



Copernicus webapp

CLIENT-SIDE RASTER VIEWER & CALCULATOR

Why?

- ▶ Free, full and open access to environmental data
- ▶ Benefits of multispectral images: ANALYSES
- ▶ Lack of quick web viewer & analyzer



How?

- ▶ MANGOL web mapping GUI framework
 - ▶ Angular2 + OpenLayers3
 - ▶ TypeScript, SCSS
 - ▶ Responsive
 - ▶ Under heavy development...
- ▶ New module: Raster calculator



Preprocessing

- ▶ 2 single-band raster images for NDVI calculations
- ▶ Put in GeoServer as GeoTiff store, create WMS service
- ▶ Problem:
 - ▶ Data is not normalized
 - ▶ Image painted on canvas (OL3) is RGB
 - ▶ Different brightness with different zoom levels: not representing real values!
 - ▶ Normalizing was necessary (0-255)



Development

- ▶ New module: Raster calculator
- ▶ ol.source.Raster is awesome!
- ▶ Only one calculation so far: NDVI index (Normalized Difference Vegetation Index)

$$\left(\begin{array}{c} \text{Near} \\ \text{IR} \end{array} \text{ minus } \begin{array}{c} \text{Red} \\ \text{Green} \\ \text{Blue} \end{array} \right)$$

-----divided by-----

$$\left(\begin{array}{c} \text{Near} \\ \text{IR} \end{array} \text{ plus } \begin{array}{c} \text{Red} \\ \text{Green} \\ \text{Blue} \end{array} \right)$$

What is
NDVI?

Simple
answer:
health of
vegetation

Results



Future

- ▶ Add more data
- ▶ Add more calculations
- ▶ Some debugging (Firefox issue)