



A large teal arrow points from left to right, positioned above two overlapping light blue circles. To the left of the circles, there are abstract light blue wavy lines forming a triangular shape.

Publication de données sols via SensorThings API Retour d'expérience

Webinaire SIST (29/09/2022)
C. Lattelais, R. Yahiaoui, C. Le Bas, A. Schellenberger

> Contexte

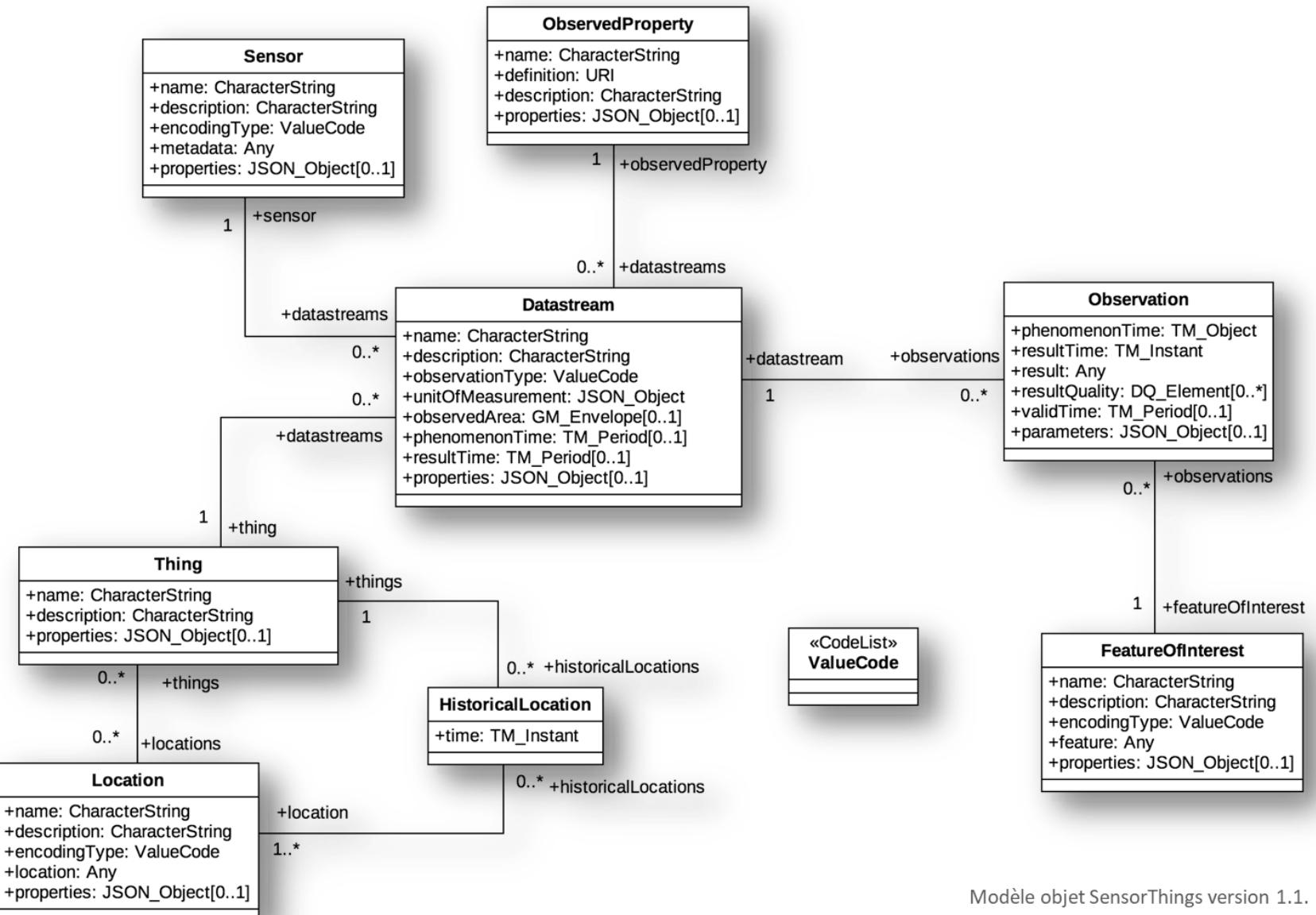
- Cadre réglementaire:

- Directive Inspire / Code de l'environnement :
définit le cadre d'accès et de diffusion des informations et des données géographiques publiques sur l'environnement
- Loi sur la République Numérique :
diffusion numérique des données publiques, y compris les données de la recherche → **Open data**
- Loi Informatique et libertés / RGPD (Règlement Général sur la Protection des Données personnelles) :
définit l'accès et la diffusion des données personnelles
- Code de la propriété intellectuelle :
définit le droit des auteurs et des producteurs de bases de données

- DSTA dans différents projets à INRAE:

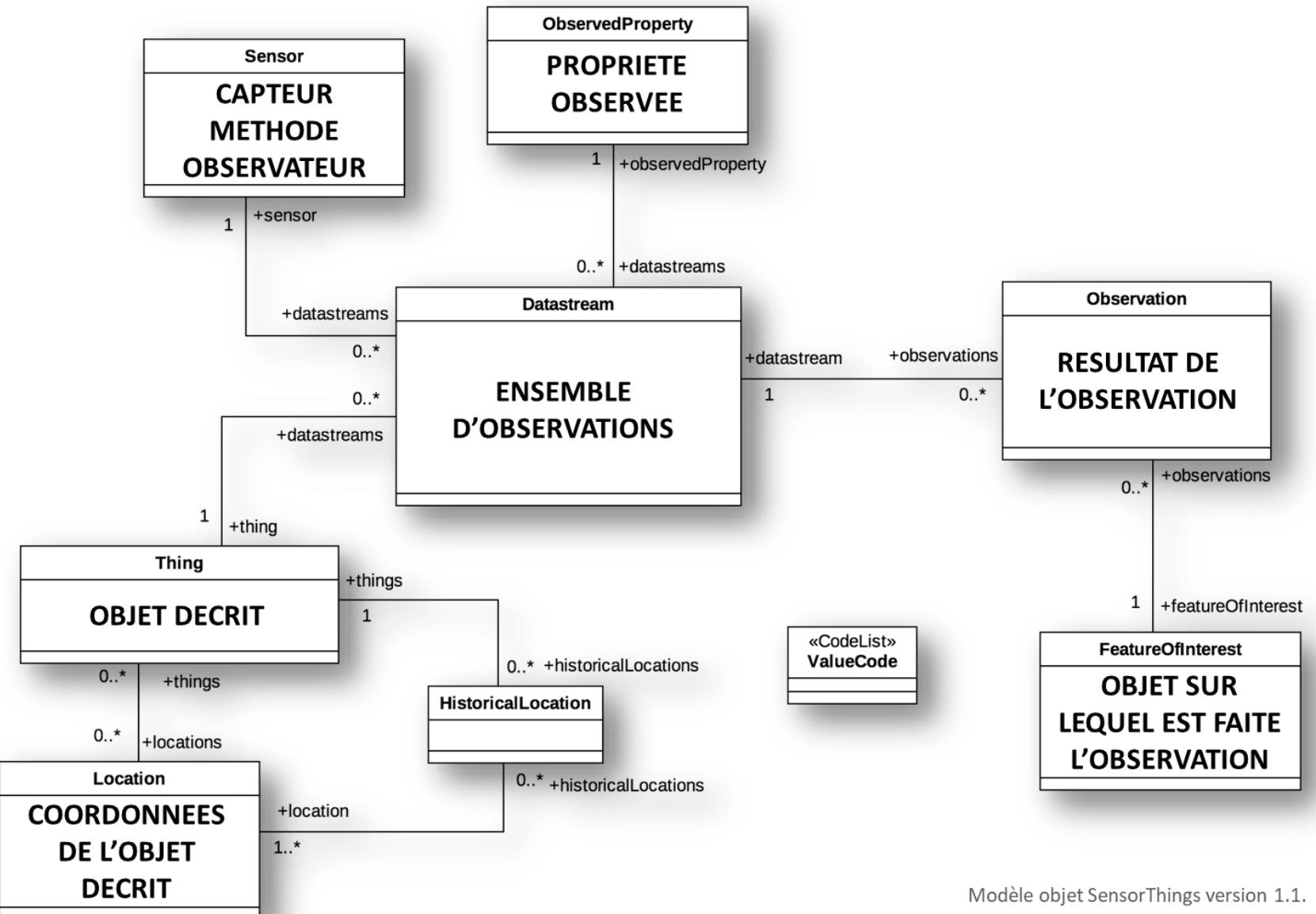
- FGU/SUPRA (ADEME, coord. BRGM)
- Data4C+ (ANR, coord. CIRAD)
- EJP Soil (Commission européenne, coord. INRAE)

Objets métier <-> STA : Mapping



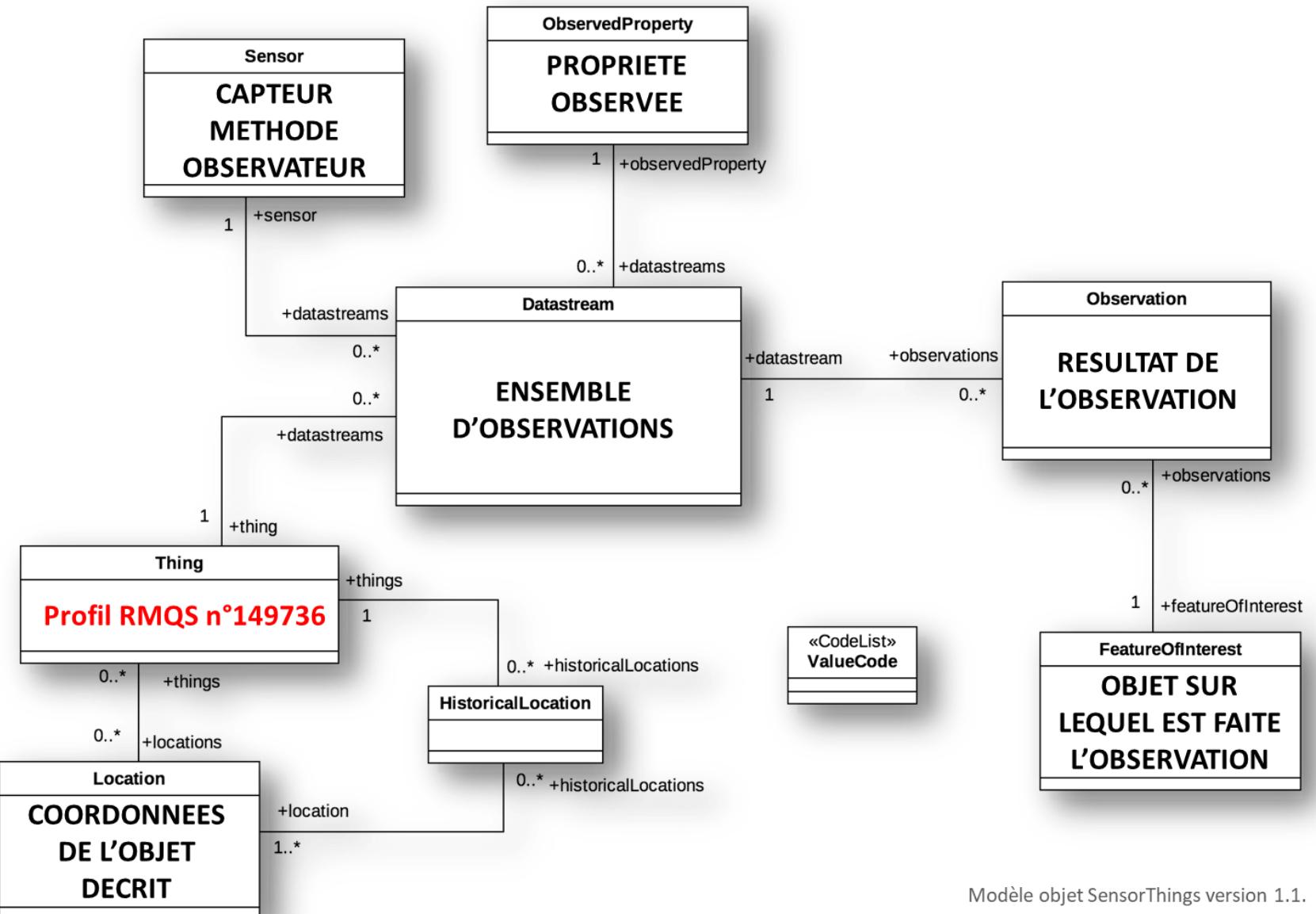
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



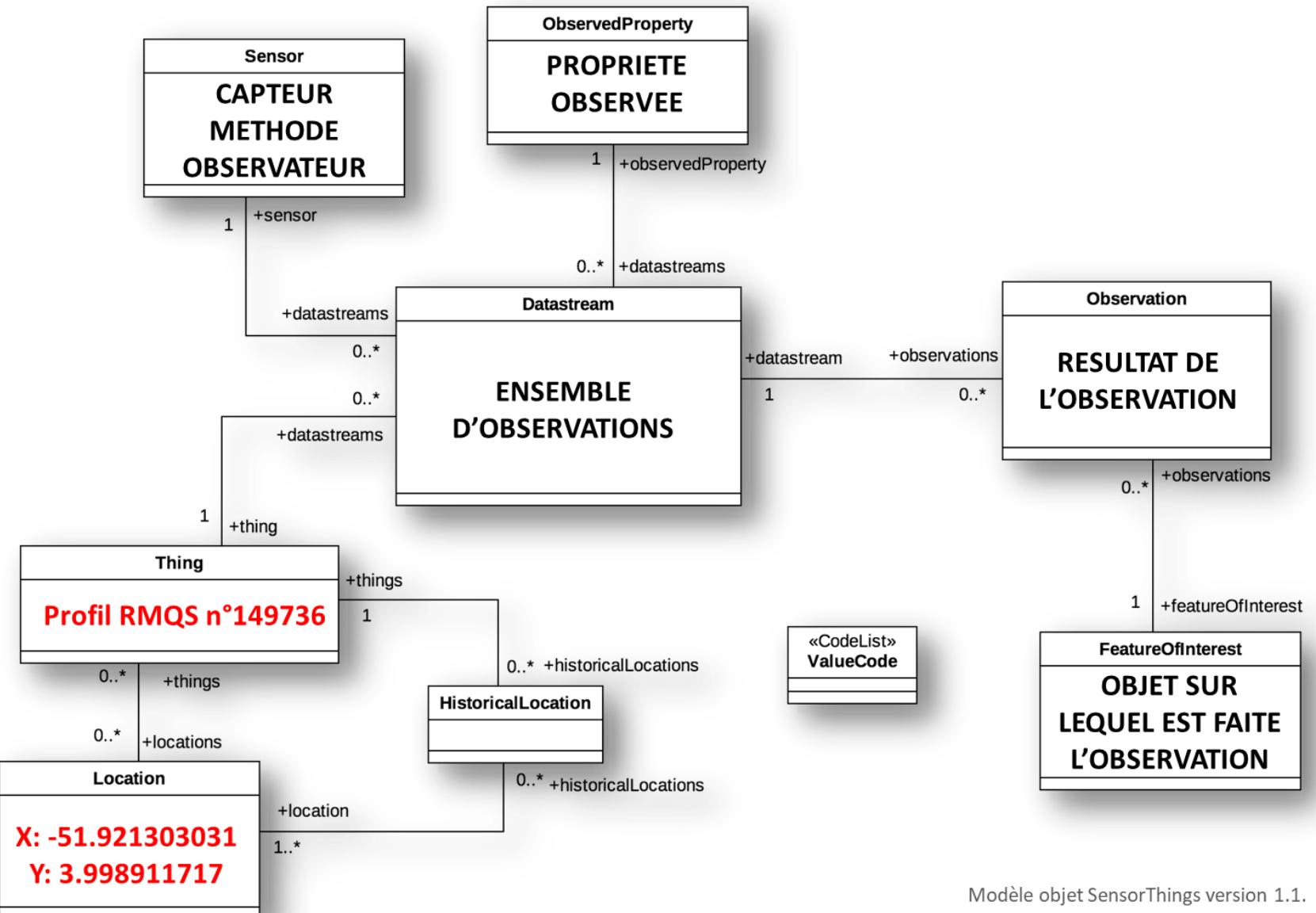
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



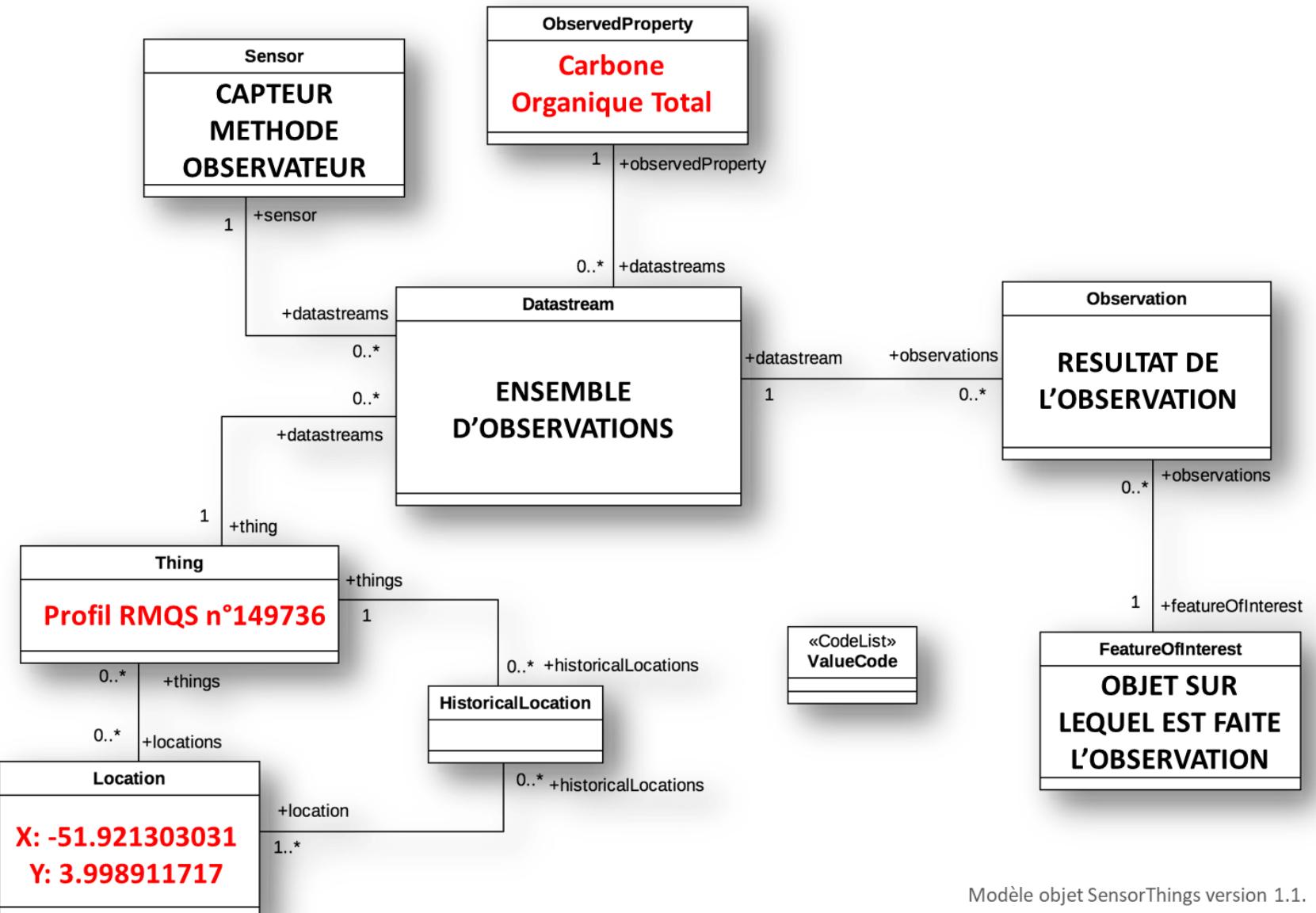
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



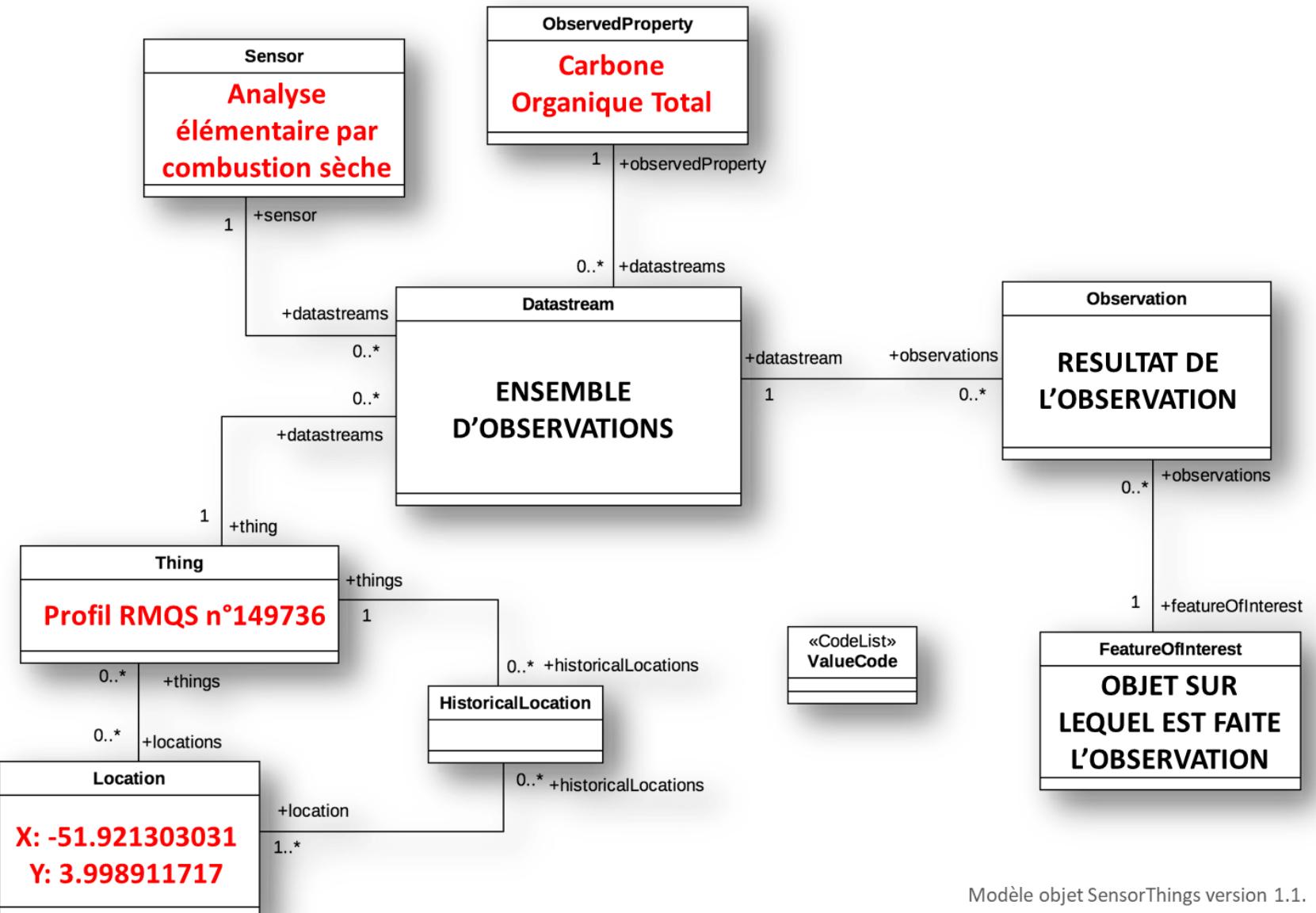
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



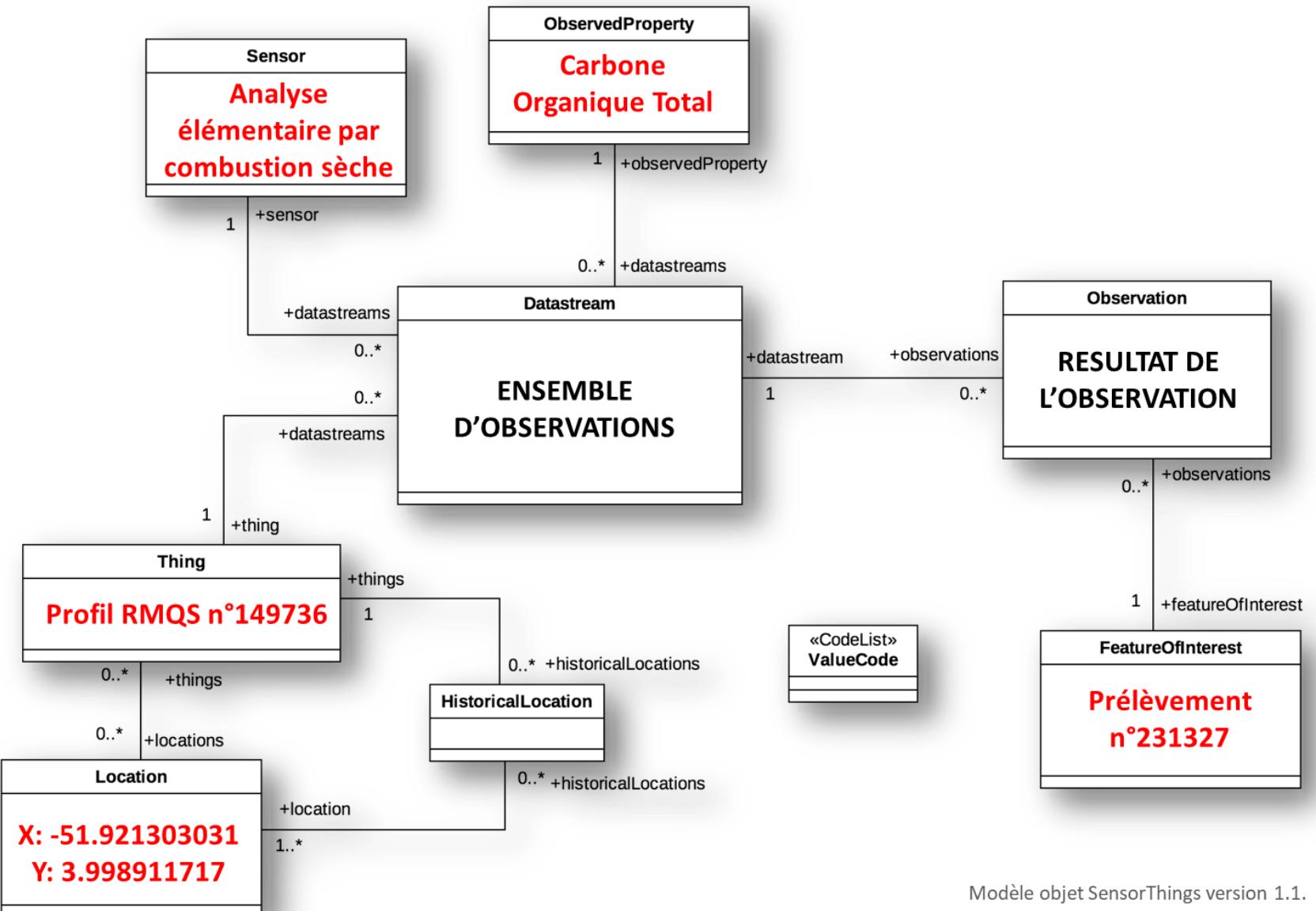
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



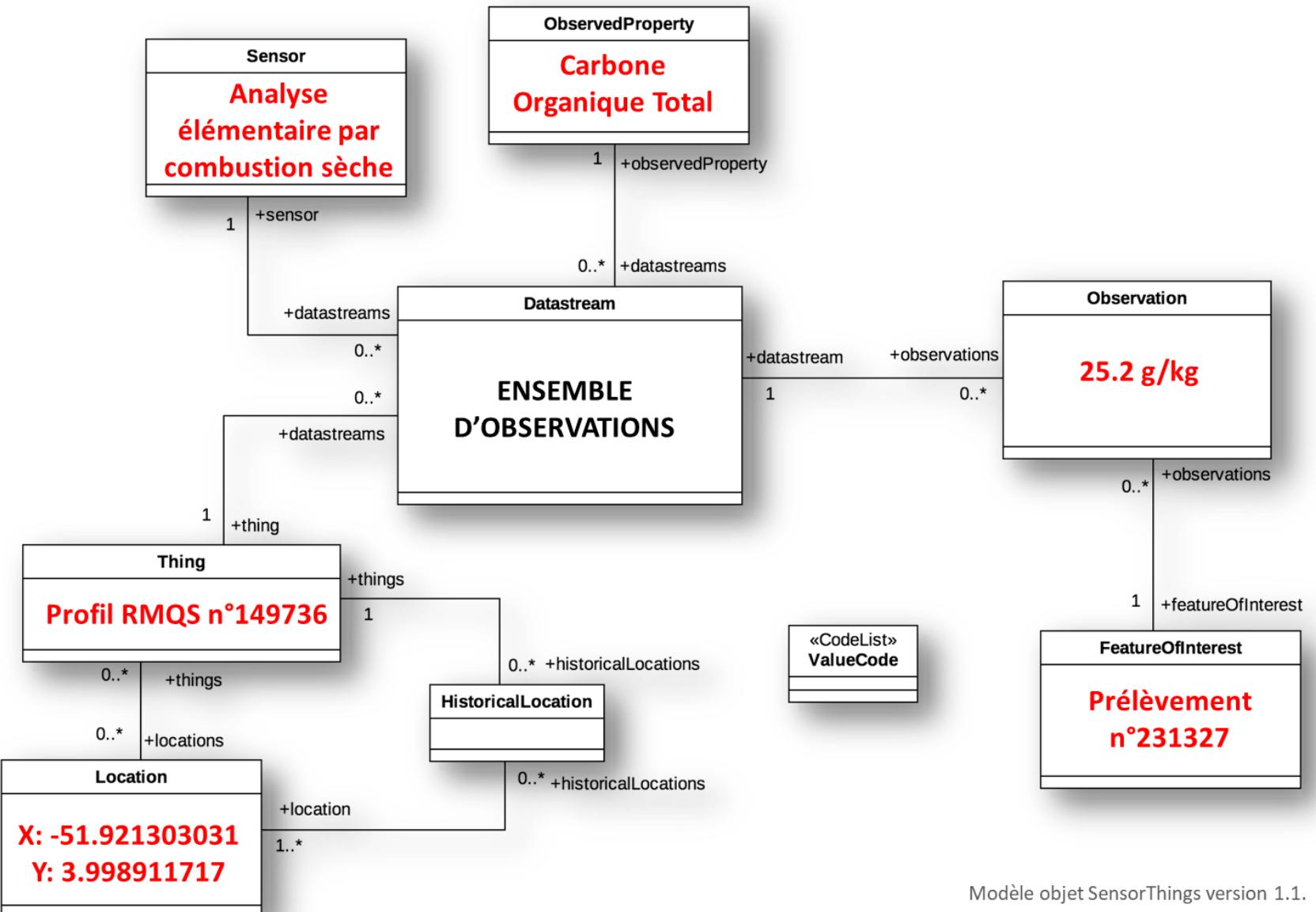
Modèle objet SensorThings version 1.1.

Objets métier <-> STA : Mapping



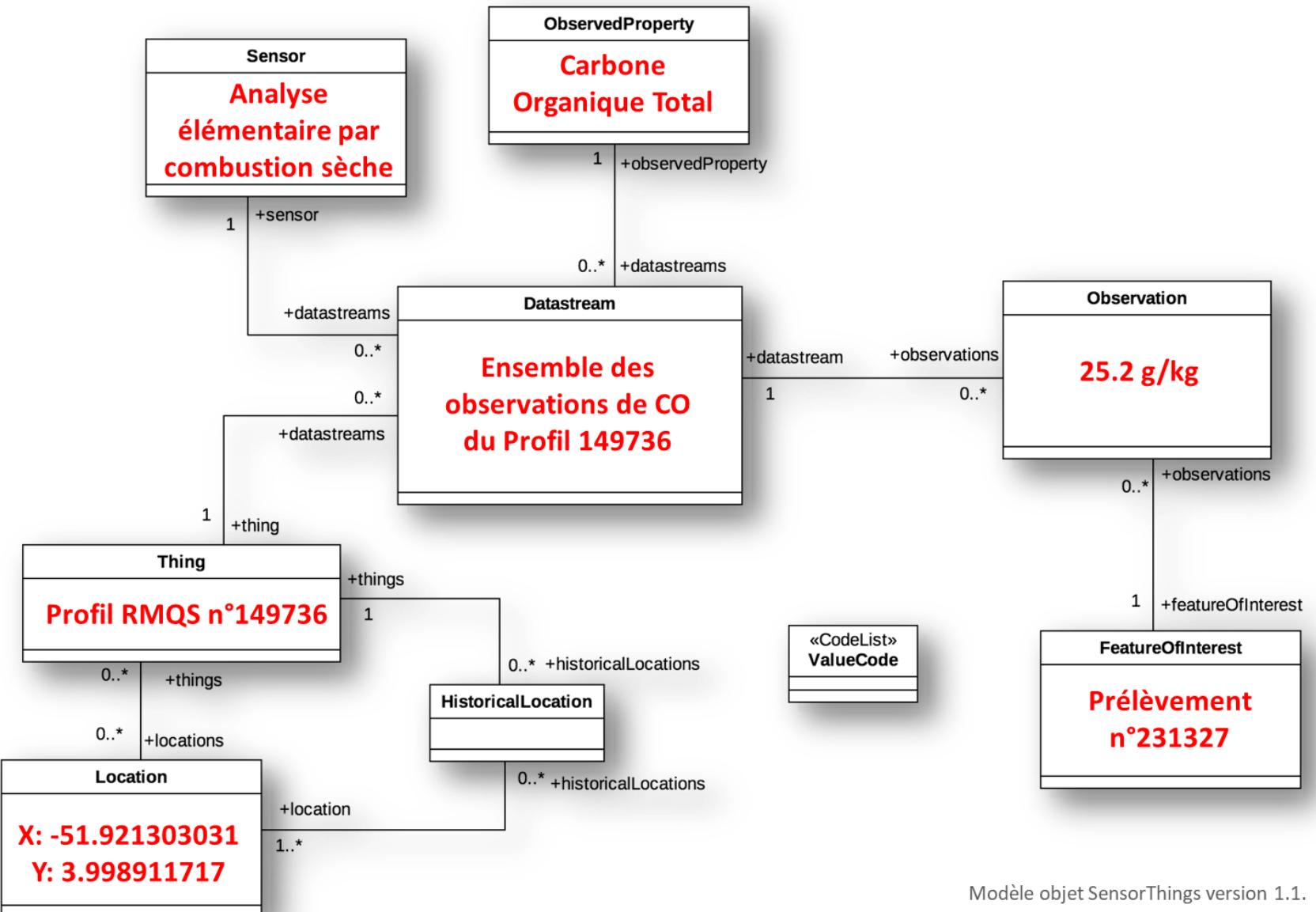
Modèle objet SensorThings version 1.1.

> Objets métier <-> STA : Mapping



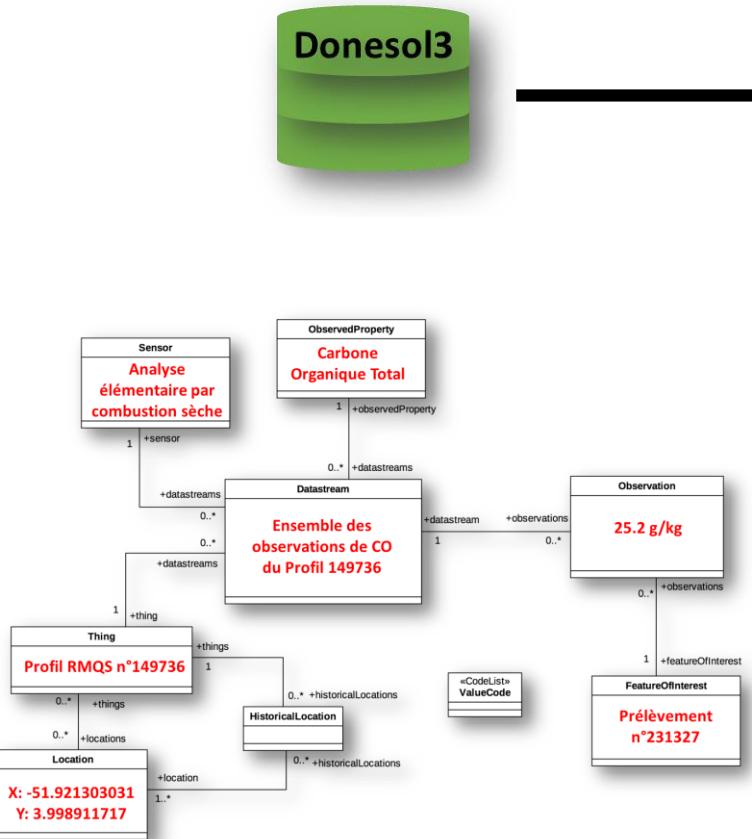
Modèle objet SensorThings version 1.1.

> Objets métier <-> STA : Mapping

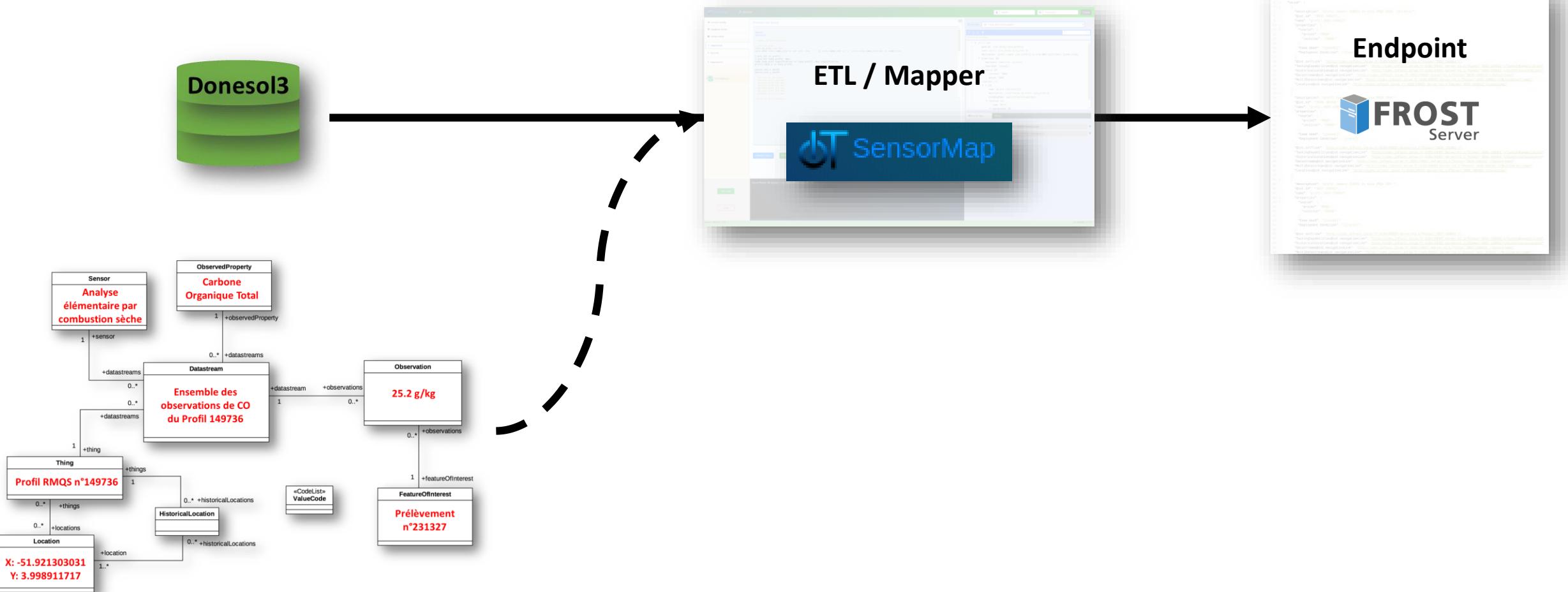


Modèle objet SensorThings version 1.1.

➤ Alimentation du serveur en données



➤ Alimentation du serveur en données



➤ Alimentation du serveur en données : SensorMap

The screenshot displays the SensorMap application interface, divided into two main sections: 'Server's Config' on the left and 'Sensor-Templates' on the right.

Server's Config:

- SensorMap:** Configuration for SensorMap API endpoint: `https://147.100.179.38:8585/rest/resources`. Buttons: `Apply`, `Restore Default`.
- SensorThings:** Configuration for SensorThings API endpoint: `http://147.100.179.38:8181/FROST-Server/v1.1/`. Buttons: `Apply`, `Restore Default`.
- SensorBoard:** Configuration for SensorBoard API endpoint: `http://147.100.179.38:8282`. Buttons: `Apply`, `Restore Default`.

Sensor-Templates:

- Sensor Type:** `Sensor_Type`.
- SensorMap:** Configuration for SensorMap API endpoint: `https://147.100.179.38:8585/rest/resources`.
- SensorThings:** Configuration for SensorThings API endpoint: `http://147.100.179.38:8181/FROST-Server/v1.1/`.

Bottom Navigation and Logs:

- Sync TimeStamp** button.
- Navigation icons: DataBase Config, Sensor-Sheet, Mapping DB, Zip Push, Mapping CSV.
- Logs...** section with `Get Logs` and `Clear` buttons.
- INRAe / Infosol (2021) footer.
- SensorMap V-2.0 footer.

➤ Alimentation du serveur en données : SensorMap

The screenshot shows the SensorMap application interface. On the left, a sidebar menu includes "Server's Config", "DataBase Config" (selected), "Sensor-Sheet", "Mapping DB", "Zip Push", "Mapping CSV", and "SensorBoard". The main area is titled "DataBase Config" and contains fields for "Db_Host" (5432), "Db_Name", "Db_Schema", "Db_User", and "Db_Password". A "Logs..." panel at the bottom has "Get Logs" and "Clear" buttons. On the right, a "Selection" panel shows "Sensor-Templates" with a dropdown menu. Below it, a "Sensor Type" section lists "SensorMap" (https://147.100.179.38:8585/rest/resources) and "SensorThings" (http://147.100.179.38:8181/FROST-Server/v1.1/). The bottom status bar indicates "Inrae / Infosol (2021)" and "SensorMap V-2.0".

Alimentation du serveur en données : SensorMap

The screenshot shows the SensorMap application interface. On the left, a sidebar lists various configuration tabs: Server's Config, DataBase Config, Sensor-Sheet, Mapping DB (which is selected), Zip Push, Mapping CSV, and SensorBoard. The main area contains a "Process Sql Query" editor with the following SQL code:

```
select
distinct
--inter.id_intervention,
--site.no_dep,
site.id_site::varchar,
case when site.comm_site is not null then '(' || site.comm_site || ')' else site.comm_site end as comm_site,
l_pro_int.id_profil,
l_pro_int.type_profil_rmq,
code_type_profil.signification as type_profil_rmq_signification,
profil.date_p as date_profil,
guyane_poi.x_wgs84,
guyane_poi.y_wgs84--,
--horizon.no_horizon,
--horizon.prof_sup_moy,
--horizon.prof_sup_min,
--horizon.prof_sup_max,
--horizon.prof_inf_moy,
--horizon.prof_inf_min,
--horizon.prof_inf_max,
--prel.id_prelevement,
--prel.no_envelopement
```

Below the editor are buttons for "Columns Name", "Push To S-Things", "Db Config", "Sensor-Sheet", and "S-Sheet". A status message at the bottom left says "SensorBoard Url Applied (http://coby.infosol.inrae.fr:8282)".

The right side of the interface displays a "Selection" panel titled "10- Thing with new Location". It shows a hierarchical tree structure of objects, properties, and locations, with some fields highlighted in green. At the bottom, there are sections for "Sensor Type" and "Things", each listing a "SensorMap" entry with its URL.

Alimentation du serveur en données : SensorMap

SensorMap Sheets

admin Password Check

Mapping CSV

Upload Csv File :

Choisir un fichier Aucun fichier choisi

Csv Separator ;

Override Properties

SensorThings

Columns Name Push To S-Things Server's Config

SensorBoard Url Applied (http://coby.infosol.inrae.fr:8282)

Get Logs Clear

Inrae / Infosol (2022)

Selection 10- Thing with new Location

Selectionner un noeud...

object {5}

- @iot.id : {{id_site}}-{{id_profil}}
- name : profil {{id_site}}-{{id_profil}}
- description : profil numero {{id_profil}} du site RMQS {{id_site}} {{comm_site}}

properties {3}

- Deployment Condition : {{cond}}
- Case Used : {{used}}
- source {2}
- institut : INRAE
- projet : RMQS

Locations [1]

- 0 {4}
- name : profil {{id_profil}}
- description : localisation du profil {{id_profil}}
- encodingType : application/vnd.geo+json
- location {2}
- type : Point
- coordinates [2]

Sensor Type Things

SensorMap https://147.100.164.7:8585/rest/resources

SensorThings http://147.100.164.7:8181/FROST-Server/v1.1/

SensorMap V-2.0

➤ Alimentation du serveur en données : SensorMap

The screenshot shows the SensorMap web application interface. On the left, a sidebar menu includes 'Server's Config', 'DataBase Config', 'Sensor-Sheet' (which is selected), 'Mapping DB', 'Zip Push', 'Mapping CSV', and 'SensorBoard'. The main content area is titled 'Sensor-Sheet (Import / Download)' and contains sections for 'Import Sensor-Sheet:' and 'Download current Sensor-Sheet:'. Under 'Import Sensor-Sheet:', there is a red-bordered input field labeled 'Choisir un fichier' with the placeholder 'Aucun fichier choisi'. Under 'Download current Sensor-Sheet:', there is a blue button labeled 'Download Sensor-Sheet'. A 'Logs...' panel at the bottom left contains 'Get Logs' and 'Clear' buttons. On the right, a large panel titled 'Template Model' shows a tree view under 'Selection' with 'Sensor-Templates ~' expanded, and a list of resources: 'Sensor Type' (Sensor_Type), 'SensorMap' (https://147.100.179.38:8585/rest/resources), and 'SensorThings' (http://147.100.179.38:8181/FROST-Server/v1.1/). The bottom status bar indicates 'Inrae / Infosol (2021)' on the left and 'SensorMap V-2.0' on the right.

➤ Alimentation du serveur en données : SensorMap

The screenshot shows the SensorMap web application interface. On the left, a sidebar menu includes 'Server's Config', 'DataBase Config', 'Sensor-Sheet' (which is selected), 'Mapping DB', 'Zip Push', 'Mapping CSV', and 'SensorBoard'. The main content area is titled 'Sensor-Sheet (Import / Download)' and contains sections for 'Import Sensor-Sheet:' (with a red-bordered 'Choisir un fichier' button) and 'Download current Sensor-Sheet:' (with a 'Download Sensor-Sheet' button). A 'Logs...' panel at the bottom left has 'Get Logs' and 'Clear' buttons. On the right, a sidebar titled 'Template Model' shows a tree view under 'Selection' with 'Sensor-Templates ~' expanded. Below it, a 'Mapping DB' section lists 'Sensor Type' and 'SensorMap' with URL 'https://147.100.179.38:8585/rest/resources'. The footer indicates 'Inrae / Infosol (2021)' and 'SensorMap V-2.0'.

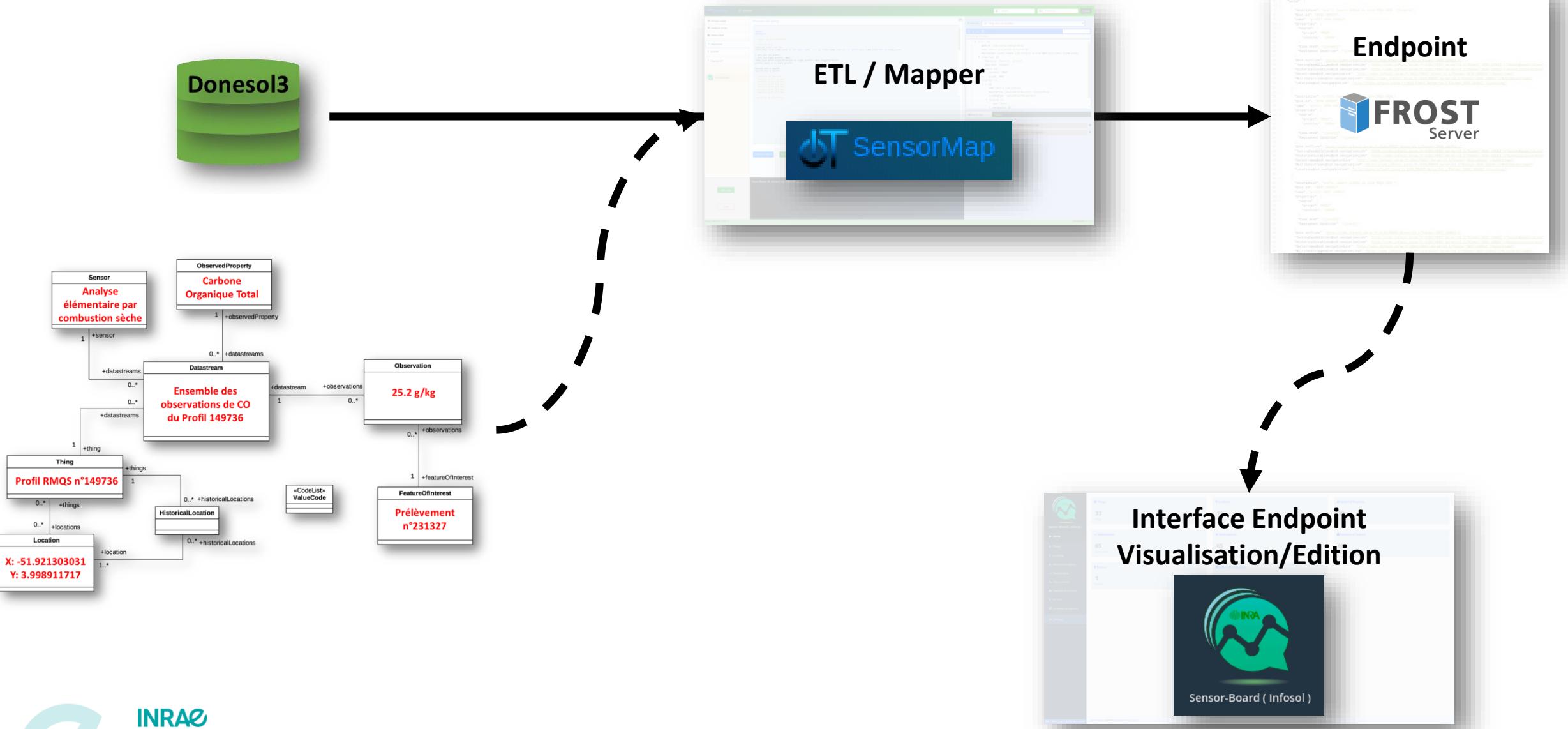
➤ Alimentation du serveur en données : SensorMap

The screenshot shows the SensorMap application interface. On the left, a sidebar lists various configuration sections: Server's Config, DataBase Config, Sensor-Sheet, Mapping DB (selected), Zip Push (selected), Mapping CSV, and SensorBoard. The main area is titled "Zip Push" and contains fields for "Upload Zipped Sensor-Sheets:" (with a "Choisir un fichier" button pointing to "STA_templates.zip"), "Db_Password" (highlighted with a red border), and "Override Sensor-Sheets Properties" (with "Db_User" and "SensorThings" dropdowns). A "Process" button is at the bottom. Below the main area, a message says "SensorBoard Url Applied (http://coby.infosol.inrae.fr:8282)". At the bottom, there are "Get Logs" and "Clear" buttons, and a footer bar with "Inrae / Infosol (2022)" and "SensorMap V-2.0". On the right, a large panel titled "Selection" shows a JSON structure for a "Thing with new Location":

```
object {5}
  @iot.id : {{id_site}}-{{id_profil}}
  name : profil {{id_site}}-{{id_profil}}
  description : profil numero {{id_profil}} du site RMQS
    {{id_site}} {{comm_site}}
  properties {3}
    Deployment Condition : {{cond}}
    Case Used : {{used}}
    source {2}
      institut : INRAE
      projet : RMQS
  Locations [1]
    0 {4}
      name : profil {{id_profil}}
      description : localisation du profil {{id_profil}}
      encodingType : application/vnd.geo+json
      location {2}
        type : Point
        coordinates [2]
```

Below this, a "Sensor Type" section shows "Things" selected, with two entries: "SensorMap" (URL: https://147.100.164.7:8585/rest/resources) and "SensorThings" (URL: http://147.100.164.7:8181/FROST-Server/v1.1/).

> Frontend



INRAe

Publication de données sols via SensorThings API

29/09/2022 – Webinaire SIST - C. Lattelais, R. Yahiaoui, C. Le Bas, A. Schellenberger

Frontend : SensorBoard

Pour compléter l'ETL, un service web a été développé: SensorBoard

- Basé sur l'interface open-source
Gost Dashboard-V2
- Visualisation des données sous forme de tables

➤ Plus lisible que du JSON

```
1 // 20210219100346
2 // http://147.100.164.7:8181/FROST-Server/
3
4 {
5   "value": [
6     {
7       "name": "Datastreams",
8       "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Datastreams"
9     },
10    {
11      "name": "MultiDatastreams",
12      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/MultiDatastreams"
13    },
14    {
15      "name": "FeaturesOfInterest",
16      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/FeaturesOfInterest"
17    },
18    {
19      "name": "HistoricalLocations",
20      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/HistoricalLocations"
21    },
22    {
23      "name": "Locations",
24      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Locations"
25    },
26    {
27      "name": "Observations",
28      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Observations"
29    },
30    {
31      "name": "ObservedProperties",
32      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/ObservedProperties"
33    },
34    {
35      "name": "Sensors",
36      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Sensors"
37    },
38    {
39      "name": "Things",
40      "url": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things"
41    }
42  ],
43  "serverSettings": {
44    "conformance": [
45      "http://www.opengis.net/spec/iot_sensing/1.1/req/batch-request/batch-request",
46      "http://www.opengis.net/spec/iot_sensing/1.1/req/batch-response/batch-response"
47    ]
48  }
```

The screenshot shows the SensorBoard interface. On the left is a sidebar with a dark blue header containing the INRAE logo and the title "Sensor-Board (infosol)". Below the header, the sidebar has several sections with icons and links: Home, Things (33), Locations (33), Datastreams (65), Observations (65), Features of interest (33), Sensors (1), Observed properties (1), and Settings. The main area of the interface is a light blue dashboard divided into four quadrants. Top-left: "Things" (33) with a "Things" icon. Top-right: "Locations" (33) with a "Locations" icon. Bottom-left: "Datastreams" (65) with a "Datastreams" icon. Bottom-right: "Observations" (65) with an "Observations" icon. Each quadrant also includes a "Historical locations" or "Features of interest" link.

Frontend : SensorBoard

Pour compléter l'ETL, un service web a été développé: SensorBoard

- Basé sur l'interface open-source
Gost Dashboard-V2
- Visualisation des données sous forme de tables

➤ Plus lisible que du JSON

```
// 20200219100430
// http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things
...
[{"value": [
  {"description": "profil numero 160612 du site RMQS 3035 (Riziére)", "giot_id": "3835-160612", "name": "profil 3035-160612", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}, {"giot.selfLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/TaskingCapabilities", "taskingCapabilities@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/HistoricalLocations", "historicalLocations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/Datastreams", "datastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/MultiDatastreams", "multiDatastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/Locations", "locations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3835-160612')/Locations"}, {"description": "profil numero 160361 du site RMQS 3036", "giot_id": "3836-160361", "name": "profil 3036-160361", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}, {"giot.selfLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/TaskingCapabilities", "taskingCapabilities@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/HistoricalLocations", "historicalLocations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/Datastreams", "datastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/MultiDatastreams", "multiDatastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/Locations", "locations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3036-160361')/Locations"}, {"description": "profil numero 150052 du site RMQS 3037", "giot_id": "3837-150052", "name": "profil 3037-150052", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}, {"giot.selfLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/TaskingCapabilities", "taskingCapabilities@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/HistoricalLocations", "historicalLocations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/Datastreams", "datastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/MultiDatastreams", "multiDatastreams@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/Locations", "locations@iot.navigationLink": "http://coby.infosol.inrae.fr:8181/FROST-Server/v1.1/Things('3037-150052')/Locations"}], "value": [{"id": "3210-149736", "name": "profil 3210-149736", "description": "profil numero 149736 du site RMQS 3210", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3173-160601", "name": "profil 3173-160601", "description": "profil numero 160601 du site RMQS 3173", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3171-149868", "name": "profil 3171-149868", "description": "profil numero 149868 du site RMQS 3171", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3169-160590", "name": "profil 3169-160590", "description": "profil numero 160590 du site RMQS 3169", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3154-160568", "name": "profil 3154-160568", "description": "profil numero 160568 du site RMQS 3154", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3153-160559", "name": "profil 3153-160559", "description": "profil numero 160559 du site RMQS 3153", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3135-160470", "name": "profil 3135-160470", "description": "profil numero 160470 du site RMQS 3135", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3133-149952", "name": "profil 3133-149952", "description": "profil numero 149952 du site RMQS 3133 (Site situé à proximité de Camp Caiman.)", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3132-150073", "name": "profil 3132-150073", "description": "profil numero 150073 du site RMQS 3132", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3131-160419", "name": "profil 3131-160419", "description": "profil numero 160419 du site RMQS 3131", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3100-160415", "name": "profil 3100-160415", "description": "profil numero 160415 du site RMQS 3100", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3099-149957", "name": "profil 3099-149957", "description": "profil numero 149957 du site RMQS 3099", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3098-150085", "name": "profil 3098-150085", "description": "profil numero 150085 du site RMQS 3098", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3085-150045", "name": "profil 3085-150045", "description": "profil numero 150045 du site RMQS 3085", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], "value": [{"id": "3084-150019", "name": "profil 3084-150019", "description": "profil numero 150019 du site RMQS 3084", "properties": [{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}], 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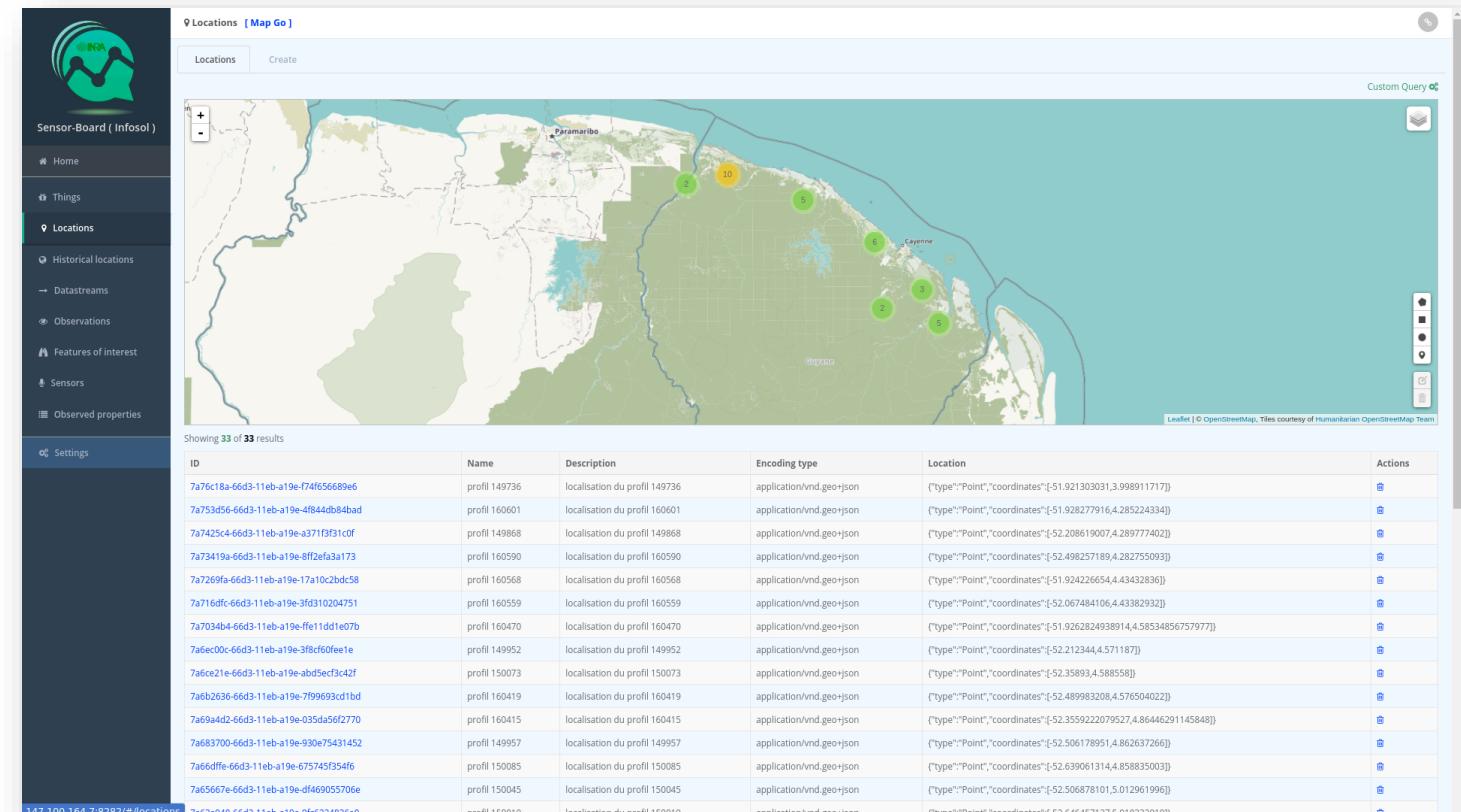
The screenshot shows the SensorBoard application interface. On the left, there is a sidebar with navigation links: Home, Things, Locations, Historical locations, Datastreams, Observations, Features of interest, Sensors, Observed properties, and Settings. The main area is titled 'Things' and displays a table with 33 results. The columns are ID, Name, and Description. Each row contains a profile entry with its ID, name, and a brief description. To the right of the table, there is a 'Properties' column showing the deployment conditions for each profile. At the bottom of the table, there is a footer with the URL '147.100.164.7:8282/#things'.

ID	Name	Description	Properties
3210-149736	profil 3210-149736	profil numero 149736 du site RMQS 3210	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
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3171-149868	profil 3171-149868	profil numero 149868 du site RMQS 3171	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3169-160590	profil 3169-160590	profil numero 160590 du site RMQS 3169	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3154-160568	profil 3154-160568	profil numero 160568 du site RMQS 3154	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3153-160559	profil 3153-160559	profil numero 160559 du site RMQS 3153	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3135-160470	profil 3135-160470	profil numero 160470 du site RMQS 3135	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3133-149952	profil 3133-149952	profil numero 149952 du site RMQS 3133 (Site situé à proximité de Camp Caiman.)	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3132-150073	profil 3132-150073	profil numero 150073 du site RMQS 3132	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3131-160419	profil 3131-160419	profil numero 160419 du site RMQS 3131	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3100-160415	profil 3100-160415	profil numero 160415 du site RMQS 3100	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3099-149957	profil 3099-149957	profil numero 149957 du site RMQS 3099	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3098-150085	profil 3098-150085	profil numero 150085 du site RMQS 3098	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3085-150045	profil 3085-150045	profil numero 150045 du site RMQS 3085	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
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3058-149982	profil 3058-149982	profil numero 149982 du site RMQS 3058	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3056-150048	profil 3056-150048	profil numero 150048 du site RMQS 3056	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3055-149992	profil 3055-149992	profil numero 149992 du site RMQS 3055	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3054-160402	profil 3054-160402	profil numero 160402 du site RMQS 3054	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
3051-150077	profil 3051-150077	profil numero 150077 du site RMQS 3051	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
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3044-150055	profil 3044-150055	profil numero 150055 du site RMQS 3044	{"source": {"project": "RMQS", "institut": "INRAE"}, "Case Used": "[{used}]", "Deployment Condition": "[{cond}]"}
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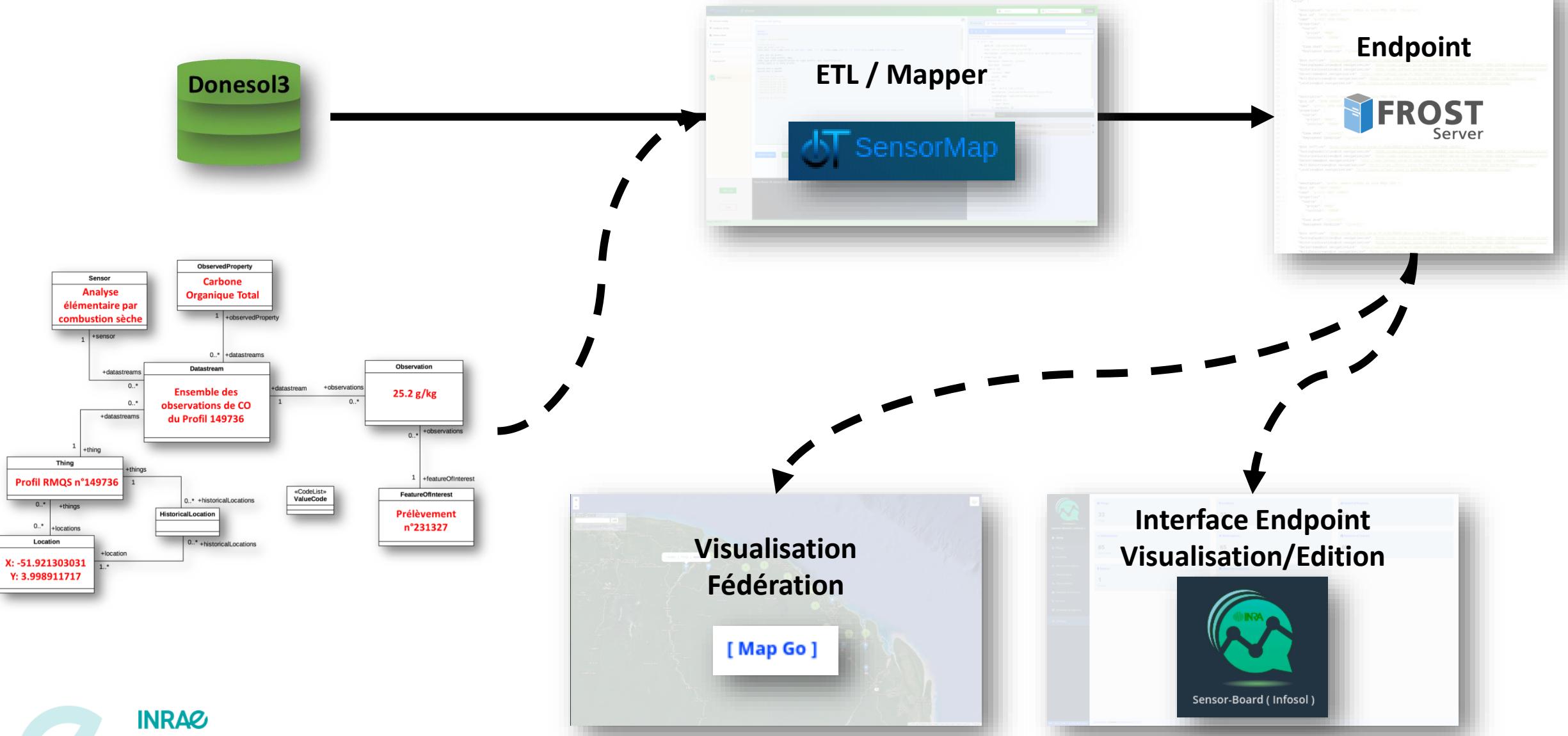
Frontend : SensorBoard

Pour compléter l'ETL, un service web a été développé: SensorBoard

- Basé sur l'interface open-source Gost Dashboard-V2
- Visualisation des données sous forme de tables
 - Plus lisible que du JSON
- Visualisation spatiale des Things



> Frontend



INRAe

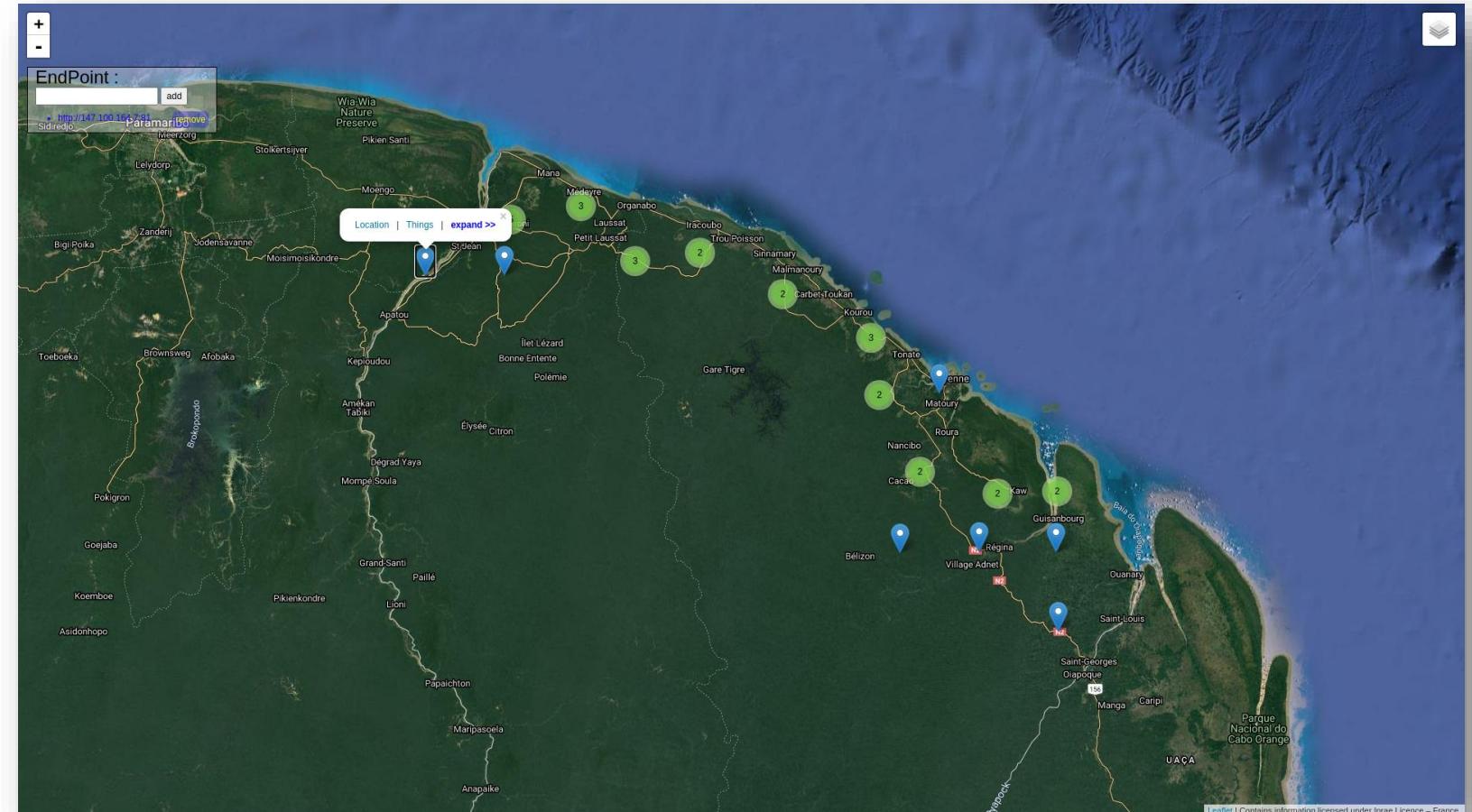
Publication de données sols via SensorThings API

29/09/2022 – Webinaire SIST - C. Lattelais, R. Yahiaoui, C. Le Bas, A. Schellenberger

Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

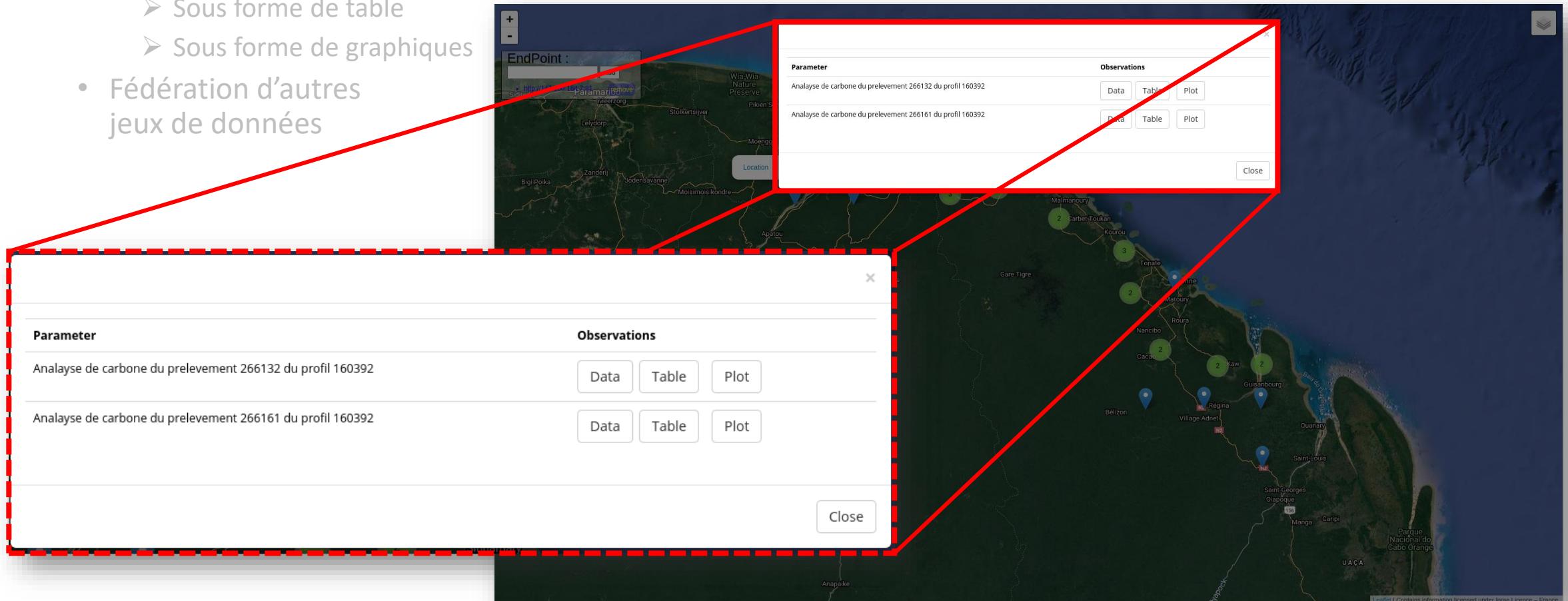
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

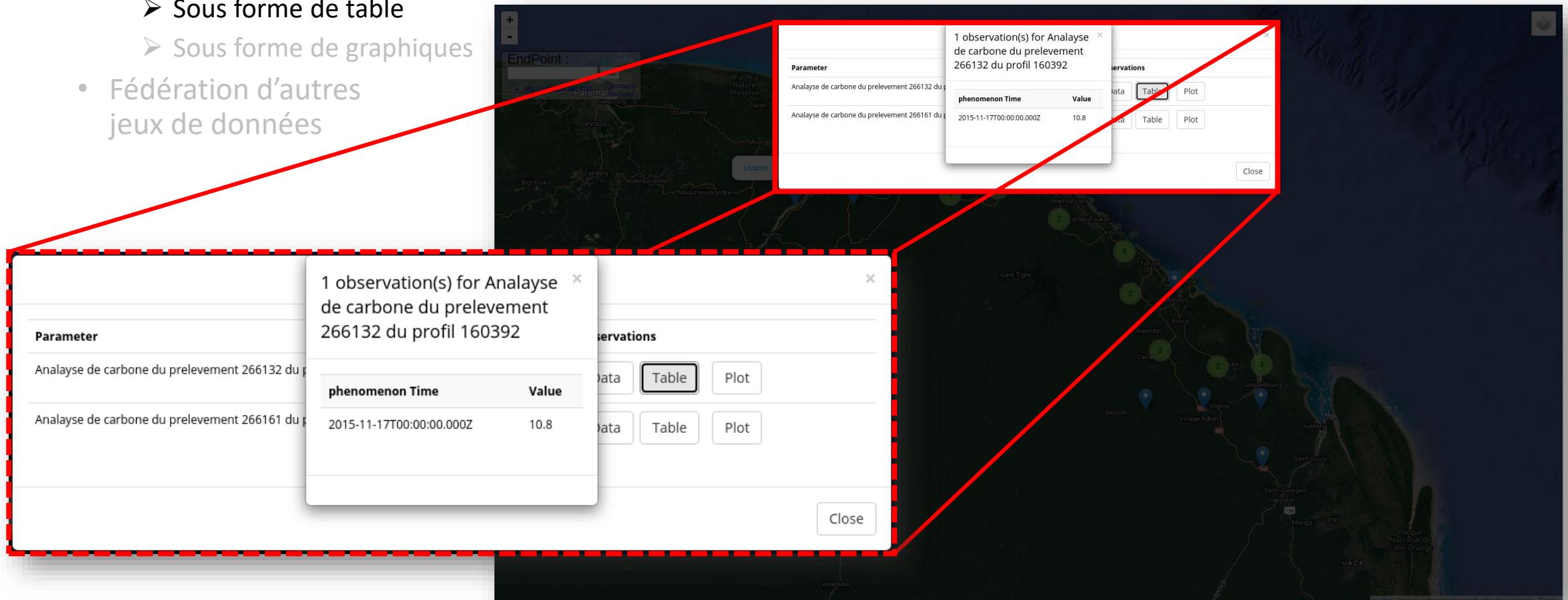
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



> Frontend : Map Go

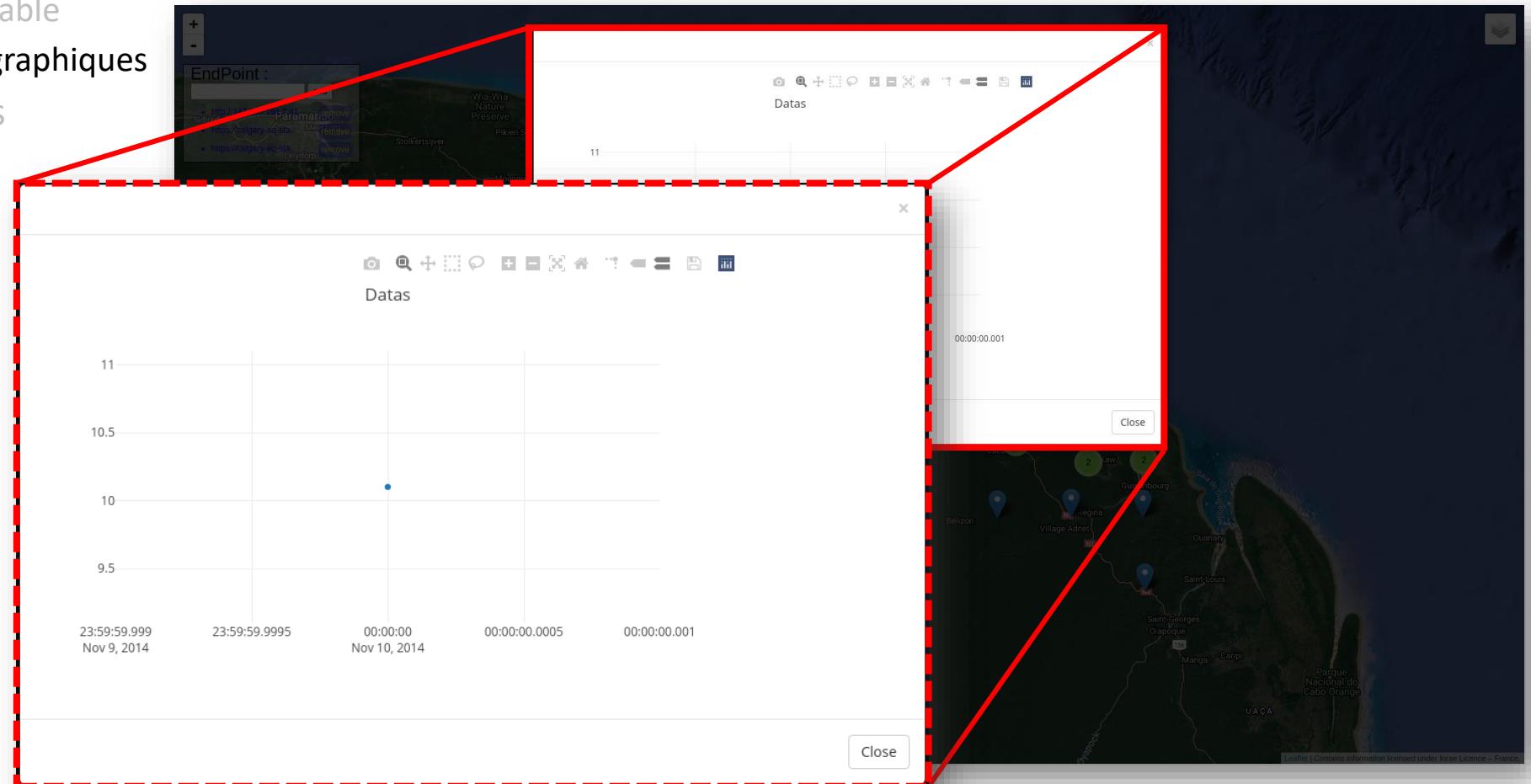
- Pour consulter les données, un autre service web a été développé: Map Go

- Visualisation spatiale des points
- Consultation directe des données

- Sous forme de table

- Sous forme de graphiques

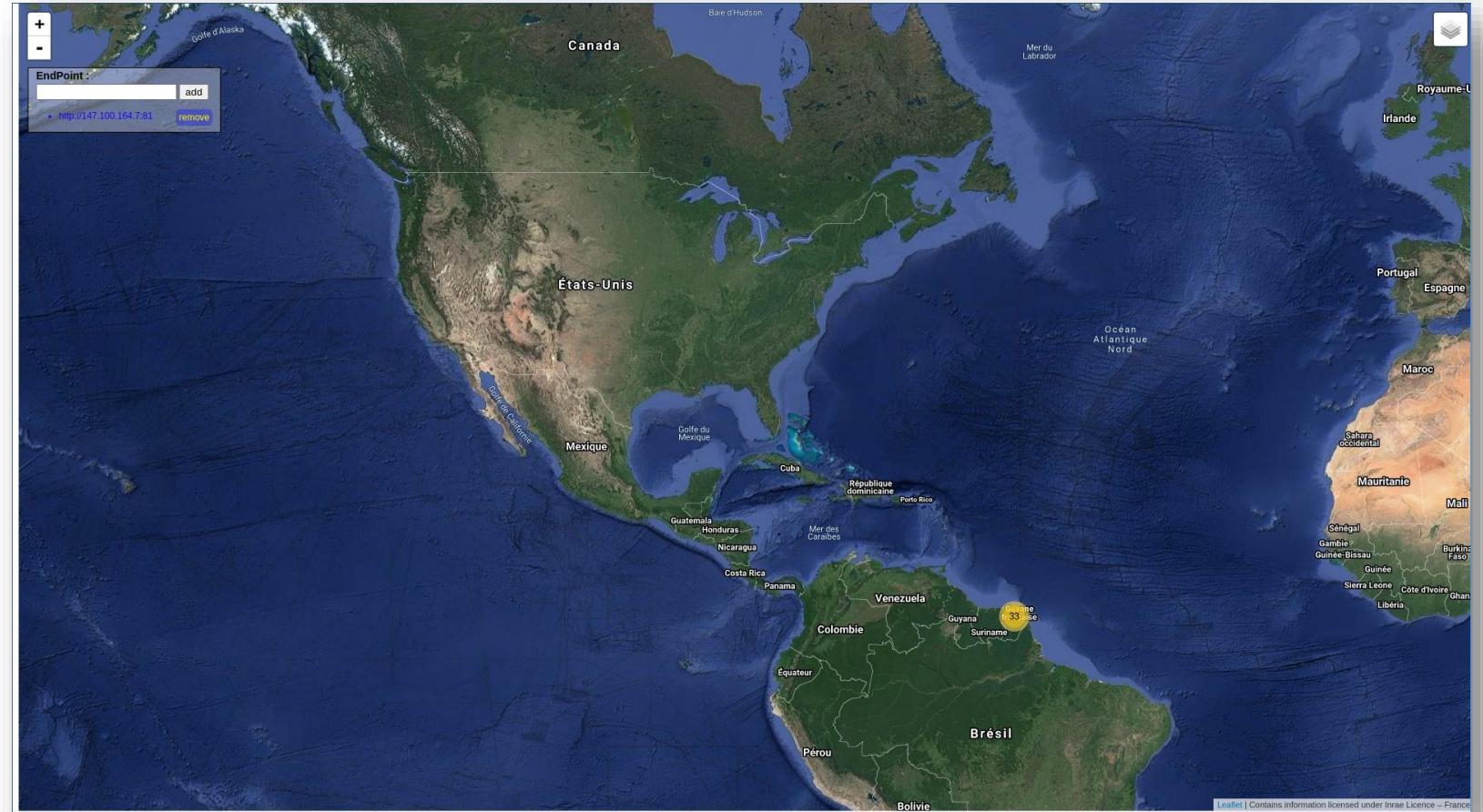
- Fédération d'autres jeux de données



> Frontend : Map Go

- Pour consulter les données, un autre service web a été développé: Map Go

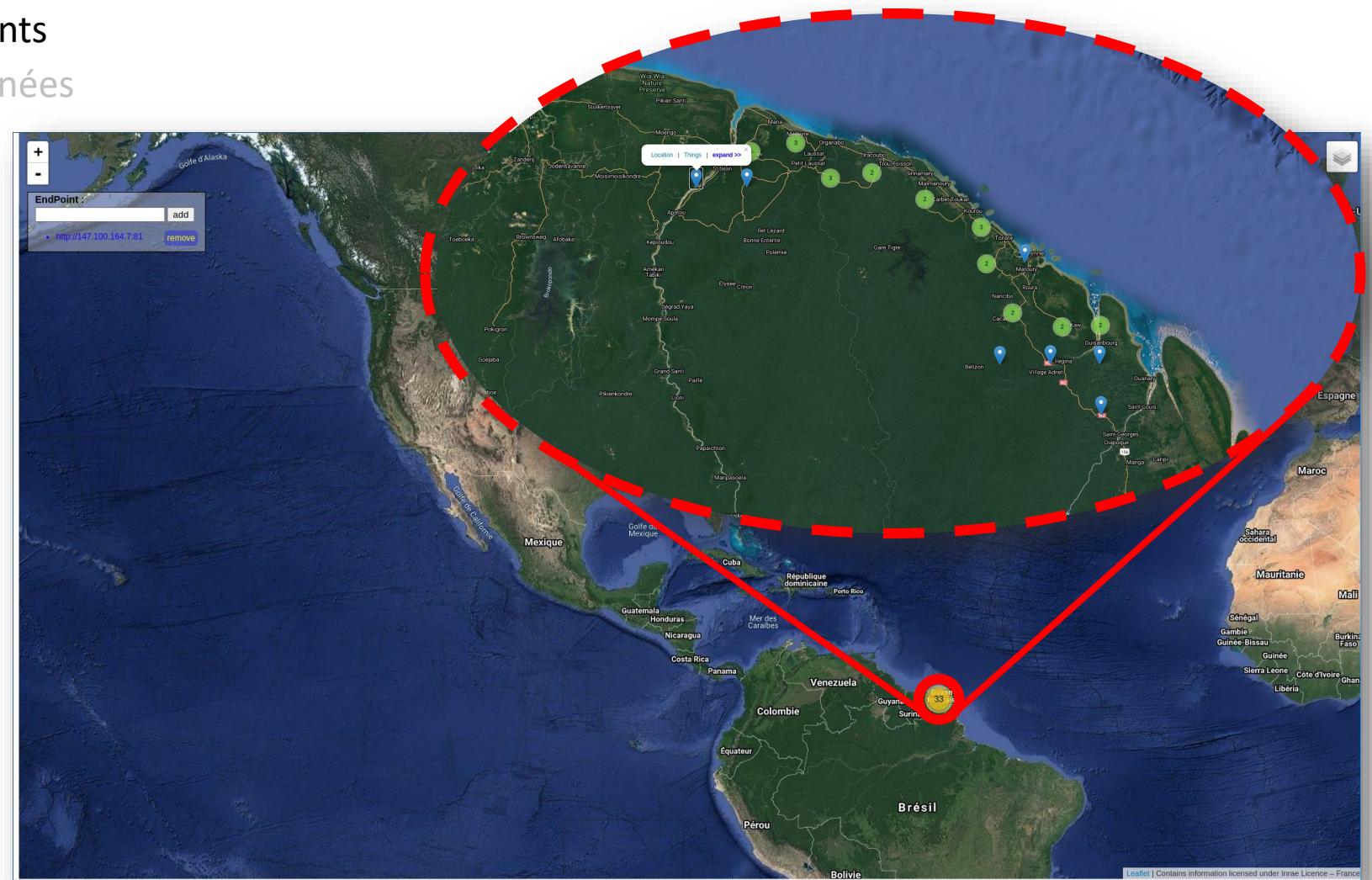
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

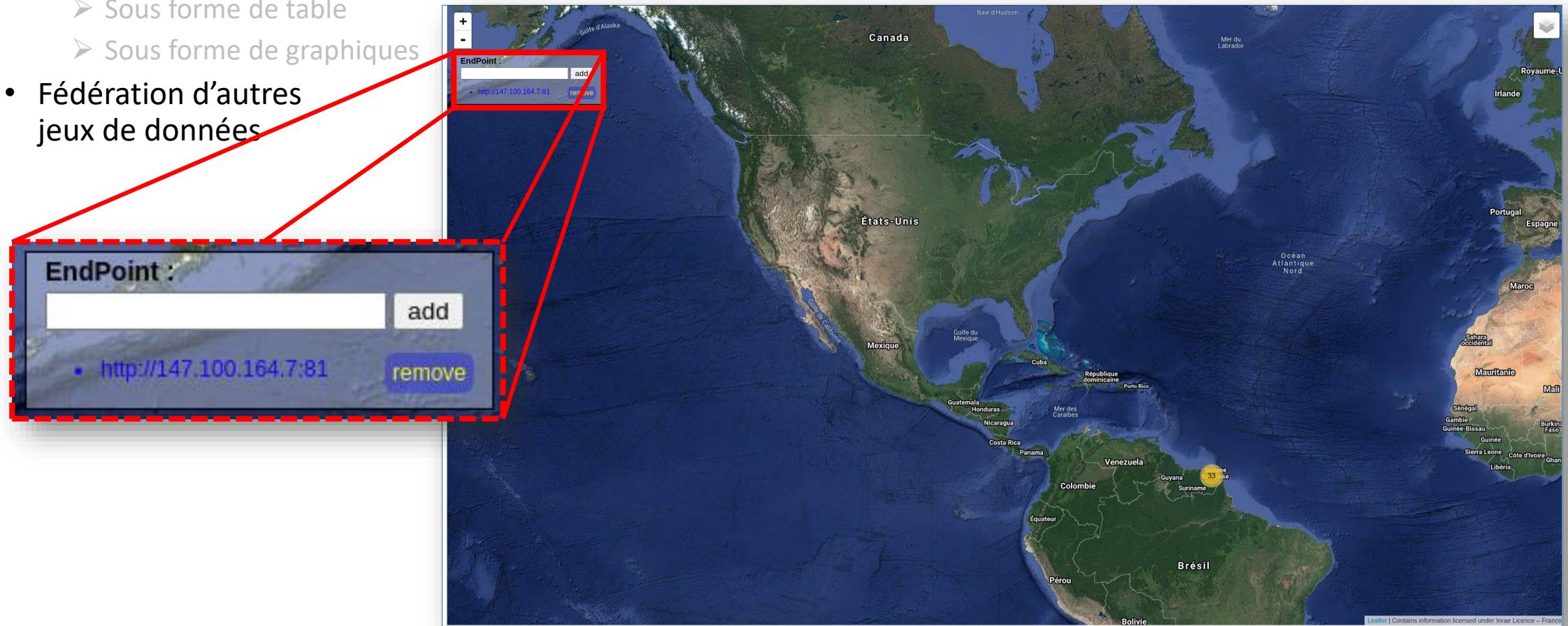
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



> Client en place : Map Go

- Pour consulter les données, un autre service web a été développé: Map Go

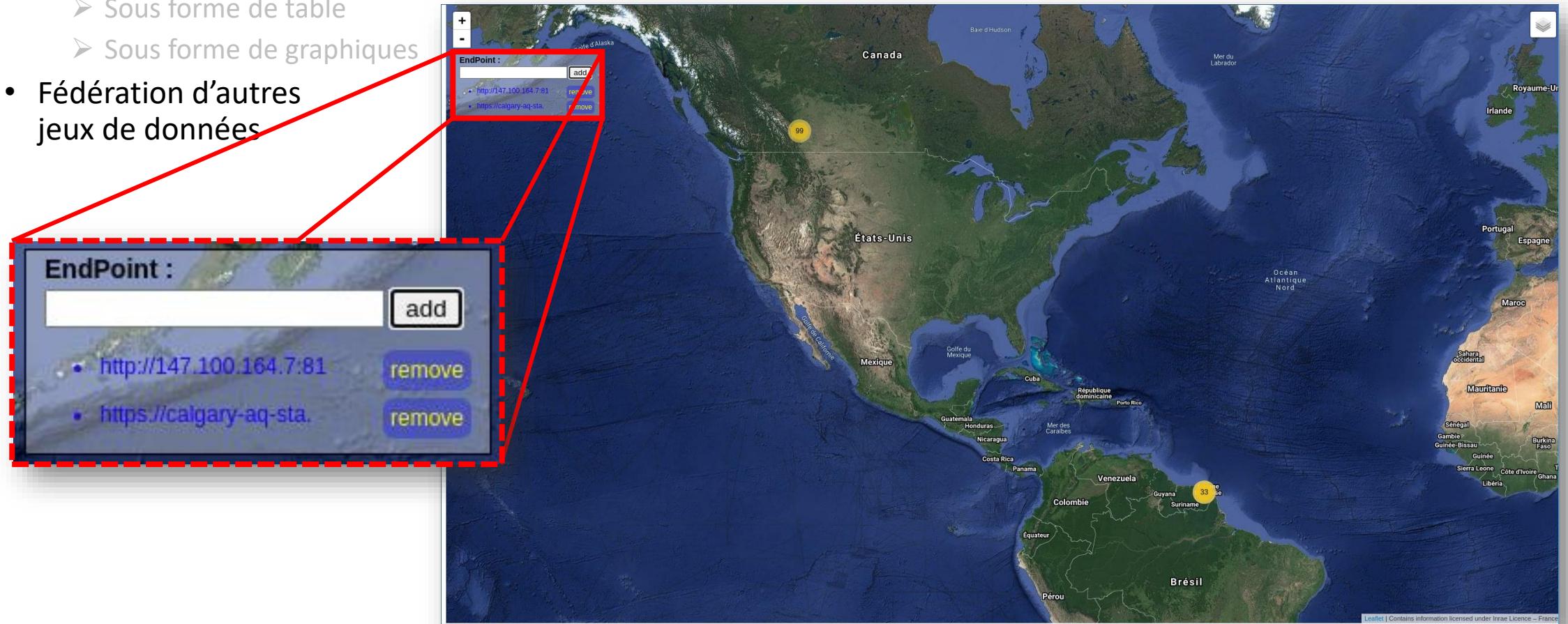
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

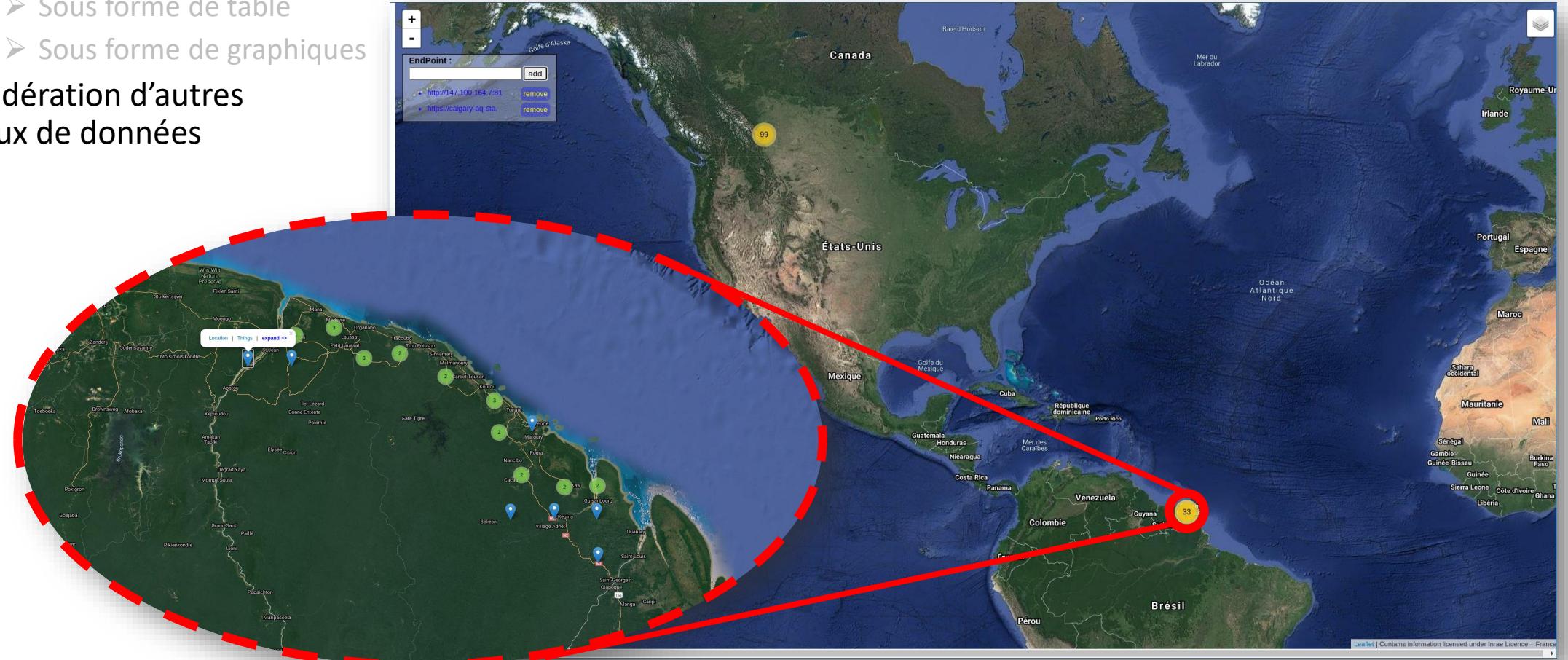
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



Frontend : Map Go

Pour consulter les données, un autre service web a été développé: Map Go

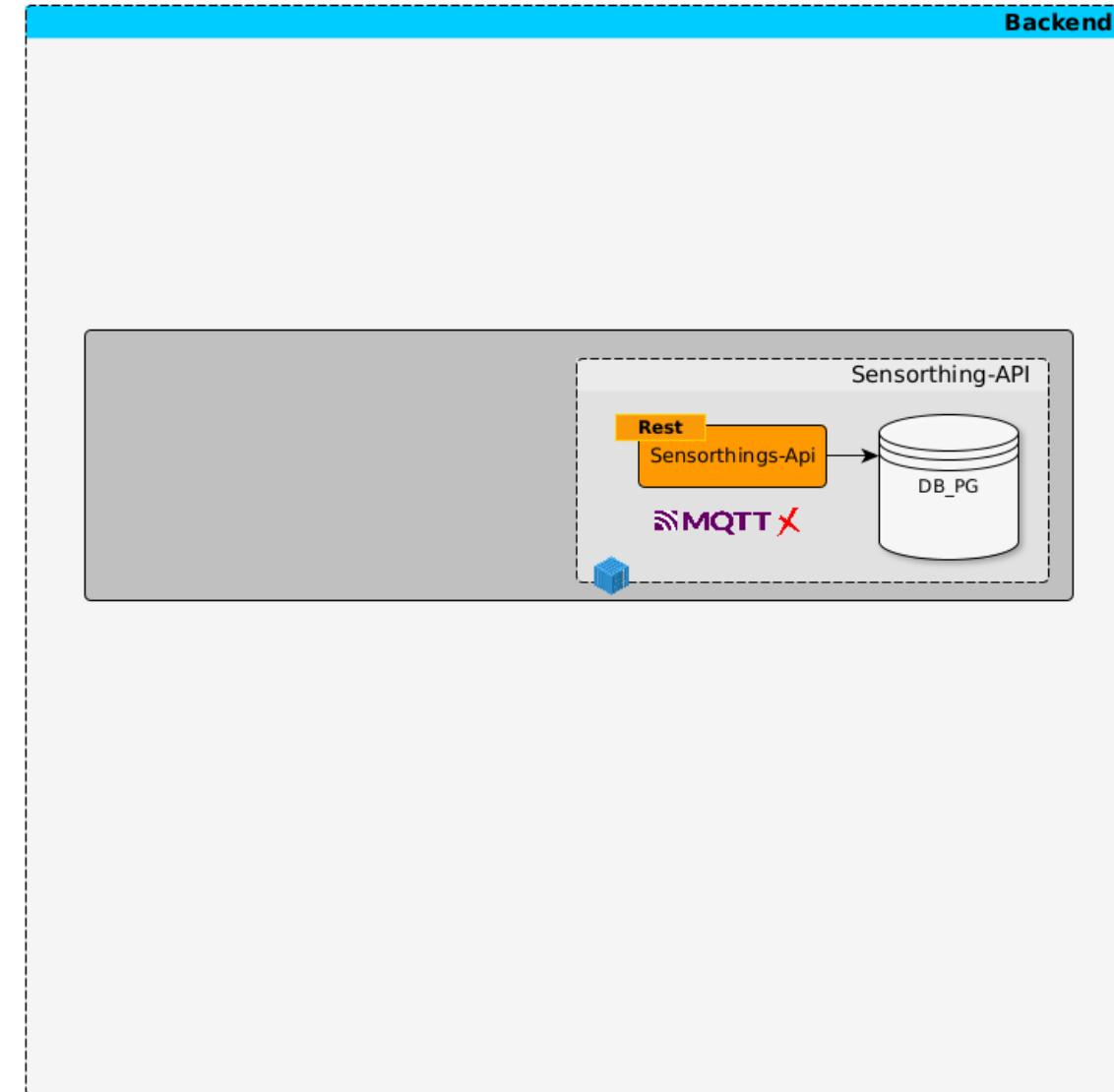
- Visualisation spatiale des points
- Consultation directe des données
 - Sous forme de table
 - Sous forme de graphiques
- Fédération d'autres jeux de données



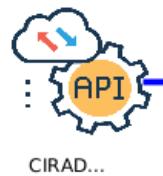
> Architecture / Déploiement



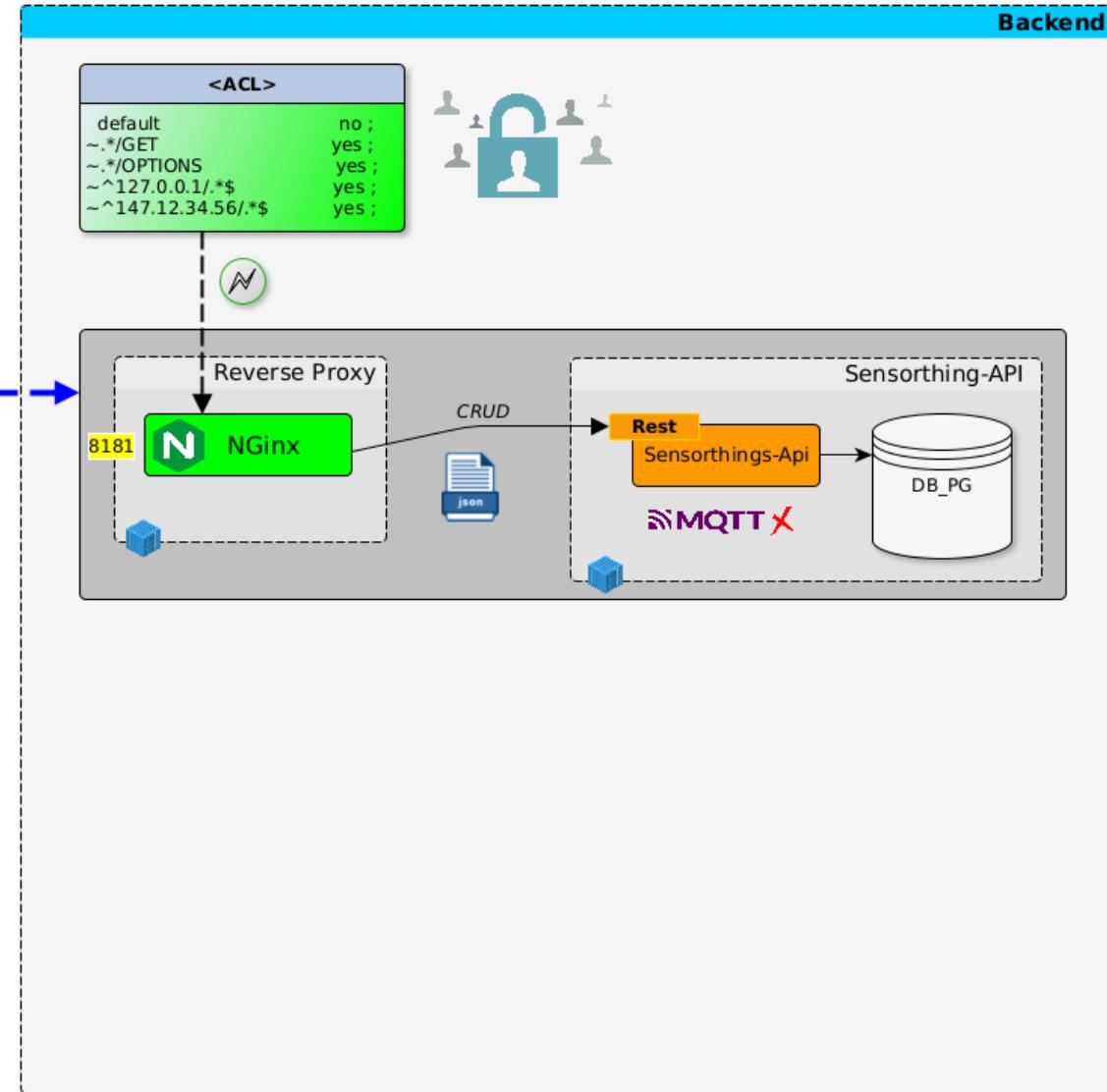
CIRAD...



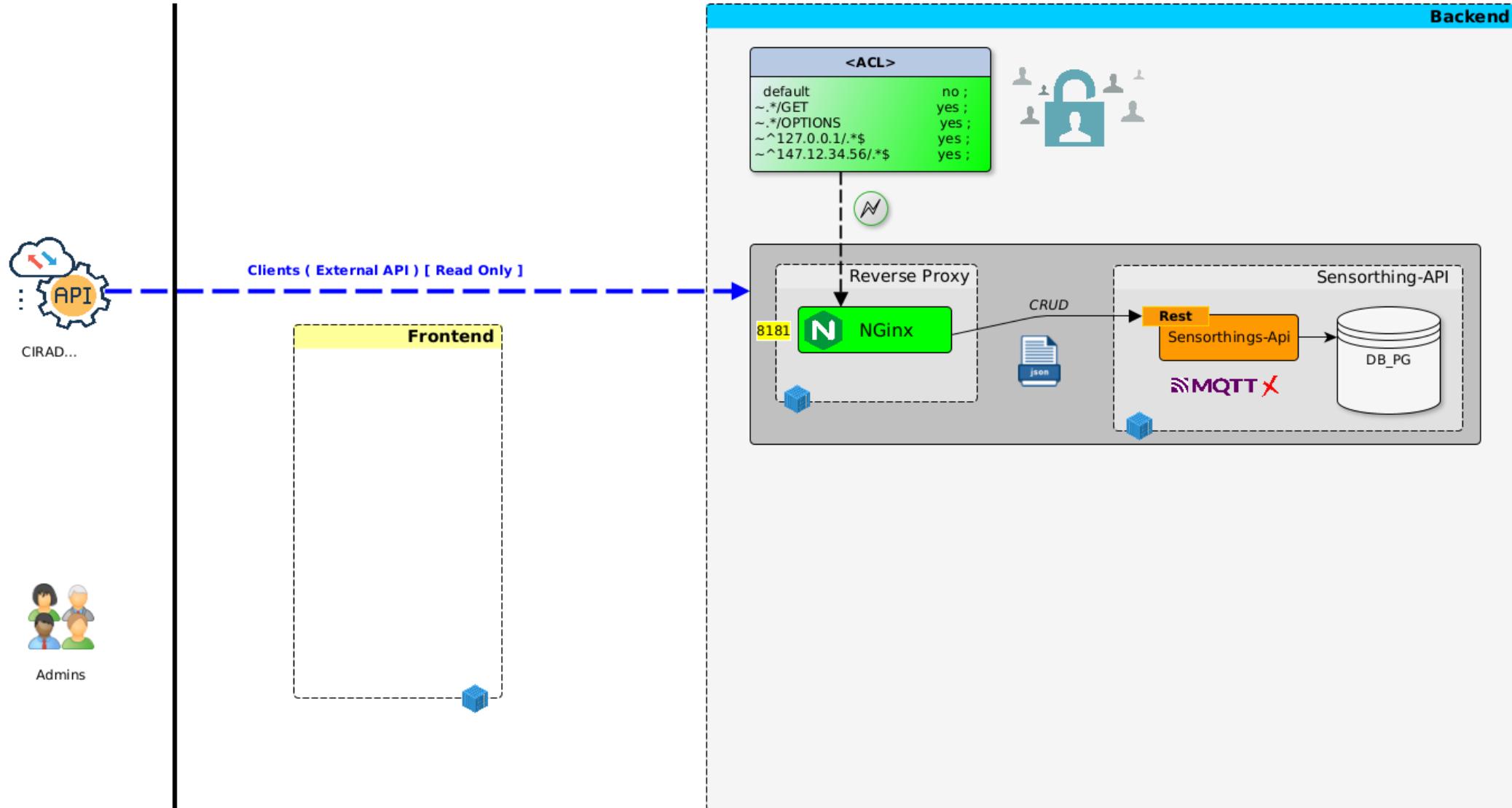
> Architecture / Déploiement



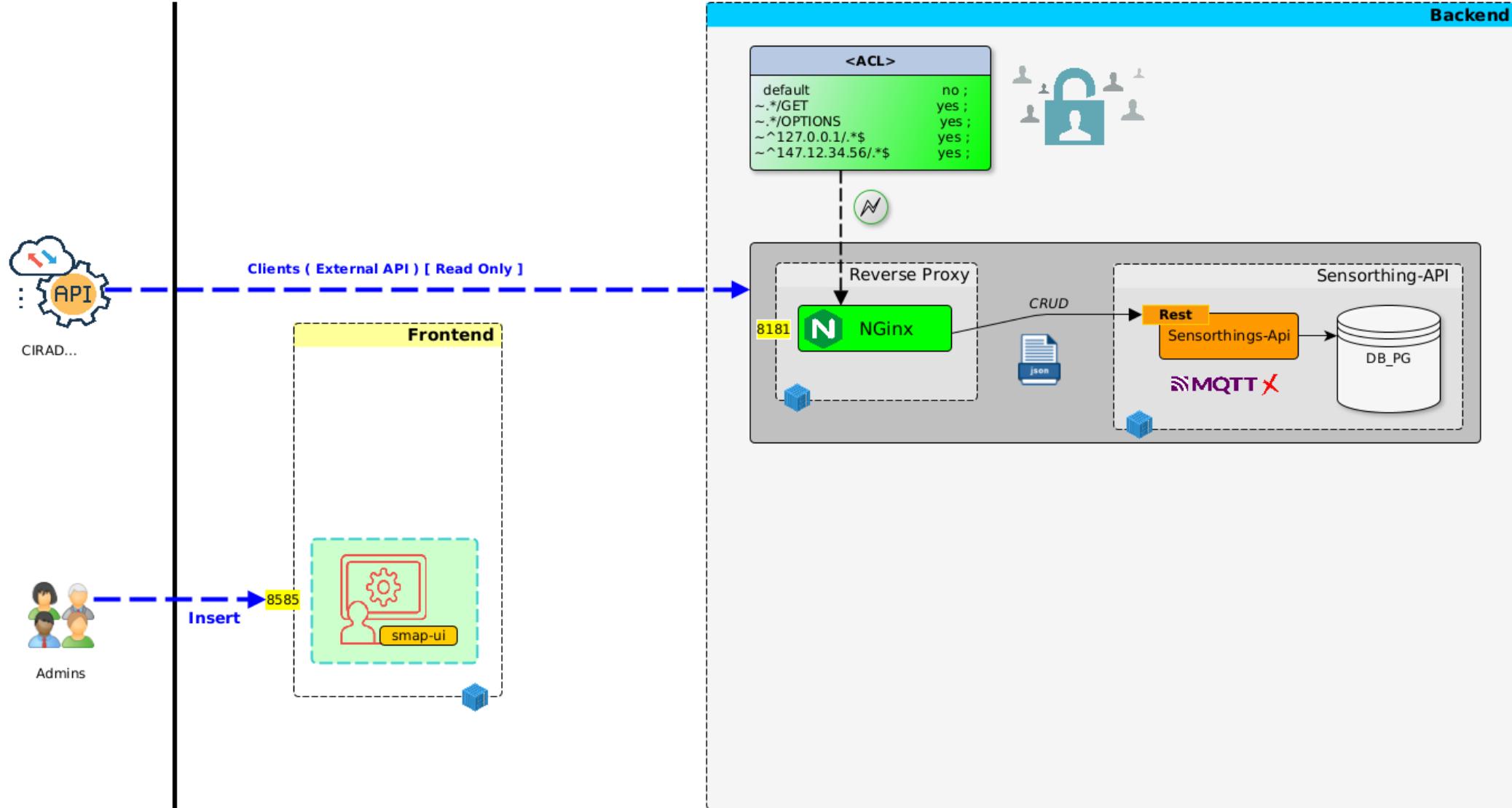
Clients (External API) [Read Only]



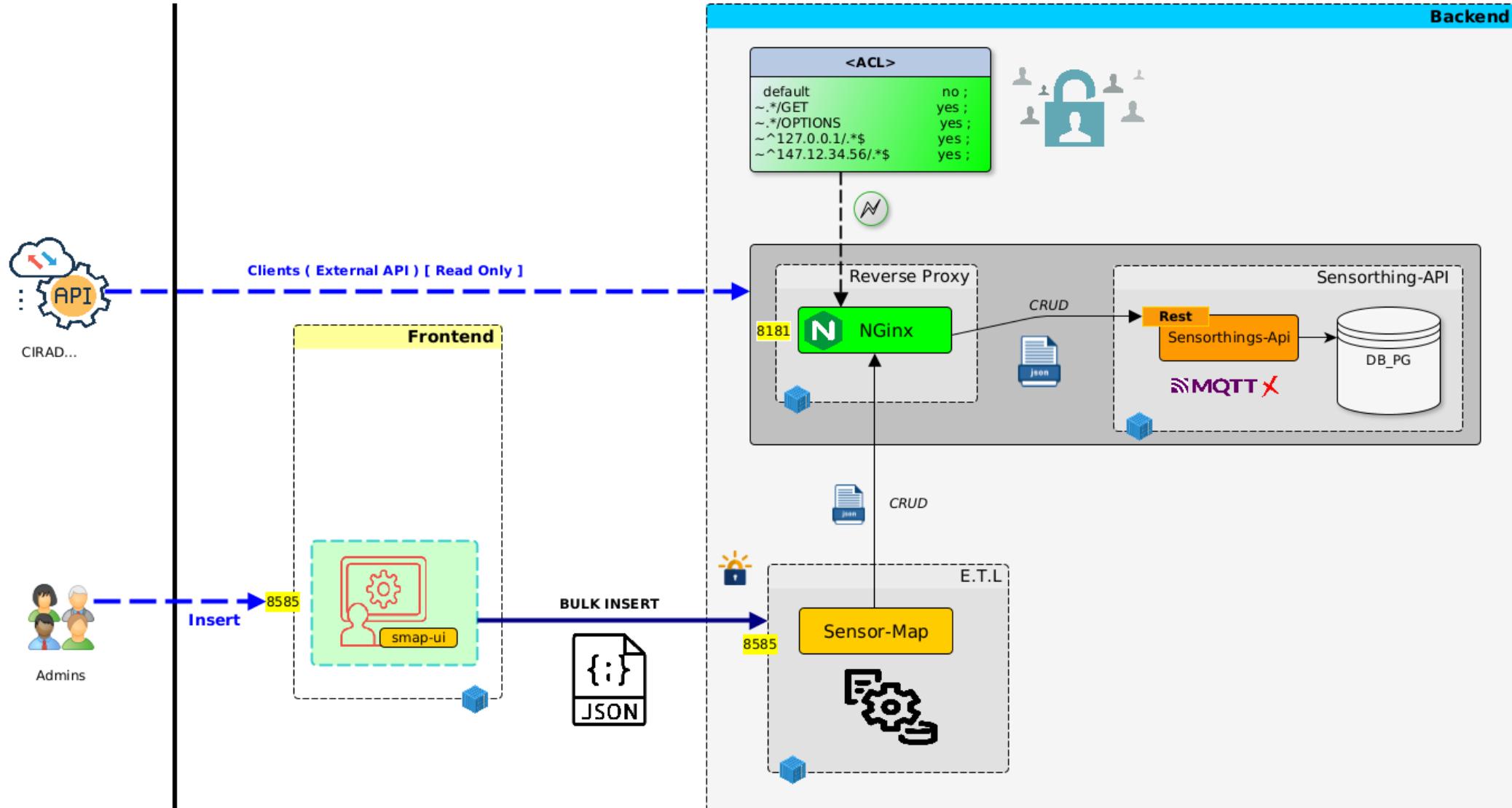
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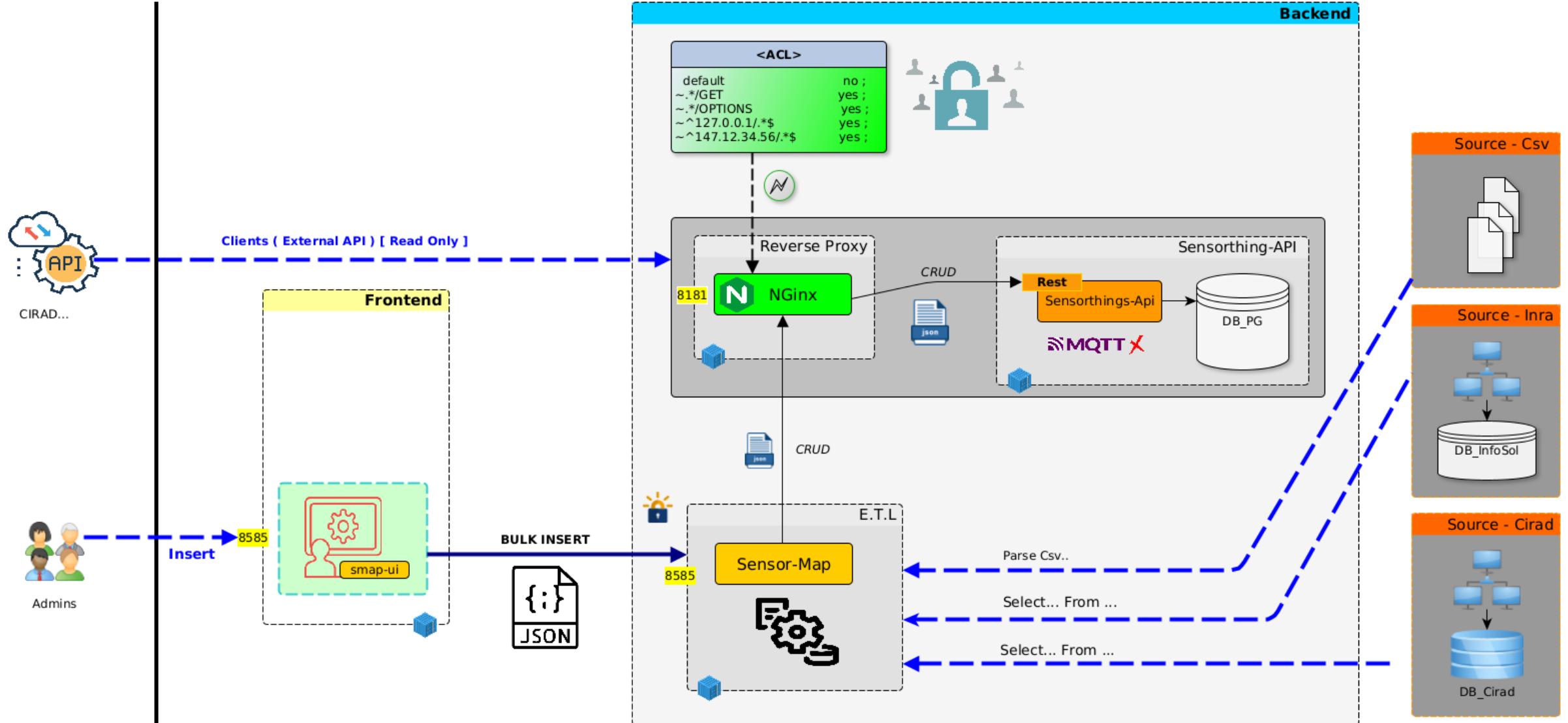
> Architecture / Déploiement



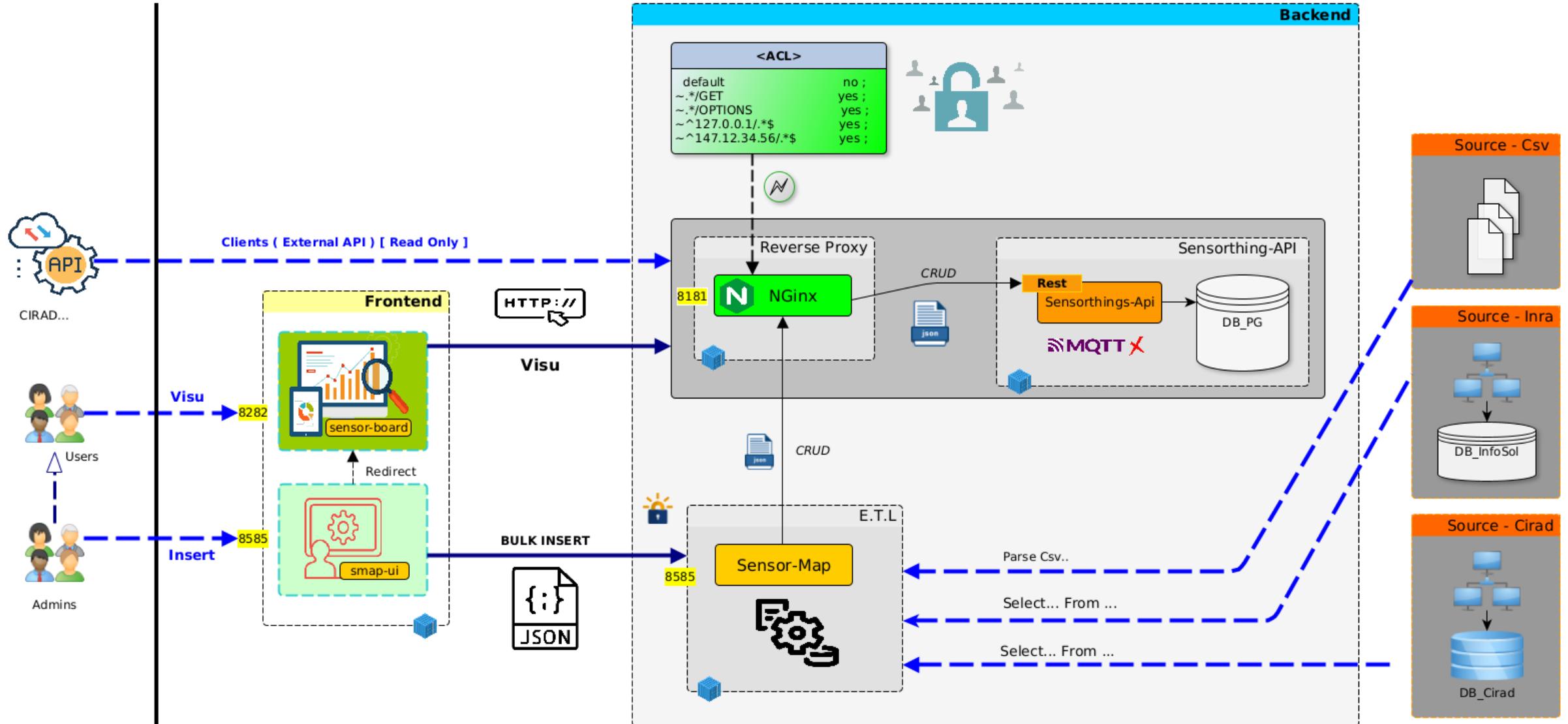
> Architecture / Déploiement



> Architecture / Déploiement



Architecture / Déploiement



> Conclusions

- API non spécifique aux données sols
- Travaux en cours
- Pas encore de retours utilisateurs
- Gestion de la sécurité (accès) pourrait-être une piste de développement de l'API

MERCI POUR VOTRE ATTENTION



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Publication de données sols via SensorThings API

29/09/2022 – Webinaire SIST - C. Lattelais, R. Yahiaoui, C. Le Bas, A. Schellenberger