



XIth International Specialized Exhibition and Scientific Congress

Interexpo GEO- Siberia-2015 -
"Open-Source Geospatial Solutions for Public Benefits"

20-22 April 2015

Novosibirsk

Open Data and Free and Open Source Geospatial Software for Cultural and Touristic valorisation: the case of “The paths of Via Regina”

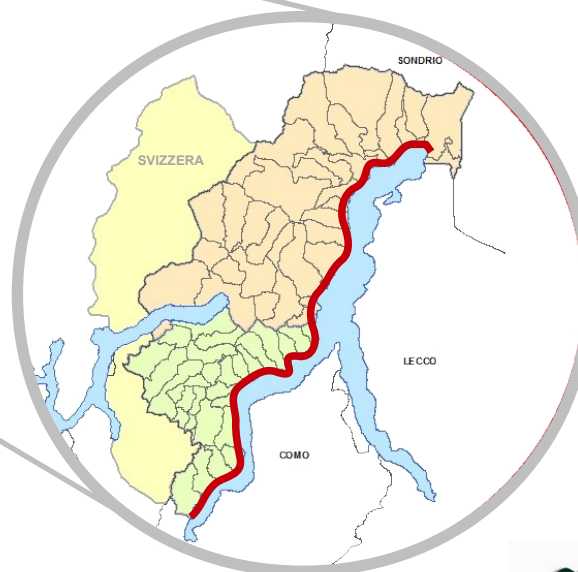
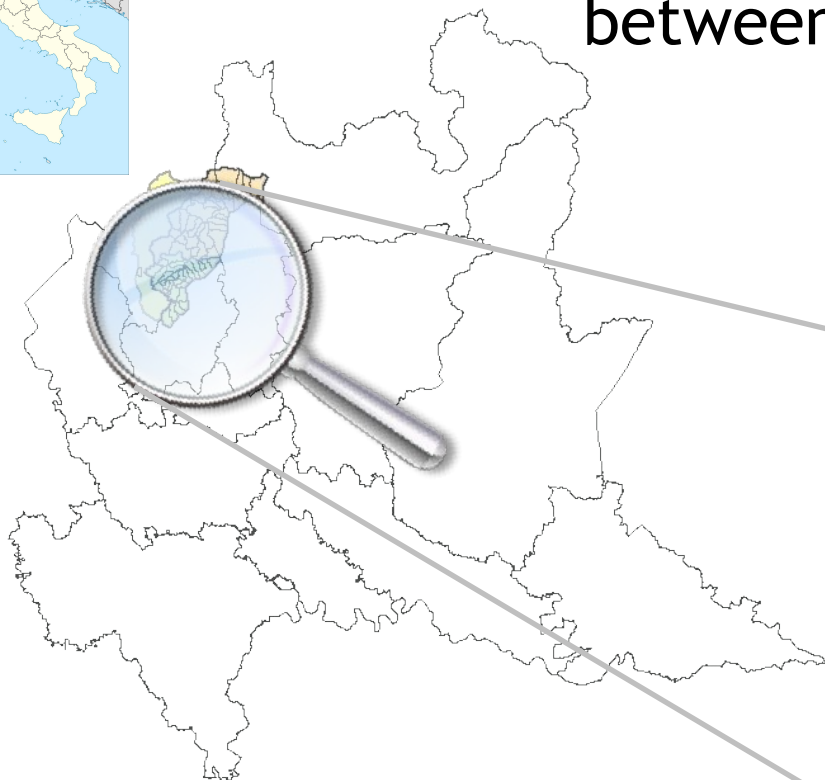
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Politecnico di Milano (DICA) – Laboratorio di Geomatica, Polo Territoriale di Como

Via Regina

❖ Via Regina defines a **cross-border area** between Italy and Switzerland

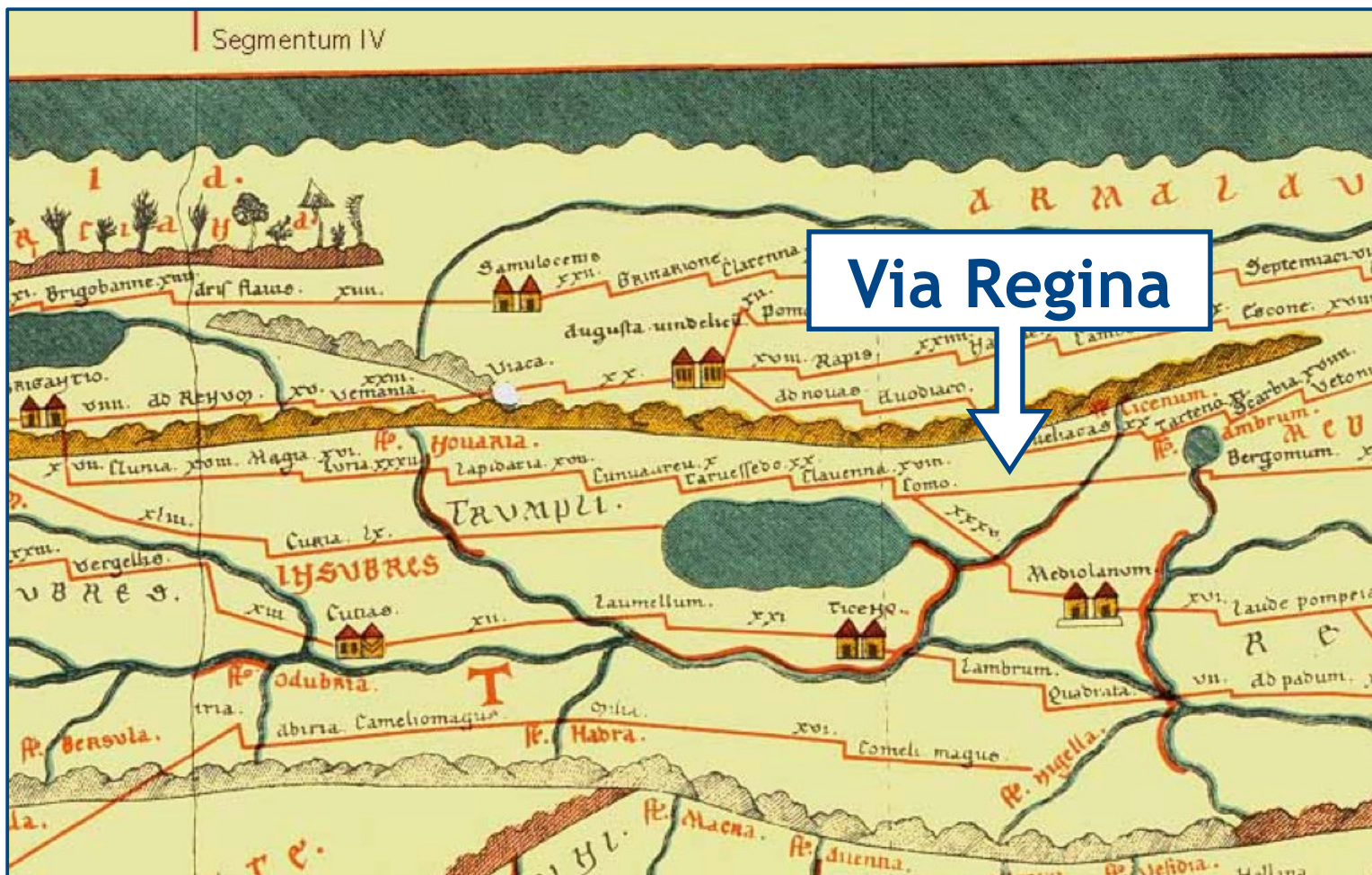
- trade and **cultural route** since Roman times
- transalpine system of **soft mobility links**



Via Regina



- ❖ Via Regina defines a cross-border area between Italy and Switzerland



Via Regina project



- ❖ “I Cammini della Regina” INTERREG project (Italy/Switzerland)

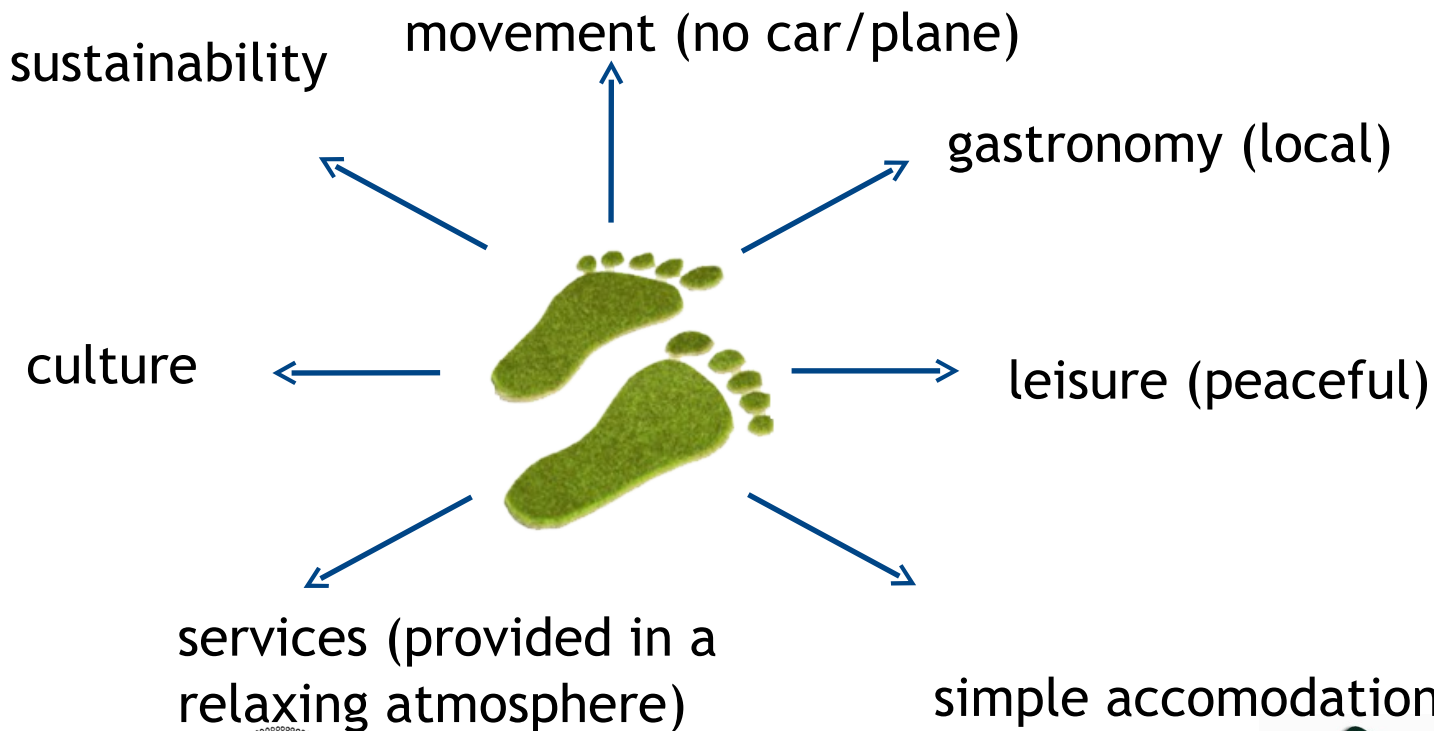


<http://www.viaregina.eu>

Slow tourism at a glance



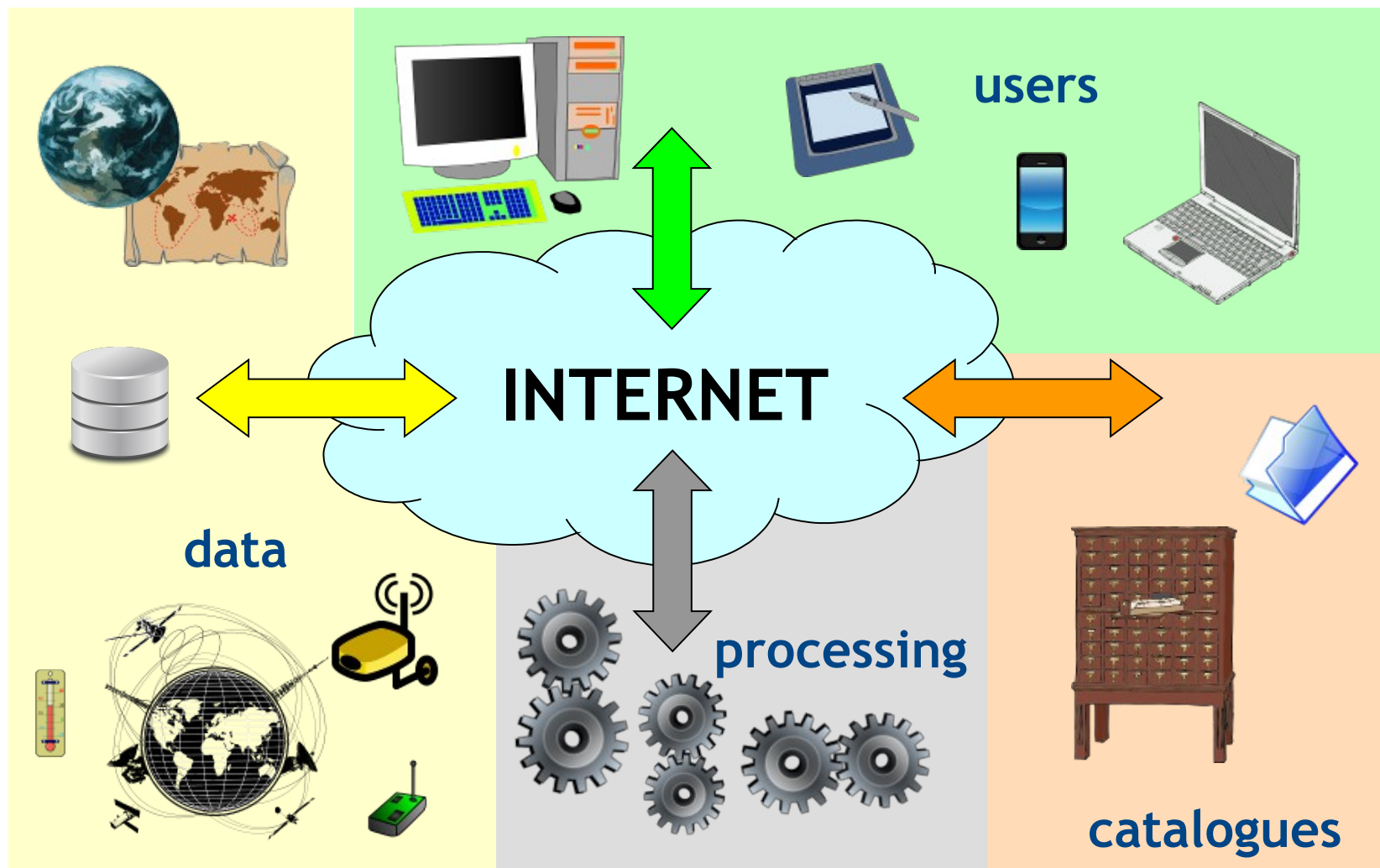
- ❖ A special case of **sustainable tourism** focused on:
 - **environmental friendliness**
 - **rediscovery of local traditions and cultural knowledge**



Geospatial Web



Geospatial Web



Data upload & sharing

- ❖ **Authoritative data:** based on the geospatial Web collaborative platform <http://viaregina.como.polimi.it>



The screenshot shows the GeoNode web interface. At the top, there is a navigation bar with the GeoNode logo, a search bar, and links for HOME, LAYER, MAPPE, DOCUMENTI, UTENTI, and CERCA. Below this, there is a section titled "ESPLORA MAPPE" with a button "Crea una nuova mappa". The main content area displays a list of maps. The first map is "Layers Mingo" by "Map da alba", created 1 month and 3 weeks ago. It has 36 visualizations and a rating of 5 stars. The second map is "I CAMMINI DELLA REGINA - Percorsi transfrontalieri legati alla via Re..." by "Map da alba", created 4 months and 2 weeks ago. It has 44 visualizations and a rating of 5 stars. On the left side, there is a sidebar with "Le tue selezioni" and buttons for "CATEGORIE", "DATA", and "PAROLE CHIAVE".

- ❖ **Open crowdwsourced data:** OpenStreetMap



Mobile data collection

❖ Allows **everyone** to report **interesting elements** using an Android device or directly from a computer

- historical and cultural elements
- morphological elements
- tourist elements
- critical elements
- warnings



Mobile data collection

- ❖ Based on the suite of tools



- management of mobile data collection through a set of related applications

FORM CREATION



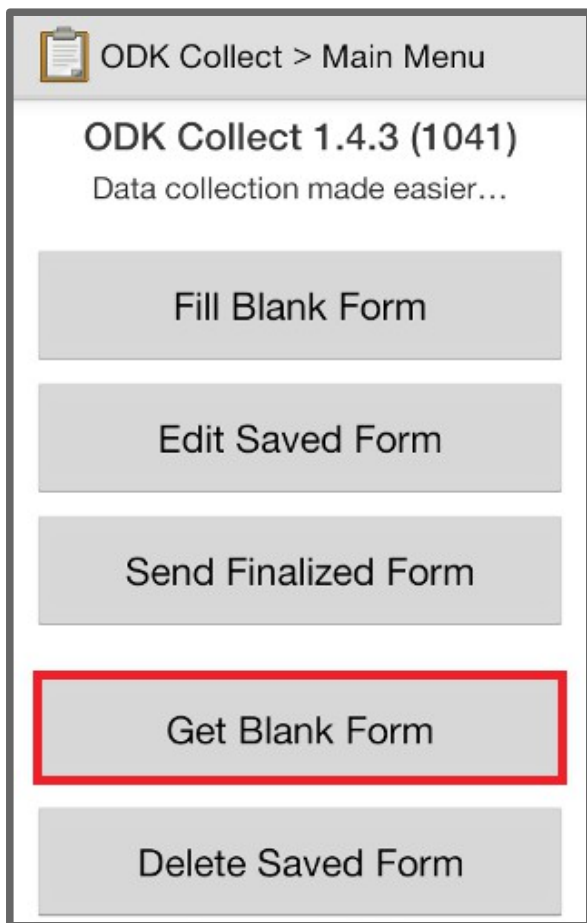
FORM COMPILATION



FORM STORAGE



❖ Form download



ODK Collect > Main Menu

ODK Collect 1.4.3 (1041)
Data collection made easier...

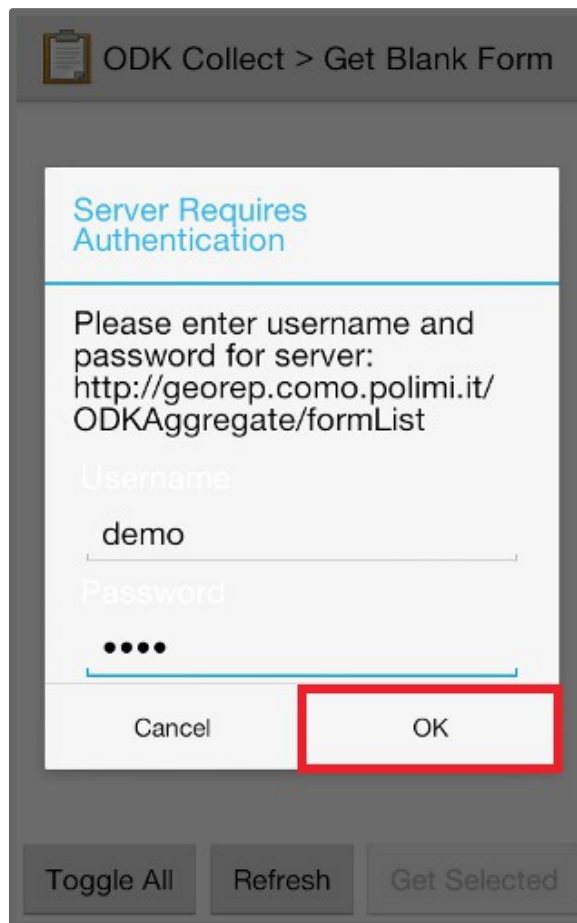
Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form



ODK Collect > Get Blank Form

Server Requires Authentication

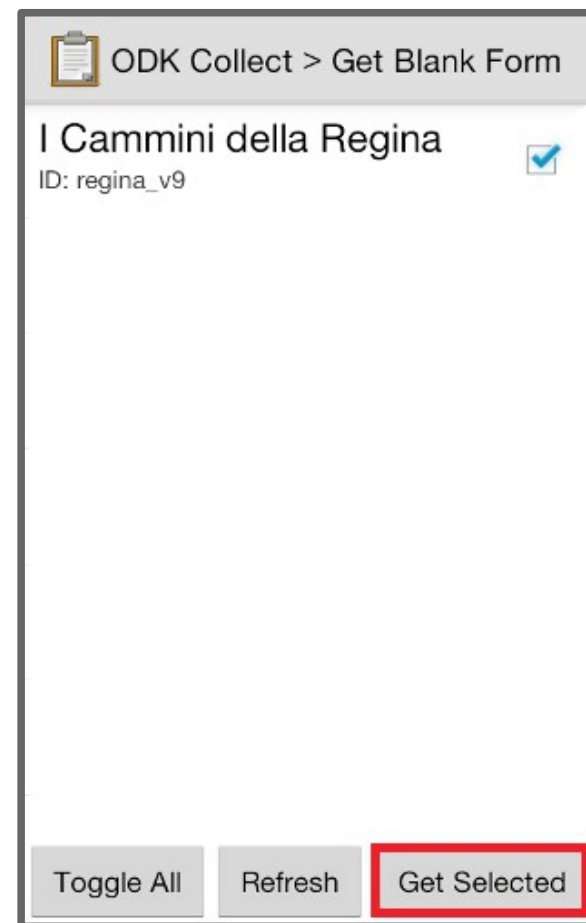
Please enter username and password for server:
<http://georep.como.polimi.it/ODKAggregate/formList>

Username
demo

Password
.....

Cancel **OK**

Toggle All Refresh Get Selected



ODK Collect > Get Blank Form

I Cammini della Regina ☒

ID: regina_v9

Toggle All Refresh **Get Selected**

❖ Form compilation

ODK Collect > Main Menu

ODK Collect 1.4.3 (1041)
Data collection made easier...

Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form

ODK Collect > Fill Blank Form

Finished scanning. All forms loaded.

Architectural Barriers
Added on Fri, Mar 07, 2014 at 10:25

Arredo_urbano
Added on Wed, Mar 05, 2014 at 13:14

I Cammini della Regina
Added on Sun, Apr 06, 2014 at 16:13

Point Of Interest
Added on mer, gen 22, 2014 at 16:29

sample
Added on Thu, Apr 03, 2014 at 15:33

ODK Collect...



I CAMMINI DELLA REGINA
percorsi transfrontalieri legati alla Via Regina

You are at the start of I
Cammini della Regina. Swipe
the screen as shown below to
go backward and forward.



backward to
previous
prompt

forward to
next
prompt

❖ Form compilation

ODK Collect...

Date of report

Aprile 2014

D	L	M	M	G	V	S
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3
4	5	6	7	8	9	10

ODK Collect...

Type of user:

Specify which kind of user you are by choosing one of the following options.

- ☒ tourist from Italy
- ☐ tourist from abroad
- ☐ citizen of Como province
- ☐ citizen of Ticino Canton

ODK Collect...

Type of element:

Specify which kind of element you wish to report by choosing one of the following options.


- ☒ historical and cultural element
- ☐ morphological element

❖ Form compilation


ODK Collect...

Classification of the element:
Classify the element you wish to report by choosing one of the following options.

☒ museum



☐ religious building



ODK Collect...

Subclassification of the element:
Classify the element you wish to report by choosing one of the following options (optional).

☐ ethnographyc

☒ thematic

☐ gallery

☐ collections

ODK Collect...

Name of the element:
Type the name of the element you wish to report (optional).

Museum of Villa Erba

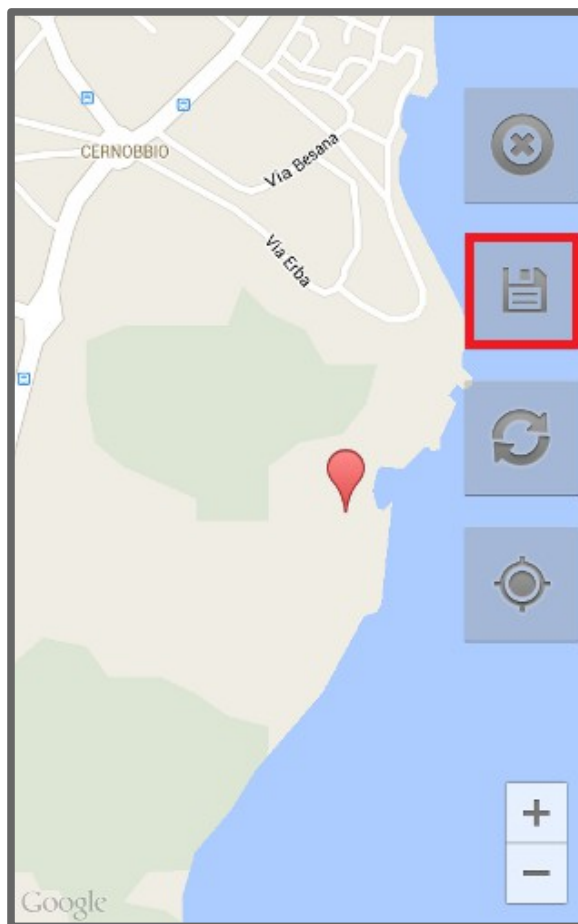
❖ Form compilation

ODK Collect...

Position of the element:
Be sure to be outdoors and check that the device GPS is on. Alternatively, you can also determine the position by connecting to a wi-fi network.

Replace Location

Latitude: N 45°50'16"
 Longitude: E 9°4'39"
 Altitude: 0m
 Accuracy: 5.5m




ODK Collect...

Picture showing the element:
Take a picture of the element using the device camera or upload a picture available on the device.

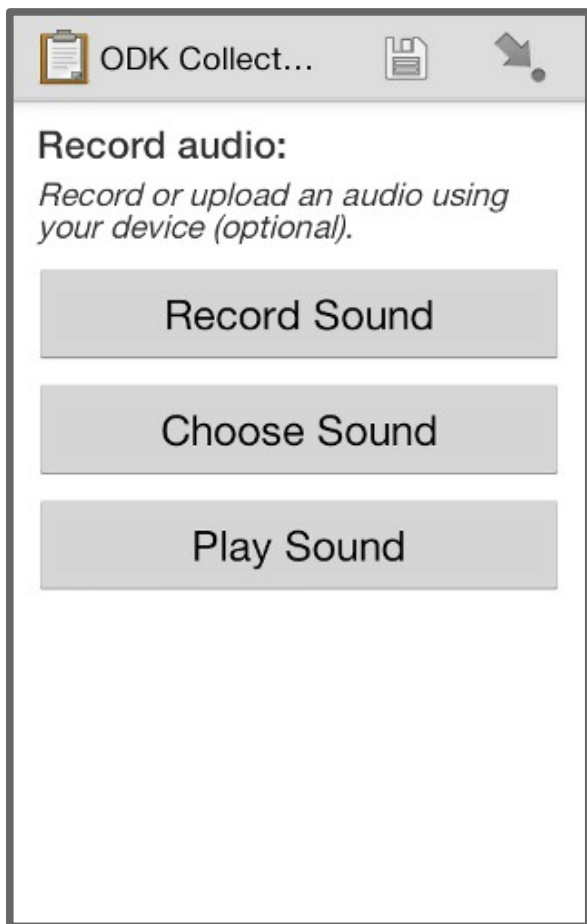
Take Picture

Choose Image



The image shows a screenshot of the ODK Collect form. It has two main sections: 'Position of the element' and 'Picture showing the element'. The 'Picture showing the element' section has two buttons: 'Take Picture' and 'Choose Image'. Below these buttons is a photograph of a large, ornate building with a clock tower, which is the image that was chosen.

❖ Form compilation



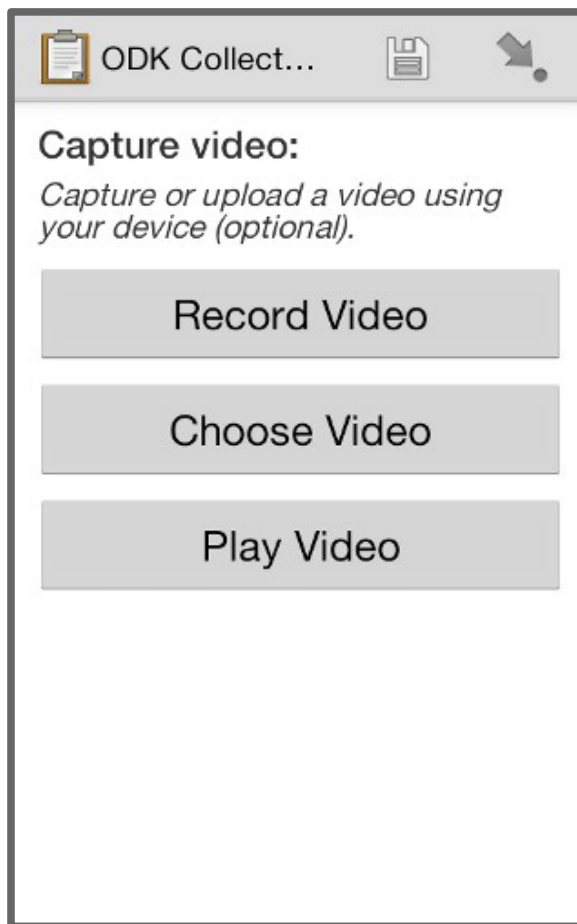
ODK Collect...

Record audio:
Record or upload an audio using your device (optional).

Record Sound

Choose Sound

Play Sound



ODK Collect...

Capture video:
Capture or upload a video using your device (optional).

Record Video

Choose Video

Play Video



ODK Collect...

You are at the end of I Cammini della Regina.

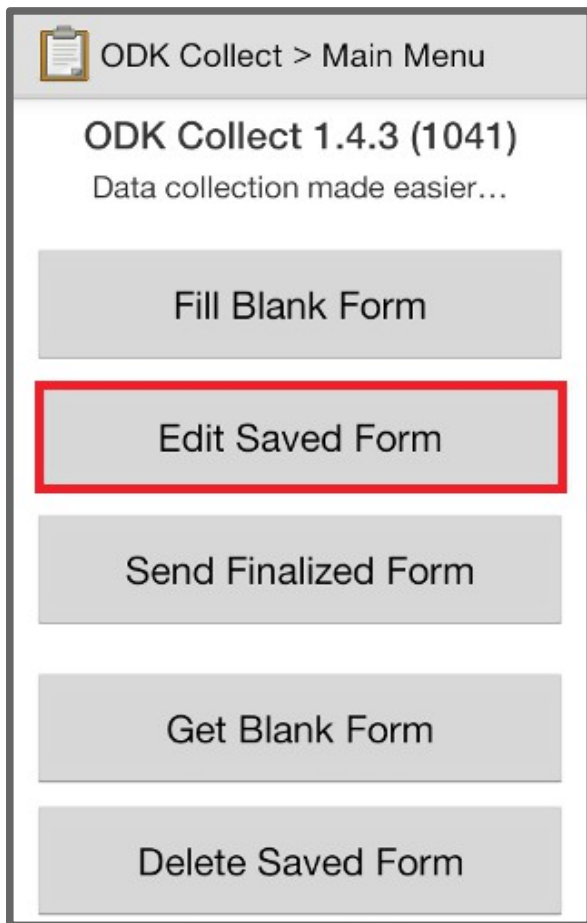
Name this form

I Cammini della Regina

☒ Mark form as finalized

Save Form and Exit

❖ Form compilation



ODK Collect > Main Menu

ODK Collect 1.4.3 (1041)
Data collection made easier...

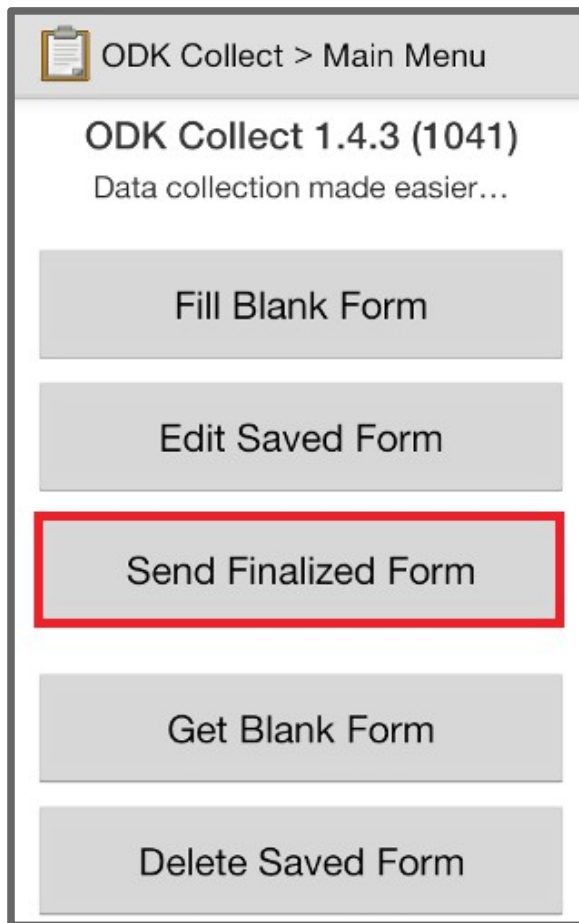
Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form



ODK Collect > Main Menu

ODK Collect 1.4.3 (1041)
Data collection made easier...

Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form



ODK Collect > Send Finalized...

Upload Results

I Cammini della Regina -
Success

OK

❖ Form compilation from computer

I Cammini della Regina

Date of report of the element: *

Insert the current date or the date the report is referred to.

2014-06-10



Type of user: *

Specify which kind of user you are by choosing one of the following options.

- ☒ tourist from Italy
- ☐ tourist from abroad
- ☐ citizen of Como province
- ☐ citizen of Ticino Canton

Type of element: *

Specify which kind of element you wish to report by choosing one of the following options.

- ☒ historical and cultural element

Required



Mapping parties

SABATO 3 MAGGIO 2014

MapParty!



CAMMINARE, OSSERVARE, DISEGNARE, MAPPARE
LUNGO I CAMMINI DELLA REGINA PER UN'ESPERIENZA
CULTURALE, SENSORIALE E GIOSA



Mapping parties

❖ Cernobbio-Piazzola – May 3, 2014

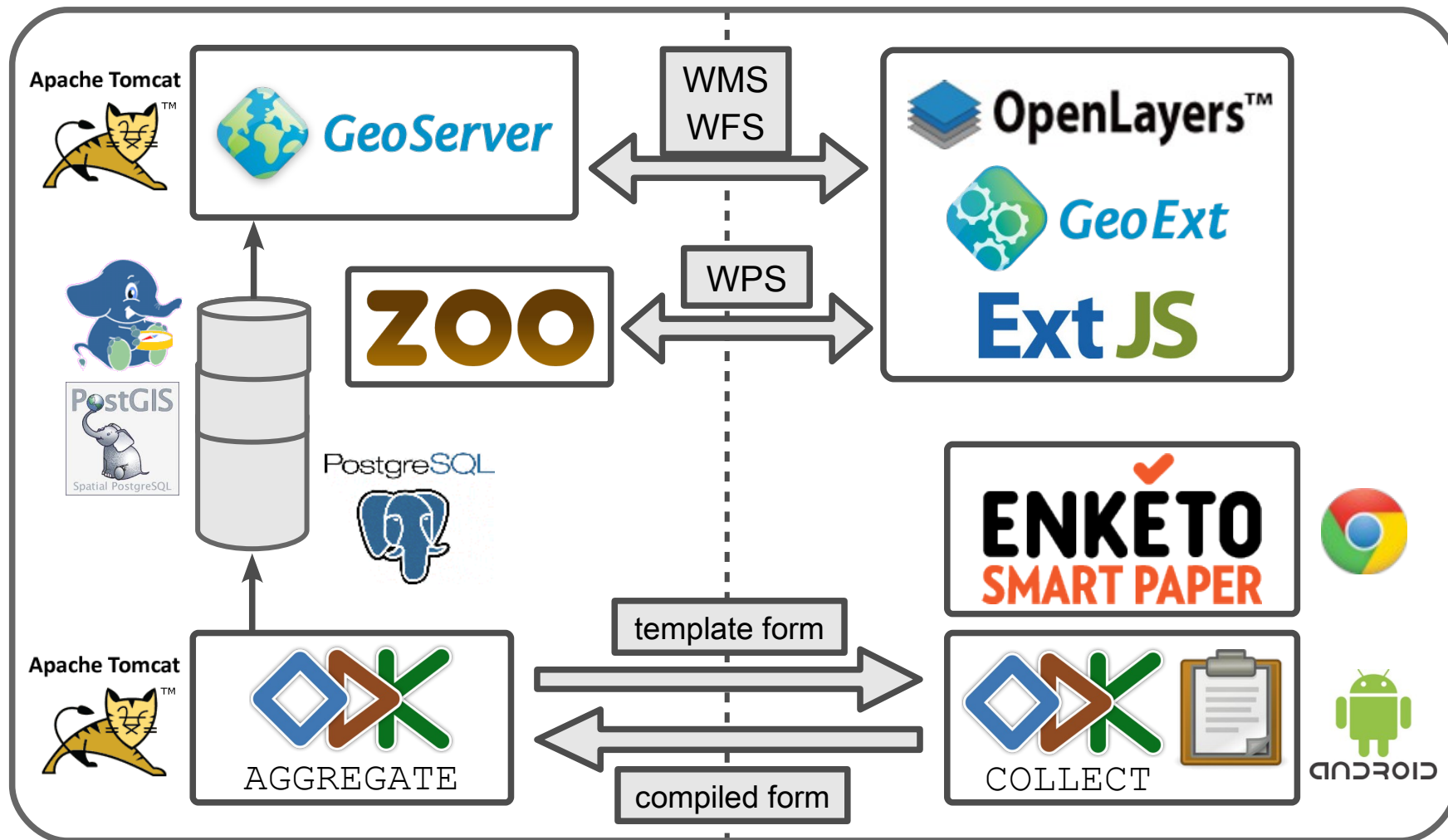


<http://viaregina.como.polimi.it/mapparty>

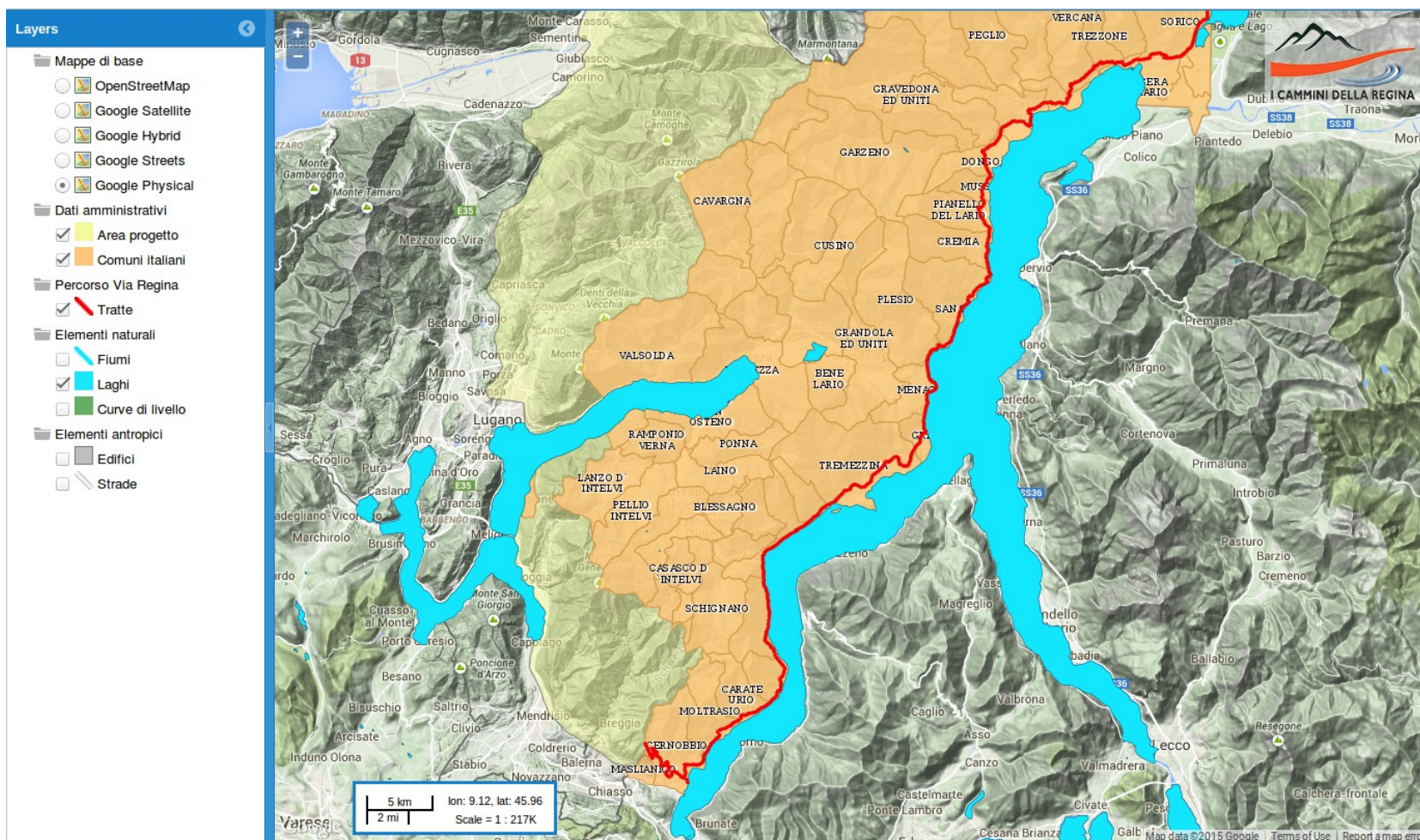
2D viewer architecture

SERVER

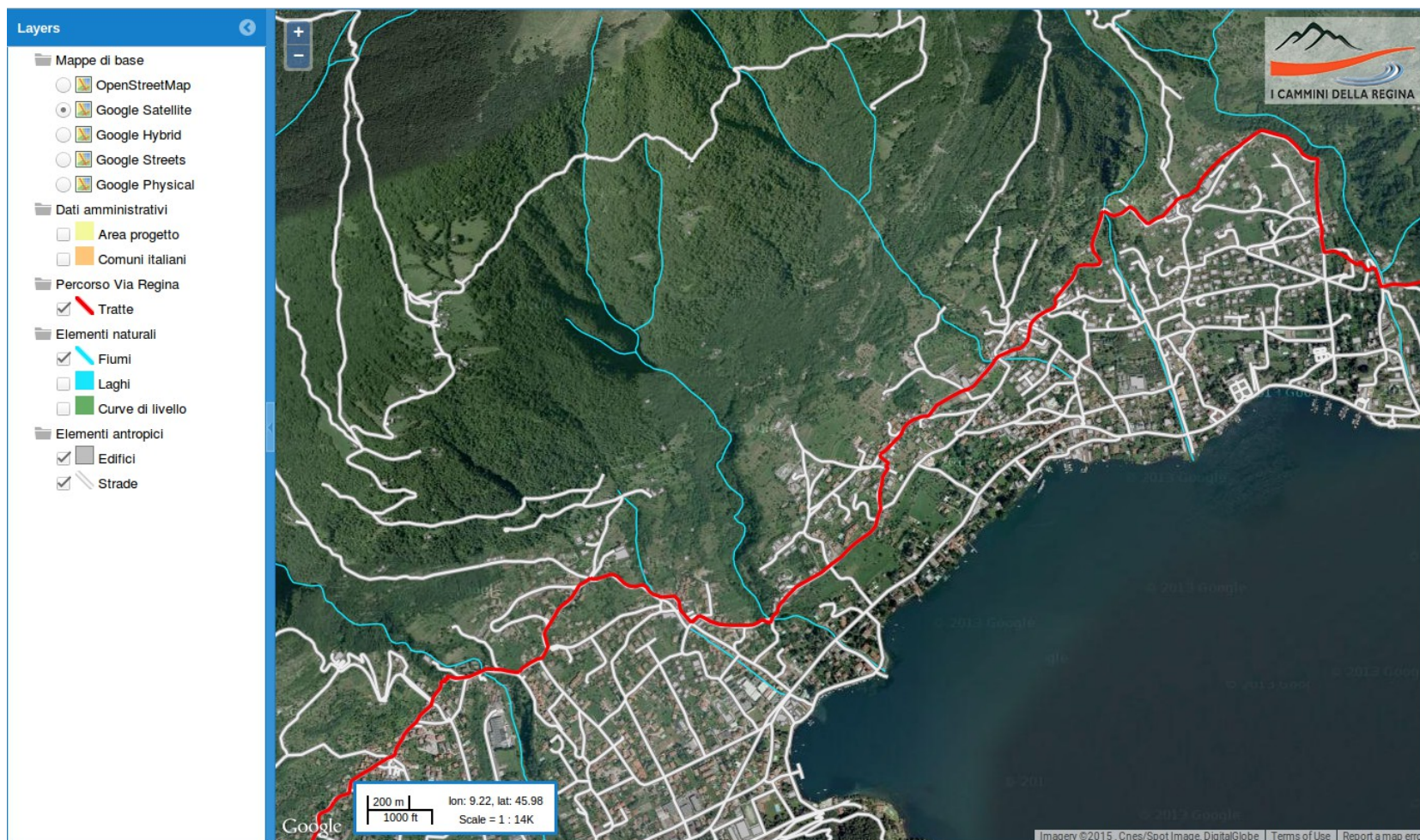
CLIENT



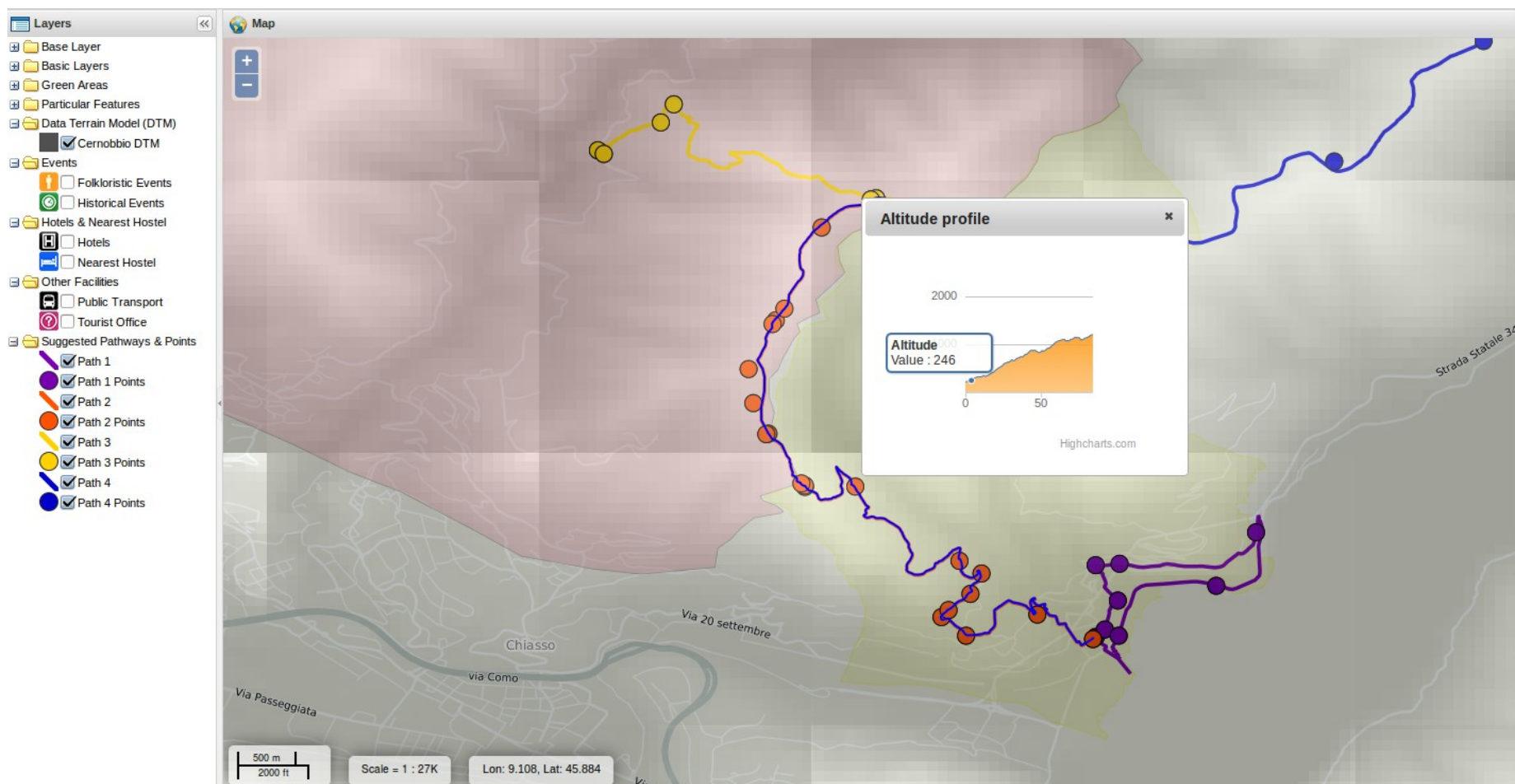
❖ Data visualization



❖ Data visualization



❖ Computation of **terrain profile** through WPS (Web Processing Service)



3D viewer



- ❖ Built as a customization of the [PoliCrowd 2.0](#) platform:

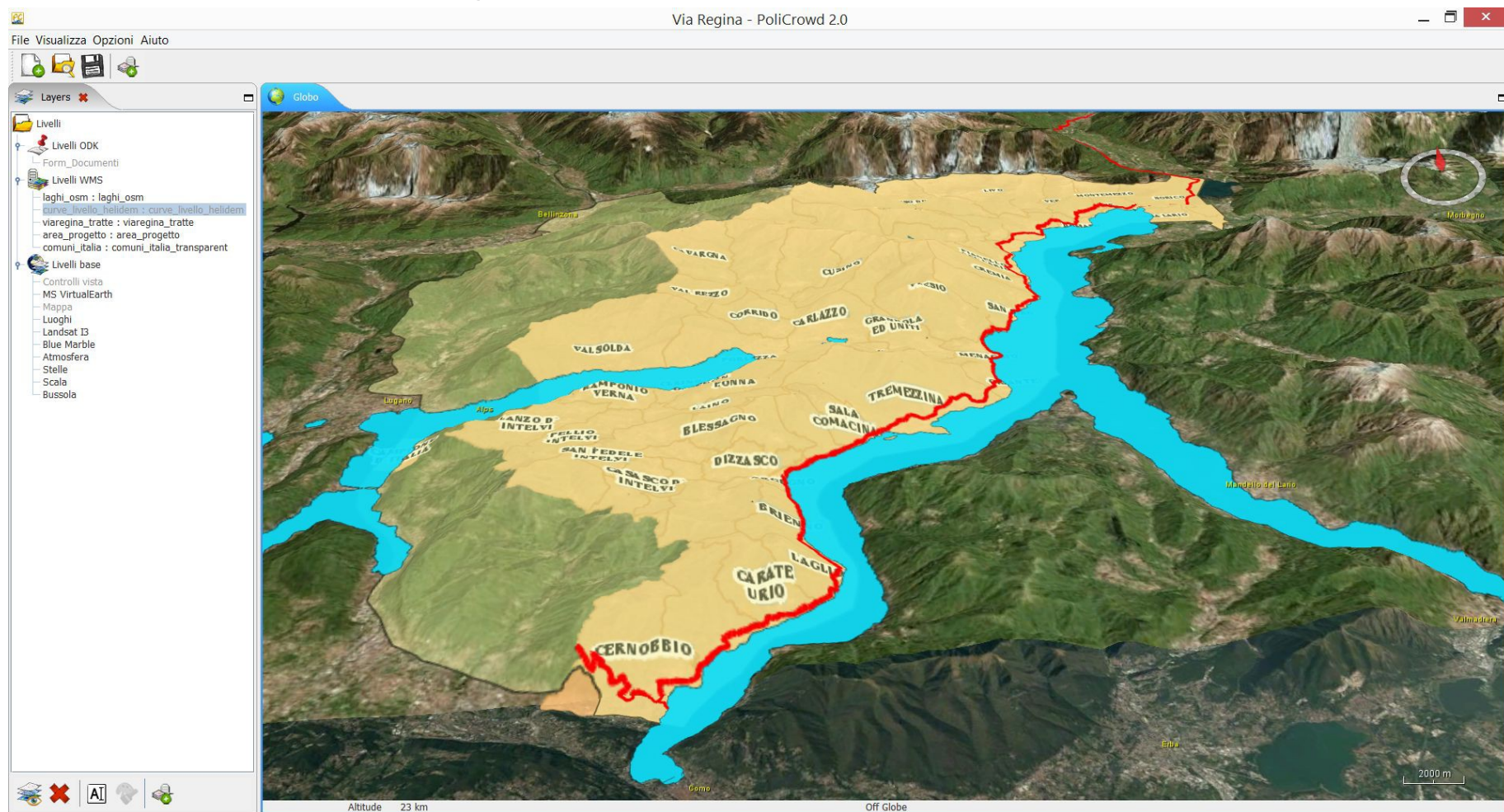


- data [3D visualization](#) on NASA World Wind virtual globe
- connection to [any WMS and ODK Aggregate server](#)
- participative functionalities: POIs collaborative enrichment & project creation
- customizable data styling & [multimedia](#) support
- support for time dimension ([4D visualization](#))



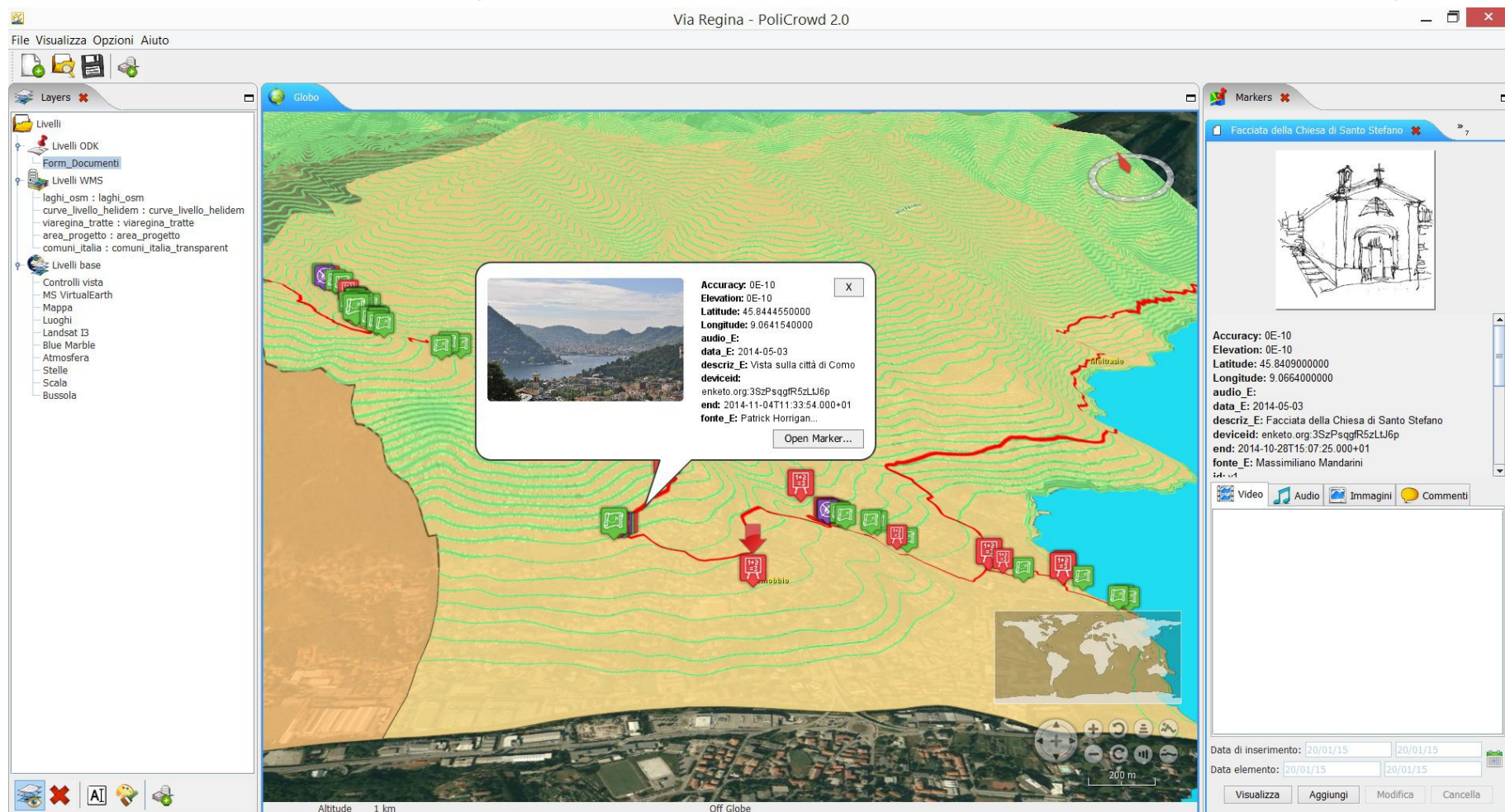
3D viewer

❖ Connection to the project WMS server & data 3D visualization



3D viewer

- ❖ Connection to the project **ODK server** & customization of the **point style**



3D viewer

- ❖ Query of the ODK data & point enrichment with multimedia contents

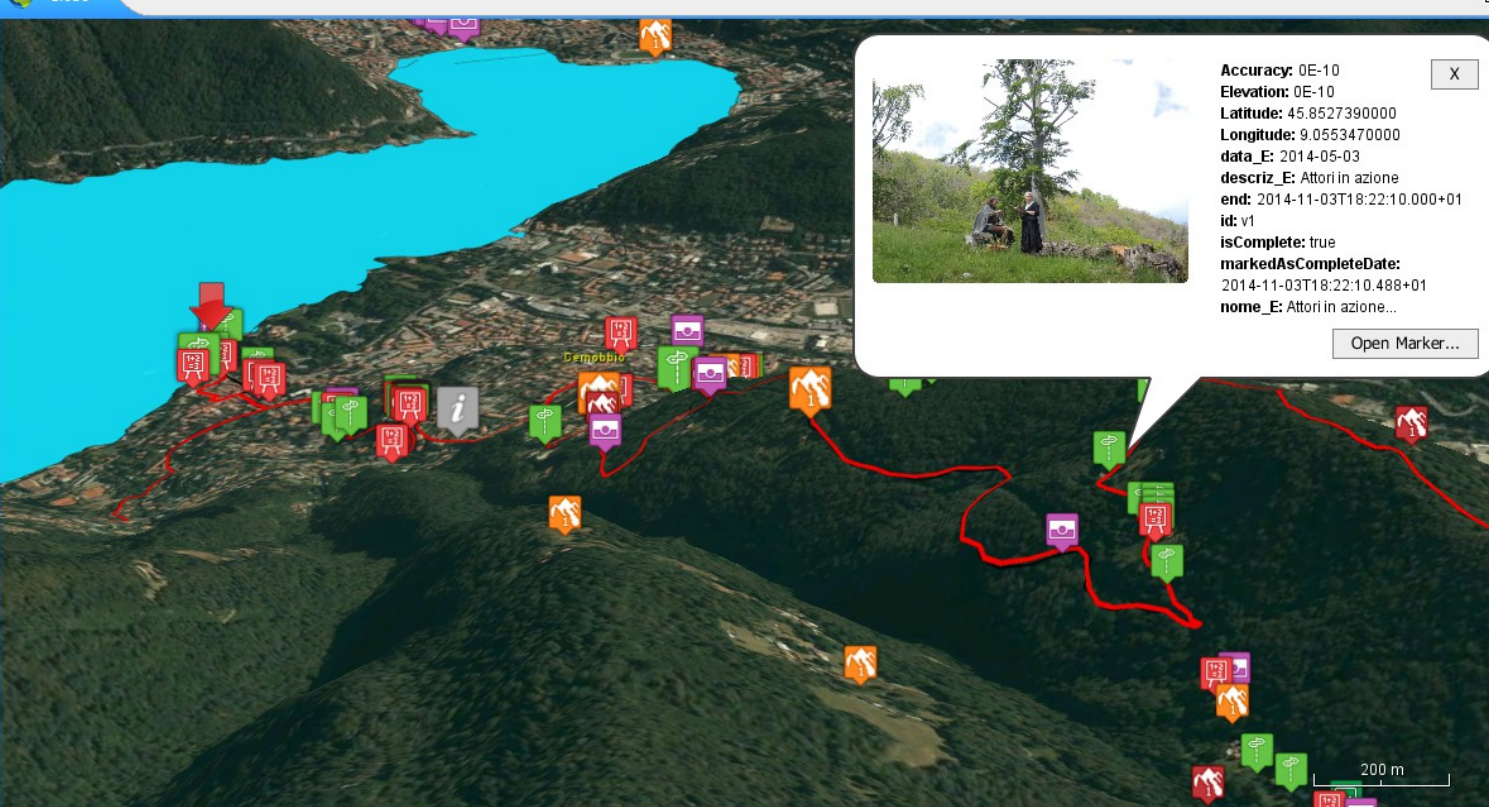
File Visualizza Opzioni Aiuto



Layers

- Livelli
 - Livelli ODK
 - I Cammini della Regina
 - Form_Documenti
 - Livelli WMS
 - laghi_osm : laghi_osm
 - comuni_italia : comuni_italia_transparent
 - viaregina_tratte : viaregina_tratte
 - area_progetto : area_progetto
 - curveLivello_helidem : curveLivello_helidem
 - elevation : elevation
 - Percorso della Via Regina : percorso_regina_2f
 - Livelli base
 - Controlli vista
 - MS VirtualEarth
 - Mappa
 - Luoghi
 - Landsat I3
 - Blue Marble
 - Atmosfera
 - Stelle
 - Scala
 - Bussola


Globo



Altitude 2 km Off Globe

200 m

Downloading



Accuracy: 0E-10
Elevation: 0E-10
Latitude: 45.8527390000
Longitude: 9.0553470000
data_E: 2014-05-03
descriz_E: Attori in azione
end: 2014-11-03T18:22:10.000+01
id: v1
isComplete: true
markedAsCompleteDate: 2014-11-03T18:22:10.488+01
nome_E: Attori in azione...

Open Marker...

Acknowledgments

- ❖ This research has been funded by the INTERREG “I Cammini della Regina – Percorsi transfrontalieri legati alla Via Regina (The paths of Regina – Crossborder paths departing from Via Regina)” 2007-2013 project.

<http://www.viaregina.eu>

<https://www.facebook.com/viaregina2.0>

<https://twitter.com/viaregina20>

Thanks for your attention!

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