

Getting satellite images for your terrain

Preliminar work: (don't do again If you already did it)

- 1) Create your .geo file (join_geos, for example), process it and save the mesh. Open the mesh with gmsh and check that the non-driveable zone (Physical Surface 222) is part of the mesh.
- 2) Run trocea_malla (inside s1_mesh)

Now we use SasPlanet to get the images

- 3) Create the .hlg file:

```
> cd s1_mesh  
> create_hlg
```

A file called s1_mesh\grid.hlg has been created with the coordinates of a box that comprises your terrain.

- 4) Open s1_mesh\grid.hlg with **SASPlanet**:

Operations -> Select -> Load from file -> Load -> Start

- 5) Save the images in a folder (c:\example_folder) with the desired splitting (5x3 in this example):

Operations -> Select -> Previous Selection -> Stick -> Start (YOU MUST select .dat file bindings)

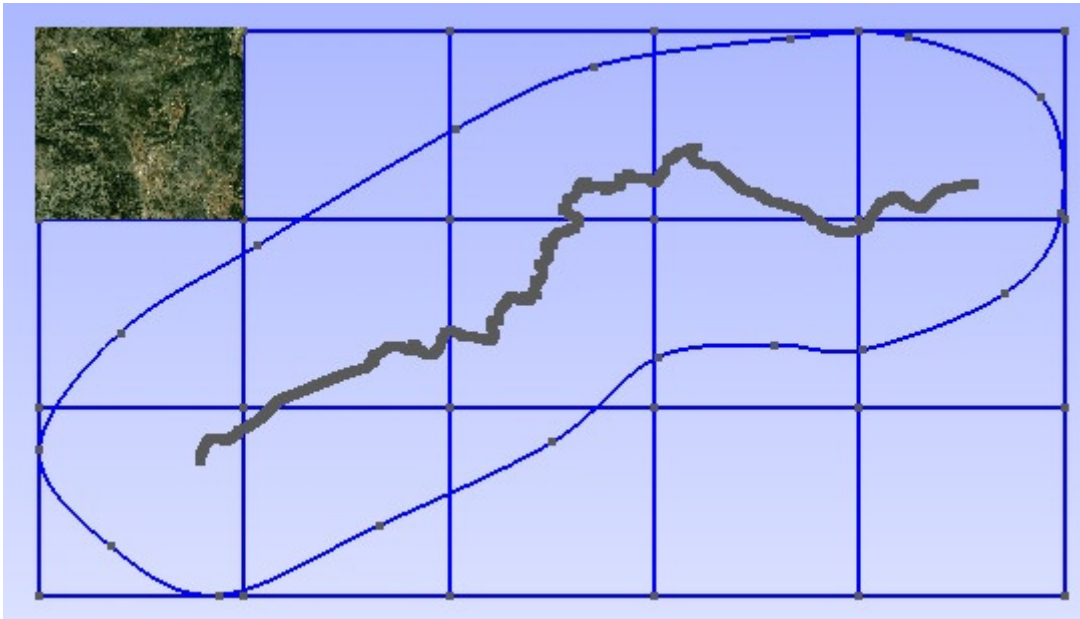
The satellite images have been splitted and the info about the splitting coordinates is in the created .dat files.

- 6) Now we can add the grid to joined.geo so we can see the limits of the downloaded images:

```
> add_dat_to_geo('c:\example_folder')
```

(if you don't want to add the grid to joined.geo, just select the option "Create grid.geo" when asked)

- 7) Open joined.geo and you will see the limits of the downloaded images you have inside c:\example_folder



Using the new grid for simplifying texture mapping

If you use the lines of the new grid for splitting the non-driveable zone, maybe you can then map the textures easily. So now you can decide to change the non-driveable zone.

Script simplificar now creates a separate .ply file for each surface belonging to the non-driveable zone, so they can be easily simplified. **All the files on folder salida\nc splitted should be processed with MeshLab**, for simplifying or just to remove unreferenced vertex. When you have processed all of them, open s4_terrain\salida\nc splitted*.ply with MeshLab (you can open all in the same operation)

View-> Show Layer Dialog

Then **Filters->Layer and ... -> Flatten visible layers**. This combines all the grid cell's meshes. Save result as salida\n.ply

NOTE: add_dat_to_geo also creates a list of all the background images, with the format needed by BTB. It is called **s1_mesh\list_bi.txt**. It must be inserted by hand inside the Venue.xml (really easy to replace the empty list of background images in the 3rd line of this file).

Images should be named sat_X-Y.jpg and should be located inside

My Project\XPacks\Common\Textures

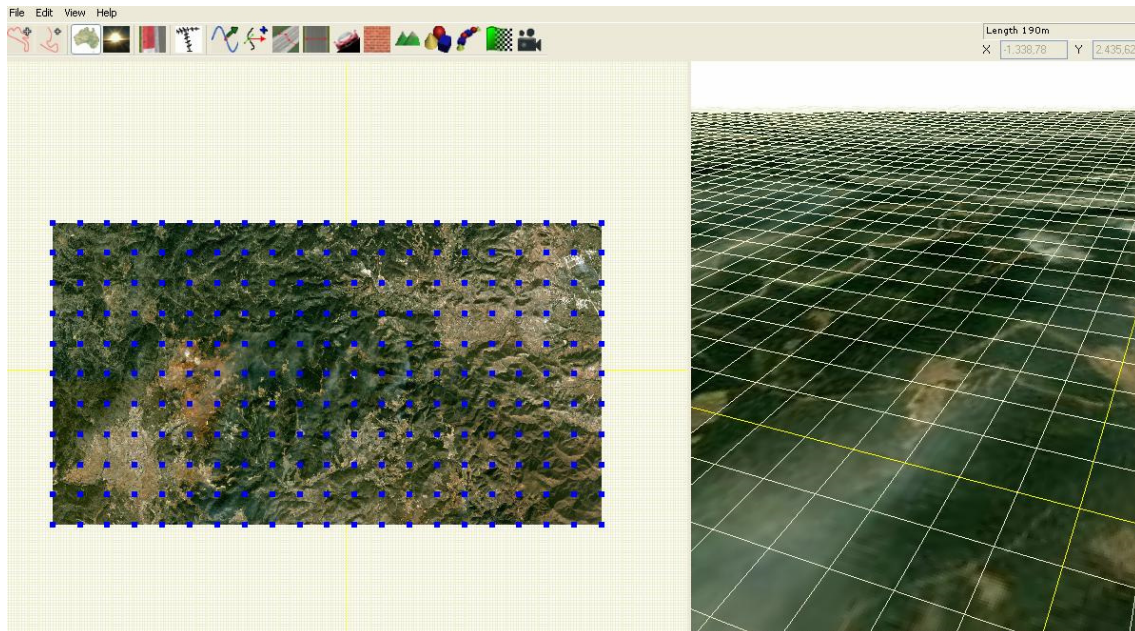
(My project is your project's BTB folder)

procesar_elementstxt_mt can automatically use the background images for the non-driveable zone, if the terrain is splitted using a grid of the same size as that used to create list_bi.txt.

For example:

procesar_elementstxt_mt(10,5,0) splits the terrain using 10x5 grid, but does NOT map background images to terrain zones. Inserting list_bi.txt and copying the images to Common\Textures folder will add the background images, but they will not be linked to the terrain.

procesar_elementstxt_mt(10,5,1) splits the terrain using 10x5 grid, using background images for blending in terrain zones. Before opening the Venue.xml It is mandatory using list_bi.txt and copying the images to Common\Textures folder.



Example list_bi.txt

```
<BackgroundImages count="50">
  <BackgroundImage>
    <Path>Common\Textures\sat_1-1.jpg</Path>
    <Plane>
      <Position x="-11232.375390" y="-0.5" z="5636.028398" />
      <Scale x="2100.341106" y="1" z="-2311.287859" />
      <Rotation x="0" y="0" z="0" />
    </Plane>
  </BackgroundImage>
  <BackgroundImage>
    <Path>Common\Textures\sat_1-2.jpg</Path>
    <Plane>
      <Position x="-11232.375390" y="-0.5" z="3324.740539" />
      <Scale x="2100.341106" y="1" z="-2311.287859" />
      <Rotation x="0" y="0" z="0" />
    </Plane>
  </BackgroundImage>
  etc.
</BackgroundImages>
```