# CLOOPSy – Copernicus Land cOver crOwdsourcing Platform for Sentinel-based mapping

# Functionality

# Documentation

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|---:|:---|
| **Author** | Daniele De Vecchi |
| **Status** | Final |
| **Version** | 1 |
| **Date** | 06/07/17 |

## Data flow and code structure

The data flow is represented by the following figure. After data collection, the report is submitted to the server and saved as private (meaning that it is visible only to the same user). The administrator of the service verifies the correctness and decides to accept or refuse the report.
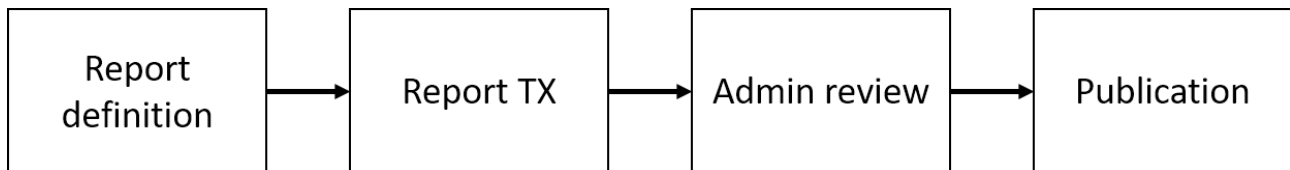


*Figure 1: Data flow from report collection to publication*

The report definition is OS-dependent; included in the repository (https://bitbucket.org/cloopsy/android/src) there are 5 folders:

- Cloopsy: folder with a class common to the two versions; it is supposed to offer the identified categories offline

- CloopsyAndroid: folder with all the code related to the Android version

- CloopsyIOS: it contains all the iOS-related files

- Components: it includes the external libraries used to develop the project

- RestLibrary: folder with code used to handle communication with the server; it is used by both platforms.

## REST-APIs

Two APIs have been developed. The first is to retrieve reports approved and made public; the other one is used to retrieve all the reports generated by a single user.

## 1. Public reports

Syntax: https://cloopsy.unipv.it/rest-api/reports-public/

JSON syntax:

```
[
    {
      "id": 83,
      "user": 13,
      "category": 62,
      "category_details": {
            "id": 62,
            "name": "Estuaries",
            "selectable": false,
            "parent": 20,
            },
      "position": "8.6287930225608, 45.8102987971586",
      "direction": "296.238",
      "distance_focus": "DISTANCE FOCUS NOT AVAILABLE",
      "telephone_id": "3300b6cf10825475",
      "area": null,
      "image": "https://cloopsy.unipv.it/media/image_lU6KoGB.jpg",
      "valid": true,
      "created_at": "2016-11-02T09:54:18.899276Z",
      },
...
]
```

## 2. Private reports

Syntax: https://cloopsy.unipv.it/rest-api/reports/

JSON syntax:

Not authorized:

```json
 {
     "detail": "Authentication credentials were not provided"
 }
```

Authorized:

```json
[
 {
   "id": 64,
   "user": 1,
   "category": 32,
   "category_details": {
       "id": 32,
       "name": "Non-irrigated arable land",
       "selectable": false,
       "parent": 10,
   },
   "position": "9.582248, 45.232307",
   "direction": "150.4846",
   "distance_focus": "DISTANCE FOCUS NOT AVAILABLE",
   "telephone_id": "3300b6cf10825475",
   "area": {
       "id": 256,
       "type": "Feature",
       "geometry": {
           "type": "Polygon"
           "coordinates":  [
         [
           [
               9.578290947328627,
               45.23291850975955
           ],
           [
               9.579561180989343,
               45.23309057064304
           ],
           [
               9.579561804168371,
               45.23288511858691
           ],
           [
               9.579824785117587,
               45.23251008664608
           ],
           [
               9.582050770033081,
               45.23287917537344
           ],
           [
               9.582813150784371,
               45.2328994850901
           ],
           [
               9.582646210403832,
               45.23217121849837
           ],
           [
```

```json
                        9.582780016207648,
                        45.2314758539573
                    ],
                    [
                        9.582045145105798,
                        45.23138781853702
                    ],
                    [
                        9.58142372021853,
                        45.23144626214614
                    ],
                    [
                        9.581337152353493,
                        45.23147009845803
                    ],
                    [
                        9.579879778226754,
                        45.23174550934103
                    ],
                    [
                        9.579526248281475,
                        45.23179101326372
                    ],
                    [
                        9.579295287631771,
                        45.23181089918501
                    ],
                    [
                        9.578539112741286,
                        45.23169062185202
                    ],
                    [
                        9.578456452946737,
                        45.23234725580131
                    ],
                    [
                        9.578290947328627,
                        45.23291850975955
                    ]
                ]
            ]
        },
        "properties": {
            "name": "10",
            "descriptio": "",
            "timestamp": "",
            "begin": "",
            "end": "",
            "altitudemo": "",
            "tessellate": 1,
            "extrude": -1,
            "visibility": -1,
            "draworder": 0,
            "icon": "",
        },
        "image": "https://cloopsy.unipv.it/media/image_vr9XLOt.jpg",
        "valid": true,
        "created_at": "2016-09-27T15:08:42.317608Z",
    },
    ...
]
```