



**C-ATFM SYSTEM OPERATIONAL  
USER MANUAL - VOLUME 3 -  
TRAFFIC FLOW MANAGEMENT**

**Airports Authority of India**

**ATECH.01.0116.13.00003/E**

**PUBLIC INFORMATION**



**GRUPO EMBRAER**

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title


## C-ATFM SYSTEM OPERATIONAL USER MANUAL - VOLUME 3 - TRAFFIC FLOW MANAGEMENT

Atech code

**ATECH.01.0116.13.00003/E**

Customer code

**D27-03**

Copy	Addressee	Institution / Company and Address	Purpose*	Released for issue
01	ED (CNS-P)	Airports Authority of India (AAI) Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi – 100 003 India	2	 Agenir de Carvalho Dias Program Manager
02				
03				
04				

\*(1) For analysis; (2) For acceptance /approval; (3) For information; (/PR) Payment-related  
Example for filling: (1) or (1/PR)

### Observations

### RECORD OF REVISIONS

Review	Date	Responsibles	Reviewed pages / Description
A	01/07/2015	Elaborated by: Sérgio Luiz Bonfim Pinto Verified by: Valter Heitor Cadore Marcelo Rodrigues Approved by: Agenir de Carvalho Dias	Initial issue.
B	26/09/2016	Elaborated by: Sérgio Luiz Bonfim Pinto Manoel Afonso de André Neto Verified by: Valter Heitor Cadore Marcelo Rodrigues Ana Paula de Oliveira Santos Approved by: Agenir de Carvalho Dias	<ul style="list-style-type: none"><li>- In Chapter 1.3: deleted the CDRL entry and changed the SICD version from B to D.</li><li>- Figures changed in Chapter 2.1.1.1.1.1 (pages 11, 12, 13, 14, 15, 16,17) and some modifications in the text.</li><li>- Figures changed in Chapters: 2.1.1.1.1.2 (pages 18, 19, 20), 2.1.1.1.1.3 (page 23), 2.1.1.1.1.4 (page 27), 2.1.1.1.1.13 (page 65), 2.1.1.1.1.14 (page 68), 2.1.1.1.1.15 (pages 72, 76), 2.1.1.1.2 (page 79), 2.1.1.1.3 (page 81), 2.1.1.1.4 (pages 82, 83), 2.1.1.2 (pages 85, 86), 2.1.2.1.1.1 (pages 94, 95, 96), 2.1.2.1.1.3 (page 105), 2.1.2.2 (page 138), 2.1.2.4.2 (page 164), 2.1.2.4.3 (page 165), 2.1.2.4.4 (page 167), 2.1.2.5 (page 170), 2.1.2.5.2 (page 177), 2.2.2.3 (pages 207, 208), 2.3.1.3.1 (page 223), 2.3.1.3.1.1 (pages 225, 226, 227), 2.4.1 (page 277).</li><li>- Figures changed in Chapter 2.1.1.1.1.11 (page 58) and Changed the description "Capacity" Group to "Time Capacity" Group (page 60).</li><li>- Changed title Chapter 2.1.2.1.2.1 of "Overview" to "Overview Tab", modified the text and changed figure (pages 109, 110).</li><li>- Changed title Chapter 2.1.2.1.2.2 of "Demand Alert" to "Demand Alert Tab" (page 112).</li></ul>



		<ul style="list-style-type: none"><li>- Changed title Chapter 2.1.2.1.3.1 of "Overview" to "Overview Tab" and changed figure (pages 123, 124).</li><li>- Changed title Chapter 2.1.2.1.3.2 of "Demand Alert" to "Demand Alert Tab" and changed figure (page 125).</li><li>- Changed title Chapter 2.1.2.1.3.3 of "Demand Chart" to "Demand Chart Tab" and changed figure (page 133).</li><li>- Changed title Chapter 2.1.2.1.3.4 of "Flight Plans" to "Flight Plans Tab" and changed figure (page 134).</li><li>- Changed title Chapter 2.1.2.2.1 of "General view" to "Overview Tab", modified the text and changed figures (pages 141, 142, 143, 144).</li><li>- Changed title Chapter 2.1.2.2.1.1 of "Demand Alert" to "Demand Alert Tab" and changed figure (page 145).</li><li>- Changed title Chapter 2.1.2.2.1.2 of "Demand Chart" to "Demand Chart Tab" and changed figures (pages 146, 152).</li><li>- Changed title Chapter 2.1.2.2.1.3 of "Flight Plans" to "Flight Plans Tab" (page 153).</li><li>- Changed title Chapter 2.1.2.2.1.5 of "Regulated Element" to "Regulated Element Tab" and changed figure (page 156).</li><li>- Changed title Chapter 2.3.1.3.1.2 of "Step 2 – Take-off Time (TOPD)" to "Step 2 – Time on Take-off (ROTT)" and modified the text (pages 228, 229, 230, 231).</li><li>- Figures changed and modified text, in chapters: 2.1.3.1 (pages 179, 180, 181, 182, 183, 184), 2.1.3.1.2 (pages 184, 185, 186), 2.2.2.5 (pages 213, 214, 215), 2.3.1.3.1.1 (pages 225, 226, 227), 2.3.1.3.1.5 (page 236), 2.3.1.3.1.6 (pages 236, 237, 238, 239), 2.3.1.3.1.8 (page 241), 2.3.1.3.1.9 (pages 242, 243, 244), 2.3.1.3.6 (pages 260, 261, 262) and 2.3.2 (pages 242, 243, 244).</li><li>- Chapter number changed: of 2.4.2 to 2.4.1.1 (page 277), 2.4.3 to 2.4.1.2 (page 278), 2.4.4 to 2.4.1.3 (page 289), 2.4.7 to 2.4.1.7 (page 305), 2.4.8 to 2.4.1.8 (page 305), 2.4.9 to 2.4.1.9 (page 306).</li><li>- Chapter number changed: of 2.4.3.1 to 2.4.1.2.1 changing the title "General View" to "Overview Tab" and figure changed (pages 279, 280).</li><li>- Chapter number changed: of 2.4.3.3 to 2.4.1.2.3 changing the title "Demond Graphic" to "Demond Chart Tab", figures changed and modified the text (pages 282, 283, 284, 285).</li><li>- Chapter number changed: of 2.4.3.4 to 2.4.1.2.4 changing the title "Demond Graphic" to "Demond Chart Tab" and added new figures (pages 286, 288).</li><li>- Chapter number changed: of 2.4.3.5 to 2.4.1.2.5 changing the title "Programs" to "Programs Tab" (page 289).</li><li>- Chapter number changed: of 2.4.5 to 2.4.1.4, added items "Delay flight and compress" and "Cancel Flight and compress" and its figures (pages 301, 302).</li><li>- Chapter number changed: of 2.4.6 to 2.4.1.6, changing the title "Report" to "Execution Report", changed figures and modified the text (pages 303, 304).</li><li>- Added chapters: 2.4.1.5 (page 303), 2.4.1.10 (page 306), 2.4.1.11 (page 307), 2.4.1.12 (page 307) and 2.4.1.13 (page 308).</li><li>- Figures changed in Chapters: 2 (pages 4, 5 and 6), 2.1.1.1.1 (page 9), 2.1.1.1.1.1 (pages 14 and 17), 2.1.1.1.1.2 (pages 19 and 20), 2.1.1.1.1.4 (pages 27, 28 and 29), 2.1.1.1.1.5 (pages 32, 33 and 35), 2.1.1.1.1.6 (pages 37 and 38), 2.1.1.1.1.7 (page 41), 2.1.1.1.1.8 (pages 44 and 45), 2.1.1.1.1.9 (pages 48 and 49), 2.1.1.1.1.10 (pages 53 and 54), 2.1.1.1.1.11 (pages 58, 60 and 61), 2.1.1.1.1.12 (page 63), 2.1.1.1.1.13 (page 65), 2.1.1.1.1.14 (pages 68, 71, 72 and 74), 2.1.2.1.1.1 (page 96), 2.1.2.1.1.3 (pages 99, 100, 101 and 102), 2.1.2.1.1.4 (pages 105 and 106), 2.1.2.1.2 (page 108), 2.1.2.1.2.1 (pages 108, 109 and 111), 2.1.2.1.2.3 (page 113), 2.1.2.1.3.1 (pages 124 and 125), 2.1.2.2 (page 138), 2.2.2.1.1 (pages 193, 195 and 196), 2.2.2.1.2 (pages 197, 198 and 199), 2.2.2.2 (page 203),</li></ul>
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			2.3.1.3.1 (page 221), 2.3.1.3.1.1 (page 225), 2.3.1.3.1.2 (page 228), 2.3.1.3.1.4 (page 233), 2.3.1.3.1.6 (pages 235, 236 and 237), 2.3.1.3.2 (pages 243 and 145), 2.3.1.3.3 (pages 247, 248 and 249), 2.3.1.3.4 (pages 251 and 252), 2.3.1.3.5 (pages 254 and 256), 2.3.1.3.6 (pages 258 and 259), 2.3.1.7 (page 264), 2.3.2 (pages 266, 267, 268 and 269), 2.3.3 (pages 271 and 273), 2.4.1.1 (pages 271, 273, 275 and 276), 2.4.1.2 (page 276), 2.4.1.2.1 (page 279), 2.4.1.2.3 (pages 281, 282 and 283), 2.4.1.2.4 (pages 285 and 286), 2.4.1.3 (pages 288, 289, 290, 291, 292, 293 and 294) and 2.4.1.3 (pages 294, 295, 296, 297, 298, 299, 300 and 301) - Included the import files format in sessions 2.1.1.1.5 and 2.3.1.2
C	10/11/2016	Elaborated by: Ana Paula de Oliveira Santos Verified by: Eno Siewerdt Marcelo Rodrigues Approved by: Agenir de Carvalho Dias	Complete revision of the manual.
D	06/12/2016	Elaborated by Ana Paula de Oliveira Santos Verified by Rovana Pereira Correa Approved by Agenir de Carvalho Dias	- This revision is applicable to SKYFLOW version 4.1.9. - Correction of flighe to flight. - Revision of session “2.1.2.1. Operational Panel Functionality” with more details. - Inclusion of a note detailing when a wind affect the runway on session 2.1.2.1.2. - Changed the priority criterias from Aerodrome Delay Program on session 2.1.4.2.1 ADP Algorithm. - Inclusion of import flight schedule errors on session 3.14.
E	03/10/2017	Elaborated by Ana Paula de Oliveira Santos Manoel Afonso de Andre Neto Verified by Rovana Pereira Correa Approved by Agenir de Carvalho Dias	- This revision is applicable to SKYFLOW version 4.2.2. - Updated the Flow menu imagens in all itens. - Updated frequency number identification for each weekday (2.1.1.1.1.3, 2.1.1.1.1.4, 2.1.1.1.1.10, 2.1.1.1.5, 2.3.1.1) - Updated the Runway capacity configuration on regulated elements fields (2.1.1.1.1.6) - Updated the description of Operational Panel (2.1.2.1) and inclusion of Aerodrome Capacity Prediction (2.1.2.1.3) - Updated the Demand Chart tab description (2.1.3.1.3) - Upadted the description of Complete Update (2.2.1.1.2.2), Partial Update (2.2.1.1.2.3), Undo Program (2.2.1.1.2.4) and Apply scenario (2.2.1.1.2.8). - Updated the Program tab description (2.2.1.3.2) - Included the Compliance Report tab description (2.2.1.3.3) - Review and inclusion of CDM programs (2.2.1.4) - Inclusion of Average Taxi Time functionality (2.3.2.4) - Included the reference to SSS document, where the CAP algorithms for aerodrome and sector/polygon are described (2.4 and 1.3)
Electronic files for the current revision		ATECH_01_0116_13_00003_Vol3_TFM.doc	





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## **1. INTRODUCTION**

### **1.1 Purpose**

The purpose of the Subsystem Traffic Flow Management (TFM) is to associate the intention of flight data with the available data of the airport infrastructure capacity. This relationship ensures that ATC capacity is used as much as possible and that the traffic volume is compatible with the capacities declared by the competent authority in order to contribute to a safe, orderly and efficient air traffic flow. To understand the operational implementation of the management of air traffic flow in the Indian scenario, the following concepts are incorporated into SKYFLOW systemic solutions.

#### **1.1.1. Flow Management Sessions**

The air traffic flow management activities are provided by means of sessions, which are considered according to the advance in respect to the flight date. The specific characteristics of each flow management session are presented as follows.

##### **a) Tactical Session**

This session corresponds to the flight actual date, and establishes the measures that must be applied together with the ATC. The flight intentions in this session result from the progressive refinement of strategic session data and including new FPL. The flight data is corrected according to the information available on the actual position of the aircrafts, provided by the ACC systems.

There is only one tactical session in the system, indicating the demand forecasts for the next six (06) hours counting from the current time. The data is updated at regular intervals of fifteen (15) minutes) (0, 15, 30, and 45).

If a situation must be simulated for ATFM measure purposes, a manual session must be created from the tactical session in order to insert other factors such as possible flight intention changes.

##### **b) Automatic Strategic Sessions**

The system automatically creates eight (08) strategic sessions, with one session for the current day and the other seven (07) corresponding to the weekdays counting from the day



after the current day and updated periodically. When the sessions are created automatically, the Regulated Elements registered in the Default Regulated Elements component and the flight plans existing on the base are considered. If for some reason the sessions are not created automatically, the user can do it manually.

If a situation must be simulated for ATFM measure purposes, a manual session must be created from this session in order to insert other factors such as possible flight intention changes.

### **c) Manual Session**

The manual sessions are created from a specific session or without reference to known sessions with the purpose of entering new factors related to the air traffic flow, such as possible flight intention changes. This new scenario allows simulating situations to apply ATFM measures.

The manual sessions are rated as follows:

- **Public Sessions:** may be accessed by and Flow Manager registered.
- **Private Sessions:** may be accessed only by the manager that originated the session, and are maintained for forty-eight (48) hours after the reference date (date corresponding to the session period finishing time). After this period, they are suppressed automatically.

**Note:** The parameter used to set the maximum number of manual sessions should be set with caution, since a very large number of manual sessions may affect system performance.

### **d) Historic Session**

Historic sessions result from state changes in the strategic session of the day. This state change may occur automatically or by means of an action executed by the user. From the moment the session changes into the “Historic” state, the data is only available for reference.

## **1.1.2. CDM Scenario**

The Collaborative Decision Making (CDM) is the functionality that allows proposing a solution for strategic or tactical flow problems. The Flow Manager has tools to simulate the problem, correct it, and have a solution proposal to evaluate collaboratively with the air companies. Finally, the operational measures defined can be applied.



To support the Flow Manager, the system provides some ATFM measures that are techniques used to manage air traffic demand considering the airspace and ATS capacity to ensure safety. However, an ATFM measure produces as a consequence an impact to the Airspace Users and should be used with care in order to minimize impacts as much as possible by selecting least restrictive methods and minimizing delays.

The CDM functionality allows creating scenarios that simulate possible solutions to Manual, Tactical or Strategic session capacity/demand unbalance issues by means of some programs, consequently supporting the collaborative decision making process.

### 1.1.3. Aerodromes as Regulated Elements

In order to manage the operations to be executed in the aerodromes, they must be registered as Regulated Elements. Therefore, the following differences are established in the way they are managed:

- **Standard Aerodrome:** aerodromes registered as Regulated Elements, which do not require special management actions regarding its operations.
- **Coordinated Aerodrome:** aerodromes registered as Regulated Elements and defined so that the slots of the General Aviation landing and take-off operations are managed.
- **Monitored Aerodrome:** aerodromes registered as Regulated Elements, with capacity and demand indicators monitored by the Flow Manager.

## 1.2 Document Overview

This volume describes the fpm Subsystem operation mode, presenting details to interact with system elements. The document is divided in the following main chapters:

- |           |  |
|-----------|--|
| Chapter 1 | Introduction: contains the introduction, a general overview of the document and reference documents.                   |
| Chapter 2 | TFM Subsystem: Presents the procedures so users interact with the TFM Subsystem.                                       |
| Chapter 3 | Abbreviations and Glossary: Contain abbreviations and definitions used in this volume of the SKYFLOW Operation Manual. |



---

### 1.3 Reference Documents

<b>[1]</b> SITC	Tender Notice for SITC of C – ATFM System nº (CNS-P)-06/2012-13
<b>[2]</b> SICD	ATECH.01.0116.03.00002/D – SICD – System Interface Control Document for C-ATFM Program
<b>[3]</b> TP	ATECH.01.0116.14.00001/B – Training Plan
<b>[4]</b> SUM_Vol7	ATECH.01.0116.13.00007/C – SUM – C-ATFM System Operational User Manual – Volume 7 – Airspace Management
<b>[5]</b> SSS	ATECH.01.0116.03.00001/D – SSS - System/Subsystem Specification for C-ATFM Program

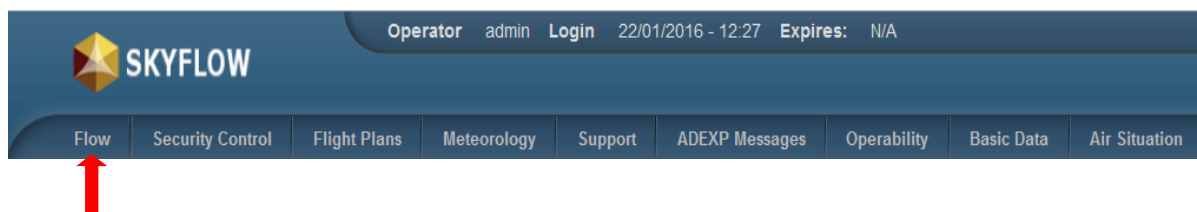


## 2. ACCESSING THE TFM SUBSYSTEM

To access the functionalities of the TFM subsystem, the user must log in the system with the "User" and "Password" identification, selecting the "Login" option.



After logging in, the user must select the "Flow" icon in the enabled subsystem bar in the "Initial Page", as follows:







When the Traffic Flow Management Subsystem (TFM) option is selected, the system displays a window with the interaction functionalities of the component that can be selected to navigate the Subsystem, as shown in the figure below.

Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel

The TFM consists of the following systemic components, namely:

- **Air Traffic Flow Control – TFC:** allows interacting with the airspace elements to be managed regarding the application characteristics (Regulated Elements), with the Aerodrome Panel for operational application and the air traffic demand sessions.
- **Collaborative Decision Making – CDM:** defines the interaction processes between system users, in order to take collaborative decisions to apply the air traffic flow management measures.



- **Flight Schedule Registration – FSR:** establishes the Flight Schedule treatment processes.
- **Capacity Calculation – CAP:** provides interaction functionalities to calculate the theoretical capacities of the Regulated Elements registered in the system (control aerodrome and sector).

To select the respective functionalities of the components of interest, the user must position the mouse cursor on the functionality and press the left button. The system then displays the functionality main page as shown in the following items.

## **2.1 Air Traffic Flow Control Component (TFC)**

This component allows interacting with the airspace elements to be managed regarding the application characteristics when declared as elements to be regulated by the system.

### **2.1.1. Regulated Element Content**

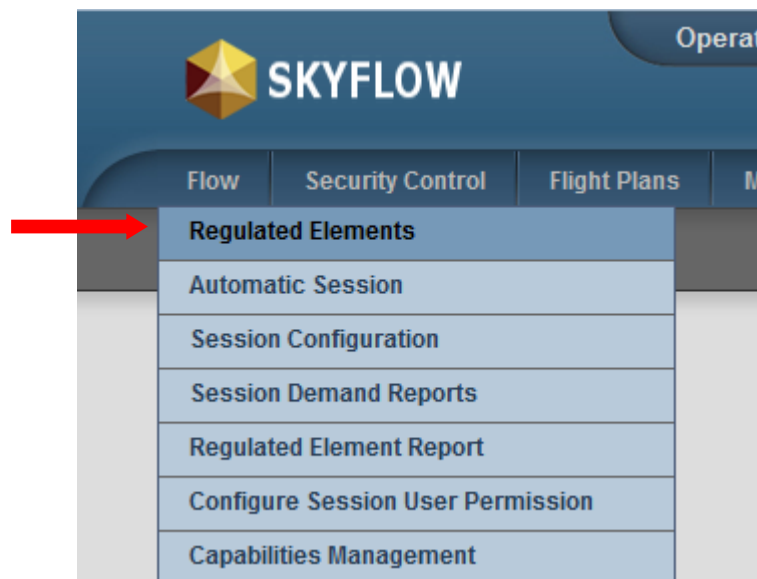
Defines the characteristics of the interactions with the functionalities listed with the Regulated Elements registered in the system as follows.

#### **2.1.1.1. “Regulated Elements” Functionality**

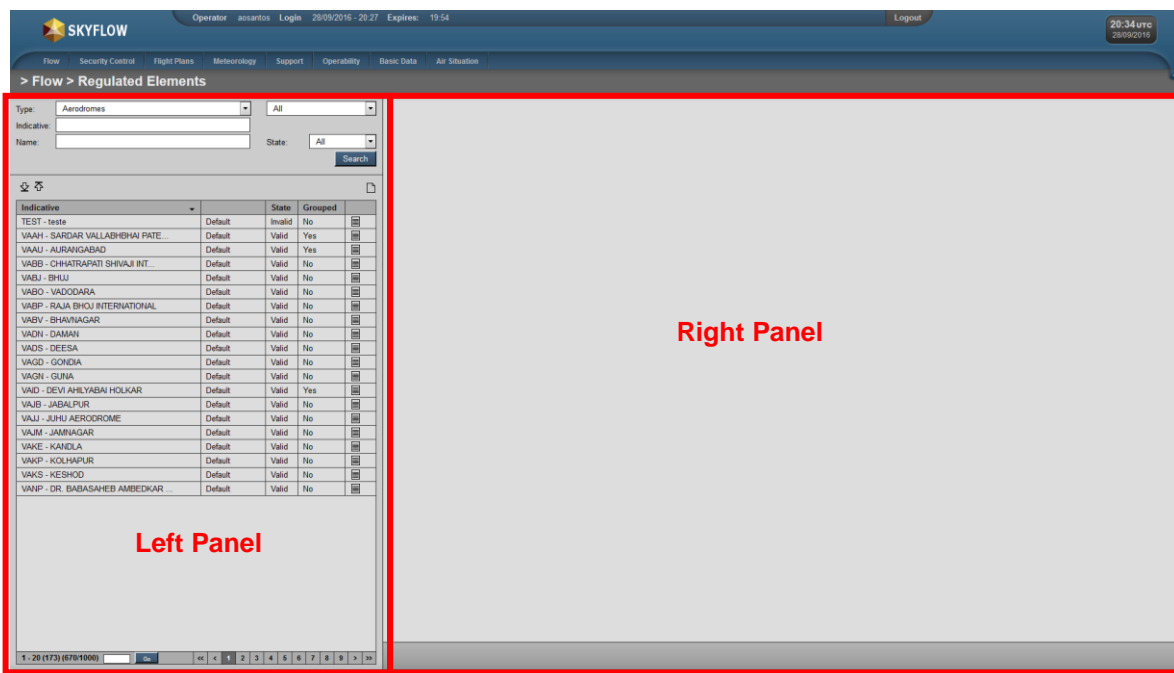
The purpose of this functionality is to maintain the Regulated Elements in the SKYFLOW context, with data to be used by the system to analyze the demand in respect to the infrastructure capacity established. The elements to be registered as Regulated Elements must be part of the Operational Airspace (to see more about operational Airspace, consult the Introduction and ASM manuals).

The system allows registering a maximum of one thousand (1,000) Regulated Elements. Element creation, change, and removal impacts the Flow Tactical, Strategic, and Manual Sessions (the later if configured), which need to be reconstructed due to the flight intentions related to the element in question. Besides that, if the element is of the Aerodrome type, the system may also request slot allocation or removal.

To open this functionality, select the Flow menu and then the Regulated Elements option as shown in the figure bellow.



When this option is selected, the System presents an initial page related to the “Regulated Element” functionality, as presented in the screen below.



In the left panel is available options to search (1), consult (2), add (3), export (4) and import (5) a Regulated Element and in the right panel the details of the desired action will be displayed.



**> Flow > Regulated Elements**

Type:

Indicative:

State:

Name:

(1)

(4) (3)

(3)

Indicative		State	Grouped	
TEST - teste	Default	Invalid	No	<input type="button" value="📄"/> (2)

#### 2.1.1.1.1. Regulated Elements fields

The fields of a Regulated Element are grouped in sets according to some functionality, the sets in SKYFLOW are:

- General Data
- Regulated Element
- Time Capacity
- Traffic Mix
- Capacity
- Runway Capacity Configuration
- Aerodrome Configuration Data
- Level
- Segment Data
- Group Sector Data
- Complexity
- Polygon Data

The following table shows the filed sets available in each type of Regulated Element:



	General Data	Regulated Elements	Time Capacity	Traffic Mix	Capacity	Runway Capacity Configuration	Aerodrome Configuration Data	Level	Segment Data	Group Sector Data	Complexity	Polygon Data
Aerodrome Groups	X	X	X	X								
Aerodromes	X		X	X	X	X	X					
Airway Segment Groups	X	X	X	X								
Airway Segments	X		X	X				X	X			
Controlled Auxiliary Points	X		X	X				X				
FIR Sector Groups	X	X	X	X	X					X	X	
FIR Sectors	X		X	X	X						X	
Fixed Points	X		X	X				X				
Polygons	X		X	X	X			X			X	X
SID Segment Groups	X	X	X	X								
SID Segments	X		X	X				X	X			
STAR Segment Group	X	X	X	X								
STAR Segments	X		X	X				X	X			
SUAs	X		X	X							X	
TMA Sector Groups	X	X	X	X	X					X	X	
TMA Sectors	X		X	X	X						X	

In the following itens these field sets will be detailed.

#### 2.1.1.1.1. General Data

All Regulated Elements has this set which contains fields to identify the element, as follows:



General Data	
Regulated Element Type:	<input type="text" value="Controlled Auxiliary Points"/>
Indicative:	<input type="text" value="BBB - VOR"/>
Name:	<input type="text" value="MUMBAI"/>

As can be seen at the figure above, this set may have three different fields:

- **Regulated Element Type:** field that identifies the type of the Regulated Element. During the creation of a new Regulated Element, the system offers a list with all Regulated Elements types available in the system.
- **Indicative:** field that contains the indicative of the Regulated Element. This field may be a free text, in case of Groups and Polygons, or a autocomplete, that will find the elements existing in database (APM) to complete the indicative typed by the user.
- **Name:** field that contains the name of the regulated element. This field is available only for Regulated Elements of type aerodrome, controlled auxiliary point and SUA.

#### 2.1.1.1.2. Regulated Elements

This set is available only for Regulated Elements of type Group. It contains a button to consult the Regulated Elements that are part of the group. It is only allowed add Regulated Elements of the same type as the group type. To be a group it has to have at least two Regulated Elements added.

Regulated Elements
<input type="button" value="Consult"/>





Regulated Elements	
<input type="checkbox"/>	VABP
<input type="checkbox"/>	VABV
<input type="checkbox"/>	VADN
<input type="checkbox"/>	VADS
<input type="checkbox"/>	VAGD
<input type="checkbox"/>	VAGN
<input checked="" type="checkbox"/>	VAID
<input type="checkbox"/>	VAJB
<input type="checkbox"/>	VAJJ
<input type="checkbox"/>	VAJM
<input type="checkbox"/>	VAKE
<input type="checkbox"/>	VAKP
<input type="checkbox"/>	VAKS
<input type="checkbox"/>	VANP
<input type="checkbox"/>	VANR
<input type="checkbox"/>	VAOZ
<input checked="" type="checkbox"/>	VAPO
<input type="checkbox"/>	VAPR
<input type="checkbox"/>	VARG
<input type="checkbox"/>	VARK

### 2.1.1.1.1.3. Time Capacity

All Regulated Elements has this set which contains fields to define the element hourly capacity. This capacity is defined in a table where the rows are the weekdays and the columns are the time, as follows:

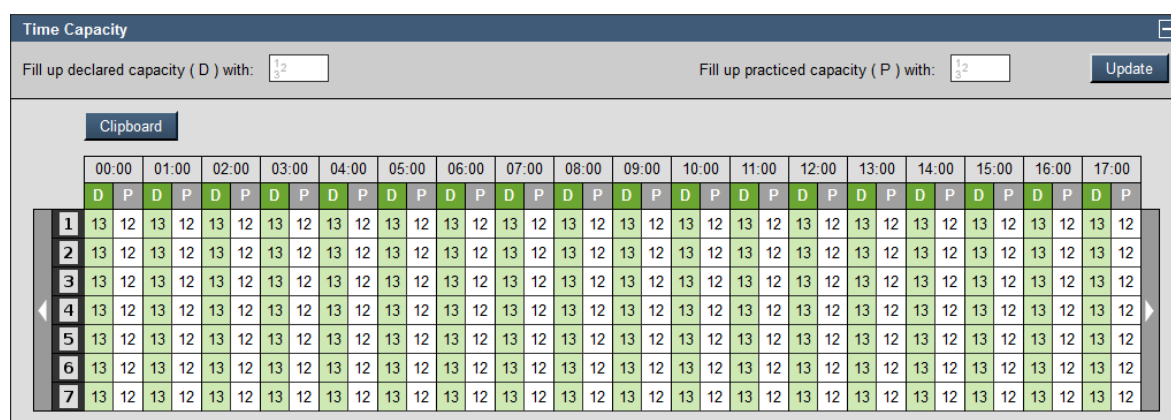
	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
3	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
4	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
5	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
7	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12



The user is able to fill each cell of the table. For each hour, the system allows one value for the declared capacity (D) and other for the practiced capacity (P). The row identified as 1 receives the value for Monday and the subsequent numbers for the subsequent weekdays. From each side of the table is available a gray bar with an arrow. This bar allows the user to check the times that are not being displayed.

Before the table there are two fields to complete the entire table, one for the declared capacity and other for the practiced one. After filling the field with the respective value, is required to click on Update button to confirm the action.

Another option to fill the table is use the Clipboard, which can be seen in more details in the item 2.1.1.1.4 of this document.



	00:00		01:00		02:00		03:00		04:00		05:00		06:00		07:00		08:00		09:00		10:00		11:00		12:00		13:00		14:00		15:00		16:00		17:00	
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P		
1	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
2	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
3	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
4	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
5	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
6	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		
7	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12		

This are the interface shown for Regulated Elements of type Airway Segment Groups, Airway Segments, Fir Sector Groups, Fir Sectors, Polygons, SID Segment Groups, SID Segments, STAR Segment Group, STAR Segments, SUAs, TMA Sector Groups and TMA Sectors.

The Aerodrome Group, Aerodrome, Controlled Auxiliary Point and Fixed Point has an additional option to define the capacity by quarter hour instead of hourly. Choosing the option just above the table, the system update the table displays the columns by quarter hour, as shown bollow:



**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:   Fill up practiced capacity ( P ) with:

☒ Use 15 minutes interval: D:   P:

	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45	02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
7	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

To fill the quarter hour capacity is expected at the same field the capacity for the four quarter contained in an hour, as shows the folloing image:

☒ Use 15 minutes interval: D:   05/03/04/02 P:   05/05/04/04

	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45	02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
2	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
3	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
4	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
5	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
6	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4
7	5	5	3	5	4	4	2	4	5	5	3	5	4	4	2	4

The Aerodrome Group and Aerodrome Regulated Elements has one more capacity type to be inserted in the table that is the regular flight. This option indicates the quantity of flights that are expected in the period and are not a RPL or a Flight Schedule.



**Time Capacity**

Fill up declared capacity ( D ) with:  Fill up practiced capacity ( P ) with:  Fill up regular flight ( RF ) with:

☒ Use 15 minutes interval: D:  P:  VR:

	00:00			00:15			00:30			00:45			01:00			01:15			01:30			01:45			02:00			02:15			02:30			02:45		
	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF	D	P	RF			
1	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
2	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
3	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
4	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
5	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
6	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				
7	12	12	12	11	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11				

The following Regulated Elements types has the options to indicate that the capacity is not applicable:

- Aerodrome Groups
- Airway Segment Groups
- Airway Segments
- Controlled Auxiliary Points
- Fixed Points
- Polygons
- SID Segment Groups
- SID Segments
- STAR Segment Group
- STAR Segments
- SUAs

In this case, the element will have the demand computed by the system, but it will never be considered as congested or saturated.

**Time Capacity**

☒ Not applicable



Time Capacity

☐ Not applicable

Fill up declared capacity ( D ) with: 
Fill up practiced capacity ( P ) with:

☐ Use 15 minutes interval:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

At the title of the set there are a square with a “–” symbol, this is used to ocult the content of the set, ash shwon in the figure bellow:

Time Capacity

+

#### 2.1.1.1.1.4. Traffic Mix

All Regulated Elements has this set which contains fields to define the hourly capacity for general aviation. By this set is possible to define for each day and time the quantity of flight from general aviation expected for the specific element. In the demand chart, this demand will decrease when a FPL message arrive. This capacity is defined in a table where the rows are the weekdays and the columns are the time, as follows:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The user is able to fill each cell of the table. For each hour, the system allows one value for the statistic mix (T) and other for the effective mix (E). The row identified as 1 receives the value for Monday and the subsequent numbers for the subsequent weekdays. From each side of the table is available a gray bar with an arrow. This bar allows the user to check the times that are not being displayed.



Before the table there are two fields to complete the entire table, one for the statistic mix (T) and other for the effective one (E). After filling the field with the respective value, is required to click on Update button to confirm the action.

Another option to fill the table is use the Clipboard, which can be seen in more details in the item 2.1.1.1.4 of this document.

**Traffic Mix**

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

This are the interface shown for Regulated Elements of type Airway Segment Groups, Airway Segments, Fir Sector Groups, Fir Sectors, Polygons, SID Segment Groups, SID Segments, STAR Segment Group, STAR Segments, SUAs, TMA Sector Groups and TMA Sectors.

The Aerodrome Group, Aerodrome, Controlled Auxiliary Point and Fixed Point has an additional option to define the capacity by quarter hour instead of hourly. Choosing the option just above the table, the system update the table displays the collumns by quarter hour, as shown bollow:

**Traffic Mix**

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:

☒ Use 15 minutes interval:

	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45	02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
2	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
3	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
4	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
5	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
6	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11
7	12	12	11	11	11	11	11	12	12	11	11	11	11	12	12	11





At the title of the set there are a square with a “–” symbol, this is used to occult the content of the set, as shown in the figure below:

Traffic Mix

#### 2.1.1.1.1.5. Capacity

This set contains only one not editable field, which displays the result of a theoretical capacity value calculated by the Capacity Component (item 2.4 from this document). As the capacity calculation, this field is available only for Regulated Elements of type aerodrome, polygon, FIR sector, FIR sector group, TMA sector, and TMA sector group.

Capacity
Theoretical Capacity: 1.4258

When there is no calculation for the specific Regulated Element, this field is filled with N/A, as shown in the figure below.

Capacity
Theoretical Capacity: N/A

#### 2.1.1.1.1.6. Runway Capacity Configuration

Only Regulated Element of type Aerodrome has this set which contains a table to identify the runway capacity configurations for the aerodrome, as follows:

Runway Capacity Configuration							
Runways	Description	Nominal	VMC	MVMC	IMC		
[09/27, 10/28, 11/29]	3 Rws: 29/11, 28/10 and 27/09	✓	75	60	60		
[09/27, 11/29]	2 Rws: 29/11 and 28/10 or 29/11 and 27/09		60	45	45		
[10/28, 11/29]	2 Rws: 29/11 and 28/10 or 29/11 and 27/09		60	45	45		
[09/27, 10/28]	Rwy 29/11 unavbl: 28/10 and 27/09		45	30	30		

It will always have a unique Nominal capacity and may have one or more Degraded capacity. For each line in the table is displayed the following fields:

- **Runways:** the runways available in the configuration
- **Description:** the description of the runway configuration



- **Nominal:** the nominal capacity of the runway configuration. This field will be filled only if the runway configuration represents the nominal capacity of the aerodrome.
- **VMC:** capacity on Visual Meteorological Conditions, if there is at least one runway in VMC status
- **MVMC:** runway capacity on Marginal Visual Meteorological Conditions, if there is at least one runway in MVMC status and no runway in the VMC status
- **IMC:** runway capacity on Instrument Meteorological Conditions if there is at least one runway in IMC status and no runway in the VMC or MVMC statuses
- **View:** option to view the screen with the fields of the runway capacity.

**Runway Capacity Configuration**

Nominal ☒

(Nominal Capacity corresponds to the most frequent value of time Capacity Table)

Runways:

☒ 09/27 ☒ 10/28 ☒ 11/29

Description :

3 Rwys: 29/11, 28/10 and 27/09

70 of 100 character(s) remaining.

	Capacity	% Nominal
VMC:	<input type="text" value="75"/>	<input type="text" value=""/> %
MVMC:	<input type="text" value="60"/>	<input type="text" value=""/> %
IMC:	<input type="text" value="60"/>	<input type="text" value=""/> %

Close

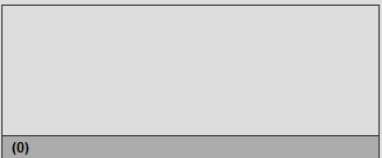
#### 2.1.1.1.1.7. Aerodrome Configuration Data

Only Regulated Element of type Aerodrome has this set which contains some fields to identify the aerodrome configuration, as follows:



Aerodrome Configuration Data				
Begin Working Time:	<input type="text" value="00:00"/>	End Working Time:	<input type="text" value="00:00"/>	
DEP x DEP:	<input type="text" value="1"/> min	DEP x ARR:	<input type="text" value="1"/> min	ARR x ARR: <input type="text" value="1"/> min
				Aerodrome Type: <input type="text" value="Default"/>

- **Begin Working Time:** UTC time when starts the operations at the aerodrome.
- **End Working Time:** UTC time when finishes the operations at the aerodrome.
- **DEP x DEP:** minimum separation time, in minutes, between departures at the aerodrome.
- **DEP x xARR:** minimum separation time, in minutes, between a takeoff and a landing at the aerodrome.
- **ARR x xARR:** minimum separation time, in minutes, between arrivals at the aerodrome.
- **Aerodrome Type:** option to indicate the type of the aerodrome. The available options are:
  - **Default:** configuration data is not required complementation
  - **Monitored:** this option requires the input of the periods in which the aerodrome is monitored, as shown in the figure bellow:

Monitored Aerodrome Configuration Data	
<div>Periods as monitored:</div> <div>Begin: ≥ <input type="text"/></div> <div>End: ≤ <input type="text"/></div> <div></div> <div></div> <div>(0)</div>	

#### 2.1.1.1.1.8. Level

This set is available for Regulated Elements of type Airway Segments, Controlled Auxiliary Points, Fixed Points, Polygons, SID Segments and STAR Segments. It contains two fields, one for the lower level and other for upper level. These fields are in flight level (FL), which are hundreds of feet.



Level			
Lower level:	<input type="text" value="F000"/>	FTx100	Upper level:
			<input type="text" value="F990"/>
			FTx100

**Note:** Besides the information in hundred feet, the system allows the following level data options:

- GND – ground altitude.
- MSL – average sea level.
- UNL – unlimited.

#### 2.1.1.1.1.9. Segment Data

This set is available for Regulated Elements of type Airway Segments, SID Segments and STAR Segments. It contains a table to identify the segments of the airway, SID or STAR, as follows:

Segment Data				
<input type="checkbox"/> All				
Item	Indicative	Point A	Point B	Direction
<input checked="" type="checkbox"/>	R460	DPN	ALI	A->B
<input checked="" type="checkbox"/>	R460	ALI	KADAS	A->B
<input checked="" type="checkbox"/>	R460	KADAS	LKN	A->B
<input checked="" type="checkbox"/>	R460	LKN	BBN	A<->B
<input type="checkbox"/>	R460	BBN	GGC	A<->B
<input type="checkbox"/>	R460	GGC	TEPAL	A<->B
<input type="checkbox"/>	R460	TEPAL	OPESU	A<->B
<input type="checkbox"/>	R460	OPESU	CEA	A<->B
(8)				

For each segment the following field is displayed:

- **Item:** the indicator if the segment is regulated.
- **Indicative:** contains the indicative of the airway, SID or STAR
- **Point A:** contains the identification of the point A of the segment
- **Point B:** contains the identification of the point B of the segment
- **Direction:** contains the identification of the direction of the segment

At the end of the table is presented the number of segments that define the airway, SID or STAR.



#### 2.1.1.1.10. Group Sector Data

This set is available for Regulated Elements of type FIR Sector Group and TMA Sector Group which contains fields to identify the application parameters of the element, as follows:

Group Sector Data			
Begin Working Time: <input type="text" value="00:00"/>	End Working Time: <input type="text" value="23:59"/>	Disable Viewing: <input type="checkbox"/> Yes	Frequency: <input type="text" value="1234567"/>

- **Begin Working Time:** time for the start of the sector group activation.
- **End Working Time:** time for the end of the sector group activation.
- **Disable Viewing:** option to disable the display of Regulated Element.
- **Frequency:** weekdays for the sector group activation. The system shows in green the enabled weekdays

#### 2.1.1.1.11. Complexity

This set is available for Regulated Elements of type FIR sector group, FIR sector, Polygon, SUA, TMA sector group, and TMA sector. It defines a new line at the Regulated Element demand chart. This complexity is defined in a table where the rows are the weekdays and the columns are the time, as follows:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The user is able to fill each cell of the table. The row identified as 1 receives the value for Monday and the subsequent numbers for the subsequent weekdays.

Before the table there are a field to complete the entire table. After filling the field with the respective value, is required to click on Update button to confirm the action.

Another option to fill the table is use the Clipboard, which can be seen in more details in the item 2.1.1.1.4 of this document.



**Complexity**

Fill up with





	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

At the title of the set there are a square with a “—” symbol, this is used to occult the content of the set, as shown in the figure below:

**Complexity**

#### 2.1.1.1.12. Polygon Data

Only Regulated Element of type Polygon has this set which contains a table to identify the polygon points, as follows:

Polygon Data										
Name	Type(lat)	°(lat)	'(lat)	''(lat)	Type(long)	°(long)	'(long)	''(long)		
A	N	31	03	50.0000	E	075	17	22.0000		
B	N	30	37	28.0000	E	078	11	23.0000		
C	N	27	41	28.0000	E	078	33	08.0000		
D	N	27	44	45.0000	E	075	13	24.0000		
(4)										

For each point of the polygon the following field is displayed:

- **Name:** contains the name of the point
- **Type(lat):** contains the identification of the hemisphere of the latitude
- **°(lat):** contains the identification of the degree of the latitude
- **'(lat):** contains the identification of the minute of the latitude
- **''(lat):** contains the identification of the second hemisphere of the latitude
- **Type(long):** contains the identification of the hemisphere of the longitude
- **°(long):** contains the identification of the degree of the longitude

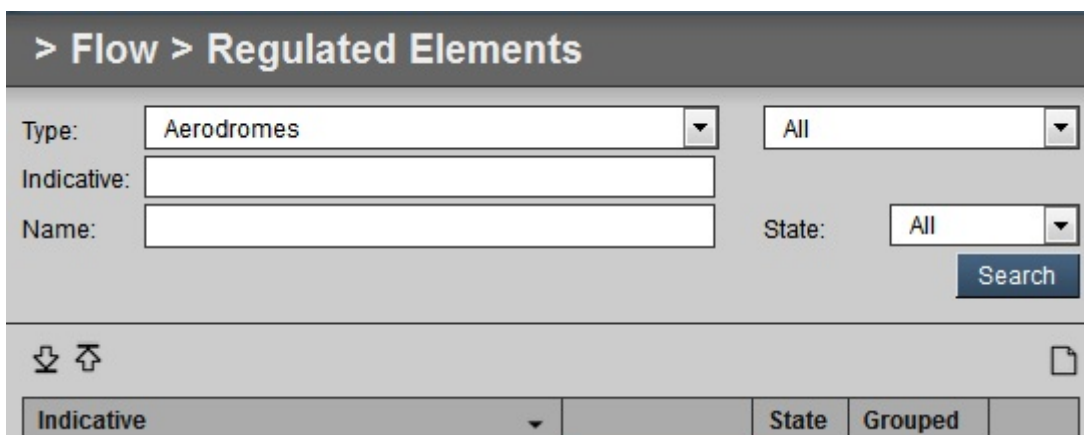


- **'(long):** contains the identification of the minute of the longitude
- **“(long):** contains the identification of the second of the longitude
- **Consult:** option to consult the coordinate
- **Remove:** option to remove the coordinate

At the end of the table is presented the number of points that define the polygon.

#### 2.1.1.1.2. Search Regulated Elements

This option allows the user to search the Regulated Elements registered in the system database. To search the Regulated Elements, the user must specify the search criteria according to the interest of the search, for that there are available the following fields:



The screenshot shows a web application interface for searching regulated elements. The title bar reads "> Flow > Regulated Elements". Below the title bar, there are search filters: "Type:" with a dropdown menu showing "Aerodromes", "Indicative:" with a text input field, "Name:" with a text input field, and "State:" with a dropdown menu showing "All". A "Search" button is located to the right of the "State:" dropdown. Below the search filters, there is a table with the following columns: "Indicative", "State", and "Grouped". The table is currently empty.

- **Type:** allows selecting, the type of Regulated Element to be searched, namely:
  - Aerodrome Groups
  - Aerodromes
  - Airway Segment Groups
  - Airway Segments
  - Controlled Auxiliary Points
  - Fir Sector Groups
  - Fir Sectors
  - Fixed Points
  - Polygons



- SID Segment Groups
- SID Segments
- STAR Segment Group
- STAR Segments
- SUAs
- TMA Sector Groups
- TMA Sectors

**Note:** when elements of the Aerodrome or Controlled Auxiliary Points are selected, the system enabled the subsequent field, with selected type options:

- **For Aerodrome:** All, Default and Monitored.
- **For Controlled Auxiliary Points:** All, VOR, NDB, and DME.
- **Indicative:** the indicative of the Regulated Element to be searched.
- **Name:** field destined to identify the name of the Regulated Element. This field is available only for the following types:
  - Aerodromes
  - Controlled Auxiliary Points
  - SUAs
- **State:** allows selecting the state of the Regulated Element to be searched, which are:
  - **All:** this option allows displaying the Regulated Elements registered regardless of their state in the system.
  - **Invalid:** this option allows displaying the Regulated Elements that are in the invalid state due to Operational Airspace changes.
  - **Valid:** this option allows displaying the Regulated Elements that are in the valid state.

After completing the fields above and pressing the “Search” button, the system shows a list of Regulated Elements according to the filter data specified, as displayed in the screen shot below.





> Flow > Regulated Elements

Type:    
Indicative:   
Name:  State:

☐ ☐

Indicative		State	Grouped	
VAAH - SARDAR VALLABHBHAI PATE...	Default	Valid	Yes	<input type="checkbox"/>
VAAK - AKOLA	Default	Valid	Yes	<input type="checkbox"/>
VAAU - AURANGABAD AIRPORT	Default	Valid	No	<input type="checkbox"/>
VABB - CHHATRAPATI SHIVAJI INT...	Default	Valid	No	<input type="checkbox"/>
VABP - RAJA BHOJ AIRPORT	Default	Valid	Yes	<input type="checkbox"/>

### 2.1.1.1.3. Consult a Regulated Element

> Flow > Regulated Elements

Type:    
Indicative:   
Name:  State:

☐ ☐

Indicative		State	Grouped	
VAAH - SARDAR VALLABHBHAI PATE...	Default	Valid	Yes	<input type="checkbox"/>
VAAK - AKOLA	Default	Valid	Yes	<input type="checkbox"/>
VAAU - AURANGABAD AIRPORT	Default	Valid	No	<input type="checkbox"/>
VABB - CHHATRAPATI SHIVAJI INT...	Default	Valid	No	<input type="checkbox"/>
VABP - RAJA BHOJ AIRPORT	Default	Valid	Yes	<input type="checkbox"/>

When the “Consult” icon of a Regulated Element is selected, the system displays at the right panel a form containing the element disabled fields. This fields are specific for each Regulated Element type.

**Note:** All the field and their meaning can be consulted in the item 2.1.1.1.1, that describes the Regulated Elements fields.

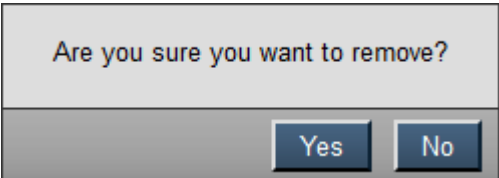
At the bottom right part of the right panel, the system provides options to edit or remove the consulted Regulated Element, as follows:



---

#### **2.1.1.1.3.1. Remove a Regulated Element**

The Remove button allows the user to delete the Regulated Element from the system database. When this option is selected, the system requests the user to confirm the operation as follows:



A confirmation dialog box with a light gray background. The text "Are you sure you want to remove?" is centered in a dark gray font. Below the text, there are two buttons: "Yes" and "No", both with a blue gradient and white text.

#### **2.1.1.1.3.2. Edit a Regulated Element**

The Edit button allows the user to change the data entered in the database. This option can be performed only if the Regulated Element is in Valid state. After choose the Edit button, the system enables the fields inside the form for editing purpose, as shown bellow:



General Data

Regulated Element Type:   
Indicative:   
Name:

Capacity

Theoretical Capacity:

Runway Capacity Configuration

Description	Nominal	Degraded	Impact
12			

1 - 1 (1)

Aerodrome Configuration Data

Begin Working Time:  End Working Time:   
DEP x DEP:  DEP x ARR:  ARR x ARR:  Aerodrome Type:

Time Capacity

Fill up declared capacity ( D ) with:  Fill up practiced capacity ( P ) with:  Fill up regular flight ( RF ) with:

Clipboard

☐ Use 15 minutes interval:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
1	D	P	RF	D	P	RF	D	P	RF	D	P	RF
2	12	12	12	12	12	12	12	12	12	12	12	12
3	12	12	12	12	12	12	12	12	12	12	12	12
4	12	12	12	12	12	12	12	12	12	12	12	12
5	12	12	12	12	12	12	12	12	12	12	12	12
6	12	12	12	12	12	12	12	12	12	12	12	12
7	12	12	12	12	12	12	12	12	12	12	12	12

Traffic Mix

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:

**Note:** All the field and their meaning can be consulted in the item 2.1.1.1.1, that describes the Regulated Elements fields.

While editing a Regulated Element, the system provides the following buttons:

- Save: allows saving the new Regulated Element data in the database.
- Cancel: cancels the operation, preserving the original data.
- Remove: the same option presented in item 2.1.1.1.3.1.

#### 2.1.1.1.4. Add a Regulated Element

To create a new Regulated Element, the user must press the “Add” button shown in the left panel.



The system displays at the right panel an option to select the type of Regulated Element to be added as follows.


General Data	
Regulated Element Type:	<input type="text"/>

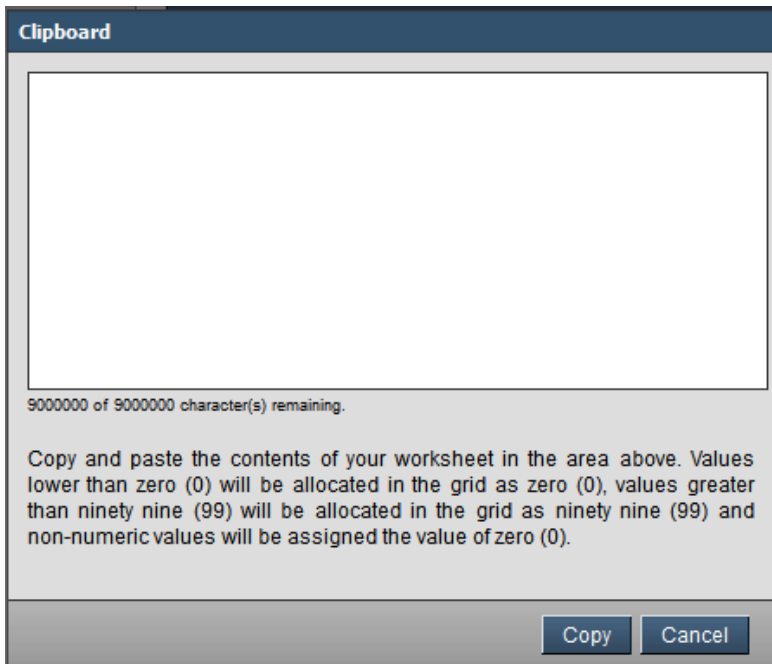
The available options are:

- Aerodrome Groups
- Aerodromes
- Airway Segment Groups
- Airway Segments
- Controlled Auxiliary Points
- Fir Sector Groups
- Fir Sectors
- Fixed Points
- Polygons
- SID Segment Groups
- SID Segments
- STAR Segment Group
- STAR Segments
- SUAs
- TMA Sector Groups



- TMA Sectors

**Note:** During the creation of any type of Regulated Element, instead of informing the time capacity in the “Capacity”, “Traffic Mix”, and “Complexity” Group, it can be done by the clipboard option (  ). When the respective button is selected, the system displays the following window.



The image shows a 'Clipboard' dialog box with a title bar. It contains a large text area for pasting content. Below the text area, it states '9000000 of 9000000 character(s) remaining.' and provides instructions: 'Copy and paste the contents of your worksheet in the area above. Values lower than zero (0) will be allocated in the grid as zero (0), values greater than ninety nine (99) will be allocated in the grid as ninety nine (99) and non-numeric values will be assigned the value of zero (0).' At the bottom right, there are 'Copy' and 'Cancel' buttons.

After pasting the content on the worksheet and selecting the “Copy” button, the system inserts the capacity data in the “Capacity”, “Traffic Mix”, and “Complexity” Groups specified for the respective Regulated Element.

The following items show the details of the procedures to create each Regulated Elements in the system.

#### 2.1.1.1.4.1. Aerodrome Group

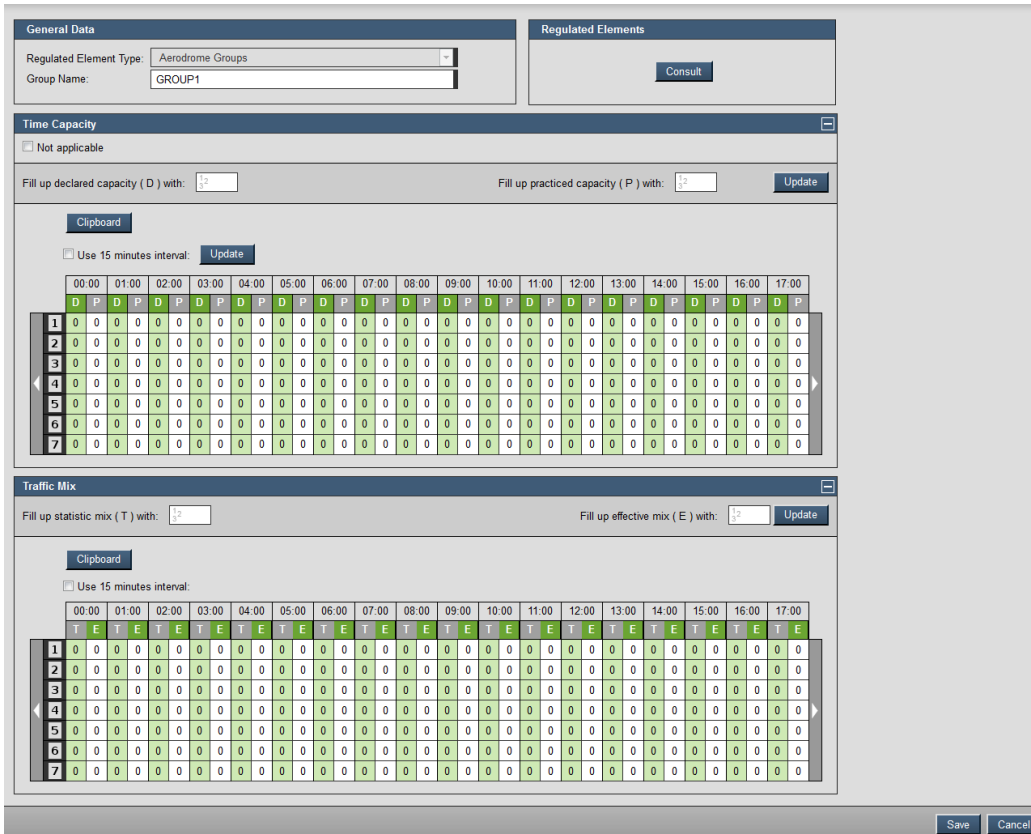
After selecting the type “Aerodrome Groups” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



The image shows a 'General Data' form. It has a dropdown menu for 'Regulated Element Type' with 'Aerodrome Groups' selected. To the right of the dropdown is an 'Update' button. Below this, there is a text input field for 'Group Name'.



After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for an Aerodrome Group, as follows:



**General Data**

Regulated Element Type: Aerodrome Groups  
Group Name: GROUP1

**Regulated Elements**

Consult

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:   
Fill up practiced capacity ( P ) with:  Update

Clipboard

☐ Use 15 minutes interval: Update

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
1	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:   
Fill up effective mix ( E ) with:  Update

Clipboard

☐ Use 15 minutes interval:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
1	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Save Cancel

This form is composed for four (4) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### 2.1.1.1.4.2. Aerodrome

After selecting the type “Aerodrome” while adding a new Regulated Element, the system will display a field to insert the indicative of the aerodrome to be created, as follows:



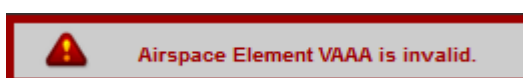
**General Data**

Regulated Element Type:

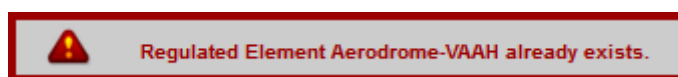
Indicative:

**Note:** If the Aerodrome Indicative entered is inconsistent, the system displays the following error messages:

- Aerodrome not included in the system database



- Aerodrome already registered as Regulated Element



After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for an Aerodrome, as follows:

**General Data**

Regulated Element Type:

Indicative:

Name:

**Capacity**

Theoretical Capacity:

**Runway Capacity Configuration**

Description	Nominal	Degraded	Impact
<div>0-0 (0) <input type="text" value="00:00"/></div>			

Add

**Aerodrome Configuration Data**

Begin Working Time:  End Working Time:

DEP x DEP:  min DEP x ARR:  min ARR x ARR:  min Aerodrome Type:

**Time Capacity**

Fill up declared capacity ( D ) with:  Fill up practiced capacity ( P ) with:  Fill up regular flight ( RF ) with:

Clipboard

☐ Use 15 minutes interval:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
1	D	P	RF	D	P	RF	D	P	RF	D	P	RF
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:

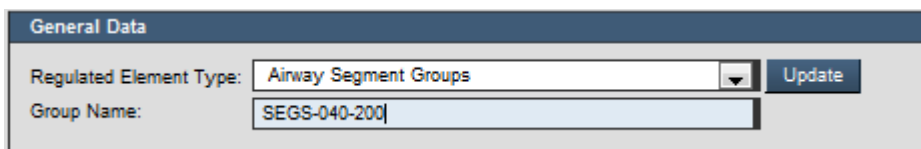
This form is composed for six (6) sets, which are:



- General Data (for more details consult item 2.1.1.1.1.1)
- Capacity (for more details consult item 2.1.1.1.1.5)
- Runway Capacity Configuration (for more details consult item 2.1.1.1.1.6)
- Aerodrome Configuration Data (for more details consult item 2.1.1.1.1.7)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### **2.1.1.1.4.3. Airway Segment Group**

After selecting the type “Airway Segment Group” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for an Airway Segment Group, as follows:





**General Data**

Regulated Element Type:   
Group Name:

**Regulated Elements**

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:   
Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:   
Fill up effective mix ( E ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

This form is composed for four (4) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### 2.1.1.1.4.4. Airway Segments

After selecting the type “Airway Segments” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



**General Data**

Regulated Element Type:

Indicative:

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for an Airway Segments, as follows:

**General Data**

Regulated Element Type:

Indicative:

**Level**

Lower level:  FTx100      Upper level:  FTx100

**Segment Data**

☐ All

Item	Indicative	Point A	Point B	Direction
<input type="checkbox"/>	R581	CEA	DUMKA	A->B
<input type="checkbox"/>	R581	DUMKA	MONDA	A->B
<input type="checkbox"/>	R581	MONDA	UXAGA	A->B
<input type="checkbox"/>	R581	UXAGA	IPLAS	A->B
<input type="checkbox"/>	R581	IPLAS	GAURA	A->B

(5)

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:       Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:       Fill up effective mix ( E ) with:

This form is composed for four (4) sets, which are:

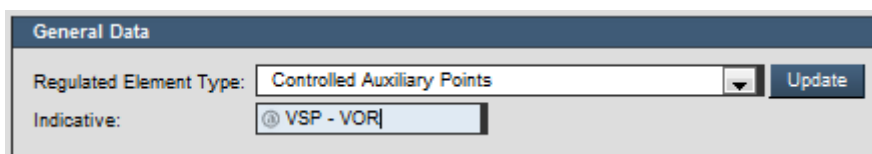
- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Segment Data (for more details consult item 2.1.1.1.1.9)



- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

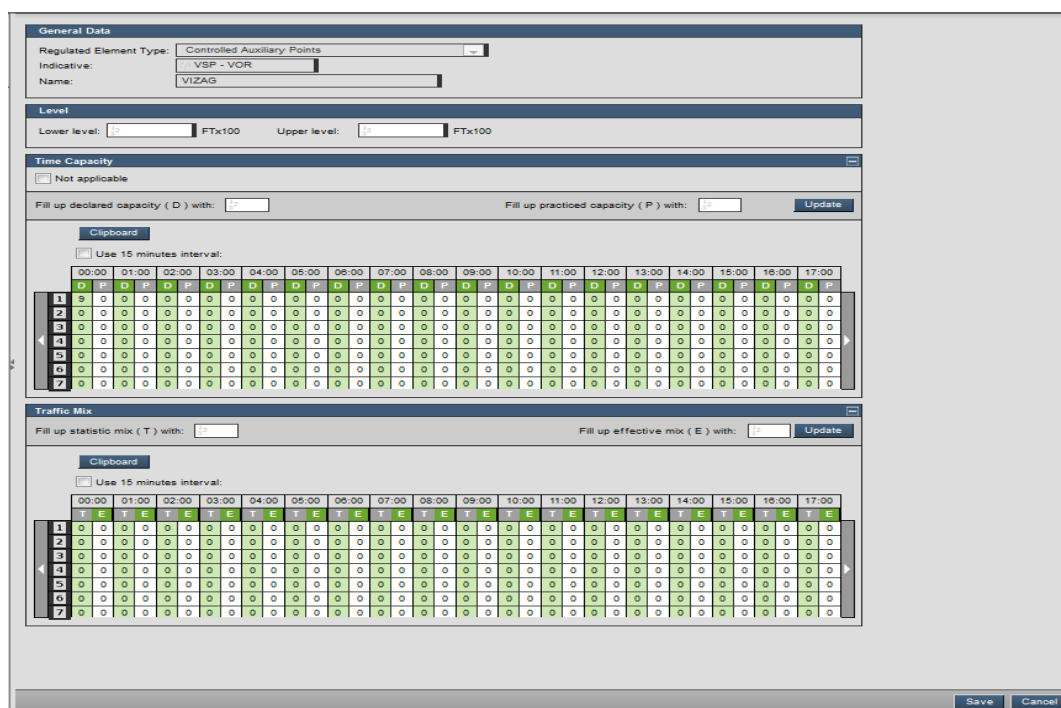
#### 2.1.1.1.4.5. Controlled Auxiliary Point

After selecting the type “Controlled Auxiliary Points” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



The Controlled Auxiliary Points to be declared as Regulated Elements can be of the following types: VOR, DME, and NDB.

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for a Controlled Auxiliary Points, as follows:



**Note:** If the Controlled Auxiliary Points Indicative entered is inconsistent, the system displays the following error messages:

- Controlled Auxiliary Points not included in the system database



Airspace Element VIII is invalid.

- Controlled Auxiliary Points already registered as Regulated Element



Regulated element NAVAID-BBB-VOR already exists in the system.

This form is composed for four (4) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### 2.1.1.1.4.6. FIR Sector Group

After selecting the type “FIR Sector Group” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:

General Data	
Regulated Element Type:	<input type="text" value="FIR Sector Groups"/> <input type="button" value="Update"/>
Group Name:	<input type="text" value="FIR-TEST INDIA"/>

After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a FIR Sector Group, as follows:



General Data		Regulated Elements																																																																																																																																																																												
Regulated Element Type:	FIR Sector Groups	<input type="button" value="Consult"/>																																																																																																																																																																												
Group Name:	FIR-TEST INDIA																																																																																																																																																																													
Capacity																																																																																																																																																																														
Theoretical Capacity:		N/A																																																																																																																																																																												
Group Sector Data																																																																																																																																																																														
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Disable Viewing:	<input type="checkbox"/> Yes		Frequency:																																																																																																																																																																											
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Time Capacity																																																																																																																																																																														
Fill up declared capacity ( D ) with:		Fill up practiced capacity ( P ) with:																																																																																																																																																																												
<input type="text"/>		<input type="text"/>																																																																																																																																																																												
<input type="button" value="Clipboard"/>		<input type="button" value="Update"/>																																																																																																																																																																												
<table border="1"><thead><tr><th></th><th>00:00</th><th>01:00</th><th>02:00</th><th>03:00</th><th>04:00</th><th>05:00</th><th>06:00</th><th>07:00</th><th>08:00</th><th>09:00</th><th>10:00</th><th>11:00</th><th>12:00</th><th>13:00</th><th>14:00</th><th>15:00</th><th>16:00</th><th>17:00</th></tr></thead><tbody><tr><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td><td>P</td><td>D</td></tr><tr><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>2</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>4</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>5</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></tbody></table>					00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00																																																																																																																																																												
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This form is composed for seven (7) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Capacity (for more details consult item 2.1.1.1.1.5)
- Group Sector Data (for more details consult item 2.1.1.1.1.10)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)

#### 2.1.1.1.4.7. FIR Sector

After selecting the type “FIR Sector” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



**General Data**

Regulated Element Type:

Indicative:

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for a FIR Sector, as follows:

**General Data**

Regulated Element Type:

Indicative:

**Capacity**

Theoretical Capacity:

**Time Capacity**

Fill up declared capacity ( D ) with:

Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:

Fill up effective mix ( E ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Complexity**

This form is composed for five (5) sets, which are:

- General Data (for more details consult item 2.1.1.1.1)
- Capacity (for more details consult item 2.1.1.1.5)



- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)

#### **2.1.1.1.4.8. Fixed Point**

After selecting the type “Fixed Point” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:

General Data	
Regulated Element Type:	<input type="text" value="Fixed Points"/> <input type="button" value="Update"/>
Indicative:	<input type="text" value="LOLTO"/>

After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a Fixed Point, as follows:



**General Data**

Regulated Element Type: Fixed Points  
Indicative: LOLTO

**Level**

Lower level: 1<sup>2</sup>/<sub>3</sub> FTx100 Upper level: 1<sup>2</sup>/<sub>3</sub> FTx100

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with: 1<sup>2</sup>/<sub>3</sub> Fill up practiced capacity ( P ) with: 1<sup>2</sup>/<sub>3</sub> Update

**Clipboard**

☐ Use 15 minutes interval:

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with: 1<sup>2</sup>/<sub>3</sub> Fill up effective mix ( E ) with: 1<sup>2</sup>/<sub>3</sub> Update

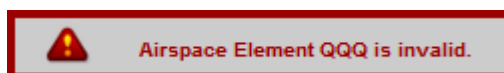
**Clipboard**

☐ Use 15 minutes interval:

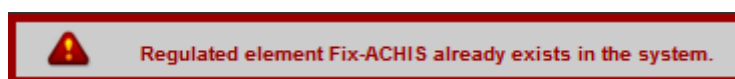
	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Note:** If the Fixed Indication entered is inconsistent, the system displays the following error messages:

- Fixed Points not included in the system database



- Fixed Points already registered as Regulated Element



This form is composed for four (4) sets, which are:






- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### **2.1.1.1.4.9. Polygon**

After selecting the type “Polygons” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



General Data	
Regulated Element Type:	Polygons <input type="button" value="Update"/>
Indicative:	POL052

After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a Polygon, as follows:



General Data

Regulated Element Type: Polygons  
Indicative: POL052

Level

Lower level: FTx100 Upper level: FTx100

Capacity

Theoretical Capacity: N/A

Polygon Data

Name	Type(lat)	°(lat)	'(lat)	''(lat)	Type(long)	°(long)	'(long)	''(long)
(0)								

Time Capacity

☐ Not applicable

Fill up declared capacity ( D ) with: Fill up practiced capacity ( P ) with: Update

Clipboard

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P	D P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Traffic Mix

Fill up statistic mix ( T ) with: Fill up effective mix ( E ) with: Update

Clipboard

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E	T E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

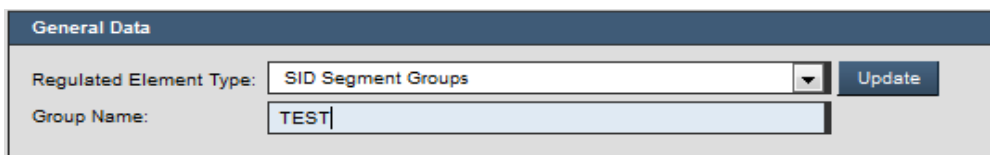
This form is composed for seven (7) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Capacity (for more details consult item 2.1.1.1.1.5)
- Polygon Data (for more details consult item 2.1.1.1.1.12)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)

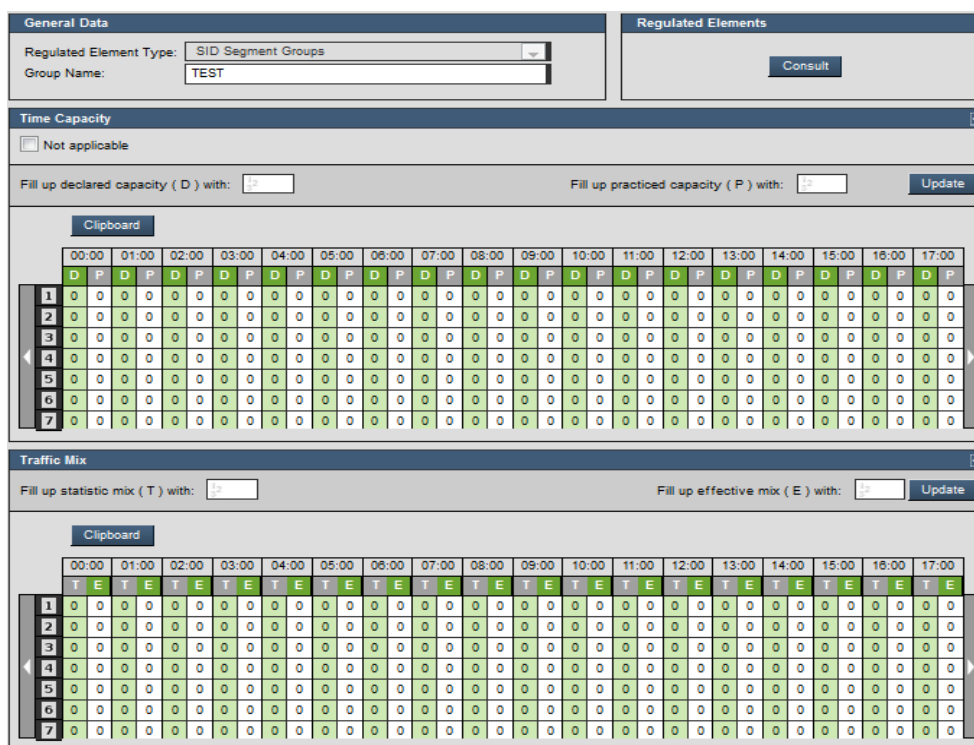


#### 2.1.1.1.4.10. SID Segment Groups

After selecting the type “SID Segment Group” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for an SID Segment Group, as follows:



**General Data**

Regulated Element Type:  Update

Group Name:

**Regulated Elements**

Consult

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:  Fill up practiced capacity ( P ) with:  Update

Clipboard

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
D	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:  Update

Clipboard

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
T	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

This form is composed for four (4) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)



## 2.1.1.1.4.11. SID Segment

After selecting the type “SID Segment” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:

**General Data**

Regulated Element Type:

Indicative:

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for a SID Segment, as follows:

**General Data**

Regulated Element Type:

Indicative:

**Level**

Lower level:  FTx100      Upper level:  FTx100

**Segment Data**

☐ All

Item	Indicative	Point A	Point B	Direction
<input type="checkbox"/>	REVKA1C_AGELA_SID	VABB	MB053	A->B
<input type="checkbox"/>	REVKA1C_AGELA_SID	MB053	SABKA	A->B
<input type="checkbox"/>	REVKA1C_AGELA_SID	SABKA	REVKA	A->B
<input type="checkbox"/>	REVKA1C_AGELA_SID	REVKA	MB362	A->B
<input type="checkbox"/>	REVKA1C_AGELA_SID	MB362	BIXOR	A->B
<input type="checkbox"/>	REVKA1C_AGELA_SID	BIXOR	AGELA	A->B

(6)

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with:       Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
1	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:       Fill up effective mix ( E ) with:

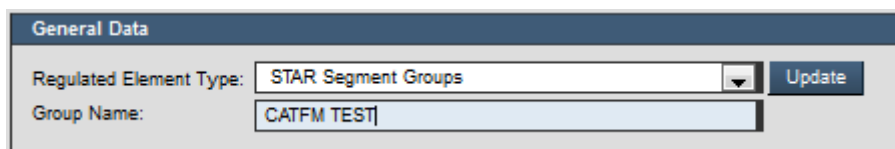
This form is composed for five (5) sets, which are:



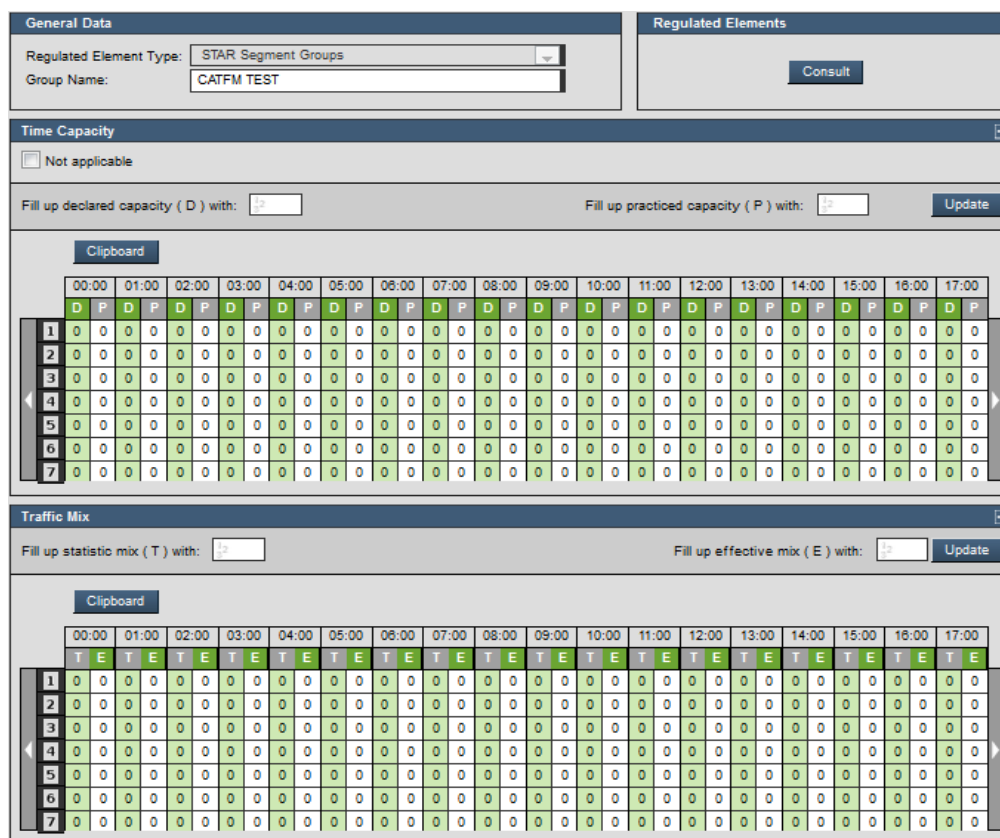
- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Segment Data (for more details consult item 2.1.1.1.1.9)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### 2.1.1.1.4.12. STAR Segment Group

After selecting the type “STAR Segment Group” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a STAR Segment Group, as follows:



The form is divided into four main sections, each with a 'Clipboard' button and a grid for data entry:

- General Data:** Includes 'Regulated Element Type' (STAR Segment Groups) and 'Group Name' (CATFM TEST). An 'Update' button is present.
- Regulated Elements:** Includes a 'Consult' button.
- Time Capacity:** Includes a 'Not applicable' checkbox, 'Fill up declared capacity ( D ) with:' and 'Fill up practiced capacity ( P ) with:' fields, and an 'Update' button.
- Traffic Mix:** Includes 'Fill up statistic mix ( T ) with:' and 'Fill up effective mix ( E ) with:' fields, and an 'Update' button.

Each section's grid has 7 rows (numbered 1-7) and 17 columns (labeled 00:00 to 17:00). The cells contain values for 'D' (Declared Capacity), 'P' (Practiced Capacity), 'T' (Statistic Mix), and 'E' (Effective Mix).

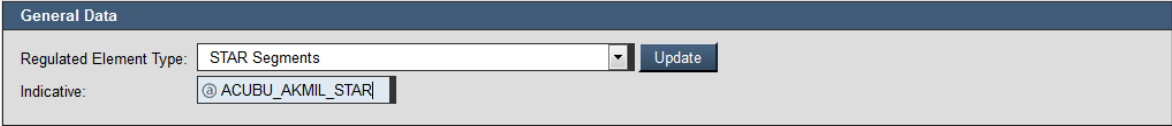
This form is composed for four (4) sets, which are:



- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### **2.1.1.1.4.13. STAR Segment**

After selecting the type “STAR Segment” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a STAR Segment, as follows:



**General Data**

Regulated Element Type: STAR Segments  
Indicative: ACUBU\_AKMIL\_STAR

**Level**

Lower level: 1<sup>2</sup> FTx100      Upper level: 1<sup>2</sup> FTx100

**Segment Data**

☐ All

Item	Indicative	Point A	Point B	Direction
<input type="checkbox"/>	ACUBU_AKMIL_STAR	AKMIL	ARDAB	A->B
<input type="checkbox"/>	ACUBU_AKMIL_STAR	ARDAB	MM512	A->B
<input type="checkbox"/>	ACUBU_AKMIL_STAR	MM512	VOMM	A->B

(3)

**Time Capacity**

☐ Not applicable

Fill up declared capacity ( D ) with: 1<sup>2</sup>      Fill up practiced capacity ( P ) with: 1<sup>2</sup> Update

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with: 1<sup>2</sup>      Fill up effective mix ( E ) with: 1<sup>2</sup> Update

**Clipboard**

This form is composed for five (5) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Level (for more details consult item 2.1.1.1.1.8)
- Segment Data (for more details consult item 2.1.1.1.1.9)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)

#### 2.1.1.1.4.14. SUA – Special Use Airspace

After selecting the type “SUAs” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



**General Data**

Type of Regulated Element:

Indicative:

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for a SUA, as follows:

**General Data**

Type of Regulated Element:

Indicative:

Name:

**Time Capacity**

☐ Not applicable capacity

Fill up declared capacity ( D ) with:

Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
1	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:

Fill up effective mix ( E ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
1	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Complexity**

Fill up with

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Note:** If the SUA Indication entered is inconsistent, the system displays the following error messages:

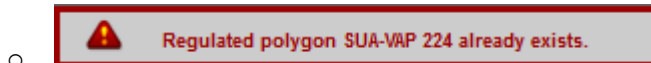
- Airspace Element is invalid







- Regulated polygon already exists



This form is composed for four (4) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)

#### **2.1.1.1.4.15. TMA Sector Group**

After selecting the type “TMA Sector Group” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:

General Data	
Regulated Element Type:	TMA Sector Groups <input type="button" value="Update"/>
Group Name:	<input type="text"/>

After filling the field, it is required to press the “Update” button, and then the system displays a form with all fields for a TMA Sector Group, as follows:



General Data		Regulated Elements																		
Regulated Element Type:	TMA Sector Groups	<input type="button" value="Consult"/>																		
Group Name:																				
Capacity																				
Theoretical Capacity:		N/A																		
Group Sector Data																				
Begin Working Time:	00:00	End Working Time:	23:59																	
Disable Viewing:		<input type="checkbox"/> Yes																		
Frequency:		SMTWTFS																		
Time Capacity																				
Fill up declared capacity ( D ) with:		Fill up practiced capacity ( P ) with:																		
$\frac{1}{2}$		$\frac{1}{2}$																		
<input type="button" value="Update"/>																				
Clipboard																				
	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Traffic Mix																				
Fill up statistic mix ( T ) with:		Fill up effective mix ( E ) with:																		
$\frac{1}{2}$		$\frac{1}{2}$																		
<input type="button" value="Update"/>																				
Clipboard																				
	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

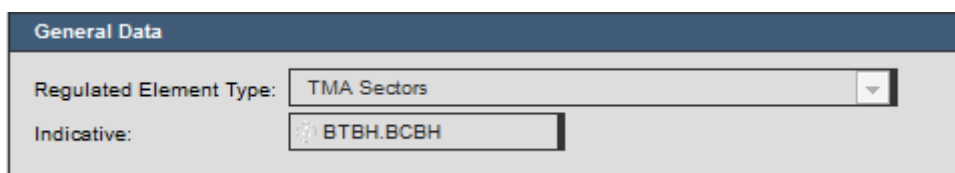
This form is composed for seven (7) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Regulated Element (for more details consult item 2.1.1.1.1.2)
- Capacity (for more details consult item 2.1.1.1.1.5)
- Group Sector Data (for more details consult item 2.1.1.1.1.10)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)



#### 2.1.1.1.4.16. TMA Sector

After selecting the type “TMA Sector” while adding a new Regulated Element, the system will display a field to insert the name of the group to be created, as follows:



General Data	
Regulated Element Type:	TMA Sectors
Indicative:	BTBH.BCBH

After filling the field, is required to press the “Update” button, and then the system displays a form with all fields for a TMA Sector, as follows:



**General Data**

Regulated Element Type:   
Indicative:

**Capacity**

Theoretical Capacity:

**Time Capacity**

Fill up declared capacity ( D ) with:  Fill up practiced capacity ( P ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D	P	D
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Traffic Mix**

Fill up statistic mix ( T ) with:  Fill up effective mix ( E ) with:

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T	E	T
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Complexity**

Fill up with

**Clipboard**

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

This form is composed for five (5) sets, which are:

- General Data (for more details consult item 2.1.1.1.1.1)
- Capacity (for more details consult item 2.1.1.1.1.5)
- Time Capacity (for more details consult item 2.1.1.1.1.3)
- Traffic Mix (for more details consult item 2.1.1.1.1.4)
- Complexity (for more details consult item 2.1.1.1.1.11)



#### 2.1.1.1.5. Importing/Exporting Regulated Elements (file format)

The file format used to import/export the Regulated Elements depends on the type of element. In the file of a specific type, all elements are described in sequence on one or more lines. Each line has a specific sequence of fields separated by semicolons. For each file, we describe the lines and its specific field's sequence. At the end of each description, we present examples to clarify the explanation.

The lines initiated by “#” are comment lines that are not processed and may be used to document the file content.

##### 2.1.1.1.5.1. Aerodrome Groups file format

Each group of aerodrome Regulated Element description may have three different kinds of lines:

- **GROUP OF AERODROME** line: it describes the main information about the the group of aerodrome;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

GROUP OF AERODROME line description

In one line it is described the aerodrome group main information.

**GROUP OF AERODROME**;GROUP\_NAME;AERODROMES;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

Field Description

Field	Description
<b>GROUP OF AERODROME</b>	Key word defining this line
GROUP_NAME	Name to identify and describe this group
AERODROMES	List of aerodromes ICAO ID separated by “#”.
TIME_CAPACITY_FLAG	Time capacity flag: “0” time capacity not applicable and “1” time capacity applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared aerodrome capacity by hour on one integer number or by quarter of hour on four numbers separated by “/”.
CAPACITY_P	Defines the practiced aerodrome by hour on one integer number or by quarter of hour on four numbers separated by “/”.
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.





```
M;1;03:15;0;0;.....  
M;1;03:30;0;0;.....  
M;1;03:45;0;0;.....
```

#### 2.1.1.1.5.2. Aerodromes file format

Each aerodrome Regulated Element description may have four different kinds of lines:

- **AERODROME** LINE: it describes the main information about the aerodrome;
- **Runway** line: it describes the runways;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

Aerodrome line Description

In one line it is described the aerodrome main information.

**AERODROME**;ICAO\_ID;BGIN\_WRK\_TIME;END\_WRK\_TIME;DEP\_DEP;DEP\_ARR;ARR\_ARR;CAPAC  
ITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;CAPACITY\_RF;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC  
\_MIX\_E;AEROD\_TYPE;MONITORED\_PERIOD;

Field Description

Field	Description
<b>AERODROME</b>	Key word defining this line
ICAO_ID	Aerodrome ICAO ID
BGIN_WRK_TIME	Begin working time
END_WRK_TIME	End working time
DEP_DEP	Minimal time between two sequential departs;
DEP_ARR	Minimal time between a depart and a arrival;
ARR_ARR	Minimal time between two sequential arrivals
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
CAPACITY_D	Defines the declared aerodrome capacity by hour on one integer number or by quarter of hour on four numbers separated by "/".
CAPACITY_P	Defines the practiced aerodrome by hour on one integer number or by quarter of hour on four numbers separated by "/".
CAPACITY_RF	Defines the regular flight aerodrome capacity by hour on one integer number or by quarter of hour on four numbers separated by "/".
TRFIC_MIX_PERIO D	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.



Field	Description
AEROD_TYPE	It has the following options: <ul style="list-style-type: none"><li>• “D”: Default</li><li>• “M”: Monitored.</li></ul>
MONITORED_PERIOD	This field shall be only present when the Aerodrome type is “M” (monitored). It shows the monitored periods separated by “#”. Each monitored period has the following syntax: HH:MM-HH:MM, corresponding to the initial and final instant.

### Runway line description

In one line it is described the nominal and degraded runway capacities. This line shall follow the associated Aerodrome line.

**R**;RUNWAY;DESCRIPTION;METEO\_CONDITIONS;DEGRADED\_COND;;;;;;;;;

#### Field Description

Field	Description
<b>R</b>	Key word defining this line
RUNWAY	One or more runway descriptions separated by “-”
DESCRIPTION	Free text description
METEO_CONDITIONS	Presents VMC, MVMC and IMC separated by “-”
DEGRADED_COND	This field is composed by one or more sequences of: “[RUNWAY]-DESCRIPTION-METEO_CONDITIONS” Each new degraded condition is separated by “#”

### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C**; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;

#### Field Description

Field	Description
<b>C</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared aerodrome capacity.
CAPACITY_P	Defines the practiced aerodrome capacity.
CAPACITY_RF	Defines the regular flight aerodrome capacity.





### Mix Line Description

Each line describes when the traffic mix is different from the regular one for a frequency and time

**M**;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;;

### Field Description

Field	Description
<b>M</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

### Example

```
AERODROME;VABB;00:00;00:00;1;1;1;H;43;43;43;H;0;0;D;;  
R;H;Peak Capacity*;45;Rwy 27/09 in use-41-9#Rwy 14/32 in use-35-22  
C;1;00:00;40;40;40 ;;;;;;;;;;  
C;2;00:00;40;40;40 ;;;;;;;;;;  
M;1;00:00;2;2 ;;;;;;;;;;  
M;2;00:00;2;2 ;;;;;;;;;;  
AERODROME;VAAK;00:00;00:00;1;2;3;H;12;12;12;H;0;0;M;04:01-06:00#03:00-04:00#06:01-23:00  
R;10/28;Regular runway;0-0-0;  
AERODROME;VIDP;00:00;00:00;1;1;1;H;74;74;74;H;0;0;D;;  
R;09/27-10/28-11/29;3 Rwy: 29/11, 28/10 and 27/09;80-60-40;[09/27-10/28]-t1-80-60-40#[10/28-11/29]-t2-80-70-60#[10/28]-t3-40-30-20#[11/29]-t4-30-20-10;;;;;;;;;;
```

### 2.1.1.1.5.3. Airway Segment Groups file format

Each airway segment Regulated Element description may have 3 different kinds of lines:

- **GROUP OF AIRWAY SEGMENT** line: it describes the main information about the airway segment group;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

**GROUP OF AIRWAY SEGMENT** line:

In one line it is described the group of airway segment main information.

**GROUP OF AIRWAY SEGMENT**;AIRWAY\_SEGMENT\_GROUP\_NAME;AIRWAY\_SEGMENTS;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E



### Field Description

Field	Description
<b>GROUP OF AIRWAY SEGMENT</b>	Key word defining this line
AIRWAY_SEGMENT_GROUP_NAME	Airway segment group name identifying this group
AIRWAY_SEGMENTS	A list of airway segments names that are part of this group separated by "#". A airway segment name is composed by its ICAO ID followed by "-" and the first point, the last point, the lower and upper levels separated by "_"
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared airway segment capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced airway segment capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C**; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;;

### Field Description

Field	Description
<b>C</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday..
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

### Mix Line Description



Each line describes when the traffic mix is different from the regular one for a frequency and time

**M**;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;

#### Field Description

Field	Description
<b>M</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

#### Example

GROUP OF AIRWAY SEGMENT;AIRWAY GROUP 1;Q1-BBB\_DPN\_0\_990#Q2-DPN\_BBB\_0\_990;0;H;0;0;H;0;0  
C;6;10:00;24;24  
M;6;10:00;6;6

### 2.1.1.1.5.4. Airway Segments file format

Each airway segment Regulated Element description may have 3 different kinds of lines:

- **AIRWAY SEGMENT** line: it describes the main information about the airway segment;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

#### AIRWAY SEGMENT line Description

In one line it is described the airway segment main information.

**AIRWAY SEGMENT**;ICAO\_ID;LOWER\_FLEVEL;UPPER\_FLEVEL;FRST\_PT;LST\_PT;TIME\_CAPACITY\_FLAG;  
CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

#### Field Description

Field	Description
<b>AIRWAY SEGMENT</b>	Key word defining this line
ICAO_ID	Airway ICAO identification.
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feet, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feet, eg.:F990)
FRST_PT	Airway first segment point





FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

#### Example

```
AIRWAY SEGMENT;Q1;F000;F990;BBB;DPN;0;H;20;20;H;4;4  
C;6;10:00;24;24  
M;6;10:00;6;6  
AIRWAY SEGMENT;Q2;F000;F990;DPN;BBB;0;H;20;20;H;0;0
```

### 2.1.1.1.5.5. Controlled Auxiliary Points file format

Each Controlled Auxiliary Points Regulated Element description may have three different kinds of lines:

- **Controlled Auxiliary Points line:** it describes the main information about the Nav/Aid;
- **Capacity line:** This line describes a specific capacity change from the standard value.
- **Mix line:** This line describes a specific traffic mix change from the defined standard.

#### Controlled Auxiliary Points line description

In one line it is described the Controlled Auxiliary Points main information.

**NAVAID**;INDICATIVE;LOWER\_LEVEL;UPPER\_LEVEL;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E;

#### Field Description

Field	Description
<b>NAVAID</b>	Key word defining this line
INDICATIVE	NAV/AID descriptive identification ("ICAO_ID"- "TYPE"). Nav/Aid type described on SUM_Vol7 [4]
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feet, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feet, eg.:F990)
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).





C;1;00:00;40;40;.....  
M;4;20:00;0;0;.....

#### 2.1.1.1.5.6. FIR Sector Groups file format

Each FIR Sector group Regulated Element description may have four different kinds of lines:

- **GROUP OF FIR SECTOR** line: it describes the main information about the Group of FIR Sectors;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard value.
- **Complexity** line: This line describes the complexity change from the standard value.

GROUP OF FIR SECTOR line description

In one line it is described the GROUP OF FIR SECTOR main information.

**GROUP OF FIR SECTOR**;GROUP\_NAME;FIR\_SECTORS;BGIN\_WRK\_TIME;END\_WRK\_TIME;DISABEL\_VIEW;FREQUENCY;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E; COMPLEXITY\_PERIOD;COMPLEXITY

Field Description

Field	Description
<b>GROUP OF FIR SECTOR</b>	Key word defining this line
GROUP_NAME	FIR Sector group name
FIR_SECTORS	List of FIR Sectors identification as defined on SUM_Vol7 [4] separated by “#”
BGIN_WRK_TIME	Begin working time
END_WRK_TIME	End working time
DISABEL_VIEW	Options: “1” enable view and “0” disable viewing
FREQUENCY	A sequence of seven digits: “0” (disabled) and “1” (enabled) associated weekday frequency: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by “/” (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by “/” (Q option).



### Capacity Line Description

**C; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;.....;**

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

## M;FREQUENCY;TIME; TRFIC MIX T; TRFIC MIX E;.....

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.





## Complexity Line Description

Each line describes when the complexity is different from the regular one for a frequency and time

**X**;FREQUENCY;TIME;COMPLEXITY;;;;;;;;;

### Field Description

Field	Description
<b>X</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week

### Example

```
GROUP OF FIR  
SECTOR;FIR_GROUP_1;VABF.BF01#VABF.BF02#VABF.BFMB;03:00;20:00;1;0101010;H;0;0;H;0;0;H;0  
GROUP OF FIR SECTOR;FIX_BAL_FIR_GROUP;VIDF.DF01#  
VIDF.DF4B#VIDF.DF5A#VIDF.DF5B;00:00;23:59;0;1111111;H;10;10;H;0;0;H;0  
GROUP OF FIR SECTOR;VIDF EAST;VIDF.DF01#VIDF.DF02;00:00;23:59;0;1111111;H;20;20;H;0;0;H;0  
GROUP OF FIR SECTOR;VIDF  
SOUTH;VIDF.DF03#VIDF.DF4A#VIDF.DF4B;00:00;23:59;0;1111111;H;20;20;H;0;0;H;0  
GROUP OF FIR SECTOR;VIDF WEST;VIDF.DF5A#VIDF.DF5B;00:00;23:59;0;1111111;H;20;20;H;0;0;H;0
```

## 2.1.1.1.5.7. FIR Sector file format

Each FIR Sector Regulated Element description may have four different kinds of lines:

- **FIR SECTOR** line: it describes the main information about the FIR Sector;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard value.
- **Complexity** line: This line describes the complexity change from the standard value.

### FIR SECTOR line description

In one line it is described the FIR SECTOR main information.

**FIR SECTOR**;INDICATIVE;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E; COMPLEXITY\_PERIOD;COMPLEXITY

### Field Description

Field	Description
<b>FIR SECTOR</b>	Key word defining this line





M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

### Complexity Line Description

Each line describes when the complexity is different from the regular one for a frequency and time

**X**;FREQUENCY;TIME;COMPLEXITY;;;;;;;;;;

### Field Description

Field	Description
<b>X</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week

### Example

```
FIR SECTOR;VIDF.DF01;H;12;10;H;4;2;H;500
FIR SECTOR;VIDF.DF02;H;12;10;H;4;2;H;600
FIR SECTOR;VIDF.DF03;H;12;10;H;4;2;H;300
FIR SECTOR;VIDF.DF06;H;12;10;H;0;0;H;0
FIR SECTOR;VIDF.DF07;H;12;10;H;0;0;H;0
FIR SECTOR;VIDF.DF4A;H;10;8;H;0;0;H;800
C;4;03:00;8;6
C;5;04:00;8;6
M;3;07:00;1;1
M;4;07:00;1;1
X;4;10:00;999
X;4;11:00;999
FIR SECTOR;VIDF.DF4B;H;6;4;H;0;0;H;0
FIR SECTOR;VIDF.DF5A;H;4;4;H;0;0;H;0
FIR SECTOR;VIDF.DF5B;H;10;6;H;0;0;H;0
FIR SECTOR;VIDF.NACC;H;12;12;H;0;0;H;0
FIR SECTOR;VIDF.SLUW;H;8;8;H;0;0;H;0
```

### 2.1.1.1.5.8. Fixed Points file format



Each FIR Sector Regulated Element description may have three different kinds of lines:

- **FIX** line: it describes the main information about the fix
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard value.
- **Complexity** line: This line describes the complexity change from the standard value.

#### **FIX** line description

In one line it is described the FIX point main information.

**FIX**;ICAO\_ID;LOWER\_FLEVEL;UPPER\_FLEVEL;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E;COMPLEXITY\_PERIOD;COMPLEXITY

#### Field Description

Field	Description
FIR SECTOR	Key word defining this line
ICAO ID	ICAO identification
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feet, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feet, eg.:F990)
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the traffic mix period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.
COMPLEXITY_PERIOD	Define if the complexity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
COMPLEXITY	Complexity

#### Capacity Line Description



**C; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;.....**

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

## M;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;,,,,,,,,,,,,,

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

X;FREQUENCY;TIME;COMPLEXITY;,,,,,,,,,,,,;

Field	Description
<b>X</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week



### Example

```
FIX;ADPOP;F000;F990;0;Q;5/6/5/6;4/5/4/5;H;2;2  
C;3;00:00;6;6  
M;6;00:00;3;3
```

## 2.1.1.1.5.9. Polygon file format

Each Polygon Regulated Element description may have five different kinds of lines:

- **POLYGON** line: it describes the main information about the Polygon;
- **P** line: it describe the polygon boundary sequence of points.
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.
- **Complexity** line: This line describes the complexity change from the standard value.

### POLYGON line description

In one line it is described the POLYGON main information.

**POLYGON**;INDICATIVE;LOWER\_LEVEL;UPPER\_LEVEL;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E;COMPLEXITY\_PERIOD;COMPLEXITY

### Field Description

Field	Description
<b>POLYGON</b>	Key word defining this line
INDICATIVE	Polygon descriptive identification
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feet, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feet, eg.:F990)
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.



Field	Description
TRFIC_MIX_E	Effective mix.
COMPLEXITY_PERIOD	Define if the complexity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
COMPLEXITY	Complexity

#### P line Description:

Each line describes one boundary point. At least three lines will be used to define the Polygon boundary

**P**;POINT\_ID;LATITUDE;LONGITUDE

#### Fields description

Field	Description
<b>P</b>	Point identification it allow to reference this point on other airspace definitions. This is a numerical identification.
POINT_ID	Point identification it allow to reference this point on other airspace definitions. This is a numerical identification.
LATITUDE	Latitude on 3 fields separated by space. LAT_DEG LAT_MIN LAT_SEC <ul style="list-style-type: none"><li>• LAT_DEG Hemisfere (N/S) followed by Latitude's degree part (integer)</li><li>• LAT_MIN Latitude's minutes part (integer).</li><li>• LAT_SEC Latitude seconds part (seconds and fraction)</li></ul>
LONGITUDE	Longitude on 3 fields separated by space: LON_DEG LONG_MIN LON_SEC <ul style="list-style-type: none"><li>• LONG_DEG Longitude direction followed by degree part (integer)</li><li>• LONG_MIN Longitude minutes part.;</li><li>• LONG_SEC Longitude seconds part (seconds and fraction)</li></ul>

#### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C**; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;;

#### Field Description

Field	Description
<b>C</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday .



TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

### Mix Line Description

Each line describes when the traffic mix is different from the regular one for a frequency and time

**M**;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;

#### Field Description

Field	Description
<b>M</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday .
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

### Complexity Line Description

Each line describes when the complexity is different from the regular one for a frequency and time

**X**;FREQUENCY;TIME;COMPLEXITY;;;;;;;;;

#### Field Description

Field	Description
<b>X</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week

### Example

```
POLYGON;POL1;F145;F990;1;H;5;5;H;0;0;H;0  
P;P1;N18 10 42.0000;E077 58 23.0000  
P;P2;N17 00 50.0000;E081 14 49.0000  
P;P3;N14 48 59.0000;E078 53 45.0000  
X;4;00:00;500  
X;4;01:00;500  
POLYGON;CESAR9;F000;F990;0;H;10;10;H;0;0;H;0  
P;A;N31 03 50.0000;E075 17 22.0000  
P;B;N30 37 28.0000;E078 11 23.0000
```





```
P;C;N27 41 28.0000;E078 33 08.0000
P;D;N27 44 45.0000;E075 13 24.0000
X;5;00:00;450
X;5;01:00;450
X;5;02:00;500
X;5;03:00;500
X;5;04:00;600
X;5;22:00;200
X;5;23:00;200
POLYGON;RRT;F000;F990;0;H;10;10;H;0;0;H;0
P;1;N24 14 54.0000;E074 16 24.0000
P;2;N23 35 29.0000;E076 23 30.0000
P;3;N22 08 36.0000;E075 32 50.0000
P;4;N23 05 43.0000;E074 05 09.0000
```

### 2.1.1.1.5.10. SID Segment Groups file format

Each SID segment group Regulated Element description may have three different kinds of lines:

- **GROUP OF SID SEGMENT** line: it describes the main information about the SID segment group;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

**GROUP OF SID SEGMENT** line:

In one line it is described the SID segment group main information.

**GROUP OF SID SEGMENT**;SID\_SEGMENT\_GROUP\_NAME;SIG\_SEGMENTS;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

#### Field Description

Field	Description
<b>GROUP OF SID SEGMENT</b>	Key word defining this line
SID_SEGMENT_GROUP_NAME	SID segment group name identifying this group
SID_SEGMENTS	A list of SID segments identification that are part of this group separated by "#".
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared airway segment capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).



### Capacity Line Description

**C; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;.....**

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday .
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

## M;FREQUENCY;TIME; TRFIC MIX T; TRFIC MIX E;.....

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

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GROUP OF SID SEGMENT;SID GROUP 1;SASRO1A\_SASRO\_SID-  
VAAH\_SASRO\_0\_990#SASRO1B\_SASRO\_SID-VAAH\_SASRO\_0\_990;1;H;0;0;H;0;0

## 2.1.1.1.5.11. SID Segments file format

Each SID Segment Regulated Element description may have three different kinds of lines:

- **SID SEGMENT** line: it describes the main information about the SID Segment Regulated Element;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

### SID SEGMENT line description

In one line it is described the SID SEGMENT main information.

**SIDSEGMENT**;INDICATIVE;LOWER\_LEVEL;UPPER\_LEVEL;AERODROME;LAST\_POINT;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

### Field Description

Field	Description
<b>SID SEGMENT</b>	Key word defining this line
INDICATIVE	SID segment identification as defined on SUM_Vol7 [4] followed by Aerodrome (AERODROME), last point (LAST_POINT), lower flight level (LOWER_FLEVEL), upper flight level (UPPER_FLEVEL). All separated by " " (SidId_Aerodrome_LastPoint_LowerFLevel_UpperFLevel).
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feets, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feets, eg.:F990)
AERODROME	SID aerodrome
LAST_POINT	Last point in the SID segment
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).



Field	Description
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.

### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C**; FREQUENCY; TIME; CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;;

#### Field Description

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

### Mix Line Description

Each line describes when the traffic mix is different from the regular one for a frequency and time

**M**; FREQUENCY; TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;;

#### Field Description

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix



## Example

```
SID SEGMENT;SASRO1A_SASRO_SID-VAAH_SASRO_0_990;F000;F990;VAAH;SASRO;0;H;20;20;H;0;0  
SID SEGMENT;SASRO1B_SASRO_SID-VAAH_SASRO_0_990;F000;F990;VAAH;SASRO;0;H;22;22;H;0;0  
SID SEGMENT;ALBAP1B_AAU_SID-VABB_AAU_100_800;F100;F800;VABB;AAU;1;H;40;40;H;0;0  
SID SEGMENT;ALBAP1B_BETKU_SID-VABB_BETKU_100_800;F100;F800;VABB;BETKU;0;H;30;30;H;0;0
```

### 2.1.1.1.5.12. STAR Segment Groups file format

Each STAR segment group Regulated Element description may have three different kinds of lines:

- **GROUP OF SID SEGMENT** line: it describes the main information about the STAR segment group;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

**GROUP OF STAR SEGMENT** line:

In one line it is described the STAR segment group main information.

**GROUP OF STAR SEGMENT**;SID\_SEGMENT\_GROUP\_NAME;SIG\_SEGMENTS;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

#### Field Description

Field	Description
<b>GROUP OF STAR SEGMENT</b>	Key word defining this line
STAR_SEGMENT_GROUP_NAME	STAR segment group name identifying this group
STAR_SEGMENTS	A list of STAR segments identification that are part of this group separated by "#".
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared airway segment capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced airway segment capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.





### 2.1.1.1.5.13. STAR Segment file format

Each STAR Segment Regulated Element description may have three different kinds of lines:

- **STAR SEGMENT** line: it describes the main information about the STAR Segment Regulated Element;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard.

#### STAR SEGMENT line description

In one line it is described the STAR SEGMENT main information.

**STAR SEGMENT**;INDICATIVE;LOWER\_LEVEL;UPPER\_LEVEL;FIRST\_POINT;AERODROME;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E

#### Field Description

Field	Description
<b>STAR SEGMENT</b>	Key word defining this line
INDICATIVE	SID segment identification as defined on SUM_Vol7 [4] followed by First point (FIRST_POINT), Aerodrome (AERODROME), lower flight level (LOWER_FLEVEL), upper flight level (UPPER_FLEVEL). All separated by " " (SidId_FirstPoint_Aerodrome_LowerFLevel_UpperFLevel).
LOWER_FLEVEL	Lower Flight level or "GND" (hundreds of feets, eg.:F000)
UPPER_FLEVEL	Upper Flight level or UNL (hundreds of feets, eg.:F990)
FIRST_POINT	FIRST point on STAR segment
AERODROME	STAR aerodrome
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.







#### 2.1.1.1.5.14. SUAs file format

Each SUA Regulated Element description may have four different kinds of lines:

- **SUA** line: it describes the main information about the SUA;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard value.
- **Complexity** line: This line describes the complexity change from the standard value.

##### SUA line description

In one line it is described the SUA main information.

**SUA**;INDICATIVE;TIME\_CAPACITY\_FLAG;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E; COMPLEXITY\_PERIOD;COMPLEXITY

##### Field Description

Field	Description
<b>SUA</b>	Key word defining this line
INDICATIVE	SUA identification as defined on SUM_Vol7 [4]
TIME_CAPACITY_FLAG	Time capacity flag: "0" not applicable and "1" applicable.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the traffic mix period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.
COMPLEXITY_PERIOD	Define if the complexity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
COMPLEXITY	Complexity

##### Capacity Line Description



**C; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;.....**

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

## M;FREQUENCY;TIME; TRFIC MIX T; TRFIC MIX E;.....

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

## X;FREQUENCY;TIME;COMPLEXITY;,,,,,,,,,,,,,

Field	Description
X	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week



### Example

```
SUA;VAD219;0;H;10;10;H;0;0;H;0  
SUA;VIR164B;0;H;3;3;H;0;0;H;800  
SUA;VIR164C;0;H;3;3;H;0;0;H;500  
SUA;VOR181D;0;H;12;12;H;0;0;H;0  
SUA;VOR182A;0;H;12;12;H;0;0;H;0  
SUA;VOR182B;0;H;12;12;H;0;0;H;0  
SUA;VOR183A;0;H;12;12;H;0;0;H;0  
SUA;VOR183B;0;H;12;12;H;0;0;H;0  
SUA;VOR184;0;H;12;12;H;0;0;H;0  
SUA;VOR185A;0;H;12;12;H;0;0;H;0  
SUA;VOR185B;0;H;12;12;H;0;0;H;0  
SUA;VOR185C;0;H;12;12;H;0;0;H;0
```

### 2.1.1.1.5.15. TMA Sector Groups file format

Each TMA Sector group Regulated Element description may have four different kinds of lines:

- **GROUP OF TMA SECTOR** line: it describes the main information about the Group of FIR Sectors;
- **Capacity** line: This line describes a specific capacity change from the standard value.
- **Mix** line: This line describes a specific traffic mix change from the defined standard value.
- **Complexity** line: This line describes the complexity change from the standard value.

#### GROUP OF TMA SECTOR line description

In one line it is described the GROUP OF TMA SECTOR main information.

**GROUP OF TMA SECTOR**;GROUP\_NAME;FIR\_SECTORS;BGIN\_WRK\_TIME;END\_WRK\_TIME;DISABLE\_VIEW;FREQUENCY;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRAFFIC\_MIX\_T;TRAFFIC\_MIX\_E; COMPLEXITY\_PERIOD;COMPLEXITY

#### Field Description

Field	Description
<b>GROUP OF TMA SECTOR</b>	Key word defining this line
GROUP_NAME	TMA Sector group name
TMA_SECTORS	List of TMA Sectors identification as defined on SUM_Vol7 [4] separated by “#”
BGIN_WRK_TIME	Begin working time
END_WRK_TIME	End working time
DISABLE_VIEW	Options: “1” enable view and “0” disable viewing



Field	Description
FREQUENCY	A sequence of seven digits "0" (disabled) and "1" (enabled) associated weekday frequency: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the traffic mix period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.
COMPLEXITY_PERIOD	Define if the complexity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
COMPLEXITY	Complexity

### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C;** FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;;

#### Field Description

Field	Description
C	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

### Mix Line Description

Each line describes when the traffic mix is different from the regular one for a frequency and time



**M**;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;;

#### Field Description

Field	Description
<b>M</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

#### Complexity Line Description

Each line describes when the complexity is different from the regular one for a frequency and time

**X**;FREQUENCY;TIME;COMPLEXITY;;;;;;;;;;

#### Field Description

Field	Description
<b>X</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week

#### Example

GROUP OF TMA SECTOR;TMA GROUP 1;BTNP.BCNP#BTNP.TMNP;00:00;23:59;1;1111111;H;8;8;H;0;0;H;0  
GROUP OF TMA SECTOR;FIX\_BAL\_TMA\_GROUP;DTMA.DT01#DTMA.DT02#DTMA.DT03#DTMA.DT04  
#DTMA.DT05;00:00;23:59;1;1111111;H;20;20;H;0;0;H;0

### 2.1.1.1.5.16. TMA Sector file format

Each TMA Sector Regulated Element description may have four different kinds of lines:

- **TMA SECTOR** line: it describes the main information about the TMA Sector;
- **Capacity** line: This line describes a specific capacity change from the standard value.



- **Mix line:** This line describes a specific traffic mix change from the defined standard value.
- **Complexity line:** This line describes the complexity change from the standard value.

#### TMA SECTOR line description

In one line it is described the TMA SECTOR main information.

**TMA SECTOR**;INDICATIVE;CAPACITY\_PERIOD;CAPACITY\_D;CAPACITY\_P;TRAFFIC\_MIX\_PERIOD;TRFIC\_MIX\_T;TRFIC\_MIX\_E; COMPLEXITY\_PERIOD;COMPLEXITY

#### Field Description

Field	Description
<b>TMA SECTOR</b>	Key word defining this line
INDICATIVE	TMA Sector identification as defined on SUM_Vol7 [4]
CAPACITY_PERIOD	Define if the capacity period is: <ul style="list-style-type: none"><li>• H: by hour;</li><li>• Q: by quarter of hour</li></ul>
CAPACITY_D	Defines the declared capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
CAPACITY_P	Defines the practiced capacity by hour, in one integer number (H option) or capacity by quarter of hour, on four integer numbers separated by "/" (Q option).
TRFIC_MIX_PERIOD	Define if the traffic mix period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
TRFIC_MIX_T	Statistical mix.
TRFIC_MIX_E	Effective mix.
COMPLEXITY_PERIOD	Define if the complexity period is: <ul style="list-style-type: none"><li>• H: hourly;</li><li>• Q: Quarter of hour</li></ul>
COMPLEXITY	Complexity

#### Capacity Line Description

Each line describes when the capacity is different from the regular one for a frequency and time.

**C**; FREQUENCY;TIME;CAPACITY\_D; CAPACITY\_P; CAPACITY\_RF;;;;;;;;;

#### Field Description

Field	Description
<b>C</b>	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.



TIME	Time (HH:MM) where the change shall be performed
CAPACITY_D	Defines the declared airway segment capacity.
CAPACITY_P	Defines the practiced airway segment capacity.

### Mix Line Description

Each line describes when the traffic mix is different from the regular one for a frequency and time

**M**;FREQUENCY;TIME; TRFIC\_MIX\_T; TRFIC\_MIX\_E;;;;;;;;;

#### Field Description

Field	Description
M	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
TRFIC_MIX_T	Statistical mix
TRFIC_MIX_E	Effective mix

### Complexity Line Description

Each line describes when the complexity is different from the regular one for a frequency and time

**X**;FREQUENCY;TIME;COMPLEXITY;;;;;;;;;

#### Field Description

Field	Description
X	Key word defining this line
FREQUENCY	A number defining the associated weekday: 1-Monday; 2-Tuesday; 3-Wednesday; 4-Thursday; 5-Friday; 6-Saturday; 7-Sunday.
TIME	Time (HH:MM) where the change shall be performed
COMPLEXITY	Complexity on the time interval and days of the week

### Example

```
TMA SECTOR;BTNP.BCNP;H;12;12;H;0;0;H;0  
TMA SECTOR;BTNP.TMNP;H;12;12;H;0;0;H;0  
TMA SECTOR;BTAH.TMAH;H;12;12;H;0;0;H;0  
TMA SECTOR;BTBH.BCBH;H;12;12;H;0;0;H;0  
TMA SECTOR;BTBP.BCBP;H;12;12;H;0;0;H;0  
TMA SECTOR;BTBP.TMBP;H;12;12;H;0;0;H;0  
TMA SECTOR;BTBV.BCBV;H;12;12;H;0;0;H;0  
TMA SECTOR;BTGD.BCGD;H;12;12;H;0;0;H;0  
TMA SECTOR;BTIL.BCIL;H;12;12;H;0;0;H;0
```



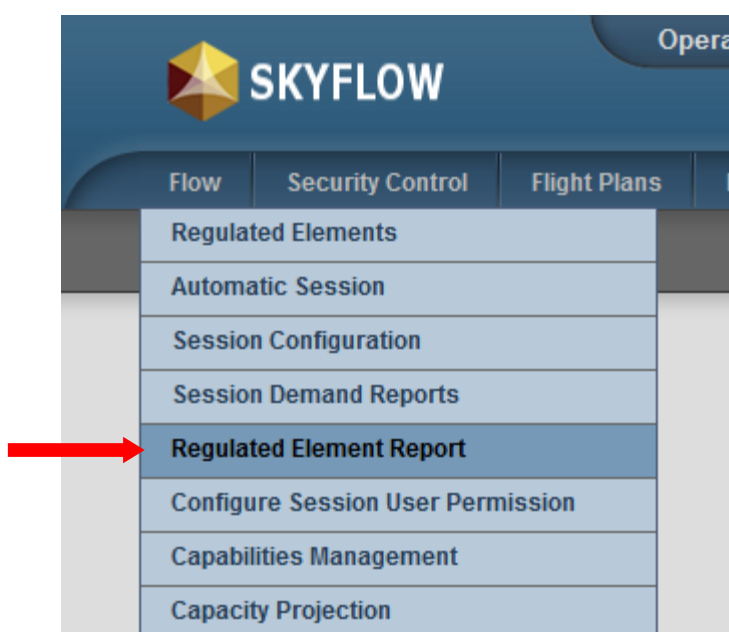
TMA SECTOR;BTII.TMII;H;12;12;H;0;0;H;0 TMA SECTOR;BTJB.BCJB;H;12;12;H;0;0;H;0 TMA SECTOR;BTJM.BCJM;H;12;12;H;0;0;H;0
--



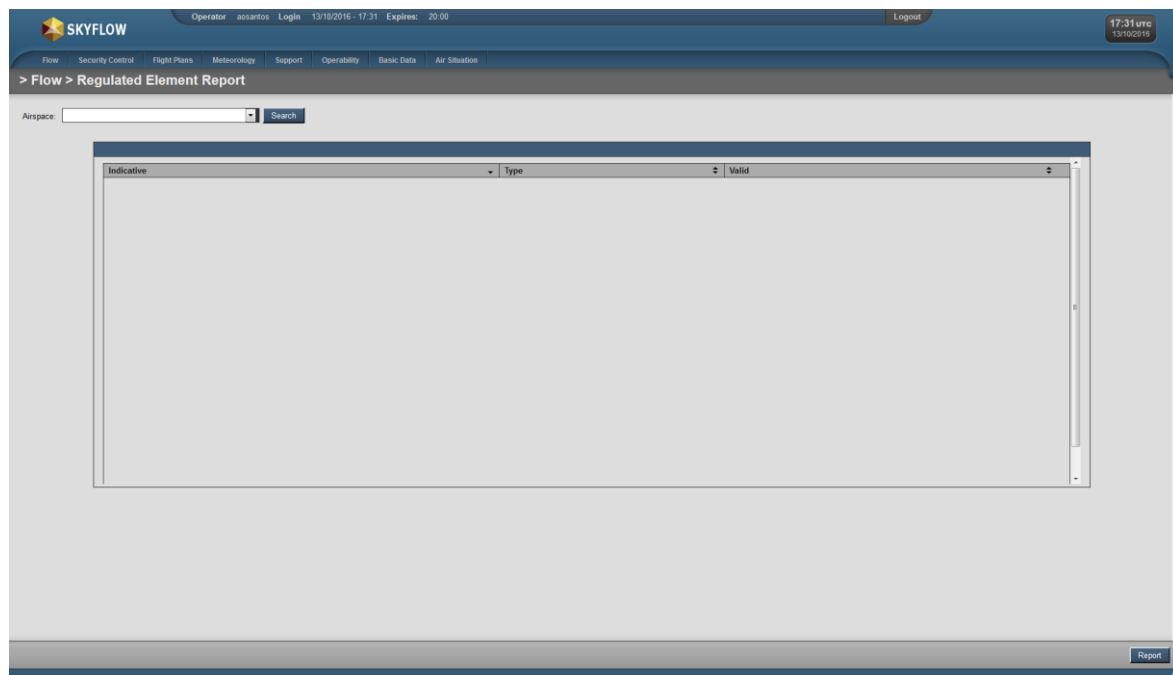


### 2.1.1.2. “Regulated Element Report” Functionality

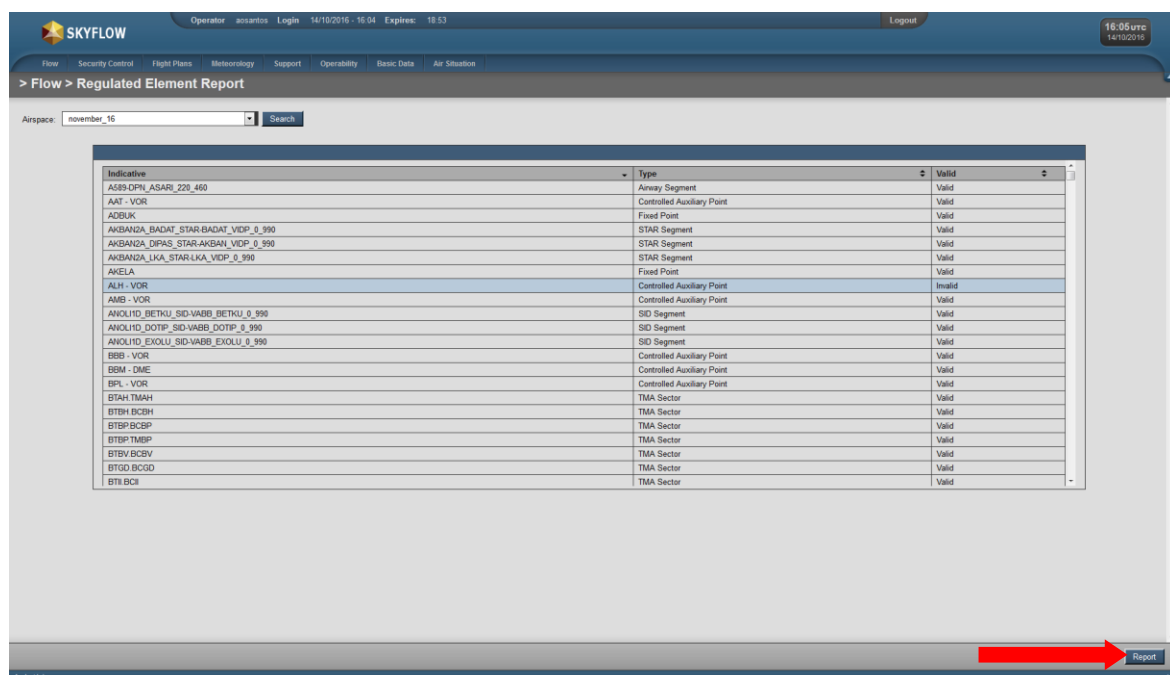
This functionality allows the user to generate reports on the Regulated Elements included in the system database to identify which one will become invalid due to an operationalization of a new airspace. With this functionality, the user has an overview of the effective impact caused by the airspace element attribute changes, providing the user with evidence on the convenience in applying such changes.



When this functionality is selected, the system displays a screen in which the user must choose the pre-operational airspace of interest as follows.

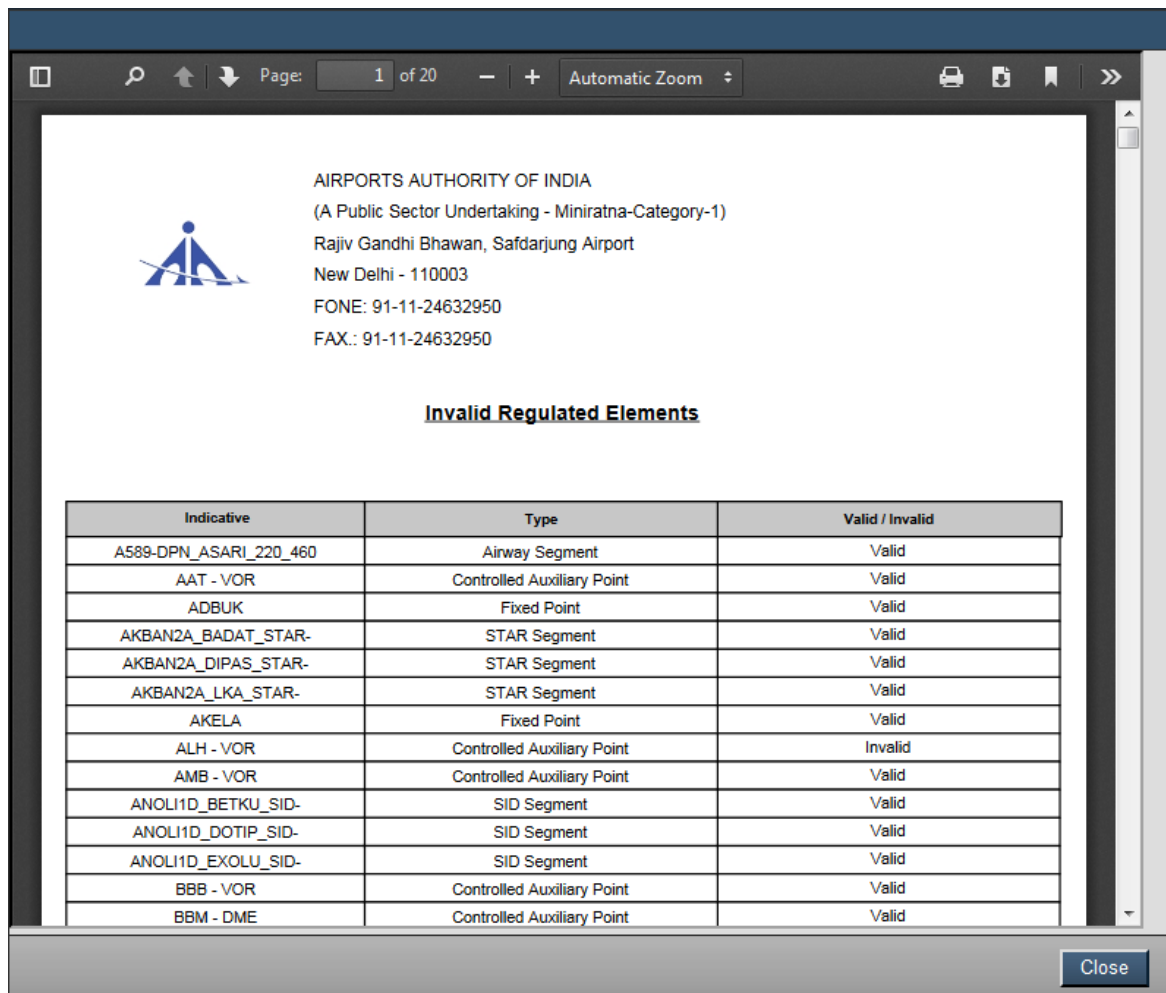


To access the report data, the user must select the airspace in the list displayed by the system and then click on “Search” button. The system displays a list of all Regulated Elements with their type and status as valid or invalid considering the airspace selected according to the figure below.





To print the report data, the system provides the “Report” button that will open a window and display the report in printing format as follows.





AIRPORTS AUTHORITY OF INDIA  
(A Public Sector Undertaking - Miniratna-Category-1)  
Rajiv Gandhi Bhawan, Safdarjung Airport  
New Delhi - 110003  
FONE: 91-11-24632950  
FAX.: 91-11-24632950

**Invalid Regulated Elements**

Indicative	Type	Valid / Invalid
A589-DPN_ASARI_220_460	Airway Segment	Valid
AAT - VOR	Controlled Auxiliary Point	Valid
ADBUK	Fixed Point	Valid
AKBAN2A_BADAT_STAR-	STAR Segment	Valid
AKBAN2A_DIPAS_STAR-	STAR Segment	Valid
AKBAN2A_LKA_STAR-	STAR Segment	Valid
AKELA	Fixed Point	Valid
ALH - VOR	Controlled Auxiliary Point	Invalid
AMB - VOR	Controlled Auxiliary Point	Valid
ANOLI1D_BETKU_SID-	SID Segment	Valid
ANOLI1D_DOTIP_SID-	SID Segment	Valid
ANOLI1D_EXOLU_SID-	SID Segment	Valid
BBB - VOR	Controlled Auxiliary Point	Valid
BBM - DME	Controlled Auxiliary Point	Valid

Close

When the report is displayed, the system provides the following options:

- **Print** () – allows the user to print the report.
- **Save** () – allows the user to download the report in PDF format.



## 2.1.2. Aerodrome Control Panel

This content allows the users to access the functionalities related to the aerodrome operational panel data management process in the SKYFLOW context.

### 2.1.2.1. “Operational Panel” Functionality

This functionality allows the user to view the operational and meteorological status of the aerodromes of interest.

Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
 Operational Panel

After selecting the functionality, the system displays the list of aerodromes registered in the system in the left panel, and the identification of the aerodromes selected by the user to compose the operational panel in the right panel as follows.



Indicative	Name
VAH	SARDAR VALLABHBHAI PAT...
VAAK	AKOLA
VAAU	AURANGABAD AIRPORT
VABB	CHHATRAPATI SHIVAJI IN...
VABI	BILASPUR
VABJ	BHUJ
VABM	BELGAUM
VABO	VADODRA AIRPORT
VABP	RAJA BHUJ AIRPORT
VABV	BHAVNAGAR AIRPORT
VADN	DAMAN
VADS	DEESA
VAGN	GUNA
VAGB	HUBLI
VAD	DEVI AHILYABAI HOLKAR ...
VAB	JABALPUR AIRPORT

**Note:** The data displayed is shared with all users who have accessed this functionality, and the information is updated automatically by the system in 1-minute intervals (system parameter) or every time an aerodrome is included or removed from the panel.

The left panel displays the user option to assign an aerodrome for query by completing the “Indicative” or “Name” field and pressing the “Search” button according to the image below.

> Flow > Operational Panel

Indicative :

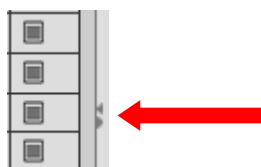
Name :

The image below shows the indication of the several pages that contain the list of registered aerodromes.

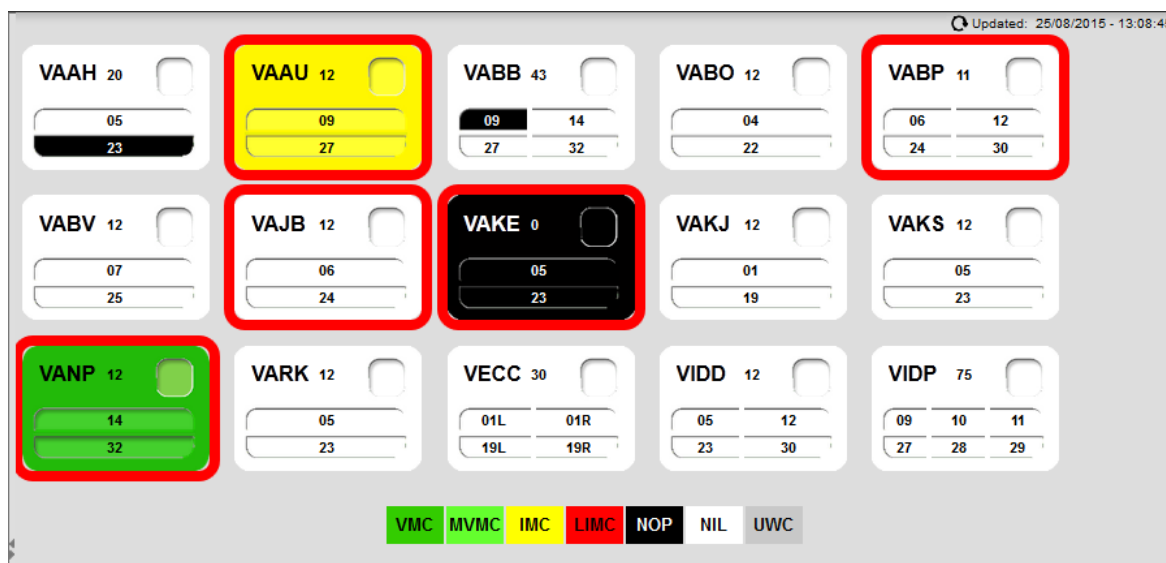
To include an aerodrome in the set to be viewed in the right panel, the user must select the respective aerodrome as indicated below.

Indicative	Name
<input checked="" type="checkbox"/>	VAH SARDAR VALLABHBHAI PAT...
<input type="checkbox"/>	VAAK AKOLA

With the purpose of making the monitor screen display only the aerodromes of interest, the system allows retracting the left panel. Therefore, the user must position the cursor and press the mouse button on the point assigned in the image below.

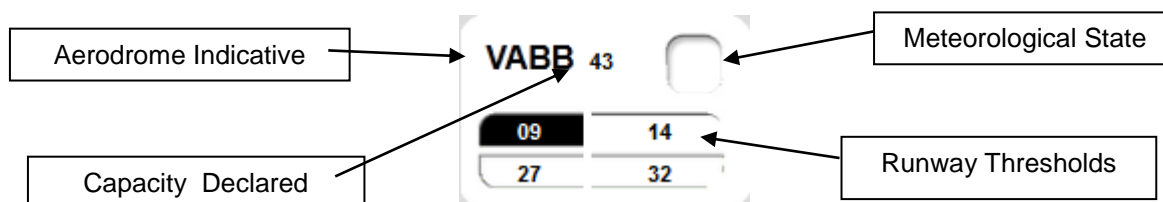


When the left panel retract command is executed, the system shows the data of the aerodrome operational panel as follows.



An option is consult the aerodrome data, is by clicking on “Consult” icon after the aerodrome name in the left panel. Then this option is required, the sytem displays a screen as described in the item 2.1.2.1.2. At the displayed screen is possible to alternate beetwen Operational Data (item 2.1.2.1.1), Meteorological Data (item 2.1.2.1.2) and Capacity Prediction (item 2.1.2.1.3) by clicking on the arrows displayed at the top right of each screen.

At the right panel, the specific data of an aerodrome is displayed as a whole in a specific window that has the following fields.



The different meteorological states of an aerodrome are identified according to the colors presented as follows.



- **VMC** - **VMC (Visual Meteorological Conditions):**

Meteorological conditions equal to or better than the minimum established to fly according to the Visual Flight Rules (VFR). The minimum landing and take-off meteorological conditions of VFR flights is:

- Ceiling equal to or higher than 1,500 feet (450 meters); and



- Ground visibility equal to or higher than 5,000 meters.

An aerodrome is in VMC state when at least on the thresholds is in VMC state.

- **MVMC** – “Marginal VMC” (*Marginal Visual Meteorological Conditions*):

Meteorological conditions below the minima established for VMC and the meteorological conditions observed are equal to or higher the minima established for MVMC:

- Ceiling equal to or higher than 1,000 feet (300 meters); and
- Ground visibility equal to or higher than 3,000 meters.

An aerodrome is in IMC state when none of the thresholds is in VMC state and at least one of the thresholds is in IMC state.

- **IMC** – *IMC (Instrument Meteorological Conditions)*:

Meteorological conditions below the minimum values established to fly according to the Visual Flight Rules. The minimum landing and take-off meteorological conditions of IFR flights is:

- Ceiling lower than 1,500 feet (450 meters); **and/or**
- Ground visibility lower than 5,000 meters.

An aerodrome is in IMC state when none of the thresholds is in VMC state and at least one of the thresholds is in IMC state.

- **LIMC** – “Low IMC” (*Low Instrument Meteorological Conditions*):

When the minimum ceiling and visibility values supported by the aids associated to the threshold are lower than the ceiling and visibility values in the respective threshold.

An aerodrome is in LIMC state when none of the thresholds is in VMC or IMC state and at least one of the thresholds is in LIMC state.

- **NOP** – **No Operations:**

An aerodrome is in NOP state when all the thresholds are in NOP state.

- **NIL** – **No Information:**

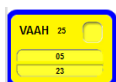
An aerodrome is in NIL state when the METAR/SPECI information is expired.

- **UWC** – **Unfavorable Wind Conditions:**



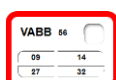
A threshold is in this state when the wind parameters (direction/intensity) are unfavorable for operation.

In addition to the colors that are filled in an aerodrome, there are also two possible contour colors for an aerodrome, which are:



- **- Blue:**




An aerodrome is with blue contour when it has received a SPECI message for the current time.



- **- Red:**

An aerodrome is with red contour when it is in Manual edition. To activate or deactivate this option is needed to edit the Aerodrome Meteorological Data and change the “Manual control” option, as shown in the item 2.1.2.1.2 of this manual.

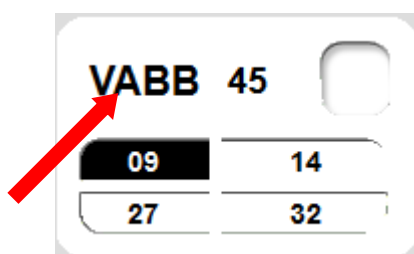
For each aerodrome there are more three different possibilities to be presented:

-  – When there is na ASC message received from an AOCC
-  – When the aerodrome has received a TAF containing a PROB40 with IMC
-  – When the aerodrome has received a TAF containing a PROB40 with LIMC

Besides the information present in the operational panel, the user has the following option to consult detailed data of an aerodrome:

#### 2.1.2.1.1. Consult Aerodrome Operational Data

To search the operational data of an aerodrome, the user must pace the cursor and press the mouse button on the indication of the aerodrome of interest in the operational panel (represented by the VAAU indication) as specified in the figure below.



After executing the operation, the system displays the operational data inserted in the form fields as follows:





**Aerodrome Operational Data**

Aerodrome: VABB      Operational Status Aerodrome: NIL      Capacity: 45      Begin working hour: 00:00      End working hour: 00:00

**Threshold 09**      Operational Status Threshold: NOP

Indicative	Type	Status	Ceiling (ft)	Visibility (m)	RVR (m)	Chart
BOM	ILS	On	1500	900		ILS RWY 09
BBB	VOR	On	1500	3200		VOR 09 (CAT C/D...)

**Threshold 14**      Operational Status Threshold: NIL

Indicative	Type	Status	Ceiling (ft)	Visibility (m)	RVR (m)	Chart
BBB	VOR	On	1500	3200		VOR RWY 14 (CAT...)
BBY	ILS	On	1500	1400		ILS RWY 14

**Threshold 27**      Operational Status Threshold: NIL

Indicative	Type	Status	Ceiling (ft)	Visibility (m)	RVR (m)	Chart
SCZ	ILS	On	550	800		ILS (Z) RWY 27
SCZ	ILS	On	550	800		ILS (Y) RWY 27

**Threshold 32**      Operational Status Threshold: NIL

Indicative	Type	Status	Ceiling (ft)	Visibility (m)	RVR (m)	Chart
BBB	VOR	On	1500	3600		VOR RWY 32

**Unserviceable**

Initial	Final	Unserviceable
07/03/2017		Aerodrome VABB Threshold 27 RWY 32 IS IN USE
04/03/2017	04/03/2017	Aerodrome VABB Threshold 09

1 - 2 (2)      Go      << < 1 > >>

Close

- **“Aerodrome” Field** – shows the ICAO indication of the aerodrome selected.
- **“Operational Status Aerodrome” Field** – shows the operational state of the aerodrome according to the current operational conditions.
- **“Capacity” Field** – shows the number of operations declared (take-off/landing) for the aerodrome in a period of sixty (60) minutes.
- **“Begin working hour” Field** – shows the air operation starting UTC time of the aerodrome.
- **“End working hour” Field** – shows the air operation closing UTC time of the aerodrome.
- **“Operational Status Threshold” data**

The system displays the list with the following data for each threshold declared in the aerodrome:

Threshold 27		Operational Status Threshold		NIL		
Indicative	Type	Status	Ceiling (ft)	Visibility (m)	RVR (m)	Chart
SCZ	ILS	On	550	800		ILS (Z) RWY 27
SCZ	ILS	On	550	800		ILS (Y) RWY 27

- ✓ **“Threshold” Field** – identifies the threshold of reference for the table data.
- ✓ **“Operational Status Threshold” Field** – identifies the threshold operational state.



- ✓ “Indicative” Column – identifies the indication of the navigation aid to execute the landing approach procedure.
- ✓ “Type” Column – identifies the type of navigation aid specified.
- ✓ “Status” Column – identifies the operational state of auxiliary navigation.
- ✓ “Ceiling” Column – identifies the minimum ceiling altitude (in feet) so the navigation support is considered appropriate for landing approach.
- ✓ “Visibility” Column – identifies the minimum visibility (in meters) so the navigation support is considered appropriate for landing approach.
- ✓ “RVR” Column – identifies the minimum runway visual range (in meters) so the navigation support is considered appropriate for landing approach.
- ✓ “Chart” Field – identifies the reference approach chart for the data specified.

**Note:** if the referred chart has been **suspended** the background of this field is gray.


#### • Aerodrome Inoperability Data

The system provides the table with the following data to register aerodrome navigation support equipment inoperabilities.

Initial	Final	Unserviceable
07/03/2017		Aerodrome VABB Threshold 27 RWY 32 IS IN USE
04/03/2017	04/03/2017	Aerodrome VABB Threshold 09

1 - 2 (2)   << < 1 > >>

- ✓ “Initial” Column – identifies the inoperability starting date.
- ✓ “Final” Column – identifies the estimated inoperability finishing date.
- ✓ “Unserviceable” Column – identifies the inoperative navigation support.

To finish the search and return the Operational Panel, the user must press the button  on the lower right corner of the form.

#### 2.1.2.1.2. Consult Aerodrome Meteorological Data

When the user places the mouse cursor on the Meteorological State field the system displays a window containing METAR and SPECI meteorological data as follows.



VABB 45

09 14

27 32

If TAF of the aerodrome exists, that displays the information with the following minimum IFR operation meteorological conditions, the system displays a red triangle located between the aerodrome indication and the Meteorological State field. When the user places the mouse on the referred triangle, the system displays a window containing the referred data.

Besides this option, the user can select the “Consult” (📄) icon displayed in the aerodrome of interest listed in the left panel.

☒ VAKE KANDLA AIRPORT 📄

After executing the operation, the system displays the meteorological data inserted in the form fields as follows:

**Aerodrome Meteorologic Data**

**Aerodrome Data**

Aerodrome: VABB Meteorologic State: NIL Ceiling: 5000 FT Visibility: 5000 m Wind: 28007 KT

**Threshold**

09	14	27	32
Visibility: 5000 m	Visibility: 5000 m	Visibility: 5000 m	Visibility: 5000 m
NIL	NIL	NIL	NIL

**Aerodrome State Prevision**

18:00	19:00	20:00	21:00	22:00	23:00
Green	Green	Yellow	Red	Green	Green

**List of Meteorology Messages**

Fields Viewed

Type	Begin Validate	End Validate	Locale	Message
TAF	06/04/2017 18:00	07/04/2017 00:00	VABB	TAF VABB 061800Z 0618/0700 21008KT 5000 HZ BECMG 0619/0620 4000 HZ BECMG 06...

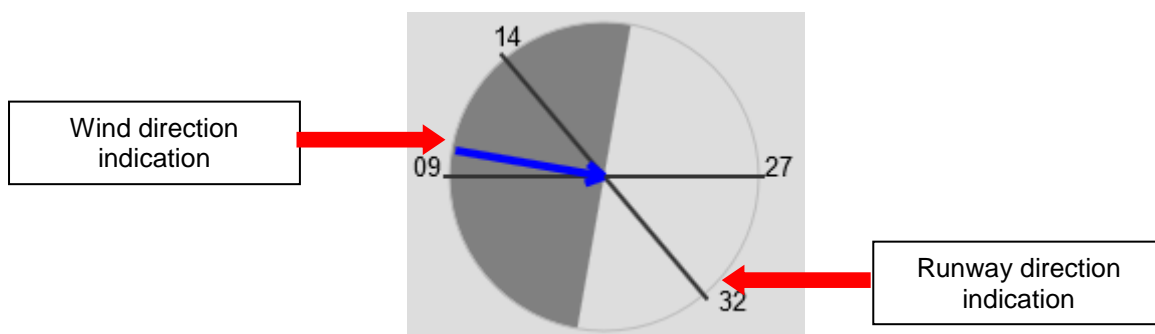
(1)

Manual Control: ☐

Close



- **Aerodrome Data** – this data set displays the current meteorological conditions of the aerodrome, obtained by means of the meteorological messages received by the system. The fields are completed with the following data:
  - ✓ “Aerodrome” Field – shows the ICAO indication of the aerodrome selected.
  - ✓ “Meteorological State” Field – identifies the aerodrome meteorological state.
  - ✓ “Ceiling” Field – shows the ceiling value (in feet) in the aerodrome area.
  - ✓ “Visibility” Field – shows the visibility value (in meters) in the aerodrome area.
  - ✓ “Wind” Field – shows the surface wind direction and intensity values of the aerodrome area.
  - ✓ “Threshold” Field – shows the visibility values and the meteorological condition in the respective thresholds.
  - ✓ Schematic representation of the wind direction – the system displays the wind action direction in respect to the aerodrome runway thresholds as specified in the figure below.



**Note:** A wind affects the runway threshold when the speed is higher or equals to six (6) knots and there is a positive intensity component in the same direction of the runway.

- **Aerodrome State Prevision** – Represents significant meteorological conditions in the aerodrome area, with data presented by means of MSG TAF. The indication of the referred phenomena is presented as follows.

Aerodrome State Prevision					
18:00	19:00	20:00	21:00	22:00	23:00

**Light Green** - identifies forecast existing from meteorological conditions will be above the minimum VFR operation.



**Green** - identifies forecast existing from meteorological conditions will be below the minimum VFR operation and above the minimum established for MVMC.


**Yellow** - identifies forecast existing from meteorological conditions will be below the minimum established for MVMC and there are nav aids associated to the runway that can maintain operation by instruments (IFR).

**Red** - identifies forecast existing from meteorological conditions will be below the minimum IFR operation.

- **List of Meteorology Messages** – shows the list of meteorological messages that affect the Aerodrome Meteorology State, according to the table below, with the following data.

List of Meteorology Messages				
Fields Viewed				
Type	Begin Validate	End Validate	Locate	Message
TAF	06/04/2017 18:00	07/04/2017 00:00	VABB	TAF VABB 061800Z 0618/0700 21008KT 5000 HZ BECMG 0619/0620 4000 HZ BECMG 06...
(1)				
<input type="checkbox"/> SPECI <input type="checkbox"/> TAF AMD				

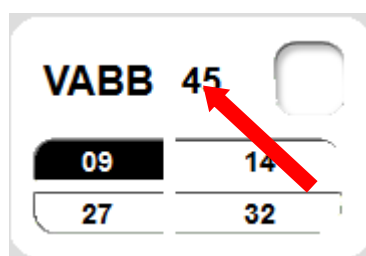
- ✓ “Type” Column – shows the type of meteorological message received by the system that affected the meteorological conditions of the aerodrome.
- ✓ “Begin Validate” Column – identifies the beginning of the validity term of the message.
- ✓ “End Validate” Column – identifies the end of the validity term of the message.
- ✓ “Locate” Column – identifies the ICAO code of the aerodrome.
- ✓ “Message” Column – describes the message text.

To finish the search and return the Operational Panel, the user must press the button  on the lower right corner of the form.

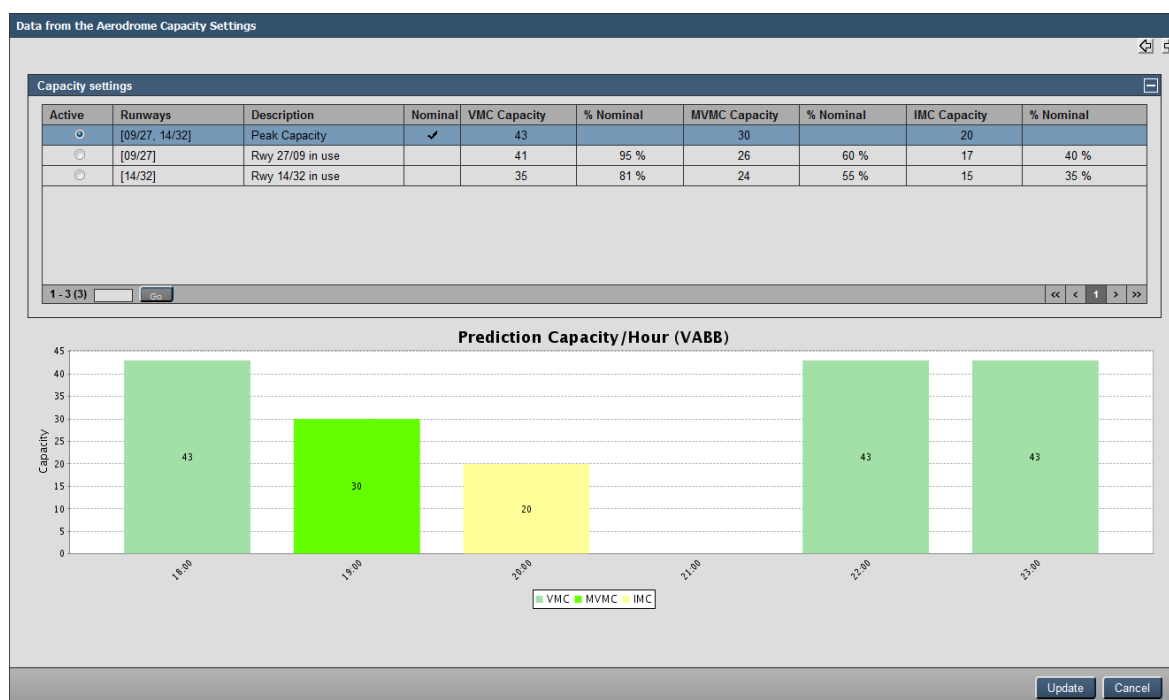


### 2.1.2.1.3. Aerodrome Capacity Prediction

The User places the mouse cursor and click on the Capacity information as shown bellos. field the system displays a window containing the capacity settings and prediction as follows.



The system displays a window containing the capacity settings and prediction as follows.



The capacity settings presents all the possible runway configurations including the information about the current and nominal configurations.

The Capacity prediction presents for each hour the capacity considering the TAF message (VMC, MVMC and IMC) and the influence of the inoperability records.

The model of aerodrome capacity prediction integrates weather information with published weather-dependent aerodrome capacities. The model takes into account deterministic weather data (ceiling & visibility, and surface winds), both now-cast and fore-cast, to produce maximum aerodrome capacity predictions for each runway configuration.



This implementation of aerodrome capacity model considers only deterministic weather information. As a result, the aerodrome capacity predictions do not take into account forecast uncertainty which may be large, especially at long term forecast.

These capacities changes will be presented on the the “Demand chart” on the tactical section (2.1.3.2.2).

### 2.1.3. Content of Flow Sessions

Define the characteristics of the interactions with the functionalities related to the Flow Sessions (Automatic and Manual) included in the system, as identified below.

	Regulated Elements
→	<b>Automatic Session</b>
	Session Configuration
	Session Demand Reports
	Regulated Element Report
	Configure Session User Permission
	Capabilities Management
	Capacity Projection
	Sector Time
	Taxi Time
	Collaborative Decision Making
→	<b>Manual Session</b>
	Flight Schedule
	Import Flight Schedules
	Remove Closed Flight Schedules
	Flight Schedule Parameters
	Operational Panel

#### a) Automatic Sessions

- **Strategical**

The SKYFLOW system automatically creates eight (08) strategic sessions, with one session for the current day and the other seven (07) corresponding to the weekdays counting from tomorrow and updated periodically. When the sessions are created automatically, the Regulated Elements registered in the “Default Regulated Elements” component, the Flight Schedule existing on the base are considered.



If a situation must be simulated for ATFM measure purposes, a manual session must be created from this session in order to insert other factors such as possible flight intention changes.

- **Tactical Session**

This session corresponds to the flight actual date, and establishes the measures that must be applied together with the ATC. The flight intentions in this session result from the progressive refinement of strategic session data, including new FPL of known airports. The flight data is corrected according to the information available on the actual position of the aircrafts, provided by the STVD of the ACC.

There is only one tactical session in the system, indicating the demand forecasts for the next six (06) hours counting from the current time. The data is updated at regular intervals of fifteen (15) minutes) (0, 15, 30, and 45).

If a situation must be simulated for ATFM measure purposes, a manual session must be created from the tactical session in order to insert other factors such as possible flight intention changes.

- **Historical Session**

Historic sessions result from state changes in the strategic session of the day. This state change may occur automatically or by means of an action executed by the user. From the moment the session changes into the “Historic” state, the data is only available for reference.

## **b) Manual Session**

The manual sessions are created from a specific session or without reference to known sessions with the purpose of entering new factors related to the air traffic flow, such as possible flight intention changes. This new session allows simulating situations to apply ATFM measures.

The manual sessions are rated as follows:

- **Public Sessions:** may be accessed by and Flow Manager registered.
- **Private Sessions:** may be accessed only by the manager that originated the session, and are maintained for one hundred and twenty (120) hours after the reference date (date corresponding to the session period finishing time). After this period, they are suppressed automatically.





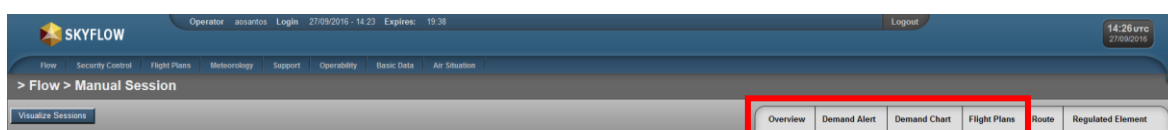
### 2.1.3.1. Sessions Default Tabs

When a system session or a CDM scenario is opened, the system identified the opened session and offers some tabs. There are four default tabs, that is present in all types of sessions, including the CDM Scenario, as shown in the following figures.

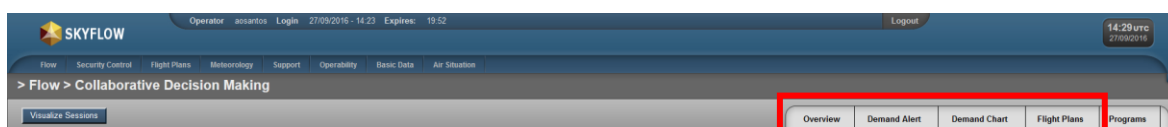
Automatic sessions (Strategic, Tactical and Historical)



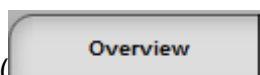
Manual Session



CDM Scenario



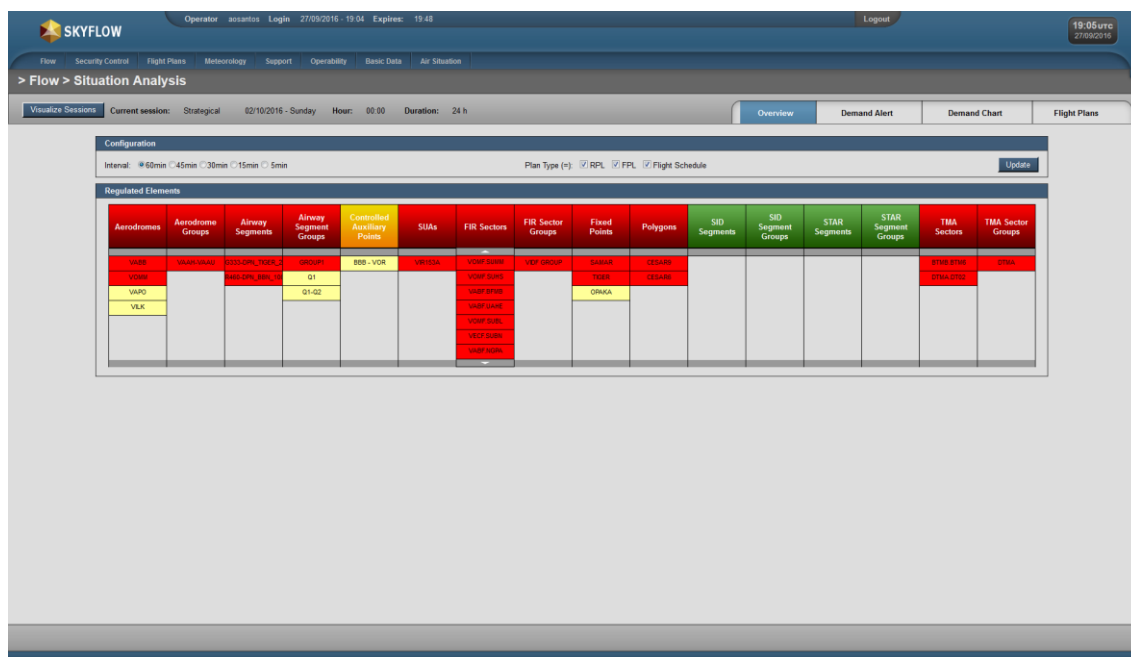
#### 2.1.3.1.1. Overview Tab



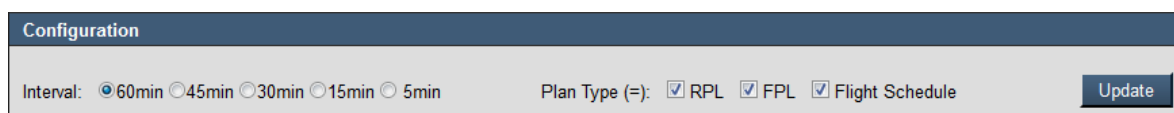
This option (Overview) provides the user with data related to the Regulated Elements that are affected by the demand, displayed with the following distinctive colors:

- *Yellow* – identifies Regulated Elements that reached the limit to be considered as congested (above 80% of the maximum capacity value).
- *Red* – identifies Regulated Elements that reached the saturation parameter (above 100% of the capacity value).

**Note:** The absence of records of a given type of Regulated Element indicates that there are no congested or saturated elements in the period of the session (green background). In the same fashion, the absence of a given Regulated Element indicates that its state is Normal, and it is not congested or saturated in the interval.



In the top of the tab is possible to configure the intervals of interest, to view the situation of the Regulated Elements, and the type of flight plan the user must select the value among the options displayed in the image below, and then press the button **Update**.



If it is an tactical session, there are one more option to enable/disable the automatic update of the session according to the reception of flight messages.

(If the “Update Automatically” (☒ Automatic Update **Update**) option is selected, the data is updated automatically by the system according to the update parameters defined in the BDS.)

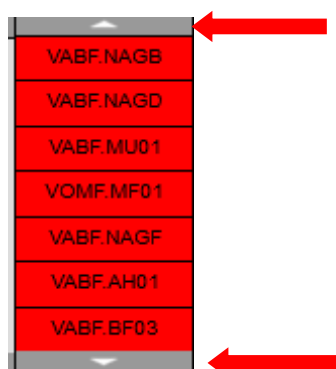
**Note:** If a configuration different than 60 min is defined, the information on the following elements is displayed in a different fashion:

- Aerodromes and respective groups;
- Airway Segments and respective groups;
- Controlled Auxiliary Points;
- SUAs;
- FIR Sector and respective groups;



- Fixed Points;
- Polygons;
- SID segments and respective groups;
- STAR segments and respective groups; and
- TMA sectors.

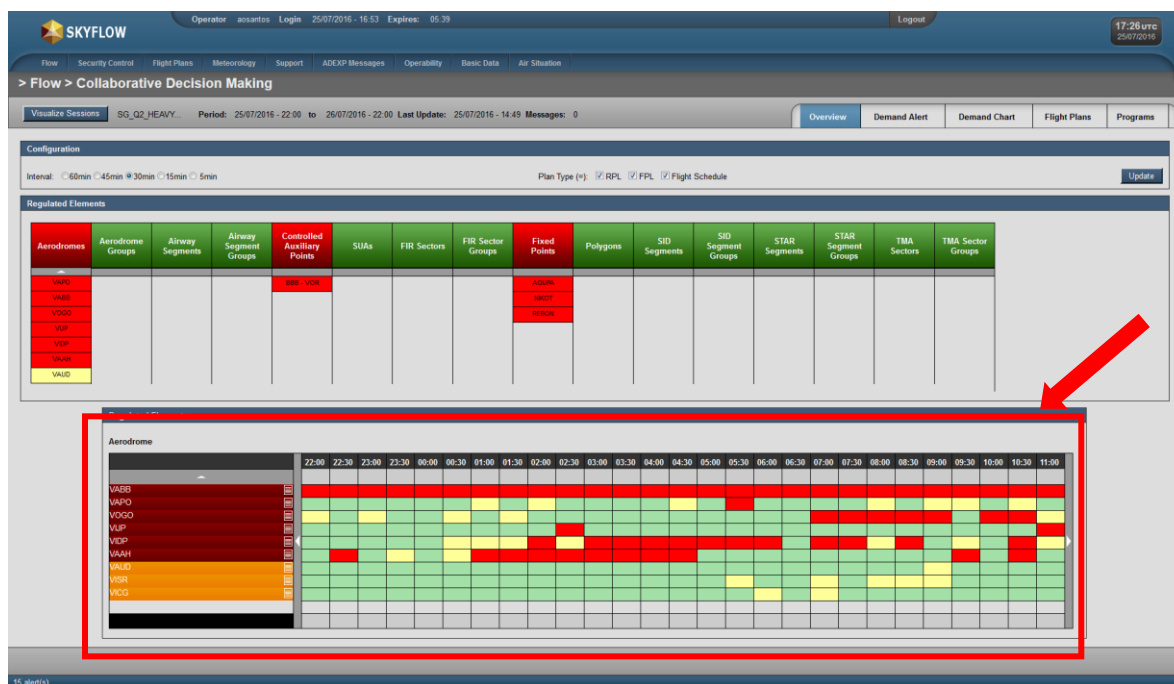
**Note:** If the number of elements affected is larger than the number that can be displayed on screen, the system provides the “scroll” option as indicated in the following example.




To view the details of a specific Regulated Element with capacity affected, the user must click on the indicator of the element of interest as follows.

Configuration						
Interval: <input checked="" type="radio"/> 60min <input type="radio"/> 45min <input type="radio"/> 30min <input type="radio"/> 15min <input type="radio"/> 5min						
Regulated Elements						
Aerodromes	Aerodrome Groups	Airway Segments	Airway Segment Groups	Controlled Auxiliary Points	SUAs	FIR Sectors
VABB					VIR153A	VOMF.SUML
VIJP						VOMF.SUMM
VOGO						VOMF.SUHS
VOBL						VABF.BFMB
VOVZ						VABF.UAHE
VAPO						VOMF.SUBL
VIDP						VECF.SUBN

At this moment, the system shows the details of the data that affected the control element according to the time interval selected, as depicted in the figure below.

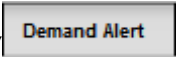


To view the Demand Chart, the user can select the “View” (  ) button of the referred element as indicated in the image below.

VABB 

After executing the action, the system displays the graph with the demand data of the referred element affected, with the content described in the "Demand Chart" option (item 2.1.3.1.3 herein).

### 2.1.3.1.2. Demand Alert Tab

This option (  ) allows the user to visualize the time in which the Regulated Element became unbalanced. The alerts are shown in groups per element selected and shows the unbalancing with the same colors of overview tab, which are red to saturations (above 100% of the element capacity) and yellow to congestion (above 80% of the element capacity), according to the following example.

Example 1



Demand Alert

Type: **Aerodromes**

Resource	Date	Hour	Type
VAAH	03/03/2015	00:00	Saturated
VAAH	03/03/2015	00:45	Congestioned
VAAH	03/03/2015	01:30	Saturated
VAAH	03/03/2015	02:15	Saturated
VAAH	03/03/2015	03:00	Congestioned
VAAH	03/03/2015	03:45	Congestioned
VAAH	03/03/2015	08:45	Congestioned
VAAH	03/03/2015	11:15	Congestioned
VAAH	03/03/2015	12:45	Congestioned
VAAH	03/03/2015	13:30	Saturated

1 - 10 (66) Go << < 1 2 3 4 5 6 7 > >>

Close

## Example 2

Demand Alert

Type: **Aerodrome Groups**

Resource	Date	Hour	Type
GROUP1	03/03/2015	00:00	Congestioned
GROUP1	03/03/2015	02:00	Saturated
GROUP1	03/03/2015	03:00	Saturated
GROUP1	03/03/2015	04:00	Saturated
GROUP1	03/03/2015	05:00	Congestioned
GROUP1	03/03/2015	09:00	Saturated
GROUP1	03/03/2015	10:00	Congestioned
GROUP1	03/03/2015	11:00	Saturated
GROUP1	03/03/2015	13:00	Saturated
GROUP1	03/03/2015	14:00	Congestioned

1 - 10 (18) Go << < 1 2 > >>

Close


The list of warnings has columns with the following information:

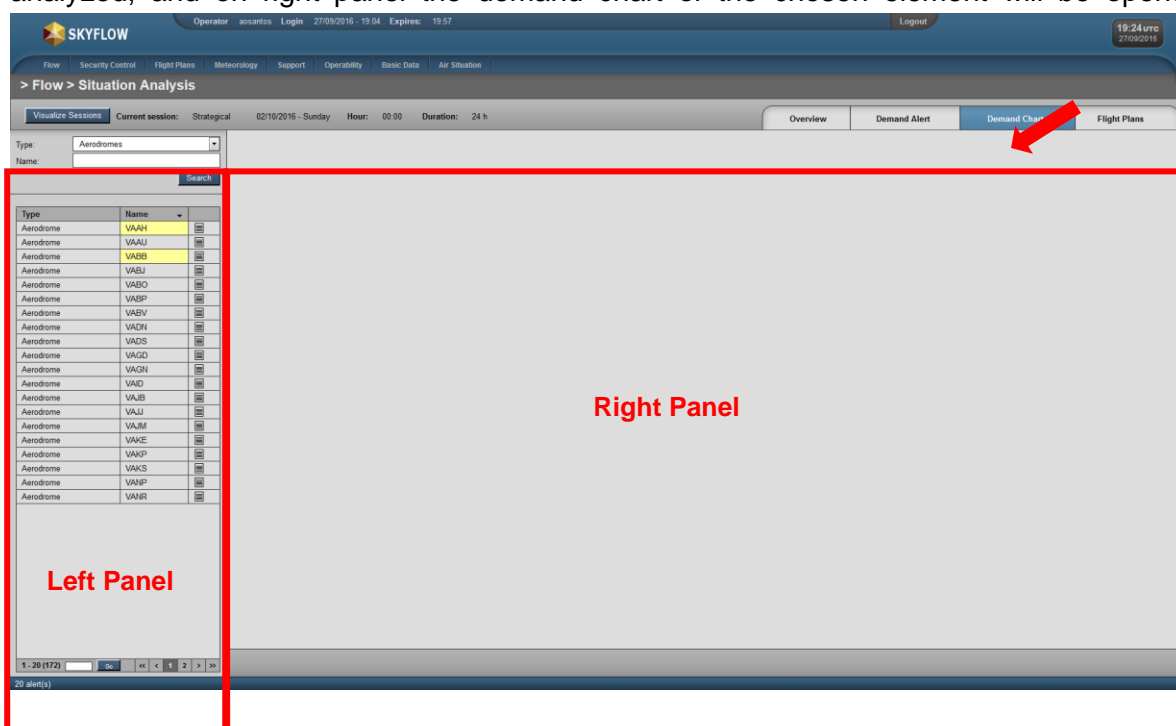
- **Resource** – identifies the Regulated Element that is affected by unbalance.
- **Date** – date of the unbalance.
- **Hour** – starting time of the unbalance.




- **Type** – type of unbalance occurred with the Regulated Element
  - Congested - Yellow
  - Saturated – Red

### 2.1.3.1.3. Demand Chart Tab

This option () allows the user to deeply analyze the data of the flight plans that is affecting the Regulated Elements. When this option is accessed, the system divides the screen in two panels. On left panel is possible choose the Regulated Element to be analyzed, and on right panel the demand chart of the chosen element will be opened.



In the left panel is possible to choose the Regulated Element type and name and after is required to click on “Search” button so the system loads the list below with Regulated Elements according to the filled fields. The list present the elements sorted alphabetically and will show in yellow the Regulated Element name of the elements that has any capacity problem (congestion or saturation). To see the respective demand char is required to click on the view icon ().



Type:

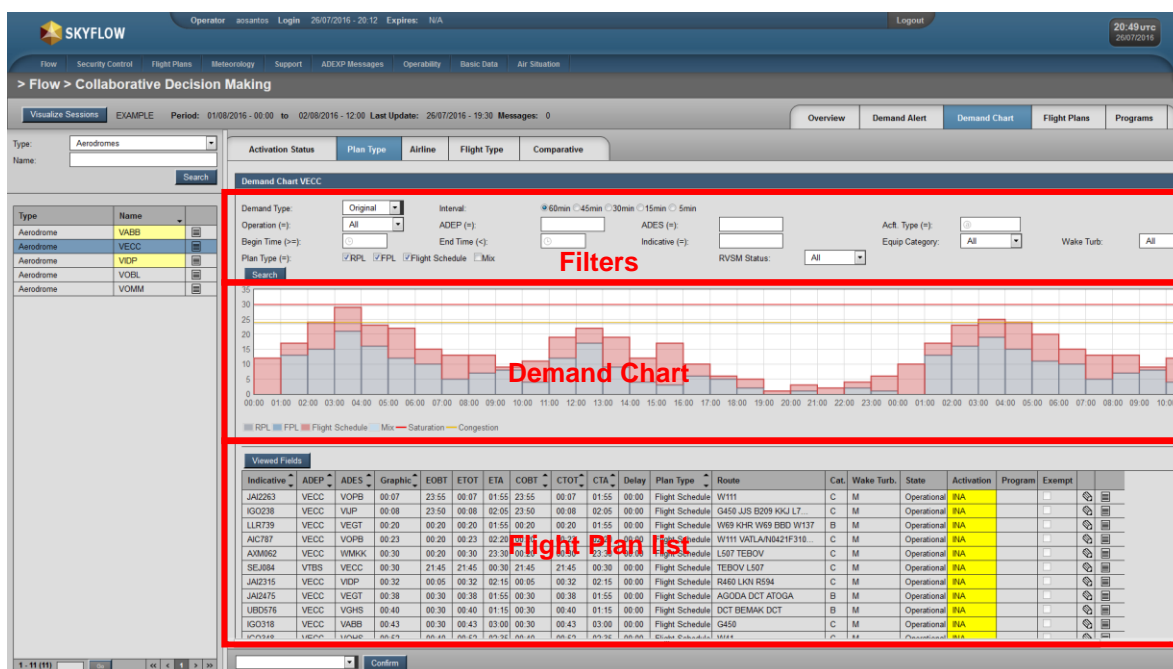
Name:

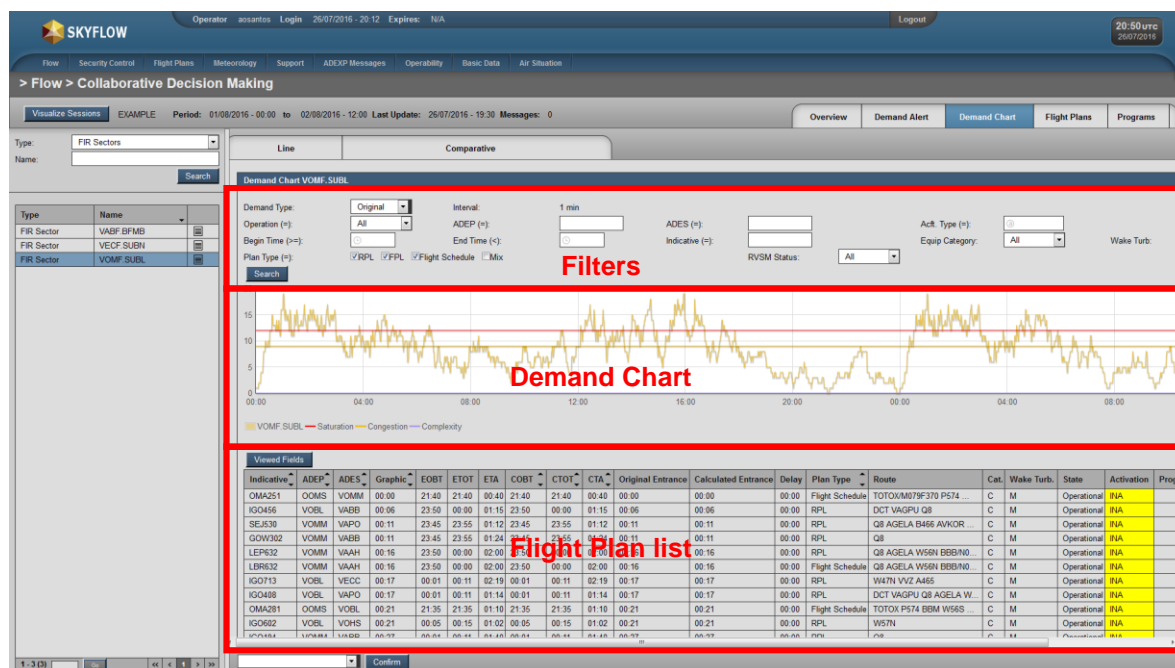
Type	Name	
Aerodrome	VAAH	
Aerodrome	VAAU	
Aerodrome	VABB	

After selecting the element of interest, the system displays the demand chart on right panel. There are two different types of chart in the system:

- **Line chart:** used for the following Regulated Element types: airway segment, FIR sector, TMA sector, SUA, polygon, SID segment and STAR segment.
- **Bar chart:** used for the following Regulated Element types: aerodrome, fix and navaid.

When a Regulated Element is selected, the respective chart is presented in the right panel divided in three sessions, at the top the filters, in the middle the chart and in the bottom the flight plan list.





The fields on the top of the panel allow to filter the flight plans that will be used to build the Demand Chart, followed by the demand chart and the list of flight plans selected.

The filters are the same for all Regulated Elements. To use is required to set the desired fields and then click on the “Search” button. At this time, the system will reload the graphic and update the flight plan list. The possible fields to filter are:

- **Demand Type** – Option to choose between the original time or the calculated time, provided by the system after the changes. This option is available only at the demand chart inside the CDM scenarios (see more in session 2.2).
- **Interval** – This option is available only in a bar chart and gives the option to choose the time interval represented by a bar, which can be 60, 45, 30, 15 or 5 minutes.
- **State (=)** – Option to choose the desired flight plan state, which can be Preview/Finished, Canceled and Annulled.
- **Operation (=)** – Option to choose the desired flight plan type. The available options are DEP, for departures, ARR, for arrivals and All for both.
- **Activation (=)** – Option to choose the desired activation status of the flight plan (INA, COR, DEP, FAM, PAA or EST). The available options are INACTIVE, for INA flights, PRE-ACTIVE, for PPA flights, ACTIVE, for DEP, COR, FAM and EST flights, FINISHED, for flights that is finished and All for all flights.
- **Plan Type (=)** – Option to choose the flight plan types. The available options



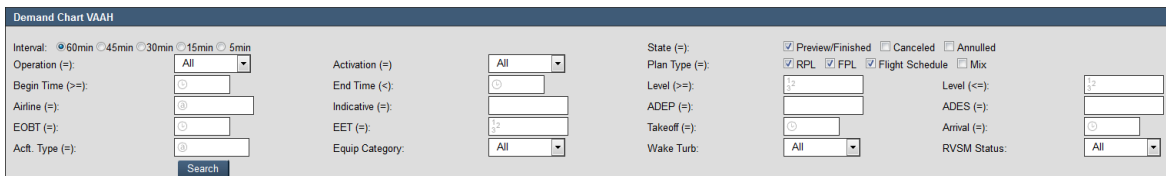


are RPL, FPL, Flight Schedule, and Mix.

- **Begin Time (>=)** – Option to choose the begin time. This field requires 4 numerical characters, in which the two first numbers represent the hour and the last two the minutes. The system will filter the flight plans with a graphic time greater or equals then this field.
- **End Time (<=)** – Option to choose the end time. This field requires 4 numerical characters, in which the two first numbers represent the hour and the last two the minutes. The system will filter the flight plans with a graphic time less then this field.
- **Level (>=)** – Option to choose flight plans which the declared level are greater than or equal to the informed value.
- **Level (<=)** – Option to choose flight plans which the declared level are less than or equal to the informed value.
- **Airline (=)** – Option to inform an airline. This is an autocomplete field, so when the typing begins it will find in the system database possibilities to complete.
- **Indicative (=)** – Option to choose the flight plan callsign.
- **ADEP (=)** – Option to inform an ADEP aerodrome.
- **ADES (=)** – Option to inform an ADES aerodrome.
- **EOBT (=)** – Option to inform the Estimated Off-Block Time
- **EET (=)** – Option to inform the Estimated Enroute Time
- **Takeoff (=)** – Option to inform the takeoff time. If the Actual Take-Off Time (ATOT) is filled this field will be used, otherwise, it will be used the Estimated Take-Off Time (ETOT).
- **Arrival (=)** – Option to inform the arrival time. If the Actual Landing Time (ALDT) is filled this field will be used, otherwise, it will be used the Estimated Landing Time (ELDT).
- **Acft. Type (=)** – Option to write an aircraft type. This is an autocomplete field, so when the typing begins it will find in the system database possibilities to complete.
- **Equip Category** – Option to choose the aircraft equipment. The available options are A, B, C, D, E, H, and All.
- **Wake Turb** – The available options are L, for light, M, for medium, H, for heavy, J, for jumbo, and All.
- **RVSM Status** – Option to choose the RVSM status. The available options are






Yes, No and All.



After the chart, the system displays all the flight plans that are been used in the chart. The data of each element is presented in a table with same possible columns:

- **Indicative** – the flight plan callsign
- **ADEP** – the departure aerodrome
- **ADES** – the destination aerodrome
- **Graphic or CHART** – the time that the flight plan appears on the graphic
- **EOBT** – the estimated off block time from the flight plan
- **ETOT** – the estimated takeoff time calculated by the system
- **ELDT** – the estimated landing time calculated by the system
- **ATOT** – the actual takeoff time received for the flight plan
- **ALDT** – the actual landing time received for the flight plan
- **COBT** – the calculated off block time calculated by the system due a program application
- **CTOT** – the calculated takeoff time calculated by the system due a program application
- **CTA** – the calculated time of arrival calculated by the system due a program application
- **Original Entrance** – the original entry time in a sector (applicable only for a line chart)
- **Calculated Entrance** – the calculated entry time in a sector (applicable only for a line chart)
- **Delay** – the delay between the original time in the flight plan and the calculated by the system
- **Plan Type or Flight Type** – the flight plan type (PRL, FPL or Flight Schedule)
- **Route** – the flight plan route
- **Cat.** – the flight plan equipment category (A, B, C, D, E or H)



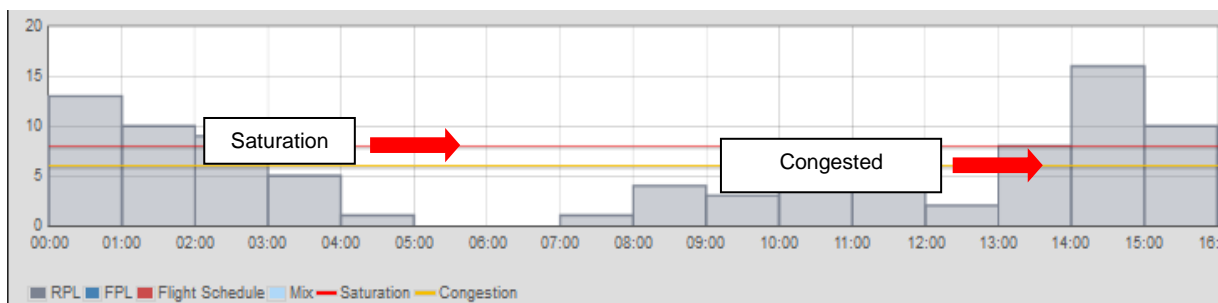
- **Wake Turb.** – the wake turbulence category (L, M or H)
- **State** – the state of the flight plan (Managed, Incomplete, Annulled, Suspended, Finished, Operational, Terminated or Canceled)
- **Activation** – the activation status of the flight plan (INA, COR, DEP, FAM, PAA or EST)
- **Program** – the acronyms list of the applied programs
- **Exempt** – a Boolean indication if the flight plan were marked as exempt
- **Edit** – the icon to edit the flight plan
- **Activate** – Option to activate the flight plan. The icon  will be presented when this options is available, otherwise it will not be shown.
- **Deactivate** – Option to deactivate the flight plan. The icon  will be presented when this options is available, otherwise it will not be shown
- **View or Consult** – the icon  which allows the user to view/consult flight plan details

There are an option to configure the table columns, in that is possible to remove a column or add the level, airline or aircraft type information.



Viewed Fields	
ADEP:	<input checked="" type="checkbox"/>
ADES:	<input checked="" type="checkbox"/>
CHART:	<input checked="" type="checkbox"/>
EOBT:	<input checked="" type="checkbox"/>
ETOT:	<input checked="" type="checkbox"/>
ETA:	<input checked="" type="checkbox"/>
ATOT:	<input checked="" type="checkbox"/>
ATA:	<input checked="" type="checkbox"/>
Delay:	<input checked="" type="checkbox"/>
Flight Type:	<input checked="" type="checkbox"/>
Level:	<input type="checkbox"/>
Airline:	<input type="checkbox"/>
Route:	<input checked="" type="checkbox"/>
Acft. Type:	<input type="checkbox"/>
Acft. Type Category:	<input checked="" type="checkbox"/>
Wake Turbulence:	<input checked="" type="checkbox"/>
State:	<input checked="" type="checkbox"/>
Flight Activation:	<input checked="" type="checkbox"/>

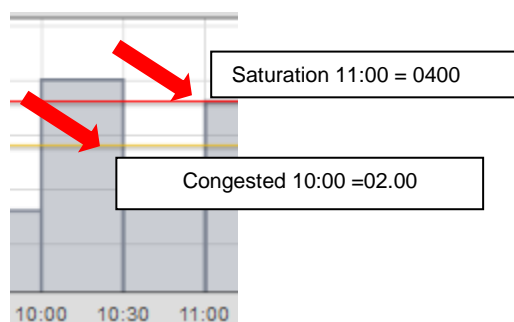
The graphic displayed includes the reference lines that indicate Saturation (red) and Congestion (yellow) for the interval specified, as identified in the figure below.



**Note 1:** To view the type of flight intention in a specific time interval, the user must position the mouse cursor on the interval of interest according to the image below, and the system displays the number of intention involved in the interval.



**Note 2:** To identify the number of flights to be considered for the Saturation and Congestion limits of a specific interval, the user must position the mouse cursor on the intersection of the respective capacity lines with the column that defines the beginning of the interval, as follows.



**Note 3:** Since the Tactical Session presents the demand for the next 6 hours, it will update the chart every quarter of an hour regarding its x axis. Therefore when the user chooses 60min period of viewing in a bar chart, any bar will represent part of 2 different hours (e.g. 10:15 up to 11:14) for the last 3 quarters of an hour (XX:15h, XX:30h and XX:45h).

**Note 4:** On the tactical session the Saturation and Congested Levels may vary for aerodromes, airway segments and sectors (FIR/TMA). All these regulated elements are affected by the Inoperability Records (OPM) when indicated as “Impacted Elements”. Additionally the Aerodrome Regulated Element may vary as result of the Advanced Capacity Prediction (2.1.2.1.3) functions. During the transition of capacity, the Saturation and Congested levels will change on each quarter of hour update, depending on the mix of capacities of the current and the following hour capacities. Ex.: On a transition of capacity from 40 to 80 movements the transition of the first hour capacity on the chart will be at each quarter from 40, 50, 60, 70 and 80.



The lower part of the page shows the flight intentions that are involved with the Regulated Elements selected. The data of each element is displayed as a line according to the image below.

Fields Viewed															Report		Save Report	
Indicative	ADEP	ADES	CHART	EOBT	ETOT	ETA	ATOT	ATA	Delay	Flight Type	Level	Airline	Route	Acft.	Cat.	Wake Turb.	State	Activation
AIC30	VABB	VAAH	00:00	00:00	00:00	00:40				Flight Schedule	F290	AIRINDIA	W13N	A319	C	M	Operational	INA
SEJ421	VABB	VOHS	00:00	23:50	00:00	00:59				RPL	F370	SPICEJET	W28	B738	C	M	Operational	INA
AIC083	VABB	VOGO	00:00	23:50	00:00	00:44				RPL	F290	AIRINDIA	W15S	A319	C	M	Operational	INA
JAI411	VAAH	VABB	00:03	23:00	23:10	00:03				RPL	F320	JET AIRWAYS	W13S	B738	C	M	Operational	INA

When the button **Fields Viewed** is pressed, the user can select the fields he wishes to view among the following options.

Fields Viewed

ADEP:

☒

ADES:

☒

CHART:

☒

EOBT:

☒

ETOT:

☒

ETA:

☒

ATOT:

☒

ATA:

☒

Delay:

☒

Flight Type:

☒

Level:

☒

Airline:

☒

Route:

☒

Acft. Type:

☒

Acft. Type Category:

☒

Wake Turbulence:

☒

State:


☒

Flight Activation:

☒

Update

Cancel

To search the data of a plan included in the flight intention page, the user must press the “Consult” (  ) icon displayed in the flight intention as follows.



Fields Viewed		Report	Save Report										
Indicative	ADEP	ADES	EOBT	Flight Type	Level	Airline	Route	Equip.	State	Activation	Activate		
IGO994	VAAH	VABB	00:15	RPL	F260	IGO	DCT	A320	Operational	INA			
IGO434	VAAH	VABB	00:15	RPL	F260	IGO	DCT	A320	Operational	INA			
SEJ991	VAAH	VOMM	00:20	RPL	F370	SEJ	DCT	B738	Operational	INA			
SEJ281	VAAH	VOMM	00:20	RPL	F370	SEJ	DCT	B738	Operational	INA			
SEJ873	VAAH	VABB	00:25	RPL	F330	SEJ	DCT	B738	Operational	INA			
SEJ993	VAAH	VABB	00:25	RPL	F330	SEJ	DCT	B738	Operational	INA			
SEJ853	VAAH	VIDP	00:35	RPL	F370	SEJ	DCT	B738	Operational	INA			
SEJ917	VAAH	VOHS	00:40	RPL	F370	SEJ	DCT	B738	Operational	INA			
SEJ997	VAAH	VOHS	00:40	RPL	F370	SEJ	DCT	B738	Operational	INA			
AIC990	VABB	VAAH	00:00	RPL	F310	AIC	DCT	A320	Operational	INA			
AIC130	VABB	VAAH	00:00	RPL	F310	AIC	W13N AAE	A320	Operational	INA			
IGO158	VAAH	VIDP	00:50	RPL	F330	IGO	DCT	A320	Operational	INA			
IGO998	VAAH	VIDP	00:50	RPL	F330	IGO	DCT	A320	Operational	INA			

After selecting the search, the system shows a specific screen with the plan detailed data as follows.

Flight Plan Detail

Message format: NEW

Flight Data

Indicative: AIC30 ADEP: VABB EOBT: 00:00 EOBD: 04/02/2018 Flight Type: S  
ATOT: 00:00 ATOD: 04/02/2018  
Airline: AIRINDIA

Aircraft

Number: Aircraft type: A319 Wake Turbulence: N  
Additional Information  
Nav/Com: S/C Flight rule: I

Frequency

Plan type: Flight Sched Frequency: SMTWTFSS

Stretch Plan

ADES: VAAH EET: 00:40 ETA: 00:40 Alternative aerodrome:  
Flight speed: N0440 Flight level: F290  
Route:  
W13N  
796 of 800 character(s) remaining.  
Other Informations:  
800 of 800 character(s) remaining.

Results

Warnings:  
Show Flight Plan Messages Details  
Close

When the button **Details** present in the page is pressed, the system displays the route specified in the plan in detail as depicted below.



Route Detail

Sub-routes

Sub-route	Type
DCT	
(1)	

Segments


	FIR/TMA	Sector	Speed Var.	Type	Airways	Distance	Point A	Point B
1	TMA: AHME	ME01	68	TAKEOFF		13.99	VAAH	2250N07238E
2	FIR: VABF	AH01	39	TAKEOFF		10.39	2250N07238E	2239N07239E
3	FIR: VABF	AH01	134	CRUISE		47.70	2239N07239E	2152N07241E
4	FIR: VABF	AH01	0	CRUISE		12.75	2152N07241E	2139N07242E
5	FIR: VABF	MU01	-93	CRUISE		123.17	2139N07242E	1935N07250E
6	FIR: VABF	MU01	-178	LANDING		30.29	1935N07250E	VABB









Points

	Point	Coordinate	Desired Level	Current Level	Desired Speed	Current Speed	EET	ETO	ATO	Type
1	VAAH	2304N07237E	F260	F002	N0170	N0170	0000	0015	0015	Aerodrome
2	2250N07238E	2250N07238E	F260	F150	N0409	N0238	0004	0019	0019	Calculate
3	2239N07239E	2239N07239E	F000	F260	N0409	N0275	0007	0022	0022	Calculate
4	2152N07241E	2152N07241E	F260	F260	N0409	N0409	0015	0030	0030	Calculate
5	2139N07242E	2139N07242E	F000	F260	N0409	N0409	0017	0032	0032	Calculate
6	1935N07250E	1935N07250E	F000	F260	N0409	N0316	0035	0050	0050	Calculate
7	VABB	1935N07251E	F000	F000	N0140	N0140	0043	0058	0058	Aerodrome

☒ Show modification of velocity variation
☒ Show modification of level variation
☒ Show zone transition
Enable filters

Close

To activate a flight intention, the user must select the option  included in the intention of interest as follows.

State	Activation		Activate
Operational	INA		
Operational	FAM		
Operational	INA		
Operational	INA		

To confirm the activation of the intention, the user must declare the UTC time that the system must then consider as current take-off time (ATOT).

Activate Flight Plan

Flight Plan will be activated. Are you sure?









ATOT:

Yes No





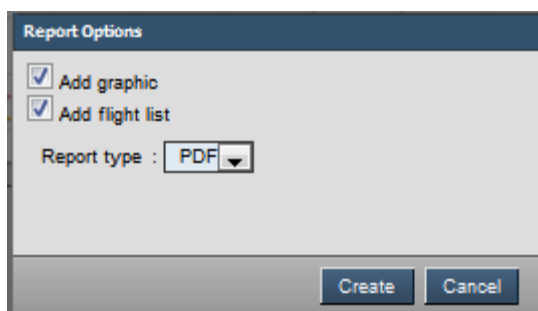
When the activation action is confirmed, the activation state of the referred intention changes to Active by Manager (FAM) and is then identified as follows.

State	Activation	Activate
Operational	INA	 
Operational	FAM	 
Operational	INA	 
Operational	INA	 

Besides the interaction options shown previously, the user can also access the functionalities to generate PDF and RTF reports as follows, except for the CDM scenario.

### - Report

This option allows generation PDF, XLS, or RTF reports by means of the following screen.



Report Options

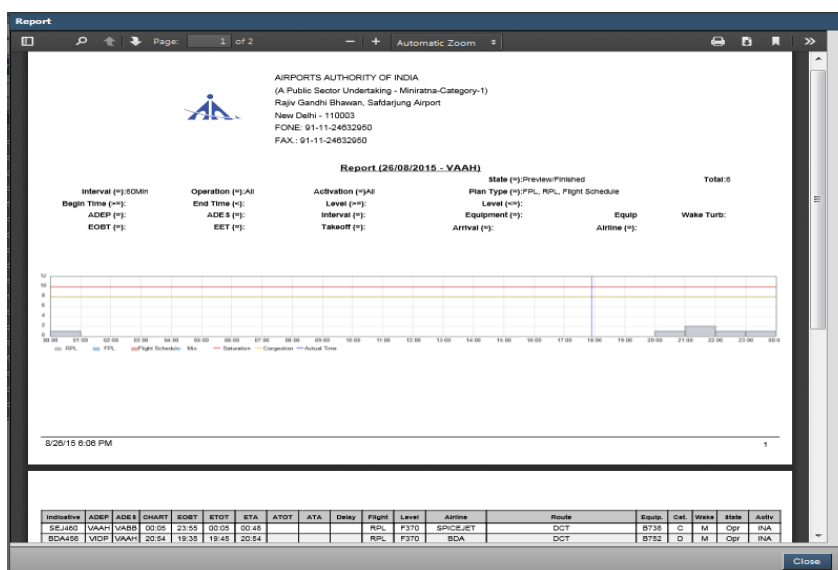
☒ Add graphic

☒ Add flight list

Report type : PDF

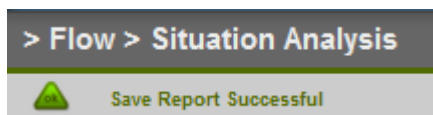
Create Cancel

When the report presentation form is selected, the Flow Manager must select the “Create” option and the system displays the final report with the print or download options.





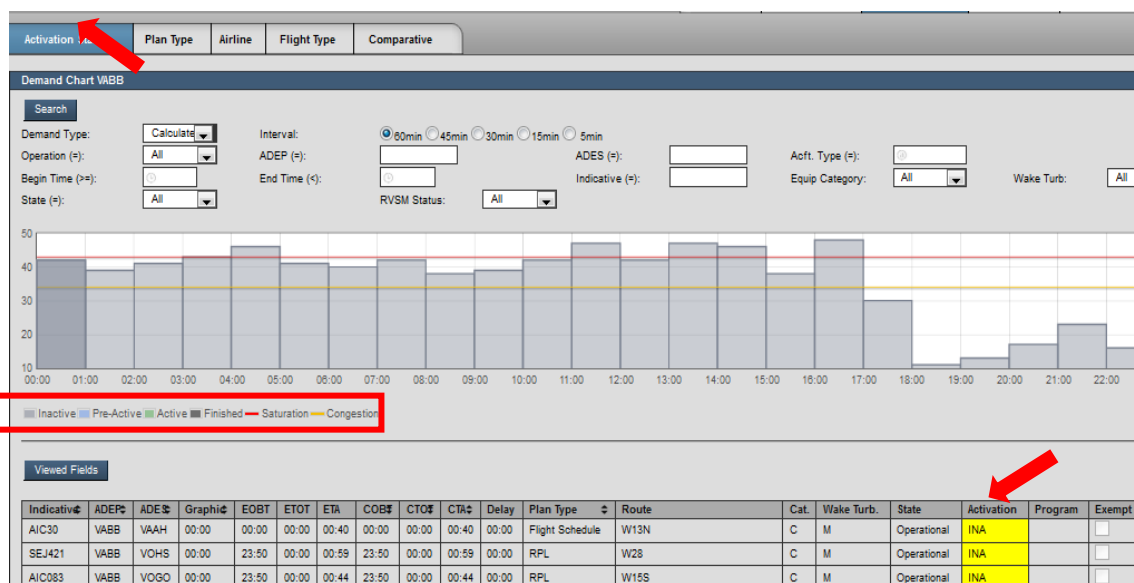
Besides the report generation functions, the system provides the option **Save Report** to save the data for further analysis and shows the following message:



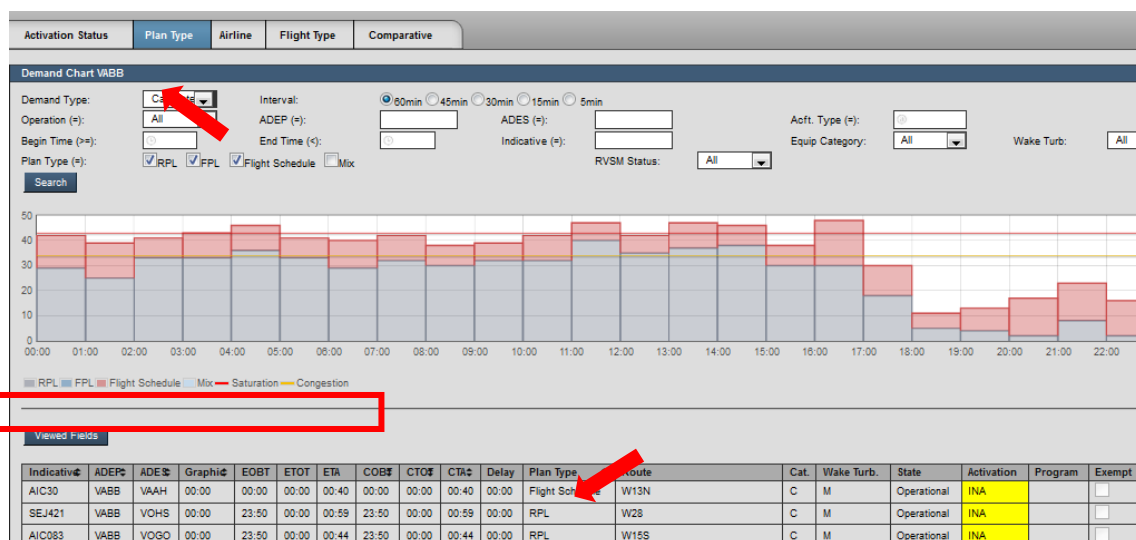
**Note:** The data saved in this option remains available in the login of the user who executed the function for as long as the user remains logged in the system.

The bar chart has five (5) tabs, in which is possible to choose how to group the flight plans. The default is Plan Type tab, but is possible to choose to see the flights grouped by Activation Status, Airline, Flight Type and a Comparative. All these tabs will be explained bellow.

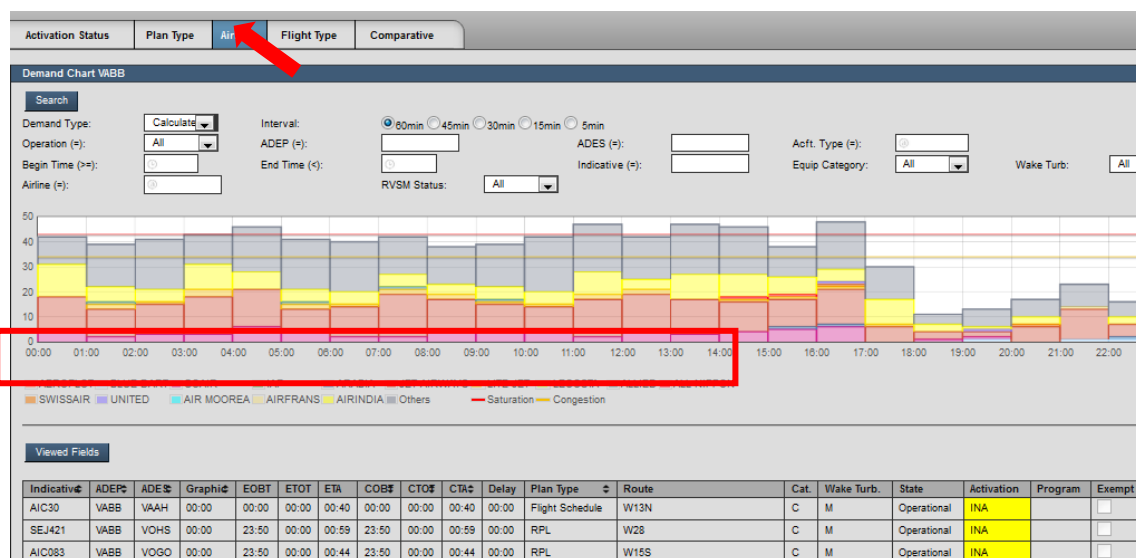
**Activation Status Tab:** When the user consult a Regulated Element by the Activation Status tab, the system identifies the flight plans in the INACTIVE, PRE-ACTIVE, ACTIVE, and TERMINATED states, as shown in the figure below.



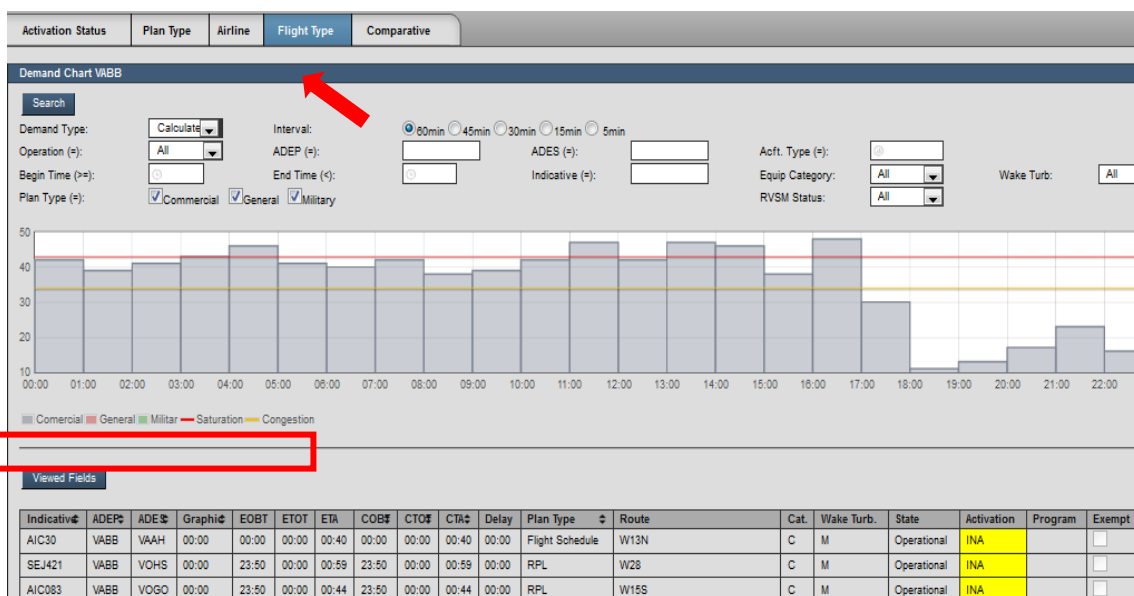
**Plan Type Tab:** When the demand chart is opened, the system displays the Plan Type tab that shows the flight plans according to the type: RPL, FPL and Flight Schedule, as shown in the figure below.



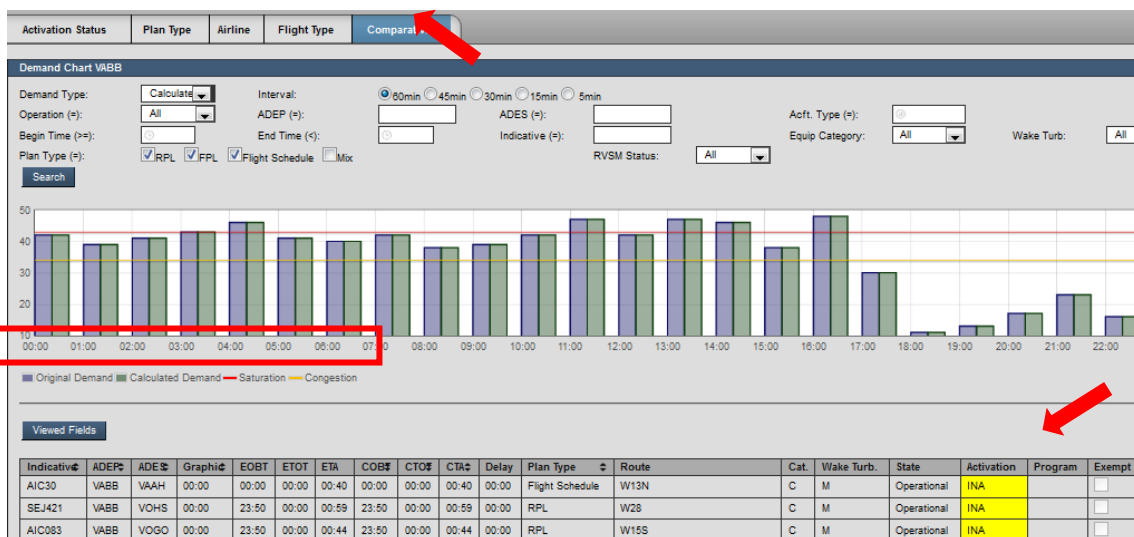
**Airline Tab:** When the user consult a Regulated Element by the Airline tab, the system identifies the number of flight plans of a given airline in the graphic, as shown in the figure below.



**Flight Type Tab:** When the user consult a Regulated Element by the Flight Type tab, the system identifies the number of flight plans according to the type: Commercial, General, and Military, as shown in the figure below.

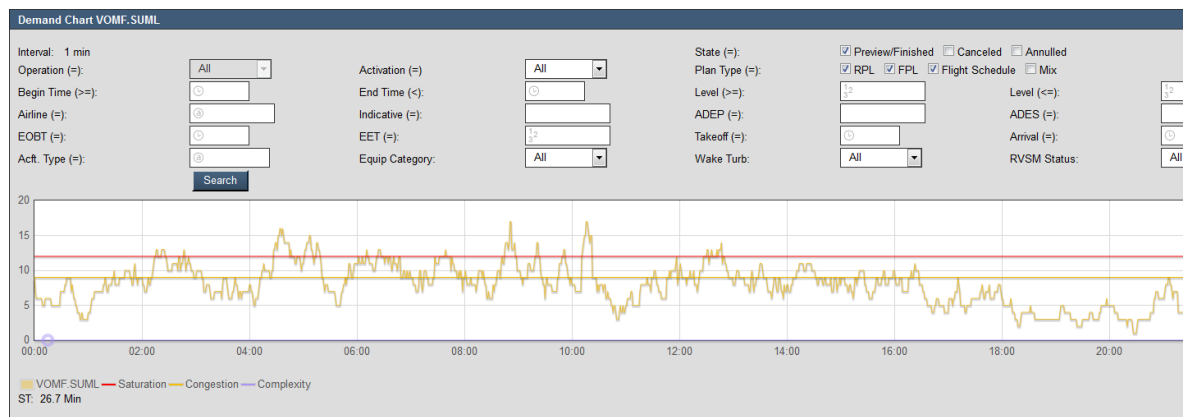


**Comparative Tab:** When the user consult a Regulated Element by the Comparative tab, the system displays a comparative between the flight plans in the moment of the scenario creation, or last update, and the current data, as shown in the figure below. The data can be different due a manual change or a program application.

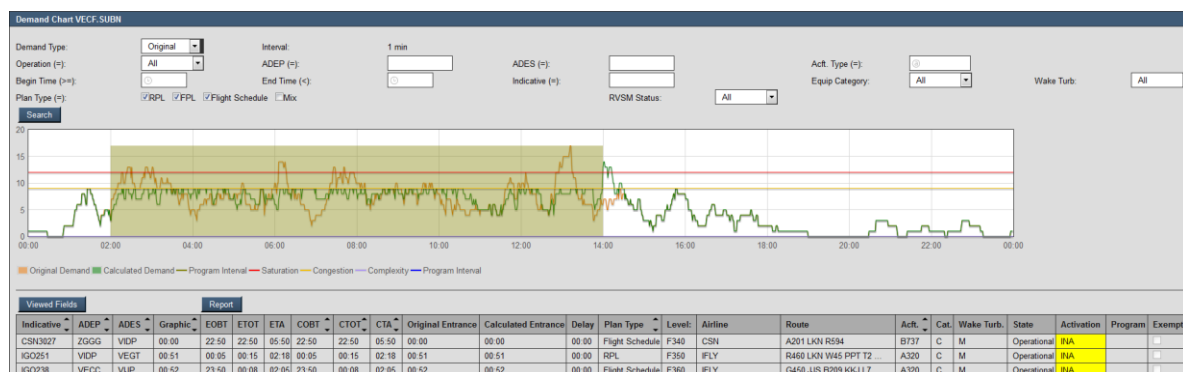


The line chart has two (2) tabs, in which is possible to choose how to see the flight plans line. The default is Line tab, but is possible to choose the Comparative tab. These two tabs will be explained bellow.

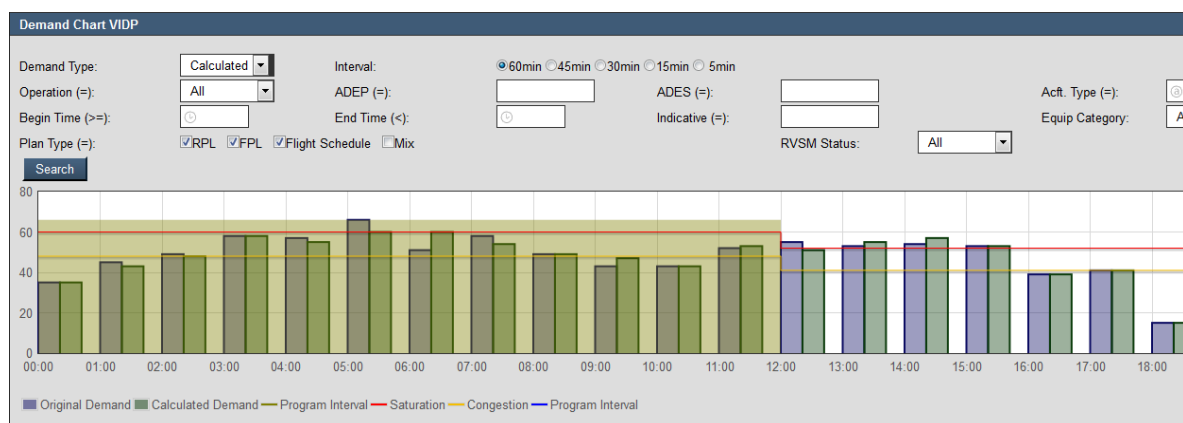
**Line Tab:** When the user consult a Regulated Element by the Line tab, the system displays a line representing the selected Demand Type (original or calculated) as shown in the figure below.



**Comparative Tab:** When the user consult a Regulated Element by the Comparative tab, the system displays two lines, one of them representing the original demand and the other the calculated one as shown in the figure below. The data can be different due a manual change or a program application.



In both line or bar chart, the period in which there are a program application in the selected Regulated Element, the background will be filled with the color olive, as shown in the figures below.

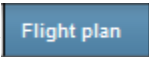




While moving the mouse over the chart, same information are displayed as:

- The demand in that particular period
- The saturation at that particular time
- The congestion at that particular time


















#### 2.1.3.1.4. Flight Plan Tab


This option () allows consult the plan database that composes a specific session. When this option is accessed, the user is provided with a list of types of plans to select, namely:



- **All** – shows all plans included in the session.
- **RPL** – shows all flight intentions included in the Repetitive Flight Plan base of the session.
- **FPL** – shows all FPLs included in the session.
- **Flight Schedule** – shows all flight intentions based in Flight Schedules.

The image below shows the initial data of the plan list according to the search criterion established.



Type:	<input type="text" value="All"/>	Indicative:	<input type="text"/>	<input type="button" value="Search"/>
Indicative	Type	Activation	State	
AIC011	RPL	INA	Operational	
AIC016	RPL	INA	Operational	
AIC022	RPL	INA	Operational	
AIC023	RPL	INA	Operational	
AIC031	RPL	INA	Operational	
AIC042	RPL	INA	Operational	
AIC047	RPL	INA	Operational	
AIC048	RPL	INA	Operational	
AIC048	RPL	INA	Operational	
AIC050	RPL	INA	Operational	
AIC051	RPL	INA	Operational	
AIC055	RPL	INA	Operational	
AIC342	RPL	INA	Operational	
AIC403	RPL	INA	Operational	
AIC404	RPL	INA	Operational	
AIC415	RPL	INA	Operational	
AIC416	RPL	INA	Operational	

To consult the data of a flight intention included in the session, the user must press the “Consult” () button as indicated in the figure below.

Indicative	Type	Activation	State	
AIC011	RPL	INA	Operational	
AIC016	RPL	INA	Operational	



After selecting the consult, the system shows a specific screen with the plan detailed data as follows.



Flight Data						
Indicative:	IGO554	ADEP:	Ⓢ VISR	EOBT:	Ⓢ 05:15	
				EOBD:	19/02/2018	
				ATOT:	Ⓢ 05:25	
				ATOD:	19/02/2018	
Airline:	IFLY					
Aircraft			Additional Information			
Number:		Aircraft type:	Ⓢ A320	Wake Turbulence:	N	
			Nav/Com:	SCW/C	Flight rule:	I
Frequency						
Plan type:	RPL	Frequency:	SMTWTFSS			
Stretch Plan				Results		
ADES:	Ⓢ VIDP	EET:	Ⓢ 01:08	ETA:	Ⓢ 06:23	
Flight speed:	Ⓢ N0449	Flight level:	Ⓢ F310	Alternative aerodrome:	Ⓢ	
Route:						
W31E						
796 of 800 character(s) remaining.						
Other Informations:						
NULLEET/VIDF0021						
784 of 800 character(s) remaining.						
				Warnings:		
				Show Flight Plan Messages		
				Details		

When the [Show flight plan messages](#) button is pressed, the system displays flight plan messages, as shown below:

Flight Plan Message				
Message Source	Originator Address	Message	Rectified Message	Recipients
(0)				
				Close

When the [Details](#) button present in the page is pressed, the system displays the route specified in the plan in detail as depicted below.





Route Detail

Sub-routes

Sub-route	Type
W31E	
(1)	

Segments

	FIR/TMA	Sector	Speed Var.	Type	Airways	Distance	Point A	Point B
1	TMA: DTUD	DCSN	7	TAKEOFF	SR1SNG	1.32	VISR	SNG
2	TMA: DTUD	DCSN	46	TAKEOFF	W31E	9.59	SNG	3352N07452E
3	TMA: DTUD	DTUN	51	TAKEOFF	W31E	13.22	3352N07452E	3342N07502E
4	TMA: DTUD	DTUN	50	CRUISE	W31E	15.62	3342N07502E	MESAR
5	TMA: DTUD	DTUN	56	CRUISE	W31E	20.53	MESAR	3310N07520E
6	TMA: DTUD	DTUS	69	CRUISE	W31E	29.67	3310N07520E	3241N07529E
7	TMA: DTUD	DTUS	0	CRUISE	W31E	27.67	3241N07529E	PK

Points

	Point	Coordinate	Desired Level	Current Level	Desired Speed	Current Speed	EET	ETO	ATO	Type
1	VISR	3359N07446E	F310	F054	N0170	N0170	0000	0525	0525	Aerodrome
2	SNG	3400N07445E	F310	F088	N0449	N0177	0000	0525	0525	Aux
3	3352N07452E	3352N07452E	F310	F170	N0449	N0223	0003	0528	0528	Calculate
4	3342N07502E	3342N07502E	F310	F310	N0449	N0274	0007	0532	0532	Calculate
5	MESAR	3329N07513E	F310	F310	N0449	N0324	0010	0535	0535	Fix
6	3310N07520E	3310N07520E	F310	F310	N0449	N0380	0013	0538	0538	Calculate
7	3241N07529E	3241N07529E	F310	F310	N0449	N0449	0017	0542	0542	Calculate

☒ Show speed transitions

☒ Show level transitions

☒ Show zone transitions

Enable filters

Close

### 2.1.3.2. “Automatic Session” Functionality

This functionality allows the user to access the strategical, tactical and historical sessions of the system. By this sessions, the user is able to see the flight plan data and the respective impacts on the capacities related to the Regulated Elements registered in the system.



Regulated Elements
<b>Automatic Session</b>
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel

When this functionality is selected, the system displays a screen in which the user can assign the type of session of interest as follows.



**Sessions**

Session Type

Name	Date	Hour	Duration
------	------	------	----------

0 - 0 (0)

First is necessary to choose the type of the session to be opened. The available options are:

- **Strategical Session** – eight (08) sessions created automatically by the system, where 1 session is for the current day and the others 7 sessions are for the subsequent days.
- **Tactical Session** – a session created automatically by the system that shows the data for the next six (06) hours.
- **Historical Session** - sessions created automatically by the system, consisting on the ninety (90) last expired strategic sessions from the current day.

The following items show the operational characteristics of the Automatic Sessions types.

#### 2.1.3.2.1. Strategical Session

To access the data of a Strategic Session, the user must select the "Strategical" option in the Session Type, and the system shows the list of strategical sessions available in the system as follows.



**Sessions**

Session Type

	Name	Date	Hour	Duration
<input type="radio"/>	01/11/2016 - Tuesday	01/11/2016	00:00	24 h
<input type="radio"/>	31/10/2016 - Monday	31/10/2016	00:00	24 h
<input type="radio"/>	30/10/2016 - Sunday	30/10/2016	00:00	24 h
<input type="radio"/>	29/10/2016 - Saturday	29/10/2016	00:00	24 h
<input type="radio"/>	28/10/2016 - Friday	28/10/2016	00:00	24 h
<input type="radio"/>	27/10/2016 - Thursday	27/10/2016	00:00	24 h
<input type="radio"/>	26/10/2016 - Wednesday	26/10/2016	00:00	24 h
<input type="radio"/>	25/10/2016 - Tuesday	25/10/2016	00:00	24 h

1 - 8 (8)

The information displayed identifies the strategical sessions in the system database, which have the following data:

- **Name** – column that identifies the session name.
- **Date** – column that identifies the session date.
- **Hour** – column that identifies the UTC hour at which begins the session.
- **Duration** – column that identifies the session duration.

To interact with the session data, the user must select the session of interest and click on the “Open” button as follows.




**Sessions**

Session Type

	Name	Date	Hour	Duration
<input type="radio"/>	01/11/2016 - Tuesday	01/11/2016	00:00	24 h
<input type="radio"/>	31/10/2016 - Monday	31/10/2016	00:00	24 h
<input checked="" type="radio"/>	30/10/2016 - Sunday	30/10/2016	00:00	24 h
<input type="radio"/>	29/10/2016 - Saturday	29/10/2016	00:00	24 h
<input type="radio"/>	28/10/2016 - Friday	28/10/2016	00:00	24 h
<input type="radio"/>	27/10/2016 - Thursday	27/10/2016	00:00	24 h
<input type="radio"/>	26/10/2016 - Wednesday	26/10/2016	00:00	24 h
<input type="radio"/>	25/10/2016 - Tuesday	25/10/2016	00:00	24 h

1 - 8 (8)   << < 1 > >>

When the process is completed, the system fills in the identification data of the session selected as highlighted in the figure below.

 Operator aosantos Login 25/10/2016 - 17:35 Expires: 19:56

Flow Security Control Flight Plans Meteorology Support Operability Basic Data Air Situation

> Flow > Situation Analysis

**Current session:** Strategical 30/10/2016 - Sunday **Hour:** 00:00 **Duration:** 24 h

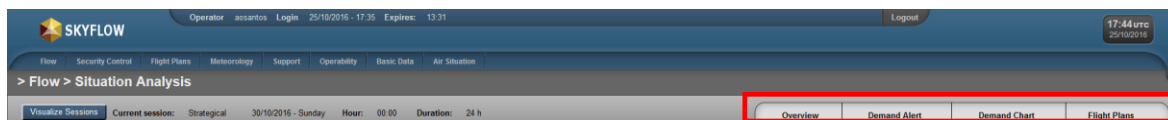
**Note:** If the user wishes to change the session to be analyzed, the process can be resumed by accessing the Visualize Sessions () button.

At this moment, the user must select one of the available tabs:

- Overview Tab
- Demand Alert Tab
- Demand Chart Tab



- Flight Plan Tab



### 2.1.3.2.2. Tactical Session

To access the data of a Tactical Session, the user must select the "Tactical" option in the Session Type, and the system shows the only tactical session available in the system as follows.

**Sessions**

Session Type

	Name	Date	Hour	Duration
<input checked="" type="radio"/>	25/10/2016 - Tuesday	25/10/2016	17:45	6 h

1 - 1 (1)  << < 1 > >>

Open Close

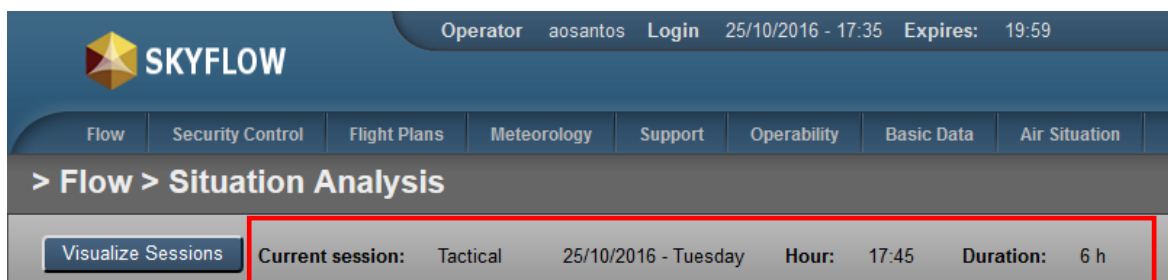
The information displayed identifies the tactical session in the system database, which have the following data:

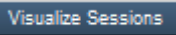
- **Name** – column that identifies the session name.
- **Date** – column that identifies the session date.
- **Hour** – column that identifies the UTC hour at which begins the session.
- **Duration** – column that identifies the session duration.



To interact with the session data, the user must click on the “Open” button.

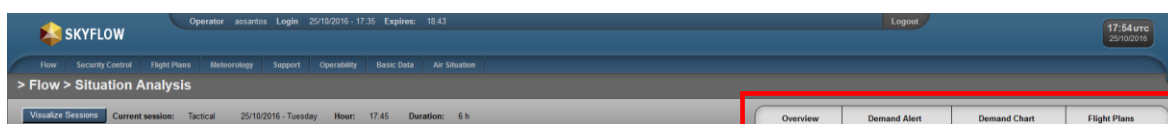
When the process is completed, the system fills in the identification data of the session selected as highlighted in the figure below.



**Note:** If the user wishes to change the type of session to be analyzed, the process can be resumed by accessing the Session (  ) button.

At this moment, the user must select one of the following tabs:

- Overview Tab
- Demand Alert Tab
- Demand Chart Tab
- Flight Plan Tab



### 2.1.3.2.3. Historical Session

To access the data of a Historical Session, the user must select the "Historical" option in the Session Type, and the system shows the list of historical sessions available in the system as follows.



**Sessions**

Session Type

	Name	Date	Hour	Duration
<input type="radio"/>	24/10/2016 - Monday	24/10/2016	00:00	24 h
<input type="radio"/>	23/10/2016 - Sunday	23/10/2016	00:00	24 h
<input type="radio"/>	22/10/2016 - Saturday	22/10/2016	00:00	24 h
<input type="radio"/>	21/10/2016 - Friday	21/10/2016	00:00	24 h
<input type="radio"/>	20/10/2016 - Thursday	20/10/2016	00:00	24 h
<input type="radio"/>	19/10/2016 - Wednesday	19/10/2016	00:00	24 h
<input type="radio"/>	18/10/2016 - Tuesday	18/10/2016	00:00	24 h
<input type="radio"/>	17/10/2016 - Monday	17/10/2016	00:00	24 h
<input type="radio"/>	16/10/2016 - Sunday	16/10/2016	00:00	24 h
<input type="radio"/>	15/10/2016 - Saturday	15/10/2016	00:00	24 h

1 - 10 (31)

<< < 1 2 3 4 > >>

The information displayed identifies the historical sessions in the system database, which have the following data:

- **Name** – column that identifies the session name.
- **Date** – column that identifies the session date.
- **Hour** – column that identifies the UTC hour at which begins the session.
- **Duration** – column that identifies the session duration.

To interact with the session data, the user must select the session of interest and click on the “Open” button as follows.






**Sessions**

Session Type

	Name	Date	Hour	Duration
<input type="radio"/>	24/10/2016 - Monday	24/10/2016	00:00	24 h
<input type="radio"/>	23/10/2016 - Sunday	23/10/2016	00:00	24 h
<input type="radio"/>	22/10/2016 - Saturday	22/10/2016	00:00	24 h
<input checked="" type="radio"/>	21/10/2016 - Friday	21/10/2016	00:00	24 h
<input type="radio"/>	20/10/2016 - Thursday	20/10/2016	00:00	24 h
<input type="radio"/>	19/10/2016 - Wednesday	19/10/2016	00:00	24 h
<input type="radio"/>	18/10/2016 - Tuesday	18/10/2016	00:00	24 h
<input type="radio"/>	17/10/2016 - Monday	17/10/2016	00:00	24 h
<input type="radio"/>	16/10/2016 - Sunday	16/10/2016	00:00	24 h
<input type="radio"/>	15/10/2016 - Saturday	15/10/2016	00:00	24 h

1 - 10 (31)   << < 1 2 3 4 > >>

When the process is completed, the system fills in the identification data of the session selected as highlighted in the figure below.

 Operator aosantos Login 25/10/2016 - 17:35 Expires: 19:56

Flow Security Control Flight Plans Meteorology Support Operability Basic Data Air Situation

> Flow > Situation Analysis

**Current session:** Historical 21/10/2016 - Friday Hour: 00:00 Duration: 24 h

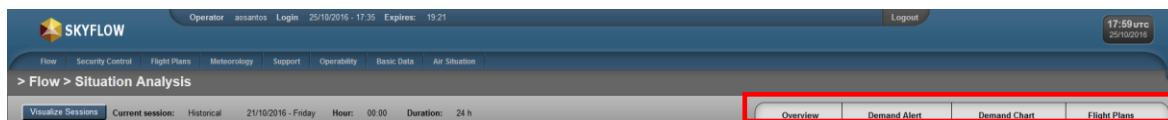
**Note:** If the user wishes to change the session to be analyzed, the process can be resumed by accessing the Visualize Sessions () button.

At this moment, the user must select one of the available tabs:

- Overview Tab
- Demand Alert Tab
- Demand Chart Tab



- Flight Plan Tab



### 2.1.3.3. “Manual Session” Functionality

This functionality allows creating sessions manually with the purpose of conducting simulations or searching the demand data of a future period. The user can only search its own private sessions or public sessions.

To access a Manual Session, the user must select the “Manual Session” option in the Flow menu as follows.

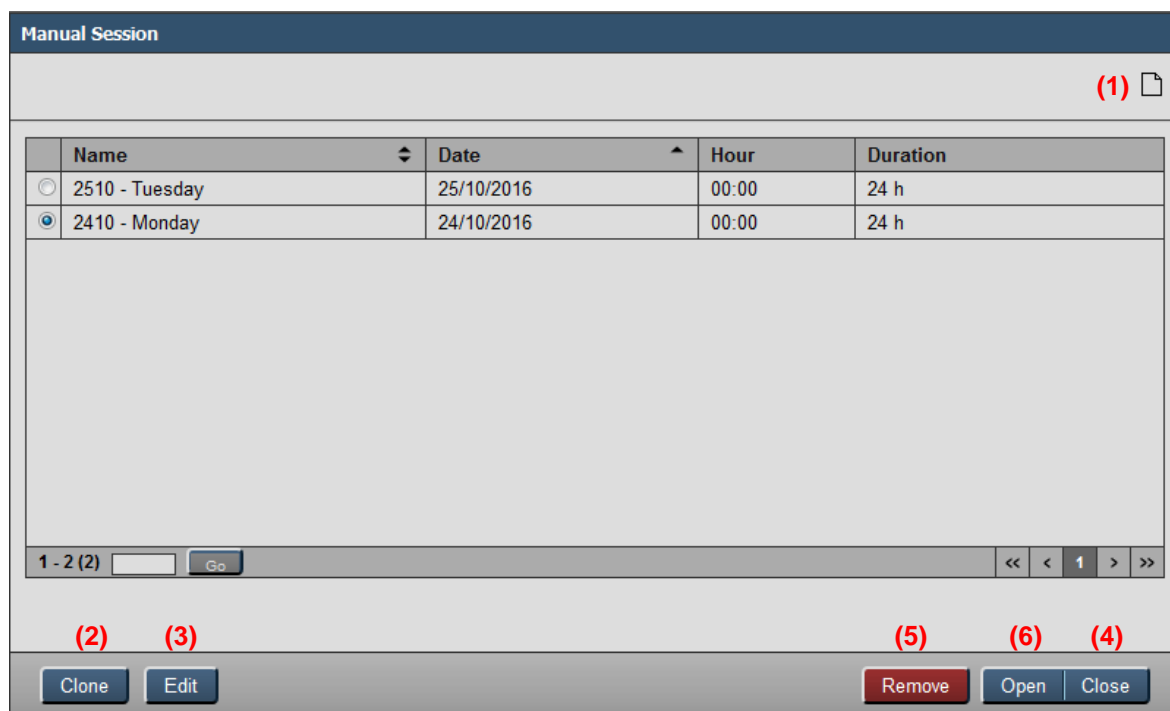


When this functionality is selected, the system displays the following interface with the manual sessions exists in the system, as follows:



The information displayed identifies the manual sessions in the system database, which have the following data:

- ATECH.01.0116.13.00003/E
- 
- Page 140



Name	Date	Hour	Duration
2510 - Tuesday	25/10/2016	00:00	24 h
2410 - Monday	24/10/2016	00:00	24 h

1 - 2 (2) Go << < 1 > >>

(2) (3) (5) (6) (4)

Clone Edit Remove Open Close

As shown in the previous figure, this screen the user has six (6) possible actions to interact with the sessions data, which are listed below and presented in the following items.

- (1) **Add** – option to create a new manual session.
- (2) **Clone** – option to create a new manual session by cloning a manual, strategical or historical session.
- (3) **Edit** – option to edit the selected manual session.
- (4) **Close** – option to close the screen.
- (5) **Remove** – option to remove the selected manual session.
- (6) **Open** – option to open the selected manual session.

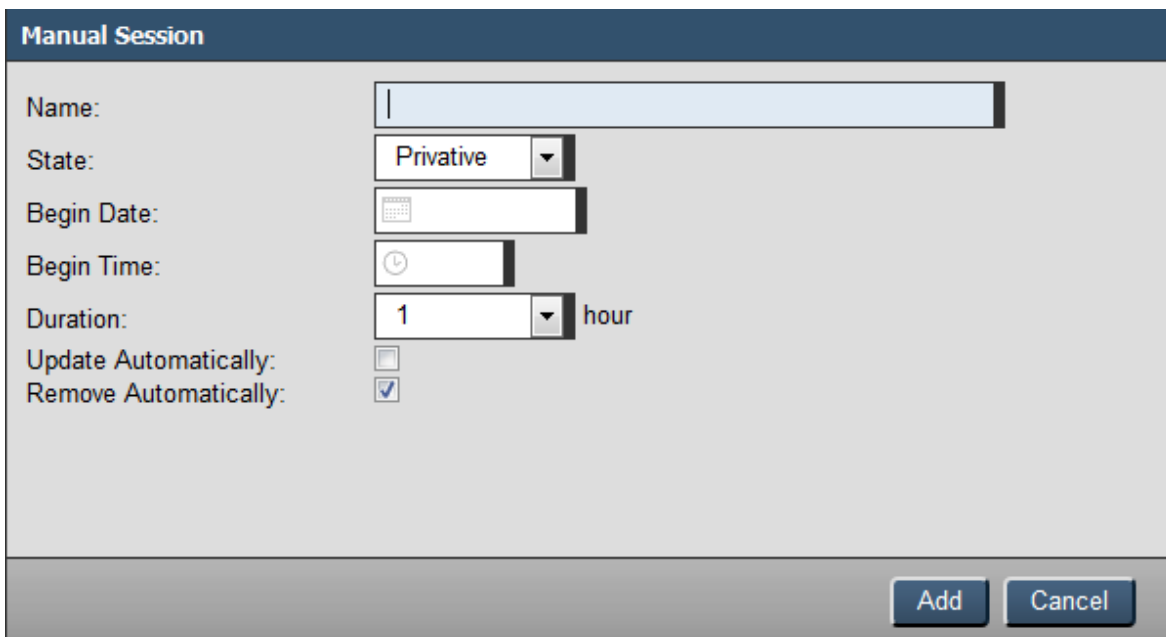
#### 2.1.3.3.1. Add a Manual Session

Allows the user to create a new manual session. When this icon is selected, the system shows a window to fill the following fields:

- **Name:** a name for the manual session, that will be used for the identification of the session in the previous screen;
- **State:** option to choose if the session will be private or public;
- **Begin Date:** the begin date of the session. The date must be a date in the future, starting on tomorrow;
- **Begin Time:** the begin time of the manual session;



- **Duration:** the duration of the manual session;
- **Update Automatically:** option to update the session with regulated element updates and received messages;
- **Remove Automatically:** option to automatically remove the session after 5 days of the date in which the manual session ends.



#### 2.1.3.3.2. Clone a Manual Session

Allows the user to create a new manual session cloning an existing manual, strategical or historical session. When this icon is selected, the system shows a window to fill the following fields:

- **Session Type:** the type of the session to be cloned;
- **Desired session:** selection of the desired session to be cloned;
- **Name:** a name for the manual session, that will be used for the identification of the session in the previous screen;
- **State:** option to choose if the session will be private or public;
- **Update Automatically:** option to update the session with regulated element updates and received messages;
- **Remove Automatically:** option to automatically remove the session according with the respective parameter.



**Manual Session**

Session Type Strategical

	Name	Date	Hour	Duration
<input type="radio"/>	01/11/2016 - Tuesday	01/11/2016	00:00	24 h
<input type="radio"/>	31/10/2016 - Monday	31/10/2016	00:00	24 h
<input type="radio"/>	30/10/2016 - Sunday	30/10/2016	00:00	24 h
<input type="radio"/>	29/10/2016 - Saturday	29/10/2016	00:00	24 h
<input type="radio"/>	28/10/2016 - Friday	28/10/2016	00:00	24 h
<input type="radio"/>	27/10/2016 - Thursday	27/10/2016	00:00	24 h
<input type="radio"/>	26/10/2016 - Wednesday	26/10/2016	00:00	24 h

1 - 7 (7) Go << < 1 > >>

Name:

State: Privative

Update Automatically: ☐

Remove Automatically: ☒

Add Cancel

### 2.1.3.3.3. Edit a Manual Session

Allows the user to change the state and the automatical update and removal of a manual session. When this icon is selected, the system shows a window to edit the following fields:

- **State:** option to choose if the session will be private or public;
- **Update Automatically:** option to update the session with regulated element updates and received messages;
- **Remove Automatically:** option to automatically remove the session according with the respective parameter.



**Manual Session**

Name:	<input type="text" value="29112016"/>
State:	<input type="text" value="Privative"/>
Begin Date:	<input type="text" value="29/11/2016"/>
Begin Time:	<input type="text" value="00:00"/>
Duration:	<input type="text" value="24"/> hour
Update Automatically:	<input checked="" type="checkbox"/>
Remove Automatically:	<input checked="" type="checkbox"/>

#### 2.1.3.3.4. Close

Allows the user to close the screen going back to the previous one.


#### 2.1.3.3.5. Remove a Manual Session

Allows the user to remove the selected manual session. This action requires a user confirmation, as shown in the following figure.

Are you sure you want to remove?

#### 2.1.3.3.6. Open a Manual Session

Allows the user to open the selected manual session. When the process is completed, the system fills in the identification data of the session selected as highlighted in the figure below.

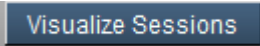
 Operator aosantos Login 26/10/2016 - 13:04 Expires: 19:24

Flow Security Control Flight Plans Meteorology Support Operability Basic Data Air Situation

**> Flow > Manual Session**

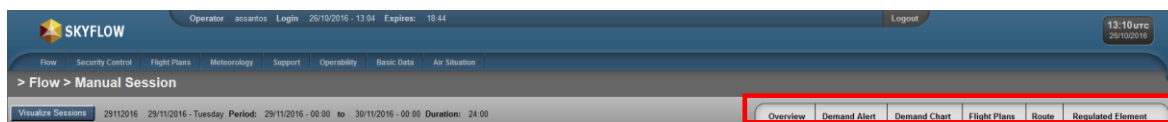
29112016 29/11/2016 - Tuesday Period: 29/11/2016 - 00:00 to 30/11/2016 - 00:00 Duration: 24:00



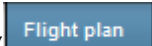
**Note:** If the user wishes to change the session to be analyzed, the process can be resumed by accessing the Visualize Sessions () button.

At this moment, the user must select one of the available tabs:


- Overview Tab
- Demand Alert Tab
- Demand Chart Tab
- Flight Plan Tab
- Route Tab
- Regulated Element Tab



#### 2.1.3.3.6.1. Flight Plan Tab

This option () allows consult the plan database that composes a specific scenario. This tab is described before at the item 2.1.3.1.4. In a manual session the user has the option to perform some adictional actions that are described in the following items.

##### 2.1.3.3.6.1.1. Add New Flight Plan

Allows the user may add a new flight plan in the session. By clicking on Add icon () the system displays a form to fill the data at the right panel, as the following figure:





Message format: NEW

Flight Data	
Plan type: <input type="text" value="FPL"/>	Indicative: <input type="text"/>
ADEP: <input type="text" value="0"/>	EOBT: <input type="text" value="0"/>
EOBD: <input type="text" value="26/10/2016"/>	Flight Type: <input type="text" value="S"/>

Aircraft	Additional Information
Number: <input type="text"/>	Nav/Com: <input type="text" value="/"/>
Aircraft type: <input type="text" value="0"/>	Flight rule: <input type="text" value="I"/>
Wake Turbulence: <input type="text"/>	

Stretch Plan	
ADES: <input type="text" value="0"/>	EET: <input type="text" value="0"/>
Flight speed: <input type="text" value="12"/>	Flight level: <input type="text" value="12"/>
Route: <input type="text"/>	
800 of 800 character(s) remaining.	
Other Informations: <input type="text"/>	
800 of 800 character(s) remaining.	

Save Cancel

After filling the flight plan data, the user has options to save or cancel.

#### 2.1.3.3.6.1.2. Clone Flight Plan

While consulting a flight plan, the user has the option to clone the flight data, allowing to create a new flight intent with some fields filled. To do that the user must press the “Clone” button located at the bottom right part of the screen and after change the desired data to save the flight plan. The system does not allows two flights with same Indicative, ADEP, ADES and EOBT be created in the database.



Message format: NEW

**Flight Data**

Indicative: ETD224 ADEP: @ OMAA EOBT: 04:20 EOBD: 28/10/2016 Flight Type: S  
Airline: ETIHAD

**Aircraft**

Number: Aircraft type: @ A330 Wake Turbulence: H Nav/Com: S/C Flight rule: I

**Frequency**

Plan type: Flight Schedule Frequency: S M T W T F S

**Stretch Plan**

ADES: @ VIDP EET: 09:30 ETA: 13:50 Alternative aerodrome: @  
Flight speed: 1/2 N0465 Flight level: 1/2 F330

Route:  
TELEM A791 ARADO A347

779 of 800 character(s) remaining.

Other Informations:  
EET/VABF0032 VIDF0125

779 of 800 character(s) remaining.

**Results**

Warnings:

Show Flight Plan Messages Details

Remove Clone Edit

Message format: NEW

**Flight Data**

Plan type: Flight Schedule Indicative: ETD224 ADEP: @ OMAA EOBT: 04:20 EOBD: 28/10/2016 Flight Type: S

**Aircraft**

Number: Aircraft type: @ A330 Wake Turbulence: H Nav/Com: S/C Flight rule: I

**Stretch Plan**

ADES: @ VIDP EET: 09:30  
Flight speed: 1/2 N0465 Flight level: 1/2 F330

Route:  
TELEM A791 ARADO A347

779 of 800 character(s) remaining.

Other Informations:  
EET/VABF0032 VIDF0125

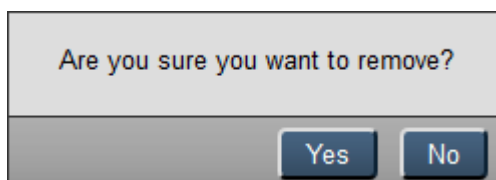
779 of 800 character(s) remaining.

Save Cancel



### 2.1.3.3.6.1.3. Remove Flight Plan

While consulting a flight plan, the user has the option to remove the flight plan. To do that the user must press the “Remove” button located at the bottom right part of the screen. This action requires a user confirmation, as shown in the following figure.



### 2.1.3.3.6.1.4. Edit Flight Plan

While consulting a flight plan, the user has the option to edit the flight data. To do that the user must press the “Edit” button located at the bottom right part of the screen and after change the desired data to save the flight plan. It is important to highlight that after editing a flight plan, the system will not be able to automatically update it.

Message format: **NEW**

**Flight Data**

Plan type: **Flight Schedule** Indicative: **JA433** ADEP: **VABB** EOBT: **03.25** EOBD: **28/10/2016** Flight Type: **S**

**Aircraft**

Number:  Aircraft type: **B738** Wake Turbulence: **M**

**Additional Information**

Nav/Com: **S/C** Flight rule: **I**

**Stretch Plan**

ADES: **VOML** EET: **01.30**

Flight speed: **N0450** Flight level: **F370**

Route:

**Q13 IKATI W17S**

788 of 800 character(s) remaining.

Other Informations:


**EET/VOMF0029**

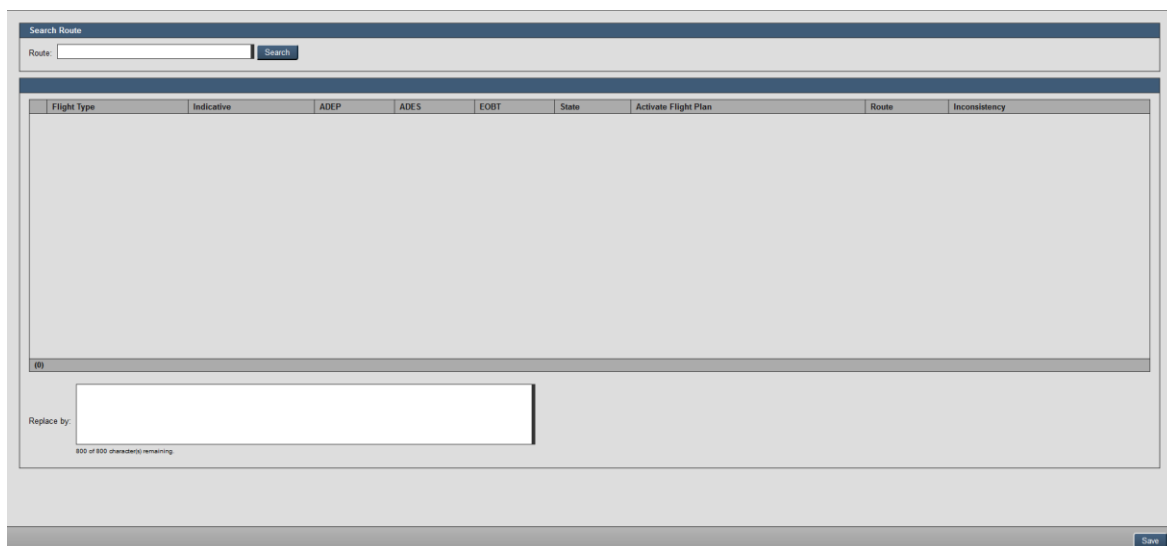
788 of 800 character(s) remaining.

**Remove Save Cancel**

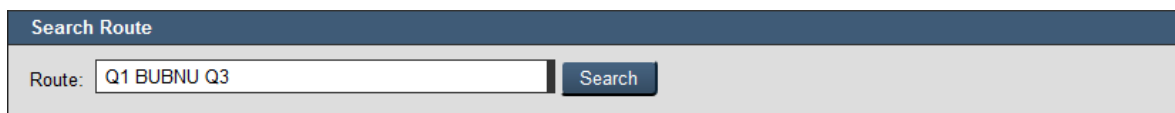


### 2.1.3.3.6.2. Route Tab

This option () allows the user to change flight routes in batch. For that is necessary search the flight plans that have a specific route, select the flight plans that will have the route changed and then write the new route at the “Replace by” field. After confirming the action, the system will extract the route from each flight plan, and in case of a successful extraction, it will change the route.



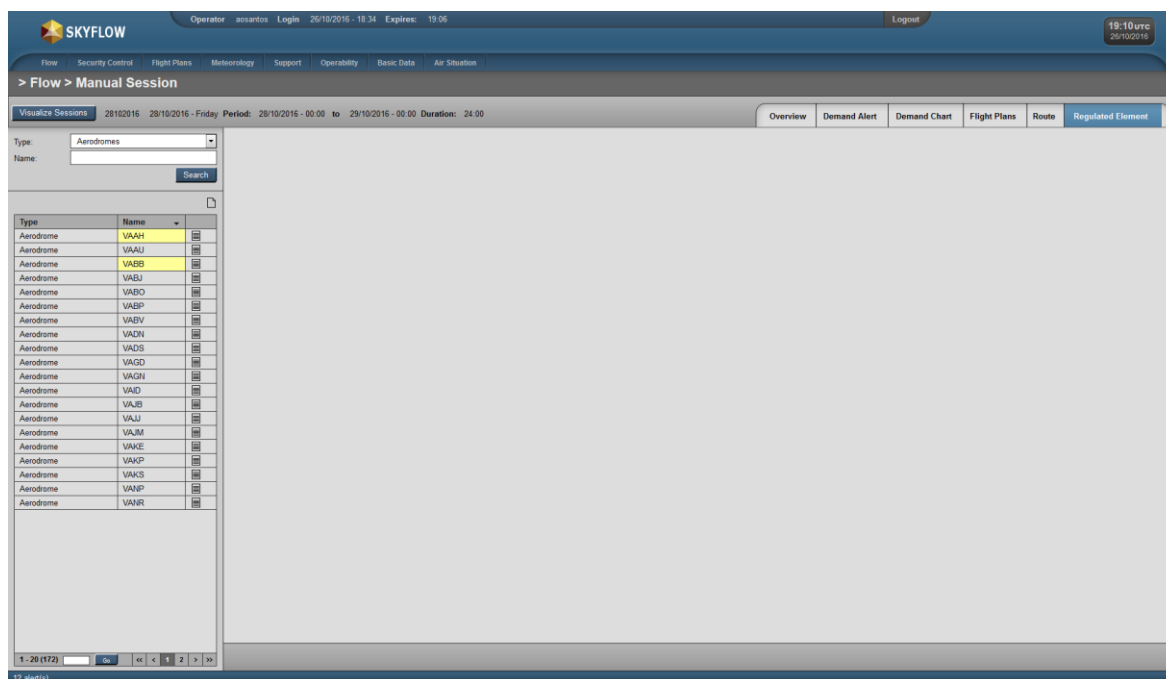
First, search the flight plans that have a specific route, as shown in the figure below.



After clicking in the “Search” button, the system shows all plans that contain the route specified as follows.



	Flight Type	Indicative	ADEP	ADES	EOBT	State	Activate Flight Plan	Route	Inconsistency
<input checked="" type="checkbox"/>	Flight Schedule	JAI416	VABB	VJUP	12:45	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	RPL	IGO217	VABB	VJUP	13:45	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	RPL	IGO696	VABB	VJUP	12:05	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	Flight Schedule	JAI2055	VABB	VJUP	00:25	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	RPL	IGO416	VABB	VJUP	04:10	Annuled	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	RPL	IGO117	VABO	VJUP	18:55	Operational	INA	DCT PUN W28 BBB Q1 LOLTO/N0439F310 Q1 BUBNU Q3 JJP DCT	
<input checked="" type="checkbox"/>	Flight Schedule	AIC611	VABB	VJUP	06:00	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	RPL	IGO207	VABB	VJUP	00:10	Annuled	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	Flight Schedule	JAI2053	VABB	VJUP	08:50	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	Flight Schedule	GOW391	VABB	VJUP	09:55	Operational	INA	Q1 BUBNU Q3	
<input checked="" type="checkbox"/>	Flight Schedule	GOW390	VABB	VJUP	00:20	Operational	INA	Q1 BUBNU Q3	

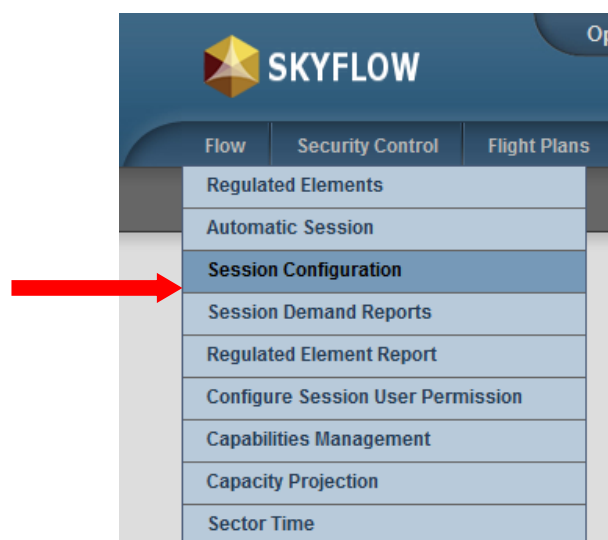


To see how to interact with this options, please consult the item 2.1.1.1 from this manual.

#### 2.1.3.4. “Session Configuration” Functionality

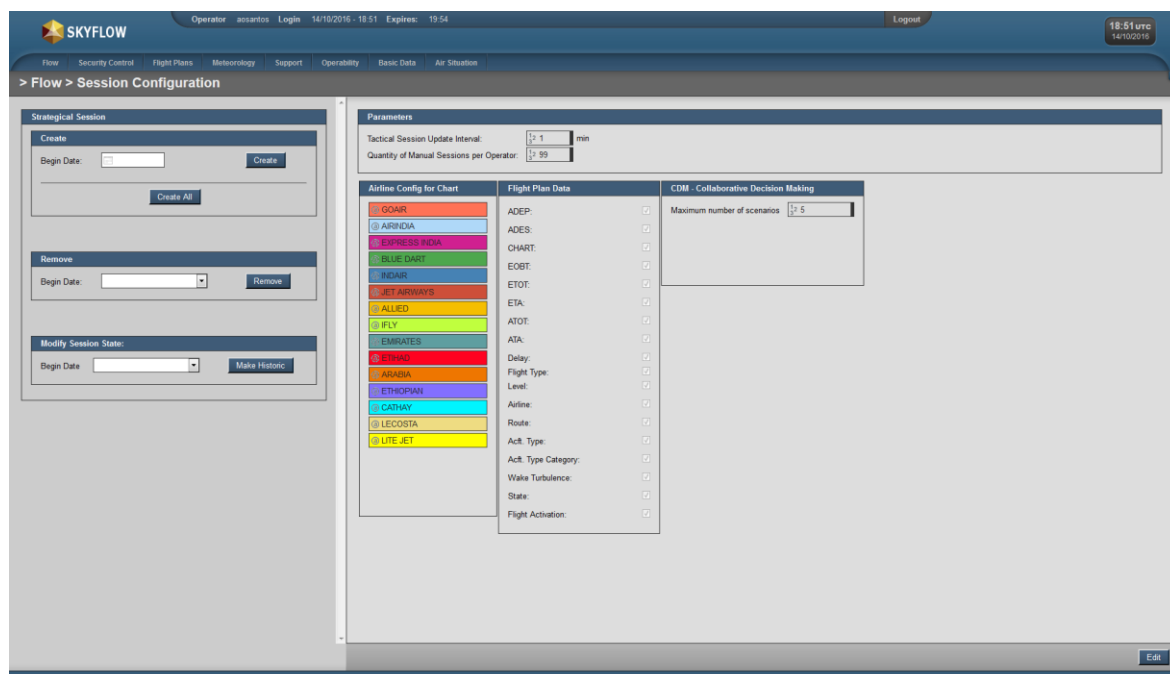
This functionality allows registered users to deal with strategic sessions that were not generated automatically by the system, as well as change specific parameters related to the sessions.

To access this functionality select Flow menu and Session Configuration, as the figure below.



When this functionality is accessed, the system displays at the left panel a screen with the actions to be performed at the Strategic Sessions, and at the right panel the system parameters that can be changed by the user.

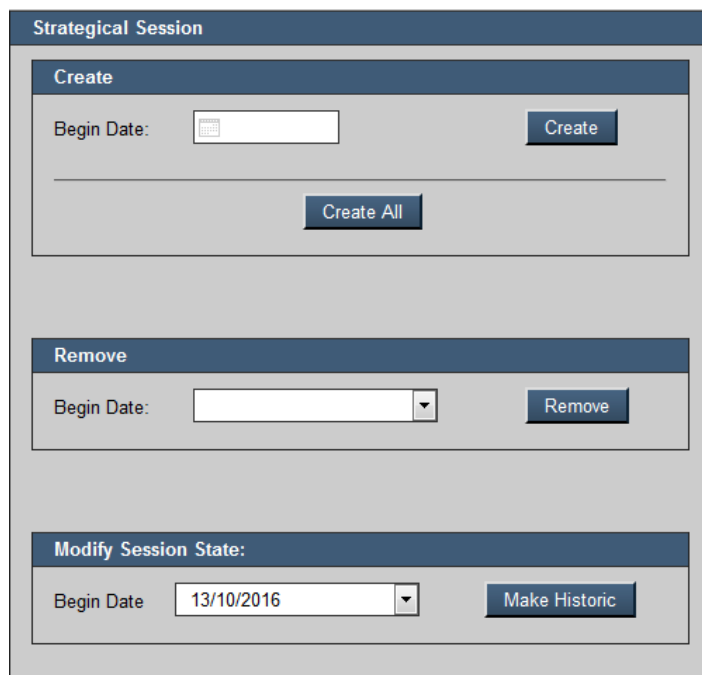
The figure below shows the initial layout of the screen.





#### 2.1.3.4.1. Strategic Session options

This option provides a contingency alternative to create one or all strategic sessions not included in the set generated automatically by the system as well remove and turn a session into historic.



The screenshot shows a web interface titled "Strategical Session". It contains three main sections:

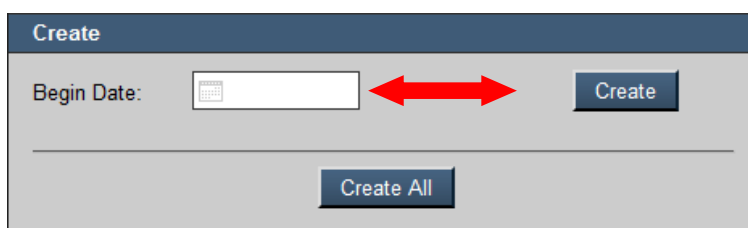
- Create:** A section with a "Begin Date:" label, a date picker icon, a text input field, and a "Create" button. Below this is a "Create All" button.
- Remove:** A section with a "Begin Date:" label, a text input field, a dropdown arrow, and a "Remove" button.
- Modify Session State:** A section with a "Begin Date:" label, a text input field containing "13/10/2016", a dropdown arrow, and a "Make Historic" button.

##### 2.1.3.4.1.1. Create Strategic Sessions

This action is needed when a session is deleted manually by the Administrator or in case of Server crash when the system has not generated the sessions foreseen automatically.

**Note:** The automatic generation takes place daily at 12:00 AM, when the system then deletes the session from the previous day and generates a new session for the 8th day.

To create a strategic session for a specific date, the user must fill the "Begin Date" field with the desired date and then click at "Create" button.

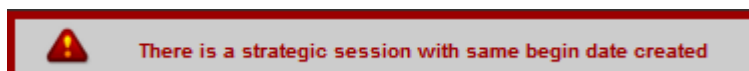
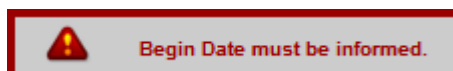


This screenshot focuses on the "Create" section of the interface. It shows the "Begin Date:" label, a date picker icon, a text input field, and a "Create" button. A red double-headed arrow points from the "Create" button to the "Begin Date" input field, indicating the relationship between the date selection and the creation action. Below the "Create" button is a "Create All" button.



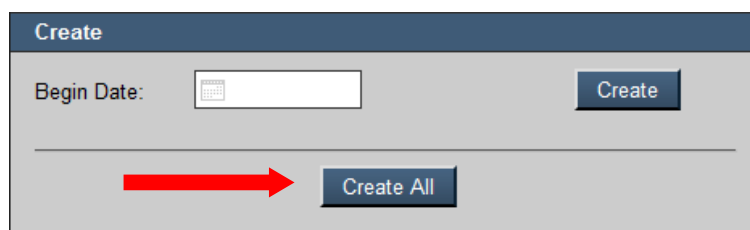


In case of inconsistencies related to this button, the system shows the following error message:



**Note:** If a new creation request is made while the previous request is in progress, the system does not execute the process.

To create all strategic sessions allowed in the system, the user must click on “Craate All” button as follows.



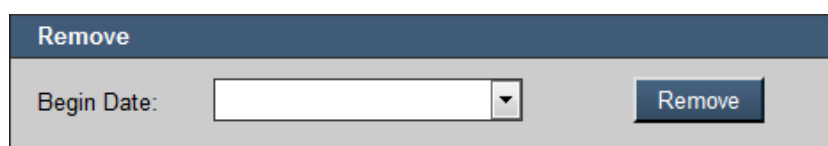
After pressing the referred button, the system generates a request to create the strategic sessions foreseen by the system and displays the following message:



If a new creation request is made while the previous request is in progress, the system does not execute the process.

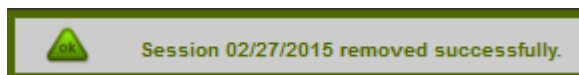
#### 2.1.3.4.1.2. Remove Strategic Sessions

This option allows the Administrator to delete a strategic session manually. To execute this option, the user must select the session of interest and select the “Remove” button . This action is performed at the following screen:





When the command is executed, the system shows the following message:



#### 2.1.3.4.1.3. Modify Session State

This option allows the user to modify the session state, turning a strategic session into a historic one. To execute this option, the user must select the session of interest and press the “Make Historic” button.

**Modify Session State:**

Begin Date

#### 2.1.3.4.2. System parameters

This screen provides an option to edit the system parameters about the sessions. As shown at the image bellow, the user must press the “Edit” button at the bottom right of the screen to edit the parameters.

**Parameters**

Tactical Session Update Interval:  min  
Quantity of Manual Sessions per Operator:

Airline Config for Chart	Flight Plan Data	CDM - Collaborative Decision Making
<input checked="" type="checkbox"/> GOAIR	ADEP: <input checked="" type="checkbox"/>	Maximum number of scenarios <input type="text" value="5"/>
<input checked="" type="checkbox"/> AIRINDIA	ADES: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> EXPRESS INDIA	CHART: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> BLUE DART	EOBT: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> INDIAN AIR	ETOT: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> JET AIRWAYS	ETA: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> ALLIED	ATOT: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> IFLY	ATA: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> EMIRATES	Delay: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> ETIHAD	Flight Type: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> ARABIA	Level: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> ETHIOPIAN	Airline: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> CATHAY	Route: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> LECOSTA	Acft. Type: <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> LITE JET	Acft. Type Category: <input checked="" type="checkbox"/>	
	Wake Turbulence: <input checked="" type="checkbox"/>	
	State: <input checked="" type="checkbox"/>	
	Flight Activation: <input checked="" type="checkbox"/>	


















#### 2.1.3.4.2.1. Parameters

This group allows the user to edit the update interval of a tactical session and the manual sessions amount by user, as shown at the image bellow.

Parameters	
Tactical Session Update Interval:	<input type="text" value="12"/>   <input type="text" value="1"/> min
Quantity of Manual Sessions per Operator:	<input type="text" value="12"/>   <input type="text" value="99"/>

#### 2.1.3.4.2.2. Airline Configuration for Chart

This group allows the user to choose the color that be used for each airline at the sessions demand chart. To change the colors the user must delete the airline associated to a color and fill with the desired one.

Airline Config for Chart
 GOAIR
 AIRINDIA
 EXPRESS INDIA
 BLUE DART
 INDAIR
 JET AIRWAYS
 ALLIED
 IFLY
 EMIRATES
 ETIHAD
 ARABIA
 ETHIOPIAN
 CATHAY
 LECOSTA
 LITE JET



#### 2.1.3.4.2.3. Flight Plan Data

This group allows the user to choose the default fields that will be shown at the demand charts in all types of sessions (strategical, tactical, historic, manual and CDM scenario).

Flight Plan Data	
ADEP:	<input checked="" type="checkbox"/>
ADES:	<input checked="" type="checkbox"/>
CHART:	<input checked="" type="checkbox"/>
EOBT:	<input checked="" type="checkbox"/>
ETOT:	<input checked="" type="checkbox"/>
ETA:	<input checked="" type="checkbox"/>
ATOT:	<input checked="" type="checkbox"/>
ATA:	<input checked="" type="checkbox"/>
Delay:	<input checked="" type="checkbox"/>
Flight Type:	<input checked="" type="checkbox"/>
Level:	<input checked="" type="checkbox"/>
Airline:	<input checked="" type="checkbox"/>
Route:	<input checked="" type="checkbox"/>
Acft. Type:	<input checked="" type="checkbox"/>
Acft. Type Category:	<input checked="" type="checkbox"/>
Wake Turbulence:	<input checked="" type="checkbox"/>
State:	<input checked="" type="checkbox"/>
Flight Activation:	<input checked="" type="checkbox"/>

#### 2.1.3.4.2.4. CDM – Collaborative Decision Making

This group allows the user to edit the maximum quantity of scenarios allowed in the system.

CDM - Collaborative Decision Making	
Maximum number of scenarios	<input type="text" value="125"/>



### 2.1.3.5. “Session Demand Report” Functionality




The purpose of this functionality is to allow the user to access the data recorded in a session. Such information is available during the period in which the user remains logged in the system.








When this functionality is selected, the system displays the demand reports recorded during the period in which the user remained logged in the system.



**> Flow > Report Session Demand**

Session Type	Session Date	Regulated Element Type	Regulated Element	
Strategical	03/01/2015	Aerodromes	GROUP1	
Tactical	02/27/2015	Controlled Auxiliary Points	AAE - VOR	
Strategical	03/03/2015	TMA Sectors	TMA DHELI	


1 - 3 (3)   << < 1 > >>

The number of reports saved is listed in the lower part of the left panel as shown by the arrow above.




**Note:** When a logged user executes the “Exit” command, the system deletes all reports recorded.

This functionality provides the following interaction options.

#### 2.1.3.5.1. Search Basic Data

To search the basic data of a report available in the system, the user must press the "Consult" () icon provided in the report of interest as signaled below.




Session Type	Session Date	Regulated Element Type	Regulated Element	
Strategical	03/01/2015	Aerodromes	GROUP1	
Tactical	02/27/2015	Controlled Auxiliary Points	AAE - VOR	
Strategical	03/03/2015	TMA Sectors	TMA DHELI	

After selecting the search option, the system displays a form in the right panel containing the report basic data as follows.

**Selected Session**  
Session Type: Strategical 05/07/2015

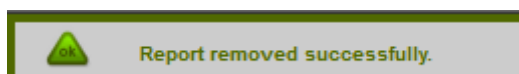
**Regulated Element**  
Type: Aerodrome Indicative: VAAH

**Search Panel**  
Interval: ☒ 60min ☐ 45min ☐ 30min ☐ 15min ☐ 5min  
Operation (=):  Activation (=):   
Begin Time (>=):  End Time (<):   
Airline (=):  Indicative (=):   
EOBT (=):  EET (=):   
Equipment (=):  Equip Category:   
State (=): ☒ Preview/Finished ☐ Canceled ☐ Annulled  
Plan Type (=): ☒ RPL ☒ FPL ☒ Flight Schedule ☐ Mix  
Level (>=):  Level (<=):   
ADEP (=):  ADES (=):   
Takeoff (=):  Arrival (=):   
Wake Turb:

To remove the referred report, the user must press the button  and the system requests confirmation to execute the action.


Are you sure you want to remove?


When the “Yes” option is selected, the system deletes the record from the list included in the left panel and shows the following message:

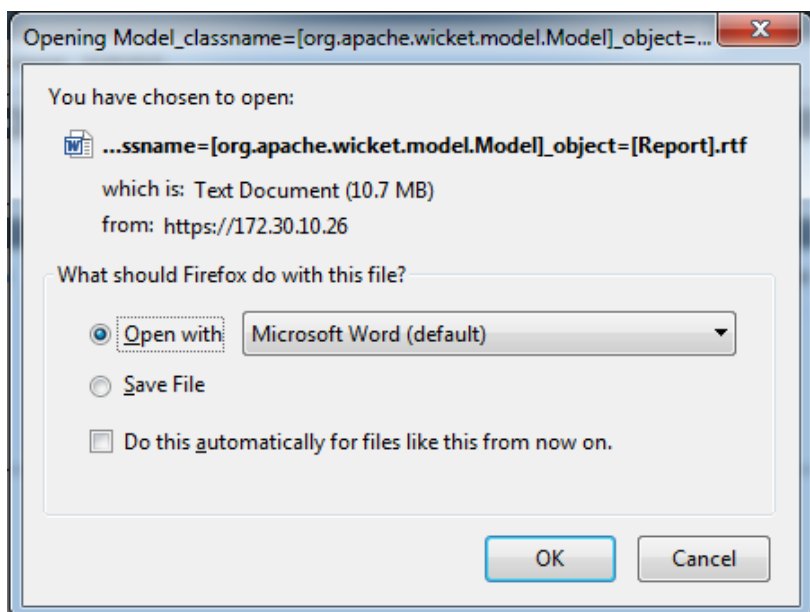


## 2.1.3.5.2. Viewing Reports in RTF format

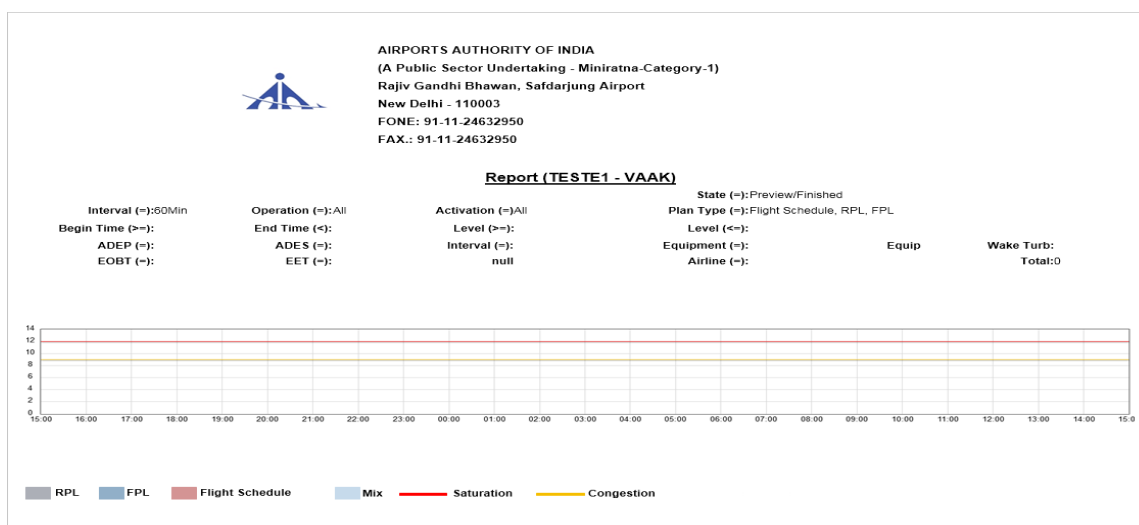


Session Type	Session Date	Regulated Element Type	Regulated Element	
Tactical	02/27/2015	Controlled Auxiliary Points	AAE - VOR	


To view the report in RTF format, the user must select the () icon. The system initially displays the alternatives to open the report as follows.




In this window, the user may choose to save the file in a specific folder with the content displayed as follows.



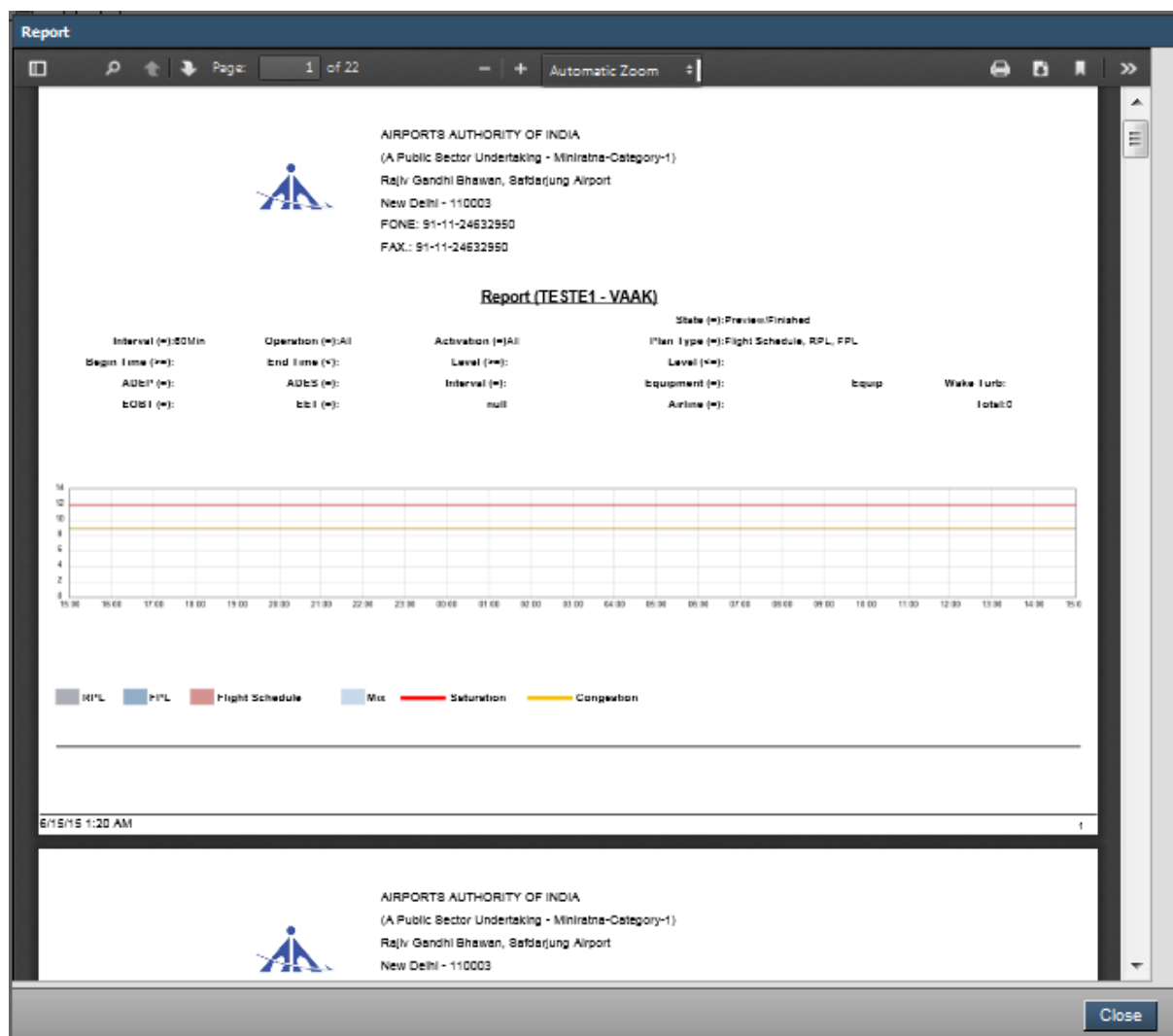
## 2.1.5.3. Viewing Reports in PDF format



Session Type	Session Date	Regulated Element Type	Regulated Element
Tactical	02/27/2015	Controlled Auxiliary Points	AAE - VOR

To view the report in PDF format, the user must select the icon  and the system displays the data as follows.



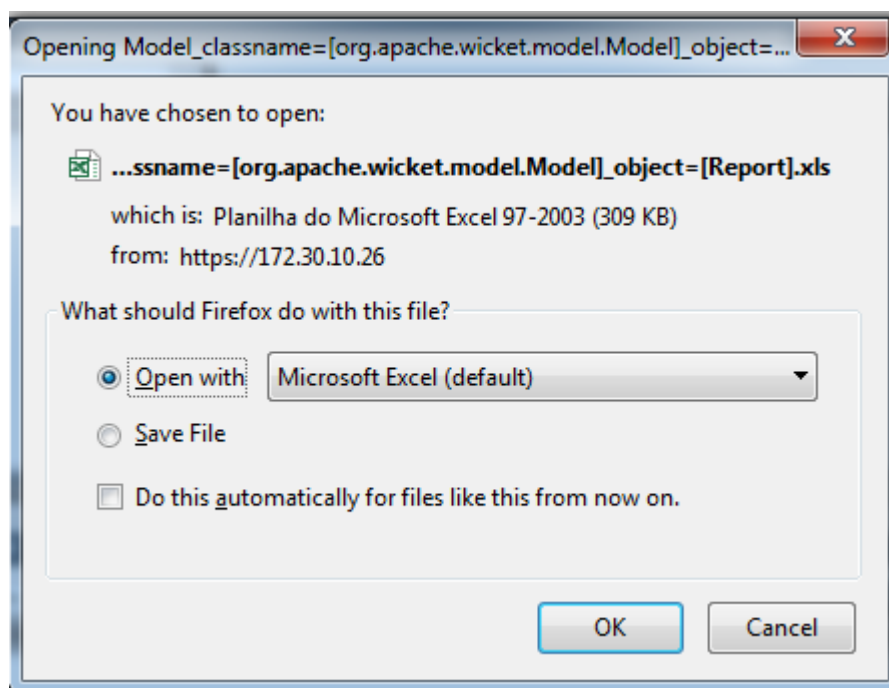


In this window, the user may choose to print or save the file in a specific folder.

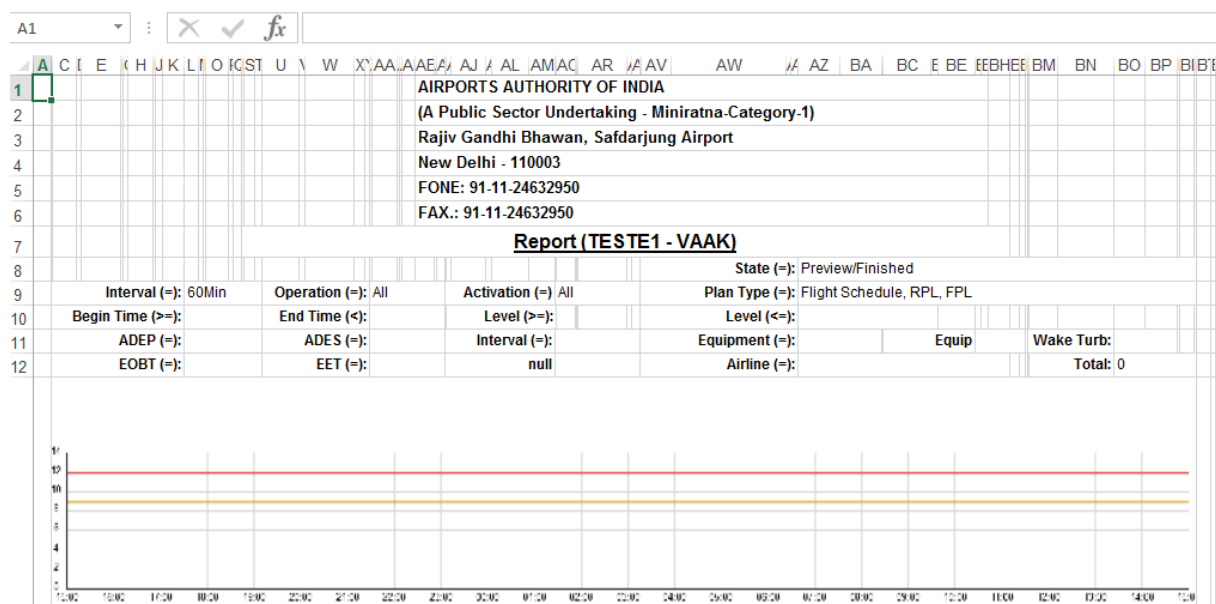
#### 2.1.3.5.4. Viewing Reports in XLS format

Session Type	Session Date	Regulated Element Type	Regulated Element
Tactical	02/27/2015	Controlled Auxiliary Points	AAE - VOR

To view the report in XLS format, the user must select the () icon. The system initially displays the alternatives to open the report as follows.

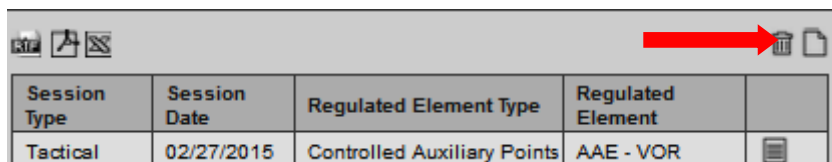



In this window, the user may choose to save the file in a specific folder with the content displayed as follows.

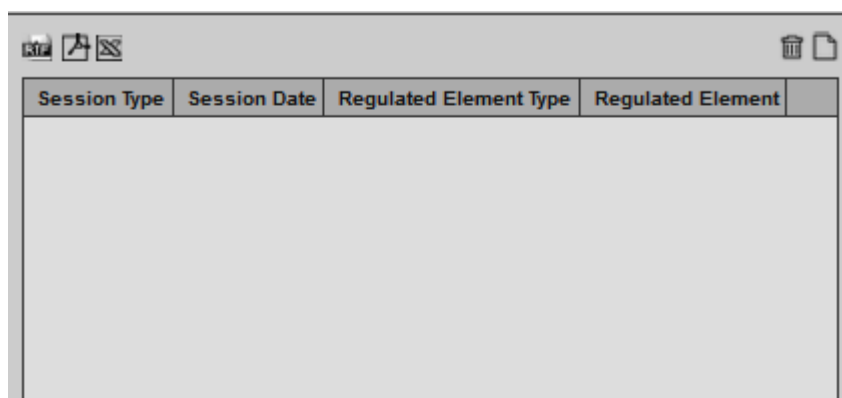




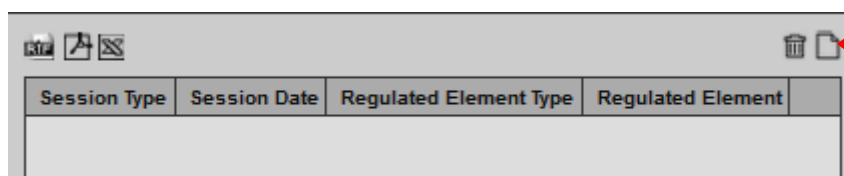
### 2.1.3.5.5. General Report Deletion




To delete all reports simultaneously, the user must select the () icon. The system then deletes all reports included in the system and updates the left panel as follows.



### 2.1.3.5.6. Creation of New Report



To create a new report, the user must select the () icon and the system displays the form to define the basic data of the report on the right panel, which must be completed by the user as follows.



**Selected Session**

Session Type:

Name	Date	Hour	Duration
<input type="radio"/> 03/06/2015 - Friday	03/06/2015	00:00	24 h
<input type="radio"/> 03/05/2015 - Thursday	03/05/2015	00:00	24 h
<input type="radio"/> 03/04/2015 - Wednesday	03/04/2015	00:00	24 h
<input checked="" type="radio"/> 03/03/2015 - Tuesday	03/03/2015	00:00	24 h
<input type="radio"/> 03/02/2015 - Monday	03/02/2015	00:00	24 h
<input type="radio"/> 03/01/2015 - Sunday	03/01/2015	00:00	24 h
<input type="radio"/> 02/28/2015 - Saturday	02/28/2015	00:00	24 h

1 - 7 (7)

**Regulated Element**

Type:  Indicative:

Regulated Element	Type	Group
<input type="radio"/> VAAH	Aerodromes	No
<input type="radio"/> VAAK	Aerodromes	No
<input type="radio"/> VAAU	Aerodromes	No
<input type="radio"/> VABB	Aerodromes	No
<input type="radio"/> VABP	Aerodromes	No
<input type="radio"/> VABV	Aerodromes	No
<input type="radio"/> VAID	Aerodromes	No
<input type="radio"/> VAJB	Aerodromes	No
<input type="radio"/> VAKE	Aerodromes	No
<input type="radio"/> VAKJ	Aerodromes	No

1 - 10 (54)

**Search Panel**

Interval: 1 min

Operation (-):  Activation (-):  State (-): ☒ Preview/Finished ☐ Canceled ☐ Annulled

Begin Time (->):  End Time (-):  Plan Type (-): ☒ RPL ☒ FPL ☒ Flight Schedule

Airline (-):  Indicative (-):  Level (->):  Level (-<):

EOBT (-):  EET (-):  ADEP (-):  ADES (-):

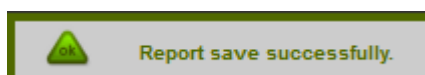
Act. Type (-):  Equip Category:  Takeoff (-):  Arrival (-):

Wake Turb:

To complete the process, the user must press the “Save” () button and the system updates the left panel.

Session Type	Session Date	Regulated Element Type	Regulated Element	
Strategical	03/03/2015	Aerodromes	VAAH	<input type="button" value="Save"/>

Besides this action, the system shows a success message.



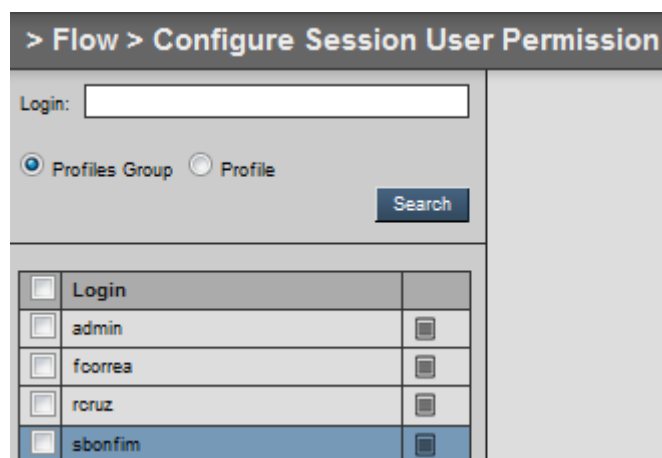


### 2.1.3.6. “Configure Session User Permission” Functionality

This functionality allows the user to define which Regulated Elements are visible for each user that can access the system Sessions.



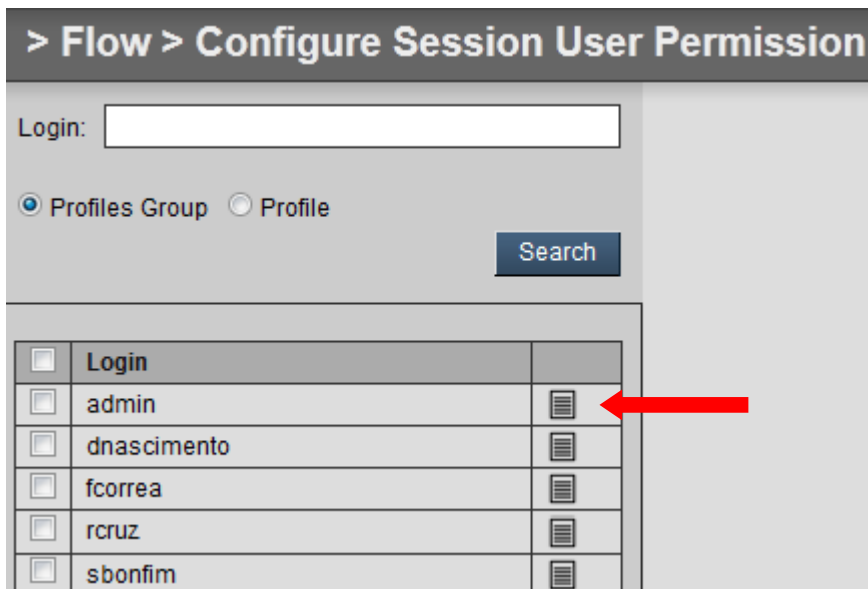
When this functionality is selected, the system shows the list of users with permission to access the system Sessions on the left panel as follows.










### 2.1.3.6.1. User Configurations

To configure the Regulated Elements viewed by a user, it is necessary to select the login of interest included in the following list.



<input type="checkbox"/>	Login	
<input type="checkbox"/>	admin	
<input type="checkbox"/>	dnascimento	
<input type="checkbox"/>	fcorrea	
<input type="checkbox"/>	rcruz	
<input type="checkbox"/>	sbonfim	

When the “Consult” icon is selected, the system displays the following form;



**Selected Login**  
admin

**Permitted Regulated Element**  
Type:   
Indicative:   
  

Regulated Element	Type	Group
VAAH	Aerodrome	No
VAAK	Aerodrome	No
VAAU	Aerodrome	No
VABB	Aerodrome	No
VABP	Aerodrome	No
VABV	Aerodrome	No
VAID	Aerodrome	No
VAJB	Aerodrome	No
VAKE	Aerodrome	No
VAKJ	Aerodrome	No
VAKS	Aerodrome	No
VANP	Aerodrome	No
VAPR	Aerodrome	No
VARK	Aerodrome	No
VARP	Aerodrome	No
VAUD	Aerodrome	No
VEBI	Aerodrome	No
VEBS	Aerodrome	No
VECC	Aerodrome	No
VEGT	Aerodrome	No

1 - 20 (56)  << < 1 2 3 > >>

**Excluded Regulated Element**

Regulated Element	Type
-------------------	------

0 - 0 (0)

The form has the following information groups:

- **“Selected Login” Group:** shows the user login selected.

**Selected Login**  
admin

- **“Permitted Regulated Element” Group:** shows the list of Regulated Elements included in the database for interaction by the user selected according to the type as follows.



Permitted Regulated Element

Type:

Indicative:

Search

Remove all

Regulated Element	Type	Group	
VAAH	Aerodromes	No	
VAAK	Aerodromes	No	
VAAU	Aerodromes	No	
VABB	Aerodromes	No	
VABP	Aerodromes	No	
VABV	Aerodromes	No	
VAID	Aerodromes	No	
VAJB	Aerodromes	No	
VAKE	Aerodromes	No	
VAKJ	Aerodromes	No	
VAKS	Aerodromes	No	
VANP	Aerodromes	No	
VAPR	Aerodromes	No	
VARK	Aerodromes	No	
VARP	Aerodromes	No	
VAUD	Aerodromes	No	
VEBI	Aerodromes	No	
VEBS	Aerodromes	No	
VEGT	Aerodromes	No	
VEGY	Aerodromes	No	

1 - 20 (54)

Go

<<

<

1

2

3

>

>>

To interact with the Regulated Elements defined for the user profile, the is necessary press the “Edit” button and the system enables the field to insert data.





Permitted Regulated Element

Type:  Indicative:

Search

Remove all

Regulated Element	Type	Group	
AAE - DME	Controlled Auxiliary Points	No	
AAE - VOR	Controlled Auxiliary Points	No	
AAR - DME	Controlled Auxiliary Points	No	
AAR - VOR	Controlled Auxiliary Points	No	
AAT - DME	Controlled Auxiliary Points	No	
AAT - VOR	Controlled Auxiliary Points	No	
AAU - DME	Controlled Auxiliary Points	No	
AAU - VOR	Controlled Auxiliary Points	No	
AGG - DME	Controlled Auxiliary Points	No	
AGG - VOR	Controlled Auxiliary Points	No	
ALH - DME	Controlled Auxiliary Points	No	
ALH - VOR	Controlled Auxiliary Points	No	
ALI - DME	Controlled Auxiliary Points	No	
ALI - VOR	Controlled Auxiliary Points	No	
AR - NDB	Controlled Auxiliary Points	No	
AT - NDB	Controlled Auxiliary Points	No	
AU - NDB	Controlled Auxiliary Points	No	
BBB - DME	Controlled Auxiliary Points	No	
BBB - VOR	Controlled Auxiliary Points	No	
BBD - DME	Controlled Auxiliary Points	No	

1 - 20 (230)

Excluded Regulated Element

Add all

Regulated Element	Type	Group
-------------------	------	-------

0 - 0 (0)

To consult a type of element in the user profile, is necessary to select the “Type” option according to the image below or assign the indication of interest.

Permitted Regulated Element

Type:  Indicative:

Search

Remove all

After defining the element to be selected, the user must press the “Search” button. The system then displays the list of all elements of the referred type included in the Default Regulated Element database, according to the figure below.

Permitted Regulated Element


Type:  Indicative:









Search


Remove all

Regulated Element	Type	Group	
AAE - DME	Controlled Auxiliary Points	No	
AAE - VOR	Controlled Auxiliary Points	No	
AAR - DME	Controlled Auxiliary Points	No	
AAR - VOR	Controlled Auxiliary Points	No	

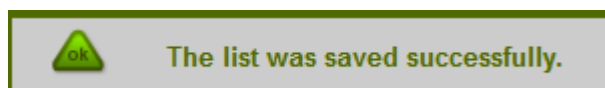


To remove a specific Regulated Element in the user profile, is necessary to select the option  of a specific element or select the option **Remove all** to remove all elements of that type according to the filter defined. After executing this operation, the system includes the element selected in the “Excluded Regulated Element” list of the respective user as follows.

Excluded Regulated Element			
			<b>Add all</b>
Regulated Element	Type	Group	
BBG - VOR	Controlled Auxiliary Points	No	
BBB - VOR	Controlled Auxiliary Points	No	
AU - NDB	Controlled Auxiliary Points	No	
AR - NDB	Controlled Auxiliary Points	No	
ALH - VOR	Controlled Auxiliary Points	No	
AGG - DME	Controlled Auxiliary Points	No	
AAR - DME	Controlled Auxiliary Points	No	
AAE - DME	Controlled Auxiliary Points	No	

To add a Regulated Element included in the “Excluded Regulated Element”, the user has the () option under a specific element or the (**Add all**) option to add all element include in the “Permitted Regulated Element”. When the first option is executed, the specific Regulated Element is deleted from the “Excluded Regulated Element” and included in the “Permitted Regulated Element”. When the second option is executed all Regulated Elements will be included in the “Permitted Regulated Element”.

To confirm the changes, the user must press the “Save” button and the system shows the following message.



#### 2.1.3.6.2. Configuration of simultaneous users






To configure the data of specific user groups, is necessary to select the Login of interest included in the following list.



> Flow > Configure Session User Permission

Login:

☒ Profiles Group ☐ Profile

<input type="checkbox"/>	Login	
<input checked="" type="checkbox"/>	admin	
<input checked="" type="checkbox"/>	azabini	
<input checked="" type="checkbox"/>	bastolpho	
<input checked="" type="checkbox"/>	ccaetano	
<input type="checkbox"/>	dnascimento	

When the “Edit” button in the lower right corner of the screen is pressed, the system displays the following form.




















**Selected Login**

admin / azabini / bastolpho / ccaetano

**Permitted Regulated Element**

Type:

Indicative:

Regulated Element	Type	Group	
VAAH	Aerodrome	No	
VAAK	Aerodrome	No	
VAAU	Aerodrome	No	
VABB	Aerodrome	No	
VABJ	Aerodrome	No	
VABO	Aerodrome	No	
VABP	Aerodrome	No	
VABV	Aerodrome	No	
VADN	Aerodrome	No	
VADS	Aerodrome	No	
VAGD	Aerodrome	No	
VAGN	Aerodrome	No	
VAHB	Aerodrome	No	
VAID	Aerodrome	No	
VAJB	Aerodrome	No	
VAJJ	Aerodrome	No	
VAJM	Aerodrome	No	
VAKP	Aerodrome	No	
VAKS	Aerodrome	No	

1 - 20 (174)  << < 1 2 3 4 5 > >>

**Excluded Regulated Element**

Regulated Element	Type	Group
-------------------	------	-------

0 - 0 (0)

The form has the following information groups:

- **“Login Selected” Group:** shows the user logins selected.


**Selected Login**

admin / azabini / bastolpho / ccaetano


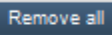





















- **“Permitted Regulated Element” Group:** shows the list of Regulated Elements included in the database to according to the type as follows.

**Permitted Regulated Element**

Type:  

Indicative:

Regulated Element	Type	Group	
VAAH	Aerodromes	No	
VAAK	Aerodromes	No	
VAAU	Aerodromes	No	
VABB	Aerodromes	No	
VABP	Aerodromes	No	
VABV	Aerodromes	No	
VAID	Aerodromes	No	
VAJB	Aerodromes	No	
VAKE	Aerodromes	No	
VAKJ	Aerodromes	No	
VAKS	Aerodromes	No	
VANP	Aerodromes	No	
VAPR	Aerodromes	No	
VARK	Aerodromes	No	
VARP	Aerodromes	No	
VAUD	Aerodromes	No	
VEBI	Aerodromes	No	
VEBS	Aerodromes	No	
VEGT	Aerodromes	No	

- **“Excluded Regulated Element” Group** – shows the list of Regulated Elements excluded of the list of users selected.



Excluded Regulated Element			
<div>Add all</div>			
Regulated Element	Type	Group	
VAPR	Aerodrome	No	
VAKS	Aerodrome	No	
VAJB	Aerodrome	No	
VABP	Aerodrome	No	
VAAH	Aerodrome	No	
1 - 5 (5) <div>Go</div>			
<div>&lt;&lt; &lt; &gt; &gt;&gt;</div>			


To consult a type of element in the user profiles, is necessary to select the “Type” option according to the image below or assign the indication of interest.

Permitted Regulated Element	
Type:	<div>Aerodromes</div>
Indicative:	<div></div>
<div>Search</div>	
<div>Remove all</div>	


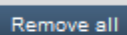
After defining the element to be selected, the user must press the “Search” button. The system then displays the list of all elements of the referred type included in the database, according to the figure below.









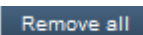
**Permitted Regulated Element**

Type:  


Indicative:



 



Regulated Element	Type	Group	
VAAH	Aerodromes	No	
VAAK	Aerodromes	No	
VAAU	Aerodromes	No	
VABB	Aerodromes	No	
VABP	Aerodromes	No	

To remove a specific Regulated Element in the user profile, is necessary to select the option  of a specific element or select the option  to remove all elements of that type according to the filter defined. After executing this operation, the system includes the element selected in the “Excluded Regulated Element” list of the respective user as follows.

**Excluded Regulated Element**



Regulated Element	Type	Group	
VEGY	Aerodromes	No	
VEBI	Aerodromes	No	

To add a specific Regulated Element included in the Excluded Regulated Element, the user has the () option under a specific element or the () option to add all element include in the “Excluded Regulated Element”. When the first option is executed, the Regulated Element is deleted from the “ Excluded Regulated Element” and included in the “Permitted Regulated Element”. When the second option is executed all Regulated Element are included in the list of the user selected.

To confirm the changes, the user must press the “Save” button and the system shows the following message.





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## **2.2. Collaborative Decision Making Component (CDM)**

The Collaborative Decision Making (CDM) Module is the component that allows proposing a solution for strategic or tactical flow problems. The Flow Manager has tools to simulate the problem, correct it, and have a solution proposal to evaluate collaboratively with the air companies. Finally, the operational measures defined can be applied.

To support the Flow Manager, the system provide some ATFM measures that are techniques used to manage air traffic demand considering the airspace and ATS capacity to insure safety. However, an ATFM measure produces as consequence an impact to the Airspace Users (AUs) and should be used with care in order to minimize impacts as much as possible by selecting least restrictive methods and minimizing delays.

### **2.2.1. “Collaborative Decision Making” Functionality**

The CDM functionality allows creating scenarios that simulate possible solutions to Tactical or Strategic session capacity/demand unbalance issues by means of some programs, consequently support the collaborative decision making process.



	Regulated Elements
	Automatic Session
	Session Configuration
	Session Demand Reports
	Regulated Element Report
	Configure Session User Permission
	Capabilities Management
	Capacity Projection
	Sector Time
	Taxi Time
	Average Taxi Time
	<b>Collaborative Decision Making</b>
	Manual Session
	Flight Schedule
	Import Flight Schedules
	Remove Closed Flight Schedules
	Flight Schedule Parameters
	Operational Panel

When this functionality is accessed, the system displays the Collaborative Decision Making (CDM) scenario records existing in the system database as follows.





Scenarios						
Type	Being Analysed					
	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	FAP_CAPPING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Privative
1 - 9 (9) <input type="button" value="Go"/>						
<< < 1 > >>						
<input type="button" value="Open"/> <input type="button" value="Close"/>						

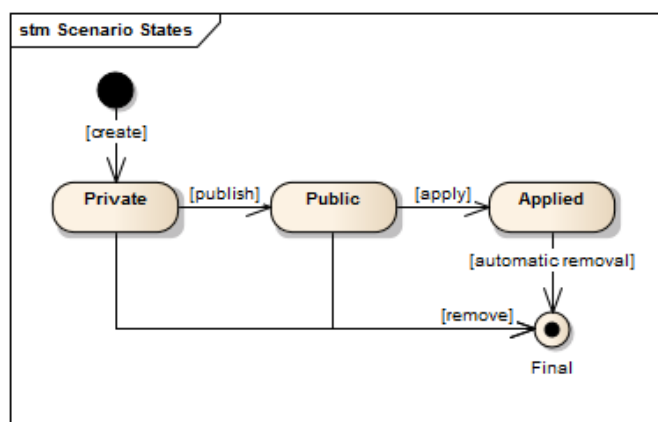
The scenarios are grouped in two types, “Being Analysed” and “Applied” and have different options in each possible state. All the process and options will be described in the following sub sessions.

### 2.2.1.1 Scenario overview

As mentioned before, the CDM scenario is based on a tactical or strategic session.

#### 2.2.1.1.1 Scenario states

A scenario can be in three different states, which are Private, Public and Applied. When a scenario is created, it jumps to Private state, when it is published it jumps to Public state and when it is applied, it jumps to Applied state. Authorized users can create and remove scenarios, but only the National Manager can publish and apply it. A scenario in Private and Public states can be removed manually but the Applied one is automatic removed by the system after thirty (30) days of its application.



In the Private state, only the user who has created the scenario and the National Manager can see it and make changes on it. As shown in the figure bellow, in Private state, the possible actions for a scenario are:

- a) *Execution Report*
- b) *Complete Update*
- c) *Partial Update*
- d) *Undo Program*
- e) *Suspend*
- f) *Unsuspend*
- g) *Publish*

Scenarios

Type: Being Analysed

Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/> FAP_CAPPING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Private
<input type="radio"/> FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Private
<input type="radio"/> FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/> DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Private
<input type="radio"/> W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/> OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Private
<input type="radio"/> ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/> BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Private
<input type="radio"/> AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Private

1 - 9 (9) Go << < 1 > >>

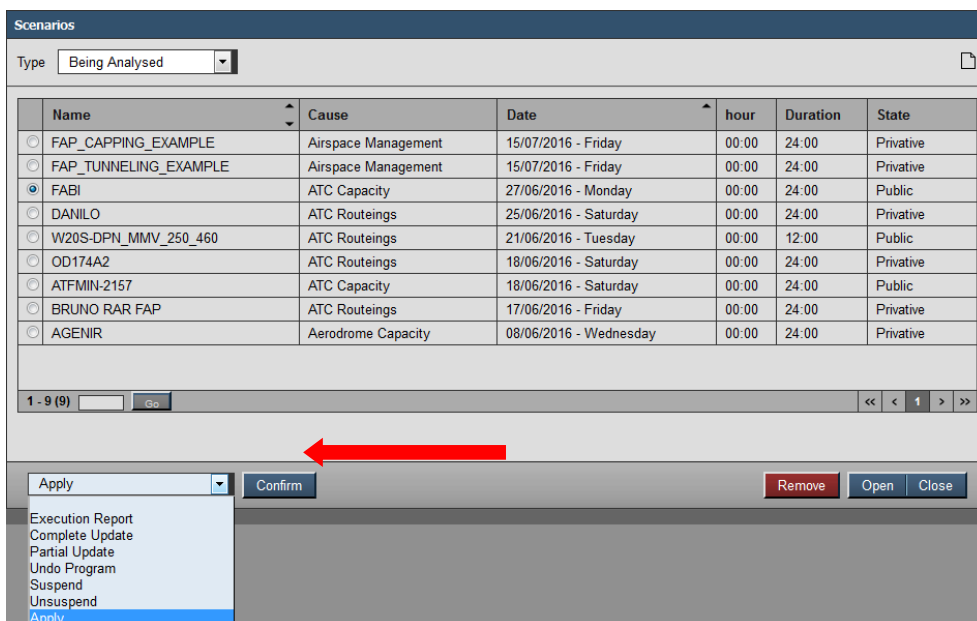
Publish Confirm Remove Open Close

- Execution Report
- Complete Update
- Partial Update
- Undo Program
- Suspend
- Unsuspend
- Publish**



In the Public state, all registered users in the system are able to view the scenario. By consulting a scenario, all users are allowed to see all flight data and make changes on the scenario, except airline users who will have access only to the data of the company's own flights and will not be able to make any changes in the scenario. As shown in the figure bellow, in Public state, the possible actions for a scenario are:

- a) *Execution Report*
- b) *Complete Update*
- c) *Partial Update*
- d) *Undo Program*
- e) *Suspend*
- f) *Unsuspend*
- g) *Apply*



Name	Cause	Date	hour	Duration	State
<input type="radio"/> FAP_CAPPING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input checked="" type="radio"/> FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/> DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/> OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/> BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Privative

In the Applied state, the scenario is available only for consulting, which means that no user can make any changes on it. As mentioned before, the scenarios in this state will be automatic removed by the system after thirty (30) days except those who has been “marked” as Not Removable. If after a while the user wants to remove a scenario previously “marked” as Not Removable, it has to “mark” the scenario as “Removable” and then the system will remove it. In this state, the possible actions are:

- a) *Execution Report*



- b) *Not Removable*
- c) *Removable*

Scenarios

Type

Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/> Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/> MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public
<input type="radio"/> MEAJUDA01	ATC Equipment	17/06/2016 - Friday	00:00	24:00	Public
<input type="radio"/> MEAJUDA	ATC Staffing	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20	ATC Capacity	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20TEST	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20VAILOGO	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20AGORAVAI	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public

1 - 8 (8)

Execution Report  
Not Removable

Scenarios

Type

Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/> Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/> MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public
<input type="radio"/> MEAJUDA01	ATC Equipment	17/06/2016 - Friday	00:00	24:00	Public
<input type="radio"/> MEAJUDA	ATC Staffing	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20	ATC Capacity	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20TEST	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20VAILOGO	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20AGORAVAI	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public

1 - 8 (8)

Execution Report  
Removable

The scenarios in state Private and Public are shown when the chosen type is “Being Analyzed” and the scenarios in Applied state are shown when the chosen type is “Applied”.



**Scenarios**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	FAP_CAPPING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Privative

1 - 9 (9)  Go << < 1 > >>

Open Close

**Scenarios**

Type Applied

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/>	MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public
<input type="radio"/>	MEAJUDA01	ATC Equipment	17/06/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	MEAJUDA	ATC Staffing	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/>	ITEM20	ATC Capacity	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/>	ITEM20TEST	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/>	ITEM20VAILOGO	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/>	ITEM20AGORAVAI	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public

1 - 8 (8)  Go << < 1 > >>

Open Close

### 2.2.1.1.2 Scenario options

In this session will be described the possible options presented to a scenario.

#### 2.2.1.1.2.1 Execution Report

Through this option it is possible to generate a report of the scenario. In this report, is presented the scenario data, advisory data, scenario statistics and all changes made in the original flight plans coming from the strategic session. These changes may have been manually done by the user or from a program application.



---

The first data in the report is related to the scenario, which are:

- Name: the name defined in the moment of the scenario creation;
- Period: Initial and final date and time of the scenario;
- Motive: the cause defined in the moment of the scenario creation;

If the scenario is in applied state, the advisory data is presented, which are:

- Validity: the advisory validity;
- Text: the advisory text sent in the e-mail;

After that, is presented the scenario statistics, which are:

- Amount plans delayed: total quantity of flights that has been delayed;
- Sum plans delay: the sum of all delays in the scenario;
- Delay average: the average delay applied in the flight plans;
- Maximum delay min: the maximum delay applied to a flight plan;
- Total flights in the program: total quantity of flights that were considered in all programs applied in the scenario;
- 5 min: the percentage of flights that were delayed up to 5 minutes;
- 15 min: the percentage of flights that were delayed up to 15 minutes;
- 30 min: the percentage of flights that were delayed up to 30 minutes;
- 45 min: the percentage of flights that were delayed up to 45 minutes;
- 60 min: the percentage of flights that were delayed up to 60 minutes;

And finally, is presented a list with all changed flight plans with the following fields: Indicative, ADEP, ADES, EOBT, ETOT, ETA, COBT, CTOT, CTA, Imposed Delay, Flight Type, Airline, Route, Applied Program, Receiver List and an option to consult the flight plan detail. In this list all changes made in the flight plans are presented in red.



Scenario Situation

Scenario: BRUNORRP

Motive: brunorp

Period: 26/10/2016 - 00:00 to 27/10/2016 - 00:00

Amount plans delayed: 31

Sum plans delay: 01:38

Delay Average: 00:03

Maximum delay min: 70 min

Total flights in the program: 37

5 min: 83%

15 min: 93%

30 min: 93%

45 min: 93%

60 min: 96%

Indicator	ADEP	ADES	EOBT	ETOT	ETA	COBT	CTOS	CTAC	Delay	Flight Type	Airline	Route	Program	Receiver List	
IGO239	VIDP	VOVZ	00:01	00:16	02:04	00:01	00:16	02:08	00:04	RPL	IFLY	DCT ITBAN W33S NOBOM...	RRP		
IAD751	VIDP	VOVZ	00:40	00:52	02:40	00:40	00:52	02:44	00:04	Flight Schedule	ARIYA	DCT ITBAN W33S NOBOM...	RRP		
AIC77	VIDP	VEBS	01:30	01:50	03:35	01:30	01:50	03:32	-00:03	Flight Schedule		ITBAN W33S KJ/N0460...	RRP		
IGO253	VIDP	VEBS	01:40	01:55	03:40	01:40	01:55	03:37	-00:03	RPL	IFLY	ITBAN W33S KJ/N0460...	RRP		
IGO207	VJUP	VECC	02:25	02:35	04:33	02:25	02:35	04:37	00:04	RPL	IFLY	W123 AGG DCT NOBOM D...	RRP		
IGO393	VIDP	VERP	02:45	03:00	04:22	02:45	03:00	04:27	00:05	RPL	IFLY	W33S NOBOM DCT ALPH ...	RRP		
IAD752	VOVZ	VIDP	03:15	03:30	05:20	03:15	03:30	05:19	-00:01	Flight Schedule	ARIYA	KJ L759 AGG L760 LE...	RRP		
JAI603	VOVZ	VIDP	03:40	03:50	05:42	03:40	03:50	05:50	00:08	RPL	JET AIRWAYS	DCT KJ DCT ALPH DCT...	RRP		
IGO486	VERP	VIDP	03:50	04:00	05:21	03:50	04:00	05:25	00:04	RPL	IFLY	DCT KJ DCT ALPH DCT...	RRP		
IGO256	VEBS	VIDP	04:10	04:20	06:06	04:10	04:20	06:06	00:00	RPL	IFLY	L759 KJ W33N	RRP		
IGO973	VJUP	VECC	04:30	04:32	06:30	04:30	04:32	06:34	00:04	Flight Schedule	IFLY	W123 AGG DCT NOBOM D...	RRP		
AIC469	VERP	VIDP	04:05	04:34	05:55	04:05	04:34	05:59	00:04	Flight Schedule		DCT KJ DCT ALPH DCT...	RRP		
AIC78	VEBS	VIDP	04:45	05:09	06:55	04:45	05:09	06:55	00:00	Flight Schedule		L759 KJ W33N	RRP		
AIC075	VIDP	VEBS	05:30	05:45	07:26	05:30	05:45	07:27	00:01	FPL		ITBAN W33S KJ/N0460...	RRP		
AIC75	VIDP	VEBS	05:30	05:54	07:35	05:30	05:54	07:36	00:01	Flight Schedule		ITBAN W33S KJ/N0460...	RRP		
IGO393	VIDP	VEBS	06:35	06:35	07:55	06:35	06:35	08:00	00:04	DDI	IFLY	DCT KJ DCT ALPH DCT...	DDI		

PDF

Execution Report

Cancel

Scenario Situation

Scenario: BRUNORRP  
Motive: brunorp

Period: 26/10/2016 - 00:00 to 27/10/2016 - 00:00

Advisory:

Validity: 02/07/2016 11:00

To be implemented

783 of 800 character(s) remaining.

Amount plans delayed: 31  
5 min: 83%

Sum plans delay: 01:38  
15 min: 93%

Delay Average: 00:03  
30 min: 93%

Maximum delay min: 70 min  
45 min: 93%

Total flights in the program: 37  
60 min: 96%

Indicative	ADEP	ADES	EOBT	ETOT	ETA	COBT	CTOS	CTAC	Delay	Flight Type	Airline	Route	Program	Receiver List
IGO239	VIDP	VOVZ	00:01	00:16	02:04	00:01	00:16	02:08	00:04	RPL	IFLY	DCT ITBAN W33S NOBOM...	RRP	
IAD751	VIDP	VOVZ	00:40	00:52	02:40	00:40	00:52	02:44	00:04	Flight Schedule	ARIYA	DCT ITBAN W33S NOBOM...	RRP	
AIC77	VIDP	VEBS	01:30	01:50	03:35	01:30	01:50	03:32	-00:03	Flight Schedule		ITBAN W33S KJ/N0460...	RRP	
IGO253	VIDP	VEBS	01:40	01:55	03:40	01:40	01:55	03:37	-00:03	RPL	IFLY	ITBAN W33S KJ/N0460...	RRP	
IGO207	VJUP	VECC	02:25	02:35	04:33	02:25	02:35	04:37	00:04	RPL	IFLY	W123 AGG DCT NOBOM D...	RRP	
IGO393	VIDP	VERP	02:45	03:00	04:22	02:45	03:00	04:27	00:05	RPL	IFLY	W33S NOBOM DCT ALPH ...	RRP	
IAD752	VOVZ	VIDP	03:15	03:30	05:20	03:15	03:30	05:19	-00:01	Flight Schedule	ARIYA	KJ L759 AGG L760 LE...	RRP	
JAI603	VOVZ	VIDP	03:40	03:50	05:42	03:40	03:50	05:50	00:08	RPL	JET AIRWAYS	DCT KJ DCT ALPH DCT...	RRP	
IGO486	VERP	VIDP	03:50	04:00	05:21	03:50	04:00	05:25	00:04	RPL	IFLY	DCT KJ DCT ALPH DCT...	RRP	
IGO256	VEBS	VIDP	04:10	04:20	06:06	04:10	04:20	06:06	00:00	RPL	IFLY	L759 KJ W33N	RRP	
IGO973	VJUP	VECC	04:30	04:32	06:30	04:30	04:32	06:34	00:04	Flight Schedule	IFLY	W123 AGG DCT NOBOM D...	RRP	
AIC469	VERP	VIDP	04:05	04:34	05:55	04:05	04:34	05:59	00:04	Flight Schedule		DCT KJ DCT ALPH DCT...	RRP	
AIC78	VEBS	VIDP	04:45	05:09	06:55	04:45	05:09	06:55	00:00	Flight Schedule		L759 KJ W33N	RRP	
AIC075	VIDP	VEBS	05:30	05:45	07:26	05:30	05:45	07:27	00:01	FPL		ITBAN W33S KJ/N0460...	RRP	
AIC75	VIDP	VEBS	05:30	05:54	07:35	05:30	05:54	07:36	00:01	Flight Schedule		ITBAN W33S KJ/N0460...	RRP	
IGO392	VECC	VIDP	06:35	06:35	07:55	06:35	06:35	08:00	00:04	DDI	IFLY	DCT KJ DCT ALPH DCT...	DDI	

PDF

Execution ReportCancel

The system provides three different formats to export the report: PDF, XLS, and RTF. To export a report the user has to choose the desired format and then click in the button “Execution Report”.



Scenario Situation

Scenario: TEST 2  
Motive: testing

Period: 25/06/2015 - 18:00 to 26/06/2015 - 04:00

Amount plans delayed: 2    Sum plans delay: 00:10    Delay Average: 00:05    Maximum delay: 5 min    Total flights in the program: 0  
5 min: 100%    15 min: 100%    30 min: 100%    45 min: 100%    60 min: 100%

Indicative	ADBP	ADBS	EOBT	ETOT	ETA	COBT	CTOT	CTA	Delay	Flight Type	Airline	Route	Program	Receiver List	
AIC130	VABB	VAAH	00:00	00:05	00:48	00:05	00:10	00:53	00:05	RPL	AIRINDIA	W13N	DLA		
BDA456	VIDP	VAAH	19:35	19:45	20:53	19:40	19:50	20:58	00:05	RPL	BDA	Q2 ADBUK/N0480F300 Q...	DLA		
JAI2001	VABB	VAAH	21:05	21:10	21:54	21:05	21:10	21:54	00:00	RPL	JET AIRWAYS	W13N	CNL		

(3)

PDF

PDF  
XLS  
RTF

Execution Report    Cancel

20:15	20:20	21:04	20:15	20:20	21:04	00:00	RPL	W13N	D	M	C
-------	-------	-------	-------	-------	-------	-------	-----	------	---	---	---

### 2.2.1.1.2.2 Complete Update

When a scenario is complete updated, the system overwrites all flight plans of the scenario with the operational flight plans for the specified period and reapplies all programs executed previously on all plans with the same parameters and in the same order. Because of that, this option will not be available whenever a manual change was performed on any flight plans. This manual change can be due to a FAP or FBP application or due to a manual change on a flight plan. The only exception is cancelation. In this case, the operation will be done and the cancelation will be lost. To execute this functionality, the user must select the scenario to be updated, choose the “Complete Update” option at the bottom left of the screen and then confirm the action.





**Scenários**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go << < 1 > >>

Publish

Execution Report

Complete Update

Partial Update

Undo Program

Suspend

Unsuspend

Publish

ConfirmRemoveOpenClose

### 2.2.1.1.2.3 Partial Update

When a scenario is partially updated, the system identifies the operational plans affected by the ATS messages (FPL, DLA, CNL, CHG) received after the last scenario update. The system overwrites the scenario with the plans are equivalent to the period of the scenario and applies all Programs, already executed previously with the same parameters, but only to the plans overwritten or added. Therefore, the plans that did not receive ATS messages remain unchanged in the scenario. This option will not be available whenever a manual change was performed on any flight plans. This manual change can be due to a FAP or FBP application or due to a manual change on a flight plan. The only exception is cancelation. In this case, the operation will be done and the cancelation will be lost. To execute this functionality, the user must select the scenario to be updated, choose the “Partial Update” option at the bottom left of the screen and then confirm the action.



**Scenários**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input checked="" type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go

ApplyConfirmRemoveOpenClose

Execution Report

Complete Update

Partial Update

Undo Program

Suspend

Unsuspend

Apply

#### 2.2.1.1.2.4 Undo Program

The user is able to undo the last program executed. This action consists in overwriting the Scenario plans that contained changes with the operational plans and apply all Programs already executed previously with the same parameters, except the last one, for all plans. It is important to highlight that the user can perform this action as many times as it needs until all applied programs in the scenario are undone. Because of that, this option will not be available whenever a manual change was performed on any flight plans. This manual change can be due to a FAP or FBP application or due to a manual change on a flight plan. The only exception is cancelation. In this case, the operation will be done and the cancelation will be lost. To execute this functionality, the user must select the scenario in which the last program will be undone, choose the “Undo Program” option at the bottom left of the screen and then confirm the action.



**Scenários**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input checked="" type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go << < 1 > >>

Apply Confirm Remove Open Close

Execution Report

Complete Update

Partial Update

Undo Program

Suspend

Unsuspend

Apply

#### 2.2.1.1.2.5 Suspend

This action is performed by the user when he wishes to show on SKYFLOW that a ATFM measure is in progress and to avoid that flight plans in operational state are cancelled. The flight plans affected by an Airport Stop Program (ASP) in the scenario, will have their status changed to Suspended and will remain in with this state until suffer another measure ATFM (cancellation, delay or reroute) or be restored. To execute this functionality, the user must select the scenario, choose the “Suspend” option at the bottom left of the screen and then confirm the action.



**Scenários**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go << < 1 > >>

Publish

Execution Report

Complete Update

Partial Update

Undo Program

Suspend

Unsuspend

Publish

ConfirmRemoveOpenClose

#### 2.2.1.1.2.6 Unsuspend

This action is performed by the user when he wants to reverse the suspensions applied in the flight plans, but the flight plans will continue been affected by the Airport Stop Program (ASP). To execute this functionality, the user must select the scenario, choose the “Unsuspend” option at the bottom left of the screen and then confirm the action.



**Scenarios**

Type Being Analysed

	Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go

« < 1 > »

Publish

Execution Report

Complete Update

Partial Update

Undo Program

Suspend

**Unsuspend**

Publish

ConfirmRemoveOpenClose

#### 2.2.1.1.2.7 Publish

By publishing a scenario it will be public and all users will be able to see the proposed solution, so the airline users can access and participate on the collaborative decision. To execute this functionality, the user must select the scenario to be published, choose the “Publish” option at the bottom left of the screen and then confirm the action.



Scenários

Type

	Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9)

- Execution Report
- Complete Update
- Partial Update
- Undo Program
- Suspend
- Unsuspend
- Publish**

### 2.2.1.1.2.8 Apply

This is the process of making operational the ATFM measures defined on the CDM. After applying a scenario, it will be available only for consulting, so no user will be able to change it. This functionality will perform the following actions:

- The existing operational flight plans in the system are modified according to changes in the scenario;
- The system sends messages ATS (CNL, DLA and CHG) for all the AMSS address defined from the route of the plan through AFTN;
- Sends email to the addresses provided containing the Advisory, scenario metrics and all the flight plans changed;
- Sends e-mails to the airline containing the Advisory and changed flight plans of the company;
- Sends email to the registered pilot on the system containing the Advisory and changed flight plans.

To execute this functionality, the user must select the scenario to be applied, choose the “Apply” option at the bottom left of the screen and then confirm the action.



**Scenários**

Type: Being Analysed


	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	RRT	ATC Routeings	25/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/>	BRUNO RAR FAP	Special Event	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/>	FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Public
<input type="radio"/>	FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/>	DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input checked="" type="radio"/>	W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/>	ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/>	AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Public

1 - 9 (9) Go << < 1 > >>

Apply Confirm Remove Open Close

- Execution Report
- Complete Update
- Partial Update
- Undo Program
- Suspend
- Unsuspend
- Apply

Now a new screen is displayed where is required to fill:

- **Receiver's e-mails:** option to enter emails to which the advisory will be send.
- **Advisory Validity:** option to fill the validity of the advisory, date and time.
- **Advisory message:** free text field for the National Manager write anything he thinks relevant about the advisory. This text will be attached on the email.
- **Icon** : option to enter the AFTN Addresses to which the advisory will be sent. An example is shown on the following image.

**Catalog**

AFTN Addresses: VIDPZTX, VIDFZQZX, VABFZQZX, VOMFZQZX, VOGOZTX

Update Close

- **Notify international ATS Units:** option to the national manager choose if the system will send ATS messages to international ATS Units. When this option is deselected,



the system will update the ETOT value on automatic sessions, otherwise, it will update the EOBT value in the flight plans delayed by the scenario application.

- **Consult:** option to consult the flight plan details.

In this screen is possible to review the scenario data, its statistics and also the affected flight plans and its changes, as shown below.

**Scenario Situation**

Scenario: SCENARIO APPLICATION

Period: 08/05/2017 - 00:00 to 09/05/2017 - 00:00

Cause: ATC Capacity

Location: Departure

Standard Remark: High Demand

Notes:

**Receiver's e-mails:**

800 of 800 character(s) remaining.

**Advisory:**

Validity:

800 of 800 character(s) remaining.

Amount plans delayed: 49

Sum plans delay: 03:02 min

Delay Average: 00:03 min

Maximum delay min: 10 min

Total flights in the program: 59

5 min: 81%

15 min: 100%

30 min: 100%

45 min: 100%

60 min: 100%

Indicative	ADEP	ADES	EOBT	TOT	LDT	CTO	CLD	Delay	Ground delay	Airborne delay	Flight Type	Airline	Route	Program	Receiver List	
VTI824	VOCI	VIDP	13:10	13:37	16:20	13:38	16:21	00:01	00:01	00:00	RPL	VISTARA	W118 CCB W43 BIA Q22	ADP		
AIC264	VOTV	VIDP	13:45	13:55	16:50	14:02	16:57	00:07	00:07	00:00	RPL	AIRINDIA	W43 BIA Q22 HIA DCT ...	ADP	VIDPZTX, VIDFZ...	
IGO706	VOCI	VIDP	13:55	14:05	16:48	14:10	16:53	00:05	00:05	00:00	RPL	IFLY	W118 CCB W43 BIA Q22	ADP	VIDPZTX, VIDFZ...	
JAI831	VOMM	VIDP	14:00	14:10	16:30	14:13	16:33	00:03	00:03	00:00	RPL	JET AIRWAYS	Q24	ADP	VIDPZTX, VIDFZ...	
SEJ108	VOMM	VIDP	14:10	14:20	16:40	14:22	16:42	00:02	00:02	00:00	RPL	SPICEJET	Q24	ADP	VIDPZTX, VIDFZ...	
JAI372	VAPO	VIDP	14:15	14:25	16:08	14:26	16:09	00:01	00:01	00:00	RPL	JET AIRWAYS	W28 BBB Q1	ADP	VIDPZTX, VIDFZ...	
VTI848	VOGO	VIDP	14:15	14:25	16:35	14:28	16:38	00:03	00:03	00:00	RPL	VISTARA	R461 BBB/N0455F390 Q...	ADP	VIDPZTX, VIDFZ...	
JAI812	VOBL	VIDP	14:20	14:30	16:46	14:35	16:51	00:05	00:05	00:00	RPL	JET AIRWAYS	W57 HIA/N0450F360 W2...	ADP	VIDPZTX, VIDFZ...	
SEJ145	VOGO	VIDP	14:25	14:35	16:44	14:39	16:48	00:04	00:04	00:00	RPL	SPICEJET	R461 BBB/N0455F370 Q...	ADP	VIDPZTX, VIDFZ...	
IGO6726	VOBL	VIDP	14:25	14:35	16:49	14:40	16:54	00:05	00:05	00:00	RPL	IFLY	W57 HIA/N0459F360 W2...	ADP	VIDPZTX, VIDFZ...	
IGO476	VECC	VIDP	14:30	14:40	16:28	14:43	16:31	00:03	00:03	00:00	RPL	IFLY	R460 LKN R594	ADP	VIDPZTX, VIDFZ...	

☐ Notify International ATS Units

## 2.2.1.1.2.9 Not Removable

The applied scenarios will be automatic removed by the system after thirty (30) days. The “Not Removable” option is to indicate to the system that the selected scenario should not be removed by this process. To execute this functionality, the user must select the applied scenario, choose the “Not Removable” option at the bottom left of the screen and then confirm the action.





Scenarios

Type Applied

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	BRUNO	ATC Capacity	16/07/2016 - Saturday	00:00	24:00	Public
<input checked="" type="radio"/>	Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/>	MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public

1 - 3 (3) « < 1 > »

Execution Report

Not Removable

Confirm

Open

Close

#### 2.2.1.1.2.10 Removable

After making an applied scenario not removable the user can undone this action by choosing the “Removable” option. To execute this functionality, the user must select the applied scenario, choose the “Removable” option at the bottom left of the screen and then confirm the action.

Scenarios

Type Applied

	Name	Cause	Date	hour	Duration	State
<input type="radio"/>	BRUNO	ATC Capacity	16/07/2016 - Saturday	00:00	24:00	Public
<input checked="" type="radio"/>	Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/>	MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public

1 - 3 (3) « < 1 > »

Execution Report

Removable

Confirm

Open

Close



---

#### **2.2.1.1.3 Scenario workflow**

In this session will be described the workflow of a scenario. First, it is necessary to identify an overload problem in the airspace flow. A scenario should be created to solve a capacity/demand problem. It can be caused by an activation of a special airspace, by an unfavorable weather condition, by an inoperability record or any other change in the airspace that affects the capacity/demand balance.

The second action is to create a CDM scenario using a strategic session. To do that is necessary to inform the type of the Regulated Element that is the focus of the program, then the Regulated Elements that are the focus of the program (it can be more than one, if they are of the same type) and finally the possible impacted elements by a solution. This step is better explored in the session 2.1.1.1 of this document.

The third action is analyze the scenario. This step is complete when the National Manager finds out that it already has a good solution for the problem. In the first interaction it is expected that the user knows which Regulated Element will have a program application. For helping, the user can use the Overview, Demand Chart and Time Table tabs to analyze the proposed solution and its impact in all the other scenario elements. This tabs is better explored in the session 2.1.2.1.3.

The fourth action is a program application, to do that, is necessary open the Demand Chart of the Regulated Element that is the focus of the program and choose the program to be applied. After that, it is required the definition of the program parameters and finally the application of the program. The possible programs are explored in the session 2.2.1.3.2.1. The user can evaluate the results of the program application in the Programs tab, selecting the metrics of the applied program.

The fifth action is undo program, in which the scenario will be reverted to the situation before the application of a program. In this action the system will revert the changes made by the last program. This process is described in the session 2.2.1.1.2.4.

The sixth action is update scenario, this action is important to evaluate if the solution remains good with the actual data. In this action, the user can choose two different types of update, complete or partial. In the complete update, the system will delete all flight plans from the scenario and recopy them from the correspondent strategic session. After that, the system will reapply the programs in the sequence with the same parameters used. This process is



described in the session 2.2.1.1.2.2. In the partial update, the system will recopy to the scenario the flight plans that received an ATS message since the last scenario update and also the flight plans that were affected by a program. After that, the system will reapply the programs in sequence with the same parameters but it will not consider the flight plans that have not suffered any change, these plans will remain in the same place. This process is described in the session 2.2.1.1.2.3.

After the actions 4, 5 and 6, the user goes back to the action 3, in which it can review the modified scenario with the changes derived from the previous actions. By this time, the user can reexamine the scenario, consulting the Overview, Demand Chart, Time Table tabs and also the scenario metrics in the Execution report. Here is needed an evaluation of the global scenario metrics and the impact analysis of all Regulated Elements in the scenario. While the user does not find a solution to the initial problem without negatively affecting others parts of the airspace, the process continues in these steps.

The seventh action occur when a solution is found and the National Manager publish the scenario. By doing that, the scenario will be public and all the involved users will be able to see the solution proposed. In the previous steps only the user who had created the scenario and the manager were able to see it. This process is described in the session 2.2.1.1.2.7.

As the airline users will not be able to perform changes in its flights by their own, they have to coordinate with the CCC/TMU and propose its changes to be done by an authorized user. This coordination is not done using the system. The eighth action represents this process.

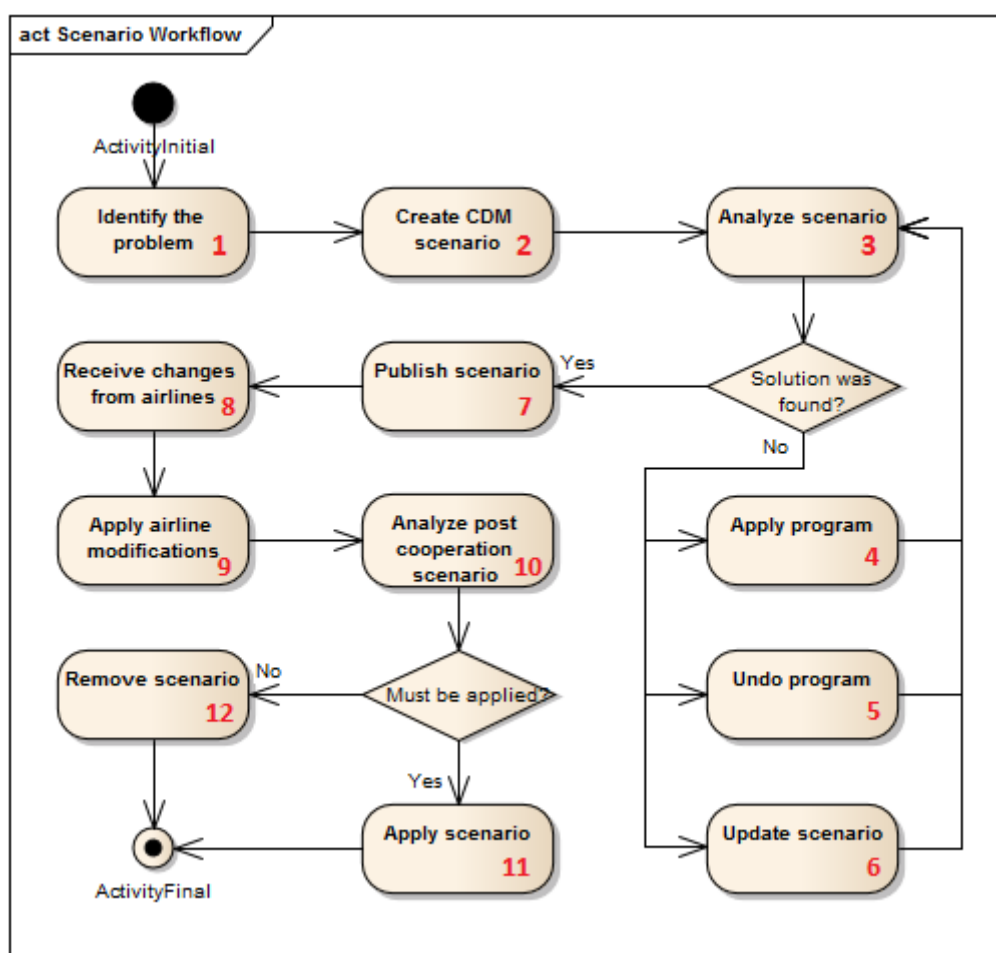
The ninth action represents the process in which an authorized user will do the changes requested by the airline users in the system. These changes include cancelations, delays, new routes, that can be performed using compression algorithm or not. This process is described in the session 2.4.1.4.5.2.2.

In the tenth action the scenario will be reviewed. During this review it is possible to do the same actions as in the step 3 and also the manual changes. This is the final evaluation after de cooperation process.

The eleventh action happens when the National Manager decides apply the scenario. To apply the scenario he has to inform the receiver's emails that will be used to disclosure the scenario application, and also a scenario advisory containing a validity and a text. In the



The twelfth action occurs when the National Manager decides not apply the scenario. It may be because he do not want spread the emails and the ATS messages, and he can coordinate the solution with the involved without using the system.



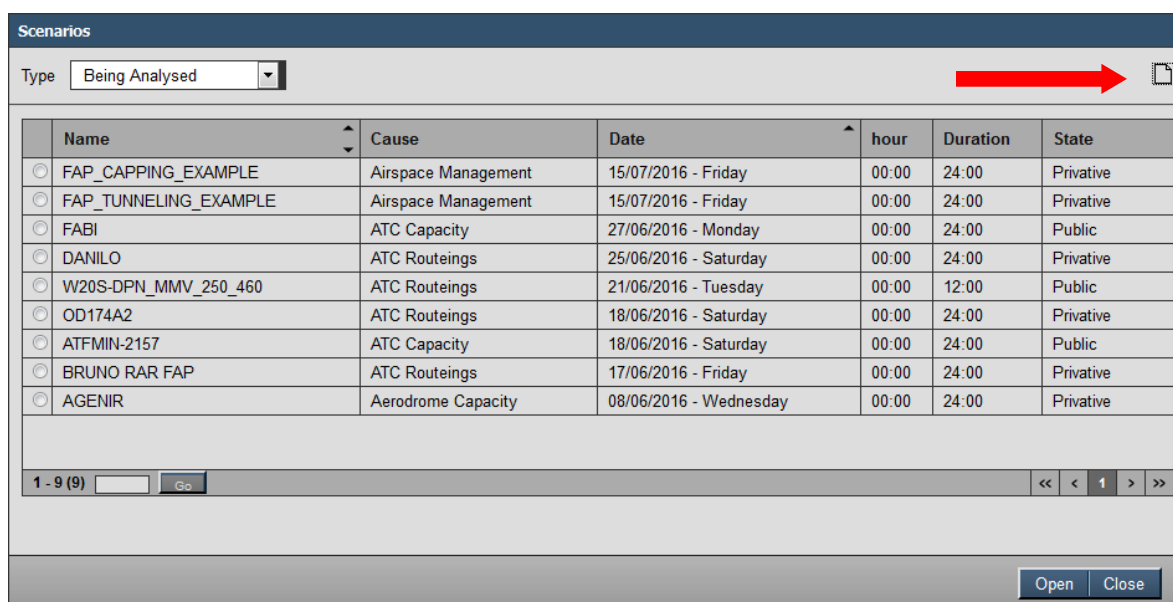
The airline user is able to consult the scenario e see the proposal changes for its flights, but it cannot interact with the system, so it has to coordinate its desired changes with the specialist or the TMU user, so they can perform the changes in the system. The numbers 8 and 9 represents these steps.



### 2.2.1.2 Create scenario

This option allows creating a CDM scenario with the purpose of evaluating a problem and applying solutions by means of programs that help solving the problems.

The option to create a scenario is presented only when the type selected is “Being Analysed” and if there are not the total scenarios amount in the system, as defined in the parameter described in the session 2.1.3.4.2.4 of this document. It is important to clarify that a user can see less than the total scenarios amount and the button can not be visible, that happens because the user have no permission to see all scenarios created in the system.



Name	Cause	Date	hour	Duration	State
<input type="radio"/> FAP_CAPPING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/> DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/> OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/> BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Privative

After pressing the referred button, the system shows the “Create Scenario” screen to complete the mandatory fields and select the Regulated Elements affected by the main element the user wishes to analyze. As indicated in the figure below.



**Create Scenario**

Name:

Motive:

256 of 256 character(s) remaining.

Begin Date:

Begin Time:

Duration:

Regulated Element Type:

Regulated Element Name:

**Regulated Element:**

Type:

Indicative:

Regulated Element	Type	Group
(0)		

**Regulated Element Selected**

Regulated Element	Type	Group
(0)		

In this screen the user must inform as mandatory fields:

- **Name:** a name for the scenario, that will be used for the identification of the scenario in the previous screen;
- **Motive:** the reason that has motivate the creation of the scenario;
- **Begin Date:** the begin date of the scenario. The date must be the date of one of the strategic session;
- **Begin Time:** the begin time of the scenario. If the scenario is for the current date, it cannot be a past hour;
- **Duration:** the duration of the scenario. The maximum accepted duration is 36 hours;
- **Regulated Element Type:** the type of the main Regulated Element;
- **Regulated Element Name:** the name of the main Regulated Element. The user can inform more than one Regulated Element, if they are of the same type and separated by comma and space.

After inform the mandatory fields, is needed to press the “Select” button and the “Regulated Element” session will be loaded with all the Regulated Elements impacted by the flights plans in the main Regulated Element informed, within the period provided in the scenario. These Regulated Elements are presented by the type and sorted by the demand in the Regulated Element that is focus of the scenario.



**Create Scenario**

Name:

Motive:

244 of 250 character(s) remaining.

Begin Date:

Begin Time:

Duration:

Regulated Element Type:

Regulated Element Name:  **Select**

**MAIN ELEMENT**

**Regulated Element:**

Type:

Indicative:  **Search** **Add all**

Regulated Element	Type	Group	
VID137	SUA	No	
VIR142	SUA	No	
VIR153A	SUA	No	
VER75A	SUA	No	
VIR145	SUA	No	
VIR143	SUA	No	
VED722	SUA	No	
VID99B	SUA	No	
VIR154	SUA	No	
VAR037	SUA	No	

**Regulated Element Selected**

**Remove all**

Regulated Element	Type	Group
AKBANZA_LKA_STAR-LKA_VIDP_0_990	STAR Segment	No
ANOLI10_DOTIP_SID-VABB_DOTIP_0_990	SID Segment	No
BBB - VOR	Controlled Auxiliary Point	No
R460-DPN_BBN_100_460	Airway Segment	No
SAPLO	Fixed Point	No
VABF_UAHE	FIR Sector	No
VIDP	Aerodrome	No
VIR155A	SUA	No

(0)

**Add** **Cancel**

Here the user can add other Regulated Elements in which the ATFM measure applied can cause an unwanted/unforeseen/possible impact and perform a better solution for the problem in analysis. A maximum of fifty (50) elements are allowed to be added. After adding some, the main element(s) will be added on the “Regulated Element Selected”.

To choose the Regulated Elements to be added in the scenario, the user can click the “Add all” button to add all elements presented in the screen or add one by one individually, clicking on the arrow in the last cell of the table. Then the selected Regulated Elements will be added in the right panel.



**Create Scenario**

Name:

Motive:

Begin Date:

Begin Time:

Duration:

Regulated Element Type:

Regulated Element Name:

**Regulated Element:**

Type:

Indicative:

Regulated Element	Type	Group	
VID137	SUA	No	<input type="checkbox"/>
VIR142	SUA	No	<input type="checkbox"/>
VIR153A	SUA	No	<input type="checkbox"/>
VER75A	SUA	No	<input type="checkbox"/>
VIR145	SUA	No	<input type="checkbox"/>
VIR143	SUA	No	<input type="checkbox"/>
VED722	SUA	No	<input type="checkbox"/>
VID99B	SUA	No	<input type="checkbox"/>
VIR154	SUA	No	<input type="checkbox"/>
VAR037	SUA	No	<input type="checkbox"/>

**Regulated Element Selected**

Regulated Element	Type	Group
AKBANZA_LKA_STAR-LKA_VIDP_0_990	STAR Segment	No
ANOLH0_DOTIP_SID-VABB_DOTIP_0_990	SID Segment	No
BBB - VOR	Controlled Auxiliary Point	No
R460-DPN_BBN_100_460	Airway Segment	No
SAPLO	Fixed Point	No
VABF_UAHE	FIR Sector	No
VIDP	Aerodrome	No
VIR155A	SUA	No

IMPACTED ELEMENTS THAT  
WILL BE PART OF SCENARIO

To finish the scenario creation, click on “Add” button.

### 2.2.1.3 Open scenario

This option allows consult existing “Being Analised” and “Applied” scenarios in the system database. To open a scenario select the scenario to be opened and then the Open button, as shown in the figures below:

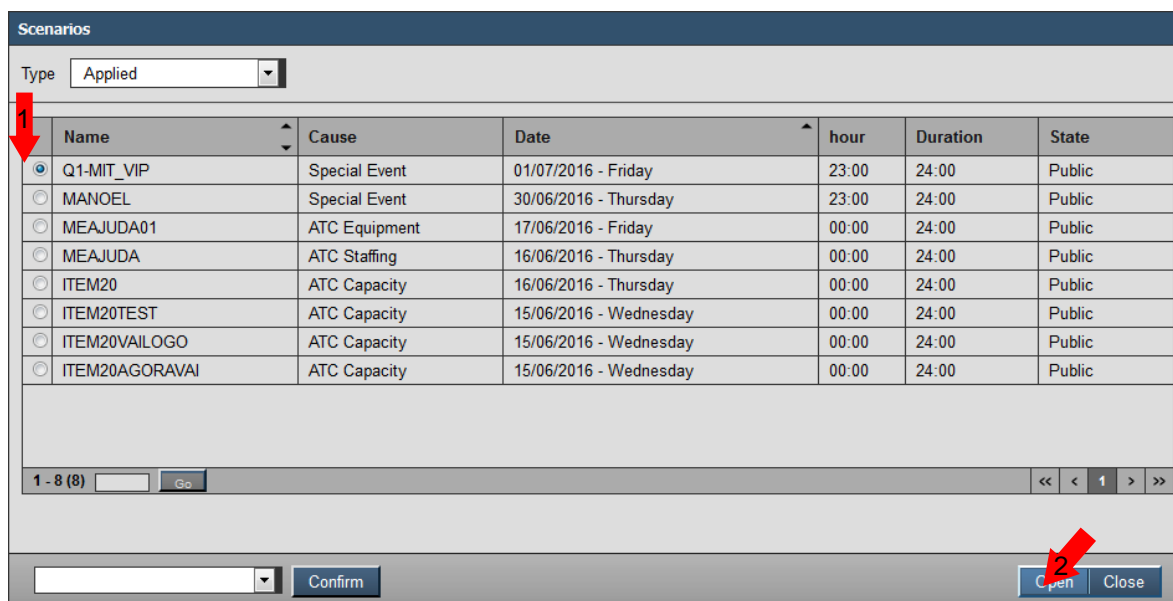
**Scenarios**

Type:

Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/> FAP_CAPPING_EXAMPLE	Airspace Management	18/07/2016 - Monday	00:00	24:00	Privative
<input type="radio"/> FAP_TUNNELING_EXAMPLE	Airspace Management	15/07/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> BRUNO	ATC Capacity	14/07/2016 - Thursday	00:00	24:00	Privative
<input type="radio"/> FABI	ATC Capacity	27/06/2016 - Monday	00:00	24:00	Public
<input type="radio"/> DANILO	ATC Routeings	25/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> W20S-DPN_MMV_250_460	ATC Routeings	21/06/2016 - Tuesday	00:00	12:00	Public
<input type="radio"/> ATFMIN-2157	ATC Capacity	18/06/2016 - Saturday	00:00	24:00	Public
<input type="radio"/> OD174A2	ATC Routeings	18/06/2016 - Saturday	00:00	24:00	Privative
<input type="radio"/> BRUNO RAR FAP	ATC Routeings	17/06/2016 - Friday	00:00	24:00	Privative
<input type="radio"/> AGENIR	Aerodrome Capacity	08/06/2016 - Wednesday	00:00	24:00	Privative

1 - 10 (10)



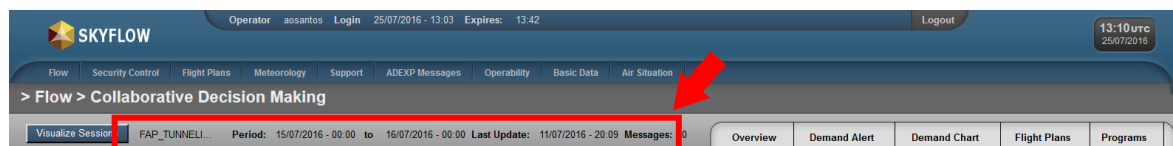


Name	Cause	Date	hour	Duration	State
<input checked="" type="radio"/> Q1-MIT_VIP	Special Event	01/07/2016 - Friday	23:00	24:00	Public
<input type="radio"/> MANOEL	Special Event	30/06/2016 - Thursday	23:00	24:00	Public
<input type="radio"/> MEAJUDA01	ATC Equipment	17/06/2016 - Friday	00:00	24:00	Public
<input type="radio"/> MEAJUDA	ATC Staffing	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20	ATC Capacity	16/06/2016 - Thursday	00:00	24:00	Public
<input type="radio"/> ITEM20TEST	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20VAILOGO	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public
<input type="radio"/> ITEM20AGORAVAI	ATC Capacity	15/06/2016 - Wednesday	00:00	24:00	Public

Any user with CDM consult profile can view the data of public scenarios; however, two restrictions apply:

- Users that belong to an Airline company must not be able to view the details of flight plans from different companies.
- Only users with National Manager profile must be able to Consult all scenarios. The other users must be able to consult only scenarios published or scenarios created by them.

When the process is completed, the system shows in the identification data of the selected scenario, which are, scenario name, period, last update and messages received since last update, as indicated in the figure below.



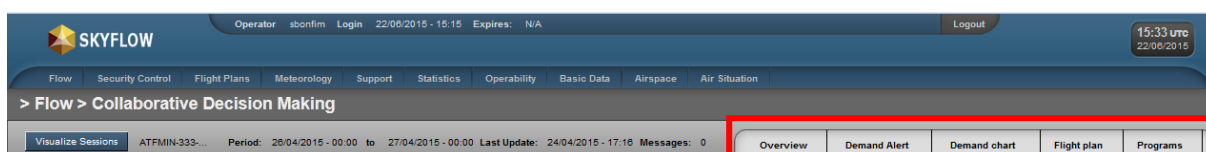
**Note:** If the user wishes to open another scenario, the process can be resumed by accessing the Visualize Sessions button, just before the scenario identification data.

At this moment, the user must select one of the following tabs:

- “Overview”,
- “Demand Alert”,



- “Demand Chart”,
- “Time Table”,
- “Flight Plan”,
- “Programs”.

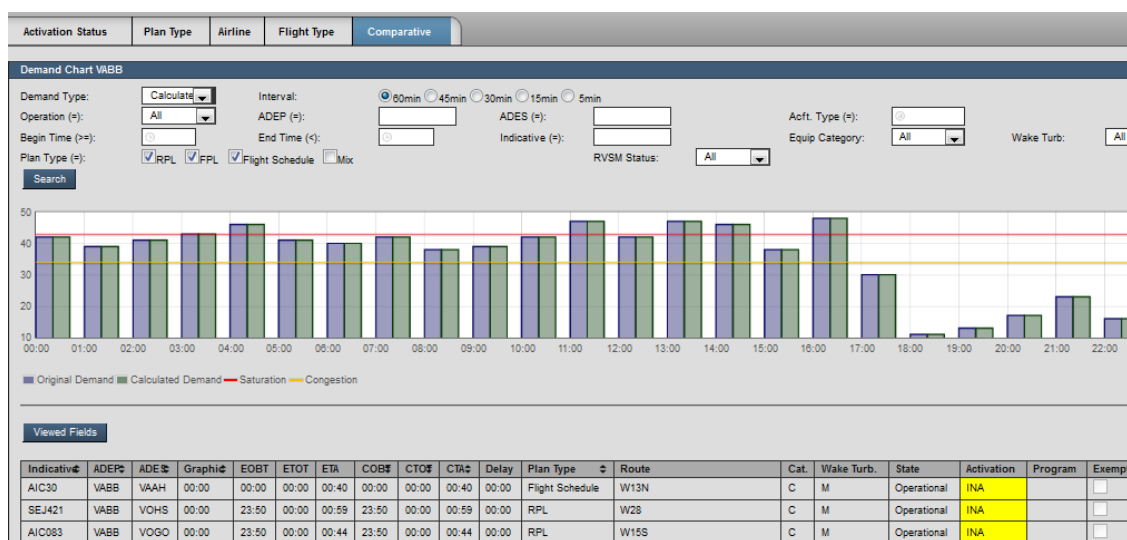


The Overview, Demand Alert and Flight Plan tabs are the same as the Sessions Default tabs, described at the item 2.1.3.1 from this document.

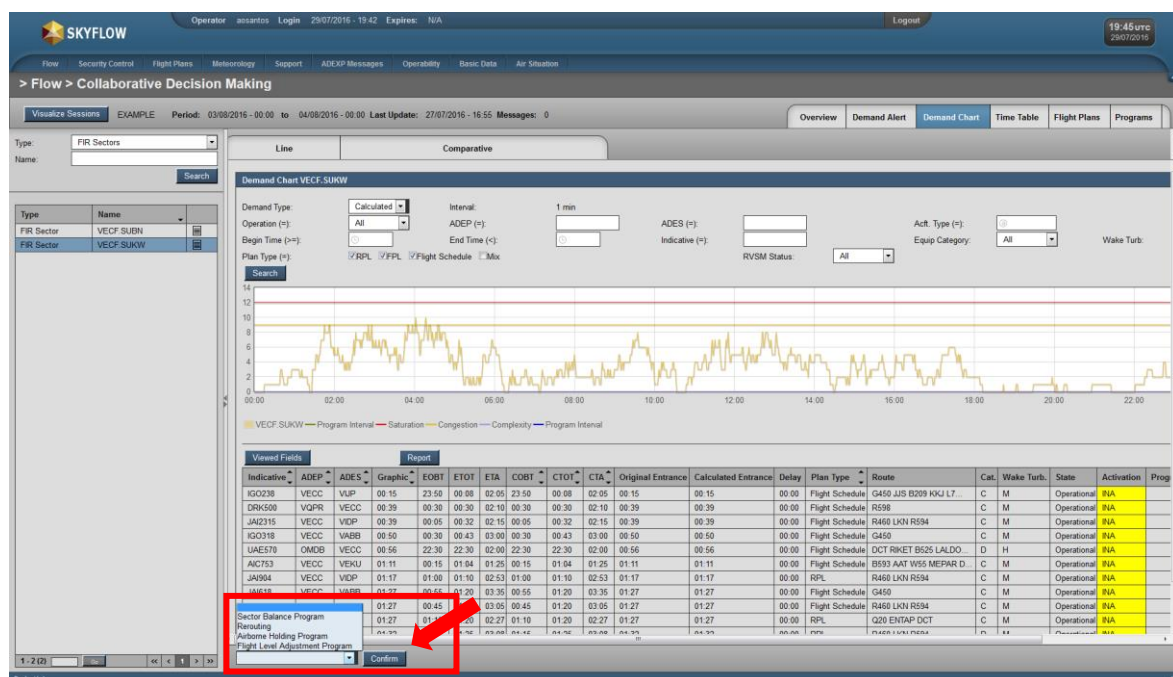
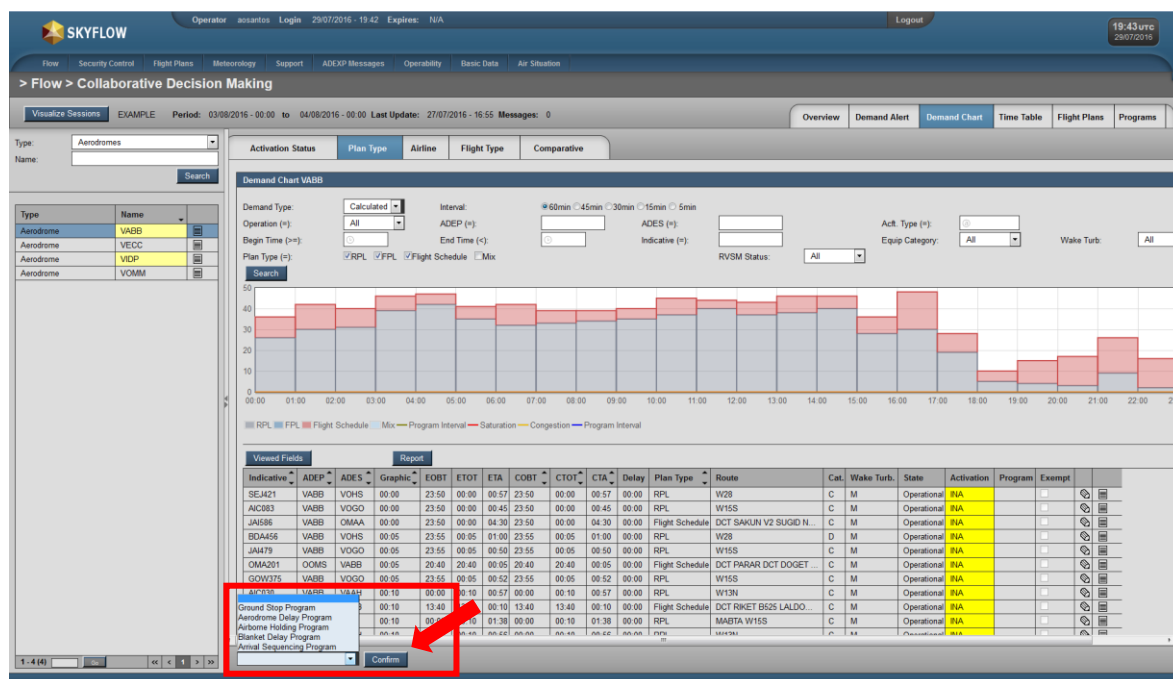
The Demand Chart tab is very similar, the details of it are described below as well as Programs tab.

### 2.2.1.3.1 Demand Chart Tab

**Comparative Tab:** When the user searches a Regulated Element by means of the Comparative tab, the system displays the situation of the element before and after applying programs or manually. As shown in the figure below.



The last field in Demand Chart tab is a combo box with the available programs to be applied on the respective Regulated Element. After choosing the program, the action has to be confirmed by the “Confirm” button, as shown in the figure bellow.



## 2.2.1.3.2 Programs Tab

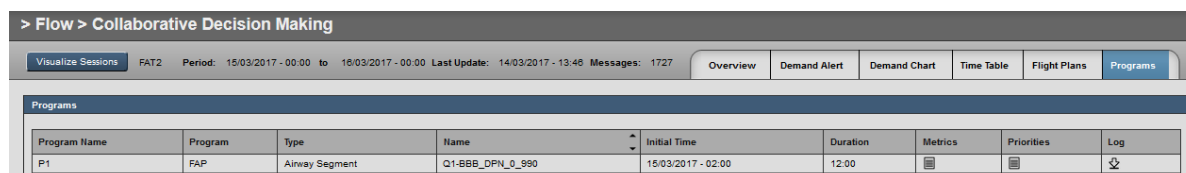
Programs

This option ( ) allows consult the programs applied in the scenario. When this option is accessed, the user can view a list with the following information about the programs applied in the scenario:



- **Program Name** – this information is defined by the user when the program is created.
- **Program** – this information is defined by the system when the user selects the type of program to be created.
- **Type** – this information indicates the type of Regulated Element that was programmed.
- **Name** – this information indicates the name of Regulated Element that was programmed.
- **Initial Time** – this information shows the program starting time.
- **Duration** – this information shows the duration of the program.
- **Metrics** (📄) – this icon allows consult the program parameters and metrics.
- **Priorities** (📄) – this icon allows consult the priority applied by the program.
- **Log** (📄) – this icon allows consult the program log. It will be available only for administrator users.

The figure below shows the information mentioned above.



> Flow > Collaborative Decision Making									
Visualize Sessions FAT2 Period: 15/03/2017 - 00:00 to 16/03/2017 - 00:00 Last Update: 14/03/2017 - 13:46 Messages: 1727									
Overview Demand Alert Demand Chart Time Table Flight Plans Programs									
Programs									
Program Name	Program	Type	Name	Initial Time	Duration	Metrics	Priorities	Log	
P1	FAP	Airway Segment	Q1-BBB_DPM_0_990	15/03/2017 - 02:00	12:00	📄	📄	📄	

#### 2.2.1.3.2.1 Metrics

By choosing this options it will be opened a screen with the program parameters and metrics. The metrics will be shown for all list of affected flights and for each flight the information will be presented in a table with the following columns:

- **Indicative** – the flight plan callsign
- **ADEP** – the departure aerodrome
- **ADES** – the destination aerodrome
- **CTOT** – the takeoff time calculated by the system. The value will be presented in red if the flight was delayed in the ground.
- **CLDT** – the landing time calculated by the system. The value will be presented in red if the flight was delayed.
- **Point** – the regulated element in which the program was applied. In case of a FBP, the point in “fix/navaid demand table” to the point which the flight was



rerouted.

- **CTO** – the time over the point (previous column) calculated by the system.
- **Flight Type** – the type of flight declared on flight plan (S, N, G, M or X)
- **Airline** – the airline identifier
- **Delay** – the applied delay. The value will be presented in red if the delay is bigger than the maximum delay informed in an AHP.
- **Route** – the route if it was modified in the program
- **Additional Distance** – the additional distance imposed by a reroute, if it is a program that allows a reroute.
- **Conflict** – the indicative of the flight plan that has a conflict at the same point, time and level after a FBP change

#### 2.2.1.3.2.2 Priorities


By choosing this options it will be opened a screen with the priority applied by the program. The priorities table will be the same for all programs, and same columns can be empty if the data is not applicable to the program applied. The presented columns are:

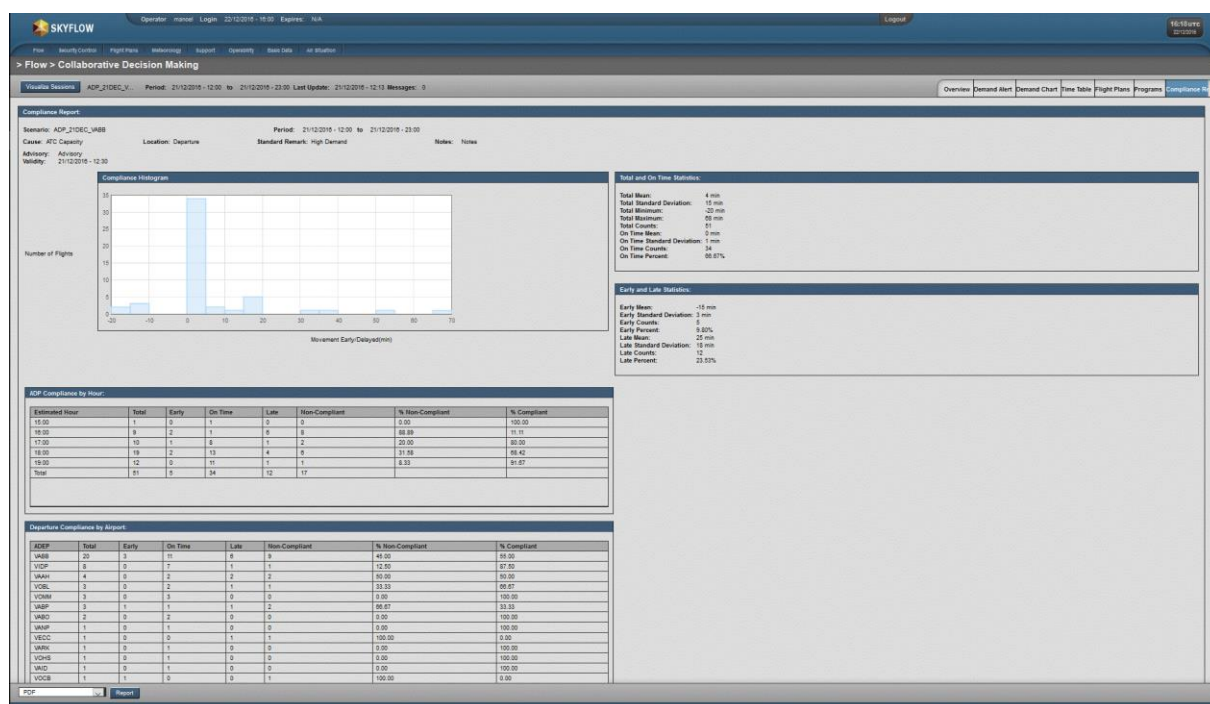
- **Position** – the position in the priority sort
- **Indicative** – the flight plan callsign
- **ADEP** – the departure aerodrome
- **ADES** – the destination aerodrome
- **Exempt** – an indication if the flight plan were marked as exempt
- **Scope** – the informed scope parameter when the flight plans was exempted due to scope
- **Activation** – the activation status of the flight plan (INA, COR, DEP, FAM, PPA or EST)
- **Program** – an indication if the flight plan were affected by a previous program
- **Distance** – the route length in NM in the managed airspace
- **Instant** – the time over the program point when the scenario was created
- **ST** – the flight total time within the zone
- **Flight Type** – the type of flight declared on flight plan (S, N, G, M or X)
- **EOBT** – the estimated off block time from the flight plan
- **Original** – the time over before the program application



- ### 2.2.1.3.2.3 Log

### 2.2.1.3.3 Compliance Report Tab

This tab (  ) provide access to ADP program's Compliance Report.



- “on time flights” are flights where the departing time is  $\pm 6$  min around the scheduled time ( $(t_{\text{scheduled}} - 6 \text{ min}) < t_{\text{depart}} < (t_{\text{scheduled}} + 6 \text{ min})$ ).





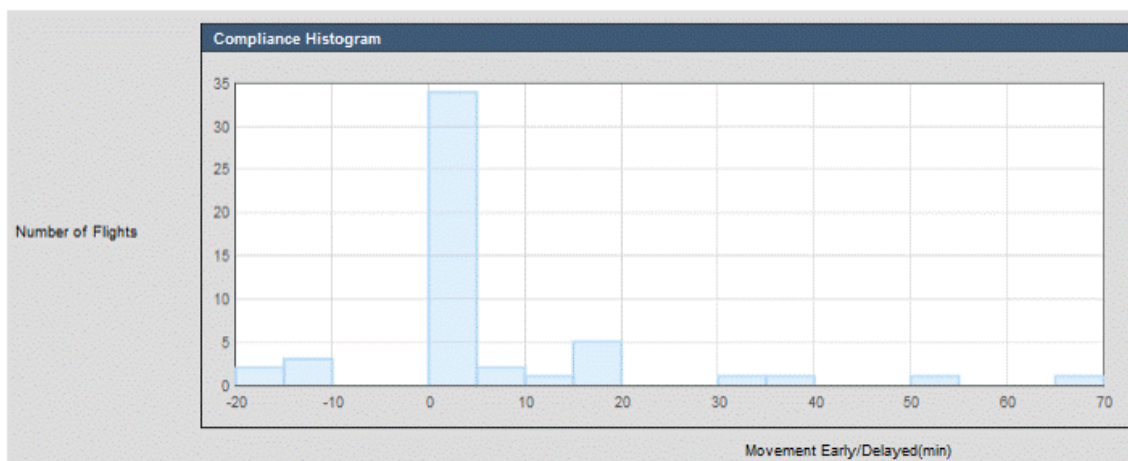
- “Early Flight”: flights departing before schedule ( $t_{\text{depart}} < (t_{\text{scheduled}} - 5 \text{ min})$ ).
- “Late Flights”: flights departing after the schedule ( $t_{\text{depart}} > (t_{\text{scheduled}} + 5 \text{ min})$ ).

This report has the following parts:

a. the Scenario Identification:

Compliance Report:			
Scenario: ADP_21DEC_VABB	Location: Departure	Period: 21/12/2016 - 12:00 to 21/12/2016 - 23:00	Notes: Notes
Cause: ATC Capacity	Standard Remark: High Demand		
Advisory: Advisory			
Validity: 21/12/2016 - 12:30			

b. The histogram:



c. Compliance by hour

This table presents the compliance by time considering all the airports in the scenario.

ADP Compliance by Hour:							
Estimated Hour	Total	Early	On Time	Late	Non-Compliant	% Non-Compliant	% Compliant
15:00	1	0	1	0	0	0.00	100.00
16:00	9	2	1	6	8	88.89	11.11
17:00	10	1	8	1	2	20.00	80.00
18:00	19	2	13	4	6	31.58	68.42
19:00	12	0	11	1	1	8.33	91.67
Total	51	5	34	12	17		

d. Departure Compliance by Airport

This table presents the compliance by airport.



Departure Compliance by Airport:							
ADEP	Total	Early	On Time	Late	Non-Compliant	% Non-Compliant	% Compliant
VABB	20	3	11	6	9	45.00	55.00
VIDP	8	0	7	1	1	12.50	87.50
VAAH	4	0	2	2	2	50.00	50.00
VOBL	3	0	2	1	1	33.33	66.67
VOMM	3	0	3	0	0	0.00	100.00
VABP	3	1	1	1	2	66.67	33.33
VABO	2	0	2	0	0	0.00	100.00
VANP	1	0	1	0	0	0.00	100.00
VECC	1	0	0	1	1	100.00	0.00
VARK	1	0	1	0	0	0.00	100.00
VOHS	1	0	1	0	0	0.00	100.00
VAID	1	0	1	0	0	0.00	100.00
VOCB	1	1	0	0	1	100.00	0.00
VIJP	1	0	1	0	0	0.00	100.00
VOCI	1	0	1	0	0	0.00	100.00
Total	51	5	34	12	17		

#### e. Total and On Time Statistics

This table provides the following information:

Total and On Time Statistics:	
Total Mean:	4 min
Total Standard Deviation:	15 min
Total Minimum:	-20 min
Total Maximum:	68 min
Total Counts:	51
On Time Mean:	0 min
On Time Standard Deviation:	1 min
On Time Counts:	34
On Time Percent:	66.67%

- Total Mean: ( $m_{total}$ ) (min): it is the mean of advances and delays considering not on time flights.

$$\overline{m}_{total} = \frac{1}{qtd_{total}} \sum_{i=1}^{qtd_{total}} x_i$$

- Total Standard Deviation ( $\sigma_{total}$ ) (min): it is the standard deviation of delays and advances for not on time flights.

$$\sigma_{total} = \sqrt{\frac{1}{qtd_{total}} \sum_{i=1}^{qtd_{total}} (x_i - \overline{m}_{total})^2}$$

- Total Minimum (min): it is the advance for the earliest flight.
- Total Maximum (min): it is the delay for the later flight.
- Total Counts ( $qtd_{total}$ ): total number of flights considered.





- On Time Mean ( $m_{pontual}$ ) (min): the mean of advances and delays of “on time flights”.

$$\overline{m}_{pontual} = \frac{1}{qtd_{pontual}} \sum_{i=1}^{qtd_{pontual}} x_i$$

- On Time Standard Deviation ( $\sigma_{pontual}$ ) (min): standard deviation of delays and advances for “on time flights”.

$$\sigma_{pontual} = \sqrt{\frac{1}{qtd_{pontual}} \sum_{i=1}^{qtd_{pontual}} (x_i - \overline{m}_{pontual})^2}$$

- On Time Counts ( $qtd_{pontual}$ ): Total number of “on time flights”.
- On Time Percent ( $r_{pontual}$ ): percentage of “on time flights” considered.

$$r_{pontual} = \frac{qtd_{pontual}}{qtd_{total}}$$

f. Early and Late Statistics

This table provides the following information:

Early and Late Statistics:	
Early Mean:	-15 min
Early Standard Deviation:	3 min
Early Counts:	5
Early Percent:	9.80%
Late Mean:	25 min
Late Standard Deviation:	18 min
Late Counts:	12
Late Percent:	23.53%

- Early Mean ( $m_{adiantamento}$ ) (min): it is the mean of advances of the early flights.

$$\overline{m}_{adiantamento} = \frac{1}{qtd_{adiantados}} \sum_{i=1}^{qtd_{adiantados}} x_i$$

- Early Standard Deviation ( $\sigma_{adiantamento}$ ) (min): it is the standard deviation of advances for the early flights.

$$\sigma_{adiantamento} = \sqrt{\frac{1}{qtd_{adiantados}} \sum_{i=1}^{qtd_{adiantados}} (x_i - \overline{m}_{adiantamento})^2}$$

- Early Counts ( $qtd_{adiantados}$ ): total number of early flights.
- Early Percent ( $r_{adiantados}$ ): percentage of early flights.

$$r_{adiantados} = \frac{qtd_{adiantados}}{qtd_{total}}$$



- Late Mean ( $m_{atraso}$ ) (min): it is the mean of delays of late flights.

$$\overline{m_{atraso}} = \frac{1}{qtd_{atrasados}} \sum_{i=1}^{qtd_{atrasados}} x_i$$

- Late Standard Deviation ( $\sigma_{atraso}$ ) (min): standard deviation of delays for late flights.

$$\sigma_{atraso} = \sqrt{\frac{1}{qtd_{atrasados}} \sum_{i=1}^{qtd_{atrasados}} (x_i - \overline{m_{atraso}})^2}$$

- Late Counts ( $qtd_{atrasados}$ ): total number of late flights.
- Late Percent ( $r_{atrasados}$ ): percentage of late flights.

$$r_{atrasados} = \frac{qtd_{atrasados}}{qtd_{total}}$$

#### 2.2.1.4 Apply Programs

An ATFM measure is implemented through programs that define techniques, methods and a set of procedures or steps that will be followed to achieve the desired result.

In certain instances it may be necessary to apply combinations of others ATFM measures in order to maintain system integrity while applying the least restrictive measures.

The CDM allows applying the following programs within the scenario:

- Ground Stop Program (GSP)
- Aerodrome Delay Program (ADP)
- Blanket Delay Program (BDP)
- Sector Delay Program (SBP)
- Rerouting Program (RRP)
- Flight Level Adjustment Program (FAP)
- In-Trail Programs (MIT/MINIT)
- Fix Balancing Program (FBP)
- Airborne Holding Program (AHP)
- Sequencing Programs (DSP/ESP/ASP)

The following is a description of each program in the CDM:



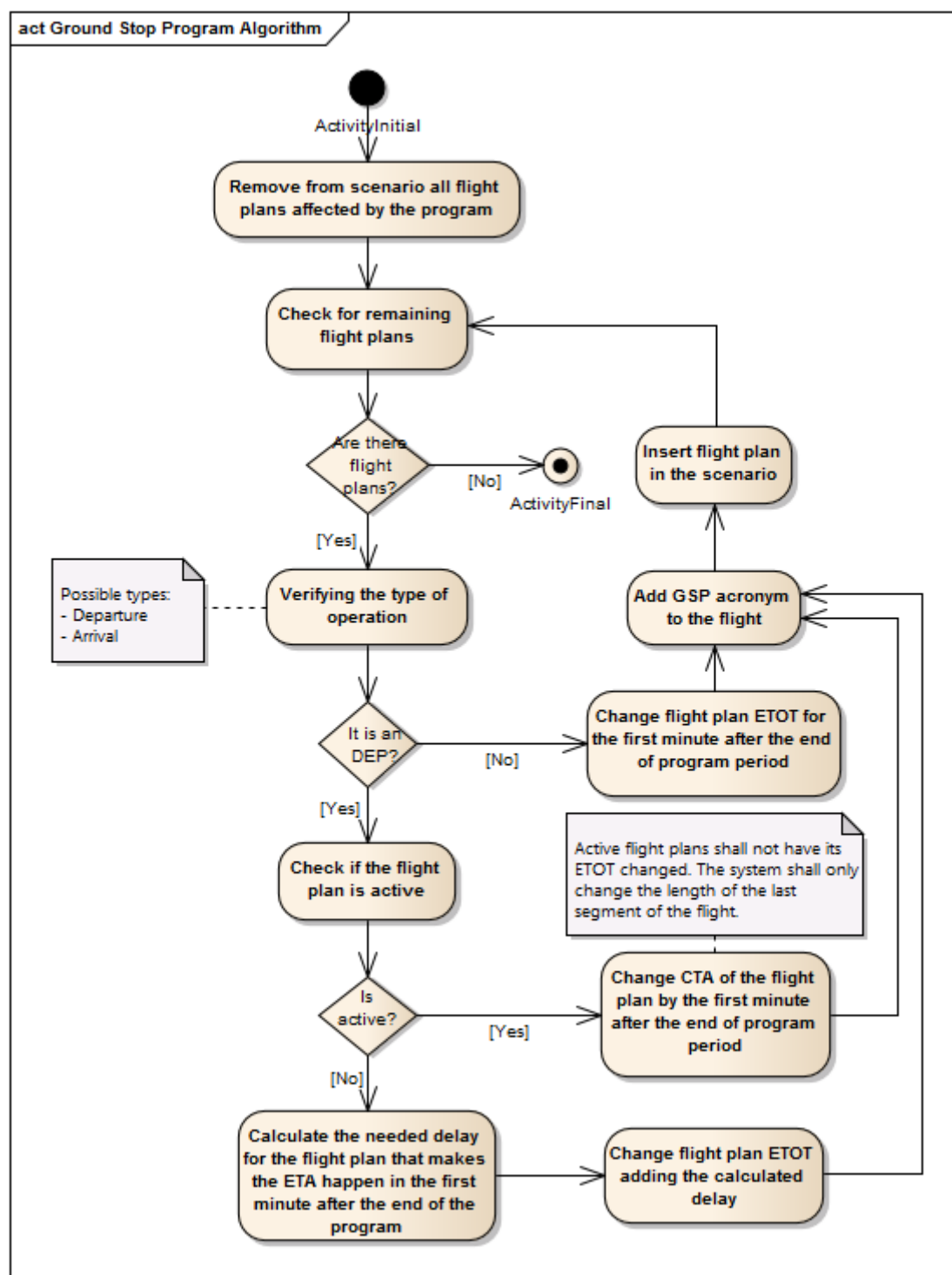
---

#### **2.2.1.4.1 Ground Stop Program (GSP)**

This program simulates the suspension of all departure and arrival operations within a specified period in a given aerodrome. It delays the flight plans for the first minute after of the program interval. The GSP does not affect annulled plans.

##### **2.2.1.4.1.1 GSP Algorithm**

The following diagram illustrate the algorithm for the Ground Stop Program.



#### 2.2.1.4.1.2 Running the program

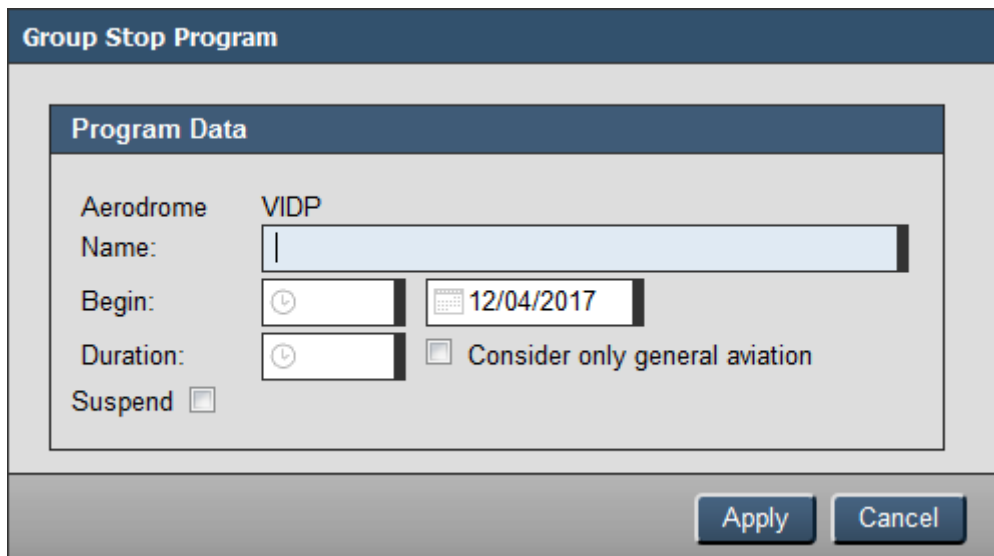
As mentioned before, the Ground Stop Program (GSP) is available for aerodrome regulated elements.



All program are executed the same way, first is necessary to open the Demand Chart of the regulated element in which the program will be applied, then select the program and confirm.

#### 2.4.1.4.1.2.1 Configuring the program

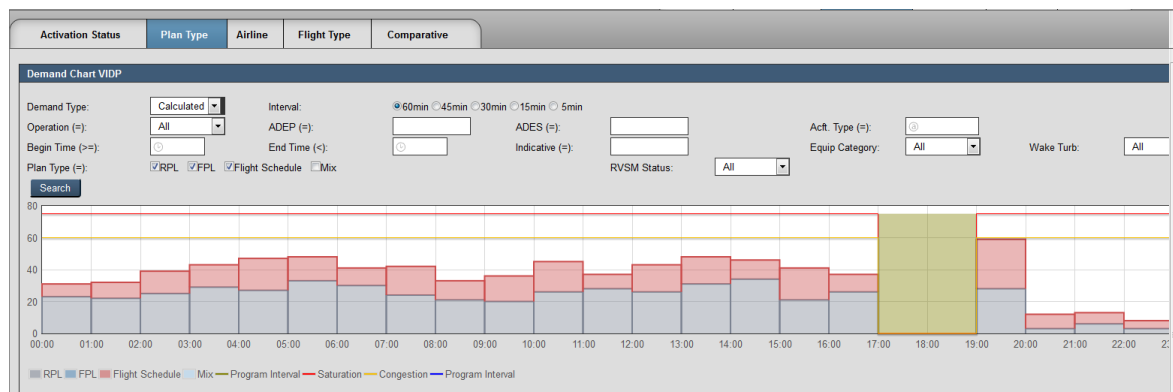
The first screen of the program is the following



In this screen is expected the mandatory program parameters:

- **Aerodrome:** this field indicates in which element the program will be applied.
- **Name:** a name to identify the program;
- **Begin:** the begin time and date of the program;
- **Duration:** the duration of the program. It is important to highlight that the maximum duration accepted for a program is 12 hours;
- **Suspend:** option to choose if the program will avoid the annulation of the flights;
- **Consider only general aviation:** option to choose if the program will affect only flights plan from general aviation. The others will stay in the scheduled time.

After fill the needed fields is necessary to click on “Apply” button so the program will be performed and the result can be viewed at the demand chart, as shown in the figure bellow:



## 2.4.1.4.1.2.2 Verifying the results

To verify the results of the program application, the program metrics has to be consulted in the Program tab of the scenario. The metrics for a GSP is presented in the figure below:

Group Stop Program										
Program Data										
Aerodrome	VIDP									
Name:	GSP1									
Begin:	17:00	17/04/2017								
Duration:	02:00	<input type="checkbox"/> Consider only general aviation								
Scenario: CDM SCENARIO					Period: 17/04/2017 - 00:00 to 18/04/2017 - 00:00					
Cause: Airspace Management										
Amount plans delayed: 49					Sum plans delay: 3358 min		Delay Average: 68 min			
Maximum delay min: 116 min					Minimum delay min: 8 min					
Indicative	ADEP	ADES	CTOT	CLDT	Point	CTO	Flight Type	Airline	Delay	
DLH762	EDDM	VIDP	12:40	19:00	VIDP	20:49	S	LUFTHANSA	00:30	
AFR226	LFPG	VIDP	10:10	19:00	VIDP	17:42	S	AIRFRANS	01:25	
ANA827	RJNN	VIDP	12:35	19:00	VIDP	14:14	S	ALL NIPPON	00:25	
IGO626	VAAH	VIDP	17:52	19:00	VIDP	19:00	S	IFLY	00:32	
AIC014	VAAH	VIDP	17:55	19:00	VIDP	19:00	S	AIRINDIA	01:05	
JLL4689	VAAH	VIDP	17:53	19:00	VIDP	19:00	S	LITE JET	01:43	
JAI0689	VAAH	VIDP	17:55	19:00	VIDP	19:00	S	JET AIRWAYS	01:15	
IGO728	VAAH	VIDP	17:52	19:00	VIDP	19:00	S	IFLY	01:27	
JAI361	VABB	VIDP	17:26	19:00	VIDP	19:00	S	JET AIRWAYS	01:56	
GOW643	VABB	VIDP	17:25	19:00	VIDP	19:00	S	GOAIR	01:45	
AIC101	VABB	VIDP	17:29	19:00	VIDP	19:00	S	AIRINDIA	01:25	
AIC0438	VABP	VIDP	18:05	19:00	VIDP	19:00	S	AIRINDIA	01:15	
AIC438	VABP	VIDP	18:05	19:00	VIDP	19:00	S	AIRINDIA	01:35	
AIC854	VAPO	VIDP	17:16	19:00	VIDP	19:00	S	AIRINDIA	01:11	
GOW176	VAPO	VIDP	17:18	19:00	VIDP	19:00	S	GOAIR	00:08	
AIC0854	VAPO	VIDP	17:16	19:00	VIDP	19:00	S	AIRINDIA	01:00	
AIC0474	VEBS	VIDP	17:14	19:00	VIDP	19:00	S	AIRINDIA	01:20	
IGO224	VECC	VIDP	17:10	19:00	VIDP	19:00	S	IFLY	01:00	
IGO152	VECC	VIDP	17:10	19:00	VIDP	19:00	S	IFLY	00:10	
JAI0902	VECC	VIDP	17:10	19:00	VIDP	19:00	S	JET AIRWAYS	01:40	
SEJ264	VECC	VIDP	17:10	19:00	VIDP	19:00	S	SPICEJET	01:40	
IGO558	VECC	VIDP	16:58	19:00	VIDP	19:00	S	IFLY	01:15	



Beyond the metrics, it is possible to consult the Priority that was used by the algorithm. To see this data is necessary to open the Priority screen, which is presented in the figure below:

Position	Indicative	ADEP	ADES	Exempt	Scope	Activation	Program	Distance	Instant	ST	Flight Type	EOBT	Original	Calculated	Delay	Route	Speed	Level
47	ANA827	RJNN	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1253.00	13:49	S		12:10	13:49	14:14	00:25			
21	CSN359	ZGGG	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1823.62	14:40	S		11:45	14:40	16:35	01:55			
38	AFR226	LFPG	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	404.64	16:17	S		08:45	16:17	17:42	01:25			
24	AXB401	WMKK	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	2330.78	17:16	S		13:20	17:16	18:06	00:50			
30	AIC0468	VOBZ	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1591.56	17:17	S		15:10	17:17	18:52	01:35			
8	IGO626	VAAH	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	800.67	18:28	S		17:10	18:28	19:00	00:32			
9	IGO625	VIDP	VAAH	<input type="checkbox"/>		INA	<input type="checkbox"/>	788.40	17:20	S		17:10	17:20	19:00	01:40			
10	IGO224	VECC	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1406.29	18:00	S		16:00	18:00	19:00	01:00			
11	JLL4814	VOBL	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1791.97	18:17	S		15:50	18:17	19:00	00:43			
12	SEJ198	VOBL	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1791.97	17:37	S		15:10	17:37	19:00	01:23			
13	GOW118	VOBL	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1791.97	17:44	S		15:15	17:44	19:00	01:16			
14	IGO152	VECC	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1406.29	18:50	S		16:50	18:50	19:00	00:10			
15	IAD722	VOBL	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1791.97	18:10	S		15:40	18:10	19:00	00:50			
16	VTI836	VOBL	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1791.97	17:50	S		15:20	17:50	19:00	01:10			
17	GOW182	VILK	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	499.60	17:50	S		16:55	17:50	19:00	01:10			
18	UAL083	VIDP	KEWR	<input type="checkbox"/>		INA	<input type="checkbox"/>	358.63	17:25	S		17:15	17:25	19:00	01:35			
19	JAI847	VOMM	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1825.28	18:22	S		15:50	18:22	19:00	00:38			
20	AIC854	VAPO	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1297.44	17:49	S		15:55	17:49	19:00	01:11			
22	IGO3536	VOMM	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1825.28	17:18	S		14:45	17:18	19:00	01:42			
23	GOW176	VAPO	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1296.39	18:52	S		17:00	18:52	19:00	00:08			
25	AIC127	VOHS	VIDP	<input type="checkbox"/>		INA	<input type="checkbox"/>	1382.63	17:30	S		15:30	17:30	19:00	01:30			
26	JAI202	VIDP	OTHH	<input type="checkbox"/>		INA	<input type="checkbox"/>	476.29	18:30	S		18:20	18:30	19:00	00:30			

The GSP does not have a log file to be consulted.

#### 2.2.1.4.2 Aerodrome Delay Program (ADP)

The Aerodrome Delay Program organizes the flight plans involved in the problem by using a priority criteria, with the purpose of minimizing the application of delays in the flight plans considered as the most important ones.

##### 2.2.1.4.2.1 ADP Algorithm

During flight reallocations, the system considers the exemptions, aerodrome capacity restrictions, and minimum separation time intervals between two movements to delay the plans within the program interval.

Optionally, when an Aerodrome Delay Program is applied, the user can exempt a flight plan from the ATFM measure, making it the one with the higher priority when reallocating the flights (exempt), and can cancel the Domestic Flight Schedules.

The priority order is as follows:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);



- Flights that have a high priority due to their scope (flight plans that land in the aerodrome with EET longer than the parameter informed);
- Active flights;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Sequence: Time-schedule in which the plan is expected to make use of the aerodrome (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.

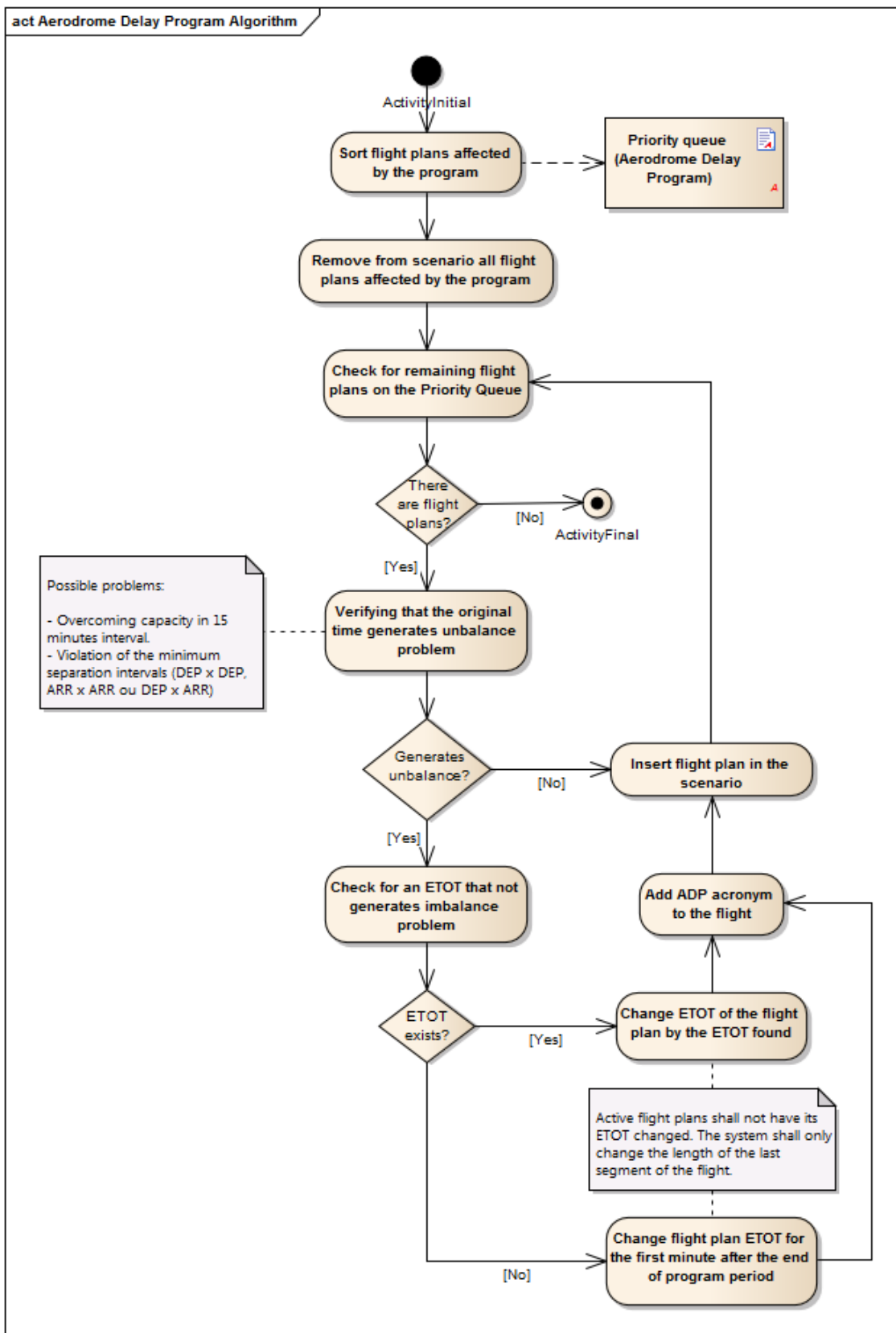
STS/FLTCK – For a flight performing calibration of nav aids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.







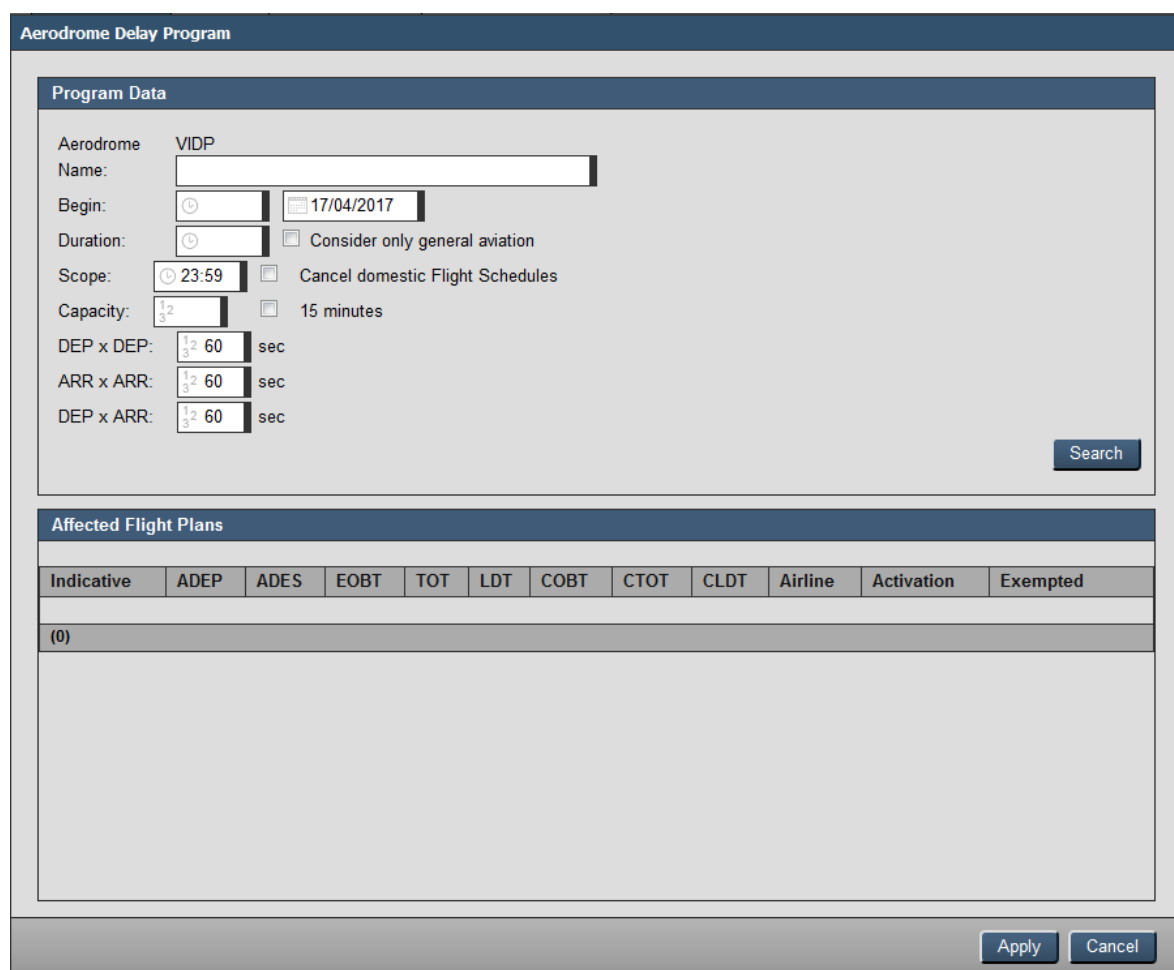
#### 2.2.1.4.2.2 Running the program

As mentioned before, the Aerodrome Delay Program (ADP) is available only for aerodrome regulated elements.

All program are executed the same way, first is necessary to open the Demand Chart of the regulated element in which the program will be applied, then select the program and confirm.

#### 2.4.1.4.2.2.1 Configuring the program

The first screen of the program is the following



**Aerodrome Delay Program**

**Program Data**

Aerodrome: VIDP

Name:

Begin:  17/04/2017

Duration:  ☐ Consider only general aviation

Scope:  23:59 ☐ Cancel domestic Flight Schedules

Capacity:  1/2/3 ☐ 15 minutes

DEP x DEP:  1/2/3 60 sec

ARR x ARR:  1/2/3 60 sec

DEP x ARR:  1/2/3 60 sec

**Affected Flight Plans**

Indicative	ADEP	ADES	EOBT	TOT	LDT	COBT	CTOT	CLDT	Airline	Activation	Exempted
(0)											

As

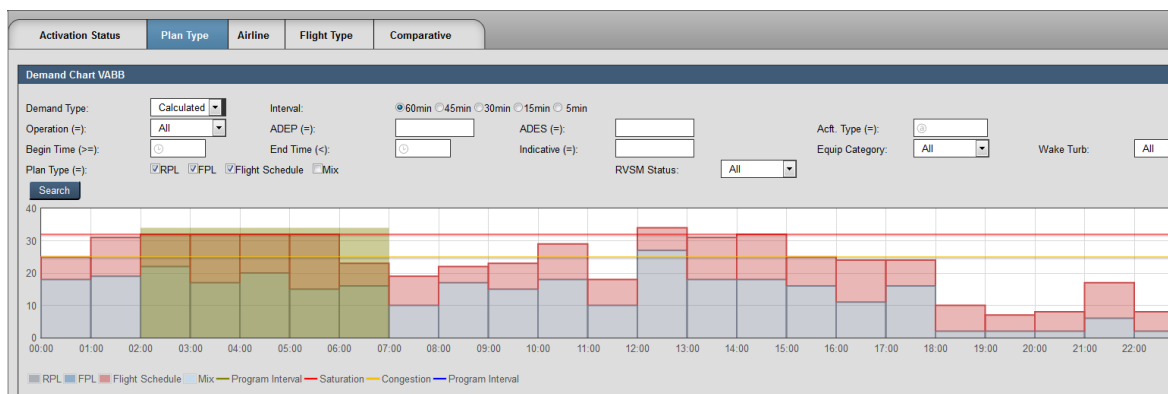
shown in the figure bellow, the program parameters are:

- **Aerodrome:** this field indicates in which element the program will be applied.
- **Name:** a name to identify the program;
- **Begin:** the begin time and date of the program;



- **Duration:** the duration of the program. It is important to highlight that the maximum duration accepted for a program is 12 hours;
- **Consider only general aviation:** option to choose if the program will affect only flights plan from general aviation. The others will stay in the scheduled time.
- **Scope:** Every flight with total EET bigger than or equal to this parameter shall be “exempted” and prioritized for this program. It is important to highlight that the maximum scope accepted for a program is 23:59;
- **Cancel domestic flight schedules:** option to choose if the program will not consider the domestic flight schedule;
- **Capacity:** The maximum number of movements for the aerodrome in one hour or 15minutes (see following option);
- **15 minutes:** option to choose if the program will consider the defined capacity as the capacity on 15 minutes period;
- **DEP x DEP:** separation in seconds between two departures at the airport;
- **DEP x ARR:** separation in seconds between a departure and an arrival at the airport;
- **ARR x ARR:** separation in seconds between two arrivals at the airport.

After filling the programs parameters, is required to click on “Search” button to load the affected flights in the list just bellow the parametes and then click on “Apply” button. The program will be applied with the filled parameters and the result can be viewed at the demand chart, as shown in the figure bellow:





## 2.4.1.4.2.2.2 Verifying the results

To verify the results of the program application, the program metrics has to be consulted in the Program tab of the scenario. The metrics for an ADP is presented in the figure below:

**Aerodrome Delay Program**

**Program Data**

Aerodrome: VABB  
Name: ADP2  
Begin: 02:00 17/04/2017  
Duration: 05:00 ☐ Consider only general aviation  
Scope: 23:59 ☐ Cancel domestic Flight Schedules  
Capacity: 32 ☐ 15 minutes  
DEP x DEP: 1/2 60 sec  
ARR x ARR: 1/2 60 sec  
DEP x ARR: 1/2 60 sec

Scenario: CDM SCENARIO  
Cause: Airspace Management  
Period: 17/04/2017 - 00:00 to 18/04/2017 - 00:00

Amount plans delayed: 127  
Maximum delay min: 39 min  
Sum plans delay: 1345 min  
Minimum delay min: 1 min  
Delay Average: 10 min

Indicative	ADEP	ADES	CTOT	CLDT	Point	CTO	Flight Type	Airline	Delay
JAI117	EGLL	VABB	22:00	05:50	VABB	05:50	S	JET AIRWAYS	00:05
JAI738	VAAH	VABB	01:41	02:28	VABB	02:28	S	JET AIRWAYS	00:01
AIC0614	VAAH	VABB	02:17	03:03	VABB	03:03	S	AIRINDIA	00:03
AIC614	VAAH	VABB	02:29	03:15	VABB	03:15	S	AIRINDIA	00:09
IGO214	VAAH	VABB	04:15	05:03	VABB	05:03	S	IFLY	00:15
GOW459	VAAH	VABB	04:24	05:18	VABB	05:18	S	GOAIR	00:19
JAI328	VAAH	VABB	04:45	05:32	VABB	05:32	S	JET AIRWAYS	00:20
JAI0328	VAAH	VABB	04:50	05:37	VABB	05:37	S	JET AIRWAYS	00:12
IGO984	VAAH	VABB	05:16	06:04	VABB	06:04	S	IFLY	00:11
SEJ152	VABB	VIDP	02:01	03:35	VABB	02:01	S	SPICEJET	00:01
SEJ457	VABB	VOBL	02:02	03:13	VABB	02:02	S	SPICEJET	00:02
JAI813	VABB	VOHS	02:03	03:08	VABB	02:03	S	JET AIRWAYS	00:03
JAI346	VABB	VIDP	02:11	03:43	VABB	02:11	S	JET AIRWAYS	00:01
VTI930	VABB	VIDP	02:15	03:51	VABB	02:15	S	VISTARA	00:05
IGO715	VABB	VOBL	02:16	03:27	VABB	02:16	S	IFLY	00:06

Close

Beyond the metrics, it is possible to consult the Priority that was used by the algorithm. To see this data is necessary to open the Priority screen, which is presented in the figure below:



Priorities of Program Flights

Position	Indicative	ADEP	ADES	Exempt	Scope	Activation	Program	Distance	Instant	ST	Flight-Type	EOBT	Original	Calculated	Delay	Route	Speed	Level:
1	SEJ14	OMDB	VABB			INA		1046.54	10:52	S		08:55	10:52					
2	JAI355	VAAU	VABB			INA		292.58	02:00	S		01:20	02:00					
3	SEJ152	VABB	VIDP			INA		1178.21	02:00	S		01:50	02:00	02:01	00:01			
4	SEJ457	VABB	VOBL			INA		857.04	02:00	S		01:50	02:00	02:02	00:02			
5	JAI813	VABB	VOHS			INA		757.39	02:00	S		01:50	02:00	02:03	00:03			
6	IGO958	VABB	VEGT			INA		2290.44	02:05	S		01:55	02:05					
7	JLL4398	VARK	VABB			INA		476.78	02:09	S		01:15	02:09					
8	MAS195	VABB	WMKK			INA		2821.20	02:10	S		02:00	02:10					
9	JAI346	VABB	VIDP			INA		1178.21	02:10	S		02:00	02:10	02:11	00:01			
10	VTI930	VABB	VIDP			INA		1178.21	02:10	S		02:00	02:10	02:15	00:05			
11	IGO715	VABB	VOBL			INA		857.04	02:10	S		02:00	02:10	02:16	00:06			
12	GOW376	VOGO	VABB			INA		556.92	02:17	S		01:25	02:17					
13	JAI0346	VABB	VIDP			INA		1178.21	02:18	S		02:00	02:18					
14	JAI0397	VABO	VABB			INA		472.38	02:20	S		01:35	02:20					
15	GOW365	VABB	VAAH			INA		463.64	02:20	S		02:10	02:20	02:21	00:01			
16	GOW381	VOGO	VABB			INA		556.92	02:27	S		01:25	02:27					
17	JAI738	VAAH	VABB			INA		520.51	02:27	S		01:30	02:27	02:28	00:01			
18	JAI397	VABO	VABB			INA		472.38	02:28	S		01:35	02:28	02:30	00:02			
19	AIC0684	VOGO	VABB			INA		556.92	02:30	S		01:35	02:30	02:31	00:01			
20	IGO964	VABB	VIDP			INA		1178.21	02:30	S		02:20	02:30	02:32	00:02			
21	AIC569	VOMM	VABB			INA		1128.92	02:32	S		00:50	02:32	02:33	00:01			
22	JAI70	VABR	VTBS			INA		2103.64	02:35	S		02:25	02:35					

Close

The log file for an ADP is available to be consulted by users with an administrator profile. An example of this file is presented in the figure below:

```
ADP, scenario:CDM SCENARIO, name:ADP2, regulatedName:VABB, begin:Mon Apr 17 02:00:00 UTC 2017, end:Mon Apr 17 02:00:00 UTC 2017
1 - 3842387, SEJ14, Mon Apr 17 05:05:00 UTC 2017, non exempt, ARR, level=10.9728 m
SEJ14 new time: Mon Apr 17 05:05:00 UTC 2017
2 - 3842805, JAI355, Mon Apr 17 02:00:00 UTC 2017, non exempt, ARR, level=10.9728 m
JAI355 new time: Mon Apr 17 02:00:00 UTC 2017
3 - 3842308, SEJ152, Mon Apr 17 02:00:00 UTC 2017, non exempt, DEP, level=10.9728 m
Separation failed for Mon Apr 17 02:00:00 UTC 2017 on JAI355-Mon Apr 17 02:00:00 UTC 2017
SEJ152 new time: Mon Apr 17 02:01:00 UTC 2017
4 - 3841874, SEJ457, Mon Apr 17 02:00:00 UTC 2017, non exempt, DEP, level=10.9728 m
Separation failed for Mon Apr 17 02:00:00 UTC 2017 on JAI355-Mon Apr 17 02:00:00 UTC 2017
Separation failed for Mon Apr 17 02:01:00 UTC 2017 on SEJ152-Mon Apr 17 02:01:00 UTC 2017
SEJ457 new time: Mon Apr 17 02:02:00 UTC 2017
5 - 3842776, JAI813, Mon Apr 17 02:00:00 UTC 2017, non exempt, DEP, level=10.9728 m
Separation failed for Mon Apr 17 02:00:00 UTC 2017 on JAI355-Mon Apr 17 02:00:00 UTC 2017
Separation failed for Mon Apr 17 02:01:00 UTC 2017 on SEJ152-Mon Apr 17 02:01:00 UTC 2017
Separation failed for Mon Apr 17 02:02:00 UTC 2017 on SEJ457-Mon Apr 17 02:02:00 UTC 2017
JAI813 new time: Mon Apr 17 02:03:00 UTC 2017
6 - 3841934, IGO958, Mon Apr 17 02:05:00 UTC 2017, non exempt, DEP, level=10.9728 m
IGO958 new time: Mon Apr 17 02:05:00 UTC 2017
7 - 3843138, JLL4398, Mon Apr 17 02:09:00 UTC 2017, non exempt, ARR, level=10.9728 m
JLL4398 new time: Mon Apr 17 02:09:00 UTC 2017
8 - 3842821, MAS195, Mon Apr 17 02:10:00 UTC 2017, non exempt, DEP, level=10.9728 m
MAS195 new time: Mon Apr 17 02:10:00 UTC 2017
9 - 3842945, JAI346, Mon Apr 17 02:10:00 UTC 2017, non exempt, DEP, level=10.9728 m
Separation failed for Mon Apr 17 02:10:00 UTC 2017 on MAS195-Mon Apr 17 02:10:00 UTC 2017
JAI346 new time: Mon Apr 17 02:11:00 UTC 2017
10 - 3842740, VTI930, Mon Apr 17 02:10:00 UTC 2017, non exempt, DEP, level=10.9728 m
Interval:Mon Apr 17 02:00:00 UTC 2017 Demand 8 / capacity 8
VTI930 new time: Mon Apr 17 02:15:00 UTC 2017
11 - 3843074, IGO715, Mon Apr 17 02:10:00 UTC 2017, non exempt, DEP, level=10.9728 m
Interval:Mon Apr 17 02:00:00 UTC 2017 Demand 8 / capacity 8
Separation failed for Mon Apr 17 02:15:00 UTC 2017 on VTI930-Mon Apr 17 02:15:00 UTC 2017
IGO715 new time: Mon Apr 17 02:16:00 UTC 2017
```

### 2.2.1.4.3 Blanket Delay Program (BDP)

This program is used by the user for adjust the delay application allowing a blanket reduction or increase of assigned delays within a specific period.



Imagine that the problem that motivated a program application have been resolved earlier than it was expected, so the user can adjust the previous solution taking off some minutes. In case of a reduction bigger than the given delay, the program will take off all the delay, maintaining the flight plan in its original time.

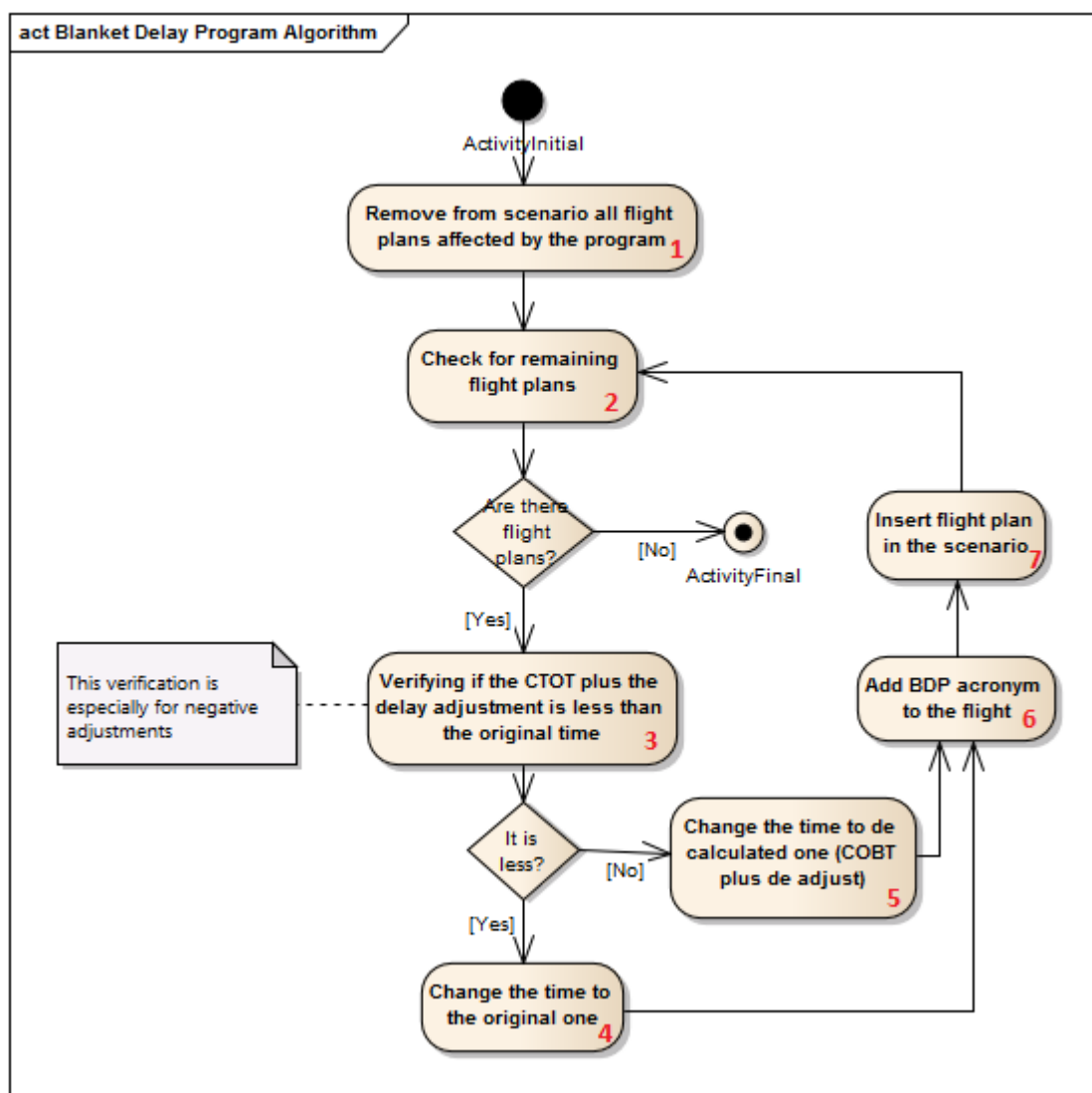
The same happens when the problema that motivated the program wil not be resolved at the imagined time. In this case, the user can adjust the previous solution adding some minutes.

#### **2.2.1.4.3.1 BDP Algorithm**

The goal of this program is to adjust the imposed delay due to a GSP or ADP application. This algorithm will be available for the regulated element aerodrome.

The algorithm identify all flights that has been delayed by a GSP or ADP and apply the following algorithm.

- (1) The algorithm first remove from the scenario all the affected flights, so then the algorithm can put one by one in the new position, which can be the same or different from the previous one.
- (2) If there is no more flight plans in the list, the algorithm will be finished.
- (3) For each flight, the algorithm will calculate the new time by adding to the previous CTOT the delay adjustment specified at the program parameters, which can be positive or negative.
- (4) If the new time calculated by the system is earlier than the flight plan EOBT, the algorithm will remove all the delay by setting as CTOT the original EOBT.
- (5) If the new time calculated by the system is later then the flight plan EOBT, the algorithm will remove the specified delay by setting as CTOT the calculated time.
- (6) The system will add the BDP acronym to the flight to identify that this flight has soffered a change by the BDP algorithm.
- (7) The flight will be added in the scenario and the algorithm will repeat this sequence for the next flight in the queue.



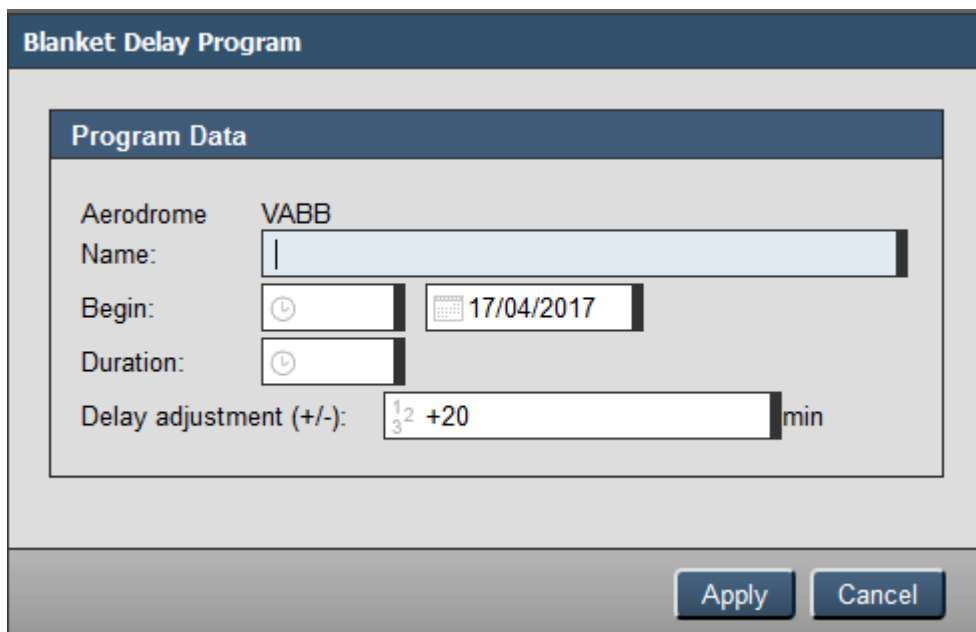
### 2.2.1.4.3.2 Running the program

As mentioned before, the Blanket Delay Program (BDP) is available only for regulated elements from the type aerodrome.

All program are executed the same way, first is necessary to open the Demand Chart of the regulated element in which the program will be applied, then select the program and confirm.

#### 2.4.1.4.3.2.1 Configuring the program

The first screen of the program is the following



**Blanket Delay Program**

**Program Data**

Aerodrome: VABB

Name:

Begin:  17/04/2017

Duration:

Delay adjustment (+/-):  12 3 +20 min

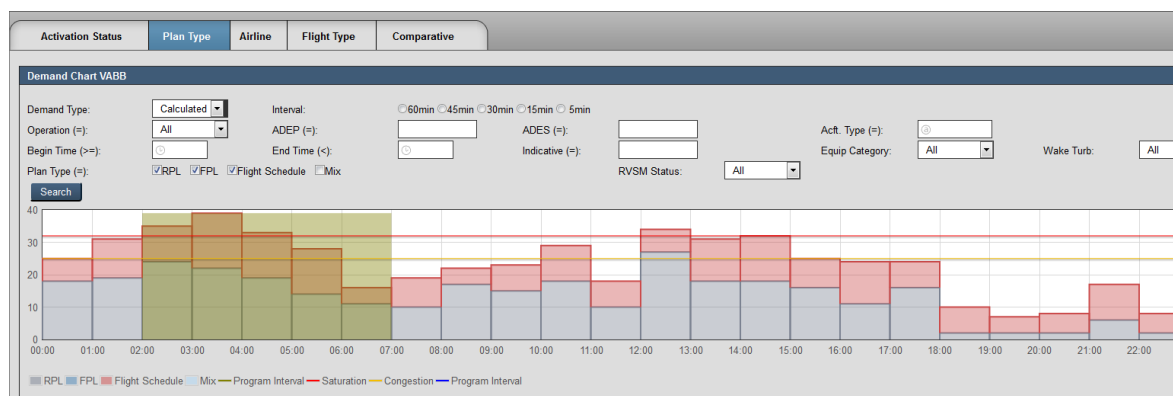
Apply Cancel

In this screen is expected the mandatory program parameters:

- **Aerodrome:** this field indicates in which element the program will be applied.
- **Name:** a name to identify the program;
- **Begin:** the begin time and date of the program;
- **Duration:** the duration of the program. It is important to highlight that the maximum duration accepted for a program is 12 hours;
- **Delay adjustment (+/-):** minutes to increase or decrease the delay assign due to a program application;

After fill the needed fields is necessary to click on “Apply” button so the program will be performed and the result can be viewed at the demand chart, as shown in the figure bellow:





## 2.4.1.4.3.2.2 Verifying the results

To verify the results of the program application, the program metrics has to be consulted in the Program tab of the scenario. The metrics for a BDP is presented in the figure below:

**Blanket Delay Program**

**Program Data**

Aerodrome: VABB  
 Name: BDP  
 Begin: 03:00 17/04/2017  
 Duration: 04:00  
 Delay adjustment (+/-): 12 -20 min

Scenario: CDM SCENARIO  
 Cause: Airspace Management  
 Period: 17/04/2017 - 00:00 to 18/04/2017 - 00:00

Amount plans delayed: 220  
 Maximum delay min: 0 min  
 Sum plans delay: -2498 min  
 Minimum delay min: -20 min  
 Delay Average: -11 min

Indicative	ADEP	ADES	CTOT	CLDT	Point	CTO	Flight Type	Airline	Delay
JAI117	EGLL	VABB	21:55	05:45	VABB	05:45	S	JET AIRWAYS	-00:05
JAI117	EGLL	VABB	21:55	05:45	VABB	05:45	S	JET AIRWAYS	-00:05
AIC0614	VAAH	VABB	02:14	03:00	VABB	03:00	S	AIRINDIA	-00:03
AIC614	VAAH	VABB	02:20	03:06	VABB	03:06	S	AIRINDIA	-00:09
IGO214	VAAH	VABB	04:00	04:48	VABB	04:48	S	IFLY	-00:15
GOW459	VAAH	VABB	04:05	04:59	VABB	04:59	S	GOAIR	-00:19
JAI328	VAAH	VABB	04:25	05:12	VABB	05:12	S	JET AIRWAYS	-00:20
JAI0328	VAAH	VABB	04:38	05:25	VABB	05:25	S	JET AIRWAYS	-00:12
IGO984	VAAH	VABB	05:05	05:53	VABB	05:53	S	IFLY	-00:11
GOW459	VAAH	VABB	04:05	04:59	VABB	04:59	S	GOAIR	-00:19
JAI0328	VAAH	VABB	04:38	05:25	VABB	05:25	S	JET AIRWAYS	-00:12
IGO984	VAAH	VABB	05:05	05:53	VABB	05:53	S	IFLY	-00:11
AIC614	VAAH	VABB	02:20	03:06	VABB	03:06	S	AIRINDIA	-00:09
JAI328	VAAH	VABB	04:25	05:12	VABB	05:12	S	JET AIRWAYS	-00:20
IGO214	VAAH	VABB	04:00	04:48	VABB	04:48	S	IFLY	-00:15

Close

Beyond the metrics, it is possible to consult the Priority that was used by the algorithm. To see this data is necessary to open the Priority screen, which is presented in the figure below:



Priorities of Program Flights

Position	Indicative	ADEP	ADES	Exempt	Scope	Activation	Program	Distance	Instant	ST	Flight-Type	EOBT	Original	Calculated	Delay	Route	Speed	Level:
79	JAI478	VOBL	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	944.49	03:00	S		01:30	03:00	02:58	-00:02			
82	JAI0333	VABB	VIDP	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1178.21	03:02	S		02:30	03:02	02:58	-00:04			
88	IGO655	VAID	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	519.18	03:01	S		02:00	03:01	02:58	-00:03			
9	JAI629	VABB	VECC	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1776.51	03:04	S		02:50	03:04	03:00	-00:04			
101	AIC0614	VAAH	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	520.51	03:03	S		02:00	03:03	03:00	-00:03			
3	AIC0625	VABB	VILK	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1344.40	03:06	S		02:55	03:06	03:03	-00:03			
7	AIC0806	VABB	VIDP	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1170.39	03:05	S		02:30	03:05	03:03	-00:02			
6	AIC625	VABB	VILK	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1344.40	03:07	S		02:55	03:07	03:05	-00:02			
78	AIC614	VAAH	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	520.51	03:15	S		02:10	03:15	03:06	-00:09			
22	IGO495	VOMM	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1128.92	03:16	S		01:30	03:16	03:12	-00:04			
97	JAI349	VOHS	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	869.01	03:17	S		01:50	03:17	03:12	-00:05			
60	JAI618	VECC	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1696.68	03:18	S		00:55	03:18	03:13	-00:05			
65	GOW381	VABB	VICG	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1437.38	03:19	S		03:05	03:19	03:15	-00:04			
54	SEJ931	VABB	VECC	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1680.36	03:20	S		02:50	03:20	03:19	-00:01			
107	GOW487	VABB	VILK	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1408.62	03:24	S		03:05	03:24	03:23	-00:01			
20	MAS187	VABB	WMKK	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	2821.20	03:31	S		03:15	03:31	03:25	-00:06			
25	AIC0887	VIDP	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1139.97	03:30	S		01:30	03:30	03:25	-00:05			
61	JAI397	VABB	VOBL	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	915.64	03:32	S		03:15	03:32	03:25	-00:07			
18	AIC628	VANP	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	697.37	03:33	S		02:20	03:33	03:28	-00:05			
94	JAI0355	VABB	VIDP	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1170.39	03:34	S		03:00	03:34	03:28	-00:06			
35	VTI970	VABB	VIDP	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1178.21	03:36	S		03:20	03:36	03:30	-00:06			
62	JAI0332	VIDP	VABB	<input type="checkbox"/>		INA	<input checked="" type="checkbox"/>	1241.95	03:35	S		01:35	03:35	03:30	-00:05			

Close

The log file for a BDP is available to be consulted by users with an administrator profile. An example of this file is presented in the figure below:

```
Listing flight plans to apply Blanket program: BDP, scenario:CDM SCENARIO, name:BDP, regulatedName:VABB, begin:Mon Apr 17 03:00:00 UTC 2017, end:Mon Apr 17 03:45:00 UTC 2017, delay =10
Total flight plans to apply Blanket program: 110
BDP, scenario:CDM SCENARIO, name:BDP, regulatedName:VABB, begin:Mon Apr 17 03:00:00 UTC 2017, end:Mon Apr 17 03:45:00 UTC 2017, delay =10
AIC0628: previous Takeoff =Mon Apr 17 02:47:00 UTC 2017, Arrival=Mon Apr 17 03:45:00 UTC 2017, delay =10
Blanket: Takeoff =Mon Apr 17 02:37:00 UTC 2017, Arrival=Mon Apr 17 03:35:00 UTC 2017, delay=0
IGO5924: previous Takeoff =Mon Apr 17 02:46:00 UTC 2017, Arrival=Mon Apr 17 05:36:00 UTC 2017, delay =11
Blanket: Takeoff =Mon Apr 17 02:35:00 UTC 2017, Arrival=Mon Apr 17 05:25:00 UTC 2017, delay=0
AIC0625: previous Takeoff =Mon Apr 17 03:06:00 UTC 2017, Arrival=Mon Apr 17 04:53:00 UTC 2017, delay =3
Blanket: Takeoff =Mon Apr 17 03:03:00 UTC 2017, Arrival=Mon Apr 17 04:50:00 UTC 2017, delay=0
JAI0618: previous Takeoff =Mon Apr 17 01:53:00 UTC 2017, Arrival=Mon Apr 17 04:01:00 UTC 2017, delay =16
Blanket: Takeoff =Mon Apr 17 01:37:00 UTC 2017, Arrival=Mon Apr 17 03:45:00 UTC 2017, delay=0
JAI421: previous Takeoff =Mon Apr 17 03:46:00 UTC 2017, Arrival=Mon Apr 17 05:07:00 UTC 2017, delay =11
Blanket: Takeoff =Mon Apr 17 03:35:00 UTC 2017, Arrival=Mon Apr 17 04:56:00 UTC 2017, delay=0
AIC625: previous Takeoff =Mon Apr 17 03:07:00 UTC 2017, Arrival=Mon Apr 17 04:54:00 UTC 2017, delay =2
Blanket: Takeoff =Mon Apr 17 03:05:00 UTC 2017, Arrival=Mon Apr 17 04:52:00 UTC 2017, delay=0
AIC0806: previous Takeoff =Mon Apr 17 03:05:00 UTC 2017, Arrival=Mon Apr 17 04:37:00 UTC 2017, delay =2
Blanket: Takeoff =Mon Apr 17 03:03:00 UTC 2017, Arrival=Mon Apr 17 04:35:00 UTC 2017, delay=0
GOW459: previous Takeoff =Mon Apr 17 04:24:00 UTC 2017, Arrival=Mon Apr 17 05:18:00 UTC 2017, delay =19
Blanket: Takeoff =Mon Apr 17 04:05:00 UTC 2017, Arrival=Mon Apr 17 04:59:00 UTC 2017, delay=0
JAI629: previous Takeoff =Mon Apr 17 03:04:00 UTC 2017, Arrival=Mon Apr 17 05:22:00 UTC 2017, delay =4
Blanket: Takeoff =Mon Apr 17 03:00:00 UTC 2017, Arrival=Mon Apr 17 05:18:00 UTC 2017, delay=0
JAI701: previous Takeoff =Mon Apr 17 06:31:00 UTC 2017, Arrival=Mon Apr 17 08:22:00 UTC 2017, delay =1
Blanket: Takeoff =Mon Apr 17 06:30:00 UTC 2017, Arrival=Mon Apr 17 08:21:00 UTC 2017, delay=0
JAI0328: previous Takeoff =Mon Apr 17 04:50:00 UTC 2017, Arrival=Mon Apr 17 05:37:00 UTC 2017, delay =12
Blanket: Takeoff =Mon Apr 17 04:38:00 UTC 2017, Arrival=Mon Apr 17 05:25:00 UTC 2017, delay=0
JAI0979: previous Takeoff =Mon Apr 17 06:00:00 UTC 2017, Arrival=Mon Apr 17 07:34:00 UTC 2017, delay =14
Blanket: Takeoff =Mon Apr 17 05:46:00 UTC 2017, Arrival=Mon Apr 17 07:20:00 UTC 2017, delay=0
IGO685: previous Takeoff =Mon Apr 17 02:54:00 UTC 2017, Arrival=Mon Apr 17 04:33:00 UTC 2017, delay =14
Blanket: Takeoff =Mon Apr 17 02:40:00 UTC 2017, Arrival=Mon Apr 17 04:19:00 UTC 2017, delay=0
GOW554: previous Takeoff =Mon Apr 17 03:22:00 UTC 2017, Arrival=Mon Apr 17 04:51:00 UTC 2017, delay =16
Blanket: Takeoff =Mon Apr 17 03:06:00 UTC 2017, Arrival=Mon Apr 17 04:35:00 UTC 2017, delay=0
AIC645: previous Takeoff =Mon Apr 17 04:46:00 UTC 2017, Arrival=Mon Apr 17 05:59:00 UTC 2017, delay =19
Blanket: Takeoff =Mon Apr 17 04:27:00 UTC 2017, Arrival=Mon Apr 17 05:40:00 UTC 2017, delay=0
JAI336: previous Takeoff =Mon Apr 17 02:54:00 UTC 2017, Arrival=Mon Apr 17 04:32:00 UTC 2017, delay =14
Blanket: Takeoff =Mon Apr 17 02:40:00 UTC 2017, Arrival=Mon Apr 17 04:18:00 UTC 2017, delay=0
```



---

#### **2.2.1.4.4 Sector Balance Program (SBP)**

This program is used to reorganize the flight plans in a FIR sector, TMA sector, FIR sector group, TMA sector group, or SUA with the purpose of solving unbalance issues. Sector Balance Program (SBP) organizes the flight plans using a priority criteria, with the purpose of minimizing the application of delays in the flight plans considered as the most important ones.

When this program is applied, the system proposes a solution avoiding the following issues:

- 1) Demand peaks.
- 2) Long saturation periods.
- 3) Short recovery periods.
- 4) Conflicts of flights entering or exiting the sector at the same minute, point, and flight level.

##### **2.2.1.4.4.1 SBP Algorithm**

Optionally, when a Sector Balancing Program is applied, the user can exempt a flight plan from the ATFM measure, making it the one with the higher priority when reallocating the flights (exempt), and can cancel the Domestic Flight Schedules. He may also choose to execute the SBP with re-routing; in this case, the system only tries to re-route flights when it is not possible to find a free time-schedule for them.

The priority order is as follows:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans with EET until reaching the regulated element longer than the parameter informed);
- Active flights;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Sector Time (the longer the flight will take to cross the sector, the higher is its priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);



- 
- Flight distance (the longer the distance, the higher is the priority);
  - Filled EET (the greater the EET, the less is the priority);
  - Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

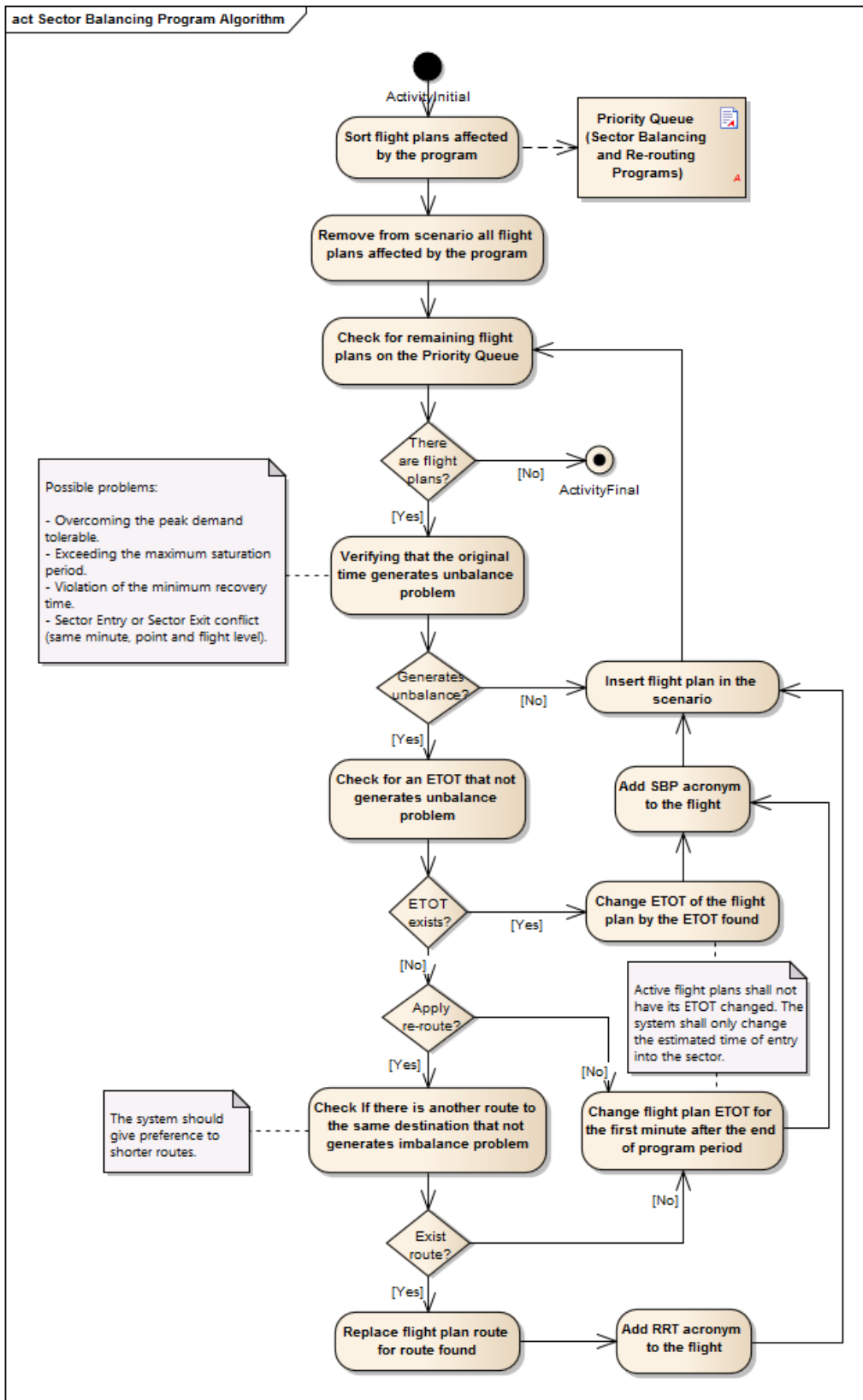
STS/SAR – For a flight engaged in Search and Rescue missions.

STS/FLTCK – For a flight performing calibration of nav aids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.





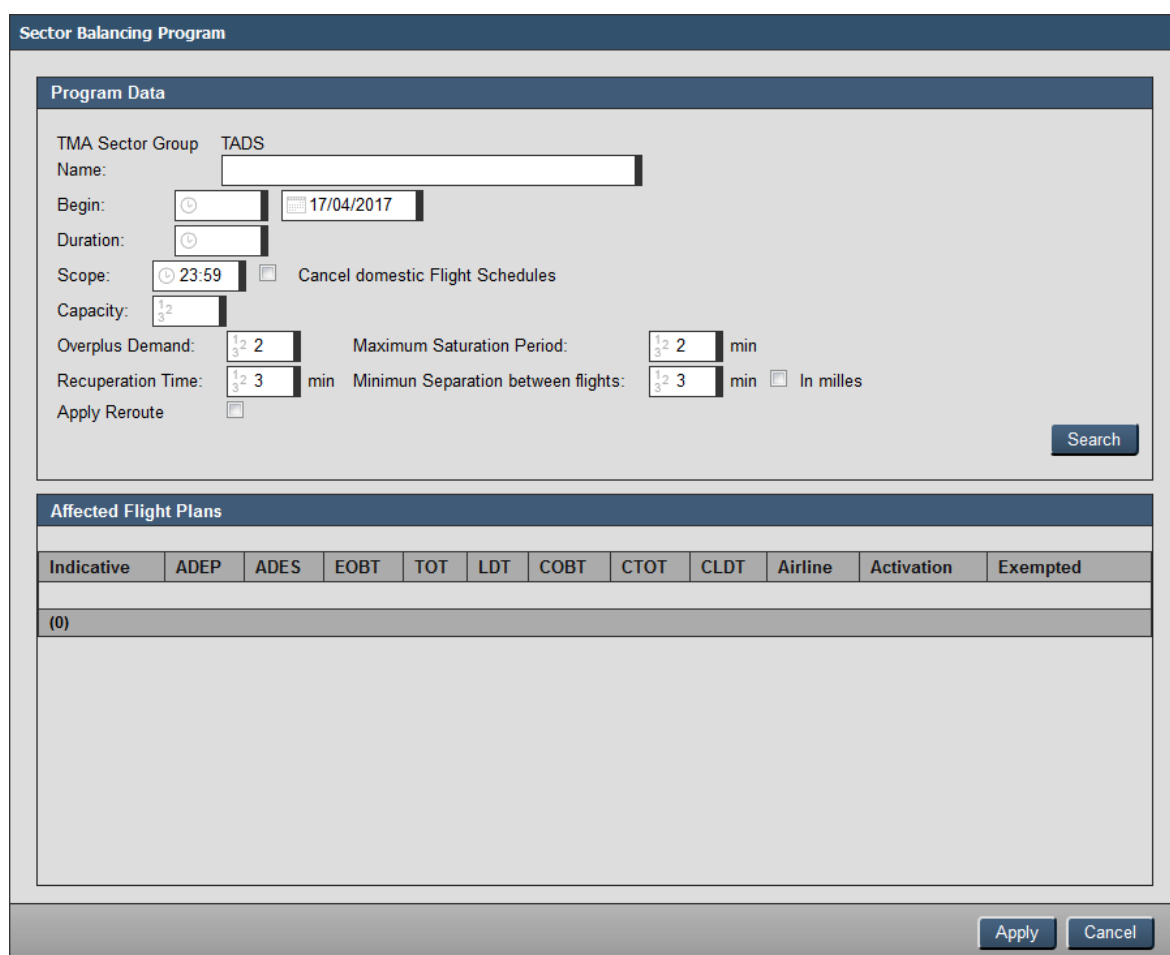
#### 2.2.1.4.4.2 Running the program

As mentioned before, the Sector Balancing Program (SBP) is available for regulated elements from the types: FIR sector, TMA sector, FIR sector group, TMA sector group, SUA, or polygon.

All program are executed the same way, first is necessary to open the Demand Chart of the regulated element in which the program will be applied, then select the program and confirm.

##### 2.4.1.4.4.2.1 Configuring the program

The first screen of the program is the following



Indicative	ADEP	ADES	EOBT	TOT	LDT	COBT	CTOT	CLDT	Airline	Activation	Exempted
(0)											

As shown in the figure bellow, the program parameters are:

- **TMA Sector Group:** this field indicates in which element the program will be applied;
- **Name:** a name to identify the program;



- 
- **Begin:** the begin time and date of the program;
  - **Duranton:** the duration of the program. It is important to highlight that the maximum duration accepted for a program is 12 hours;
  - **Scope:** Every flight with total EET bigger than or equal to this parameter shall be “exempted” and prioritized for this program. It is important to highlight that the maximum scope accepted for a program is 23:59;
  - **Cancel domestic flight schedules:** option to choose if the program will not consider the domestic flight schedule;
  - **Capacity:** The maximum number of movements in one minute;
  - **Overplus Demand:** how many flights above the capacity is allowed for the program period;
  - **Maximum Saturation Period:** for how long the extra flights defined in previous parameter is allowed;
  - **Recuperation Time:** since the algorithm has consider the extra flights during the minutes established in the previous parameter, for how long it should be respecting the capacity;
  - **Minimum Separation between flights:** for the flights that are entering and exiting the volume at the same point and level, what is the minimum separation between these flights. This separation can be in minutes or miles.

After filling the programs parameters, is required to click on “Search” button to load the affected flights in the list just bellow the parametes and then click on “Apply” button. The program will be applied with the filled parameters and the result can be viewed at the demand chart, as shown in the figure bellow:



## 2.4.1.4.4.2.2 Verifying the results

To verify the results of the program application, the program metrics has to be consulted in the Program tab of the scenario. The metrics for a SBP is presented in the figure below:

**Sector Balancing Program**

**Program Data**

TMA Sector Group: TADS  
Name: SBP1  
Begin: 03:00 17/04/2017  
Duration: 06:00  
Scope: 23:59 ☐ Cancel domestic Flight Schedules  
Capacity: 1/2 20  
Overplus Demand: 1/2 2 Maximum Saturation Period: 1/2 2 min  
Recuperation Time: 1/2 3 min Minimum Separation between flights: 1/2 3 min ☐ In miles  
Apply Reroute ☐

Scenario: CDM SCENARIO Period: 17/04/2017 - 00:00 to 18/04/2017 - 00:00  
Cause: Airspace Management

Amount plans delayed: 205 Sum plans delay: 2699 min Delay Average: 13 min  
Maximum delay min: 77 min Minimum delay min: 1 min

Indicative	ADEP	ADES	CTOT	CLDT	Point	CTO	Flight Type	Airline	Delay
AIC114	EGBB	VIDP	20:33	04:23		04:29	S	AIRINDIA	00:08
JAL749	RJAA	VIDP	06:36	13:06		08:12	S	JAPANAIR	00:26
KZR907	UAAA	VIDP	03:00	11:30	ASARI_F	04:07	S	KZR	00:30
IGO3492	VAAH	VIDP	03:27	04:35		03:54	S	IFLY	00:02
AIC806	VABB	VIDP	02:46	04:18		03:39	S	AIRINDIA	00:01
AIC806	VABB	VIDP	03:04	04:36		03:57	S	AIRINDIA	00:01
AIC866	VABB	VIDP	03:41	05:13		04:34	S	AIRINDIA	00:01
JAI2057	VABB	VIJP	04:59	06:16		05:53	S	JET AIRWAYS	00:01
VTI994	VABB	VIDP	05:06	06:42		06:01	S	VISTARA	00:01
VTI994	VABB	VIDP	05:06	06:42		06:01	S	VISTARA	00:01
AIC806	VABB	VIDP	02:46	04:18		03:39	S	AIRINDIA	00:01
AIC806	VABB	VIDP	03:04	04:36		03:57	S	AIRINDIA	00:01
AIC866	VABB	VIDP	03:41	05:13		04:34	S	AIRINDIA	00:01
JAI2057	VABB	VIJP	04:59	06:16		05:53	S	JET AIRWAYS	00:01
IGO464	VABB	VICG	06:21	08:14		07:16	S	IFLY	00:01
IGO532	VABB	VICG	06:34	08:26		07:28	S	IFLY	00:01

Close





Beyond the metrics, it is possible to consult the Priority that was used by the algorithm. To see this data is necessary to open the Priority screen, which is presented in the figure below:

Position	Indicative	ADEP	ADES	Exempt	Scope	Activation	Program	Distance	Instant	ST	Flight Type	EOBT	Original	Calculated	Delay	Route	Speed	Level
35	LLR613	VIDP	VUU			INA		698.58		00:52	S	02:05	02:18	02:19	00:01			
102	AIC864	VABB	VIDP			INA		1170.39		00:29	S	01:30	02:33	02:35	00:02			
88	JAI301	VABB	VIDP			INA		1178.21		00:32	S	01:30	02:35	02:36	00:01			
5	JAI336	VIDP	VABB			INA		1241.95		00:37	S	02:30	02:41	02:42	00:01			
6	GOW334	VIDP	VABB			INA		1241.95		00:37	S	02:35	02:46					
103	AIC0864	VABB	VIDP			INA		1170.39		00:29	S	01:30	02:46					
202	IGO6929	VIDP	VOBL			INA		1776.99		00:16	S	02:35	02:49					
230	AIC804	VOBL	VIDP			INA		1791.97		00:13	S	00:40	02:48	02:49	00:01			
225	IAD1720	VOBL	VIUP			INA		1619.95		00:15	S	00:35	02:50					
96	IGO591	VABO	VIDP			INA		814.65		00:31	S	02:10	02:49	02:51	00:02			
10	AIC0665	VIDP	VABB			INA		1139.97		00:36	S	02:30	02:52					
232	AIC559	VOHS	VIDP			INA		1382.63		00:13	S	01:15	02:54					
31	GOW347	VIUP	VABB			INA		1008.91		00:17	S	02:40	02:54					
9	JAI0336	VIDP	VABB			INA		1139.97		00:36	S	02:30	02:56					
22	SEJ152	VABB	VIDP			INA		1178.21		00:31	S	01:50	02:56					
161	CSN3027	ZGGG	VIDP			INA		1823.62		00:24	S	00:30	02:57					
183	IGO393	VIDP	VERP			INA		1044.71		00:20	S	02:45	02:56	02:58	00:02			
105	AIC0461	VIDP	VIAR			INA		463.65		00:28	S	02:40	02:57	02:58	00:01			
203	JAI0759	VIDP	VOMM			INA		1903.93		00:16	S	02:40	02:58	02:59	00:01			
15	JAI346	VABB	VIDP			INA		1178.21		00:32	S	02:00	03:05					
44	IGO746	VIDP	VAUD			INA		556.30		00:40	S	02:55	03:06					
63	SEI471	VIDP	VISR			INA		814.02		00:36	S	02:55	03:06	03:07	00:01			

The log file for a SBP is available to be consulted by users with an administrator profile. An example of this file is presented in the figure below:

```
Reset SBP helper lists with {} flights.298
SBP, scenario:CDM SCENARIO, name:SBP1, regulatedName:TADS, begin:Mon Apr 17 03:00:00 UTC 2017, end:Mon Apr 17 1
1 - GOW381, adep:VABB, departure:Mon Apr 17 03:15:00 UTC 2017, firstPoint:2500N07428E, firstLevel:F370, firstS
entry Mon Apr 17 04:11:00 UTC 2017
exit Mon Apr 17 04:57:00 UTC 2017
2 - JAI0489, adep:VABB, departure:Mon Apr 17 04:24:00 UTC 2017, firstPoint:2500N07428E, firstLevel:F370, first
entry Mon Apr 17 05:19:00 UTC 2017
exit Mon Apr 17 06:03:00 UTC 2017
3 - JAI701, adep:VABB, departure:Mon Apr 17 06:30:00 UTC 2017, firstPoint:2500N07428E, firstLevel:F370, firstS
entry Mon Apr 17 07:25:00 UTC 2017
exit Mon Apr 17 08:09:00 UTC 2017
4 - JAI0701, adep:VABB, departure:Mon Apr 17 06:39:00 UTC 2017, firstPoint:2500N07428E, firstLevel:F370, first
entry Mon Apr 17 07:34:00 UTC 2017
exit Mon Apr 17 08:18:00 UTC 2017
5 - JAI336, adep:VIDP, departure:Mon Apr 17 02:40:00 UTC 2017, firstPoint:2830N07706E, firstLevel:F050, firstS
ADEP:Collision at VIDP Mon Apr 17 02:40:00 UTC 2017
entry Mon Apr 17 02:42:00 UTC 2017
exit Mon Apr 17 03:19:00 UTC 2017
6 - GOW334, adep:VIDP, departure:Mon Apr 17 02:45:00 UTC 2017, firstPoint:2830N07706E, firstLevel:F050, firstS
entry Mon Apr 17 02:46:00 UTC 2017
exit Mon Apr 17 03:23:00 UTC 2017
7 - IGO179, adep:VIDP, departure:Mon Apr 17 03:10:00 UTC 2017, firstPoint:2830N07706E, firstLevel:F050, firstS
ADEP:Collision at VIDP Mon Apr 17 03:10:00 UTC 2017
entry Mon Apr 17 03:12:00 UTC 2017
exit Mon Apr 17 03:49:00 UTC 2017
8 - IGO181, adep:VIDP, departure:Mon Apr 17 04:10:00 UTC 2017, firstPoint:2830N07706E, firstLevel:F050, firstS
entry Mon Apr 17 04:11:00 UTC 2017
exit Mon Apr 17 04:48:00 UTC 2017
9 - JAI0336, adep:VIDP, departure:Mon Apr 17 02:55:00 UTC 2017, firstPoint:2830N07704E, firstLevel:F050, first
entry Mon Apr 17 02:56:00 UTC 2017
exit Mon Apr 17 03:32:00 UTC 2017
10 - AIC0665, adep:VIDP, departure:Mon Apr 17 02:51:00 UTC 2017, firstPoint:2830N07704E, firstLevel:F050, first
entry Mon Apr 17 02:52:00 UTC 2017
exit Mon Apr 17 03:28:00 UTC 2017
```



---

#### **2.2.1.4.5 Rerouting Program (RRP)**

This program is used to change the routes of flight plans that affect a FIR sector, TMA sector, FIR sector group, TMA sector group, or SUA with the purpose of solving unbalance issues.

##### **2.2.1.4.5.1 RRP Algorithm**

The Re-routing Program organizes the flight plans involved in the problem by using a priority criteria, with the purpose of solve the unbalance with the minimal rerouting of the flight plans considered as the most important ones.

When this program is applied, the system proposes a solution avoiding the following issues:

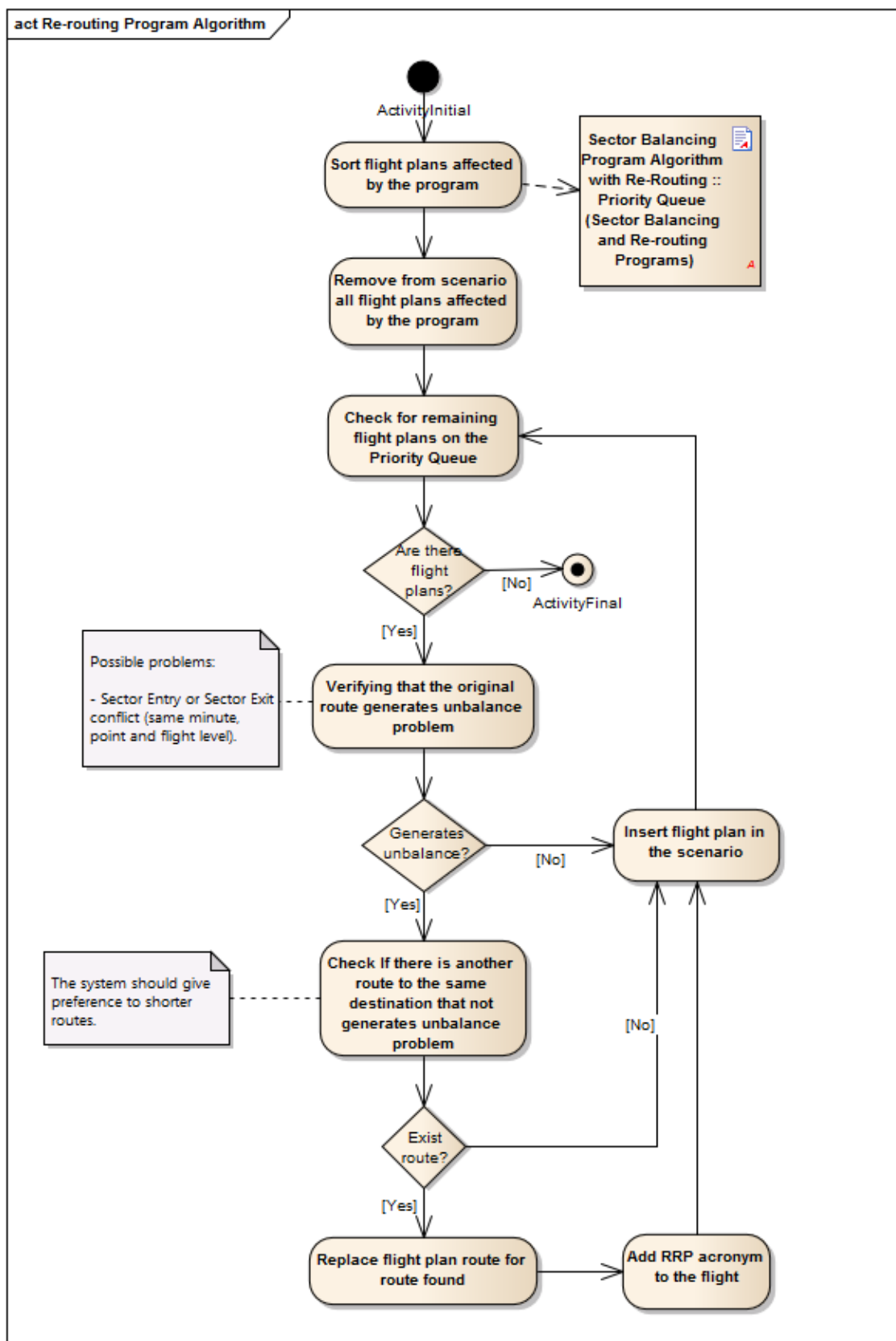
- 1) Demand peaks.
- 2) Long saturation periods.
- 3) Short recovery periods.
- 4) Conflicts of flights entering or exiting the sector at the same minute, point, and flight level.

The system tries to find a new route in the SKYFLOW Route Catalogue for the plans that do not meet the conditions above, transferring the flight plans to other sectors.

Optionally, when a Re-routing Program is applied, the user can exempt a flight plan from the ATFM measure, making it the one with the higher priority when reallocating the flights (exempt), and can cancel the Domestic Flight Schedules.



### act Re-routing Program Algorithm





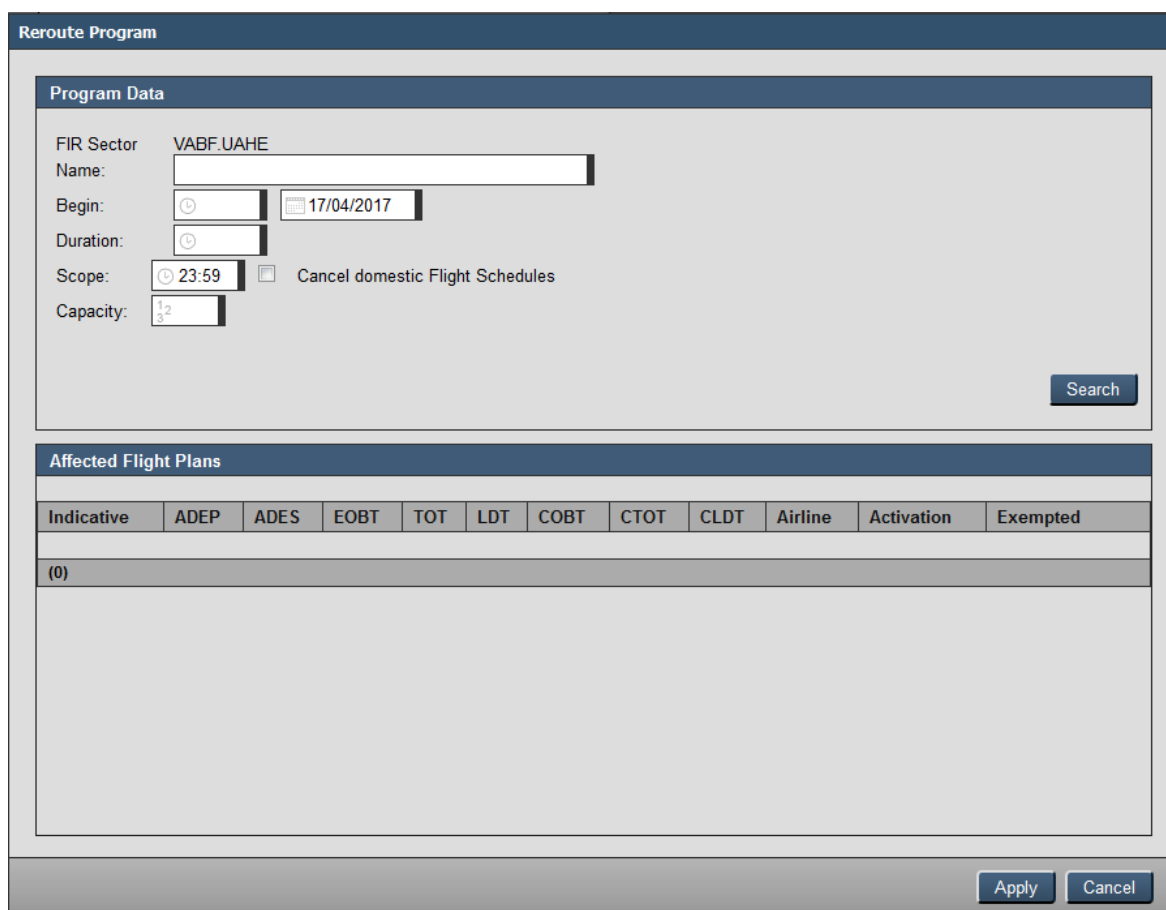
## 2.2.1.4.5.2 Running the program

As mentioned before, the Flight Level Adjustment Program (FAP) is available for regulated elements from the types: FIR sector, TMA sector, FIR sector group, TMA sector group, SUA, polygon, or airway segment.

All program are executed the same way, first is necessary to open the Demand Chart of the regulated element in which the program will be applied, then select the program and confirm.

### 2.4.1.4.5.2.1 Configuring the program

The first screen of the program is the following



Indicative	ADEP	ADES	EOBT	TOT	LDT	COBT	CTOT	CLDT	Airline	Activation	Exempted
(0)											

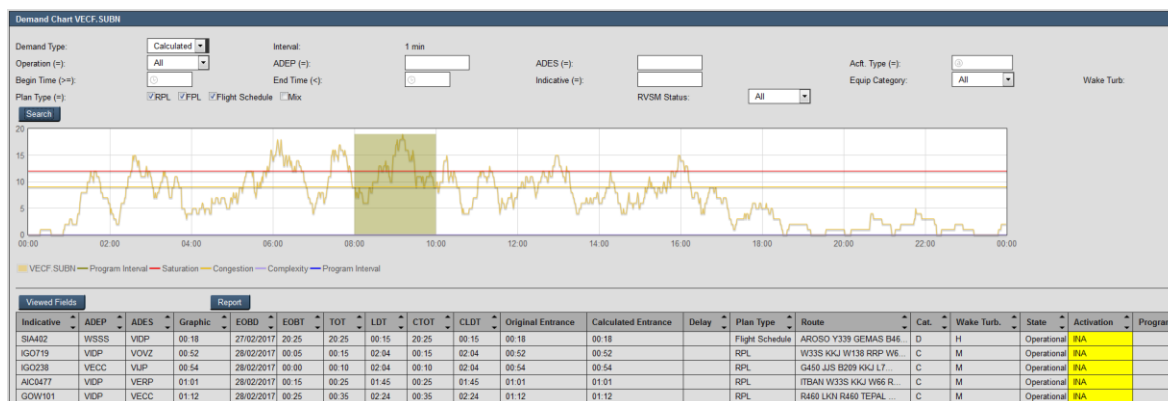
As shown in the figure bellow, the program parameters are:

- **FIR Sector:** this field indicates in which element the program will be applied.
- **Name:** a name to identify the program;
- **Begin:** the begin time and date of the program;



- **Duraction:** the duration of the program. It is important to highlight that the maximum duration accepted for a program is 12 hours;
- **Scope:** Every flight with total EET bigger than or equal to this parameter shall be “exempted” and prioritized for this program. It is important to highlight that the maximum scope accepted for a program is 23:59;
- **Cancel domestic flight schedules:** option to choose if the program will not consider the domestic flight schedule
- **Capacity:** The maximum number of movements in one minute.

After filling the programs parameters, is required to click on “Search” button to load the affected flights in the list just bellow the parametes and then click on “Apply” button. The program will be applied with the filled parameters and the result can be viewed at the demand chart, as shown in the figure bellow:



#### 2.4.1.4.5.2.2 Verifying the results

To verify the results of the program application, the program metrics has to be consulted in the Program tab of the scenario. The metrics for a RRP is presented in the figure below:



**Reroute Program**

**Program Data**

FIR Sector: VABF UAHE

Name: RRP1

Begin: 00:00 17/04/2017

Duration: 08:00

Scope: 23:59 ☐ Cancel domestic Flight Schedules

Capacity: 12 0

Scenario: RRP TEST

Cause: Airspace Management

Period: 17/04/2017 - 00:00 to 18/04/2017 - 00:00

Amount plans delayed: 12

Sum plans delay: -7 min

Delay Average: 0 min

Maximum delay min: 13 min

Minimum delay min: -8 min

Maximum delay: 100.68 NM

Sum plans delay: -219.45 NM

Delay Average: -18.28 NM

Minimum delay: -57.13 NM

Indicative	ADEP	ADES	CTOT	CLDT	Point	CTO	Flight Type	Airline	Delay	Additional Distance
GOW459	VAAH	VABB	04:05	04:51			S	GOAIR	-00:08	-57.13 NM
SEJ636	VAAH	VABB	00:00	00:46			S	SPICEJET	-00:02	-26.3 NM
IGO958	VAAH	VABB	00:15	01:01			S	IFLY	-00:02	-26.3 NM
JAI738	VAAH	VABB	01:40	02:26			S	JET AIRWAYS	-00:01	-26.3 NM
AIC0614	VAAH	VABB	02:14	03:00			S	AIRINDIA	00:00	-26.3 NM
AIC614	VAAH	VABB	02:20	03:06			S	AIRINDIA	00:00	-26.3 NM
IGO214	VAAH	VABB	04:00	04:46			S	IFLY	-00:02	-26.3 NM
JAI328	VAAH	VABB	04:25	05:11			S	JET AIRWAYS	-00:01	-26.3 NM
JAI0328	VAAH	VABB	04:38	05:25			S	JET AIRWAYS	00:00	-26.3 NM
IGO984	VAAH	VABB	05:05	05:51			S	IFLY	-00:02	-26.3 NM
IGO414	VAAH	VABB	07:10	07:56			S	IFLY	-00:02	-26.3 NM
IGO236	VABB	VILK	04:10	06:02			S	IFLY	00:13	100.68 NM

(12)

Close

Beyond the metrics, it is possible to consult the Priority that was used by the algorithm. To see this data is necessary to open the Priority screen, which is presented in the figure below:



Priorities of Program Flights																		
Position	Indicative	ADEP	ADES	Exempt	Scope	Activation	Program	Distance	Instant	ST	Flight Type	EOB	Original	Calculated	Delay	Route	Speed	Level
114	IGO4683	VAAH	VIDP			INA		800.67		00:13	S	23:50	00:14					
9	AIC851	VIDP	VAPO			INA		1218.97		00:30	S	23:30	00:17					
12	IGO218	VJUP	VABB			INA		1008.91		00:30	S	23:50	00:21					
91	JAI2093	VABB	VAUD			INA		626.31		00:25	S	23:40	00:21					
10	AIC0851	VIDP	VAPO			INA		1218.97		00:30	S	23:30	00:26					
122	JAI329	VABB	VAAH			INA		463.64		00:10	S	23:50	00:26					
11	IAD779	VIDP	VOGO			INA		1607.64		00:30	S	23:40	00:28					
113	JAI0329	VABB	VAAH			INA		445.22		00:16	S	23:50	00:30					
123	AIC017	VABB	VAAH			INA		463.64		00:10	S	00:00	00:36					
102	JAI0685	VAAH	VIDP			INA		768.68		00:21	S	00:20	00:39					
40	JAI0364	VAPO	VIDP			INA		1296.39		00:29	S	00:00	00:41					
129	JAI341	VABB	VABO			INA		369.05		00:06	S	00:05	00:41					
132	SEJ921	VAAH	VOBL			INA		1338.13		00:05	S	00:30	00:44					
93	AIC0633	VABB	VABP			INA		785.43		00:25	S	00:30	01:00					
42	GOW390	VABB	VJUP			INA		948.22		00:29	S	00:25	01:01					
43	JAI2055	VABB	VJUP			INA		948.22		00:29	S	00:25	01:01					
115	IGO158	VAAH	VIDP			INA		800.67		00:13	S	00:40	01:04					
92	AIC633	VABB	VABP			INA		785.43		00:25	S	00:30	01:06					
119	IGO586	VOBL	VAAH			INA		1316.41		00:11	S	23:30	01:06					
41	SEJ913	VIDP	VAAH			INA		788.40		00:29	S	00:20	01:08					
82	GOW532	VAAH	VECC			INA		1688.92		00:27	S	00:55	01:09					

The log file for a RRP is available to be consulted by users with an administrator profile. An example of this file is presented in the figure below:

```
Reset SBP helper lists with {} flights.154
RRP, scenario:RRP TEST, name:RRP1, regulatedName:VABF.UAHE, begin:Mon Apr 17 00:00:00 UTC 2017, end:Mon Apr 17
1 - LLR608, adep:VASU, departure:Mon Apr 17 04:00:00 UTC 2017, firstPoint:2131N07306E, firstLevel:F209, firstSp
    Exceeded capacity: For entrance at Mon Apr 17 04:10:00 UTC 2017 it'd exceed overplus demand at Mon
    No alternative route found
entry Mon Apr 17 04:10:00 UTC 2017
exit Mon Apr 17 04:54:00 UTC 2017
2 - LLR631, adep:VIDP, departure:Mon Apr 17 00:30:00 UTC 2017, firstPoint:2500N07420E, firstLevel:F220, firstSp
    Exceeded capacity: For entrance at Mon Apr 17 01:38:00 UTC 2017 it'd exceed overplus demand at Mon
    No alternative route found
entry Mon Apr 17 01:38:00 UTC 2017
exit Mon Apr 17 02:15:00 UTC 2017
3 - AIC646, adep:VIJO, departure:Mon Apr 17 06:35:00 UTC 2017, firstPoint:2503N07339E, firstLevel:F340, firstSp
    Exceeded capacity: For entrance at Mon Apr 17 06:51:00 UTC 2017 it'd exceed overplus demand at Mon
    No alternative route found
entry Mon Apr 17 06:51:00 UTC 2017
exit Mon Apr 17 07:25:00 UTC 2017
4 - JAI797, adep:VIDP, departure:Mon Apr 17 00:45:00 UTC 2017, firstPoint:IDOLA, firstLevel:F180, firstSpeed:NC
    Exceeded capacity: For entrance at Mon Apr 17 01:42:00 UTC 2017 it'd exceed overplus demand at Mon
    No alternative route found
entry Mon Apr 17 01:42:00 UTC 2017
exit Mon Apr 17 02:14:00 UTC 2017
5 - JAI2094, adep:VAUD, departure:Mon Apr 17 01:40:00 UTC 2017, firstPoint:2429N07404E, firstLevel:F150, firstSp
    Exceeded capacity: For entrance at Mon Apr 17 01:44:00 UTC 2017 it'd exceed overplus demand at Mon
    Extract flight with route: VAUD/DCT UUD W75 PRA A474 SG DCT AKTIV DCT IGBAN DCT/VABB
    Route does not avoid the area
entry Mon Apr 17 01:44:00 UTC 2017
exit Mon Apr 17 02:16:00 UTC 2017
6 - GOW334, adep:VIDP, departure:Mon Apr 17 02:45:00 UTC 2017, firstPoint:2500N07504E, firstLevel:F370, firstSp
    Exceeded capacity: For entrance at Mon Apr 17 03:23:00 UTC 2017 it'd exceed overplus demand at Mon
    Extract flight with route: VIDP/DCT REBON Q2 SG DCT/VABB
    Route does not avoid the area
    Extract flight with route: VIDP/DCT REBON Q2 SG DCT/VABB
    Route does not avoid the area
    Extract flight with route: VIDP/Q2/VABB
    Route does not avoid the area
    Extract flight with route: VIDP/Q2/VABB
    Route does not avoid the area
entry Mon Apr 17 03:23:00 UTC 2017
exit Mon Apr 17 03:54:00 UTC 2017
```



#### 2.2.1.4.6 Flight Level Adjustment Program (FAP)

This program is used by the Flow Manager for segregating different traffic flows, or to distribute the number of aircraft requesting access to a specified geographic region. Capping and Tunneling are techniques commonly used to keep aircraft from entering busy and complex sectors and still permitting them to depart with minimal delays.

- a) *Capping*: Term to indicate aircraft will be cleared to an altitude lower than their requested altitude until they are clear of a particular airspace. Capping may apply to the initial segment of the flight or for the entire flight.
- b) *Tunneling*: Term to indicate traffic will be descended prior to the normal descent point at the arrival airport to remain clear of an airspace situation; e.g., holding.

##### 2.2.1.4.6.1 FAP Algorithm

The goal of this program is to identify the flight plan that need a change of altitude and provide some auxiliary information to the user change the flight plan route insuring the altitude restriction in a airspace volume (FIR sector, TMA sector, FIR sector group, TMA sector group, SUA, or polygon) or airway segment.

The priority order is as follows:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Active plans;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Sector Time (the longer the flight will take to cross the sector, the higher is its priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.





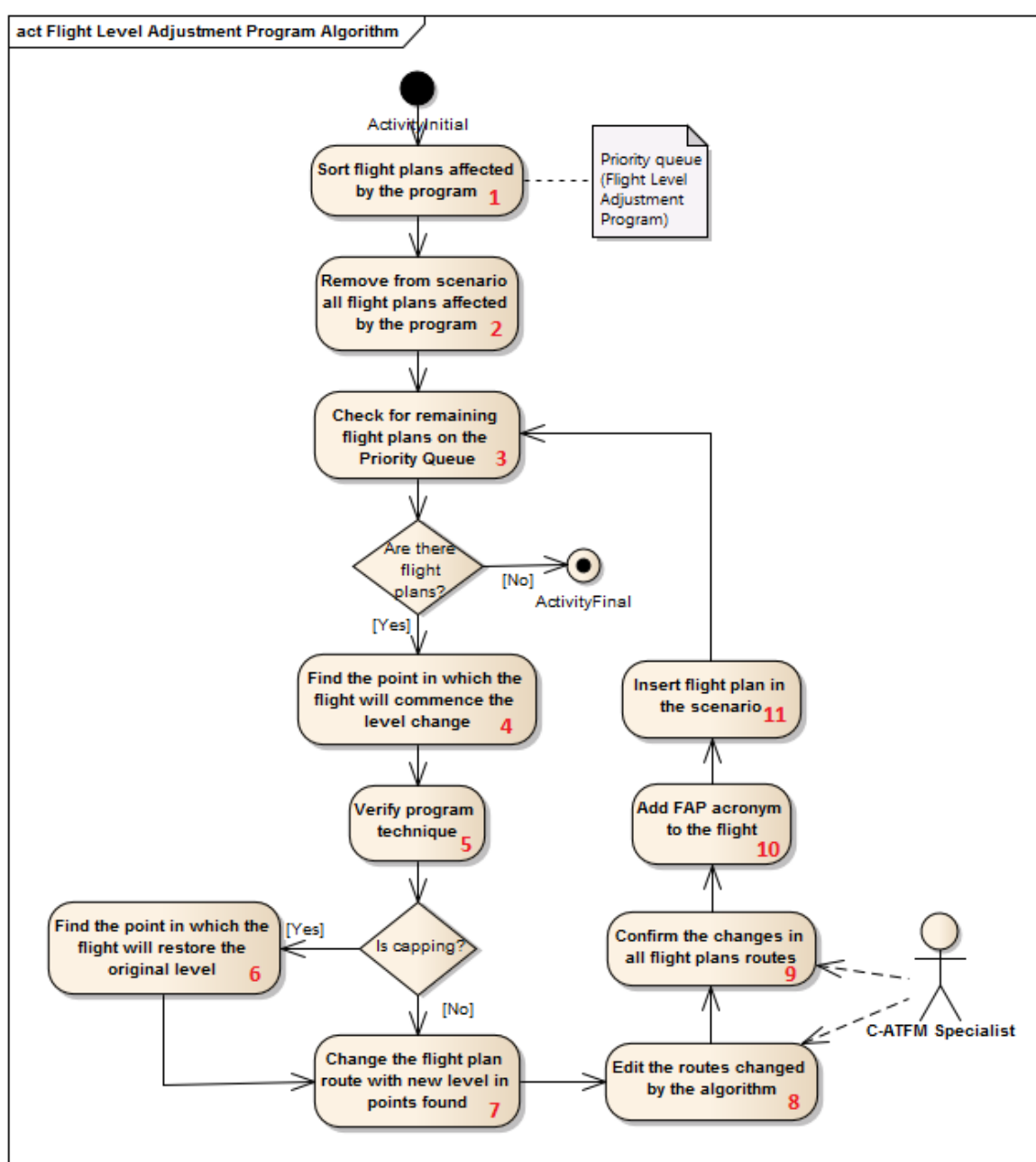
STS/FLTCK – For a flight performing calibration of nav aids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.

The algorithm is presented in the following diagram and the steps detailed as follow:





- (1) The algorithm first sort all the affected flights and present them in inverse order of priority.
- (2) After all the affected flights will be removed from the scenario, so then the algorithm can put one by one in the new position, which can be the same or different from the previous one.
- (3) If there is no more flight plans in the list, the algorithm will be finished.
- (4) For each flight, the algorithm will find the point at which begins the change of level considering that the aircraft must avoid the restriction in order to reach the projected entry point at the new altitude.
- (5) Now the algorithm will verify the selected technique, if it is capping or tunneling.
- (6) If it is capping, the algorithm will find the point at which the flight will restore the original level. It means that the restriction has been avoid and the flight can continue the route in the original flight level.
- (7) The system will present the starting and ending points for the respective flight plan.
- (8) The user is able to change the flight route using the informations calculated by the algorithm.
- (9) A confirmation about the route change is required so the algorithm will run again to check if the flight does not violate the flight level restriction specified in the program parameters.
- (10) The system will add the FAP acronym to the flight to identify that this flight has suffered a change by the FAP algorithm.
- (11) The flight will be added in the scenario and the algorithm will repeat this sequence for the next flight in the queue.

#### **2.2.1.4.7 Fix Balancing Program (FBP)**

This program is used by the Flow Manager to distribute demand and avoiding delays. The aircraft is assigned a different arrival or departure fix/navaid than the one indicated in the flight plan. Assigning an aircraft a fix/navaid other than that in the filed flight plan in the arrival or departure phase of flight to equitably distribute demand.



Fix Balancing Program generates a set of tactical flow measures that allow the Traffic Management Specialist (TMS) to reduce the traffic on a fix by changing the original route of some flight plans, accommodating the demand to the decreased capacity or to the increased uncertainty. The program impose restrictions to some flight plans possibly increasing the required flight distance and EET to the destination.

The Fix Balance Program function on SKYFLOW support the user to rerouting some flights in order to reach traffic balance among different options. The Fix Balance Program, rerouting some flights may be a complementary option to a Ground Stop Program, when the depart fix is saturated or to a MIT/MINIT en route program to minimize the flight delays to reach the destination.

The Fix Balancing Programs is available for three different point (fix/navaid) types:

- a) DEP: it is applied to a departure point. The SKYFLOW will automatically identify the aerodromes having SID procedures with transition point equal to the selected point;
- b) ARR: it is applied to an arrival point. The SKYFLOW will automatically identify the aerodromes having STAR procedures with transition point equal to selected point;
- c) ENR: It is applied to an en route point. The SKYFLOW will automatically include in the CDM scenario all points within a predefined distance (program parameter) from the selected point.

The User will evaluate the proposed options to reroute the flights. Rerouting the plans the User shall reach the balance among the options and avoid traffic demand levels above the congestion and saturation or any limit established as a consequence of a decreasing on ATS capacity after a weather condition or a technical or a staffing restriction. After publishing the User will negotiate the flight plan changes with AO. Additional changes on the flights may be implemented to reach the traffic balance after publishing.

This program provides to the User a tool to manually reroute the flights and simultaneously evaluating the options to balance the demand among the routing options.

#### **2.2.1.4.7.1 FBP Algorithm**

The Fix Balancing Program option provides a set of tools that are associated to manual actions to allow the user to rerouting flights considering its order and priority and reach a convenient solution to balance the demand over a point (fix/navaid).



To apply the program the User shall fulfill the following steps:

- 1) Already identified the problem to solve, built a scenario where all main ATS restrictions can be evaluated eventually adjusted to specific conditions due to weather or to technical problems.
- 2) Analyzed the problem, define a reference point (fix or navaid) that has a traffic saturation in a specific period. This reference point can be associated to a STAR or SID procedure or just be a point on the Airspace.
- 3) Define the FBP parameters.

The tool provides a list of flight plans indicating the flights associated to the imbalances (red/yellow indication) ordered following associated priorities criteria and a list of alternative points (fix or navaid) with associated traffic load.

The priority order is as follows:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans with EET until crossing the fix/navaid longer than the parameter informed);
- Active plans;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to cross the fix/navaid (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.

STS/FLTCK – For a flight performing calibration of nav aids.

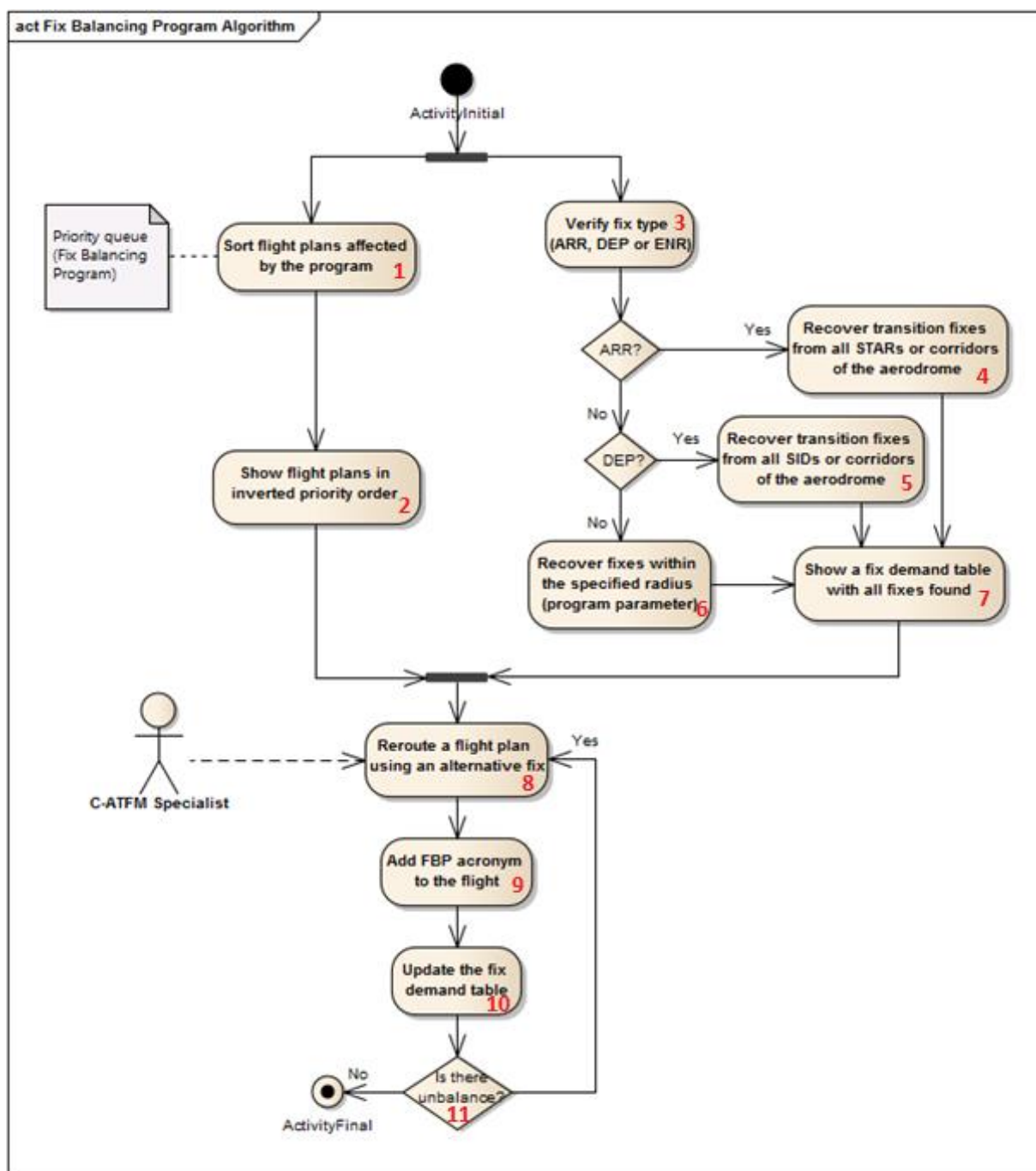


STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.

The algorithm is presented in the following diagram and the steps detailed as follow:





- (1) The algorithm first sort all the affected flights.
- (2) The affected flights are presented in inverse order of priority.
- (3) Verify the point type defined in the program parameter (DEP, ARR or ENR).
- (4) If it is an ARR point, will be recovered all transition points from STARs and corridors of the aerodrome to which the point is associated.
- (5) If it is a DEP point, will be recovered all transition points from SIDs and corridors of the aerodrome to which the point is associated.
- (6) If it is an ENR point, will be recovered all points within the specified distance (program parameter).
- (7) The system will present a Fix Demand Table with all alternative points found.
- (8) Manually, the user has to reroute flight by flight using an alternative point.
- (9) The system will add the FBP acronym to the flight to identify that this flight has suffered a change by the FBP algorithm.
- (10) The Fix Demand Table will be updated considering the new route given to the flight.
- (11) If the unbalance problem was not resolve, the user can change another flight route, going to step 8. Otherwise, the algorithm finishes.

#### **2.2.1.4.8 Airborne Holding Program (AHP)**

Airborne holding is a procedure where is issued a clearance for a predetermined maneuver which keeps aircraft within a specified airspace while awaiting further clearance from ATC. Airborne holding is caused by many factors: airport arrival demand exceeds its capacity, equipment outages (navaid, radar, computer etc.), aircraft emergencies, enroute weather, airport gridlock, and sector saturation. With the exception of demand exceeding airport capacity, these factors are usually unknown in advance.

In certain instances, planned limited airborne holding may be used to manage traffic when delays per aircraft are expected to be brief or may be utilized to insure arrival demand is available when capacity is unknown or when capacity unexpectedly increases. This will help to keep a supply of traffic available to meet the capacity of an airport when the slowdown is temporary. At other times, airborne holding is in response to a situation and is unplanned. At



some facilities where holding airspace is available, holding ensures aircraft are available to fill the capacity at the airport. Airborne Holding is a tactical time separation program.

It has the possibility of reducing cost and decreasing passenger inconvenience by minimizing the chance of aircraft diversions. Additional benefits include more accurate delay initiatives, and better matches of demand and capacity and capacity enhancement.

The safety does not recommend extended periods of airborne holding, and shall be complemented by programs keeping the aircraft on ground minimizing the airborne holding time to a minimum.

Airborne Holding Programs are tactical ATFM measures that allow identify the holding times to face a capacity restrictions on tactical scenarios. After applying the program the user shall evaluate the results and identify other measures for the flights exceeding “reasonable” holding times (delays).

There are three types of AHP implemented in SKYFLOW:

- a. Aerodrome type: it is applied to an arrival airport regulated element and allow to automatically update the flight plans considering the parameters defined in the program: the capacity to receive flights and the aircrafts separation.
- b. Fix: it is applied to a Fix or Navaid regulated element and allow to automatically update the flight plans considering the parameters defined in the program: capacity of movements and the aircraft separation when flying at the same level.
- c. Area: It is applied to FIR sector, TMA sector, FIR sector group, TMA sector group, SUA or polygon, all corresponding to a regulated element. This program allow to automatically update the flight plans considering the parameters defined in the program: capacity of movements, aircraft separation on the entry point at the same level. Additionally this program allow to define an exceeding demand during specifics timing conditions.

#### **2.2.1.4.8.1 AHP Algorithm**

The goal of this algorithm is to provide a tool to compute the airborne holding time necessary to decrease the traffic to a desirable level on a reference point or area. This is applicable to aerodrome, fix/navaid or area (FIR sector and sector group, TMA sector and sector group, SUA and polygon).



The program consider three different priority orders, one for aerodromes, other for fix or navaid and another one for zones (sectors, SUAs and polygons) as follows:

#### Aerodrome

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans that land in the aerodrome with EET longer than the parameter informed);
- Active flights;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to make use of the aerodrome (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

#### Fix/navaid:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans that land in the aerodrome with EET longer than the parameter informed);
- Active flights;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to cross the fix/navaid (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

#### Zones:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);





- Flights that have a high priority due to their scope (flight plans that land in the aerodrome with EET longer than the parameter informed);
- Active flights;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Sector time (the greater the sector time, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.

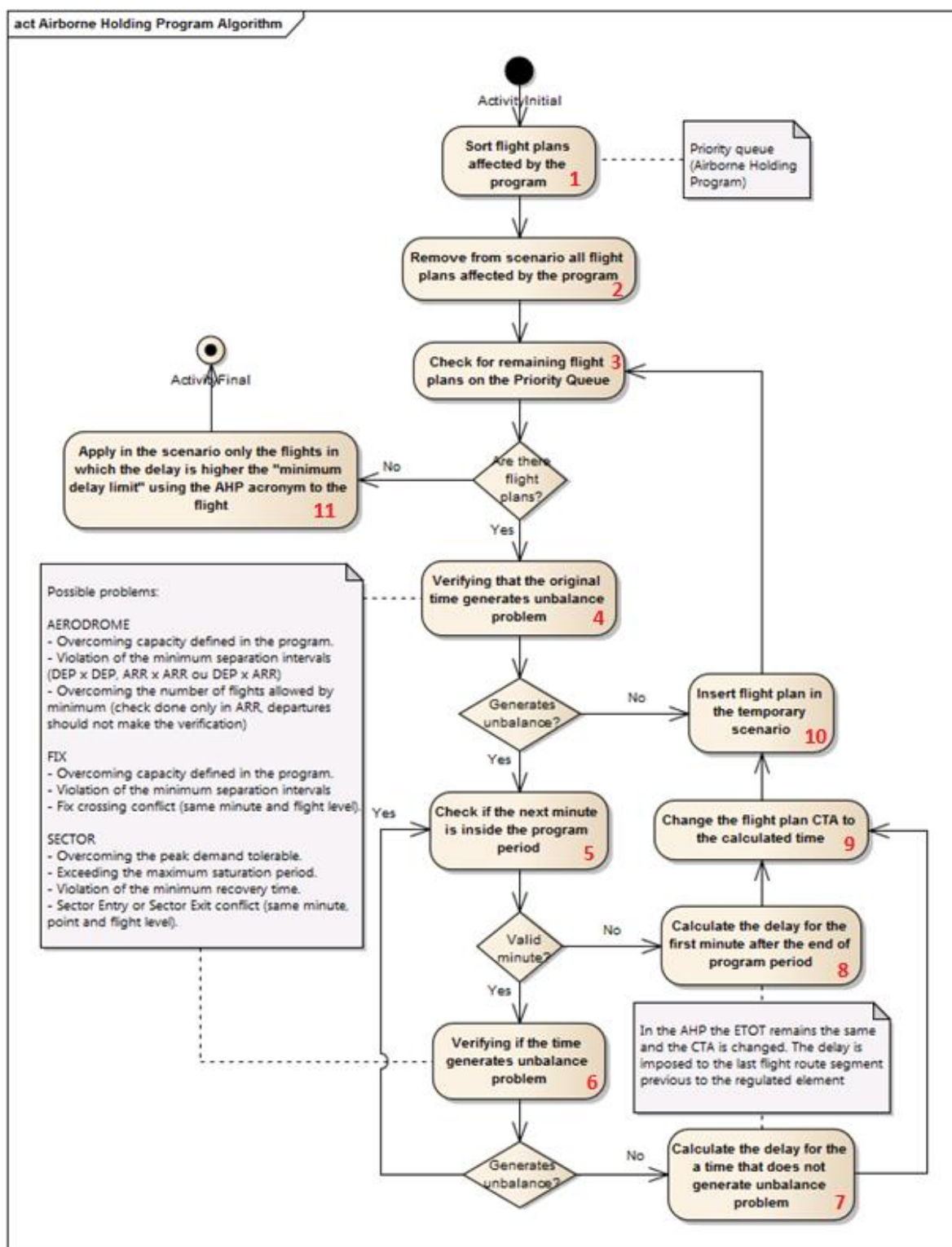
STS/FLTCK – For a flight performing calibration of nav aids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.

The algorithm is presented in the following diagram and the steps detailed as follow:



(1) The algorithm first sort all the affected flights.



- 
- (2) All affected flights will be removed from the scenario, and then the algorithm can put one by one in the new position, which can be the same or different from the previous one.
  - (3) The algorithm will check if there are remaining flight plans on the priority queue.
  - (4) If there are flight plans in the queue, the algorithm will verify, for each flight, if the original time generates unbalance problem. The unbalance will be checked considering the parameters defined for each regulated element type:
    - a) Aerodrome:
      - Overcoming capacity defined in the program.
      - Violation of the minimum separation intervals (DEP x DEP, ARR x ARR ou DEP x ARR)
      - Overcoming the number of flights allowed by minimum (check done only in ARR, departures should not make the verification)
    - b) Fix/Navaid:
      - Overcoming capacity defined in the program.
      - Violation of the minimum separation intervals
      - Fix crossing conflict (same minute and flight level).
    - c) FIR sector, TMA sector, FIR sector group, TMA sector group, SUA or polygon:
      - Overcoming the peak demand tolerable.
      - Exceeding the maximum saturation period.
      - Violation of the minimum recovery time.
      - Sector Entry or Sector Exit conflict (same minute, point and flight level).
  - (5) If the original time generate unbalance problem, the algorithm will check if the next minute is inside the program period. Otherwise, it will go to step (10)
  - (6) If the minute is valid, the algorithm will again check for unbalance problems.



- 
- (7) If the minute does not generate unbalance problem, the algorithm will calculate the delay to the minute, otherwise, it will go back to step (5).
  - (8) If the minute is not valid, the algorithm will calculate the delay to the first minute after the end of the program period.
  - (9) The algorithm will change the CLDT to the calculated time.
  - (10) The flight will be inserted in the scenario and will be back to step (3).
  - (11) If there is no more flight plans in the queue, the algorithm will be applied only in flight plans which the given delay is higher the “minimum delay limit” specified adding the AHP acronym to the flight to identify that this flight has suffered a change by the AHP algorithm.

#### **2.2.1.4.9 In Trail Spacing Programs (MIT/MINIT)**

In-Trail Spacing Programs generates tactical flow measures that allow to reduce the traffic rate accommodating the flights on its original route to face surge on the demand or the decreased on ATC capacity or to the increased level of uncertainty (weather). The program applies restrictions to the flights spacing the aircrafts in miles (MIT) or in time (MINIT) on a point or on a segment between points.

There are two In-Trail Programs in SKYFLOW:

- d) Miles In-Trail Program (MIT);
- e) Minutes In-Trail Program (MINIT).

A MIT program specify the distance between aircraft, normally, in the same stratum associated with the same destination or flight route. A MIT program describes the number of miles required between aircrafts over a fix of departing flights of specific airport, or over a fix with a specific flight level, or entering point on a sector, or a specific route segment. MIT program are used to space flights based on distance in order to control the rates of certain flows into a region or at a fix/navaid. They are used also to provide space for additional traffic (merging departing flights) to enter the flow of traffic. Normally MIT program is implemented in response to a specific situation. For example, standard separation between aircraft in the en route environment has a number of miles defined which can be increased due to a weather event.



A MINIT program is a variation of MIT program. Minutes-in-Trail Program describes the minutes needed between successive aircrafts. It is normally used when aircraft are operating in a non-radar environment or transitioning to/from a non-radar environment.

#### **2.2.1.4.9.1 MIT / MINIT Algorithm**

The goal of this algorithm is to set the CTO on the reference point for every flight selected to the program insuring the separation parameter among these flights. This is applicable to fix, navaid, and airway segment.

The priority order is as follows:

- Time-schedule in which the flight plan is expected to cross the fix/navaid (the earlier the schedule, the higher is the priority);
- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Active plans;
- Flight plans that have already been delayed or re-routed by another program;
- Pre-active plans;
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.

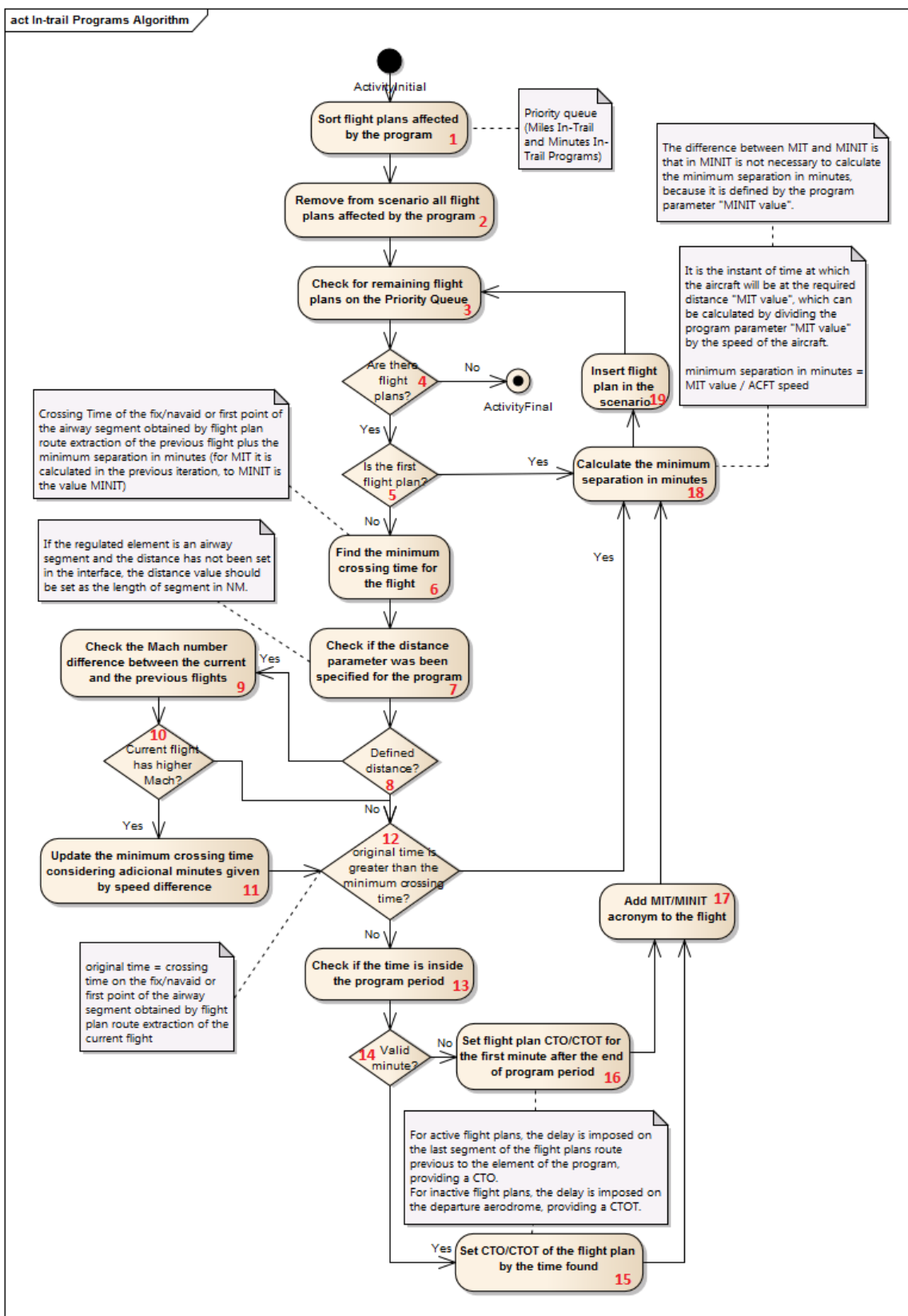
STS/FLTCK – For a flight performing calibration of nav aids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.

The algorithm is presented in the following diagram and the steps detailed as follow:





- (1) The algorithm first sort all the affected flights.
- (2) All affected flights will be removed from the scenario, and then the algorithm can put one by one in the new position, which can be the same or different from the previous one.
- (3) The algorithm will check if there are remaining flight plans on the priority queue.
- (4) If there is no more flight plans in the list, the algorithm will be finished.
- (5) If it is the the first flight plan the system will put it at the original time and continue to step (18).
- (6) If it is not the first flight, the algorithm will find the minimum crossing time for the flight, based on the route extraction of the previous flight considering the minimum separations defined.
- (7) It will be checked if the distance parameter was defined for the program.
- (8) If the distance were defined, go to step (9), otherwise to step (12).
- (9) Verify the Mach number difference between the current flight and the previous one.
- (10) If the current flight has a higher Mach number then the previous one, go to step (11), otherwise, go to step (12).
- (11) Based on the difference between the Machs, and the distante defined in program parameters, use the following table to find the additional minutes to increase the minimum crossing time:

Difference in Mach	Distance to Fly (in miles) and Separation (in minutes) Required at Entry Point				
	001 - 600 NM	601 - 1200 NM	1201 - 1800 NM	1801 - 2400 NM	2401 - 3000 NM
0.01	11 min	12 min	13 min	14 min	15 min
0.02	12 min	14 min	16 min	18 min	20 min
0.03	13 min	16 min	19 min	22 min	25 min
0.04	14 min	18 min	22 min	26 min	30 min
0.05	15 min	20 min	25 min	30 min	35 min
0.06	16 min	22 min	28 min	34 min	40 min
0.07	17 min	24 min	31 min	38 min	45 min
0.08	18 min	26 min	34 min	42 min	50 min



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0.09	19 min	28 min	37 min	46 min	55 min
0.10	20 min	30 min	40 min	50 min	60 min

- (12) Compare the original time crossing the element with the minimum crossing time calculated by the algorithm. If it is greater, go to step (18), otherwise, go to step (14).
- (13) Check if the time is inside the program interval.
- (14) If it is, go to step (15), otherwise, go to step (16).
- (15) For active flight plans, set the CTO on the element that the program was applied with the calculated new time. For inactive flight plans, set the CTOT with the calculated new time.
- (16) For active flight plans, set the CTO on the element that the program was applied with the first minute after the end of the program interval. For inactive flight plans, set the CTOT with the first minute after the end of the program interval.
- (17) Add the MIT or MINIT acronym to the flight plan.
- (18) Calculate the minimum separation in minutes. For MINIT, this value is defined in MINIT value. For MIT, this value is the MIT value divided by the aircraft speed at the element that the program was applied.
- (19) Insert the flight plan on the scenario.

#### **2.2.1.4.10 Sequencing Program (DSP/ESP/ASP)**

Sequencing programs are designed to achieve a specified interval between aircraft. There are different sequencing programs to accommodate different phases of flight. Sequencing Programs generates tactical flow measures accommodating the flights on its original route to face a surge on the demand, or an ATC capacity decreasing or any increasing on the level of uncertainty.

The SKYFLOW provides the following types of Sequencing programs:

- Departure Sequencing Program (DSP) - Assigns a departure time to achieve a constant flow of traffic over a common point (fix/navaid). Normally, this involves departures from multiple aerodromes.





- b. En-route Sequencing Program (ESP) - Assigns fix/navaid crossing time sequencing to an en-route stream.
- c. Arrival Sequencing Program (ASP) - Assigns arrival time to aircrafts destined to a specific airport.

These programs were designed to not affect previously flights affected by a MIT or a MINIT program, this program will not change this flight but it will be considered to evaluate capacity and separation criteria.

#### **2.2.1.4.10.1 DSP/ESP/ASP Algorithm**

These programs are designed to sequence aircrafts destined to a specified airport or fix/navaid. The DSP and ESP programs are applicable to fix or navaid, and the ASP is applicable to aerodrome.

The program consider three different priority orders, one for each kind of sequencing, as follows:

DSP:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans with EET until crossing the fix longer than the parameter informed);
- Flight plans that have already been delayed or re-routed by another program;
- Active plans;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to cross the fix or navaid (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

ESP:

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans with EET until crossing the fix longer than the parameter informed);



- Flight plans that have already been delayed or re-routed by another program;
- Active plans;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to cross the fix or navaid (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**ASP:**

- Flights that have a high priority because they have been selected by the operator or because they have been submitted as exempt (STS);
- Flights that have a high priority due to their scope (flight plans that land in the aerodrome with EET longer than the parameter informed);
- Flight plans that have already been delayed or re-routed by another program;
- Active flights;
- Pre-active plans;
- Time-schedule in which the flight plan is expected to make use of the aerodrome (the earlier the schedule, the higher is the priority);
- Type of flight
  - o type S,
  - o G or M
  - o N or X;
- EOBT (the earlier the EOBT, the higher is the priority);
- Flight distance (the longer the distance, the higher is the priority);
- Filled EET (the greater the EET, the less is the priority);
- Submission time (the earlier the submission time, the higher is the priority).

**Note1:** The separation between exempt flights will always be 1 minute.

**Note 2:** STS/HEAD – For a flight with ‘Head of State’ status.

STS/SAR – For a flight engaged in Search and Rescue missions.

STS/FLTCK – For a flight performing calibration of navaids.

STS/ATFMX – For a flight specially authorized by the National Body established for the purpose to be exempted from flow regulations, regardless of any other STS/indicator used (if any).

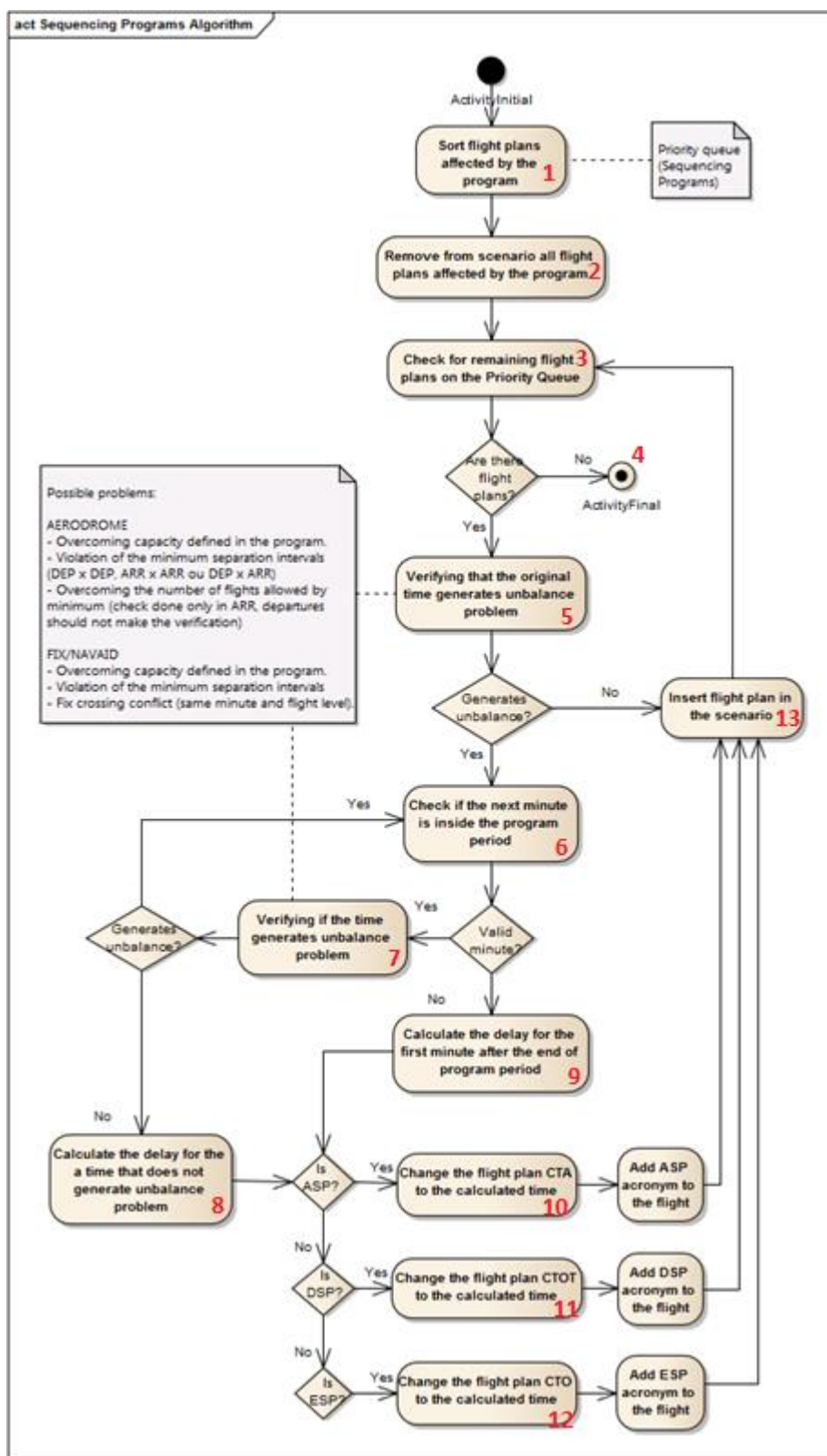


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STS/MEDEVAC – For a life critical medical emergency evacuation.

STS/HUM – For flights operating for humanitarian reasons.

The algorithm is presented in the following diagram and the steps detailed as follow:




(1) The algorithm first sort all the affected flights.

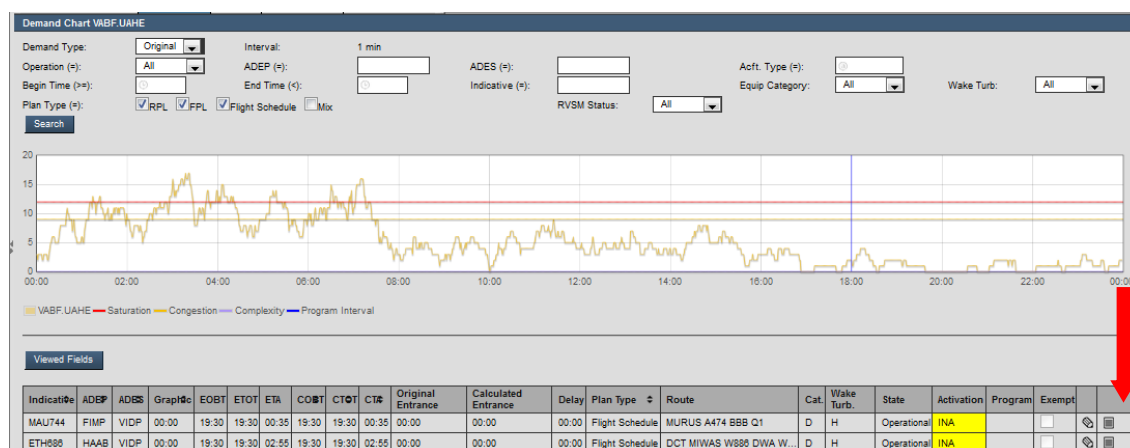


- 
- (2) All affected flights will be removed from the scenario, and then the algorithm can put one by one in the new position, which can be the same or different from the previous one.
  - (3) The algorithm will check if there are remaining flight plans on the priority queue.
  - (4) If there is no more flight plans in the list, the algorithm will be finished.
  - (5) For each flight, the algorithm will check if the original time generates unbalance problems. For aerodrome regulated elements, it will be checked the capacity and minimum separation intervals between operations defined in the program parameters. For fix or navaid regulated elements, it will be checked the capacity and minutes between flights program parameters. If it does not generate unbalance problem, go to step (13).
  - (6) If it does generate unbalance problem, check if the next minute is inside the program interval. If it does not, go to step (9).
  - (7) If it inside the program interval, check if the new time generates unbalance problems. For aerodrome regulated elements, it will be checked the capacity and minimum separation intervals between operations defined in the program parameters. For fix or navaid regulated elements, it will be checked the capacity and minutes between flights program parameters. If it does generate unbalance problem, go to step (6).
  - (8) If it does not generate unbalance problem, calculate the delay for the new time.
  - (9) Calculate the delay for the first minute after the program interval.
  - (10) If it is an ASP, change the flight plan CLDT to the calculated time and add the ASP acronym to the flight plan.
  - (11) If it is an DSP, change the flight plan CTOT to the calculated time and add the DSP acronym to the flight plan.
  - (12) If it is an ESP, change the flight plan CTO to the calculated time and add the ESP acronym to the flight plan.
  - (13) Insert the flight plan on the scenario.

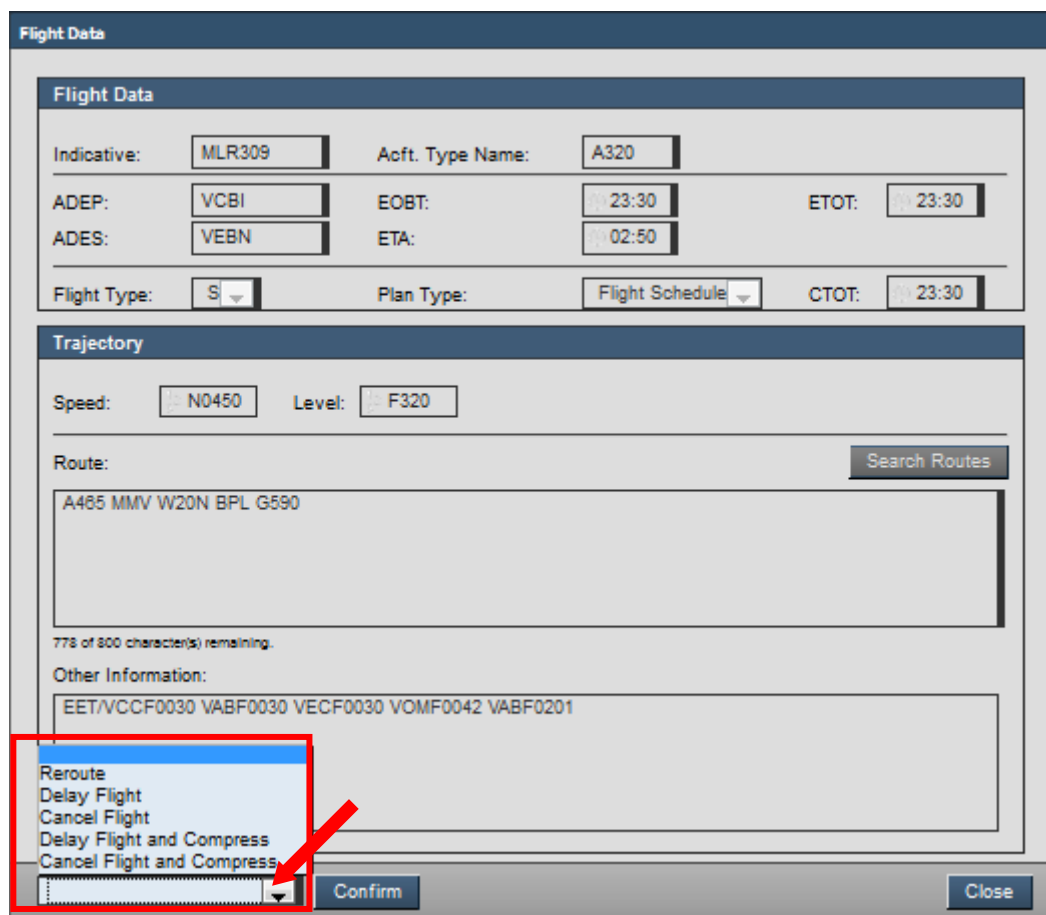


### 2.2.1.5 Change Flight Plan Manually

This option (  ) allows the user to edit flight plans manually, and not by a program application.



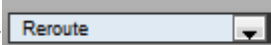

There are five (5) possibilities to the manual changes, which are: Re-routing, Delay Flight, Cancel Flight, Delay Flight and Compress and Cancel Flight and Compress, as shown in the figure below. The field in the bottom left of the screen allow the referred actions.

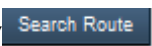


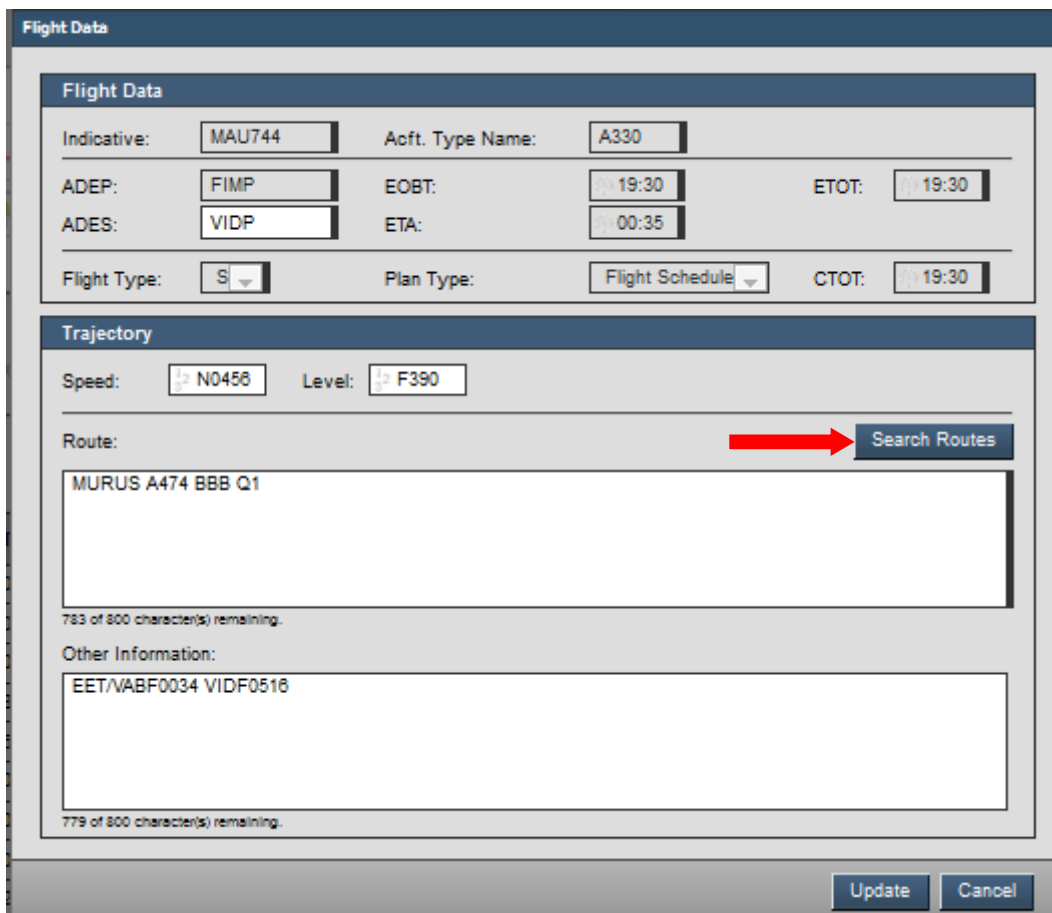
### 2.2.1.5.1 Reroute

This option allow manually changing the route of a specific Flight Plan in a Scenario. The user can choose a route registered in the route library or fill in the fields related to the route manually. All plans rerouted manually display the RRT abbreviation in the “Program” column in the list of flight plans.

#### 2.2.1.5.1.1 Running the program

To change the route manually, the user must select the Reroute option and select the ( ) option. The system enables the following fields for editing: ADES, Speed, Level, Route, and Other Information. The user must complete the fields required for the new route.

The new route can be typed or the user can use a route from route catalogue. To change the route through of the route catalogue, the user must select the () option.



**Flight Data**

Indicative: MAU744 Acft. Type Name: A330

ADEP: FIMP EOBT: 19:30 ETOT: 19:30

ADES: VIDP ETA: 00:35

Flight Type: SI Plan Type: Flight Schedule CTOT: 19:30

**Trajectory**

Speed: N0456 Level: F390

Route: → Search Routes

MURUS A474 BBB Q1

783 of 800 character(s) remaining.

Other Information:

EET/VABF0034 VIDF0516

779 of 800 character(s) remaining.

Update Cancel

Through this option, will be listed to the user the available routes from the route catalogue and it can calculated the dwell time in a specific sector. For that, the type of sector must be selected (TMA Sector, TMA Sector Groups, FIR Sector, or FIR Sector Groups) and then the name must be typed, as shown in the figure bellow. After clicking on “Calculate SPT” button, the dwell time in sector will be filled in the route table.





**Suggested Routes**

Sector:

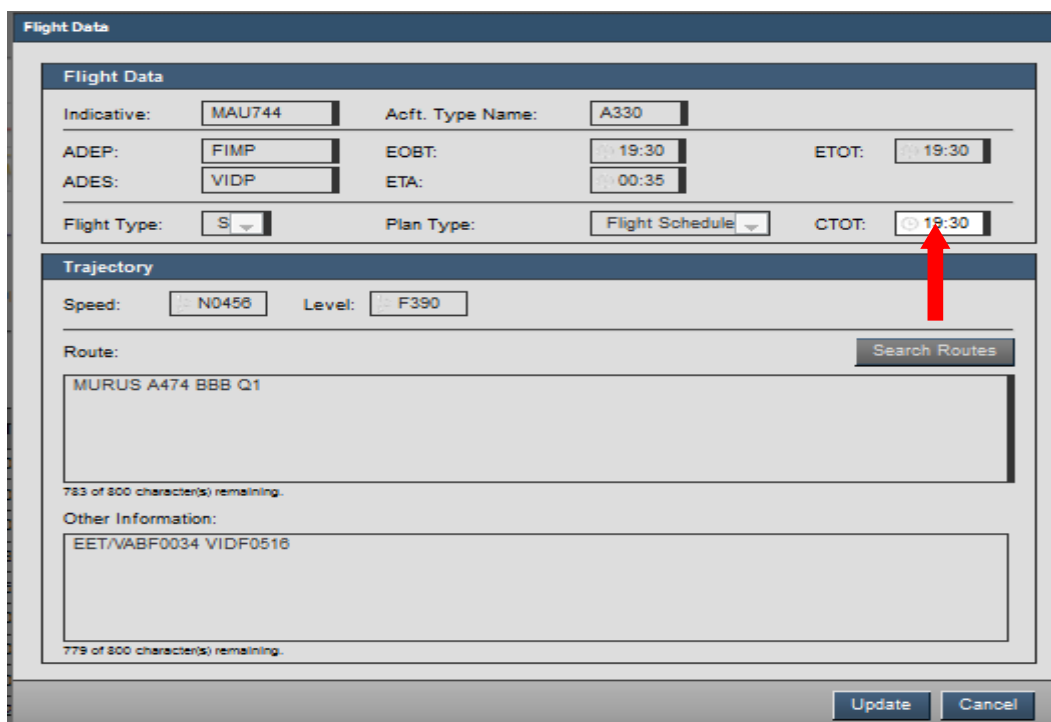
Speed	Level	Route	Other Information	ST
<input type="radio"/> N0400	F290	R480	EET/VIDF0008	2
<input type="radio"/> N0438	F290	R480	EET/VIDF0008	1
<input type="radio"/> N0480	F370	R480	EET/VIDF0008	4

(3)

After selecting the desired route, the user needs to click on “Confirm” button. Now the previous screen will be displayed and is needed to confirm the change on “Update” button.

#### 2.2.1.5.2 Delay flight

The user can delay a flight plan manually without applying a program. The system enables the CTOT field to indicate a time-schedule after the ETOT; therefore, it never moves the plan forward. All plans delayed manually display the DLA abbreviation in the “Program” column in the list of flight plans, so any user that consults the flight list is able to identify that a delay was imposed due to a manual change.



**Flight Data**

Indicative: MAU744 Acft. Type Name: A330

ADEP: FIMP EOBT: 19:30 ETOT: 19:30

ADES: VIDP ETA: 00:35

Flight Type: S Plan Type: Flight Schedule CTOT: 19:30

**Trajectory**

Speed: N0456 Level: F390

Route: MURUS A474 BBB Q1

783 of 800 character(s) remaining.

Other Information: EET/VABF0034 VIDF0516

779 of 800 character(s) remaining.

Update Cancel

#### 2.2.1.5.3 Cancel flight

The user is able to cancel a flight plan manually. All plans canceled manually display the CNL abbreviation in the “Program” column in the list of flight plans.

#### 2.2.1.5.4 Delay flight and compress

The Compression algorithm fills unassigned slots and/or open slots that have been created by cancelled or delayed flights. It follows the following order:

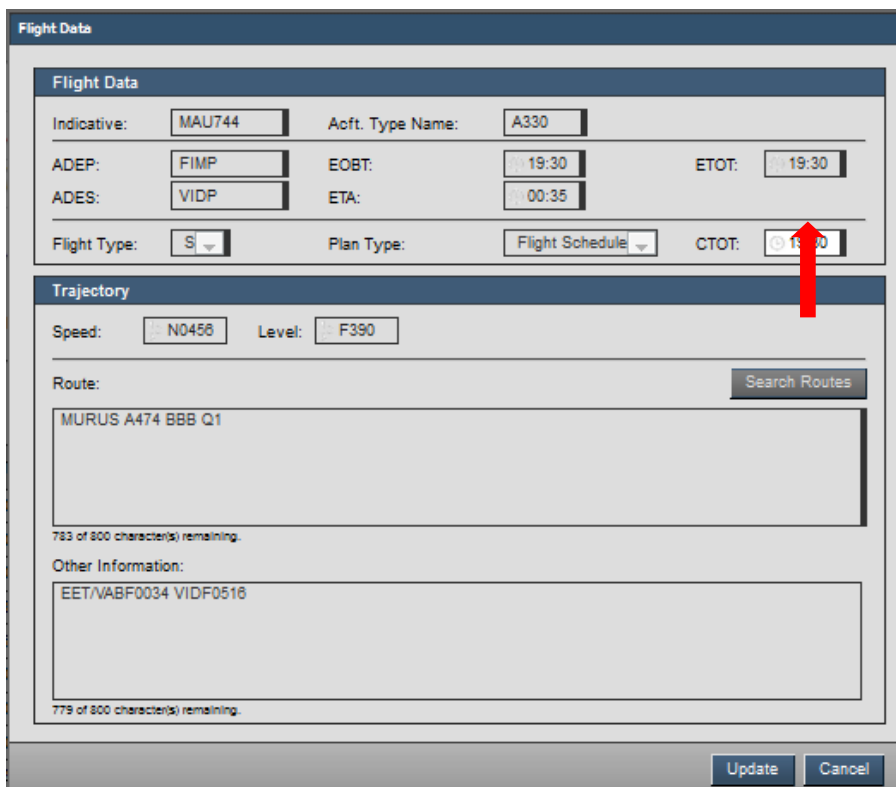
- 1) *Intra-Airline Compression* is the process by which slots are reassigned within flights of the same airline to which the slot was originally assigned.
- 2) *Inter-Airline Compression* is the process by which slots are reassigned among all airlines to ensure complete usage of available capacity.

When a flight plan is delayed with this option, the system will find a flight from the same airline to fill the open slot due to the delay. In case of no flight from the airline can use the open slot, the system will fill it with a flight plan from other airline to ensure complete usage of the available capacity.

As in Delay option, the system enables the CTOT field to indicate a time-schedule after the ETOT; therefore, it never moves the plan forward. All plans delayed manually display the



DLA abbreviation in the “Program” column in the list of flight plans, so any user that consults the flight list is able to identify that a delay was imposed due to a manual change.



#### 2.2.1.5.5 Cancel flight and compress

When a flight plan is canceled with this option, the system will find a flight from the same airline to fill the open slot due to the cancelation. In case of no flight from the airline can use the open slot, the system will fill it with a flight plan from other airline to ensure

### 2.3. Flight Schedule Component

This component allows the C-ATFM operator to analyze Flight Schedule in order to issue a report on the request, and also allows the users to access the data of Flight Schedule formalized by DGCA (Directorate General of Civil Aviation).

#### 2.3.1. “Import Flight Schedules” Functionality

This functionality allows the user to import Flight Schedules.



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
<b>Import Flight Schedules</b>
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel



When this option is selected, the system displays a form according to the image below.

> Flow > Import Flight Schedules

Import

File:  No file selected.  Maximum file size: 1024.00 KB

Processing Log

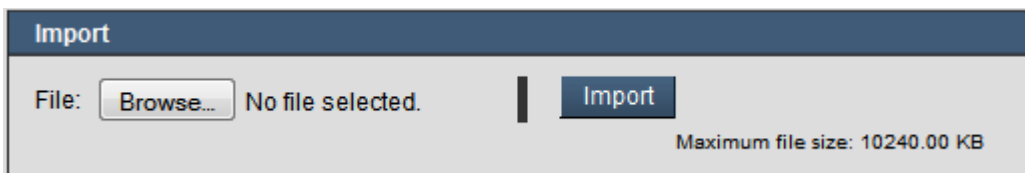
File name	Date	Amount	Incorrects	Corrects	Type
2017M428_165157_FLIGHT SCHEDULE.txt	28/04/2017 18:03	3222	0	3222	Import Flight Schedule
2017M428_165157_FLIGHT SCHEDULE.txt	28/04/2017 16:53	1	0	1	Import Flight Schedule
FLIGHT SCHEDULE.txt	03/04/2017 18:22	3152	8	3144	Import Flight Schedule
FLIGHT SCHEDULE.txt	03/04/2017 17:12	3152	9	3143	Import Flight Schedule
winter flight schedule 23012017.txt	22/02/2017 08:52	3554	0	3554	Import Flight Schedule
TEST ATECH.txt	15/02/2017 10:57	2	1	1	Import Flight Schedule
TEST ATECH.txt	15/02/2017 10:55	2	1	1	Import Flight Schedule
TEST ATECH.txt	15/02/2017 10:53	1	1	0	Import Flight Schedule
FLIGHT SCHEDULE123.txt	11/02/2017 18:26	1	1	0	Import Flight Schedule
FLIGHT SCHEDULE1.txt	11/02/2017 18:21	1	1	0	Import Flight Schedule
FLIGHT SCHEDULE1.txt	11/02/2017 18:12	1	1	0	Import Flight Schedule
FS-11FEB.txt	11/02/2017 05:31	1	0	1	Import Flight Schedule
FS-11FEB.txt	11/02/2017 05:21	1	0	1	Import Flight Schedule
AIMS.txt	10/02/2017 12:59	1	0	1	Import Flight Schedule
AIMS.txt	10/02/2017 12:57	1	1	0	Import Flight Schedule
FS-10022017.txt	10/02/2017 10:49	1	1	0	Import Flight Schedule
FS-10022017.txt	10/02/2017 10:48	0	0	0	Import Flight Schedule
FS-10022017.txt	10/02/2017 10:36	0	0	0	Import Flight Schedule
fs-10feb2017.txt	10/02/2017 10:30	0	0	0	Import Flight Schedule
fs-10feb2017.txt	10/02/2017 10:28	0	0	0	Import Flight Schedule

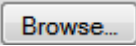
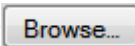
1 - 20 (244)

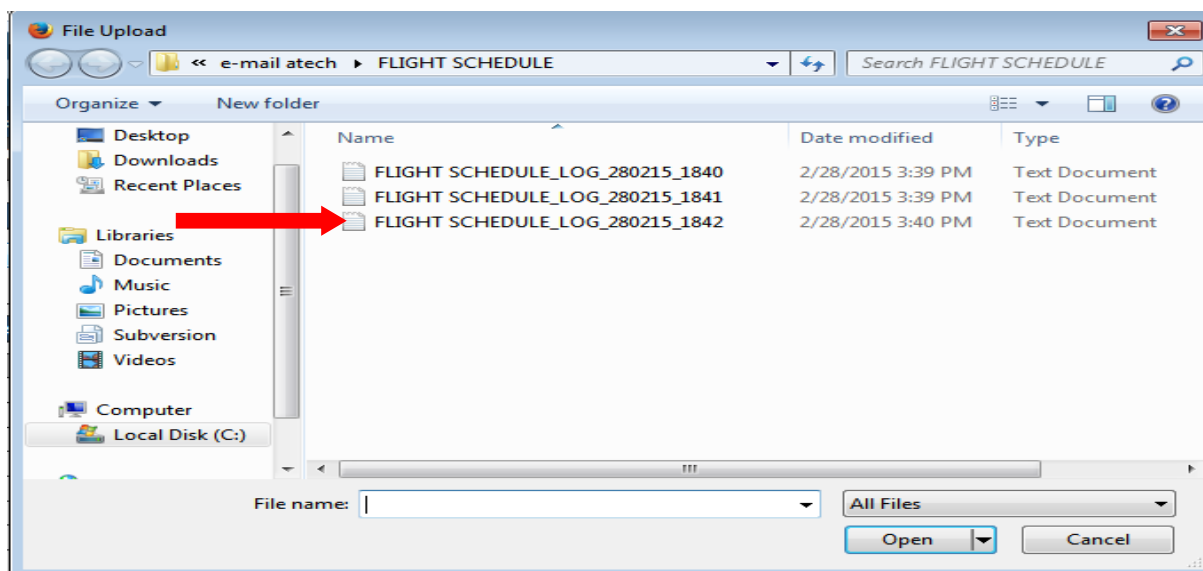
« < 1 2 3 4 5 > »



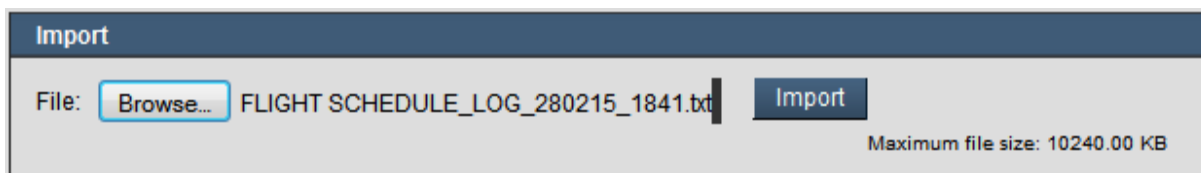
- **“Import” Group** – the purpose of this information group is to identify the file to be imported.



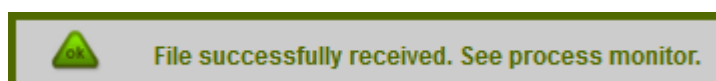
-  – icon that allows selecting the file name to be imported.
- After click (  ) the following screen is shown:



After the wanted file was selected, the following figure is shown:




After click in (  ) the system show the following message:
























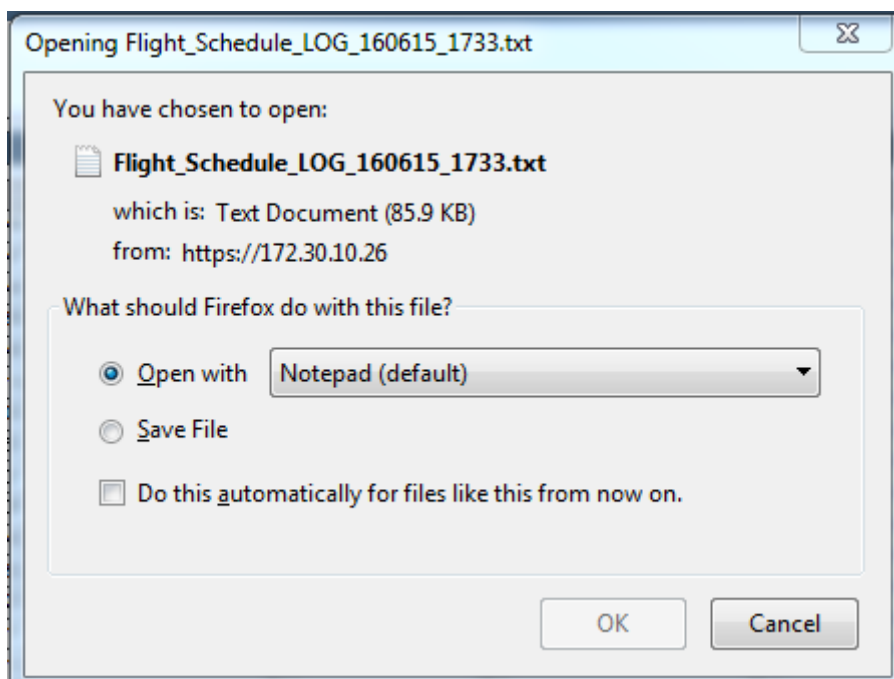
And the imported file is shown in processing logs, as below:

Processing Logs						
File name	Date	Amount	Incorrects	Corrects	Type	
FLIGHT SCHEDULE_LOG_280215_1841.bt	28/02/2015 19:21	0	0	0	Import Flight Schedule	

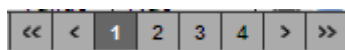
- **“Processing Logs” Group** – the purpose of this information group is to show the processing logs after importing a Flight Schedule file.

Processing Logs						
File name	Date	Amount	Incorrects	Corrects	Type	
FLIGHT SCHEDULE_LOG_280215_1841.bt	28/02/2015 19:21	0	0	0	Import Flight Schedule	
HOTRAN_LOG_280215_1840.bt	28/02/2015 18:52	0	0	0	Import Flight Schedule	
HOTRAN_LOG_280215_1840.bt	28/02/2015 18:42	0	0	0	Import Flight Schedule	
AAI.bt	12/02/2015 13:16	3	0	3	Import Flight Schedule	
AAI.bt	12/02/2015 13:13	1	1	0	Import Flight Schedule	
AAI.bt	02/02/2015 17:31	3	0	3	Import Flight Schedule	
AAI.bt	28/01/2015 15:52	3	0	3	Import Flight Schedule	
AAI.bt	28/01/2015 15:48	3	0	3	Import Flight Schedule	
AAI.bt	28/01/2015 15:39	3	0	3	Import Flight Schedule	
AAI.bt	28/01/2015 15:35	3	0	3	Import Flight Schedule	
AAI.bt	26/01/2015 21:33	3	0	3	Import Flight Schedule	
AAI.bt	26/01/2015 18:41	3	0	3	Import Flight Schedule	
AAI.bt	23/01/2015 19:41	3	0	3	Import Flight Schedule	
AAI.bt	23/01/2015 19:34	1	1	0	Import Flight Schedule	
AAI.bt	22/01/2015 20:41	3	0	3	Import Flight Schedule	
AAI.bt	22/01/2015 20:41	3	0	3	Import Flight Schedule	
AAI.bt	22/01/2015 20:37	3	0	3	Import Flight Schedule	
AAI.bt	22/01/2015 20:20	3	0	3	Import Flight Schedule	

- **File name** – this column shows the name of the file imported.
- **Date** – date in which the importation was conducted.
- **Amount** – Amount items imported.
- **Incorrects** – number of items that were not imported due to inconsistency during the importation process.
- **Corrects** – number of items imported successfully.
- **Type** – type of operation executed. Import Flight Schedule.
-  – when this icon is selected, the system allows exporting the Flight Schedule log as follows.




If the number of records listed is bigger than the number of lines available, the system shows a page indicator in the lower right corner of the panel as follows.



To display the information on the number of logs, the system provides the following data:



- The first set ( **1 - 19 (19)** ) shows the number of logs in the page (1-19 in the example) and total (19).

The field allows  the user to directly assign the page number to be viewed.

### 2.3.1.1. Flight Schedule Importing file format

The file to import Flight Schedule is composed by a sequence of lines. Each line describes one Flight Schedule as an ordered sequence of fields separated by semicolon.

Here under we describe sequence of fields that describes a Flight Schedule and after we present an example of Flight Schedule file to clarify the explanation.



One Flight Schedule is composed by following ordered fields:

AIRLINE;FLIGHT\_NB;CODE1;CODE2;;EQP;FRQ1;FRQ2;FRQ3;FRQ4;FRQ5;FRQ6;FRQ7;SEATS;WEEK\_SEATS;FL\_SCD\_NB;FL\_SCD\_INI\_VAL;PREV\_FL\_SCD;PREV\_INI\_VAL;SERVICE;SEQUENCE;ADEP;DEP\_T;ADES;ARR\_T;VERSION;

Fields	Description
AIRLINE	ICAO designator
FLIGHT_NB	Flight number
CODE1	Flight code on one letter: "C": Code Sharing or "D": Duplicated Leg
CODE2	One letter: "D" Duplicated Leg if FLIGHT_CODE_1 is "C" or NULL.
EQP	Equipment – Aircraft type
FRQ1	Flight on Monday "1": or "0": no flight.
FRQ2	Tuesday flight "2" or "0": no flight.
FRQ3	Wednesday flight "3": or "0": no flight.
FRQ4	Thursday flight "4": or "0": no flight.
FRQ5	Friday flight "5": or "0": no flight.
FRQ6	Saturday flight "6": or "0": no flight.
FRQ7	Sunday flight "7": or "0": no flight.
SEATS	Number of seats
WEEK_SEATS	Weekly offered seats
FL_SCD_NB	Flight Schedule number (9 Digits)
FL_SCD_INI_VAL	Flight Schedule initial validity (DDMMYY)
PREV_FL_SCD	Previous flight schedule number (9 Digits)
PREV_INI_VAL	Previous initial validity (DDMMYY)
SERVICE	Nature of the service: "C": Freight, "E": Especial, "G": International Freight, "I": International, "L": Postal, "N": Domestic, "R": Regional or "S": International Sub-Regional
SEQUENCE	Flight stretch number (1 to 9)
ADEP	Depart Aerodrome
DEP_T	Departure Time
ADES	Arrival Aerodrome
ARR_T	Arrival Time
VERSION	Version fixed code

### Example

AAL;922;C;D;;B752;1;2;3;4;5;6;7;174;1228;000508061;191015;000508060;010115;I;1;KMIA;1330;SLLP;2019;1;  
AAL;922;C;D;;B752;1;2;3;4;5;6;7;174;1228;000508061;191015;000508060;010115;I;2;SLLP;2125;SLVR;2245;1;  
AAL;922;C;D;;B752;1;2;3;4;5;6;7;174;1228;000508061;191015;000508060;010115;I;3;SLVR;0005;KMIA;0703;1;





## 2.3.2. Flight Schedule Content

By means of the content specified in a Flight Schedule, the user has access to the functionalities related to the management process of the referred Flight Schedule included in the system database.

### 2.3.2.1. “Flight Schedule” Functionality

This functionality allows the user to Interact with the Flight Schedule list received from Directorate General of Civil Aviation (DGCA) and included in the system database. Also allows creating or importing the Flight Schedule manually in case of communication failure between the SKYFLOW and DGCA.



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
<b>Flight Schedule</b>
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel



When this option is selected, the system displays on the left panel the fields that allow composing the search filters of Flight Schedule in the system database. The figure below shows the fields in the Flight Schedule display window.




> Flow > Flight Schedule

Flight Schedule :  State :


Indicative :




Flight Schedule	State	
AAA-000001-001	Incomplete	

1 - 1 (1)   << < 1 > >>

The fields displayed in the window have the following meanings:

- **Flight Schedule :**  - field that allows defining a specific Flight Schedule.
- **Indicative :**  - field that allows defining a specific Flight Schedule section.
- **State :**  - allows establishing the filter according to the Flight Schedule state () , namely:
  - **All** – All states are shown




- **Incomplete** – when a route is not found or more than one route is found to complete the route of the respective Flight Schedule.
- **To be Effective** – Flight Schedule that was approved by Directorate General of Civil Aviation (DGCA), and due to its Effective date will only be accounted for as flight intention in future sessions.
- **Effective** – Flight Schedule approved by Directorate General of Civil Aviation (DGCA) that is accounted for as flight intentions due to its active Effective date.
- **Closed** – Flight Schedule closed by Directorate General of Civil Aviation (DGCA) and no longer valid, which is not accounted for as flight intention.
- **Icon**  – allows the system to search the Flight Schedule according to the filters established.
- **Icon**  – allows exporting the list of Flight Schedule from the search result in PDF format to allow printing or sending via email.
- **Icon**  – allows creating a new Flight Schedule manually.

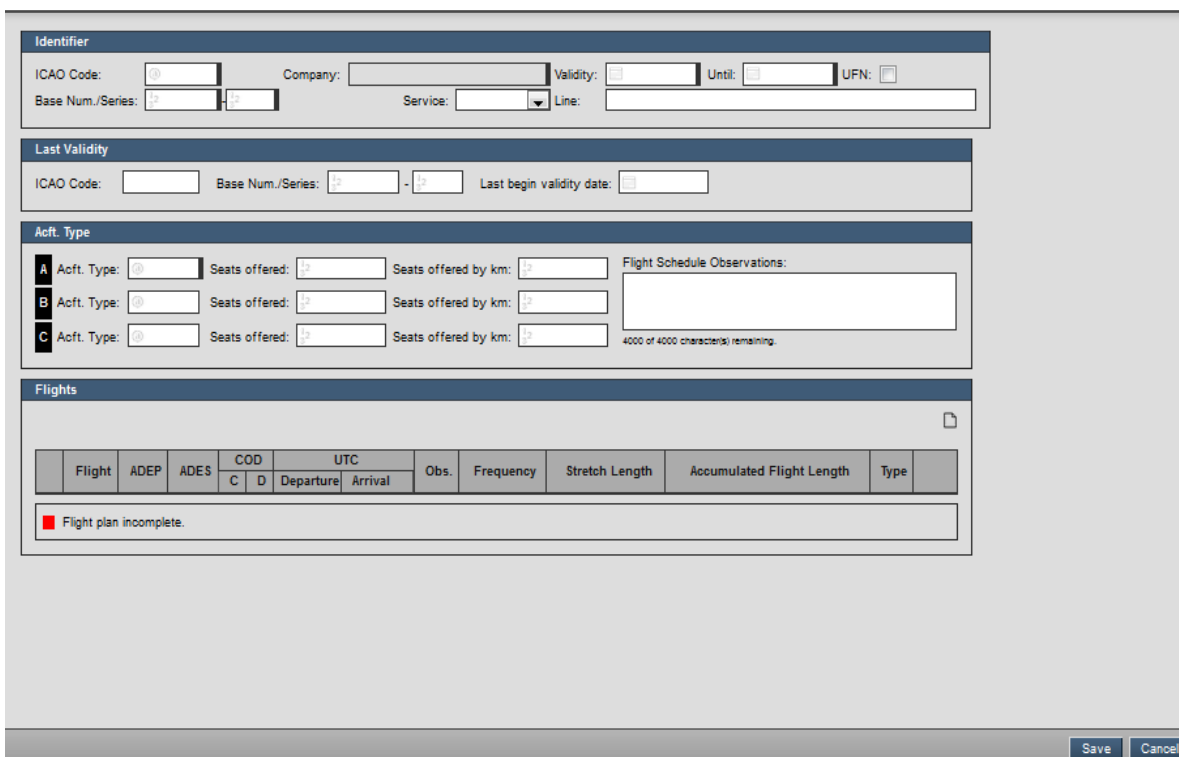
Besides searching the Flight Schedule stored in the system database, the user has the following interaction options.



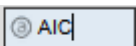

### 2.3.2.1.1. Create Flight Schedule

This option allows the user to manually enter a Flight Schedule that was not inserted automatically due to communication problems between the C-ATFM and DGCA.

When the option to create a new Flight Schedule (  ) is selected, the system displays the following form on the right panel.


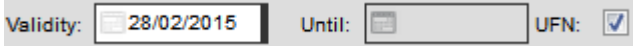


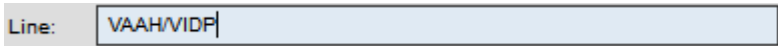


When this action is executed, the system displays the following information groups, which define the content of the Flight Schedule.




- **“Identifier” Group** – the purpose of this information group is to identify the Flight Schedule that is being created by means of the following fields:
  - **ICAO Code:**  – definition of the ICAO Code of the airline that is presenting the Flight Schedule. This field can be completed automatically according to the airline company registration or by entering the new ICAO Code.
  - **Company:**  – field to be completed by the system according to the registration in the database. If the ICAO Indicator is not





included in the database, the system completes this field with “Airline company Not Registered”.

-  – field to be completed with the Flight Schedule validity start and end dates. If no end date is defined, the user can complete the field.
  -  The UFN field must be checked if there is no date set for the end of validity
  -  – Flight Schedule base number and series.
  -  – field destined to define one of the following types of services to which the proposal applies: C/Freight; E/Special; G/I. Freight; I/International; L/Postal; N/Domestic; R/Regional, and S/I. Sub.
  -  – field destined to identify the aerodromes involved in the Flight Schedule courses.
- **“Last Validity” Group** – this information group identifies the validity term of a prevision version, if any, which has the following fields.


Last Validity			
ICAO Code:	<input type="text"/>	Base Num./Series:	<input type="text"/> - <input type="text"/>
		Last begin validity date:	<input type="text"/>

- **“Aircraft Type” Group** – this group allows identifying the equipment (aircrafts) that can be used in the several flights that compose the Flight Schedule. Each piece of equipment declared is identified by the following icons:  ,  or  . The fields that compose the group are specified in the image below, and the system provides the auto-complete option to fill in the Equipment field.

Acft. Type				
	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	<b>Flight Schedule Observations:</b> <input type="text"/> <small>4000 of 4000 character(s) remaining.</small>
	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	
	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	



- **“Flights” Group** – this group allows defining all flights that compose the Flight Schedule as follows.

To include the data of a new flight, the user must select the icon (  ) present in this group, and the data is completed in the fields presented in the mode provided by the system as follows.

- **Indicative:**  - field to be completed with the flight indication.
- **ADEP:**  - take-off aerodrome.
- **ADES:**  - destination aerodrome.
- **COD:** ☐ C ☐ D - C = Code Sharing; D = Duplicate Leg.
- **Frequency:**  2 3 4 5 6 S S - weekdays in which the flight occurs.
- **Stretch Length:**  0 - distance of the flight between two locations.
- **Accumulated flight length:**  0 - distance accumulated if the proposal has more than one flight section.

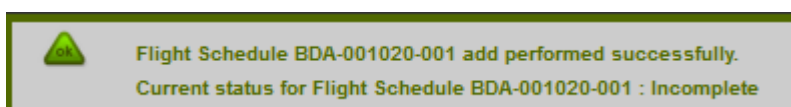


- **Obs:**  - Equipment identifier according to the Equipment specifications.
- **Type:**  - type of the trip. The system provide three options: One way trip, return trip and round trip.
- **UTC Time**  
**Departure:**  **Arrival:**  - fields to be completed automatically by the system with UTC time information.
- **Departure:**  - departure time
- **Arrival:**  - arrival time.

When the flight data is included, the user must select (**Add**) to enter the data in a specific line of the flight table. To include the new flight, the user must repeat the previous steps. The user can view the data entered as follows.

Flight	ADEP	ADES	COD		UTC		Obs.	Frequency	Stretch Length	Accumulated Flight Length	Type
			C	D	Departure	Arrival					
AIC1152	VAAH	VIDP	✓		08:00	11:00	A	1 2 3 4 5 6 7	500	1000	

To finish entering the Flight Schedule data, the user must press the “Save” (**Save**) button and the system saves the Flight Schedule entered and shows the inclusion message followed by a message to indicate the Flight Schedule state in the system, as shown in the example below.




After including the Flight Schedule in the system, the list of Flight Schedules included in the left panel is updated according to the state of the new Flight Schedule.

From this moment, the user has the following interaction options:


- **Remove** - allows removing the Flight Schedule from the database (against confirmation).
- **Clone** - allows the user to generate a new Flight Schedule from another reference Flight Schedule, or even replace the current Flight Schedule (against confirmation).

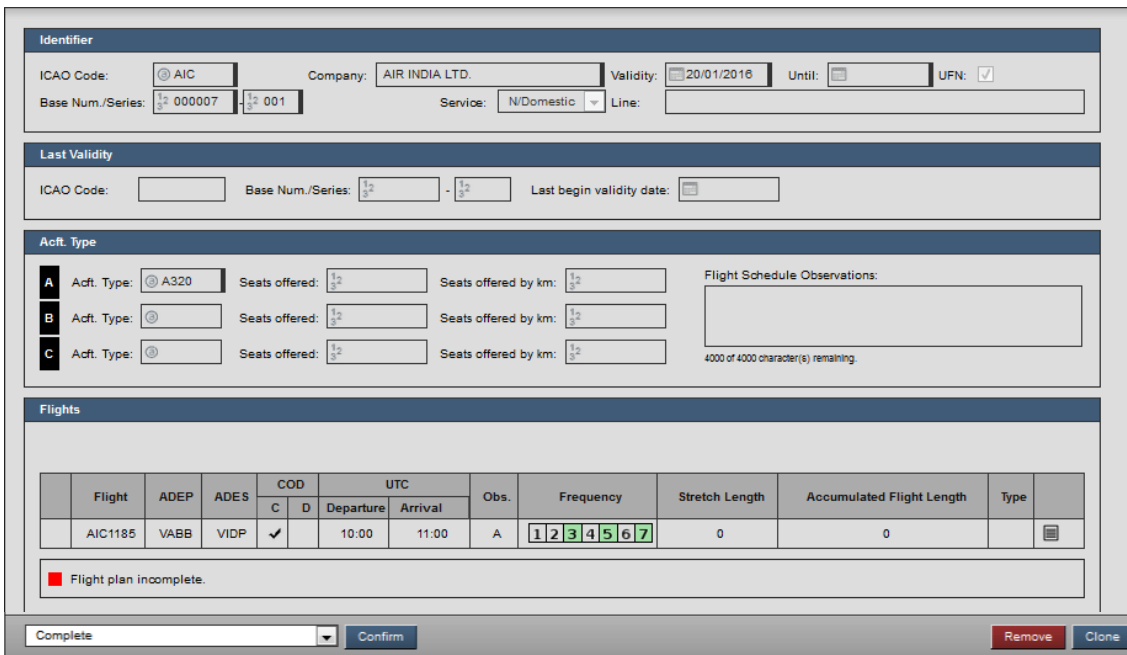


-  - this option allows the user to complete a Flight Schedule.

### 2.3.2.1.2. Complete Flight Schedule manually

This option allows the user to complete a Flight Schedule in the “Incomplete” state because the route data, level data, speed data, and other information was not completed automatically by the system .

To execute this option, the user must select a Flight Schedule in the “Incomplete” state and press the “Consult” () icon. From this moment, the system shows a form containing the following Flight Schedule fields.



**Identifier**

ICAO Code:  Company:  Validity:  Until:  UFN: ☒

Base Num./Series:   Service:  Line:

**Last Validity**

ICAO Code:  Base Num./Series:  -  Last begin validity date:

**Acft. Type**

Acft. Type	Seats offered	Seats offered by km
A Acft. Type: <input type="text" value="A320"/>	<input type="text"/>	<input type="text"/>
B Acft. Type: <input type="text"/>	<input type="text"/>	<input type="text"/>
C Acft. Type: <input type="text"/>	<input type="text"/>	<input type="text"/>

Flight Schedule Observations:

4000 of 4000 character(s) remaining.

**Flights**

Flight	ADEP	ADES	COD	UTC	Obs.	Frequency	Stretch Length	Accumulated Flight Length	Type		
			C	D	Departure	Arrival					
AIC1185	VABB	VIDP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:00	11:00	A	<input type="text" value="1234567"/>	0	0	<input type="text"/>

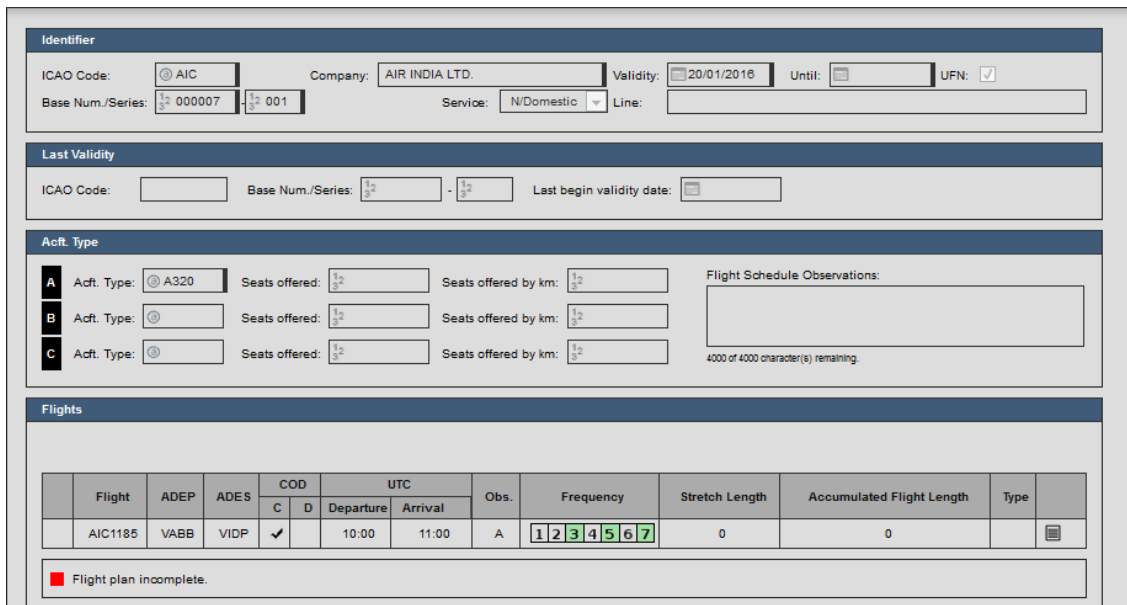
☒ Flight plan incomplete.

After this action select the icon () when the system displays the following figure:





when this action is executed, the system displays the following information groups, which



The screenshot shows a web interface for creating a flight schedule. It is divided into four main sections: Identifier, Last Validity, Acft. Type, and Flights.

- Identifier:** Contains fields for ICAO Code (AIC), Company (AIR INDIA LTD.), Validity (20/01/2016), Until, UFN (checked), Base Num./Series (000007 / 001), Service (N/Domestic), and Line.
- Last Validity:** Contains fields for ICAO Code, Base Num./Series, and Last begin validity date.
- Acft. Type:** Contains a table with columns A, B, and C. Each row has fields for Adt. Type, Seats offered, and Seats offered by km. There is also a text area for Flight Schedule Observations.
- Flights:** Contains a table with columns: Flight, ADEP, ADES, COD, UTC, Obs, Frequency, Stretch Length, Accumulated Flight Length, and Type. The table has one row with data: AIC1185, VABB, VIDP, checkmark, 10:00, 11:00, A, 1234567, 0, 0, and a dropdown menu.

define the content of the Flight Schedule.

- **“Identifier” Group** – the purpose of this information group is to identify the Flight Schedule that is being created by means of the following fields.



This screenshot shows the Identifier section of the flight schedule creation interface. It contains the following fields:

- ICAO Code: AAA
- Company: Airline not found
- Validity: 01/02/2015
- Until: (empty)
- UFN: checked
- Base Num./Series: 000001 / 001
- Service: N/Domestic
- Line: VABB/VIDP

- **ICAO Code:** AAA – definition of the ICAO Code of the airline company defined in the Flight Schedule. This field can be completed automatically according to the airline company registration or by entering the new ICAO Code.
- **Company:** Airline not found – field to be completed by the system according to the registration in the database. If the ICAO Indicator is not included in the database, the system completes this field with “Airline company Not Registered”.
- **Validity:** 28/02/2015 **Until:** (empty) – field to be completed with the Flight Schedule validity start and end dates. If no end date is defined, the user can complete the field **UFN:** checked.



- **Base Num./Series:**  -  – Flight Schedule base number and series.
  - **Service:**  – field destined to define one of the following types of services to which the proposal applies: C/Freight; E/Special; G/I. Freight; I/International; L/Postal; N/Domestic; R/Regional, and S/I. Sub
  - **Line:**  – field destined to identify the aerodromes involved in the Flight Schedule courses.
- **“Last Validity” Group** – this information group identifies the validity term of a prevision version, which has the following fields.

Last Validity			
ICAO Code:	<input type="text"/>	Base Num./Series: <input type="text" value="12"/> - <input type="text" value="3"/>	Last begin validity date: <input type="text"/>

- **“Aircraft Type” Group** – this group allows identifying the equipment (aircrafts) that can be used in the several flights that compose the Flight Schedule. Each piece of equipment declared is identified by the following icons: **A**, **B** or **C**. The fields that compose the group are specified in the image below, and the system provides the auto-complete option to fill in the Equipment field.


Acft. Type				
<b>A</b>	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	Flight Schedule Observations: <input type="text"/>
<b>B</b>	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	
<b>C</b>	Acft. Type: <input type="text"/>	Seats offered: <input type="text"/>	Seats offered by km: <input type="text"/>	

4000 of 4000 character(s) remaining.

- **“Flights” Group** – this group allows defining all flights that compose the Flight Schedule as follows.

Flights											
Flight	ADEP	ADES	COD		UTC		Obs.	Frequency	Stretch Length	Accumulated Flight Length	Type
			C	D	Departure	Arrival					

Flight plan incomplete.

To include the data of a new flight, the user must select the  icon present in this group, and the data is completed in the fields presented in the mode provided by the system as follows.



Flight

Flight data

Indicative:  ADEP:  ADES:  COD: ☐ C ☐ D  
Frequency:         Stretch Length:  Accumulated flight length:  Obs:   
Type:

UTC Time

Departure:  Arrival:

Add


Cancel


- Indicative:  - field to be completed with the flight indication.
- ADEP:  - take-off aerodrome.
- ADES:  - destination aerodrome.
- COD: ☐ C ☐ D - C = Code Sharing; D = Duplicate Leg.
- Frequency:         - weekdays in which the flight occurs.
- Stretch Length:  - distance of the flight between two locations.
- Accumulated flight length:  - distance accumulated if the proposal has more than one flight section.
- Obs:  - Equipment identifier (A, B or C) according to the Equipment specifications.
- Departure:  - departure time using Brasilia as reference.
- Arrival:  - arrival time using Brasilia as reference.
- UTC Time


Departure:  Arrival:


- fields to be completed automatically by the system with UTC time information.



When the flight data is included, the user must select () to enter the data in a specific line of the flight table. To include the new flight, the user must repeat the previous steps. The user can view the data entered as follows.

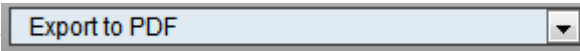
Flights												
Flight	ADEP	ADES	COD		UTC		Obs.	Frequency	Stretch Length	Accumulated Flight Length	Type	
			C	D	Departure	Arrival						
AIC1185	VABB	VIDP	✓		10:00	11:00	A	1 2 3 4 5 6 7	0	0		

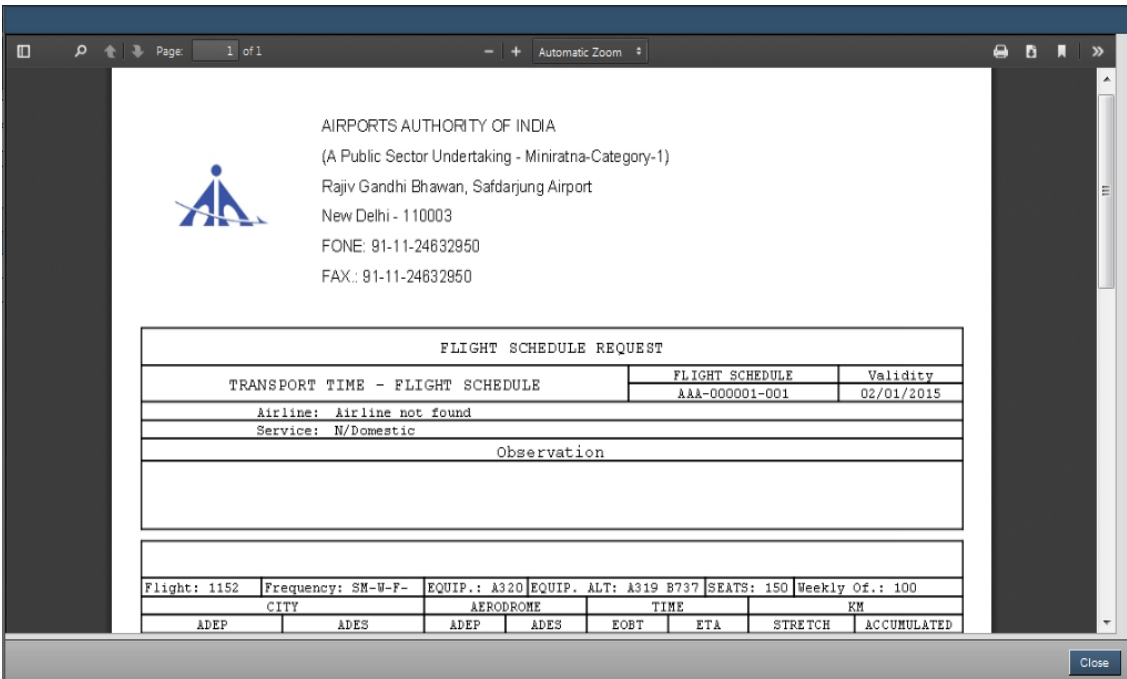
 Flight plan incomplete.

To finish entering the proposal data, the user must press the “Save” () button so the system saves the Flight Schedule in the database.



### 2.3.2.1.3. Export Flight Schedule to PDF file

When this option () is selected to export Flight Schedules in any state, the system displays a mode with the Flight Schedule in PDF format, to allow printing or even sending by email as shown in the image below.



AIRPORTS AUTHORITY OF INDIA  
(A Public Sector Undertaking - Miniratna-Category-1)  
Rajiv Gandhi Bhawan, Safdarjung Airport  
New Delhi - 110003  
FONE: 91-11-24632950  
FAX: 91-11-24632950

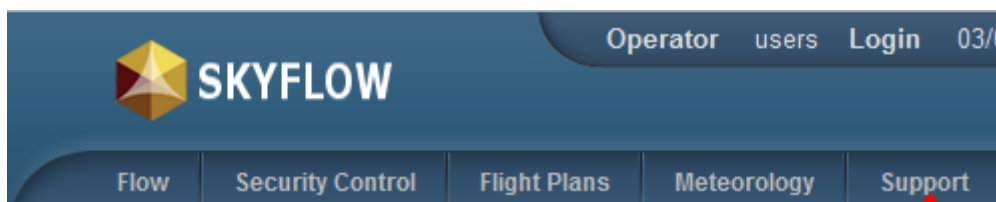
FLIGHT SCHEDULE REQUEST		
TRANSPORT TIME - FLIGHT SCHEDULE	FLIGHT SCHEDULE	Validity
	AAA-000001-001	02/01/2015
Airline: Airline not found		
Service: N/Domestic		
Observation		
Flight: 1152	Frequency: SM-W-F-	EQUIP.: A320
		EQUIP. ALT: A319 B737
		SEATS: 150
		Weekly Of.: 100
CITY		
AERODROME		
TIME		
KM		
ADEP	ADES	ADEP
ADES	EOBT	ETA
STRETCH		ACCUMULATED

Close

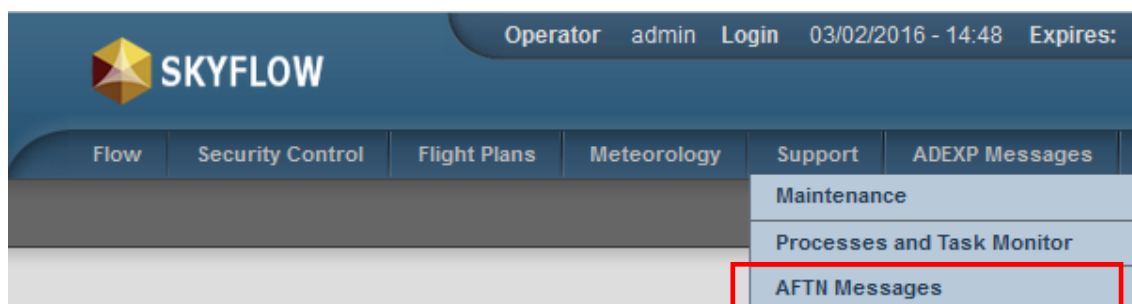
### 2.3.2.2. “Processes and Task Monitor” Functionality (Support menu)

This functionality allows the user to follow-up the importation process of Flight Schedule files.

To access this functionality, the C-ATFM operator must select the Support requirement available in the Subsystem menu.



After selecting the “Support” option, the system displays the functionalities according to the image below.



When this option is selected, the system displays the Task Monitor and Process Monitor screens.

The Task Monitor screen has the following fields:

Task Monitor:						
Task Type	Begin	End	Amount of Processes	Total Processed	Finished	
Import Flight Schedule	02/28/2015 - 19:38	02/28/2015 - 19:38	0	0		✓
Import Flight Schedule	02/28/2015 - 19:21	02/28/2015 - 19:21	0	0		✓
Import Flight Schedule	02/28/2015 - 18:52	02/28/2015 - 18:52	0	0		✓
Import Flight Schedule	02/28/2015 - 18:42	02/28/2015 - 18:42	0	0		✓
Import Regulated Element	02/23/2015 - 18:16	02/23/2015 - 18:16	50	50		✓
Import Regulated Element	02/23/2015 - 18:14	02/23/2015 - 18:14	50	50		✓
Import Regulated Element	02/23/2015 - 18:11	02/23/2015 - 18:11	49	49		✓
Import Regulated Element	02/23/2015 - 15:16	02/23/2015 - 15:16	49	49		✓
Import Regulated Element	02/13/2015 - 18:18	02/13/2015 - 18:18	0	0		✓
Import Regulated Element	02/13/2015 - 18:12	02/13/2015 - 18:12	0	0		✓

1 - 10 (30)  Go << < 1 2 3 > >>

- Task Type

Import Flight Schedule

 - identifies the type of task.
- Begin

02/28/2015 - 19:38

 - marks the beginning of the task monitoring.
- End

02/28/2015 - 19:38

 - marks the end of the task monitoring.
- Amount of Processes

0

 - identifies the total number of records to be processed by the task.



- | Total Processed |
|-----------------|
| 0               |

 - identifies the current number of records processed by the task.

- | Finished |
|----------|
| ✓        |

 - informs if the task was already processed.

The Process Monitor screen has the following fields:

Process Monitor:						
Process Name	Begin	End	User Requester	Server ID	Status	
Automatic Finish of Active Plans	03/01/2015 - 17:10	03/01/2015 - 17:10	sigma	skfsrv03.skyflow.local@127.0.0.1	Complete	
Automatic Cancel of Inactive Plans	03/01/2015 - 17:10	03/01/2015 - 17:10	sigma	skfsrv02.skyflow.local@127.0.0.1	Complete	
Automatic Finish of Active Plans	03/01/2015 - 17:05	03/01/2015 - 17:05	sigma	skfsrv03.skyflow.local@127.0.0.1	Complete	
Automatic Cancel of Inactive Plans	03/01/2015 - 17:05	03/01/2015 - 17:05	sigma	skfsrv02.skyflow.local@127.0.0.1	Complete	
Automatic Finish of Active Plans	03/01/2015 - 17:00	03/01/2015 - 17:00	sigma	skfsrv02.skyflow.local@127.0.0.1	Complete	
Automatic Cancel of Inactive Plans	03/01/2015 - 17:00	03/01/2015 - 17:00	sigma	skfsrv02.skyflow.local@127.0.0.1	Complete	
Automatic Finish of Active Plans	03/01/2015 - 16:55	03/01/2015 - 16:55	sigma	skfsrv02.skyflow.local@127.0.0.1	Complete	
Automatic Cancel of Inactive Plans	03/01/2015 - 16:55	03/01/2015 - 16:55	sigma	skfsrv03.skyflow.local@127.0.0.1	Complete	
Automatic Finish of Active Plans	03/01/2015 - 16:50	03/01/2015 - 16:50	sigma	skfsrv03.skyflow.local@127.0.0.1	Complete	
Automatic Cancel of Inactive Plans	03/01/2015 - 16:50	03/01/2015 - 16:50	sigma	skfsrv03.skyflow.local@127.0.0.1	Complete	

- | Process Name                     |
|----------------------------------|
| Automatic Finish of Active Plans |

 - identifies the Process Name.

- | Begin              |
|--------------------|
| 03/01/2015 - 17:10 |

 - marks the beginning of the Process monitoring

- | End                |
|--------------------|
| 03/01/2015 - 17:10 |

 - marks the end of the Process Monitoring

- | User Requester |
|----------------|
| skyflow        |

 - Identifies the User Requester

- | Server ID                        |
|----------------------------------|
| skfsrv03.skyflow.local@127.0.0.1 |

 - Identifies the Server ID

- | Status   |
|----------|
| Complete |

 - Identifies the Status.



### 2.3.2.3. “Taxi Time” Functionality

This functionality allows the user to define the landing and take-off taxi time of specific aerodromes. Aerodromes for which these times are not defined use the general SKYFLOW definition, which is configured within the FPM Subsystem (Flight Plan Management).



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
<b>Taxi Time</b>
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel


When this option is selected, the system displays a form according to the image below.








**> Flow > Taxi Time**

Aerodrome Indicative  **Search**



Aerodrome Indicative	
VAAH	
VIDP	

The fields displayed in the window have the following meanings:

- **Aerodrome Indicative**  - field that allows defining a specific aerodrome.
- **Icon** **Search** – allows the system to search the aerodrome according to the filter established.
- **Icon**  – allows defining the landing and take-off taxi times of new aerodromes according to the image below.

**General Data**

Aerodrome Indicative

**Taxi time on departure**

Taxi Time:  min

**Taxi time on arrival**


Taxi Time:  min

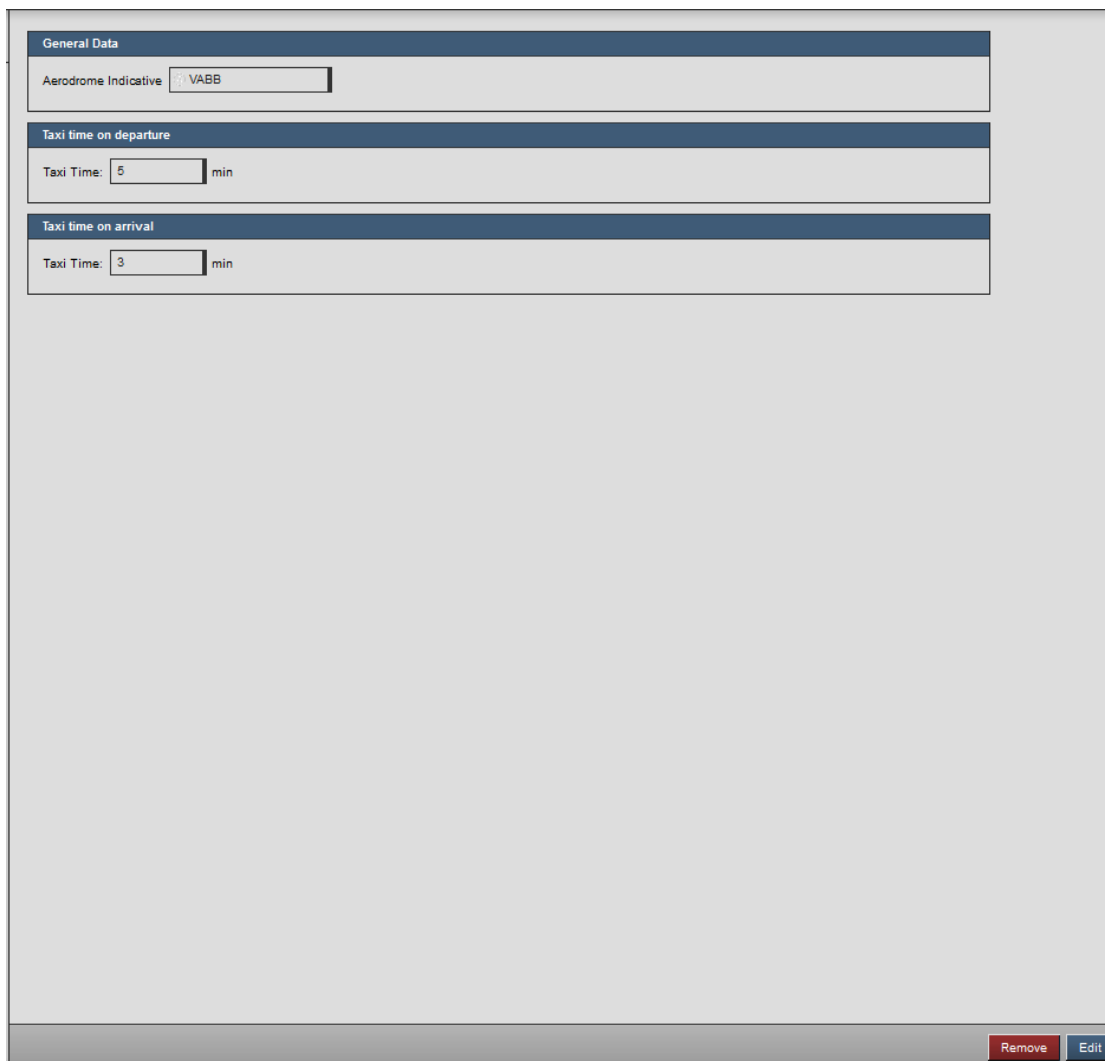
- **General Data**  
Aerodrome Indicative  – Can be completed automatically according to the list of aerodromes in the SKYFLOW system.

- **Taxi time on arrival**  
Taxi Time:  min – Arrival taxi time in minutes

- **Taxi time on departure**  
Taxi Time:  min – Departure time in minutes.



- **Save** – allows the user to save the landing and take-off taxi time definitions.
- **Cancel** – allows the user to cancel the landing and take-off taxi time definitions.
- **Icon**  – allows searching the landing and take-off taxi times defined for new aerodromes according to the image below.



The screenshot shows a web form with three main sections:

- General Data**: Contains a text input field for "Aerodrome Indicative" with the value "VABB".
- Taxi time on departure**: Contains a text input field for "Taxi Time:" with the value "5" and a "min" label.
- Taxi time on arrival**: Contains a text input field for "Taxi Time:" with the value "3" and a "min" label.

At the bottom right of the form, there are two buttons: "Remove" (red) and "Edit" (blue).

- **Remove** – allows the user to remove the landing and take-off taxi time definitions.



- **Edit** – allows the user to edit the landing and take-off taxi times as described in the definition.

#### 2.3.2.4. “Average Taxi Time” Functionality

This functionality allows the user to consult the average taxi-out time and average taxi-in time for aerodromes runways. This average is calculated based on data received from DPI messages.



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
<b>Average Taxi Time</b>
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel

When this option is selected, the system displays a screen containing a filters session and just after a table with the information, as shown in the figure below.



> Flow > Average Taxi Time

Begin Date:  End Date:  Aerodrome:  Taxi Type:

Average Taxi Time

Aerodrome	Runway	Average Taxi-Out Time	Average Taxi-In Time
VAAH	28L		10
VABB	16	10	
VAUJ	09	10	
VAPQ	09	14	
VIDP	15	10	
VIDP	09	31	
VIDP	16C	9	
VIDP	11	10	
VIDP	27L	16	
VIDP	10	10	
VISA	09	3	
VOCB	09	10	
VOCI	11	10	

(13)

The system generate the average taxi time by hour every midnight. To consult the averages, the user can specify some filters, which are:

- **Begin Date** – allows the user to specify the begin date and time to calculate the average taxi times. It is important to highlight that the time is allowed only in full hour.
- **End Date** – allows the user to specify the end date and time to calculate the average taxi times. It is important to highlight that the time is allowed only in full hour.
- **Aerodrome** – allows the user to specify the aerodrome to which the average taxi times will be calculated.
- **Taxi Type** – option to choose if it will be generated average time for Taxi-in, Taxi-out or All (which means both).
- **Search** – allows the system to calculate the average taxi time according to the filter established.
- **Generate Average Taxi Time** – allows system to generate average taxi time from the DPI messages received for the previous hours of the current day.



### 2.3.2.5. “Remove Closed Flight ScheduleS” Functionality

This functionality allows the user to remove the Flight ScheduleS that are in the “Closed” state and were not deleted automatically by the system.

	Regulated Elements
	Automatic Session
	Session Configuration
	Session Demand Reports
	Regulated Element Report
	Configure Session User Permission
	Capabilities Management
	Capacity Projection
	Sector Time
	Taxi Time
	Average Taxi Time
	Collaborative Decision Making
	Manual Session
	Flight Schedule
	Import Flight Schedules
	<b>Remove Closed Flight Schedules</b>
	Flight Schedule Parameters
	Operational Panel

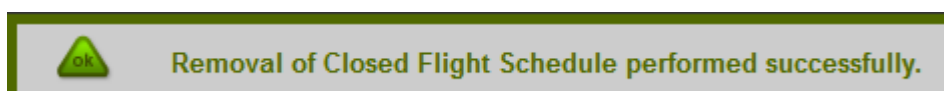
When this option is selected, the system displays a form according to the image below.



Remove Closed Flight Schedule						
Closed Flight Schedule Removal Log						
File Name	Date	Time	Amount	User		
AAI_01032015_030000	03/01/2015	03:00	0	sigma		
AAI_28022015_030000	02/28/2015	03:00	0	sigma		
AAI_27022015_030000	02/27/2015	03:00	0	sigma		
AAI_26022015_030000	02/26/2015	03:00	0	sigma		
AAI_25022015_030000	02/25/2015	03:00	0	sigma		
AAI_24022015_030000	02/24/2015	03:00	0	sigma		
AAI_23022015_030000	02/23/2015	03:00	0	sigma		
AAI_22022015_030000	02/22/2015	03:00	0	sigma		
AAI_21022015_030000	02/21/2015	03:00	0	sigma		
AAI_17022015_030000	02/17/2015	03:00	0	sigma		
AAI_16022015_030000	02/16/2015	03:00	0	sigma		
AAI_15022015_030000	02/15/2015	03:00	0	sigma		
AAI_14022015_030000	02/14/2015	03:00	0	sigma		
AAI_13022015_030000	02/13/2015	03:00	0	sigma		
AAI_12022015_030000	02/12/2015	03:00	0	sigma		
AAI_02112015_030000	02/11/2015	03:00	0	sigma		
AAI_02102015_030000	02/10/2015	03:00	0	sigma		
AAI_02092015_030000	02/09/2015	03:00	0	sigma		
AAI_02082015_030000	02/08/2015	03:00	0	sigma		
AAI_02072015_030000	02/07/2015	03:00	0	sigma		

- **Remove Closed Flight Schedule** - icon that allows removing the Flight Schedules that are in the “Closed” state.
- Group (**Closed Flight Schedule Removal Log**) – set of information related to the removal event logs (manual or automatic), with the following fields:
  - **File Name** – name to the file in which the Flight Schedules were archived.
  - **Date** – removal execution date.
  - **Time** – removal execution time.
  - **Amount** – total Flight Schedules removed when this action was executed.
  - **User** – user that executed the action.

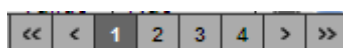
When this “Remove” (**Remove Closed Flight Schedule**) icon is selected and after confirming the action, the system removes the Flight Schedules in the “Closed” state, shows the operation execution message, and updates the log list according to the following figures.





File Name
AAI_09032015_030000
AAI_08032015_031441

If the number of records listed is bigger than the number of lines available, the system shows a page indicator in the lower right corner of the panel as follows.



To display the information on the number of logs, the system provides the following data:

81 - 98 (98)

- The first set (1 - 27 (101) (424/1000)) shows the number of logs in the page (1-27 in the example) and total (101). Total system Logs (424), besides the maximum total allowed (1,000).
- The field allows   the user to directly assign the page number to be viewed.

#### 2.3.2.6. “Flight Schedule Parameters” Functionality

This functionality allows the user to define the parameters used by the system to analyze Flight Schedules.



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
<b>Flight Schedule Parameters</b>
Operational Panel



When this option is selected, the system displays a form according to the image below.





> Flow > Flight Schedule Parameters

**Flight Schedule Parameters**

Closed Flight Schedule Validity:  Day(s)

Closed Flight Schedule File Name:

**International Stretch**

ADEP:  ADES:  Add

ADEP	ADES
LEMD	VIDP
LFPG	VIDP

(2)

Edit

The form has the following information groups:

- **Group (Flight Schedule Parameters)** – the purpose of this information group is to define the Flight Schedule treatment parameters.

**Flight Schedule Parameters**

Closed Flight Schedule Validity:  Day(s)

Closed Flight Schedule File Name:

- **Closed Flight Schedule Validity:** – number of days a Flight Schedule remains in the system after the expiration date.
  - **Closed Flight Schedule File Name:** – default name of the file to be used by the system to store closed Flight Schedules.
- **Group (International Stretch)** – the purpose of this information group is to define the international sections (formed by pairs of ADEP and ADES) that do not fly over the Indian airspace, and therefore are not imported by the system.




International Stretch

ADEP:  ADES:

ADEP	ADES	
LEMD	VIDP	
LFPG	VIDP	

(2)

To change the parameter data, the user must select the () icon, and the system enables the fields for editing.

> Flow > Flight Schedule Parameters

Flight Schedule Parameters

Closed Flight Schedule Validity:  Day(s)

Closed Flight Schedule File Name:

International Stretch

ADEP:  ADES:

ADEP	ADES	
LEMD	VIDP	
LFPG	VIDP	

(2)



> Flow > Flight Schedule Parameters

**Flight Schedule Parameters**

Closed Flight Schedule Validity:  Day(s)


Closed Flight Schedule File Name:

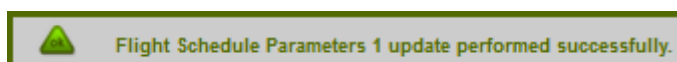
**International Stretch**

ADEP:  ADES:

ADEP	ADES	
LEMD	VIDP	
LFPG	VIDP	

(2)

When the user finishes editing, he must save the new information by selecting the (  ) icon. The system then shows the following message.





## 2.4. Capacity Component (CAP)

This component allows the user to calculate the FIR sector, TMA sector, FIR sector group, TMA sector group, Aerodrome, and Polygon capacities.

The Aerodrome Capacity Prediction and Sector/Polygon Capacity Prediction algorithms are fully described in the SSS document.

### 2.4.1. “Capabilities Management” Functionality

The purpose of this functionality is to generate the capacity samples of the airspace elements of operational interest (Aerodrome, FIR and TMA sectors, group of FIR and TMA sectors, and Polygon).




Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
<b>Capabilities Management</b>
Capacity Projection
Sector Time
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel




When this functionality is accessed, the system displays a screen containing the records of capacity samples included in the database as follows.



**> Capabilities Management > Test Methods**








Type:  

Indicative:

Identifier:

State:  


 

ICAO Code	Identifier	State	Capacity	Last update	
ABC	ct0a	Fictitious		06/05/2015 - 12:16	
CT01	CA_Fluxo...	Fictitious	35.00	03/03/2015 - 23:18	
CT01	P_Fluxo0...	Fictitious		29/01/2015 - 11:00	
CT01	CTP_Flux...	Fictitious		29/01/2015 - 11:06	
CT01	MATOP CO...	Fictitious		28/01/2015 - 18:07	
CT01	D_Fluxo0...	Fictitious		29/01/2015 - 11:01	
CT01	SS_Fluxo...	Fictitious		28/01/2015 - 18:44	

The initial screen of this functionality shows the following interactions:

#### 2.4.1.1. Search Filter Configuration


This option allows the user to configure the search filters to select the information of interest by means of the following fields.


- Type:   – this field allows selecting the type of element of interest:





  - Aerodrome
  - FIR Sectors Groups
  - TMA Sectors Groups
  - FIR Sectors



- TMA Sectors
- Polygons

- **Indicative:**  – This field allows specifying the indicative of element of interest.
- **Identifier:**  – this field allows specifying the identification of the capacity sample of interest.
- **State:**   – this field allows specifying the following states of the capacity samples of interest.
  - “Valid” state – identifies the samples in which the element specified in the “indication” field is included in the system database.
  - “Invalid” state – identifies the samples in which the element specified in the “indication” field was deleted from the system after the sample.
  - “Fictional” state – identifies the samples in which the element specified in the “indication” field is not included in the system database.


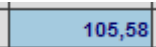
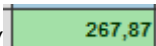

To display the samples according to the filters specified, the user must press the “Search” () button and the system fills in the record list in the system as follows.

ICAO Code	Identifier↕	State	Capacity	Last update	
CT01	CA_Fluxo...	Fictitious	35.00	02/03/2015 - 12:51	
CT01	P_Fluxo0...	Fictitious		01/29/2015 - 11:00	
CT01	ST_Fluxo...	Fictitious		01/28/2015 - 18:47	
CT01	CTP_Flux...	Fictitious		01/29/2015 - 11:06	

The list of samples displayed consists of the following information columns:

- “ICAO Code” column – this field specifies the ICAO Code of the element of interest according to the type selected.
- “Identifier” column – this field shows the sample identifier.
- “State” column – specifies if the Regulated Element selected is part of the system database, according to the following characteristics:
  - “Valid” – element specified in the “indication” field is included in the system database.
  - “Invalid” – element specified in the “indication” field was deleted from the system after the sample.
  - “Fictional” – element specified in the “indication” field is not included in the system database.




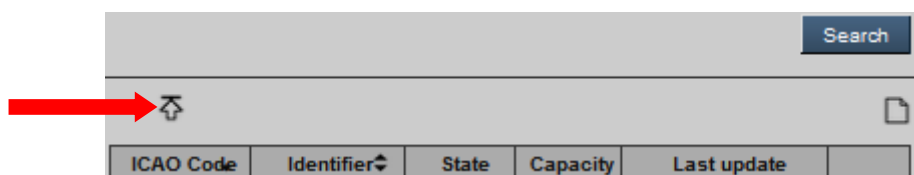
- “Capacity” column – shows the capacity of the Regulated Element, which can be:
  - Blank () – identifies that the operator did not calculate the capacity with the data provided.
  - Blue background () – identifies that the operator calculated the capacity; however, the value was not “disclosed”.
  - Green background () – identifies that the capacity value calculated was “disclosed”.
- “Last update” column – shows the date of the last intervention in the sample.
- “Consult” column – “Consult” () icon, which allows the user to access the data of samples stored in the system.

If the number of records is higher than the number that can be displayed in a page, the system generates the subsequent pages and indicates this situation in the lower right corner of the page as follows.

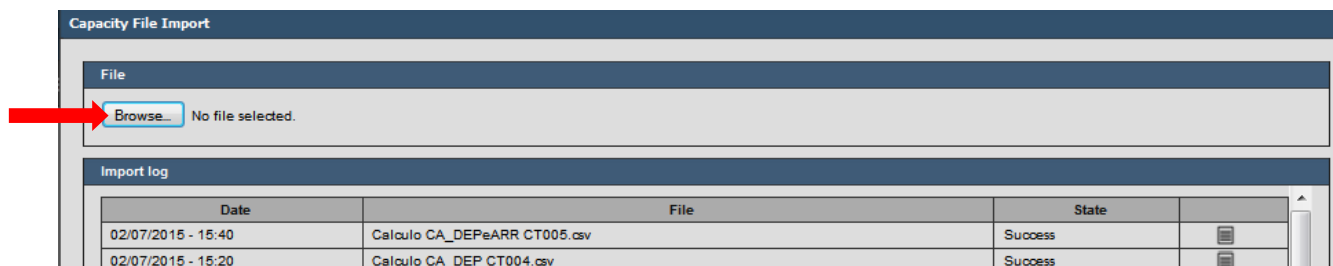


#### 2.4.1.2. Importing Capacity Files

This option allows the user to import a movement record file to create the database of aerodrome samples. Therefore, the user must select the () icon displayed on the left panel as follows.

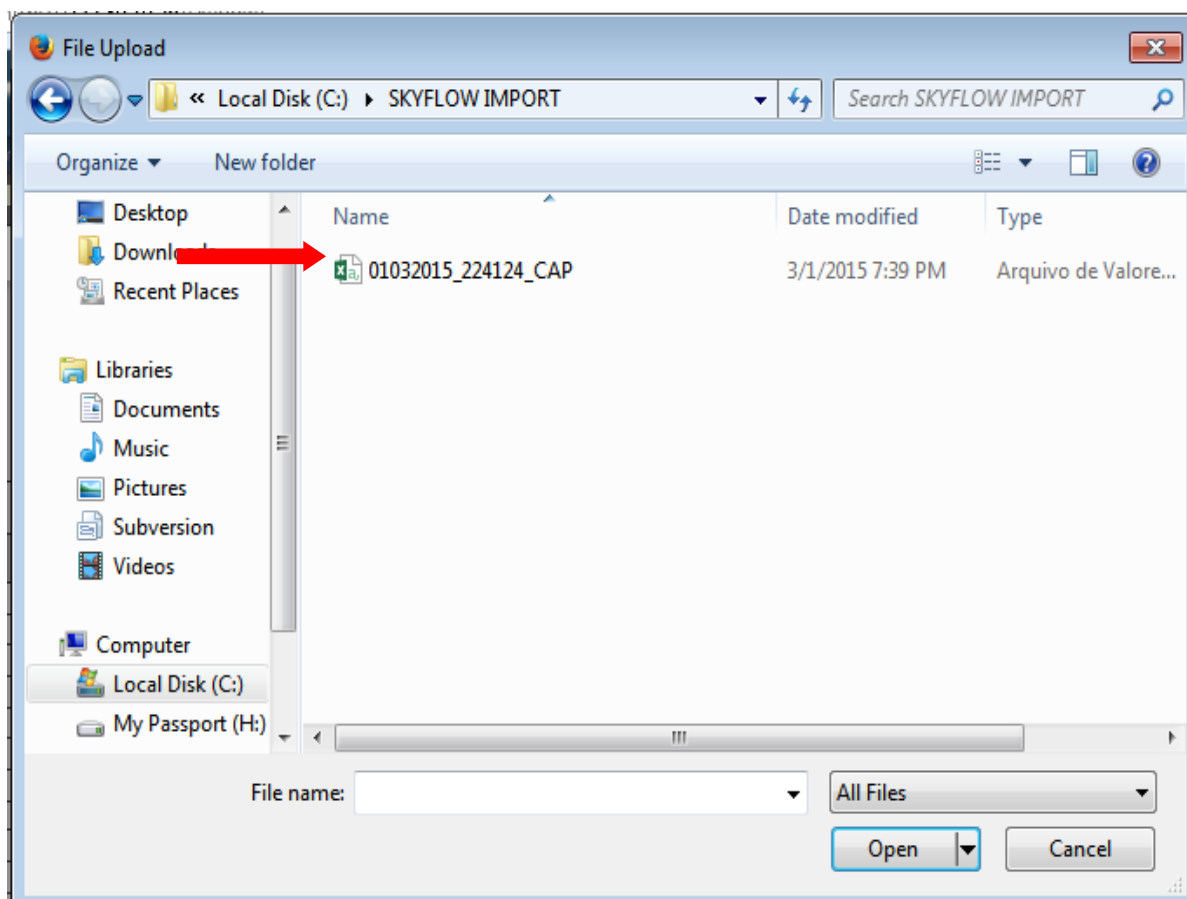


After this action, the system allows selecting the file to be imported according to the following identification.



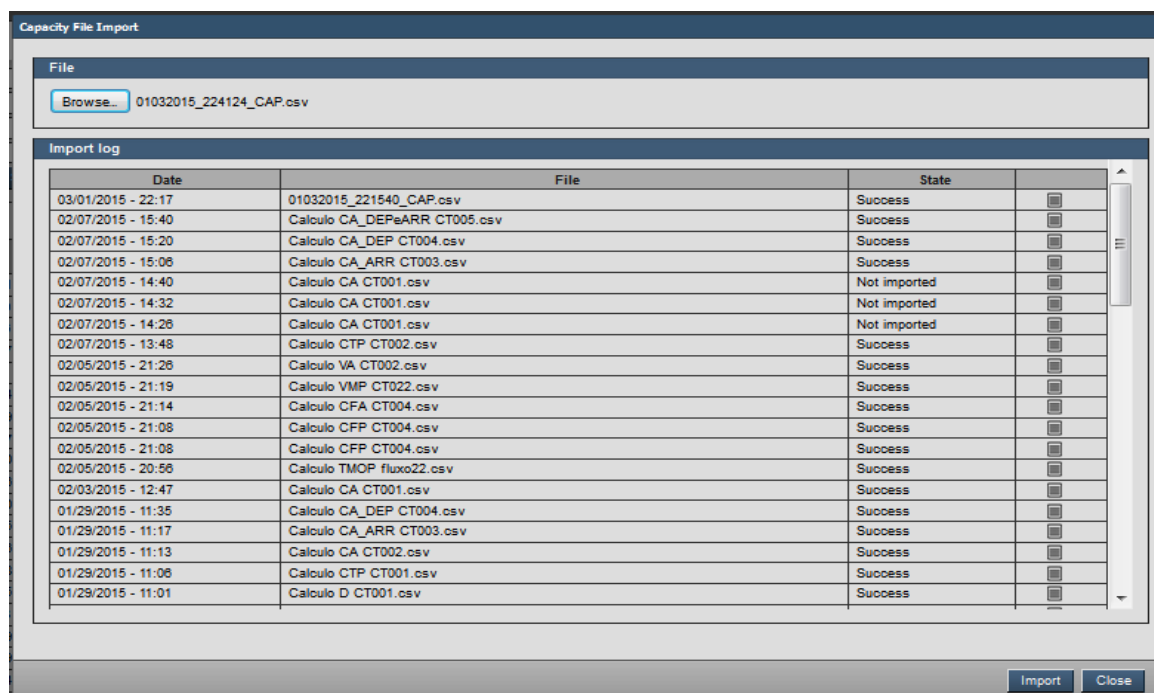


After to click in (  ) the system show the following below figure:





When the file is selected click in Open then the following figure is shown:

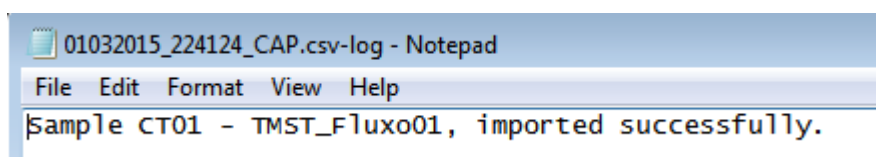






After to click in (  ) then the figure below is shown:


Import log			
Date	File	State	
03/01/2015 - 22:53	01032015_224124_CAP.csv	Success	

After the importation process is completed, the system records the operation in the log list describing the result obtained. To search the importation data details, the user must select the (  ) icon of the log of interest, and the data is displayed as follows.



In case of importation process failure, the system displays the following error messages:

-  **Select a file to import.**
-  **Invalid file extension (csv).**

To cancel the action and return to the main page, the operator must press the “Close” (  ) button.



## Capacity file format

The first line must be:

#CAP

The second line describes the capacity simulation:

ID\_ENSAIO;Capacity Simulation Identification;Aerodrome ICAO Code

### Field Description

Field	Description
ID_ENSAIO	Key word defining this line
Capacity Simulation Identification	An identification for the capacity simulation.
Aerodrome ICAO Code	The ICAO code of the aerodrome to which the capacity simulation refers.

The third line describes the runway to which the following arrivals, departures and approach registries refers. This line and its subsequents can be repeated as many times as necessary.

RWY;Runway Identification 1

### Field Description

Field	Description
RWY	Key word defining this line
Runway Identification 1	The runway identification to which the following ARR, DEPs and OM/THR refers.

The following lines describe the landing times:

ARR;Aircraft Identification;Type of aircraft;Occupation Time;Taxiway;Observation

### Field Description

Field	Description
ARR	Key word defining this line
Aircraft Identification	An identification of the aircraft for which the time was registered
Type of aircraft	The type of the aircraft for which the time was registered
Occupation Time	The runway occupation time during the landing
Taxiway	The taxiway used during the landing
Observation	An observation

The following lines describe the take-off times:

DEP;Aircraft Identification;Type of Aircraft;Taxi Time;Holding Time;Takeoff Time;Total Time;Taxiway;Observation

### Field Description



Field	Description
DEP	Key word defining this line
Aircraft Identification	An identification of the aircraft for which the time was registered
Type of aircraft	The type of the aircraft for which the time was registered
Taxi Time	The average taxi time during the take-off for the referred aircraft type
Holding Time	The average holding time during the take-off for the referred aircraft type
Takeoff Time	The average take-off time for the referred aircraft type
Total Time	The total time during the take-off for the referred aircraft type. If this field is blank, the system will fill it with the sum of the previous times.
Taxiway	The taxiway used during the take-off
Observation	An observation

The following lines describe the times between the outer marker and the runway threshold during the final approach:

OM/THR;Aircraft Identification;Type of Aircraft;Time;Taxiway;Observation

#### Field Description

Field	Description
OM/THR	Key word defining this line
Aircraft Identification	An identification of the aircraft for which the time was registered
Type of Aircraft	The type of the aircraft for which the time was registered
Time	The time spent by the aircraft during the final approach phase, from the moment when it passes over the outer marker to the intersection of the runway threshold
Taxiway	The taxiway used during the landing
Observation	An observation


#### Example

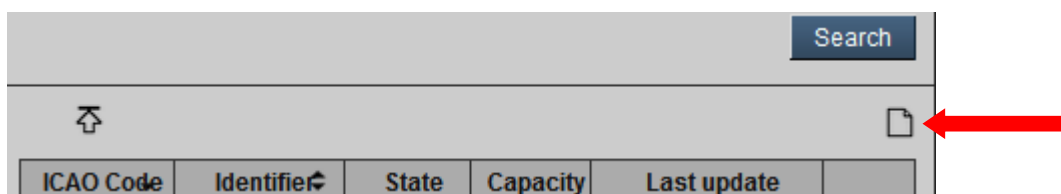
```
#CAP
ID_ENSAIO;CA_Fluxo 3;VANP
RWY;14
ARR;ABY01;M326;10.0;T1;TESTE01
ARR;AFL02;AB11;20.0;T1;TESTE02
ARR;AFR03;AC68;30.0;T1;TESTE03
ARR;ACA04;AMT3;40.0;T1;TESTE04
DEP;GFA01;M326;10.0;10.0;30.0;50.0;T1;TOPD1
DEP;GIA02;AB11;10.0;10.0;30.0;50.0;T1;TOPD2
DEP;IVE03;AC68;10.0;10.0;30.0;50.0;T1;TOPD3
DEP;IYE4;AMT3;10.0;10.0;30.0;50.0;T1;TOPD4
OM/THR;ABY01;M326;150.0;TESTE01
OM/THR;AFL02;AB11;160.0;TESTE02
OM/THR;AFR03;AC68;170.0;TESTE03
```



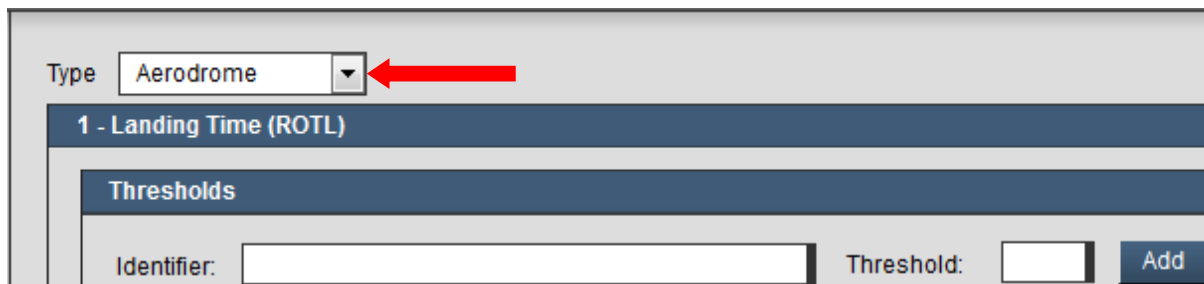
```
OM/THR;ACA04;AMT3;180.0;TESTE04
RWY;32
ARR;UAL01;M326;10.0;T1;TESTEB01
ARR;UALE2;AB11;20.0;T1;TESTEB02
ARR;UAL03;AC68;30.0;T1;TESTEB03
ARR;UAL04;AMT3;40.0;T1;TESTEB04
DEP;SAA01;M326;10.0;10.0;30.0;50.0;T1;TOPDB1
DEP;SAA02;AB11;10.0;10.0;30.0;50.0;T1;TOPDB2
DEP;SAA03;AC68;10.0;10.0;30.0;50.0;T1;TOPDB3
DEP;SAA04;AMT3;10.0;10.0;30.0;50.0;T1;TOPDB4
OM/THR;UAL01;M326;150.0;TESTEB01
OM/THR;UAL02;AB11;160.0;TESTEB02
OM/THR;UAL03;AC68;170.0;TESTEB03
OM/THR;UAL04;AMT3;180.0;TESTEB04
```

### 2.4.1.3. Create Capacity Sample

This option allows the user to create a new capacity sample for a specific element. To access this option, the user must press the “Add” (  ) button on the left panel as follows.



After the referred button is pressed, the system displays a screen on the right panel with the fields to be completed. By “default”, the system displays the “Aerodrome” element form as identified in the image below.





---

To start the process to create a new sample, the user must select the type of interest among the following options:

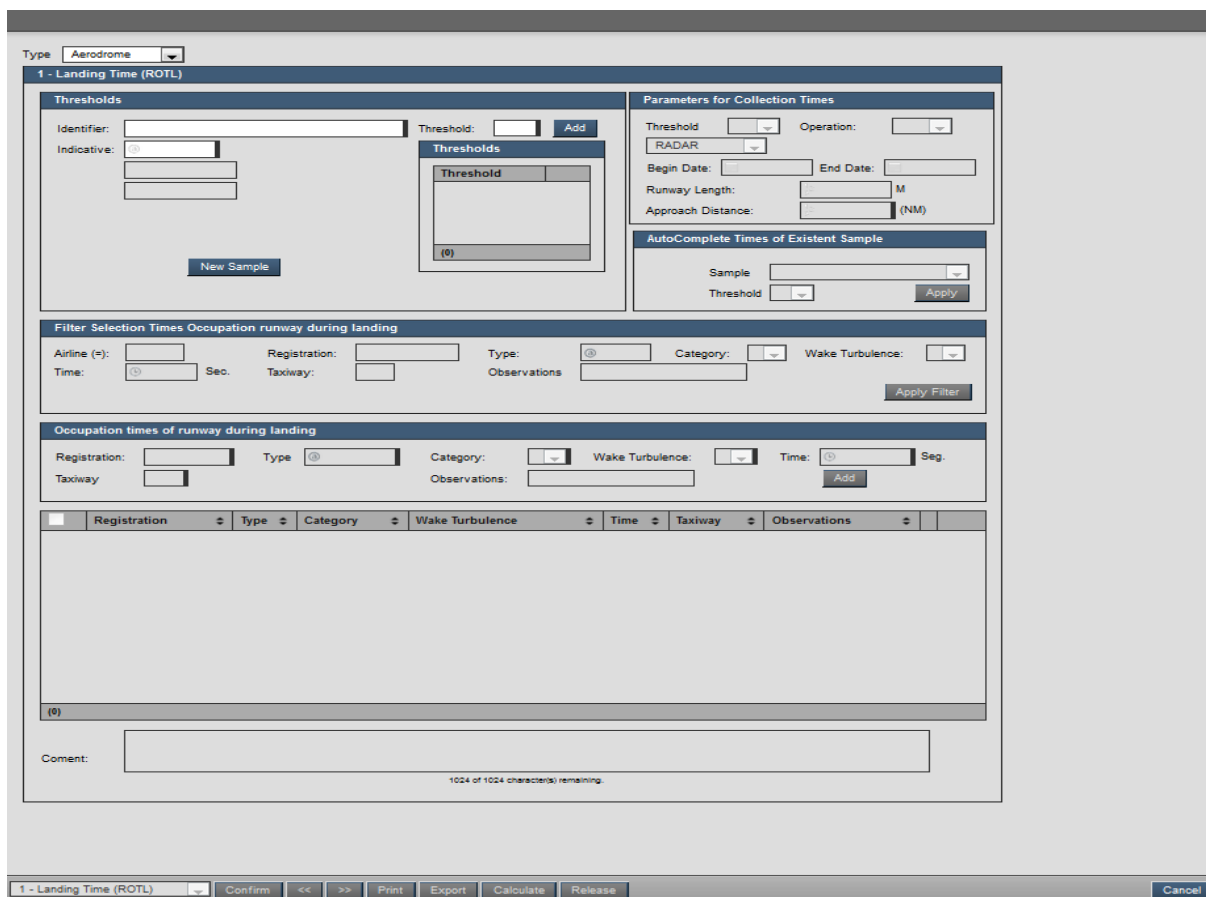
- Aerodrome
- FIR Sector Group
- TMA Sector Group
- FIR sector
- TMA sector
- Polygon

The following items show the options to create the different types of samples.



### 2.4.1.3.1. Create Aerodrome Sample

To create a new aerodrome sample, the user must select the type of Regulated Element:  
**Type** Aerodrome ▼. After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.



The data to be completed is divided in a sequence of steps, and each step has specific content to be completed. The steps that define this process are identifies in the lower part of the screen, namely:

- 1 - Landing Time (ROTL) ▼
- 2 - Time on Takeoff (ROTT) ▼
- 3 - Time between OM e THR (T) ▼
- 4 - Aft. Type Mix (MIX) ▼
- 5 - Percentage of Use (PU) ▼
- 6 - Mean Time (ATRO) ▼



- 
- 
- 

Besides the selection options of the step of interest, the user can access buttons with the following functionalities:

- - allows displaying the specific form of the step selected.
- - allows advancing or returning to the previous step.
- - when enabled, allows printing the report with the capacity data completed.
- - allow to export capacity data
- - when enabled, allows calculating the capacity value.
- - allows disclosing the value calculated to be used in the traffic demand analysis processes.
- - allows canceling the sample creation operation.

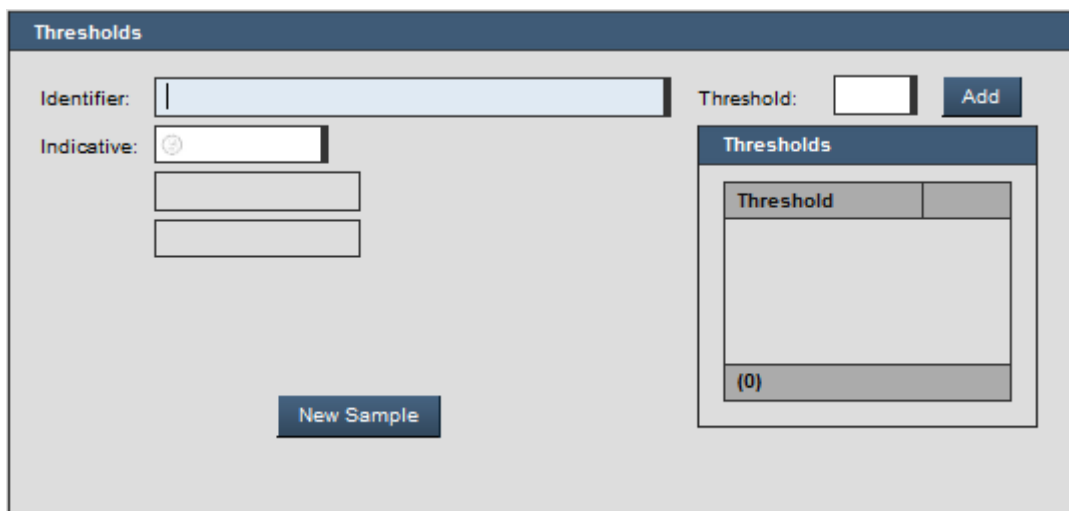
The following items describe the steps to complete the data.

#### 2.4.1.3.1.1. Step 1 – Landing Time (ROTL)


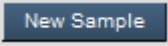
The purpose of this step is to define the sample identification and enter the runway occupation time values during landing to be considered during the aerodrome capacity calculation process. The values entered are the object of data collection in the fields in which the measurements are conducted by means of specific forms. The information is identified by means of the data set described as follows.

- **Sample Threshold**

This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.



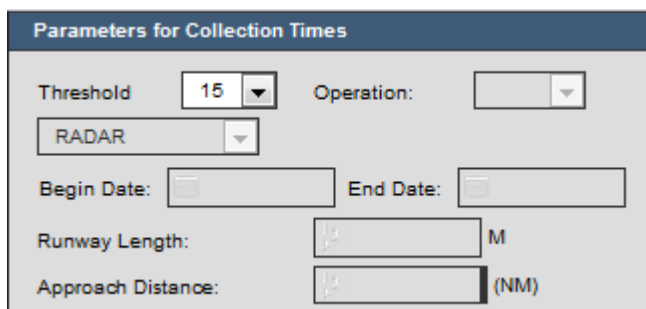
Threshold
(0)

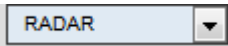
- “Identifier” field – name to be used to identify the sample.
- “Indicative” field – identification code of the aerodrome in question.
- “Threshold” field – identification code of the thresholds of the aerodrome. For each new threshold, the user must press the “Add” () button and the system inserts the data in the “Thresholds” table.
- “New Sample” () button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
  - “Valid” – element specified in the “indication” field is included in the system database.
  - “Fictional” – element specified in the “indication” field is not included in the system database.
  - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.

- **Parameters for Collection Times**

This data set allows defining the parameters that define the time collection references related to the thresholds of the aerodrome being analyzed.

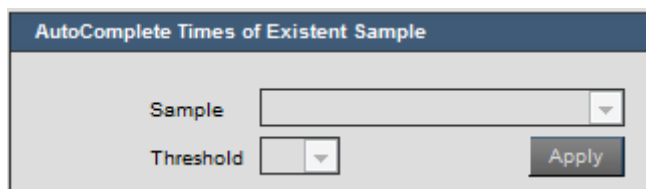




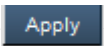


- “Threshold” field – threshold to be user to collect the data.
- “Operation” field – DEP or ARR
-  - fill the field if RADAR or NON RADAR
- “Begin Date” field – data collection initial date.
- “End Date” field – data collection final date.
- “Runway Length” field – length (in meters) of the runway considered.
- “Approach Distance” field – distance between the OM (Outer Marker) and the THR (Runway Threshold).

#### • Auto Complete Times of Existent Sample

This data set allows importing the times declared in a given sample that already exists.



- “Sample” field – by selecting the  icon, the system displays the several samples existing in the system database for selection purposes.
- “Threshold” field – when the  icon is selected, the system provides the thresholds existing in the sample for selection purposes.
- “Apply” () button – when pressed, the system imports all records.

#### • Filter Selection Times Occupation runway during landing

This data set allows composing the filters to select the runway occupation data during landings.



**Filter Selection Times Occupation runway during landing**

Airline (+):	<input type="text"/>	Registration:	<input type="text"/>	Type:	<input type="text"/>	Category:	<input type="text"/>	Wake Turbulence:	<input type="text"/>
Time:	<input type="text"/> s	Taxiway:	<input type="text"/>	Observations:	<input type="text"/>				

- “Airline” field – filter applied to the companies displayed in the list.
- “Registration” field – filter applied to registration of aircraft
- “Type” field – filter applied to the type of aircraft.
- “Category” field – filter applied to the aircraft categories to be displayed in the list (A, B, C, D, E, H).
- “Wake Turbulence” field – filter applied to the wake turbulences displayed in the list (L, M, H).
- “Time” field – filter applied to the time the occupation runway during landing in second.
- “Taxiway” field – filter applied to the taxi runways displayed in the list.
- “Observations” field – filter applied to any observation.
- “Apply Filter” () button – when pressed, the system signals the records according to the filtering criteria, with the time values being used in the capacity calculation process.

- **Occupation Times of Runway during landing**


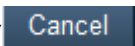
This data set allows declaring the individual runway occupation times of specific aircrafts landing:

**Occupation times of runway during landing**

Registration:	<input type="text"/>	Type:	<input type="text"/>	Category:	<input type="text"/>	Wake Turbulence:	<input type="text"/>	Time:	<input type="text"/> Seg.
Taxiway:	<input type="text"/>	Observations:	<input type="text"/>						

- “Registration” field – completed with the registration of the aircraft object of the data collection.
- “Type” field – completed with the type of aircraft object of the data collection.
- “Category” field – completed with the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – completed with the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Time” field – runway occupation time during landing (in seconds).
- “Taxiway” field – taxi runway used by the aircraft when the runway is released.
- “Observations” field – records of interest.




- “Add” () button - when pressed, the system enters the record in the sample database.
- “Cancel” () button – when pressed, the system cleans the fields completed.

- **Time Lists**

Lists of data collected by aircraft associated to the runway occupation times.

<input type="checkbox"/>	Registration	Type	Category	Wake Turbulence	Time	Taxiway	Observations		
<input checked="" type="checkbox"/>	TESTE01	M328	A	L	60.0000	T1	TESTE01		
<input checked="" type="checkbox"/>	TESTE02	AB11	A	L	60.0000	T1	TESTE02		

- “Registration” column – displays the registration of the aircraft object of the data collection.
- “Type” field – displays the type of aircraft object of the data collection.
- “Category” field – displays the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – displays the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Time” field – displays the runway occupation time during landing (in seconds).
- “Taxiway” field – displays the taxi runway used by the aircraft when the runway is released.
- “Observations” field – displays the records of interest.
- Icon () – allows deleting the record.

#### 2.4.1.3.1.2. Step 2 – Time on Take-off (ROTT)

The purpose of this step is to define the runway occupation times during take-off to be considered in the aerodrome capacity calculation process. The values entered are the object of data collection in the fields in which the measurements are conducted by means of specific forms. The information is identified by means of the data set described as follows.

- **Sample Thresholds**

Data declared as reference, with the content completed in Step 1.

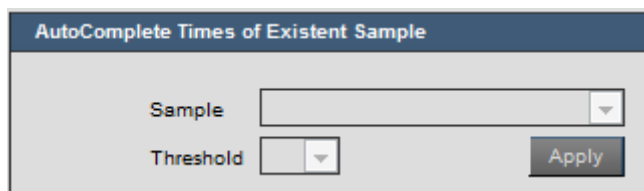
- **Parameters for Collection Times**

This data set allows defining the reference parameters that define the time collection references related to the specific thresholds of the aerodrome being analyzed, as executed in Step 1.



- **Auto-Complete Times of Existent Sample**

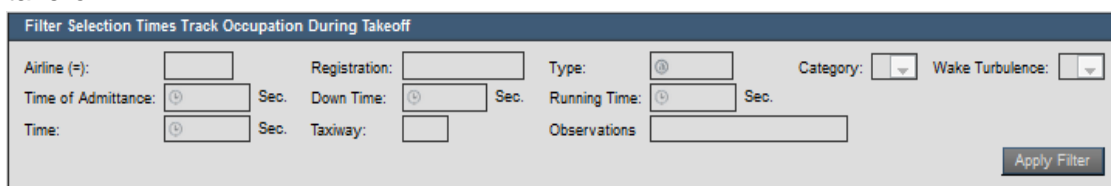
This data set allows importing the times declared in a given sample that already exists.



- “Sample” field – by selecting the (▼) icon, the system displays the several samples existing in the system database for selection purposes.
- “Threshold” field – when the (▼) icon is selected, the system provides the thresholds existing in the sample for selection purposes.
- “Apply” (Apply) button – when pressed, the system imports all records.


- **Filter Selection Time Track Occupation During Takeoff**

This data set allows composing the filters to select the runway occupation data during take-off.



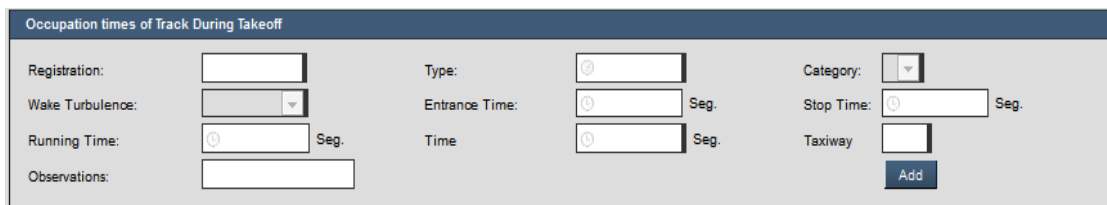
- “Airline” field – filter applied to the Airlines displayed in the list.
- “Registration” field – completed with the registration of the aircraft object of the data collection.
- “Type” field – completed with the type of aircraft object of the data collection.
- “Category” field – filter applied to the aircraft categories to be displayed in the list (A, B, C, D, E, H).
- “Wake Turbulence” field – filter applied to the wake turbulences displayed in the list (L, M, H).
- “Time of Admittance” field – filter applied to the time an aircraft spends to enter the runway to take-off.
- “Down Time” field – filter applied to the time an aircraft remains stopped before starting the take-off run.




- “Running Time” field – filter applied to the time an aircraft spends to speed up for take-off.
- “Time” field – filter applied to the total time spent in the take-off process.
- “Taxiway” field– filter applied to the taxi runways displayed in the list.
- “Observations” field - records of interest.
- “Apply Filter” () button – when pressed, the system signals the records according to the filtering criteria, with the time values being used in the capacity calculation process.

### Occupation times of Track During Takeoff

This data set allows declaring the individual runway occupation times of specific aircrafts take off:




- “Registration” field – completed with the registration of the aircraft object of the data collection.
- “Type” field – completed with the type of aircraft object of the data collection.
- “Category” field – completed with the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – completed with the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Entrance Time” field – completed with the time an aircraft spends to enter the runway to take-off.
- “Stop Time” field – completed with the time an aircraft remains stopped before starting the take-off run.
- “Running Time” field – completed with the time an aircraft spends to speed up for take-off.
- “Time” field – completed with the total time spent in the take-off process.
- “Taxiway” field – taxi runway used by the aircraft when the runway is released.
- “Observations” field – records of interest.
- “Add” () button - when pressed, the system enters the record in the sample database.



- **Time Lists**

Lists of data collected by aircraft associated to the runway occupation times.

	Registration	Type	Category	Wake Turbulence	Entrance Time	Stop Time	Running Time	Time	Taxiway	Observations		
<input checked="" type="checkbox"/>	TESTE01	M328	A	L	10.0000	10.0000	30.0000	50.0000	T1	TOPD		

- “Registration” column – displays the registration of the aircraft object of the data collection.
- “Type” field – displays the type of aircraft object of the data collection.
- “Category” field – displays the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – displays the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Entrance Time” field – displays the time an aircraft spends to enter the runway to take-off.
- “Stop Time” field – displays the time an aircraft remains stopped before starting the take-off run.
- “Running Time” field – displays the time an aircraft spends to speed up for take-off.
- “Time” field – displays the total time spent in the take-off process.
- “Taxiway” field – displays the taxi runway used by the aircraft when the runway is released.
- “Observations” field – displays the records of interest.
- Icon () – allows deleting the record.

#### 2.4.1.3.1.3. Step 3 – Time between OM and THR (T)

The purpose of this step is to define the flight time between the Outer Marker (OM) and the runway threshold crossing point (THR), to be considered by aircraft.

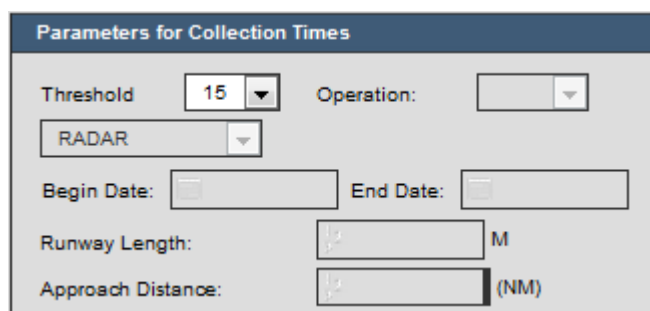
The information is identified by means of the data set described as follows.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Parameters for Collection Times**

This data set allows defining the parameters that define the time collection references related to the a specific threshold of the aerodrome being analyzed.



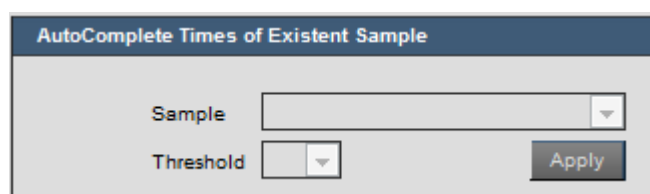
Parameters for Collection Times

Threshold: 15 Operation: [dropdown]  
RADAR [dropdown]  
Begin Date: [date picker] End Date: [date picker]  
Runway Length: [text input] M  
Approach Distance: [text input] (NM)

- “Threshold” field – threshold to be user to collect the data.
- “Operation” field – If ARR or DEP
- “RADAR or NON RADAR” – field – auto complet field
- “Begin date” field – data collection initial date.
- “End date” field – data collection final date.
- “Runway Length” field – length (in meters) of the runway considered.
- “Approach Distance” field – distance between the OM (Outer Mark) and the THR (Runway Threshold).

#### • AutoComplete Times of Existent Sample

This data set allows importing the times declared in a given sample that already exists.



AutoComplete Times of Existent Sample

Sample [dropdown]  
Threshold [dropdown] [Apply]

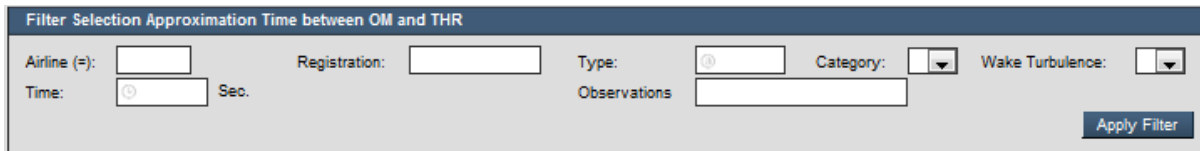
- “Sample” field – by selecting the (dropdown icon) icon, the system displays the several samples existing in the system database for selection purposes.
- “Threshold” field – when the (dropdown icon) icon is selected, the system provides the thresholds existing in the sample for selection purposes.
- “Apply” (Apply button) button – when pressed, the system imports all records and displays in the data table as follows.


<input type="checkbox"/>	Registration	Type	Category	Wake Turbulence	Time	Observations		
<input checked="" type="checkbox"/>	TOTO029	B222	H	L	430.0000	TESTE29		



- **Filter Selection ApproximationTime between OM and THR**

This data set allows composing the filters to select the data to define the times between the OM and THR during approaches.



- “Airline” field - filter applied to the airlines displayed in the list.
- “Registration” field – completed with the registration of the aircraft object of the data collection.
- “Type” field – completed with the type of aircraft object of the data collection.
- “Category” field – completed with the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – completed with the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Time” field – completed with the total time spent in the take-off process.
- “Observations” field – displays the records of interest.
- “Apply Filter” (  ) button – when pressed, the system signals the records according to the filtering criteria, with the time values being used in the capacity calculation process.

- **Times between OM and THR**


This data set allows declaring the individual times between OM and THR during approaches.



- “Registration” field – completed with the registration of the aircraft object of the data collection.
- “Type” field – completed with the type of aircraft object of the data collection.
- “Category” field – completed with the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – completed with the wake turbulence of the aircraft object of the data collection (L, M, H).










- “Time” field – completed with the total time spent in the take-off process.
- “Observations” field – displays the records of interest.
- “Add” () button – when pressed, the system enters the record in the sample database.

### Time Lists

Lists the data collected by aircraft, associated to the times between OM and THR.

<input type="checkbox"/>	Registration	Type	Category	Wake Turbulence	Time	Observations		
<input checked="" type="checkbox"/>	TOTO001	M328	A	L	150.0000	TESTE01		
<input checked="" type="checkbox"/>	TOTO002	AB11	A	L	160.0000	TESTE02		

- “Registration” column – displays the registration of the aircraft object of the data collection.
- “Type” field – displays the type of aircraft object of the data collection.
- “Category” field – displays the aircraft categories object of the data collection (A, B, C, D, E, H).
- “Wake Turbulence” field – displays the wake turbulence of the aircraft object of the data collection (L, M, H).
- “Time” field – displays the total time spent between OM and THR.
- “Observations” field – displays the records of interest.
- Icon () – allows deleting the record.

#### 2.4.1.3.1.4. Step 4 –Aircraft Type Mix (MIX)

The purpose of this step is to define the percentage distribution of the number of aircrafts in operation in the aerodrome, according to the categories, in a specific period of time.

The information is identified by means of the data set described as follows.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Percentage of Aircrafts per Wake Turbulence Class**

This data set allows defining the traffic MIX values related to a specific aerodrome, and the percentages are completed according to the following table.

**Note:** The values are obtained by means of the arithmetic average of a sample containing data related to the period of a whole week (minimum period) and that considered the days with higher movement, which generally are from Monday to Friday.



[Return to statistic Mix](#)

Category	Total ACFT	% Wake			Calculated Mix	Adopted Mix
		L	M	H		
A	0	0.00	0.00	0.00	0.00	<input type="text" value="0.00"/> %
B	0	0.00	0.00	0.00	0.00	<input type="text" value="0.00"/> %
C	0	0.00	0.00	0.00	0.00	<input type="text" value="100.00"/> %
D	0	0.00	0.00	0.00	0.00	<input type="text" value="0.00"/> %
E	0	0.00	0.00	0.00	0.00	<input type="text" value="0.00"/> %
Total	0					

☐ Category A shall account for rotatory-wings aircrafts

Mix Total: 100.00 %

Coment:

1024 of 1024 character(s) remaining.

- “Category” column – specifies the categories of the aircrafts that operate in the aerodrome.
- “Total ACFT” column – number of aircrafts per category considered in the field survey.
- “L” column – percentage of aircrafts with wake turbulence equal to “L” according to the category specified.
- “M” column – percentage of aircrafts with wake turbulence equal to “M” according to the category specified.
- “H” column – percentage of aircrafts with wake turbulence equal to “H” according to the category specified.
- “Calculated Mix” column – Mix value per category calculated by the system.
- “Adopted Mix” column – Mix value per category to be attributed by the Capacity Operator and adopted by the capacity calculations.
- “Comment” field – displays the records of interest.

To use the mix values included in the statistical database, the capacity operator must click on the “[Return to statistic Mix](#)” button and the system deletes the values in the “Mix Adopted” column completed by the operator.



#### 2.4.1.3.1.5. Step 5 – Percentage of Use (PU)

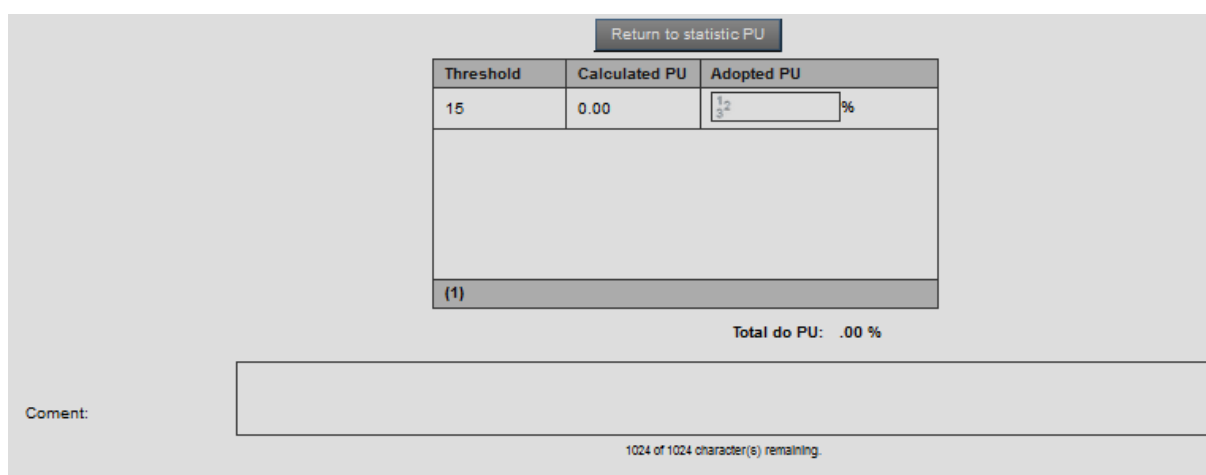
The purpose of this step is to define the usage percentages of the thresholds by the aircrafts that operate in the aerodrome.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Return to statistic PU**

This data set allows declaring the usage percentages per threshold.



Threshold	Calculated PU	Adopted PU
15	0.00	1.2 %
(1)		

Total do PU: .00 %

Coment:

1024 of 1024 character(s) remaining.

- “Threshold” column – completed with the threshold registered in the aerodrome.
- “Calculated PU” column – percentage per threshold calculated by the system according to the statistical data.
- “Adopted PU” column – percentage per threshold adopted by the operator according to the data collected.
- “Coment” field – displays the records of interest.

#### 2.4.1.3.1.6. Step 6 – Mean Time (ATRO)

The purpose of this step is to show all times obtained in the previous steps, with the values analyzed by the Operator Capacity to decide which value should be adopted in the capacity calculations.

**Note:** The Capacity Operator must define the new value to be adopted by aircraft category whenever the value calculated is not consistent.



- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Runway Average Occupancy During Landing (ROLT)**

Shows the runway average occupancy during landing (ROLT) specified by aircraft category.

RUNWAY AVERAGE OCCUPANCY DURING LANDING (ROLT) in (s)					
Threshold 14			Threshold 32		
CAT	ROLT Calculated	ROLT Adopted	CAT	ROLT Calculated	ROLT Adopted
A	30.0000	<input type="text"/>	A	30.0000	<input type="text"/>
B	80.0000	<input type="text"/>	B	80.0000	<input type="text"/>
C	38.3333	<input type="text"/>	C	38.3333	<input type="text"/>
D	80.0000	<input type="text"/>	D	80.0000	<input type="text"/>
E	30.0000	<input type="text"/>	E	30.0000	<input type="text"/>

- **Runway Average Occupancy During Takeoff (ROTT)**

Shows the runway average occupancy during take-off (ROTT) specified by aircraft category.

RUNWAY AVERAGE OCCUPANCY DURING TAKEOFF (ROTT) in (s)					
Threshold 14			Threshold 32		
CAT	ROTT Calculated	ROTT Adopted	CAT	ROTT Calculated	ROTT Adopted
A	50.0000	<input type="text"/>	A	50.0000	<input type="text"/>
B	50.0000	<input type="text"/>	B	50.0000	<input type="text"/>
C	50.0000	<input type="text"/>	C	50.0000	<input type="text"/>
D	50.0000	<input type="text"/>	D	50.0000	<input type="text"/>
E	50.0000	<input type="text"/>	E	50.0000	<input type="text"/>

- **Arithmetic Average between the Runway Average Occupancy (AAROT)**

When (MATOP) is selected the system shows the arithmetic average between the runway average occupancy specified by aircraft category.

When (SATOP) is selected the system shows the sum average values between runway occupancy times specified by threshold.



☒ MATOP ☐ SATOP

ARITHMETIC AVERAGE BETWEEN THE RUNWAY AVERAGE OCCUPANCY (AAROT) in (s)

Threshold 14			Threshold 32		
CAT	AAROT Calc.	AAROT Adopted	CAT	AAROT Calc.	AAROT Adopted
A	40.0000	<input type="text"/>	A	40.0000	<input type="text"/>
B	65.0000	<input type="text"/>	B	65.0000	<input type="text"/>
C	44.1667	<input type="text"/>	C	44.1667	<input type="text"/>
D	65.0000	<input type="text"/>	D	65.0000	<input type="text"/>
E	40.0000	<input type="text"/>	E	40.0000	<input type="text"/>

☐ MATOP ☒ SATOP

ARITHMETIC AVERAGE BETWEEN THE RUNWAY AVERAGE OCCUPANCY (AAROT) in (s)

Threshold 14			Threshold 32		
CAT	AAROT Calc.	AAROT Adopted	CAT	AAROT Calc.	AAROT Adopted
A	40.0000	<input type="text"/>	A	40.0000	<input type="text"/>
B	65.0000	<input type="text"/>	B	65.0000	<input type="text"/>
C	44.1667	<input type="text"/>	C	44.1667	<input type="text"/>
D	65.0000	<input type="text"/>	D	65.0000	<input type="text"/>
E	40.0000	<input type="text"/>	E	40.0000	<input type="text"/>

- Runway Time-Weighted Average Occupancy (ATRO)**

Shows the runway time weighted average occupancy specified by threshold.

RUNWAY TIME-WEIGHTED AVERAGE OCCUPANCY (ATRO) in (s)

Threshold 14		Threshold 32	
ATRO Calculated	ATRO Adopted	ATRO Calculated	ATRO Adopted
48.3333	<input type="text"/>	48.3333	<input type="text"/>

- Mean Time Between the Sum Of Runway Occupancy (ASROT)**

Shows the mean time between the sum of runway occupancy specified by threshold.

MEAN TIME BETWEEN THE SUM OF RUNWAY OCCUPANCY (ASROT) in (s)

Threshold 14			Threshold 32		
CAT	ASROT Calc.	ASROT Adopted	CAT	ASROT Calc.	ASROT Adopted
A		<input type="text"/>	A		<input type="text"/>
B		<input type="text"/>	B		<input type="text"/>
C		<input type="text"/>	C		<input type="text"/>
D		<input type="text"/>	D		<input type="text"/>
E		<input type="text"/>	E		<input type="text"/>



- **Weighted Sum Runway Occupancy (WSRO)**

Shows the weighted sum runway occupation time specified by threshold.

WEIGHTED SUM OF RUNWAY OCCUPANCY (WSRO) in (s)			
Threshold 14		Threshold 32	
WSRO Calculated	WSRO Adopted	WSRO Calculated	WSRO Adopted
	<input type="text"/>		<input type="text"/>

#### 2.4.1.3.1.7. Step 7 – Average Speed (VMP)

The purpose of this step is to define the approach speed values by threshold to be considered in the aerodrome capacity calculation process. The information is identified by means of the data set described as follows.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Average Speed Approach**

The values calculated by CAT are obtained by means of the final approach time data (Step 3) and the distance between the OM and the THR of the thresholds specified in the aerodrome being analyzed.

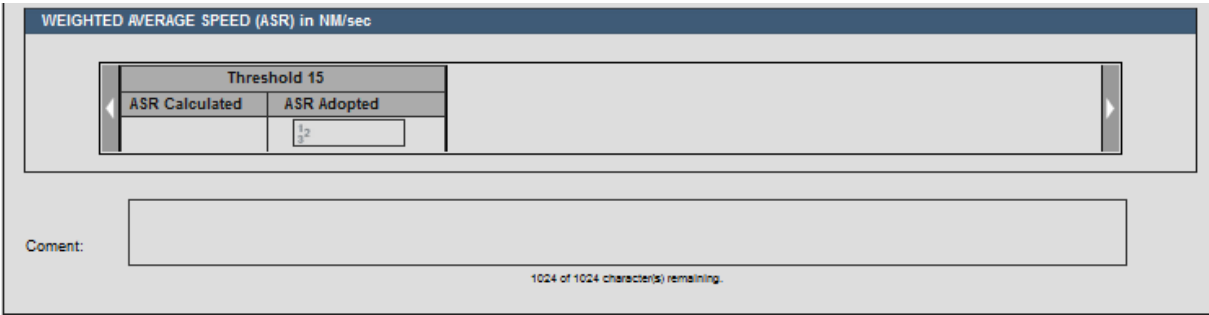
AVERAGE SPEED APPROACH							
Header 07							
CAT	T. Average Calculated (sec)	T. Average Adopted (sec)	V. Average Calculated (Kt)	V. Average Calculated (NM/min)	V. Average Calculated (NM/sec)	V. Average Adopted (NM/sec)	Observations
A		<input type="text"/>				<input type="text"/>	
B		<input type="text"/>				<input type="text"/>	
C		<input type="text"/>				<input type="text"/>	
D		<input type="text"/>				<input type="text"/>	
E		<input type="text"/>				<input type="text"/>	

- “CAT” column – specifies the categories of the aircrafts that operate in the aerodrome.



- “Time Average Calculated” column – shows the value calculated by the system for the average approach time (seconds) by aircraft category, measured between the OM and the THR (Step 3).
  - “Time Average Adopted” column – shows the average approach time value by aircraft category calculated by the capacity operator, considered between the OM and the THR.
  - “V. Average Calculated (Kt)” column – value calculated by the system for the average approach speed (seconds) by aircraft category, considering the distance between the OM and the THR.
  - “V. Average Calculated (NM/min)” column – value calculated by the system for the average approach speed (NM/min) by aircraft category, considering the distance between the OM and the THR.
  - “V. Average Calculated (NM/s)” column – value calculated by the system for the average approach speed (NM/s) by aircraft category, considering the distance between the OM and the THR.
  - “V. Average Adopted (NM/s)” column – value adopted by the capacity operator for the average approach speed (NM/s) by aircraft category, considering the distance between the OM and the THR.
  - “Observations” column - Fill the records of interest
- **Weighted Average Speed (ASR) in NM/sec**

This data set allows defining the weighted average speed values for the thresholds specified in the aerodrome under analysis.



Threshold 15	
ASR Calculated	ASR Adopted

Coment:

1024 of 1024 character(s) remaining.

- “ASR calculated” field - value calculated by the system considering the weighing between the values obtained by aircraft category.
- “ASR” adopted” field - value calculated by the capacity operator considering the weighing between the values obtained by adopted category.
- “Comment” field – displays the records of interest.



#### 2.4.1.3.1.8. Step 8 – Physical Capacity (APC)

The purpose of this step is to define the physical capacity values per threshold and the aerodrome physical capacity. The information is identified by means of the data set described as follows.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

- **Runway Physical Capacity (RPC)**

This data set defines the capacity values per threshold, for an interval of sixty (60) minutes, according to the runway occupation time.

RUNWAY PHYSICAL CAPACITY (RPC)	
Threshold 8	
RPC Calculated	RPC Adopted
	<input type="text" value="12"/>

- “RPC calculated” field – value calculated by the system considering the parameters defined in the previous steps.
- “RPC adopted” – value adopted by the capacity operator according to the previous references.

- **Aerodrome Physical Capacity (APC)**

This data set defines the aerodrome capacity values.

AERODROME PHYSICAL CAPACITY (APC)	
APC Calculated	APC Adopted
	<input type="text" value="12"/>

Coment:

1024 of 1024 character(s) remaining.

- “APC calculated” field – value calculated by the system considering the parameters defined in the previous steps.
- “APC” adopted” – value adopted by the capacity operator according to the previous references.
- “Comments” field – displays the records of interest.





#### 2.4.1.3.1.9. Step 9 – Aerodrome Capacity (AC)


The purpose of this step is to define the runway capacity values that are fully sustainable to be adopted considering the calculation parameters applied in the previous steps, added by the parameters that interfere directly or indirectly in the “modus operandi” of the air traffic control agency. The information is identified by means of the data set described as follows.

- **Sample Threshold**

Data declared as reference, with the content completed in Step 1.

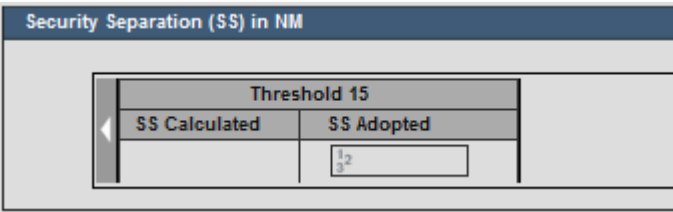
- **Minimum Regulatory Separation (SMR)**

Minimum separation value to be considered between two aircrafts in approach process, to be defined by the capacity operator by completing the following field.

➤ 

- **Security Separation (SS)**

Separation value to be considered in the possibility of a take-off between two consecutive landings, without however harming the minimum regulatory separation (SMR).



Threshold 15	
SS Calculated	SS Adopted
	1.2

➤ “SS calculated” field – value of the distance (NM) calculated by the system to be added to the minimum regulatory separation, between aircrafts in approach process, in order to allow an aircraft to take-off right after the first one lands, without however compromising the regulatory separation with the second approaching aircraft.

➤ “SS adopted” field – value of the distance (NM) adopted by the capacity operator to be added to the minimum regulatory separation, between aircrafts in approach process, in order to allow an aircraft to take-off right after the first one lands, without however compromising the regulatory separation with the second approaching aircraft.

- **Total Separation (ST)**

Value to be considered between the sum of the safety separation and the minimum regulatory separation.



TOTAL SEPARATION (ST) in NM	
Threshold 15	
ST Calculated	ST Adopted
	<input type="text" value="12"/>

- “ST calculated” – value of the distance (NM) calculated by the system between two approached interleaved with a take-off.
- “ST adopted” – value of the distance (NM) adopted by the capacity operator between two approached interleaved with a take-off.

- **Weighted Average Time Between Two Consecutives Landings (TMST)**

Time value (s) weighted to consider the total separation.

WEIGHTED AVERAGE TIME BETWEEN TWO CONSECUTIVES LANDINGS (TMST) IN SECONDS	
Threshold 15	
TMST Calculated	TMST Adopted
	<input type="text" value="12"/>

- “TMST calculated” field – time value (s) weighted to consider the total separation.
- “TMST adopted” field – time value (s) adopted by the capacity operator between two consecutive approaches, considering the aerodrome aircraft mix.

- **Number of landings (L)**

Number of landings during a sixty (60) minute time interval, interleaved with take-offs.

Number of Landings (L)	
Threshold 15	
Calculated landings	Adopted landings
	<input type="text" value="12"/>

- “Landings calculated” field – number of landings calculated by the system in a period of sixty (60) minutes.
- “Landings adopted” field – number of landings adopted by the capacity operator in a period of sixty (60) minutes.



- **Number of Takeoff (D)**

Number of take-offs during a sixty (60) minute time interval, interleaved with approaches.

Number of Takeoff (D)	
Threshold 15	
Calculated Take Offs	Adopted Take Offs
	<input type="text" value="12"/>

- “Take-offs calculated” field - number of take-offs calculated by the system in a period of sixty (60) minutes.
- “Take-offs adopted” field – number of take-offs adopted by the capacity operator in a period of sixty (60) minutes.

- **Theoretical Capacity of the Runway (TCR)**

Number of operations in a sixty (60) minute time interval, according to the runway occupation time (TOP) added by the legislation related to the regulatory separation between aircrafts, as well as the specific standards and procedures applicable to air operations in the location considered. Destined to aerodromes in which the air traffic demand has reached or tends to reach jamming levels.

Theoretical capacity of the runway (TCR)	
Threshold 15	
Calculated TCR	Adopted TCR
	<input type="text" value="12"/>

- “TCR calculated” field – value calculated by the system considering the parameters defined in the previous steps.
- “TCR adopted” field – value adopted by the capacity operator according to the previous references.

- **Aerodrome Capacity (AC)**

Defines the aerodrome capacity values that are fully sustainable to be adopted considering the calculation parameters applied in the previous steps, added by the parameters that interfere directly or indirectly in the “modus operandi” of the air traffic control agency.



AERODROME CAPACITY (AC)	
Calculated CA	Adopted CA
	<input type="text"/>

Coment:

1024 of 1024 character(s) remaining.

- “CA calculated” field – value calculated by the system considering the parameters defined in the previous steps.
- “CA adopted” – value adopted by the capacity operator according to the previous references.
- “Comments” field – displays the records of interest.


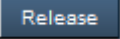


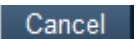
#### 2.4.1.3.2. Create FIR sector group sample

To create a new FIR sector group sample, the user must select the type of Regulated Element: **Type** **FIR Sector Group**. After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.

Type <b>FIR Sector Group</b>	
<b>Threshold Sample</b>	
Identifier:	<input type="text"/>
Indicative:	<input type="text"/>
	<input type="text"/>
	<input type="text"/>
	<b>New Sample</b>
<b>Average Staying Time in FIR Sector Groups</b>	
Calculated SPT:	<input type="text"/> s
Adopted SPT:	<input type="text"/> s
<b>Representative Constant of The Spent Time by ATCO</b>	
k Calculated:	<input type="text"/>
k Adopted:	<input type="text"/>
<b>Adopted Values</b>	
Controller Availability Factor (f):	<input type="text"/> %
Communication average number of each airplane (n):	<input type="text"/>
Secondary Activities Average Time (TMAS):	<input type="text"/> s
Average time of each message (Tm):	<input type="text"/> s
<b>Average Iteration Time</b>	
TMI Applied:	<input type="text"/> s
TMI Adopted:	<input type="text"/> s
<b>Capacities</b>	
N Calculated:	<input type="text"/>
N Adopted:	<input type="text"/>
CHS:	<input type="text"/>
<b>Comment</b>	
<input type="text"/>	
<b>Calculate</b>	<b>Release</b>
<b>Print</b>	<b>Save</b>
	<b>Cancel</b>



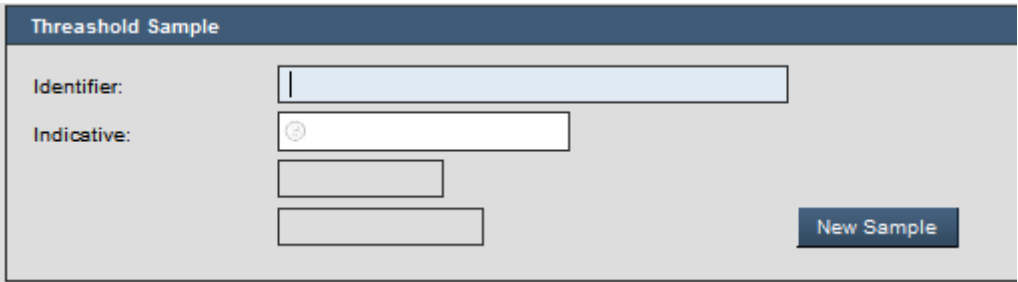
The user has buttons with the following functionalities:

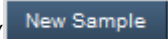
-  - when enabled, allows calculating the capacity value.
-  - allows disclosing the value calculated to be used in the traffic demand analysis processes.
-  - allows to save the inserted data
-  - when enabled, allows printing the report with the capacity data completed.
-  - allows canceling the sample creation operation.

The data completed is specified in the following items:

- **Threshold Sample**

This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.



- “Identifier” field – name to be used to identify the sample.
  - “Indicative” field – indicative code of the FIR sector group in question.
  - “New Sample” () button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
    - “Valid” – Regulated Element specified in the “indication” field is included in the system database.
    - “Fictitious” – Regulated Element specified in the “indication” field is not included in the system database.
    - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.
- **Average Staying Time in FIR Sectors Groups**

This data set allows declaring the average staying time in the FIR sectors groups by means of the following fields.



Average Staying Time in FIR Sector Groups	
Calculated SPT: <input type="text" value="1.2"/>	s
Adopted SPT: <input type="text" value="1.2"/>	s

- “TPS calculated” field – time (s) extracted from statistical data that establishes the weighted average of the permanence times in the sector groups that compose the scenario analyzed.
- “TPS adopted” field – time (s) adopted by the capacity operator that establishes the weighted average of the permanence times in the sector groups that compose the scenario analyzed.

- **Representative Constant of the Spent Time by ATCO**

Constant (k) that identifies the time spent by ATCO to execute non-observable functions during the Average Sector Traffic Permanence Time. By default, the constants (k) are defined as 1.30 for ACC sectors and 1.15 for APP sectors.

Representative Constant of The Spent Time by ATCO	
k Calculated: <input type="text" value="1.2"/>	k Adopted: <input type="text" value="1.2"/>

- “k calculated” field – constant value used by the system according to the default values defined (1.30 for ACC and 1.15 for APP).
- “k adopted” field – constant value defined by the capacity operator.

- **Adopted Values**

Values defined by collecting field data, which is used to define the sector’s simultaneous capacity.

Adopted Values			
Controller Availability Factor (f): <input type="text" value="1.2"/>	%	Communication average number of each airplane (n): <input type="text" value="1.2"/>	
Secondary Activities Average Time (TMAS): <input type="text" value="1.2"/>	s	Average time of each message (Tm): <input type="text" value="1.2"/>	s

- “Controller Disponibility Factor (f)” field – dedicated time percentage attributed exclusively to communication (transmission/reception) with aircrafts.
- “Secondary Activities Average Time (TMAS)” field – time attributed to execute secondary activities during the average sector permanence time.
- “Communication average number of each airplane (n)” field – average number of ATCO/ACFT communication during the sector permanence time.



- “Average time of each message (Tm)” – average duration of the communications between ATCO/ACFT to be established during the sector permanence time.

- **Average Interaction Time**

Average interaction time between the ATCO/ACFT during the average sector permanence time.

Average Iteration Time	
TMI Calculated: <input type="text"/>	Sec. TMI Adopted: <input type="text"/> Sec.

- “TMI calculated” field –average calculated time (s) of interaction between ATCO and ACFT during the average sector permanence time.
- “TMI adopted” field – average time (s) of interaction between ATCO and ACFT during the average sector permanence time adopted by the capacity operator.

- **Capacities**

Ideal capacity values controlled simultaneously by the control sector.

Capacities		
N Calculated: <input type="text"/>	N Adopted: <input type="text"/>	CHS: <input type="text"/>

- “N calculated” field – calculated capacity of simultaneous operations in a given control sector.
- “N adopted” field – capacity of simultaneous operations in a given control sector adopted by the capacity operator.
- “CHS” field – sector group time-schedule capacity calculated by the system.

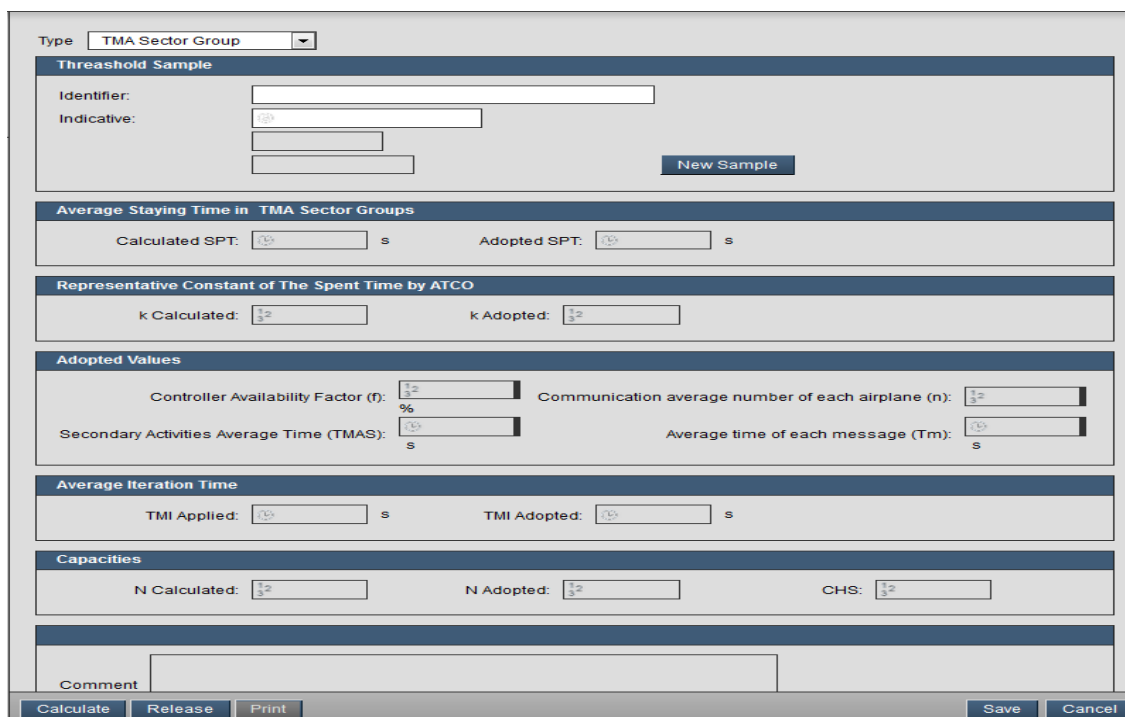
Comment	<input type="text"/>
1024 of 1024 character(s) remaining.	

- “Comments” field – displays the records of interest.



### 2.4.1.3.3. Create TMA sector group sample

To create a new TMA sector group sample, the user must select the type of Regulated Element: **Type** **TMA Sector Group**. After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.



The user has buttons with the following functionalities:

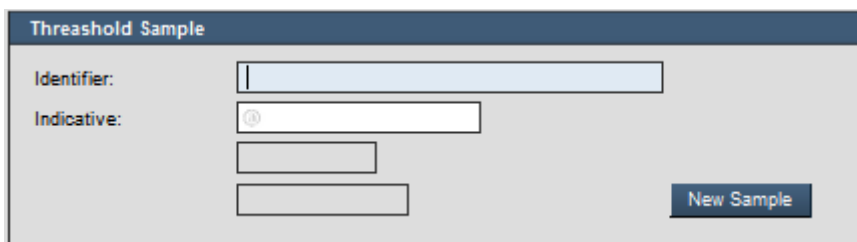
- **Calculate** - when enabled, allows calculating the capacity value.
- **Release** - allows disclosing the value calculated to be used in the traffic demand analysis processes.
- **Print** - when enabled, allows printing the report with the capacity data completed.
- **Save** - allows to save the inserted data
- **Cancel** - allows canceling the sample creation operation.

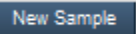
The data completed is specified in the following items:

- **Threshold Sample**

This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.

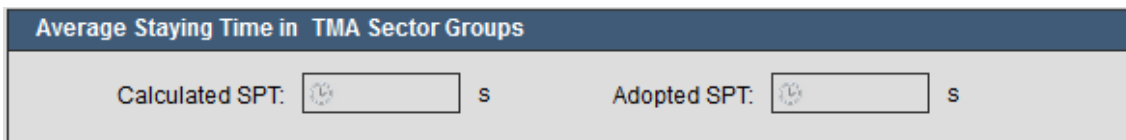




- “Identification” field – name to be used to identify the sample.
- “Indication” field – identification code of the TMA sector group in question.
- “New Sample” (  ) button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
  - “Valid” – Regulated Element specified in the “indication” field is included in the system database.
  - “Fictitious” – Regulated Element specified in the “indication” field is not included in the system database.
  - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.

- **Average Staying Time in TMA Sector Groups**

This data set allows declaring the average permanence time in the TMA sector group by means of the following fields.



- “TPS calculated” field – time (s) extracted from statistical data that establishes the weighted average of the permanence times in the sector groups that compose the scenario analyzed.
- “TPS adopted” field – time (s) adopted by the capacity operator that establishes the weighted average of the permanence times in the sector groups that compose the scenario analyzed.



- **Representative Constant of the Spent Time by ATCO**

Constant (k) that identifies the time spent by ATCO to execute non-observable functions during the Average Sector Traffic Permanence Time. By default, the constants (k) are defined as 1.30 for ACC sectors and 1.15 for APP sectors.

Representative Constant of The Spent Time by ATCO			
k Calculated:	<input type="text" value="1.2/3.2"/>	k Adopted:	<input type="text" value="1.2/3.2"/>

- “k calculated” field – constant value used by the system according to the default values defined (1.30 for ACC and 1.15 for APP).
- “k adopted” field – constant value defined by the capacity operator.

- **Adopted Values**

Values defined by collecting field data, which is used to define the sector's simultaneous capacity.

Adopted Values					
Controller Availability Factor (f):	<input type="text" value="1.2/3.2"/>	%	Communication average number of each airplane (n):	<input type="text" value="1.2/3.2"/>	
Secondary Activities Average Time (TMAS):	<input type="text" value="1.2/3.2"/>	s	Average time of each message (Tm):	<input type="text" value="1.2/3.2"/>	s

- “Controller Disponibility Factor (f)” field – dedicated time percentage attributed exclusively to communication (transmission/reception) with aircrafts.
- “Secondary Activities Average Time (TMAS)” field – time attributed to execute secondary activities during the average sector permanence time.
- “Communication average number of each airplane (n)” field – average number of ATCO/ACFT communication during the sector permanence time.
- “Average time of each Message (Tm)” – average duration of the communications between ATCO/ACFT to be established during the sector permanence time.

- **Average Interaction Time**

Average interaction time between the ATCO/ACFT during the average sector permanence time.

Average Iteration Time					
TMI Applied:	<input type="text" value="1.2/3.2"/>	s	TMI Adopted:	<input type="text" value="1.2/3.2"/>	s

- “TMI calculated” field – average calculated time (s) of interaction between ATCO and ACFT during the average sector permanence time.



- “TMI adopted” field – average time (s) of interaction between ATCO and ACFT during the average sector permanence time adopted by the capacity operator.
- **Capacities**

Ideal capacity values controlled simultaneously by the control sector.

Capacities					
N Calculated:	<input type="text" value="1232"/>	N Adopted:	<input type="text" value="1232"/>	CHS:	<input type="text" value="1232"/>

- “N calculated” field – calculated capacity of simultaneous operations in a given control sector.
- “N adopted” field – capacity of simultaneous operations in a given control sector adopted by the capacity operator.
- “CHS” field – sector group time-schedule capacity calculated by the system.

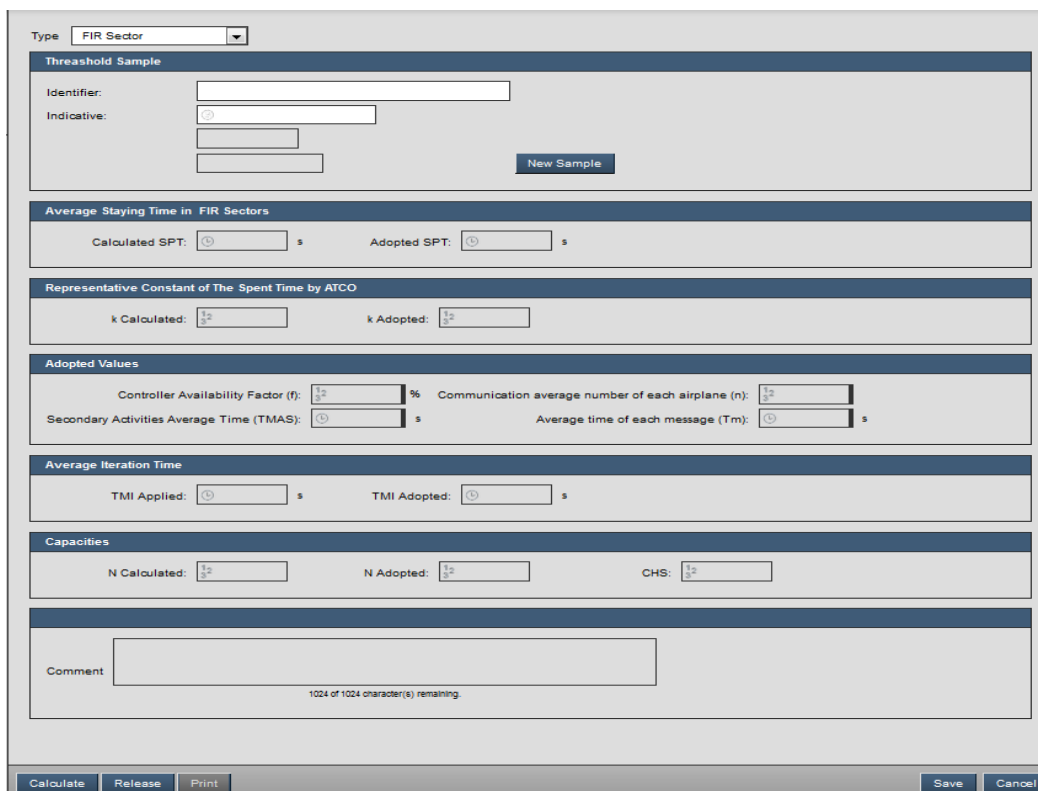
Comment	
	<input type="text"/>
1024 of 1024 character(s) remaining.	

“Comment” field – displays the records of interest.



#### 2.4.1.3.4. Create FIR Sector Sample

To create a new FIR sector sample, the user must select the type of Regulated Element: **Type** **FIR Sector**. After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.



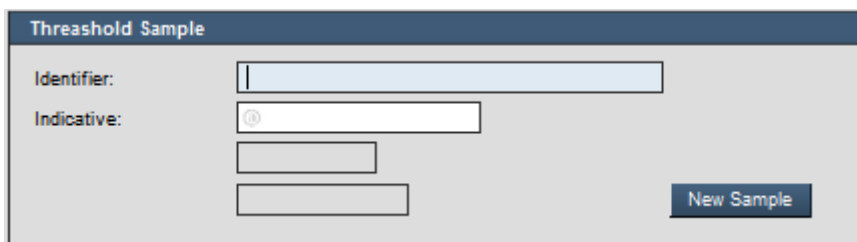
The user has buttons with the following functionalities:

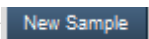
- **Calculate** - when enabled, allows calculating the capacity value.
- **Release** - allows disclosing the value calculated to be used in the traffic demand analysis processes.
- **Print** - when enabled, allows printing the report with the capacity data completed.
- **Save** - allows to save the inserted data
- **Cancel** - allows canceling the sample creation operation.

The data completed is specified in the following items:

- **Threshold Sample**

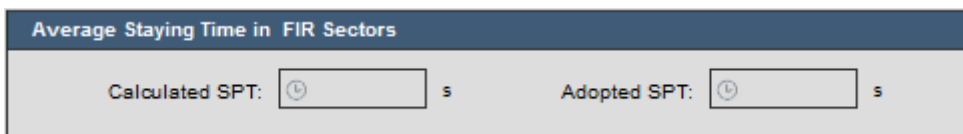
This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.



- “Identification” field – name to be used to identify the sample.
- “Indication” field – identification code of the FIR sector in question.
- “New Sample” (  ) button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
  - “Valid” – element specified in the “indication” field is included in the system database.
  - “Fictitious” – element specified in the “indication” field is not included in the system database.
  - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.

- **Average Staying Time in FIR Sectors**

This data set allows declaring the average permanence time in the FIR sector that defines the sample, by means of the following fields.



- “TPS calculated” field – time (s) extracted from statistical data that establishes the weighted average of the permanence times in the sector that composes the scenario analyzed.
- “TPS adopted” field – time (s) adopted by the capacity operator that establishes the weighted average of the permanence times in the sector that composes the scenario analyzed.

- **Representative Constant of the Spent Time by ATCO**

Constant (k) that identifies the time spent by ATCO to execute non-observable functions during the Average Sector Traffic Permanence Time. By default, the constants (k) are defined as 1.30 for ACC sectors and 1.15 for APP sectors.



#### Representative Constant of The Spent Time by ATCO

k Calculated:

k Adopted:

- “k calculated” field – constant value used by the system according to the default values defined (1.30 for ACC and 1.15 for APP).
- “k adopted” field – constant value defined by the capacity operator.

#### • Values Adopted

Values defined by collecting field data, which is used to define the sector's simultaneous capacity.

##### Adopted Values

Controller Availability Factor (f):  %

Communication average number of each airplane (n):

Secondary Activities Average Time (TMAS):  s

Average time of each message (Tm):  s

- “Controller Availability Factor (f)” field – dedicated time percentage attributed exclusively to communication (transmission/reception) with aircrafts.
- “Secondary Activity Average Time (TMAS)” field – time attributed to execute secondary activities during the average sector permanence time.
- “Average number of communication of each aircraft (n)” field – average number of ATCO/ACFT communication during the sector permanence time.
- “Average Duration Time of Each Message (Tm)” – average duration of the communications between ATCO/ACFT to be established during the sector permanence time.

#### • Average Interaction Time

Average interaction time between the ATCO/ACFT during the average sector permanence time.

##### Average Interaction Time

TMI Applied:

s

TMI Adopted:

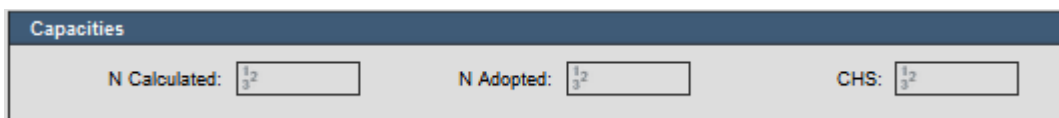
s

- “TMI calculated” field – average calculated time (s) of interaction between ATCO and ACFT during the average sector permanence time.
- “TMI adopted” field – average time (s) of interaction between ATCO and ACFT during the average sector permanence time adopted by the capacity operator.

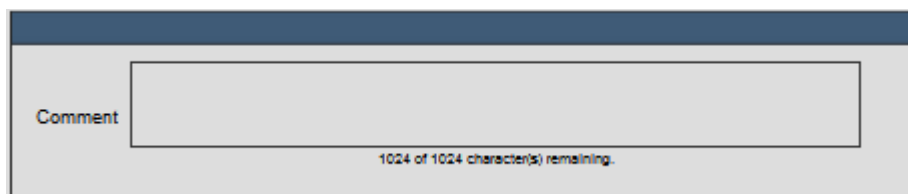


- **Capacities**

Ideal capacity values controlled simultaneously by the control sector.



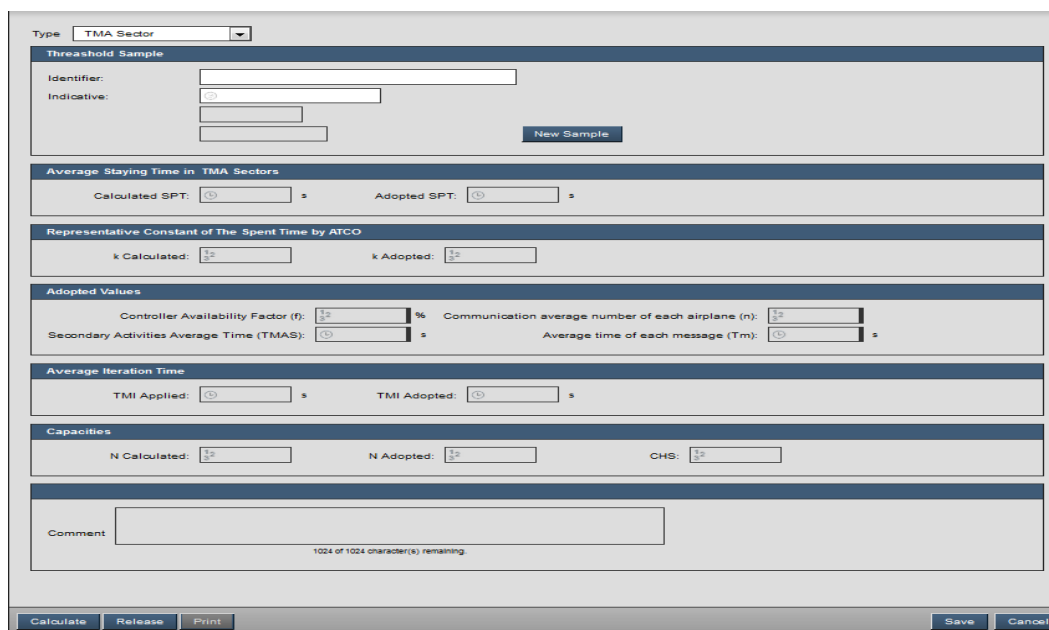
- “N calculated” field – calculated capacity of simultaneous operations in a given control sector.
- “N adopted” field – capacity of simultaneous operations in a given control sector adopted by the capacity operator.
- “CHS” field – sector time-schedule capacity calculated by the system.



“Comments” field – displays the records of interest.


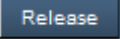

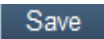

#### 2.4.1.3.5. Create TMA Sector Sample

To create a new TMA sector sample, the user must select the type of Regulated Element: Type **TMA Sector**. After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.





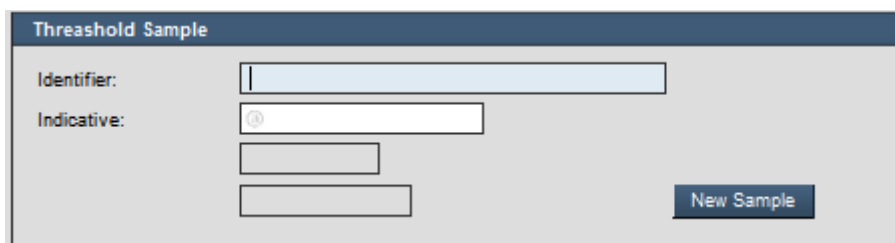
The user has buttons with the following functionalities:


-  - when enabled, allows calculating the capacity value.
-  - allows disclosing the value calculated to be used in the traffic demand analysis processes.
-  - when enabled, allows printing the report with the capacity data completed.
-  - allows to save the inserted data
-  - allows canceling the sample creation operation.

The data completed is specified in the following items:

- **Sample Threshold**

This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.



- “Identification” field – name to be used to identify the sample.
- “Indication” field – identification code of the TMA sector in question.
- “New Sample” () button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
  - “Valid” – element specified in the “indication” field is included in the system database.
  - “Fictitious” – element specified in the “indication” field is not included in the system database.
  - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.

- **Average Staying Time in TMA Sectors**

This data set allows declaring the average permanence time in the TMA sector that defines the sample, by means of the following fields.





Average Staying Time in TMA Sectors	
Calculated SPT: <input type="text" value="12"/>	s
Adopted SPT: <input type="text" value="12"/>	s

- “TPS calculated” field – time (s) extracted from statistical data that establishes the weighted average of the permanence times in the sector that compose the scenario analyzed.
- “TPS adopted” field – time (s) adopted by the capacity operator that establishes the weighted average of the permanence times in the sector that composes the scenario analyzed.

- **Representative Constant of the Spent Time by ATCO**

Constant (k) that identifies the time spent by ATCO to execute non-observable functions during the Average Sector Traffic Permanence Time. By default, the constants (k) are defined as 1.30 for ACC sectors and 1.15 for APP sectors.

Representative Constant of The Spent Time by ATCO	
k Calculated: <input type="text" value="1.2"/>	k Adopted: <input type="text" value="1.2"/>

- “k calculated” field – constant value used by the system according to the default values defined (1.30 for ACC and 1.15 for APP).
- “k adopted” field – constant value defined by the capacity operator.

- **Values Adopted**

Values defined by collecting field data, which is used to define the sector’s simultaneous capacity.

Adopted Values			
Controller Availability Factor (f): <input type="text" value="1.2"/>	%	Communication average number of each airplane (n): <input type="text" value="1.2"/>	
Secondary Activities Average Time (TMAS): <input type="text" value="12"/>	s	Average time of each message (Tm): <input type="text" value="12"/>	s

- “Controller Availability Factor (f)” field – dedicated time percentage attributed exclusively to communication (transmission/reception) with aircrafts.
- “Secondary Activity Average Time (TMAS)” field – time attributed to execute secondary activities during the average sector permanence time.
- “Average number of communication of each aircraft (n)” field – average number of ATCO/ACFT communication during the sector permanence time.



- “Average Duration Time of Each Message (Tm) – average duration of the communications between ATCO/ACFT to be established during the sector permanence time.

- **Average Iteration Time**

Average interaction time between the ATCO/ACFT during the average sector permanence time.

Average Iteration Time	
TMI Applied: <input type="text"/>	TMI Adopted: <input type="text"/>

- “TMI calculated” field – average calculated time (s) of interaction between ATCO and ACFT during the average sector permanence time.
- “TMI adopted” field – average time (s) of interaction between ATCO and ACFT during the average sector permanence time adopted by the capacity operator.

- **Capacities**

Ideal capacity values controlled simultaneously by the control sector.

Capacities		
N Calculated: <input type="text"/>	N Adopted: <input type="text"/>	CHS: <input type="text"/>

- “N calculated” field – calculated capacity of simultaneous operations in a given control sector.
- “N adopted” field – capacity of simultaneous operations in a given control sector adopted by the capacity operator.
- “CHS” field – sector time-schedule capacity calculated by the system.

Comments	
Comment	<input type="text"/>

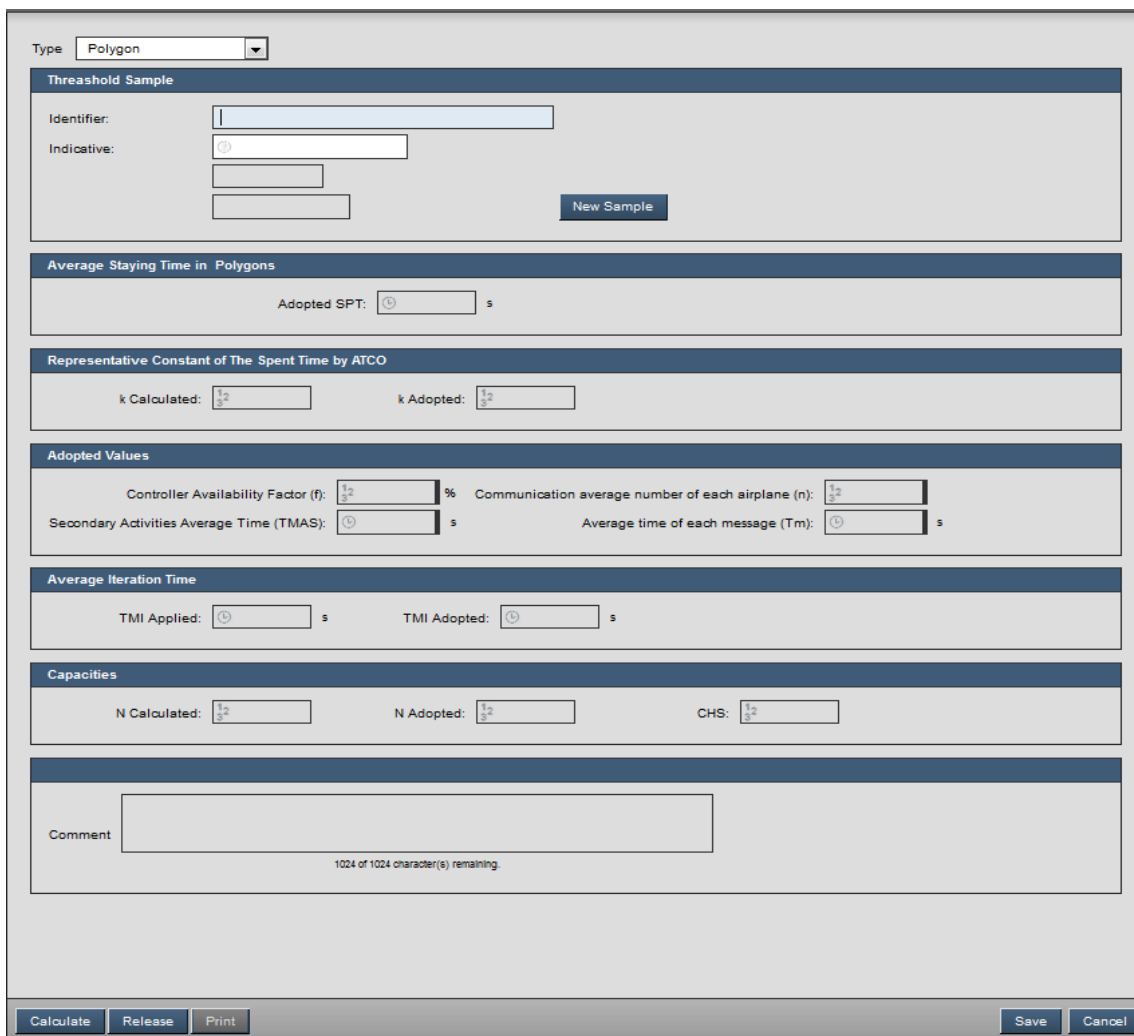
1024 of 1024 character(s) remaining.

“Comments” field – displays the records of interest.

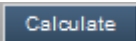


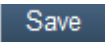


### 2.4.1.3.6. Create Polygon Sample

To create a new polygon sample, the user must select the type of Regulated Element: Type . After selecting the type, the system displays the fields to be completed in the right panel according to the following layout.



The user has buttons with the following functionalities:

-  - when enabled, allows calculating the capacity value.
-  - allows disclosing the value calculated to be used in the traffic demand analysis processes.
-  - when enabled, allows printing the report with the capacity data completed.
-  - allows to save the inserted data

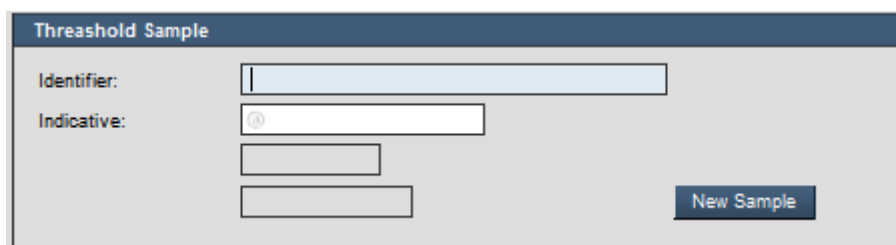



- **Cancel** - allows canceling the sample creation operation.

The data completed is specified in the following items:

- **Sample Threshold**

This data set allows declaring the basic data that define the sample, with the fields identifies in the image below.



- “Identification” field – name to be used to identify the sample.
- “Indication” field – identification code of the polygon in question.
- “New Sample” () button – when added, the system generates a new report and includes in the sample list on the left panel, and also complements the fields with the following possibilities:
  - “Valid” – Regulated Element specified in the “indication” field is included in the system database.
  - “Fictitious” – Regulated Element specified in the “indication” field is not included in the system database.
  - “Not Disclosed” – the system signals that initially the result obtained in not disclosed.

- **Average Staying Time in Polygons**

This data set allows declaring the average permanence time in the polygon that defines the sample, by means of the following fields.



- “TPS adopted” field – time (s) adopted by the capacity operator that establishes the weighted average of the permanence times in the polygon that composes the scenario analyzed.



- **Representative Constant of the Spent Time by ATCO**

Constant (k) that identifies the time spent by ATCO to execute non-observable functions during the Average Sector Traffic Permanence Time. By default, the constants (k) are defined as 1.30 for ACC and 1.15 for APP.

Representative Constant of The Spent Time by ATCO	
k Calculated:	<input type="text" value="1.2"/>
k Adopted:	<input type="text" value="1.2"/>

- “k calculated” field – constant value used by the system according to the default values defined (1.30 for ACC and 1.15 for APP).
- “k adopted” field – constant value defined by the capacity operator.

- **Adopted Values**

Values defined by collecting field data, which is used to define the polygon’s simultaneous capacity.

Adopted Values	
Controller Availability Factor (f): <input type="text" value="1.2"/>	% Communication average number of each airplane (n): <input type="text" value="1.2"/>
Secondary Activities Average Time (TMAS): <input type="text" value="1"/>	s Average time of each message (Tm): <input type="text" value="1"/>
	s

- “Controller Availability Factor (f)” field – dedicated time percentage attributed exclusively to communication (transmission/reception) with aircrafts.
- “Secondary Activity Average Time (TMAS)” field – time attributed to execute secondary activities during the average polygon permanence time.
- “Average number of communication of each aircraft (n)” field – average number of ATCO/ACFT communication during the polygon permanence time.
- “Average Duration Time of Each Message (Tm) – average duration of the communications between ATCO/ACFT to be established during the polygon permanence time.

- **Average Iteration Time**

Average interaction time between the ATCO/ACFT during the average polygon permanence time.

Average Iteration Time	
TMI Applied: <input type="text" value="1"/>	s TMI Adopted: <input type="text" value="1"/>
	s

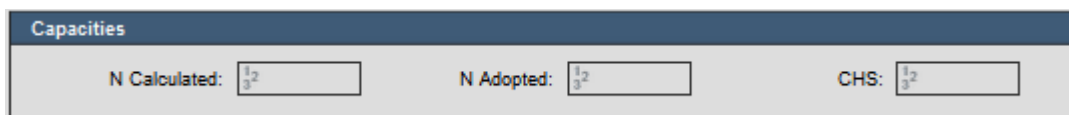
- “TMI calculated” field – average calculated time (s) of interaction between ATCO and ACFT during the average polygon permanence time.



- “TMI adopted” field – average time (s) of interaction between ATCO and ACFT during the average polygon permanence time adopted by the capacity operator.

- **Capacities**

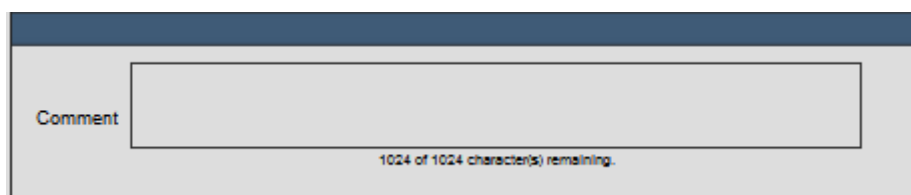
Ideal capacities controlled simultaneously by the polygon.



Capacities

N Calculated:  N Adopted:  CHS:

- “N calculated” field – calculated capacity of simultaneous operations in a given polygon.
- “N adopted” field – capacity of simultaneous operations in a given polygon adopted by the capacity operator.
- “CHS” field – polygon time-schedule capacity calculated by the system.






Comment

1024 of 1024 character(s) remaining.

“Comments” field – displays the records of interest.

#### 2.4.1.4. Remove Capacity Sample


This option allows the user to remove a capacity sample stored in the system. To access this option, the user must press the “Consult” () icon on the left panel as follows.

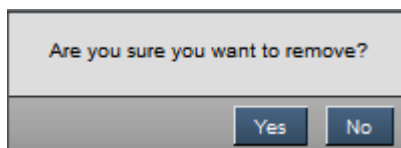
ICAO Code	Identific	State	Capacity	Last update	
ABC	ct01	Fictitious		03/02/2015 - 01:08	
ABC	ct0a	Fictitious		03/02/2015 - 01:24	

After pressing the referred button, the system displays the data of the sample selected in the right panel, and the page footnote allows selecting this option as identified in the image below.

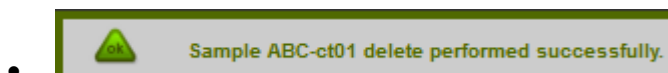


Confirm << >> Print Export Calculate Release Remove Clone Edit


After pressing the button to remove () , the system requests confirmation to execute the operation by means of the following options.





If the user selects the “Yes” option, the system executes the operation, deletes the sample from the list, and displays the following execution message.



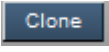
#### 2.4.1.5. Clone Capacity Sample

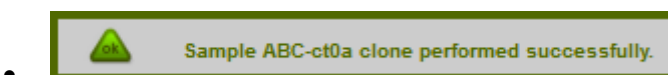
This option allows the user to generate a new capacity sample from another sample stored in the system. To access this option, the user must press the “Consult” () icon on the left panel as follows.


ICAO Code	Identific#	State	Capacity	Last update	
ABC	ct01	Fictitious		03/02/2015 - 01:08	
ABC	ct0a	Fictitious		03/02/2015 - 01:24	

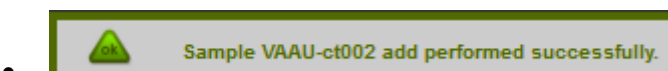
After pressing the referred button, the system displays the data of the sample selected in the right panel, and the page footnote allows selecting this option as identified in the image below.



When the cloning button () is pressed, the system enables the “Identification” field for editing and displays the following message informing the event:






To create a new sample by cloning an existing sample, the operator must complete the “Identification” field and press the () button. The system then includes the new sample in the list and displays the following message:






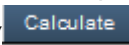
#### 2.4.1.6. Edit Capacity Sample

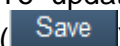
This option allows the user to edit the data of a capacity sample stored in the system. To access this option, the user must press the “Consult” (  ) icon on the left panel as follows.

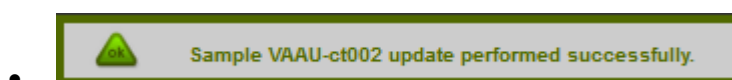
ICAO Code	Identific	State	Capacity	Last update	
ABC	ct01	Fictitious		03/02/2015 - 01:08	
ABC	ct0a	Fictitious		03/02/2015 - 01:24	

After pressing the referred button, the system displays the data of the sample selected in the right panel, and the page footnote allows selecting this option as identified in the image below.





When the editing button (  ) is pressed, the system enables the specific fields of each type of sample for editing. To consolidate the data changed in the page, the user must press the (  ) button and the system updates the date according to the changes executed.

To update the data of the sample stored in the system, the operator must press the (  ) button and the system updates the sample and issues the following message:



#### 2.4.1.7. Disclose Capacity Sample

This option allows the user to disclose the value of a capacity sample stored in the system. To access this option, the user must press the “Consult” (  ) icon on the left panel as follows.


ICAO Code	Identific	State	Capacity	Last update	
ABC	ct01	Fictitious		03/02/2015 - 01:08	
ABC	ct0a	Fictitious		03/02/2015 - 01:24	








After pressing the referred button, the system displays the data of the sample selected in the right panel, and the page footnote allows selecting this option as identified in the image below. The option is enabled whenever the sample data is completed.



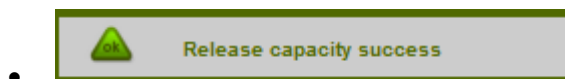





When the disclose button () is pressed, the system discloses the capacity value to be adopted in the capacity/demand analysis procedures. Such operation is available in the sample list, in which the value disclosed is highlighted with a green background as follows.



ICAO Code	Identifier	State	Capacity	Last update	
VABB	vabb1	Valid		09/10/2015 - 06:33	
VABB	example5	Valid	66.01	09/10/2015 - 06:33	
VANP	nag2		12.00	05/02/2016 - 22:17	
VANP	cap8	Valid	31.41	09/10/2015 - 06:33	
VANP	test12	Valid	55.00	09/10/2015 - 06:33	
VANP	CAP1	Valid	41.66	09/10/2015 - 06:33	
VANP	clone1	Valid	31.41	09/10/2015 - 06:33	

When the process is completed, the system shows the following message:




#### 2.4.1.8. Print Capacity Sample

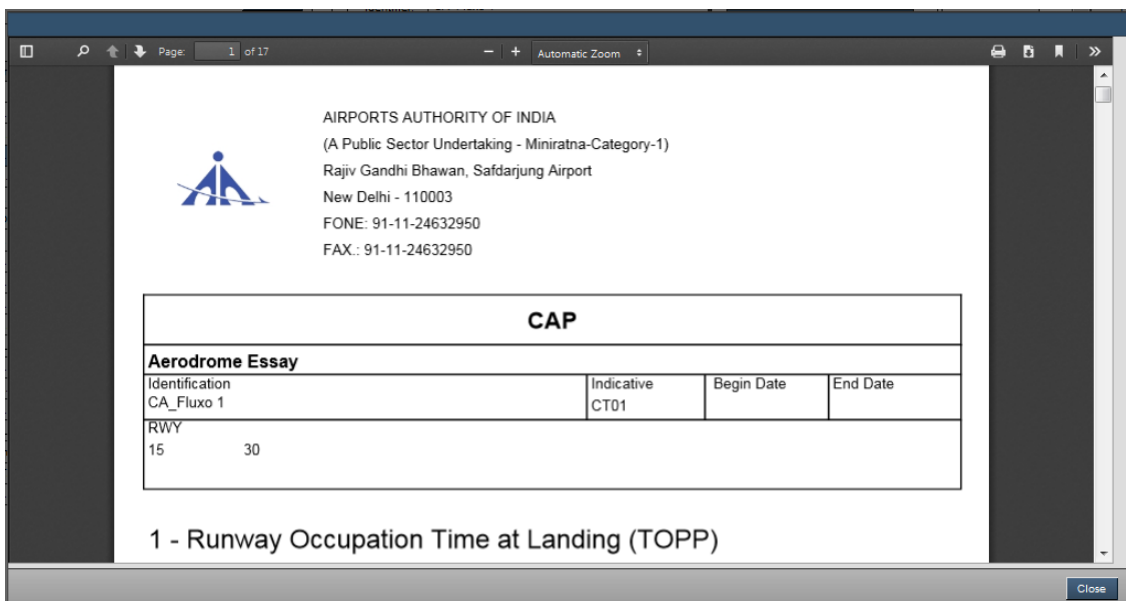
This option allows the user to print the data of a capacity sample stored in the system. To access this option, the user must press the “Consult” () icon on the left panel as follows.

ICAO Code	Identifier	State	Capacity	Last update	
ABC	ct01	Fictitious		03/02/2015 - 01:08	
ABC	ct0a	Fictitious		03/02/2015 - 01:24	

After pressing the referred button, the system displays the data of the sample selected in the right panel, and the page footnote allows selecting this option as identified in the image below.



When the print button () is pressed, the system displays the data of the sample selected as follows.



AIRPORTS AUTHORITY OF INDIA  
(A Public Sector Undertaking - Miniratna-Category-1)  
Rajiv Gandhi Bhawan, Safdarjung Airport  
New Delhi - 110003  
FONE: 91-11-24632950  
FAX.: 91-11-24632950

CAP			
Aerodrome Essay			
Identification	Indicative	Begin Date	End Date
CA_Fluxo 1	CT01		
RWY			
15	30		

1 - Runway Occupation Time at Landing (TOPP)

Close

When this page is shown, the system provides the option to print or download in a specific folder as follows.



#### 2.4.2. “Capacity Projection” Functionality

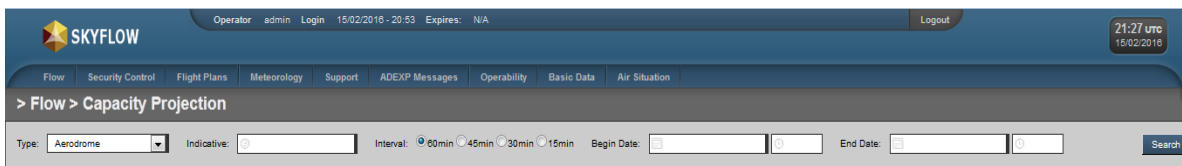
The purpose of this functionality is to enable the user to consult the capabilities of the Regulated Elements of interest by the selection of the type of Regulated Element and the definition of the period. This functionality provides a summary of the impacts suffered to the elements regulated in that period. In the interface will be presented data from the original capacity (nominal), the new value (degraded) and the percentage of degradation that was applied. The lists of impacting factors will also be presented (OPE and SUA)

To access this functionality click in Capacity Projection, as shown below

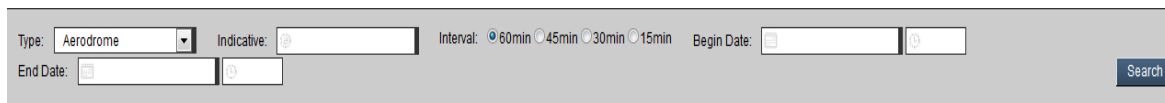


	Regulated Elements
	Automatic Session
	Session Configuration
	Session Demand Reports
	Regulated Element Report
	Configure Session User Permission
	Capabilities Management
	<b>Capacity Projection</b>
	Sector Time
	Taxi Time
	Average Taxi Time
	Collaborative Decision Making
	Manual Session
	Flight Schedule
	Import Flight Schedules
	Remove Closed Flight Schedules
	Flight Schedule Parameters
	Operational Panel

After the system offers several types of Regulated Elements that can be consulted, as shown in the following figures below:





**Type Aerodrome:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time"



The system show the selected aerodrome to consult capacities, OPE impact and SUA impact.



VAAH - SARDAR VALLABHBHAI PATEL INTERNATIONAL

**Capacities**



Begin Date	End Date	Nominal	Degraded	Impact
01/02/2015 - 08:00	14/02/2016 - 08:00	20	20	
(1)				

**OPE Impact**

Type	Element	Resource	State	Start	End	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										



To generate consult in PDF click in  to generate consult in XLS click in 

**Type Airway Segment:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type:  Indicative:  Interval: ☒ 60min ☐ 45min ☐ 30min ☐ 15min Begin Date:    
End Date:

The system show the selected airway segment to consult capacities, OPE impact and SUA impact.

Q2-DPN\_BBB\_0\_990 - null

**Capacities**



Begin Date	End Date	Nominal	Degraded	Impact
01/02/2015 - 08:00	16/02/2016 - 08:00	0	0	
(1)				

**OPE Impact**

Type	Element	Resource	State	Start	End	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										

To generate consult in PDF click in  to generate consult in XLS click in 





**Type FIR Sector:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type:  Indicative:  Interval: ☒ 60min ☐ 45min ☐ 30min ☐ 15min Begin Date:   End Date:

The system show the selected FIR Sector to consult capacities, OPE impact and SUA impact.

VABF.UAHE - null

**Capacities**



Begin Date	End Date	Nominal	Degraded	Impact
01/02/2015 - 08:00	16/02/2016 - 08:00	12	12	
(1)				

**OPE Impact**

Type	Element	Resource	State	Start	End	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										



To generate consult in PDF click in  to generate consult in XLS click in 

**Type TMA Sector:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type:  Indicative:  Interval: ☒ 60min ☐ 45min ☐ 30min ☐ 15min Begin Date:   End Date:

The system show the selected TMA Sector to consult capacities, OPE impact and SUA impact.

VABF.UAHE - null

**Capacities**

Begin Date	End Date	Nominal	Degraded	Impact
01/02/2015 - 08:00	16/02/2016 - 08:00	12	12	
(1)				

**OPE Impact**

Type	Element	Resource	State	Start	End	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										

To generate consult in PDF click in  to generate consult in XLS click in 





**Type STAR Segment:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type: STAR Segment Indicative: Interval: 60min 45min 30min 15min Begin Date: 01/02/2015 08:00 End Date: 16/02/2016 08:00

The system show the selected STAR Segment to consult capacities, OPE impact and SUA impact.

APUSU\_1A-APUSU\_VABB\_40\_380 - null

**Capacities**



Begin	End	Nominal	Degraded	Impact
07/03/2015 - 10:00	09/03/2015 - 11:00	0	0	
(1)				

**OPE Impact**

Type	Element	Resource	State	Start	br.atech.sigma.gop.presentation.markup.html.panel.operability.operabilityPanelLeftGrid.end	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										



To generate consult in PDF click in  to generate consult in XLS click in 

**Type SID Segment:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type: SID Segment Indicative: Interval: 60min 45min 30min 15min Begin Date: End Date:

The system show the selected SID Segment to consult capacities, OPE impact and SUA impact.

ALIJA\_ALI-VIDP\_ALI\_0\_999 - null

**Capacities**

Begin	End	Nominal	Degraded	Impact
06/03/2015 - 09:00	09/03/2015 - 10:00	0	0	
(1)				



**OPE Impact**

Type	Element	Resource	State	Start	br.atech.sigma.gop.presentation.markup.html.panel.operability.operabilityPanelLeftGrid.end	Priority	Comment	Motive
(0)								

**SUA Impact**

Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										







To generate consult in PDF click in  to generate consult in XLS click in 

**Type Fix:** after to fill the following fields: "Type", "indicative", "interval", "begin date and time" and "end date and time".

Type: Fixed Point	Indicative: EPKOS	Interval: <input checked="" type="radio"/> 60min <input type="radio"/> 45min <input type="radio"/> 30min <input type="radio"/> 15min	Begin Date: 01/02/2015	08:00
End Date: 16/02/2016	08:00			

The system show the selected FIX to consult capacities, OPE impact and SUA impact.

EPKOS - null										
 										
<b>Capacities</b>										
Begin Date	End Date	Nominal	Degraded	Impact						
01/02/2015 - 08:00	16/02/2016 - 08:00	0	0							
(1)										
<b>OPE Impact</b>										
Type	Element	Resource	State	Start	End	Priority	Comment	Motive		
(0)										
<b>SUA Impact</b>										
Type	Identification	State	Name	Operational Condition	Start	End	Lowest Limit	Highest Limit	Activation Mode	Observation
(0)										

To generate consult in PDF click in  to generate consult in XLS click in 

### 2.4.3. "Sector Time" Functionality

The purpose of this functionality is to show on a consolidated way data relating to aircraft that involved in the control sectors registered in the system (FIR and TMA). The informations obtained refer amounts of the aircrafts and the average flight times within their sectors. The system provides options for selecting the days of interest. Such information enables the C-ATFM user evaluate the historical demand of occupation of the control sectors. With this information, the user can re-evaluate the parameters established for the definition of the capacity of control sectors.

To access this functionality click in Sector Time, as shown below:



Regulated Elements
Automatic Session
Session Configuration
Session Demand Reports
Regulated Element Report
Configure Session User Permission
Capabilities Management
Capacity Projection
<b>Sector Time</b>
Taxi Time
Average Taxi Time
Collaborative Decision Making
Manual Session
Flight Schedule
Import Flight Schedules
Remove Closed Flight Schedules
Flight Schedule Parameters
Operational Panel

After the system offers “FIR Sector type” and “TMA Sector type” of Regulated Elements that can be consulted, as shown in the following figure below:







**Type FIR Sectors:** When FIR Sectors is selected, all the types FIR Sectors registered in database are display , as shown below:






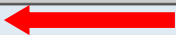
Type:  ▼


Name:







Type	Name	
FIR Sectors	VABF.AH01	
FIR Sectors	VABF.BF01	
FIR Sectors	VABF.BF02	
FIR Sectors	VABF.BF03	
FIR Sectors	VABF.MU01	
FIR Sectors	VABF.NAGA	


The FIR sectors can be consulted one by one, filling the name of the type FIR Sectors in the field **Name:**  and after click search or clicking in  of FIR Sector, as shown below:

Type:  ▼

Name:  



Type	Name	
FIR Sectors	VABF.AH01	 
FIR Sectors	VABF.BF01	
FIR Sectors	VABF.BF02	
FIR Sectors	VABF.BF03	
FIR Sectors	VABF.MU01	

After to select the FIR Sectors, fill Sector name and click in Search or click in  the following figure is displayed:



**Calculated SPT**

Aircraft average calculated: 8

SPT average calculated: 3.7 min

Element SPT Average: 3.7 min

Calculate

**SPT Historic**

<input checked="" type="checkbox"/> Sunday	<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday	<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday
					<input type="checkbox"/> 22/01/2016 [8 - 3.8]	<input type="checkbox"/> 23/01/2016 [8 - 3.8]
<input checked="" type="checkbox"/> 24/01/2016 [8 - 3.8]	<input type="checkbox"/> 25/01/2016 [8 - 3.8]	<input type="checkbox"/> 26/01/2016 [8 - 3.8]	<input type="checkbox"/> 27/01/2016 [9 - 3.9]	<input type="checkbox"/> 28/01/2016 [8 - 3.8]	<input type="checkbox"/> 29/01/2016 [8 - 3.6]	<input type="checkbox"/> 30/01/2016 [8 - 3.8]
<input checked="" type="checkbox"/> 31/01/2016 [8 - 3.8]	<input type="checkbox"/> 01/02/2016 [8 - 3.7]	<input type="checkbox"/> 02/02/2016 [8 - 3.6]	<input type="checkbox"/> 03/02/2016 [8 - 3.6]	<input type="checkbox"/> 04/02/2016 [8 - 3.6]	<input type="checkbox"/> 05/02/2016 [8 - 3.6]	<input type="checkbox"/> 06/02/2016 [8 - 3.8]
<input checked="" type="checkbox"/> 07/02/2016 [8 - 3.8]	<input type="checkbox"/> 08/02/2016 [8 - 3.7]	<input type="checkbox"/> 09/02/2016 [8 - 3.6]	<input type="checkbox"/> 10/02/2016 [8 - 3.6]	<input type="checkbox"/> 11/02/2016 [8 - 3.6]	<input type="checkbox"/> 12/02/2016 [8 - 3.6]	<input type="checkbox"/> 13/02/2016 [8 - 3.8]
<input checked="" type="checkbox"/> 14/02/2016 [8 - 3.8]	<input type="checkbox"/> 15/02/2016 [8 - 3.7]					

The system provides options for selecting the days of interest.












**Type TMA Sector:** When TMA Sectors is selected, all the types TMA Sectors registred in database are display , as shown below:




**> Flow > Dwell Time in Sector**

Type:






Name:


Type	Name	
TMA Sectors	AHME.ME01	
TMA Sectors	AURA.AU01	
TMA Sectors	BANG.BA01	
TMA Sectors	BANG.BA02	
TMA Sectors	BANG.BA03	
TMA Sectors	BHUB.BH01	
TMA Sectors	CALI.CA01	
TMA Sectors	CHEN.CH01	
TMA Sectors	COCH.CO01	
TMA Sectors	COIM.IM01	
TMA Sectors	DELB.LB01	

The TMA sectors can be consulted one by one, filling the name of the type TMA Sectors in the field **Name:**  and after click search or clicking in  of TMA Sector, as shown below:

Type:

Name:

Type	Name	
TMA Sectors	AHME.ME01	
TMA Sectors	AURA.AU01	
TMA Sectors	BANG.BA01	
TMA Sectors	BANG.BA02	
TMA Sectors	BANG.BA03	

After to select the TMA Sectors, fill Sector name and click in Search or click in  the following figure is displayed:



Calculated SPT						
Aircraft average calculated:		SPT average calculated:		Element SPT Average: 1.6 min		<input type="button" value="Calculate"/>
SPT Historie						
<input type="checkbox"/> Sunday	<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday	<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday
<input type="checkbox"/> 24/01/2016 [124 - 1.6]	<input type="checkbox"/> 25/01/2016 [135 - 1.7]	<input type="checkbox"/> 26/01/2016 [153 - 1.7]	<input type="checkbox"/> 27/01/2016 [147 - 1.6]	<input type="checkbox"/> 28/01/2016 [147 - 1.6]	<input type="checkbox"/> 29/01/2016 [148 - 1.6]	<input type="checkbox"/> 30/01/2016 [134 - 1.6]
<input type="checkbox"/> 31/01/2016 [140 - 1.6]	<input type="checkbox"/> 01/02/2016 [147 - 1.6]	<input type="checkbox"/> 02/02/2016 [146 - 1.6]	<input type="checkbox"/> 03/02/2016 [146 - 1.6]	<input type="checkbox"/> 04/02/2016 [148 - 1.6]	<input type="checkbox"/> 05/02/2016 [166 - 1.6]	<input type="checkbox"/> 06/02/2016 [152 - 1.6]
<input type="checkbox"/> 07/02/2016 [158 - 1.6]	<input type="checkbox"/> 08/02/2016 [164 - 1.6]	<input type="checkbox"/> 09/02/2016 [164 - 1.6]	<input type="checkbox"/> 10/02/2016 [161 - 1.6]	<input type="checkbox"/> 11/02/2016 [166 - 1.6]	<input type="checkbox"/> 12/02/2016 [166 - 1.6]	<input type="checkbox"/> 13/02/2016 [152 - 1.6]
<input type="checkbox"/> 14/02/2016 [158 - 1.6]	<input type="checkbox"/> 15/02/2016 [164 - 1.6]					

The system provides options for selecting the days of interest.



### 3. FLOW ERROR MESSAGES

This section presents a set of error messages that a C-ATFM operator might see in SKYFLOW. Along with the messages, there are described the possible cause and solution for each case.

#### 3.1. Regulated Elements

Message	Cause	Resolution
A Regulated Element Type must be selected	The following Regulated Element Type is empty	Type the value of the Regulated Element Type correctly
Regulated Element must have at least 2 element	There are at most one element in Regulated Element box	Add at least two Regulated Elements
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly
The <i>Field</i> must be filled up to update the table	The following <i>Field</i> is empty in box Time Capacity	Type the value of this <i>Field</i> correctly

#### 3.2. Automatic Session

Message	Cause	Resolution
<i>Field</i> must be selected	The following <i>Field</i> is empty	Select this <i>Field</i> correctly
Select a Session	No session was selected.	Select a desired session before open it.

#### 3.3. Session Configuration

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly

#### 3.4. Session Demand Reports

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly



### 3.5. Regulated Elements Reports

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly

### 3.6. Configure Session User Permission

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly

### 3.7. Capabilities Management

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly
Select a file to import	No file was selected	Select a file.

### 3.8. Capacity Projection

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly

### 3.9. Sector Time

Message	Cause	Resolution
There are no error messages.		

### 3.10. Taxi Time

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly



### 3.11. Collaborative Decision Making

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly
Inform a valid Regulated Element.	The fields Regulated Element Type and Regulated Element Name are invalid.	The fields Regulated Element Type and Regulated Element Name must be filled with valid data.
Duration minutes must be multiple of 15.	The field Duration must end with: 00, 15, 30 or 45.	Type the field with the following minutes: 00, 15, 30 or 45.
Duration invalid	The field Duration is filled with 00:00	Duration must be greater than 00:00.
The scenario must not end before the current time.	The field Begin Date and the sum of the fields Begin Time and Duration must be after the current time.	Be sure these three fields are filled, according the following rule.
Inform regulated elements	It must have registers in the box Regulated Element Selected	Add some registers in Regulated Element Selected
Scenario <i>Value</i> already exists.	The typed <i>Value</i> in field Name already exists.	Type another Name.

### 3.12. Manual Session

Message	Cause	Resolution
Select a Session	No session was selected	A session must be selected
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly
Manual Session <i>Value</i> already exists.	The typed <i>Value</i> in field Name already exists.	Type another Name.

### 3.13. Flight Schedule

Message	Cause	Resolution
Flight Schedule with invalid format.	The field Flight Schedule must contain uppercase	Type a new Flight Schedule with the correct format.



	letters, numbers, dashes, and maximum of 14 characters.	
There are not data to download	The table result is empty	Change the filter to show some results.
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly
Plans must be at least 1 element(s).	There are no Plans in box Flights	It must be added a new Plan in box Flights.
Invalid Validity period, begins after ending date.	The field Until must be after the Validity one.	Swap Validity and Until fields, or correct them.
<i>Field</i> is required	The <i>Field</i> in box "Last Validity" must not be empty.	Type the value of this <i>Field</i> correctly
Indicative malformed.	The field Indicative must be with the correct format: AAA1(111). (The numbers in parentheses are optional)	Type the value of Indicative correctly

### 3.14. Import Flight Schedule

Message	Cause	Resolution
File for importing must be selected.	The file field must not be empty.	Select a file before import
Upload must be less than 1MB	The selected file must be at most 1MB.	Trim or split the current file, or select another file.
Unable to extract file information.	The selected file must be with .txt extension.	Rename the extension to .txt, or select another file.
Flight plan has already been registered.	As described in the message	Verify if the flight schedule in the file should be different or should prevail on the current one. If it is the case solve the problem manually.
Flight Schedule %s has no previous association.	As described in the message	Review Flight Schedule %s should'nt have an association
Flight Schedule %s does not have series similar to Flight Schedule associated.	As described in the message	Review and verify if the change shall be validate.





Flight Schedule %s does not have the minor series similar to Flight Schedule associated.	As described in the message	Review and verify if the change shall be validate.
Flight Schedule %s has different flight plan set size in relation to similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Plan %s not found in similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Plan %s has different ADES in relation to similar flight plan in similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Plan %s has different EOBT in relation to similar flight plan in similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Plan %s has different Acft. Type in relation to similar flight plan in similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Plan %s has different frequency in relation to similar flight plan in similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Schedule %s has different initial validity in relation to similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Schedule %s has different final validity in relation to similar Flight Schedule %s.	As described in the message	Review and verify if the change shall be validate.
Flight Schedule %s has closed aerodromes.	As described in the message	Review and verify if the change shall be validate.
Params should never be null	As described in the message	Review description
It is not possible to use Acft.	As described in the message	Review configuration content



Type {0}, cause it has just deleted from system.		or change the aircraft type.
Flight plan {0} already exists in system.	As described in the message	Verify if the flight plan in the file is oK.
Acft. Type {0} must be informed.	As described in the message	Review description
Proposal with invalid format.	As described in the message	Review description
There is already a new version of the {0} in the system.	As described in the message	Review the flight plan in the file and in the system and define solution.
No valid route was defined.	As described in the message	Review flight schedule description
There is one or more semantic errors.	As described in the message	Review description
There is one or more syntax errors.	As described in the message	Review description
{0} has no Acft. Type.	As described in the message	Review flight schedule description
{0} could not be processed.	As described in the message	Review flight schedule description
{0} has an duplicated plan.	As described in the message	Review flight schedule description
{0} has more than 3 Acft. Type associated.	As described in the message	Review flight schedule description

Note: % - Flight Schedule



### 3.15. Remove Closed Flight Schedules

Message	Cause	Resolution
<i>There are no error messages.</i>		

### 3.16. Flight Schedule Parameters

Message	Cause	Resolution
<i>Field</i> must be informed	The following <i>Field</i> is empty	Type the value of this <i>Field</i> correctly

### 3.17. Operation Panel

Message	Cause	Resolution
<i>There are no error messages.</i>		



## 4. ABBREVIATIONS AND GLOSSARY

### 4.1. Abbreviations

<b>ACC</b>	<i>Area Control Center</i>
<b>ADEP</b>	<i>Take-off Aerodrome</i>
<b>ADES</b>	<i>Destination Aerodrome</i>
<b>DGCA</b>	National Agency of Civil Aviation
<b>ARR</b>	Landing
<b>ATC</b>	Air Traffic Control
<b>C-ATFM</b>	Central Air Traffic Flow Management
<b>ATS</b>	Air Traffic Service
<b>CAN</b>	Canceled
<b>COR</b>	Correlated
<b>DEP</b>	Take-off
<b>DME</b>	Distance Measuring Equipment
<b>EET</b>	Estimated Elapsed Time
<b>EOBT</b>	Estimated Off-Block Time
<b>FIR</b>	Flight Information Region
<b>FPL</b>	Flight Plan Message Presented
<b>Flight Schedule</b>	Air Transportation Time-Schedule
<b>ICAO</b>	International Civil Aviation Organization
<b>INA</b>	Inactive
<b>MSG</b>	Message
<b>NDB</b>	Non-directional Beacon
<b>PAG</b>	Activated by Manager Action



<b>PLN</b>	Flight Plan
<b>PPA</b>	Pre-Active Plan
<b>RPL</b>	Repetitive Flight Plan
<b>SID</b>	Standard Instrument Departure
<b>SKYFLOW</b>	Integrated Air Movement Management System
<b>STAR</b>	Standard Instrument Arrival
<b>TFM</b>	Traffic Flow Management
<b>TMA</b>	Terminal Control Area
<b>UTC</b>	Coordinated Universal Time
<b>VOR</b>	Omnidirectional VHF Beacon

## 4.2. Glossary

<b>LOGIN</b>	Operational post access order, to which the operator informs his name and password. If the user is registered as a system operator and no typo were committed while executing the order, the commands available in the operational post are then released for use.
<b>LOGOUT / LOGOFF</b>	Order to abandon an operational post. The commands available in the post are automatically blocked for use.
<b>FLIGHT PLAN</b>	Specific information related to the planning or part of the planning of a flight to be conducted by an aircraft, made available by the agencies that provide air traffic services.
<b>REPETITIVE FLIGHT PLAN</b>	Flight plan related to a series of regular flight plans that are conducted frequently, with identical basic characteristics, presented by the Air Companies for retention and repetitive use by the ATS agencies.