

OL3-CESIUM



3D for OpenLayers



<https://github.com/openlayers/ol3-cesium>

Why, what, how?

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Add 3D to OpenLayers maps

OpenLayers can handle 3D data, Cesium can render it

Easy to learn for OpenLayers users

Federate efforts in one place

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Initially funded by a Boundless client

Created in cooperation with KlokanTech and Camptocamp

Additional funding by Camptocamp clients

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- OpenLayers can handle 3D data, Cesium can render it
- Easy to learn for OpenLayers users
- Federate efforts in one place

- Initially funded by a Boundless client
- Created in cooperation with KlokanTech and Camptocamp
- Additional funding by Camptocamp clients

- Initial release 1 year ago
- Camptocamp is actively working on new features
- Monthly releases

Adding 3D to your map

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var ol3d = new olcs.OLCesium({map: map, target: id});  
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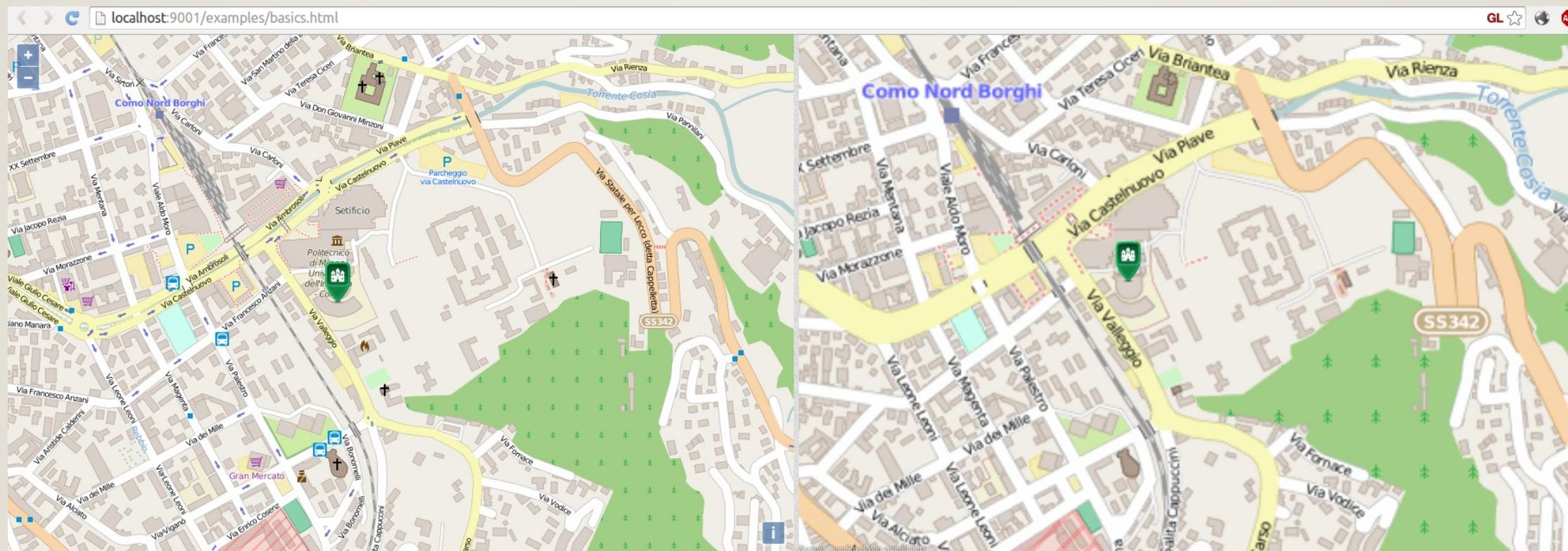
- A Cesium globe is created

Adding 3D to your map

```
var ol3d = new olcs.OLCesium({map: map, target: id});  
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```

- A Cesium globe is created
- layers and view are kept in sync

Synchronized views



Try it

3D map with terrain

3D map with terrain

```
var ol3d = new olcs.OLCesium({map: map});
var scene = ol3d.getCesiumScene();
var terrainProvider = new Cesium.CesiumTerrainProvider({
    url: '//cesiumjs.org/stk-terrain/tilesets/world/tiles'
});
scene.terrainProvider = terrainProvider;
scene.globe.depthTestAgainstTerrain = true; // optional
ol3d.setEnabled(true);
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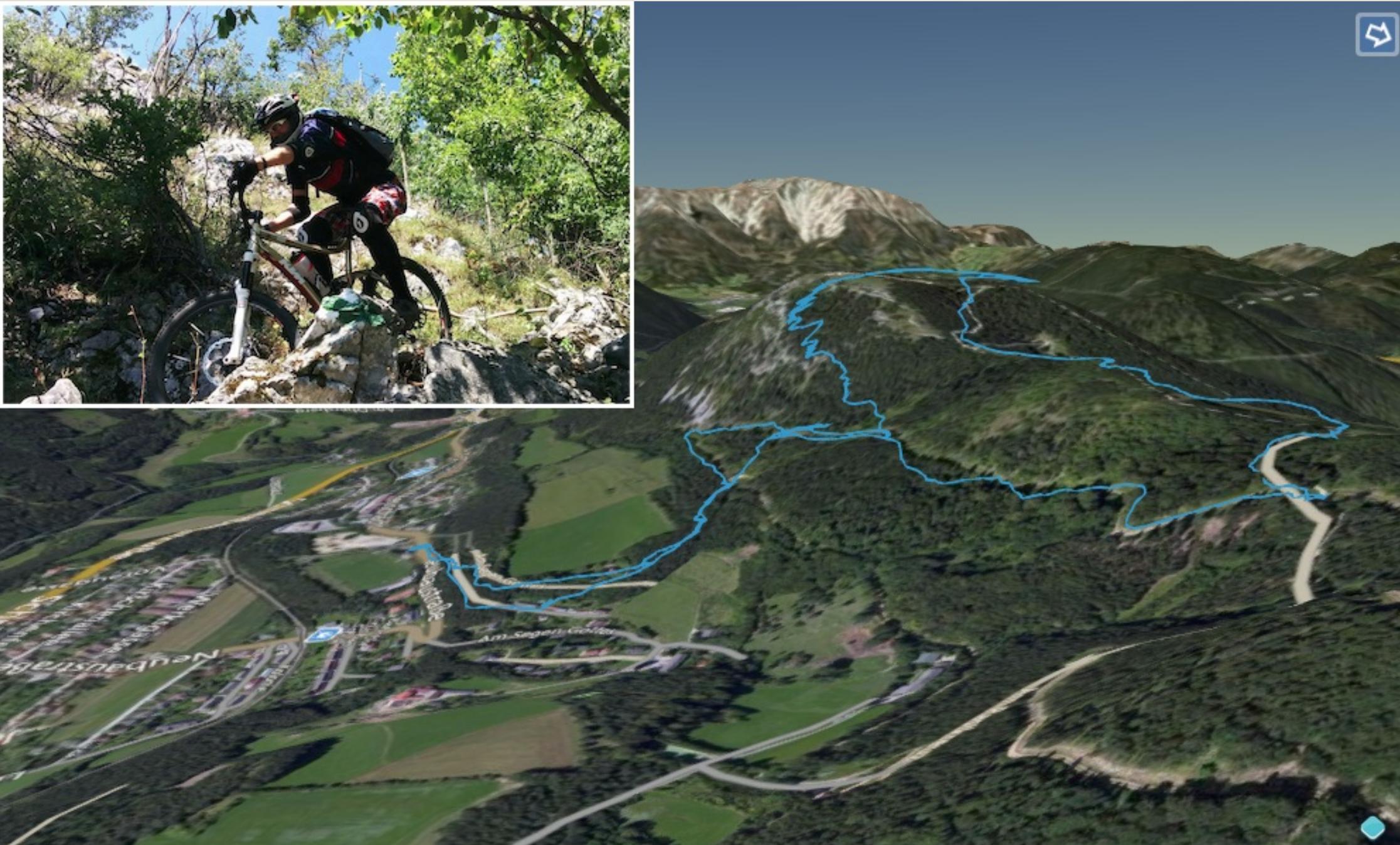
- Raster layers are clamped to ground

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```

- Raster layers are clamped to ground
- z-coordinates of vector data are used

3D GPS Track



OL3-Cesium – Guillaume Beraudo, Andreas Hocevar [Try it](#)

Real life example

Suisse**Mobile** 3d

Real life example

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- Swiss projection

Real life example

SuisseMobile 3d

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- Many layers including clusters

Real life example

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- Many layers including clusters
- Picking and tooltips

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Different 2D projection

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- Cesium supports EPSG:4326 and EPSG:3857

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Different 2D projection

- Cesium supports EPSG:4326 and EPSG:3857
- Vector layers are reprojected automatically
- Raster layers must be handled by application
 - No support for client side reprojection (yet?)
 - Require additionnal dataset in EPSG:4326 or EPSG:3857

Vector clustering



Vector clustering



- 30'000 points instead of reprojected rasters

Vector clustering



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- Pregenerated using a [custom OpenLayers3 tool](#)

Vector clustering



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- Picking: id, children and resolution per feature

Vector clustering



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- Pregenerated using a [custom OpenLayers3 tool](#)
- Picking: id, children and resolution per feature
- Data only sent once to the GPU, decimation in the shader

3D geometries



3D geometries



- Static positioning (x, y, z) for all geometries

3D geometries



- Static positioning (x, y, z) for all geometries
- Dynamic positioning (`altitudeMode = "clampToTerrain"`)

3D geometries



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3D geometries



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 - Polygons coming soon

3D geometries

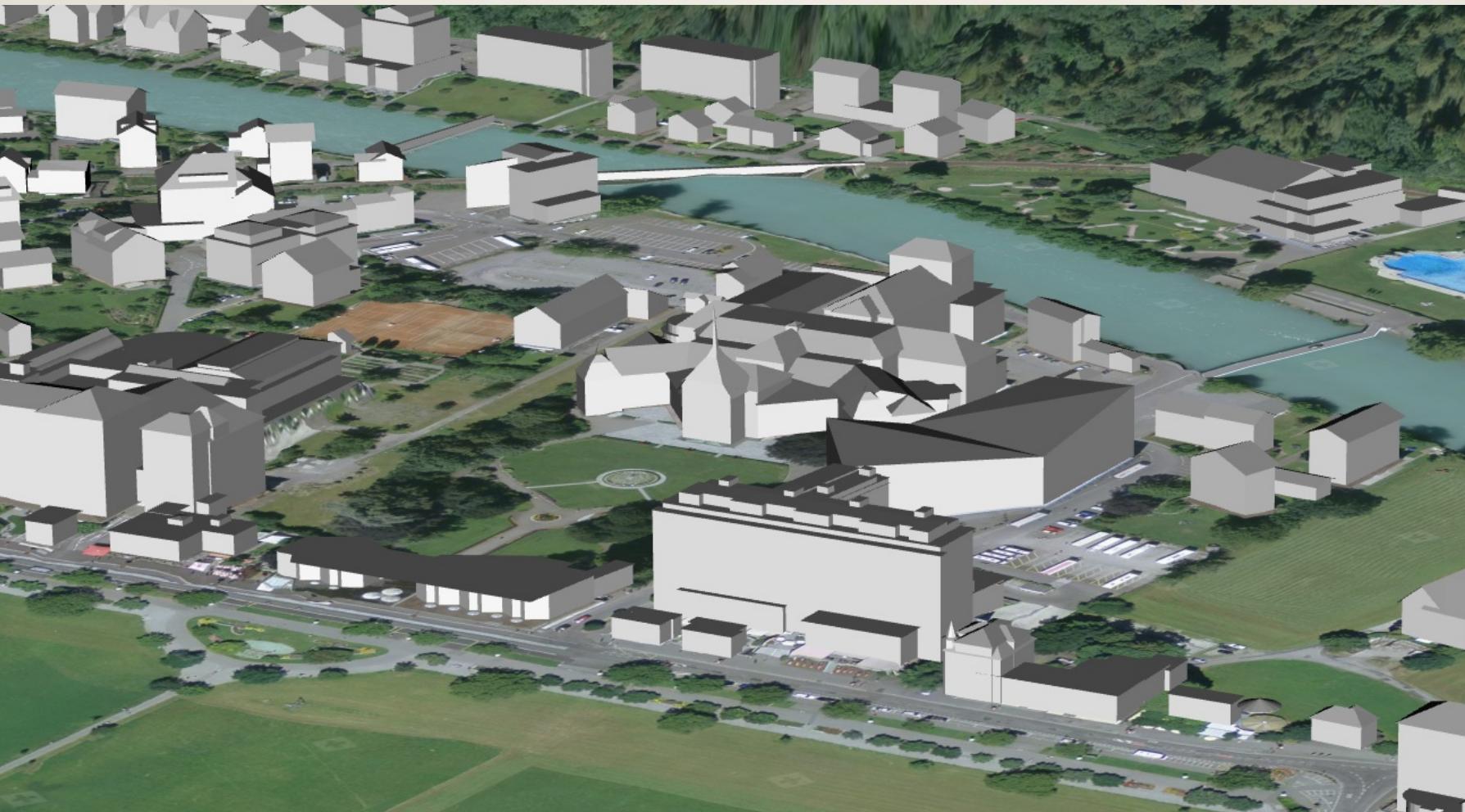


- Static positioning (x, y, z) for all geometries
- Dynamic positioning (altitudeMode = "clampToTerrain")
 - Points done
 - Polygons coming soon
 - Lines are Work In Progress

Buildings and vector tiles

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- 3D buildings tile generation POC from CityGML



Buildings and vector tiles

Buildings and vector tiles

- 2.5D extruded polygons of a single "tile" POC



Buildings and vector tiles

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- Try it

Buildings and vector tiles

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 - Tiling and Levels Of Details

Buildings and vector tiles

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 - Loading and unloading strategies

Buildings and vector tiles

- 3D-tiles specification is WIP in Cesium
 - Tiling and Levels Of Details
 - Loading and unloading strategies
 - Efficient (GLTF)

Questions?

openlayers / ol3-cesium

Unwatch 32 Star 69 Fork 26

OpenLayers - Cesium integration <http://openlayers.org/ol3-cesium/> — Edit

577 commits 5 branches 9 releases 9 contributors

Branch: master ol3-cesium / +

Merge pull request #242 from gberaudo/port_ol3_3.9.0 ...

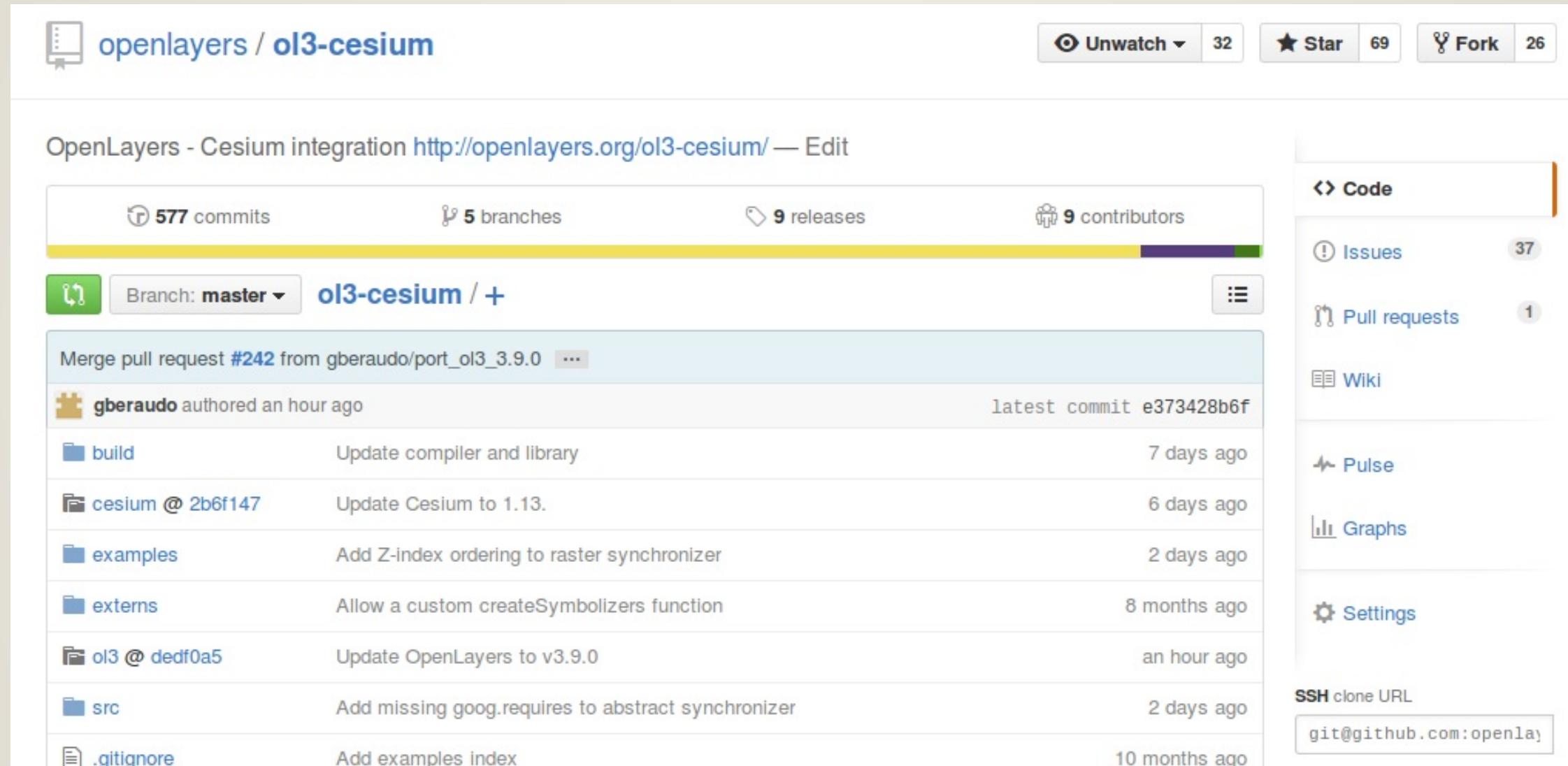
gberaudo authored an hour ago latest commit e373428b6f

build	Update compiler and library	7 days ago
cesium @ 2b6f147	Update Cesium to 1.13.	6 days ago
examples	Add Z-index ordering to raster synchronizer	2 days ago
externs	Allow a custom createSymbolizers function	8 months ago
ol3 @ dedf0a5	Update OpenLayers to v3.9.0	an hour ago
src	Add missing goog.requires to abstract synchronizer	2 days ago
.gitignore	Add examples index	10 months ago

Code

- Issues 37
- Pull requests 1
- Wiki
- Pulse
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SSH clone URL
git@github.com:openla...



감사합니다