



# **SIGMA REPORT**

## **Review of the existing apps for field data collection**

**Reference:** *SIGMA\_review\_app\_field\_data\_v1*  
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## 1. Overview of the applications for field data collection

Several applications developed for tablets or smart phones can help in-situ operations. Some of them have been tested for crop type data capture and the main advantages and drawbacks are given here under. This review will help to give some recommendations for further App development.

### 1.1. Geowiki pictures

platform	. Android . iOS
+	. Localization, direction, tilt, distance recorded with the picture
-	. No crop type defined in the legend . No pinpoint possibility
access	<a href="http://www.geo-wiki.org/">http://www.geo-wiki.org/</a>

### 1.2. GIS cloud

platform	. Android . iOS
+	. customizable forms . pinpoint on background map/EO image of your choice (only online) . data capture possible offline (but without background layer)
-	. 20 USD/month or 30 days free trial period (limit to 10,000 points and 100 Mb data) . no background layer when offline
access	<a href="http://www.giscloud.com/">http://www.giscloud.com/</a>

### 1.3. Poimapper

platform	. Android . iOS
+	. Create own form . free for single user . Visualize data on maps on the mobile device even when off-line (pro version)
-	. No EO image background in the free version . only a preselected set of maps is accessible in off-line mode . no pinpoint possibility (only record the current GPS position) . 30 USD/user/month for pro version + 0.29 USD per uploaded form
access	<a href="http://www.poimapper.com/">http://www.poimapper.com/</a>

### 1.4. Wolf-GIS

platform	. Android . iOS
+	. satellite image

	<ul style="list-style-type: none"> <li>. pinpoint</li> <li>. google image in online mode</li> </ul>
-	<ul style="list-style-type: none"> <li>. Basic version limits: no raster file (but google image if online) &amp; 2 GB connect storage</li> <li>. at least cloud connection required to save vector data</li> <li>. Wolf-Direct license required to connect Wolf-cloud and perform shapefile and raster file preparation on PC</li> </ul>
access	<a href="http://wolfgis.com/">http://wolfgis.com/</a>
Prices	<ul style="list-style-type: none"> <li>GIS-basic + cloud connect = 9\$/month</li> <li>GIS-basic + local PC access = 40\$/year</li> <li>GIS-pro + cloud connect = 50 \$/year</li> <li>GIS-pro + local PC access = 300 \$/year</li> </ul>

## 1.5. ArcGIS by ESRI

platform	<ul style="list-style-type: none"> <li>. iOS</li> <li>. android</li> <li>. windows</li> </ul>
+	<ul style="list-style-type: none"> <li>. pinpoint on background map possible</li> <li>. sync with ArcGIS online service</li> <li>. map service created by UCL for crop type data collection (see section <b>Erreur ! Source du renvoi introuvable.</b>)</li> </ul>
-	<ul style="list-style-type: none"> <li>. internet connection required</li> <li>. ArcGIS online license required</li> </ul>
access	<a href="http://www.esri.com/software/arcgis/smartphones/arcgis-app">http://www.esri.com/software/arcgis/smartphones/arcgis-app</a>

## 1.6. Collector for ArcGIS

platform	<ul style="list-style-type: none"> <li>. iOS</li> <li>. android</li> </ul>
+	<ul style="list-style-type: none"> <li>. customizable forms</li> <li>. pinpoint on background map</li> <li>. work off line (cache map background and feature service)</li> <li>. sync with ArcGIS online service</li> <li>. map service created by UCL for crop type data collection (see section <b>Erreur ! Source du renvoi introuvable.</b>)</li> </ul>
-	<ul style="list-style-type: none"> <li>. ArcGIS online organization license required</li> </ul>
access	<a href="http://www.esri.com/software/arcgis/smartphones/collector-app">http://www.esri.com/software/arcgis/smartphones/collector-app</a>

## 1.7. GeoODK collect

platform	Android
+	<ul style="list-style-type: none"> <li>. Offline</li> <li>. Design collection forms by drag-and-drop (?to try, android)</li> <li>. open source</li> </ul>
-	<ul style="list-style-type: none"> <li>. record location but no pin-point possibility (??to try under Android)</li> </ul>
access	<a href="http://geoodk.com/">http://geoodk.com/</a>

	<a href="https://play.google.com/store/apps/details?id=org.odk.collect.android&amp;hl=fr">https://play.google.com/store/apps/details?id=org.odk.collect.android&amp;hl=fr</a>
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## 1.8. Various ODK based applications

platform	Android
+	<ul style="list-style-type: none"> <li>. based on the Open Data Kit (ODK) open source platform</li> <li>. create own form</li> <li>. work offline</li> <li>. possibility to add background map if online (e.g. in Makina Collect)</li> </ul>
-	. record location but no offline pin-point possibility (??to try under Android)
access	<a href="https://play.google.com/store/apps/details?id=com.surveycto.collect.android">https://play.google.com/store/apps/details?id=com.surveycto.collect.android</a> <a href="https://play.google.com/store/apps/details?id=com.datawinners.android.collect">https://play.google.com/store/apps/details?id=com.datawinners.android.collect</a> Many others (SurveyCTO, DataWinners, Makina Collect, Acquee ODKm Asset Data Collection, ...)

## 1.9. GeoMobile for ArcGIS

platform	Android
+	<ul style="list-style-type: none"> <li>. geo-coder</li> <li>. own GIS layers can be load via a Web hosted configuration file</li> </ul>
-	. offline possibility (?to be tested in android)
access	<a href="https://play.google.com/store/apps/details?id=air.SwizTest3&amp;hl=fr">https://play.google.com/store/apps/details?id=air.SwizTest3&amp;hl=fr</a>

## 1.10. Geopaparazzi

platform	Android
+	<ul style="list-style-type: none"> <li>. georeferenced and oriented picture and notes</li> <li>. Create dedicated data form</li> </ul>
-	. EO image as background
access	<a href="http://geopaparazzi.github.io/geopaparazzi/">http://geopaparazzi.github.io/geopaparazzi/</a> <a href="https://play.google.com/store/apps/details?id=eu.hydrologis.geopaparazzi">https://play.google.com/store/apps/details?id=eu.hydrologis.geopaparazzi</a>

## 1.11. DataPoint GIS

platform	Android
+	<ul style="list-style-type: none"> <li>. collect geodata on or off line</li> <li>. Create dedicated data form</li> </ul>
-	<ul style="list-style-type: none"> <li>. A web account is required to use this application (only a free month evaluation)</li> <li>. pinpoint seems possible but only on a google map background (try using android?)</li> </ul>
access	<a href="https://play.google.com/store/apps/details?id=com.datapointlite&amp;hl=fr">https://play.google.com/store/apps/details?id=com.datapointlite&amp;hl=fr</a>

## 1.12. GIS Mobile-Imperious

platform	Android
+	

-	. browse data but no collect possibility
access	<a href="https://play.google.com/store/apps/details?id=air.GISMobile_Imperious&amp;hl=fr">https://play.google.com/store/apps/details?id=air.GISMobile_Imperious&amp;hl=fr</a>

### 1.13. MapWithUS GIS

platform	Android iOS
+	. custom data collection templates
-	. online only
access	<a href="https://www.mapwith.us/products/gis">https://www.mapwith.us/products/gis</a>

### 1.14. Garafa GIS Kit

platform	iOS
+	. work off-line
-	. \$99.99
access	<a href="http://garafa.com/wordpress/all-apps/gis-pro">http://garafa.com/wordpress/all-apps/gis-pro</a>

### 1.15. GIS Coletor

platform	Android
+	. work off-line
-	. no background image (only map) (to be tested on android)
access	<a href="https://play.google.com/store/apps/details?id=air.mobilegiscoletor">https://play.google.com/store/apps/details?id=air.mobilegiscoletor</a>

### 1.16. FieldMap

platform	iOS
+	. work off-line with vector map . collect or edit features . real time location on the map . MapText to publish map (Amazon cloud or own server)
-	. no background image when off-line . not free of charge
access	<a href="http://maptext.com/">http://maptext.com/</a> <a href="https://itunes.apple.com/us/app/fieldmap/id737081889?mt=8">https://itunes.apple.com/us/app/fieldmap/id737081889?mt=8</a>

### 1.17. Connected Farm Scout

platform	Android iOS
+	. Display background imagery using Bing maps
-	. online only
access	<a href="http://www.connectedfarm.com/features.html">http://www.connectedfarm.com/features.html</a>

## 1.18. Mappt

platform	Android
+	<ul style="list-style-type: none"><li>. GIS functionalities</li><li>. offline cache access</li><li>. import/export raster/vector</li></ul>
-	<ul style="list-style-type: none"><li>. AU\$450 first year (then AU\$199 each year)</li><li>. free trial does not allow export data</li></ul>
access	<a href="https://play.google.com/store/apps/details?id=au.com.mappt">https://play.google.com/store/apps/details?id=au.com.mappt</a>

## 1.19. Field Tracer

platform	Android
+	<ul style="list-style-type: none"><li>. Record polygons, lines and points</li><li>. Select layers: SHP, JPEG, BMP and PNG formats (GRD coming soon)</li></ul>
-	<ul style="list-style-type: none"><li>. not free (only 15 days trial version)</li></ul>
access	<a href="https://play.google.com/store/apps/details?id=com.dirtech.fieldtracer">https://play.google.com/store/apps/details?id=com.dirtech.fieldtracer</a>

## 1.20. QGIS for Android

platform	Android
+	<ul style="list-style-type: none"><li>. GIS functionalities</li><li>. display geotiffs</li></ul>
-	
access	<a href="http://hub.qgis.org/projects/android-qgis">http://hub.qgis.org/projects/android-qgis</a>

## 1.21. pcMapper

platform	Android
+	
-	Only google maps on line as background
access	<a href="http://www.inigis.org/226/pcmapper-map-editing-app-for-android.html/">http://www.inigis.org/226/pcmapper-map-editing-app-for-android.html/</a>

## 1.22. MapItFast

platform	Android
+	<ul style="list-style-type: none"><li>. collect point, line, polygons</li><li>. work offline (also Bing and Google aerial Basemaps)</li><li>. show current location</li><li>. attributes from personal data dictionary</li><li>. free version (for personal use only)</li></ul>
-	<ul style="list-style-type: none"><li>. paid subscription to upload own layers and basemaps</li></ul>
access	<a href="https://play.google.com/store/apps/details?id=com.agterra.MapItFast&amp;hl=fr">https://play.google.com/store/apps/details?id=com.agterra.MapItFast&amp;hl=fr</a>

### 1.23. Geospago

platform	Android iOS (coming soon)
+	. collect data . offline basemap
-	. \$27.99 per month but free trial version exist
access	<a href="http://geospago.com/">http://geospago.com/</a>

### 1.24. GIS 2go

platform	Android iOS
+	. offline use of the map . easy import collected data in ArcGIS
-	. to pay but free demo account (up to 500 MB of storage)
access	<a href="http://www.gis2go.com/">http://www.gis2go.com/</a>

## 2. Recommendations

After the analysis of the above described apps, the app for field data collection should have the following characteristics:

- **Offline access to a high resolution image** on which the location is displayed to support the delineation/pin-pointing of features when no internet connection is available in the field. This requires that the image has been previously downloaded and stored on the device.
- Possibility to **run offline** in order to collect data in areas without connection and upload them later.
- Polygon, line or point **drawing capabilities by hand** thanks to the background image
- Polygon, line, or point **drawing capabilities by GPS location**. Depending on the field size,
- **Predefined JECAM crop type legend**. In order to prevent language problem, a color coded symbology is used to complement English labels (as defined in JECAM).
- Export data to the **JECAM data format**. The geographical coordinates are recorded in decimal degree (longitude and latitude) in the WGS84 reference system (EPSG: 4326).
- Define **personal legend**
- **Multi-platform**
- **Free of charge**

From an ergonomic point of view, after delineation or GPS location, a window should pop up presenting the 4 dominant crop types and an 'other' button which leads to the full list of crops.