






# DSix Terrain Detection

## DSix Terrain Detection

Terrain elevation in DSix is dependent upon the currently loaded graphics package. A default DSix project expects terrain elevation at aircraft CG to be mapped to the DSix variable, *“Terrain\_AltTerrain”*.

-  DSixGraphics\_I
-  DSixGraphics\_II
-  DSixGraphics\_P3D

## DSix Terrain Detection (DSixGraphics\_I)

All terrain in the simple DSixGraphics\_I package is set to 0. Therefore, it is generally adequate to simply set the default value of Terrain\_AltTerrain = 0.

## DSix Terrain Detection (DSixGraphics\_II)

DSixGraphics\_II, as well as DSixGraphics\_P3D, utilizes the DSix Terrain Detection module to configure defined airframe contact points, and to register these contact points with P3D.

To access the terrain detection interface, select *"..Tools..Configure Terrain Detection"* from the DSix menu.

When using DSixGraphics\_II, A contact point is defined by providing a name for the contact point, DSix variables that contain raw x and y locations of the contact point, and a DSix variable that the resulting terrain elevation should be mapped to. For more than

# Graphics\_II Terrain Detection Walkthrough

- ✈️ Ensure that DSix is set up to load the DSixGraphics\_II module
- ✈️ Start DSix. Load the stock BARJet project
- ✈️ Select “*..Tools..Configure Terrain Detection*” from the DSix menu
- ✈️ Check “Use IC Location On Reset” This avoids starting a new run with stale terrain elevation left over from prior run.
- ✈️ Select “*Graphics II*” and “*Local Simulation*”\*
- ✈️ Note the currently defined contact point provides variables containing x, y location of the aircraft CG, and the result container variable “*Terrain\_AltTerrain*”

\* Networked terrain elevation not currently supported

## DSix Terrain Detection (DSixGraphics\_P3D)

DSixGraphics\_P3D, as well as DSixGraphics\_II, utilizes the DSix Terrain Detection module to configure defined airframe contact points, and to register these contact points with P3D.

To access the terrain detection interface, select *“..Tools..Configure Terrain Detection”* from the DSix menu.

When using DSixGraphics\_P3D, A contact point is defined by providing a name and x, y, z offsets from the aircraft CG, as well as a DSix variable that the resulting terrain elevation should be mapped to.

## P3D Terrain Detection Walkthrough

- ✈ Ensure that DSix is set up to load the DSixGraphics\_P3D module
- ✈ Start DSix. Load the stock BARJet P3DDemo project
- ✈ Select “*..Tools..Configure Terrain Detection*” from the DSix menu
- ✈ Check “Use IC Location On Reset” This avoids starting a new run with stale terrain elevation left over from prior run.
- ✈ Select “*Prepar3d 3.x, 4.x*” and “*Local Simulation*”\*
- ✈ Note the currently defined contact point provides variables containing x, y, and z offsets from the aircraft CG, and point to the resulting container variable “*Terrain\_AltTerrain*”

\* Networked terrain detection not currently supported.

## Tutorial

# Creating Wingtip Contact Points for Prepar3d

- ✈ With the DSixGraphics\_P3D module loaded, start DSix and load the BARJet P3D Demo model.
- ✈ From the DSix menu, select “..Edit..Variables”
- ✈ Click “Add” and add the variable “Terrain\_LWing”
- ✈ Click “Add” and add the variable “Terrain\_RWing”. OK.
- ✈ “..Tools..Configure Terrain Detection”
  - ✈ Double-click the first “Unused” entry. Name = LWing
  - ✈ Offsets  $x = 0$ ,  $y = -20$ ,  $z = 0$ . (y offset based on span of 40)
  - ✈ Click “Select Terrain Var” and select the variable “Terrain\_LWing” from the list
  - ✈ Repeat above steps for right wing, with Name = RWing, offsets of 0, 20, 0, and target variable “Terrain\_RWing”
  - ✈ Close with OK, and save the DSix project



## Wingtip Contact Points in Prepar3d Viewing the Results

- ✈ Select the “Cruise” IC set, to relocate to an area with high terrain variability
- ✈ Add Terrain\_AltTerrain, Terrain\_LWing and Terrain\_RWing to a variable display. Expand precision to 3 or 4 decimal places.
- ✈ Start a flight. Bank left over the mountains. Pause the sim occasionally in order to compare the elevations at the 3 contact points.



Flight Simulation Environment