



# URBAN GEO BIG DATA Meeting Milan, 11 July 2017

▶ CNR-IREA

▶ R.Lanari

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PRIN PROJECT: *URBAN GEOmatics for Bulk Information Generation, Data Assessment and Technology Awareness*



MINISTERO DELL'ISTRUZIONE DELL'UNIVERSITÀ E DELLA RICERCA



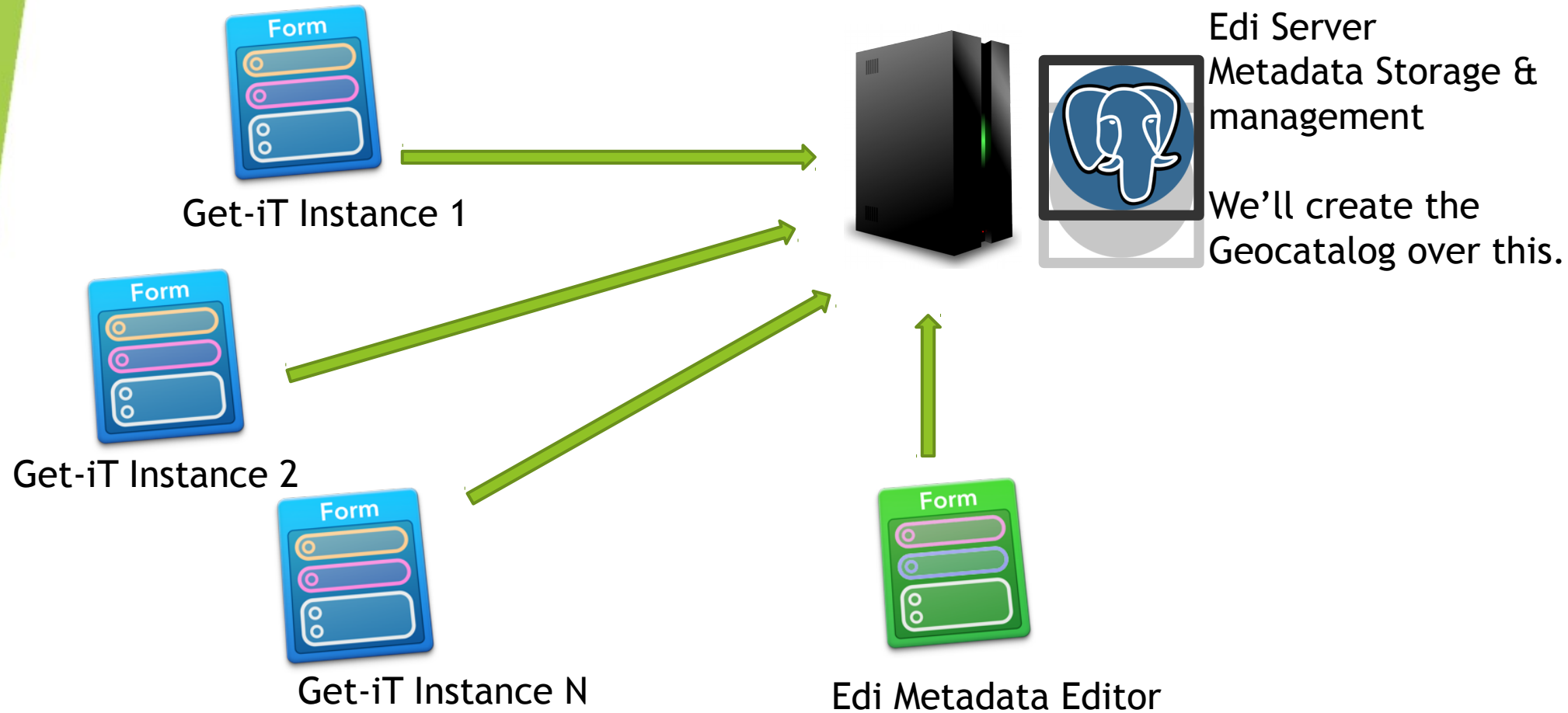
## METADATA : what we have done.

We have created 2 EndPoints to create Metadata:

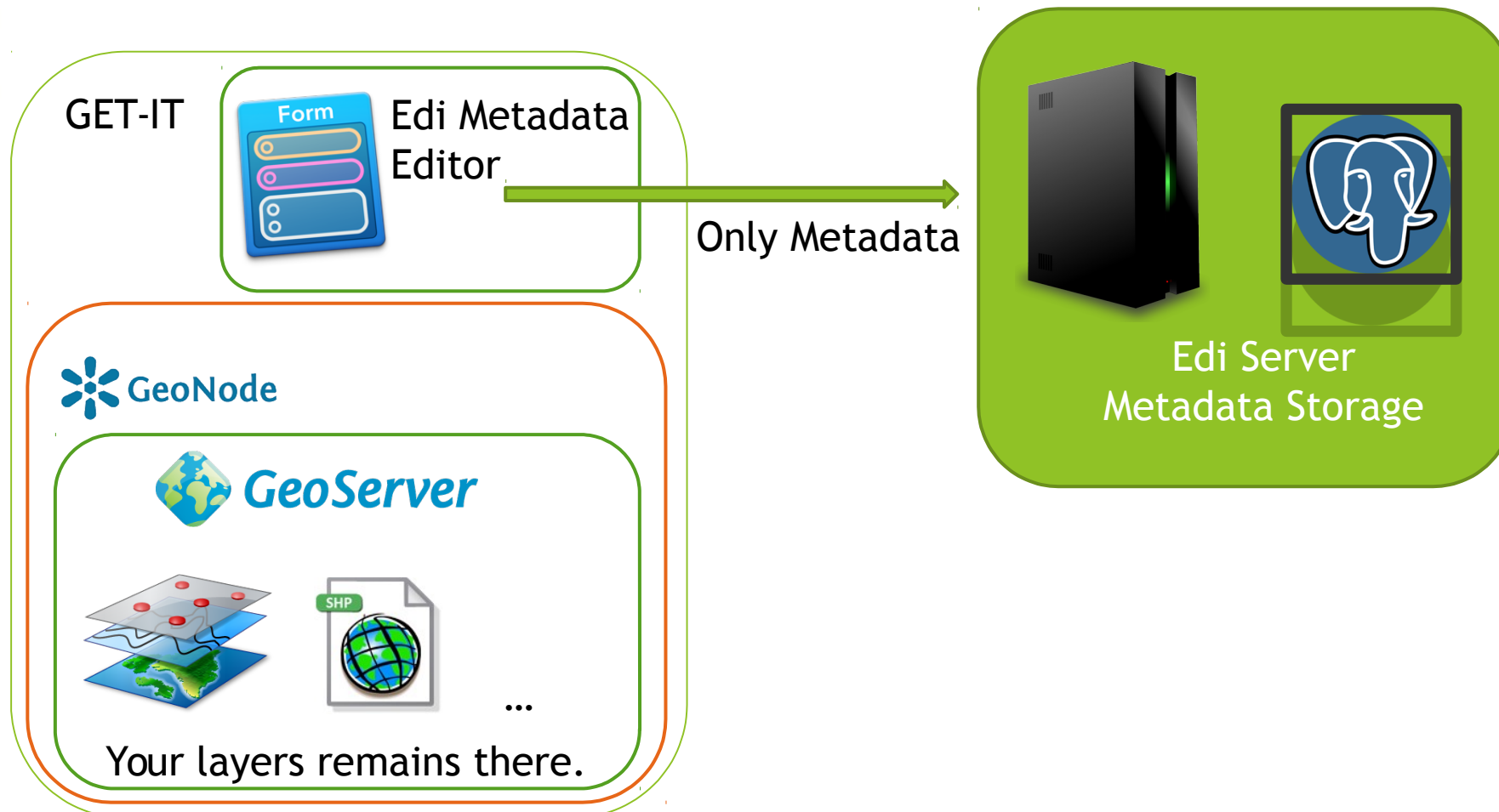
- ▶ An instance of Get-it both to upload layers and to deploy related web services and to create their metadata.  
It is a sandbox for learning to use Get-It.  
<http://ugbd.get-it.it/>
- ▶ An instance of EDI, the stand alone metadata editor to create metadata for those units who deploy their layers at their own end-point.  
[http://test-ugbd.get-it.it/dist/RNDT\\_dataset.html](http://test-ugbd.get-it.it/dist/RNDT_dataset.html)

And an instance of Edi Server to store them all.

## What is Edi-Server ?



## Schema 2 : How Edi-Server Works

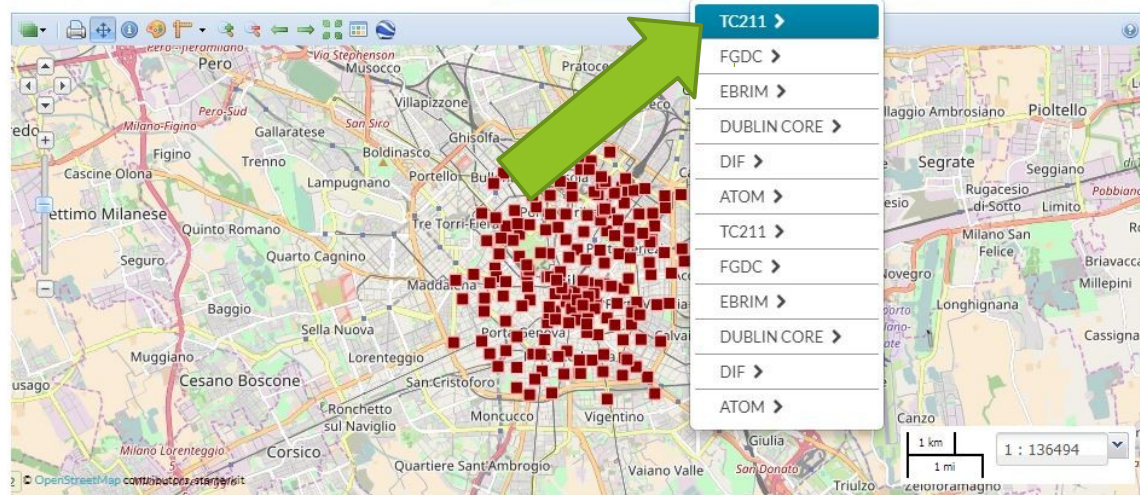


## Differences between stand alone and get-it metadata editor.

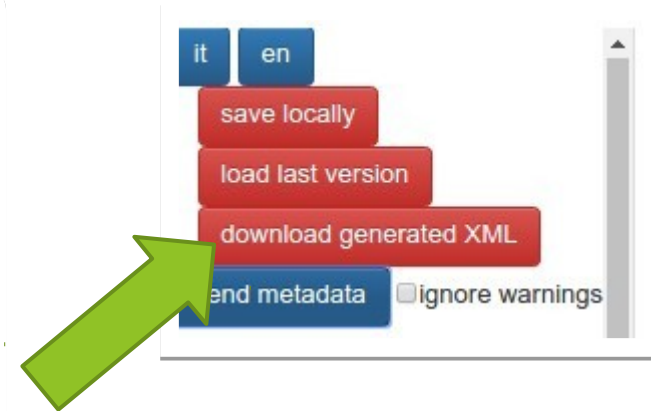
- ▶ Both the EndPoints offer the possibility to download the XML metadata created compliant with the RNDT standard schema.

### GET-IT

#### EXPORT



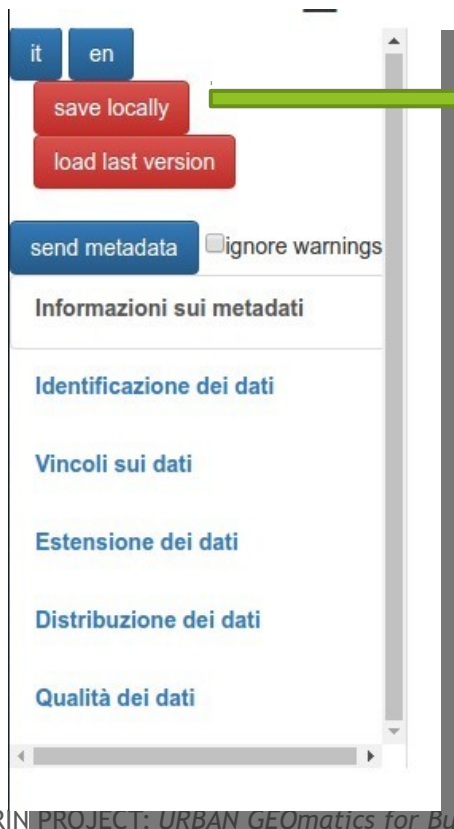
### EDI EDITOR





## Differences between stand alone and get-it metadata editor.

- What does it mean Save Locally in the stand alone editor ?



It saves (and loads) data in the local SQLite database of your browser

- P



## Differences between stand alone and get-it metadata editor.

- In order to create metadata in the Get-IT Edi metadata editor you must send them to the Edi-Server using this button. After that you can download them.

**Edit metadata export**

Informazioni sui metadati

Identificatore del file ?

CNR-aaaaaa1

Lingua dei metadati ?

Italiano

Set dei caratteri dei metadati ?

16-bit fixed size Universal Character Set

Id file precedente ?

Livello gerarchico ?

dataset

Responsabile dei metadati ?

Email

mailto:frigerio.l@irea.cnr.it

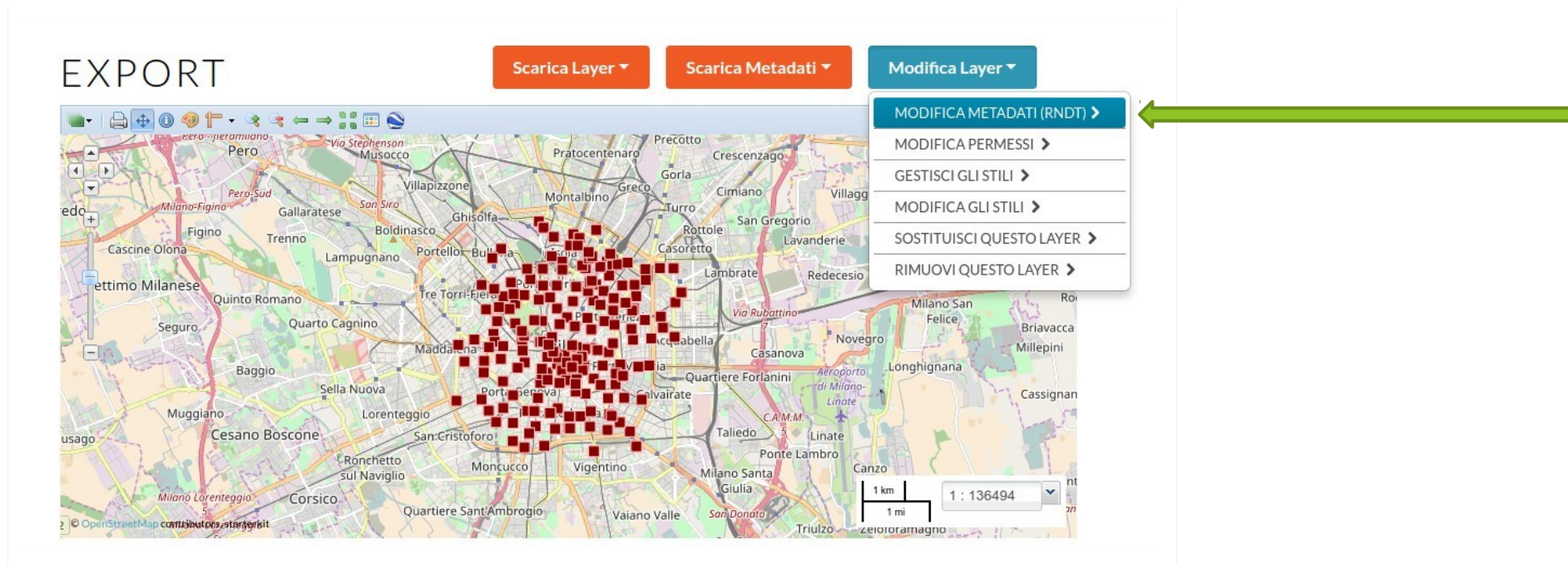
Cancel Save metadata

Here it is the button



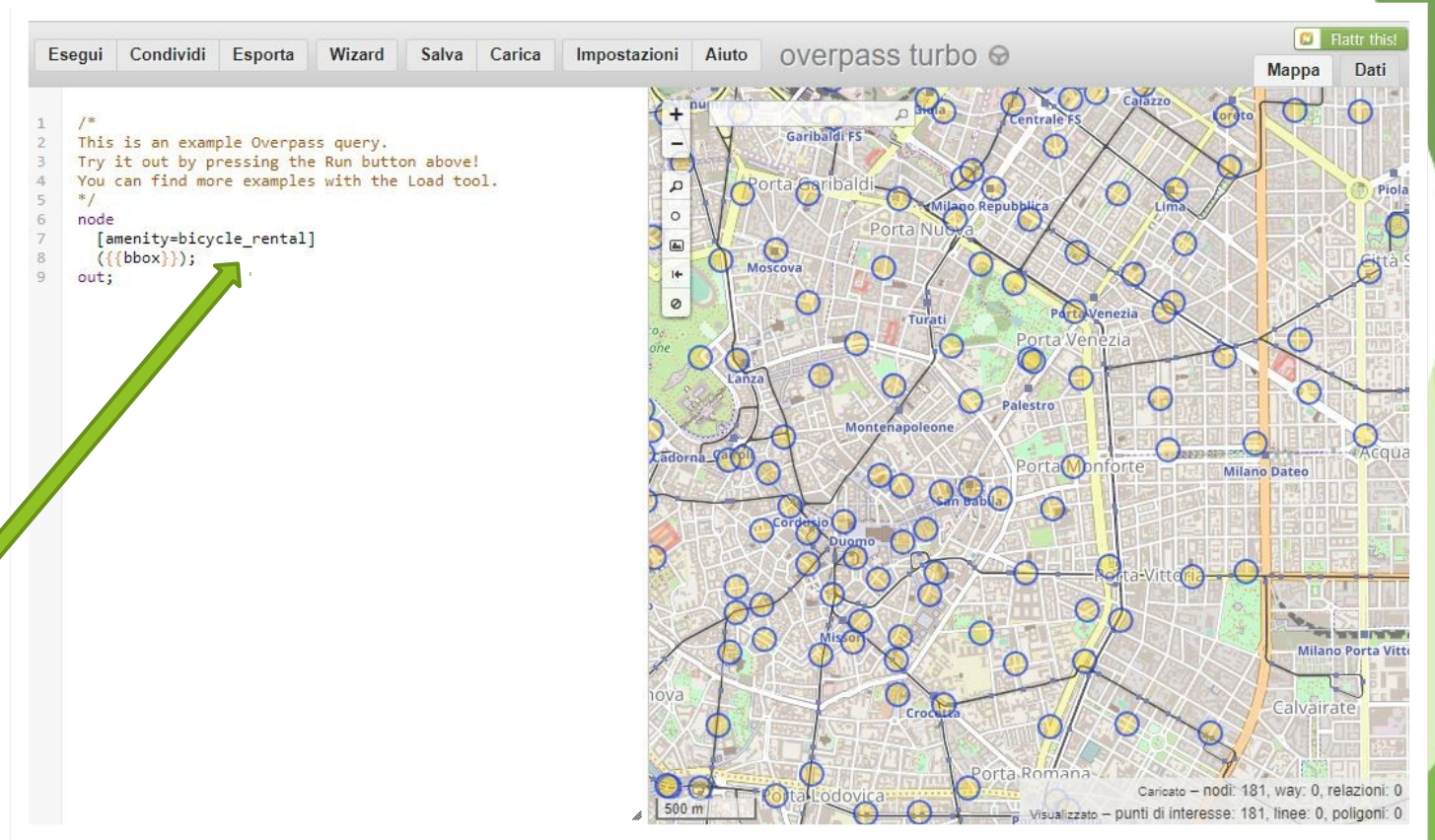
## Differences between stand alone and get-it metadata editor.

- ▶ With Get-IT Edi metadata editor you can modify the metadata of your layer.

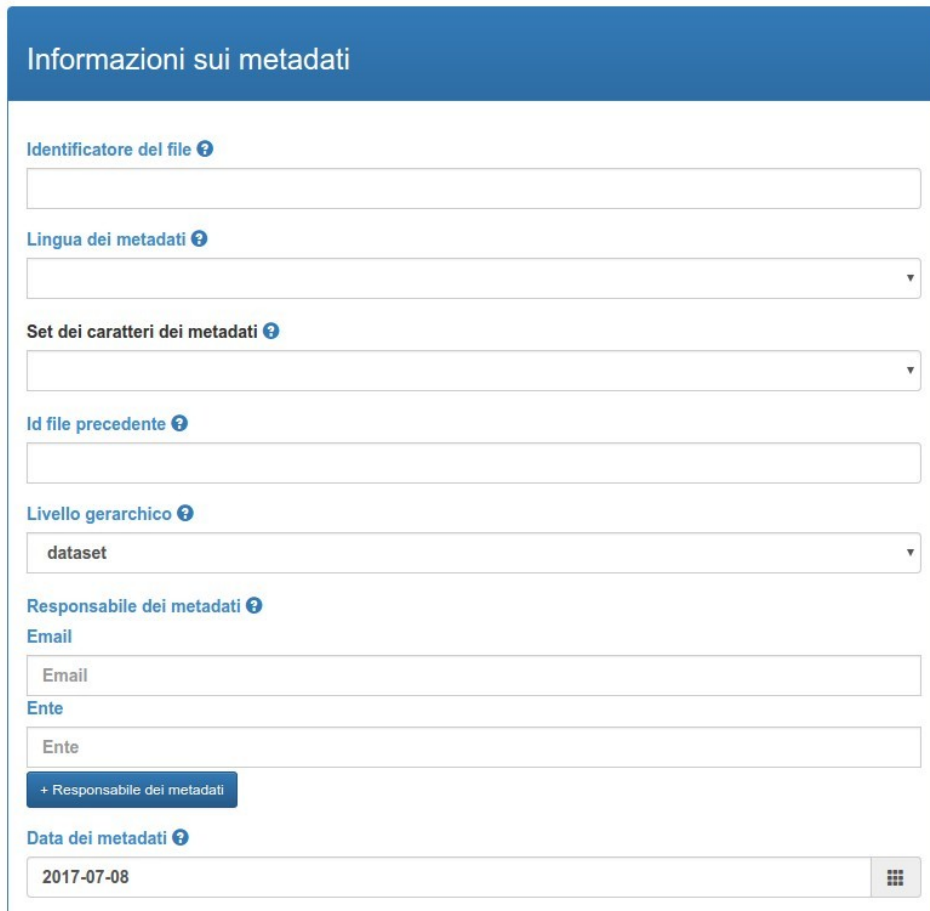


# An example : bicycle rental layer from OSM.

- Downloaded with Overpass Turbo
- Converted with Qgis
- Deployed on the Web as WFS by using Get-IT

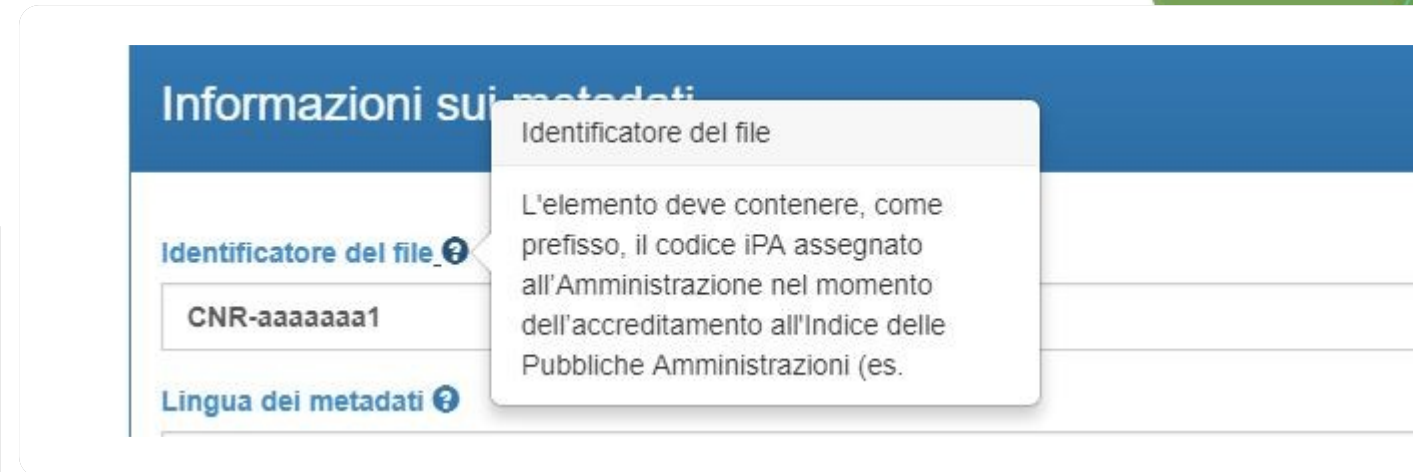


## RNDT metadata fields: IPA code ?



The screenshot shows a web form titled 'Informazioni sui metadati'. It contains several input fields and dropdown menus:

- Identificatore del file**: A text input field.
- Lingua dei metadati**: A dropdown menu.
- Set dei caratteri dei metadati**: A dropdown menu.
- Id file precedente**: A text input field.
- Livello gerarchico**: A dropdown menu with 'dataset' selected.
- Responsabile dei metadati**: A section containing:
  - Email**: A text input field.
  - Ente**: A text input field.
  - A button labeled '+ Responsabile dei metadati'.
- Data dei metadati**: A text input field with the date '2017-07-08' and a calendar icon.



This screenshot shows the same form as the previous one, but with a tooltip explaining the 'Identificatore del file' field. The tooltip text is:

Identificatore del file

L'elemento deve contenere, come prefisso, il codice IPA assegnato all'Amministrazione nel momento dell'accreditamento all'Indice delle Pubbliche Amministrazioni (es. CNR-aaaaaaa1).

Each institute has its own IPA code.

You can find a document in the Google Drive repository with those of the PRIN URBAN GEO-BIG DATA project units.

The identifier string needs to have this IPA code according to the Inspire rules.

i.e. CNR-6b9fd4c9-a4ef-4656-81d3-5422363ad7ee

i.e. 6b9fd4c9-a4ef-4656-CNR-81d3-5422363ad7ee



# RNDT metadata fields: Autocompletion

Informazioni sui metadati

Identificatore del file ?  
CNR-d6b4c96a-218f-4626-87aa-b13b41a8a44e

Lingua dei metadati ?  
Italiano


Set dei caratteri dei metadati ?  
16-bit fixed size Universal Character Set

Id file precedente ?

Livello gerarchico ?  
dataset

Responsabile dei metadati ?  
Email  
fr|  
mailto:frigerio.i@irea.cnr.it  
+ Responsabile dei metadati

Data dei metadati ?  
2017-07-08



Informazioni sui metadati

Identificatore del file ?  
CNR-d6b4c96a-218f-4626-87aa-b13b41a8a44e

Lingua dei metadati ?  
Italiano

Set dei caratteri dei metadati ?  
16-bit fixed size Universal Character Set

Id file precedente ?

Livello gerarchico ?  
dataset

Responsabile dei metadati ?  
Email  
mailto:frigerio.i@irea.cnr.it  
Ente  
CNR-IREA Milano  
+ Responsabile dei metadati

Data dei metadati ?  
2017-07-08

Please fill in the Google Sheets in the Drive repository.

# The importance of the Inspire Theme

**Tema di INSPIRE ?**

- Servizi di pubblica utilità e servizi amministrativi
- Zone sottoposte a gestione/limitazioni/regolamentazione e unità con obbligo di comunicare dati
- Condizioni atmosferiche
- Copertura del suolo
- Distribuzione della popolazione — demografia
- Distribuzione delle specie
- Edifici
- Elementi geografici meteorologici
- Elementi geografici oceanografici
- Elevazione
- Geologia
- Habitat e biotopi
- Idrografia
- Impianti agricoli e di acquacoltura
- Impianti di monitoraggio ambientale
- Indirizzi
- Nomi geografici
- Orto immagini
- Parcelle catastali
- Produzione e impianti industriali

**Parametro osservativo ?**

+ Parametro osservativo

**Tema di INSPIRE ?**

Reti di trasporto

+ Tema di INSPIRE

**Keyword da vocabolari controllati ?**

**Keyword**

vehicle rental

vehicle rental di provenienza

di provenienza

**Data di pubblicazione (aaaa-mm-gg)**

Data di pubblicazione (aaaa-mm-gg)

+ Keyword da vocabolari controllati

**Keyword a testo libero ?**

+ Keyword a testo libero

**Parametro osservativo ?**

+ Parametro osservativo



## The importance of the Inspire Theme

**Tema di INSPIRE ?**

Reti di trasporto ▼

+ Tema di INSPIRE

**Keyword da vocabolari controllati ?**

**Keyword**

vehicle rental

vehicle rental di provenienza

di provenienza

**Data di pubblicazione (aaaa-mm-gg)**

Data di pubblicazione (aaaa-mm-gg)

+ Keyword da vocabolari controllati

**Keyword a testo libero ?**

+ Keyword a testo libero

**Parametro osservativo ?**

+ Parametro osservativo

Only for scientific purpose.

## RNDT metadata fields: Next Step : extend quality fields

### Distribuzione dei dati

**Distributore** ?

Email

**Ente**

+ Distributore

**Indirizzo della risorsa** ?

### Qualità dei dati

**Accuratezza posizionale** ?

**Genealogia** ?

# Useful Links :

- ▶ RNDT Fields Manual :  
[http://www.rndt.gov.it/RNDT/home/images/RNDT\\_guida\\_operativa\\_dati\\_v2.0\\_20140725.pdf](http://www.rndt.gov.it/RNDT/home/images/RNDT_guida_operativa_dati_v2.0_20140725.pdf)
- ▶ Get-IT  
<http://www.get-it.it/>



# IREA Naples : Web Deploy of Time Series

10 55 cm/year

1992.31 1992.41 1992.60 1992.69 1992.79 1993.17 1993.36 1993.56 1993.74 1993.94 1995.35 1995.44 1995.54 1995.63 1995.73 1995.82 1995.83 1995.92 1995.92 1996.01 1996.11 1996.11 1996.49 1996.59 1996.68 1997.45 1998.03 1998.60 2000.42 2000.71 2000.81 2000.90 2001.00 2001.58 2001.67 2001.96 2002.05 2002.25 2002.72 2002.91 2003.10 2003.30 2003.59 2003.68 2003.87 2003.97 2004.64 2004.73 2004.93 2005.22 2005.41 2005.60 2005.79

383847.79 3115535.310 837672 -0.110132 161 144 28 522584 -16 167292 -0.271239 -0.00000 0.726865 1.53615 0.273120 -1.31764 -0.329221 1.58779 3.43777 0.620958

1.09819 1.03266 1.62859 3.16386 2.60920 1.06164 2.11563 2.26032 2.94830 3.37892 2.13966 1.01388 3.71340 3.63465 2.20264 2.67435 3.26372 2.45828 1.99037 1.37857 3.99820 1.38926 1.21839 -0.898401 -1.35003 0.468195 1.28424 2.69060 -0.509746 0.291974 -0.123933 0.703781 -2.05103 -1.04274 -0.776650 2.88467 1.67740 1.69581 1.00309 1.40094 0.180434 -0.964214 0.900135 1.46264 1.34702 -1.64738

305703.06 3155649.5 0.962555 -0.0957369 161 145 28 522584 -16 167292 -0.271239 -0.00000 0.231495 1.10119 0.344736 -1.52335 -0.318635 1.25365 3.12865 0.655781 1.13315 0.755935 1.72506 2.77567 2.28870 1.03523 2.09393 2.26063 2.82193 3.47251 2.11683 0.869572 3.65337 3.44932 2.14698 2.82136 3.21488 2.32727 1.88338 1.39297 4.25847 1.92369 1.53176 -0.565357 -1.12916 0.266027 1.59169 2.05387 -0.673227 -0.142085 -0.644791 0.711379 -1.41418 -0.719609 -0.348141 2.81019 1.06803 1.50044 0.535337 1.45087 0.242995 -0.313013 0.686014 1.32579 1.41940 -1.54576

305952.02 3155552.0 -0.000093 -0.0770776 162 145 28 522584 -16 167292 -0.271239 -0.00000 0.408083 1.35433 0.684314 -0.979364 -0.0618577 1.13595 3.21453 0.99364 1.43255 0.917284 2.00139 2.97380 2.24436 1.04883 2.29010 2.59686 2.87980 3.27706 2.20167 1.08337 3.79730 3.58637 2.13109 3.25455 3.10238 2.55705 2.43309 1.64585 4.60834 1.85294 1.61110 -0.475206 -0.570013 0.108892 1.64812 2.36209 -0.359409 0.626673 -0.281547 0.960229 -1.11907 -0.103198 -0.670806 3.09593 1.58237 2.11461 1.25159 1.42188 0.328586 1.09010 1.18793 1.53657 1.63628 -1.28043

1st record  
Number of the column relevant to the start of the time series  
Number of employed dates  
Deformation measurement unit

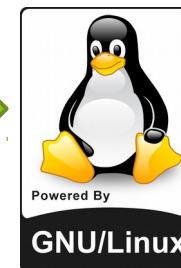
2nd record  
Date: [year+(month-1)/12+(day/365)]  
The deformation time series of the analyzed points start from the 3rd record

Column  
1 East Coord. - UTM - WGS84  
2 North Coord. - UTM - WGS84  
3 Temporal interferometric coherence  
4 Deformation velocity (cm/year)  
5 Azimuth Coord.  
6 Range Coord.  
7 Latitude Coord.  
8 Longitude Coord.  
9 Residual topography

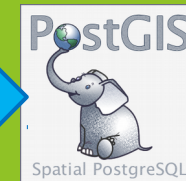
Development of a Data Parser Application  
working on every operating system



Internal  
Process

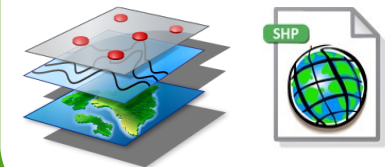


Imports data



GET-IT

Creates layer



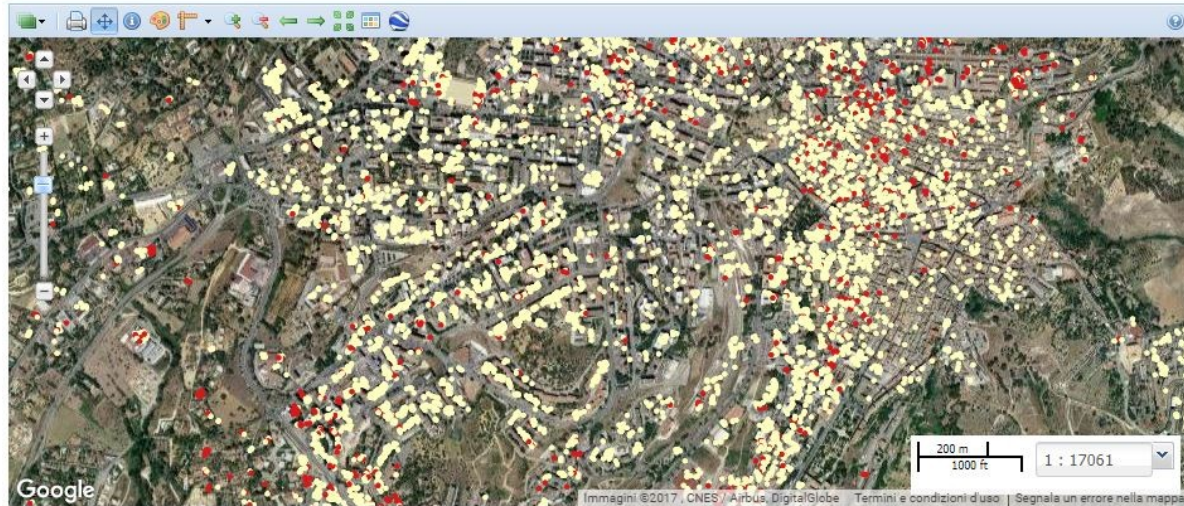


# The result :

1497886024382\_2

Scarica Layer ▼

Scarica Metadati ▼



Informazioni

Attributi

Condividi

Valutazioni

Commenti

Titolo: 1497886024382\_2

Descrizione:

No abstract provided

Publication Data: Giu. 20, 2017, 6:56 a.m.

## LEGENDA

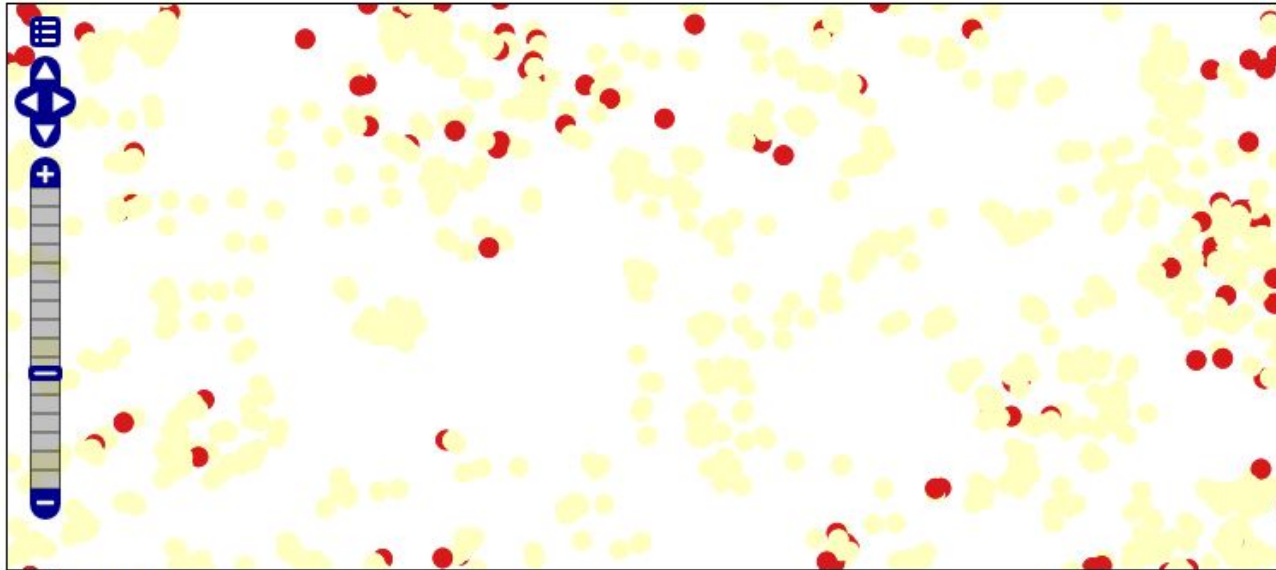
- 1.87 - -0.12
- 0.12 - 1.62
- 1.62 - 3.37

The Layer of average values of Terrain Displacement was created and deployed by using Get IT



# WMS

The Layer Terrain Displacement is served as WMS layer in a standard way



Scale = 1 : 6054

14.05427, 37.49438

1497886024382\_2

fid	id	est_utm	nord_utm	coher	vel	az	range	topo	WFS URL
1497886024382_2.5727	uptrbb5t5vra2p8ifhc8d7einj	416428.69	4149874.0	0.514661	-0.068072	1388.0	565.0	-1.0	<a href="http://test.get-it.it:6080/arcgis/servi..">http://test.get-it.it:6080/arcgis/servi..</a>
1497886024382_2.5728	2icgc7t7el37fgqvik6l75v8lt	416431.28	4149871.9	0.548098	-0.0179395	1389.0	565.0	-1.0	
1497886024382_2.5789	aqtlhhq42n17h8phgejrjdje3i	416419.03	4149878.0	0.415833	0.00340635	1388.0	566.0	-7.0	
1497886024382_2.5790	rmv5raq9n1vh055hmnt23lgig9	416425.66	4149873.9	0.617064	0.00961886	1389.0	566.0	-8.0	
1497886024382_2.5661	mak3ansrs9imol7ab9naaragkh	416422.0	4149861.8	0.432214	0.0195313	1392.0	564.0	14.5	
1497886024382_2.5662	qoro54qtnpkqjthvi1hb8820e8	416427.09	4149853.6	0.443658	-0.037897	1393.0	564.0	11.0	
1497886024382_2.5729	otoksnn817rg8285tggqnfvi1e	416425.75	4149865.9	0.419432	-0.0498185	1390.0	565.0	-2.0	
1497886024382_2.5730	fnmul9e3k7782eft6m8vceug1u	416423.59	4149855.1	0.412794	0.0276491	1393.0	565.0	1.0	
1497886024382_2.5791	gg7mk64i31tk3a125qkufoiaol	416423.94	4149865.8	0.408513	-0.0169161	1390.0	566.0	-9.5	
1497886024382_2.5792	sasaahaoohlvar0ilhc2lanbma	416423.53	4149863.8	0.606791	0.0255828	1391.0	566.0	-7.0	



Link to time series



WFS service related to each acquisition point

```
JSON
{
  type: "FeatureCollection",
  totalFeatures: 20387,
  features: [
    {
      type: "Feature",
      id: "1497886024382_2.1",
      geometry: {
        type: "Point",
        coordinates: [
          14.207487,
          37.508731
        ]
      },
      geometry_name: "location",
      properties: {
        id: "mkv7fs2frpnadrm0j19ug2vu9p",
        est_utm: 429957.25,
        nord_utm: 4151605,
        coher: 0.351036,
        vel: -0.053691,
        az: 226,
        range: 0,
        topo: -66.5
      }
    }
  ]
}
```

Each acquisition point is deployed as WFS so as to be able to access all the time series in the point.

The service is available for any standard WFS requests

# Useful Link:

- Get-IT instance hosting the example of Metadata from IREA-Napoli :  
<http://heavy.get-it.it/>

