Research Group Cartography
at Department of Geodesy and Geoinformation
at Vienna University of Technology

Wien, January 16, 2015

Via Regina: using FOSS4G for slow tourism

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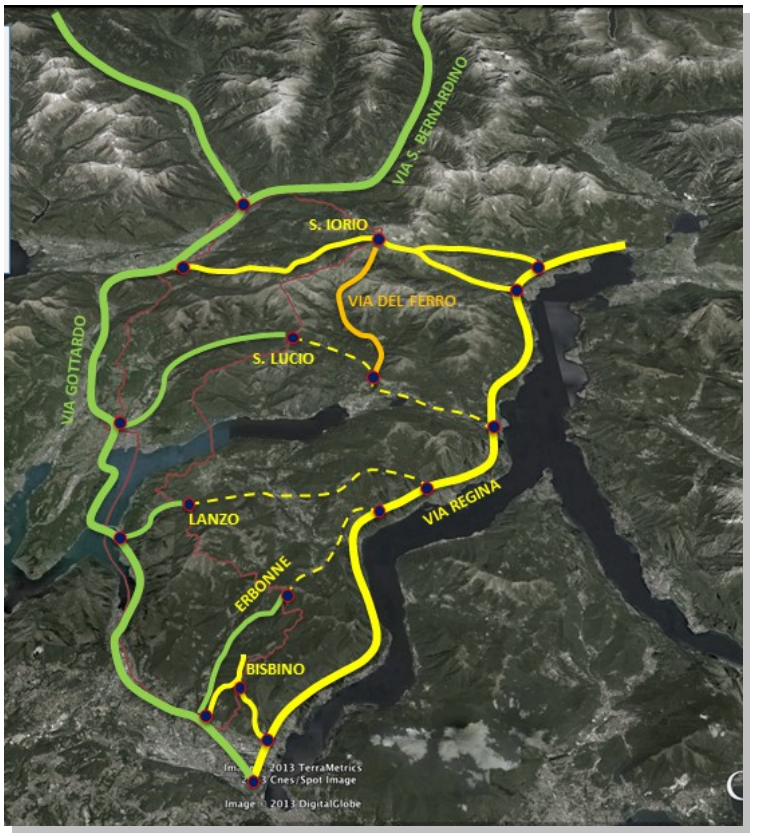
The paths of Via Regina project

INTERREG project (Cross-border Co-operation Operational Programme Italy – Switzerland 2007-2013) which aims at valorizing the cross-border area between Italy and Switzerland covered by many historical paths departing from the old Via Regina.



Aims

- Valorization of the territory and cultural heritage through the preservation and enhancement of the available historical paths
- Use of geospatial technology for disseminating knowledge, protecting the natural resources and promoting tourism thanks to the environmental and cultural wealth of the territory
- Development and implementation of innovative technological tools such as:
  - multidimensional visualization
  - participation
  - augmented reality

Partners

POLITECNICO DI MILANO

Scuola universitaria professionale della Svizzera italiana
SUPSI

Fondazione Politecnico di Milano

IUBILANTES COMO

Museo della Via Spluga e della Val San Giacomo

Città di Cernobbio

Regione Lombardia

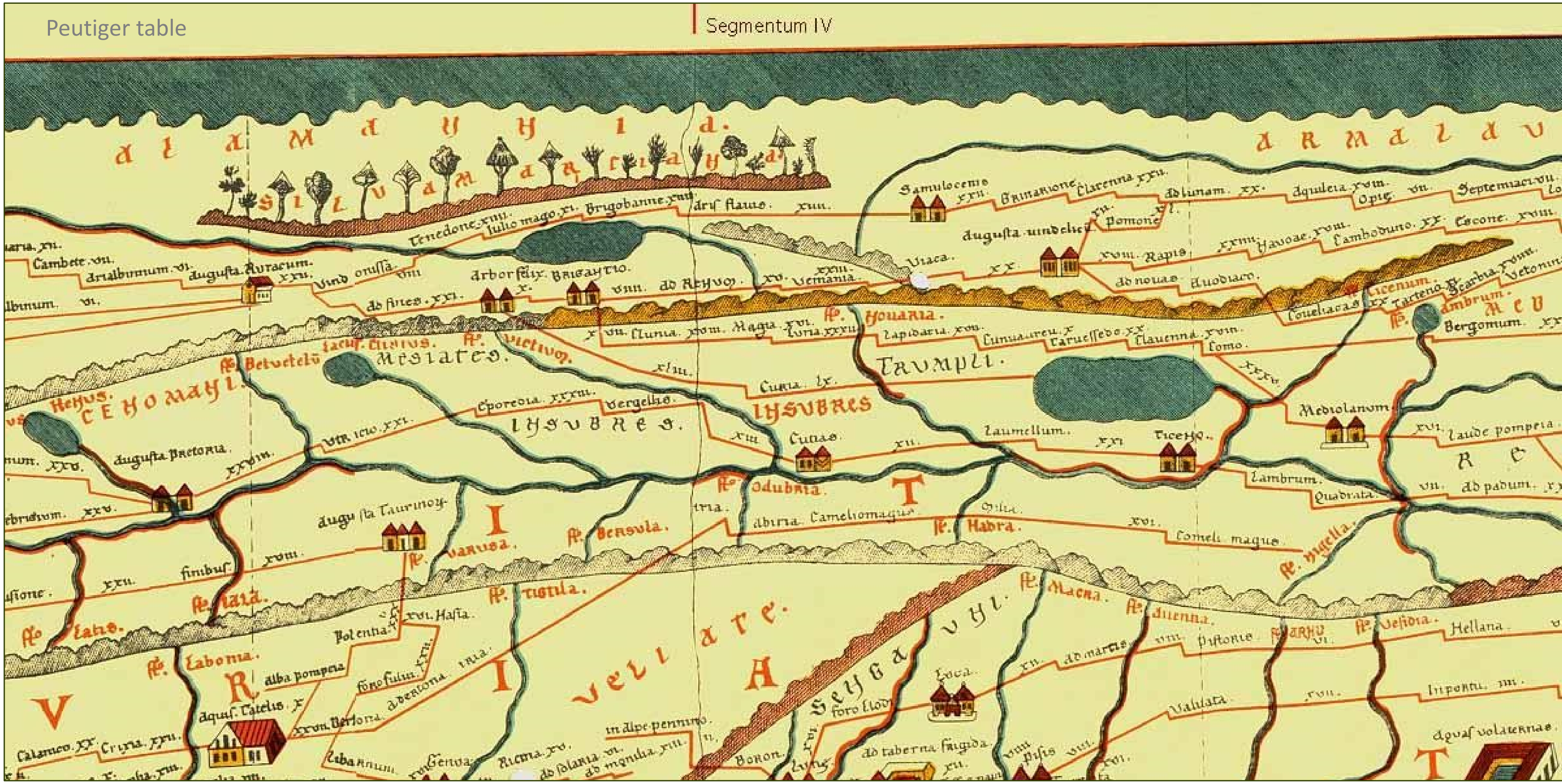
I CAMMINI DELLA REGINA
percorsi transfrontalieri legati alla Via Regina

INTERREG
ITALIA~SVIZZERA ITALIE~SUISSE ITALIEN~SCHWEIZ

POLITECNICO DI MILANO

Unione Europea
Fondo Europeo di Sviluppo Regionale

What is Via Regina?



ti

Regione Lombardia

I CAMMINI DELLA REGINA
percorsi transfrontalieri legati alla Via Regina

What is Via Regina?

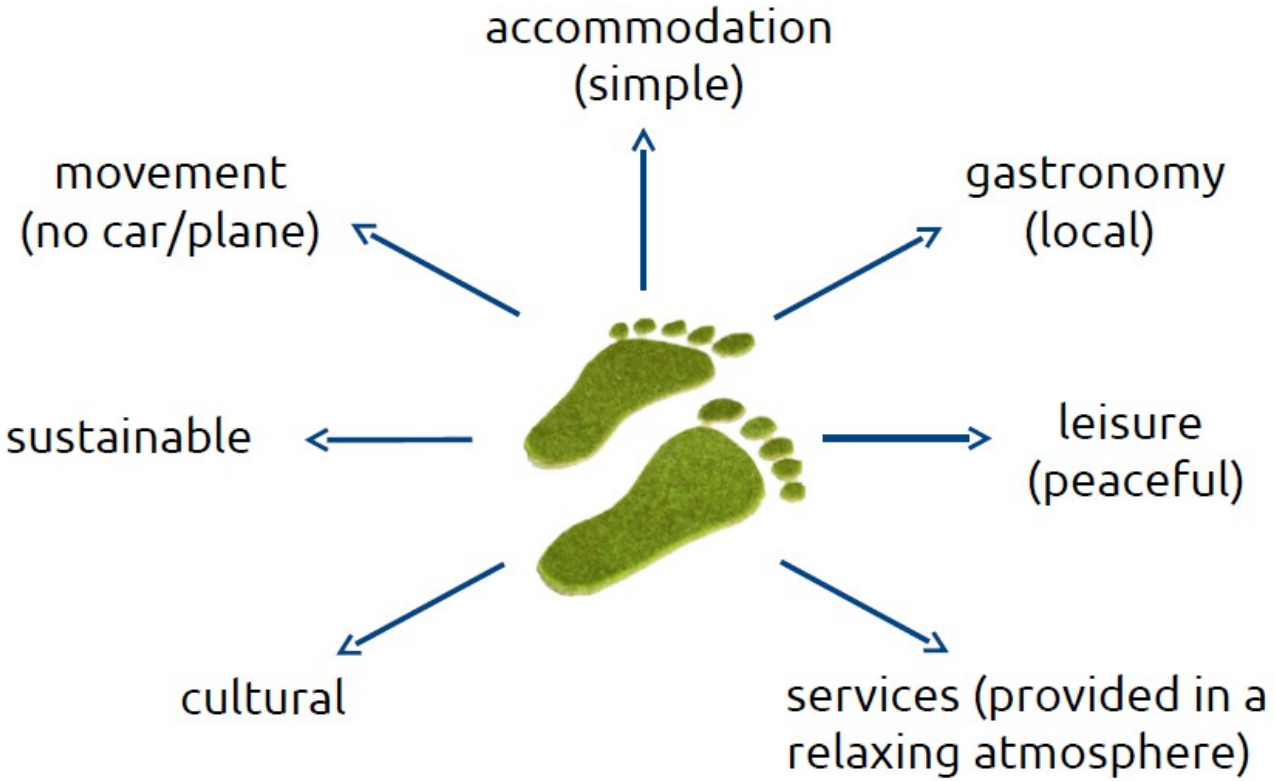
Via Regina is one of the oldest paths for historical and cultural exchanges between Italy and Switzerland.

What is Via Regina?

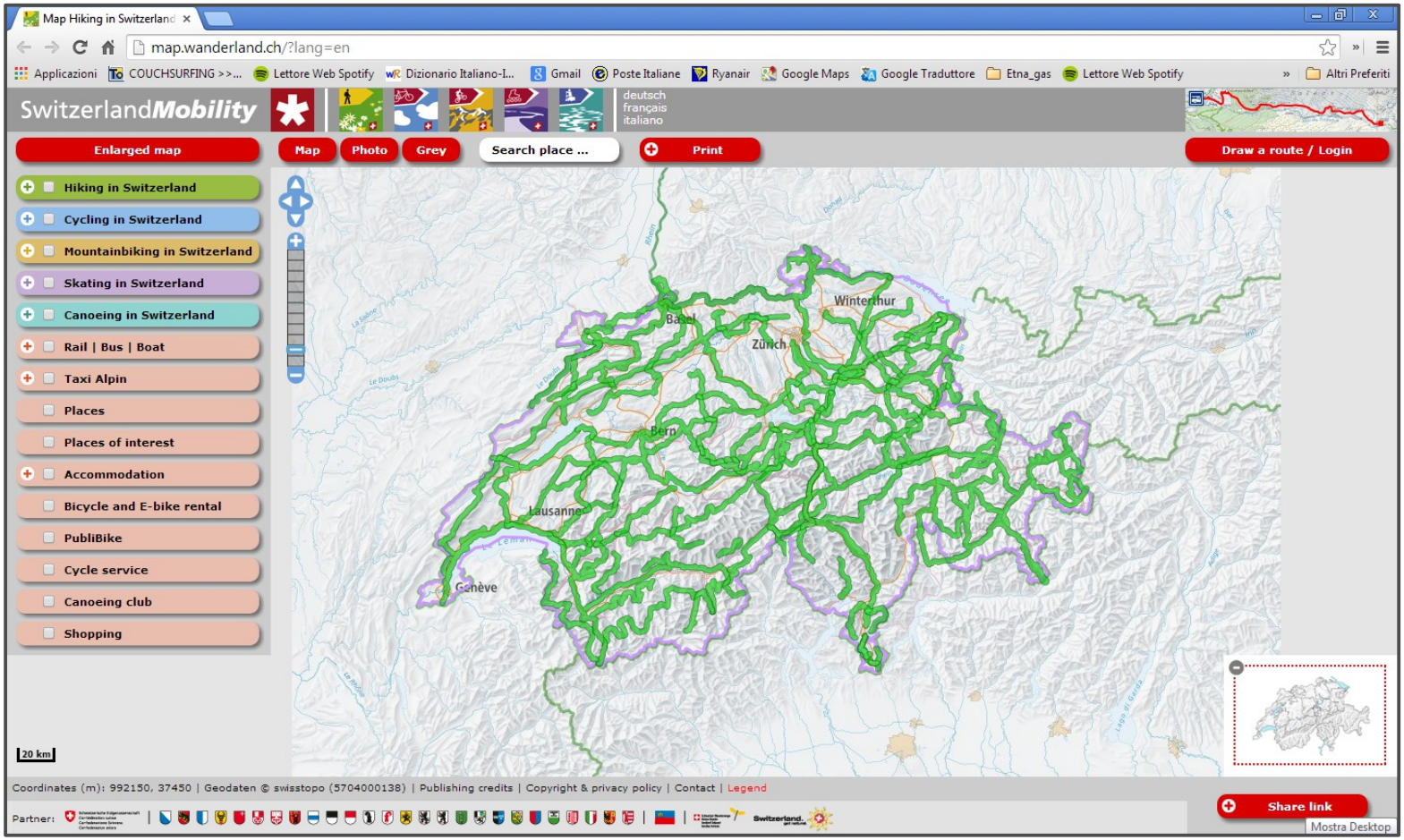
It represents a fundamental transalpine system of **soft** mobility links especially for slow tourism

Slow tourism at a glance

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

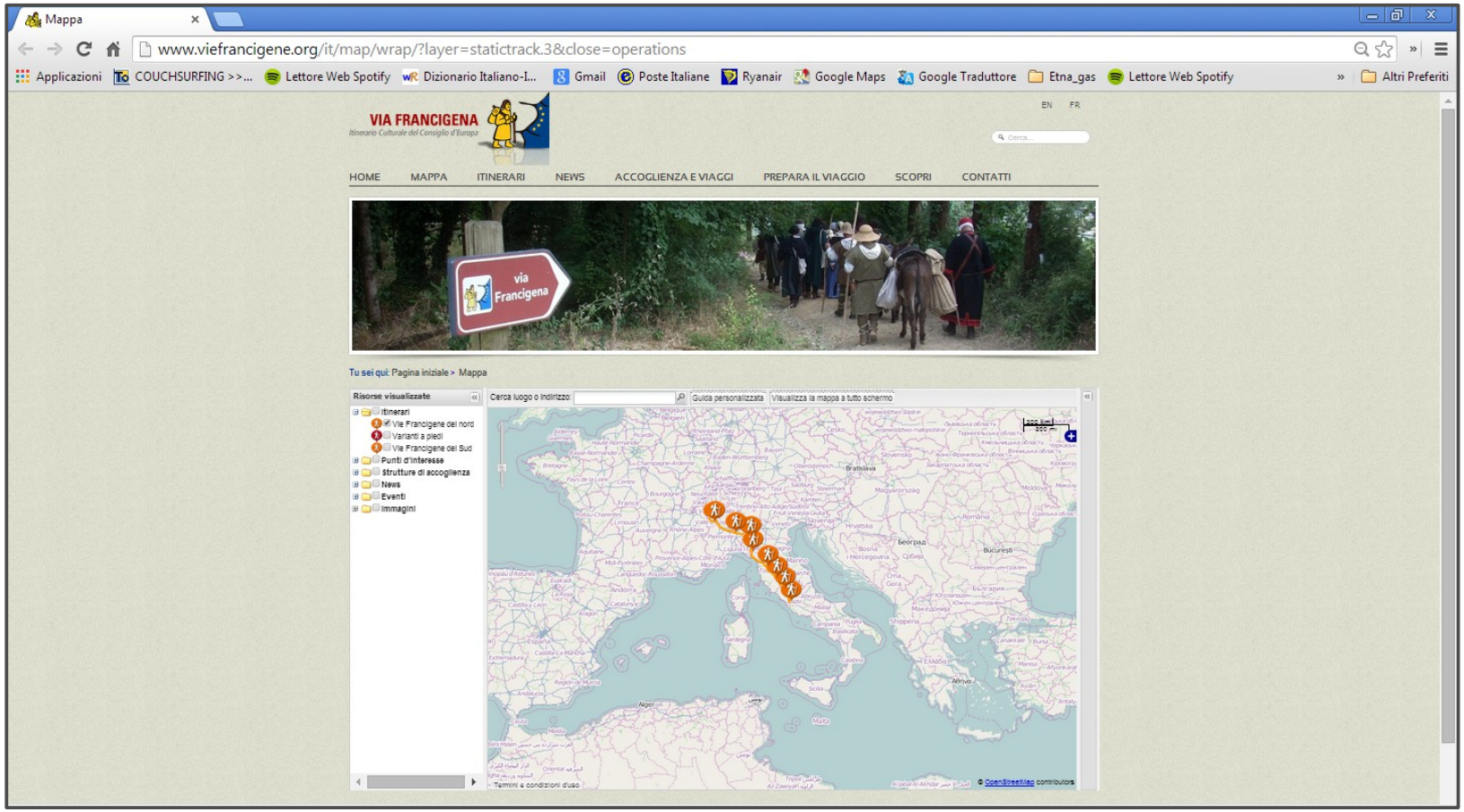


Switzerland Mobility



http://map.wanderland.ch/?lang=en

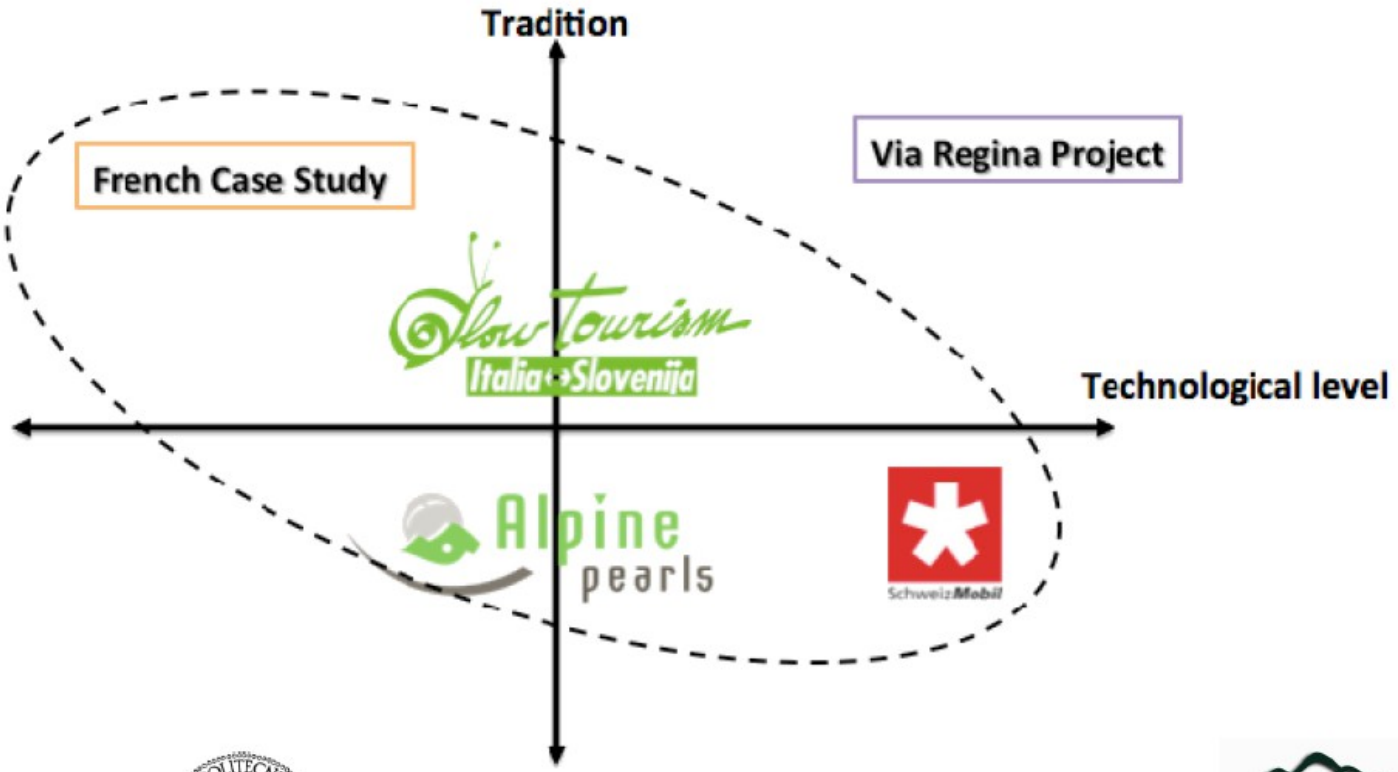
Via Francigena



http://www.viefrancigene.org/it/map/wrap/?layer=statictrack.3&close=operations

Positioning

- Focus on 2 main domains:
  - tradition: use of cultural heritage and local traditions as a marketing leverage, and emphasis on the authentic aspect of the experience
  - technology: development of a website/WebGIS to enhance tourist experience



Authoritative Data

- Regional Map (scale 1:10 000 - 1: 25 000)
- Digital Terrain Models (DTMs) res. 2 m; 20 m
- Town Maps at scale 1: 1 000 - 1:5 000
- Maps of path networks
- Maps of thematic paths
- Aerial images
- National maps
- Historical maps
- Hiking trails
- Geological Atlases
- Inventory historical routes
- Land cover

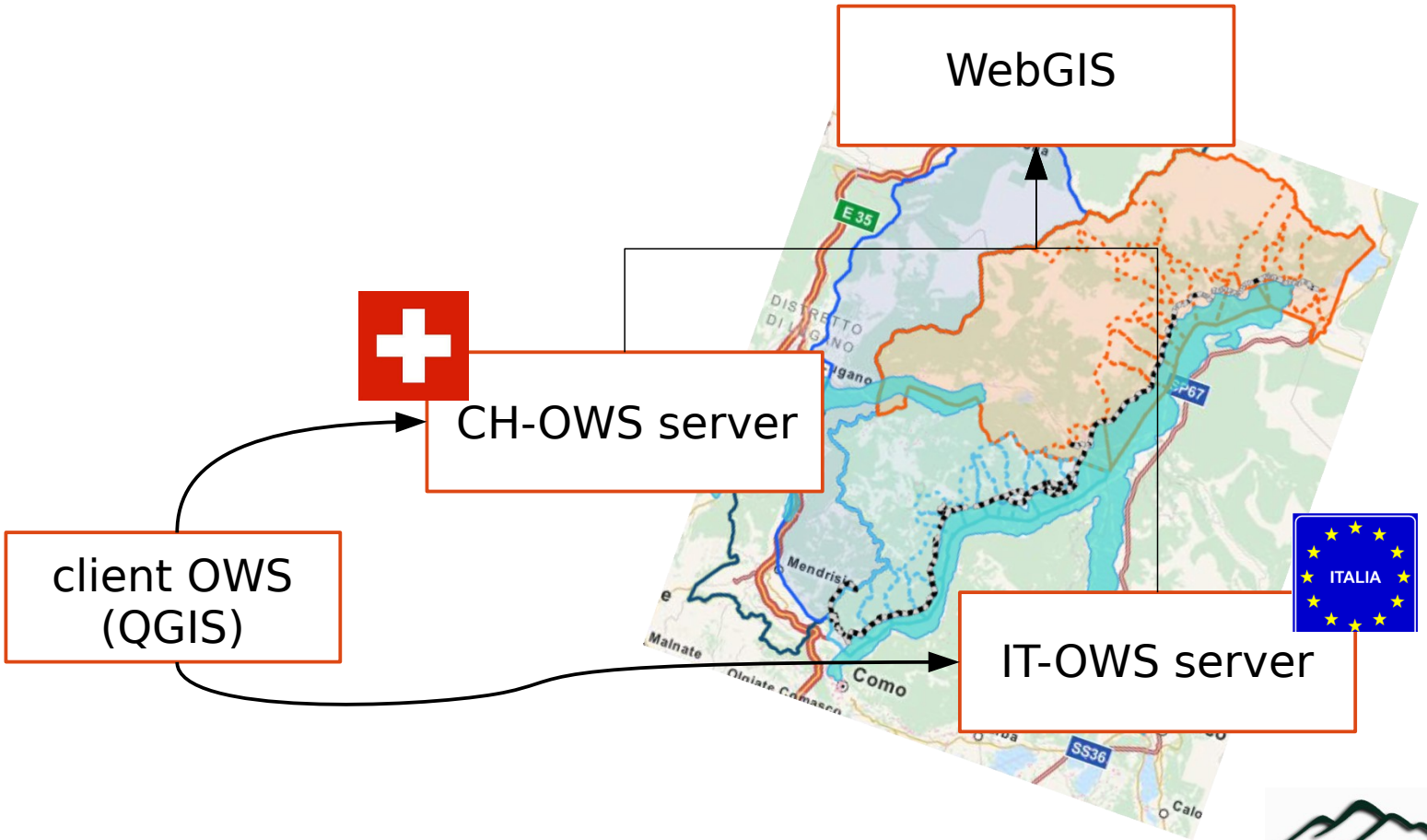
Open Problems/ solutions

- Reference systems, projections, models
  - **Geo-Services**

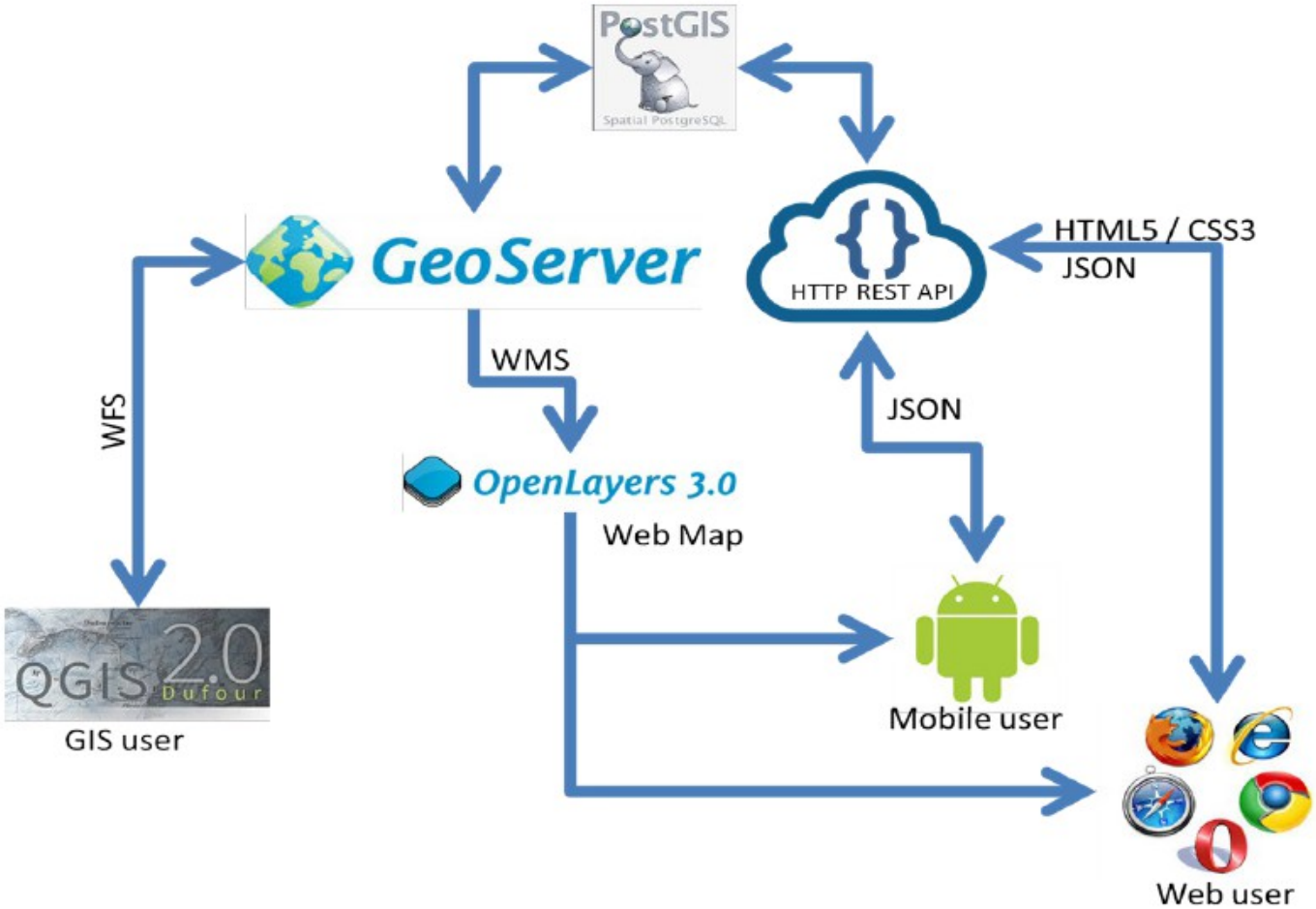
- **Data License**
  - Italian data are open and available free of charge
  - Swiss data must be paid
  - **Openstreetmap**

Comparison between authoritative data and OSM

Server architecture

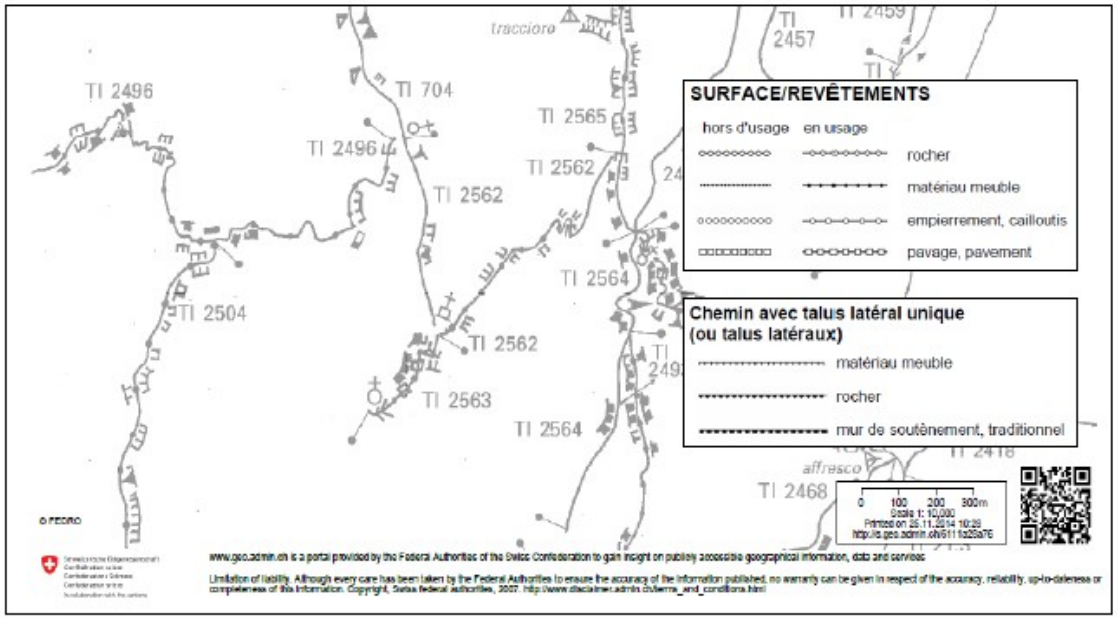


CH-OWS architecture



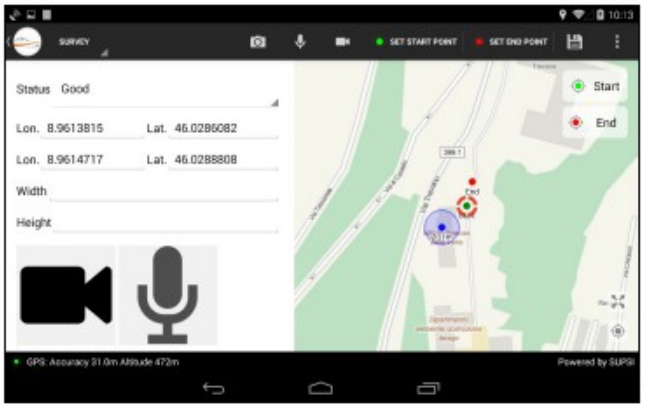
The inventory of historical routes

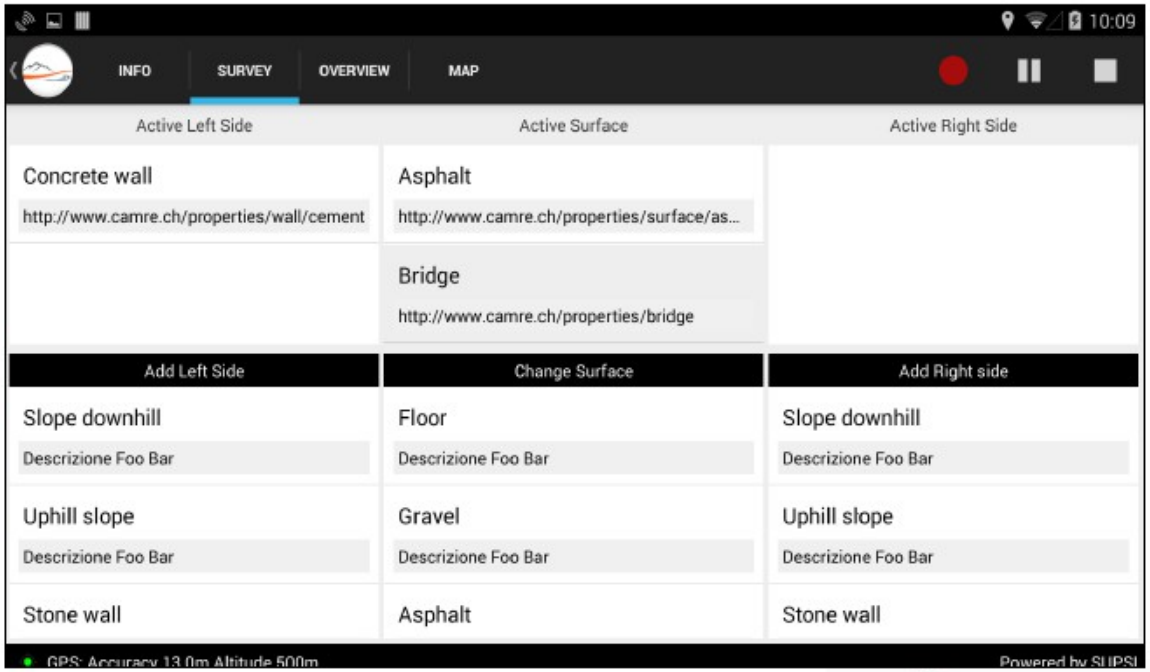
- Consolidated Swiss procedure for mapping historical routes and characteristic elements: used for landuse planning as they are considered historical heritage
  - Completely handwork without any support



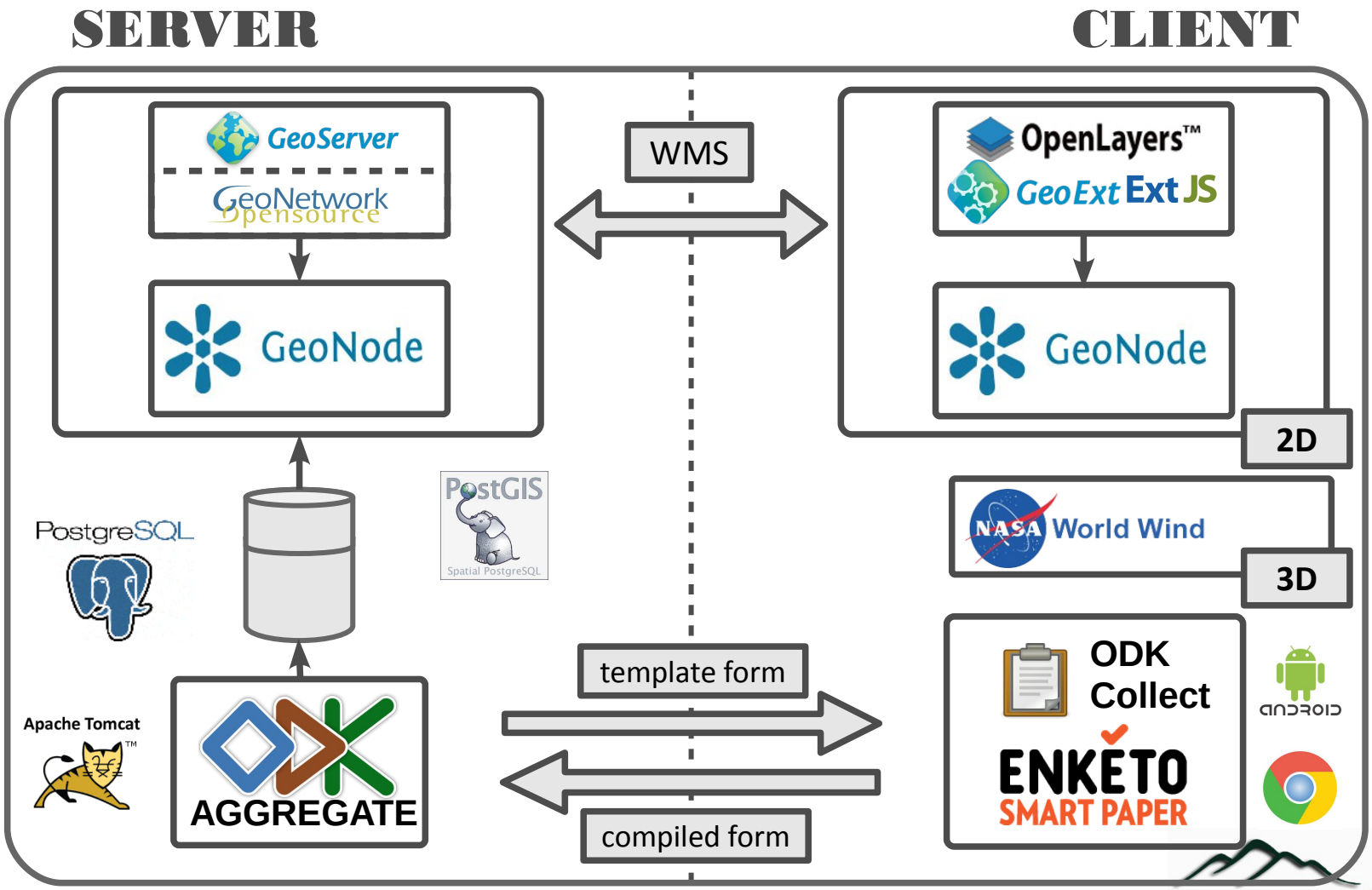
Path survey with Android

- Developed in Java with AndroidStudio using Android SDK and JTS topology suite
- JSON object are locally stored and will be sent to a python webservice.

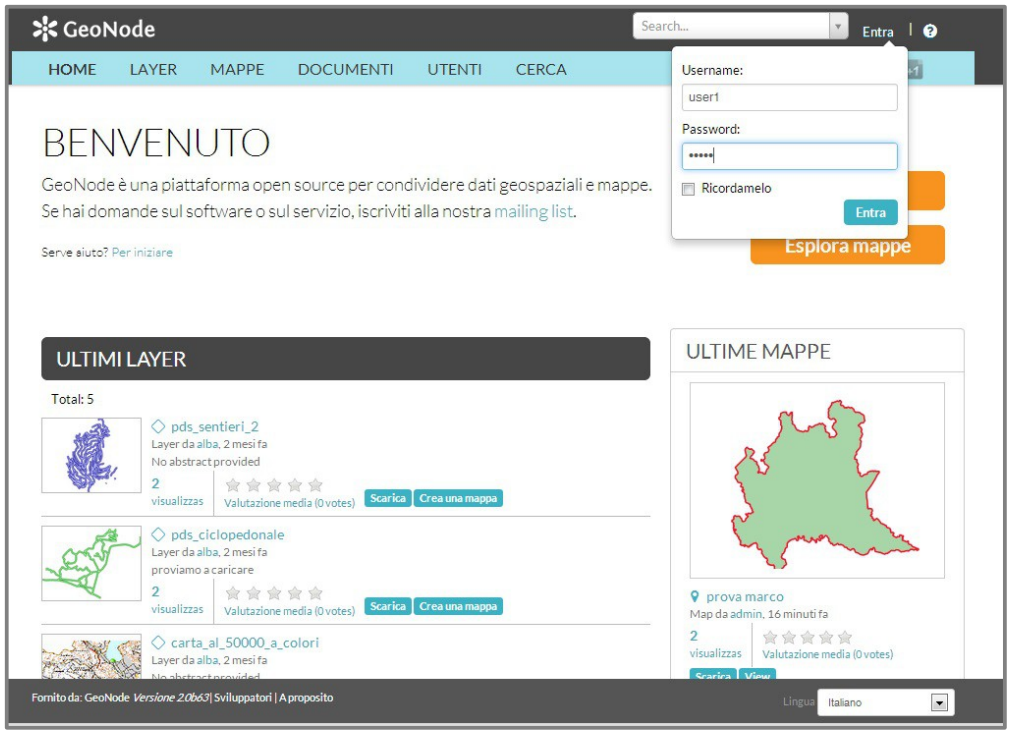




IT-OWS server architecture



Data sharing tools for local administrations



GeoNode*

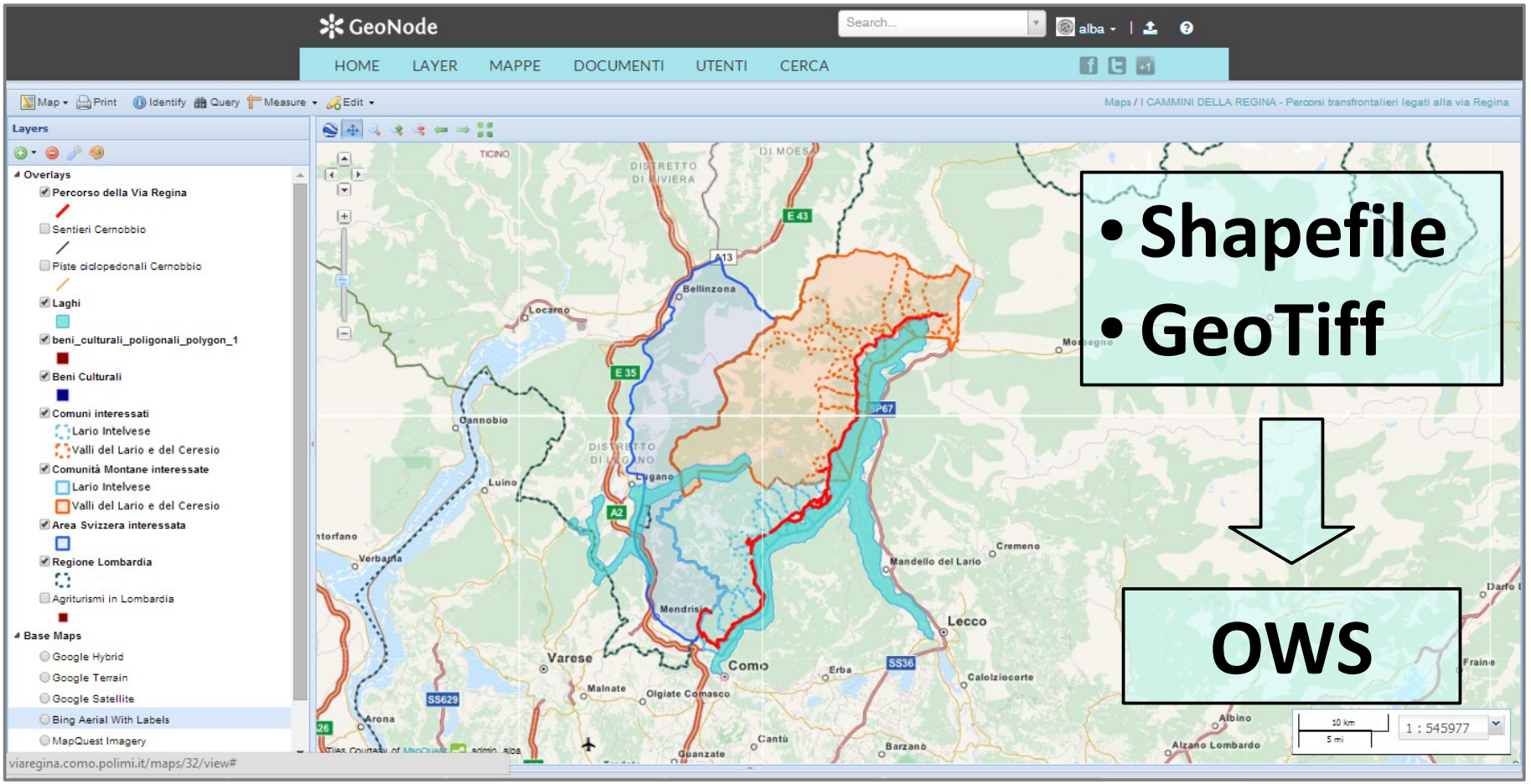
Open source platform for:

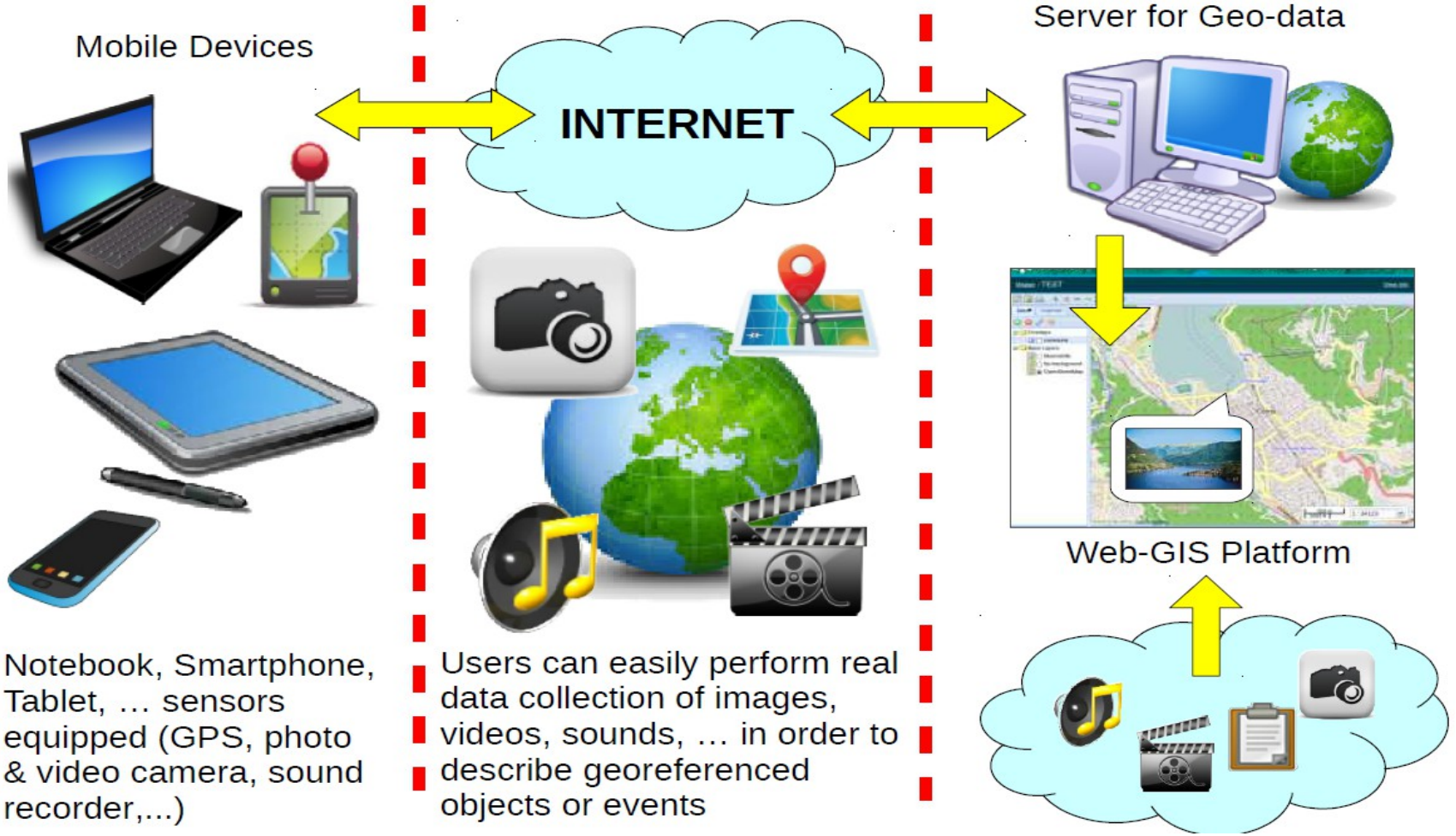
- creation
- management
- publication
- sharing

of interactive maps and geospatial information.

Usable also by non expert users.

Data sharing tools for local administrations




Mobile Devices
INTERNET
Server for Geo-data
Web-GIS Platform
Notebook, Smartphone, Tablet, … sensors equipped (GPS, photo & video camera, sound recorder,...)
Users can easily perform real data collection of images, videos, sounds, … in order to describe georeferenced objects or events

Data sharing tools for citizen

➔Suite providing a set of tools for managing mobile data collection

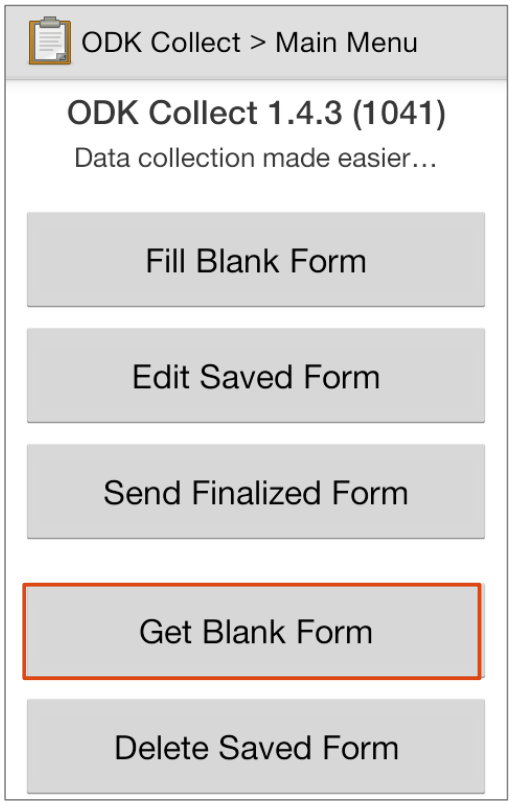
- http://opendatakit.org
- free and open source under Apache2 license
- developed by University of Washington - Department of Computer Science & Engineering

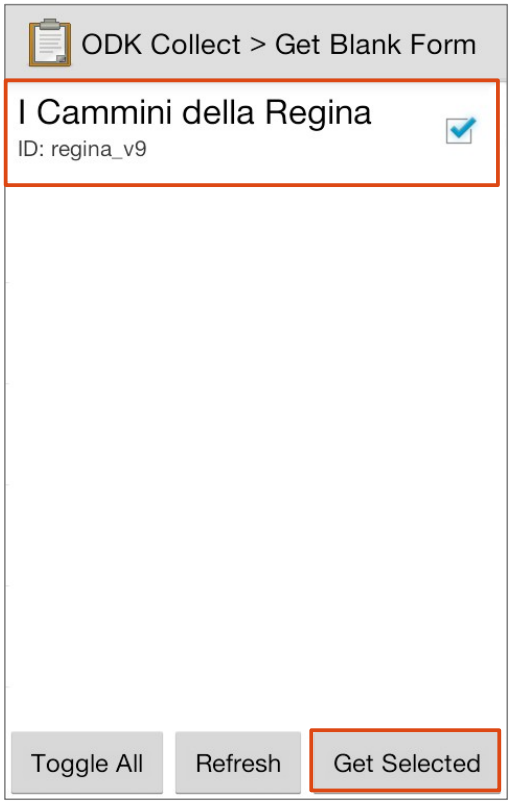
Data sharing tools for citizen

- form authoring tools:
  - ODK Build: graphical drag-and-drop tool for creating simple forms
  - XLSForm: form design via Excel spreadsheet
- ODK Collect:
  - Android app for filling forms (which can contain multimedia and locations)
- ODK Aggregate:
  - repository of the data sent by ODK Collect
  - can run in the cloud, on a virtual machine or on a private server (i.e. a Tomcat server backed with a PostgreSQL database)

Data sharing tools: ODK Collect

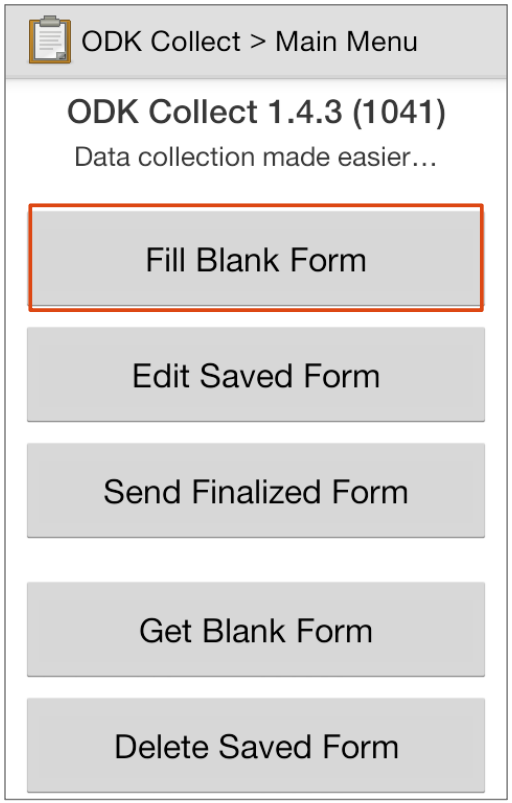
✔ Application main menu ✔ Download of form template





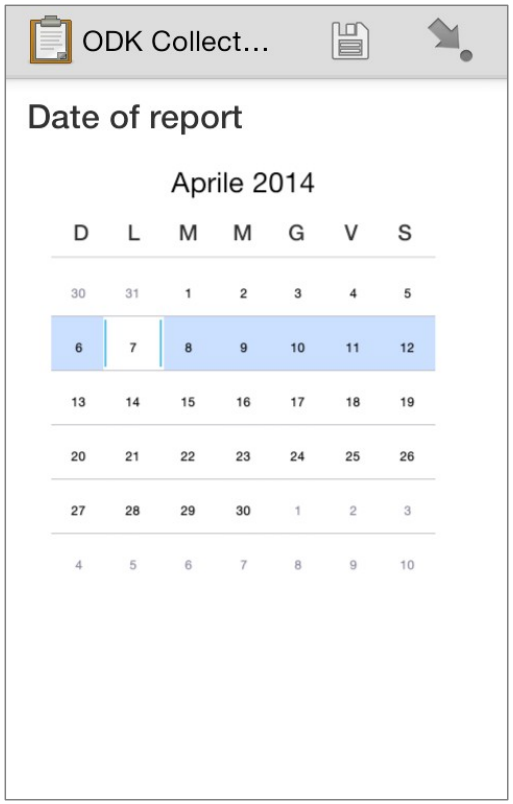
Data sharing tools: ODK Collect

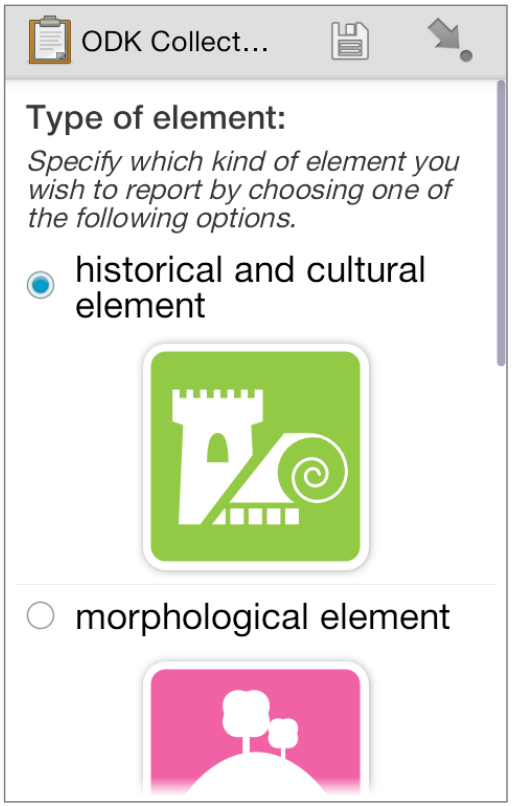
✔ Application main menu ✔ Guided form compilation



Data sharing tools: ODK Collect

- ✔ Guided form compilation





Data sharing tools: ODK Collect

- ✔ Guided 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).

- ( ) etnographyc
- (●) thematic
- ( ) gallery
- ( ) collections

ODK Collect…

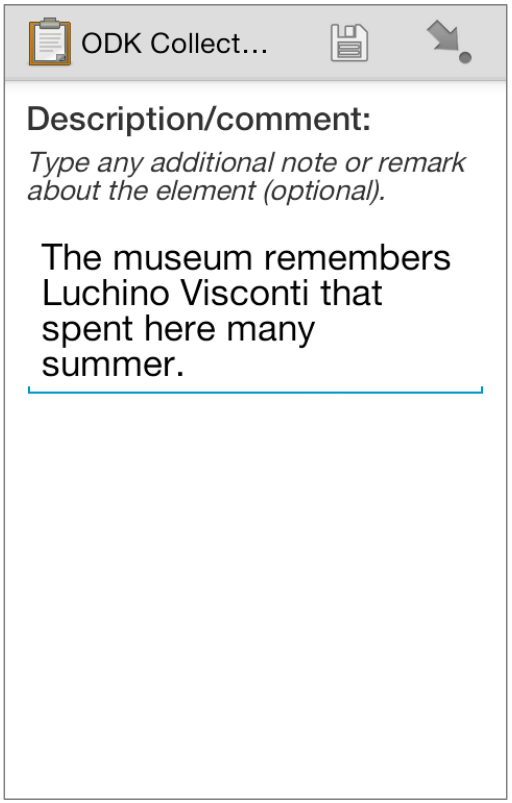
Name of the element:

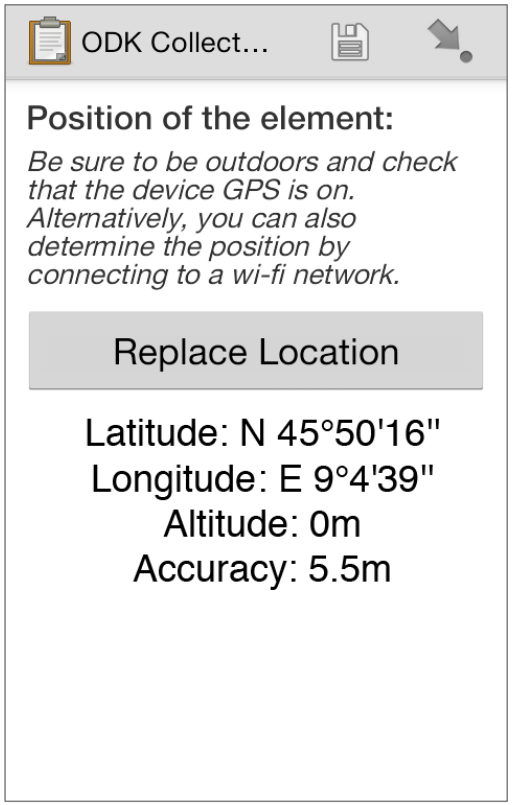
Type the name of the element you wish to report (optional).

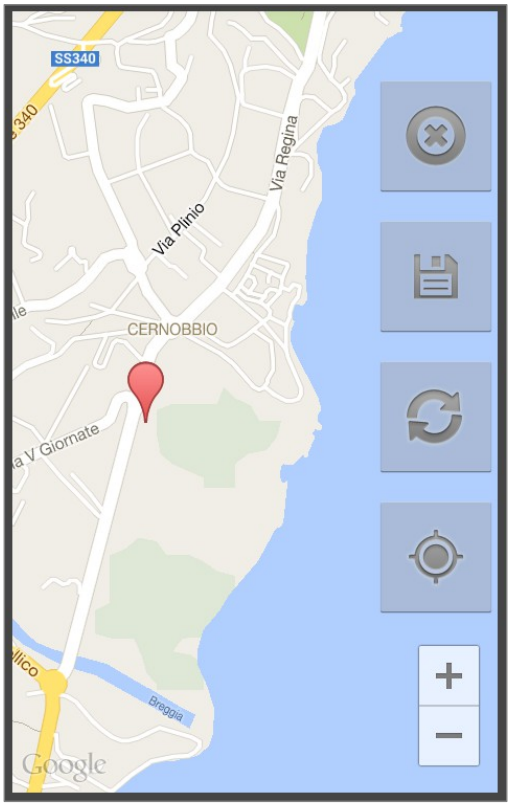
Museum of Villa Erba

Data sharing tools: ODK Collect

- ✔ Guided form compilation







Data sharing tools: ODK Collect

- ✔ Guided form compilation

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

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).

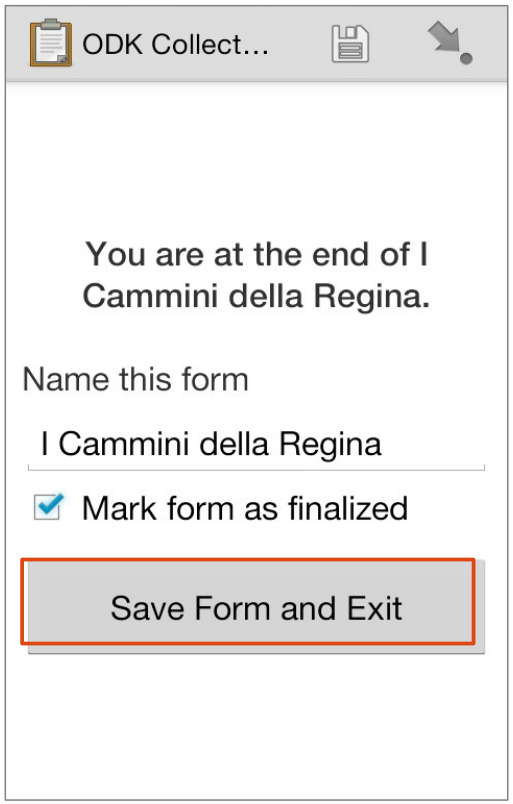
Record Video

Choose Video

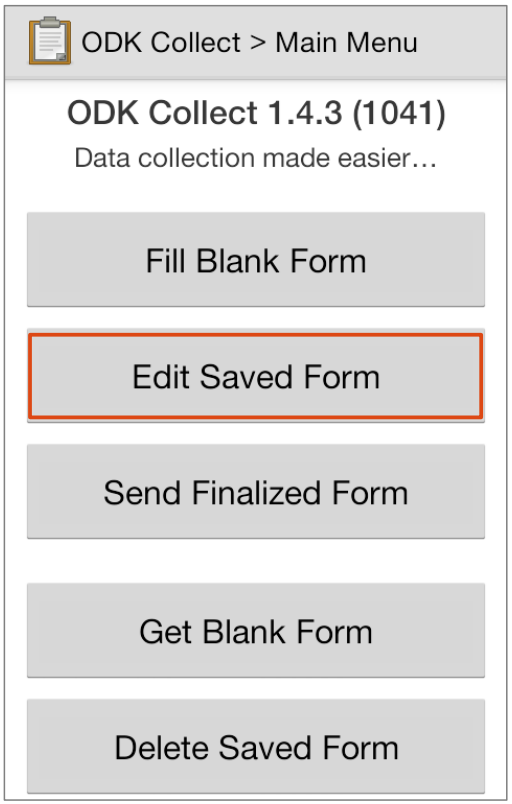
Play Video

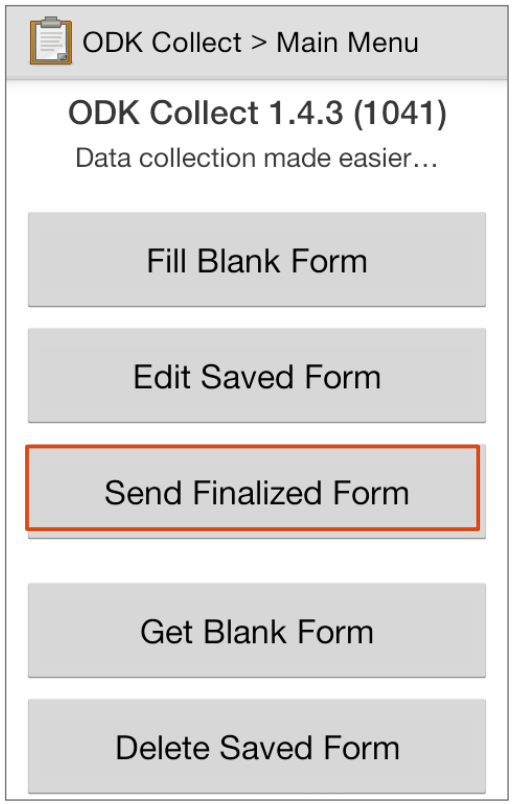
Data sharing tools: ODK Collect

✔ Guided form compilation



✔ Application main menu





INTERREG
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SATURDAY MAY 3 2014

MapParty!

WALK, OBSERVE, DRAW, MAP ALONG THE VIA REGINA
FOR A CULTURAL, SENSORY AND PLAYFUL EXPERIENCE

Stories on the road between Italy and Switzerland with the Brigata dei novellatori senza frontiere

ti

Regione Lombardia

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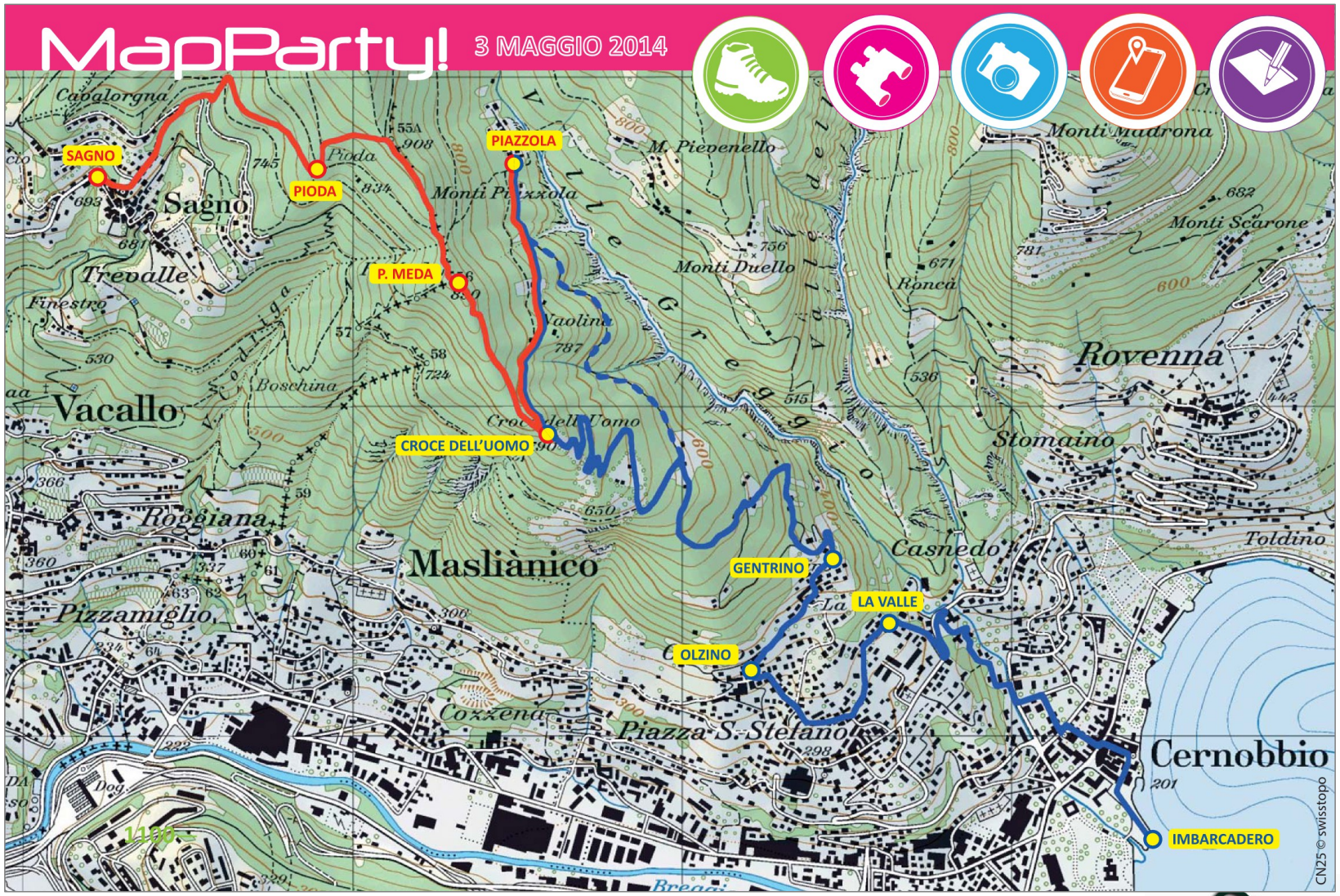
MapParty! 3 MAGGIO 2014



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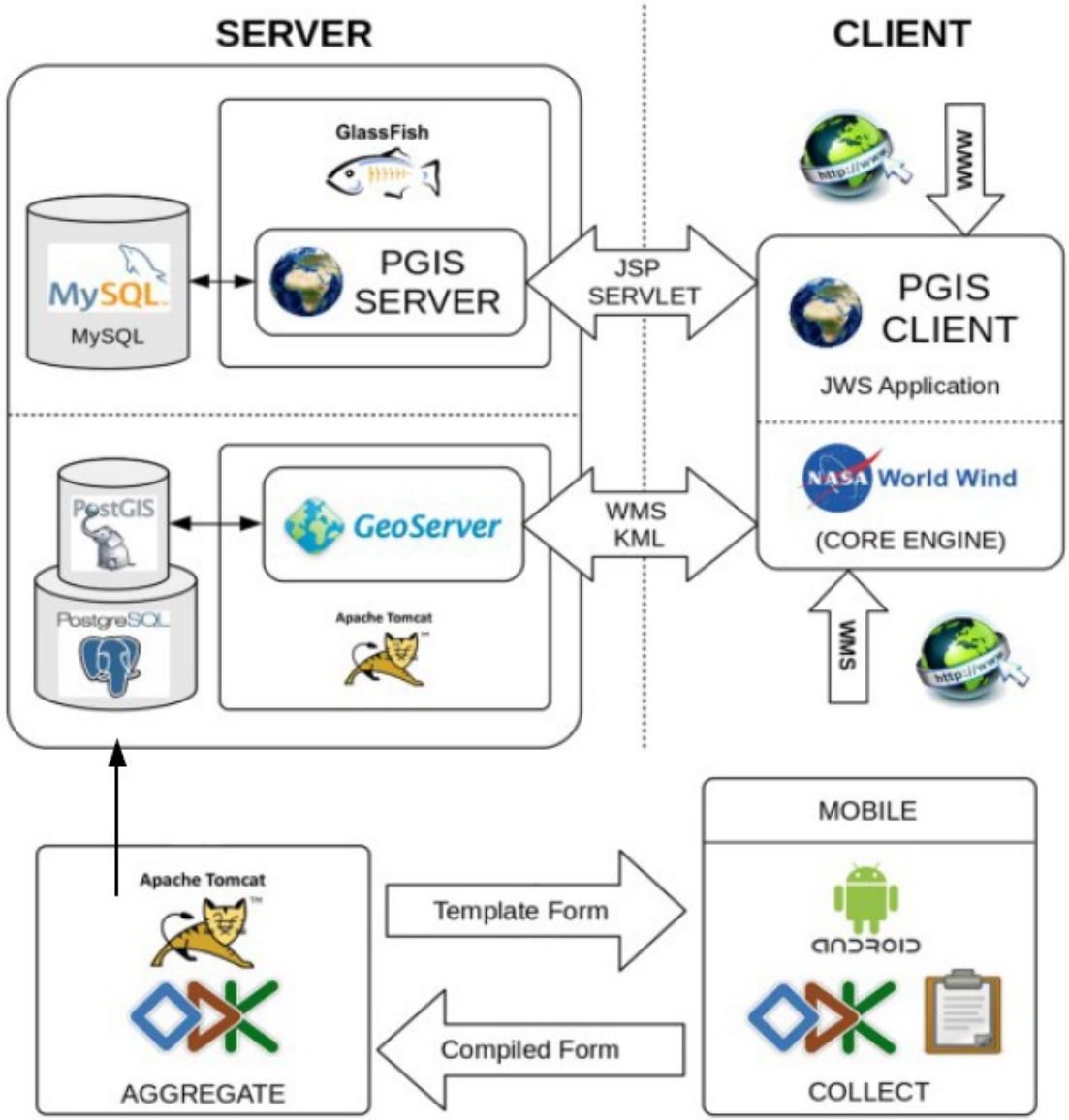
http://viaregina.como.polimi.it/mapparty



PoliCrowd2.0

In addition to the WMS servers, PoliCrowd 2.0 has also the innovative capability to directly connect with any Open Data Kit (ODK) server available on the network and publish the related data collected by the community

Policrowd2.0

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.

Thanks for your attention!

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