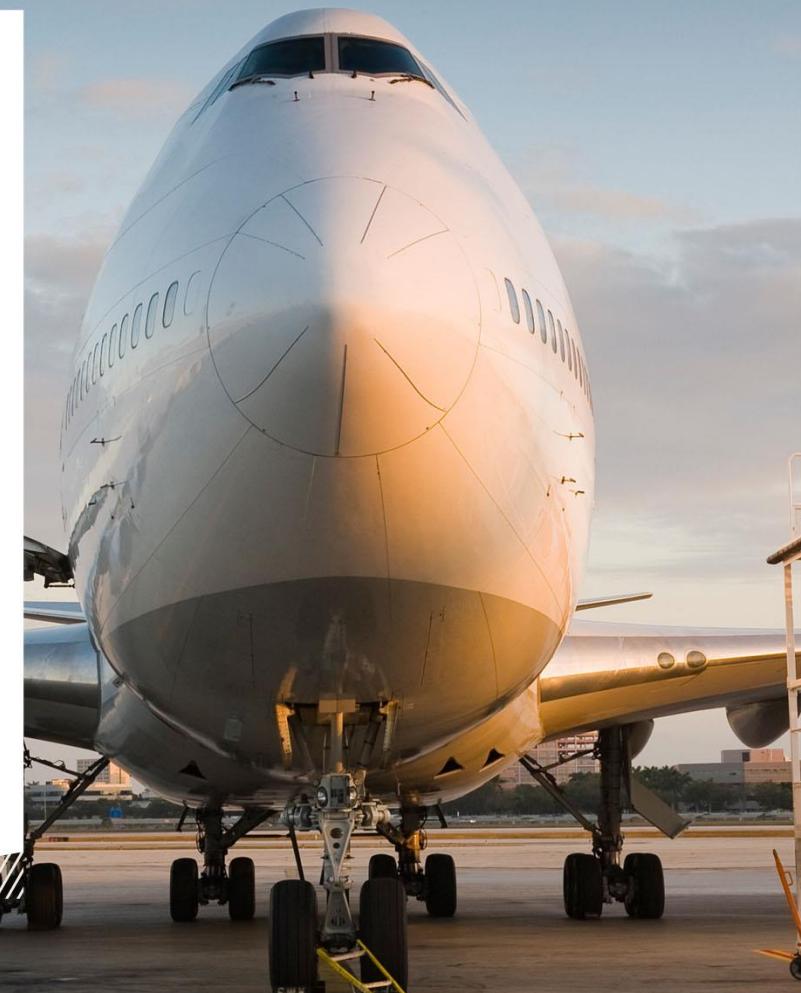


# **BEONTRA** **Scenario Planning**

**B Tactical**

**Basic User Guide**  
**Main Features**

Version 4.11  
20.04.2018



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### Contact Details



## B Tactical Steps of building planning schedules

### Step 1

Choose and Load  
Base Schedule  
ATM

### Step 2

Add ATM to  
target level  
ATM

### Step 3

Add Load Data to  
ATM  
Pax, Trsf, Bags etc.

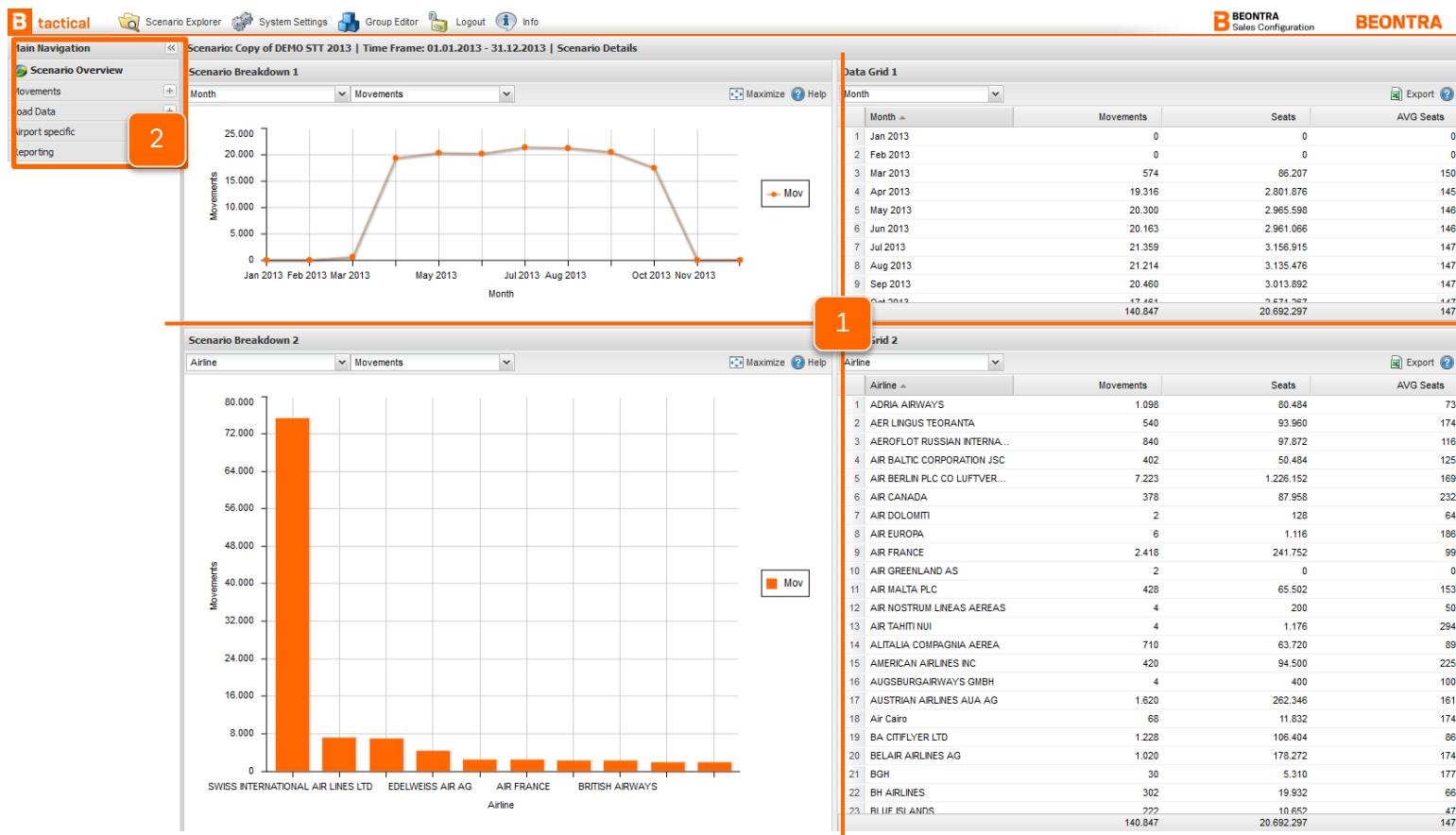


# B Tactical

## Start screen of a Scenario

### Functionality

After opening a B Tactical Scenario, you see a general menu on the left (Main Navigation) and an overview of the Scenario on the right (4 quadrants).



### How to use it

- 1 To get a graphical overview of the Scenario, use the quadrates Breakdown 1 and Breakdown 2.
- 2 To get a tabular overview, use the quadrates Data Grid 1 and Data Grid 2.
- 1 To work on the Scenario, click on a menu item in the Main Navigation (e.g. Movements, e.g. Load Data).
- 2 For an overview of the process, look at the submenus of each menuitem.

# B Tactical

## Start screen of a Scenario

### Functionality

Graphical overview of selected data.



	Movements	Seats
per Month	only Breakdown 2	only Breakdown 2
per Week	only Breakdown 2	only Breakdown 2
per Day	only Breakdown 2	only Breakdown 2
per Airline	Breakdown 1 and 2	Breakdown 1 and 2
per Aircraft Type	Breakdown 1 and 2	Breakdown 1 and 2
per Via	Breakdown 1 and 2	Breakdown 1 and 2

### How to use it

- 1 To select a breakdown, click on the drop-down menu and click on the relevant breakdown.  
Temporal breakdowns are shown as a line graph; non-temporal breakdowns are shown as a bar chart.

- 2 To view specific details, mouseover a point/ bar in the graph.

- 3 To see everything or to print, click on the Maximize icon.

The table on the left shows a summary of your dropdown options (it is not a screenshot).

# B Tactical

## Start screen of a Scenario

### Functionality

Tabular overview of selected data.

The screenshot shows a data grid titled "Data Grid 1". The columns are labeled "Month", "Movements", "Seats", and "AVG Seats". The data rows represent months from January 2013 to October 2013. A context menu is open over the "Movements" column, with options "sort ASC" and "sort DESC" highlighted. Another context menu is open over the "Columns" header, listing "Month", "Movements", "Seats", and "AVG Seats", where "Movements" has a checked checkbox. An "Export" button is visible in the top right corner of the grid area.

Month	Movements	Seats	Avg Seats
1 Jan 2013	19.3	0	0
2 Feb 2013	20.300	0	0
3 Mar 2013	20.163	86.207	150
4 Apr 2013	21.359		145
5 May 2013	21.214		146
6 Jun 2013	20.460		146
7 Jul 2013	17.161	2.571.267	147
8 Aug 2013	140.847	20.692.297	147
9 Sep 2013			147
10 Oct 2013			147

### How to use it

The constants are Movements, Seats and AVG Seats. The variables are listed in each dropdown box.

- 1 To sort a column, mouseover on the right of its title until a small arrow appears. Click on the arrow and click on "sort ASC" or on "sort DESC".

To hide a column, untick the relevant box. To show a column again, tick the relevant box. (Hiding does not delete data.)

- 2 To export data to Excel, click on the Export icon.



# **BEONTRA**

## **B Tactical**

1. Basic Setup  
Automated Import

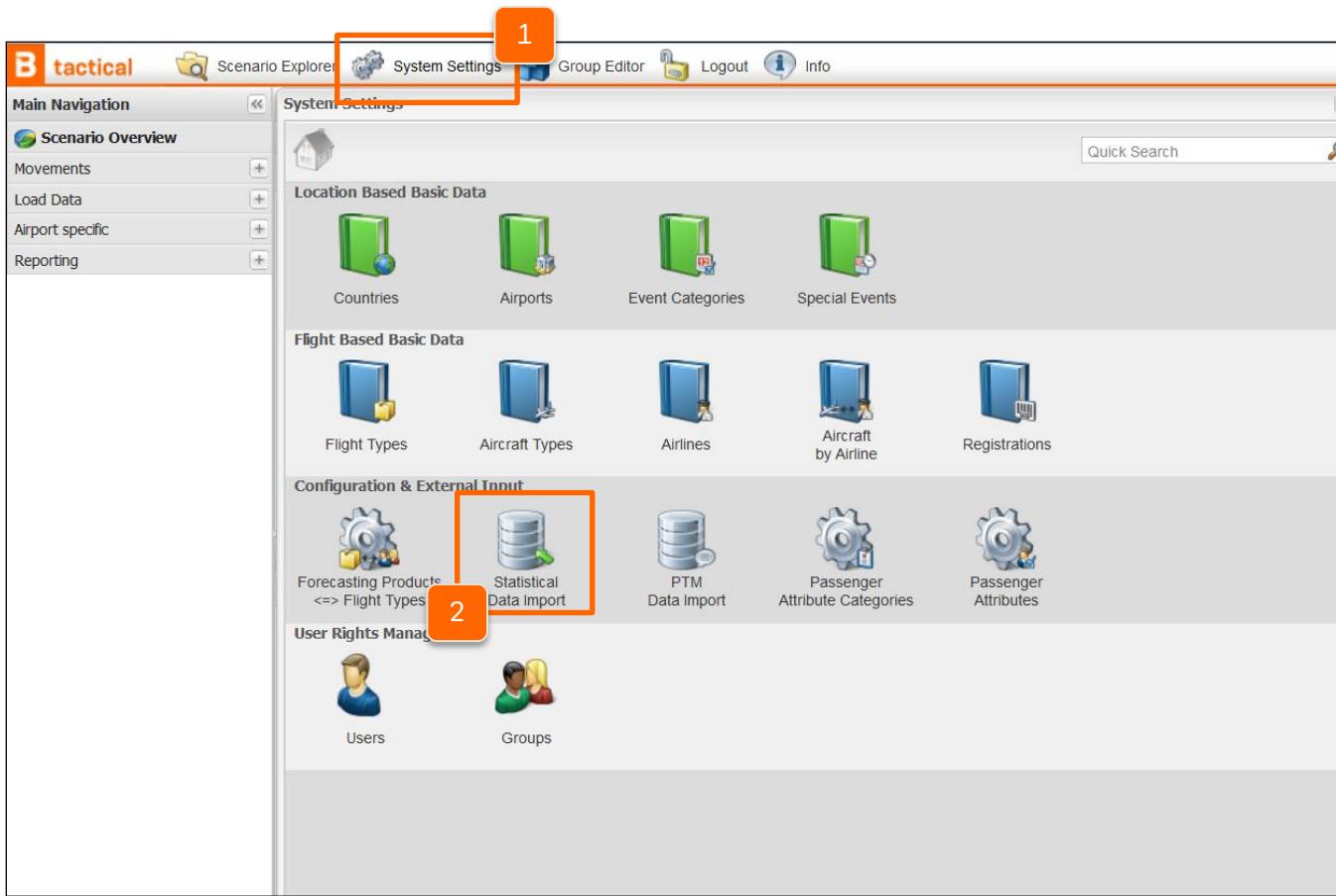


# Basic Setup

## Automated import

### Functionality

Used to upload your own statistical data for the comparison period



### How to use it

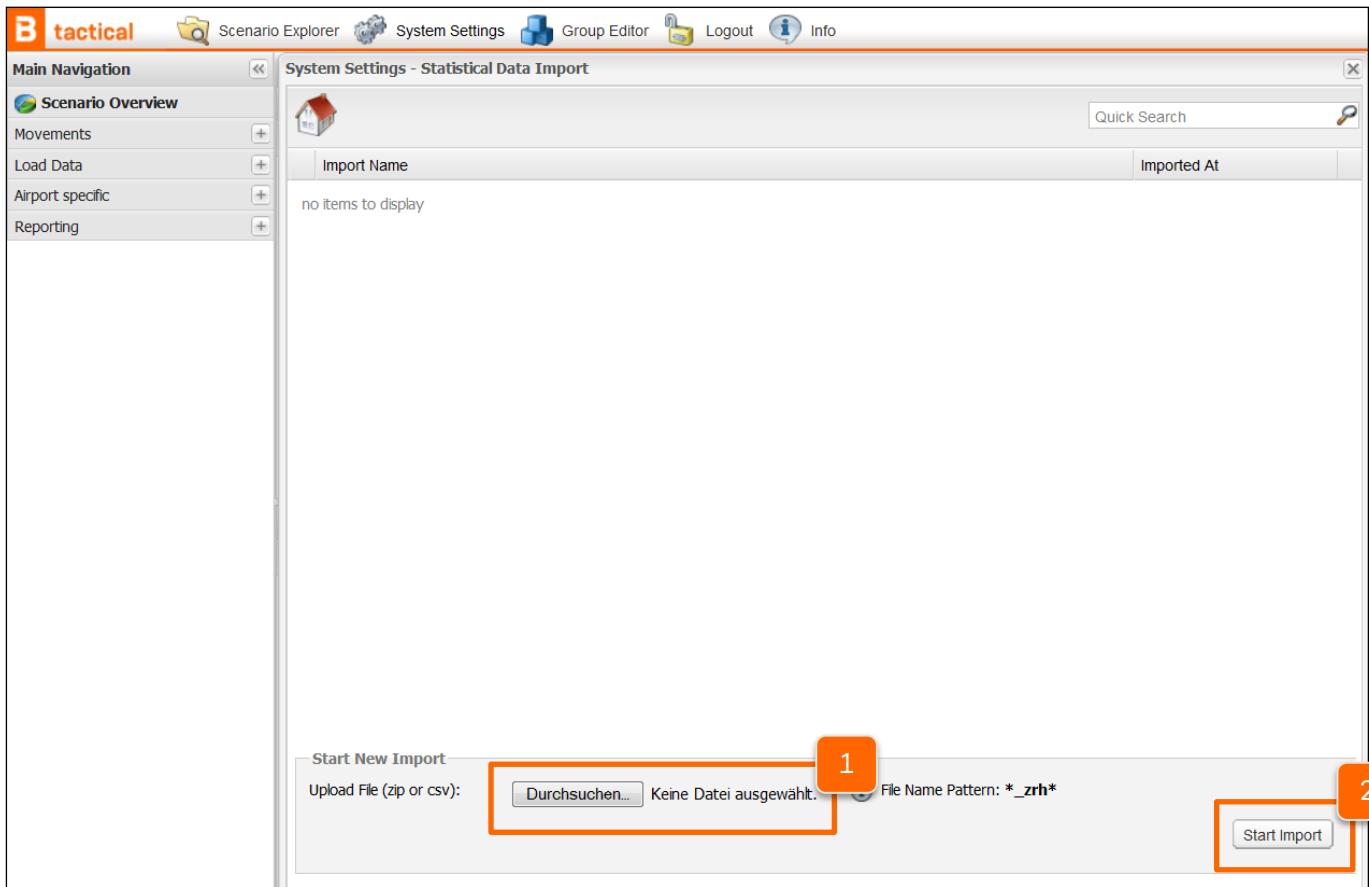
- 1 Click on „System Settings“
- 2 Click on „Statistical Data Import“ to get to the next pop-up window

# Basic Setup

## Automated import

### Functionality

Used to upload your own statistical data for the comparison period



### How to use it

- 1 Import your statistical data in zip or csv format and with the file name pattern ending of \* \_XXX\*. XXX stands for the 3-letter code of your airport
- 2 Click on „Start Import“

# **BEONTRA**

## **B Tactical**

### 2. Basic Setup

#### Group Editor

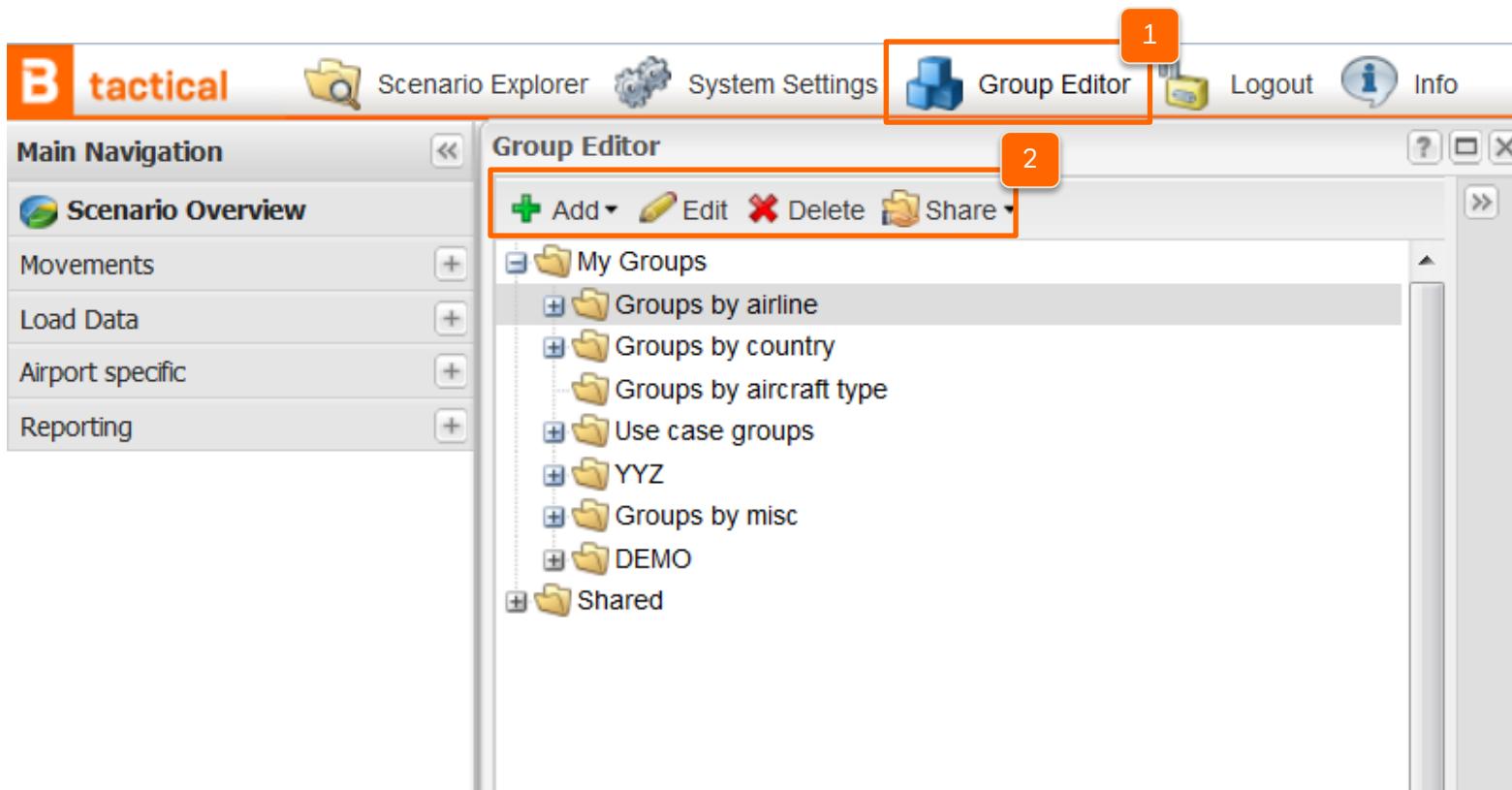


# Basic Setup

## Group Editor

### Functionality

Used to create certain groups an airport needs for filtering options



### How to use it

- 1 Click on „Group Editor“
- 2 In the Group Editor you are able to add new groups as well as to delete, edit and share already existing groups. For more information about creating new folders, groups and adding conditions, please read the user guide for the Group Editor.

# **BEONTRA**

## **B Tactical**

### 3. Movements Import



# Movements

## Import – Step 1: Import Type

### Functionality

Used to upload flights schedules and / or statistical data for creating movements and flight schedules based on past data

The screenshot shows the 'B tactical' software interface. The main navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The 'Movements' section is selected in the main navigation. The current screen is titled 'Step 1: Import Type' under 'Import Movements'. It contains two main sections: 'Import Type' and 'Type:'. The 'Import Type' section has a 'Name:' input field. The 'Type:' section contains two columns of radio buttons:

Type:	File	System
<input type="radio"/> CSV	<input type="radio"/> Statistical Data	
<input type="radio"/> SAMS File	<input type="radio"/> Flight Coordination	
<input type="radio"/> Day File	Schedule	
<input type="radio"/> SIR	<input type="radio"/> Scenario	
<input type="radio"/> SIR+		
<input type="radio"/> SSIM		

At the bottom left of the screen is a 'Next Step' button, which is highlighted with a red box and labeled '3'. Below the main content area, there is a list of steps: Step 2: Import Settings, Step 3: Assign File Columns, Step 4: Filter Settings, Step 5: Flight Schedule Comparison, Step 6: Basic Data Status, and Step 7: Import Summary.

### How to use it

- 1 Step 1 out of 7 is to type a name for the file to be imported (e.g. Summer Schedule 2013)
- 2 Further choose the import type by clicking the desired selection box
- 3 Continue by clicking the button „Next Step“

# Movements

## Import – Step 2: Import Settings

### Functionality

Used to determine the Import Settings

**Step 2: Import Settings**

**Import Settings**

Import File:  1

Separator:  2

Schedule Type:  3

UTC -> Local Time:  4

5

### How to use it

- 1 Step 2 out of 7 is to select the file by clicking on Browse
- 2 Select the Separator type in the drop-down menu that separates one data column from another in your uploaded file
- 3 Select the Schedule Type your file consists of by using the drop-down menu. There are 2 kinds of schedules
  - a) periodical flight events
  - b) single flight events
- 4 Switch the UTC (Coordinated Universal Time) to local time by ticking the box
- 5 To continue click Next Step and if there is an earlier mistake, return gradually by clicking Previous Step.

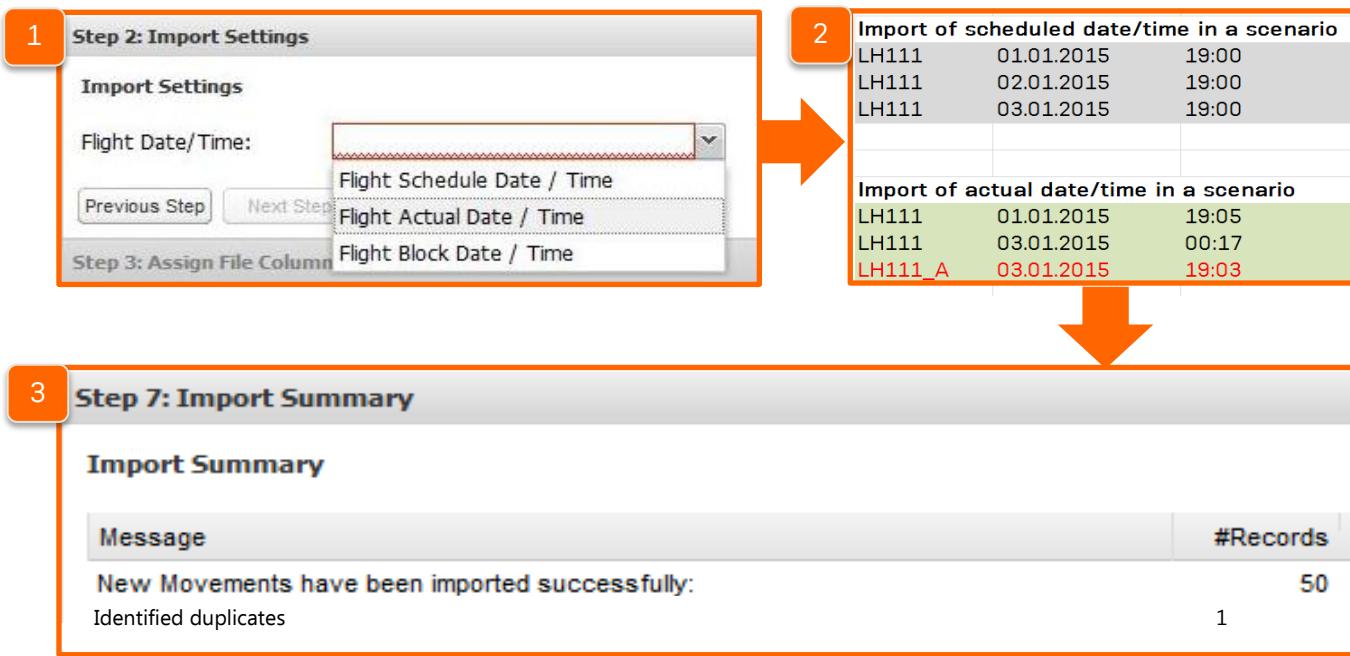


## Movements

### Import – Step 2: Import Settings – Handling of different date/time settings

#### Functionality

Based on the chosen date/time in step 2 of the statistical data import wizard, the system will run a second check. There, duplicates, which will be identified, will get a suffix.



#### How to use it

- 1 Choose which date/time should be used (Scheduled / Actual / Block)
- 2 e.g. Actual date/time was chosen to import in scenario, then the system will identify the duplicates and add a suffix. So it will be ensured that just unique flight events will be imported
- 3 After the successful import, the user gets an additional message how many duplicated flights are identified

The wizard only shows the number of duplicates. In the views you have the possibility to filter for duplicates with the advanced filter. Then all duplicates will be shown in a list.



# Movements

## Import – Step 3: Assign Filter Columns

### Functionality

Used to tell the system the sequence of columns in your import file

**Step 3: Assign File Columns**

**Assign File Columns**

Start of Period:	Start of Period
End of Period:	End of Period
Days of Operation:	Day of operation
A/D:	A/D
Flight Number:	Flight No.
Carrier Code:	Airline
Destination Code:	Destination
Via:	Via
Scheduled Time:	Time
Flight Type Code:	Flight Type
Aircraft Type Code:	Type 3LC
Aircraft Seats:	Capacity
MTOW:	MTOW

**1**

Airline	D	A	D
<b>Flight No.</b>	AF 2141	AF 2240	AF 2241
Airline	AF	AF	AF
<b>Destination</b>	ORY	ORY	ORY
Via			
<b>Time</b>	1905	1845	1950
Flight Type	J	J	J

### How to use it

- 1 Step 3 out of 7 is to assign the file columns to data base attributes. Open each field and select the correct name in the drop-down menu.

The names of columns in your import file are in bold letters. Non-bold letters are example cells from the relevant column.

Repeat for all mandatory fields.  
Mandatory fields are highlighted in red.  
If you wish, you can assign the optional fields too.



# Movements

## Import – Step 4: Filter Settings

### Functionality

Used to determine the Filter Settings

Step 3: Assign File Columns

Step 4: Filter Settings

**Filter Settings**

Start Date (Import Scenario Data)	Fri, 01.01.2016	<input type="button" value="8"/>	1
End Date (Import Scenario Data)	Sun, 03.01.2016	<input type="button" value="8"/>	
Start Date (Scenario):	Fri, 01.01.2016	<input type="button" value="8"/>	2
Calculated End Date (Scenario):	Sun, 03.01.2016	<input type="button" value="8"/>	3
Group Filter:	Choose a Group	<input type="button" value="8"/>	4
Delete all Flights in Scenario Period:	<input type="checkbox"/>		
Business Rules:	Choose a template	<input type="button" value="8"/>	
Update Check Columns:	<input type="button" value="Edit"/>		5

Step 5: Flight Schedule Comparison

### How to use it

- 1 Step 4 out of 7 is to determine the filter settings. Decide which flights should be imported into which period of the project.
- 2 Optional you can choose a previously defined group for filtering options.
- 3 If you have flights for the selected target scenario period in your forecast you can decide to delete all of them
- 4 If you have the feature business rules you can apply these (e.g. an automated conversion of aircraft types for specific airlines) for the current import procedure → see slide 18-21 for details
- 5 You can configure on which data columns the Flight Schedule Comparison in step 5 should be based on → see slide 22 for details



# Movements

## Import – Step4: Filter Settings – Business Rules – Creating a Template

### Functionality

The Business Rules are used to define templates which represent rules. This can e.g. be the replacement of a certain aircraft type by another one for a specific airline.

The screenshot shows the BEONTRA B Tactical software interface. The main navigation menu includes 'Main Navigation' (Scenario Overview, Movements, Generate, Import Movements, Analyze, Check), 'Import Movements' (Scenario Update, Flight Event Generator), 'Import Settings' (Scenario: My Docu), 'Filter Settings' (Start Date, End Date, Scenario Dates), and 'User Rights Management' (Users, Groups). The 'Import Movements' section is active. A red box labeled '1' highlights the 'System Settings' button in the top navigation bar. A larger red box labeled '2' highlights the 'General Template' icon in the 'Configuration' section of the 'System Settings' dialog box. The 'System Settings' dialog box contains sections for Location Based Basic Data (Countries, Airports, Event Categories, Special Events), Flight Based Basic Data (Flight Types, Aircraft Types, Airlines, Aircraft by Airline, Registrations), Configuration (Forecasting Products <=> Flight Types, Passenger Attribute Categories, Passenger Attributes, General Template), External Input (BT Statistical Data Import, PTM Data Import, BS Statistical Data Import, BS Secondary Data Import), and User Rights Management (Users, Groups).

### How to use it

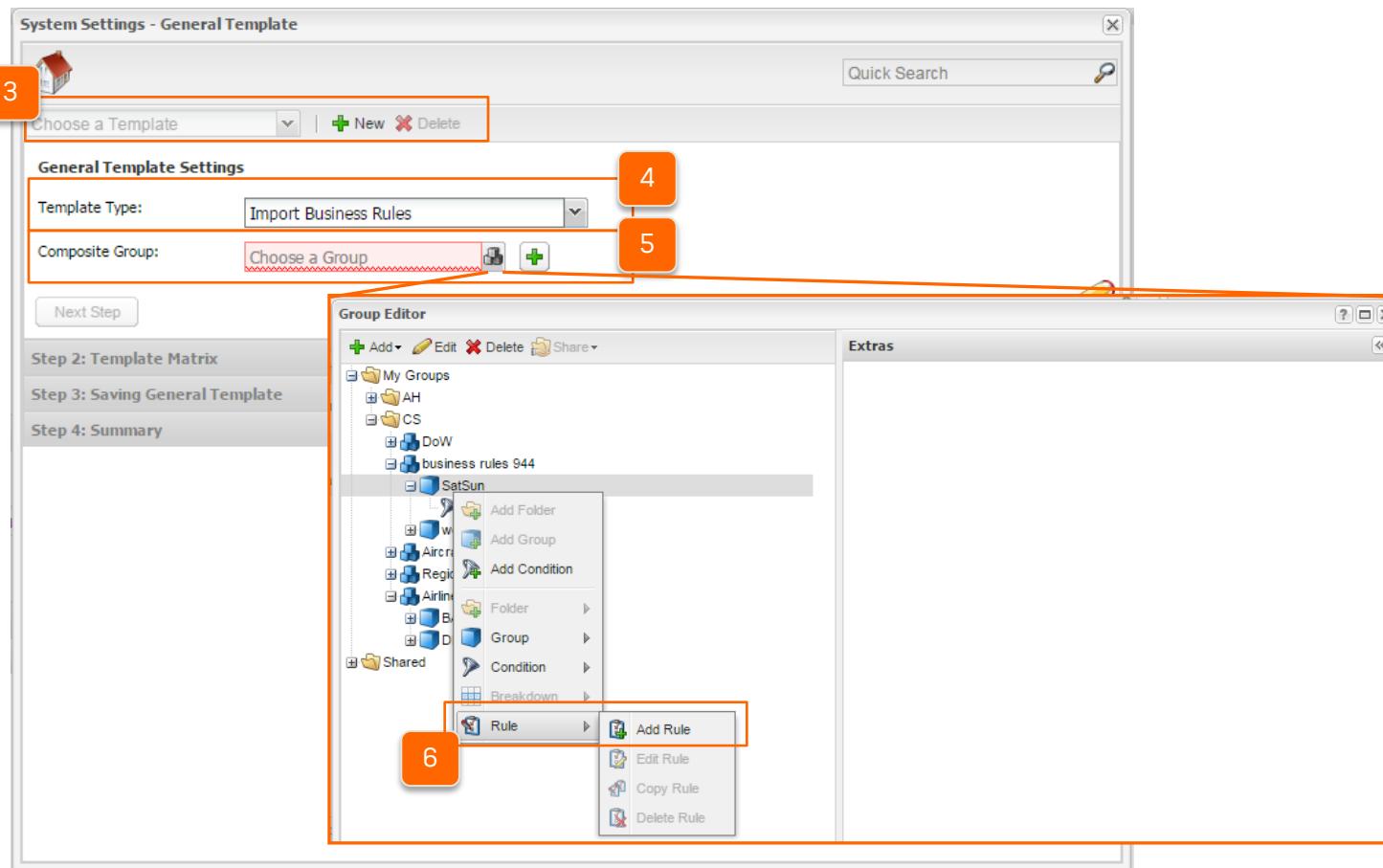
- 1 Go to the System Settings &
- 2 Click on the General Template button in the Configuration row → next slide

## Movements

### Import – Step4: Filter Settings – Business Rules – Creating a Template

#### Functionality

The Business Rules are used to define templates which represent rules. This can e.g. be the replacement of a certain aircraft type by another one for a specific airline.



#### How to use it

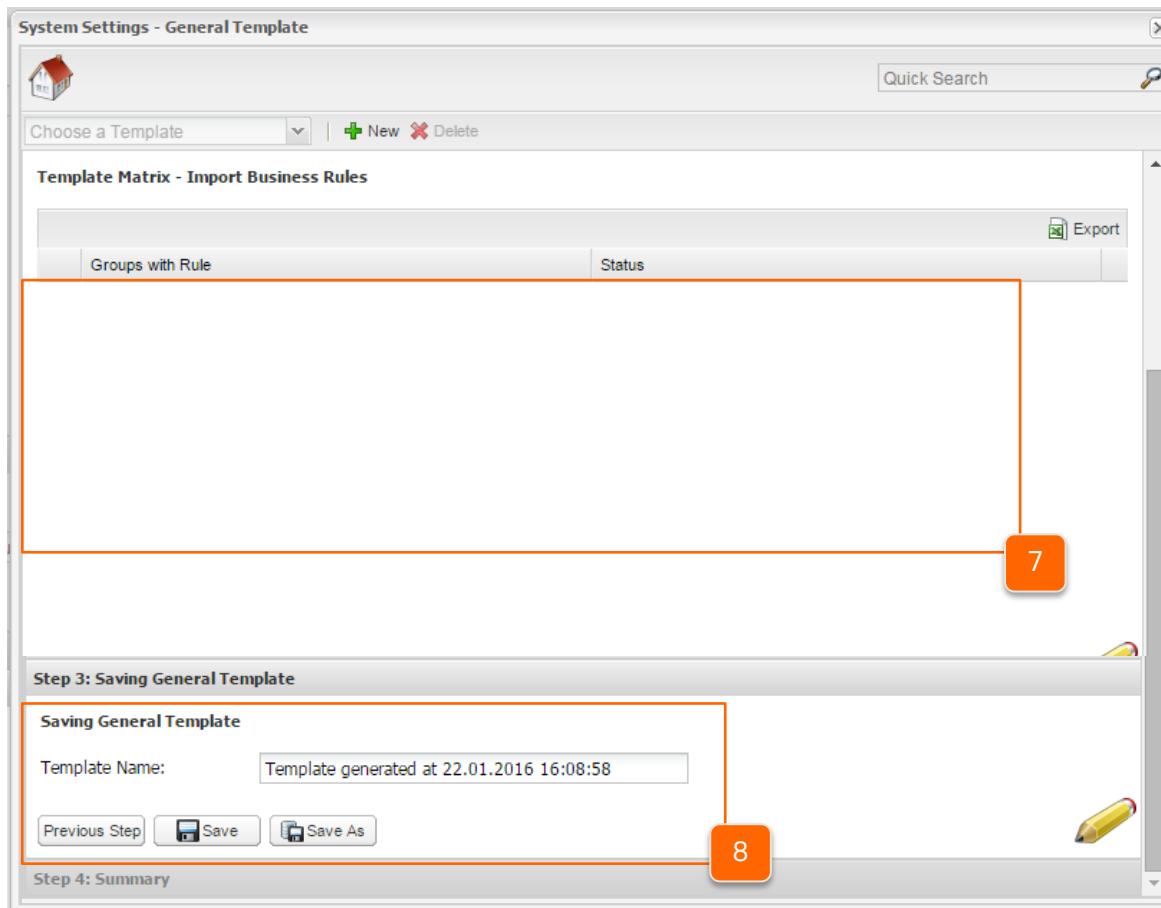
- 3 Choose an existing template to edit or delete it or create a new one
- 4 Select the Template Type Import Business Rules
- 5 Choose a Composite Group for which you have defined a rule just like adding a normal group condition – see & go to the next step
- 6

## Movements

### Import – Step4: Filter Settings – Business Rules – Creating a Template

#### Functionality

The Business Rules are used to define templates which represent rules. This can e.g. be the replacement of a certain aircraft type by another one for a specific airline.



#### How to use it

- 7 For each sub group of the selected composite group you can select whether to activate the rule of this group for this import procedure or not  
& go to the next step
- 8 Save a changed template or save a newly created one by given it a name

## Movements

### Import – Step4: Filter Settings – Business Rules – Select a Template

#### Functionality

The Business Rules are used to define templates which represent rules. This can e.g. be the replacement of a certain aircraft type by another one for a specific airline.

Step 3: Assign File Columns

Step 4: Filter Settings

**Filter Settings**

Start Date (Import Scenario Data)	<input type="text" value="Fri, 01.01.2016"/> <input type="button" value="..."/>
End Date (Import Scenario Data)	<input type="text" value="Sun, 03.01.2016"/> <input type="button" value="..."/>
Start Date (Scenario):	<input type="text" value="Fri, 01.01.2016"/> <input type="button" value="..."/>
Calculated End Date (Scenario):	Sun, 03.01.2016
Group Filter:	<input type="button" value="Choose a Group"/> <input type="button" value="..."/>
Delete all Flights in Scenario Period:	<input type="checkbox"/>
Business Rules:	<input type="button" value="..."/> <div style="border: 1px solid #ccc; padding: 5px; width: 150px;">           No template            BR for documentation         </div>
Update Check Columns:	

**Step 5: Flight Schedule Comparison**

#### How to use it

- 9 To apply business rules just select one of the formerly created templates and continue the import



# Movements

## Import – Step4: Filter Settings – Edit Update Check Columns

### Functionality

The flight schedule comparison, in Step 5 of a movement import, checks specific columns of the updated and imported schedule. It is now possible to select and deselect certain columns for every import procedure during Step 4 – Filter Settings.

The screenshot shows the BEONTRA software interface for Movement Import. The main navigation on the left includes 'Scenario Overview', 'Movements' (selected), 'Generate' (with 'Import Movements' highlighted), 'Analyze' (with 'Runway Constraints View', 'Linked Flights', and 'Cancellation Rate'), and 'Check' (with 'Business Rules'). The main window displays 'Step 2: Import Settings' and 'Step 3: Assign File Columns'. In 'Step 4: Filter Settings', there are fields for 'Start Date (Statistical Data)', 'End Date (Statistical Data)', 'Start Date (Scenario)', 'Calculated End Date (Scenario)', 'Group Filter', 'Delete all Flights in Scenario Period', 'Business Rules', and 'Update Check Columns'. A red box labeled '1' highlights the 'Import Movements' button in the navigation. A red box labeled '2' highlights the 'Edit' button in the 'Update Check Columns' section. An orange arrow points from the 'Edit' button to a modal dialog titled 'Edit Update Check Columns' which lists columns: Column Name, AC, AIRL, DEST, Flight Type, MTOW, and Seats. Buttons for 'Save', 'Save & Close', and 'Cancel' are at the bottom of the dialog. Below the dialog is 'Step 5: Flight Schedule Comparison' with a table comparing 'Import Schedule' and 'Scenario Schedule' for various flight types. At the bottom are buttons for 'Previous Step', 'Start Import', and 'Step 6: Basic Data Status'.

### How to use it

- 1 Go to Movements in the Main Navigation of BT and select Import Movements in the section Generate
- 2 During the 4<sup>th</sup> step click on Edit in the Update Check Columns row & select or deselect on which columns the flight schedule comparison in step 5 should be based on

# Movements

## Import – Step 5: Flight Schedule Comparison

### Functionality

The Flight Schedule Comparison is a preview to compare the importable file (Import Schedule) to the predicted import (Scenario Schedule).

Step 5: Flight Schedule Comparison			
Flight Schedule Comparison			
Import Period 2013-01-01 - 2013-12-31			
	Import Schedule	Scenario Schedule	Difference
Flights within Import Period	489.602	124.388	365.214
New Flights	489.602		489.602
Cancelled Flights		124.388	124.388
Changed Flights	0	0	
Unchanged Flights	489.602	124.388	

### How to use it

- 1 Step 5 out of 7 shows an overview about flights of the import schedule and the scenario schedule.
- 2 High level selection which flights should be considered or not
- 3 Click on „Comparison details“ to be able to make the selection of 2 on a more detailed level - more information see next slide

<input checked="" type="radio"/> Import Flights	<input type="radio"/> No Import of new Flights
<input checked="" type="radio"/> Cancel Flights in Scenario	<input type="radio"/> Leave cancelled Flights in Scenario
<input checked="" type="radio"/> Update changed Flights in Scenario	<input type="radio"/> Ignore updates in Import



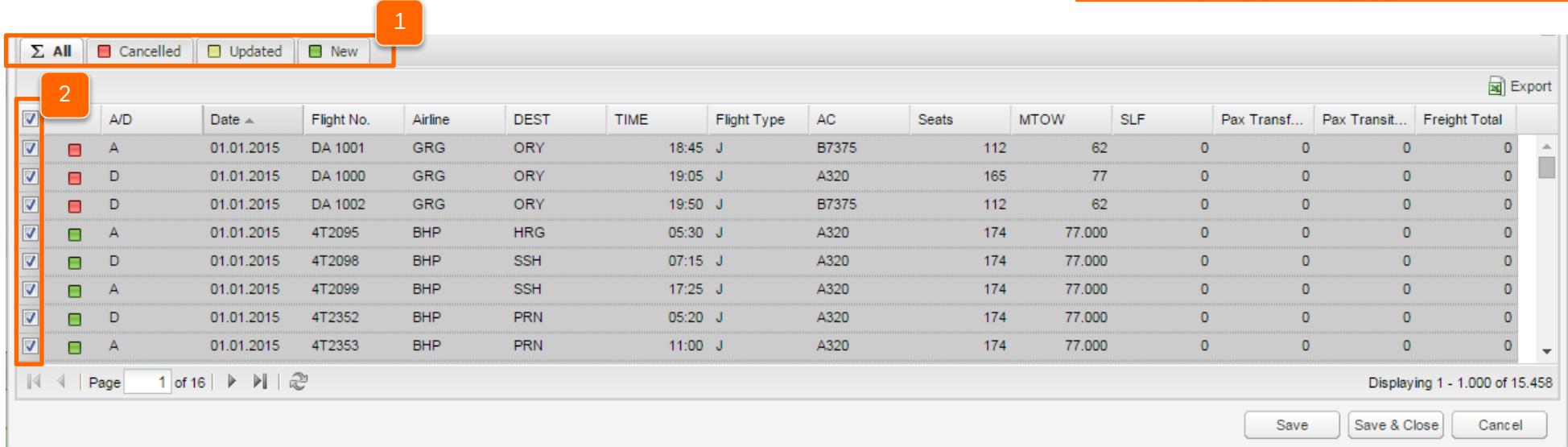
# Movements

## Import – Comparison Details

### Functionality

Used to compare original to imported data in more detail.  
 Lower part gives detailed information on flight event level.

ID	MOV			Scenarios	SEATS	
	Cancelled	Updated	New		Comparison	Scenarios
O	88	0	7.669	88	7.669	7.338 1.029.042
A	26	0	7.675	26	7.675	2.128 1.030.659
	114	0	15.344	114	15.344	9.495 2.059.701



The screenshot shows a software interface for flight schedule comparison. At the top, there are three tabs: 'All' (selected), 'Cancelled', 'Updated', and 'New'. Below the tabs is a large grid of flight data with the following columns: A/D, Date, Flight No., Airline, DEST, TIME, Flight Type, AC, Seats, MTOW, SLF, Pax Transf., Pax Transit., and Freight Total. Each row in the grid has a checkbox in the first column. The grid contains 10 rows of flight data. At the bottom of the grid, there are navigation buttons for 'Page' (1 of 16) and a status message 'Displaying 1 - 1.000 of 15.458'. Below the grid are three buttons: 'Save', 'Save & Close', and 'Cancel'.

### How to use it

- To see and edit Cancelled, Updated and New flights, click on the corresponding tab.
- To delete a flight, untick its box and click on Save (or Save & Close).



# Movements

## Import – Comparison Details

### Functionality

Used to compare original to imported data in more detail.

Upper part displays accumulated data according to user defined structure.

	AO	Date	Flight No.	Origin	Dest	Time	Flight Type	AC	Seats	MTOW	SLT	Pax Transf.	Pax Transf.	Freight Transf.	Export
✓	A	01.01.2016	DA1001	GRO	ORY	18:45	B737S	A320	112	62	0	0	0	0	
✓	D	01.01.2016	DA1000	GRO	ORY	19:05	J	A320	105	77	0	0	0	0	
✓	D	01.01.2016	DA1002	GRO	ORY	19:50	J	A320	112	62	0	0	0	0	
✓	A	01.01.2016	472095	BHP	HRO	05:30	J	A320	174	77.000	0	0	0	0	
✓	D	01.01.2016	472098	BHP	SDH	07:15	J	A320	174	77.000	0	0	0	0	
✓	D	01.01.2016	472099	BHP	SDH	07:25	J	A320	174	77.000	0	0	0	0	
✓	D	01.01.2016	472052	BHP	PRM	09:25	J	A320	174	77.000	0	0	0	0	
✓	A	01.01.2016	472053	BHP	PRM	11:00	J	A320	174	77.000	0	0	0	0	

The screenshot shows the 'Flight Schedule Comparison Details' window with two main tabs: 'MOV' and 'SEATS'. The 'MOV' tab is selected, displaying flight data for 'D' and 'A' categories. The 'SEATS' tab is also visible. At the top left, there's a dropdown menu with 'Rome' selected and a help icon. Below the tabs, there are filters for 'A/D', 'Cancelled' (red), 'Updated' (yellow), and 'New' (green). The main table has columns for Scenario, Comparison, and another set of Scenario, Comparison. The bottom of the window shows page navigation and a message 'Displaying 1 - 2 of 2'.

MOV				SEATS			
Scenario	Comparison	Scenario	Comparison				
88	7.669	88	7.669				
26	7.675	26	7.675				

### How to use it

- 1 Select a template to display the desired data and breakdown structure.
- 2 Cancelled, Updated and New flights can be analyzed at a glance + select e.g. "D" to extend breakdown structure.



# Movements

## Import – Step 6: Basic Data Status

### Functionality

Used to check Basic Data and New Records to be inserted

**Step 6: Basic Data Status**

**Basic Data Status**

You are about to insert the following new recordsets into the basic data section:

Basic Data	#New Records	Examples
Flight Carrier	12	SP, AIS, AST

**Import Summary | Movements: 489.602 | Capacity: 71.872.067**

1

2

### How to use it

1 In Step 6 out of 7 the system compares the import data to the basic data, to check whether new data has to be imported (e.g. Airlines, Flight carriers or Airports). The amount of new data will be shown and automatically created as dummy values in the basic data storage. You can later edit these values.

2 Click on „Start Import“ to continue the process



# Movements

## Import – Step 7: Import Summary

### Functionality

Get a short summary of the imported data

**Step 7: Import Summary**

**Import Summary**

Message	#Records
New movements have been imported successfully:	489.602
New basic data records in category Flight Carrier:	12

**Buttons:**

- Restart Wizard
- Go To Calendar View

**Bottom Status:** Import Summary | Movements: 489.602 | Capacity: 71.872.067

### How to use it

1 In Step 7 out of 7 the system checks how many movements have been imported successfully and how many new basic records and in which category have been inserted. Whenever a duplicate flight number exists for a given movement the system will not import this movement.

2 To continue click the button „Go To Calendar View“.



# **BEONTRA**

## **B Tactical**

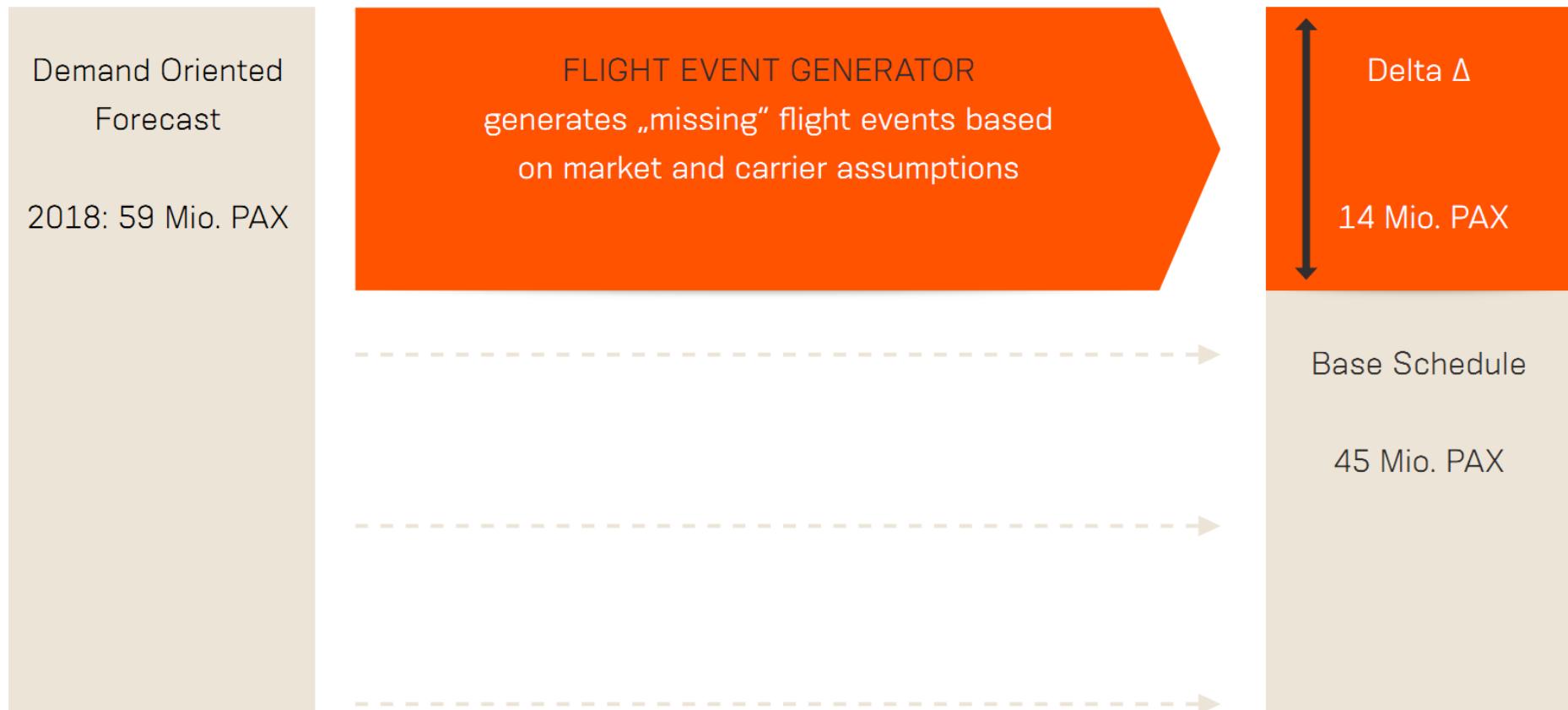
### 4. Movements Add-On Feature

Flight Event Generator (FEG)



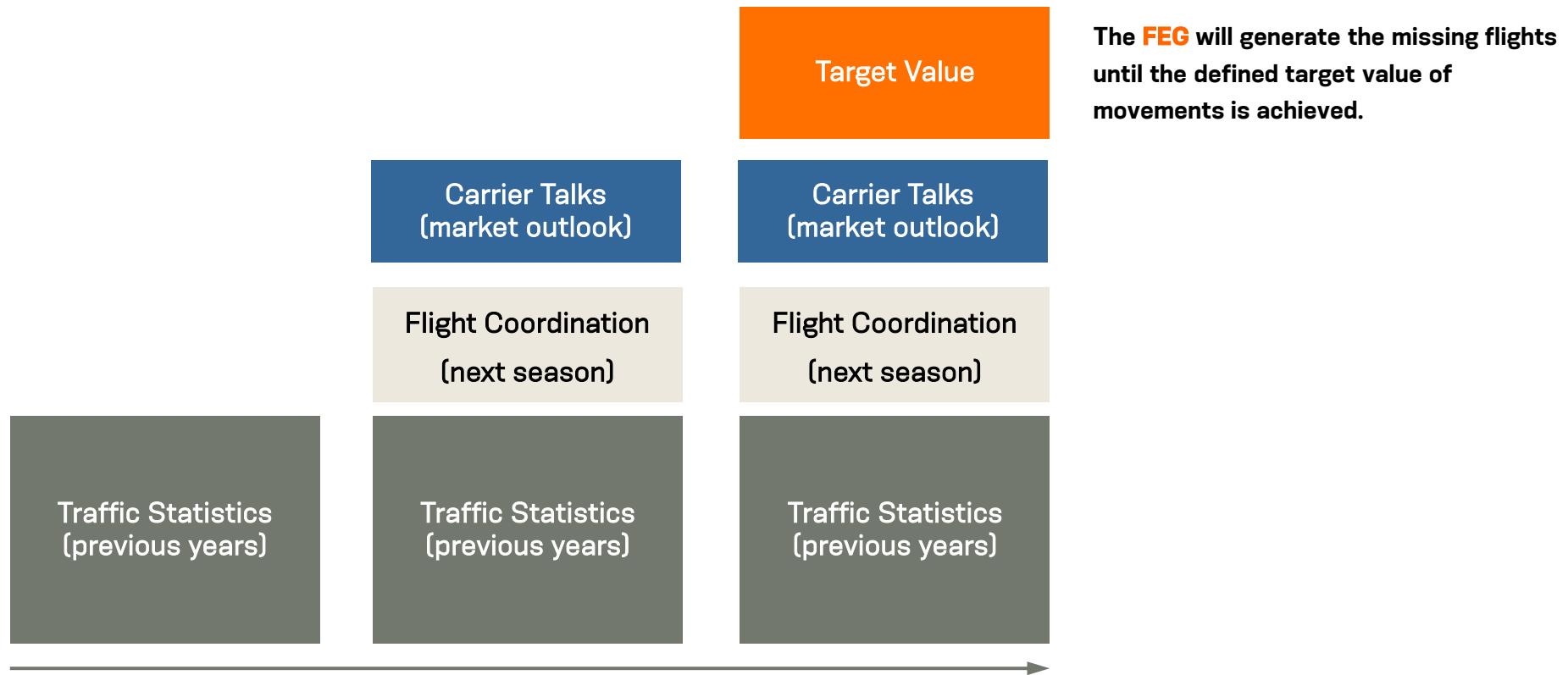
## Movements - Flight Event Generator

To fill the gap between the known base schedule and demand oriented forecasts the flight event generator (FEG) will generate the missing flights dependent on several assumptions you can make



## Movements - Flight Event Generator

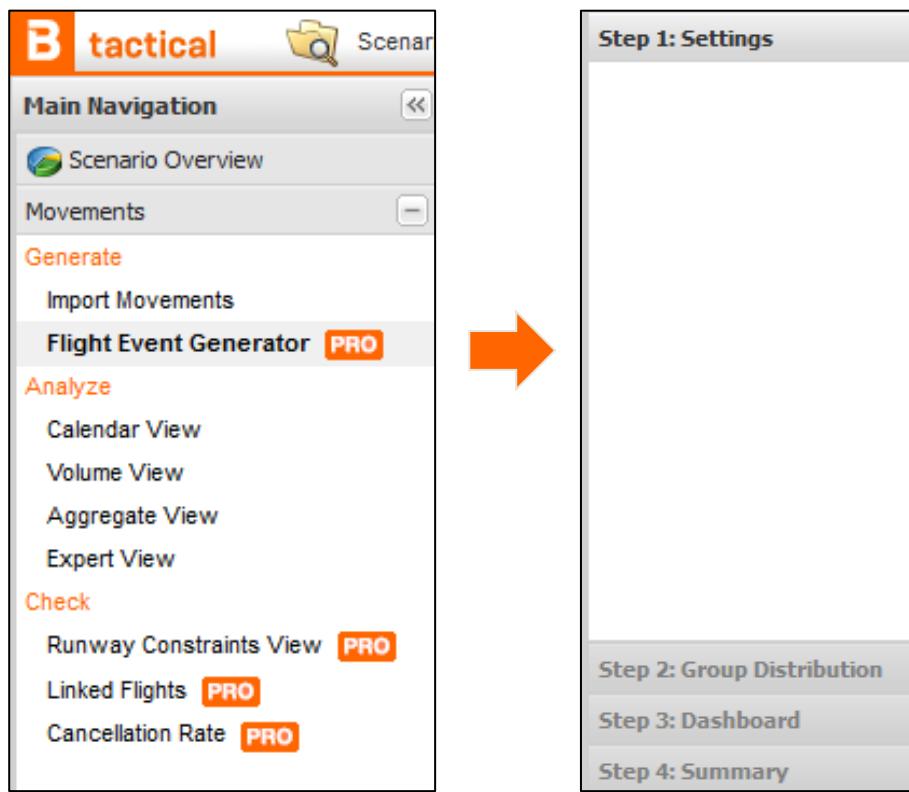
Here you can see the composition of movement data and where the value-creation of the FEG takes place



# Movements - Flight Event Generator

## Functionality

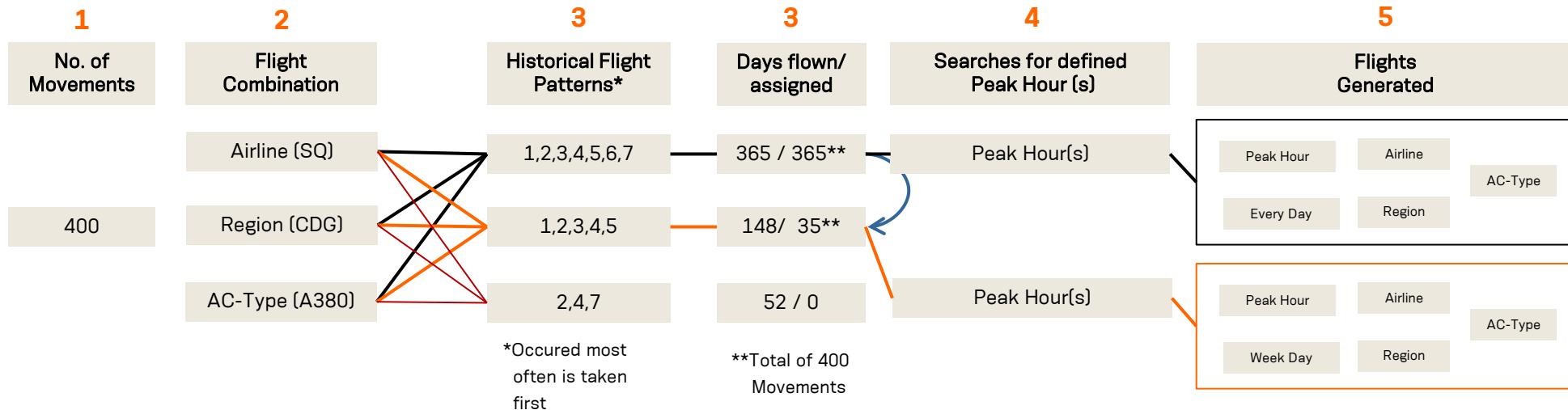
The general purpose of the FEG is that it can be used to create flights for future flight schedule scenarios



## How to use it

- You can find the FEG within the movement section of the B Tactical Module.
- The process consists out of four main steps.
  - Step 1: Settings
  - Step 2: Group Distribution
  - Step 3: Dashboard
  - Step 4: Summary
- All steps will be explained later on
- Prerequisites for using the Flight Event Generator (FEG) is a project containing a schedule or imported movements and special groups created with the group editor.

# Movements - Flight Event Generator – How it Works



1. The numbers of movements which you would like to generate are taken.
2. An airline, a corresponding region and an aircraft type are combined to build possible flight combinations (here: SQ, CDG and an A380)
3. After that the FEG checks possible flight patterns from the past for this specific flight combination. In the system these flight patterns are called day of week combinations [here: 1,2,3,4,5,6,7 and 1,2,3,4,5 are used]. In total 5040 combinations of weekdays exist. The FEG evaluates the most flown days for this combination and assigns flights accordingly. In our example 365 flights will be generated for the first flight and weekday combination. However 35 flights are still available for the generation, so the FEG will switch to the second most occurred weekday combination [here: 1,2,3,4,5] and generates the missing 35 flights for this combination.
4. The last step then will be to identify for the entire period and each flight combination the arrival peak hours of that period, so that the flights can be generated finally with a flight time. The peak hour patterns are, as well, analyzed from the scenario data loaded into the project before.
5. In the end the generated flights consist out of an airline, a destination, an ac-type, a flight day and time.

# **BEONTRA**

## **B Tactical**

Flight Event Generator (FEG)

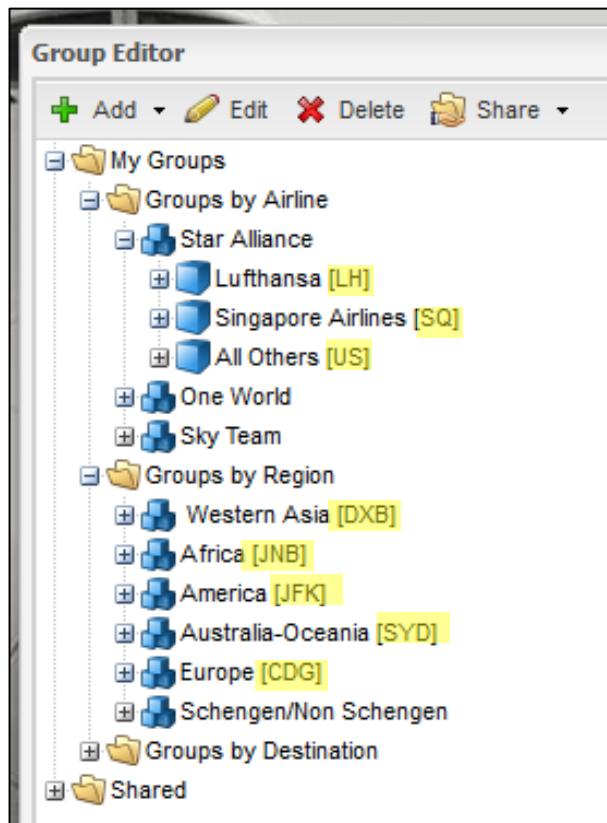
- How to Use It



# Movements – Flight Event Generator - Group Editor

## Functionality

Before you can start with the generation of flights you need to define special groups in the group editor



This is a 'Group Selection' dialog box. It contains three fields: 'Carrier Group: \*' with a 'Choose a Group' button, 'Region Group: \*' with a 'Choose a Group' button, and 'Home Carrier Group: \*' with a 'Choose a Group' button.

For this field in the FEG the groups need to be named accordingly. The function and purpose of these fields will be discussed later on

*A number of 3 to 5 group elements is a good amount to be used for the FEG so that the results are significant.*

## How to use it

- Define a composite group called „groups by airline“
- Split the group according to carriers like alliances and put an exemplary letter code of a corresponding airline in square brackets at the end of each group name like [LH]. This code can be 2 or 3 letters long, and will be used as airline code for generated flights
- Do the same for a composite group called „groups by region/country“ where you split the group according to continents/countries or regions. An example could be [SYD]. The given code will be used as destination for generated flights
- Click on „Apply“ on the bottom of the page to confirm the chosen group.



# Movements - Flight Event Generator

## Functionality

Here the data input fields for the settings of the FEG are shown

The screenshot shows the 'Step 1: Settings' page of the FEG. At the top, there are navigation links: 'File Explorer', 'System Settings', 'Group Editor', 'Logout', and 'Info'. Below that, the scenario is set to 'Forecast 2020' with a time frame from '01.01.2020 - 31.12.2020'. The main area is titled 'Step 1: Settings'.

**Settings**

Name of Generation: \* Schedule generated at 02.12.2013 15:25:33

**Flight Schedule Season**

	Start Date	End Date
Target Forecast Period: *	01.01.2020	31.12.2020
Comparison Period: *	01.01.2011	31.12.2011

**Movement Details**

Current # MOV:	510,934
Additional # MOV:	0
Target # MOV: *	510934

**Group Selection**

Carrier Group: *	Choose a Group
Region Group: *	Choose a Group
Home Carrier Group:	Choose a Group

**Navigation**

Next Step

Step 2: Group Distribution  
Step 3: Dashboard  
Step 4: Summary

The three main sections are highlighted with orange boxes and numbered 1, 2, and 3. Section 1 covers the 'Flight Schedule Season' inputs. Section 2 covers the 'Movement Details' summary. Section 3 covers the 'Group Selection' dropdowns.

## How to use it

- For each rectangle you will find a detailed explanation on the following slides.
1. The left rectangle shows the time period when the FEG would generate flights (Flight Schedule Season).
  2. The rectangle in the middle shows the different numbers of movements (Movement Details).
  3. The right rectangle defines for which group combinations flights will be generated. A group combination consists out of airlines and regions (Group Selection).



# Flight Event Generator – Step 1

## Functionality

Here you can define the forecast and comparison period for the FEG

### Settings

Name of Generation: \*

Additional Flights 2013

### Flight Schedule Season

Target Forecast Period: \*

Start Date	End Date
01.01.2013	31.12.2013

Comparison Period: \*

Start Date	End Date
01.01.2011	31.12.2011

\* Mandatory Fields

Next Step

## How to use it

- First, you have to define a name for the group of generated flights , so that you can identifying them in the schedule afterwards (e.g. in the Calendar View).
- The Target Forecast Period is the period in which the FEG will create the flights.
- The Comparison Period is the period of statistical data to be used for analyzing the shares and to copy them for the new flights.



# Flight Event Generator – Step 1

## Functionality

Here you can define the number of movements that should be generated

1

Movement Details

Current # MOV:	250.918
Additional # MOV:	<input type="text" value="0"/>
Target # MOV: *	<input type="text" value="250918"/>

2

Current # MOV:	510.934
Additional # MOV:	<input type="text" value="1000"/>
Target # MOV: *	<input type="text" value="511934"/>

## How to use it

1. You do not have to enter a number here. You could also insert numbers in the second step.
2. Either you define the number of additional movements you would like to generate and the system calculates the target number of movements.

Or you define the target number of movements (current + target) you would like to have and the system calculates the number of additional movements in the middle row.



# Flight Event Generator – Step 1

## Functionality

With the group selection window you can decide for which airline and region combinations flights should be created

The image shows two windows side-by-side. On the left is the 'Group Editor' window, which has a tree view of group categories. The 'My Groups' category is expanded, showing 'Groups by Airline' (with 'Star Alliance', 'One World', and 'Sky Team' children), 'Groups by Region' (with 'Asia [DXB]', 'Africa [JNB]', 'America [JFK]', 'Australia-Oceania [SYD]', 'Europe [CDG]', and 'Schengen/Non Schengen' children), and 'Groups by Destination'. The 'One World' and 'Asia [DXB]' groups are highlighted with orange boxes. On the right is the 'Group Selection' window, which contains three dropdown menus labeled 'Carrier Group:', 'Region Group:', and 'Home Carrier Group:', each with a 'Choose a Group' button. A large orange number '3' is positioned above the Group Selection window.

## How to use it

- For this section you will need the groups, which have been previously defined by you in the group editor (groups by airline and groups by region).
- You have to click on the grey boxes to select the carrier group first and then the region group (be aware: your groups might have other names) for the FEG calculation.
- *For example:*  
If you want to generate flights for the One World carrier you have to choose here the composite group „One World“ and press apply. Further, if you want your One World flights only to be generated in Asia you have to choose the [DXB] composite group



# Flight Event Generator – Step 1

## Functionality

3

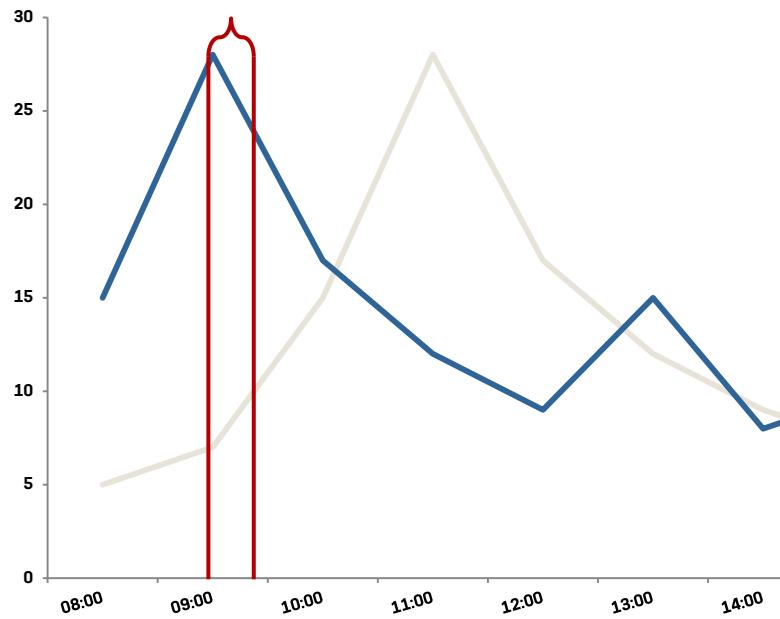
Group Selection

Carrier Group:	<input type="button" value="Choose a Group"/>
Region Group:	<input type="button" value="Choose a Group"/>
Home Carrier Group:	<input type="button" value="Choose a Group"/>

With the home carrier group you can adjust the FEG to generate departure flights regarding their usual departure patterns and not in a prefixed time frame as normally done.

### No Home Carrier Group is chosen

(A) 09:00 + (Turnaround Time) 30 min = (D)09:30 to (D) 09:55



- For airports with no home carrier, flights will be generated according to the arrival peak hour which means that the FEG will search for previously defined arrival peak hours and generate the arrival flights. After that the corresponding turnaround time will be added on top to generate a departure flight.
- For arrival and departure hours there is always a random component regarding the minutes. For example, for peak hour 9 as arrival time, the minute can be anything between 9:00 and 9:55 in 5 minute steps.
- The same applies to the departure time. So with 9:00 as arrival plus 30 minutes turnaround time, the departure time can be anything between 9:30 and 9:55.
- Another Example:  
Arrival 9:35 + 30 minutes turnaround time ->  
Departure between 10:05 and 10:55
- (zwei Zufallskomponenten)



# Flight Event Generator – Step 1

## Functionality

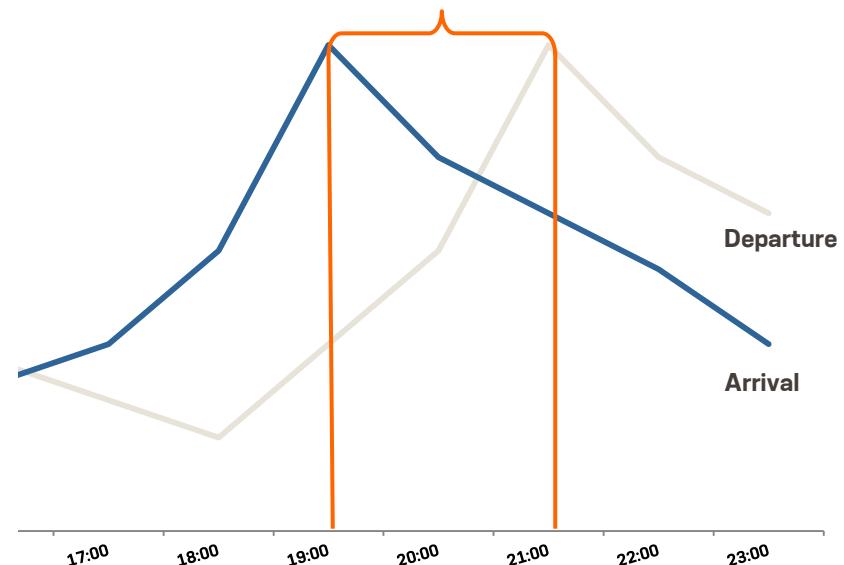
3

With the home carrier group you can adjust the FEG to generate departure flights regarding their usual departure patterns and not in a prefixed time frame as normally done.

- With the selection of the home carrier group arrivals and departures will be generated independent from each other as real home carrier do not stick to the turnaround times at their hub airport.
- The departure will be generated according to the departure peak hour of the hub which might be BEFORE or AFTER the arrival flight. Arrival and departure flights are not logically linked for home carriers.
- (Keine Kürzel)

## Home Carrier Group is chosen

Gap is longer than the usual turnaround time of 60-90 min



## Home Carrier Group – Special Case Home Carrier and Curfew\*

3

**Group Selection**

Carrier Group: \*

Region Group: \*

Home Carrier Group:

**Dashboard**

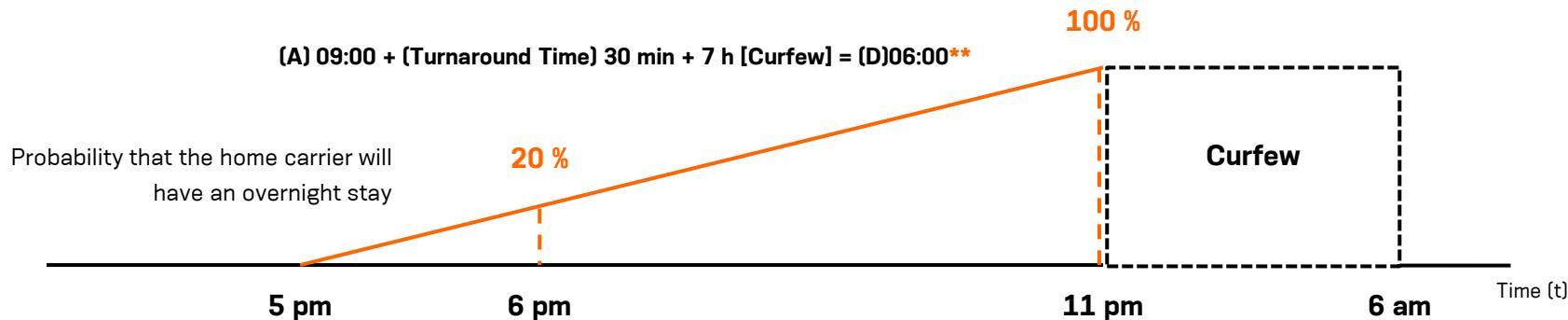
Preferred Settings Templates

Curfew:

FEG Settings:

\*If you would like to use this feature an additional configuration needs to be triggered by BEONTRA

- There is a special case if you have a home carrier and you would like to select a curfew.
- In case both options are selected the FEG will calculate the probability that the home carrier might not depart again at a certain time before the curfew. You can see in the graph below, the closer the departure would be to the curfew start time, the higher the probability would be that the home carrier will presume an overnight stay. This means that the FEG will generate Arrival Time + Turnaround Time + **Curfew** = Departure Time. Normally departures would be generated, as mentioned before, Arrival Time + Turnaround Time = Departure Time.



\*\*However, as the FEG calculates only with full hours and the curfew ends at 06:00, flights will be generated at earliest at 07:00.

Therefore, your curfew template should be defined with a curfew end of 05:59. Then it will be assured that flights, for example, at 06:05 will be generated.



# Flight Event Generator – Step 2 – Group Distribution

## Functionality

Here the distribution of movements corresponding to the carrier, region and aircraft type can be specified in more detail

1

Step 2: Group Distribution							
Group Distribution							
Apply Shares							
Carrier Group	Target		Growth	Scenario		Comparison Period	
	MOV	Share		MOV	Share	MOV	Share
Others [AB]	4.257	85,13%	89,90%	4.735	85,13%	9.519	85,98%
AF+KL+Skyteam [AF]	378	7,57%	89,79%	421	7,57%	826	7,46%
LH+Star [LH]	365	7,30%	89,90%	406	7,30%	723	6,53%
BA+Oneworld [BA]	0	0,00%	0,00%	0	0,00%	3	0,03%
(4 Elements)	5.000	100,00%	89,90%	5.562	100,00%	11.071	100,00%

2

Step 2: Group Distribution							
Group Distribution							
Apply Shares							
Region Group	Target		Growth	Scenario		Comparison Period	
	MOV	Share		MOV	Share	MOV	Share
Rest-Europe [FRA]	1.485	34,89%	89,89%	1.652	34,89%	4.075	42,81%
Europe [CDG]	1.340	31,49%	89,87%	1.491	31,49%	3.222	33,85%
US & Canada Mexiko...	761	17,87%	89,95%	846	17,87%	1.462	15,36%
Others [SYD]	671	15,76%	89,95%	746	15,76%	760	7,98%
(4 Elements)	4.257	100,00%	89,90%	4.735	100,00%	9.519	100,00%

3

Step 2: Group Distribution							
Group Distribution							
Add    Apply Shares    Remove Shares    Copy Shares    Set Top-X Shares							
Aircraft Types	Target		Growth	Scenario		Comparison Period	
	MOV	Share		MOV	Share	MOV	Share
B773W	1.137	76,63%	89,89%	1.266	76,63%	1.647	40,42%
77X	173	11,62%	90,10%	192	11,62%	345	8,47%
B744F	112	7,57%	89,60%	125	7,57%	605	14,85%
75T	32	2,18%	88,89%	36	2,18%	162	3,98%
74N	21	1,39%	91,30%	23	1,39%	3	0,07%
GS4	2	0,12%	100,00%	2	0,12%	0	0,00%
B7772	1	0,06%	100,00%	1	0,06%	3	0,07%
GLF3	1	0,06%	100,00%	1	0,06%	3	0,07%
CNA2	1	0,06%	100,00%	1	0,06%	19	0,47%
CANRJ	1	0,06%	100,00%	1	0,06%	0	0,00%
DF9	1	0,06%	100,00%	1	0,06%	0	0,00%
ERJE	1	0,06%	100,00%	1	0,06%	0	0,00%
E135	1	0,06%	100,00%	1	0,06%	0	0,00%
CL30	1	0,06%	100,00%	1	0,06%	0	0,00%
A3302	0	0,00%	0,00%	0	0,00%	539	13,23%
A3403	0	0,00%	0,00%	0	0,00%	17	0,42%
A3406	0	0,00%	0,00%	0	0,00%	590	14,48%
DF7	0	0,00%	0,00%	0	0,00%	15	0,37%
(26 Aircraft types)	1.485	100,00%	89,89%	1.652	100,00%	4.075	100,00%

Previous Step Next Step

## How to use it

- The workflow of Step 2 starts in the upper left corner where the distribution of the carrier groups will be done
- After that the box below will be the next to look at as the regional distributions need to be defined there for the chosen carrier group from the box above
- Last but not least the box on the right side is used to specify the aircraft types for the chosen carrier and region group

So every box will be explained on the following slides



# Flight Event Generator – Step 2 - Carrier Group Distribution

## Functionality

In this section you can define how many movements per carrier group should be generated

Step 2: Group Distribution						
Group Distribution						
Carrier Group	Target			Scenario		Comparison Period
	MOV	Share ▾	Growth	MOV	Share	MOV
Others [AB]	4.257	85,13%	89,90%	4.735	85,13%	9.519
AF+KL+Skyteam [AF]	378	7,57%	89,79%	421	7,57%	826
LH+Star [LH]	365	7,30%	89,90%	406	7,30%	723
BA+Oneworld [BA]	0	0,00%	0,00%	0	0,00%	3
(4 Elements)	5.000	100,00%	89,90%	5.562	100,00%	11.071
						100,00%

### 1. Mov:

In this area the total amount of flights will be distributed to the carrier from the selected group. The exact split is estimated according to the shares from the scenario period. If you do not want to use this split you can change the numbers manually.

### 2. Share:

The shares are copied from the scenario period. If you want to specify the target numbers with the change of the shares, you need to be aware that all numbers have to cumulate to 100 % and that before the system will calculate you have to press the „Apply Shares“ button in the upper left corner.

### How to use it

- The first step would be to analyze the split of movements for the carrier in the carrier group
- All available carrier are displayed on the left side
- If you do not prefer the pre-adjusted split between the carrier you can adjust Movements in three different fields.

### 3. Growth:

The growth shares are calculated as the relation of the Target Movements to the Scenario Movements. If you change the growth percentages the system will adjust the movement numbers immediately without the need to press „Apply Shares“.



# Flight Event Generator – Step 2 - Carrier Group Distribution

## Functionality

In this section you can define how many movements per carrier group should be generated

Step 2: Group Distribution							
Group Distribution							
Target				Scenario		Comparison Period	
Carrier Group	MOV	Share ▾	Growth	MOV	Share	MOV	Share
Others [AB]	4.257	85,13%	89,90%	4.735	85,13%	9.519	85,98%
AF+KL+Skyteam [AF]	378	7,57%	89,79%	421	7,57%	826	7,46%
LH+Star [LH]	365	7,30%	89,90%	406	7,30%	723	6,53%
BA+Oneworld [BA]	0	0,00%	0,00%	0	0,00%	3	0,03%
(4 Elements)		5.000	100,00%	89,90%	5.562	100,00%	11.071 100,00%

## How to use it

- **Scenario Section**  
Here the actual movements and shares from the scenario are shown. The shares from this section are used as a reference for the target section.
- **Comparison Period**  
In this section the movements and the shares of the comparison period are shown.
- The total amount of each column can be seen in the last row at the bottom.
- (89 5000 von 5562)



# Flight Event Generator – Step 2 - Region Group Distribution

## Functionality

In this section you can define how many movements from a chosen carrier group should be generated in specific regions

**1**

Step 2: Group Distribution								
Group Distribution								
Carrier Group	Target		Scenario		Comparison Period			
	MOV	Share	Growth	MOV	Share	MOV	Share	
Others [AB]	4.257	85,13%	89,90%	4.735	85,13%	9.519	85,98%	
AF+KL+Skyteam [AF]	378	7,57%	89,79%	421	7,57%	826	7,46%	
LH+Star [LH]	2	7,30%	89,90%	406	7,30%	723	6,53%	
BA+Oneworld [BA]	0,00%	0,00%		0	0,00%	3	0,03%	
(4 Elements)	5.000	100,00%	89,90%	5.562	100,00%	11.071	100,00%	

**2**

Step 2: Group Distribution								
Group Distribution								
Region Group	Target		Scenario		Comparison Period			
	MOV	Share	Growth	MOV	Share	MOV	Share	
Rest-Europe [FRA]	1.485	34,89%	89,89%	1.652	34,89%	4.075	42,81%	
Europe [CDG]	1.340	31,49%	89,87%	1.491	31,49%	3.222	33,85%	
US & Canada Mexiko...	761	17,87%	89,95%	846	17,87%	1.462	15,36%	
Others [SYD]	671	15,76%	89,95%	746	15,76%	760	7,98%	
(4 Elements)	4.257	100,00%	89,90%	4.735	100,00%	9.519	100,00%	

## How to use it

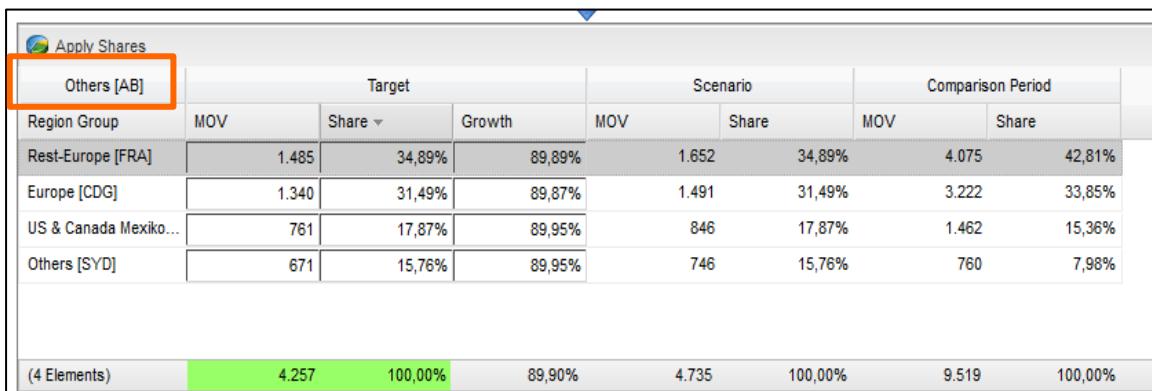
- The second step would be to analyze the split of movements regarding the region they should be generated
- So first you have to chose the airline group for which you would like to define the region in more detail by clicking on this carrier. The area will turn gray and the corresponding regions will be shown in the second window below.
- In the second grid you see details for the selected regions of the previously selected region group.



# Flight Event Generator – Step 2 - Region Group Distribution

## Functionality

In this section you can define how many movements from a chosen carrier group should be generated in which regions



Region Group Distribution							
Region Group	Target			Scenario		Comparison Period	
	MOV	Share	Growth	MOV	Share	MOV	Share
Rest-Europe [FRA]	1.485	34,89%	89,89%	1.652	34,89%	4.075	42,81%
Europe [CDG]	1.340	31,49%	89,87%	1.491	31,49%	3.222	33,85%
US & Canada Mexiko...	761	17,87%	89,95%	846	17,87%	1.462	15,36%
Others [SYD]	671	15,76%	89,95%	746	15,76%	760	7,98%
(4 Elements)		4.257	100,00%	89,90%	4.735	100,00%	9.519
100,00%							

## How to use it

- The usage of the target fields follows exactly the same pattern as explained before in the carrier group section.
- By changing the shares you can define how many movements have to be generated for this carrier group in certain regions.
- For example: Here for all „other“ airlines you can decide in which regions how many movements should be generated.
- For each specified carrier group you can select the regions.



# Flight Event Generator – Step 2 – Aircraft Type Distribution

## Functionality

In this section you can now define the aircraft types for the chosen carrier and region combination

Aircraft Types							
Others [AB] > Rest-Europe [FRA]	Target			Scenario		Comparison Period	
	MOV	Share	Growth	MOV	Share	MOV	Share
B773W	1.137	76,63%	89,89%	1.266	76,63%	1.647	40,42%
77X	173	11,62%	90,10%	192	11,62%	345	8,47%
B744F	112	7,57%	89,60%	125	7,57%	605	14,85%
75T	32	2,18%	88,89%	36	2,18%	162	3,98%
74N	21	1,39%	91,30%	23	1,39%	3	0,07%
GS4	2	0,12%	100,00%	2	0,12%	0	0,00%
B7772	1	0,06%	100,00%	1	0,06%	3	0,07%
GLF3	1	0,06%	100,00%	1	0,06%	3	0,07%
CNA2	1	0,06%	100,00%	1	0,06%	19	0,47%
CANRJ	1	0,06%	100,00%	1	0,06%	0	0,00%
DF9	1	0,06%	100,00%	1	0,06%	0	0,00%
ERJE	1	0,06%	100,00%	1	0,06%	0	0,00%
E135	1	0,06%	100,00%	1	0,06%	0	0,00%
CL30	1	0,06%	100,00%	1	0,06%	0	0,00%
A3302	0	0,00%	0,00%	0	0,00%	539	13,23%
A3403	0	0,00%	0,00%	0	0,00%	17	0,42%
A3406	0	0,00%	0,00%	0	0,00%	590	14,48%
DF7	0	0,00%	0,00%	0	0,00%	15	0,37%
(26 Aircraft types)	1.485	100,00%	89,89%	1.652	100,00%	4.075	100,00%

## How to use it

- You can define the aircraft type shares to be used in the generation process.
- By clicking on „Remove Shares“ you are able to remove all given shares so that you can enter manually your own shares.
- By clicking on „Copy Shares“ the shares of the scenario column will be copied one-to-one into the target column.
- You can distribute the 100 % to the first X aircraft types in the table with the function „Set Top-X Shares“. This will enable you to quickly generate flights for the most flown aircraft- types.
- To confirm your shares please press the „Next Steps“ button on the bottom of the slide.

# Flight Event Generator – Step 3 – Dashboard

## Functionality

Here the dashboard can be used to define curfews, peak hours and day of week (DoW) combinations

**Step 3: Dashboard**

**Dashboard**

**Prefered Settings Templates**

Curfew: Choose a template

FEG Settings: Choose a template

**Default Settings**

Top-X Peak Hours: \* 5

All selected Peak Hours:

Definition Peak Hour (in %): \* 50

Do not use Adjacent Hours:

Peak Hour Ratio Threshold (in %): \* 75

DoW Minimum (in %): \* 5

DoW Most Common Record (in %): \* 100

Generate Flat Period:

Fill lowest Peak Hours:

Fill Peak Hours sequentially:

\* Mandatory Fields

**Step 4: Summary**

## How to use it

- Within the dashboard you can define several settings for adjusting the process of identifying peak hours and day of week combinations.
- Within the curfew template you can specify the time in which flights won't be generated.
- The "FEG Settings" template contains the preferred information which are used for generating flights regarding peak hours and day of week combinations.
- The default settings are best practice settings from different consulting projects. They will be applied to those records which are not specified through the templates above.

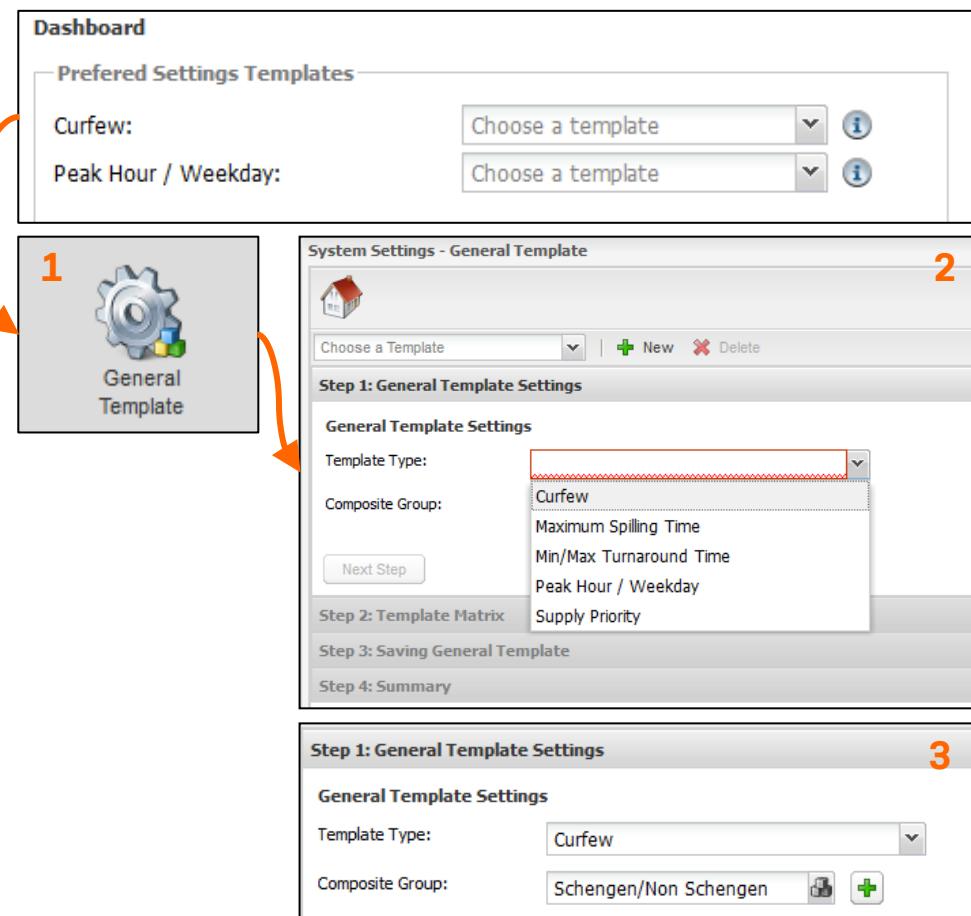
You do not have to use a template, in this case the default settings will be applied



# Flight Event Generator – Step 3 – Preferred Settings Templates - Curfew

## Functionality

The curfew template enables you to specify different curfews



## How to use it

1. To create a template for the preferred settings you would need to go back to the system settings and create a general template by pressing the general template button.
2. Now you have to select the template type „Curfew“
3. Then you would need to specify the carrier and region group. Please note that the groups should be the same as in step 1 (Flight Event Generator settings).

*You can define general templates also before you use the FEG!*

*This is an independent process which is not linked to the generation of flights*

# Flight Event Generator – Step 3 – Curfew Template

## Functionality

Here you can specify for each region in the group when the curfew should start and end

	Schengen/Non Sch...	Start 1	End 1	Start 2	End 2	Status
1	Schengen [FRA]	22:00	06:59	00:00	00:00	activated
2	Non Schengen [DXB]	22:00	04:59	00:00	00:00	activated

Previous Step    Next Step

Step 3: Saving General Template

Saving General Template

Template Name: Curfew

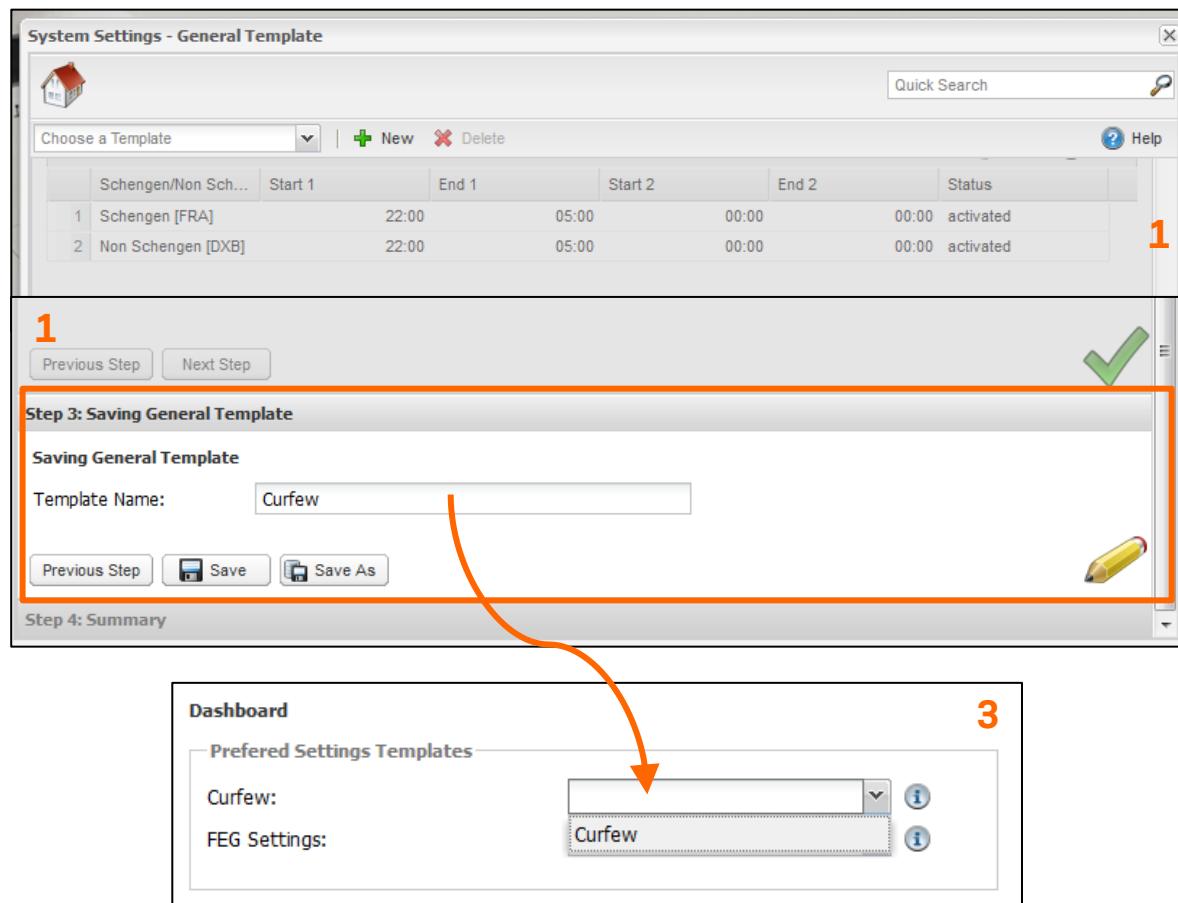
## How to use it

- So here the group Schengen/ Non Schengen was chosen. However, any other classification can be possible dependent on the groups you have previously defined.
- You should be aware that the FEG calculates for the curfew only in full hours. This means that if the curfew ends at 5:00 a.m. in the morning, the next possible flight will be generated at earliest at 06:00 a.m..
- To overcome this issue, you should define the end of the curfew at 04:59 to guarantee that also flights at 06:00 or 06:05 or 06:10, etc., can be generated.

# Flight Event Generator – Step 3 – Curfew Template

## Functionality

After saving the curfew template it will be available for selection in the dashboard of the FEG



## How to use it

1. After you have specified the curfew restrictions, you need to name the template

Here it will be called „Curfew“, however, for you it would make sense to name it with a unique name, so that you can distinguish it later on when time has past

2. If you then go back to the FEG you can select the previously created template from the list by clicking on the drop down menu in the dashboard
- You can also define the templates first and then start to use the FEG as the definition of templates is independent from the features they are used for.

# Flight Event Generator – Step 3 – FEG Settings Template

## Functionality

The FEG Settings template specifies the peak hour and weekday combinations

System Settings - General Template

Step 1: General Template Settings

General Template Settings

Template Type: FEG Settings

Composite Group:

- Curfew
- FEG Settings**
- Maximum Spilling Time
- Min/Max Turnaround Time
- Supply Priority

Next Step

Step 2: Template Matrix

Step 3: Saving General Template

Step 4: Summary

Step 1: General Template Settings

General Template Settings

Template Type: FEG Settings

Composite Group:

- Alliances
- Europe/Non-Europe

## How to use it

- For the FEG settings a new template needs to be created in the system settings. To generate the right template please select the „FEG Settings“ template
- After that you need to choose a carrier group and a region groups (the ones you want to use for the FEG)

By clicking in the green cross you can add the second group to the template and then chose the region group.

Here: Alliances und Europe/Non-Europe

# Flight Event Generator – Step 3 – FEG Settings Template

## Functionality

With this template you can specify for each carrier and region combination the individual settings for the peak hours and DoW

System Settings - General Template

Choose a Template | + New | X Delete | Next Step | Help

Step 2: Template Matrix

Template Matrix - FEG Settings

Carrier Group	Region Group	Top-X Peak	Def. Pea...	Ratio Th...	DoW Min...	DoW Co...	Status
Star Alliance	Schengen/Non Schengen	5	50	25	5	100	activated
1 Lufthansa [LH]	Schengen [FRA]	5	50	25	5	100	deactivated
2 Lufthansa [LH]	Non Schengen [DXB]	5	50	25	5	100	activated
3 Singapore Airlines [SQ]	Schengen [FRA]	5	50	25	5	100	activated
4 Singapore Airlines [SQ]	Non Schengen [DXB]	5	50	25	5	100	activated
5 All Others [US]	Schengen [FRA]	5	50	25	5	100	activated
6 All Others [US]	Non Schengen [DXB]	5	50	25	5	100	activated

1      2      3

Previous Step | Next Step | Export | Help | Pencil

Step 3: Saving General Template | Step 4: Summary

## How to use it

- As we had chosen three airlines (LH, SQ and All others) and two possible regions (Schengen and Non-Schengen) we have six possible combinations. Please note that the region group AND carrier group MUST be the same as in step 1 (Flight Event Generator settings).
- The status „activated“ means that this combination is valid for generating flights. In case the combination is „deactivated“, it will not be recognized. You can choose via a drop down menu, if the record should be activated or deactivated
- Also the definition of a peak hour can be done here.
- The other settings which can be changed here, will be explained in detail in the following slides.



# Flight Event Generator – Step 3 – FEG Settings Template

## Functionality

After saving the FEG Settings template it will be available for selection in the dashboard of the FEG

The screenshot shows two windows of the Flight Event Generator application.

**Step 3: Saving General Template** (Top Window, Numbered 1):

- Template Name:
- Buttons: Previous Step, Save, Save As

**Step 3: Dashboard** (Bottom Window, Numbered 2):

- Preferred Settings Templates:
  - Curfew: Choose a template (dropdown menu)
  - FEG Settings: FEG Settings (selected, dropdown menu)
- Default Settings (List of configuration options):
  - Top-X Peak Hours: \* 5 (spin box)
  - All selected Peak Hours: (checkbox)
  - Definition Peak Hour (in %): \* 50 (spin box)
  - Do not use Adjacent Hours: (checkbox)
  - Peak Hour Ratio Threshold (in %): \* 75 (spin box)
  - DoW Minimum (in %): \* 5 (spin box)
  - DoW Most Common Record (in %): \* 100 (spin box)
  - Generate Flat Period: (checkbox) checked
  - Fill lowest Peak Hours: (radio button)
  - Fill Peak Hours sequentially: (radio button) checked
- \* Mandatory Fields
- Buttons: Previous Step, Generate

## How to use it

1. The last step would be to save the template and name it.  
Here it will be called „FEG Settings“, however, for you it would make sense to name it with a unique name, so that you can distinguish it later on when time has passed.
2. If you then go back to the FEG you can select the previously created template from the list by clicking on the drop down menu in the dashboard

*You can also define the templates first and then start to use the FEG as the definition of templates is independent from the features they are used for.*

# Flight Event Generator – Step 3 – Default Settings - Top-X Peak Hours

## Functionality

In the default settings you can make assumptions about the peak hours and weekday combinations (DoW)

**Default Settings**

Top-X Peak Hours: *	<input type="text" value="5"/>	
All selected Peak Hours:	<input checked="" type="checkbox"/>	
Definition Peak Hour (in %): *	<input type="text" value="50"/>	
Do not use Adjacent Hours:	<input checked="" type="checkbox"/>	
Peak Hour Ratio Threshold (in %): *	<input type="text" value="75"/>	
DoW Minimum (in %): *	<input type="text" value="5"/>	
DoW Most Common Record (in %): *	<input type="text" value="100"/>	
Generate Flat Period:	<input checked="" type="checkbox"/>	
Fill lowest Peak Hours:	<input type="radio"/>	
Fill Peak Hours sequentially:	<input checked="" type="radio"/>	

\* Mandatory Fields

[Previous Step](#) [Generate](#)

**1**

	Star Alliance	Schengen/Non Schengen	Top-X Peak
1	Lufthansa [LH]	Schengen [FRA]	5
2	Lufthansa [LH]	Non Schengen [DXB]	5
3	Singapore Airlines [SQ]	Schengen [FRA]	5
4	Singapore Airlines [SQ]	Non Schengen [DXB]	5
5	All Others [US]	Schengen [FRA]	5
6	All Others [US]	Non Schengen [DXB]	5

**2**

**1**

**1**

## How to use it

- These settings are valid in case no templates are chosen or for records that are not covered by a template
- In general, flights will be generated for each carrier and region combination and the defined peak hours
- 1. Top-X Peak Hours defines the number of peak hours you would like to assume. In the picture below you see that you have five peak hours, therefore, you can leave the default settings as they are
- 2. In the FEG Settings template you could also define the assumed number of peak hours. Hence, you need to define it in the Top-X Peak column. (Here: all carrier-region combinations have 5 peak hours per day).
- 3. If you tick the box for „All selected Peak Hours“, and 24 is used for the Top-X Peak Hours all 24 hours will be used for the generation independent of the actual number of peak hours in the scenario
- 4. (Peak – Wie viele Peaks werden generiert pro airline und Region)

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April 2018

User Guide B Tactical

SCENARIO PLANNING

# Flight Event Generator – Step 3 – Default Settings - Definition of Peak Hour

## Functionality

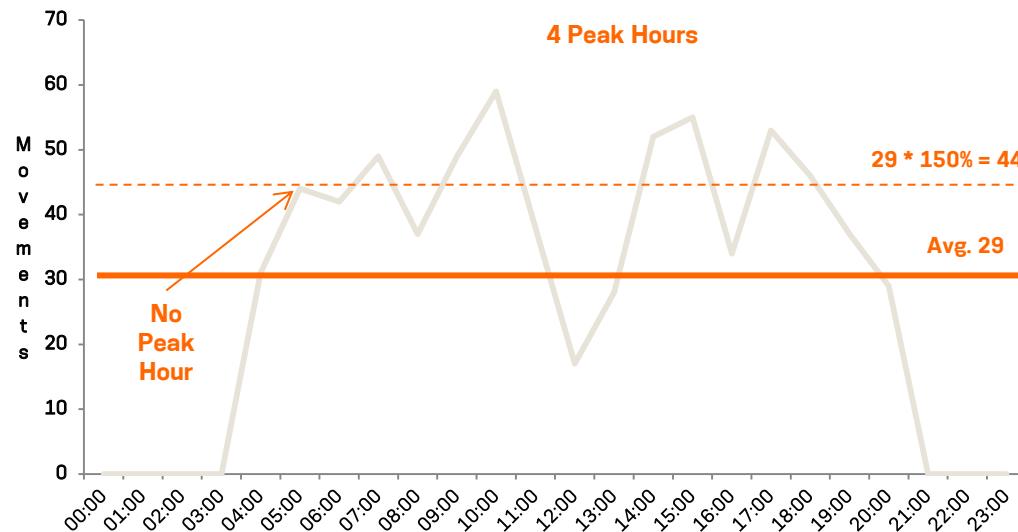
Here you can define the ratio for which an hour is counted as a peak hour for each airline and region combination

Default Settings

Top-X Peak Hours: *	5
All selected Peak Hours:	<input type="checkbox"/>
Definition Peak Hour (in %): *	50
Do not use Adjacent Hours:	<input type="checkbox"/>
Peak Hour Ratio Threshold (in %): *	75
DoW Minimum (in %): *	5
DoW Most Common Record (in %): *	100
Generate Flat Period:	<input checked="" type="checkbox"/>
Fill lowest Peak Hours:	<input type="radio"/>
Fill Peak Hours sequentially:	<input type="radio"/>

\* Mandatory Fields

[Previous Step](#) [Generate](#)



- A peak hour is defined as an hour where the most movements per day occurred. Depending on your definition you could reach several peak hours per day.
- The FEG defines a peak hour as following, first the average movements of the entire day are taken (here: 29, please have a look at the table on the right). Then 50% of these movements are added on top as defined in the default settings ( $29 + 15 = 44$ ). If more than 44 movements are reached, the system will define this hour as a peak hour.
- In the graph you can see that with this definition, we will end up with four peak hours spread over the day, where the system will use them as a guideline to generate flights
- If you want to take more than the 50% or less, depends on your decision. However, the 50% is a good way to start with (Beontra Recommendation)

Hour	Movements
00:00	0
01:00	0
02:00	0
03:00	0
04:00	31
05:00	44
06:00	42
07:00	49
08:00	37
09:00	49
10:00	59
11:00	38
12:00	17
13:00	28
14:00	52
15:00	55
16:00	34
17:00	53
18:00	46
19:00	37
20:00	29
21:00	0
22:00	0
23:00	0
Sum	700
Avg.	29



## Flight Event Generator – Step 3 – Default Settings - Adjacent Hours & Peak Hour Threshold

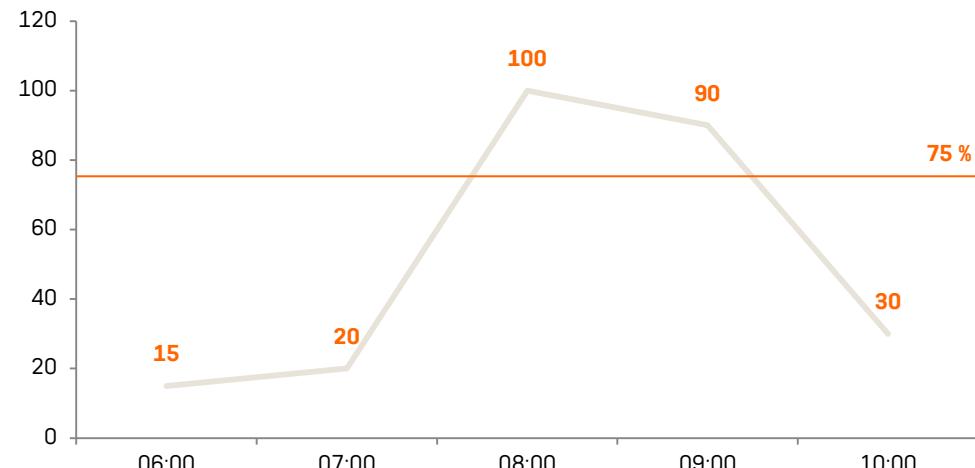
### Functionality

With the peak hour ratio threshold it can be determined if adjacent hours can be used for the generation.

Default Settings

Top-X Peak Hours: *	5
All selected Peak Hours:	<input type="checkbox"/>
Definition Peak Hour (in %): *	50
Do not use Adjacent Hours:	<input type="checkbox"/>
Peak Hour Ratio Threshold (in %): *	75
DoW Minimum (in %): *	5
DoW Most Common Record (in %): *	100
Generate Flat Period:	<input checked="" type="checkbox"/>
Fill lowest Peak Hours:	<input type="radio"/>
Fill Peak Hours sequentially:	<input type="radio"/>

\* Mandatory Fields



Type of Hour	Time	Mov	Ratio in %	Generation
Peak Hour	08:00	100	1	YES
Adj. Hour	07:00	20	20 (of peak hour)	YES
Adj. Hour	09:00	90	90 (of peak hour)	NO

- By ticking the box you can decide, if you want to use the option of re-constructing adjacent hours or not. This might be important as the structure of peak and adjacent hours should remain after the generation of flights
- If the ratio of the adjacent and the peak hour (adjacent/peak) is higher than 75 % the adjacent hour will NOT randomly be used for generation, because the adjacent hour might be another peak hour
- In our example, if the threshold is 75%, flights might be generated for the 8<sup>th</sup> hour and also for the adjacent hour 7, because the ratio is 20% . In contrast, no flights will be generated for the 9<sup>th</sup> hour as the ration of 90 % is higher than the threshold.

# Flight Event Generator – Step 3 – Default Settings - DoW Minimum & DoW Common Record

## Functionality

The weekday combinations can be adjusted here

Default Settings

Top-X Peak Hours: \* 5

All selected Peak Hours:

Definition Peak Hour (in %): \* 50

Do not use Adjacent Hours:

Peak Hour Ratio Threshold (in %): \* 75

**1** DoW Minimum (in %): \* 5

**2** DoW Most Common Record (in %): \* 100

Generate Flat Period:

Fill lowest Peak Hours:

Fill Peak Hours sequentially:

\* Mandatory Fields

## How to use it

1. This option sets the minimum percentage of movements for a weekday to be included in a certain weekday combination. So here it will be defined, if a week day will be considered for a weekday combination.

For example, you have the weekday combination 1,2,3,4 and in total 302 flights which are split:

Day 1 – 100 mov  
Day 2 – 100 mov  
Day 3 – 2 mov  
Day 4 – 100 mov

Then the third day is not used for the combination because at least 5% of the total no. of movements (302) must be valid for one day.

Here day 1,2 and 4 have 75,5% compared to day 2 which has only 2,6%. This value is lower than 5% and is not considered. So the weekday combination is defined as 1,2,4.

1. Here you can adjust the amount of combinations that should be used. In our case all combinations found in the scenario data for each airline/region segment will be used as 100% was chosen as default. You could also insert 50 % then only 50 % of the most common combinations will be considered.



# Flight Event Generator – Step 3 – Default Settings - Generate Flat Period

## Functionality

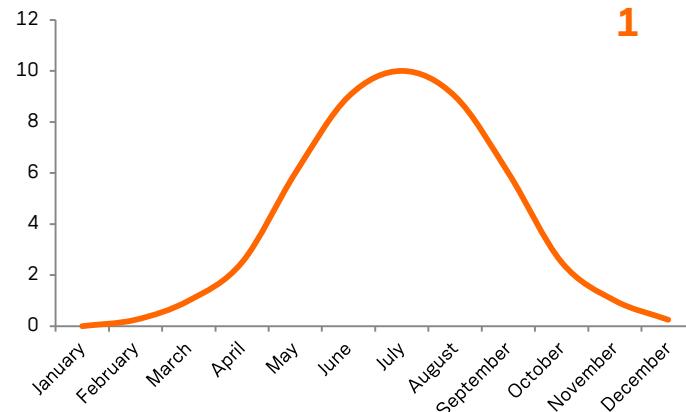
The weekday combinations can be adjusted here

Default Settings

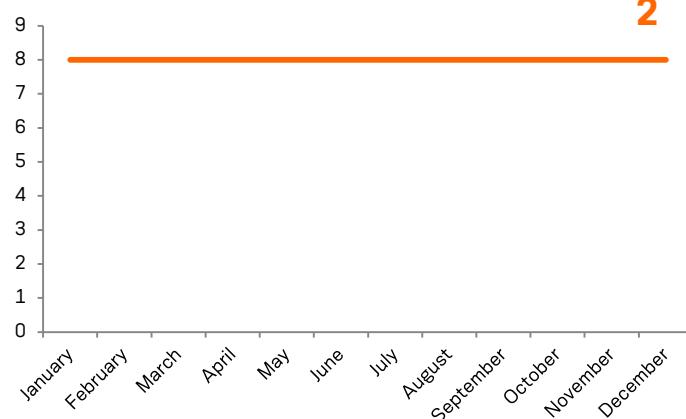
Top-X Peak Hours: *	5
All selected Peak Hours:	<input type="checkbox"/>
Definition Peak Hour (in %): *	50
Do not use Adjacent Hours:	<input type="checkbox"/>
Peak Hour Ratio Threshold (in %): *	75
DOW Minimum (in %): *	5
DOW Most Common Period (in %): *	100
Generate Flat Period:	<input checked="" type="checkbox"/>
Fill lowest Peak Hours:	<input type="radio"/>
Fill Peak Hours sequentially:	<input checked="" type="radio"/>

\* Mandatory Fields

Previous Step    Generate



1



2

## How to use it

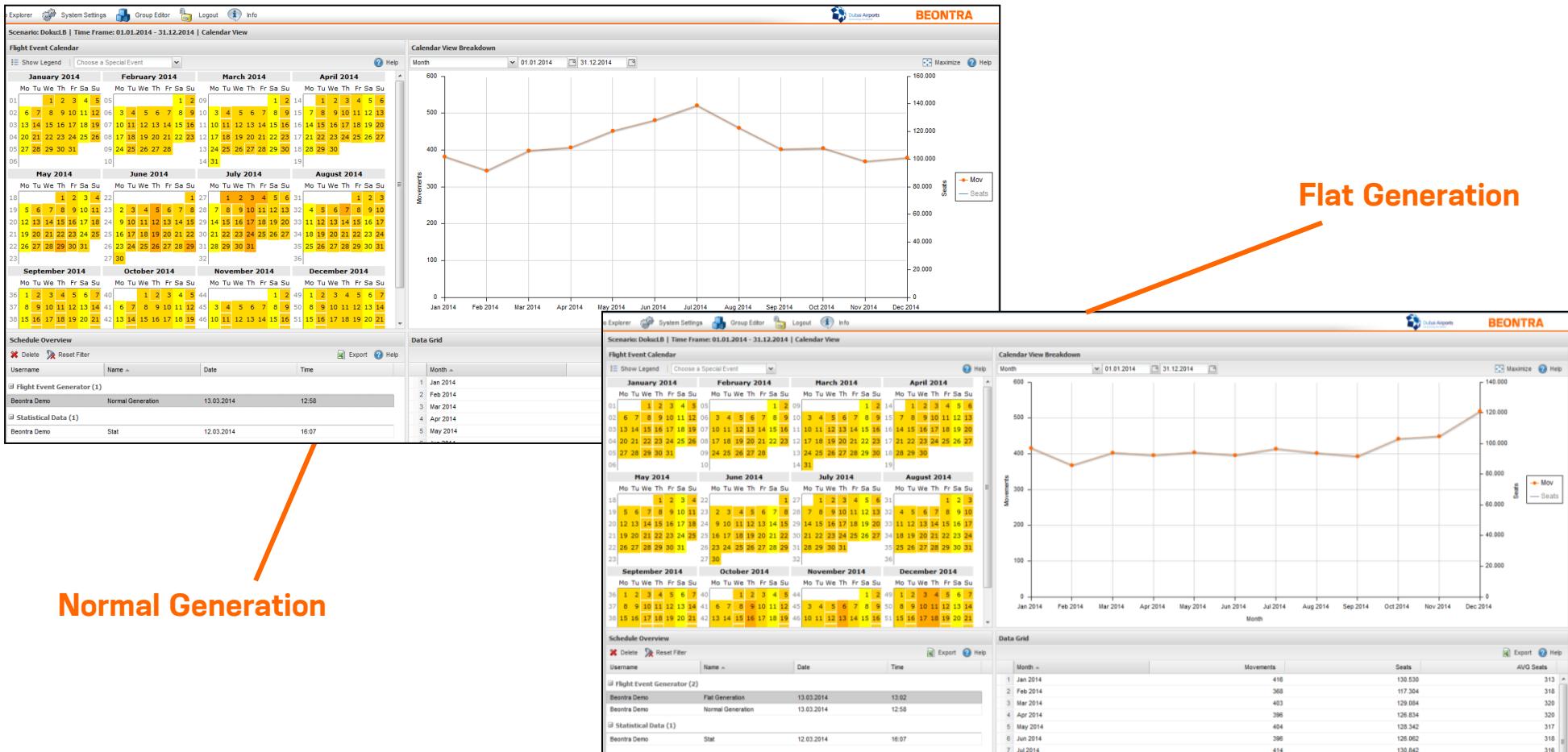
1. Normally, the FEG generates flights according to a bell shaped curve like shown in the picture (1). Meaning that more flights would be generated in the middle of the year. (Not all DOW can be filled over an entire period)
2. To be able to evenly distribute generated flights in one period, the box need to be checked. With the flat generation the flights will be generated over an entire period. Flat generation is achieved by trying to find aircraft types and DOW combinations for each airline/region segment which can be used filling the entire generation period. Remaining flights are spilled to the next region within one region group, only in the last region remaining single day DOW flights are added at the end of the period. (Only DOW that can be filled over an entire period are taken)



# Flight Event Generator – Step 3 – Compare the Type of Generation

## Functionality

Here you can actually see the difference in the generation process as described before.



**Normal Generation**

**Flat Generation**

# Flight Event Generator – Step 3 – Default Settings - Fill Options

## Functionality

With these two options you can decide how the FEG should assign flights to open peak hours

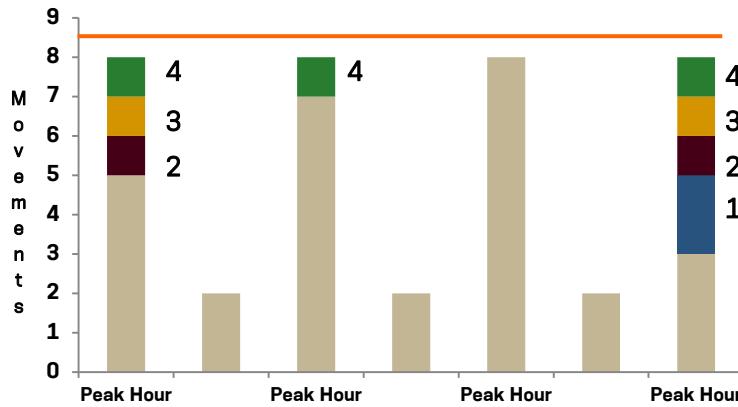
Default Settings

Top-X Peak Hours: *	5
All selected Peak Hours:	<input type="checkbox"/>
Definition Peak Hour (in %): *	50
Do not use Adjacent Hours:	<input type="checkbox"/>
Peak Hour Ratio Threshold (in %): *	75
DoW Minimum (in %): *	5
DoW Most Common Record (in %): *	100
Generate Flat Period:	<input checked="" type="checkbox"/>
Fill lowest Peak Hours:	<input type="radio"/>
Fill Peak Hours sequentially:	<input type="radio"/>

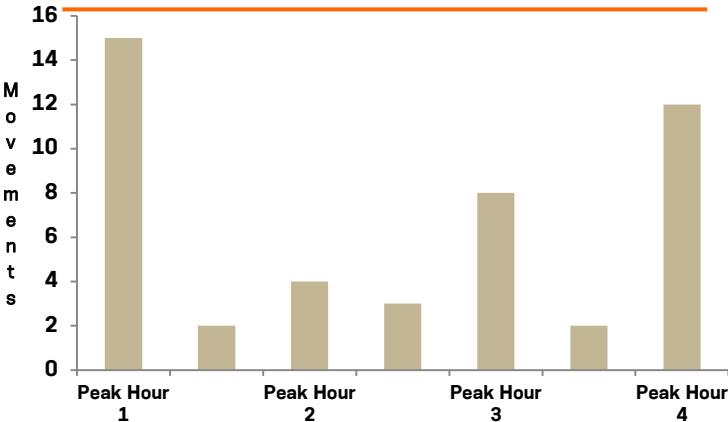
\* Mandatory Fields

Previous Step    Generate

1



2



## How to use it

### 1. Fill lowest Peak Hours

Flights are generated for the lowest peak hour. After every allocation of flights, the peak hours will be evaluated according to the lowest and then filled up again. In the picture you can see that first peak hour 4 is filled until it reached peak hour 1. After peak hour 4 and 1 are filled alternately until they reach peak hour 2 peak hour 4,1, and 2 will be filled rotational until they reach peak hour 3.

### 2. Fill Peak Hours sequentially

Flights are evenly and sequentially distributed on all Top-X peak hours, starting with the highest one. For each flight to be generated, another peak hour is picked sequentially, starting with the highest one. So peak hours according to this example will be filled like 1, 4, 3, 2, 1, 4...

# Flight Event Generator – Outcome

## Functionality

You can analyze the generated data in the calendar and expert view

The screenshot shows the BEONTRA B Tactical software interface. The top navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Help. The main window has a 'Main Navigation' sidebar with sections for Movements, Analyze, Calendar View, Volume View, Aggregate View, Expert View, and Check. The 'Movements' section is currently selected.

The central area displays a 'Flight Event Calendar' for the period from January 2014 to December 2014. The calendar grid shows various flight events color-coded by day of the week. To the right of the calendar is a 'Calendar View Breakdown' chart showing Movements (orange line) and Seats (blue line) over time. Below the calendar is a 'Data Grid' table with columns for Month, Movements, Seats, and AVG Seats, showing data for January through June 2014.

The bottom section is the 'Scenario Overview' expert view, which includes a table of movements and an 'Advanced Filter' dialog box. The 'Advanced Filter' dialog has fields for Import, Date, STA/SDT, DES/ORG, and Terminal, with a dropdown for 'Schedule gen'.

## How to use it

1. You can filter in the Schedule Overview of the calendar View for the generated flight events.

The calendar, the chart and the data grid show after selecting the entry for generated flights only the respective flights.

Here you can perfectly see that the flights were generated with the flat period as the new flight increase steadily in a flat manner.

2. You can also filter for all the generated flights in the Expert View with the support of the Advanced Filter. Here you should select Import = "Name of the generated flights". Then only the FEG flights will be displayed

# **BEONTRA**

## **B Tactical**

### 5. Movements Analysis of Views

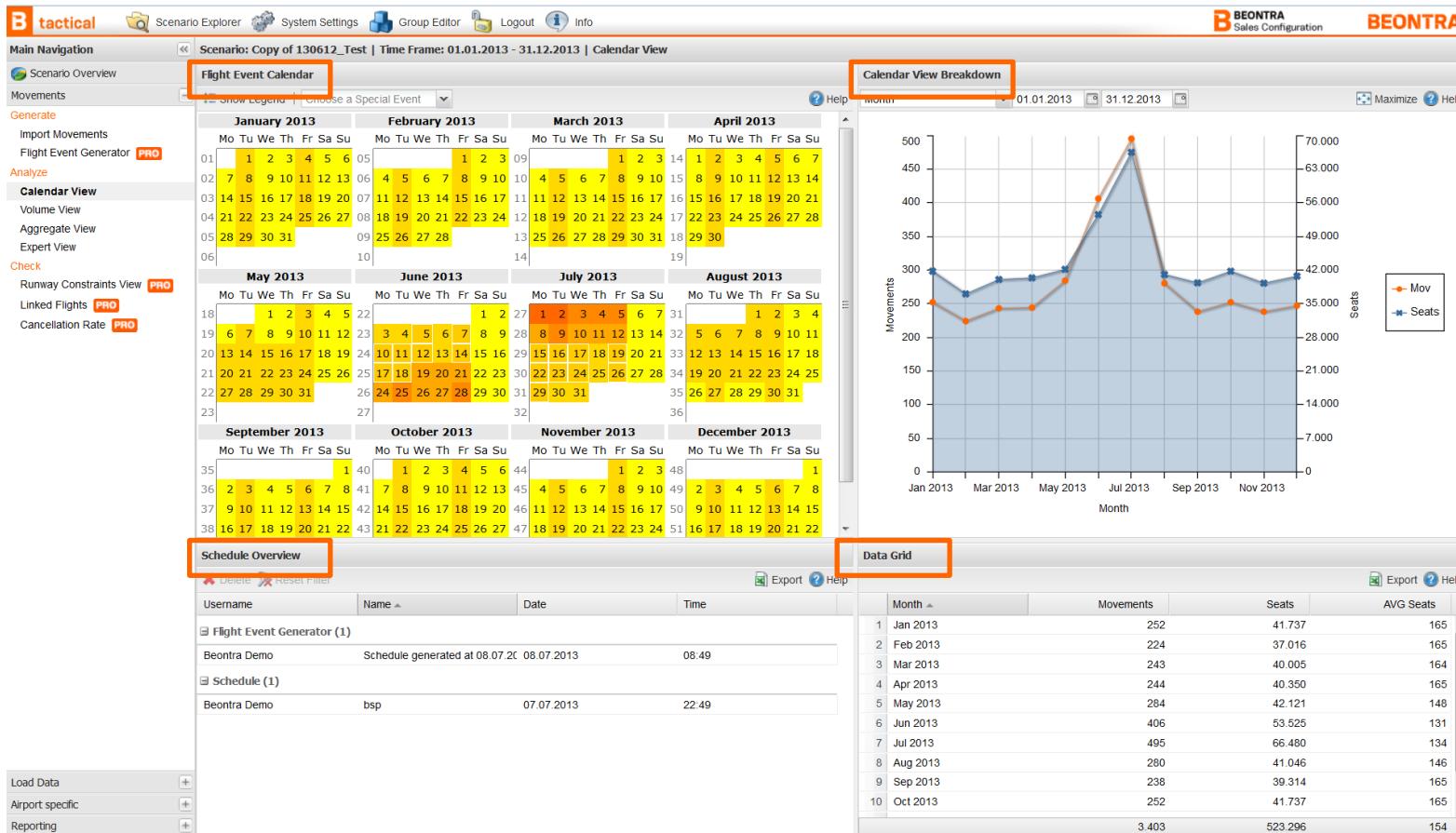


# Movements

## Analyze Views

### Functionality

**Calendar View:** The timescale of movements is visualized best with Calendar View, consisting of four elements and beginning with the one down on the left (schedule overview).

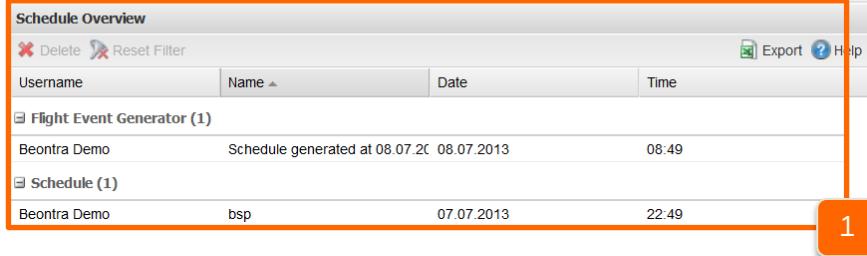
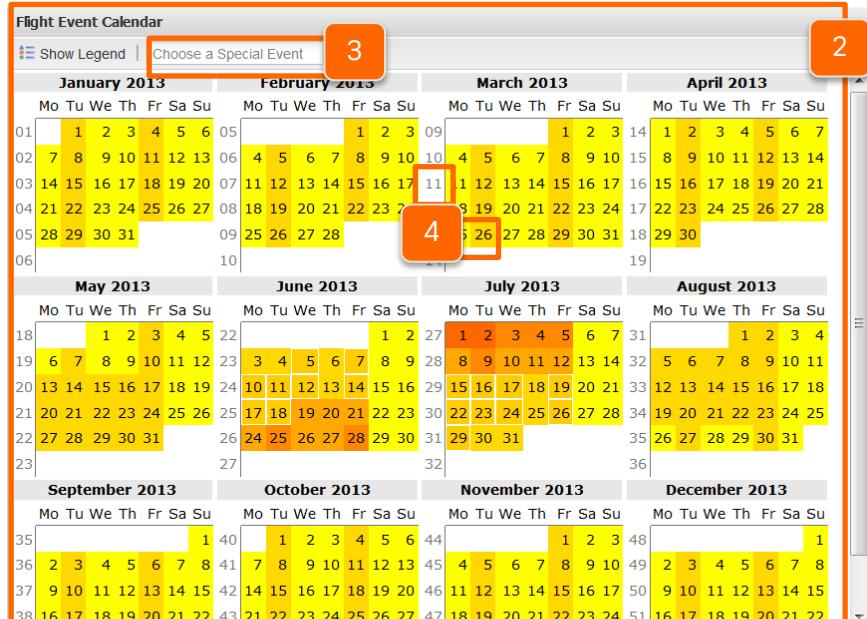


# Movements

## Analyze Views

### Functionality

#### Calendar View: Schedule Overview and Flight Event Calendar



### How to use it

1 The Schedule Overview shows all the flight schedules, statistical data, manually created flight events and generated flights in this project. By clicking on a single source the Flight Event Calendar will be adjusted.

2 The Flight Event Calendar shows when most of the movements occurred (color legend: red = most flight events, yellow = fewer flight events) and allows you to check the capacity on a monthly, weekly and daily basis.

3 In the Flight Event Calendar Special Events (defined in System Settings) can be chosen and displayed.

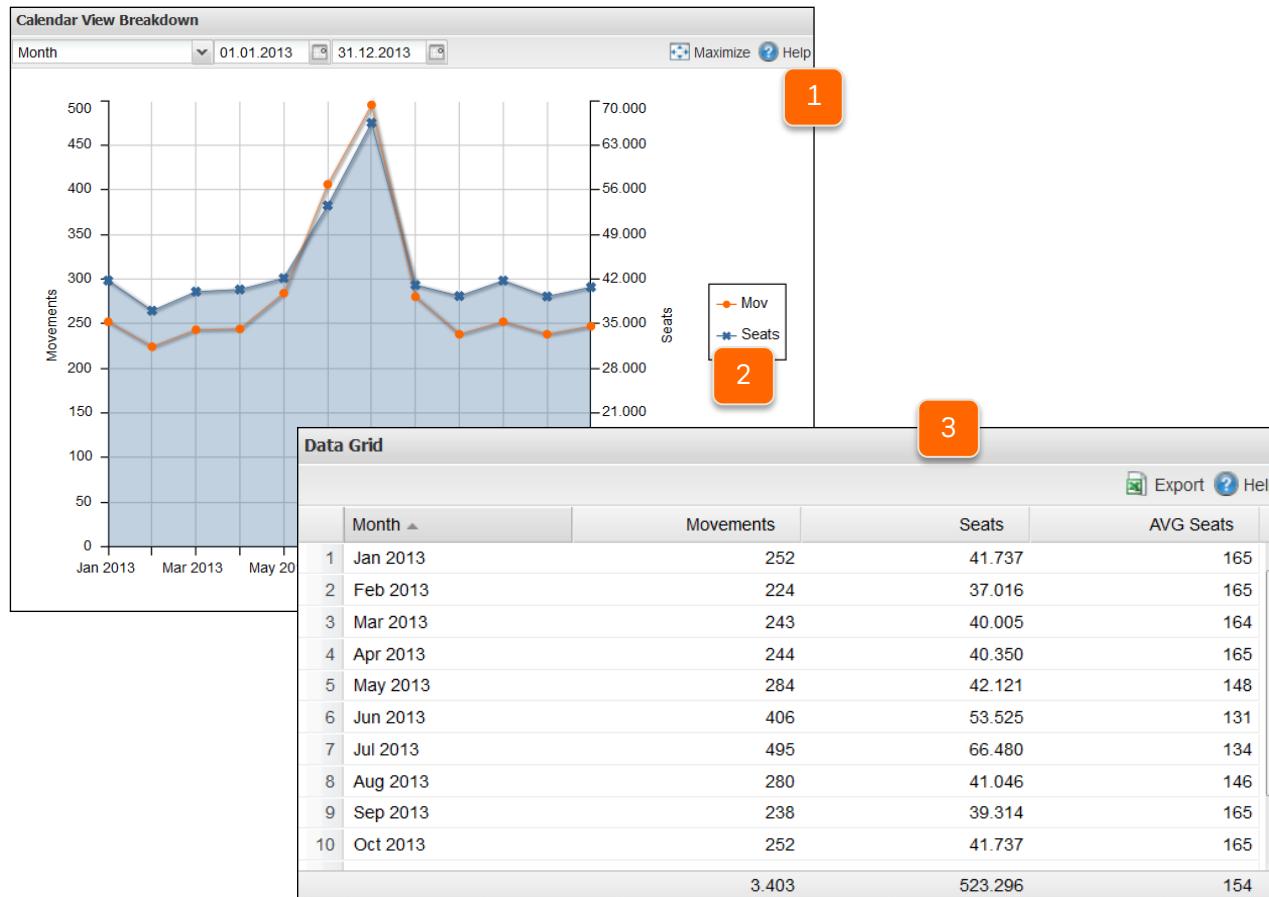
4 Clicking on single weeks or days will change the Breakdown View and Data Grid.

# Movements

## Analyze Views

### Functionality

**Calendar View:** Calendar View Breakdown and Data Grid, depending on what is selected in the Flight Event Calendar



### How to use it

- 1 The breakdown allows you to visualize movement and capacity amounts for a selected period.
- 2 To see only Movements, click on Seats in the legend to deactivate them (analog to see only Seats).
- 3 The Data Grid represents a table with various traffic values with different sorting options and the option to export data in excel.



# Movements

## Analyze Views

### Functionality

**Volume View:** The quantity of movements is visualized best with Volume View, consisting of four elements. Display shows aggregated movements in a weekly frequency with breakdowns by airline and destination.

The screenshot shows the BEONTRA B Tactical software interface. The top navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The main navigation on the left lists categories like Main Navigation, Scenario Overview, Movements, Generate, Import Movements, Flight Event Generator (PRO), Analyze, Calendar View, Volume View, Aggregate View, Expert View, Check, Runway Constraints View (PRO), Linked Flights (PRO), and Cancellation Rate (PRO). The central workspace displays a grid of flight data with columns for A/D, Carrier, Flight No., Period, Start Date, End Date, STA/STD, DES/ORG, and various performance metrics such as Wi, Su, and MOV. The right side features a 'Target Frequencies' panel for adjusting target frequencies for specific airlines.

# Movements

## Analyze Views

### Functionality

**Volume View:** Overview about weekly frequencies with breakdowns by airlines and destinations in winter and summer seasons of the scenario and comparison period.

Airline		Scenario		Comparison		
Breakdown	Wi	Su	Wi	Wi	Su	Wi
SWISS INTERNATION...	1.254,3			1.250,8	1.265,9	
AIR BERLIN PLC CO L...	120,5			124,3	148,6	
DEUTSCHE LUFTHAN...	113,0			125,5	121,4	
EDELWEISS AIR AG	71,3			32,4	78,8	
KLM ROYAL DUTCH A...	41,9			33,7	41,8	

Destination		Scenario			Comparison		
Breakdown	Wi	Su	Wi	Wi	Su	Wi	Wi
Berlin					3,5		
Duesseld...	24,4			22,9	23,8		
Frankfurt	41,5			48,2	47,1		
Hamburg	19,7			16,4	18,2		
Milan					3,5		
Munich	27,5			38,0	32,2		
Paris					3,5		

### How to use it

- 1 Compare movements from scenario with comparison data.
- 2 Sort movements ascending or descending by clicking on the season (Wi = winter season / Su = summer season)
- 3 By clicking on a specific airline the breakdown by destinations will be adjusted.



# Movements

## Analyze Views

### Functionality

Volume View: Adjust target frequencies for airlines and generate missing flights

The screenshot shows the BEONTRA software interface with the following components:

- Main Window:** Titled "Adjust Target Frequencies for DEUTSCHE LUFTHANSA A G to Frankfurt". It contains three tabs: "Target Frequencies" (selected), "Breakdown Chart", and "Breakdown Chart". Below the tabs are buttons for "Save", "Reset", and "Generate". A table lists seasons (Winter 1, Summer 1, Winter 2) with their corresponding Schedule Frequency (0,0, 41,5, 0,0) and Target Frequency (0,0, 41,5, 0,0). The "Summer 1" row is highlighted in red.
- Sub-Window:** Titled "Adjust Target Frequencies for DEUTSCHE LUFTHANSA A G to Frankfurt". It has the same tabs and buttons. The "Summer 1" row is highlighted in red, and the "Target Frequency" field for Summer 1 is highlighted with a red border.
- Destination Comparison Table:** Titled "Destination". It compares flight scenarios across various destinations (Berlin, Düsseldorf, Frankfurt, Hamburg, Milan, Munich, Paris) based on Scenario (Wi, Su, Wi) and Comparison (Wi, Su, Wi) metrics. The "Frankfurt" row is highlighted in green.
- Bottom Right Window:** Titled "Adjust Target Frequencies for DEUTSCHE LUFTHANSA A G to Frankfurt". It shows the same table as the main window, but the "Summer 1" row has been modified. The "Target Frequency" field for Summer 1 is now green, indicating it has been successfully generated.

### How to use it

- 1 Adjust schedule frequency by double-clicking on the corresponding target frequency field.
- 2 Fill in your target frequency number and click „Save“.
- 3 The schedule frequency number will be highlighted in red.
- 4 Add missing flights by clicking on „Generate“ > The schedule frequency number change to green in both tables.

# Movements

## Analyze Views

### Functionality

**Volume View:** Adjust target frequencies for airlines and generate missing flights. This view will be adjusted depending on what you select in the airline and destination table.

A/D	Flight No.	Period	Start Date	End Date	STA/STD	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Flight Type	Aircraft	Seats
LH	LH1182	S13	31.03.2013	30.09.2013	05:35	FRA	✗	✗	✗	✗	✗	✗	J	321	191
D	LH1183	S13	31.03.2013	30.09.2013	06:20	FRA	✗	✗	✗	✗	✗	✗	J	320	160
DLH	LH1184	S13	01.04.2013	30.09.2013	06:55	FRA	✗	✗	✗	✗	✗	✗	J	319	131
DLH	LH1185	S13	01.04.2013	30.09.2013	07:30	FRA	✗	✗	✗	✗	✗	✗	J	319	131
DLH	LH1186	S13	31.03.2013	30.09.2013	08:40	FRA	✗	✗	✗	✗	✗	✗	J	320	159
DLH	LH1187	S13	31.03.2013	30.09.2013	09:30	FRA	✗	✗	✗	✗	✗	✗	J	320	159
DLH	LH1190	S13	31.03.2013	30.09.2013											
DLH	LH1191	S13	31.03.2013	30.09.2013											
DLH	LH1196	S13	31.03.2013	30.09.2013											
DLH	LH1197	S13	31.03.2013	30.09.2013											
DLH	LH1198	S13	02.04.2013	30.09.2013											
DLH	LH1199	S13	02.04.2013	30.09.2013											
DLH	LH1200	S13	01.04.2013	30.09.2013											
DLH	LH1201	S13	01.04.2013	30.09.2013											

	A/D	Carrier	Flight No.	STA/SDT	DES/ORG	Flight Type	Aircraft	Seats
1	X	A	LH	!	!	!	!	!
2	X	DLH	LH	DEUTSCHE LUFTHANSA AG				
		CLH	CL	LUFTHANSA CITYLINE GMBH				

### How to use it

- 1 The generated flights are highlighted in light blue.
- 2 Instead of generate missing flights automatically you can also add them manually by clicking on „Add“ and a new window „Create new Flights“ will open.
- 3 There are different filter options to analyze movements in more detail.
- 4 Movements highlighted in orange have different values regarding STA/STD (time), aircrafts and seats during different flight events. By clicking on the field you get more details about the breakdown.

**Example** of STA/STD = 09:30 contains 157 of 184 movements occur at 09:30 and 27 of 184 movements at 09:35.

# Movements

## Analyze Views

### Functionality

**Aggregate View:** Median values of movements are visualized best with Aggregate View, also consisting of four elements. It aggregates / synthesizes movements with shared characteristics into a single record.

**B tactical** Scenario Explorer System Settings Group Editor Logout Info

**Scenario Overview**

**Movements**

**Generate**

- Import Movements
- Flight Event Generator **PRO**
- Analyze**
- Calendar View
- Volume View
- Aggregate View**
- Expert View
- Check
- Runway Constraints View **PRO**
- Linked Flights **PRO**
- Cancellation Rate **PRO**

**Main Navigation**

**Scenario: Copy of DEMO STT 2013 | Time Frame: 01.01.2013 - 31.12.2013 | Aggregate View**

No breakdown **Add** **Edit** **Delete** Advanced Filter Choose a Group **Apply Filter** **Reset Filter** Show Changes **Export** **Help**

A/D	Carrier	Flight No.	Breakdown	Start Date	End Date	STA/STD	DES/ORG	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Flight Type	Aircraft	Seats	MTOW	Terminal	Gate	Stand	MOV
JAT	JU330	Total		31.03.2013	26.10.2013	16:00	BEG	✈	✈	✈	✈	✈	✈	✈	J	733	134	0				210
JAT	JU331	Total		31.03.2013	26.10.2013	16:50	BEG	✈	✈	✈	✈	✈	✈	✈	J	733	134	0				210
JAT	JU332	Total		31.03.2013	25.10.2013	07:50	BEG								J	733	134	0				77
JAT	JU333	Total		31.03.2013	25.10.2013	08:40	BEG								J	733	134	0				77
ELO	K2487	Total		31.03.2013	25.10.2013	17:25	KRK	✈	✈	✈	✈	✈	✈	✈	J	DH4	78	0				180
ELO	K2488	Total		31.03.2013	25.10.2013	18:10	KRK	✈	✈	✈	✈	✈	✈	✈	J	DH4	78	0				180
KAL	KE933	Total		02.04.2013	26.10.2013	18:00	ICN	✈	✈	✈	✈	✈	✈	✈	J	77W	291	0				90
KAL	KE934	Total		02.04.2013	26.10.2013	19:35	ICN	✈	✈	✈	✈	✈	✈	✈	J	77W	291	0				90
KLM	KL1952	Total		31.03.2013	26.10.2013	04:55	AMS	✈	✈	✈	✈	✈	✈	✈	J	E90	100	51				210
KLM	KL1953	Total		31.03.2013	26.10.2013	06:35	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	129	0				210
KLM	KL1954	Total		31.03.2013	26.10.2013	07:25	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	129	0				210
KLM	KL1957	Total		31.03.2013	26.10.2013	09:05	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	129	0				210
KLM	KL1958	Total		31.03.2013	26.10.2013	09:55	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	129	0				210
KLM	KL1959	Total		31.03.2013	26.10.2013	11:35	AMS	✈	✈	✈	✈	✈	✈	✈	J	E90	100	51				210
KLM	KL1960	Total		31.03.2013	26.10.2013	12:20	AMS	✈	✈	✈	✈	✈	✈	✈	J	E90	100	51				210
KLM	KL1961	Total		31.03.2013	26.10.2013	14:40	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	132	0				210
KLM	KL1962	Total		31.03.2013	26.10.2013	15:35	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	132	0				210
KLM	KL1963	Total		31.03.2013	26.10.2013	17:20	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	132	0				207
KLM	KL1964	Total		31.03.2013	26.10.2013	18:05	AMS	✈	✈	✈	✈	✈	✈	✈	J	73W	132	0				207
KLM	KI 1969	Total		31.03.2013	26.10.2013	20:25	AMS	✈	✈	✈	✈	✈	✈	✈	J	F90	100	51				210

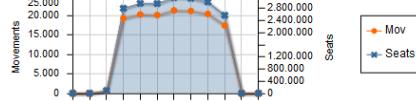
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Displaying 1 - 1.000 of 1.346

**Aggregate View Breakdown**

Month: Jan 2013 to Jul 2013

Movements: 25,000,000  
Seats: 2,000,000



**Data Grid**

Month Movements Seats AVG Seats

Month	Movements	Seats	Avg Seats
1 Jan 2013	0	0	0
2 Feb 2013	0	0	0
3 Mar 2013	574	86.207	150
4 Apr 2013	19.316	2.801.876	145
5 May 2013	20.300	2.965.598	146
6 Jun 2013	20.163	2.961.066	146
7 Jul 2013	21.359	3.156.915	147
	140.821	20.688.137	147

**Summary**

Result for Filter: # Records: 1.346 Movements: 140.821 Seats: 20.688.137 HTOW: 19.599.800 Seats: 20.688.137

**Aggregated Fields**



# Movements

## Analyze Views

### Functionality

**Aggregate View:** Adjust target frequencies for airlines and generate missing flights. This view will be adjusted depending on what you select in the airline and destination table.

A/D	Carrier	No.	Breakdown	Start Date	End Date	STA/STD	DES/OFF	Tue	Wed	Thu	Fri	Sat	Sun	Flight Type	Aircraft	Seats	MTOW	Terminal	Gate	Stand	MOV
JAT	JU330	Total	31.03.2013	26.10.2013		16:00	BEG	✗	✗	✗	✗	✗	✗	J	733	134	0				210
JAT	JU331	Total	31.03.2013	26.10.2013		16:50	BEG	✗	✗	✗	✗	✗	✗	J	733	134	0				210
JAT	JU332	Total	31.03.2013	25.10.2013		07:50	BEG							J	733	134	0				77
JAT	JU333	Total	31.03.2013	25.10.2013		08:40	BEG							J	733	134	0				77
ELO	K2487	Total	31.03.2013	25.10.2013		17:25	KRK	✗	✗	✗	✗	✗	✗	I	DH4	78	0				180
ELO	K2488	Total	31.03.2013	25.10.2013		18:10	KRK	✗	✗	✗	✗	✗	✗	I	DH4	78	0				180
KAL	KE933	Total	02.04.2013	26.10.2013		18:00	ICN	✗	✗	✗	✗	✗	✗	J	77W	291	0				90
KAL	KE934	Total	02.04.2013	26.10.2013		19:35	ICN	✗	✗	✗	✗	✗	✗	J	77W	291	0				90
KLM	KL1952	Total	31.03.2013												100	51					210
KLM	KL1953	Total	31.03.2013												129	0					210
KLM	KL1954	Total	31.03.2013												129	0					210
KLM	KL1957	Total	31.03.2013												129	0					210
KLM	KL1958	Total	31.03.2013												129	0					210
KLM	KL1959	Total	31.03.2013												100	51					210
KLM	KL1960	Total	31.03.2013												100	51					210
KLM	KL1961	Total	31.03.2013												132	0					210
KLM	KL1962	Total	31.03.2013	26.10.2013		15:35	AMS	✗	✗	✗	✗	✗	✗	J	73W	132	0				210
KLM	KL1963	Total	31.03.2013	26.10.2013		17:20	AMS	✗	✗	✗	✗	✗	✗	J	73W	132	0				207
KLM	KL1964	Total	31.03.2013	26.10.2013		18:05	AMS	✗	✗	✗	✗	✗	✗	J	73W	132	0				207
KLM	KL1969	Total	31.03.2013	26.10.2013		20:25	AMS	✗	✗	✗	✗	✗	✗	J	F90	100	51				210

Displaying 1 - 1,000 of 1,346

### How to use it

- 1 Aggregation is by default operated on a yearly (12 month) basis. To change aggregation level to a seasonal or monthly basis, click on the relevant period by using the drop-down menu.
- 2 There are different filter options to analyze movements in more detail.
- 3 Movements with plane icon highlighted in orange means that this flight is not operated every weekday (here: Thursday). Further you have the possibility to add or delete them.



# Movements

## Analyze Views

### Functionality

**Aggregate View:** The Aggregate View Breakdown shows a line graph visualizing movements and capacity (seats) during a predetermined time period.



### How to use it

- 1 Aggregation is by default operated on monthly basis. To change aggregation level to a weekly or daily basis, click on the relevant period by using the drop-down menu.
- 2 To get a more precise figure for each spot of movements or seats you move the mouse over the relevant spot on the line and a box with exact data appears.



# Movements

## Analyze Views

### Functionality

**Aggregate View:** The Data Grid is a table showing the characteristics of the flights.

**Data Grid**

	Month ▾	Movements	Seats	Avg Seats
1	Jan 2013	0	0	0
2	Feb 2013	0	0	0
3	Mar 2013	574	86.207	150
4	Apr 2013	19.316	2.801.876	145
5	May 2013	20.300	2.965.598	146
6	Jun 2013			
7	Jul 2013			

**Data Grid**

	Day ▾	Movements	Seats	Avg Seats
48	17.02.2013	647	94.050	145
49	18.02.2013	645	93.641	145
50	19.02.2013	678	98.392	145
51	20.02.2013	621	90.723	146
52	21.02.2013	656	95.450	145
53	22.02.2013	665	95.850	144
54	23.02.2013	628	90.891	144
55	24.02.2013	615	88.870	144
		140.821	20.688.137	147

### How to use it

- 1 The displayed time period is depending on the basis you choose in the aggregate view breakdown. Possible time periods are month, week or day.
- 2 Furthermore you can export the data grid in excel.

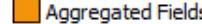


# Movements

## Analyze Views

### Functionality

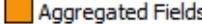
Aggregate View: The Summary shows the criteria selected to filter the flights.

Summary	
<b>Result for Filter:</b>	
# Records:	1.346
<b>Movements:</b>	140.821
<b>Seats:</b>	20.688.137
	

1

STA/STD	DES/ORG	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Flight Type	Aircraft	Seats	MTOW	Terminal	Gate	Stand	MOV	Export	Help
05:50	YYZ								J	763	211	0				189		
08:00	YYZ								J	763	211	0				189		
18:15	LJU								J	CR9	86	38				210		
19:00	LJU								J	CR9	86	38				210		
13:30	LJU								J	CR2	48	0				125		
14:25	LJU								J	CR2	48	0				125		
07:00	LJU								J	CR2	48	0				210		
08:00	LJU								J	CR2	48	0				210		
16:30	LJU								P	CR2	48	0				1		
04:55	BEY								C	CR2	48	0				1		
13:35	BEY								C	CR2	48	0				1		
14:35	LJU								P	CR2	48	0				1		
06:00	BEG								C	CR2	48	0				1		
16:00	BEG								C	CR2	48	0				1		
16:30	LJU								P	CR2	48	0				1		
05:30	LJU								P	CR2	48	0				1		
05:35	FRA								J	321	191	206				210		
06:20	FRA								J	320	160	170				210		
06:55	FRA								J	319	131	167				209		
07:30	FRA								J	319	131	167				209		

Displaying 1 - 539 of 539

Summary	
<b>Result for Filter:</b>	
# Records:	539
<b>Movements:</b>	94.564
<b>Seats:</b>	13.921.091
	

2

### How to use it

- This summary shows the total number of movements, capacity and MTOW without using a filter.
- This summary shows the number of movements, capacity and MTOW using the filter Star Alliance [LX] compared to total movements.



# Movements

## Analyze Views

### Functionality

Expert View: Detailed information on movements is visualized best with Expert View, also consisting of four elements.

**B** tactical Scenario Explorer System Settings Group Editor Logout Info

Main Navigation Scenario Overview Movements Generate Import Movements Flight Event Generator **PRO** Analyze Calendar View Volume View Aggregate View Expert View Check Runway Constraints View **PRO** Linked Flights **PRO** Cancellation Rate **PRO**

Scenario: Copy of DEMO STT 2013 | Time Frame: 01.01.2013 - 31.12.2013 | Expert View

Add Change all Flights Delete Save Reject Advanced Filter Choose a Group Apply Filter Reset Filter Export Help

A/D	Carrier	Flight No.	Date	STA/SDT	DES/ORG	Flight Type	Aircraft	Seats	MTOW	Terminal	Gate	Stand	Linked Flight No.
D	SWR	LX92	01.09.2013	20:40	GRU	J	343	219	610				
A	SWR	LX93	01.09.2013	09:05	GRU	J	343	219	610				
D	SWR	LX86	01.09.2013	10:50	YUL	J	333	236	514				
A	SWR	LX87	01.09.2013	04:15	YUL	J	333	236	514				
D	SWR	LX1830	01.09.2013	07:45	ATH	J	321	198	206				
A	SWR	LX1831	01.09.2013	12:50	ATH	J	321	198	206				
A	SWR	LX1839	01.09.2013	17:30	ATH	J	321	198	206				
A	SWR	LX1843	01.09.2013	06:20	ATH	J	321	198	206				
D	SWR	LX1838	01.09.2013	10:55	ATH	J	321	198	206				
D	SWR	LX1842	01.09.2013	19:10	ATH	J	321	198	206				
A	BER	AB3213	01.09.2013	11:15	HER	J	319	150	167				
D	BER	AB3212	01.09.2013	04:30	HER	J	319	150	167				
A	EDW	WK355	01.09.2013	10:45	JMK	J	320	160	170				
D	EDW	WK354	01.09.2013	04:20	JMK	J	320	160	170				
A	EDW	WK338	01.09.2013	08:40	JTR	J	320	160	170				
A	EDW	WK337	01.09.2013	20:50	JTR	J	320	160	170				
D	EDW	WK336	01.09.2013	14:20	JTR	J	320	160	170				
A	TVS	QS4949	01.09.2013	11:10	KGS	C	73H	189	76				QS4950
D	TVS	QS4948	01.09.2013	04:30	KGS	C	73H	189	76				QS4947
D	BER	AB3616	01.09.2013	14:00	KGS	J	320	174	170				

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**Expert View Breakdown**

Month: Maximize Help

**Data Grid**

Month Movements Seats AVG Seats

Month	Movements	Seats	Avg Seats
1 Jan 2013	0	0	0
2 Feb 2013	0	0	0
3 Mar 2013	574	88,207	150
4 Apr 2013	19,316	2,801,876	145
5 May 2013	20,300	2,965,598	146
6 Jun 2013	20,163	2,961,066	146
7 Jul 2013	21,359	3,156,915	147
	140,847	20,692,297	147

**Summary**

Movements: 140,847 Seats: 20,692,297 MTOW: 19,604,220

Generated record  
Changed record  
New record  
Copied record

# Movements

## Analyze Views

# Functionality

**Expert View:** Used to edit flight events in detail.

## How to use it

- 1 Use the Group Editor to filter desired flights (e.g. Sky Team [AF]).
  - 2 Click on „Change all Flights“ to change an attribute (e.g. Destination) for all filtered flights.
  - 3 Please note that this change can't be reverted.

# Movements

## Analyze Views

### Functionality

Expert View: Legend of the Summary provides information about different types of record, highlighted in color.

Scenario: Copy of DEMO STT 2013   Time Frame: 01.01.2013 - 31.12.2013   Expert View							
A/D	Carrier	Flight No.	Date	STA/SDT	DES/ORG	Flight Type	Aircraft
D	SWR	LX92	01.09.2013	20:40	GRU	J	343
A	SWR	LX93	01.09.2013	09:05	GRU	J	343
D	SWR	LX86	01.09.2013	10:50	YUL	J	333
A	SWR	LX87	01.09.2013	04:15	YUL	J	333
D	SWR	LX1830	01.09.2013	07:45	ATH	J	321
A	SWR	LX1831	01.09.2013	12:50	ATH	J	321
A	SWR	LX1839	01.09.2013	17:30	ATH	J	321
A	SWR	LX1843	01.09.2013	06:20	ATH	J	321
D	SWR	LX1838	01.09.2013	10:55	ATH	J	321
D	SWR	LX1842	01.09.2013	19:10	ATH	J	321
A	BER	AB3213	01.09.2013	11:15	HER	J	319
D	BER	AB3212	01.09.2013	04:30	HER	J	319
A	EDW	WK355	01.09.2013	10:45	JMK	J	320
D	EDW	WK354	01.09.2013	04:20	JMK	J	320
A	EDW	WK338	01.09.2013	08:40	JTR	J	320
A	EDW	WK337	01.09.2013	20:50	JTR	J	320

Summary	
<b>Movements:</b>	140.847
<b>Seats:</b>	20.692.297
<b>MTOW:</b>	19.604.220
Generated record	
Changed record	
New record	
Copied record	



# **BEONTRA**

## **B Tactical**

### 5. Movements Runway Constraints View (PRO)



# Movements

## Runway Constraints View PRO

### Functionality

Create a set of runway constraints to express runway capacity. Apply these runway constraints to your schedule ("is" versus "should" comparison). Then the BSP-system can adapt your schedule, by shifting and, if necessary, deleting the excess number of flights:

- Flights are shifted according to your settings in the RC Manager. To ensure rotation, departures and arrivals with the same/ similar flight numbers are kept within +/- 1 month. Linked flights are kept together in so far as possible; linked arrivals and departures are kept together for each day (00:00 to 23:59). Your airport's customized configuration for turnaround time is applied.
- Flights can be deleted automatically in the following order: Flights created by the Flight Event Generator, manually added flights, flights imported with a schedule and statistics.

### How to use it

- To view and analyze the results of runway constraints, stay in the current screen (Runway Constraints View).
- To create or edit a set of runway constraints, open the RC Manager by clicking on the RC Manager icon.

# Movements

## Runway Constraints View PRO

### Functionality

Use an existing set of runway constraints (a Template) without modifying it.

The screenshot shows the 'Runway Constraints Calendar View' interface. On the left, there's a sidebar with various navigation options like 'Scenario Overview', 'Movements', 'Generate', 'Import Movements', 'Flight Event Generator', 'Analyze', 'Calendar View', 'Volume View', 'Aggregate View', 'Expert View', 'Check', 'Runway Constraints View' (which is selected and highlighted in blue), and 'Linked Flights'. At the top, there are buttons for 'RC Manager' and 'Flight Spilling'. The main area is a calendar grid for the year 2013, showing days of the week and dates. An orange box labeled '1' highlights the 'Choose a Template' dropdown menu at the top of the screen.

This screenshot shows the same interface as above, but the 'Choose a Template' dropdown has been opened and the option 'Constraints generated at 24.09.201...' has been selected, as indicated by an orange box labeled '2'. The calendar grid remains visible below the dropdown.

### How to use it

Stay in the Runway Constraints View.

- 1 Click on the dropdown box Choose a Template.
- 2 In the dropdown box list, click on a template's name (in the screenshot, we clicked on the e.g. Template called Constraints generated at 24.09.201...)

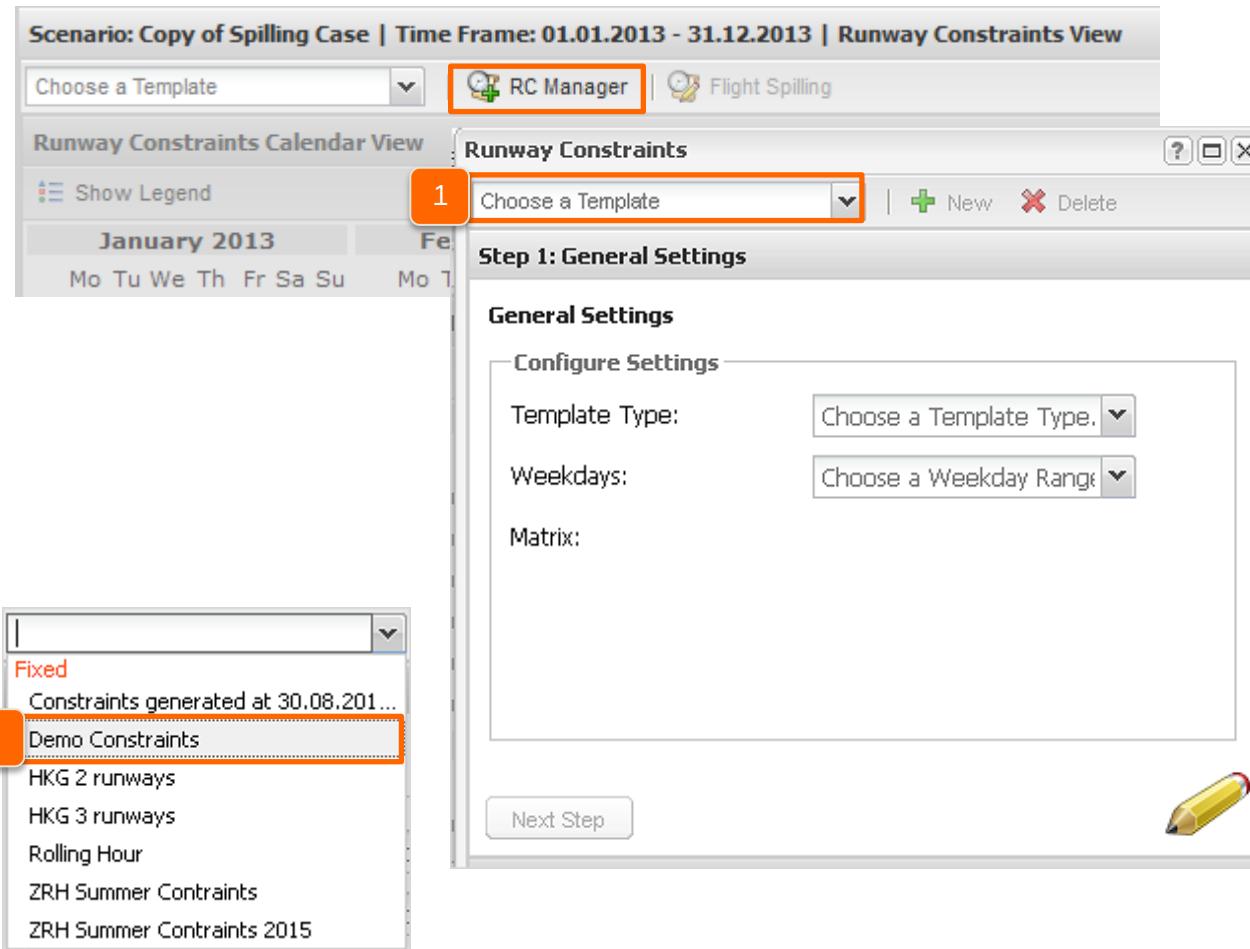


# Movements

## Runway Constraints View PRO

### Functionality

Modify an existing set of runway constraints (a Template).



### How to use it

In the Runway Constraints View, click on the RC Manager icon.

- 1 In the new window, click on the dropdown box Choose a Template.
- 2 In the dropdown box list, click on a template's name (in the screenshot, we clicked on the e.g. Template Demo Constraints).
- 3 To modify the Template, see the slide "[Create a new set of runway constraints in the RC Manager](#)".

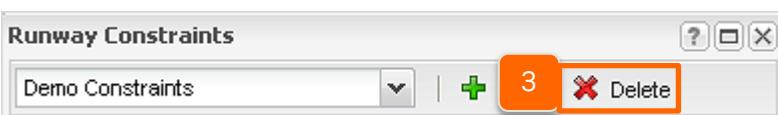
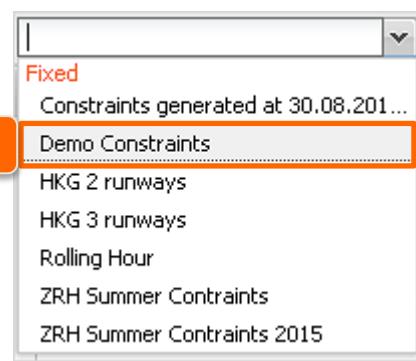


# Movements

## Runway Constraints View PRO

### Functionality

Delete an existing set of runway constraints (a Template).



### How to use it

In the Runway Constraints View, click on the RC Manager icon.

- 1 In the new window, click on the dropdown box Choose a Template.
- 2 In the dropdown box list, click on a template's name (in the screenshot, we clicked on the e.g. Template Demo Constraints).
- 3 To delete the Template, click on the Delete icon.

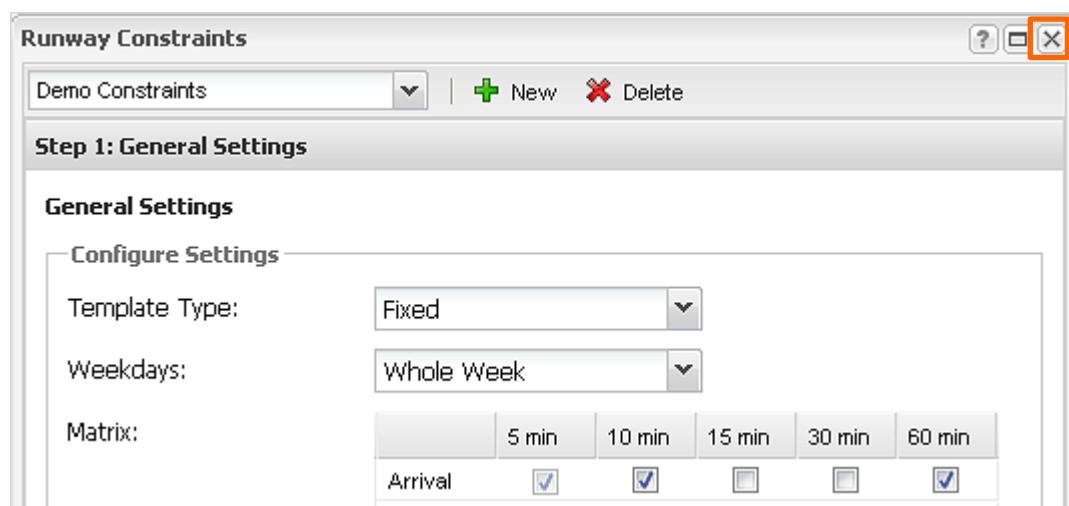


# Movements

## Runway Constraints View PRO

### Functionality

Exit the RC Manager without saving.



### How to use it

- Click on cross at the top of the window; or
- press the ESC key.



# Movements

## Runway Constraints View PRO

### Functionality

Create a new Template in the RC Manager.

Basic type: Fixed.

1

Whole Week	▼
Whole Week	
Mo - Fr, Sa, Su	
Single Weekdays	

2

	5 min	10 min	15 min	30 min	60 min
Arrival	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Departure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mixed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Your settings from Step 1 will be applied in Step 2.

The 1<sup>st</sup> row of column headings will show the selected Weekdays;  
 the 2<sup>nd</sup> will show the selected intervals;  
 the 3<sup>rd</sup> will show Arrival, Departure and Mixed (if selected).

		Mon - Sun									
		5 Minutes			15 Minu...		30 Minu...		60 Minu...		
Start	End	Arr	Dep	Mix	Arr	Dep	Dep	Mix	Arr	Mix	
00:00	03:59	1	1	1			5	10			
21:00	23:59	1	1	1			5	10			
04:00	20:59	5	5	10			40	60			

### How to use it

Step 1: General Settings

Click on the New icon.

1 Weekdays:

- If you select "Single Weekdays" with the dropdown box arrow, then in Step 2 you can fix independent constraints for each weekday.
- If you select "Whole Week", then you can only fix 1 set of constraints for all weekdays.
- If you select "Mon-Fri, Sat, Sun", then you can fix 3 sets of independent constraints.

2 Arr/Dep Matrix:

- You fix the range of all intervals (to which runway constraints will apply): for Arrivals, for Departures and for Arrivals+Departures (called "Mixed").
- You can tick more than 1 box. You cannot untick 5 min boxes.

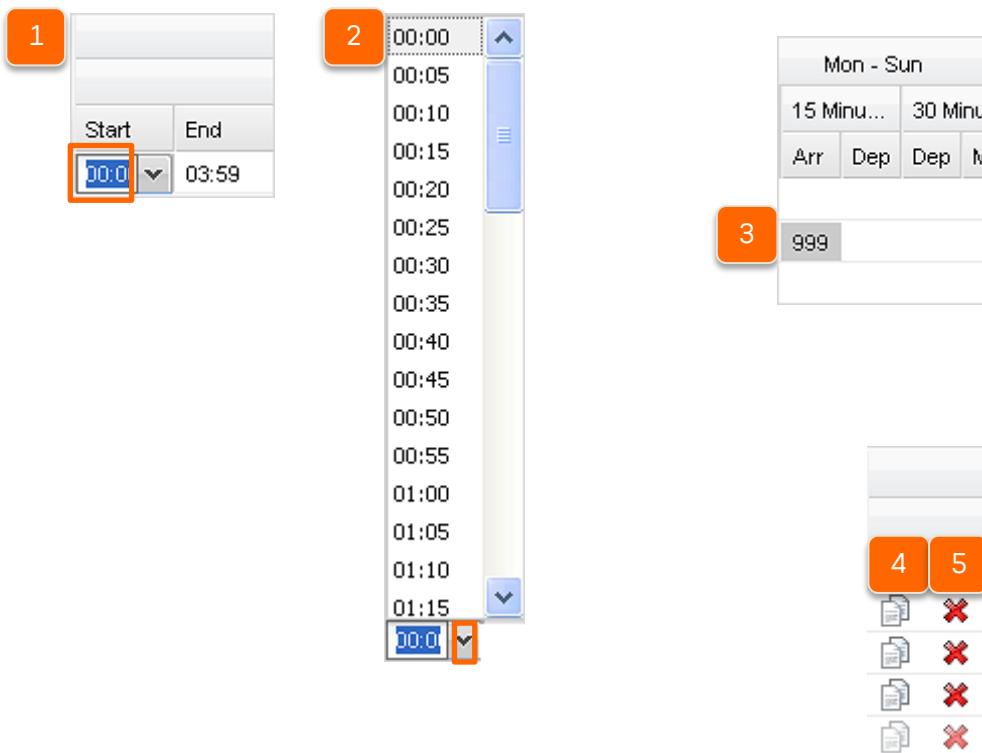
# Movements

## Runway Constraints View PRO

### Functionality

Create a new Template in the RC Manager.

Basic type: Fixed (continued).



### How to use it

#### Step 2: Adjust Runway Constraints

To fix the period during which the runway constraints of an interval should apply:

- 1 Go to the Start & End columns.
- 2 Click a 1<sup>st</sup> time on the relevant cell and type the time or click a 2<sup>nd</sup> time on the dropdown arrow.
- 3 To set a runway constraint, click on the relevant cell and type the maximum number of allowed flights.
- 4 To copy the runway constraints of one period to another period, click on the copy icon.
- 5 To delete a single runway constraint, click on the relevant cell and press the delete key.
- 5 To delete a period and all its runway constraints, click on the delete icon.

Caution: If you return to the Previous Step, then you will lose all data from Step 2.

# Movements

## Runway Constraints View PRO

### Functionality

Create a new Template in the RC Manager.

Basic type: Fixed

(continued).

**Step 3: Template Settings**

**Template Settings**

Template Name:

Fixed  
Constraints generated at 30.08.201...  
Demo Constraints  
HKG 2 runways  
HKG 3 runways  
Let's rename Demo Constraints  
Let's rename Demo Constraints  
Rolling Hour  
Second Version of Demo Constraints  
ZRH Summer Contraints  
ZRH Summer Contraints 2015  
new name  
second

### How to use it

#### Step 3: Template Settings

If you created a New Template, its default name will be "Constraints generated at [date] [time]".

- To save the New Template under its default name, click on the Save button/ the Save As button.
- To save the New Template under another name, type the new name in the text box and click on the Save button/ the Save As button.

If you edited an old Template, you can:

- Keep the old Template and make a New Template, by typing a new name in the text box and clicking on the Save As button.
- Delete and replace the old Template with a New Template, by typing a new name in the text box and clicking on the Save button.

# Movements

## Runway Constraints View PRO

### Functionality

Create a new Template in the RC Manager.

Advanced type: Rolling.

Step 1: General Settings																													
General Settings																													
<b>Configure Settings</b>																													
Template Type:	<input style="border: 1px solid red; width: 100px; height: 25px;" type="button" value="Fixed"/> <input style="border: 1px solid gray; width: 100px; height: 25px;" type="button" value="Rolling Hours"/>																												
Weekdays:	<input style="border: 1px solid red; width: 100px; height: 25px;" type="button" value="Choose a Weekday Range"/>																												
Matrix:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>5 min</th> <th>10 min</th> <th>15 min</th> <th>30 min</th> <th>60 min</th> </tr> </thead> <tbody> <tr> <td>Arrival</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Departure</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Mix</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>						5 min	10 min	15 min	30 min	60 min	Arrival	<input checked="" type="checkbox"/>	Departure	<input checked="" type="checkbox"/>	Mix	<input checked="" type="checkbox"/>												
	5 min	10 min	15 min	30 min	60 min																								
Arrival	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
Departure	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
Mix	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
Template Type:	<input style="width: 100px; height: 25px;" type="text" value="Fixed"/>																												
Weekdays:	<input style="width: 100px; height: 25px;" type="button" value="Choose a Weekday Range"/>																												
Matrix:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>5 min</th> <th>10 min</th> <th>15 min</th> <th>30 min</th> <th>60 min</th> </tr> </thead> <tbody> <tr> <td>Arrival</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Departure</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Mix</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>						5 min	10 min	15 min	30 min	60 min	Arrival	<input checked="" type="checkbox"/>	Departure	<input checked="" type="checkbox"/>	Mix	<input checked="" type="checkbox"/>												
	5 min	10 min	15 min	30 min	60 min																								
Arrival	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
Departure	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
Mix	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								
<b>Rolling Hours</b>																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>5 min</th> <th>10 min</th> <th>15 min</th> <th>30 min</th> <th>60 min</th> </tr> </thead> <tbody> <tr> <td>A   D   Mix</td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>							5 min	10 min	15 min	30 min	60 min	A   D   Mix	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
	5 min	10 min	15 min	30 min	60 min																								
A   D   Mix	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																								
<input checked="" type="radio"/> Standard <input type="radio"/> Weighted																													

### How to use it

Go to Step 1. Click on the dropdown arrow and click on Rolling (instead of Fixed) .

- e.g. Fixed:  
Runway constraints are applied to each 10 min. interval.
- e.g. Rolling:  
Runway constraints are applied from 00:00 to 00:59 to each 10 min. interval.

#### Rolling:

- ⇒ Where the Start time is 00:10, the runway constraints are applied until 01:10;
- ⇒ where the Start time is 00:20, the runway constraints are applied until 01:20...  
until the End time 00:59, where the runway constraints are applied until 01:59.



# Movements

## Runway Constraints View PRO

### Functionality

Create a new Template in the RC Manager.

Advanced type: Rolling (continued).

Optional: Use the average of two divergent runway constraints.

**Step 1: General Settings**

**General Settings**

**Configure Settings**

Template Type:	Rolling Hours												
Weekdays:	Single Weekdays												
Matrix:	<table border="1"> <tr> <td></td> <td>5 min</td> <td>10 min</td> <td>15 min</td> <td>30 min</td> <td>60 min</td> </tr> <tr> <td>A   D   Mix</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </table>		5 min	10 min	15 min	30 min	60 min	A   D   Mix	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	5 min	10 min	15 min	30 min	60 min								
A   D   Mix	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>								
Calculation Rule:	<input type="radio"/> Standard <input checked="" type="radio"/> Weighted												

### How to use it

Go to Step 1 and select Weighted.

e.g.

You decide that the period 06:30 - 7:29 is divided into 4 x 15 min. intervals:

- from 06:30 - 06:59, you apply the runway constraint "4 Arrivals per 15 min. interval";
- from 07:00 - 07:29 you apply the runway constraint "5 Arrivals per 15 min. interval".

=> The BSP-System concludes:

- from 06:30 - 06:59 there are 2 x 15 min. intervals, therefore  $2 \times 4 = 8$  Arrivals can occur;
- from 07:00 - 07:29, 10 Arrivals can occur.



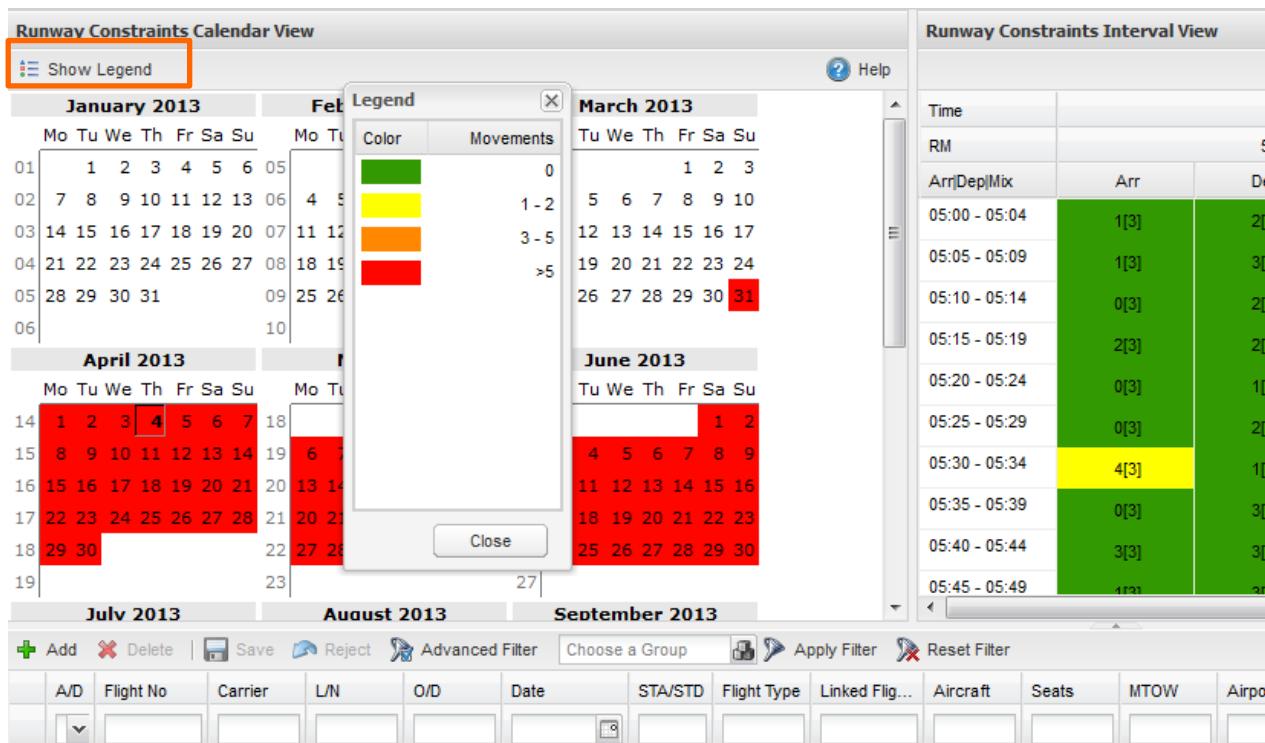
# Movements

## Runway Constraints View PRO

### Functionality

Analyze the results in the Runway Constraints View:

Getting an overview.



### How to use it

Go to the quadrant Runway Constraints Calendar View (RC Calendar View).

To understand the colors in the Runway Constraints View, click on the Show Legend icon.

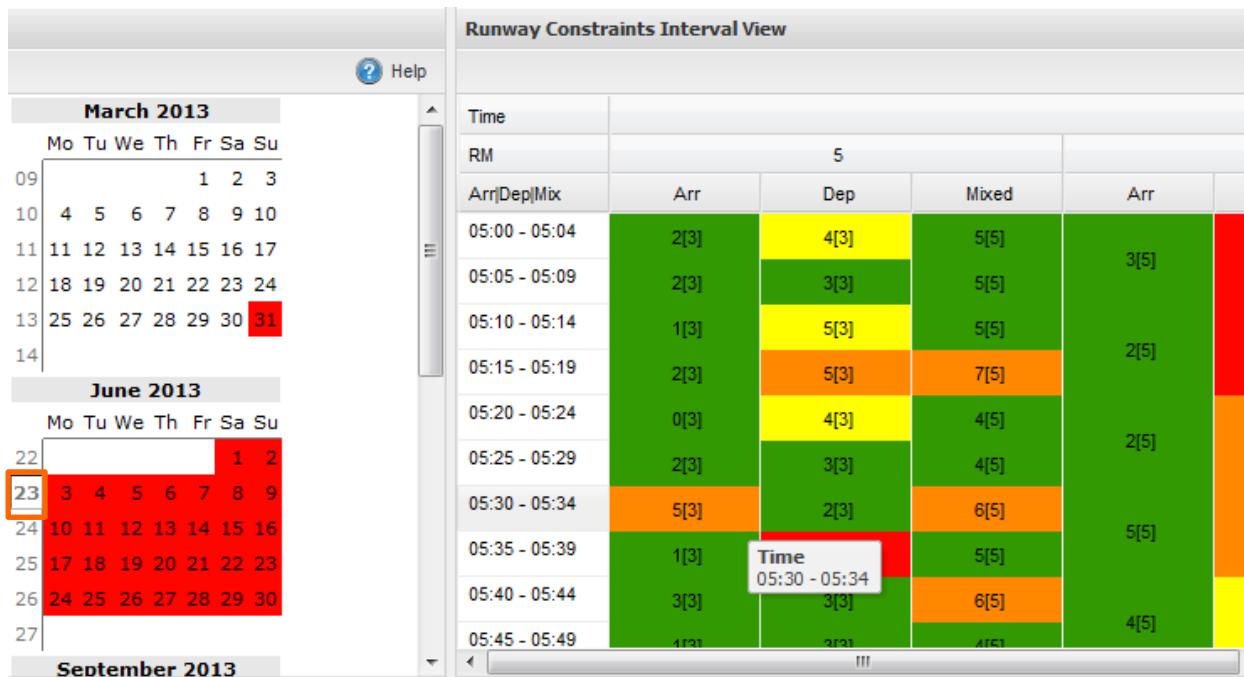
# Movements

## Runway Constraints View PRO

### Functionality

Analyze the results in the Runway Constraints View:

Getting a detailed view.



### How to use it

Go to the quadrant RC Calendar View and click on the name of a month, or a calendar week number, or a particular day.

e.g. screenshot:

In the quadrant Calendar View, the calendar week number 23 of the month June is clicked.

⇒ In the Internal View, each row shows a 4-minute interval applied to the entire calendar week.

In the Internal View, each cell shows:

- The "is no." of flights = how many there really are and
- [The "ought no"] = the runway constraint fixed in the RC Manager.

To check the duration of an interval, click on a cell and mouseover it.

# Movements

## Runway Constraints View PRO

### Functionality

Analyze the results in the Runway Constraints View:  
Getting a detailed view and editing single flight events.

Runway Constraints Calendar View

Show Legend He

23	27
<b>July 2013</b>	
Mo Tu We Th Fr Sa Su	Mo Tu We Th Fr Sa Su
27 1 2 3 4 5 6 7	31 1 2 3 4
28 8 9 10 11 12 13 14	32 5 6 7 8 9 10 11
29 15 16 17 18 19 20 21	33 12 13 14 15 16 17 18
30 22 23 24 25 26 27 28	34 19 20 21 22 23 24 25
31 29 30 31	35 26 27 28 29 30 31
32	36

Add Delete Save Reject Advanced Filter

A/D	Carrier	Flight No.	Date	STA
D	OAW	2L104	23.08.2013	
A	OAW	2L105	23.08.2013	
D	OAW	2L172	23.08.2013	
A	OAW	2L173	23.08.2013	
D	OAW	2L310	23.08.2013	

### How to use it

To see each single flight event during a month, or week, or day, click on the period in the quadrant RC Calendar View.

⇒ In the main screen, you can see each single flight event.

Violations of runway constraints are marked with a red square.

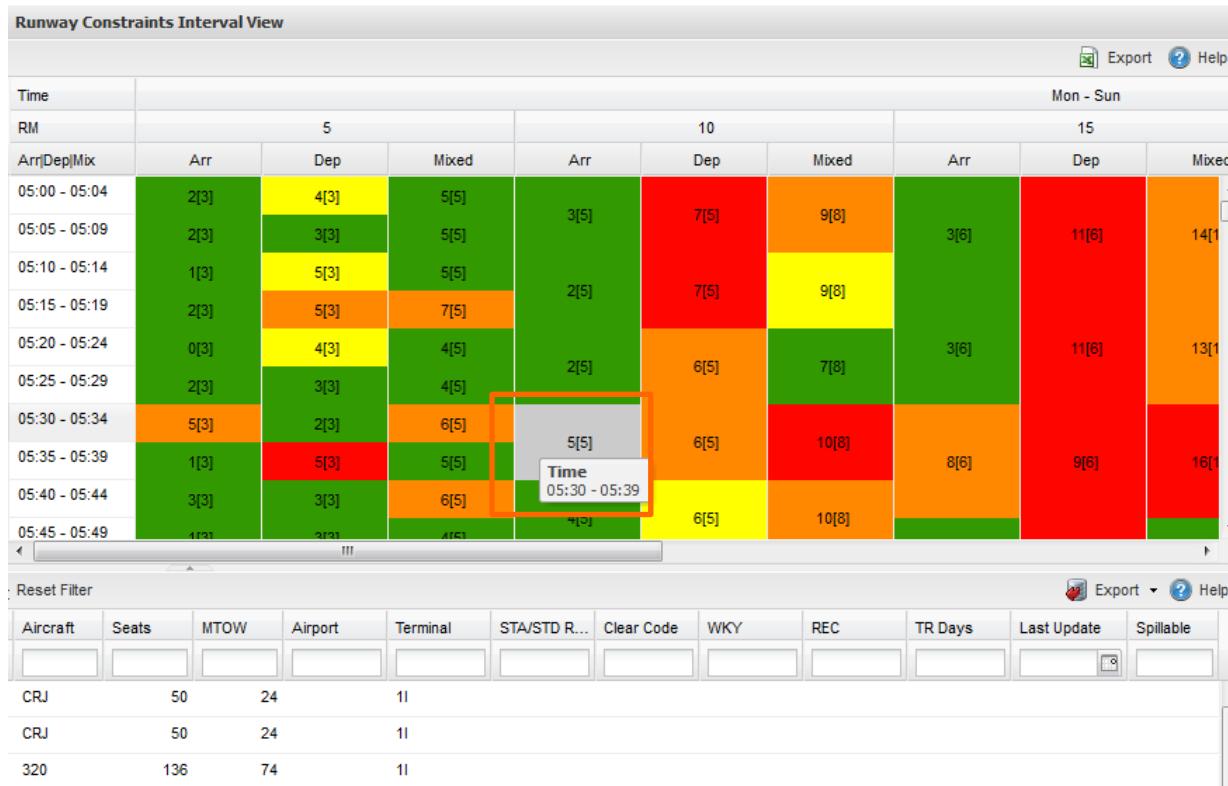
In the main screen, you can sort, filter and edit each flight event.

# Movements

## Runway Constraints View PRO

### Functionality

Analyze the results in the Runway Constraints View:  
Getting a very detailed view and editing single flight events.



### How to use it

To see each single flight event during a particular interval, click on the interval in the quadrant RC Internal View.

- ⇒ In the main screen, you can see each single flight event.  
Violations of runway constraints are marked with a red square.

In the main screen, you can sort, filter and edit each flight event.



# Movements

## Runway Constraints View – Flight Spilling

### Functionality

Shift and / or delete multiple flight events:

### How to use it

- Click on the Flight Spilling icon to shift or delete multiple flight events of a fixed or a rolling hour template.
- A new window to resolve violations is opened.
- The algorithm to spill flights on a rolling hour basis is an extension of the current version.

# Movements

## Runway Constraints View – Flight Spilling

### Functionality

Shift and / or delete multiple flight events:

Resolve Violations

Step 1: Settings

Settings

Time Frame

Start Date: \* 01.01.2013      End Date: \* 31.12.2013

Spilling Priority

Template: Choose a template

Min/Max Turnaround Time

Template: \* Choose a template

Min: \* 30      Max: \* 180

Maximum Spilling Time

Template: \* Choose a template

Max: \* 240

\* Mandatory Fields

Next Step

Step 2: Resolve Violations

Step 3: Summary

### How to use it

#### Step 1: Settings

- 1 Choose a Start and End Date which you want to look at.
- 2 Choose a template for prioritising airlines. Thus the flights of the chosen airlines will be spilled first. To create a corresponding template go to System Settings and General Template. Note that this field is not mandatory.
- 3 Choose a template to set the minimum and maximum Turnaround Time for different airlines and aircrafts. The additional two Min and Max fields have to be filled for those flights which are not specified through the template.
- 4 Choose a template to set a maximum Spilling Time.

# Movements

## Runway Constraints View – Flight Spilling

### Functionality

Shift and / or delete multiple flight events:

Resolve Violations

Assign Spilled Flights to Import: RCR: Spilled - Schedule generated at 28.11.2013 11:53:03

Delete or Mark Lost Flights:  Mark Lost Flights  Delete Lost Flights

Assign Lost Flights to Import: RCR: Lost - Schedule generated at 28.11.2013 11:53:03

A/D	Carrier	Flight No	O/D	Aircraft	Date Old	STA/STD Old	Date New	STA/STD New	Priority	Action	
<input checked="" type="checkbox"/>	A	EK 180	WAW	77W	31.03.2013	18:15	31.03.2013	-	1	Delete	
<input checked="" type="checkbox"/>	A	EK 393	SGN	77W	31.03.2013	22:00	31.03.2013	-	1	Delete	
<input checked="" type="checkbox"/>	A	EK 379	HKT	343	31.03.2013	23:55	31.03.2013	-	1	Delete	
<input checked="" type="checkbox"/>	A	JAI	9W 532	IXE	31.03.2013	21:20	31.03.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	EK 758	ALG	332	31.03.2013	21:25	31.03.2013	-	1	Delete	
<input checked="" type="checkbox"/>	A	EK 814	RUH	332	31.03.2013	22:55	31.03.2013	-	1	Delete	
<input checked="" type="checkbox"/>	FDB	FZ 816	AHB	73H	31.03.2013	18:25	31.03.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	ETH	ET 3612	ADD	31.03.2013	22:20	31.03.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	EAQ	QF 9	MEL	31.03.2013	18:45	31.03.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	IGO	6E 37	TRV	320	31.03.2013	17:15	31.03.2013	13:35	100	-
<input checked="" type="checkbox"/>	A	IGO	6E 37	TRV	320	31.03.2013	17:15	31.03.2013	13:35	100	-
<input checked="" type="checkbox"/>	A	CPA	CX 68	HKG	31.03.2013	21:50	31.03.2013	-	2	Delete	
<input checked="" type="checkbox"/>	A	DHX	DHX131	BAH	31.03.2013	23:50	31.03.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	PVT	PVT180	VKO	GRJ	01.04.2013	09:20	01.04.2013	12:10	100	-
<input checked="" type="checkbox"/>	D	PVT	PVT190	MCT	GRJ	01.04.2013	21:55	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	D	PVT	PVT179	RUH	318	01.04.2013	15:30	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	D	PVT	PVT182	BOM	GRJ	01.04.2013	11:45	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	A	UAE	EK 180	WAW	332	01.04.2013	18:15	01.04.2013	-	1	Delete
<input checked="" type="checkbox"/>	D	PVT	PVT184	FAB	GRJ	01.04.2013	12:55	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	D	PVT	PVT212	JED	CL6	01.04.2013	12:10	01.04.2013	14:20	100	-

Previous Step  Resolve Violations

### How to use it

#### Step 2: Resolve Violations

This step provides all identified flights which can be spilled or deleted.

The overview shows both the old and new date respectively STA/STD to the flights concerned. Flights which can't be shifted are marked as Delete in the column Action.

# Movements

## Runway Constraints View – Flight Spilling

### Functionality

Shift and / or delete multiple flight events:

The screenshot shows the 'Resolve Violations' dialog box. At the top, there are two radio buttons: 'Mark Lost Flights' (selected) and 'Delete Lost Flights'. Below them is a message: 'RCR: Lost - Schedule generated at 28.11.2013 11:53:03'. The main area is a grid of flight events with columns: A/D, Carrier, Flight No, O/D, Aircraft, Date Old, STA/STD Old, Date New, STA/STD New, Priority, and Action. The 'Action' column contains mostly 'Delete' entries. Several rows are highlighted with orange boxes and numbered 1 through 4. Box 1 surrounds the 'Delete Lost Flights' radio button. Box 2 surrounds the 'Date Old' column header. Box 3 surrounds the first column (A/D). Box 4 surrounds the 'Resolve Violations' button at the bottom left. The bottom right of the dialog has a pencil icon.

A/D	Carrier	Flight No	O/D	Aircraft	Date Old	STA/STD Old	Date New	STA/STD New	Priority	Action
A	UAE	EK 180	WAW	77W	31.03.2013	18:15	31.03.2013	-	1	Delete
A	UAE	EK 393	SGN	77W	31.03.2013	22:00	31.03.2013	-	1	Delete
A	UAE	EK 379	HKT	343	31.03.2013	23:55	31.03.2013	-	1	Delete
A	JAI	9W 532	IXE	73H	31.03.2013	21:20	31.03.2013	-	100	Delete
A	UAE	EK 758	ALG	332	31.03.2013	21:25	31.03.2013	-	1	Delete
A	UAE	EK 814	RUH	332	31.03.2013	22:55	31.03.2013	-	1	Delete
A	FDB	FZ 816	AHB	73H	31.03.2013	18:25	31.03.2013	-	100	Delete
A	ETH	ET 3612	ADD	75F	31.03.2013	22:20	31.03.2013	-	100	Delete
A	EAQ	QF 9	MEL	388	31.03.2013	18:45	31.03.2013	-	100	Delete
A	IGO	6E 37	TRV	320	31.03.2013	17:15	31.03.2013	13:35	100	-
A	IGO	6E 37	TRV	320	31.03.2013	17:15	31.03.2013	13:35	100	-
A	CPA	CX 68	HKG	74Y	31.03.2013	21:50	31.03.2013	-	2	Delete
A	DHX	DHX131	BAH	75F	31.03.2013	23:50	31.03.2013	-	100	Delete
D	PVT	PVT180	VKO	GRJ	01.04.2013	09:20	01.04.2013	12:10	100	-
D	PVT	PVT190	MCT	GRJ	01.04.2013	21:55	01.04.2013	-	100	Delete
D	PVT	PVT179	RUH	318	01.04.2013	15:30	01.04.2013	-	100	Delete
D	PVT	PVT182	BOM	GRJ	01.04.2013	11:45	01.04.2013	-	100	Delete
A	UAE	EK 180	WAW	332	01.04.2013	18:15	01.04.2013	-	1	Delete
D	PVT	PVT184	FAB	GRJ	01.04.2013	12:55	01.04.2013	-	100	Delete
D	PVT	PVT212	JED	CL6	01.04.2013	12:10	01.04.2013	14:20	100	-

Buttons at the bottom: Previous Step, Resolve Violations (highlighted), and a pencil icon.

### How to use it

#### Step 2: Resolve Violations

- 1 Select Delete Lost Flights for deleting the listed flights below which have Delete as Action. If you only want to mark the lost flights (which can't be spilled) without deleting them select the option Mark Lost Flights.
- 2 Use the known filter options to filter by any column you like.
- 3 Tick or untick special flights you want to exclude. Ticked flight events will be shifted/deleted. To untick all flight events, click on the box in the column heading (to tick all again, click again).
- 4 Click Resolve Violations to apply all the actions you made before.

# Movements

## Runway Constraints View – Flight Spilling

### Functionality

Shift and / or delete multiple flight events:

Resolve Violations

A/D	Carrier	Flight No	O/D	Aircraft	Date Old	STA/STD ...	Date New	STA/STD ...	Priority	Action	
D	EAQ	QF 9	LHR	388	01.04.2013	21:00	01.04.2013	-	100	Delete	
A	EAQ	QF 9	MEL	388	01.04.2013	18:45	01.04.2013	-	100	Delete	
A	JGO	SG 17	COK	738	01.04.2013	15:50	01.04.2013	-	100	Delete	
D	JGO	SG 16	AMD	738	01.04.2013	15:25	01.04.2013	-	100	Delete	
A	JGO	SG 15	AMD	738	01.04.2013	14:15	01.04.2013	-	100	Delete	
D	UPS	UPS24	SZX	74Y	01.04.2013	09:55	01.04.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	UPS	UPS24	CGN	01.04.2013	07:50	01.04.2013	-	100	Delete	
<input checked="" type="checkbox"/>	A	IGO	6E 37	TRV	320	01.04.2013	17:15	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	A	TAY	3V 51	LGG	77X	01.04.2013	10:50	01.04.2013	12:15	100	-
D	UAE	EK 81	LYS	345	01.04.2013	09:55	01.04.2013	-	1	Delete	
<input checked="" type="checkbox"/>	A	EAY	EE 101 P	RKT	733	01.04.2013	09:30	01.04.2013	11:30	100	-
<input checked="" type="checkbox"/>	A	EAY	EE 101 P	RKT	733	01.04.2013	09:30	01.04.2013	11:30	100	-
<input checked="" type="checkbox"/>	A	PVT	PVT111	JED	CCJ	01.04.2013	16:45	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	A	PVT	PVT112	ALA	CCJ	01.04.2013	08:15	01.04.2013	-	100	Delete
<input checked="" type="checkbox"/>	D	PVT	PVT107	GRV	CCX	01.04.2013	08:00	01.04.2013	07:55	100	-
D	DHX	DHX130	BAH	75F	01.04.2013	19:00	01.04.2013	-	100	Delete	
D	PVT	PVT122	BBU	DF3	01.04.2013	22:10	01.04.2013	-	100	Delete	
D	PVT	PVT124	LTN	DF3	01.04.2013	14:00	01.04.2013	-	100	Delete	
A	PVT	PVT126	RUH	318	01.04.2013	15:35	01.04.2013	-	100	Delete	
A	PVT	PVT120	KWI	LRJ	01.04.2013	15:35	01.04.2013	-	100	Delete	

Previous Step Resolve Violations

Step 3: Summary

**Summary**

Runway Constraints Violations successfully resolved. (Flight events: Changed 3, deleted 2)

**Restart Wizard**

### How to use it

#### Step 3: Summary

The third step provides a summary of the resolved violations.

Close the window or click the Restart Wizard button to start the Flight Spilling menu again.



# **BEONTRA**

## **B Tactical**

### 6. Movements Linked Flights



# Movements Linked Flights

## Functionality

The system searches for arrivals and departures with same/similar flight numbers and which occur within +/- 1 month in order to provide rotation. The time between a matched arrival and departure flight is defined as block time.

**B** tactical Scenario Explorer System Settings Group Editor Logout Info

Scenario: Copy of DEMO STT 2013 | Time Frame: 01.01.2013 - 31.12.2013 | Linked Flights

Main Navigation Scenario Overview Movements Generate Import Movements Flight Event Generator **PRO** Analyze Calendar View Volume View Aggregate View Expert View Check Runway Constraints View **PRO** Linked Flights **PRO** Cancellation Rate **PRO**

**Link Flights**

Carrier	Arrival	Departure	Σ	
SWISS INTERNATIONAL AIR LINES LTD	37.640	37.639	75.279	0
AIR BERLIN PLC CO LUFTVERKEHRS KG	3.612	3.611	7.223	0
DEUTSCHE LUFTHANSA AG	3.488	3.489	6.977	0
EDELWEISS AIR AG	2.182	2.156	4.338	0
KLM ROYAL DUTCH AIRLINES	1.257	1.257	2.514	2.512
AIR FRANCE	1.209	1.209	2.418	2.416
INTERSKY LUFTFAHRT GMBH	1.164	1.164	2.328	2.328
BRITISH AIRWAYS	1.146	1.146	2.292	2.290
TURK HAVA YOLLARI TURKISH AIRLINE...	945	945	1.890	1.888
HELVETIC AIRWAYS AG	898	914	1.812	0
SCANDINAVIAN AIRLINES SYSTEM	874	874	1.748	1.748
93 Elements	70.429	70.418	140.847	42.788

Aircraft Type	Arrival	Departure	Σ	
A320		20.364	20.501	40.865
AR1		10.278	10.012	20.290
A319		8.697	8.688	17.385
A321		5.972	5.840	11.812
F100		3.356	3.375	6.731
A330-300		2.683	2.890	5.773
A340-300		2.408	2.410	4.818
E190		2.300	2.299	4.599
DH4		1.445	1.653	3.098
738		1.222	1.222	2.444
DH8C		1.162	1.162	2.324
52 Elements		70.429	70.418	140.847

Export Help

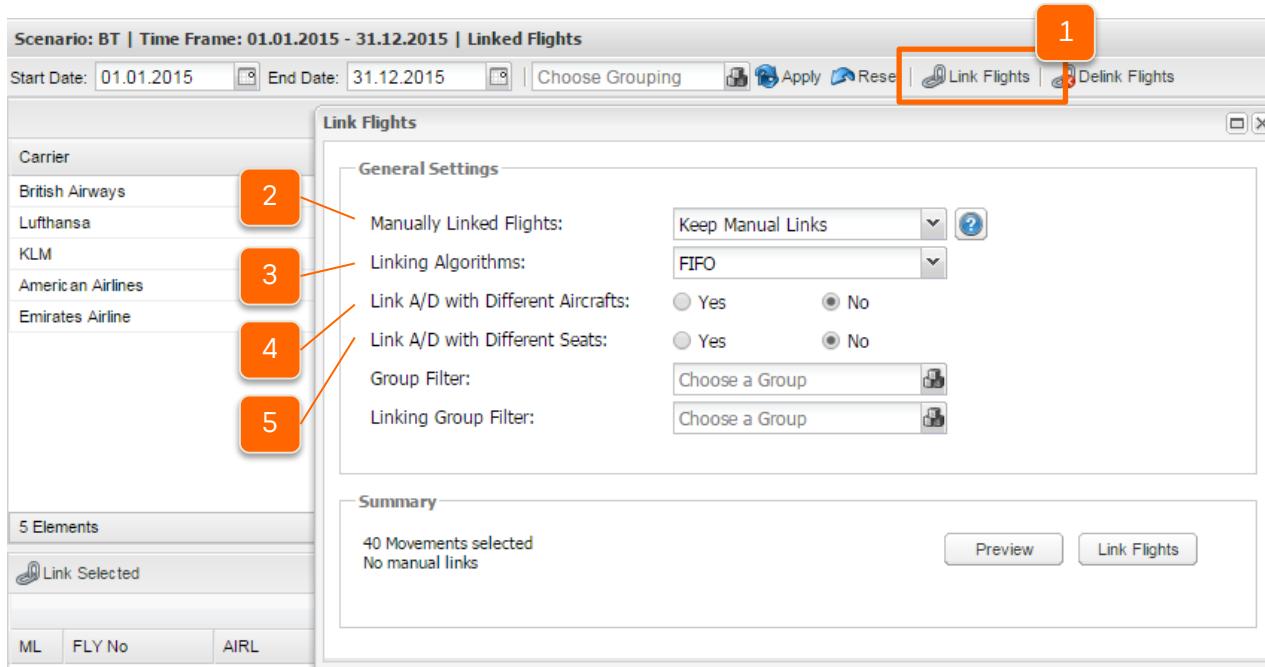
Arrival							Departure							Link Result			
FLY No	AIRL	DEST	DATE	TIME	Flight Type	AC	FLY No	AIRL	DEST	DATE	TIME	Flight Type	AC	Blocktime	HP		
							LX2810	SWR	GVA	31.03.2013	15:45	J	320	0	0		
							LX1026	SWR	DUS	31.03.2013	15:45	J	320	0	0		
LX1251	SWR	ARN	31.03.2013	15:55	J	320								0	0		
XQ120	SXS	AYT	31.03.2013	15:55	J	738	XQ121	SXS	AYT	31.03.2013	16:45	J	738	50 min	65.536		
							2L184	DAW	OHD	31.03.2013	16:00	J	100	0	0		
JU330	JAT	BEG	31.03.2013	16:00	J	733	JU331	JAT	BEG	31.03.2013	16:50	J	733	50 min	65.536		
AZ574	AZA	FCO	31.03.2013	16:05	J	E75	AZ573	AZA	FCO	31.03.2013	16:45	J	E75	40 min	65.536		
WK285	EDW	FNC	31.03.2013	16:10	J	320								0	0		
LX2085	SWR	LIS	31.03.2013	16:10	J	320								0	0		
AY863	FIN	HEL	31.03.2013	16:15	J	319	AY864	FIN	HEL	31.03.2013	17:10	J	319	55 min	65.536		
							LH1197	DLH	FRA	31.03.2013	16:15	J	319	0	0		
							LX1664	SWR	VCE	31.03.2013	16:15	J	320	0	0		
							LX978	SWR	TXL	31.03.2013	16:20	J	320	0	0		
4T2099	BHP	SSH	31.03.2013	16:20	J	320								0	0		
Load Data	+/-	AB8198	BER	TXL	31.03.2013	16:30	J	319						0	0		
Airport specific	+/-	IB3474	IBE	MAD	31.03.2013	16:30	J	320	IB3471	IBE	MAD	31.03.2013	17:10	J	320	40 min	65.536
Reporting	+/-													Displaying 1 - 1.000 of 119.453			

Export Help

# Movements Linked Flights

## Functionality

Used to choose the General Settings for linking flights.



## How to use it

- 1 Click on Linked Flights in the main menu. New window will open.
- 2 Decide whether to replace existing linked flights (= Override Manual Links) or to only link unlinked flights (= Keep Manual Links).
- 3 Choose the Linking Algorithms:  
FIFO = first in first out  
LIFO = Last in first out
- 4 „Yes“ allows more flexibility in linking flights.
- 5 „Yes“ allows to link flights which have different amounts of seats  
→ Proceed to next slide

# Movements Linked Flights

## Functionality

Used to choose the General Settings for linking flights.

Scenario: BT | Time Frame: 01.01.2015 - 31.12.2015 | Linked Flights

Start Date: 01.01.2015 End Date: 31.12.2015 Choose Grouping Apply Reset Link Flights Delink Flights

**Carrier**

- British Airways
- Lufthansa
- KLM
- American Airlines
- Emirates Airline

**Link Flights**

**General Settings**

- Manually Linked Flights: Keep Manual Links
- Linking Algorithms: FIFO
- Link A/D with Different Aircrafts:  Yes  No
- Link A/D with Different Seats:  Yes  No
- Group Filter: Choose a Group
- Linking Group Filter: Choose a Group

**Summary**

40 Movements selected  
No manual links

ML FLY No AIRL

## How to use it

- 6 Choose the Groups for which the linking should be done
- 7 Possibility to define carrier groups which flights can explicitly be linked. Even if they normally can not be linked due to different carriers
- 8 Click on Preview to see the # Mov. affected.
- 9 After clicking on "Link Flights" the algorithm is started and the flights will be linked.

# Movements Linked Flights

## Functionality

The minimum and maximum turnaround time for every Airline-Aircraft-combination can be stored in the Aircraft by Airline table within the system settings.

The screenshot shows the 'System Settings - Aircraft by Airline' window. It contains a table with columns: Aircraft Type, Airline, MTOW, Seats, Min Turnaround, Max Turnaround, and Wingspan. A red box highlights the 'Max Turnaround' column. Below the table is a 'Link Flights' dialog box. The dialog has sections for General Settings (Manually Linked Flights, Linking Algorithms, Link A/D with Different Aircrafts, Link A/D with Different Seats, Group Filter, Linking Group Filter) and a Summary section (40 Movements selected, No manual links). A red box highlights the 'Link Flights' button in the dialog. Three numbered callouts point to specific elements: 1 points to the 'Max Turnaround' column header; 2 points to the 'Link Flights' button in the dialog; 3 points to the 'Max Turnaround' column in the table.

	Aircraft Type	Airline	MTOW	Seats	Min Turnaround	Max Turnaround	Wingspan
1	RJ100	BEL	44	98	35	2160	
2	CRJ90	DLH	38	81	35	2150	
3	DH840	AUA	29	70			
4	DO328	AUA	14	29			
5	E190	BAW	46	100			
6	E195	DLH	51	110	35	2080	
7	FK70	AUA	41	75	35	2070	
8	MD11	DLH	286	0	60	2160	
9	B378W	DLH	80	92	45	2140	
10	A321	DLH	80	196	45	2130	
11	FK100	AUA	45	98	40	2090	
12	A3181	AFR	60				
13	A319	AFR	66				
14	A319	BAW	65				
15	A319	DLH	67				
16	A319	AUA	68				
17	A320A	AFR	72				
18	A320A	AEE	74				
19	A320A	BAW	74				
20	A320A	DLH	74				
21	A32B	BER	93				

Scenario: BT | Time Frame: 01.01.2015 - 31.12.2015 | Linked Flights  
Start Date: 01.01.2015 End Date: 31.12.2015 | Choose Grouping | Apply | Reset | Link Flights | Delink Flights

**Link Flights**

General Settings

- Manually Linked Flights: Keep Manual Links
- Linking Algorithms: FIFO
- Link A/D with Different Aircrafts: Yes (radio button)
- Link A/D with Different Seats: No (radio button)
- Group Filter: Choose a Group
- Linking Group Filter: Choose a Group

Summary

40 Movements selected  
No manual links

Preview | Link Flights

## How to use it

- 1 In Aircraft by Airline table within the System Settings you can set different minimum and maximum turnaround times.
- 2 After clicking on "Link Flights" the algorithm is started and the flights will be linked.
- 3 If the algorithm can't find an entry for a combination, the default is taken into account. The default minimum is 25 minutes and the maximum 36 hours (=2160 minutes).

# Movements Linked Flights

## Functionality

The results of the linking are shown. The fourth column displays the linked flights and the fifth column displays the unlinked flights. The Blocktime is the time between the displayed arrival and departure time.

Scenario: BT | Time Frame: 01.01.2015 - 31.12.2015 | Linked Flights

Carrier	Arrival	Departure	$\Sigma$	Link Flights	Unlink Flights	Export
British Airways	9	9	18	18	0	
Lufthansa	6	6	12	12	0	
KLM	3	3	6	6	0	
American Airlines	1	1	2	2	0	
Emirates Airline	1	1	2	2	0	

Aircraft Type	Arrival	Departure	$\Sigma$	Link Flights	Unlink Flights	Export
Airbus A320	10	10	20	20	0	
Airbus A380-800	7	7	14	14	0	
Boeing 737 All Series	1	1	2	2	0	
Boeing 747 All Series	1	1	2	2	0	
A380-841	1	1	2	2	0	

5 Elements		20	20	40	40	0				

Arrival							Departure							Link Result			
ML	FLY No	AIRL	DEST	DATE	TIME	Flight Type	AC	ML	FLY No	AIRL	DEST	DATE	TIME	Flight Type	AC	Blocktime	HP
(	LH008	DLH	FRA	01.01.2015	00:10	J	388	(	LH008	DLH	FRA	01.01.2015	01:00	J	388	50 min	120
(	BA004	BAW	MAN	01.01.2015	01:00	J	320	(	BA004	BAW	MAN	01.01.2015	02:00	J	320	60 min	120
(	BA002	BAW	JFK	01.01.2015	11:00	J	320	(	BA002	BAW	JFK	01.01.2015	12:00	J	320	60 min	120
(	BA001	BAW	MAN	01.01.2015	11:00	J	388	(	BA001	BAW	MAN	01.01.2015	12:00	J	388	60 min	120
(	KL001	KLM	AMS	01.01.2015	12:00	J	388	(	KL001	KLM	AMS	01.01.2015	13:00	J	388	60 min	120
(	LH005	DLH	FRA	01.01.2015	12:00	J	320	(	LH005	DLH	FRA	01.01.2015	13:00	J	320	60 min	120
(	LH004	DLH	FRA	01.01.2015	12:00	J	320	(	LH004	DLH	FRA	01.01.2015	13:00	J	320	60 min	120
(	BA003	BAW	MAN	01.01.2015	12:00	J	320	(	BA005	BAW	MAN	01.01.2015	13:00	J	320	60 min	120
(	EK001	UAE	FRA	01.01.2015	12:00	J	737	(	EK001	UAE	FRA	01.01.2015	13:00	J	737	60 min	120
(	AAI 001	AAI	FRA	01.01.2015	12:00	J	747	(	AAI 001	AAI	FRA	01.01.2015	13:00	J	747	60 min	120



# BTactical Check – Linked Flights – Sally Export

## Functionality

It is now possible to choose whether the exported sally file is filled with number of pax information or number of seats information per flight event.

The screenshot shows the BTactical software interface with the following details:

- Main Navigation:** Scenario Overview, Movements, Analyze, Reporting.
- Scenario Overview:** Scenario: Spilling Test | Time Frame: 01.01.2015 - 31.12.2015 | Linked Flights.
- Movements:** Sub-sections include Import Movements, Scenario Updates, Flight Event Generator, Calendar View, Time View, Regate View, Alert View, and Way Constraints View. A red box labeled '1' highlights the 'Linked Flights' option.
- Table:** Shows flight data with columns: Carrier, Arrival, Departure, Σ, and two icons. The data includes flights from various carriers like President Airlines, easyJet, Royal Air Maroc, Alitalia, Tunisair, CR, Air Caraïbes, Norwegian Air Shuttle, Air Fiji, Air Berlin, and 16 Elements.
- Export:** A large table titled 'Export' showing aircraft type, arrival, departure, Σ, and icons. It lists aircraft types like Boeing 737-800 Winglets, Airbus A320, A330-200, A330-300, A319, and A320.
- Link Selected:** A table showing linked flights with columns: Arrival, Departure, and Blocktime. It lists flights like EZY4223, EZY4277, TO 3002, etc.
- Export Dialog:** A modal dialog titled 'Export' with three options: CSV, Sally Pax, and Sally Seats. The 'Sally Pax' option is selected.
- Bottom Status:** Displays 'Displaying 1 - 1 000 of 1 901'.

## How to use it

1 Go to Movements in the Main Navigation of BTactical and select Linked Flights in the Check section

2 Export the linked flight table as sally file & choose whether you want to export the file with passenger or seat information

# Movements

## Delink Flights

### Functionality

Possibility to delink all or specific flights in order to relink the schedule.

Screenshot of the BEONTRA B Tactical software interface showing the "Linked Flights" section. The "Delink Flights" button is highlighted with a red box.

The interface includes a Main Navigation bar with links to Scenario Explorer, System Settings, Group Editor, Logout, and Info. The "Movements" section is selected in the navigation tree.

The "Linked Flights" section displays two tables:

- Carrier:** Shows flight counts by carrier: British Airways (9), Lufthansa (6), KLM (3), American Airlines (1), and Emirates Airline (1).
- Aircraft Type:** Shows flight counts by aircraft type: Airbus A320 (10), Airbus A380-800 (7), Boeing 737 All Series (1), Boeing 747 All Series (1), and A380-841 (1).

Below these tables are two large grids for "Link Selected" flights:

- Arrival Grid:** Columns include ML, FLY No, AIRL, DEST, DATE, TIME, Flight Type, AC, and various identifiers for each flight.
- Departure Grid:** Columns include ML, FLY No, AIRL, DEST, DATE, TIME, Flight Type, AC, and various identifiers for each flight.
- Link Result Grid:** Columns include Blocktime and HP.

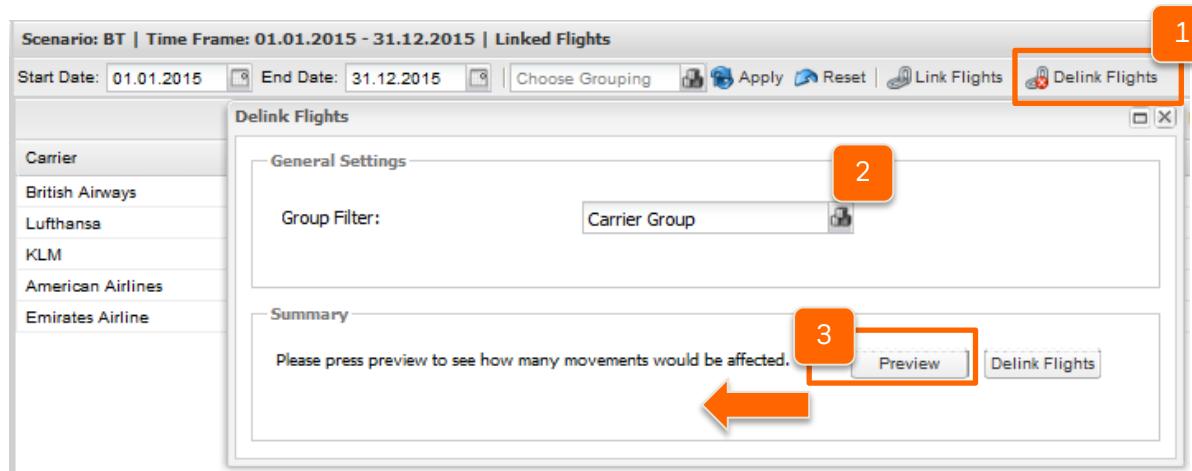
At the bottom of the screen, there are navigation buttons for Page, Reporting, and a house icon.

# Movements

## Delink Flights

### Functionality

Possibility to delink all or specific flights on order to relink the schedule.



### How to use it

- 1 Click on Deink Flights in the main menu. New window will open.
- 2 Decide which flights you want to delink. All, if no group is selected or for a specific group.
- 3 Click on Preview to see the # Mov. Affected.



# **BEONTRA**

## **B Tactical**

### 6. Movements Cancellation Rate



# Movements Cancellation Rate

## Functionality

It is possible to cancel a certain amount of flights. First of all unlinked flights are deleted and afterwards linked pairs are deleted.

## How to use it

- 1 Choose Start and End Date.
- 2 Press Preview to calculate the identified amount of flights.
- 3 Enter a certain percentage or the amount of movements you would like to delete.
- 4 Press „Cancel Flights“ to start the algorithm.

# Movements Cancellation Rate

## Functionality

When choosing a certain group, only flights belonging to this group are deleted.

The screenshot shows the BEONTRA B Tactical software interface. The main navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The left sidebar lists various movement analysis options like Scenario Overview, Movements, Generate, Import Movements, Flight Event Generator (PRO), Analyze, Calendar View, Volume View, Aggregate View, Expert View, Check, Runway Constraints View (PRO), Linked Flights (PRO), and Cancellation Rate (PRO). The central workspace displays a 'Settings' panel for 'Movements Cancellation Rate'. It includes fields for 'Group Filter' (Star Allicane [LX]), 'Start Date' (01.01.2013), 'End Date' (31.12.2013), 'Preview' (button 3), 'MOV for this selection' (1.396), 'Cancellation Rate (in %)' (10), '# of MOV' (140), and 'Cancel Flights' (button 5). A note at the bottom says 'Mandatory Fields\*'. Orange numbered callouts (1 through 5) point to each of these fields respectively.

## How to use it

- 1 Choose a certain group within the Group Editor.
- 2 Choose Start and End Date.
- 3 Press Preview to calculate the identified amount of flights.
- 4 Enter a certain percentage or the amount of movements you would like to delete.
- 5 Press „Cancel Flights“ to start the algorithm.

# **BEONTRA**

## **B Tactical**

### 7. Load Data Load Factor View

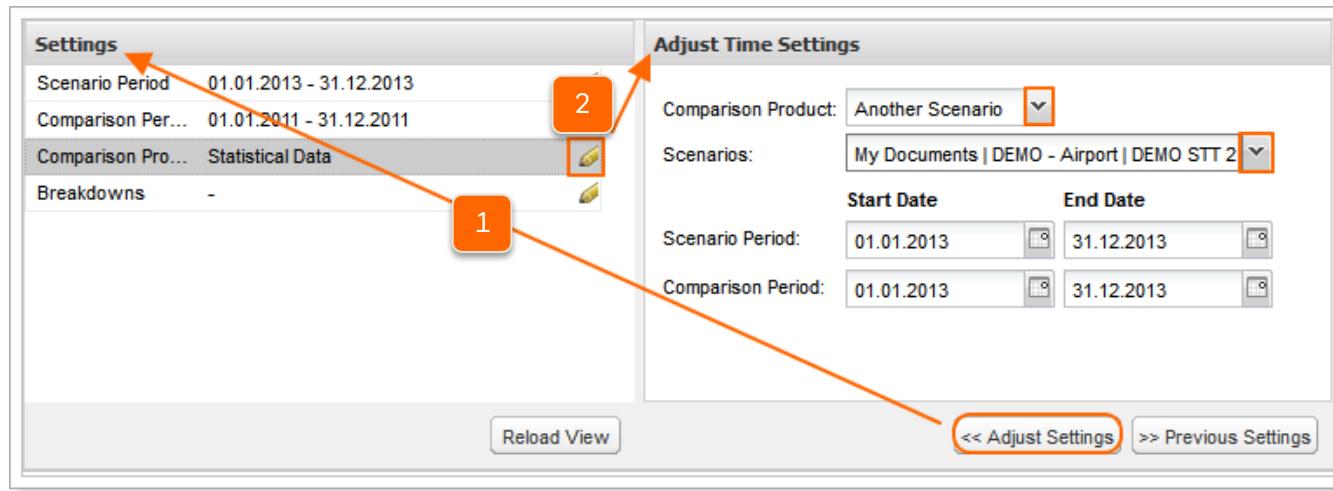


# Load Data

## Load Factor View

### Functionality

Used to define Settings and to adjust Time Settings



### How to use it

- 1 Select one of the periods or products shown in Settings.
- 2 Click on the pen to edit the Time Settings.

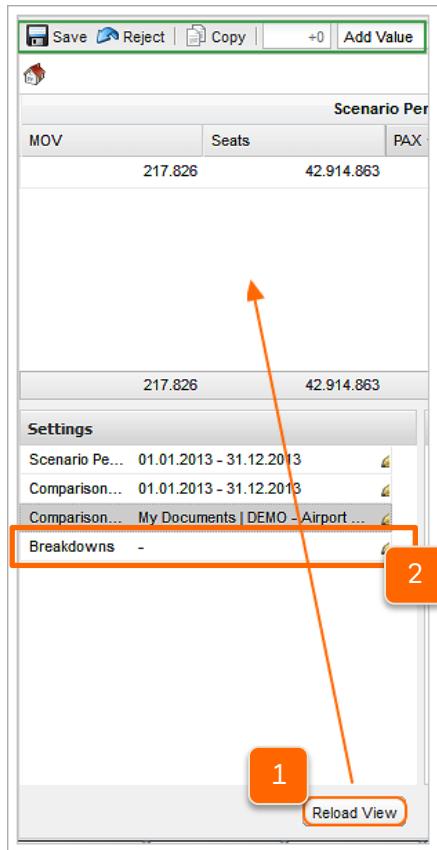


# Load Data

## Load Factor View

### Functionality

Used to apply Settings on main screen



### How to use it

- 1 Click on „Reload View“ to adjust data in the main screen.
- 2 Click on „Breakdowns“ for the next step.



# Load Data

## Load Factor View

### Functionality

Used to define breakdowns for the main screen

Settings	
Scenario Period	01.01.2013 - 31.12.2013
Comparison Period 1	01.01.2011 - 31.12.2011
Comparison Product	0
Breakdowns	-

**Adjust Breakdowns**

Breakdown 1: A/D

Breakdown 2: Month

Breakdown 3: Carrier Code

Breakdown 4: Destination Code

Breakdown 5: Choose a Breakdown

Reload View
<< Adjust Settings
>> Previous Settings
Reset

### How to use it

- 1 Adjust one or several breakdowns via drop-down menus which you like to have on the main screen in the right order.
- 2 Click „<<Adjust Settings“ and „Reload View“

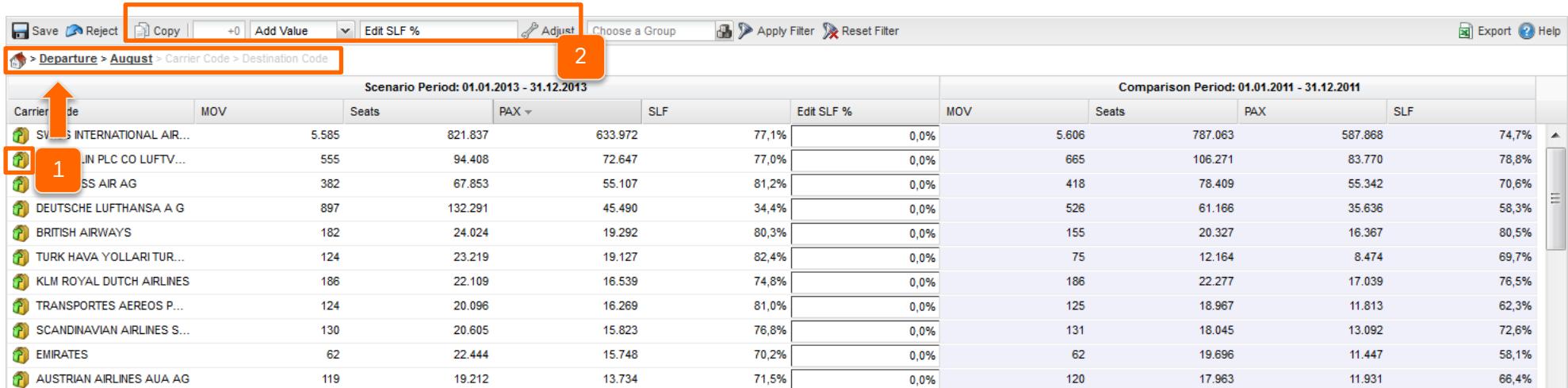


# Load Data

## Load Factor View

### Functionality

Used to analyze breakdowns in detail and to edit Load Factors per breakdown level.



Scenario Period: 01.01.2013 - 31.12.2013							Comparison Period: 01.01.2011 - 31.12.2011				
Carrier	Code	MOV	Seats	PAX	SLF	Edit SLF %	MOV	Seats	PAX	SLF	
	SVCS INTERNATIONAL AIRLINES	5.585	821.837	633.972	77,1%	0,0%	5.606	787.063	587.868	74,7%	
	LIN PLC CO LUFTVERBUND	555	94.408	72.647	77,0%	0,0%	665	106.271	83.770	78,8%	
	SS AIR AG	382	67.853	55.107	81,2%	0,0%	418	78.409	55.342	70,6%	
	DEUTSCHE LUFTHANSA AG	897	132.291	45.490	34,4%	0,0%	526	61.166	35.636	58,3%	
	BRITISH AIRWAYS	182	24.024	19.292	80,3%	0,0%	155	20.327	16.367	80,5%	
	TURK HAVA YOLLARITURK	124	23.219	19.127	82,4%	0,0%	75	12.164	8.474	69,7%	
	KLM ROYAL DUTCH AIRLINES	186	22.109	16.539	74,8%	0,0%	186	22.277	17.039	76,5%	
	TRANSPORTES AEREOS P...	124	20.096	16.269	81,0%	0,0%	125	18.967	11.813	62,3%	
	SCANDINAVIAN AIRLINES S...	130	20.605	15.823	76,8%	0,0%	131	18.045	13.092	72,6%	
	EMIRATES	62	22.444	15.748	70,2%	0,0%	62	19.696	11.447	58,1%	
	AUSTRIAN AIRLINES AUA AG	119	19.212	13.734	71,5%	0,0%	120	17.963	11.931	66,4%	

### How to use it

- 1 Use this icon for further breakdowns which are shown next to the „Home Button”
- 2 To edit the load factor (e.g. SLF) you have different possibilities: copy it from comparison period, add or set a value. Confirm by clicking „Adjust”.

# Load Data

## Load Factor View

### Functionality

Load and edit data from all other kinds of PAX, Bags and Freight in the same way as explained on previous slides.

Main Navigation

-  Scenario Overview
- Movements
- Load Data

PAX Total

- PAX Transfer/Transit
- Bags Local
- Bags Transfer
- Freight Full
- Freight Belly
- Belly Mail



# **BEONTRA**

## **B Tactical**

### 8. Load Data Forecast Adjustment



# Load Data Forecast Adjustment

## Functionality

Used to delete existing load factors and define new load factors by setting breakdowns for all entries simultaneously and automatically.

The screenshot shows the 'Forecast Adjustment' module interface. Step 1 highlights the 'Choose a Template' dropdown. Step 2 highlights the 'Reset All Load Factors' radio buttons ('Yes' selected) and the 'Group Filter' dropdown. Step 3 highlights the 'Start Date' and 'End Date' date pickers for the 'Scenario Period'. Step 4 highlights the 'Products' checkbox list, which includes 'Products', 'PAX Total', 'PAX Transfer', 'PAX Transit', 'Bags Local', 'Bags Transfer', 'Freight Full', 'Freight Belly', and 'Belly Mail', with 'Products' checked.

## How to use it

- 1 Choose, add or delete a template(optional). The advantage lies in being able to reuse the Forecast Adjustment settings for other projects.
- 2 Choose whether to apply the forecast adjustments to all entries or not(reset all load factors or not).
- 3 Select the start and end dates for which you would like to apply the forecast adjustments.
- 4 Select the products for which you like to adjust the load factor.

# Load Data

## Forecast Adjustment – Breakdown Structure

### Functionality

Used to delete existing load factors and define new load factors by setting breakdowns for all entries simultaneously.

The screenshot shows the BEONTRA Forecast Adjustment interface. On the left, there's a main navigation menu with options like Scenario Explorer, System Settings, Group Editor, Logout, and Info. Below that is a detailed navigation tree with categories such as Main Navigation, Movements, Load Data, PAX Total, PAX Transfer/Transit, Bags Local, Bags Transfer, Freight Full, Freight Belly, Belly Mail, and Forecast Adjustment. The Forecast Adjustment section is currently selected. The main content area has tabs for General Settings, Time Settings, and Products. Under General Settings, there are options to Reset All Load Factors (Yes or No) and a Group Filter. Under Time Settings, it shows the Scenario Period (01.01.2013 - 31.12.2013) and Comparison Period (01.01.2011 - 31.12.2011). The Products tab lists various categories with checkboxes: Products, PAX Total, PAX Transfer, PAX Transit, Bags Local, Bags Transfer, Freight Full, Freight Belly, and Belly Mail. The most prominent part of the interface is the 'Breakdown Structure' section on the right. It contains a list of breakdown levels: Total, A/D, Month, Carrier Code, Destination Code, and 'Choose a Breakdown'. An orange box highlights this list, and two orange numbered callouts point to it: '1' points to the 'Total' entry, and '2' points to the 'Stop Level' label above the list. At the bottom of the interface, there's a 'Start Calculation' button with a warning message: 'Warning: This action cannot be undone!', followed by 'Adjust Forecast' and 'Reset' buttons. An orange callout '3' points to the 'Adjust Forecast' button.

### How to use it

- 1 Select all the levels of the breakdown structure that are necessary for the forecast adjustment.
- 2 Choose the stop level to ensure that the system adjusts the load factors with at least the breakdowns until and including the stop level. The other breakdown levels are only used when there is data within.
- 3 Click on „Adjust Forecast“.

## Load Data

### Forecast Adjustment – Breakdown Structure – Working principle

#### Functionality

The Breakdown Structure makes sure that the desired forecast adjustment logic is used. Furthermore, when this logic is not applicable, the possibility for a higher level forecast adjustment is enabled.

Scenario Period: 01.01.2015 - 31.12.2015							Comparison Period: 01.01.2010 - 20.01.2010				
A/D	Carrier Code	Origin / Destination Code	MOV	Seats	PAX Total	SLF	Seat Lo...	MOV	Seats	PAX Total	SLF
A	Emirates Airline	Frankfurt	1	180	180	100,0%	0,0%	1	150	150	100,0%
A	KLM	Amsterdam	1	200	196	98,0%	0,0%	2	450	440	97,8%
A	KLM	John F Kennedy Intl	1	250	242	96,8%	0,0%	0	0	0	0,0%
D	American Airlines	Frankfurt	1	180	170	94,4%	0,0%	0	0	0	0,0%
A	Lufthansa	Berlin	1	250	229	91,6%	0,0%	0	0	0	0,0%
A	Lufthansa	FLIGHT_DATE	FLIGHT_CARRIER_2L	FLIGHT_NO	ARR_DEP	AC_SEATS	AC_TYPE	FLIGHT_TYPE	FLIGHT_DESTINATION	PAX_SUM	
A	Lufthansa	04012010 1200	KLM	KL001	A	250	388 J		AMS	250	
		05012010 1400	KLM	KL002	A	200	320 J		AMS	190	
		14012010 1850	KLM	KL003	A	200	320 J		FRA	190	
		04012010 1400	KLM	KL001	D	250	388 J		AMS	200	
		05012010 1600	KLM	KL002	D	200	320 J		AMS	160	
		14012010 2230	KLM	KL003	D	200	320 J		FRA	160	

Stop Level

Total:	Total	<input type="radio"/>
Breakdown 1:	A/D	<input checked="" type="radio"/>
Breakdown 2:	Carrier Code	<input type="radio"/>
Breakdown 3:	Origin / Destination Code	<input type="radio"/>
Breakdown 4:	Choose a Breakdown	<input type="radio"/>

#### How to use it

- 1 The Forecast Adjustment initially „drills down“ based on A/D → Carrier Code → Origin/Destination Code. In case there are flights within, the SLF values are copied. If there are **no flights within**, then the **lowest breakdown level** is **omitted** and the drill down re-starts.
- 2 As 1 pointed out, Breakdown 3 is omitted and 1 is carried out again. In the present case, the drill down was successful and 3 flights were found with valid Seats and SLF values. The **average of the PAX numbers** are taken and are copied to the **Scenario Period** as the adjustment of the SLF in the forecast.



# Load Data

## Forecast Adjustment – Calculation Example

### Functionality

The goal is to calculate PAX Total. We have three Breakdowns and the third one is the Stop Level.

The screenshot displays the BEONTRA Load Data Forecast Adjustment interface. It includes the following sections:

- General Settings:** Includes "Reset All Load Factors" (radio buttons for Yes or No), "Group Filter" (button to "Choose a Group"), and a "Stop Level" section.
- Time Settings:** Shows "Scenario Period" from 01.01.2015 to 31.12.2015 and "Comparison Period" from 01.01.2010 to 20.01.2010.
- Products:** A list of items with checkboxes, where "PAX Total" is selected.
- Breakdown Structure:** A "Stop Level" section with dropdown menus for "Total" (set to "Total"), "Breakdown 1" (set to "A/D"), "Breakdown 2" (set to "Carrier Code"), "Breakdown 3" (set to "Origin / Destination Code" with a radio button selected), and "Breakdown 4" (set to "Choose a Breakdown").
- Start Calculation:** A warning message "Warning: This action cannot be undone!" followed by "Adjust Forecast" and "Reset" buttons.

## Load Data

### Forecast Adjustment - SLF Calculation: 1 full match

#### Functionality

The breakdowns "A/D", "Carrier Code", "Origin / Destination Code" are taken into account when searching for a fitting flight in the comparison period. In this case the combination is "A", "DLH" and „JFK".

Sort   SLF   PAX Total		Scenario Period: 01.01.2015 - 31.12.2015						Comparison Period: 01.01.2010 - 20.01.2010					
A/D	Carrier Code	Origin / Destination Code	MOV	Seats	PAX Total	SLF	Seat Lo...	MOV	Seats	PAX Total	SLF		
A	Lufthansa	John F Kennedy Intl	1	200	200	100,0%	0,0%	1	200	200	100,0%		
A	Emirates Airline	Frankfurt	1	180	180	100,0%	0,0%	1	150	150	100,0%		
A	KLM	Amsterdam	1	200	196	98,0%	0,0%	2	450	440	97,8%		

FLIGHT_DATE_ACTUAL	FLIGHT_DATE	FLIGHT_CARRIER_2L	FLIGHT_NO	ARR_DEP	AC_SEATS	AC_TYPE	FLIGHT_TYPE	FLIGHT_DESTINATION	PAX_SUM	PAX_LOCAL	PAX_SUM	PAX_LOCAL	PAX_TRANSIT	PAX_TRANSFER
02012010 1100	02012010 1100	BA	BA002	A	200	320 J		JFK	150	110	150	110	0	40
13012010 2050	13012010 2050	DLH	LH009	A	200	320 J		JFK	200	200	200	200	0	0
02012010 1400	02012010 1400	BA	BA002	D	200	320 J		JFK	160	110	160	110	20	30
13012010 2350	13012010 2350	DLH	LH009	D	200	320 J		JFK	100	60	100	60	40	0

#### How to use it

In the historical data there are 4 flights from/to JFK. Two of them have "DLH" as carrier, but only one is an arrival flight. It has 200 seats and 200 PAX Total. This results in a SLF of 100 % in the comparison period. In the scenario period we have 200 seats and 200 \* 1 = 200. We get 200 PAX Total. This leads to a SLF of 100 % in the Scenario Period.

$$\begin{aligned}
 \text{SLF} &= \frac{\text{PAX Total}}{\text{Seats}} \cdot 100 \% \\
 &= \frac{200}{200} \cdot 100 \% \\
 &= 100 \%
 \end{aligned}$$

## Load Data

### Forecast Adjustment – Common Error – Assigning Flight Types

#### Hint

The Error TP-10002 is a common error, please find help in the right box. It is caused by not assigning a forecasting product to a flight type.



System Settings - Forecasting Products <=> Flight Types	
Forecast Product	Flight Type
Freight Belly	C
Freight Belly	J
Belly Mail	J
Belly Mail	C
Freight Full	F
PAX Total	C
PAX Total	J
PAX Total	P
PAX Transfer	P
PAX Transfer	J
PAX Transfer	C
PAX Transfer/Transit	J
Bags Local	J



#### Solution

- 1 Go to System Settings.
- 2 Click on „Configuration & External Input” and then click on „Forecast Products ⇌ Flight Types”.
- 3 Click on „Add” and enter a flight product (e.g. Bags Local) and assign a flight type code.
- 4 Confirm by pressing „Save”.



# Load Data

## Forecast Adjustment – Common Error – Zero Seat Load Factor

### Encountered problem

After the Forecast Adjustment, the Seat Load factor of some of all flights is zero. This is caused by having the Stop Level in the Breakdown Structure too low in the tree.

The screenshot displays the DTAP software interface with two main windows:

- Top Window (Load Factor View):** Shows a table with flight data for MOV (Movement) 16. The table includes columns for Seats, PAX Total, SLF, and SLF %. The SLF % value is highlighted with a red box and shows 0.0%.
- Bottom Window (Forecast Adjustment):** Shows the 'Breakdown Structure' settings. The 'Stop Level' dropdown menu is open, showing levels from 'Total' down to 'Terminal'. The 'Terminal' option is selected and highlighted with a red box. A red arrow points from the 'Terminal' selection back up towards the 'Load Factor View' window.

1 Go to Load Data/Forecast Adjustment.

2 Revise and (if necessary) modify the Breakdown Structure of the forecast adjustment.

3 Move the Stop Level to a higher breakdown level according to your preferences.

### Hint:

Investigate the effects of different Stop Levels for obtaining a more accurate forecast.

# **BEONTRA**

## **B Tactical**

9. Load Data  
Special Events & Forecast Organizer



## B Tactical Special Event Handling

Forecast the SLF for 2017 based on historical data of 2010

	Easter 2017	Easter 2010
Friday	14.04.2017	02.04.2010
Saturday	15.04.2017	03.04.2010
Sunday	16.04.2017	04.04.2010
Monday	17.04.2017	05.04.2010



# B Tactical

## System Settings – Event Categories – Special Event Handling

### Functionality

Create different Event Categories to handle special events.

System Settings

CR9

Location Based Basic Data

- Countries
- Airports
- Event Categories
- Forecast Event Organizer
- Terminal Locations
- Outlets
- Operators
- Non-Aviation Segments

Flight Based Basic Data

System Settings - Event Categories

Add Delete | Save Reject | Reset Filter

Quick Search

Import Export CSV

	Name
1	Holidays
2	Vacations
3	Exhibitions
4	SpecialEvents
5	Weather
6	Miscellaneous

Page 1 of 1 | Displaying 1 - 6 of 6

Table Import Delete Results

### How to use it

- 1 To build special event entries it is necessary to create the event categories which should be used.
- 2 In the toolbar the typical functions like add, delete, import and export are available. This enables to create all necessary events.

# B Tactical

## System Settings – Forecast Event Organizer – Special Event Handling

### Functionality

Generate different special events in the System settings to use it during the forecast adjustment.

The screenshot shows the 'System Settings' window with various categories like Location Based Basic Data and Flight Based Basic Data. A callout box labeled '1' highlights the 'Forecast Event Organizer' icon. This leads to a detailed view of the 'System Settings - Forecast Event Organizer' window, which contains a table of special events. The table has columns for Start Date, End Date, Start Date Comparison, End Date Comparison, Name, and Category. One row is selected, showing '14.04.2017' as the start date, '17.04.2017' as the end date, '02.04.2010' as the comparison start date, '05.04.2010' as the comparison end date, 'Easter' as the name, and 'Vacations' as the category. The toolbar at the top of this window includes buttons for Add, Delete, Save, Reject, Start Date, End Date, Apply Filter, Reset Filter, Import, and Export CSV. The bottom of the window shows navigation buttons for Page, Table, Import, and Delete Results, and a status message 'Displaying 1 - 1 of 1'.

	Start Date	End Date	Start Date Comparison	End Date Comparison	Name	Category
1	14.04.2017	17.04.2017	02.04.2010	05.04.2010	Easter	Vacations

### How to use it

- 1 Create special event entries in the system settings.
- 2 When adding a new special event, you have to choose the Start and the End Date and also the Comparison period. The name can be chosen freely and the category has to be from the ones created before.
- 3 In the toolbar the basic functions like add, delete, import and export are available.

# B Tactical

## Load Data – Forecast Adjustment – Create Adjustment Template

### Functionality

As usual create an Adjustment Template in the section “Forecast Adjustment”.

The screenshot shows the BEONTRA software interface. On the left, the Main Navigation pane includes links for Scenario Overview, Movements, Load Data, PAX Total, PAX per Flight, PAX Transfer/Transit, Bags Local, Bags Transfer, Freight, Forecast Adjustment (which is highlighted with an orange arrow), and Forecast Organizer. The central area displays the 'Forecast Adjustment' screen for a template named 'Easter\_Show\_And\_Tell'. This screen has sections for General Settings (Reset All Load Factors: Yes, Group Filter: Choose a Group), Time Settings (Scenario Period: 01.04.2017 - 30.04.2017, Comparison Period: 01.04.2010 - 30.04.2010), Products (list including PAX Total, PAX per Flight, PAX Transfer, PAX Transit, Bags Local, Bags Transfer, Freight, Position, with PAX Total selected), Breakdown Structure (Stop Level: Total, Breakdown 1: A/D, Breakdown 2: Carrier Code, Breakdown 3: Flight Date, Breakdown 4: Choose a Breakdown), and a Start Calculation button with a warning message: 'Warning: This action cannot be undone!'. An orange arrow points from the bottom left towards the 'Products' list.

### How to use it

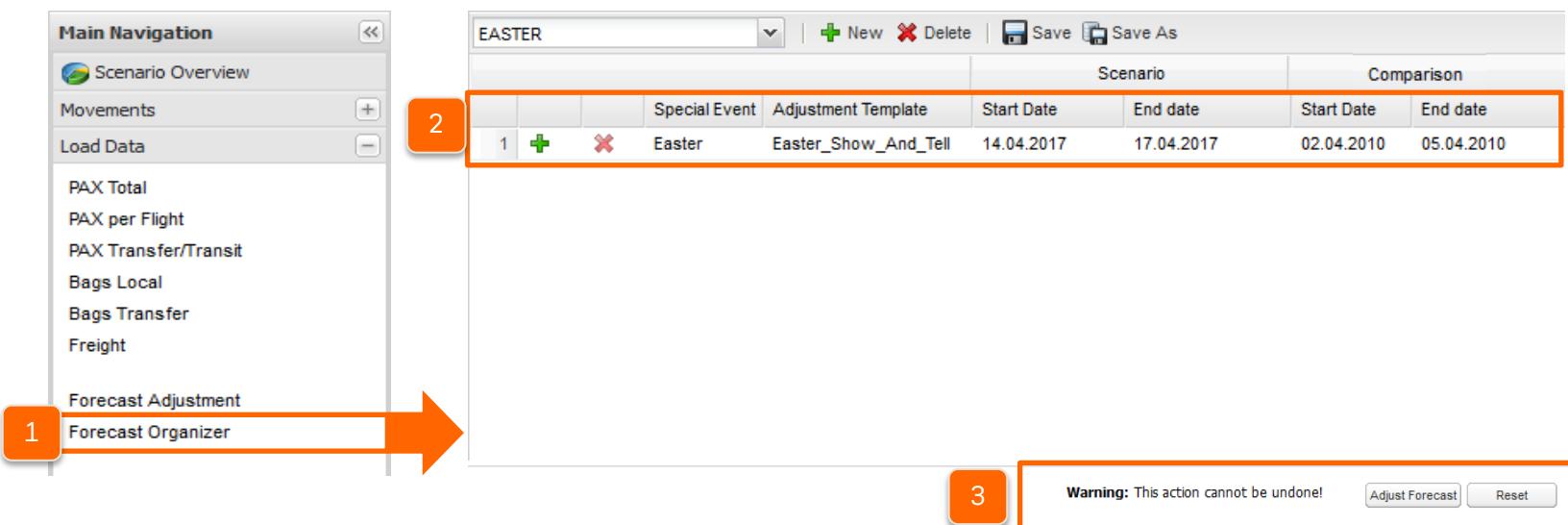
- 1 Go to the Forecast Adjustment
- 2 Choose all the settings and save the template, but don't run the forecast.

# B Tactical

## Load Data – Forecast Organizer – Special Event Handling

### Functionality

After creating an Adjustment Template, you can create a new template including special events with the “Forecast Organizer” and run the forecast for the chosen special events. The SLF will be shown in the Load Data section.



### How to use it

- 1 Go to the Forecast Organizer.
- 2 Choose the special events and the created adjustment template.
- 3 Run the forecast for the chosen special events.



# B Tactical

## Load Data View – PAX Total

### Functionality

See the results in the Load Data View.

Main Navigation

- [Scenario Overview](#)
- [Movements](#)
- [Load Data](#)
- PAX Total**
- [PAX per Flight](#)
- [PAX Transfer/Transit](#)
- [Bags Local](#)
- [Bags Transfer](#)
- [Freight](#)
- [Forecast Adjustment](#)
- [Forecast Organizer](#)

Scenario Period: 01.04.2017 - 20.04.2017						Comparison Period: 01.04.2010 - 20.04.2010				
A/D	Flight Date	MOV	Seats	Pax Total	SLF	Seat Load Factor %	MOV	Seats	Pax Total	SLF
A	12.04.2017	1	271	0	0,0%	0,0%	314	41.802	31.084	74,4%
D	12.04.2017	1	271	0	0,0%	0,0%	316	42.000	32.181	76,6%
A	13.04.2017	1	295	0	0,0%	0,0%	282	39.624	26.912	67,9%
D	13.04.2017	1	295	0	0,0%	0,0%	282	39.857	27.749	69,6%
A	14.04.2017	119	16.784	10.679	63,6%	0,0%	294	40.662	31.139	76,6%
D	14.04.2017	121	17.073	10.122	59,3%	0,0%	294	40.375	28.863	71,5%
A	15.04.2017	137	20.740	13.578	65,5%	0,0%	316	41.727	30.226	72,4%
D	15.04.2017	138	21.087	13.371	63,4%	0,0%	312	41.004	28.719	70,0%
A	16.04.2017	140	21.623	15.096	69,8%	0,0%	300	39.101	25.188	64,4%
D	16.04.2017	144	22.041	14.775	67,0%	0,0%	300	39.148	24.138	61,7%
A	17.04.2017	34	6.050	4.399	72,7%	0,0%	313	41.409	29.916	72,2%
D	17.04.2017	26	3.841	2.823	73,5%	0,0%	313	41.101	26.515	64,5%
A	18.04.2017	2	406	0	0,0%	0,0%	314	41.837	31.153	74,5%
D	18.04.2017	2	406	0	0,0%	0,0%	315	42.064	29.868	71,0%
A	19.04.2017	3	763	0	0,0%	0,0%	311	42.239	31.750	75,2%
D	19.04.2017	1	157	0	0,0%	0,0%	311	42.528	33.032	77,7%
A	20.04.2017	1	303	0	0,0%	0,0%	281	30.850	28.713	72,1%
		902	138.779	84.843	61,1%		12.162	1.633.421	1.130.324	69,2%

### How to use it

- 1 Go to the Load Data View.
- 2 After the run the SLF for the chosen period are shown.  
To forecast the other days it is necessary to run the Automated Forecast Adjustment.

# **BEONTRA**

## **B Tactical**

### 10. Airport Specific Publish Scenario



# Airport Specific Publish Scenario

## Functionality

Used to publish a scenario for the module B Capacity.

The screenshot shows the BEONTRA B Tactical software interface. The main navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The main content area has a title 'Scenario: BT | Time Frame: 01.01.2015 - 31.12.2015 | Publish Scenario'. On the left, there is a sidebar with 'Main Navigation' containing links for Scenario Overview, Movements, Load Data, Airport specific, Sally, Export PFP, and Publish Scenario. The 'Publish Scenario' link is highlighted. The central part of the screen is divided into two sections: 'Settings' (enclosed in a red box and labeled 1) and 'Published Scenarios' (labeled 2). The 'Settings' section contains fields for Publish Scenario Name (set to 'Publish BT'), Description (empty), Start Date (01.01.2015), and End Date (31.12.2015). A note at the bottom says '\* Mandatory Fields'. Below these fields are 'Publish Scenario' and 'Reset' buttons. The 'Published Scenarios' section shows a table with one entry: ID 1, Name 'Publish sga', Status (empty), Description (empty), Start Date 01.01.2015, and End Date 31.12.2015.

## How to use it

- 1 Fill out the settings as required for your exercise.
- 2 Click on „Publish Scenario“ and the scenario will appear on the right box in Published Scenarios.

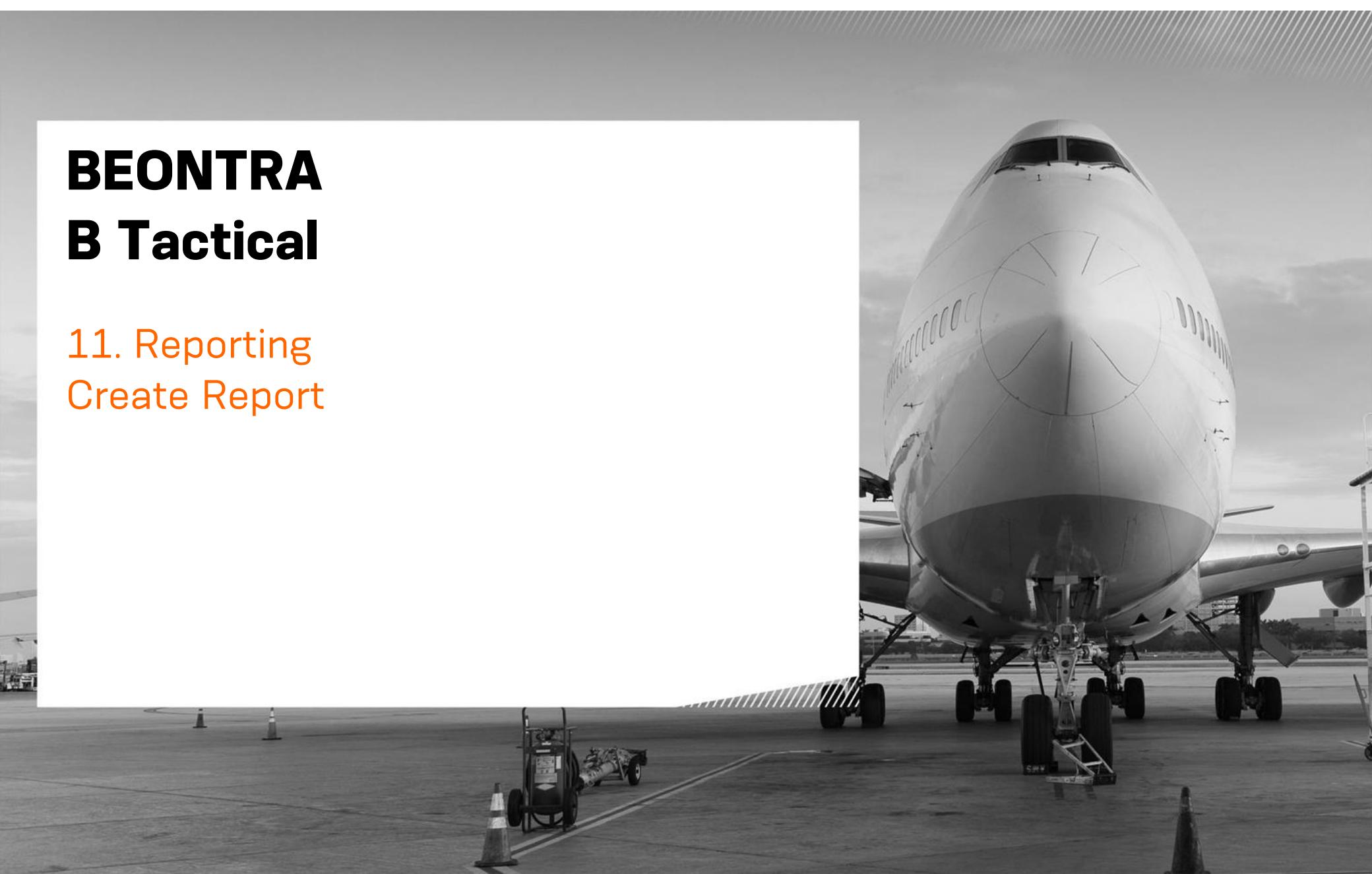


# **BEONTRA**

## **B Tactical**

### 11. Reporting

#### Create Report



# Reporting

## Create Report

### Functionality

Reports can be provided to superiors, colleagues or other business partners. Moreover they can be used to check where further manual adjustments are required in the scenario.

The screenshot shows the BEONTRA Sales Configuration software interface. The top navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The main title is "Scenario: Copy of DEMO STT 2013 | Time Frame: 01.01.2013 - 31.12.2013 | Create New Report". The left sidebar has a "Main Navigation" section with categories like Scenario Overview, Movements, Load Data, Airport specific, Reporting, Create (Create New Report, Create New Dashboard), and Report (FEG Basis, FEG Generated, FEG Total, Market Analysis, Peak Structure, Standard Airlinereport). Below these are sections for Dashboard (Dashboard\_CR, FEG Comparison, TestDashboard) and a search bar. The main content area has tabs for "Settings" and "Report". Under "Settings", there are sections for "Time Settings" (Comparison Product: Statistical Data, Scenario Period: 01.01.2013 - 31.12.2013, Comparison Period: 01.01.2011 - 31.12.2011), "Filter" (Group Filter: Choose a Group), and "Start" (View Report, Export, Reset). A note says "\* Mandatory Fields". Under "Report", there are sections for "Breakdowns" (Available: Group..., 10min Interval, 15min Interval, 30min Interval, 5min Interval, Aircraft Type Code, Country, Day of Week, Flight Date, Flight Number, Flight Type Code, Hour, Month / Year, Scheduled Time; Selected: A/D, Month, Carrier Code, Destination Code), "Products" (Available: Bags Local, Bags Local per PAX, Bags Transfer, Bags Transfer per PAX, FRT, FRT per Flight, MTOW, Mail, Mail per Flight, PAX Transfer Share, PAX Transit Share, SLF, Seats; Selected: MOV, PAX, PAX Local, PAX Transfer, PAX Transit), and "Generated Export Files" (File Name, Created At, Time). A note says "No export files available."

# Reporting

## Create Report

### Functionality

Used to define details for creating a report

The screenshot shows the 'Create Report' screen with two main sections:

- Time Settings:** Contains fields for 'Comparison Product' (set to 'Statistical Data'), 'Scenario Period' (from 01.01.2013 to 31.12.2013), and 'Comparison Period' (from 01.01.2011 to 31.12.2011). A dropdown menu is open next to 'Comparison Product' with options: 'No Comparison', 'Statistical Data', and 'Another Scenario'. An orange arrow points from the 'Comparison Product' field to this menu, labeled '1'.
- Breakdowns:** Shows 'Available' breakdown categories like 'Group...', '10min Intervall', '15min Interval', etc., and 'Selected' categories like 'Alliances', 'A/D', 'Month', etc. An orange arrow points from the 'Selected' list to the 'Available' list, labeled '2'.

### How to use it

- 1 Choose the Comparison Product and determine the period.
- 2 Set the breakdowns for the report by clicking or moving them to the box „Selected“.



# Reporting

## Create Report

### Functionality

Used to define details for creating a report

The screenshot shows a user interface for creating a report. At the top left is a 'Filter' section with a 'Group Filter' dropdown labeled 'Choose a Group'. A red box highlights this dropdown, and a red number '1' is placed to its right. Below it is a 'Products' section. On the left is a list of 'Available' products: Bags Local, Bags Local per PAX, Bags Transfer, Bags Transfer per PAX, FRT, FRT per Flight, MTOW, Mail, Mail per Flight, PAX Transfer Share, PAX Transit Share, SLF, and Seats. A vertical scrollbar is on the right of this list. To the right is a 'Selected' list with items: MOV, PAX, PAX Local, PAX Transfer, and PAX Transit. Each item has two icons next to it: a summation symbol ( $\Sigma$ ) and a percentage symbol (%). A red box highlights the first item in the 'Selected' list, and a red number '3' is placed above it. A red number '2' is placed at the bottom right of the 'Available' list.

### How to use it

- 1 Select a Group Filter if required.
- 2 Select the products for the report by clicking or moving them to the box „Selected“.
- 3 Choose absolute and relative numbers by clicking on the icons.



# Reporting

## Create Report

### Functionality

To process further the report you have to possibilities: view or export it.

The screenshot shows the reporting interface with the following elements:

- Top Bar:** Buttons for "Start", "View Report" (highlighted with orange box and number 1), "Export" (highlighted with orange box and number 2), and "Reset".
- Generated Export Files:** A table listing an export file named "export\_aggregate\_r\_20130710\_172640.csv" created at 10.07.2013 17:27. It includes columns for File Name, Created At, and Time.
- Table View:** A table showing flight data by alliance. The columns are MOV, PAX\_SUM, PAX\_LOCAL, PAX\_TRANSFER, and PAX\_TRANSIT. The rows include Star Alliance (LX), others (ZZ), OneWorld (BA), and Sky Team (AF).
- Breakdown Chart:** A bar chart titled "Breakdown Chart" showing MOV values for different alliances. The chart has two series: "Scenario" (orange bars) and "Comparison" (blue bars). The alliances listed are Star Alliance (LX), others (ZZ), OneWorld (BA), and Sky Team (AF).

### How to use it

- 1 Click on „View Report“ to display it in the system with data columns and a Breakdown Chart showing scenario and comparison figures.
- 2 Click on „Export“ to export the report to Excel. The report will be generated which takes some seconds and will be saved in „Generated export Files“. Click on the icon to open the file in Excel.

# Reporting

## Handling of absolute & Percentage Changes in Reports

### Functionality

Enhanced reporting possibility for absolute and percentage changes to differentiate between unchanged flights (0 / 0%), new flights (925 / +) & stopped flights (-925/-)

The screenshot shows the BEONTRA B Tactical software interface. The main navigation bar includes links for Scenario Explorer, System Settings, Group Editor, Logout, and Info. The main content area displays a report titled "Flat View Scenario: 01.01.2015 - 31.12.2015 - Comparison Period: 01.03.2013 - 31.03.2013". The report table has columns for Week, Scenario, Comparison, and Perc. A red box highlights the "Perc." column header. The data rows show various weeks (CW 1, CW 11, CW 9, CW 12, CW 13, CW 10) with their respective scenario names and comparison values.

Week	Scenario	Comparison	Perc.
CW 1		40	0
CW 11			4.286
CW 9			1.866
CW 12			4.265
CW 13			4.343
CW 10			4.260

### How to use it

1

- If there is no data for the comparison period or the scenario respectively the value for absolute and percentage change is not always set to 0 any more. But to the exact positive and negative values in the absolute case and to '-' or '+' indicating a deletion or addition of MOVs, Pax etc. for the relative values.

Scenario	Comparison	abs. changes	[%] changes
925	0	925	+
925	925	0	0%
0	925	-925	-

# Contact

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