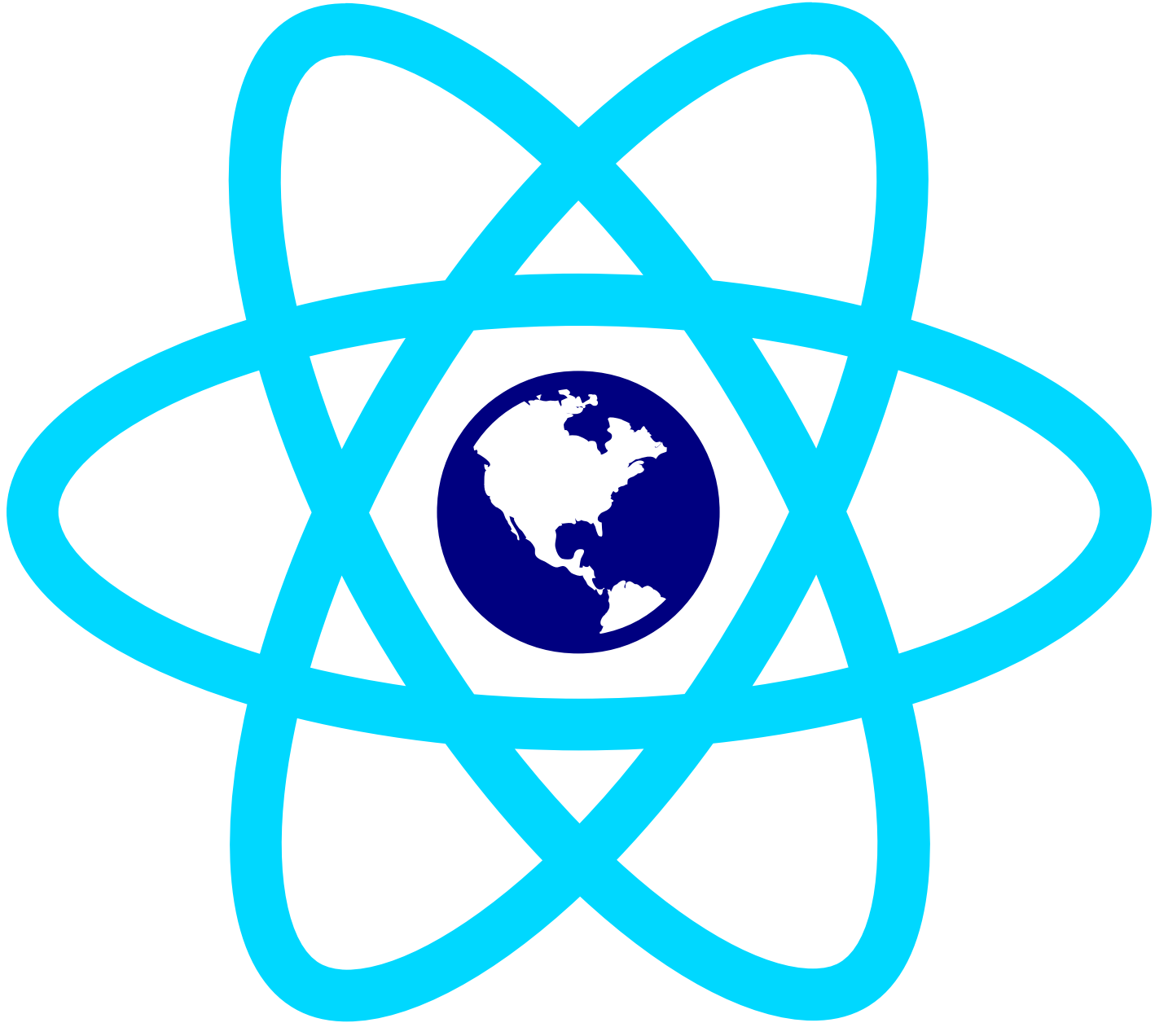

React meets OpenLayers

Vorstellung & Beispiel react-geo

Daniel Koch & Marc Jansen, terrestris GmbH & Co. KG

FOSSGIS 2018, Bonn, 23.03.2018

Gliederung

- Über…
- React & OpenLayers
- react-geo
- Beispiele

Daniel Koch

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@dnlkoch

- M. Sc. Geographie
- Lead developer @terrestris
- Kernentwickler react-geo
- Kernentwickler SHOGun
- Sprecher & Trainer
  national & international

Marc Jansen

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@selectoid

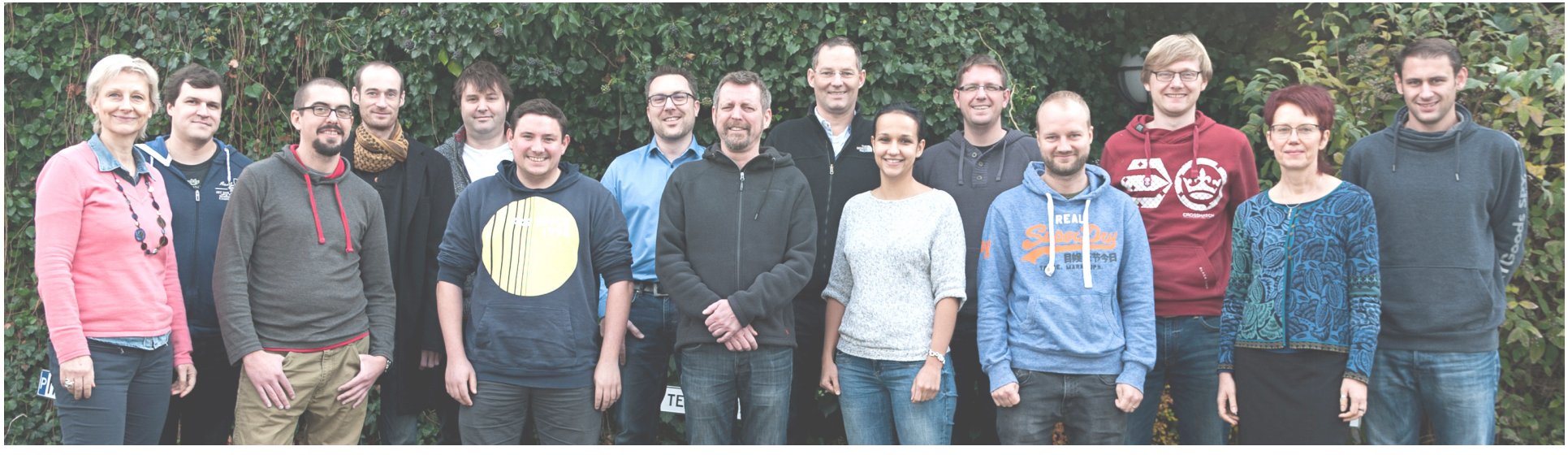
- Geschäftsführer @terrestris
- Kernentwickler OpenLayers
- Kernentwickler GeoExt
- Buchautor "OpenLayers"
- Sprecher & Trainer national & international
- OSGeo Foundation Charter Member

terrestris

info@terrestris.de
@terrestris
@terrestrisde

- terrestris.de
- OpenSource GIS aus Bonn
- Entwicklung, Projekte & Support/Schulung
- Beratung, Planung, Implementierung & Wartung

Teil des Teams werden?



- Softwareentwickler/in
- GIS Consultant
- Praktikanten / betreute Abschlussarbeiten

Details gerne am terrestris Stand

React & OpenLayers

React

“

A JavaScript library for building user interfaces

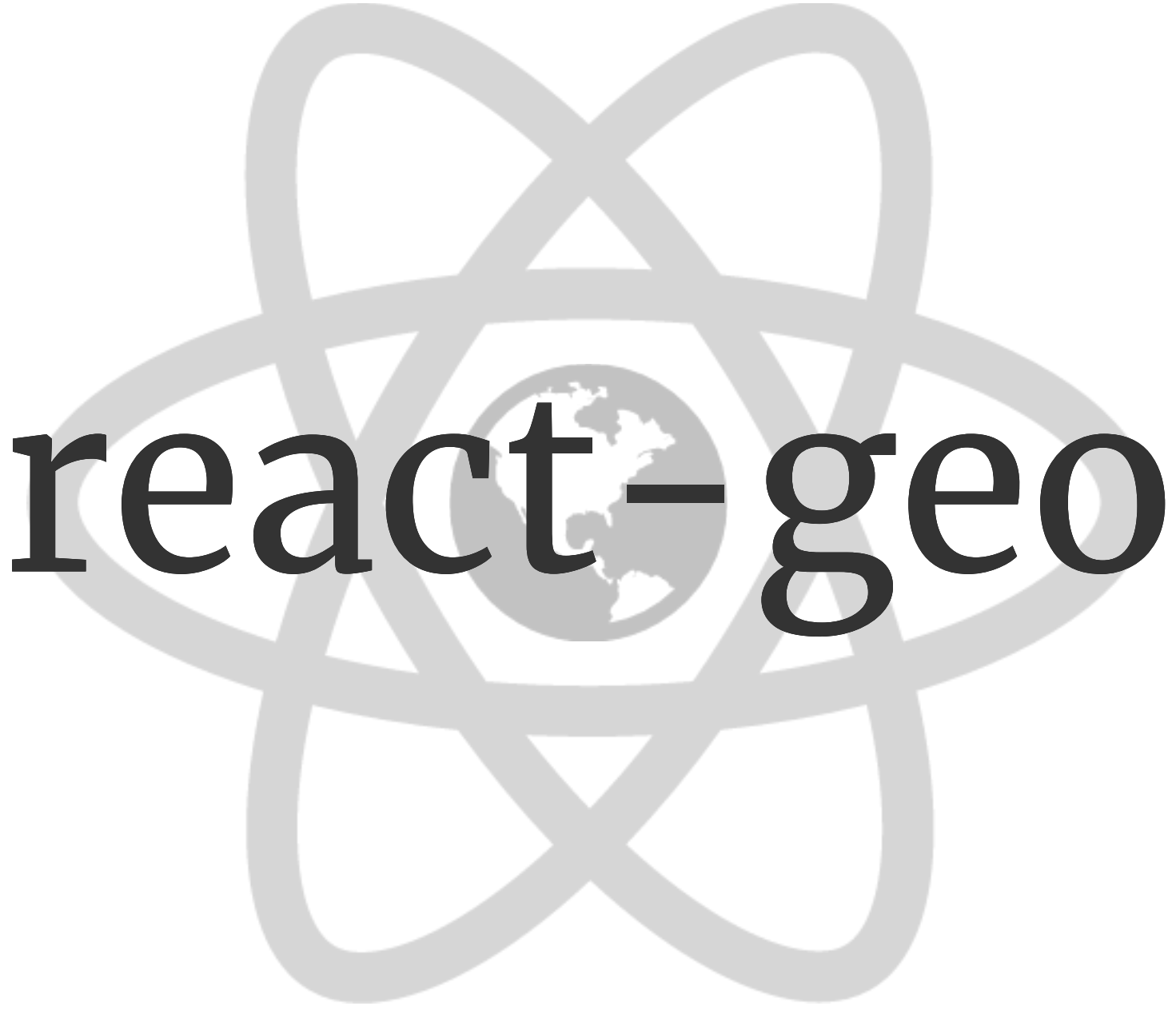
- https://reactjs.org/
- Facebook
- Deklarativ & komponentenbasiert
- Virtual DOM & JSX
- Seit 2013, aktuell v16.2.0
- FOSS, MIT-Lizenz

OpenLayers

“

A high-performance, feature-packed library for all your mapping needs.

- https://openlayers.org/
- OSGeo Projekt
- Umfangreich, cutting-edge, flexibel, stabil
- Seit 2006, aktuell v4.6.5
- FOSS, BSD-Lizenz


react-geo

react-geo

> *A set of geo related modules to use in combination with React, Ant Design and OpenLayers*

- Komponenten, Utility Klassen und HOCs
- OpenLayers, React & antd: latest stable
- Seit September 2017, v5.6.2
- FOSS, BSD-Lizenz
- Inspiration: MapStore2, Boundless SDK, Pirmin Kalberers POC, react-openlayers

react-geo

- https://terrestris.github.io/react-geo/
- https://github.com/terrestris/react-geo
- npm: @terrestris/react-geo

```
import {
  DigitizeButton,
  GeometryUtil,
  MapComponent,
  MapUtil,
  MapProvider,
  NominatimSearch
} from '@terrestris/react-geo';
```

Nicht-funktionale Eigenschaften

- EcmaScript 6 Module
- Getested mit `jest`
- `webpack` und `babel` empfohlen
- > 450 Tests, Code-Coverage ~86%
- 40 Releases seit 09/2017
- Sehr schnelle Entwicklungszyklen

Komponenten

- ...für Karten `MapComponent`
- ...für Themenbäume `LayerTree`
  - ...optional: `LayerTransparencySlider`
  - ...optional: `Legend`
- ...für Suchen `NominatimSearch`
- ...zum Zeichnen `DigitizeButton`
- ...zum Messen `MeasureButton`
- ... und noch viel mehr

Utilities

- Animationen
- Features
- OGC-Dienst-Interaktionen `Jsonix`
- Geometrische Operationen `Turf.js`
- Projektionen `Proj4js`

Was nicht?

- Kein redux
  - Aber in Applikationen 100% nutzbar
- Kein i18n
  - Aber in Applikationen 100% nutzbar
- Nicht fixiert auf antd, bsp. `ag-grid`

Beispiele

LayerTree example

Please note that the layers have resolution restrictions, please zoom in and out to see how the trees react to this.

Autoconfigured with topmost LayerGroup of passed map:

- Layergroup
  - OSM

LayerTree Beispiel

```
import {
  LayerTree
} from '@terrestris/react-geo';
```

```
<LayerTree
  map={map}
/>
```

```
<LayerTree
  map={map}
  layerGroup={layerGroup}
/>
```

```
<LayerTree
  map={map}
  filterFunction={layer => layer.get('name') != 'OSM'}
/>
```

NominatimSearch example

The NominatimSearch

Ortsname, Straßenname, Stadtteilname, POI usw.

This demonstrates the usage of the NominatimSearch.

```
import React from 'react';
```

NominatimSearch Beispiel

```
import {
  NominatimSearch
} from '@terrestris/react-geo';
```

```
<NominatimSearch
  map={map}
/>
```

```
<NominatimSearch
  map={map}
  onMenuItemSelected={rec => /* do sth. with rec */}
/>
```

GeometryUtil example

Drawing:

Draw polygon | Split by Line | Union | Intersection | Difference

Add Buffer (100 km)

GeometryUtil Beispiel

MultiLayerSlider example

Move the slider to change the layer's opacity:

This example shows the usage of the MultiLayerSlider. It takes an Array of layers that are already added to the map and makes their opacity changeable by a single slider component.

This way you can slide through a set of layers, which e.g. is useful when using layers showing the same area but different content or time.

MultiLayerSlider Beispiel

```
import {
  MultiLayerSlider
} from '@terrestris/react-geo';
```

```
<MultiLayerSlider
  layers={[
    layer1,
    layer2,
    layer3,
    layer4,
    layer5
  ]}
/>
```

FeatureGrid WFS example

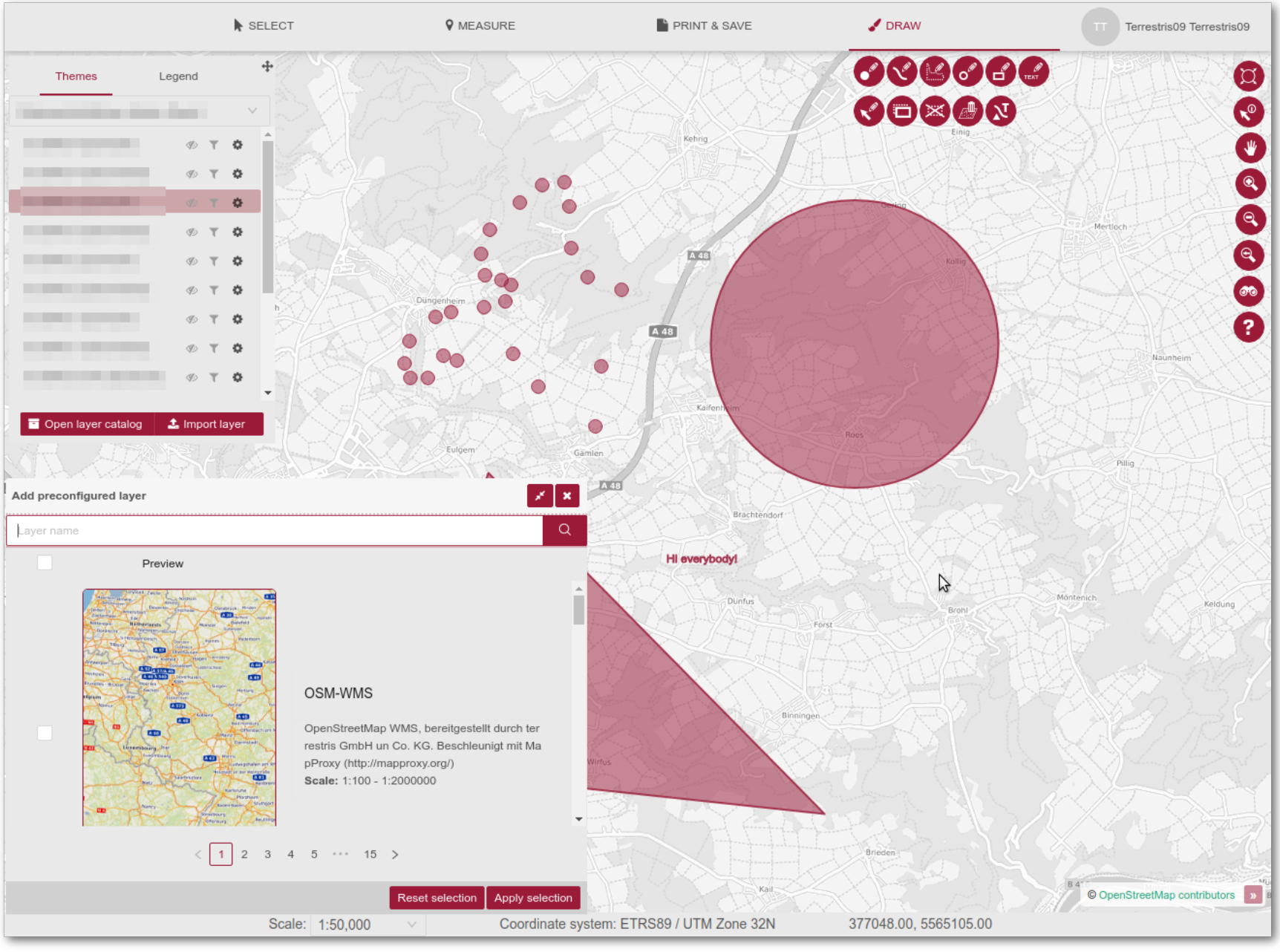
id	osm_id	name	type	ref
3302514	2635489573		bus_stop	
3300355	2634735782		bus_stop	
1687109	676823173		bus_stop	
1687107	676823099		bus_stop	P6
2531909	1732025555		bus_stop	
1687108	676823131		bus_stop	
1246319	439490336		bus_stop	
948605	292382710		bus_stop	
3302515	2635489572		bus_stop	

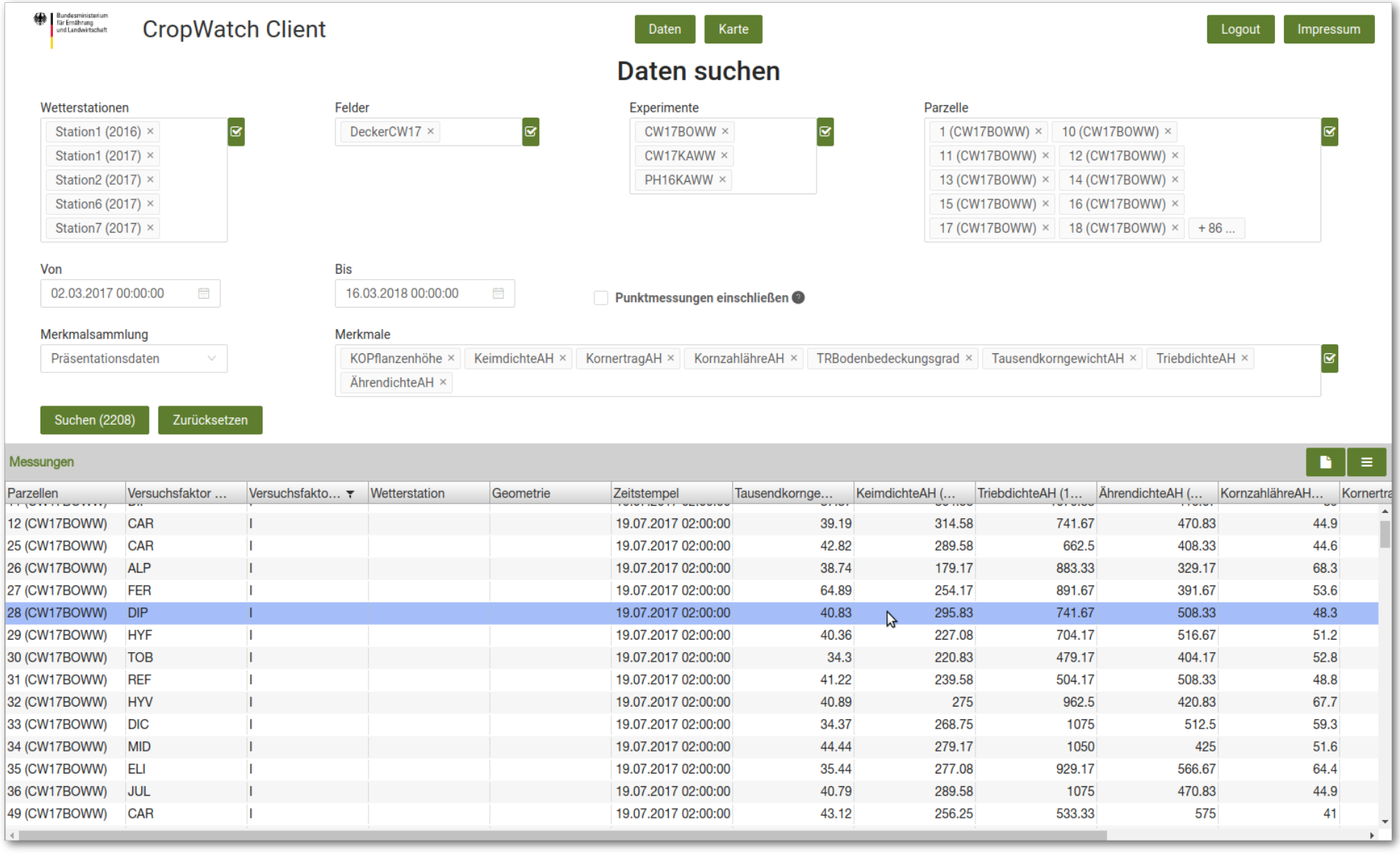
FeatureGrid Beispiel

```
import {
  FeatureGrid
} from '@terrestris/react-geo';
```

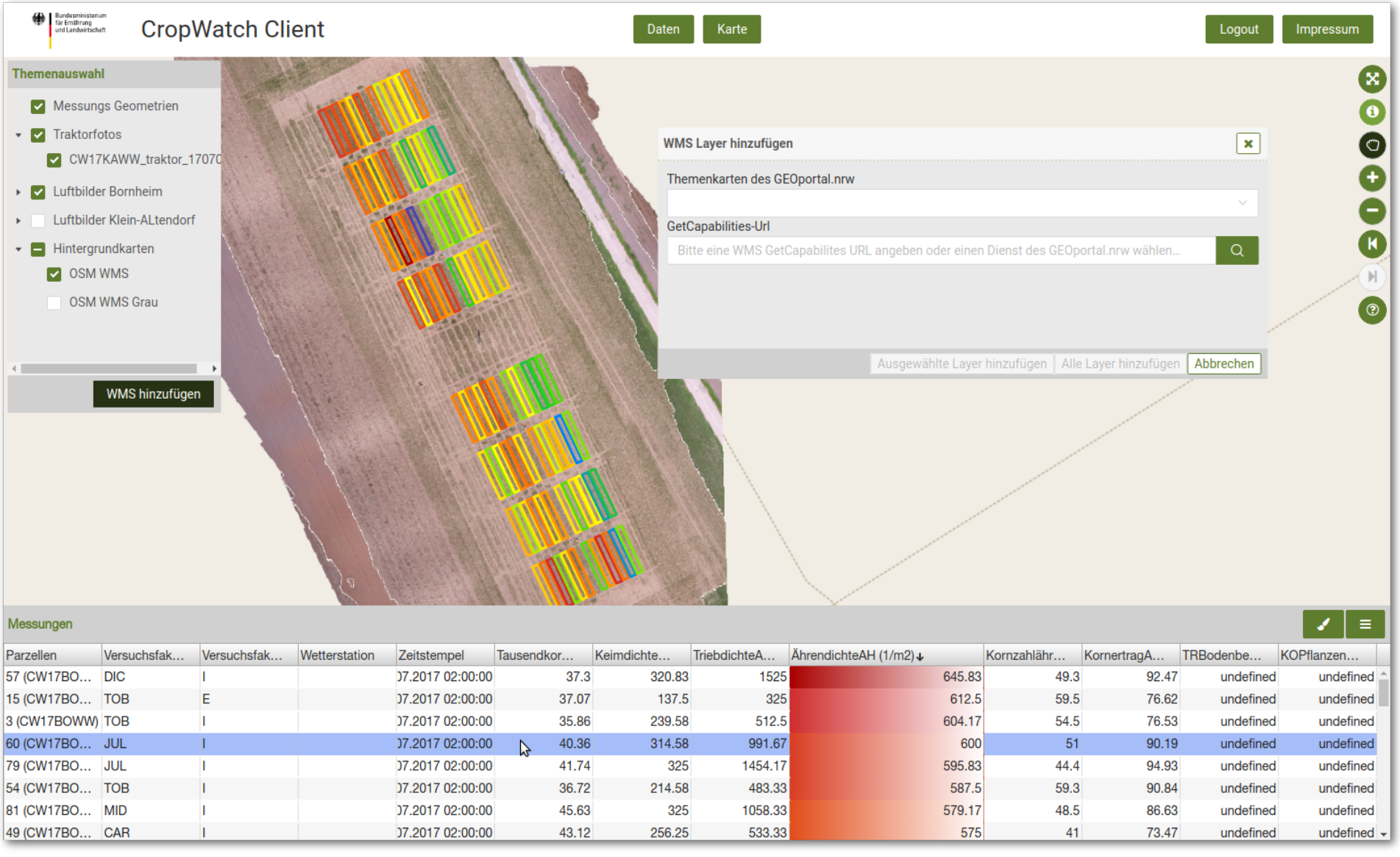
```
<FeatureGrid
  map={map}
  features={features}
/>
```

Komplexere Beispiele


SELECT
MEASURE
PRINT & SAVE
DRAW
Terrestris09 Terrestris09
Themes
Legend
Open layer catalog
Import layer
Add preconfigured layer
Layer name
Preview
OSM-WMS
OpenStreetMap WMS, bereitgestellt durch ter
restris GmbH un Co. KG. Beschleunigt mit Ma
pProxy (http://mapproxy.org/)
Scale: 1:100 - 1:2000000
1 2 3 4 5 15
Reset selection
Apply selection
Hi everybody!
© OpenStreetMap contributors
Scale: 1:50,000
Coordinate system: ETRS89 / UTM Zone 32N
377048.00, 5565105.00

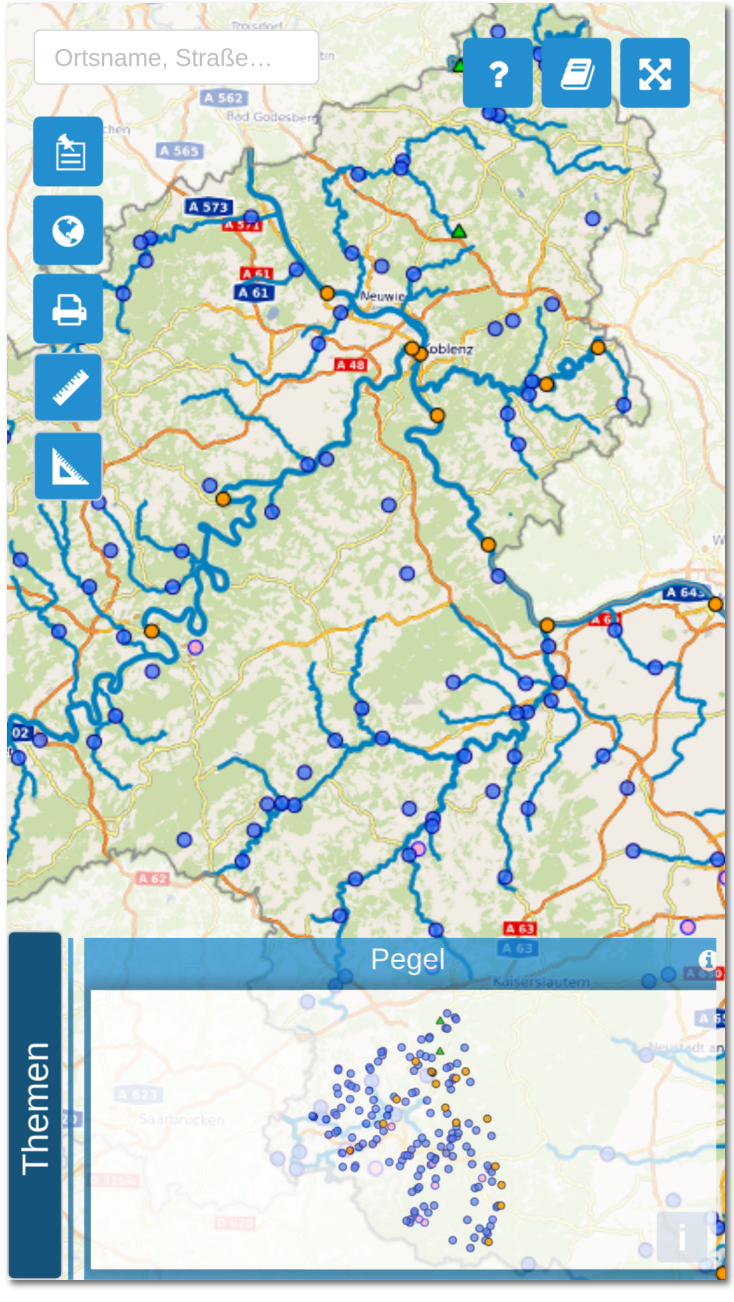


Parzellen	Versuchsfaktor ...	Versuchsfakto...	Wetterstation	Geometrie	Zeitstempel	Tausendkornge...	KeimdichteAH (...	TriebdichteAH (1...	ÄhrendichteAH (...	KornzahlähreAH...	Kornertra
12 (CW17BOWW)	CAR	I			19.07.2017 02:00:00	39.19	314.58	741.67	470.83	44.9	
25 (CW17BOWW)	CAR	I			19.07.2017 02:00:00	42.82	289.58	662.5	408.33	44.6	
26 (CW17BOWW)	ALP	I			19.07.2017 02:00:00	38.74	179.17	883.33	329.17	68.3	
27 (CW17BOWW)	FER	I			19.07.2017 02:00:00	64.89	254.17	891.67	391.67	53.6	
28 (CW17BOWW)	DIP	I			19.07.2017 02:00:00	40.83	295.83	741.67	508.33	48.3	
29 (CW17BOWW)	HYF	I			19.07.2017 02:00:00	40.36	227.08	704.17	516.67	51.2	
30 (CW17BOWW)	TOB	I			19.07.2017 02:00:00	34.3	220.83	479.17	404.17	52.8	
31 (CW17BOWW)	REF	I			19.07.2017 02:00:00	41.22	239.58	504.17	508.33	48.8	
32 (CW17BOWW)	HYV	I			19.07.2017 02:00:00	40.89	275	962.5	420.83	67.7	
33 (CW17BOWW)	DIC	I			19.07.2017 02:00:00	34.37	268.75	1075	512.5	59.3	
34 (CW17BOWW)	MID	I			19.07.2017 02:00:00	44.44	279.17	1050	425	51.6	
35 (CW17BOWW)	ELI	I			19.07.2017 02:00:00	35.44	277.08	929.17	566.67	64.4	
36 (CW17BOWW)	JUL	I			19.07.2017 02:00:00	40.79	289.58	1075	470.83	44.9	
49 (CW17BOWW)	CAR	I			19.07.2017 02:00:00	43.12	256.25	533.33	575	41	



Messungen

Parzellen	Versuchsfak...	Versuchsfak...	Wetterstation	Zeitstempel	Tausendkor...	Keimdichte...	TriebdichteA...	ÄhrendichteAH (1/m2)	Kornzahlähr...	KornertragA...	TRBodenbe...	KOPflanzen...
57 (CW17BO...	DIC	I		07.2017 02:00:00	37.3	320.83	1525	645.83	49.3	92.47	undefined	undefined
15 (CW17BO...	TOB	E		07.2017 02:00:00	37.07	137.5	325	612.5	59.5	76.62	undefined	undefined
3 (CW17BOWW)	TOB	I		07.2017 02:00:00	35.86	239.58	512.5	604.17	54.5	76.53	undefined	undefined
60 (CW17BO...	JUL	I		07.2017 02:00:00	40.36	314.58	991.67	600	51	90.19	undefined	undefined
79 (CW17BO...	JUL	I		07.2017 02:00:00	41.74	325	1454.17	595.83	44.4	94.93	undefined	undefined
54 (CW17BO...	TOB	I		07.2017 02:00:00	36.72	214.58	483.33	587.5	59.3	90.84	undefined	undefined
81 (CW17BO...	MID	I		07.2017 02:00:00	45.63	325	1058.33	579.17	48.5	86.63	undefined	undefined
49 (CW17BO...	CAR	I		07.2017 02:00:00	43.12	256.25	533.33	575	41	73.47	undefined	undefined


Ortsname, Straße…
A 562
A 565
A 573
A 61
A 48
A 62
A 63
Koblenz
Bad Godesberg
Kaiserslautern
Saarbrücken
Pegel
Themen

Ausblick

- Auslagerung der Utilities
- Benutzerfreundlichere API-Docs und Beispiele
- Rasteroperationen
- Upgrade OpenLayers v5
- Harmonisierung mit anderen geogr. React Bibliotheken

Vielen Dank

Fragen & Anmerkungen?

Impressum

Impressum

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Lizenz

Vortragsfolien, PDF-Version, git repository