OMApp Tutorial

OMApp (Open Mapping Application) is cloud application for automatic image mosaicking and georeferencing. The application is designed to support several users, whereby every user is able to upload a set of captured images via a web interface, begin their processing and make an overview of already created maps. After the processing, the user receives an e-mail notification. The user also has the ability to download the maps in standard GeoTiff format and use them in one of the existing GIS tools. OMApp uses numerous open-source image processing tools and libraries (OpenDroneMap, GDAL, etc.), where the most computationally demanding among them are able to perform multi-core parallel processing, which provides a better usage of the cloud resources.

OMApp is available at the address: http://www.omapp.ucg.ac.me/.
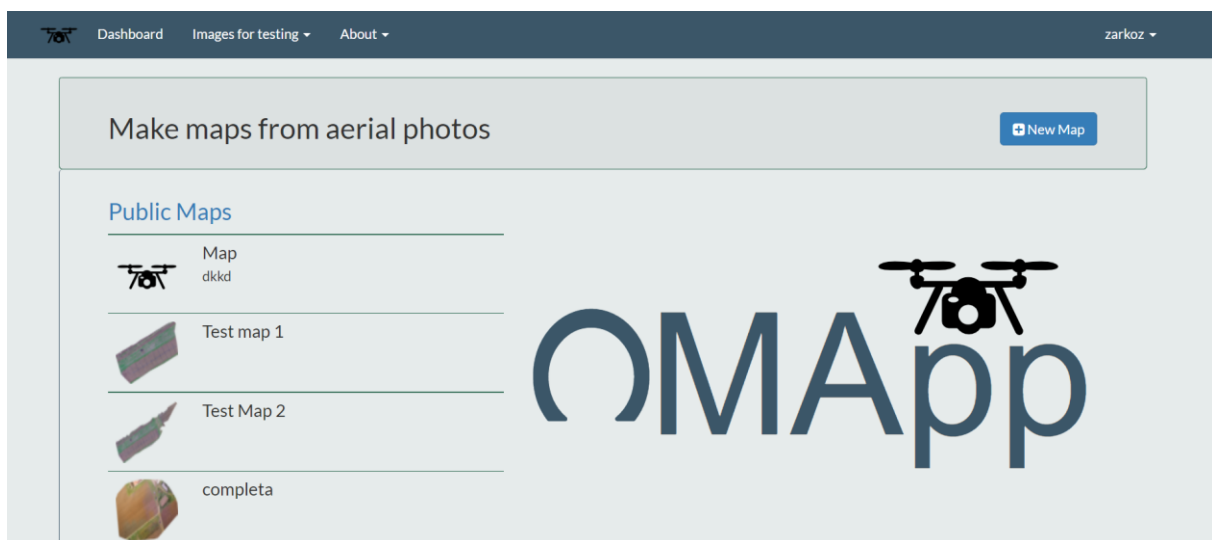

Figure 1. Homepage of OMApp service

OMApp is simple for use. At homepage, the user can **Login** or **create an account** (Fig. 1). Also, at homepage public maps, created by other users, are available. Dashboard (Fig. 2) consists of two main parts: maps that are already created, and currently processing maps or maps that are in the queue. When the user creates a new map and uploads images, a processing job is sent into a queue. Currently a cloud server can process one map in time.
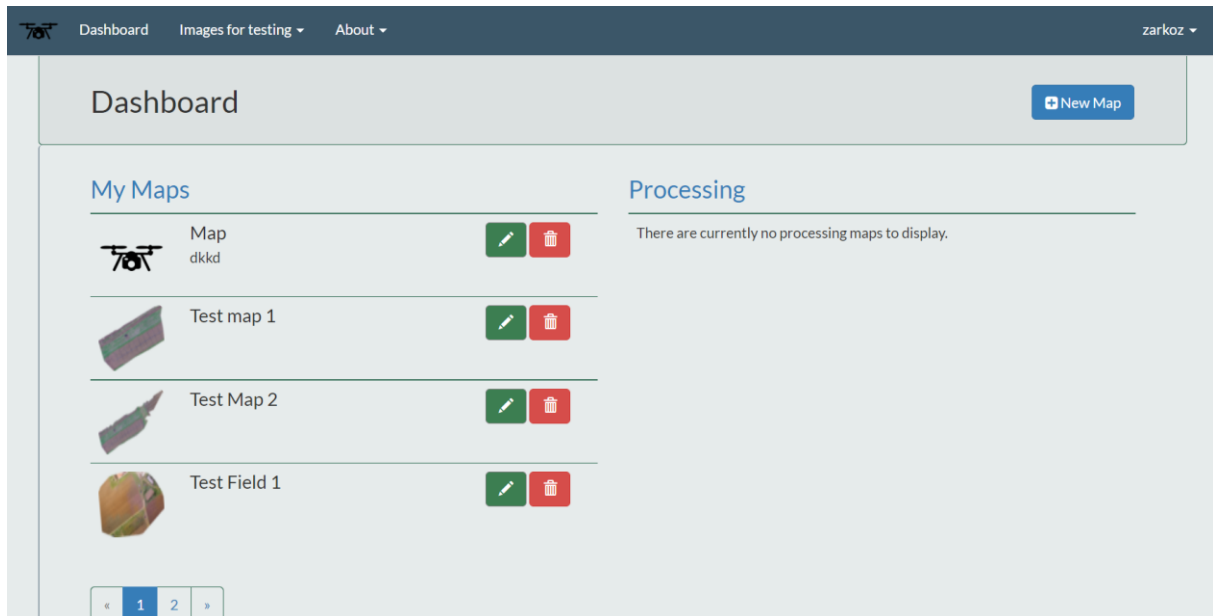
Figure 2. User Dashboard

To create a new map, the user should specify a name of map, its description, type of visibility (public or private) and finally upload images (Fig 3). When map processing is started, an e-mail notification is sent to the user. Also, the user is notified when map processing is finished.
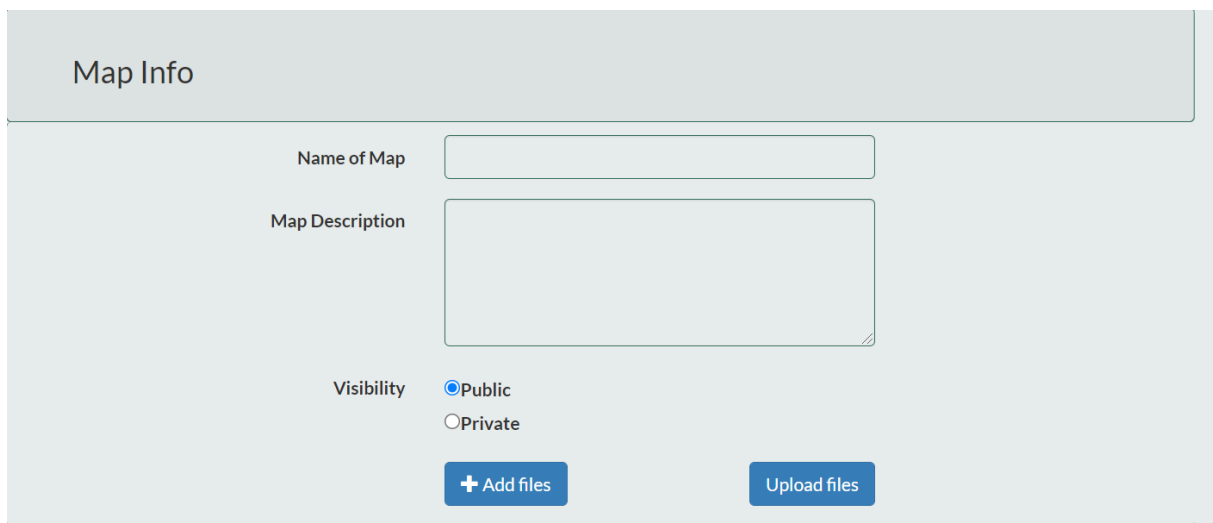

Figure 3. Interface for image upload

When the image processing has finished, the user is notified by e-mail. Depending on a number of uploaded images, the map processing can took up to two hours. Note that all images need to be geo-tagged. In order to test the services, some test images are provided to users (Dashboard).

Maps are visualized by mobile-friendly, open-source Leflet.js library. OMApp provides three types of maps: RGB, VARI (Visible atmospherically resistant index) and 3D.
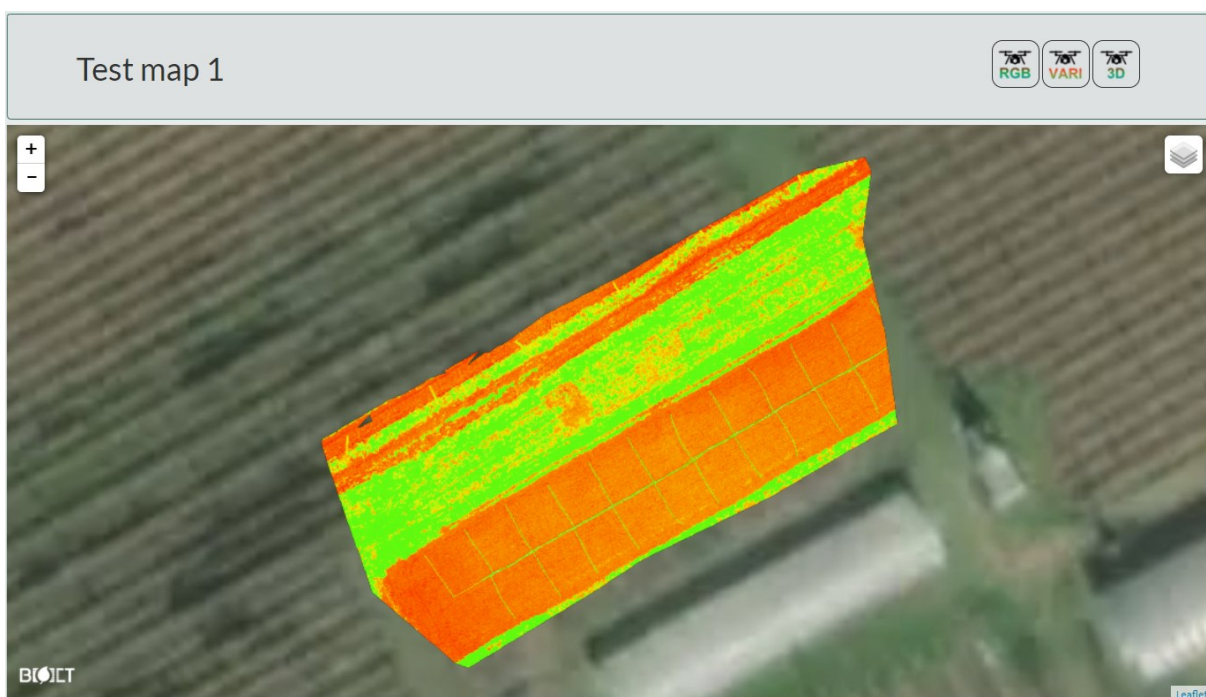
Figure 4. Example of the RGB map
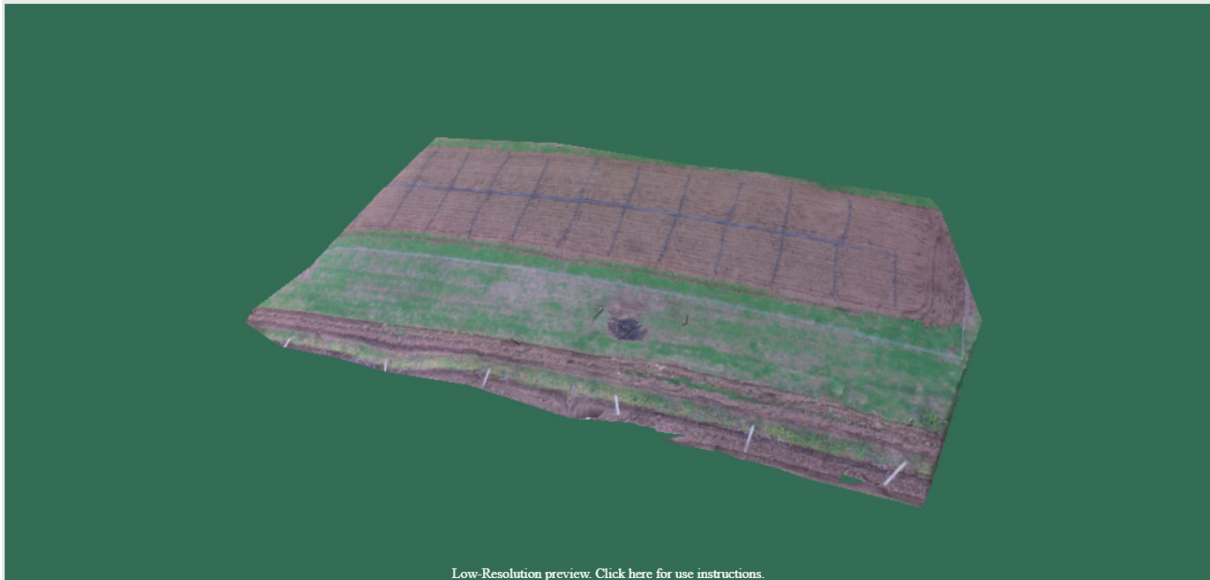

Figure 5. Example of the VARI map

Figure 6. Example of the 3D map

RGB maps can be embedded into html page by using url:

http://www.omapp.ucg.ac.me/GetPMap/apikey,

where **apikey** is a unique key associated to map.

Remark:

In the example provided in this tutorial we used the image dataset

http://www.omapp.ucg.ac.me/Let3.zip

Users also have the possibility to download processed imagery in standard formats (GeoTIFF, .obj, etc). Download option is not available for public maps.