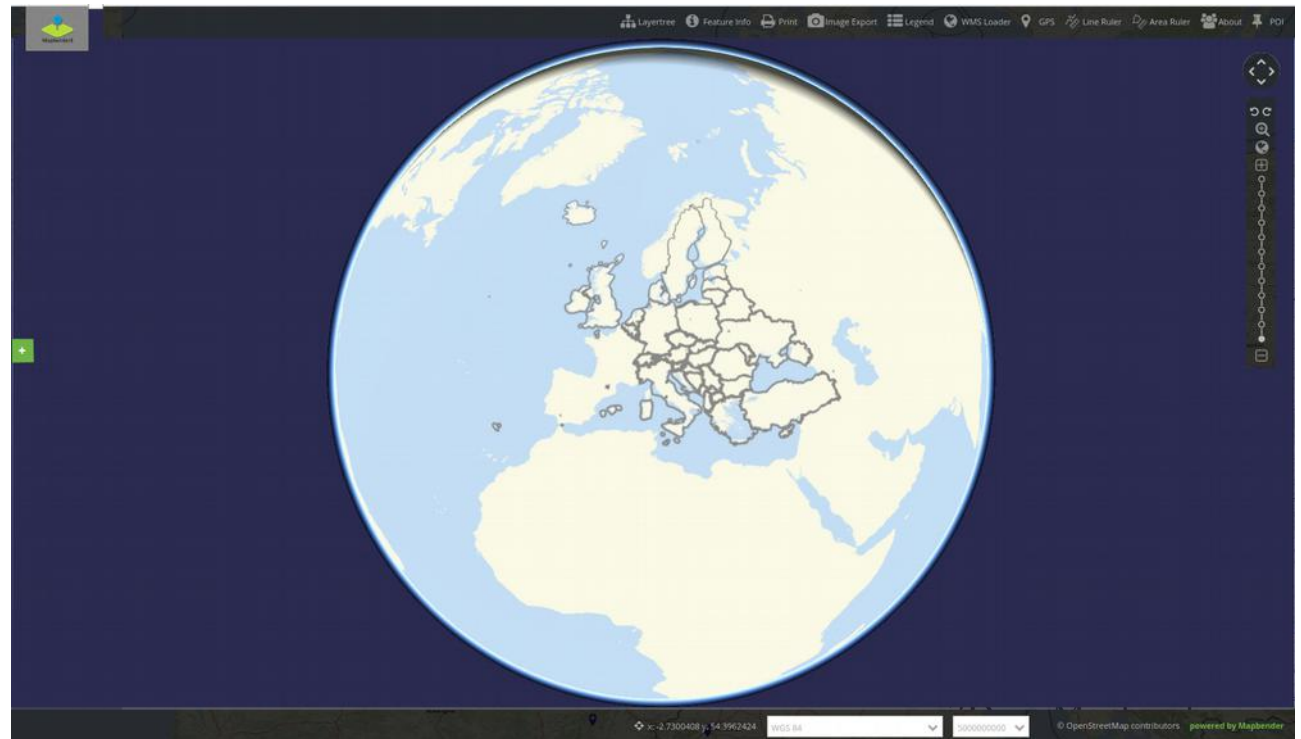




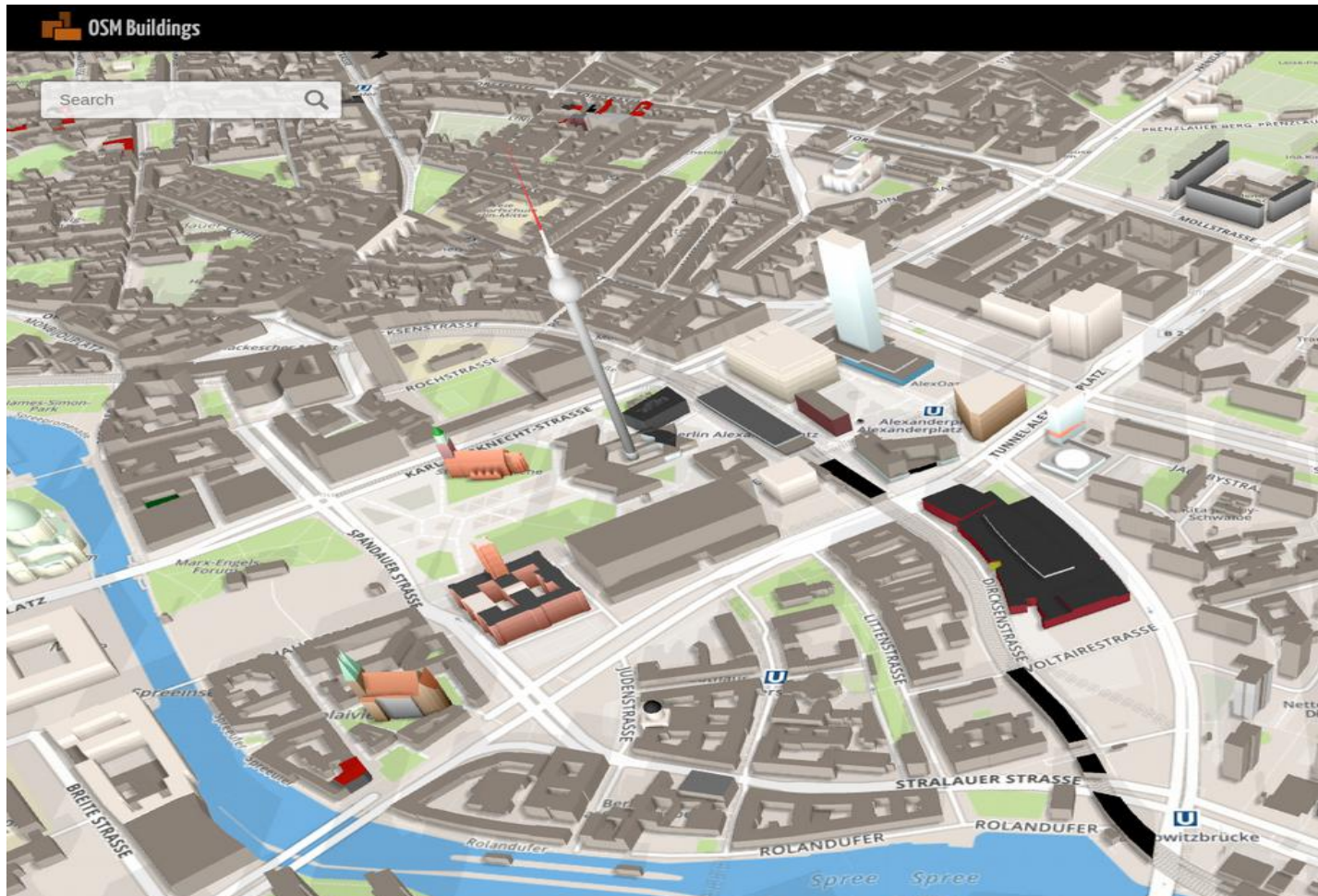
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3D-Daten in Mapbender





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<https://osmbuildings.org/>



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<http://www.businesslocationcenter.de>



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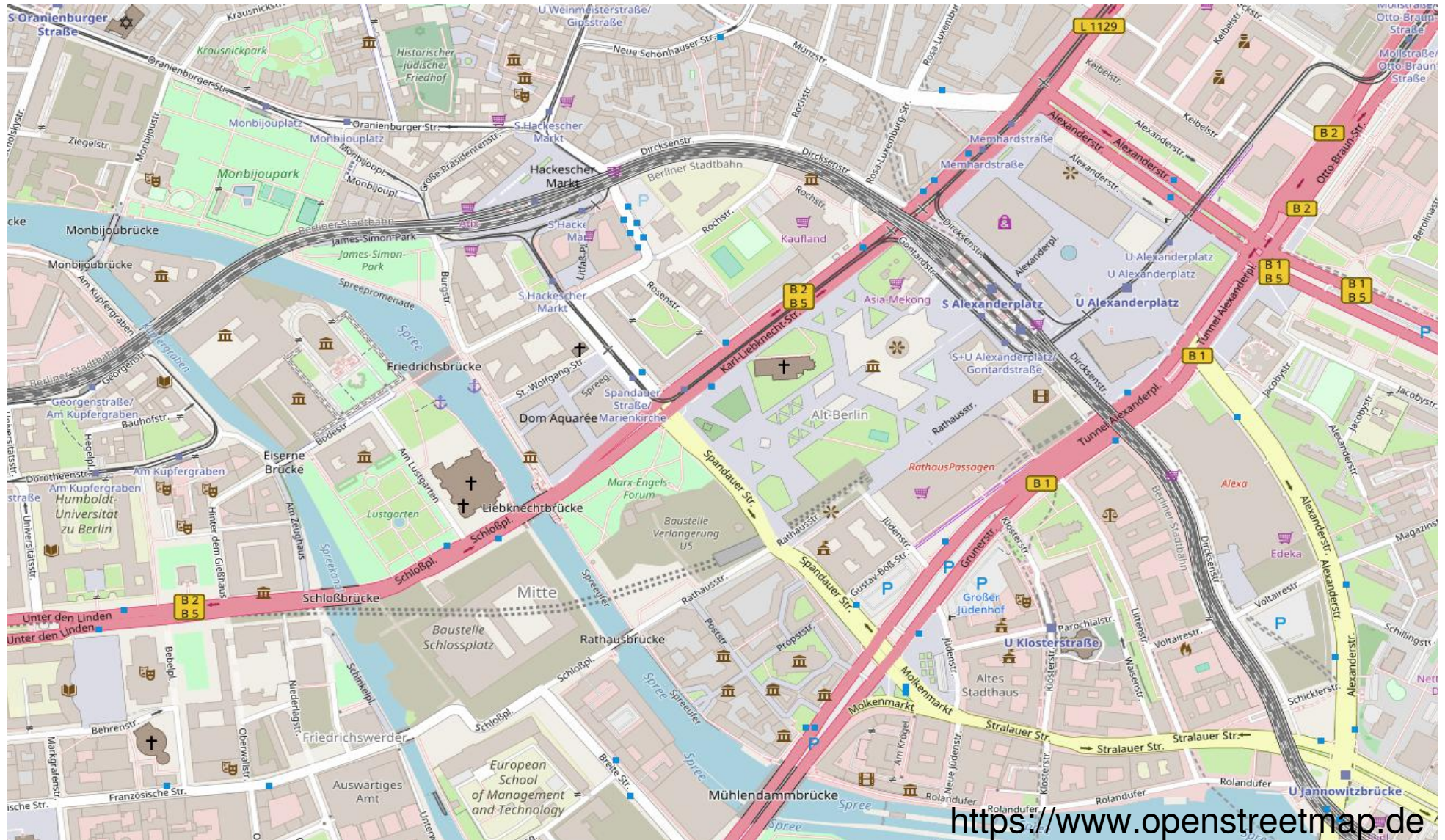
<http://www.minecraftforum.net/forums/minecraft-java-edition/creative-mode/2085543-my-replica-of-the-berlin-fernsehturm>

Where2B 2017

3D im Mapbender

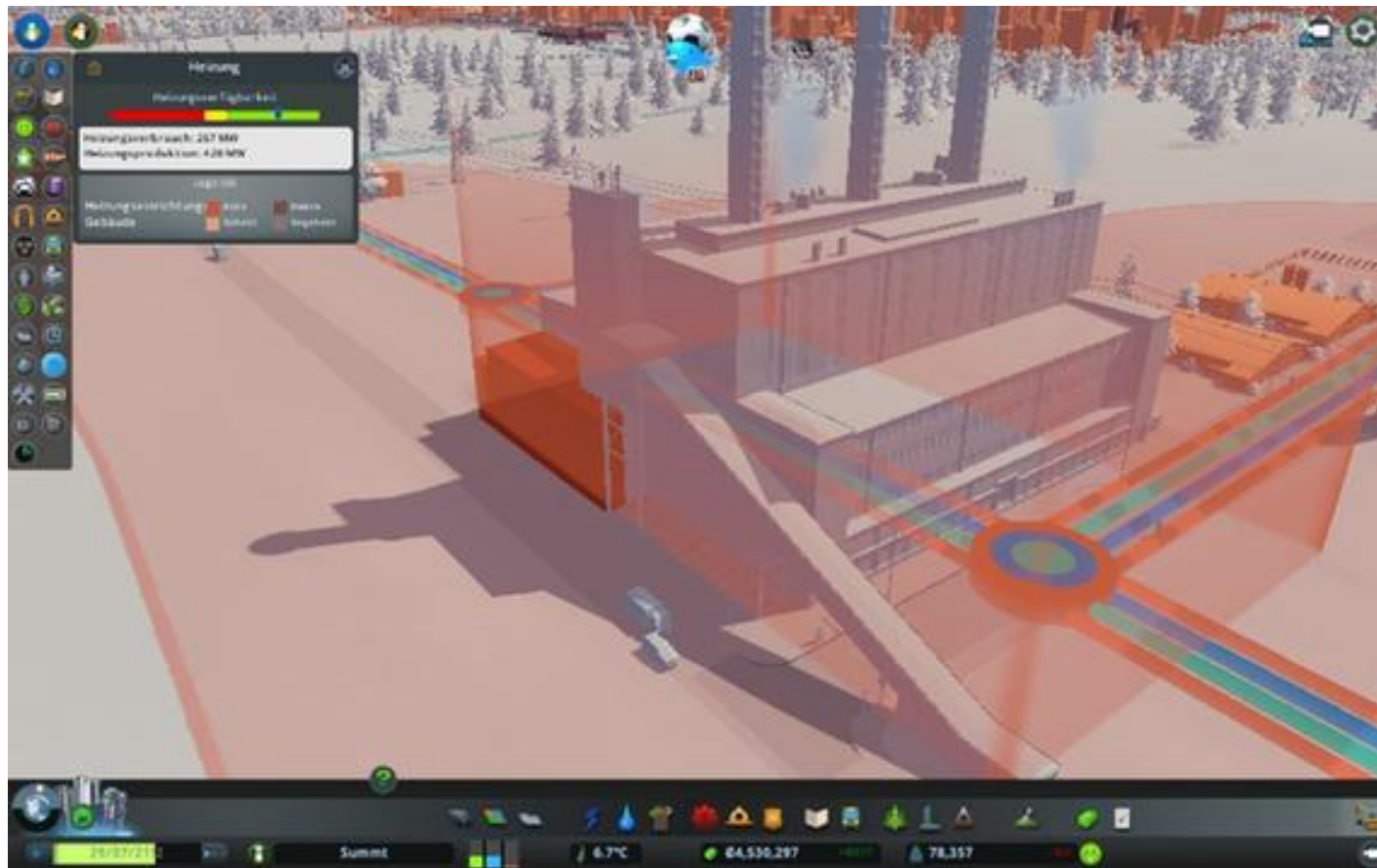


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... ein Projekt bei der Vattenfall Europe Information Services GmbH



<https://steamcommunity.com/sharedfiles/filedetails/?id=851302283&searchtext=>



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<http://www.ket.de>



2D

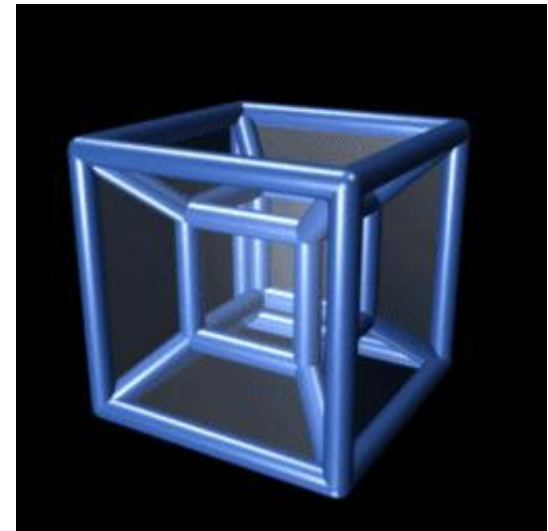
2,5D

3D

4D

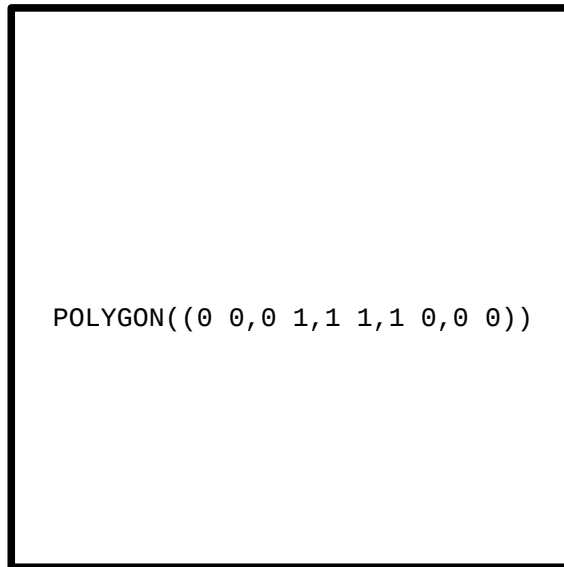
...

?





2D

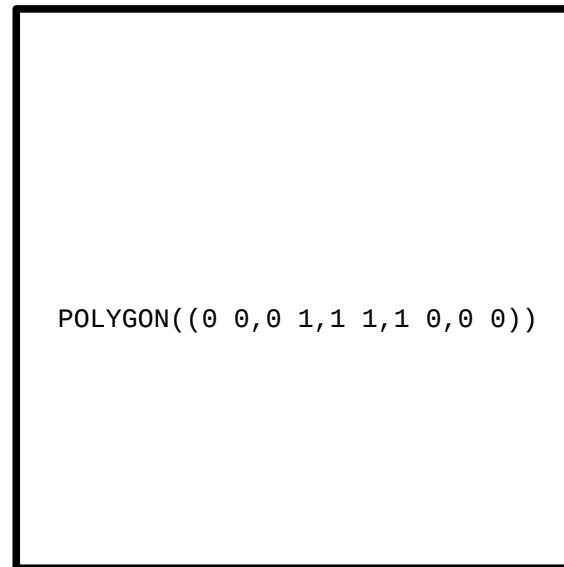


geom
X, Y

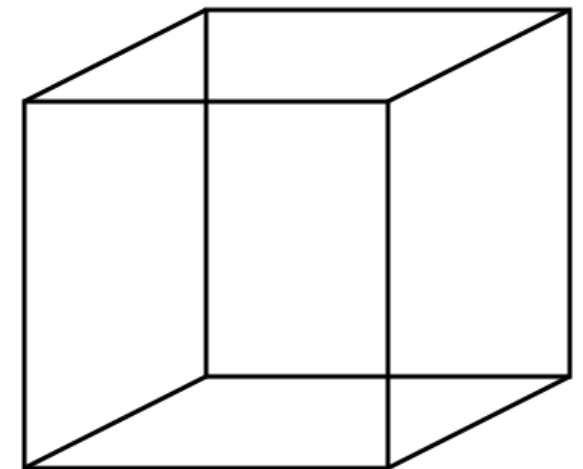
```
POLYGON((0 0,0 1,1 1,1 0,0 0))
```



2,5D



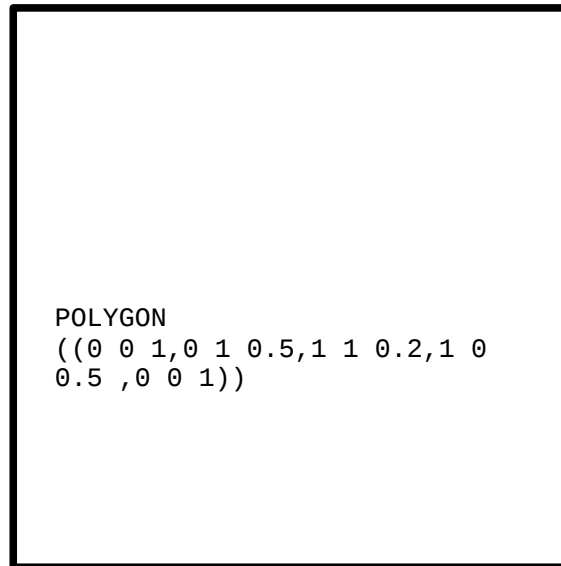
geom	hoehe
X, Y	Z



3D im Mapbender

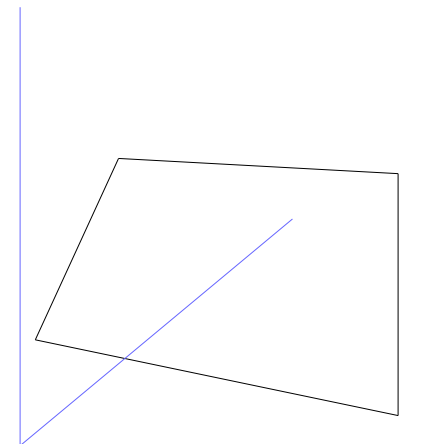


3D



```
POLYGON  
((0 0 1,0 1 0.5,1 1 0.2,1 0  
0.5 ,0 0 1))
```

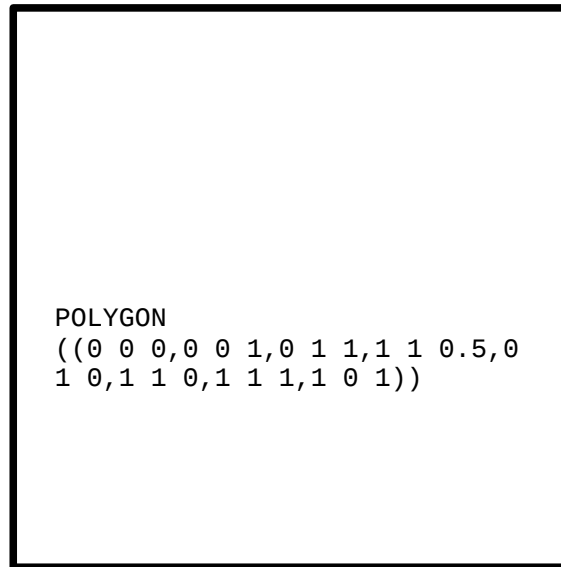
geom
X, Y, Z



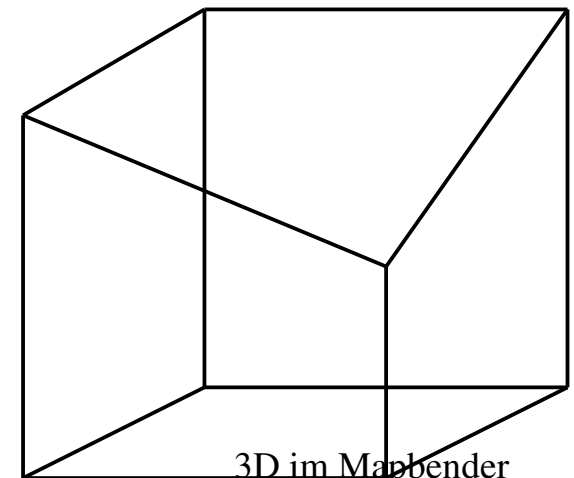
3D im Mapbender

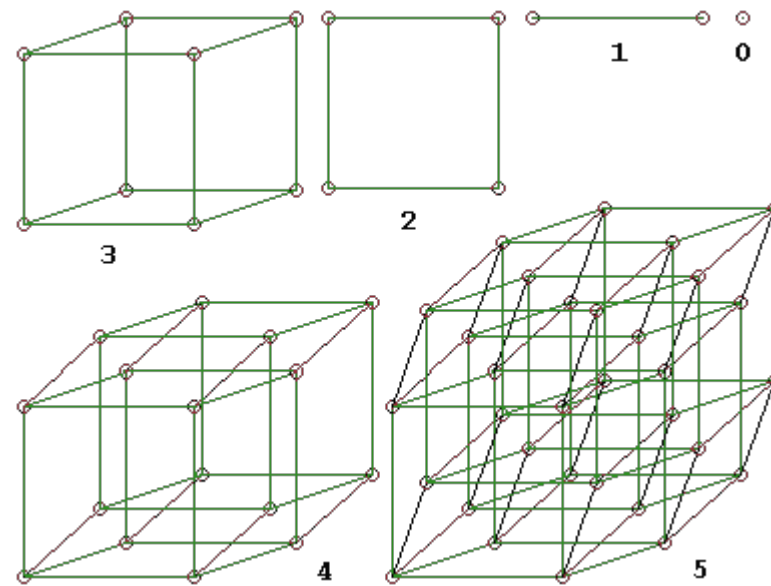


3D

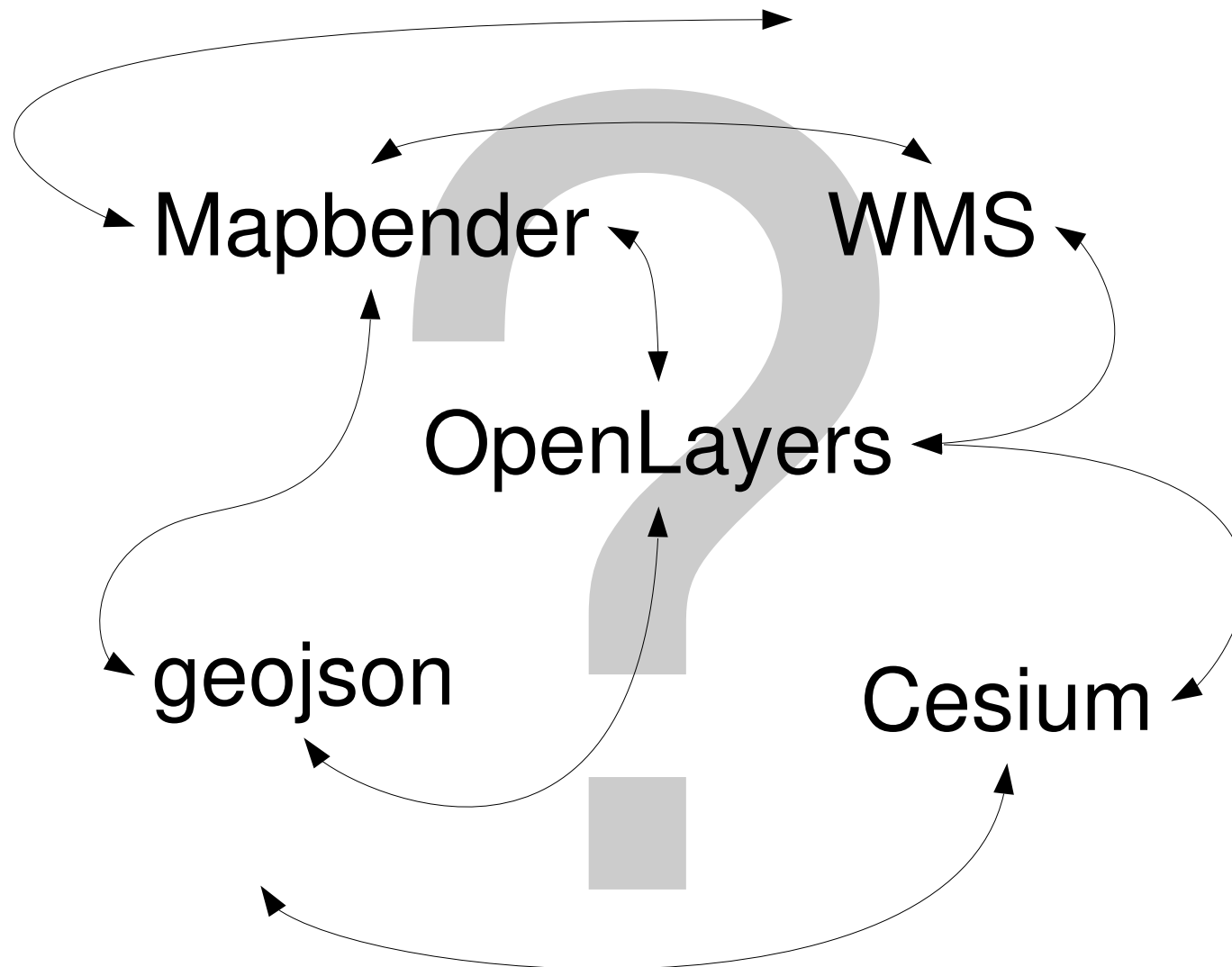


geom
X, Y, Z





<https://de.wikipedia.org/wiki/4D>





The screenshot shows the Mapbender web interface. On the left, a 'Digitizer' panel is active, displaying 'point digitizing' and a table of digitized points. The table has columns for 'Nr.', 'Name', and edit/delete icons. Below the table, it shows '1 to 7 from 7' and a 'Layertree' section. The main map area shows a street map of Bonn, Germany, with a white overlay containing the 'OpenLayers™' logo and the number '2'. The bottom status bar shows 'ETRS89 / UTM zone 32N', a scale of '25000', and '© OpenStreetMap contributors powered by Mapbender'.

Nr.	Name		
194	Puntito		
196	haus2		
197	test		
198	A		
199	Test		
200	testzttt		
204	test		

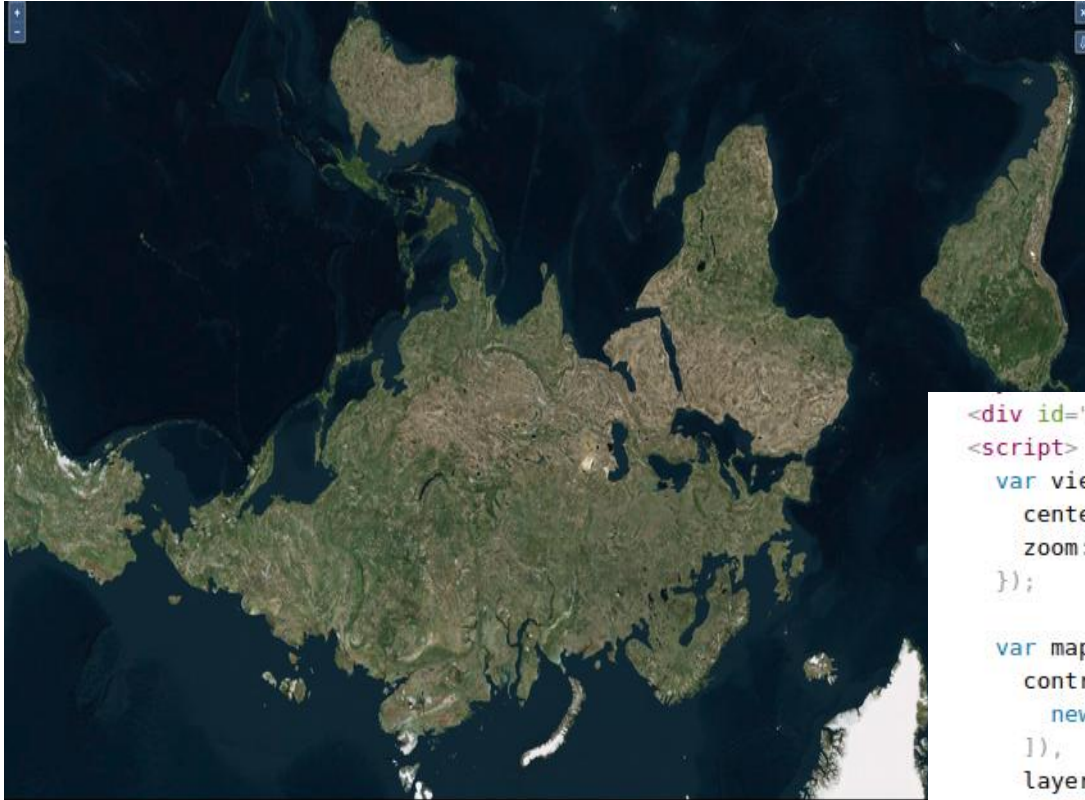


The screenshot shows the Mapbender web interface. A central white overlay contains the text "OL3-Cesium" and "Third dimension for OpenLayers" with two logos. The interface includes a "Digitizer" panel on the left with a table of points, a "Layertree" at the bottom left, and a map of Bonn with a red highlighted area. The bottom status bar shows "ETRS89 / UTM zone 32N" and "25000".

Nr.	Name		
194	Puntito		
196	haus2		
197	test		
198	A		
199	Test		
200	testzttt		
204	test		

1 to 7 from 7

ETRS89 / UTM zone 32N 25000 © OpenStreetMap contributors powered by Mapbender



OpenLayers

```
<div id="map" class="map"></div>
<script>
  var view = new ol.View({
    center: [-9101767, 2822912],
    zoom: 14
  });

  var map = new ol.Map({
    controls: ol.control.defaults().extend([
      new ol.control.FullScreen()
    ]),
    layers: [
      new ol.layer.Tile({
        source: new ol.source.BingMaps({
          key: 'Your Bing Maps Key from http://www.bingmapsportal.com/ here',
          imagerySet: 'Aerial'
        })
      })
    ],
    target: 'map',
    view: view
  });
</script>
```



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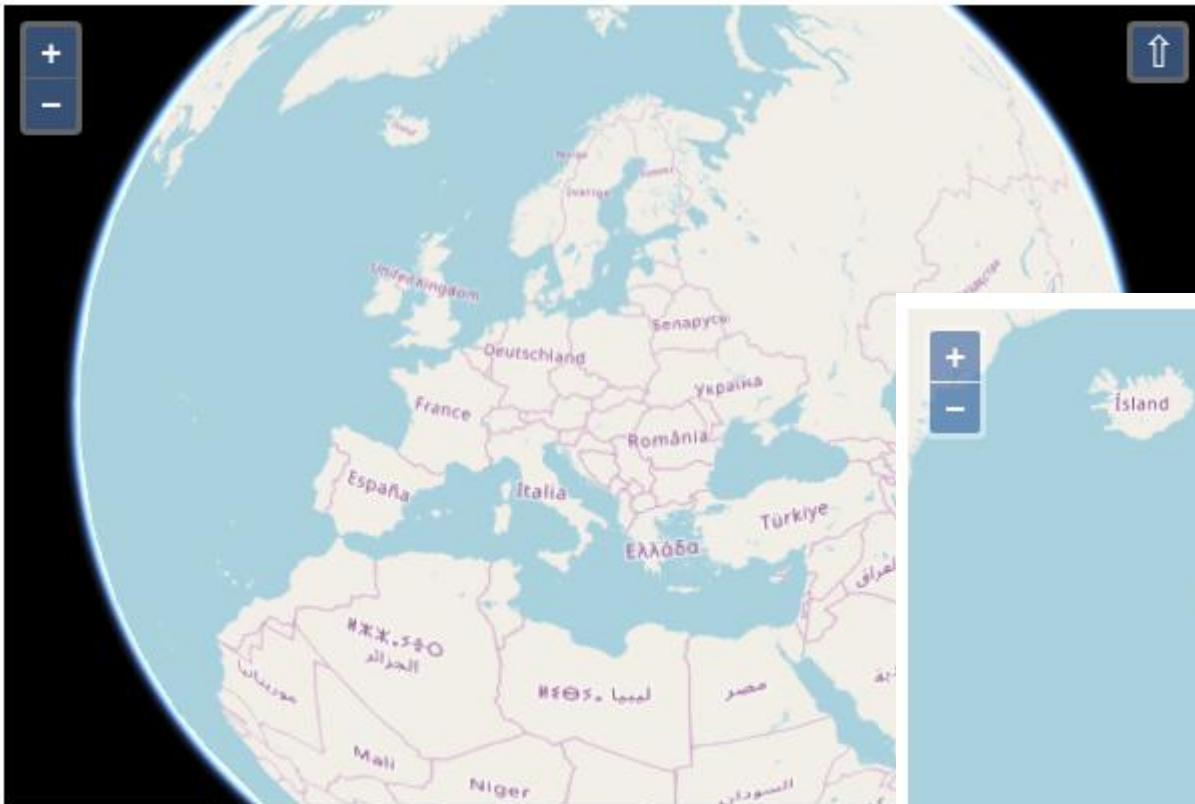
Cesium
An open-source JavaScript library
for world-class 3D globes and maps

Close Demo

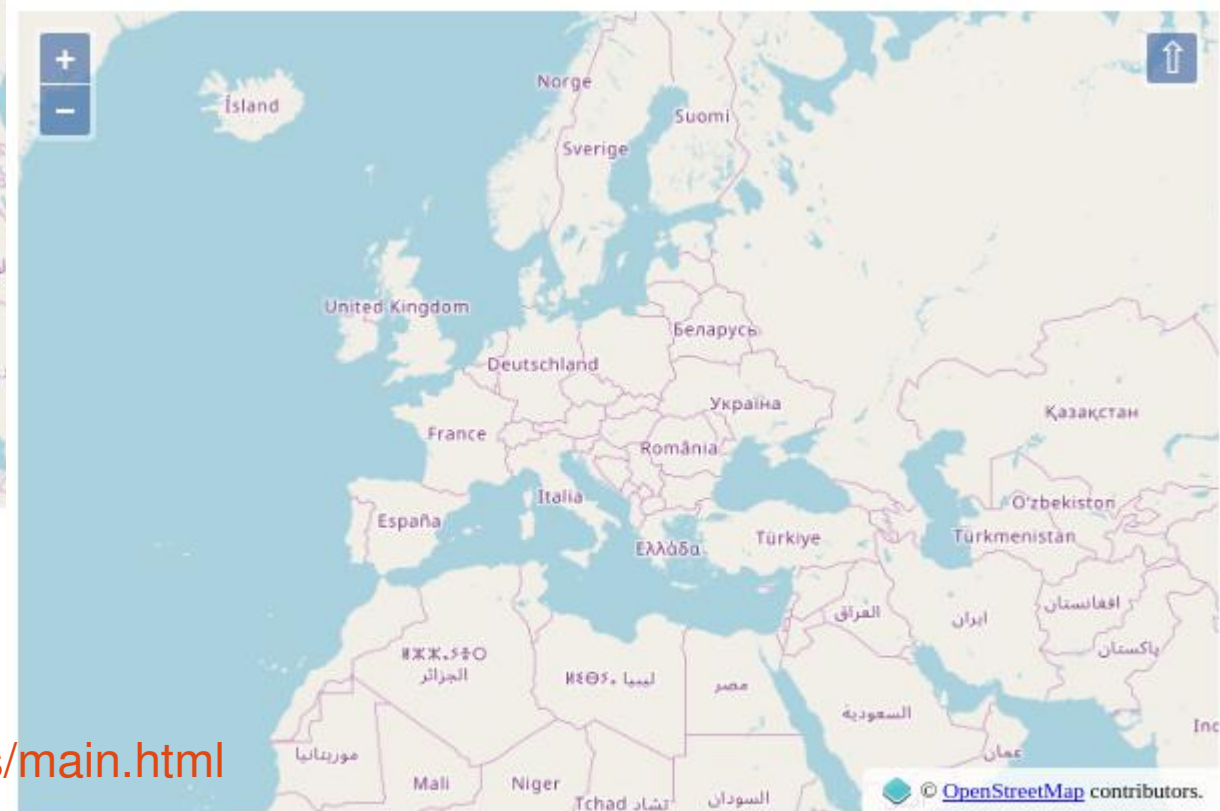
1x
Dec 11 2017
14:56:05 UTC

CESIUM AGI [Data attribution](#)

Dec 11 2017 18:00:00 UTC Dec 12 2017 00:00:00 UTC Dec 12 2017 06:00:00 UTC Dec 12 2017 12:00:00 UTC



Enable/disable Enable/disable lightning (only 3d)

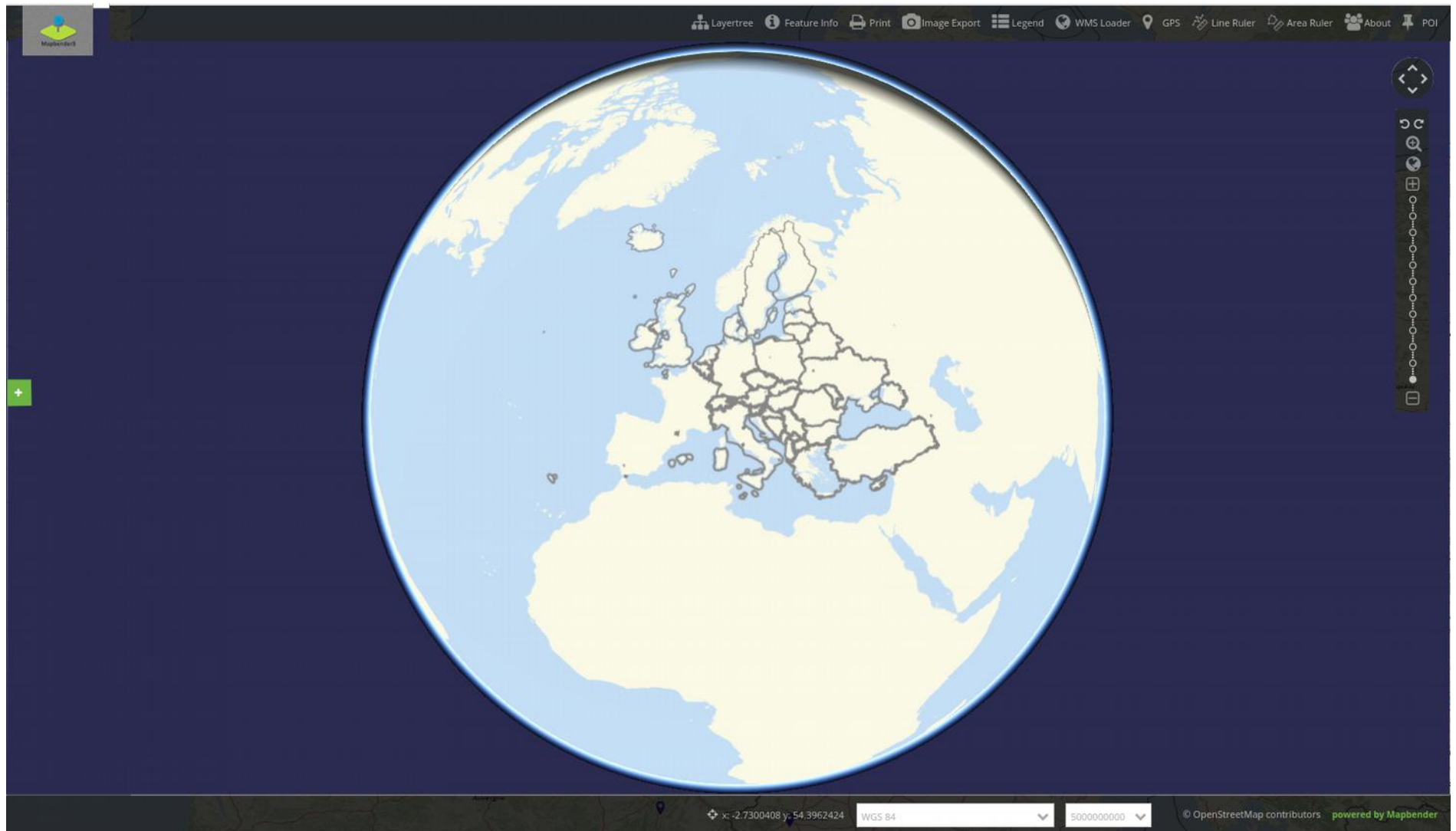


Enable/disable Enable/disable lightning (only 3d)

<http://openlayers.org/ol-cesium/examples/main.html>

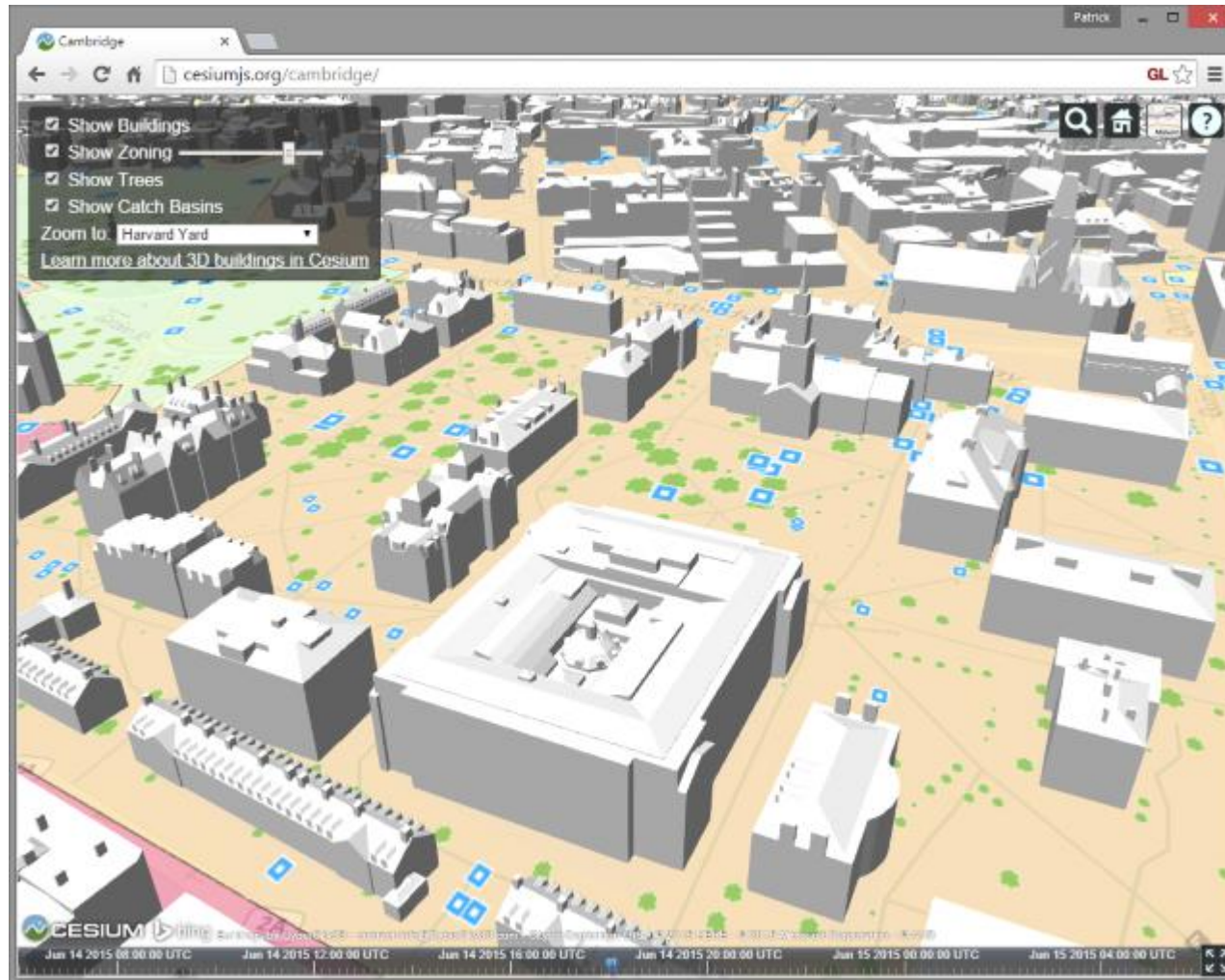


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Welche Dateiformate können genutzt werden?

- Darstellung von VectorFeatures aus geoJson-Datei in 2D und 3D
- Geometrien
 - KML
 - GeoJSON
 - TopoJSON
- 3D Modelle
 - glTF (GL Transmission Format)
 - COLLADA and OBJ können zu glTF konvertiert werden



Welche Daten können aktuell dargestellt werden?

- Darstellung von VectorFeatures(GeoJSON)
- 3D Darstellung von VectorFeatures durch Featureeigenschaft extrude und base erreicht
 - extrude \triangleq Höhe des Features
 - base \triangleq z-Koordinate ("Boden des Features")
- Bestehende VectorFeatures müssen nur um diese beiden Eigenschaften erweitert werden
- Bei Multipolygone haben alle Punkte die gleiche Höhe da extrude und base zum Feature und nicht zum Punkt gehören
 - Höhe für alle spezifischen Punkte würde Erweiterung des Datenmodells erfordern



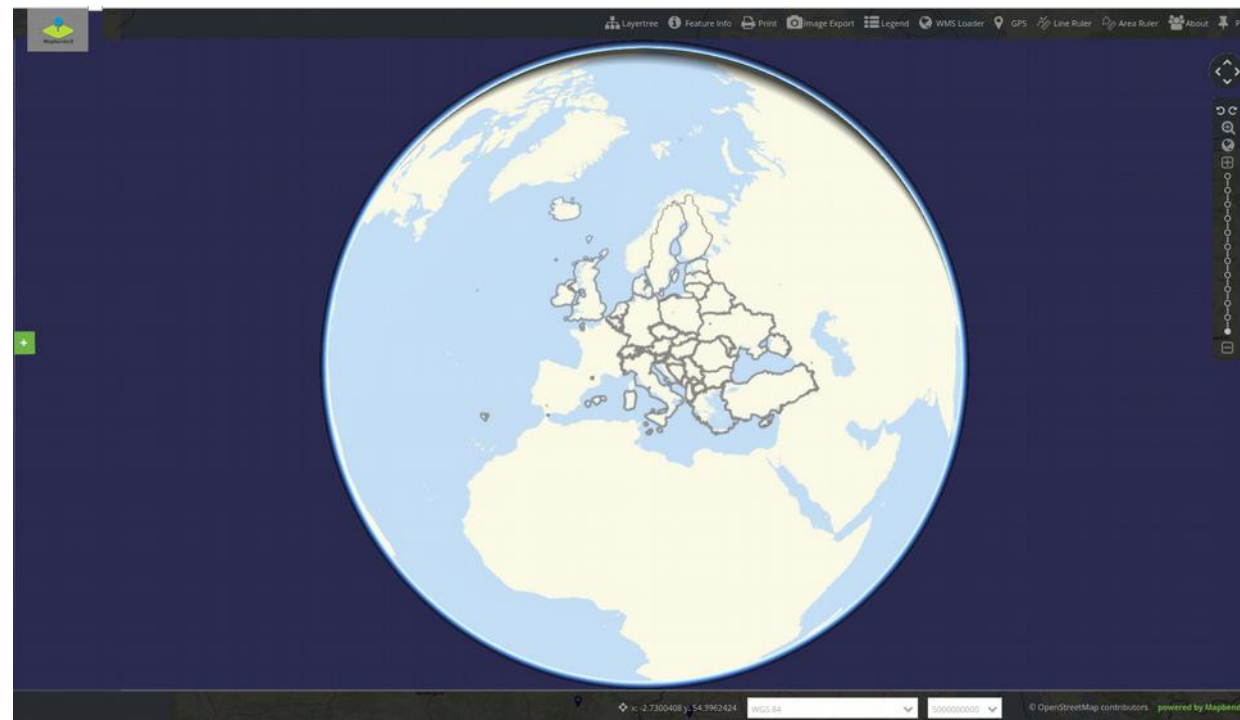
```
{
  "type": "Feature",
  "properties": {
    "id": "42",
    "kks": "KKS-1337",
    "description": "Vorderwand 2",
    "hauptsystem": "HS-9",
    "planname": "S202",
    "dokument": "D420",
    "extrudedHeight": 100,
    "base": 1
  },
  "geometry": {
    "type": "MultiPolygon",
    "coordinates": [
      [...]
    ]
  }
}
```



Druck

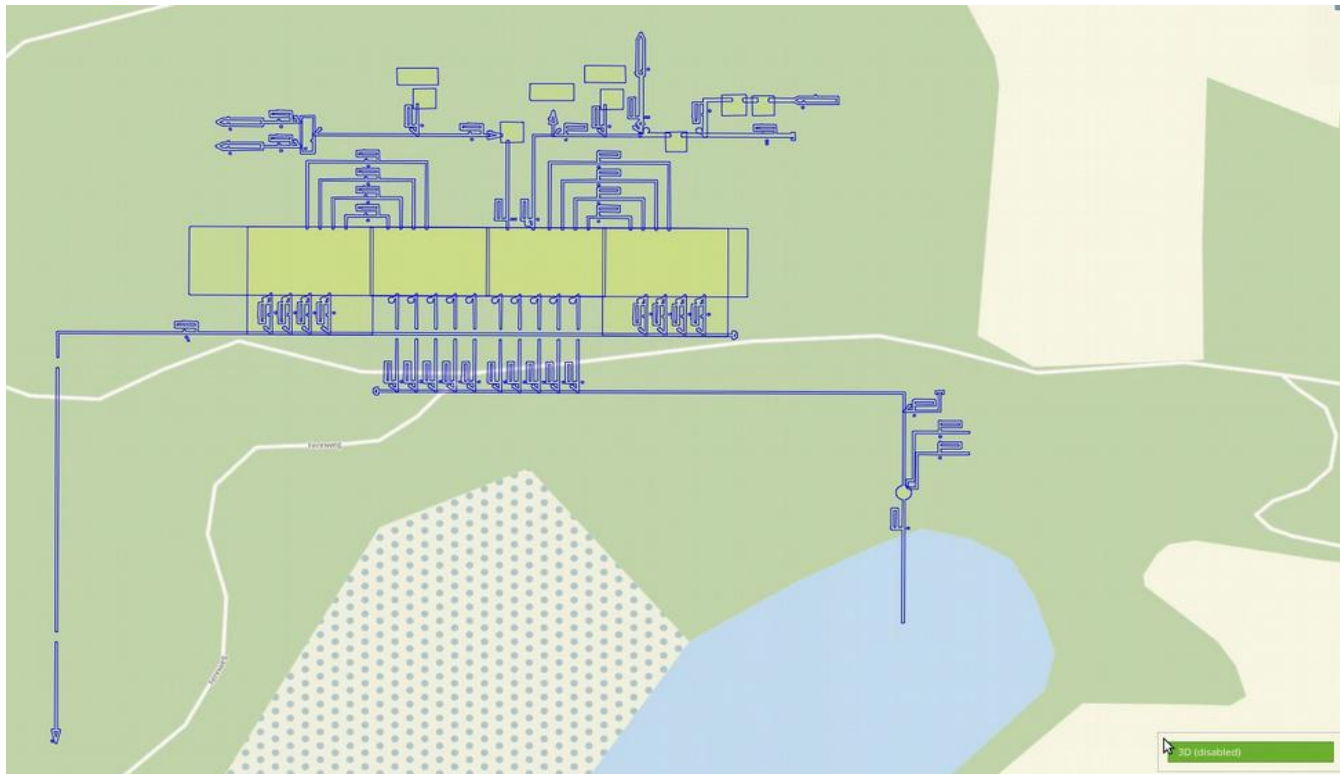
FeatureInfo

Ebenenbaum



Backend-Konfiguration

YAML-
Konfiguration





WhereGroup

Vielen Dank für Ihre Aufmerksamkeit ...

Fragen?

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<http://www.wherogroup.com>

