

# Smart Emission

## Deelproject: Infrastructuur & APIs

**Data**

**Standaarden**

**Viewers**

Michel Grothe - Geonovum

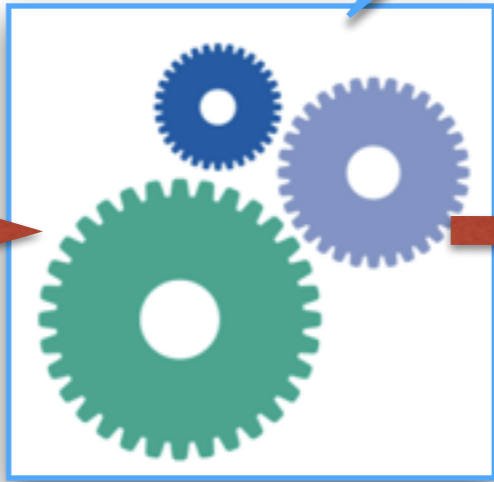
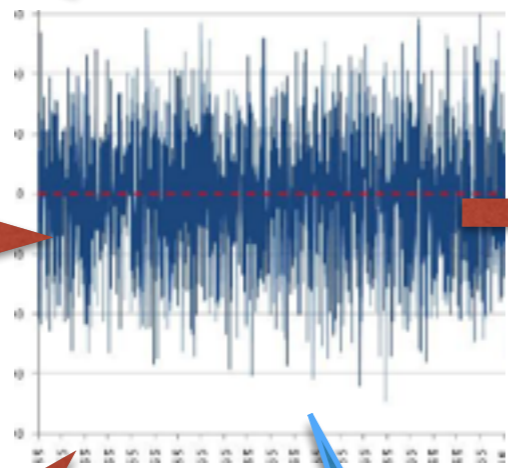
Just van den Broecke - Geonovum

Matthijs Kastelijns - Geonovum/TU Delft



**Data**

# Datastream

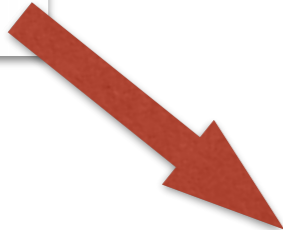


“Raffineren”



Ruwe Data

“Verfijnde”  
Data



**Viewers**



# Whale

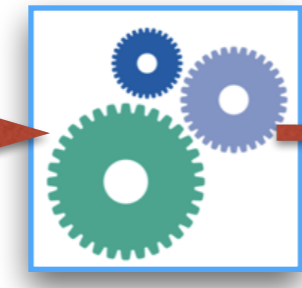
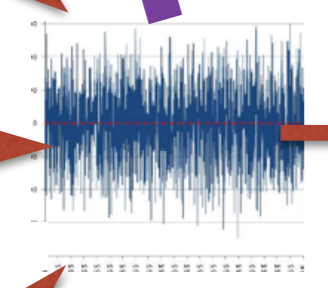
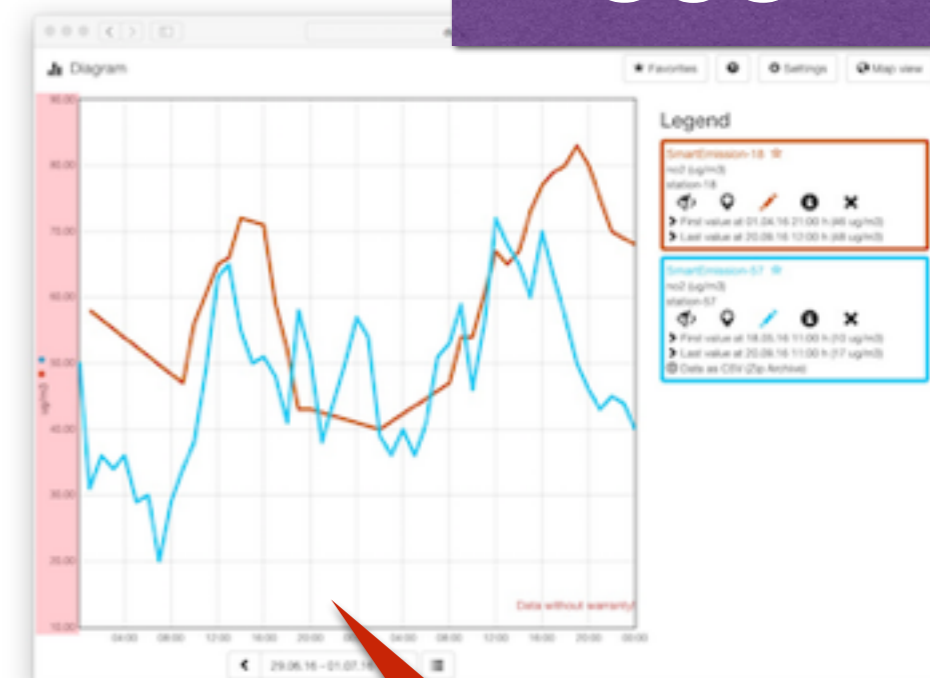
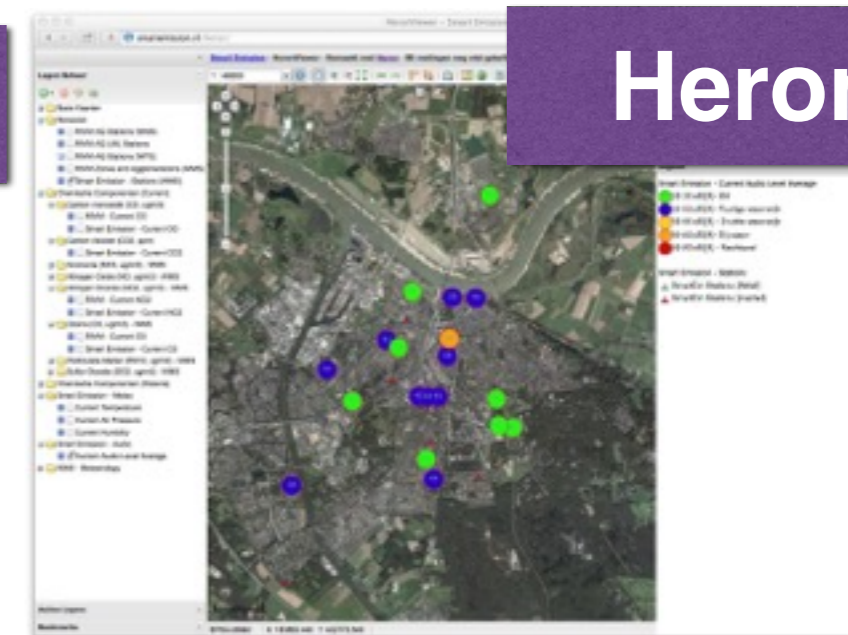
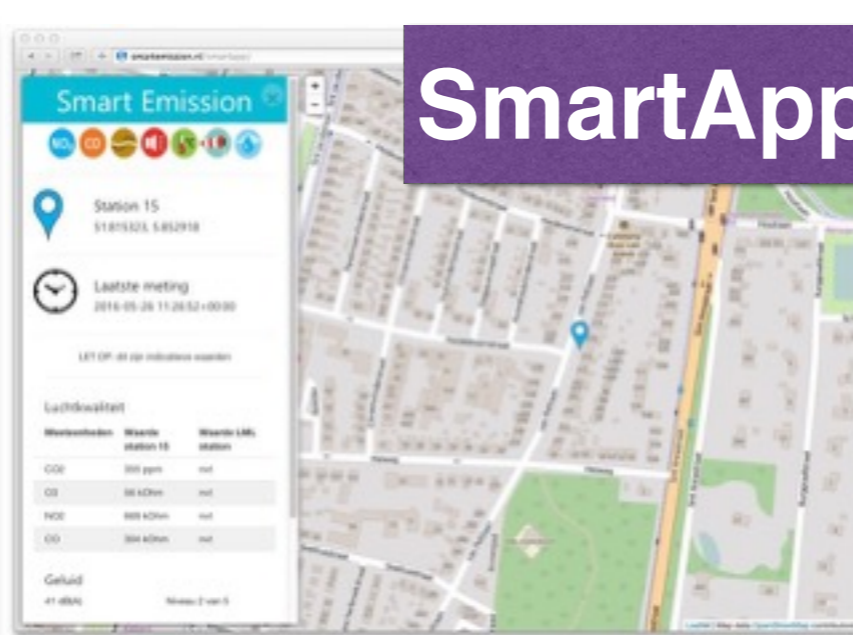
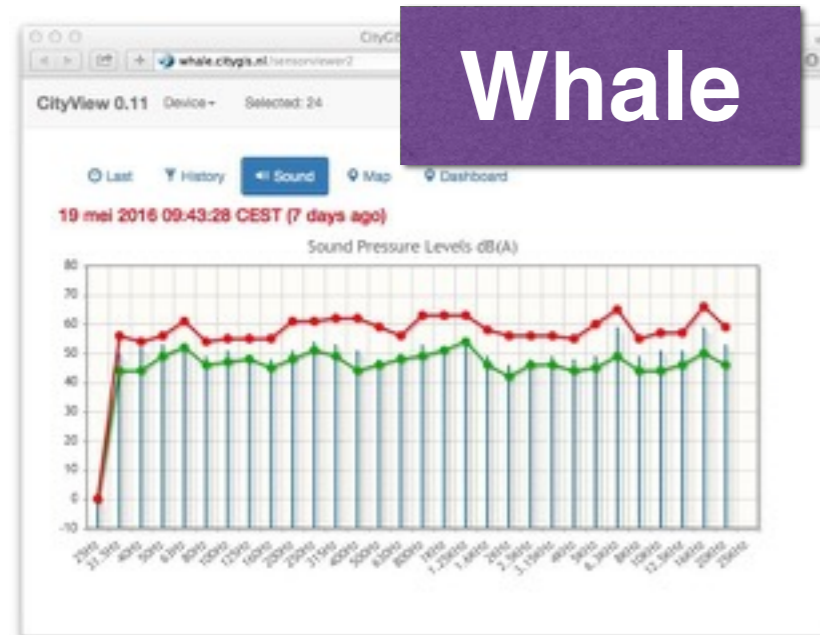
# SmartApp

# Heron

# SOS

# NIEUW

“Verfijnde”  
Data





# Smart Emission



Station 57  
51.830536, 5.851028



Laatste meting  
2016-09-20 13:39:25+02:00

LET OP: dit zijn indicatieve waarden

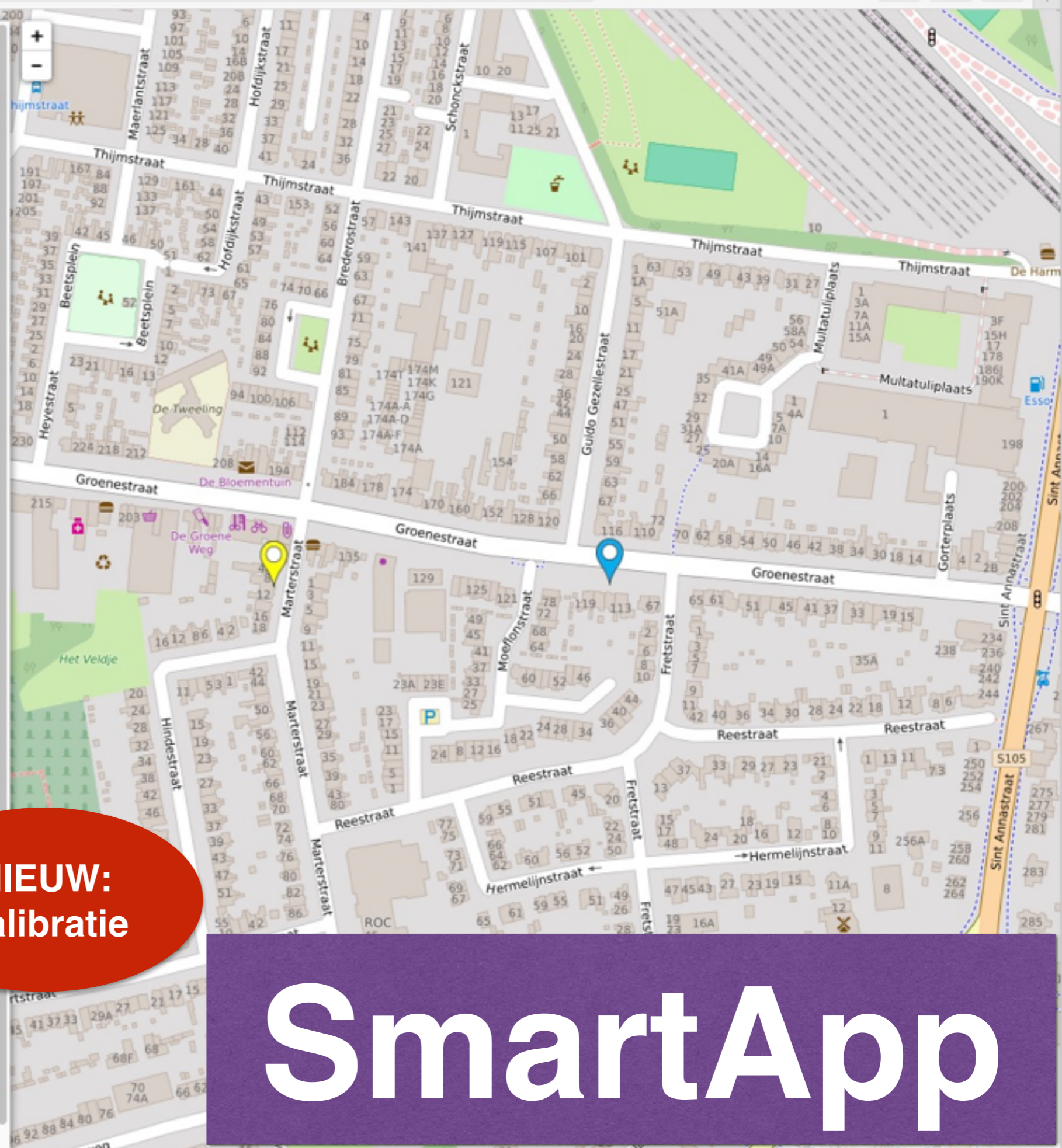
## Luchtkwaliteit

Meeteenheden	Waarde station 57	Waarde LML station
CO	16 ug/m3	nvt
CO2	937 ppm	nvt
CORaw	286 kOhm	nvt
NO2	26 ug/m3	nvt
NO2Raw	812 kOhm	nvt
O3	79 ug/m3	nvt
O3Raw	72 kOhm	nvt

Geluid  
42 dB(A) Niveau 2 van 5

Meteo

Meeteenheden	Waarde station 57
Luchtvochtigheid	43 Procent
Luchtdruk	1016 HectoPascal
Temperatuur	25 Celsius





Lagen Beheer

- Basis Kaarten
- Sensoren
  - RIVM AQ Stations (WMS)
  - RIVM AQ LML Stations
  - RIVM AQ Stations (WFS)
  - RIVM Zones and Agglomerations (WMS)
  - Smart Emission - Stations (WMS)
- Chemische Componenten (Current)
  - Carbon monoxide (CO, ug/m3)
    - RIVM - Current CO
    - Smart Emission - Current CO
  - Carbon dioxide (CO2, ppm)
    - Smart Emission - Current CO2
  - Ammonia (NH3, ug/m3) - WMS
  - Nitrogen Oxide (NO, ug/m3) - WMS
  - Nitrogen Dioxide (NO2, ug/m3) - WMS
    - RIVM - Current NO2
    - Smart Emission - Current NO2
  - Ozone (O3, ug/m3) - WMS
    - RIVM - Current O3
    - Smart Emission - Current O3
  - Particulate Matter (PM10, ug/m3) - WMS
  - Sulfur Dioxide (SO2, ug/m3) - WMS
- Chemische Componenten (Historie)
- Smart Emission - Meteo
  - Current Temperature
  - Current Air Pressure
  - Current Humidity
- Smart Emission - Audio
  - Current Audio Level Average
- KNMI - Meteorology



Slider for Time Series Layers

Date: 2016-05-26 Time: 11:00:00

< [Slider] >

Legend

- Smart Emission - Current Audio Level Average
- 20-35 dB(A)- Stil
  - 35-50 dB(A)- Rustige woonwijk
  - 50-65 dB(A)- Drukke woonwijk
  - 65-80 dB(A)- Bij spoor
  - 80-90 dB(A)- Rockband
- Smart Emission - Stations
- ▲ SmartEm Stations (Aktief)
  - ▲ SmartEm Stations (Inactief)

Active Layers

Bookmarks

# Heron



Lagen Beheer

Zoek adres met PDOK GeoCoder

Slider for Timeseries (History in UTC) Layers

Date: 2016-09-20 Time: 10:00:00

Castellatoren

Castellastra

de Ruyter

# Heron

Zoeken: Download Historie/Tijdreeksen

Station: 57

Component: Stikstofdioxide (NO2 mg/m3)

Start datum: 29 Jun 2016

Eind datum: 01 Jul 2016

Downloaden tijdreeksen (historie)

Kies station nummer, dan component, dan evt tijdspanne.

Klik op "Zoeken" knop. Zoeken kan even duren...geduld...Dan rechtsboven in resultaat tabel

Download en formaat, bijv CSV, kiezen


Zoeken voltooid: 49 Resultaten

Stop Zoeken

&lt; Zoeken


Resultaat &gt;

Tips

Downloaden tijdreeksen (historie): kies verrekijker knop  boven

Legenda

Smart Emission - Stations

 SmartEm Stations (Aktief) SmartEm Stations (Inactief)**NIEUW:  
Downloads**(C) [OpenBasisKaart](#)  
Data [ODbL](#) [OpenStreetMap](#)

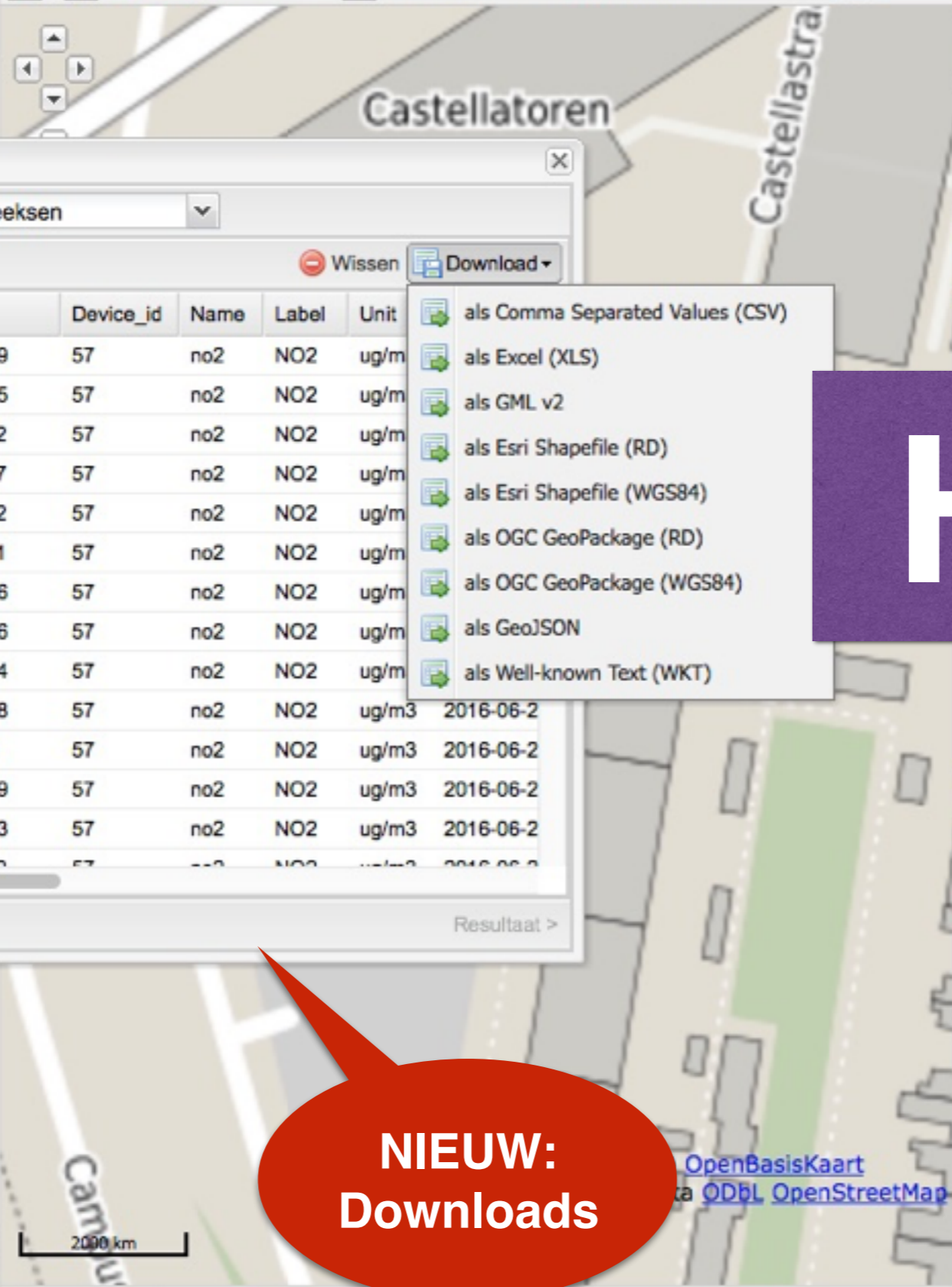
2000 km

EPSG:28992 | X: 187014.671 | Y: 427927.956



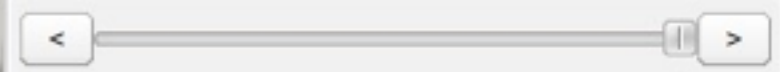
Lagen Beheer

- Basis Kaarten
- Stations
  - RIVM
  - Sm
- Smart Em
- Carbo
  - 
  - 
  - 
  -
- Nitrog
  - 
  -
- Ozon
  - 
  -
- Smart Em
  - No
  - No
- Smart Emission - Meteo
  - Temperature - Current
  - Temperature - History
  - Air Pressure - Current
  - Air Pressure - History
  - Humidity - Current
  - Humidity - History



Slider for Timeseries (History in UTC) Layers

Date: 2016-09-20 Time: 10:00:00



Tips

Downloaden tijdreeksen (historie): kies verrekijker knop bovenaan

Legenda

- Smart Emission - Stations
  - SmartEm Stations (Aktief)
  - SmartEm Stations (Inactief)

Zoeken: Download Historie/Tijdreeksen

49 Resultaten Wissen Download

Gid_r...	Insert_time	Device_id	Name	Label	Unit	
59619	2016-07-27T03:20:10.679	57	no2	NO2	ug/m	
59620	2016-07-27T03:20:10.945	57	no2	NO2	ug/m	
59621	2016-07-27T03:20:11.202	57	no2	NO2	ug/m	
59622	2016-07-27T03:20:11.417	57	no2	NO2	ug/m	
59623	2016-07-27T03:20:11.662	57	no2	NO2	ug/m	
59624	2016-07-27T03:20:11.941	57	no2	NO2	ug/m	
59625	2016-07-27T03:20:12.186	57	no2	NO2	ug/m	
59626	2016-07-27T03:20:12.486	57	no2	NO2	ug/m	
59627	2016-07-27T03:20:12.744	57	no2	NO2	ug/m	
59628	2016-07-27T03:20:13.018	57	no2	NO2	ug/m3	2016-06-2
59629	2016-07-27T03:20:13.25	57	no2	NO2	ug/m3	2016-06-2
59630	2016-07-27T03:20:13.519	57	no2	NO2	ug/m3	2016-06-2
59631	2016-07-27T03:20:13.823	57	no2	NO2	ug/m3	2016-06-2
59632	2016-07-27T03:20:14.112	57	no2	NO2	ug/m3	2016-06-2

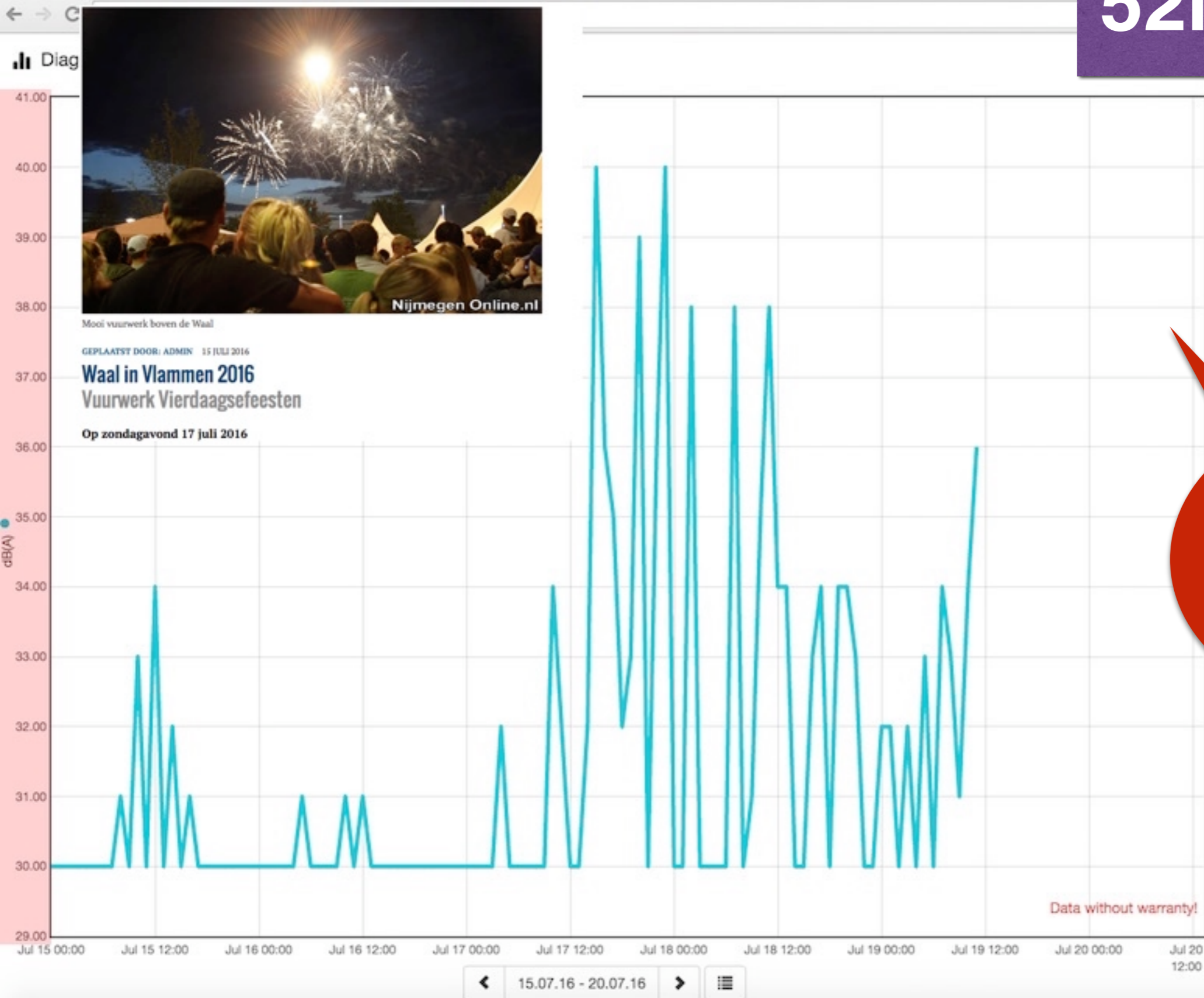
< Zoeken Resultaat >

- als Comma Separated Values (CSV)
- als Excel (XLS)
- als GML v2
- als Esri Shapefile (RD)
- als Esri Shapefile (WGS84)
- als OGC GeoPackage (RD)
- als OGC GeoPackage (WGS84)
- als GeoJSON
- als Well-known Text (WKT)

# Heron

**NIEUW:  
Downloads**

# 52N SOS

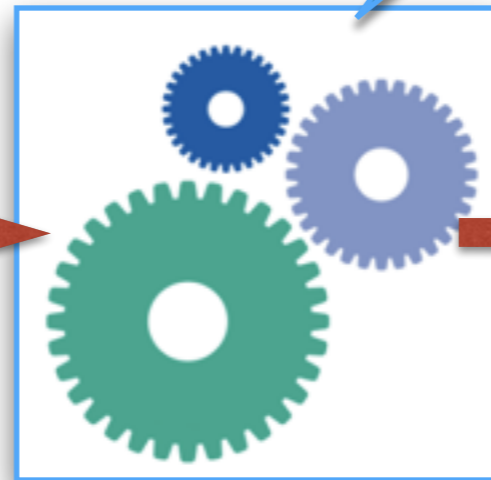
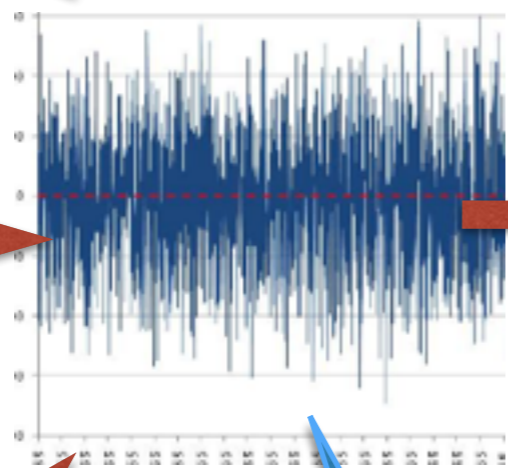


<http://data.smartemission.nl/sos52n/static/client/jsClient/index.html>



# Standdaarden

# Datastream



“Raffineren”

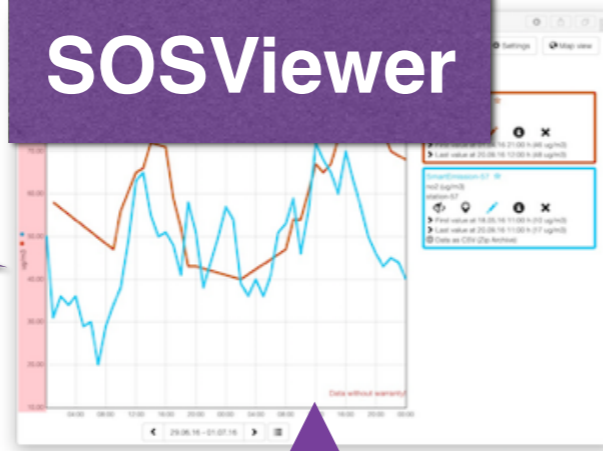
Ruwe Data

“Verfijnde”  
Data



Viewers

SOSViewer



Heron



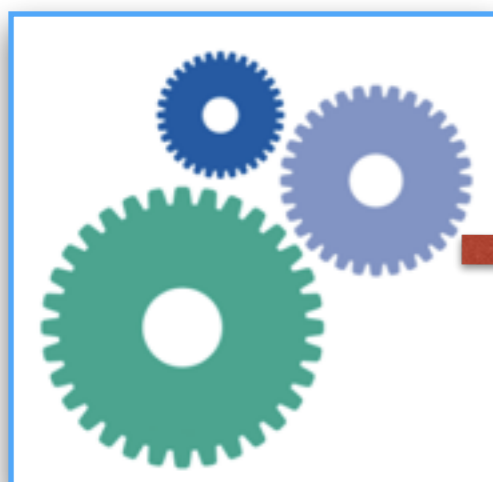
Standaarden  
"APIs"

SOS

WMS

WFS

STA



"Verfijnde"  
Data



**STATUS**



# Highlights

20 jun -20 sept 2016

## Data

- Validatie
- Historie
- Calibratie
- Aggregatie

**Fiware: on-hold**

## Standaarden

- SOS (ready)
- WFS (tbv download)
- WMS-Time (tbv timeslider)
- SensorThings (started)

## Viewers

- SmartApp: gecalibreerde waarden
- Heron: Timeslider, Download
- SOS Viewer (nieuw)

# Wensen & Uitbreidingen

+Input van deze evaluatie dag!

**Data**

- Calibratie (verfijn)
- Geluid (nwe indicatoren)

**Fiware: ?**

**Standaarden**

- SensorThings (finalize)

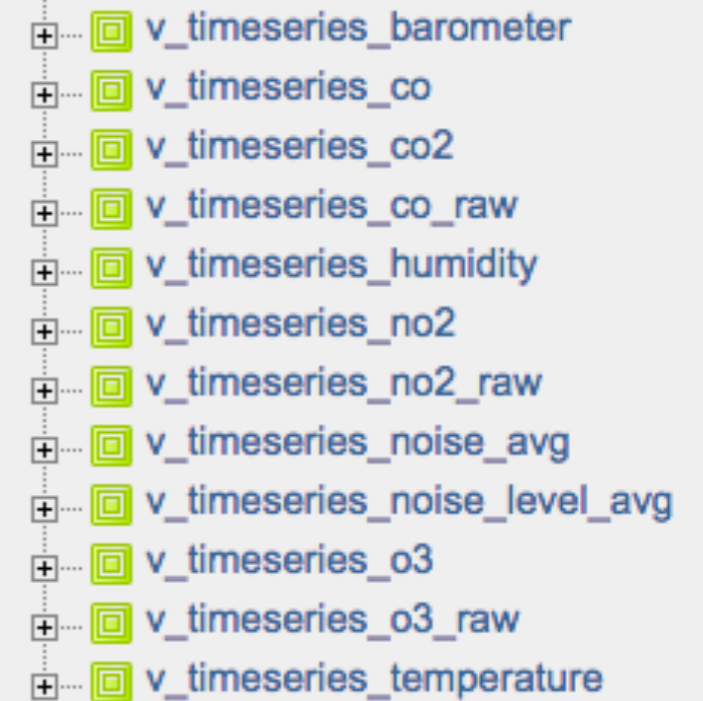
**Viewers**

- SmartApp: ?
- Heron: ?
- SOS Viewer (bugfixes)



# Data

## Statistieken op 20 sept 2016



<input type="checkbox"/>	v_timeseries_barometer
<input type="checkbox"/>	v_timeseries_co
<input type="checkbox"/>	v_timeseries_co2
<input type="checkbox"/>	v_timeseries_co_raw
<input type="checkbox"/>	v_timeseries_humidity
<input type="checkbox"/>	v_timeseries_no2
<input type="checkbox"/>	v_timeseries_no2_raw
<input type="checkbox"/>	v_timeseries_noise_avg
<input type="checkbox"/>	v_timeseries_noise_level_avg
<input type="checkbox"/>	v_timeseries_o3
<input type="checkbox"/>	v_timeseries_o3_raw
<input type="checkbox"/>	v_timeseries_temperature

- **Historie: start 25 april 2016**
- **Stations: 46, actief (laatste 2 uur) 33**
- **Indicatoren: 12 (meteo 3, geluid 2, gas 7)**
- **Metingen (ruw):**
  - 10GB JSON “harvested” (whale API)**
  - plm 10 miljoen metingen**
  - plm 70 indicatoren (sensors)**
  - plm 200 per station/per uur**
  - ~ 8000 metingen per/uur**
  - ~ 20000 metingen per dag**
  - database opslag plm 15GB, plm 5GB p/maand**
- **Metingen (geaggregeerd uurbasis)**
  - totaal 888636**
  - database opslag 150MB plm 15MB p/maand**

**Dank!**