

# ***Heron Mapping Client***

## ***An Overview***



**Coöperatieve Vereniging OpenGeoGroep U.A. - [www.opengeogroep.nl](http://www.opengeogroep.nl)**

Just van den Broecke - [www.justobjects.nl](http://www.justobjects.nl)

Geonovum Dec 17, 2013

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- Nutshell
- Examples
- Concepts
- Q&A



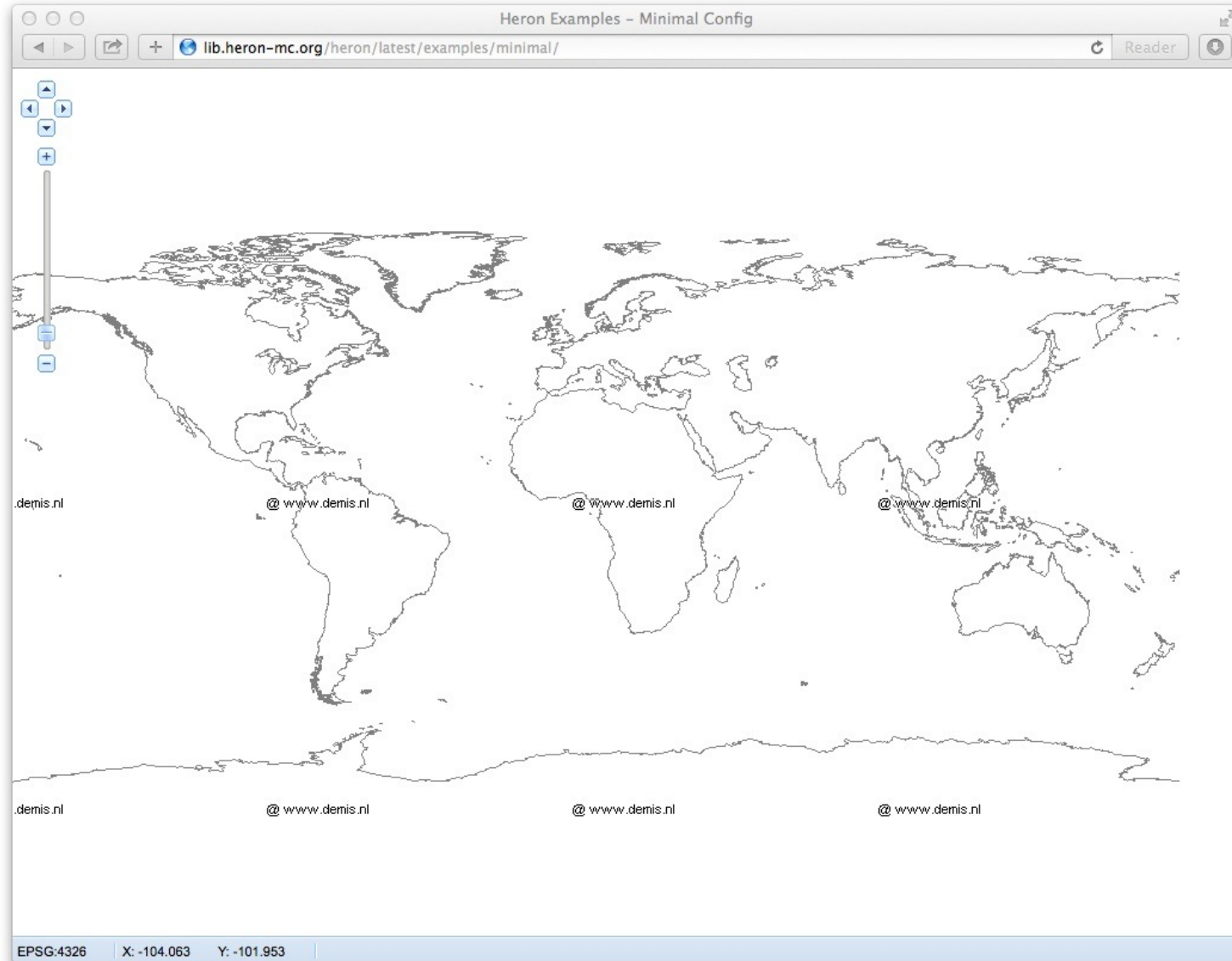
**JavaScript framework  
to quickly develop  
geo-apps for  
the browser**

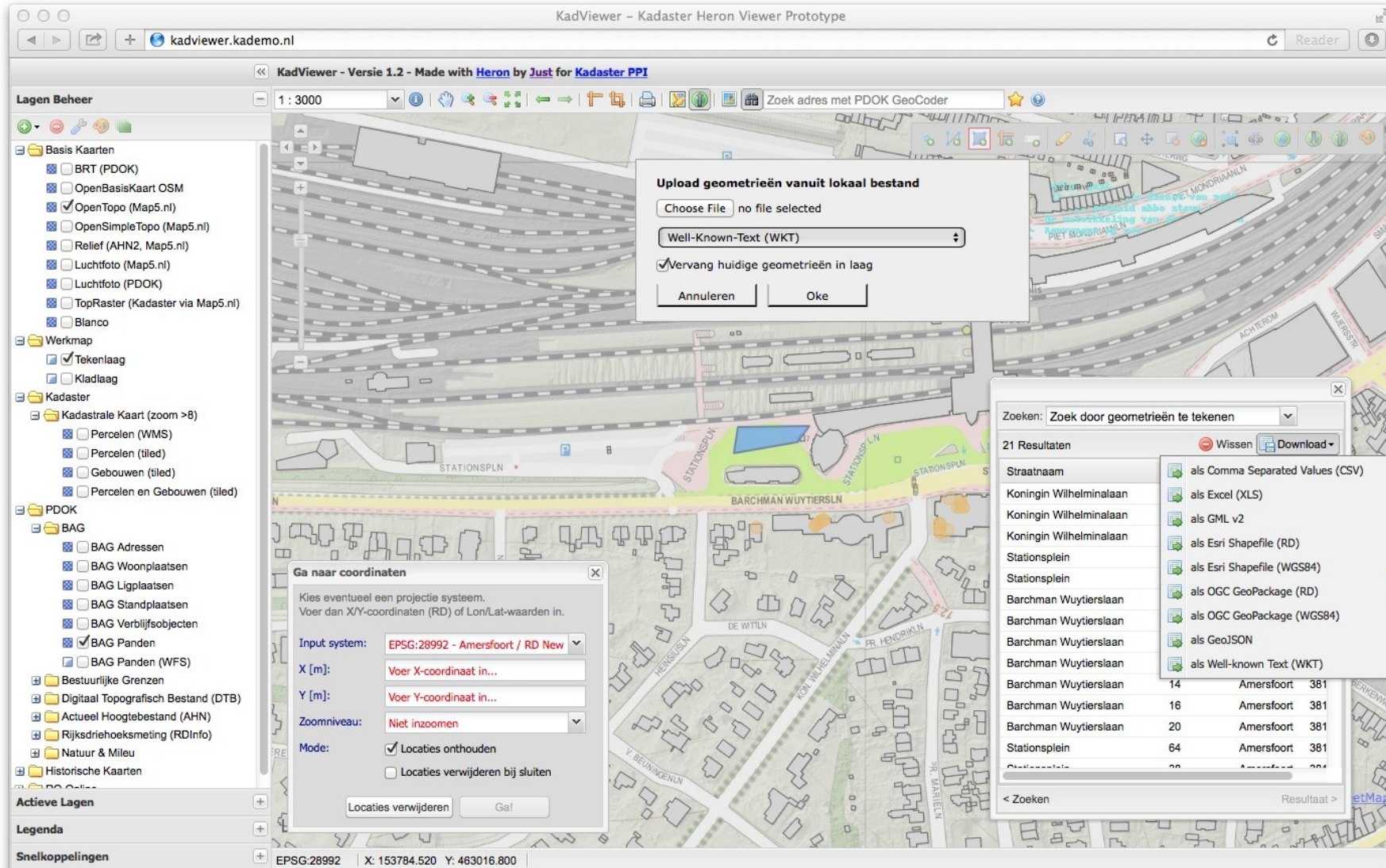


not a viewer app  
not even an app  
not a client/server suite



**Heron provides  
building blocks  
to create your own app**







**server: OGC services**

==> WMS, WFS, OpenLS, CSW, WPS, SOS

**data: standard formats**

==> GML, GeoJSON, CSV, Shape,...

**code: existing libraries**

==> GeoExt, OpenLayers, ExtJS





# Free and Open Source

==> GNU GPL v3 License

# In The Cloud

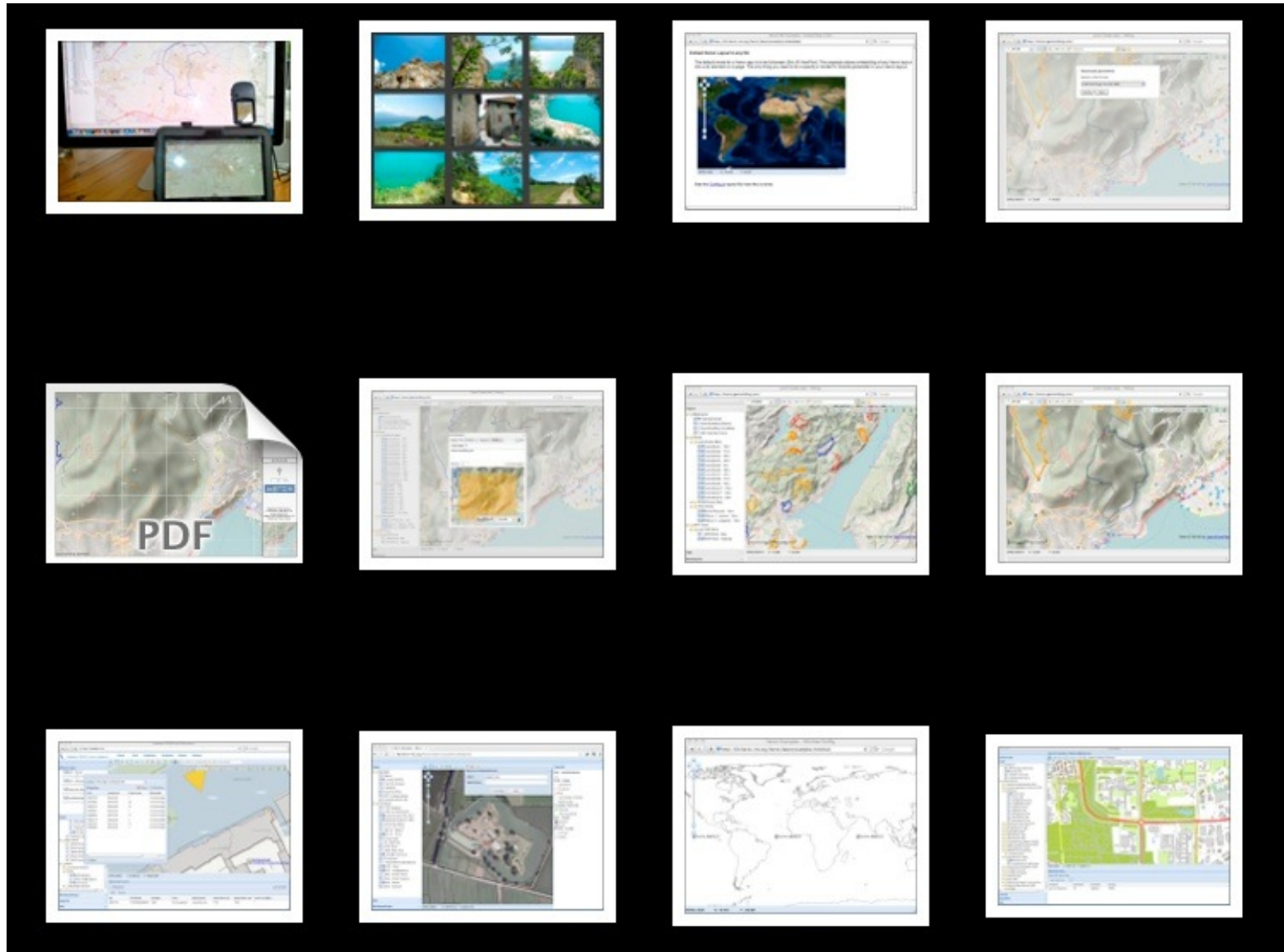
==> public repository, no barriers

# Community

==> small but growing, customers and devs



[www.heron-mc.org](http://www.heron-mc.org)



PreviewApp  
 http://apps.heron-mc.org/previewapp/

Heron PreviewApp - Publieke PDOK Services

Actieve Lagen

Lagen

- Achtergrond
- PDOK Services
  - Agrarisch Areaal Nederland (AAN)
    - AAN [tms]
    - AAN [wmts]
    - AAN [wms]
    - AAN [atom]
  - Actueel Hoogtebestand Nederland (AHN)
  - BAGViewer
    - Panden [wms]
    - Panden [wfs]
    - Verblifsobjecten [wms]
    - Verblifsobjecten [wfs]
    - Ligplaatsen [wms]
    - Ligplaatsen [wfs]
    - Standplaatsen [wms]
    - Standplaatsen [wfs]
    - Woonplaatsen [wms]
  - Beschermde natuurmonumenten
  - Bestuurlijke grenzen 2012
  - Bevolkingskernen 2008
  - Bodemgebruik 2008
  - CBS Vierkanten 100m
  - CBS Vierkanten 500m
  - Cultuurhistorische objecten (CultGIS)
    - Elementen [wms]
    - Aandachtsgebieden [wms]
    - Deellandschappen [wms]
    - Landschappen
    - Regio's
  - Digitaal Topografisch Bestand (DTB)
  - Fietsknooppunten netwerk
  - INSPIRE (Harmonized Data)
  - Inspireadressen (=BAG)
    - Adressen [wms]
- Legenda
- Capabilities
- Info

nieuwe steeg 74,herwijnen  
 Nieuwe Steeg,Herwijnen,Lingewaal,Gelderland  
 Nieuwe Steeg,Herwijnen,Lingewaal,Gelderland  
 Nieuwe Steeg,Herwijnen,Lingewaal,Gelderland

EPSG:28992 X: 136917.320 Y: 431270.680

Objectinformatie

Tabel XML Boom WFS

elementen	inspireadressen	pand							
naam	beginjaar_periode	eindjaar_periode	type	subtype	kenmerkendheid	atlascode	periode	trefwoorden	reg
Nieuwe Holland...	1815	1951	verdedigingswerk	verboden kring	provinciaal	400	Nieuwste tijd	verdedigingslini...	<a href="#">http</a>
Nieuwe Holland...	1801	1951	verdedigingswerk	inundatiegebied	provinciaal	401	Nieuwste tijd	verdedigingslini...	<a href="#">http</a>

**Customizable Layer Trees**  
 WMS, WFS, WMTS, TMS, Vector,...

**Autofill Gazetteer Search:**  
 PDOK Geocoder (OpenLS), Geonames.org, Your Geocoder

**Multitabbed "Identify" (WMS, WFS)**



About Map Documentation Demos Development Contact

Lightweight CMS/Portal

Flexible Layer Stacking with Transparency Sliders

Active Layers

- HY.Watercourse
- Topo Raster
- OpenStreetMapNL

Layers

- Base Layers
  - Topo Raster
  - OpenStreetMap (NL)
- Addresses (AD)
- Administrative Units (AU)
- CadastralParcels (CP)
  - CadastralParcels
- Geographical Names (GN)
- Hydrography (HY)
  - Watercourses
  - StandingWater
  - Hydrography (all)
- TransportNetwork (TN)
  - RoadLinks
  - RoadAreas

Info

Shortcuts

Legend

Search: Pieter de Hoogstraat, Ommen, Overijssel, 773

Results:

- Pieter de Hoogstraat, Ommen, Overijssel, 7731CX,
- Pieter de Hooglaan, Oegstgeest, Zuid-Holland, 2343,
- Pieter de Hoogstraat, Maassluis, Stadsregio Rotterdam, Zuid-
- Pieter de Hoogstraat, Delfshaven, Nieuwe Westen, Rotterdam, 3024EZ, Nede...
- Pieter de Hoogstraat, Delfshaven, Nieuwe Westen, Rotterdam, 3024 EJ, Nede...

Map Coordinates: X: 6.601460 Y: 52.416118

Feature info

HY

IDENT	TYPEINFRAS	TYPEWATER	BREEDTEKLA	BREEDTE	HOOFDAFWAT	FYSIEKVOOR	FUNCTIE	VOORKOMEN	STROOMRICH
NL.TOP10NL.1...	overig watergeb...	greppel, droge ...			nee		overig	overig	
NL.TOP10NL.1...	overig watergeb...	waterloop	0,5 - 3 meter		ja		overig	overig	
NL.TOP10NL.1...	overig watergeb...	greppel, droge ...			nee		overig	overig	
NL.TOP10NL.1...	overig watergeb...	greppel, droge ...			nee		overig	overig	
NL.TOP10NL.1...	overig watergeb...	greppel, droge ...			nee		overig	overig	

Data CC By-SA by OpenStreetMap

# Theming

- Lagen**
- Basislagen
    - Blanco
    - Luchtfoto (PDOK)
    - Top10NL (Geodan)
    - TopRaster
    - OpenStreetMap
    - BRT Achtergrondkaart
    - OpenBasisKaart OSM
  - Themalagen
    - TNO Boorgaten
    - TNO Grondwaterputten
    - Kadastrale Kaart Alles (tiled)
    - Kadastrale Gebouwen (tiled)
    - Kadastrale Vlakken
    - Natura 2000 (TMS)
    - RD Info - Stations
    - RD Info - Punten
    - Hockeyclubs
    - NL Height Map
    - KNMI Radar
    - KNMI Radar Color
    - Landelijke Fietsroutes
    - Streekpaden
    - Lange Afstands Wandelroutes
    - NWB - Wegen
    - BAG - Verblifsobjecten
    - BAG - Panden (WFS)
    - BAG - Panden Selected
    - BAG - Panden
    - BAG - Adressen



- Legenda**
- Lange Afstands Wandelroutes
    - LAWLijnen
    - LAWLabels
  - Landelijke Fietsroutes
    - LFroutes
    - LFRoutesLabels
  - Streekpaden
    - StreekpadenLijnen
    - StreekpadenLabels

Actieve Lagen

- BAG - Panden
- RO Online Bestemmingsplannen
- Luchtfoto (PDOK)

**Doorzichtigheid**

RO Online Bestemmingsplannen

Layer Stacking with Transparency Sliding

Customizable Feature Grid (e.g. hyperlinks)

**Objectinformatie**

BPG\_30962 BPG\_26897 BPG\_17202 BPG\_10042 GA\_228798 GA\_205215 GA\_158920 **GA\_105371**

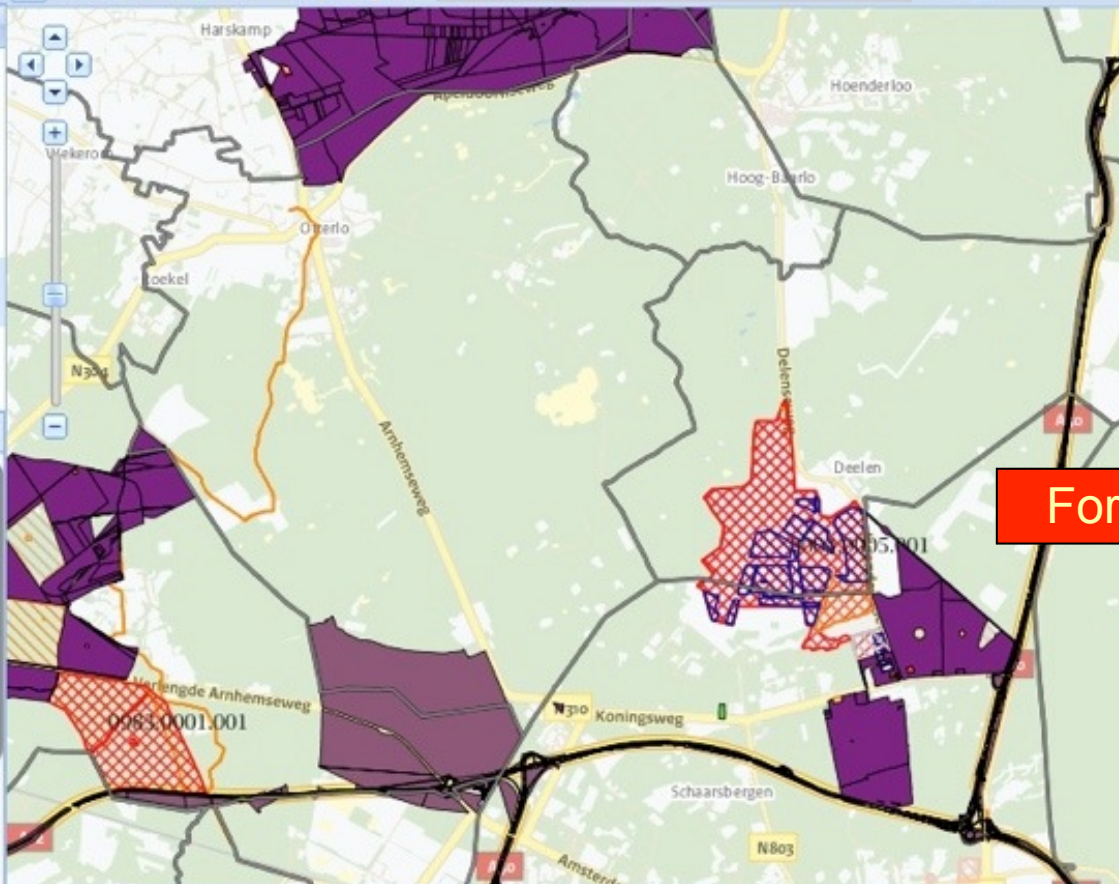
1 Resultaat Wissen Download

typeplan	Versieimro	Verwijzingnaartekst	Dossierid	Dossierstatus	Datum
Bestemmingsplan	IMRO2008	<a href="http://ruimtelijkeplannen.nl/docum...">http://ruimtelijkeplannen.nl/docum...</a>	NL.IMRO.0228....	vastgesteld	2011-01-27

Rijksvastgoed- en Ontwikkelingsbedrijf - HERON - GIS Viewer HELP

- Actieve Lagen**
- BAG Woonplaatsen
  - Leegstand\_ve
  - Actuele\_contracten
  - Brtachtergrond

- Lagen**
- Basis Kaarten
    - Zwart (donker maken transparant)
    - Luchtfoto's 2006
    - Luchtfoto's 2011
    - BRT achtergrond
    - OpenStreetmap
    - Postcode 2010 (4 cijfers)
  - Staatsbalans
  - TOP10NL (vanaf level 6 zichtbaar)
  - RVOB
    - Actuele contracten
    - Alle contracten
    - AVR-zaken 2012 en toekomst
    - AVR-zaken tot en met 2011
    - Leegstand (volledig eigendom)
    - Leegstand (niet volledig eigendom)
    - Zendmasten
  - Contractsoorten
  - Hulp lagen
  - Ligplaatsen



Ga naar coördinaten

X:

Y:

Form-based WFS-Search

EPSG:28992 X: 190731.239 Y: 460602.401

**Objectinformatie**

rvob_contracten		leegstand_ve				
bedrijfsnummer	documentnumm...	documentstatus	uurcontractnu...	contractsoort	contractsoort_o...	gebruikssoc
3200	107010086	IW	0004.0005.001	32	Medegebruik	6
3300	107017210	AF	0168.0003.001	31	Ingebruikgeving	2
3300	107017392	AF	0168.0004.001	41	Jacht	9
3300	107017392	AF	0168.0004.001	41	Jacht	9
3300	107017392	AF	0168.0004.001	41	Jacht	9

**Zoeken contracten**

**Zoeken Contracten**

bedrijfs nr.	hc nr.	Soort
3400	1218.0001.001	Erfpacht

< Zoeken Resultaat >

- 
- 
- 
- 
- 
- 
- 

Overige terreinen

01-04-2015



- Actieve Lagen**
- Lagen**
- Basis Kaarten
    - BRT (PDOK)
    - OpenBasisKaart OSM
    - Luchtfoto (PDOK)
    - TopRaster (Kadaster)
    - Blanco
  - Werkmap
    - Editor
    - Scratch
  - Kadaster
    - Kadastrale Kaart (zoom >8)
      - Percelen (WMS)
      - Percelen (tiled)
      - Gebouwen (tiled)



WFS Search by Drawing Shapes

Zoeken: Zoek door geometrieën te tekenen

Search in: BAG - Adressen

4 Seconden - Aan het werk...

Cancel

< Zoeken Resultaat >

## Actieve Lagen

1 : 3000

Zoek adres met PDOK GeoCoder

## Lagen

## Basis Kaarten

- BRT (PDOK)
- OpenBasisKaart OSM
- Luchtfoto (PDOK)
- TopRaster (Kadaster)
- Blanco

## Werkmap

- Editor
- Scratch

## Kadaster

## Kadastrale Kaarten

- Percele
- Percele
- Gebouw
- Percele

## PDOK

## BAG

- BAG A
- BAG V
- BAG P
- BAG P

## Bestuurlijke C

## Digitaal Topo

## Actueel Hoog

## Rijksdriehoek

## Natuur &amp; Mile

- Natura
- Nationa
- NOK 20
- NOK 2010 - RODS
- NOK 2010 - BBLBuitenbegr.

**Spatial WFS Search:**  
Draw Shapes to find Geometries in source Layer  
and use these for search in target Layer!

Zoeken: Zoeken via object-selectie

Choose Layer to select with: Kadastrale Vlakken

1 objects selected from "Kadastrale Vlakken"

Search in: BAG - Adressen

Type of Search: WITHIN

Actions:

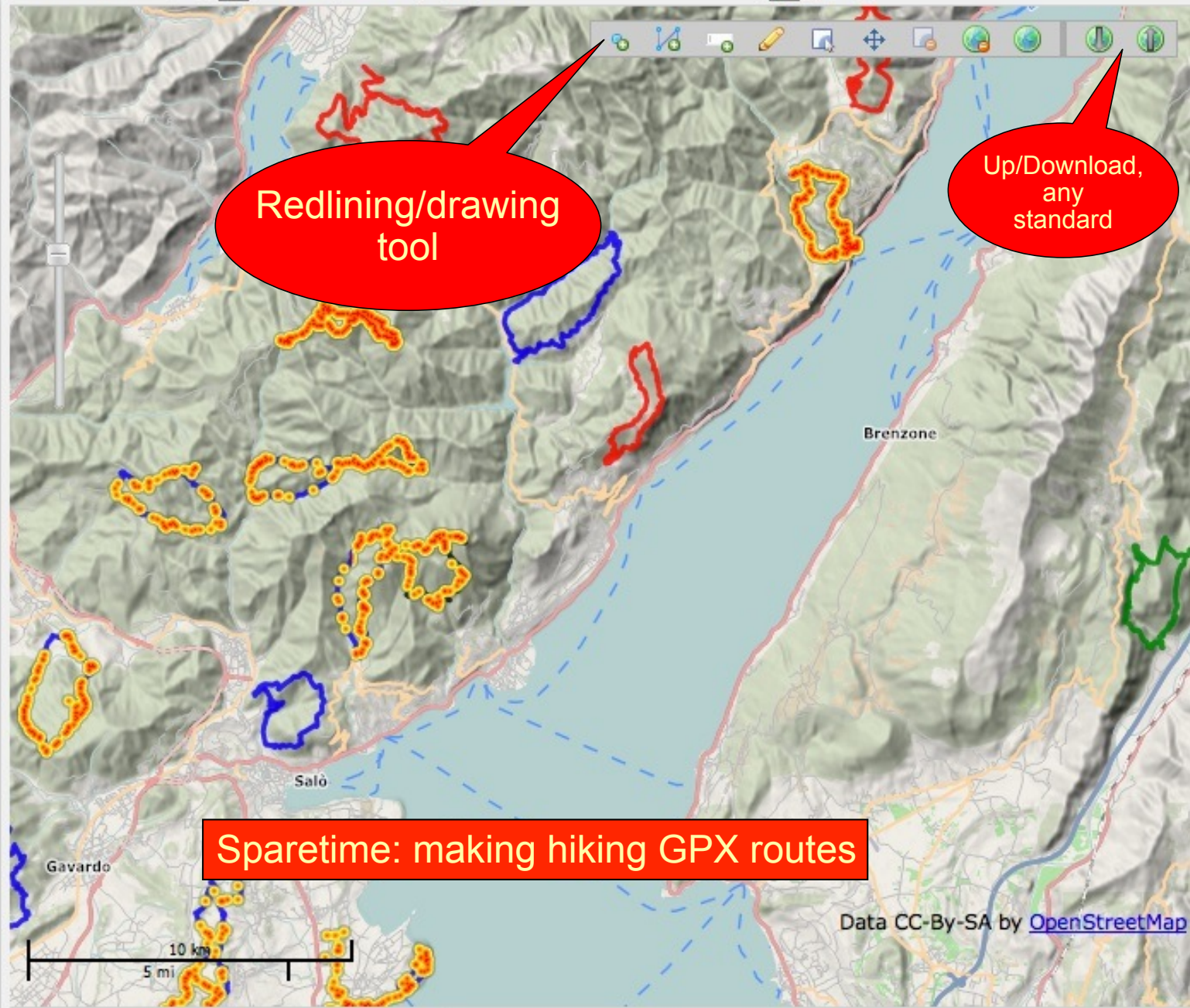
Select the spatial operator (optional) and use the Search button to start your search.

< Zoeken Resultaat >



Layers

- BaseLayers
  - Topomap Europe
  - OpenStreetMap (Mapnik)
  - OpenStreetMap (CycleMap)
  - IGN Topomap France
- Routes
  - Justs Routes (Blue)
    - JustsGarda1 - 10km
    - JustsGarda2 - 11km
    - JustsGarda3 - 16km
    - JustsGarda4 - 12km
    - JustsGarda5 - 7km
    - JustsGarda6 - 18km
    - JustsGarda7 - 12km
    - JustsGarda8 - 11km
    - JustsGarda9 - 13km
    - JustsGarda10 - 10km
    - JustsGarda11 - 16km
    - JustsGarda12 - 12km
  - ANWB Routes (Red)
  - Other Routes
    - Monte Pizzocolo - 14km
    - WikiLoc 1 - brentino - 14km
    - WikiLoc 2 - pregasina - 13km
- GPS Traces
  - Justs GPS Points
    - GPS Points - Raw
    - GPS Points - Heatmap



Redlining/drawing tool

Up/Download, any standard

Sparetime: making hiking GPX routes

1:34124

Search

Draw a Path



Data CC-BY-SA by [OpenStreetMap](#)

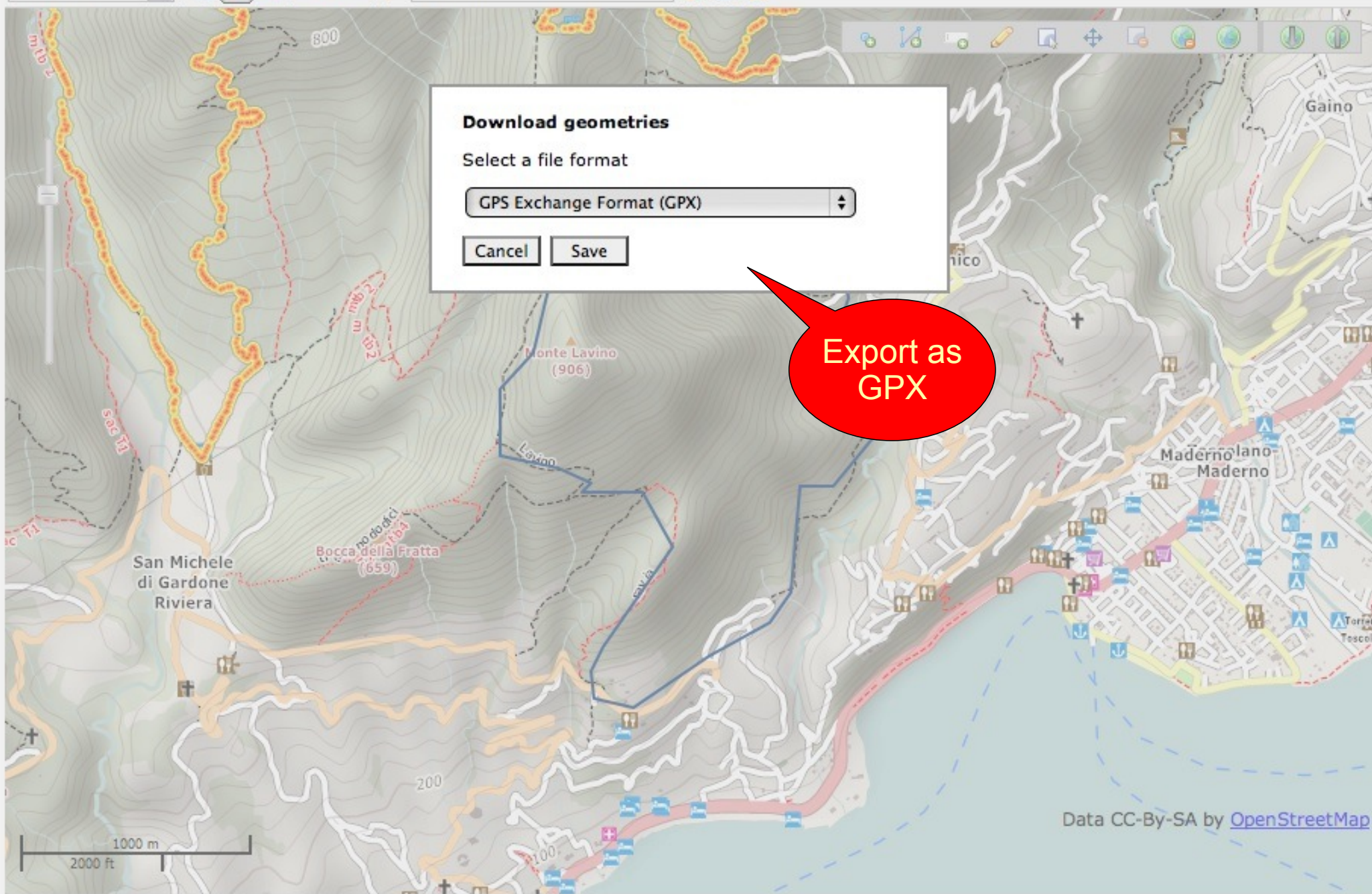
EPSG:900913 | X: 10.554 | Y: 45.624

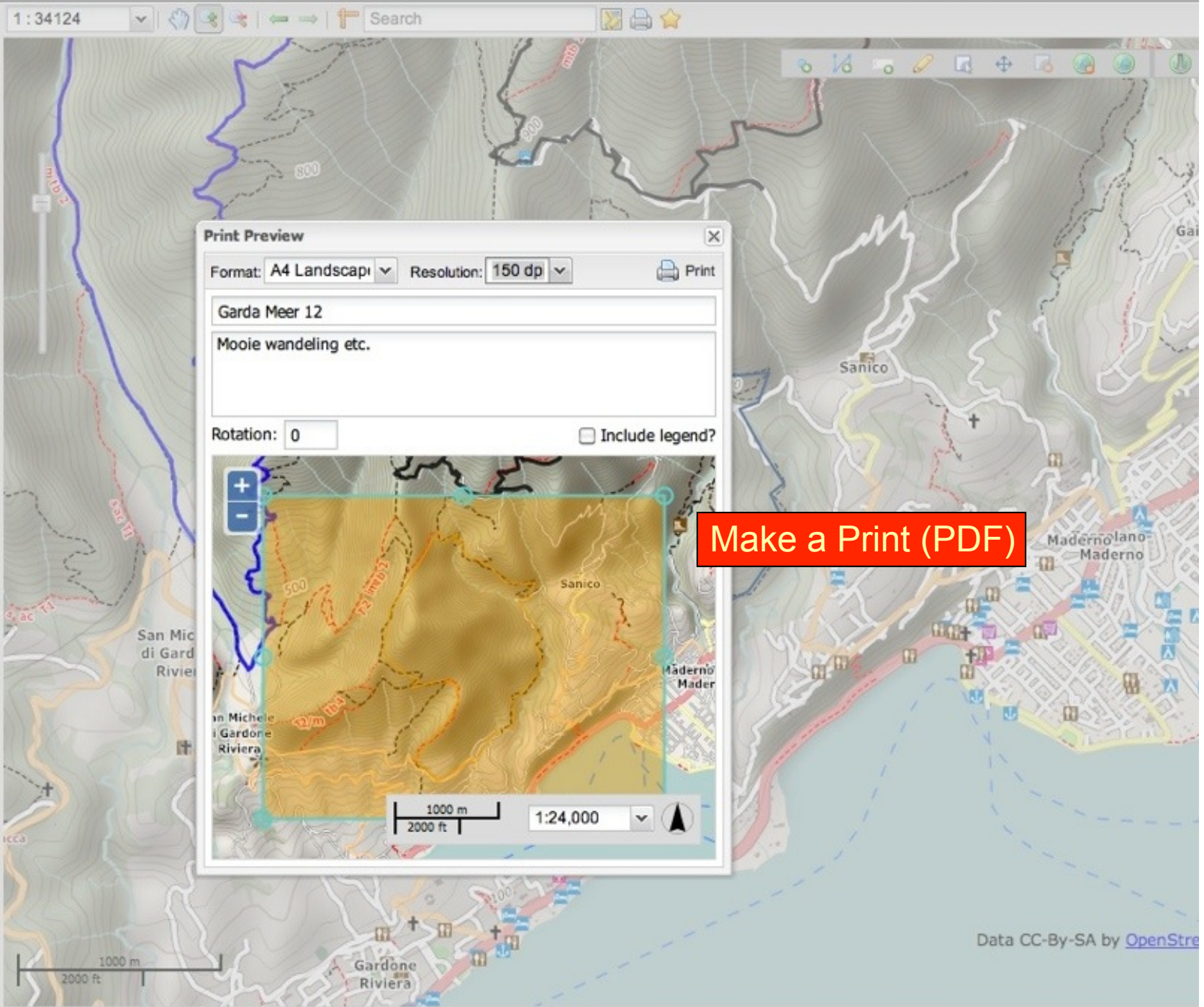
**Download geometries**

Select a file format

GPS Exchange Format (GPX)

Cancel Save





- Layers**
- BaseLayers
    - Topomap Europe
    - OpenStreetMap (Mapnik)
    - OpenStreetMap (CycleMap)
    - IGN Topomap France
  - Routes
    - Justs Routes (Blue)
      - JustsGarda1 - 10km
      - JustsGarda2 - 11km
      - JustsGarda3 - 16km
      - JustsGarda4 - 12km
      - JustsGarda5 - 7km
      - JustsGarda6 - 18km
      - JustsGarda7 - 12km
      - JustsGarda8 - 11km
      - JustsGarda9 - 13km
      - JustsGarda10 - 10km
      - JustsGarda11 - 16km
      - JustsGarda12 - 12km
    - ANWB Routes (Red)
      - ANWB 7 - 15km
      - ANWB 8 - 11km
      - ANWB 9 - 15km
      - ANWB 10 - 14km
      - ANWB 12 - 18km
      - ANWB 13 - 13km
      - ANWB 14 - 14km
      - ANWB 15 - 6 of 13km
    - Other Routes
      - Monte Pizzocolo - 14km
      - WikiLoc 1 - brentino - 14km
      - WikiLoc 2 - pregasina - 13km
  - GPS Traces
    - Justs GPS Points
      - GPS Points - Raw
      - GPS Points - Heatmap

**Print Preview**

Format: A4 Landscap Resolution: 150 dp

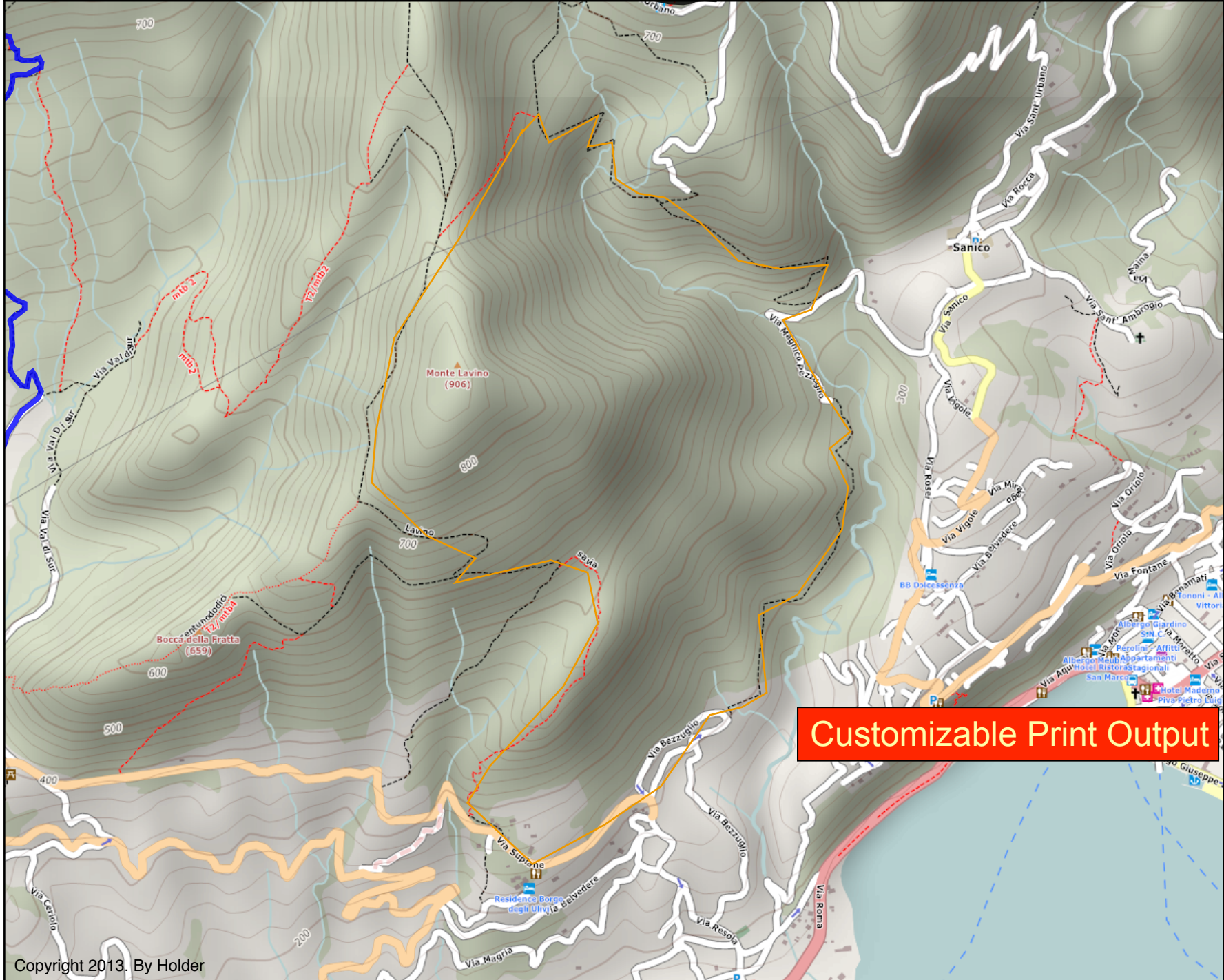
Garda Meer 12

Mooie wandeling etc.

Rotation: 0  Include legend?

1000 m 2000 ft 1:24,000

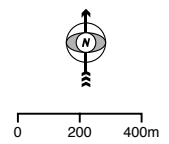
**Make a Print (PDF)**



Garda Meer 12

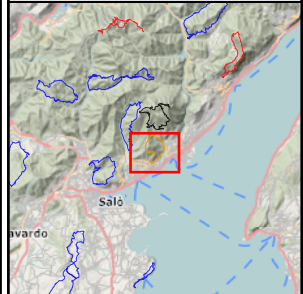
Mooie wandeling etc.

2013-09-03



Customizable Print Output

MapFish Print Server at Kadaster GEORZ Lab  
[www.kademo.nl](http://www.kademo.nl)  
 YAML core Warwickshire CC  
 YAML by Heron Devs



Copyright 2013. By Holder





Use GPX on any other Device





Be surprised how it looks in real!



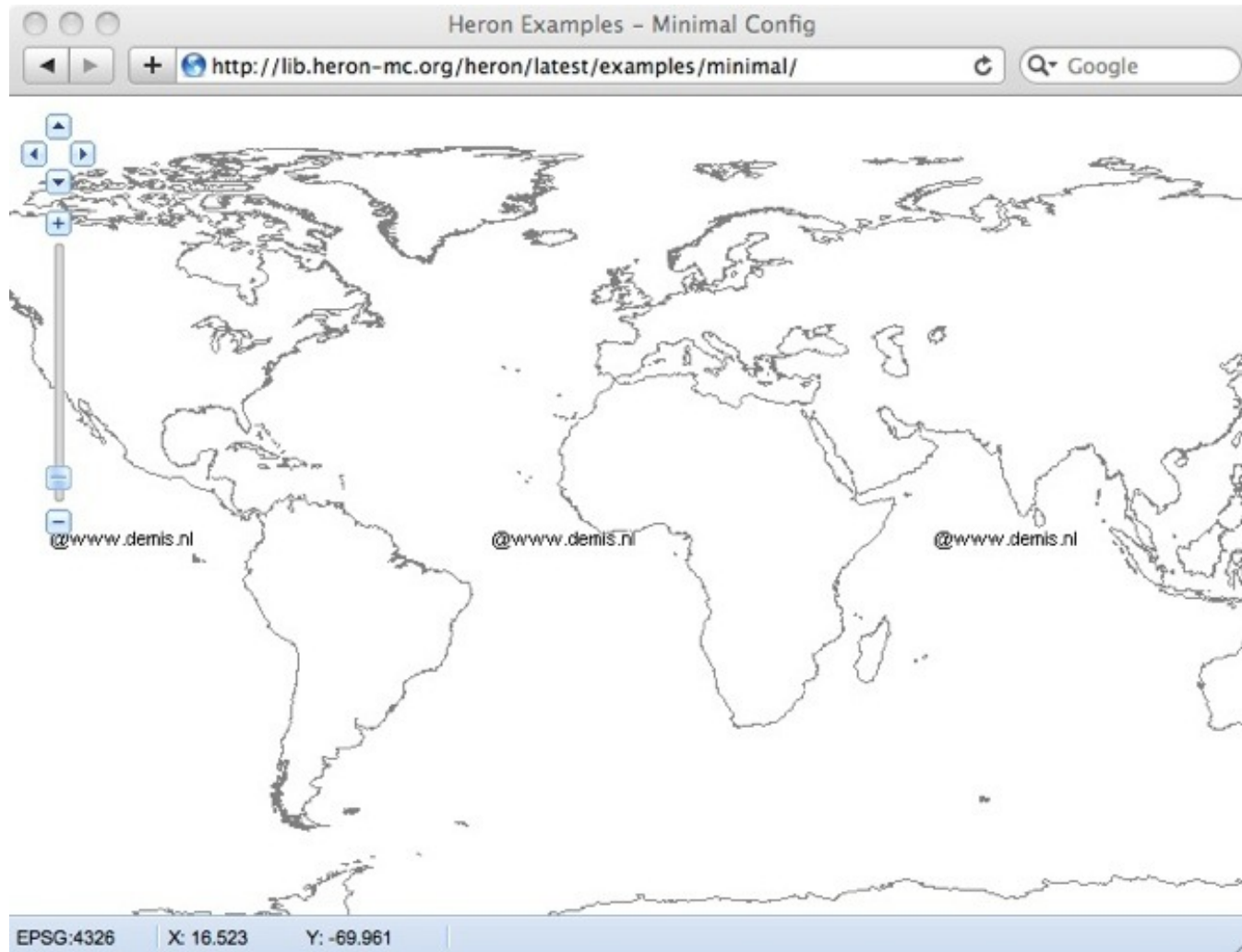


- Make web mapping easy
- Not just a map: provide for a complete web app
- Reuse the power of existing web mapping libs
- Reusable widgets and components
- Server back-end:
  - Minimal weight
  - Open Standards: OGC (W\*S, CSW), TMS etc
- Focus on “The Data behind the Map”

- Declarative Programming
  - “what” not “how”
  - via config
  - ***“look ma, no programming!”***
- Component Based
- Complete Webapp
- Build on GeoExt  
(=ExtJS+OpenLayers) and others like GXP



**the configuration is the app  
the app is the configuration**



<http://lib.heron-mc.org/heron/latest/examples/minimal/>



```
Heron.layout = {  
  xtype: 'hr_mappanel',  
  hropts: {  
    layers: [  
      new OpenLayers.Layer.WMS("World Map",  
        "http://www2.demis.nl/WMS/wms.asp?WMS=WorldMap",  
        {layers: 'Coastlines', format: 'image/png'})  
    ]  
  }  
};
```

<http://lib.heron-mc.org/heron/latest/examples/minimal>

A horizontal rectangular box with a light blue background and a thin black border, containing the text "Heron Apps".

Heron Apps

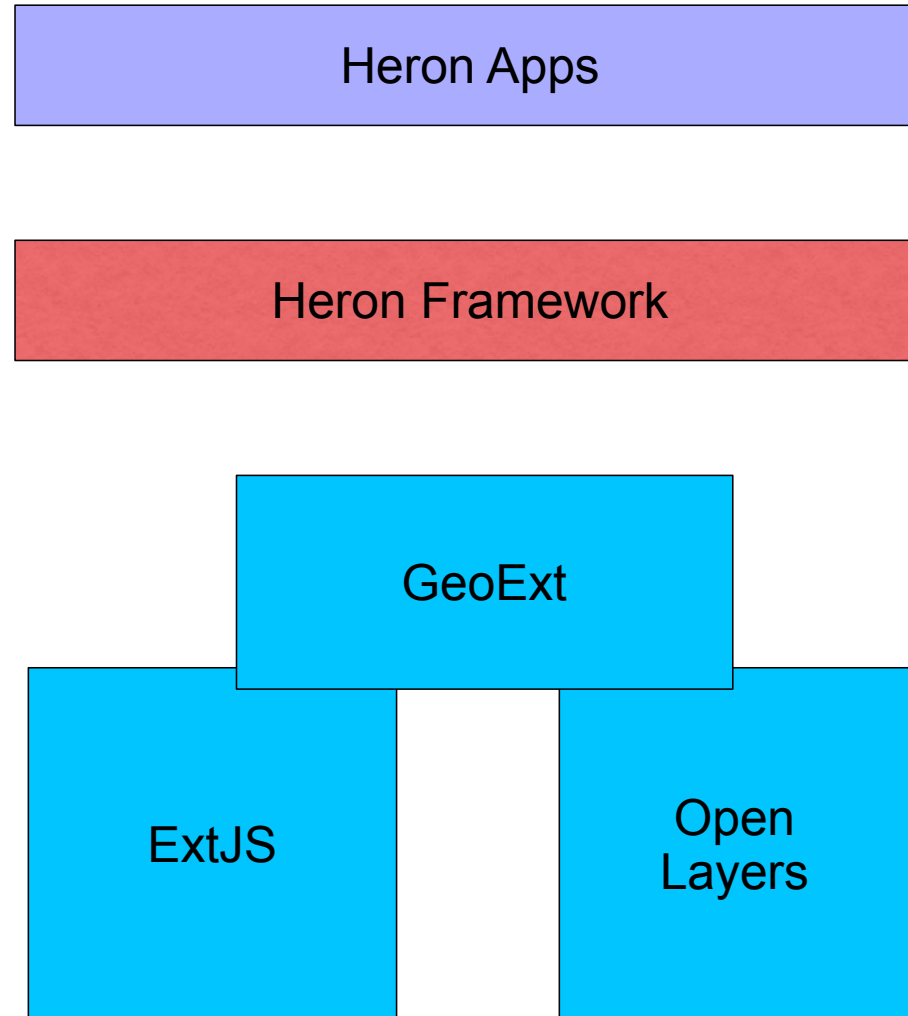
A horizontal rectangular box with a red background and a thin black border, containing the text "Heron Framework".

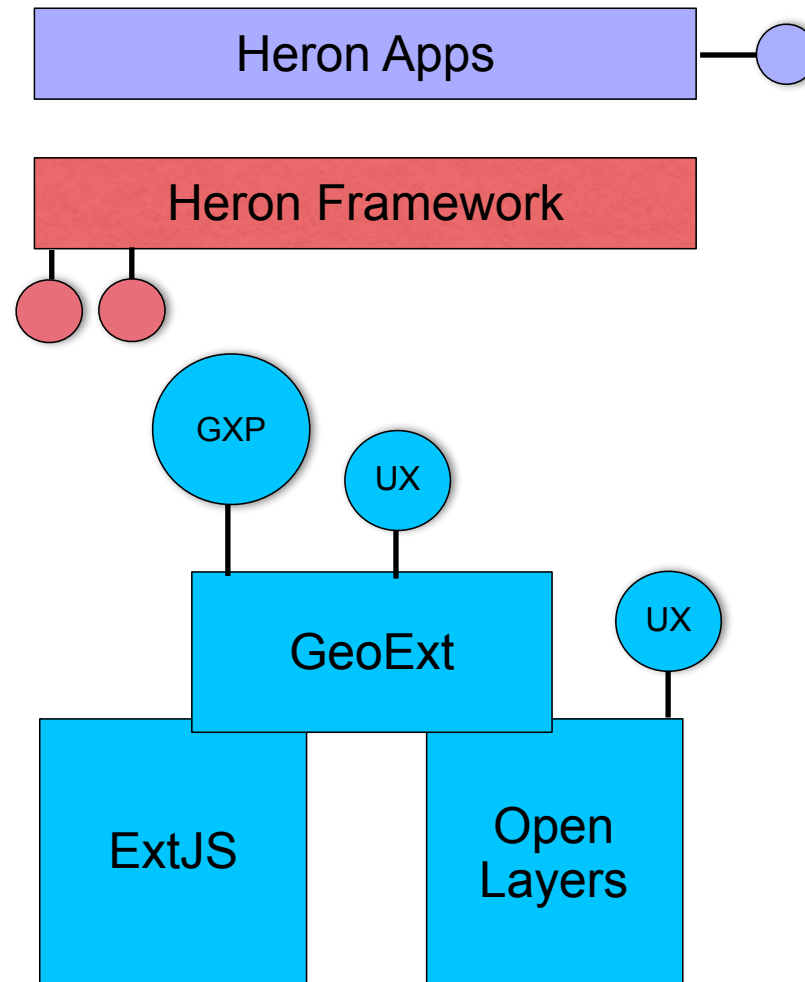
Heron Framework

A horizontal rectangular box with a cyan background and a thin black border, containing the text "GeoExt".

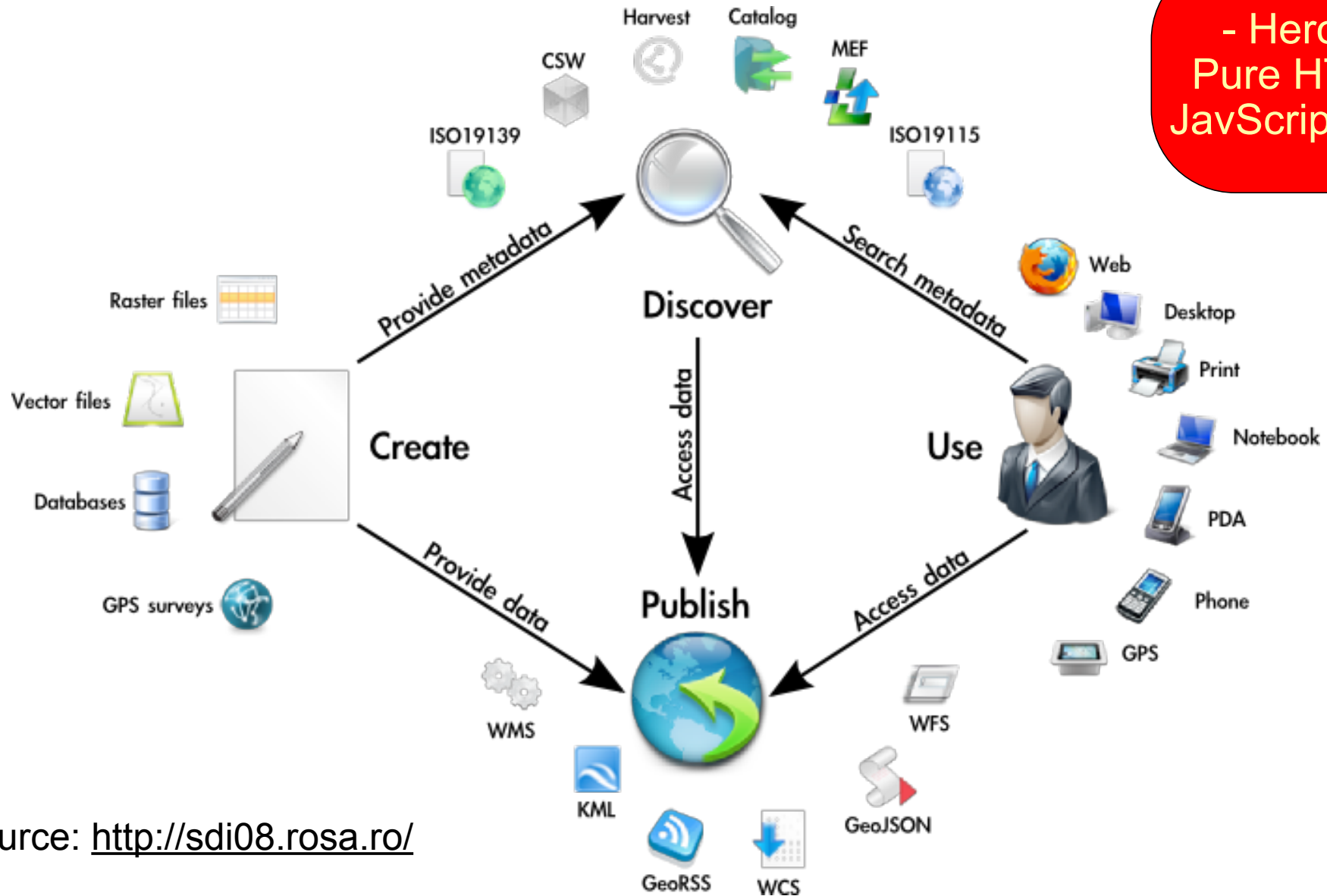
GeoExt



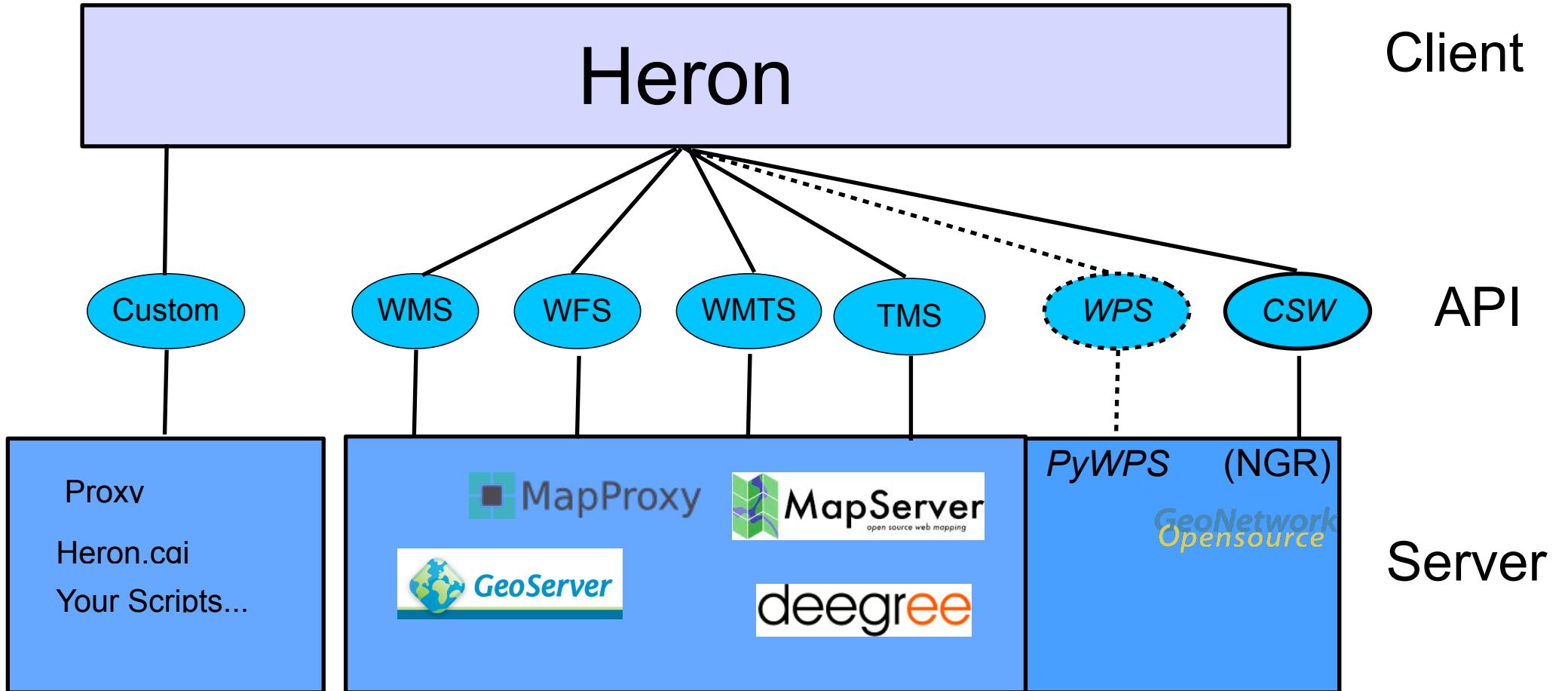




- Heron -  
Pure HTML/  
JavaScript/CSS



Source: <http://sdi08.rosa.ro/>



..... = Planned

- Heron App === Configuration
  - defined as JSON/JavaScript object in config .js files
  - determines overall GUI-layout
  - includes components (widgets) and their properties
  - components from Heron, GeoExt, GXP and/or ExtJS
  - plus your own custom components
  - “Builder” Design Pattern (based on ExtJS ‘xtype’)

```
Heron.layout = {
  xtype: 'panel',
  layout: 'border',
  items: [
    {
      xtype: 'panel',
      layout: 'accordion',
      region: "west",
      width: 240,
      collapsible: true,
      split: true,
      border: false,
      items: [
        {
          xtype: 'hr_layertreepanel'
          :
          :
          :
        }
      ]
    }
  ]
}
```

1:272990 Search

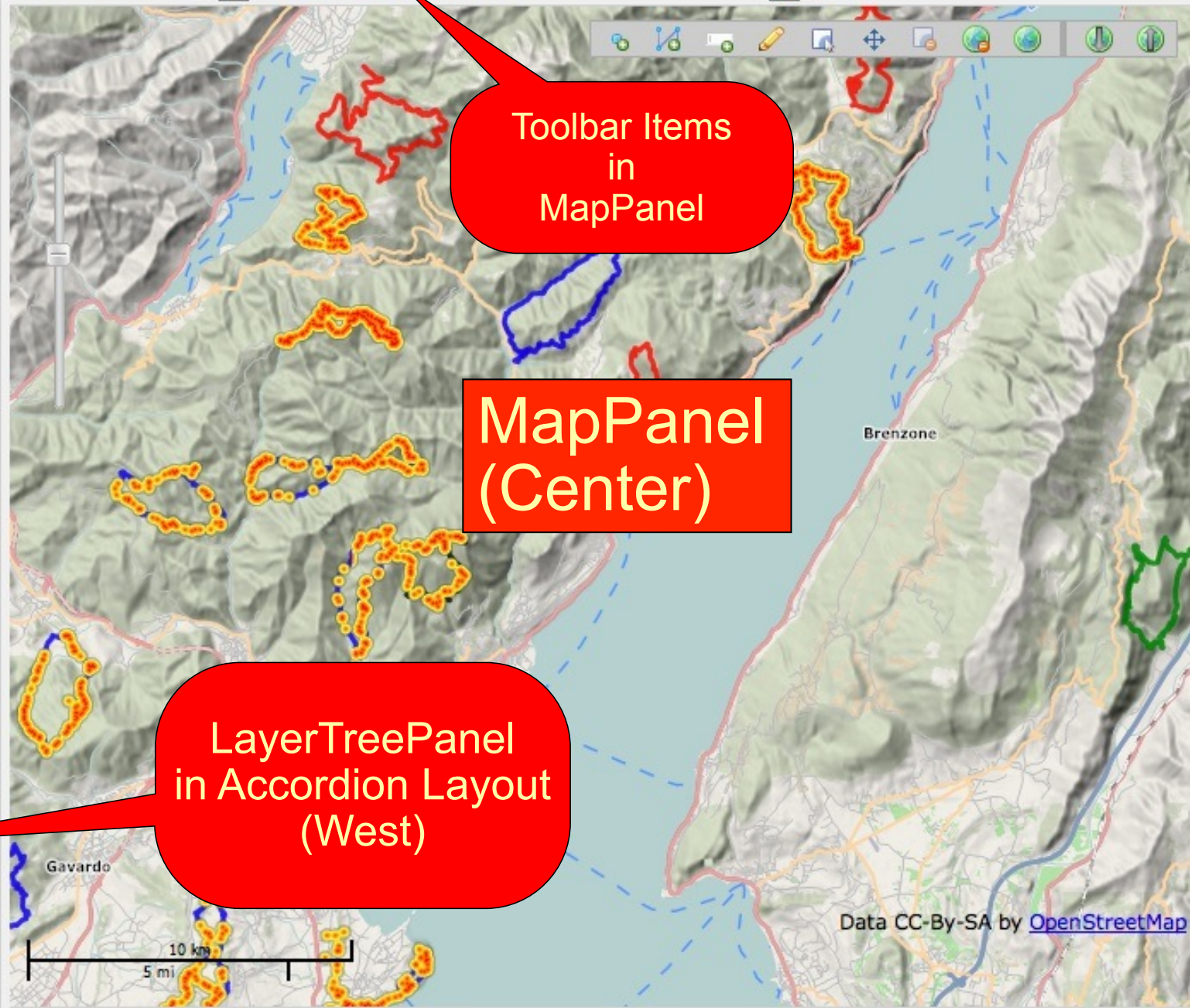
Layers

- BaseLayers
  - Topomap Europe
  - OpenStreetMap (Mapnik)
  - OpenStreetMap (CycleMap)
  - IGN Topomap France
- Routes
  - Justs Routes (Blue)
    - JustsGarda1 - 10km
    - JustsGarda2 - 11km
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    - GPS Points - Heatmap

Toolbar Items in MapPanel

MapPanel (Center)

LayerTreePanel in Accordion Layout (West)



Info

EPSG:900913 | X: 10.588 | Y: 45.546

Bookmarks



```

<html>
<head>
  <title>Kadaster GEORZ Lab & INSPIRE Data with FOSS</title>
  <!-- External lib: ExtJS -->
  <link rel="stylesheet" type="text/css" href="http://extjs.cachefly.net/ext-3.4.1/resources/css/ext-all.css"/>
  <script type="text/javascript" src="http://extjs.cachefly.net/ext-3.4.1/adaptor/ext/ext-base.js"></script>
  <script type="text/javascript" src="http://extjs.cachefly.net/ext-3.4.1/ext-all.js"></script>

  <!-- External lib: OpenLayers -->
  <script type="text/javascript" src="http://lib.heron-mc.org/openlayers/2.11/OpenLayers-min.js"></script>

  <!-- External lib: GeoExt -->
  <script type="text/javascript" src="http://lib.heron-mc.org/geoext/1.1/GeoExt-min.js"></script>

  <!-- External lib: Heron Mapping Client -->
  <link rel="stylesheet" type="text/css" href="http://lib.heron-mc.org/heron/latest/resources/css/default.css"/>
  <script type="text/javascript" src="http://lib.heron-mc.org/heron/latest/script/Heron.js"></script>

  <!-- Specific JS/CSS for this site -->
  <link rel="stylesheet" type="text/css" href="resources/css/site.css"/>
  <script type="text/javascript" src="resources/js/options.js"></script>
  <script type="text/javascript" src="resources/js/layout.js"></script>
</head>
<body>
</body>
</html>

```

Supporting  
Libs

Your  
Config

the configuration is the app  
the app is the configuration



- Founding fathers  
Dutch Kadaster (Kademo Lab) and RVOB
- Initially developed with Geodan  
ESDIN INSPIRE Project
- Contributors from OpenGeoGroep.nl and internationally
  - OGG: Eddy Scheper, Anke Keuren, Milo van der Linden, Raymond Nijssen, Just van den Broecke e.v.a.
- Google Code project (GPLv3)
  - <http://code.google.com/p/geoext-viewer> - project
  - <http://groups.google.com/group/geoext-viewer-devel> - mailing list

- Desktop GIS Replacement
  - migration from proprietary desktop apps (Arc\*, MapInfo,..)
  - traditional (toolbar!) but productive (viz. spreadsheet)
  - many intranet/internal deployments
- “Users as Developers”
  - assembly (config) by customers’ GIS-specialists
- “Geospatial Asset Management”
  - see Cases next
- Not:
  - mobile apps (not now, but planned)

- **RVOB:** Government-owned Properties
- **PDOK:** PreviewApp: testing PDOK services
- **Kadaster:** Cadastral Parcels and related assets
- **Kadaster Kademo Lab:** many prototyping apps
- *Gasunie: Gas Pipelines and -Installations*
- **Deutsche Bundesbahn:** Railways and related
- **Warwickshire (UK):** county properties

- **Co-development with Customers within Community**
  - jointly determine new features; select which to add to Heron core
  - new features added to Heron public Tracker and Roadmap
  - communication on issues via public Heron tracker/ mailing list
- **Customer Benefits**
  - maintain only a Heron configuration (=application!)
  - influence roadmap
  - simple online progress tracking
  - help from the community
  - long-term OGG-support contracts
  - minimal maintenance costs
  - new functions for free with Heron upgrades!
- **Future: joint funding ?!**



## Web Mapping Made Easy

The Heron Mapping Client (MC) facilitates the creation of browser-based web mapping applications with the [GeoExt](#) JavaScript toolkit.

[GeoExt](#) is a powerful toolkit that combines the web mapping library [OpenLayers](#) with the user interface savvy of [Ext JS](#) to help build powerful desktop style GIS apps on the web with JavaScript. The Heron MC leverages these frameworks by providing high-level components and a convention to quickly assemble applications merely through configuration ("Look ma no programming").

## Using Heron

See Heron in action.

```

Heron.layout = {
  xtype: 'window',
  title: "Hello Heron",
  height: 280, width: 450,

  items: [
    {
      xtype: "gx_mappanel",
      layers: [new OpenLayers.Layer.WMS("Global Imagery",
        "http://maps.opengeo.org/geowebcache/service/wms",
        {layers: "bluemarble"})],
      zoom: 1
    }
  ]
};

```

Run it!

This is a minimal Heron application. You can see that this app is completely defined through a configuration object starting with `heron.layout`. Learn more about using Heron in your application by reading the [documentation](#).

## Heron is Free Source

Heron is available under the [GNU GPL v3 license](#).

## Download

Current release: **0.67**






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### Project Information

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**Code license**  
[GNU GPL v3](#)

#### Labels

geoext, openlayers, extjs, webmapping, wms, wfs, INSPIRE, GIS, geospatial, mapping, ogcservices, javascript, FOSS4G, geoviewer

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**External links**  
[heron-mc.org](#)

## About

The Heron Mapping Client or Heron MC provides an extensible browser-based mapping client. The main goal of this project is to make it easy to create web mapping applications like viewers for maps and editors for geodata. Note: the project-name "geoext-viewer" is still here since the project started under that name. The official website for the Heron MC project is <http://heron-mc.org>. This Google Code site is related to all of the Heron MC project development.

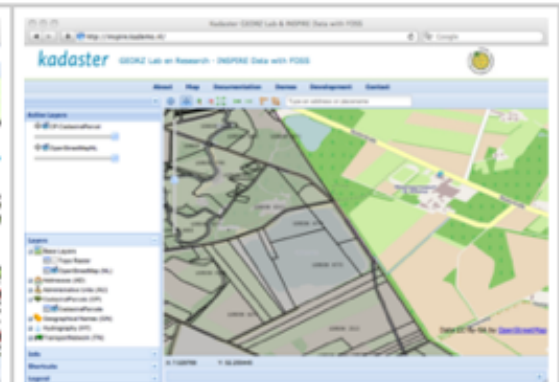
See an introductory presentation of Heron MC at <http://www.justobjects.nl/jo/assets/presentation/bolsena-2011-heron>



PDOK (Dutch national SDI)  
<http://nieuwsinkaart.nl/pdok>



Kadaster GEORZ Lab en Research  
<http://kademo.nl>



INSPIRE Data with FOSS  
<http://inspire.kademo.nl>

## Features

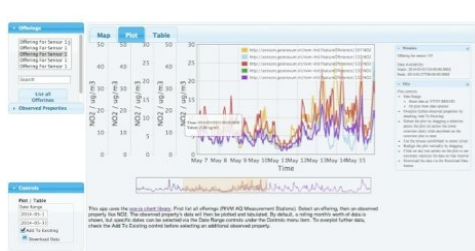
- Browser-based mapping client
- Standards compliant, supporting [Open Geospatial Consortium \(OGC\)](#) standards
- Renders maps from Web Map Services (WMS), Web Feature Services (WFS), Google/Bing/Yahoo Maps
- Easy to use
- No browser plugins required
- Built on proven Javascript frameworks: [GeoExt](#), [OpenLayers](#) and [ExtJS](#).
- Works with most modern browsers
- Advanced map components

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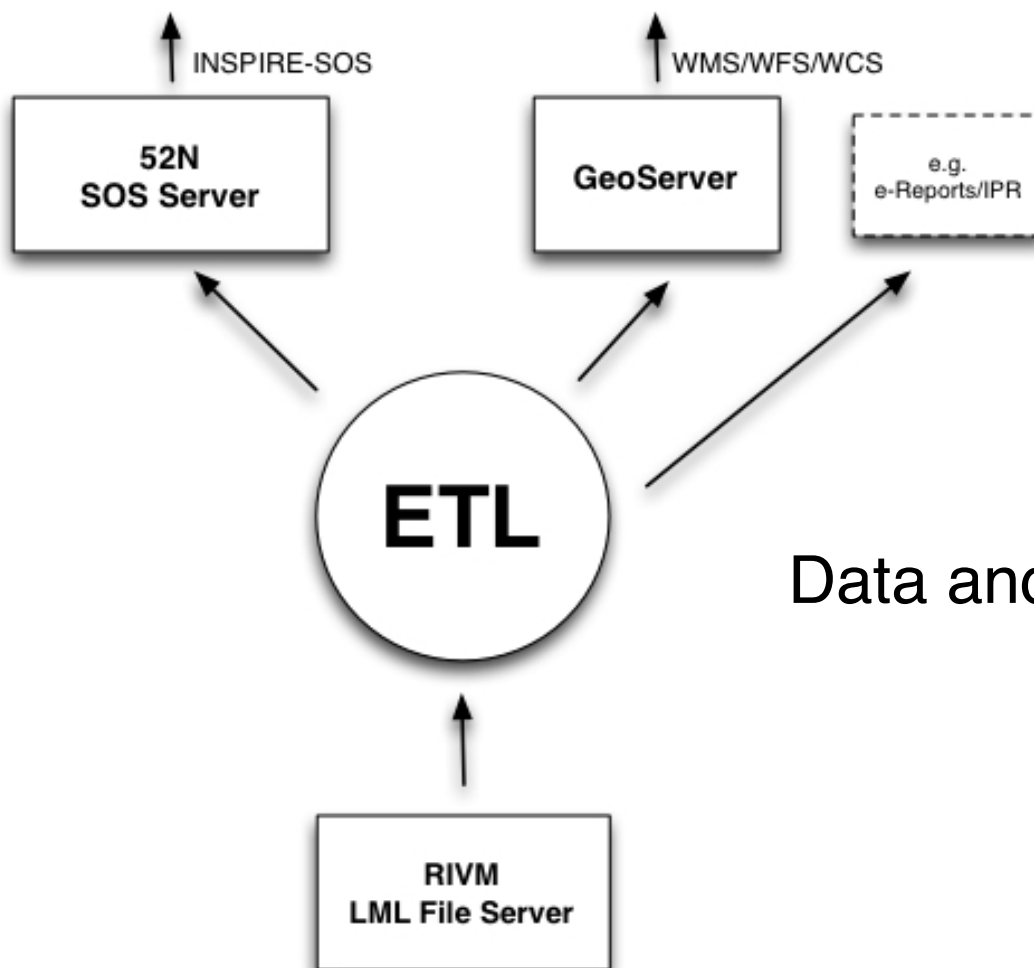
**[www.heron-mc.org](http://www.heron-mc.org)**

**<http://lib.heron-mc.org> - hosted libs (also on CDNJS)**  
**<http://apps.heron-mc.org> - ready apps**

# Geonovum SOS Platform



Clients



Services

Data and Transformations



# Clients - WMS/WFS - HeronViewer

HeronViewer - Viewer for SOSPilot

sensors.geonovum.nl/heronviewer/

SOSPilot HeronViewer - Version 1.0 - Made with Heron

Active Layers: 1: 1536001

Layers:

- Basis Kaarten
  - BRT (PDOK)
  - OpenBasisKaart OSM
  - Luchtfoto (PDOK)
  - TopRaster (Kadaster)
  - Blanco
- RIVM LML
  - AQ Stations (WMS)
  - AQ Stations (Active WFS)
- Carbon monoxide (CO) - WMS
- Ammonia (NH3) - WMS
  - Last Measurements NH3
  - Time Series Measurements NH3
- Nitrogen Oxide (NO) - WMS
- Nitrogen Dioxide (NO2) - WMS
  - Last Measurements NO2
  - Time Series Measurements NO2
- Ozone (O3) - WMS
- Particulate Matter (PM10) - WMS
- Sulfur Dioxide (SO2) - WMS
  - Last Measurements SO2
  - Time Series Measurements SO2
- KNMI - Meteorology
  - KNMI - Rain Radar (Color)
- Kadaster
- PDOK
- RO Online
- Scratch folder

Feature Info

RIVM - Measurements NO2 | RIVM - All Stations

3 Results

Station_id	Municipality	Sample_time	Sample_value	Validated
+ 561	Haarlemmermeer	2014-05-24T08:00:00	24.0	0
+ 564	Haarlemmermeer	2014-05-24T08:00:00	22.0	0

Time Series Slider

Date: 2014-05-24 Time: 08:00:00

Legend

KNMI - Rain Radar (Color)

100.0  
31.6  
10.0  
3.2  
1.0  
0.3  
0.1

kg/m2/h

- RIVM - Measurements SO2
- RIVM - Measurements NO2
- RIVM - Measurements NH3
- RIVM - All Stations
- Active Stations
- Inactive Stations

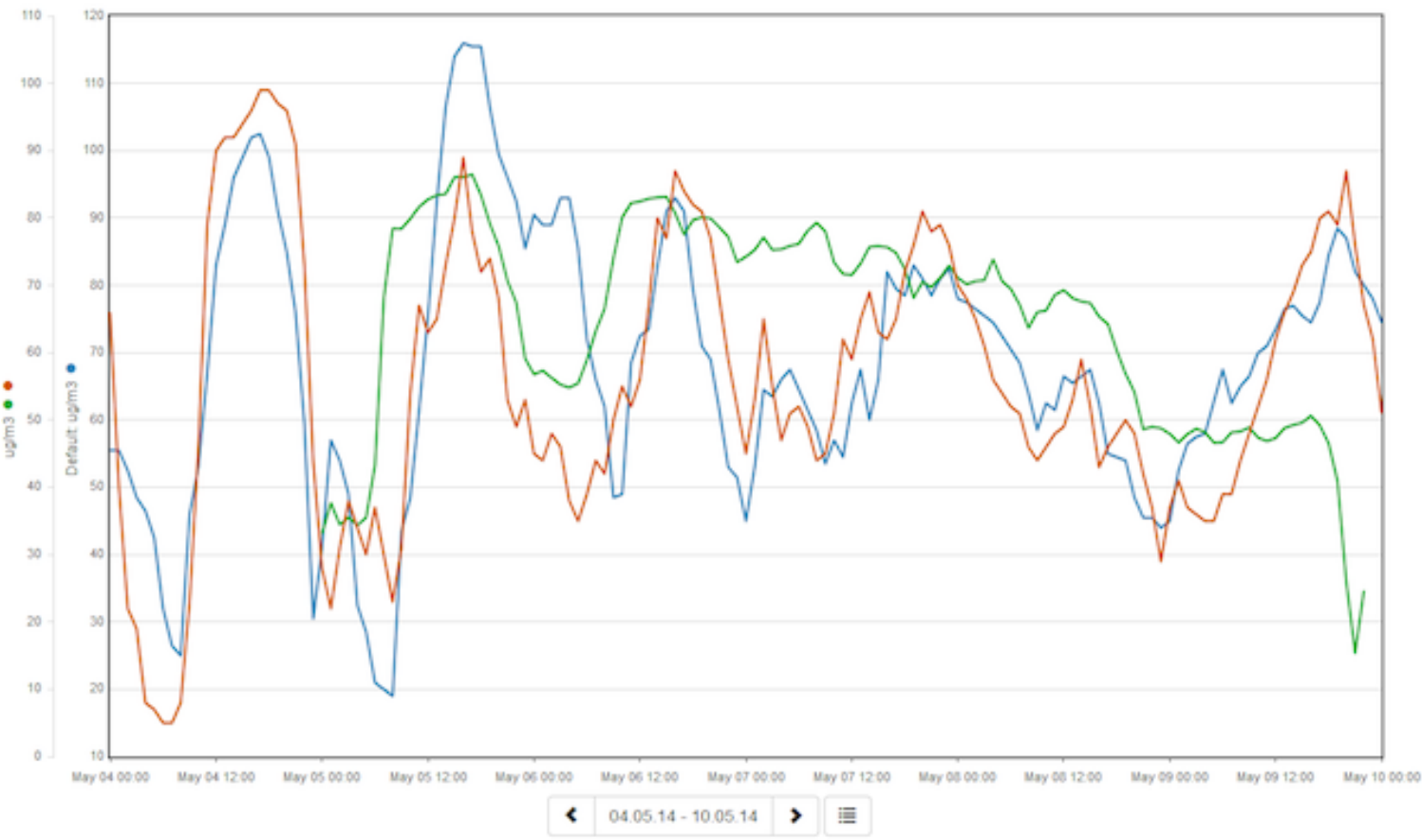
Add Layers (Experimental)

Bookmarks

EPSG:28992 | X: 246176.960 | Y: 564713.920

# Clients - SOS - JSClient - 52N

Diagram



# Heron Workshop

we gebruiken vandaag:

<http://sensors.geonovum.nl/heronviewer>

meer voorbeelden:

<http://heron-mc.org/examples.html>

<http://kadviewer.kademo.nl>

# Heron Workshop

- navigatie: pan, zoom, prev/next
- lagen beheer: lagen aan/uit zetten
- lagen toevoegen 1) uit catalogus 2) zoek in NGR (CSW)
- object informatie via WMS GetFeatureInfo
- ga naar plek op kaart: 1) adreszoeker 2) coördinaten
- WMS-Time: 1) huidige waarden 2) historie met tijdschuif
- spatial queries (WFS), download resultaten
- data laden, e.g. Shapefile (.zip)
- tekenen
- printen