



SMASH

DIGITAL FIELD MAPPING FOR EVERYONE

Silvia Franceschi, Andrea Antonello

HydroloGIS s.r.l.

November 2020

PRESENTATION OUTLINE

- Introduction
- What is SMASH
- Base functionalities
- Info and documentation

HYDROLOGIS

- small (very small) engineering company placed Bolzano (Italy)
- 2 cofounders: Andrea Antonello, Silvia Franceschi
- environmental engineers specialized in hydrology, hydraulics, geomorphology and forestry
- developers of:
 - the HortonMachine library in the fields of: hydrology, hydraulic, forestry
 - SMASH and Geopaparazzi app for digital field mapping
 - Geopaparazzi Survey Server (GSS) centralized server environment
- OSGeo Charter Members

HYDROLOGIS: MAIN ACTIVITIES

- *environmental engineering*: natural hazard, water supply systems, wairst water/urban networks
 - collect data in the field to support and verify simulations
- *software development*: in the fields of the company's activities (Open Source)
 - offer services and custom developement for *outdoor activities*, *organized data collection*, *crowdmapping*



...WE USUALLY GO IN THE FIELD...



HYDROLOGIS: MOBILE APP

- starting from 2010 development of app and tools for digital field mapping
- most known application is Geopaparazzi
 - translated into more than 15 languages (Arabic, Korean, Japanese)
 - more than 10.000 downloads
 - examples of applications all over the world (Afrika, Australia, Europe)

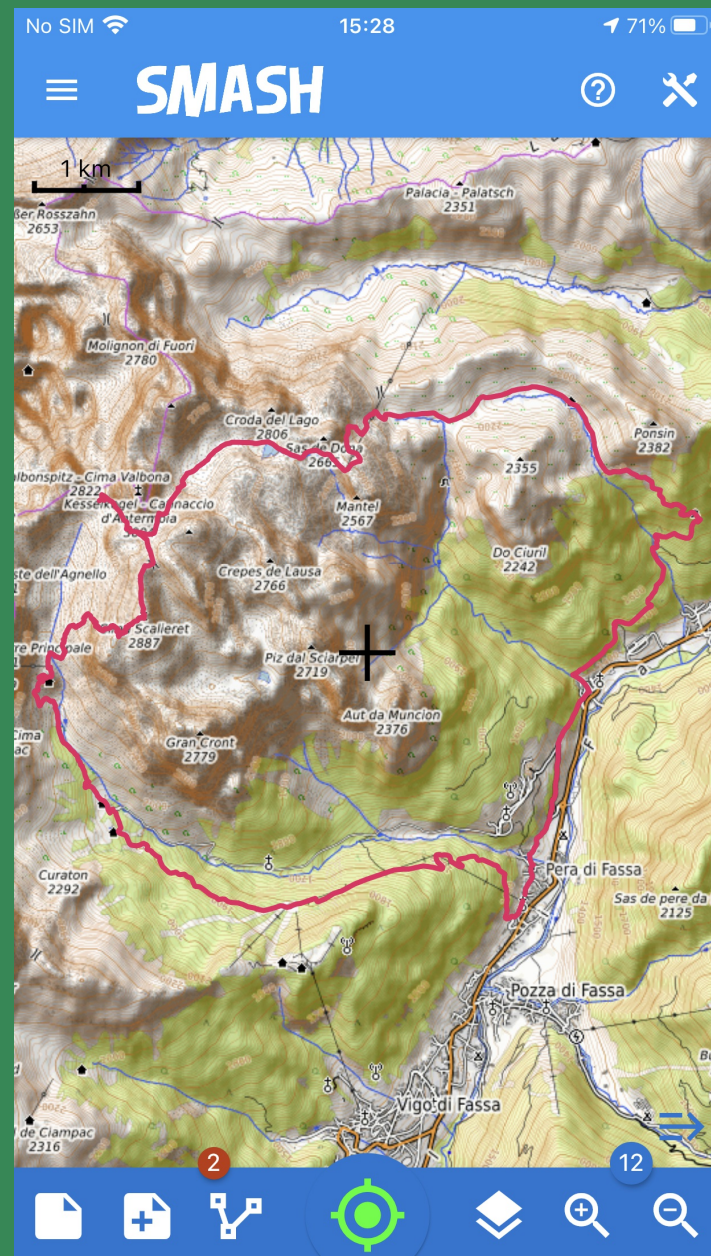
HYDROLOGIS: MOBILE APP

- in 2020 Geopaparazzi needs a hard restyling
 - only for Android O.S.
 - complex and slow to develop (Android native)
 - old style GUI
 - usability thought for professional use
- in 2019 started the development of SMASH

SMART MOBILE APPLICATION FOR SURVEYOR'S HAPPYNESS



WHAT IS SMASH



- application to support outdoor activities for non expert users
- users-oriented GUI
- available for Android and iOS devices (free and O.S.)
- can collect georeferenced pictures, notes and gps tracks log
- a map view for navigation with support for raster and vector data
- easy create input and export data

WHERE DO I GET SMASH

Smash is available on the market store of the two OS:

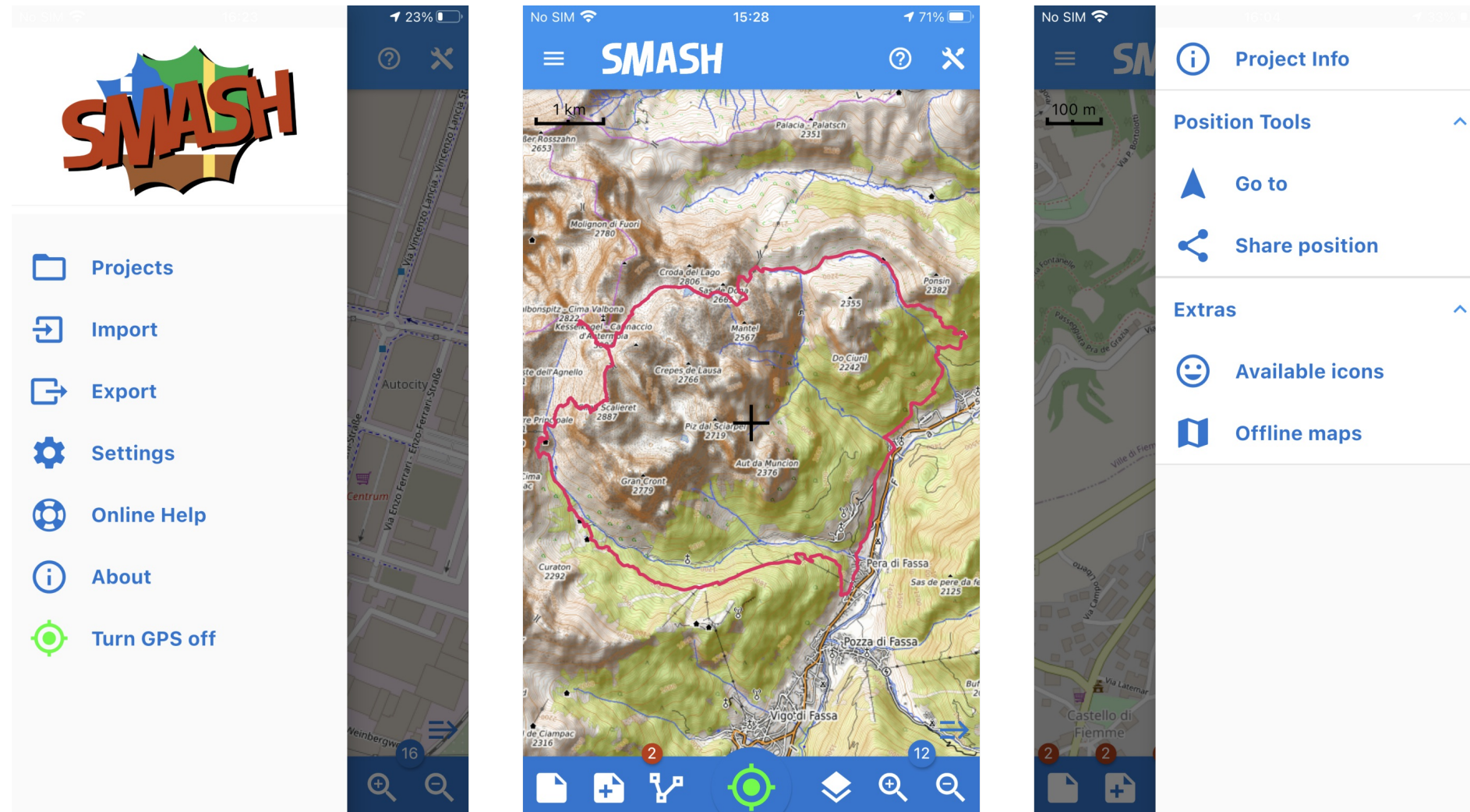
Android Play Store

Apple Store

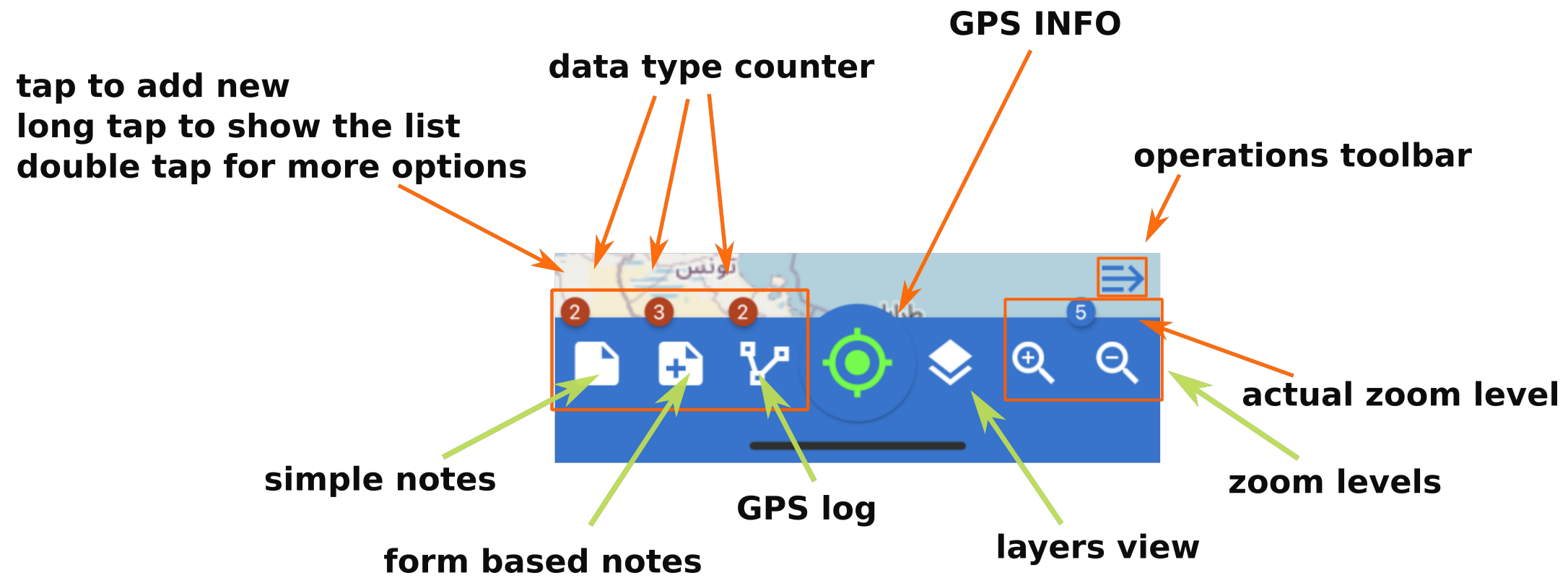
i Since the word **SMASH** is used a lot in gaming apps, in order to avoid to have to scroll down many results, it is useful to insert in the search bar the complete name: **SMASH Digital field mapping.**

MAIN VIEW

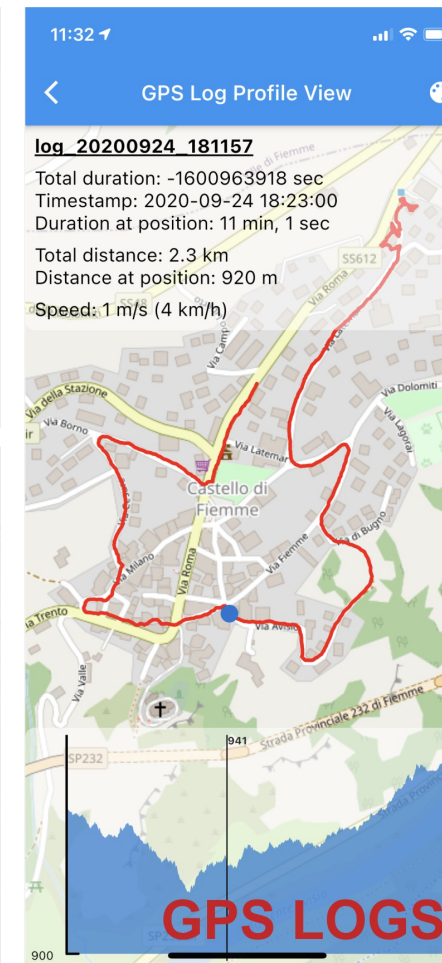
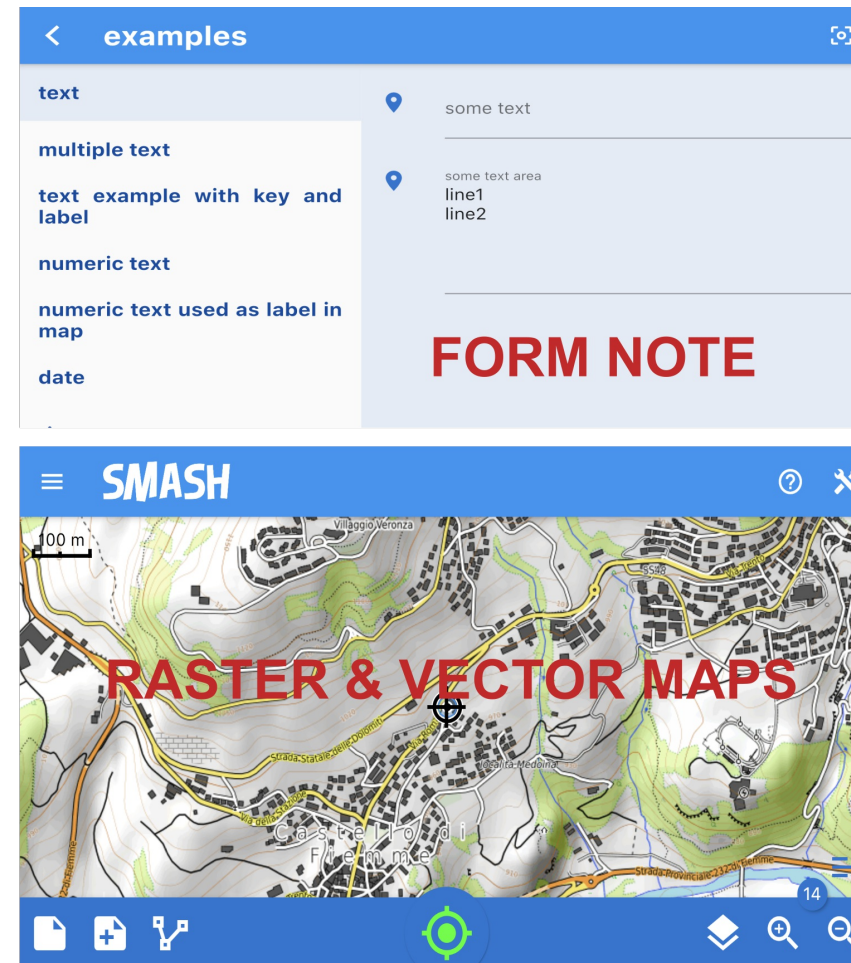
SMASH opens up directly in the mapview and features a bottom toolbar. Both left and right there is a slider with menus for less common operations.



BASE FUNCTIONALITIES

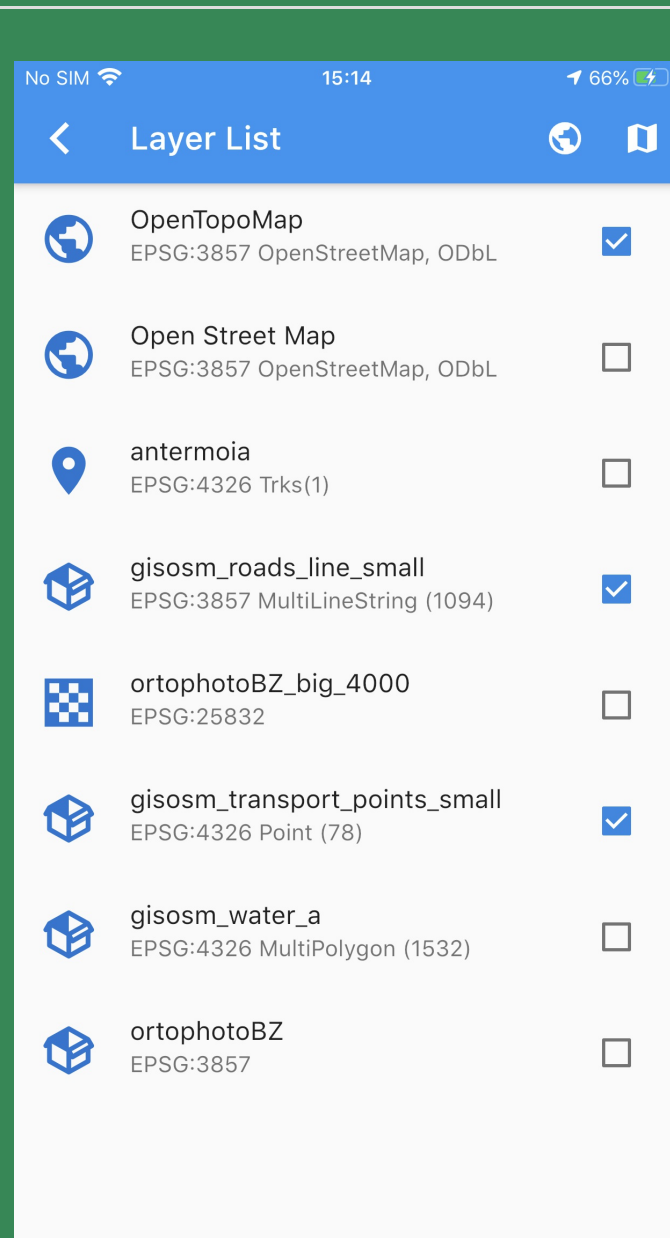


BASE FUNCTIONALITIES



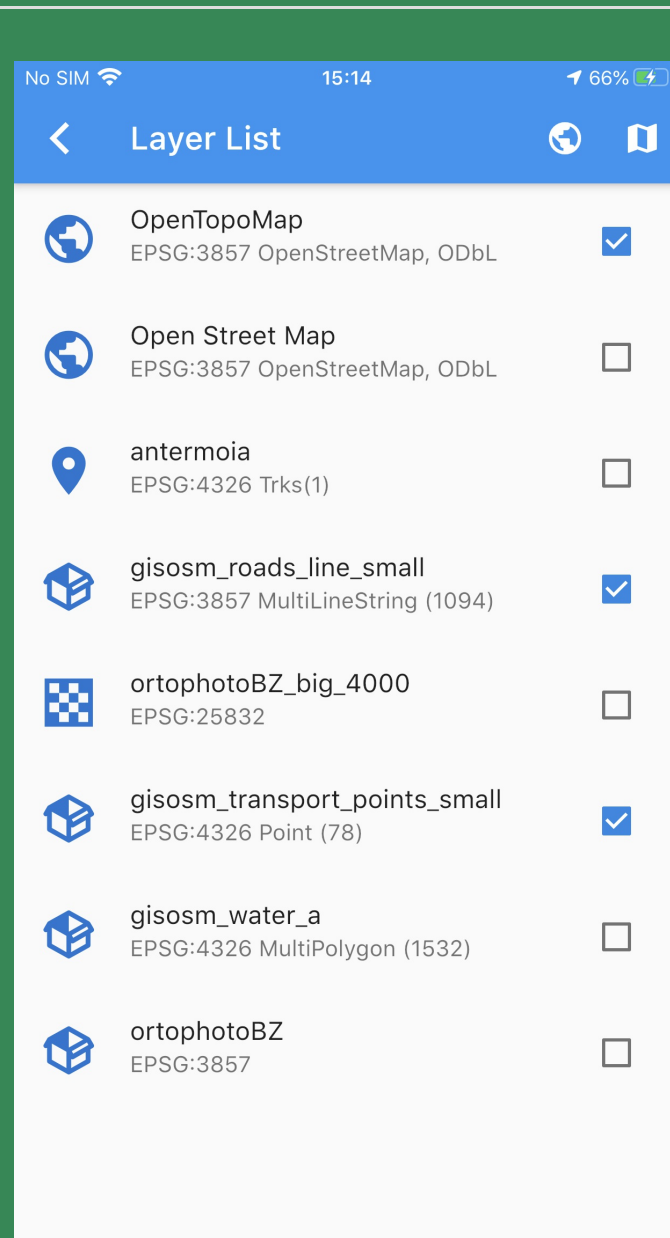
i Notes, images and gps logs are saved a single project database file.

LAYERS



- Supported formats for rasters:
 - Geopackage raster tiles
 - MapUrls: TMS and WMS online services with catalog
 - Mapsforge offline .map files
 - MBtiles
 - World images (tiff, png, jpg with extention and projection files)

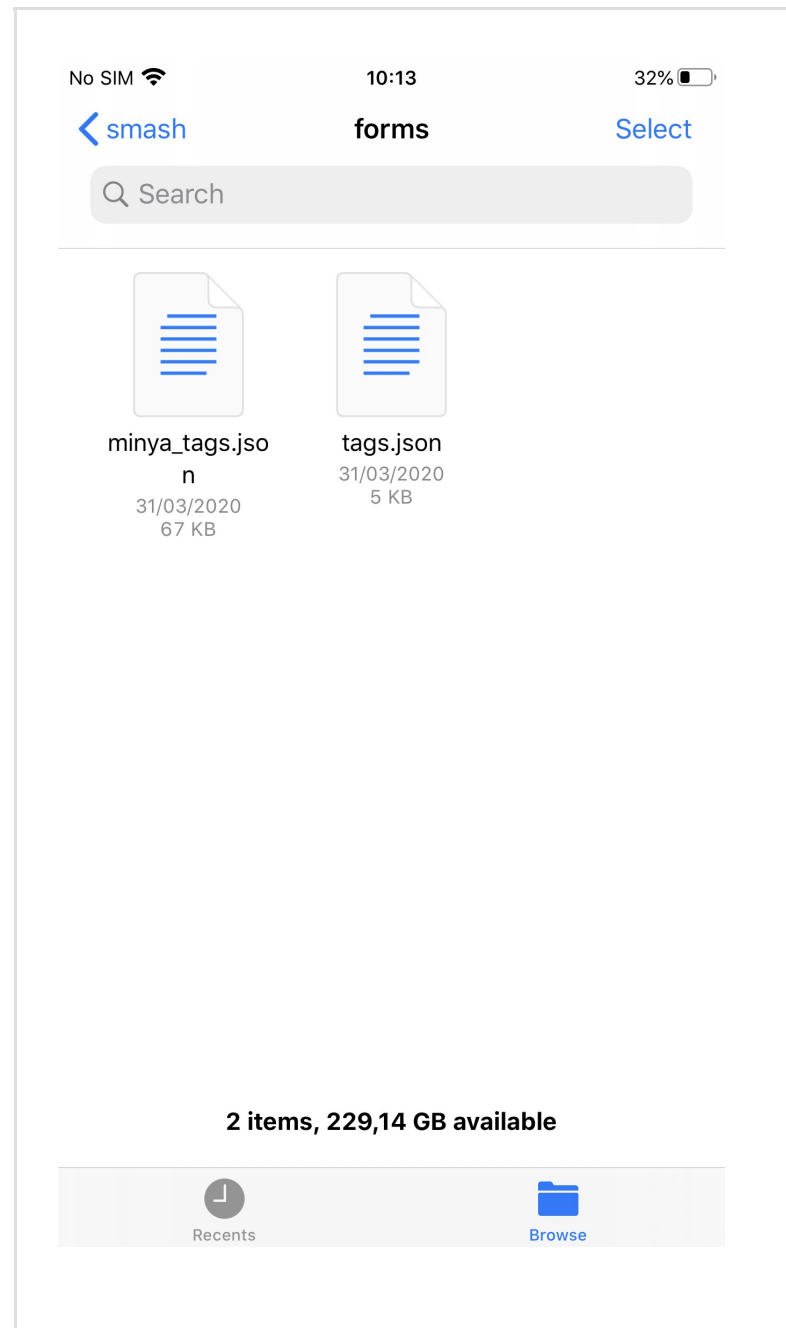
LAYERS



- Supported formats for vectors:
 - Geopackage vectors layers
 - GPX
 - Shapefiles only in reading mode
 - SLD styling standard is supported in reading and writing mode
 - custom CRS is supported and can be added to the app.

FORM NOTES

Notes can be simple or form based. To add a customized form to the list:

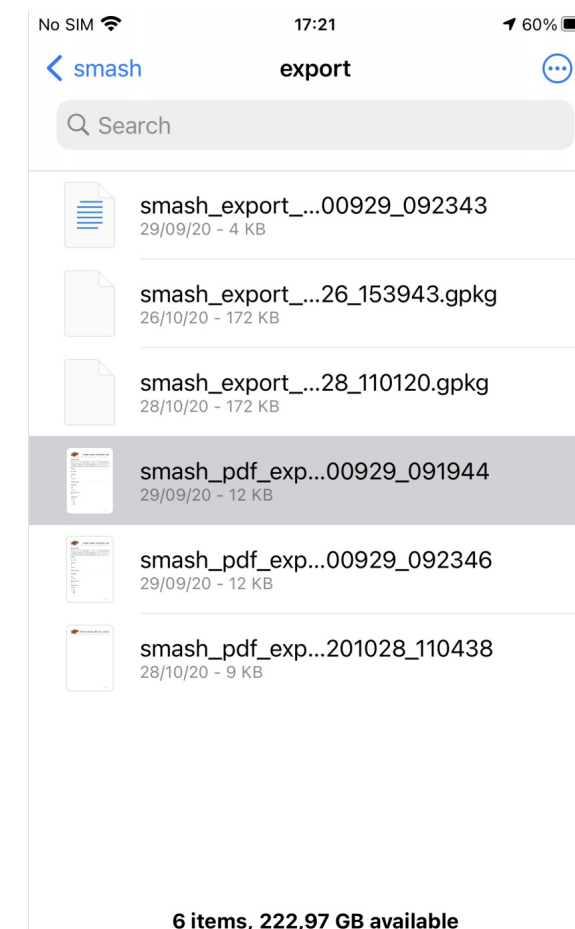
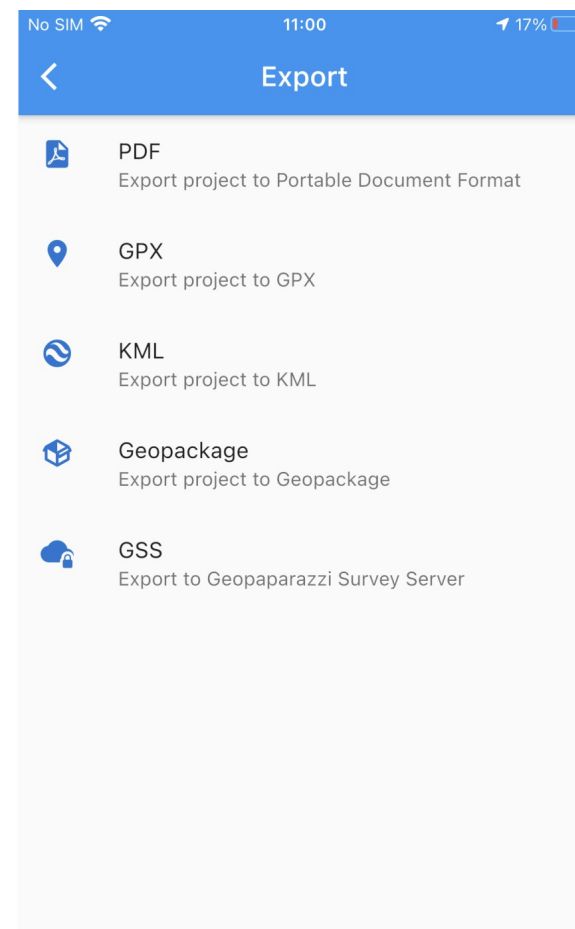
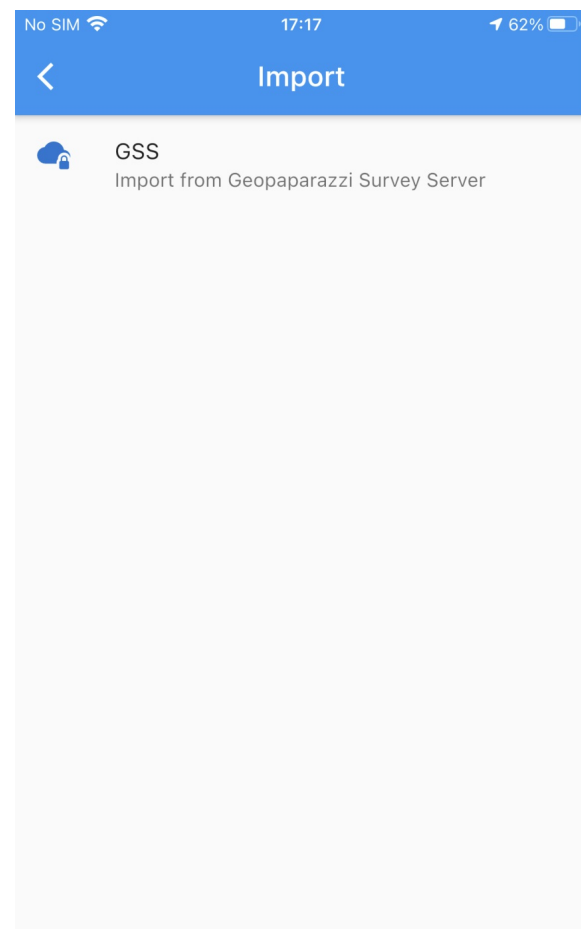


- create a form following the common **specifications** of the Geopaparazzi project using the application GForm of the HortonMachine library
- save the file with the form definition as **_tags.json** file
- copy the json file on your device in the folder **form** inside the application folder

IMPORT/EXPORT

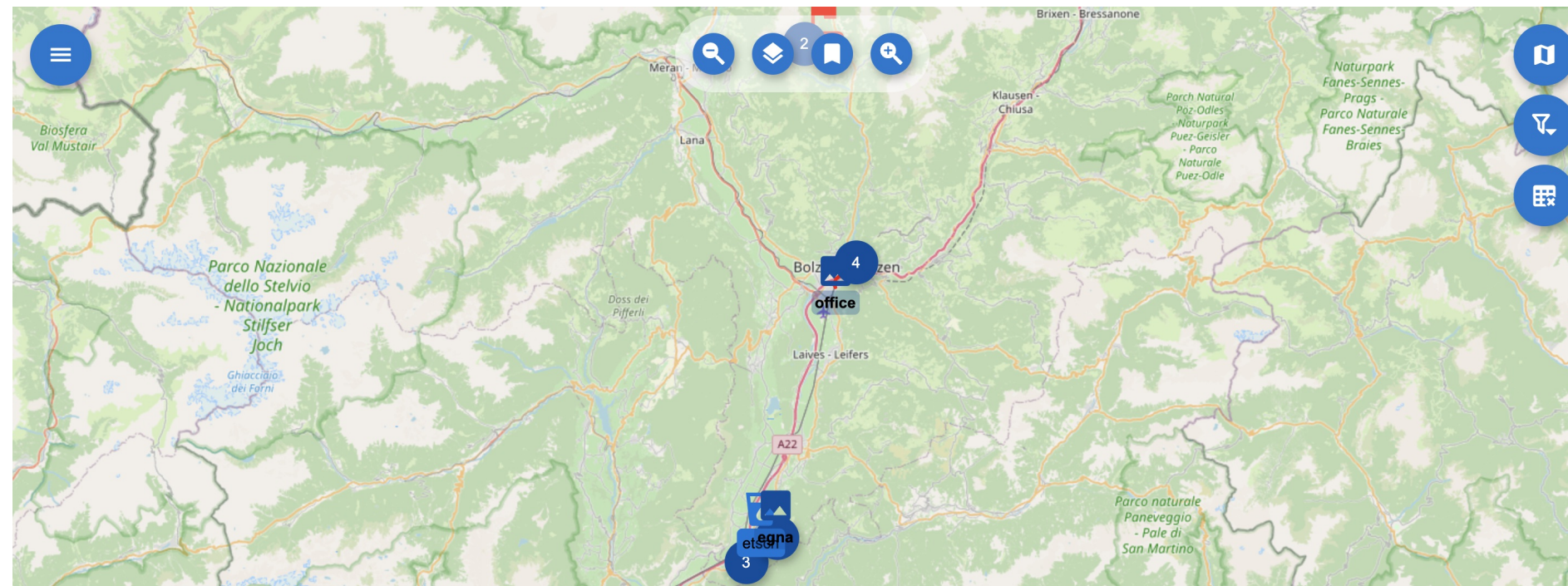
Smash supports some simple import - export directly from the device:

- complex notes (forms) can be exported to pdf
- project data can be exported as Geopackage



SYNCRONIZATION WITH GSS

The Geopaparazzi Survey Server (GSS) is a web application that allows SMASH users to synchronize in a productive way their survey data with a central server.



Marker	Actions	Id	Text	Timestamp	User	Project
		11	note	2020-06-22 11:23:08	Silvia Franceschi iPhone	smash_20200622_1111
		7	rabbits	2020-05-26 09:14:11	Carla Ansam Pixel 2XL	project_1_pixel2xl
		4	etsch	2020-05-26 09:15:47	Andrea Antonello Pixel 3a	project_2_pixel3a
		1	start	2020-05-26 09:07:59	Andrea Antonello Pixel 3a	project_1_pixel3a

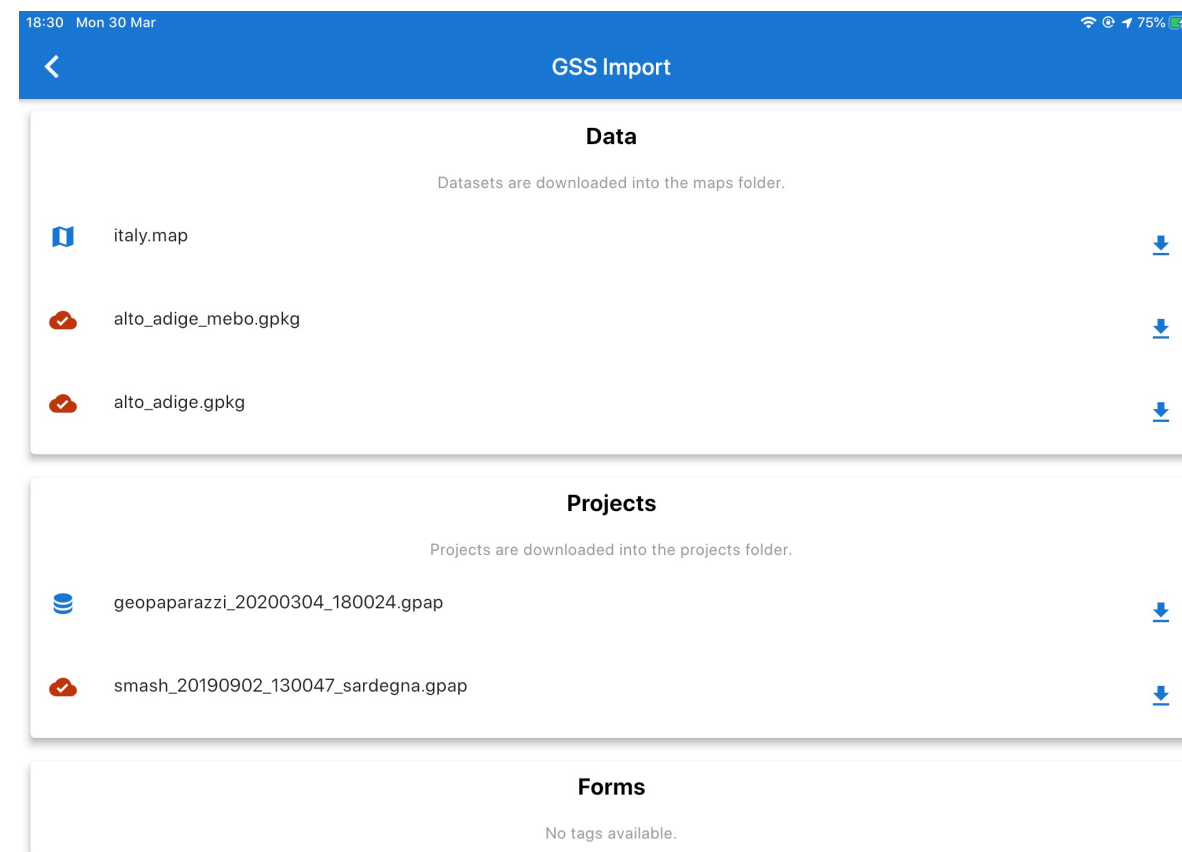
SYNCRONIZATION WITH GSS

The GSS shows a the main **Map View** with toolsets and sections:

- left upper menu icon gives access to:
 - the drawer header which also shows the current logged user
 - the Surveyors view
 - the Web Users view
 - the Project Data view
 - the About view
- the upper central navigation buttons
- various tools at the upper right part of the map
- the bottom attributes table, if enabled

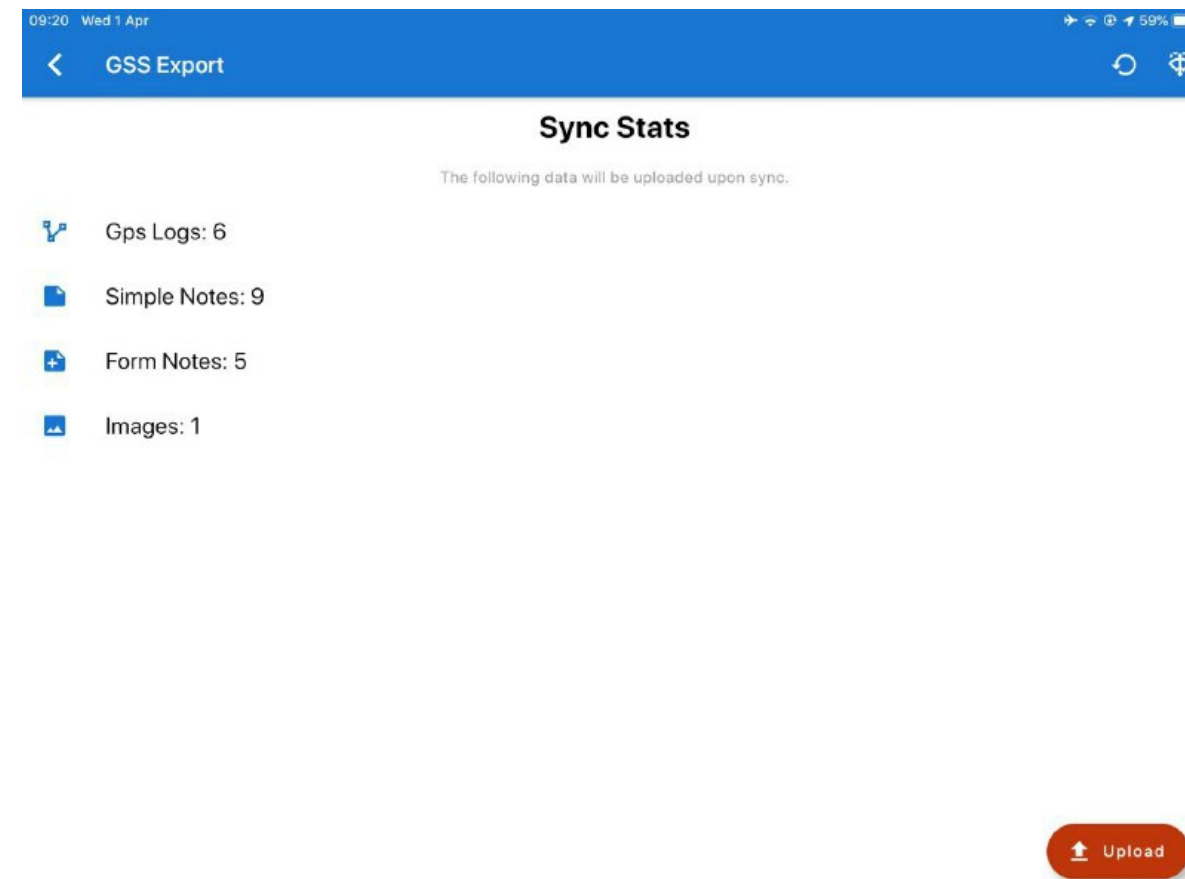
SYNCRONIZATION WITH GSS

- import/download centralized data, projects and forms



SYNCRONIZATION WITH GSS

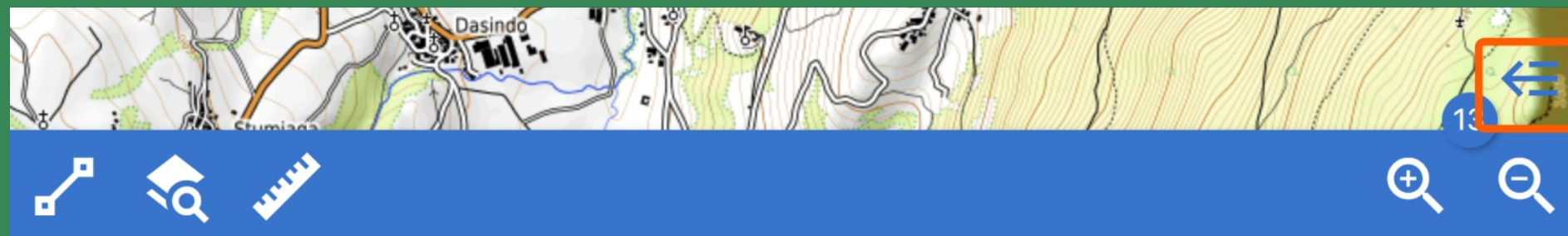
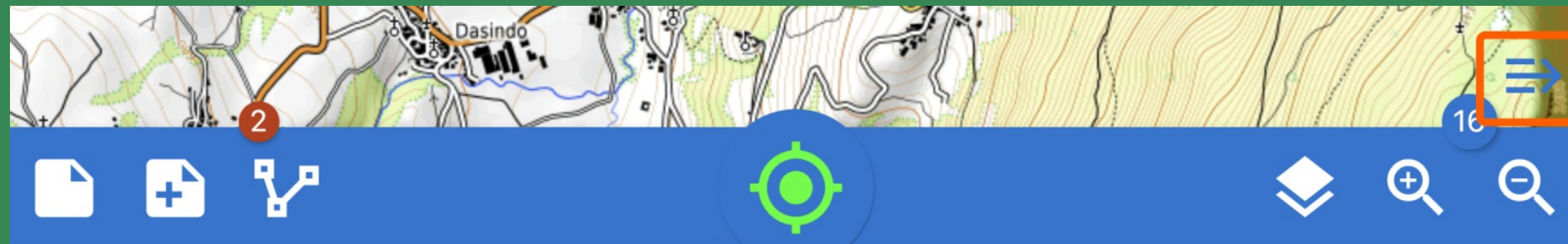
- export collected data and synchronize with a central DB



i GSS supports the versioning of the notes also from different users/devices.

VECTOR EDITING

- from version 1.5.0 a small handler in the lower right corner allows to activate the operations toolbar
- operations toolbar contains all the interactive operations on layers and on the map view



VECTOR EDITING

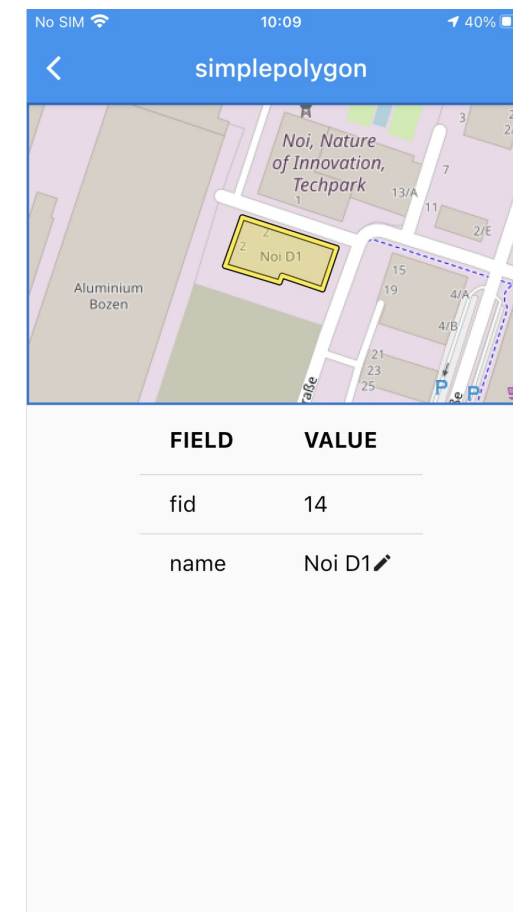
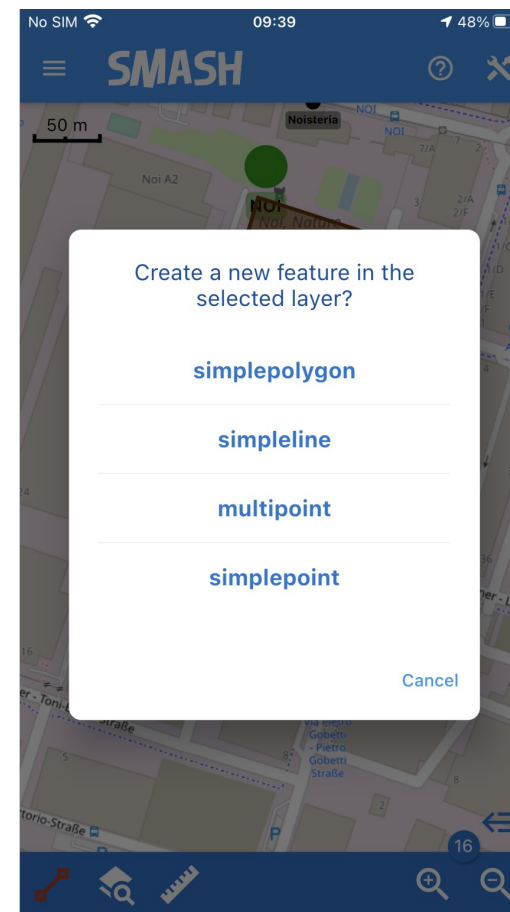
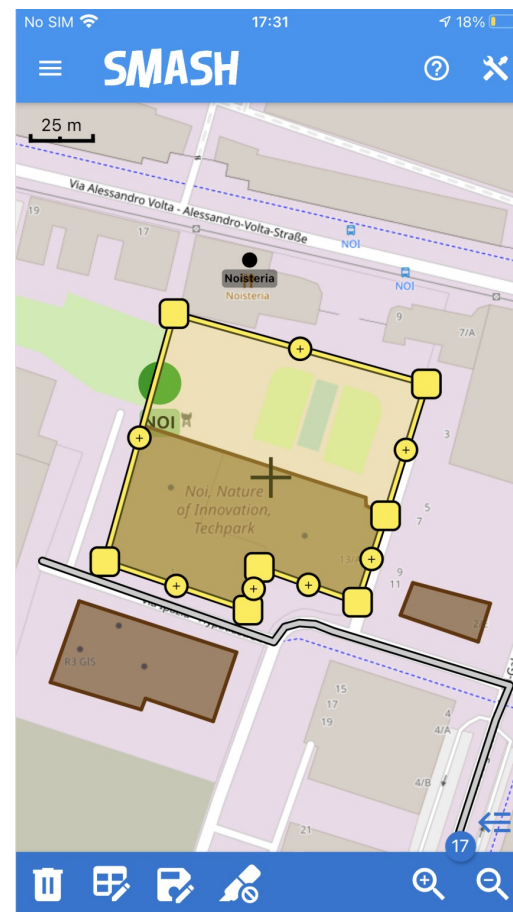
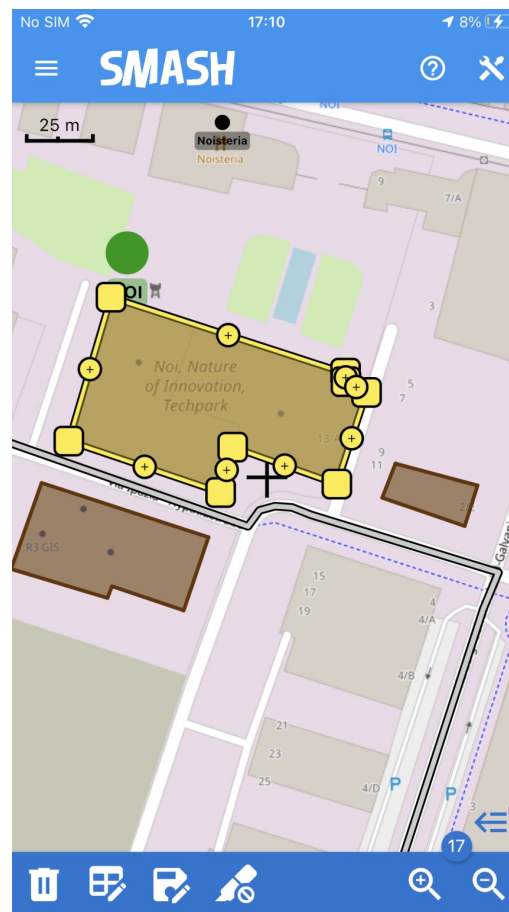
- **Geopackage** vector layers can be edited: attributes and geometries
- all feature's type: point, lines, polygons and multipoint, multiline, multipolygon
- in their own coordinate reference system.

VECTOR EDITING

The vector editing works for all visible vector layers of a Geopackage:

- modify existing geometries
- add a new geometry
- delete an existing geometry
- modify the attributes

VECTOR EDITING



NEXT STEPS...

- vector editing using GPS position
- vector editing using map center
- snap in vector editing
- audio notes
- multi language support

THANKS FOR YOUR ATTENTION!

Geopaparazzi and SMASH share the same website and mailing list.

Homepage: <http://www.geopaparazzi.eu>

Mailinglist: <http://groups.google.com/group/geopaparazzi-users>

Translation **SMASH** it other languages:

<https://www.transifex.com/projects/p/geopaparazzi/>

News about Geopaparazzi and SMASH:

<http://jgrasstechtips.blogspot.it/search/label/geopaparazzi>

Have cool userstories to share?

Join the facebook group: **Geopaparazzi Users Around The World!**

<https://www.facebook.com/groups/350587351732480/>

The background features a stylized globe with a blue outline and various colored segments in shades of green, yellow, and brown. Overlaid on the globe is the word "SWATH" in large, bold, orange letters with a grey drop shadow.

Silvia Franceschi, Andrea Antonello

contact: silvia.franceschi@hydrologis.com

HydroloGIS s.r.l.

November 2020