left-clicking on this button clears from the viewer all filters that are currently set.

Filtering Mode — A pull-down menu with two options, which are **Row Filter** and **Advanced**:

Row Filter provides the default filtering mechanism, which was described in the section immediately preceding: a single value is entered into the editable field at the head of the column, and the **Filter Icon** is left-clicked on, to reveal the logical operations by means of which a filtering operation is performed.

Advanced provides an alternative filtering mechanism. When it is selected, the editable fields at the column-heads are dismissed, and the **Filter Icons** alone remain, adjacent to the column-titles. When left-clicked on, the **Filter Icon** for a column containing either text or integer values provides a dialogue from which advanced filtering options are chosen. This dialogue is described in the section following.

Show Grid Name – Checking this checkbox ensures that the name of the current Flight Grid is visible. If the box is *unchecked*, no name is displayed.

Allow Grouping – Checking this checkbox ensures that the **Groupings** mechanism can be used. If the box is *unchecked*, the **Groupings** field is not displayed, and the mechanism cannot be used.

Show UTC Times – Checking this checkbox causes times to be displayed in UTC format.

- ⊕ **Highlight Row Changes** – Checking this checkbox causes any row changes, due to periodic updates from the database, to be highlighted. If the box is *unchecked*, updates are *not* highlighted.

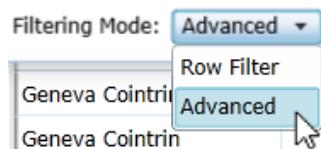
What is Advanced Filtering?

Advanced filtering can be performed by selecting the **Advanced Filtering Mode**, from the **Data** interface.

By default, the **Row Filter** mechanism is switched on. This provides a column-header that features the name of the column, an editable text field into which the data to be searched for can be input, and the **Filter Icon**, which provides the dialogue whereby filter-logic is selected. The column-header thus appears as follows:

ScheduledToDepart	Outbound Airport
Enter date	
12/09/2013 14:10:00	Geneva Cointrin

To switch on **Advanced** filtering instead, use the **Filtering Mode** pull-down menu, which is located in the **Data** interface:



The column-headers now change, to appear as follows:

ScheduledToDepart	Outbound Ai
12/09/2013 14:10:00	Geneva Cointrin

Advanced filtering is itself provided in two different forms; which are **for Standard Values** and **for Dates**. To observe the **Advanced** filtering mechanism **for Standard Values**, left-click on the **Filter Icon** of a row containing text or integer values. The following dialogue appears:

The screenshot shows the 'Default Airport Name' column header with a filter icon. A context menu has been opened, showing options like 'Select All' and 'Geneva Cointrin'. Below this, the filter dialog is open, showing the following settings:

- Filter Type: Is equal to
- Value: Geneva Cointrin
- Condition: And
- Second Condition: Is equal to (with an empty value field)

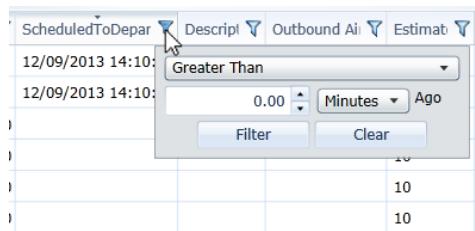
The upper part of the dialogue provides a checkbox for each data-value listed in the current column, whereby that particular value can be selected for display. As many individual values as are selected in this way will indeed be displayed in the column, following selection: all others, along with accompanying data, will be omitted. In addition, a **Select All** checkbox allows *all* values to be selected for display.

The lower part of the dialogue provides an interface whereby data-values are selected for display based on pattern-matches achieved with entered strings: once a string has been entered, a logical option is specified, and a match is searched for according to the option. The available filter options, which are revealed by left-clicking on pull-down menus, are as follows:

-  **Is equal to** – Returns all column-values that are equal to the value specified.
-  **Is not equal to** – Returns all column-values that are *not* equal to the value specified.
-  **Starts with** – Returns all column-values whose commencement is identical to the specified value.
-  **Ends with** – Returns all column-values whose ending is identical to the specified value.
-  **Contains** – Returns all column-values that provide an internal match to the specified value.
-  **Does not contain** – Returns all column-values that do not provide an internal match to the specified value.
-  **Is contained in** – Returns all column-values that are a textual-subset of the specified value.
-  **Is not contained in** – Returns all column-values that are *not* a textual-subset of the specified value.
-  **Is empty** — Returns all column-values that are empty.
-  **Is not empty** — Returns all column-values that are not empty.
-  **Is less than** – Returns all column-values that are less than the value specified.
-  **Is less than or equal to** – Returns all column-values that are less than or equal to the value specified.
-  **Is greater than** – Returns all column-values that are greater than the value specified.

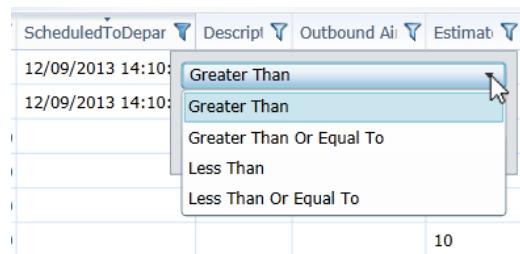
- ⊕ **Is greater than or equal to** – Returns all column-values that are greater than or equal to the value specified.
- ⊕ **Is null** – Returns all column-values that are null.
- ⊕ **Is not null** – Returns all column-values that are *not* null.

To observe the **Advanced** filtering mechanism **for Dates**, left-click on the **Filter Icon** of a row containing time and date values. The dialogue now appears differently:



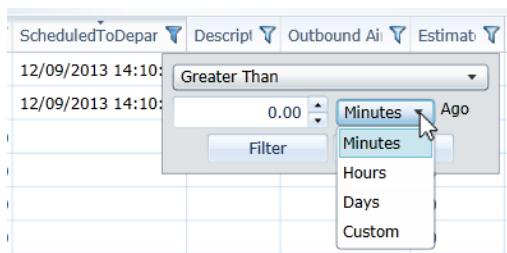
The dialogue allows values to be filtered according to how much time has elapsed between the value and the current time. Its interactive elements are as follows:

- ⊕ **Greater Than** – A pull-down menu that allows specification of a logical operation to be applied to the values in the column. To select an operation, left-click on the downwards-pointing arrow at the right-hand side of the pull-down menu field:



As this illustration indicates, the options are **Greater Than**, **Greater Than Or Equal To**, **Less Than**, and **Less Than Or Equal To**

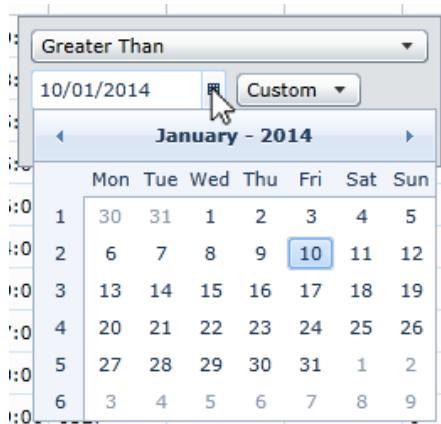
- ⊕ **0.00** — A numeric value, which is the number of time units that will be referred to by the specified logical operation.
- ⊕ **Minutes** — The type of time unit to be employed in the logical operation. Select a unit-type from the pull-down menu:



As this illustration indicates, the possible unit types are **Minutes**, **Hours**, **Days**, and **Custom**. Note that the field is succeeded by the word **Ago**. This indicates that the value declared by means of the text field and time-units pull-down menu is interpreted as a point of time in the past, as counted from the present time.

Left-clicking on the **Filter** button causes filtering to occur based on the specified values. Thus, when a time-period has been specified (say, 24 hours), a logical value of **Greater Than** causes the Grid to display only rows whose value for the present column is a point in time prior to the current time by a period greater than 24 hours. If a logical value of **Less Than Or Equal To** is specified, rows are displayed only if their value for the present column is a point in time prior to the current time by a period less than or equal to 24 hours.

Note that selection of the **Custom** option from the time-units-type pull-down menu changes the appearance of the dialogue and brings up an interactive calendar, as follows:

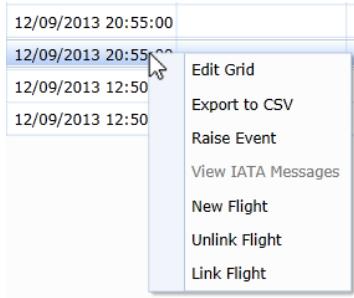


The word **Ago** has now disappeared, and the text field shows a full date, which is the current date. This date can be modified directly from the keyboard, or by means of left-clicking on the interactive calendar. The logical operation will now be performed strictly with respect to the date provided: thus, in the current illustration, only rows with a value for the current column that is **Greater Than** (which is to say, later than) the currently entered date will be displayed in the Grid.

Left-clicking on **Clear** clears all filter-values currently entered, and restores the Grid to its unfiltered state.

How do I export?

To export the current Data Viewer in CSV (*Comma Separated Values*) format, right-click on any point in the Grid. This displays the **Data Viewer Options** menu:



These options are:

- ⊕ **Edit Grid** – Allows authorised users to edit the grid definition. Refer to the *UltraAPEX Administrator Guide – Data Viewers*.
- ⊕ **Export to CSV** – Permits export of the current Data Viewer data in a Comma-separated Value format, for offline analysis.
- ⊕ **Raise Event** – Only available to users with suitable permissions, who should consult the document *UltraAPEX Administrator Guide – Events*.
- ⊕ **View IATA Messages** — Available on some systems, allows *IATA* Messages to be viewed.
- ⊕ **New Flight, Unlink Flight, and Link Flight** — Options for creating flights and defining their flight-legs. These options are described below.

Selecting the **Export to CSV** option brings up a Windows Explorer window, which provides access to the host system and potentially, locations on the network, where the CSV file can be saved.

How do I handle animated alerts?

The Data Viewer can *animate* cells or rows, in order to draw your attention to the data represented there. This is due to either of the following conditions:

- ⊕ The data has changed.
- ⊕ The data has changed so as to attain a specific value.

In both situations, it is assumed that the significance of the change is understood by the user, and that the animated alert may thus lead to appropriate actions.

The appearance of an animated alert may vary:

- ⊕ The background of the cell or row may change colour.

USING FLIGHT VIEWERS

⊕ The text of the cell or row may change colour.

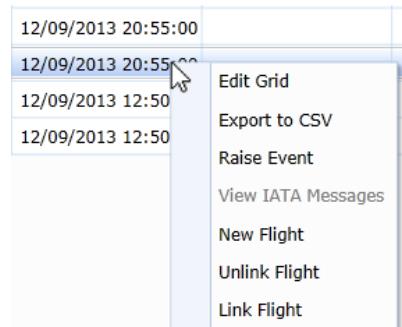
⊕ The change may be temporary or permanent.

The illustration below provides an example of how a row might appear, when animated due to a data-change:

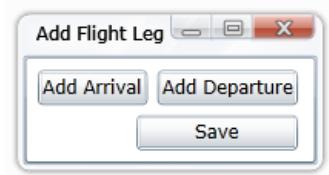
My Flight Viewer				
Drag a column header and drop it here to group by that column				
ScheduledToArrive	ScheduledToDepart	Description	Outbound	Inbound
Enter date	Enter date	aA		
	03/07/2013 08:20:00		Kimberley	
	03/07/2013 04:45:00		Kimberley	
02/07/2013 15:30:00	02/07/2013 16:10:00	De Havilland DHC-8-400 Dash 8Q	Kimberley	
02/07/2013 13:00:00	02/07/2013 13:25:00	De Havilland DHC-8-400 Dash 8Q	Kimberley	
02/07/2013 07:30:00	02/07/2013 08:20:00	De Havilland DHC-8-400 Dash 8Q	Kimberley	
02/07/2013 03:45:00	02/07/2013 04:45:00	CRJ 700	Kimberley	
01/07/2013 15:30:00	01/07/2013 16:10:00	De Havilland DHC-8-400 Dash 8Q	Kimberley	
01/07/2013 12:30:00	01/07/2013 13:00:00	De Havilland DHC-8-400 Dash 8Q	Kimberley	
	30/06/2013 12:10:00		Kimberley	

How do I create a new flight leg?

To add a flight leg to a current flight, use the **Data Viewer Options** menu, which is accessed by right-clicking on the appropriate row of the Data Viewer Grid:

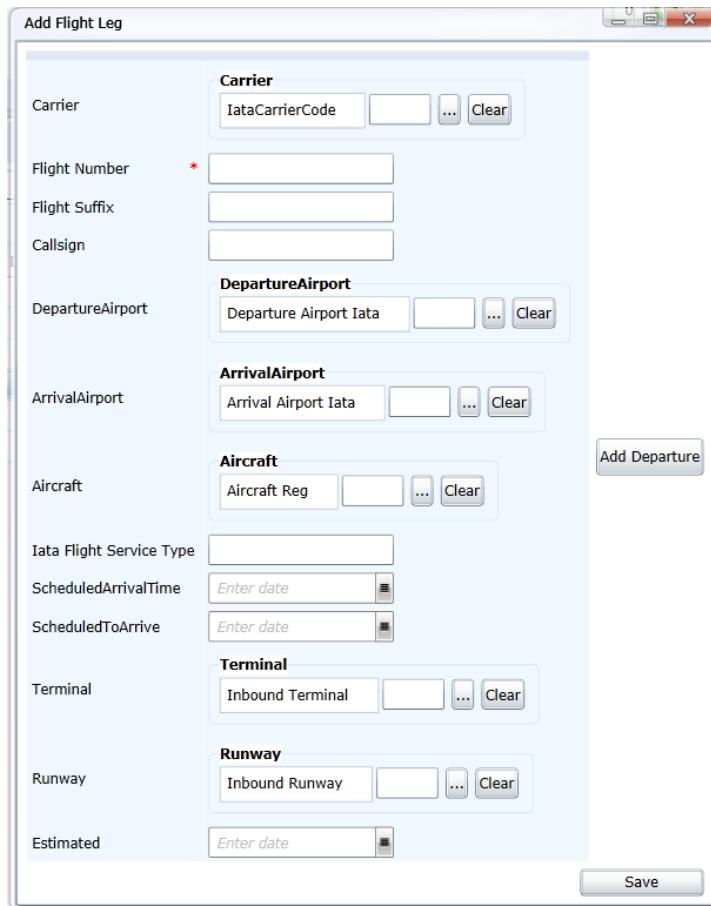


To create a new flight leg, select the **New Flight** option. This brings up the **Add Flight Leg** dialogue:



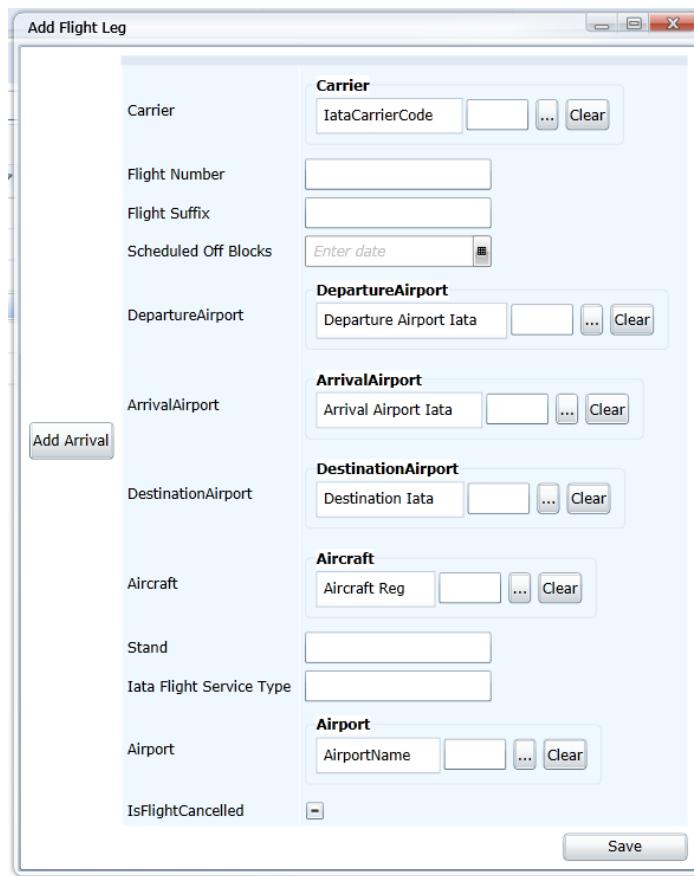
USING FLIGHT VIEWERS

Left-click on the **Add Arrival** button to add a flight-arrival. This expands the **Add Flight Leg** dialogue as follows:



Complete the dialogue and left-click on **Save** to add the new leg to the Data Viewer.

Left-clicking on the original **Add Flight Leg** interface's **Add Departure** button brings up a similar dialogue:



Note that each expanded version of the **Add Flight Leg** dialogue features a button to bring up the other. Thus, if you left-click on the **Add Arrival** button that appears to the left in the illustration immediately above, or on the **Add Departure** button that appears to the right in the previous illustration, the other dialogue appears, and you can edit both, side by side.

How do I link and unlink flights?

To link one leg of a flight to another, access the **Data Viewer Options** menu by right-clicking on the appropriate row of the current Data Viewer. Then, select **Link Flight**. This brings up the **Add Flight Leg** dialogue sequence, as illustrated in the previous section. The leg you add is linked to the leg represented by the row you right-clicked on.

To *unlink* one leg of a flight from another, select **Unlink Flight**. This brings up a dialogue requesting confirmation that you wish to unlink the flight on which you right-clicked. Left-click the **Yes** button to unlink the flight.

How do I handle checkboxes?

Checkboxes are used in fields of a Data Viewer Grid to indicate a value that can be *yes* or *no*.

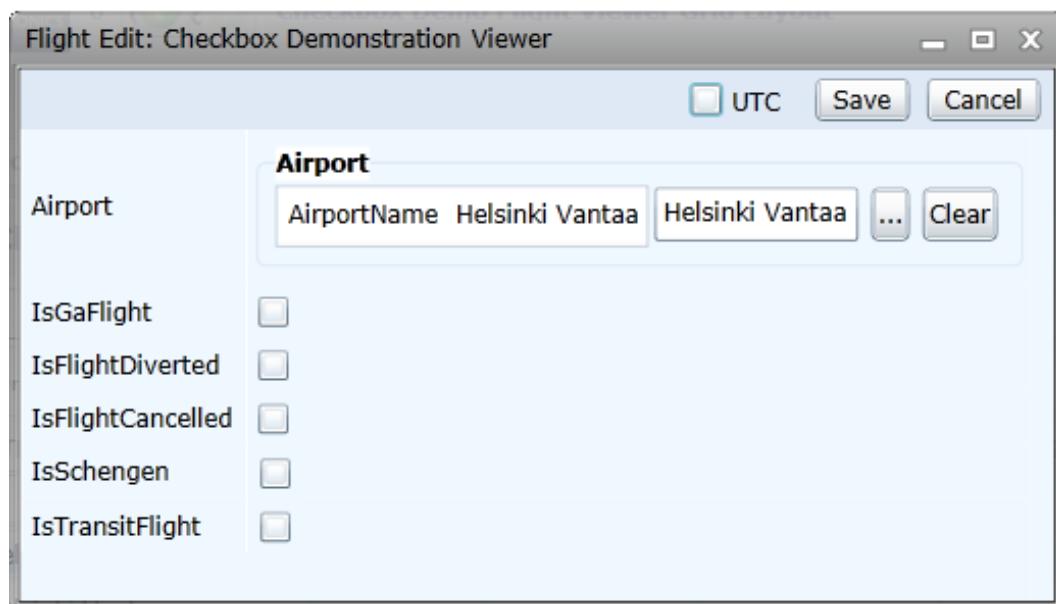
USING FLIGHT VIEWERS

The initial appearance of a row in a Grid that employs checkboxes may be as follows:

AirportName	IsGaFlight	IsFlightDiverted	IsFlightCancelled	IsSchengen	IsTransitFlight
	<input type="checkbox"/>				
Helsinki Vantaa	<input type="checkbox"/>				

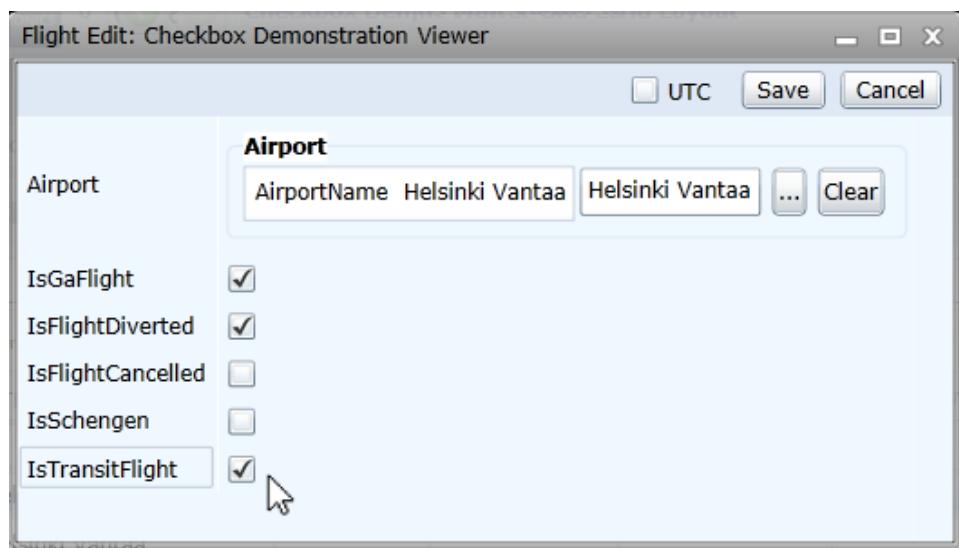
Other than the **AirportName** field, there are five fields shown. All have visible checkboxes.

If you have been granted edit-permissions on a Data Viewer Grid, you can access checkboxes and change their status. For example, to modify the checkbox in the top row for **IsGaFlight**, first, double left-click on the field. The **Details** dialogue now appears, as follows:



To change the values of the checkboxes within the **Details** dialogue, simply left-click on each. Doing so on a checkbox that is blank changes its value from *negative* to *positive* – placing a checkmark in the box – and doing so a second time changes it back to *negative*.

For example, the dialogue might be changed as follows, by left-clicking:



Once these values are saved by left-clicking on the **Save** button, the Data Viewer Grid re-appears as follows:

AirportName	IsGaFlight	IsFlightDiverted	IsFlightCancelled	IsSchengen	IsTransitFlight
Helsinki Vantaa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Thus, the selected boxes appear checked in the displayed row.

Using the Filter Interface

The *Filter* interface of the Data Viewer provides a way of selecting and filtering data. This is particularly useful when the Data Viewer contains a high volume of data.

How does the Filter relate to the Grid?

A *Filter* interface can be used in conjunction with the Grid interface. For this to be possible, a Layout that provides a Filter interface must also provide an adjacent Grid interface.

This appearance is as follows:

USING FLIGHT VIEWERS

The screenshot shows the UltraAPEX interface with two main panels. On the left is the 'My Flight Viewer' grid, which displays flight data with columns for ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name. The grid contains several rows of flight information, such as Piper PA-42 Cheyenne 400 arriving at Wonderboom on 18/06/2013 at 13:34:00. On the right is the 'Filter - My Flight Viewer' panel, which contains four text input fields with checkboxes: ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name. The grid shows 8293 of 8293 flights.

How does the Filter relate to other tools?

The Filter interface can be used in conjunction with other UltraAPEX utilities, in the absence of a Data Viewer Grid. For example, it might be used with an Event Viewer, or with Charts; or with any display that features a significant amount of data that can be filtered according to flight details; or indeed, with a multiplicity of such displays. Once again, for this to be possible, a Layout must be created that incorporates the Filter interface along with whatever other or others are appropriate.

How do I use the Filter?

The Filter interface, which appears as the Layout's right-hand sub-panel, contains two fields for each of the properties represented as columns in the Grid interface:

- ⊕ The longer field, to the left, displays row-data. To populate the field, you can manually select a row in the adjacent Grid interface, by left-clicking with the mouse. Alternatively, you can enter text directly from the keyboard.
- ⊕ The field to the right is a checkbox. Checking this *selects* the row-data in the adjacent display, and causes the data in the Grid to be filtered, such that only matches with the selected row-data are displayed.

How do I populate fields?

First, left-click in any column on the top row of the Grid interface, in the left-hand panel:

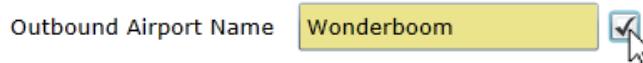
USING FLIGHT VIEWERS

The screenshot shows the 'My Flight Viewer' application interface. On the left is a grid of flight data with columns: ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name. A specific row is highlighted in blue, representing a selected flight. On the right is a 'Filter - My Flight Viewer' panel with four input fields: ScheduledToArrive (18/06/2013 13:34:00), ScheduledToDepart (18/06/2013 14:15:00), Description (Piper PA-42 Cheyenne 400), and Outbound Airport Name (Wonderboom). The 'Outbound Airport Name' field has a checked checkbox.

Thus, the row in the Grid appears selected; and the data-display fields in the Form are each populated with the information from the Grid-columns to which they respectively correspond.

How do I filter Grid-data?

For example, click on the checkbox adjacent to the **Outbound Airport Name** data-display field:



This highlights the text in the data-display field; it also causes the data in the Grid to be filtered, as follows:

The screenshot shows the 'My Flight Viewer' application interface after applying the filter. The grid now only displays flights where the Outbound Airport Name is 'Wonderboom'. The first row shown is for a Piper PA-42 Cheyenne 400 on 18/06/2013 at 14:15:00.

Thus, only data that features a match to the selected value is displayed.

USING FLIGHT VIEWERS

Can I apply multiple filters?

Yes. Grid-data can be filtered by multiple specifications, made with the Filter interface. The specifications can occur either through further row-selections in the Grid, or through direct text-entry into the Filter.

For example:

The screenshot shows the 'My Flight Viewer' application interface. On the left is a grid of flight data with columns: ScheduledToArrive, ScheduledToDepart, Description, and Outbound Airport Name. The grid contains several rows of data. On the right is a 'Filter - My Flight Viewer' panel with four filter criteria: ScheduledToArrive (28/06/2013 13:10:00), ScheduledToDepart (28/06/2013 13:45:00), Description (Cessna light aircraft), and Outbound Airport Name (Wonderboom). The 'Description' and 'Outbound Airport Name' fields have yellow backgrounds and checked checkboxes, indicating they are active filters.

Can I access the Data interface?

Yes, you can access the Data interface from the downwards-pointing arrowhead, visible at the top of the Filter panel. Note that the selections within the Data interface of the Filter must match those within the Data interface of any other utilities that is co-located within the same panel, if such utilities are intended to work together.

Using the Details Interface

The *Details* interface allows an individual row from a Data Viewer Grid to be reviewed and modified.

The appearance is as follows:

The screenshot shows the 'My Flight Viewer' application with the Details interface open for a selected row. The grid on the left shows flight data for Helsinki Vantaa, including columns: Default Airp, ScheduledToArrive, ScheduledToDepart, Descrip, and Outbound Airport Name. The selected row for Helsinki Vantaa 12/09/2013 21:40:00 has its details shown in the Details interface on the right. The Details interface includes sections for Airport (Default Airport Name), ScheduledToArrive, ScheduledToDepart, Aircraft (Description), and ArrivalAirport (Outbound Airport Name).

The Details panel contains editable fields, each of which corresponds to a column in the Data Viewer Grid.

How do I access the Details panel?

When it initially appears, the Details panel is not initialized. This is because you must first select a specific row from the Grid display: the information you have selected will then be used to populate the Details panel. For example, make a selection by left-clicking on a row within the Grid display, to the left-hand side of your Layout:

Helsinki Vantaa		12/09/2013 19:15:00		Tampere Pirkkala
Helsinki Vantaa		12/09/2013 19:05:00		Turku
Helsinki Vantaa		12/09/2013 18:45:00		Kruunupyy
Helsinki Vantaa		12/09/2013 18:30:00		Kuopio

You now see the Details panel change in appearance, to represent the data of the row you just selected:

The screenshot shows a modal dialog box titled "Details". At the top right are three buttons: a checkbox labeled "UTC", a "Save" button, and a "Cancel" button. The main area is divided into sections: "Airport", "Aircraft", and "ArrivalAirport".

- Airport:** Contains a "Default Airport Name" field set to "Helsinki Vantaa", a "Helsinki Vantaa" button, and a "... Clear" button.
- Aircraft:** Contains a "Description" field, a browse button, and a "... Clear" button.
- ArrivalAirport:** Contains an "Outbound Airport Name" field set to "Turku", a "Turku" button, and a "... Clear" button.

Note the three fields at the upper-right of the panel. **UTC** allows date/time fields to be displayed in UTC format. **Save** and **Cancel** respectively allow you to save and cancel your work within the panel.

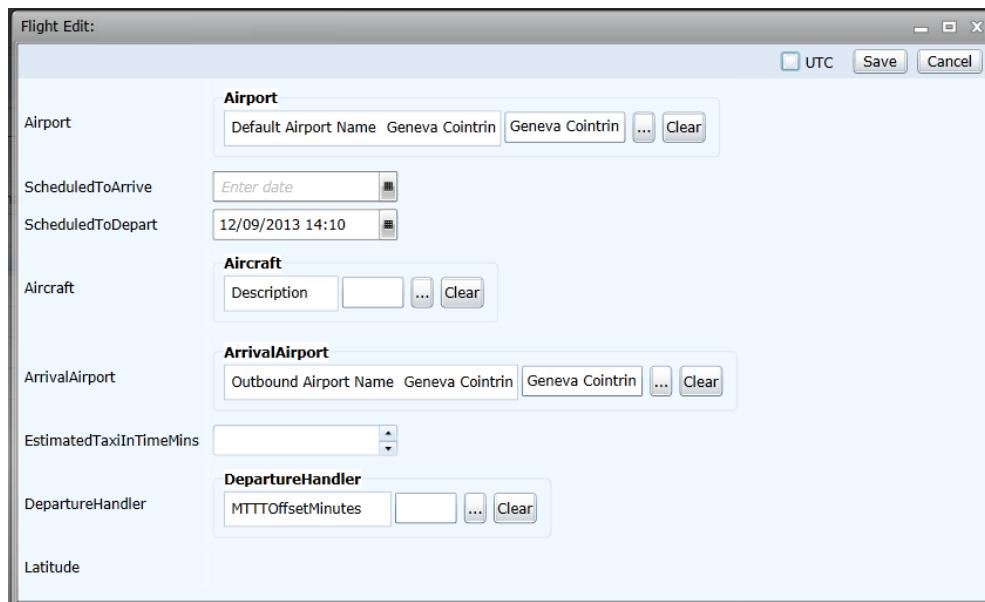
Note: If you *do* have write-access to the data displayed by your Data Viewer, but no Details panel has been provided in your Layout, you may be able to access an equivalent dialogue, by double left-clicking on the row you wish to edit.

For example, double left-click on the row:

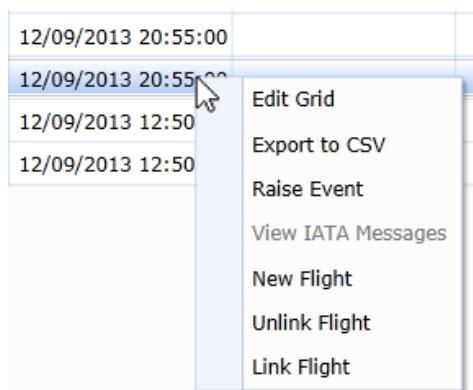
USING FLIGHT VIEWERS

My Flight Viewer					
Drag a column header and drop it here to group by that column					
Default Airport Name	ScheduledToArrive	ScheduledToDepart	Description	Outbound Aircraft	EstimatedTime
Geneva Cointrin		12/09/2013 14:10:00		Geneva Cointrin	
Geneva Cointrin		12/09/2013 14:10:00		Geneva Cointrin	
Geneva Cointrin	12/09/2013 20:55:00				10
Geneva Cointrin	12/09/2013 20:55:00				10
Geneva Cointrin	12/09/2013 12:50:00				10
Geneva Cointrin	12/09/2013 12:50:00				10

Subsequently, the dialogue appears:



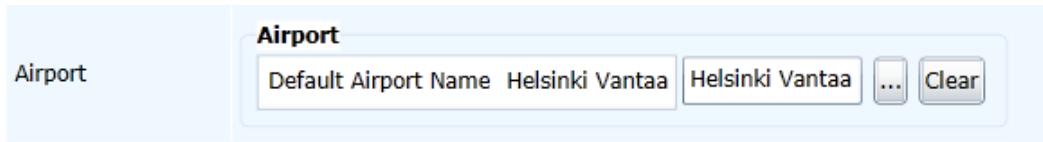
A further way of accessing this dialogue is provided by right-clicking on the row. This reveals the **Data Viewer Options** menu:



Select **Edit Grid** to bring up the **Details Dialogue**.

How do I change names?

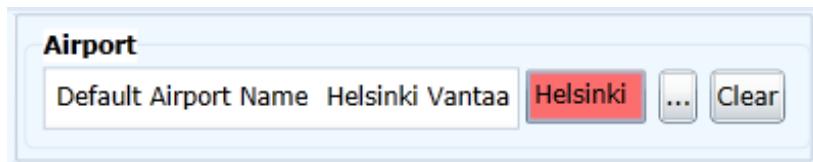
Assuming you have appropriate permissions, you can change the content of fields that represent *names* by entering new text values. The current Details panel provides three examples of the interactive interface used for these purposes: these being for the the **Airport**, the **Aircraft**, and the **ArrivalAirport** properties. For example, the **Airport** property is represented as follows:



There are three principal elements:

- ✚ **Default Airport Name** — An uneditable field that affirms the default airport name for the selected row. The appearance of this field changes to correspond to edits you make.
- ✚ **Helsinki Vantaa** — An editable field that contains the actual default name of the airport for the selected row, which in this case is Helsinki Vantaa. If you access this row by acquiring focus and typing new data, the **Default Airport Name** display changes in correspondence.
- ✚ ... — The search option. If you left-click on this button, an interface appears displaying all rows in the current Grid that contain a Default Airport Name that at least partially matches the input data.
- ✚ **Clear** — A button that restores all fields to their original state, when left-clicked on.

For example, access the editable text field, and modify it to read *Helsinki* only:



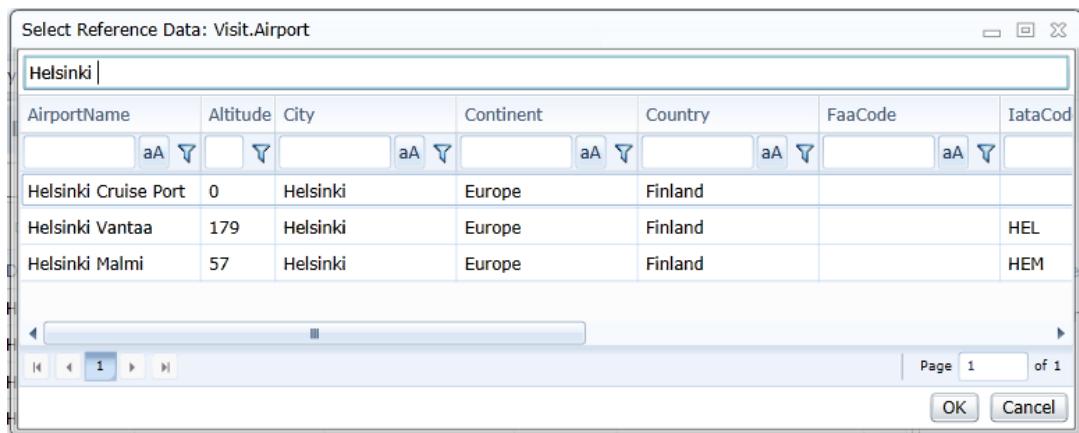
Note that the background of the text field has changed colour, to indicate that the data currently does not match database contents.

Now, left-click on the search option:



This brings up the **Select Reference Data** dialogue:

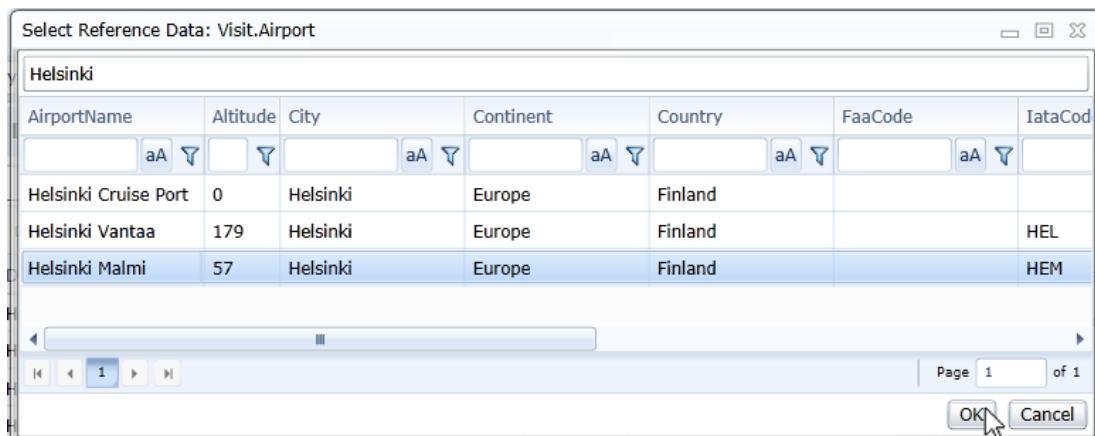
USING FLIGHT VIEWERS



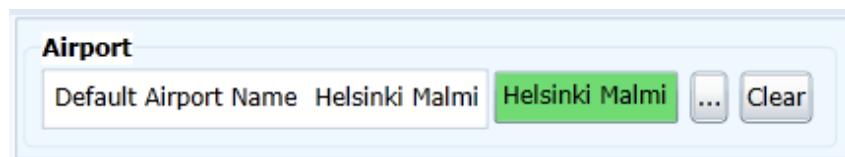
The string on which the search has been performed, *Helsinki*, is represented in the text field towards the top. If you wish to search further, you can simply edit this field, and searches will be performed on the revised data.

The dialogue contains all rows from the Grid that contain a default airport name that at least partially matches the input data. Note that the rows contain *all* columns for the rows on which matches have occurred. Data is presented in standard Grid format, allowing you to perform filtering operations, and so refine your searches further.

Based on the data initially entered, three different matches have been found. To select an option, select the row by left-clicking on it; then left-click on the **OK** button, towards the lower-right, in order to apply it: (Or, alternatively, left-click on **Cancel** to dismiss the dialogue without a match being applied.



The **Airport** interface on the Details panel now appears as follows:



Thus, the background of the editable field has changed colour again, to indicate an acquired match. Note that the name in the *uneditable* field has also changed, in due correspondence.

How do I change dates and times?

You can change dates and times by means of the interactive interface here provided for the **ScheduledToArrive** and **ScheduledToDepart** properties:

ScheduledToArrive	<input type="text" value="Enter date"/>	
ScheduledToDepart	<input type="text" value="12/09/2013 19:05"/>	

The calendar interface has been described elsewhere in this document; and the reader is therefore invited to revisit those descriptions, if required.

How do I change integers?

When your Data Viewer Grid includes fields whose content is integer-based, you can perform edits by means of the Details panel, using the following interface:

EstimatedTaxiInTimeMins	<input type="text" value="10.00"/>	 
-------------------------	------------------------------------	--

Either access the text field directly by positioning the mouse-cursor, and enter text from the keyboard; or, left-click on the arrowhead-buttons at the right-hand side of the text field, in order to increment or decrement the integer.

Next Steps

The UltraAPEX utilities we have so far examined allow information on airport operations to be expressed with the finest granularity, such that conditions can be precisely analyzed and root causes established with confidence.

As a complementary feature, further enhancing the system's usability, UltraAPEX also provides *Strategic Dashboards*: these provide *visual summaries* of operational activities, so that problems at the lowest level are spontaneously flagged at the highest, and so rendered instantaneously recognizable by the system's users.

In Chapter 7, we provide a full account of this facility.

Using Strategic Dashboards

A *Strategic Dashboard* summarizes performance levels for critical *Indicators* (or *KPIs*), so that you can see at a glance where problems occur.

Basic Concepts

A Strategic Dashboard groups *Indicators* hierarchically, to form *value chains*, each of which represents a general area of airport operations. If any Indicator within the value chain reveals that operations have been inefficient, the Dashboard displays this graphically – at the highest, summary level, so that it can be immediately seen.

For example:

- ⊕ A Strategic Dashboard might be designed by an administrator to consist of two *value chains*, named **Arrival** and **Departure**, to correspond to the movements of flights in and out of the airport.
- ⊕ The value chain named **Arrival** might itself be designed to contain individual **Activities** for **Aircraft Landing**, **Aircraft Taxi In**, **Aircraft Disembarkation**, and **Aircraft Offloading** – these all being considered pertinent to the arrival of flights.
- ⊕ Each **Activity** is built from one or more **Value Items**. Therefore, the **Aircraft Landing** item might itself have been built from the values **Late (vs Scheduled)** and **Late (vs Estimate)** – which are, in fact, standard Indicators, such as those you have already used in your composition of Charts and Reports.
- ⊕ Both **Summary** and **Value Items** are graphically represented in the Dashboard so as to reflect whatever degrees of inefficiency may have been captured by their underlying data. Thus, if the data for either **Late (vs Scheduled)** or **Late (vs Estimate)** is indeed indicative of inefficiency, their **Value Item** is displayed in a warning colour; as indeed is the higher-level **Activity** it has been used to build, **Aircraft Landing**.

In this way, a Dashboard can expose inefficiencies deeply embedded within an airport's operations, allowing users to recognize and respond to the associated problems with speed.

Basic Interactions

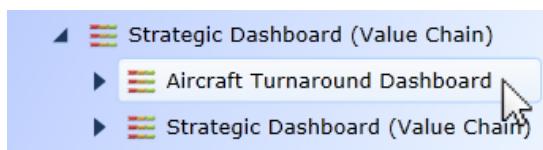
Strategic Dashboards, assuming they have indeed been made available by your system administrator, can be accessed and inspected by means of the **Layout Browser**.

How do I access?

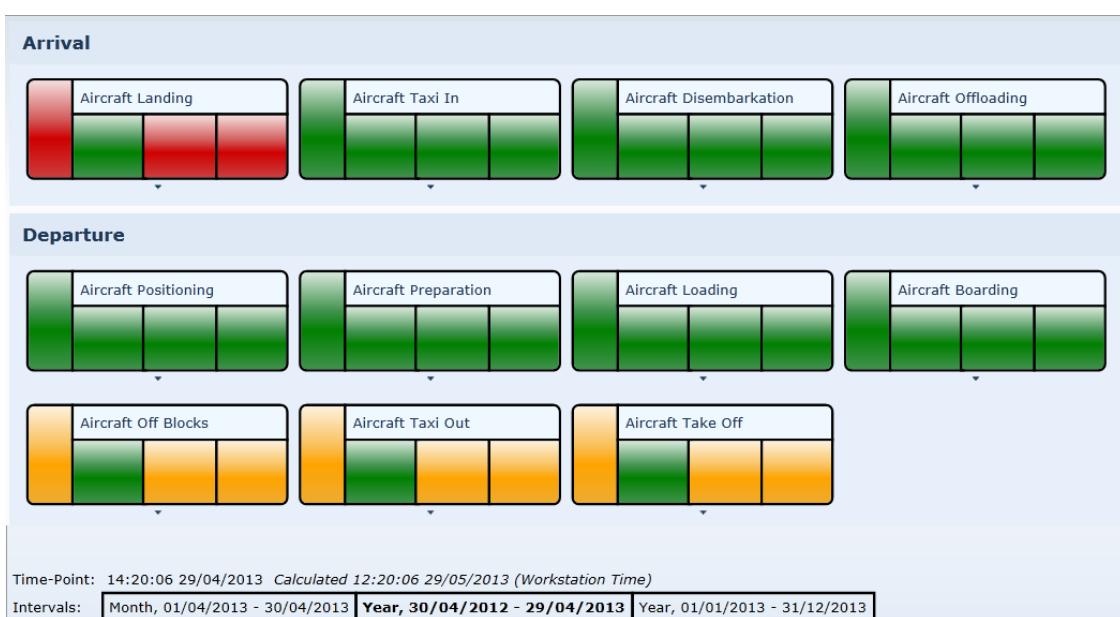
Use the navigational tree at the left of the **Layout Browser** to access Dashboards. In the example below, Dashboards are found under the **Ultra Standard Layouts** element:



Examine first the **Aircraft Turnaround Dashboard**:



This brings up the selected Dashboard in the main display area of the **Layout Browser**:



What are the basic elements?

The elements shown in the Dashboard above are as follows:

- ✚ **Arrival and Departure** – These are the *value chains* for the **Aircraft Turnaround Dashboard**:
 - ✚ Aircraft Landing, Aircraft Taxi In, Aircraft Disembarkation, and Aircraft Offloading are the Activities defined for the Arrival value chain.
 - ✚ Aircraft Positioning, Aircraft Preparation, Aircraft Loading, Aircraft Boarding, Aircraft Off Blocks, Aircraft Taxi Out, and Aircraft Take Off are the Activities defined for the Departure value chain.
- ✚ **Time-Point** – This is the principal chronological reference-point for the current Dashboard. In many cases, this is the current *time of day*, at the moment you bring up the Dashboard. Sometimes, it may be a different time, specified by the administrator.
- ✚ **Intervals** – These are the *three* time-periods used in the creation of the Dashboard. All three are related to the specified **Time-Point**, as is explained in detail below.

How do I inspect an item?

Activities are colour-coded to represent the possible presence of inefficiencies in airport operations. They are also interactive, allowing you to bring up the various Charts that provide detailed representations of the **Value Items** that the **Activity** indeed summarizes.

The **Aircraft Turnaround Dashboard** that we are examining features two value chains; one of *four*, the other of *seven Activities*. In some cases, **Activities** are variantly coloured:



As this subset of items shows, each **Activity** has the following basic visual characteristics:

- ✚ It is divided into five geometrical subcomponents.
- ✚ Its subcomponent at the upper right bears the unique name of the item.
- ✚ Its other four subcomponents have no labels, but each might appear *green*, *red*, or *amber*.
- ✚ It surmounts a downwards-pointing arrowhead, which can be left-clicked on, in order to produce additional data (as demonstrated below).

What do the colours mean?

The three colours relate to *KPI Performance Level Thresholds*, as follows:

- ✚ **Green** – No inefficiency has been found in the item's underlying data.
- ✚ **Amber** – Inefficiency *has* been found in the item's underlying data, sufficient to generate a *Warning* alert, which is duly represented by the colour amber.
- ✚ **Red** – Inefficiency *has* been found in the item's underlying data, sufficient to generate a *Critical* alert, which is duly represented by the colour red — this indicating a matter of greater urgency than does amber.

How do colours relate to time?

When inefficiency (or for that matter, efficiency) is declared through colourization, the user likely wishes to know whether it has lasted:

- ⊕ Throughout the defined interval.
- ⊕ Only for part of the defined interval.
- ⊕ For a period greater than the defined interval.

To ensure a sufficiently broad interpretive context, Dashboards always provide a colour-representation for each of *three* intervals. These intervals are all measured in relation to the **Time-Point**, and differ in their lengths.

The following intervals can be used:

- ⊕ Ten minute
- ⊕ Quarter-hour
- ⊕ Hour
- ⊕ Day
- ⊕ Month
- ⊕ Year

The *second* of the three intervals is referred to as the *primary* interval, and is expected to be the initial unit of focus for the user. The *first* and *third* intervals provide supportive information, respectively declaring status for a shorter and a longer period than the primary.

For example, if the primary interval is specified as **Hour**, the first becomes **Quarter-Hour**, and the third **Day**. Or, if the primary interval is **Fifteen-minute**, then the first becomes **Ten minute**, and the third **Hour**.

If the primary interval is **Ten minute**, then the first interval is also **Ten minute**. If the primary is **Year**, the third is also **Year**.

How do Intervals relate to Time-Points?

The **Time-Point** is specified by the administrator who creates the Dashboard. All **Intervals** are computed with reference to the **Time-Point**, as follows:

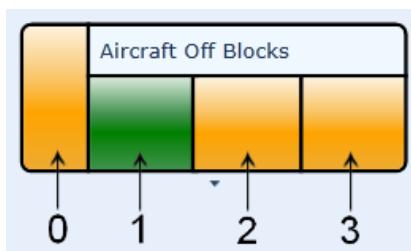
- ⊕ **Ten minute**, **Quarter-hour**, and **Hour** intervals start at the time and on the day specified by the **Time-Point**.
- ⊕ **Day** intervals start at 00:00 of the day specified by the **Time-Point**.
- ⊕ **Month** intervals start at 00:00 of the first day of the month specified by the **Time-Point**.

- **Year** intervals start at 00:00 of the first day of January of the year specified by the **Time-Point**.

Note that intervals *can* be specified to run beyond the current day; in which case, the interval effectively ends with the current day and time.

What do the subcomponents represent?

The four subcomponents able to bear the colours *green*, *amber*, and *red* are presented in annotated form in the diagram below:



Subcomponents **1**, **2**, and **3** relate to the currently specified **Intervals**, which appear on the current Dashboard as follows:

Time-Point: 17:20:00 29/04/2013 Calculated 15:46:01 29/05/2013 (Workstation Time)
Intervals: Month, 01/04/2013 - 30/04/2013 Year, 01/01/2013 - 31/12/2013 Year, 01/01/2013 - 31/12/2013

Therefore:

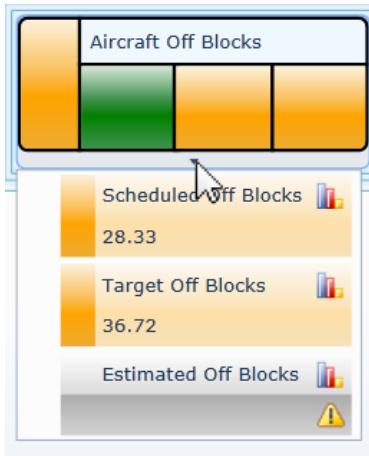
- Subcomponent **2** represents the *primary* (that is, the *second*) interval, which is currently defined as **Year**. This interval is the entire calendar year within which the **Time-Point** falls.
- Subcomponent **1** represents the *first* interval, which becomes **Month**, and is the entire month within which the **Time-Point** falls.
- Subcomponent **3** represents the *third* interval, which becomes **Year**, and is therefore the same as the *primary* interval.

Subcomponent **0** summarizes the overall performance level for this item, and as such, simply repeats the verdict of subcomponent **2** (and always does so).

How do I respond to warnings?

When an **Activity**'s subcomponent is either *amber* or *red*, this indicates that inefficiency has been evidenced by the underlying data. For an understanding of the exact location and nature of this inefficiency, the **Value Items** that were used to build the item must themselves be inspected.

To do this, left-click on the inverted arrowhead immediately below the item:



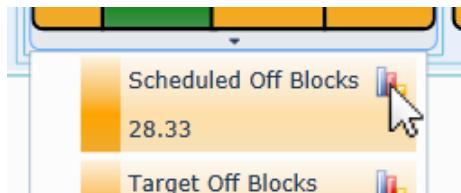
Here, **Aircraft Off Blocks** has revealed three **Value Items**, which were used to build it. The first two of these appear *amber*, and each is labelled with numeric data. The Third is currently unable to locate required data, and so appears with a warning symbol.

Note that an interval always takes the colour of the most serious warning reflected by its underlying **Value Items**. (In other words, if an **Activity** is built from, say, twenty **Value Items**, and all are green save one, which is amber, then, at the level of the **Activity**, the interval or intervals to which that amber **Value Item** applies will themselves appear amber, not green.)

Here, the appearance of the **Activity** indicates that the *primary* and *third* intervals both feature *Warnings*. We do not yet know whether the two **Value Items** that each feature a *Warning* both relate to each interval, or each relate to a different interval. To understand more, we must examine each value independently.

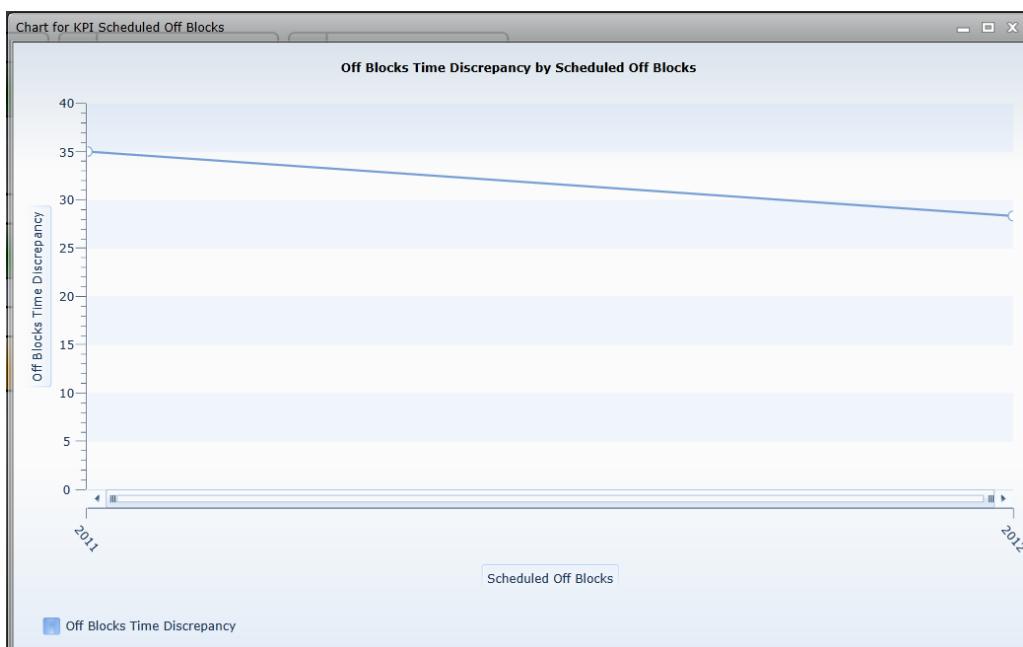
How do I examine Value Items?

Each **Value Item** displays a chart-icon at its upper-right. Click on this to reveal a Chart containing all pertinent information. For example:



This brings up the Chart associated with the **Value Item**, as follows:

USING STRATEGIC DASHBOARDS



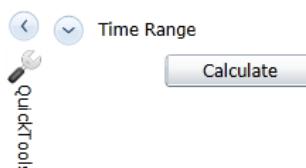
In this way, close examination of the Charts associated with **Value Items** should allow instances of inefficiency to be appropriately pinpointed, in terms of incidence and duration.

Using QuickTools

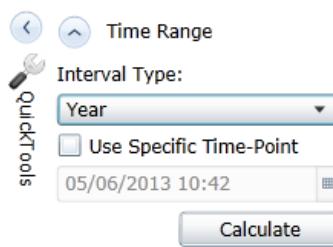
Depending on how your system administrator has configured the Dashboards you use, you *may* find that **QuickTools** are available. These allow you to recalculate the data-values that underlie the Dashboard, and are typically located to the upper-left of its main display area:



Left-click on the right-pointing caret, to open **QuickTools**:



Now, left-click on the downwards-pointing caret, to examine the **Time Range** options:



The user interface components thus revealed allow specification of an **Interval Type** and, if required, a **Specific Time-Point**; they also allow you to **Calculate** a new set of values based on these specifications, and so update the Dashboard correspondingly.

Using Strategic Dashboards Effectively

Strategic Dashboards contain a great deal of information, the significance of which should be explored in stages:

1. Acquire the Strategic Dashboard by means of the Layout Browser, and, through initial inspection, ensure that the main *value chains* it contains are indeed the ones you need.
2. For each *value chain* in which you are interested, make an initial visual scan of the *summary* graphical component of each **Activity** – which is the leftmost rectangular area of the **Activity** (which was annotated as **0**, earlier in this chapter).
3. If any part of the **Activity** is displayed as *amber* or *red*, this constitutes a warning. So, starting with any **Activities** that feature *red*, inspect subcomponents **1**, **2**, and **3**. Subcomponent **2** will *always* have the same colour as the *summary*.
4. Left-click on the inverted arrowhead below the item, and make a visual inspection of the **Value Items** from which the **Activity** has been constituted. Ascertain which of these are themselves *red*, and make a note of whatever numerical value they display. (This value has exceeded a threshold of some kind.)
5. By clicking on the icon at the upper-right of the *value*, bring up the associated Chart, and make a full inspection of the inefficiency, including in terms of its precise time of incidence and duration.
6. Begin procedures for taking corrective action. Note that these may include the composition of a Report, whereby interested parties can be properly informed.

Note that within a Strategic Dashboard, certain **Value Items** and **Charts** may have been included for display purposes only: in such cases, the values they represent are not summarized at higher levels, and are not used to establish alerts.

Next Steps

The information provided by Charts, Reports, Dashboards, Data Viewers, and other utilities frequently necessitates *user responses*, so that suboptimal operational conditions can be investigated, and perceived inefficiencies duly corrected. UltraAPEX provides a rich *event management* system, which allows information on changing conditions to be either automatically or manually disseminated to users, so that in each case, the appropriate response can be ensured. In our next chapter, Chapter 8, we describe this system.



Handling Events

Events are notifications sent to users and groups of users. They may be sent:

- Through the manual intervention of a user, who has decided to notify one or more users of a *changed condition*.
- Programmatically, when triggered by a *changed condition*.

Changed conditions may include delays; flight-plan modifications; changes of terminal or runway; and seating, gate, or baggage assignments.

Sometimes, users are expected previously to have been directed how to respond when receiving an Event. On other occasions, an Event may be accompanied by instructions, in the form of one or more explicit Tasks, expressed on Task Cards.

UltraAPEX provides an **Event Viewer** and a **Task Card Viewer**, which allow users to receive and respond to Events and Tasks. It also provides a **Task Sequence Progress Viewer** and a **Task Card Attachment Viewer**, which provide further details.

This chapter explains how to handle Events and associated Tasks.

Layout Preparation

UltraAPEX provides a variety of tools, to assist you with Event Management. Typically, you incorporate some or all of these in a Layout (or, an administrator does so *for you*), and use the Layout whenever you need to manage Events and Tasks.

This Layout *may* have been provided to you by a system administrator. Alternatively, you yourself may be required to create it.

How do I create an Event Management Layout?

If you have the appropriate permissions, you can create an Event Management Layout by following the basic procedures that were detailed in Chapter 3, *Using Layouts*.

Which tools should I include?

The tools provided by UltraAPEX for Event Management can be accessed as follows:

1. Access your **My Layouts** folder.
2. Elect to create a **New Layout**, as explained in Chapter 3. This brings up the **Layout Editor**.
3. In the navigation tree at the left-hand side of the **Layout Editor**, access the **Events** folder.

As a user, you will see this folder to contain the **Event Viewer**, the **Task Card Viewer**, the **Task Card File Attachment Viewer**, and the **Task Sequence Progress Viewer**.

All four of these tools support your handling of Events and Tasks, and can be included in your Event Handling Layout. Note that the most important of the four are the **Event Viewer** and the **Task Card Viewer**: and so these two should certainly be included as the essential minimum requirement.

All four tools are described throughout the remainder of this chapter.

Receiving and Responding

UltraAPEX Event Management tools each provide you with a subset of options for handling Events and Tasks. By using each in turn, you can manage an Event and its associated Tasks through their entire lifecycle, and document actions you are taking in response.

How do I receive Events?

By means of the **Event Viewer** utility, you can see which Events have been raised and apply to you. Its appearance might be as follows:

Alarm Viewer								
Drag a column header and drop it here to group by that column								
	Time Raised	Event Id	Severity	Category	Title	End Time	Alarm Information	Last Updated By
	29/07/2013 14:38:08	146	⚠ Medium (31)	New	Runway Changed			
	29/07/2013 14:38:58	147	❗ Low (61)		Baggage Carousel Changed			
+	29/07/2013 14:39:16	148	✖ High (1)	New	Departure Delayed Event			

Thus, each row in the **Event Viewer** corresponds to an Event that has been raised. If you can see the Event, then it indeed applies to you. The columns provide information on:

- ✿ **Time Raised** — The date and time of day at which the Event was raised.
- ✿ **Event Id** — The unique numerical ID of the raised Event.

- ⊕ **Severity** — An indication of the Event's relative importance. This can be:
 - ⊕ **Info**, default level 100, but may be any number between 91 and 100. This is the lowest level, and is thus indicative of the least severity. Events at this level are for informational purposes only.
 - ⊕ **Low**, default level 61, but may be any number between 61 and 90. Indicative of low severity.
 - ⊕ **Medium**, default level 31, but may be any number between 31 and 60. Indicative of medium severity.
 - ⊕ **High**, default level 1, but may be any number between 1 and 30. Indicative of high severity.
- ⊕ **Category** — An administrator-defined category for the Event.
- ⊕ **Title** — The administrator-defined name of the Event.
- ⊕ **End Time** — The time, if specified, at which the Event ceases to be active, and so can be ignored.
- ⊕ **Alarm Information** — Additional information for the user, which may be a reference to a particular Property of a given Flight: for example, its scheduled Arrival or Departure time, or allocated runway, or assigned gate. A change to such a Property may be the reason for the Event's generation.
- ⊕ **Last Updated By** — The identity of the user who last entered information concerning this Event.

How should I respond to Events?

It depends. The Events you receive are of three kinds:

- ⊕ *Informational* — The **Severity** of the Event is between 91 and 100. The Event is giving you information, but you are *not* expected to do anything in response.
- ⊕ *Actionable* — The **Severity** of the Event is between 90 and 1 (which covers the **Low**, **Medium**, and **High** categories), and you *may be* expected to do something in response. The appropriate action may appear specified in the **Information** column for the Event-row, or it may have been prearranged between yourself and your supervisor.
- ⊕ *Task-Related* — The **Severity** of the Event is between 90 and 1 (which covers the **Low**, **Medium**, and **High** categories), and you *are* expected to take specific actions in response: these actions are detailed on one or more *Task Cards* associated with the Event you have received.

How do I receive Tasks?

In the **Event Viewer**, the leftmost column of each Event-row indicates whether a supervisor-defined Task has been associated with the Event. If the column's default appearance is *blank*, then no such Task has been defined. If the column includes an interactive **plus icon**, then a Task *has* been defined.

Nevertheless, even if no supervisor-defined Task is associated with an Event, a *default Task Card* is associated with it, so that any receiving user can add information to the system, concerning how the Event is being responded to.

You can see this by double left-clicking on an Event-row whose initial column does not feature a **plus icon**:

	29/07/2013 14:11:58	145		Information (100)	New	Runway Changed	
	29/07/2013 14:38:08	146		Medium (31)	New	Runway Changed	
	29/07/2013 14:38:58	147		Low (61)		Baggage Carousel Changed	

Once your selection has been made, access the **Task Card Viewer**: This now appears as follows:



If an Event-row *does* feature a **plus icon** in its initial column, you can open the icon by left-clicking:

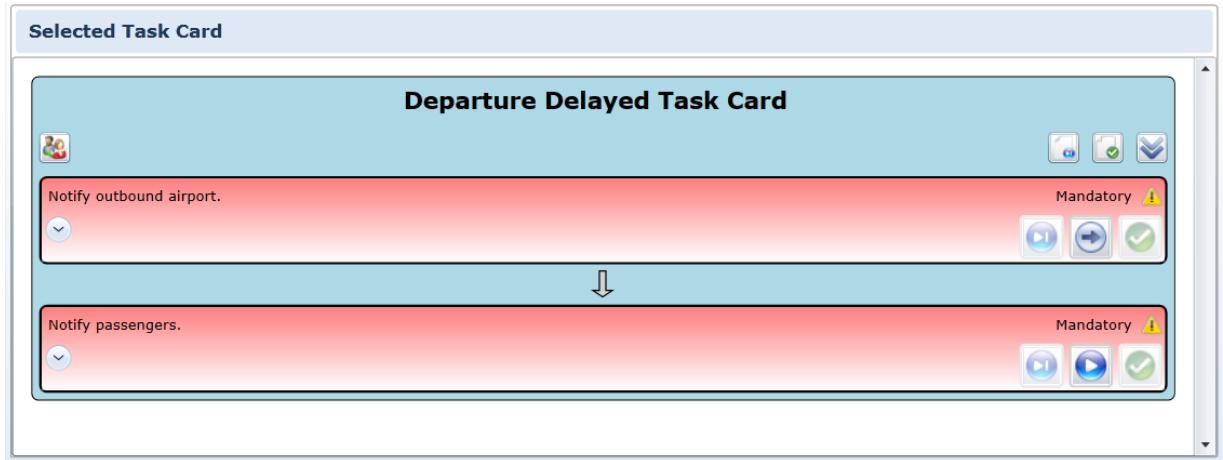


This in turn opens the Event-row itself, to reveal a subsidiary row that lists the Task associated with the Event. For example:

Alarm Viewer								
Drag a column header and drop it here to group by that column								
	Time Raised	Event Id	Severity	Category	Title	End Time	Alarm Information	Last Updated By
	29/07/2013 14:38:08	146		Medium (31)	New	Runway Changed		
-	29/07/2013 14:38:58	147		Low (61)		Baggage Carousel Changed		
	29/07/2013 14:39:16	148		High (1)	New	Departure Delayed Event		
29/07/2013 14:39:16 148-1 Departure Delayed Task Card								

Thus, the **Departure Delayed Task Card** is a Task Card explicitly defined and associated with the **Departure Delayed Event**. If you now double left-click on this

Task Card's row, the **Task Card Viewer** changes, to display details of the Task Card:



How should I respond to Task Cards?

A Task Card consists of one or more Tasks, which are arranged in a sequence. Each Task bears a title, which constitutes a directive you are expected to follow. For example, in the Task Card above, there are two Tasks, whose directives are **Notify outbound airport** and **Notify passengers**. Your first response should be to declare whether you intend to follow some or all of the directives.

If appropriate, you can respond to the entire Task Card by registering it as *accepted*, *declined*, or as *completed*. This is accomplished by means of the three icons that appear towards the upper-right of the Task Card, above the first Task:



From left to right, these icons are:

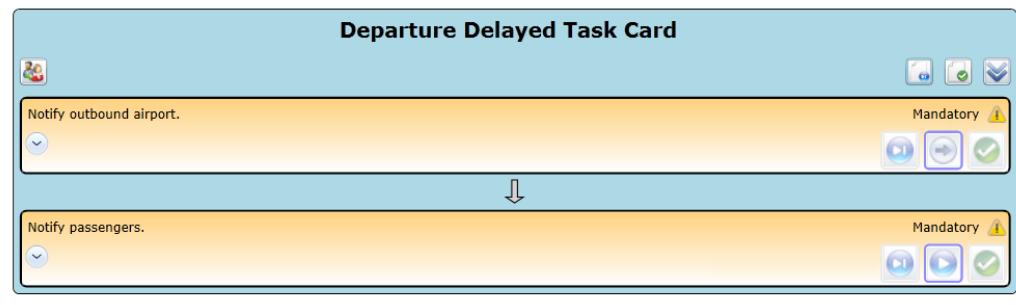
- ➊ **No action all tasks** — Left-clicking this icon indicates your intention to take no action for any of the Tasks on the Task Card. The icon appears as follows:



- ➋ **Accept all tasks** — Left-clicking this icon indicates your intention to accept all of the Tasks on the Task Card:



When you have done so, the appearance of the Task Card changes as follows:

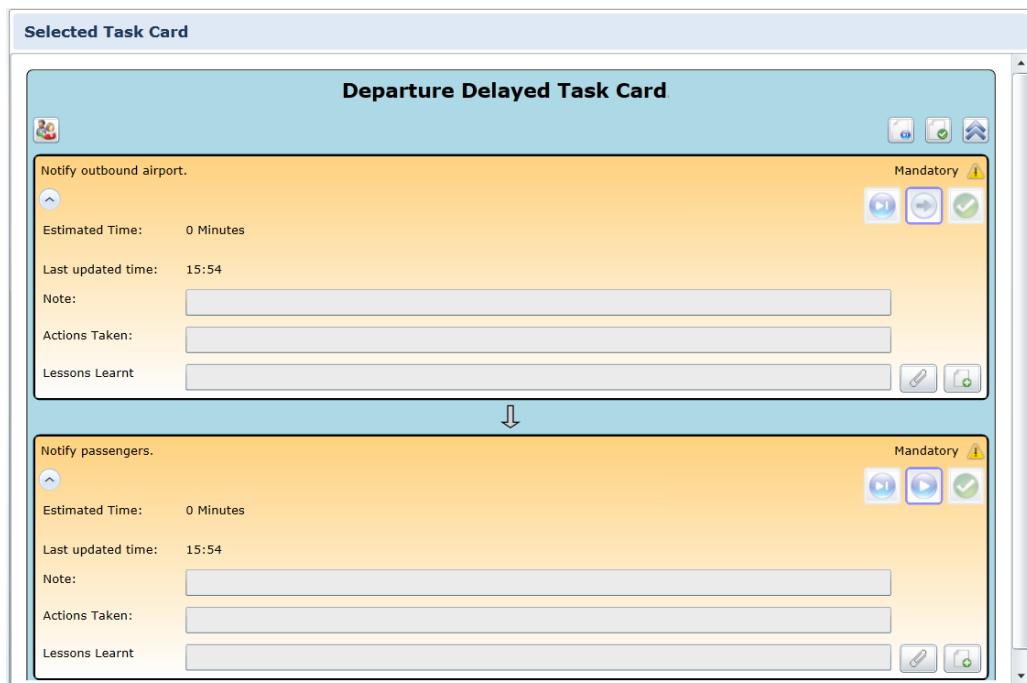


Thus, the individual Tasks on the Task Card are now shaded yellow, rather than red, to indicate user-acceptance.

- **Expand all tasks** — This icon expands each Task listed in the Task Card:

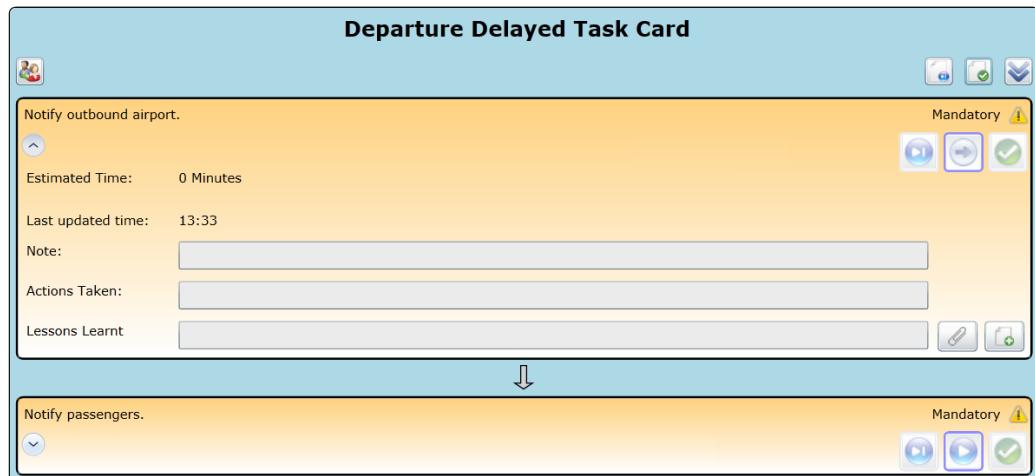


Once this icon has been left-clicked on, the Task Card appears as follows:



Thus, Tasks have been expanded. Note that the **Expand all tasks** icon now appears inverted, with its double-caret image pointing upwards — as can be seen in the illustration immediately above: left-clicking on the icon when it is in this state re-collapses all Tasks.

Note that you can also expand each Task individually, by left-clicking on the **caret** that appears towards the left-hand side. For example, you could left-click the caret in the lower Task bar of the above illustration. The **Task Card Viewer** would then appear as follows:



In addition to the row of icons that allow control of user-response and appearance for *all* Tasks, each individual Task features a row of three similar icons towards its right-hand side:



From left to right, these icons are:

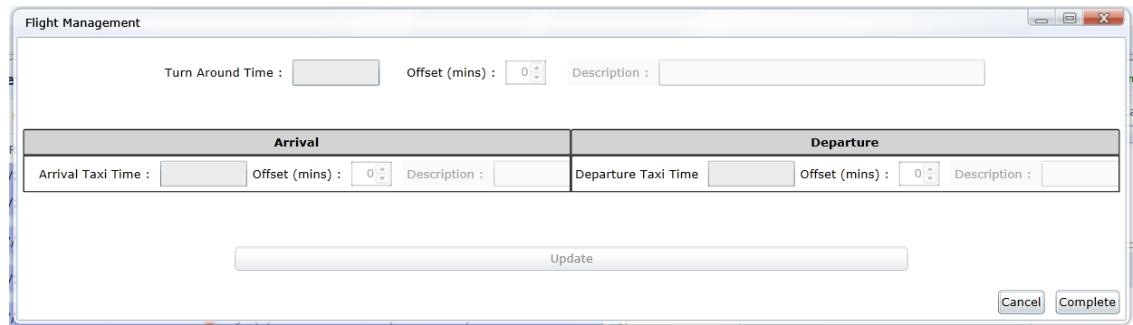
- ⊕ **No action this Task** — Left-clicking this icon indicates that the user intends to take no action in response to the current Task. If the Task displayed within the **Task Card Viewer** appears closed, left-clicking on this icon opens it; and if it appears open, closes it. The icon appears as follows:



- ⊕ **Accept (the initial) Task** — Left-clicking this icon, which only appears on the first Task to be displayed on the Task Card, indicates that the user accepts this Task. The icon appears as follows:



Left-clicking on this icon opens the **Flight Management** dialogue, which appears as follows:



This dialogue provides information on the disposition of the flight to which the Event relates, and allows user-updates to occur. Once the user left-clicks on the **Complete** button, the Task is registered as completed (see below).

- **Accept** (a subsequent) **Task** — This icon, which only appears on Tasks after the initial one displayed by the Task Card, indicates that the user accepts this Task. Left-clicking does *not* open the **Flight Management** dialogue. The icon appears as follows:



- **Task Complete** — Left-clicking this icon indicates that the user has completed work on the current Task. The icon appears as follows:



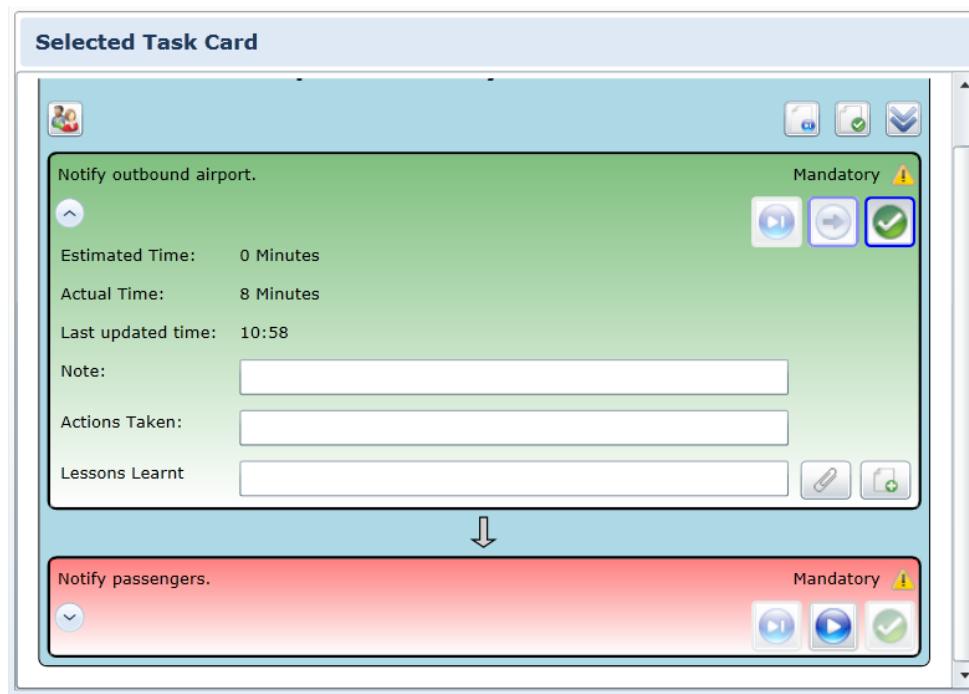
Whenever a Task is indicated as completed, its appearance changes (see below).

What happens if I take no action?

If you left-click a **No Action** icon, this indicates that you do not intend to take any action in response to a particular Task or Task Card. If this is not the right decision, you should expect to be contacted in due course. Note that in the current example, the notification **Mandatory** appears towards the upper right of each Task in the Task Card. This may not always be specified.

What happens if I accept a Task?

Left-click on, for example, the **Accept Task** icon for a particular Task, and the display changes as follows:



What other features are available?

A number of additional features are provided by the **Task Card Viewer**:

- + **Assign to users** — This icon, towards the upper-left of the **Task Card Viewer**, allows you to assign the entire contents of the current Task Card to one or more other users and/or groups.

Note: You may not have access to this facility, depending on your permission-level. If you do not have access, the icon appears greyed-out, and cannot be used.

To use this facility, left-click on the icon, as follows:



The **Edit Assigned Users** dialogue now appears:



Thus, the dialogue shows the list of users to whom the current Task has been assigned: currently, this is restricted to the **Administrators** group. Note that in fact, the default configuration of this dialogue is to show the **Roles** who have been assigned the Task, rather than the **Users**. To show the users, check the **Include Users** checkbox.

Left-click on **Cancel**, to dismiss the dialogue.

- + **Carets** — Each Task is represented by a bar, containing a number of user interface elements. At the extreme left of the bar is a **caret icon**. If left-clicked on, this expands the Task bar to show all details of the Tasks:

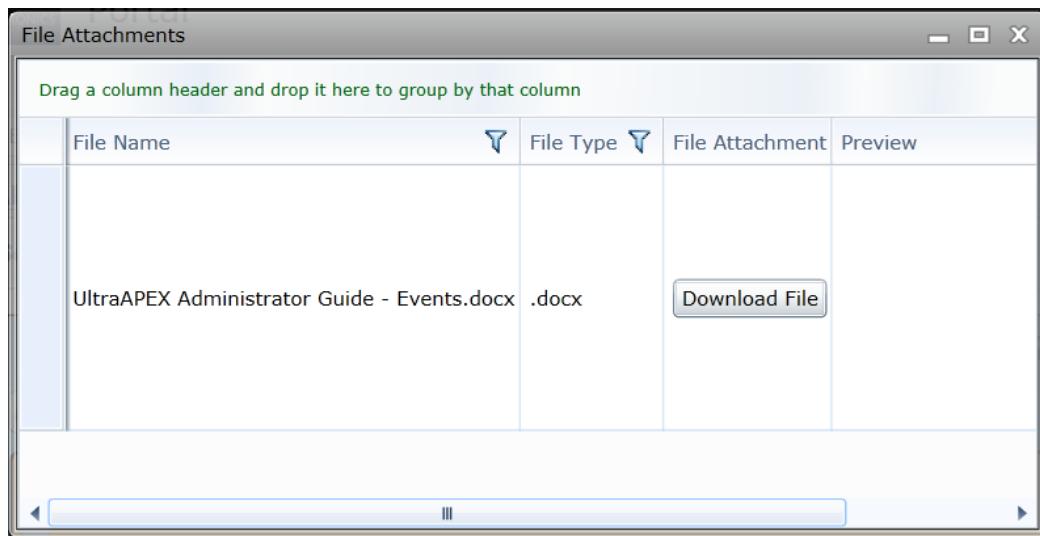


- + **Download/Add File Attachment** — Two icons: the left one (with the **paperclip icon**) allowing the downloading of an attached file, and the right one (with the **add document icon**) allowing the attachment of a file:



Therefore, to attach a document to the Task, left-click the icon that appears to the right. A host-based window then allows selection of a document from a local or network-available location.

To download a document, left-click the icon to the left. The following dialogue appears:



Left-click on the **Download File** button to save the document to a local or network-available location.

- **Notifications** — Each Task within the Task Card features a number of notifications, related to the current Task. In the current example, these include:
 - **Mandatory** — An indication that this Task should be considered mandatory by the user.
 - **Estimated Time** — The amount of time, estimated by the administrator or supervisor, that should be required for the discharging of the current Task.
 - **Actual Time** — The amount of time, in minutes, that elapsed between the user's left-clicking the **Accept Task** and the **Task Complete** buttons.
 - **Last updated time** — The last time, in hours and minutes, that the current Task received an update from the current user.
 - **Note** — Any note that the user wishes to add.
 - **Actions Taken** — The user's account of what actions have been taken towards the discharging of this Task.
 - **Lessons Learnt** — The user's perspective on what learning was acquired during the discharging of this Task.

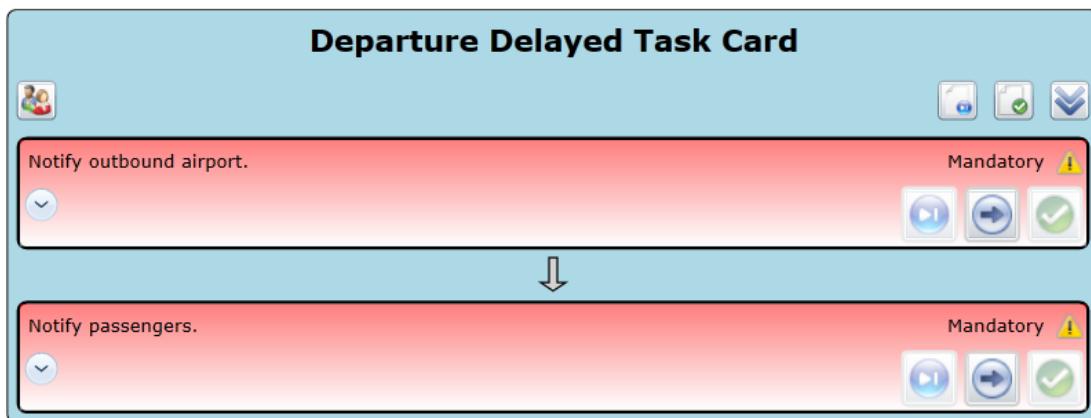
What if I complete all my Tasks?

If you complete all the Tasks on your Task Card, each Task appears green. This signifies that you have fully discharged your responsibilities, and can move on to other Tasks.

How do I check progress?

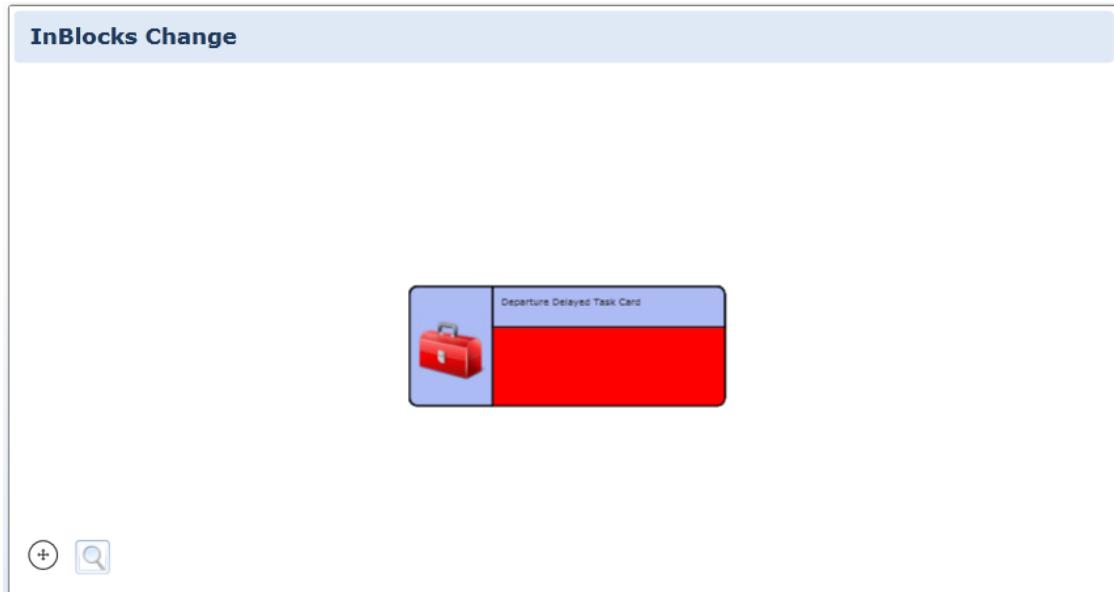
The **Task Sequence Progress Monitor** allows you to check your progress on Tasks, providing a simple visual structure that summarizes the current status of each Task in a sequence.

For example, consider the following appearance of the **Task Card Viewer**:



Thus, two sequential Tasks have been allocated, and, since both are currently red in appearance, neither has yet been accepted or declined.

If you have a **Task Sequence Progress Monitor** co-located in your Layout, its appearance changes to reflect the contents of the **Task Card Viewer**. Thus, it currently appears as follows:



Once the first Task in the sequence has been accepted, the **Task Card Viewer** appears as follows:

Selected Task Card

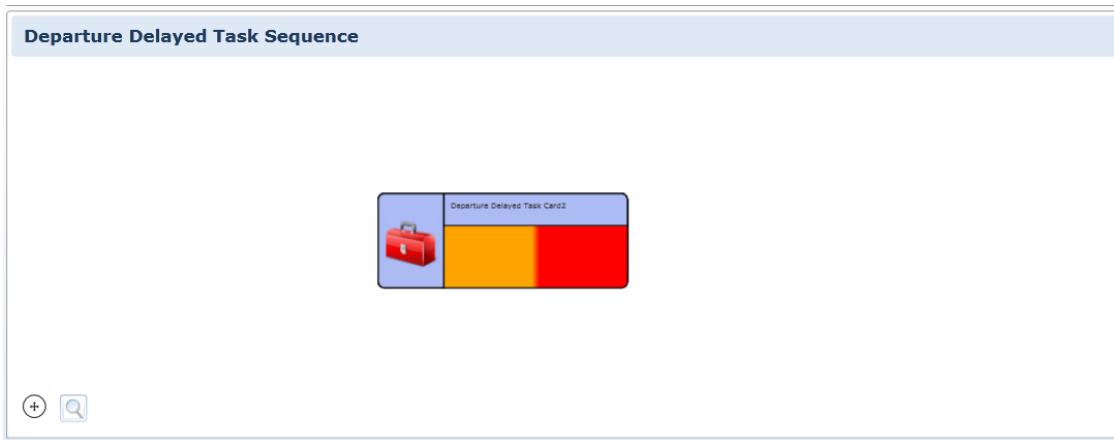
Departure Delayed Task Card

Notify outbound airport.	Mandatory
Estimated Time: 0 Minutes	
Last updated time: 14:39	
Note:	<input type="text"/>
Actions Taken:	<input type="text"/>
Lessons Learnt	<input type="text"/>

Notify passengers.

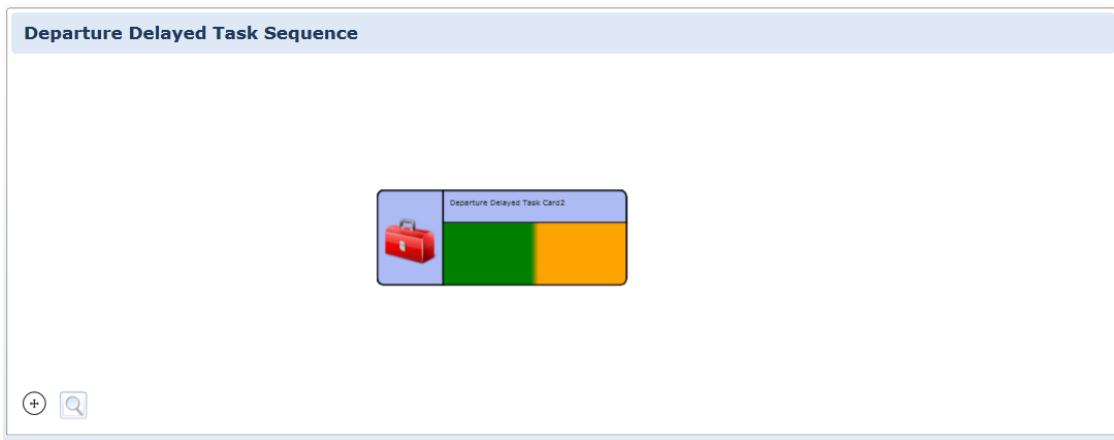
Notify passengers.	Mandatory
Estimated Time: 0 Minutes	
Last updated time: 14:39	
Note:	<input type="text"/>
Actions Taken:	<input type="text"/>
Lessons Learnt	<input type="text"/>

Correspondingly, the **Task Sequence Progress Monitor** looks as follows:



Thus, the main display area of the graphical element is yellow to the left (representing the accepted status of the first Task in the sequence) and red to the right (representing the currently unaccepted status of the second Task).

Subsequently, if the first Task is registered as completed, and the second Task as accepted, the **Task Sequence Progress Monitor** will appear as follows:



Might I receive multiple Task Cards?

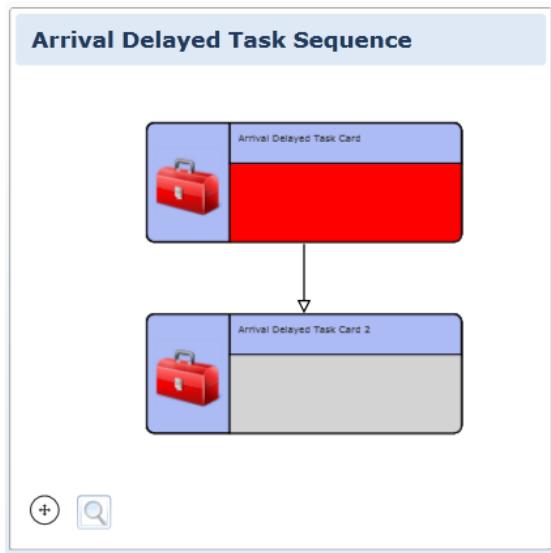
Yes. Sometimes, multiple Task Cards are associated with a single Event in sequence.

When you initially receive the Event, however, you see a maximum of one Task Card displayed in the **Event Viewer**; this to be handled by means of the **Task Card Viewer** and **Task Sequence Progress Monitor**. When you have completed that initial Task Card, the Event is sent a second time, in order to raise the second Task Card with which it is associated.

For example, when you first receive the Event, the **Event Viewer** might appear as follows:

Alarm Viewer							
Drag a column header and drop it here to group by that column							
	Time Raised	Event Id	Severity	Category	Title	End Time	Alarm
+	24/07/2013 13:06:19	140	⚠ Medium (31)		Arrival Delayed Task Sequence		
-	24/07/2013 13:12:02	142	✖ High (1)	New	Arrival Delayed Event		
24/07/2013 13:12:02 142-1 Arrival Delayed Task Card							

This indicates that a single Task Card is associated with **Arrival Delayed Event**. However, if you view the **Task Sequence Progress Monitor**, you see it appears as follows:

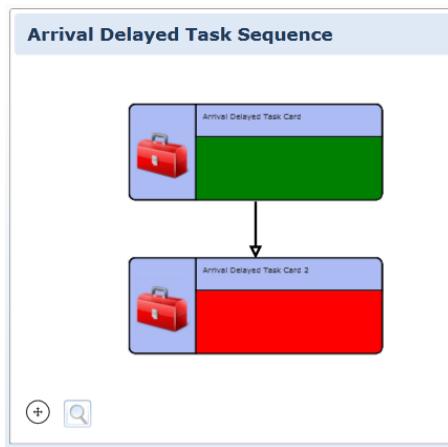


This indicates that beyond the currently received Task Card, which is as yet unaccepted, and so appears red, there is an anticipated second Task Card; which, since as yet unreceived, appears grey.

Once you have completed the Task Card named **Arrival Delayed Task Card**, the second dispatch of the Event changes the appearance of the **Event Viewer** as follows:

Alarm Viewer							
Drag a column header and drop it here to group by that column							
	Time Raised	Event Id	Severity	Category	Title	End Time	Alarm Information
+	24/07/2013 13:06:19	140	⚠ Medium (31)		Arrival Delayed Task Sequence		
-	24/07/2013 13:12:02	142	✖ High (1)	New	Arrival Delayed Event		
	24/07/2013 13:12:02	142-1	Arrival Delayed Task Card				
	24/07/2013 13:25:56	142-2	Arrival Delayed Task Card 2				

Meanwhile, a notification appears at the foot of the Layout Browser, indicating that a new event has been raised; and the appearance of the **Task Sequence Progress Monitor** changes as follows:

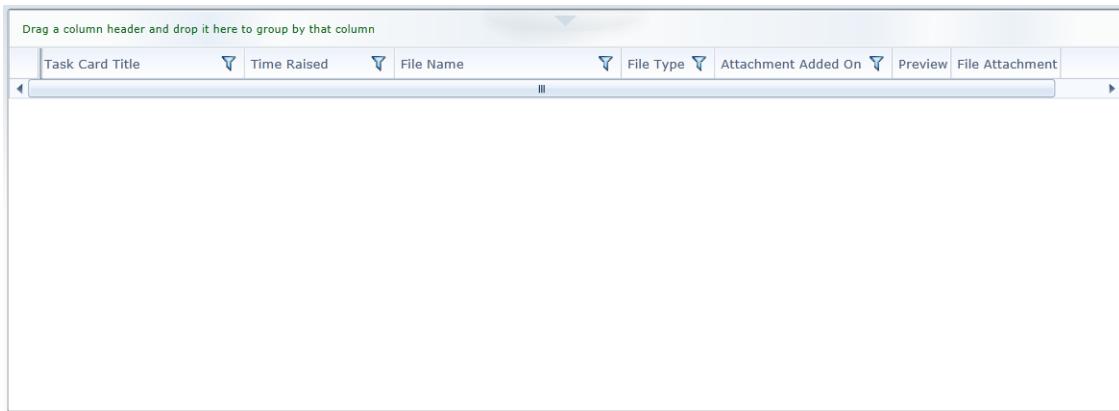


Thus, since the originally received Task Card was completed, it appears entirely green; whereas since the newly received Task Card has not yet been accepted, it appears entirely red.

From this point, you can continue by working on the newly appeared Task Card, which is named **Arrival Delayed Task Card 2**.

Can I download and add attachments?

Yes. As well as using the icons provided for each Task within the **Task Card Viewer**, you can use the **Task Card Attachment Viewer**. This appears as follows:



The viewer can be configured to display a list of all attachments to Tasks allocated to the user within a specific period of time. To perform configuration, left-click on the large, downwards-pointing arrowhead, at the centre-top of the viewer:



This opens the **Time Configuration** interface:

HANDLING EVENTS

Select Interval

Start Date: 29/07/2013 15 Start Time: 15:00

End Date: 30/07/2013 15 End Time: 15:00

Load Data Cancel

By specifying appropriate start and end dates, you can determine the period of time for which attachments to Tasks are to be displayed. You can either enter dates and times directly from the keyboard, or alternatively, use the interactive calendars, which are brought up from the calendar-symbols at the right of each text field.

When you have specified an appropriate time-period, left-click on the **Load Data** button:



If the specified period featured Events with attachments, these attachments are now listed:

Drag a column header and drop it here to group by that column							
Task Card Title	Time Raised	File Name	File Type	Attachment Added On	Preview	File Attachment	
> Departure Delayed Task Card2	22/07/2013 10:09:50	UltraAPEX Administrator Guide - E .docx		22/07/2013 16:04:28		Download File	
Departure Delayed Task Card	23/07/2013 11:31:50	UltraAPEX Administrator Guide - E .docx		23/07/2013 12:30:31		Download File	
Alarm Test Card	15/07/2013 12:02:01	UltraAPEX Administrator Guide - F .docx		15/07/2013 13:15:42		Download File	

Thus, several attachments are specified, each to its own row.

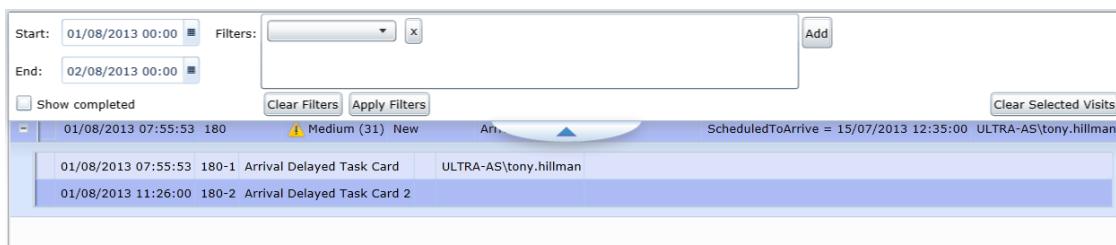
Note that the user interface of the **Task Card Attachment Viewer** is that of a *Grid*, such as was described extensively in Chapter 6, *Using Data Viewers* – which you should consult for detailed information on grouping, moving, and filtering column-data. Here, the column titles are as follows:

- ⊕ **Task Card Title** — The name of the Task Card that featured the attachment.

- **Time Raised** — The date and time of day at which the Task Card was raised.
- **File Name** — The name of the file that was attached to the Task Card.
- **File Type** — The type of the file (for example, *.pdf, *.doc, *.xml).
- **Attachment Added On** — The date and time of day at which the attachment was added to the Task Card.
- **Preview** — Preview data.
- **File Attachment** — A **Download File** button. Left-click on this to download the attachment.

Can I filter Events?

You can filter Events by means of the **Event Filter Dialogue**, which is accessed by means of the large downwards-pointing arrowhead, towards the top of the **Event Viewer**. Left-click on this to reveal the dialogue:



The interactive components provided by this dialogue are as follows:

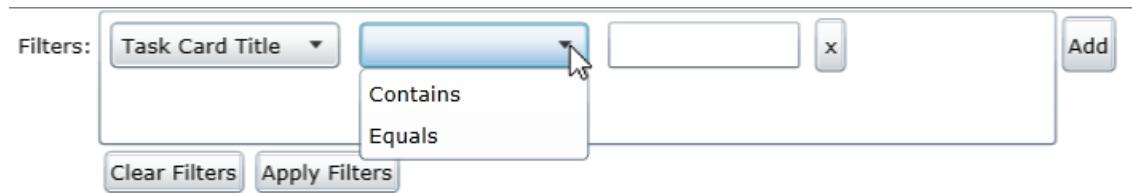
- **Start** — The date and time of day that constitute the commencement of the period for which Events should be displayed. This can be entered from the keyboard, or with the mouse by means of the interactive calendar, brought up by left-clicking the icon at the right-hand side of the field.
- **End** — The date and time of day that constitute the end of the period for which Events should be displayed. This can be entered from the keyboard, or with the mouse by means of the interactive calendar, brought up by left-clicking the icon at the right-hand side of the field.
- **Show completed** — If this checkbox is checked, Events that have been completed are displayed for the specified time period; otherwise, they are omitted.
- **Filters** — A dialogue that allows filters to be defined and applied. When the principal pull-down menu field is left-clicked on, the dialogue opens as follows:



Thus, the pull-down menu has, in this case, two options.

ScheduledToArrive, if selected, filters Events based on the presence of the **ScheduledToArrive** category. **Task Card Title**, if selected, filters based on the titles of associated Task Cards.

By left-clicking on the downwards-pointing arrowhead of the second pull-down menu field, you reveal a menu that allows selection of comparison operators:



By selecting **Contains** from the menu, and then entering text from the keyboard into the text field to the right of the menu, you specify a filter that returns all Events that contain a Task Card whose title contains the entered string. By selecting **Equals**, you specify such that the title must be exactly equal to the string.

If you wish to add more filters, left-click on the **Add** button:



If you wish to remove a filter, left-click on the **X** button at the end of the row.

- **Clear Filters** — Left-click to remove all filters.
- **Apply Filters** — Left-click to apply the currently defined filters.
- **Clear Selected Visits** — Left-click to clear any previously selected filter-condition (for use in conjunction with a Data Viewer Grid).

Handling Notifications

UltraPortal keeps track of all the *notifications* that you receive – including Events and Tasks – in the **Notification Field**, which is to the left of the **Navigation History** control, in the UltraPortal header:



The **Notification Field** is the text field at the far left, which currently contains the number 0, indicating that no notification has yet been received.

How am I notified?

When you receive a notification of any kind, UltraPortal informs you in two ways. Firstly, a **New Event Raised** indicator appears temporarily at the bottom of the Layout Browser. For example:



After a few seconds, the **New Event Raised** indicator disappears. However, while it is visible, you can make use of either of the interactive icons that appear in its upper-right corner. These are:

- ⊕ The **red cross icon**, which appears as follows:



If you left-click on this icon, the **New Event Raised** indicator immediately disappears.

- ⊕ The **grid icon**, which appears as follows:



By left-clicking on this icon, you bring up the default Event Viewer layout.

Secondly, the number that appears in the **Notification Field** is incremented. Thus:



How do I respond?

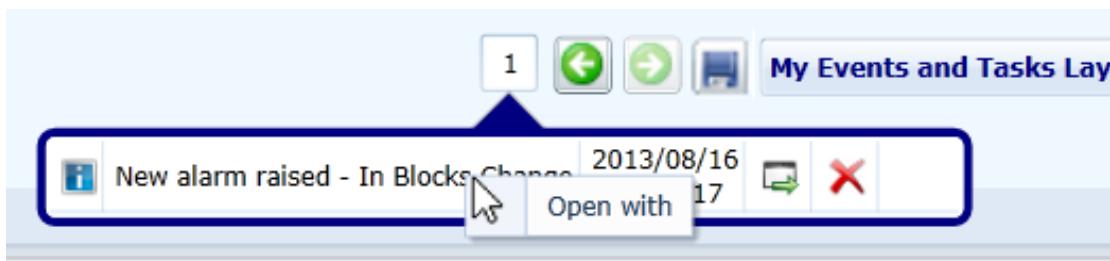
To handle the notification, start by left-clicking on the **Notification Field**. This produces the **Active Notification Queue**, which lists in chronological order all notifications that you have been sent during the current session, and are awaiting your attention:



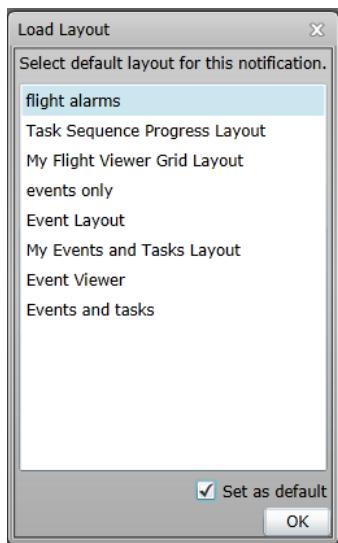
Each notification in the list (the current illustration contains just one) provides the **red cross** and **grid** interactive icons, which respectively allow you to dismiss the notification from the list and bring up the Event Viewer. The data and time of the notification's reception is also shown.

Note that double left-clicking on either the **information icon**, at the extreme left of each notification-row, or the notification-title, brings up the Event Viewer (just as does left-clicking on the **grid** interactive icon).

If you right-click on any field in the notification-row, you reveal the **Open With** option:



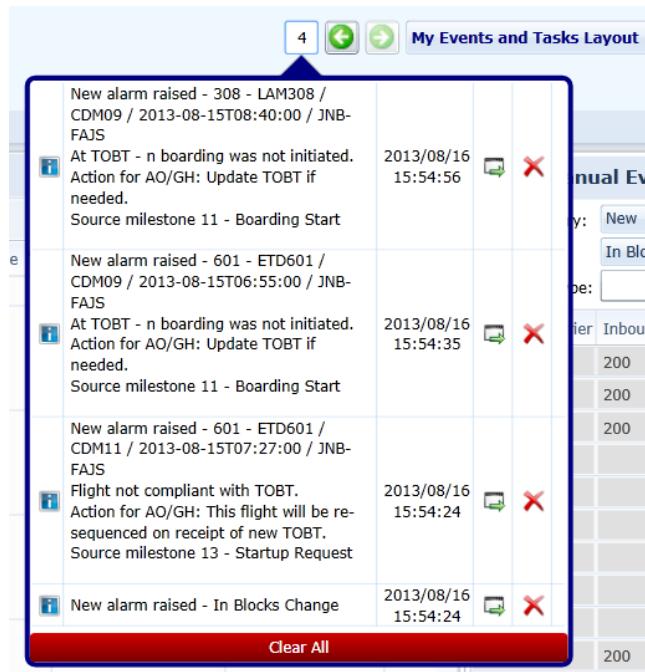
Left-click on this option to bring up the **Load Layout** dialogue:



This allows you to choose the Event Viewer layout from a list of those available to you, in order to handle the notification. For example, if you have access to a Layout named **Event Viewer**, you select this Layout by left-clicking with the mouse, and then left-clicking on the **OK** button, at the bottom-right. If you do so with the **Set as default** checkbox checked, then the chosen **Event Viewer** layout becomes the default Layout for your dealing with notifications.

How do I clear the queue?

When there are multiple notifications in the **Active Notification Queue**, you can clear the queue by left-clicking on the **Clear All** field that appears at the bottom:



When you have done so, the queue display disappears, and the **Notification Field** again displays the number 0.

Note that this merely clears the **Active Notification Queue**: it does not dismiss the Events themselves. Thus, if you have access to an **Event Viewer** Layout, this continues to display the Events, so that you can formally respond to them.

Next Steps

Frequently, a user's ability to respond to Tasks and notifications is dependent on their insight into the current physical disposition of aircraft, ground vehicles, and other elements of airport-infrastructure. To enhance such insight, UltraAPEX provides dynamically updated and animated *Airport Maps*, which we describe in our next chapter, Chapter 9.



Using Airport Maps

UltraAPEX provides interactive *Airport Maps*, which allow you to inspect and analyze traffic movements. Each map is dynamically updated — indeed, is *animated*, such that the taxiing, take off, and landing of aircraft can be observed in real time.

This chapter explains how to access and use Airport Maps.

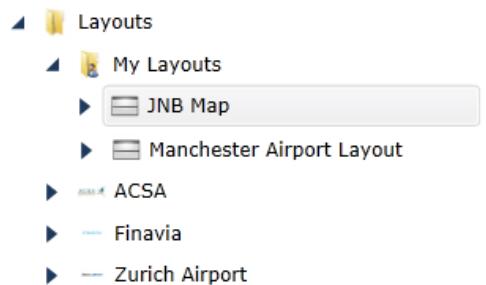
Getting Started

Like Charts, Reports, and other UltraAPEX utilities, Airport Maps are accessed as *Layouts*, available from the navigation tree at the left-hand side of the Layout Browser.

How do I access?

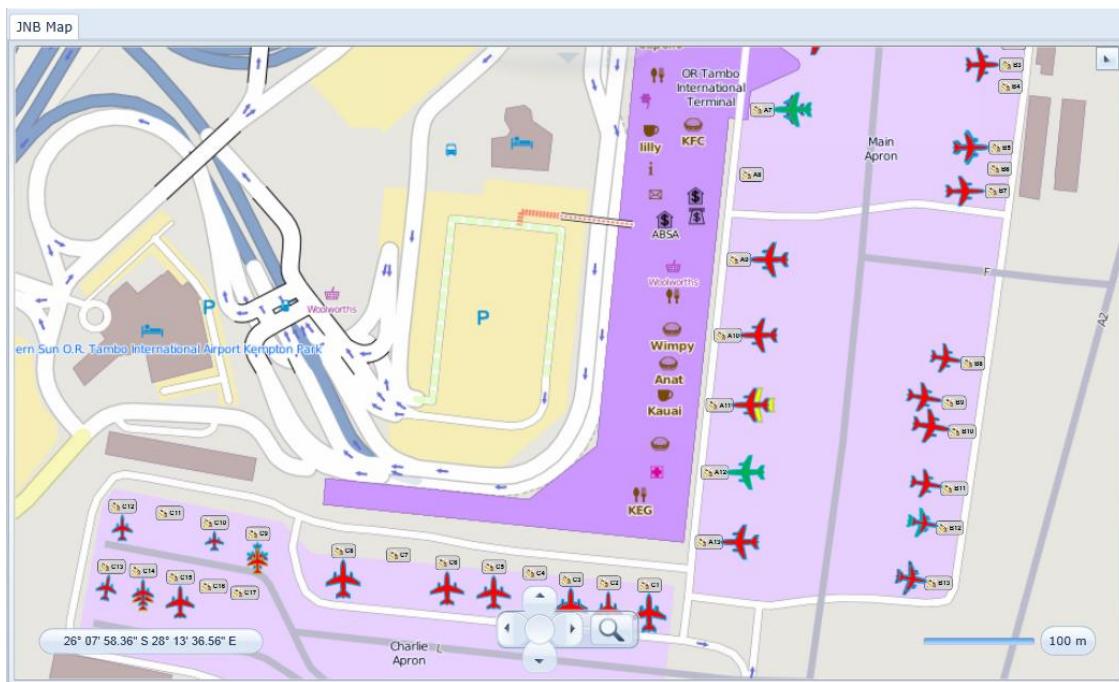
It may be that your administrator has already prepared one or more Airport Map Layouts for you to use. Otherwise, if you have appropriate permissions, you can create an Airport Map Layout, as described earlier in this document — see Chapter 3, *Using Layouts*.

For example, if an Airport Map Layout is available within your **My Layouts** folder, you can access it as follows:



Your Airport Map Layout now appears, as follows:

USING AIRPORT MAPS



How do I use?

The dimensions and graphical objects on your Airport Map correspond to those of the airport on which it is based. Your initial inspection of the map should therefore allow you to identify all the most salient landmarks. These include roads leading in and out of the airport; parking areas; main terminal and other buildings; gates; taxiways; and runways.

How do I get oriented?

Each Airport Map is part of a *global map*, any and all elements of which can be inspected by scrolling.

How do I scroll my immediate area?

To scroll the immediate area represented by the Airport Map, you have three options.

Accessing the Map's Surface

Position the mouse-cursor on any point on the map's surface, click and hold down the left mouse button, then drag the map in any direction. The map scrolls correspondingly, and so allows you to view areas outside the initial perimeters.

Accessing the Map Navigation Controls

The Map Navigation Controls are located at the lower-centre of the map, and consist of four directional arrows, positioned around a central circle. To the right of the **Navigation Controls** is a **Zoom Slider Bar**, marked by a magnifying-glass icon:

USING AIRPORT MAPS

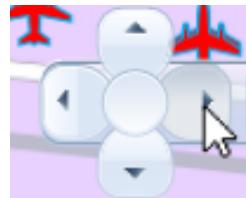


If you left-click on one of the directional arrows, the entire map moves in the corresponding direction.

For example, the initial appearance of the upper-right corner of your Airport Map may be as follows:



Now, left-click on the right arrow in the **Navigation Controls**:



This moves the viewer's virtual location correspondingly — to the right; which in turn means that the map scrolls to the left. The upper-right corner now appears as follows:



Thus, the map has duly scrolled to the left.

Accessing the Scale Reference Button

At the lower-right of the map appears the **Scale Reference**, which is a blue, horizontal line, displayed adjacent to a button that displays the real-world distance that the line's length represents:



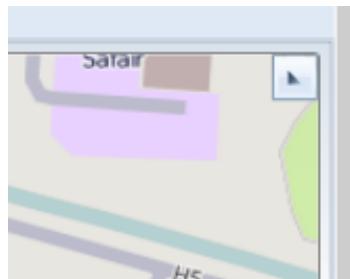
Note that the visible length of the line and the real-world distance to which it corresponds *vary* according to factors that include:

- The current *zoom level* of the map. The greater the surface area that is represented, the greater the distance represented by the **Scale Reference**.
- The current *screen area* occupied by the map. If you widen the browser window that contains the Airport Map Layout, and thereby increment the usable screen area, the distance represented by the **Scale Reference** is increased correspondingly.

To scroll the entire map to the *North West* (thus moving the viewer's virtual location to the *South West*), double left-click on the **Scale Reference Button**.

How do I scroll my outlying areas?

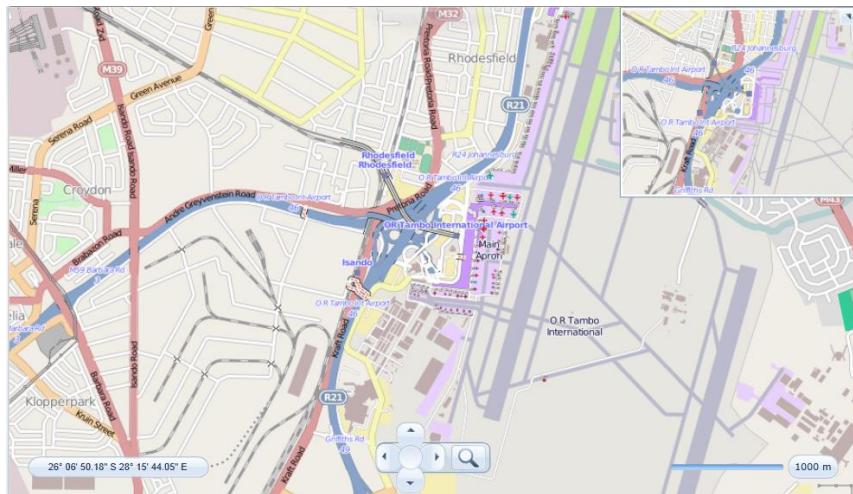
In the upper right-hand corner of the Airport Map appears the **Navigation Inset Tab**:



Left-click on this, in order to reveal the **Navigation Inset**:



The **Navigation Inset** now appears, as follows:



Thus, the **Navigation Inset** is a rectangular window positioned in the upper right-hand corner of the map, displaying a scaled version of the current map-contents. By positioning the mouse over the **Navigation Inset** surface, left-clicking and holding, and dragging in any direction, you cause the contents of both the **Navigation Inset** and the main map-display to scroll correspondingly. When (as currently shown) the contents are near-identical, this may provide little or no advantage. However, if the main contents of the map are increased through **panning**, the value of the **Navigation Inset** becomes greater — as we shall now see.

How do I zoom and pan?

To zoom or pan the Airport Map, use the **Zoom Control Slider**, which is at the bottom centre of the map-display, to the right of the **Navigation Controls**, and marked by a magnifying-glass icon. *Hover* the mouse-cursor over the icon, in order to reveal the slider:



Now, left-click on hold on the **handlebar** on the **Zoom Control Slider**:

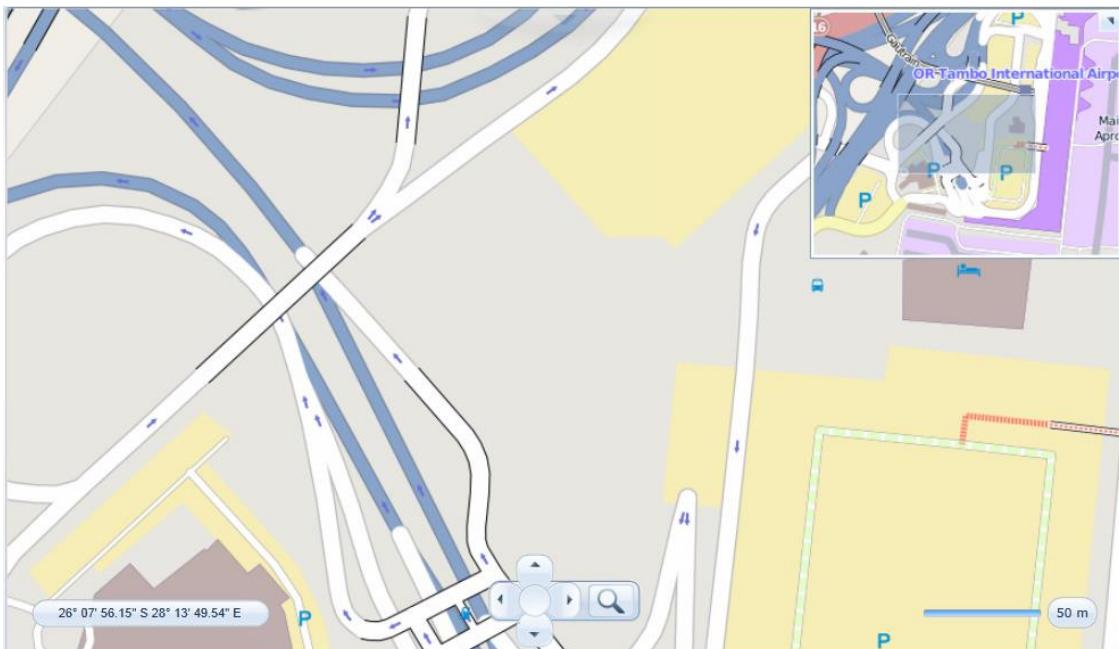


By dragging the handlebar *down* towards the **minus** sign, you cause the image to *pan*, and thus include more detail at lesser size. By dragging it *up* towards the **plus** sign, you cause the image to *zoom*, and thus include less detail at greater size. Move the handlebar significantly *up*:



Alternatively, rather than grabbing and dragging the handlebar in this way, you can left-click on the slider, so as to *summon* the handlebar either up or down.

The surface of the Airport Map now zooms correspondingly. Note the change that occurs in the **Navigation Inset**:

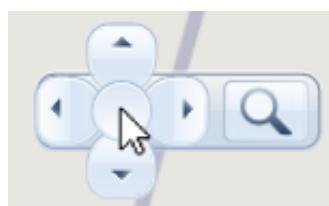


Thus, in the centre of the **Navigation Inset** there now appears a shaded **Navigation Guide**, which corresponds to the visible area displayed in the main Map display. The area displayed in the **Navigation Inset** is now greater than that of the main display, with features *not* shown in the main display lying outside the shaded **Navigation Guide**. This allows you to use the **Inset** to identify adjacent features you wish to display in the main area: when you have done so, left-click and hold the mouse-cursor on the surface of the **Navigation Inset**, and drag in the appropriate direction; this causes the surface both of the **Inset** and of the main display to scroll correspondingly, such that the desired feature eventually appears in the main display.

Note: Additional options for zooming and panning are likely available from the standard user interface controls for your browser. For example, you might press and hold the *Control* key on your keyboard, and then move your *mouse-wheel* up or down, in order respectively to zoom or pan.

How do I hide the Navigation Controls?

If you wish to hide the **Navigation Controls**, left-click on the circle that appears in-between the directional arrows:



This transforms the **Navigation Controls** into a single circle:



Left-click on this circle in order to restore the **Navigation Controls** to their initial appearance.

What are the numbers at the lower-left?

At the lower left-hand side of the map display there appears the following display:



This is the **Coordinate Tracker** for your Airport Map. It shows, first, a longitude reading (followed by **N** or **S**, to distinguish whether it refers to North or South), expressed in the conventional *degrees, minutes, and seconds*; and secondly, a latitude reading (followed by **W** or **E**, to distinguish whether it refers to regions West or East of the meridian), expressed similarly. These values are dynamically updated as you move your mouse-cursor over the map: thus, whenever

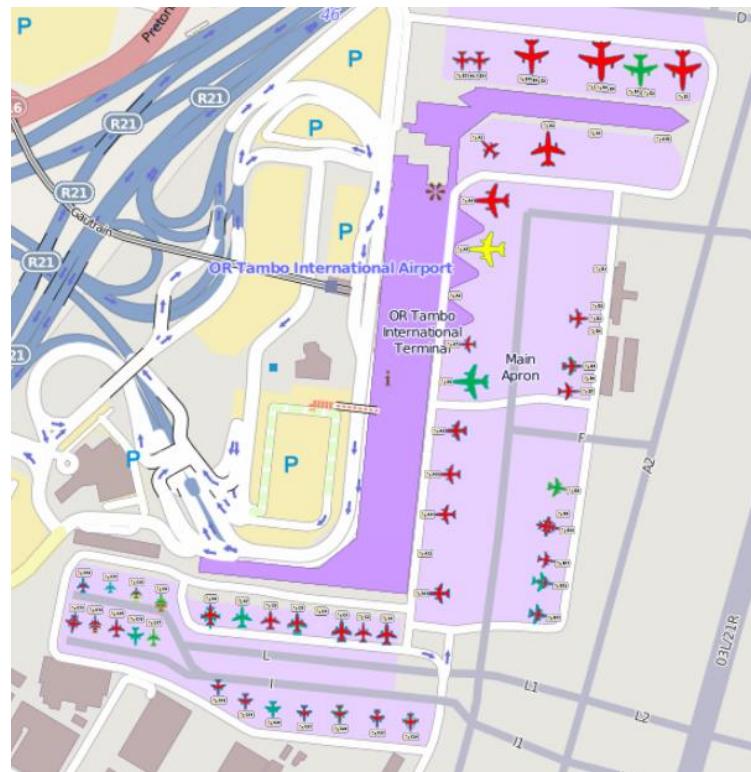
necessary, you can retrieve and report the exact coordinates of map-displayed features.

Observing Airport Conditions

UltraAPEX Airport Maps provide various ways in which an airport's constantly changing status is dynamically represented to the user.

How do I observe airport features?

Simply ensure that your map-display is zoomed to an appropriate level. Provided that there is sufficient surface-area for the degree of detail required, you will see representations of aircraft, both moving and stationary. For example:



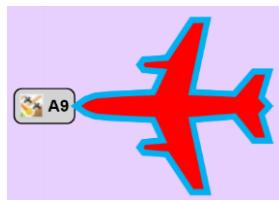
What does movement signify?

When you observe an aircraft-image that is moving across your map, you are seeing a representation of the movements of an actual aircraft in real time. The movement may be as a result of taxiing in or out, of taking off, or of landing.

When an aircraft is taking off or landing, its image is only visible when tracked by ground radar.

How do I distinguish between gates?

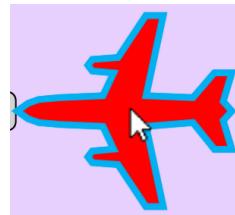
You can distinguish between airport *gates* according to the name they display. For example:



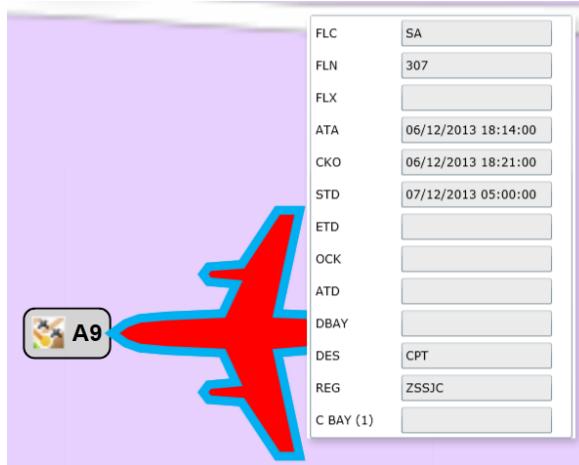
How do I distinguish between aircraft?

You can distinguish between aircraft by using the mouse to retrieve identifying information. This can be accomplished either when the aircraft-image appears in motion, or is at rest.

For example, left-click on the image of an aircraft that is at rest at a particular gate:



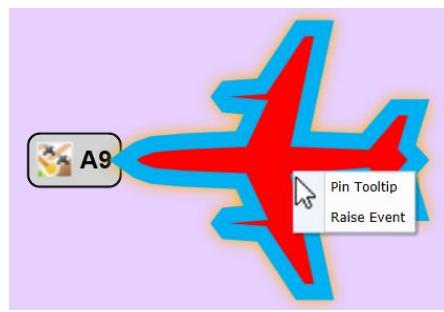
This reveals the **Flight Identifier Tooltip**:



The fields on this tooltip are location-specific: therefore, your should contact your administrator in order to learn their significance.

How do I pin the tooltip?

If you right-click on the aircraft-image, the following pull-down menu is exposed:



Here, the two available options are **Pin Tooltip** and **Raise Event**. To pin the tooltip therefore, select the first of these options. The tooltip duly appears pinned at the upper-left of the map display.

How do I raise an Event?

Based on details made visible in the **Flight Identifier Tooltip**, you may wish to raise an Event, in order to notify other users of some key aspect of current status. See the chapter *Handling Events*, in the current document, for detailed information on receiving Events; and see the document *UltraAPEX Administrator Guide – Events*, for information on how specifically to *raise* Events.

To initiate the Event-raising mechanism, select the second available option from the pull-down menu.

Changing Display Settings

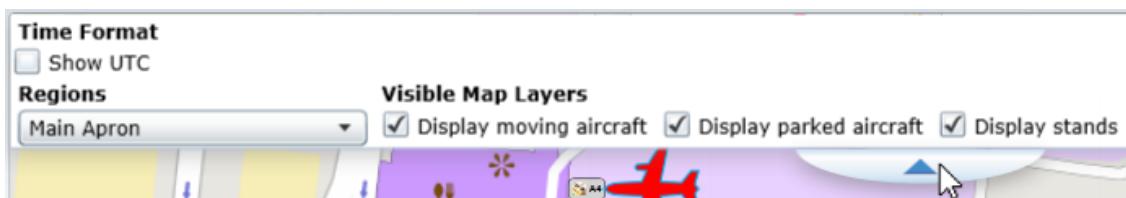
The display settings for the current Map Layout can be changed.

How do I access?

To view the available settings, left-click on the large, semi-transparent, downwards-pointing arrowhead, near the upper centre of the main display area:



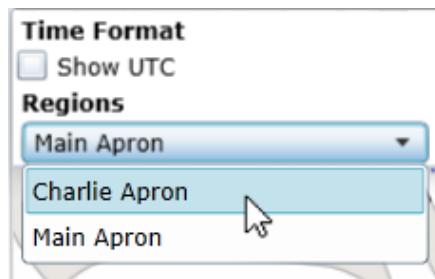
The **Settings Panel** now appears, as follows:



What settings are available?

The panel contains the following user interface elements:

- **Time Format** — A checkbox, labelled **Show UTC**, that, when checked, ensures that all times are shown in UTC format.
- **Regions** — A pull-down menu field. When the downwards-pointing arrowhead at the right-hand side is left-clicked on, the field reveals a pull-down menu, each of whose elements is a *region* whose perimeters and zoom-level were defined by the administrator who set up the current Map Layout. By selecting an element, you change the contents of the main display to represent the defined region. For example, select the first element in the menu:



This changes the main display to show the selected region:



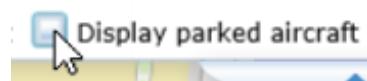
- **Visible Map Layers** — A series of checkboxes, each of which, when checked, ensures display of one category of interactive features. The options currently shown are **Display moving aircraft**, **Display parked aircraft**, and **Display stands**. To omit a category, leave the checkbox unchecked.

USING AIRPORT MAPS

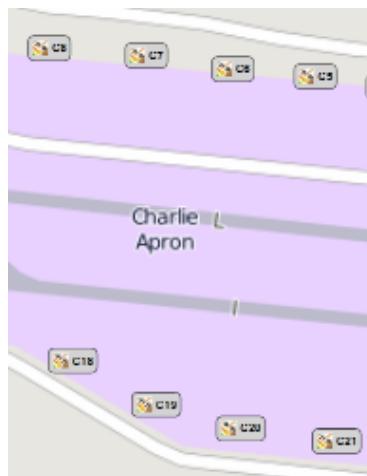
For example, *Charlie Apron* currently displays the following stationary aircraft:



Left-click on the **Display parked aircraft** checkbox, in order to uncheck it:



Charlie Apron now appears as follows:



Thus, the stands remain displayed, but the parked aircraft are hidden.

Understanding States

UltraAPEX Airport Maps have the potential to represent the *States* of aircraft visually, in order to ensure the user's immediate recognition.

What is a State?

A *State* is an aircraft's place in the lifecycle of its visit. This may involve:

- ⊕ An **AODB Category** that represents the *beginning* of a critical time-period. For example, **Flight Plan Activated**, **Final Approach**, **Landed**, **In Blocks**.
- ⊕ A category definition, indicating whether the category is **Actual**, **Estimated**, **Scheduled**, **Best**, or **Current Time**.
- ⊕ A logical operation, such as **Has A Value**, **Matches**, **Is LessThan**, or **Is Greater Than**.
- ⊕ An **AODB Category** and accompanying definition that represent the *end* of the critical time-period.
- ⊕ A specific time-offset, to be used in association with the logical operation.

If the specified State is matched by information currently provided by the AODB, the image of the aircraft on your Map is changed to an appropriate colour. For example, if the **Actual In Blocks** time is **Greater Than** the **Scheduled** by an **Offset** of 5 minutes, the aircraft may appear *red*.

How do I interpret colour-codes?

To understand the colours in which aircraft-images appear on your Airport Map, consult the administrator responsible for its design.

Next Steps

Operational inefficiencies recorded and represented by UltraAPEX utilities frequently result in *delays*, whereby the schedule of one or more flights is negatively affected. In order that the nature of and responsibility for such delays can be captured, and so subsequently used for process-improvement, UltraAPEX provides a system of *Delay Code Management*. This system is explained in our next and final chapter, Chapter 10.



Handling Delay Codes

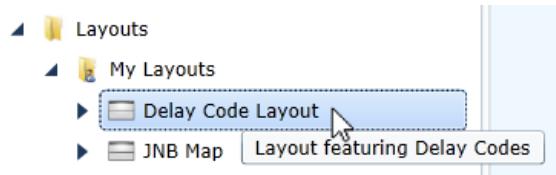
A **Delay Code** can be associated with every form of delay that a flight experiences. Some codes are universally standardized, and so will be understood by all airports. Others are defined for use only within a single airport.

UltraAPEX provides a **Delay Code Assignment** Layout, which allows a suitably qualified and authorised employee to assign and define Delay Codes. Each Delay Code is automatically associated with a *Responsibility Centre*. Once the Delay Code has been assigned and submitted, it can be approved by an appropriate authority; and responsibility for the delay thus confirmed.

This chapter explains how the tool can be used.

How do I access?

The **Delay Code Assignment** Layout can be accessed from the Layouts folder, at the left-hand side of the Layout Browser:



The **Delay Code Assignment** Layout now appears. Since this Layout typically contains a large number of wide columns, we present it here in two vertically aligned sections:

Delay Code Assignment										
		Start:	10/12/2013	End:	10/12/2013	Airport:	JNB			
Drag a column header and drop it here to group by that column										
	Created at	Carrier	Flight Number	Flight Callsign	Delay time	Scheduled	Actual		Delay Code	
>	10/12/2013 12:44:26	FN	202	FTZ202	29	10/12/2013 12:15:00	10/12/2013 12:44:00	29		
	10/12/2013 10:20:17	SA8	220	LNK220	53	10/12/2013 08:40:00	10/12/2013 09:33:00	53		
	10/12/2013 10:15:09	SA	050	SAA050	81	10/12/2013 08:10:00	10/12/2013 09:31:00	81		
	10/12/2013 12:54:37	MN	901	CAW901	19	10/12/2013 12:35:00	10/12/2013 12:54:00	19		
	10/12/2013 12:16:58	SA	559	SAA559	10	10/12/2013 11:55:00	10/12/2013 12:05:00	10		
	10/12/2013 12:32:26	PM	101	PM101	17	10/12/2013 12:15:00	10/12/2013 12:32:00	17		

Sub Delay Code	Responsibility Centre	Status	Approval	Description	Save
		Unassigned	<input checked="" type="checkbox"/> <input type="checkbox"/>		SUBMIT
		Unassigned	<input checked="" type="checkbox"/> <input type="checkbox"/>		SUBMIT
		Unassigned	<input checked="" type="checkbox"/> <input type="checkbox"/>		SUBMIT
		Unassigned	<input checked="" type="checkbox"/> <input type="checkbox"/>		SUBMIT
		Unassigned	<input checked="" type="checkbox"/> <input type="checkbox"/>		SUBMIT

What are the features?

The principal interactive elements in the **Delay Code Assignment** Layout are as follows:

- ✚ **Start** and **End** — Text fields that accept calendar dates respectively signifying the start and end of the period for which Delay Codes are displayed. Dates can be directly input from the keyboard, or specified by means of the interactive calendar, whose icon appears at the right-hand side of each text field.
- ✚ **Airport** — A pull-down menu field. Left-clicking on the downwards-pointing arrowhead at the right of the field reveals a pull-down menu, each of whose elements is an airport, Delay Codes for which are displayed in the Layout when the element is selected.
- ✚ The **Grouped by** facility — This allows the main data-display to be reorganized. See the chapter *Data Viewers* in this document, for detailed information on how this facility can be used.
- ✚ **Created at** — A column whose data-elements specify the time at which their row was created.
- ✚ **Carrier**, **Flight Number**, and **Flight Callsign** — Columns containing data that identify the affected flight.
- ✚ **Delay Time**, **Scheduled**, and **Actual** — Columns containing data specifying the extent of the delay.
- ✚ **Delay Code** and **Sub Delay Code** — Columns into which appropriate Delay Code information can be entered by the user.

- **Responsibility Centre** — A read-only column whose data is assigned automatically by the system, based on user-input elsewhere in the row.
- **Status** — An indication of whether or not approval for this responsibility-assignment has been approved. If approval has been granted, the column reads **Approved**. If approval has been withheld, the column reads **Rejected**. Until approval has been explicitly granted or withheld, the column reads **Unassigned**.
- **Approval** — Two interactive icons, one of which is a **white cross** on a red background, the other a **white tick** on a green. If the current user is appropriately authorized, left-clicking on the tick *grants* approval for this responsibility-assignment; while left-clicking on the cross *withholds* approval.
- **Description** — An optional description of the delay.
- **Save** — A **Submit** button, left-clicking on which causes the delay-assignment of the current row to be submitted to a user, supervisor, or administrator authorized to grant or withhold approval.

Note that other user interface features of the **Delay Code Assignment** Layout are those of the standard UltraAPEX *Grid*, which is described in detail above, in the chapter *Data Viewers*.

How do I enter a Delay Code?

Proceed as follows:

1. Make sure that the **Start**, **End**, and **Airport** fields are set appropriately.
2. Select the row for which you wish to assign a Delay Code. In the current example, we will use the data on the topmost row, for the flight whose number is **202**.
3. Access the **Delay Code** column. Left-click on the downwards-pointing arrowhead at the right-hand side of the field. This reveals the **Delay Code Pull-Down Menu**, as follows:

USING AIRPORT MAPS

Delay Code	Sub Delay Code	Responsibility Centre	Status	Approval
29			Unassigned	X
53	0 - AIRLINE INTERNAL 00			
81	1 - XA AIRLINE INTERNAL 01			
19	2 - XB AIRLINE INTERNAL 02			
10	3 - XC AIRLINE INTERNAL 03			
17	4 - XD AIRLINE INTERNAL 04			
1	5 - XF			

Note that the Delay Codes in the menu are displayed in a numbered sequence. Each code has two forms: an *alphanumeric*, and a *numeric*. These codes are not comprehensively described in the current document, since they constitute an IATA standard, which can easily be reviewed elsewhere.

4. Select a Delay Code appropriate for the current row. For example:

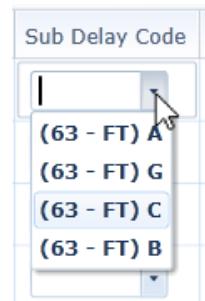
OTHER AUTOMATED SYSTEMS
61 - FP FLIGHT PLAN, LATE COMPLETION OR CHANGE OF, FLIGHT DOCUMENTATION
62 - FF OPERATIONAL REQUIREMENT, FUEL, LOAD ALTERATIONS
63 - FT LATE CREW BOARDING OR DEPARTURE PROCEDURES
64 - FS FLIGHT DECK CREW SHORTAGE
65 - FR FLIGHT DECK CREW SPECIAL REQUEST

After your selection, the **Delay Code** text field correspondingly appears as follows:

Delay Code
29 63 - FT

5. Access the column to the right of **Delay Code**, which is **Sub Delay Code**. Follow the same procedure as for **Delay Code**, and select an appropriate Sub Delay Code for this particular delay.

USING AIRPORT MAPS



6. Access the **Description** column, and add an appropriate description to the text field. For example:

Description	Save
Crew delayed.	

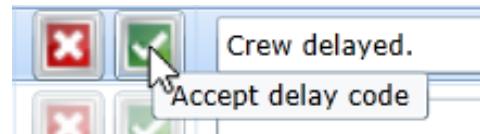
7. Left-click on the **Submit** button:



The row momentarily appears greyed-out, following submission. Presently, its original colour is restored, and a value appears in the **Responsibility** field:

Responsibility Centre
Responsibility Centre\Airlines\Local Airlines\MANGO.COM

8. If you are authorized to determine approvals, either give or withhold approval, by left-clicking on the appropriate icon:



This concludes the process whereby a Delay Code and associated responsibility are assigned.

Index

0

0.00 79

A

Accept (a subsequent) Task 112

Accept (the initial) Task 111

Accept all tasks 109

Accept Task 115

access 128

accessing Airport Maps 128

Actionable Events 107

Actions Taken 115

Active Notification Queue 125

Actual 142

Actual Time 115

Add 123

Add Arrival 83

Add Departure 83

add document icon 114

Add Flight Leg 82

Advanced 76, 77

Advanced Filtering for Dates 79

Advanced Filtering for Standard Values 77

Aircraft Navigation Packs 23

Aircraft Type 58

Airport 142

Airport Group 58

Airport Maps 7, 128

Airport Performance Expert System 5

Airport Reporting Pack 22

Alarm Information 107

Allow Grouping 76

Amber 98

animated alerts 81

Apply Filters 123

Approval 143

Approved 143

Attachment Added On 122

B

Base Airport 58

C

Calculate 103

Cancel 90, 93, 114

caret icon 114

Carets 114

Carousel View 13

Carrier 142

Category 107

Change Layout Icon 36

change time-periods 43

Chart Annotations 49

Chart Editor 55

Charts 5, 21, 38

resizing 40

zoom and pan

checkbox 84

Clear 80, 92

Clear All 126

Clear Filter 72

Clear Filters 76, 123

Clear Selected Visits 123

column-order 64

Complete 112

Contains 73, 78, 123

Controller/Receiver 53

Coordinate Tracker 134

Create Layout 25

Create URL Link 36

Created at 142

Critical 98

Current Page 60

Custom 80

D

Dashboard Intervals 99

Dashboards 95

Data 75

Data Viewer 62

Data Viewer Column Header Menu 74

Data Viewer Options 82

Data Viewers 62

access 62

interactions 62

Date Bar 43

Date Slider 44

Days 80

default airport 75

Delay Code 141, 142

Delay Code Assignment 141

Delay Time 142

Delete Layout 36

Description 143

Details 63

Direction 58

Display moving aircraft 138

Display parked aircraft 138

display settings 137

Display stands 138

Dockable 33

Does not contain 73, 78

Download File 115, 122

Download/Add File Attachment 114

Drill-Down 50, 52

adding 52

E

Edit Assigned Users 113

Edit Chart 55

INDEX

Edit Grid 81
Edit Layout 32
End 122, 142
End Time 58, 107
Ends with 73, 78
Enter date 71
Equals 123
Estimated Time 115
Event Filter Dialogue 122
Event Id 106
Event Management Layout 105
Event Viewer 105, 106
Event Viewers 7
Events 105
Exclude 47
Exiting 18
Expand all tasks 110
export 81
Export to CSV 81

F

File Attachment 122
File Name 122
File Type 122
Filter 45, 63, 80, 86
Filter Icon 71, 76
Filtering Mode 76, 77
Filters 122
Find 59
First 60
Flight Callsign 142
Flight Identifier Tooltip 136
Flight Number 142
Flight Service Types 58
Floating 33
Form 89
From 58

G

Go back to the parent Report 59
Greater Than 79
Greater Than Or Equal To 79
Green 98
Grid 62, 64
grid icon 124
Grouped by 142
Grouping 66

H

Help 55
Hide 33
Hide Column 74
High 107
Highlight Row Changes 77
Home 16
Hours 80

I

Include 46
Info 107
information icon 125
Informational Events 107
Interactive Charts 22
Interval Type 103
Intervals 97
Is contained in 73, 78
Is empty 78
Is equal to 72, 78
Is greater than 72, 78
Is greater than or equal to 72, 79
Is less than 72, 78
Is less than or equal to 72, 78
Is not contained in 73, 78
Is not empty 78
Is not equal to 72, 78
Is not null 72, 79
Is null 72, 79
items 95

K

Key Performance Indicators 5
Key Performance Indicators (KPIs) 5
KPI Performance Level Thresholds 98
KPIs 5

L

Last 60
Last Updated By 107
Last updated time 115
Layout Browser 96
 Going back 14, 15
 Home Layout 16
 Online Help 17
 Quick access 15, 16
 Searching for Layouts 17
 Shortcuts 16, 17
 Switching views 14
 Tree View 11
 User Settings 17
 What is the Layout Browser? 11
Layout Context Menu 35
Layout Editor 25
Layouts 10, 20
 copying 37
 custom 24
 editing 32
 relocating 37
Layouts Menu 35
Legend Position 48
Less Than 79
Less Than Or Equal To 79
Lessons Learnt 115
Link Flight 84

INDEX

Load Data 121
Load Layout 125
Logging out 19, 20
Low 107

M

Mandatory 115
Maps
 See "Airport Maps" 128
Medium 107
minus sign 133
Minutes 79, 80
Modules 8
Month 58
move elements 34
My Layouts 24

N

navigation buttons 17
Navigation Controls 129
 hiding 134
Navigation Guide 134
Navigation History 15, 35, 124
Navigation Inset 131
Navigation Inset Tab 131
New Alarm Raised 124
New Flight 82
New Layout 25
Next 59, 60
No Action 112
No action all tasks 109
No action this Task 111
Note 115
Notification Field 124
Notifications 115, 124

O

OK 93, 126
Open Chart In New Window 55
Open Layout In New Tab 35
Open With 125
Origin/Destination Airport 59

P

pan 42, 132
Panel Closure button 18
paperclip icon 114
Pin Tooltip 137
plus icon 108
plus sign 34, 133
Portal Help 17
Portal Options 17
Preview 122
Previous 60
primary interval 99
property 62
Property Filter 45

Q

Quick Access 34
Quick Access ID 34
QuickTools 45, 102

R

Raise Event 81, 137
Red 98
red cross icon 124
Regions 138
Registration 58
Rejected 143
Related Layouts Folder 31, 35
Report Types 58
Reports 5, 23, 56
 modifying 58
 preserving 60
resize elements 34
Responsibility Centre 141, 143
Row Filter 76
row-order 64

S

Save 31, 83, 90, 143
Scale Reference 130
Scale Reference Button 131
Scheduled 142
Scheduled Turn Around Time 58
scrolling Airport Maps 129, 131
Search and Filter 70
Select All 78
Select Reference Data 92
Set Airport 75
Set as default 126
Settings Panel 137
Severity 107
shortcuts 16, 35
Show completed 122
Show Grid Name 76
Show Top N On Chart 58
Show UTC 138
Show UTC Times 76
Sort By 58
sort order 65
Specific Time-Point 103
Standard Layouts 20
Start 122, 142
Start Time 58
Starts with 73, 78
start-up Layout 17
States 139
Status 143
Sub Delay Code 142
Submit 143

INDEX

T

Task Card Attachment Viewer 105, 120
Task Card Title 121, 123
Task Card Viewer 105, 108, 116
Task Card Viewers 7
Task Cards
 Receiving multiple 118
Task Complete 112, 115
Task Sequence Progress Monitor 116, 117
Task Sequence Progress Viewer 105
Task-Related Events 107
Tile View 12
Time Configuration 120
Time Format 138
Time Frame 58
Time Raised 106, 122
Time Range 102
Time Zone 58
Time-Point 97, 99
Title 107
To 58
Tooltip 53
Tree View 11

U

Ultra Standard Layouts 21
UltraAPEX 5
 Getting access 8
 What is UltraAPEX? 5
UltraPortal 8, 10, 56
 Layout Browser 11
 Layouts 10
 Logging in 10
 starting 10
 Using 10
Unassigned 143
Unhide Column 75
unique three integer ID 34
Unlink Flight 84
User Layouts 20
User Settings 17
using Airport Maps 129
UTC 90

V

value chain 95, 97
Value Item 97, 101
values 95, 101
View Chart Data 55
view Layouts quickly 34
View Report 23, 59
Visible Map Layers 138

W

Warning 98
white cross icon 143

white tick icon 143

Windows desktop authentication 18

X

X 70

Y

Y 84

Year 58

Z

zoom 41, 132

Zoom 59

Zoom Control Slider 132

Zoom Slider Bar 129