Ground Radar plugin for EuroScope

- version 1.1.2 -

Developer Guide

EuroScope | power of control

1 Installation

- In EuroScope, open the “OTHER SET” menu, then click on the “Plug-ins…” item
- Check if the “Ground Radar plugin” is already loaded. If not, click on “Load” and select the plugin file (GRplugin.dll). Then close the Plug-ins Dialog with “Close”.
- If you are using other plugins and they need to draw on the screen when a Ground Radar plugin ASR file is open, they need permission to do so. For example if you are using the TopSky plugin and the aircraft lists use menus by that plugin, the TopSky plugin needs to be given permission to draw on the Ground Radar display: On the plugins list area click on “TopSky plugin”, then move “Ground Radar display” from the “Forbidden to draw on types” box to the “Allowed to draw on types” box.
- Open the “OTHER SET” menu and click on “Save profile”. This will automatically load the plugin with the profile when it’s used the next time. You can also select “Save profile as” if you want to create a different profile for this plugin for some reason.
- At this point you should see no difference on your screen. To use the plugin, a specific ASR file needs to be created. This is explained in the next chapter.

2 ASR file setup

Regardless of which mode you plan to create, the first step is to create an ASR file. Select the desired sector file, set a good zoom level, use the Display settings dialog to select what you want to be shown, select the "GRplugin" tag family provided in the package which hides the EuroScope tags, and then save the ASR file ("OPEN SCT" menu, "Save as…"). Then exit EuroScope and open the ASR file in a text editor such as Notepad. How to edit the file depends on which of the two modes you wish to see, but in both cases the file should contain the following lines:

```
DisplayTypeName:Ground Radar display
DisplayTypeNeedRadarContent:0
DisplayTypeGeoReferenced:1
SHOWLEADER:0
HISTORY_DOTS:0
TAGFAMILY:GRplugin
```

If some of these items are missing (or contain different values), insert the lines and/or correct the values.

If you are using the TopSky plugin, insert the following line (it tells the plugin not to draw items that should only be drawn on the TopSky radar screen):

```
PLUGIN:TopSky plugin:NoDraw:1
```

2.1 Ground mode

The ground mode needs three additional lines to tell the plugin information about the airport:

```
PLUGIN:Ground Radar plugin:AirportElevation:179
PLUGIN:Ground Radar plugin:AirportRadius:1.9
PLUGIN:Ground Radar plugin:GroundMode:EFHK
```

The first line is the airport elevation in feet. It is used by the Approach Window to hide aircraft on the ground at the airport. The second line is used for the same purpose and contains the airport radius in nautical miles. It is the distance from the airport reference point to the furthest corner of the airport. Aircraft outside that circle will be shown on the Approach Window regardless of their altitude. The last line tells the plugin to use the ground movement radar mode and the airport ICAO code. The code is used to set up the Approach and Inbound Windows, as well as coloring the arriving and departing tracks differently.

Optionally, to customize the "on runway" and related buffer distances per runway, insert the following line:

```
PLUGIN:Ground Radar plugin:RunwayAreas:<Areas+Buffers>
```

<Areas+Buffers> is a list of the runway area and buffer distances from the centerline in meters, separated by ":". Each runway for the airport must have both values specified, and the order of the runways is the one they are specified in the sector file. For an airport with two runways, the <Areas+Buffers> entry could be for example *40.0:70.0:45.0:90.0* (rwy1area:rwy1buffer:rwy2area:rwy2buffer)

2.2 Tower mode

The tower mode only needs one additional line:

```
PLUGIN:Ground Radar plugin:TowerMode:ESSA
```

It tells the plugin to use the tower mode and the airport ICAO code to color the arriving and departing tracks differently.

3 External data files

This chapter gives guidance on developing the external data files used by the plugin for various features. Even though the plugin does its best to check the data for errors, some errors may get through and cause all kinds of issues, possibly leading to ES crashing, so it's important to be careful to provide correctly formed data when creating the files. Errors in these files discovered by the plugin are reported in a "GRplugin" chat tab when the files are loaded (for some of the files only the first error in the file is displayed).

3.1 GRpluginAircraftInfo.txt

This file contains information about aircraft types to improve the quality of the stand assignment feature. An example data line is shown below:

A225	88.4	84	18.2	600000	C

Each line must contain the aircraft type designator, wingspan (meters), fuselage length (meters), height (meters), maximum takeoff weight (kg) and a description (see below) separated by TAB characters. Enter 0 (zero) for unknown numeric values.

The description defines the typical use for the aircraft type to help with stand assignment. Enter one or more of the following characters:

- A (airliner/commuter)
- B (business/corporate aircraft)
- C (cargo aircraft)
- H (helicopter)
- I (military helicopter)
- M (military aircraft)
- P (private aircraft)
- T (military tanker/transport)

3.2 GRpluginCargoCallsigns.txt

This file lists callsigns used by cargo airlines to improve the quality of the stand assignment feature. The callsigns (three letters, for example "BOX") must be listed one per row. There may be more information after the callsign, but only if it separated from the callsign with a TAB character, and the callsign must be the first item in each line. This allows the same data to be used as in the EuroScope callsigns data file.

3.3 GRpluginEventStands.txt

This file contains pre-defined stand assignments (for example for event use). The information in the file is only used for stand assignments made inside the defined validity period. The following example is used to show the syntax (optional lines in grey color):

START:1608011600	Validity start time
END:1608012100	Validity end time
// EFHK arrivals	Comment
FIN123:EFHK:22	Stand assignment

Validity start time

START:StartTime

A mandatory line that defines the start time for the file validity period. Any stand assignments made before this time will use the default assignment criteria.

- StartTime UTC time (format YYMMDDHHMM)

Validity end time

END:EndTime

A mandatory line that defines the end time for the file validity period. Any stand assignments made after this time will use the default assignment criteria.

- EndTime UTC time (format YYMMDDHHMM)

Stand assignment

Callsign:Ades:Stand

Pre-defines a stand assignment for a flight matching both the callsign and the destination.

- Callsign Flight callsign (text string)
- Ades Destination airport ICAO code (text string)
- Stand Stand designator (text string, must be found in the GRpluginStands.txt file)

3.4 GRpluginMaps.txt

This file contains the definitions for the plugin drawn maps. The following example area is used to show the syntax (optional lines in grey color):

COLORDEF:Runway:0:0:0	Color definition
// runway 01L/19R	Comment
MAP:01L/19R	Name
FOLDER:ESSA	Folder
ACTIVE:RWY:ARR:ESSA01L:DEP:*	Active
ACTIVE:RWY:ARR:ESSA19R:DEP:*	Active
ACTIVE:RWY:ARR:*:DEP:ESSA01L	Active
ACTIVE:RWY:ARR:*:DEP:ESSA19R	Active
COLOR:Runway	Color
N059.38.14.252 E017.54.49.244	Coordinate
N059.39.58.802 E017.55.26.928	Coordinate
N059.39.59.055 E017.55.24.239	Coordinate
N059.38.14.503 E017.54.46.513	Coordinate

The mandatory items for each map are a name, a folder and a color with which to draw the items.

Color definition

COLORDEF:ColorName:R:G:B

Every color used in the maps must be defined using one of these lines.

- ColorName — Color name to be used in the Color lines (text string)
- R — Color's red component value (0-255)
- G — Color's green component value (0-255)
- B — Color's blue component value (0-255)

Symbol definition

SYMBOLDEF:SymbolName

The first line for each symbol must be a *symbol definition* line.

- SymbolName — Symbol name to use for this symbol in the Symbol lines (text string)

The symbol itself can consist of various elements, drawn by the following lines. The X and Y coordinates are relative to the symbol centerpoint, with the X axis having increasing values to the right and the Y axis having increasing values to the down direction. The commands are the same as in the EuroScope Symbology dialog with the exception of the possibility to draw elliptical arcs and the ":" separating the values here so the ES dialog can be used in most cases to test the results.

MOVETO:X:Y

Sets the starting point for the next LINETO command

- X — Number of pixels from the symbol centerpoint in the left(-)-right(+) direction
- Y — Number of pixels from the symbol centerpoint in the up(-)-down(+) direction

LINETO:X:Y

Draws a straight line from the previous position

- X — Number of pixels from the symbol centerpoint in the left(-)-right(+) direction
- Y — Number of pixels from the symbol centerpoint in the up(-)-down(+) direction

SETPIXEL:X:Y

Paints the selected pixel

- X — Number of pixels from the symbol centerpoint in the left(-)-right(+) direction
- Y — Number of pixels from the symbol centerpoint in the up(-)-down(+) direction

ARC:X:Y:Radius:StartAngle:EndAngle
ARC:X:Y:$Radius_X$:$Radius_Y$:StartAngle:EndAngle

Draws a part of a circle

- X — Centerpoint offset from the symbol centerpoint in the left(-)-right(+) direction
- Y — Centerpoint offset from the symbol centerpoint in the up(-)-down(+) direction
- Radius — Arc radius in pixels (to make a circular arc)
- $Radius_X$ — Arc radius in relation to the X axis in pixels (to make an elliptical arc)
- $Radius_Y$ — Arc radius in relation to the Y axis in pixels (to make an elliptical arc)
- StartAngle — Arc starting angle (integer degrees, 0 degrees is at positive X-axis, increasing counterclockwise)
- EndAngle — Arc ending angle (integer degrees, 0 degrees is at positive X-axis, increasing counterclockwise)

FILLARC:X:Y:Radius:StartAngle:EndAngle
FILLARC:X:Y:$Radius_X$:$Radius_Y$:StartAngle:EndAngle

Otherwise the same as ARC above but the result is filled

POLYGON:X_1:Y_1: X_2:Y_2:…: X_n:Y_n

Draws a filled polygon with n vertices

Name

MAP:MapName

The first line for each map definition must be a *name* line.

- MapName Map name (text string)

Folder

FOLDER:FolderName

Every map must belong to a folder. There is practically no limit to how many maps a single folder can contain.

- FolderName Folder name for the map (text string)

Note: the folder name may not start with an empty space character, and may not contain the backslash ("\") character.

APM

APM

An *APM* line is used to create areas for the Area Penetration Monitoring safety net. After the *APM* line, define the area vertices using coordinate lines.

Zoom

ZOOM:ZoomLevel

A whole map or parts of it can be hidden based on the current zoom level. When the radar screen is zoomed out so that there are less than the specified number of pixels per nautical mile, the lines of the map definition after this line are not read. There can be more than one *zoom* line in one map to hide parts of the map at different zoom levels.

- ZoomLevel Radar screen zoom level (pixels per nautical mile, decimal value)

Note: when there is more than one zoom line in a map, their order is important (for example "ZOOM:5" has to be before "ZOOM:10" to have any effect as with zoom below 10 pix/nm the "ZOOM:5" line will never be read if it's after the "ZOOM:10" line...)

Blocks

BLOCKS:AirportCode:StandList

A map can be set to block specified stands when it is active using this line. A map can contain more than one *Blocks* line if necessary. This only blocks the stands from automatic assignment.

- AirportCode Airport ICAO code
- StandList Comma-separated list of stand designators to be blocked

Color

COLOR:ColorName
COLOR:ColorName:FillColorName

Every map must have at least one *color* line. It sets the color to be used to draw the subsequent drawings. Each line, symbol, etc. within a map can be drawn with a different color simply by including a new *color* line when a color change is required. If the FillColorName is not specified, it is set to the same color as ColorName. All used color names must be defined in the file with a *colordef* line.

- ColorName — Color to be used for drawing lines and texts
- FillColorName — Color to be used for filling FILLARC, POLYGON and region type objects

Style

STYLE:StyleName
STYLE:StyleName:Width

The style line defines the line type for any subsequent *line* items within this map. It is not mandatory; a Solid type line with width 1 pixel will be drawn by default. As with the *color* line, a single map may contain any required number of *style* lines to draw different line styles within the same map. The width is only necessary for Solid type lines (it has no effect on the other types). If a width is not defined, a 1 pixel width is drawn by default.

- StyleName — Style to be used (Solid, Dash, Dot, DashDot or DashDotDot)
- Width — Width of line (pixels)

Line

LINE:Lat_1:Lon_1:Lat_2:Lon_2
LINE:StartPointName:EndPointName

Draws a line from one point to another. Uses the previously defined line style (or solid line with 1 pixel width if no style defined).

- Lat_1 — Latitude of starting point (decimal degrees or sector file format)
- Lon_1 — Longitude of starting point (decimal degrees or sector file format)
- Lat_2 — Latitude of end point (decimal degrees or sector file format)
- Lon_2 — Longitude of end point (decimal degrees or sector file format)
- StartPointName — Fix, VOR, NDB ,airport code or runway (must be found in the active sector file)
- EndPointName — Fix, VOR, NDB, airport code or runway (must be found in the active sector file)

Note: the syntax to define a runway threshold as a StartPointName or an EndPointName is the 4-letter ICAO airport designator followed by a forward slash and the runway identifier.

Coordinate

Lat Lon
Lat:Lon

Defines a vertex point for a filled region or APM area (APM area if an *APM* line exists above the coordinates, a region otherwise). The region or APM area is drawn with the color(s) defined in a preceding *color* line. To draw more than one region or APM area in a map, another line type must appear between them (for example a *color* line). If the map needs to have both filled regions and APM areas, the regions must be defined first, and then after the *APM* line the APM areas. There cannot be any regions below the *APM* line.

Active

ACTIVE:1
ACTIVE:SchedStartDate:SchedEndDate:SchedWeekdays:StartTime:EndTime
ACTIVE:RWY:ARR:ArrRwyList:DEP:DepRwyList

The *active* line is optional. If there is no *active* line, the map will not be automatically activated. A map can contain more than one *active* line; the plugin will check all of them to set the activation status.

The first option will activate the map automatically without any time limits when the plugin is loaded. Note that this option cannot be used together with other *active* lines as it would override any other schedule.

The second option can be used to set activation schedules.

- SchedStartDate — First day to activate the map
  - month and day in the format MMDD (for recurring periods every year)
  - year, month and day in the format YYMMDD (for a single period)
- SchedEndDate — Last day to activate the map, formats as above
- SchedWeekdays — Days of the week to activate the map
  - list of numbers representing the days to activate the map, for example "145" means the map will activate on Mondays, Thursdays and Fridays
  - "0" (zero) to activate the map continuously from StartTime on SchedStartDate to EndTime on SchedEndDate
- StartTime — Time to activate the map (UTC time in the format HHMM)
- EndTime — Time to deactivate the map (UTC time in the format HHMM)

Note: SchedEndDate and SchedWeekdays only limit the activation of the map. If the activation time extends past midnight, the map stays active until EndTime on the following day.

The third option activates the map based on active runways. If all the specified runways are active, the map is activated. If even one of them is not, the map will be deactivated. The runway identifiers must be in the format "<4-letter ICAO code><runwayID>", for example "EFHK15".

- ArrRwyList — Comma-separated list of runways. Enter "*" to allow any runway.
- DepRwyList — Comma-separated list of runways. Enter "*" to allow any runway.

Symbol

SYMBOL:SymbolName:Lat:Lon
SYMBOL:SymbolName:Lat:Lon:Label:OffsetX:OffsetY
SYMBOL:SymbolName:PointName
SYMBOL:SymbolName:PointName:Label:OffsetX:OffsetY

Draws a predefined symbol on the screen. Optionally, can display a text label with the label's centerpoint offset a given number of pixels from the symbol centerpoint.

- SymbolName — Name of symbol
- Lat — Latitude of symbol centerpoint (decimal degrees or sector file format)
- Lon — Longitude of symbol centerpoint (decimal degrees or sector file format)
- PointName — Fix, VOR, NDB, airport code or runway (must be found in the active sector file)
- Label — Text label (text string)
- OffsetX — Number of pixels to offset the label centerpoint in the left(-)-right(+) direction
- OffsetY — Number of pixels to offset the label centerpoint in the up(-)-down(+) direction

Note: the syntax to define a runway threshold as a PointName is the 4-letter ICAO airport designator followed by a forward slash and the runway identifier.

Text

TEXT:Lat:Lon:Label
TEXT:Lat:Lon:Label:OffsetX:OffsetY
TEXT:PointName:Label
TEXT:PointName:Label:OffsetX:OffsetY

Draws a text label on the screen. Optionally, the label's centerpoint can be offset a given number of pixels from the given position.

- Lat — Latitude of label centerpoint (decimal degrees or sector file format)
- Lon — Longitude of label centerpoint (decimal degrees or sector file format)
- PointName — Fix, VOR, NDB, airport code or runway (must be found in the active sector file)
- Label — Text label (text string)
- OffsetX — Number of pixels to offset the label centerpoint in the left(-)-right(+) direction
- OffsetY — Number of pixels to offset the label centerpoint in the up(-)-down(+) direction

Note: the syntax to define a runway threshold as a PointName is the 4-letter ICAO airport designator followed by a forward slash and the runway identifier.

3.5 GRpluginSettings.txt

This file allows adjusting the plugin settings. Each setting in the file must be on its own line, and the syntax is *SettingName=Value*, for example *Equip_ProMode=1* to set the pro mode on by default. It is possible to set most settings to be airport-specific by using an [icao] line. For example if there is a line *[EFHK]* anywhere in the file, any settings after that are only applied for EFHK.

The available settings, their default values and short descriptions containing the acceptable values are listed below. Settings that are always system-wide (cannot be set as airport-specific) are shown in red.

Setting name	Default value	Description
Equip_ProMode	0	Pro mode on(1)/off(0)
Equip_ModeS	WZLCISG	List of "mode S equipped" equipment code letters
Equip_NonAlt	XTDBMNYCVS	List of "non-altitude-reporting" equipment code letters
System_UseReportedGS	1	Use reported(1)/calculated(0) ground speed
System_GS_Samples	5	Number of positions used for calculated ground speed (1-19)
System_GS_DeleteMinMax	0	Disregard highest and lowest from above(1)/Use all values(0)
System_Unblock_GS	5	Groundspeed to unblock a manually blocked stand (1-999)
System_AutoAssignDist	100	Distance from destination [nm] to auto-assign a stand (1-999) Setting this value to zero disables the automatic assignment
System_RwyArea	45.0	"On runway" distance from centerline in meters (0.1-999.9)
System_RwyBufferArea	90.0	"On runway" buffer area from centerline in meters (0.1-999.9)
System_SchengenArea	BI,EB,ED,EE,EF,EH,EK,EL,EN,EP,ES,ET,EV,EY,GC,LE,LF,LG,LH,LI,LJ,LK,LM,LO,LP,LS,LZ	Comma-separated list of Schengen area ICAO codes
System_APM	1	Area Penetration Monitoring on(1)/off(0)
System_ECM	1	Emergency Code Monitoring on(1)/off(0)
System_OSM	1	Occupied Stand Monitoring on(1)/off(0)
System_RIM	1	Runway Incursion Monitoring on(1)/off(0)
System_SRM	1	SID/Runway Monitoring on(1)/off(0)
Color_Arrival	255,255,64	R,G,B value of the arrival flight color
Color_Background	0,0,0	R,G,B value of the APP window background color
Color_Departure	64,255,255	R,G,B value of the departure flight color
Color_New_Stand	255,127,0	R,G,B value of the changed stand assignment color
Color_RawVideo	224,224,0	R,G,B value of the raw video data (latest positions)
Color_RawVideoHistory	224,224,0	R,G,B value of the raw video data (older positions)
Color_Runway	160,160,160	R,G,B value of the APP window runway color
Color_RunwayExtension	80,80,80	R,G,B value of the APP window runway extension color
Color_Text_Notes	255,255,255	R,G,B value of the text notes color
Color_Unknown	224,224,224	R,G,B value of the unknown flight color
Color_Warning	224,0,0	R,G,B value of the warning color
Color_WarningText	255,255,255	R,G,B value of the warning text color
Color_WBackground	160,160,160	R,G,B value of the Inbound window background color
Color_WBorder	160,160,160	R,G,B value of the window border color
Color_WForeground	0,0,0	R,G,B value of the Inbound window texts

Color_WForeground2	128,128,128	R,G,B value of the window titles and APP window scale
Color_WTitleBar	80,80,80	R,G,B value of the window title bar color
GroundLabel	1	Show(1)/hide(0) the label, track symbol, history and heading line in ground mode
GroundLabel_Font	Lucida Sans Unicode	Font used for ground mode track labels
GroundLabel_FontSize	13	Font size for ground mode track labels (1-99)
GroundLabel_ATYP	0	Show(1)/hide(0) ATYP in ground mode track label
GroundLabel_WTC	0	Show(1)/hide(0) WTC in ground mode track label
GroundLabel_SID	0	Show(1)/hide(0) SID in ground mode track label
GroundLabel_RMK	0	Show(1)/hide(0) RMK in ground mode track label
AppLabel_Font	Lucida Sans Unicode	Font used for APP window track labels
AppLabel_FontSize	13	Font size for APP window track labels (1-99)
AppLabel_AFL_VS	0	Show(1)/hide(0) AFL+VS in APP window track label
AppLabel_GS	0	Show(1)/hide(0) GS in APP window track label
TowerLabel_Font	EuroScope	Font used for tower mode track labels
TowerLabel_FontSize	13	Font size for tower mode track labels (1-99)
TowerLabel_AFL_VS	1	Show(1)/hide(0) AFL+VS in tower mode track label
TowerLabel_GS	1	Show(1)/hide(0) GS in tower mode track label
Track_PredictionLine_APP	0	APP window prediction line length in minutes (0-99)
Track_PredictionLine_TWR	0	Tower mode prediction line length in minutes (0-99)
Track_HistoryDots_APP	5	Number of history dots in APP window (0-19)
Track_HistoryDots_GND	5	Number of history dots in ground mode (0-19)
Track_HistoryDots_TWR	5	Number of history dots in tower mode (0-19)
Track_Heading_Line	0	Show(1)/hide(0) the heading line in ground mode
TextNotes_Font	Lucida Sans Unicode	Font used for text notes
TextNotes_FontSize	10	Font size for text notes (1-99)
Window_Inbound_WTC	0	Show(1)/hide(0) WTC in Inbound windows
Window_Inbound_ETA	0	Show(1)/hide(0) ETA in Inbound windows
Window_Inbound_STAND	1	Show(1)/hide(0) STAND in Inbound windows
Window_APP_Scale	10.0	APP window scale in pixels/nm (1.0-100.0)
Window_APP_Extensions	0	Show(1)/hide(0) runway extensions in APP window
Window_APP_Rotation	0.0	APP window view rotation in degrees (-360.0 to 360.0)
Window_Stand_Items	10	Number of stands to display in the window (5-999)
RawVideo	1	Show(1)/hide(0) raw video data
RawVideo_Gradient	0	(1) Fade all raw video from *Color_RawVideo* to *Color_RawVideoHistory* based on plot age (0) Use *Color_Rawvideo* for latest plot and *Color_RawVideoHistory* for all history plots
RawVideo_Brightness	100	Raw video data brightness (0-100)

RawVideo_Afterglow	30	Raw video data afterglow (0-100)
RawVideo_MaxHistory	10	Raw video data maximum history positions displayed (0-10)

3.6 GRpluginStands.txt

The file contains the stand definitions to be used when assigning arrival stands via the plugin. The following example shows the syntax (optional lines in grey color):

// stand 221	Comment
STAND:EFHK:221:N060.18.39.640:E024.58.42.050:20	Stand
BLOCKS:222	Blocks
WTC:LM	WTC
PRIORITY:-1	Priority
USE:C	Use

The plugin's stand assignment system checks the flightplan, finds out which code stands are available for that flightplan, checks for stands already in use, and then assigns one of the available stands.

The example stand definition above defines a stand "221" at EFHK, at the given coordinates and with a 20m radius. Whenever it's assigned or occupied, it blocks stand "222". It's restricted to cargo flights with wake turbulence categories light or medium. It's also classified as a lesser priority stand, to be used only when higher priority stands are not available for assignment. If automatic stand assignment fails to find a suitable stand, the plugin tries again with some restrictions removed (first the CALLSIGN, then also the NOTCALLSIGN, USE, ADEP, NOTADEP, SCHENGEN, NONSCHENGEN, VIA and NOTVIA restrictions are lifted).

Left-clicking the "HITT" label in the menu bar toggles a display of all stand areas to help with development. Occupied and blocked stands are shown in red, assigned stands in yellow and free stands in green color.

Stand

STAND:AirportCode:StandName:Lat:Lon:Radius

This line is the only mandatory line for a stand definition and must always be the first line in a definition. The latitude, longitude and radius define a circle which is used to check if the stand is occupied.

- AirportCode — The airport ICAO code
- StandName — The designator for the stand
- Lat — The latitude of the stand area (decimal degrees or sector file format)
- Lon — The longitude of the stand area (decimal degrees or sector file format)
- Radius — The radius of the stand area (meters, decimal value)

Manual

MANUAL

Causes the stand to be excluded from automatic assignment.

Area

AREA

Defines the stand as an area capable of parking (and being assigned to) multiple aircraft at the same time. These stands can be blocked but not manually assigned using the Stand Window.

Blocks

BLOCKS:Stand$_1$,Stand$_2$,Stand$_3$,…

Causes the stand to block the specified stands from assignment when assigned or occupied.

- Stand$_x$ Stand designator

Priority

PRIORITY:PriorityNumber

Assigns a priority group number to the stand. When assigning stands, available ones are checked according to priority groups, with the higher priority stands first. Stands in lower priority groups will be assigned only when matching higher priority ones are not available. A neutral (zero) priority is assigned by default.

- PriorityNumber Priority group number (from -3 to +3)

Use

USE:Users

Limits the stand assignment only to specified categories of aircraft. By default all categories are allowed.

- Users Allowed categories (any combination of the following)
  - A (airliners/commuter aircraft)
  - B (business/corporate aircraft)
  - C (cargo aircraft)
  - H (helicopters)
  - I (military helicopters)
  - M (military aircraft)
  - P (private aircraft)
  - T (military tanker/transport aircraft)

Note: The categories are checked from the AircraftInfo data file. For the cargo category also the flightplan remarks field is checked for "CARGO" and the callsign is compared against the list in the GRpluginCargoCallsigns data file. In case the information is not found, the flight will be assumed to be an airliner.

Schengen

SCHENGEN

Causes the stand to be assigned only to flights arriving from the Schengen area.

Non-Schengen

NON-SCHENGEN

Causes the stand to be assigned only to flights arriving from outside the Schengen area.

ATYP

ATYP:$Type_1$,$Type_2$,$Type_3$,…

Limits the stand assignment to the specified aircraft types. To allow partial matches, enter "*" after the type string. For example "A3" will only look for A3, whereas "A3*" will match anything beginning with A3 and having at least one character after it, so A3 will not be a match but A320 will be.

- $Type_x$ Aircraft type (complete or partial)

NotATYP

NOTATYP:$Type_1$,$Type_2$,$Type_3$,…

Blocks the stand assignment from the specified aircraft types. Otherwise the format and limitations are the same as in the ATYP line.

- $Type_x$ Aircraft type (complete or partial)

WTC

WTC:CategoryList

Limits the stand assignment to the specified wake turbulence categories.

- CategoryList The allowed category letters (any combination of the following)
  - L (light)
  - M (medium)
  - H (heavy)
  - J (super)

NotWTC

NOTWTC:CategoryList

Blocks the stand assignment from the specified wake turbulence categories.

- CategoryList The blocked category letters (see WTC above for available options)

EngineType

ENGINETYPE:TypeList

Limits the stand assignment to the specified engine types.

- TypeList The allowed type letters (any combination of the following)
  - P (piston)
  - T (turboprop/turboshaft)
  - J (jet)
  - E (electric)

NotEngineType

NOTENGINETYPE:TypeList

Blocks the stand assignment from the specified engine types.

- TypeList The blocked type letters (see ENGINETYPE above for available options)

Wingspan

WINGSPAN:MinSpan:MaxSpan
WINGSPAN:MaxSpan

Limits the stand assignment based on aircraft wingspan. The first option sets both the minimum and maximum values while the second only limits the maximum value.

- MinSpan The minimum allowed wingspan (meters, decimal value)
- MaxSpan The maximum allowed wingspan (meters, decimal value)

Note: The wingspans are checked from the AircraftInfo data file. In case the information for a specific type is not found, a fixed value based on the wake turbulence category is used (L=14m, M=35m, H=64m, S=79m, unknown=0m).

Length

LENGTH:MinLength:MaxLength
LENGTH:MaxLength

Limits the stand assignment based on aircraft fuselage length. The first option sets both the minimum and maximum values while the second only limits the maximum value.

- MinLength The minimum allowed fuselage length (meters, decimal value)
- MaxLength The maximum allowed fuselage length (meters, decimal value)

Note: The fuselage lengths are checked from the AircraftInfo data file. In case the information for a specific type is not found, a value of 0 meters is used.

Height

HEIGHT:MinHeight:MaxHeight
HEIGHT:MaxHeight

Limits the stand assignment based on aircraft height. The first option sets both the minimum and maximum values while the second only limits the maximum value.

- MinHeight The minimum allowed height (meters, decimal value)
- MaxHeight The maximum allowed height (meters, decimal value)

Note: The heights are checked from the AircraftInfo data file. In case the information for a specific type is not found, a value of 0 meters is used.

MTOW

MTOW:MinMTOW:MaxMTOW
MTOW:MaxMTOW

Limits the stand assignment based on the aircraft's maximum takeoff weight. The first option sets both the minimum and maximum values while the second only limits the maximum value.

- MinMTOW The minimum allowed MTOW (kilograms, decimal value)
- MaxMTOW The maximum allowed MTOW (kilograms, decimal value)

Note: The MTOWs are checked from the AircraftInfo data file. In case the information for a specific type is not found, a value of 0 kilograms is used.

Code

CODE:MinCode:MaxCode
CODE:MaxCode

Limits the stand assignment based on element 2 of the aerodrome reference code. The first option sets both the minimum and maximum values while the second only limits the maximum value.

- MinCode The minimum allowed code letter (A-F)
- MaxCode The maximum allowed code letter (A-F)

Note: This line type currently enforces only the wingspan limits (i.e. CODE:C has the same effect as WINGSPAN:35.999).

Callsign

CALLSIGN:Callsign$_1$,Callsign$_2$,Callsign$_3$,…

Causes the stand to be assigned only to matching callsigns.

- Callsign$_x$ Partial or full callsign ("SAS" matches with all callsigns beginning with "SAS")

NotCallsign

NOTCALLSIGN:Callsign$_1$,Callsign$_2$,Callsign$_3$,…

Causes the stand to be blocked from the matching callsigns.

- Callsign$_x$ Partial or full callsign (“SAS” matches with all callsigns beginning with “SAS”)

ADEP

ADEP:ICAOcode$_1$,ICAOcode$_2$,ICAOcode$_3$,…

Limits the stand assignment to flights departing from one of the defined airports. The whole ICAO airport code is not needed; the match can also be done on the first one or more letters, e.g. entering “EF” will match all airports with ICAO designators beginning with “EF”. The ADEP line can contain one or more airport codes and one stand definition can also have more than one ADEP line if necessary.

- ICAOcode$_x$ Airport ICAO code (complete or partial)

NotADEP

NOTADEP:ICAOcode$_1$,ICAOcode$_2$,ICAOcode$_3$,…

Limits the stand assignment to flights not departing from any of the defined airports. Otherwise the format and limitations are the same as in the ADEP line.

- ICAOcode$_x$ Airport ICAO code (complete or partial)

Via

VIA:Point$_1$,Point$_2$,Point$_3$,…

Limits the stand assignment to flights routing via at least one of the defined points. The point can be anywhere along the flightplan. One or more points can be defined in one VIA line and one stand definition can contain more than one VIA line if necessary.

- Point$_x$ Point name (Fix, VOR, NDB or airport)

NotVia

NOTVIA:Point$_1$,Point$_2$,Point$_3$,…

Limits the stand assignment to flights not routing via any of the defined points. Otherwise the format and limitations are the same as in the VIA line.

- Point$_x$ Point name (Fix, VOR, NDB or airport)