DigiTerra Explorer Quick Start

USER MANUAL

DigiTerra Kft.

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1 How to use the QuickStart Guide

Thank you for choosing DigiTerra Explorer!

Since the foundation of DigiTerra Ltd in 1996 the company offers high quality GIS softwares for professionals working on several speciality, who are collecting and actualizing data especially on the field.
During the development of DigiTerra Explorer v7 we are taking care of keeping "traditional" DigiTerra tools, but trying to actualize the software with new up-to-date tools too. We are improving some functions via the customers feedback, for making more easy-handling and user friendly.

The main goal of the Quickstart Guide is the customer who hasn't seen this guide before, get familiar with DigiTerra Explorer's workflow, from installing the program to the printing of the map project.

If this is the first time you meet with DigiTerra Explorer and you would like to measure objects, we recommend you to read the main topics as you can see below:

1. How does the program works?
2. Installing the software and the neccessary components onto the PC
3. The first run, and creating a Map Project
4. Set up the program for measurements
5. Creating a Map Layer and set up the attributes for the data collection
6. GPS measurements
7. Editing of the measurements and search for among the attributes
8. Labeling, Classification **(coloring the map via it's attributes)**
9. Saving the Map Project
10. Moving and copy the data to the PC
11. Print the Map Project

We wish you all the best for using the software:

DigiTerra Ltd.

Last Update: 10/15/2015

2 How does the program work

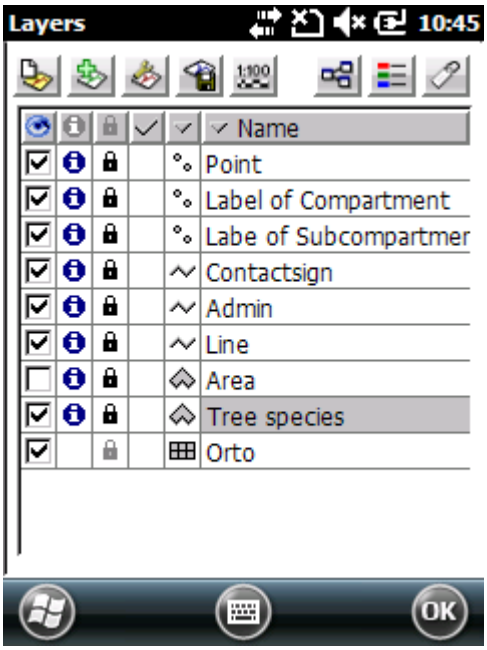
In general professional people, who use the first time DigiTerra Explorer, want to collect data with spatial position on the field . Several users would like to measure area and displaying as a map. What is the map? How to make it? What kind of data it contains?

In case there are no data available - there hasn't been collected a data yet - the first step is to select the appropriate spatial reference system for starting the GNSS measuring. The next step is creating a new **map project** with the selected spatial reference system.

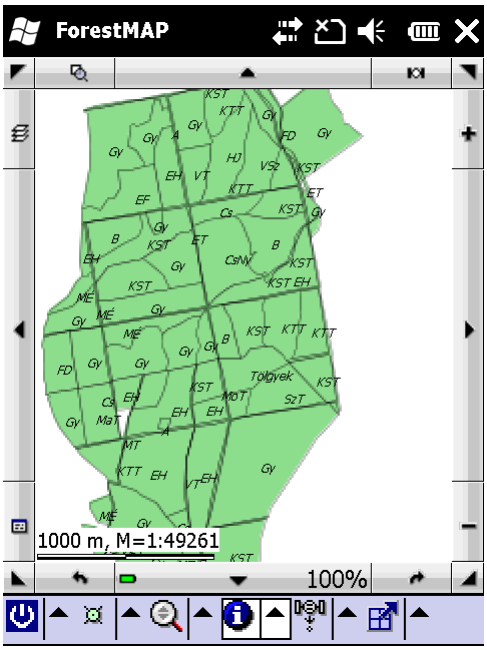
Areas, line facilities (eg.: roads, wirings), point objects (eg.:bird nests, trees) can be measured in the created map project- so new objects(features) can be placed on the empty map. These objects not can only be displayed on the map, but further attribute data can be recorded to each ones.

The following data can be recorded for example during an area surveying:
- how large is your area?
- who is the owner?
- what kind of crops can be found on the field?
- what kind of work operations had been done?
- etc.

The surveyed objects are stored in a map **Layer.** The types of the objects have to be defined in the map layers. In one map layer only one type of objects can be saved. (E.g.: saving line object to an area type object is not allowed.) The maps layers are displayed on the software's **Layers** panel, and those customization (E.g.: labeling, classifying) can also done here.



After surveying, the data will be saved automatically into the recent layer, and changes also will be displayed on the map.



At the end of the surveying task, only the map project should be saved. By this saving, the structure (contained layers) and the appearance (labels, colors) of the map can be defined.

3 System requirements

DigiTerra Explorer has two components: a mobile version and a desktop version is also available.
See below the hardware/software requirements.

DigiTerra Explorer 7 Mobile version

Hardware requirements

- **Operation system**
  - *Windows Mobile® version 5.x or higher*
  - *Windows® Embedded Handheld 6.x*
- **Processor type:** ARM, XScale, or OMAP
- **Processor speed:** 400 MHz *or higher*
- **Memory:** 32 MB RAM
- **Peripherals**
  - SD card / micro SD card hub
  - USB port
- **Display**
  - Colored touch screen (240 x 320 or higher definition),
  - Clearly visible screen even on the field

DigiTerra Explorer 7 desktop version

Needed software

- **Microsoft ActiveSync 4.5:** **https://www.microsoft.com/en-us/download/details.aspx?id=15**
- **Mobile Device Center 6.1**
  - https://www.microsoft.com/en-us/download/details.aspx?id=14 - 32-bit
  - https://www.microsoft.com/en-us/download/details.aspx?id=3182- 64-bit
- **Microsoft .NET Framework 4.5:** **http://www.microsoft.com/en-us/download/details.aspx?id=30653**
- **Microsoft .NET Framework 3.5:** https://www.microsoft.com/en-us/download/details.aspx?id=21
- **Dropbox client** (not compulsory)**:** https://www.dropbox.com/downloading?os=win

Supported operation systems

- **Windows 8/8.1**, Pro, Enterprise, Home Premium (32-bit or 64-bit)
- **Windows 7** Ultimate, Enterprise, Professional, Home Premium (32-bit or 64-bit SP1)
- **Windows Vista** (32-bit or 64-bit)
- **Windows XP** Professional Edition (32-bit SP3 or 64-bit SP2)

The Microsoft Location Service is not available in DigiTerra Explorer. The location service is only available in Windows 8/8.1 operation systems. Running DigiTerra Explorer on computers with this operation system external GPS connection is necessary.

Software install

4 Software install

This chapter describes the first steps of setting up the software. The description of software downloading for PC and for mobile device are within two separate chapters because the it has two components.

1. Two downloading methods exists for "Mobile" version: with SD card (it means that the software is registered in the card, namely the software become portable.) and the second method is to set up direct from CAB file. This way of downloading technique the software won't be portable.

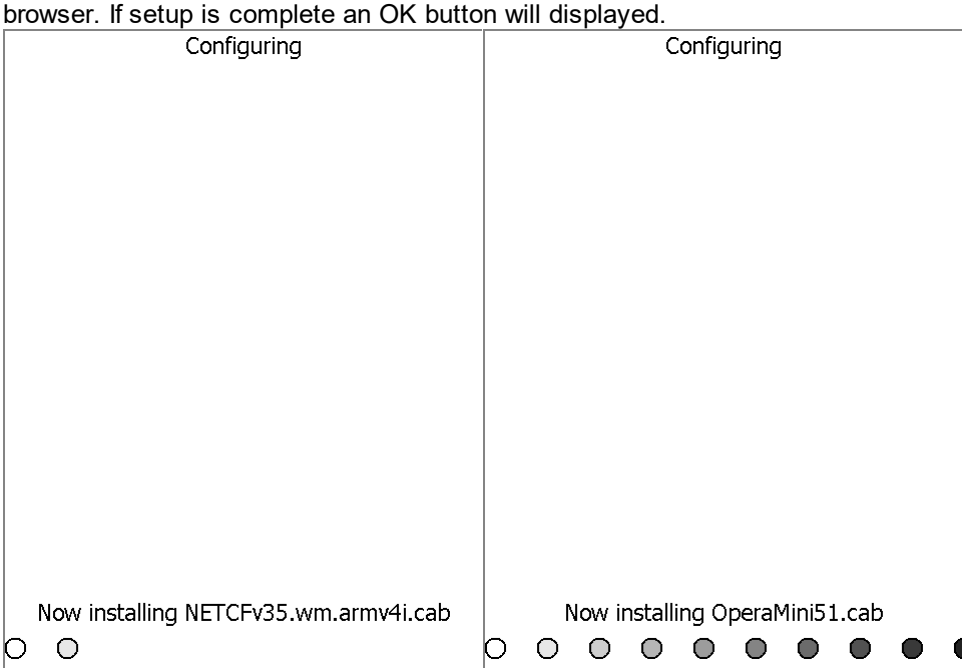
2. The second chapter contains the way of setting up DigiTerra Explorer for PC.

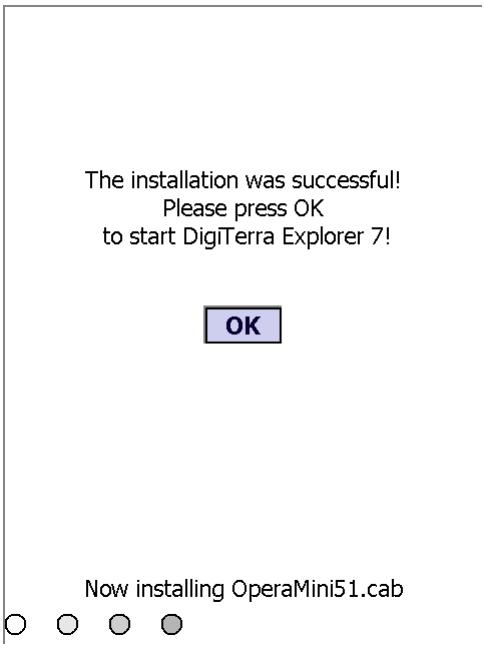
For more information about updating the software see the Software update chapter.

4.1 Installing the Mobile version

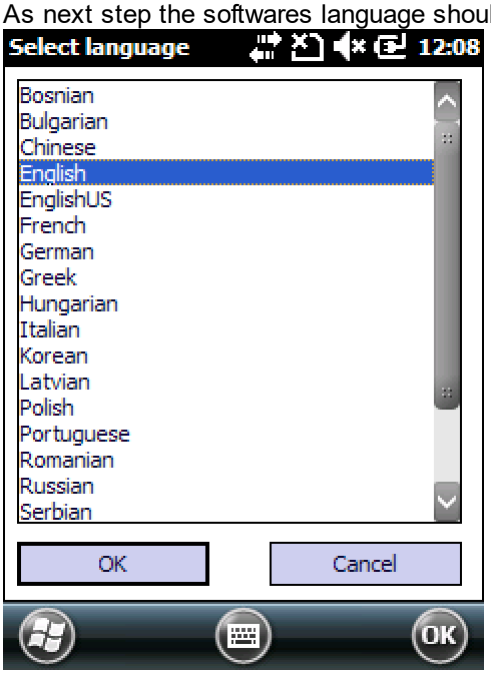
In case of SD card

1. Please insert the SD card, and start the device
2. When the operation system is started on the device, the installer of DigiTerra Explorer will be launched automatically.
3. The installer firstly sets up the .NET compact framework, and the Opera Mini web browser. If setup is complete an OK button will displayed.

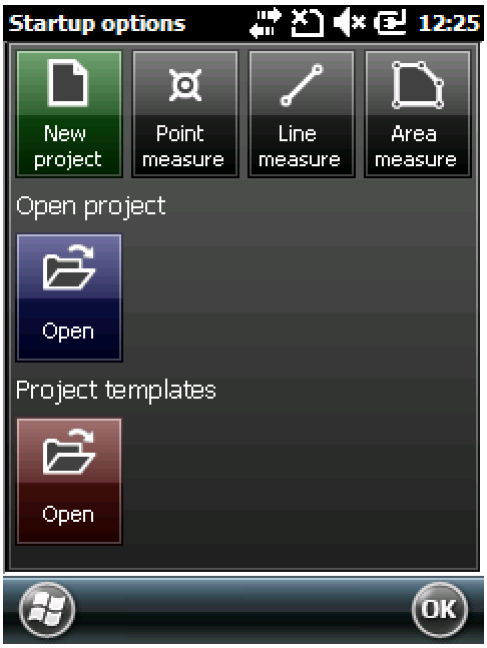




4. After pressing OK, the installer may offer further components to set up. For example **Leica** devices require the *Zeno Connect* or **Trimble** devices (eg.: Trimble Juno SB) require the *Pathfinder Tools SDK*.
5. As next step the softwares language should be selected.



6. After finalizing setup the **Startup** srceen of the software will be displayed.



DigiTerra Explorer 7 installer for SD card: http://digiterraexplorer.com/downloads/DTEXPV7MobilePack.zip

Installing from CAB file

1. Please download le a DigiTerra Explorer CAB installer: **DTEXPV7MobilePack.CAB**
2. Please copy the CAB installer from PC to mobile device. For copying Microsoft ActiveSync or Mobile Device Center connection is needed.
3. Browse the CAB file and press it for starting the installer. From this, the steps of the installation are the same as it is written at SD card installer from.

DigiTerra Explorer 7 Mobile CAB installer: http://digiterraexplorer.com/downloads/DTEXPV7MobilePack.CAB

Tutorial video

Tutorial video about installing DigiTerra Explorer.

Installing

4.2 Installing the PC version

The final step of the installation is to set up the desktop version

Preparing to install to PC

1. In case there is **Windows XP** operation system on your PC, the synchronization window of Microsoft ActiveSync 4.5 software should be popped up, after connecting the mobil device to PC via USB. Do **NOT** do the synchronization! (Please click on the cancel button). In case the Microsoft ActiveSync 4.5 has not been installed yet, it can be downloaded from this ulr: http://www.microsoft.com/en-US/download/details.aspx?id=15
2. In case there is **Windows Vista, Windows 7, Windows 8/8.1** operation system on your PC, the synchronization window of Windows Mobile Device Center should be popped up, after connecting the mobil device to PC via USB. Do **NOT** do the synchronization! Please Click: "Connect without setting up your device". In case the Windows Mobile Center has not been installed yet, it can be downloaded
   a. the x86 version of the software from here: https://www.microsoft.com/en-in/download/details.aspx?id=14
   b. the x64 version of the software from here:: https://www.microsoft.com/en-us/download/details.aspx?id=3182-
3. The next step is downloading the installer of the latest version of DigiTerra Explorer.
4. Run the installer, and follow the instructions.

The main components of the software will be placed at folder *C:\Program Files* illetve *C:\Program Files (x86)*. The user and hardware depend data will be placed at folder *"User"\Documents\ DigiTerra Explorer.* This folder contains the following data:

- sample maps
- user settings and user defined spatial reference systems
- the menu and toolbar files what define the interface of the software
- Scripts folder - it stores the settings what depends on the manufacturer and type of each devices

Properties of your operation system can be check at Control Panel > System.

Latest DigiTerra Explorer 7 desktop installer can be downloaded from here: http://digiterraexplorer.com/downloads/DTEXPV7DesktopSetup.exe

4.3 Program registration

DigiTerra Explorer is a competitive map based GIS software, which has three edition such as **Basic, Advanced** and **Professional.** Each of edition has different function kit. By these editions everyone can find the most cost-effective solution in field mapping and data collecting tasks. If You purchase a license You are owner of two - **a mobile and a desktop one**. The license of the software is bound to the mobile device, so **before installing the desktop version an installed mobile version has to be available,** for that reason the desktop software get the license from the mobile one when the USB connection (ActiveSync, Mobile Device Center) is active between the mobile device and the PC.

The DigiTerra Explorer should be activated for using all of its functions - depends on the purchased edition. Without activation the software runs in demo mode as trial version. This way the software can be used without time limit with the following restrictions:

1. Not available funtions: **export,**
2. **Printing**
3. **Reporting.**
4. **A Project what is saved in demo mode can not be opened in registered/ activated version of the software.**

In case You purchase a Product ID-t, there will be no restrictions.

Registration requires a valid Product ID (license key) which is delivered to You, after purchasing DigiTerra Explorer.

SD card installation

In case of puchasing DigiTerra Explorer on SD card, it is activated, so there is nothing to do as regards the activation.

If You want to activate the software on Your own SD card, please follow the install guide at Getting started > Intallation > Mobile version and please follow the steps of activation. Height speed and good quality SD card usage is recommended for reaching the best performance.

Please be advised that the only way to move Your registered software to an other supported device is the SD card installation. In case the installation has happen from CAB file - and the software has been registered and activated - it cannot be used on an other device.Terms and conditions: https://digiterraexplorer.com/how-to-buy/terms-conditions

CAB file installation

In case the software has been installed not to the SD card, but the devices own memory, the license will be bound to the devices serial number. As a result of this the software can be used only on one device. Terms and conditions: https://digiterraexplorer.com/how-to-buy/terms-conditions

Activating

Activating is a quite simple procedure. In case the software has been accidentally removed from your PC, or mobile device, or from the SD card, activation is also needed. For activating please confirm about the following things:

1. You own the Product ID
2. There is active internet connection on the device
3. The operation systems date and time is correct.

In other cases the the activation can not be happened.

The menu for activation can be found here:

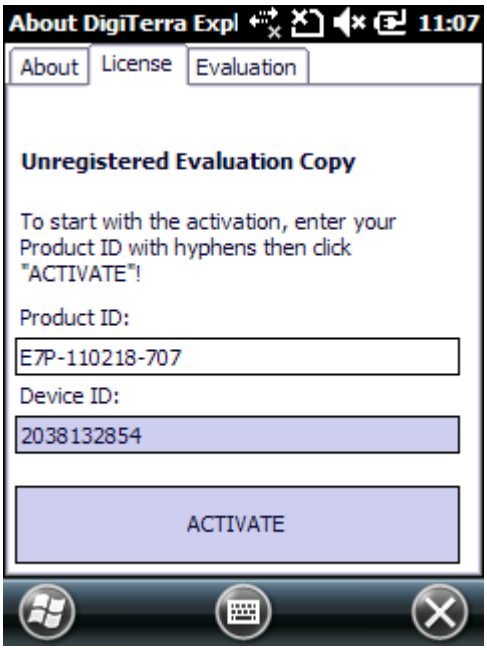
Mobile version:
File menu > Help > About > License tab

Desktop version:
File menu > About > License tab

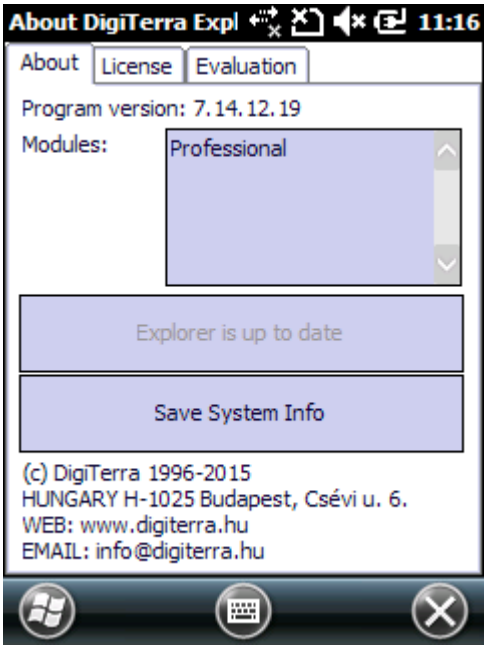
Please enter the Product ID and press the License upgrade button.

Please be careful, if You had no standalone PC license, the installation should be happen firstly to the mobile device, for the desktop version get the license from the mobile device.

About > License tab



Activated software



Tutorial video about activating

Activating the software

4.4 Program update

The two way to refresh Your DigiTerra Explorer software

1. By downloading an running the latest intaller file
2. Using the built in updater

Detailed information see below.

Updating by downloading the latest installer

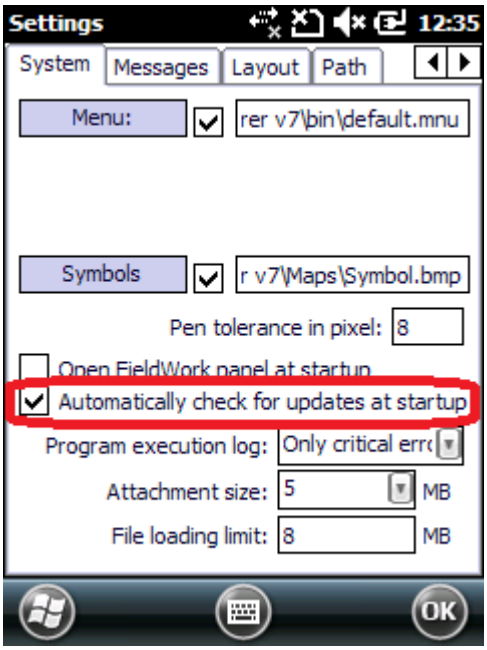
Also the mobile and the desktop version of DigiTerra Explorer software can be updated at any time. Please look at http://digiterraexplorer.com/free-trial website for more information about the latest versions.

Please compare the version number You have - found at "Help > About" menu - with the version number that is found at the website. In case there is newer installer at the website, then it can be downloaded and installed to Your device/PC.

Using the DigiTerra Explorer built in updater

The built in software updater automatically checks the version number and in case a newer is version is found at DigiTerras website it will be downloaded and installed to the device/PC.

The updater service is only available when active internet connection is exists. Please enter to the Settings menu and select the System tab to see the 'Automatically check for updates at start up' is checked or not. This option is checked by default, so the software checks the version number after every start up. If newer version is found, the software asks to install it or not.



When the software update message box appears, please press the "Download and Install" button and follow the instructions.

Detailed information found at: https://digiterraexplorer.com/support/video-tutorials/update-the-software/

Software update

Starting screen

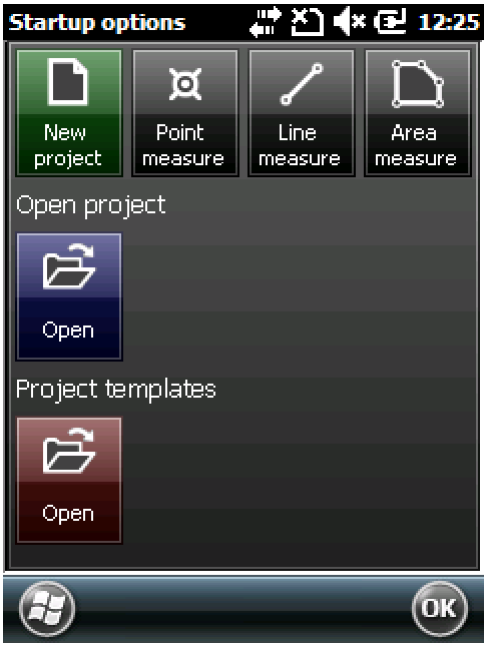
5 Starting screen

After successful install the start up screen of the software appears. This screen appears after every start up.

Starting from Today screen

Starting from programs

The DigiTerra Explorers start up screen does not appear when a start up map is set at Settings>Map menu. Detailed information can be found here.



By start up screen it is easier to create new map projects and open the recent ones.

Furthermore the "Quick measure" buttons are found next to the 

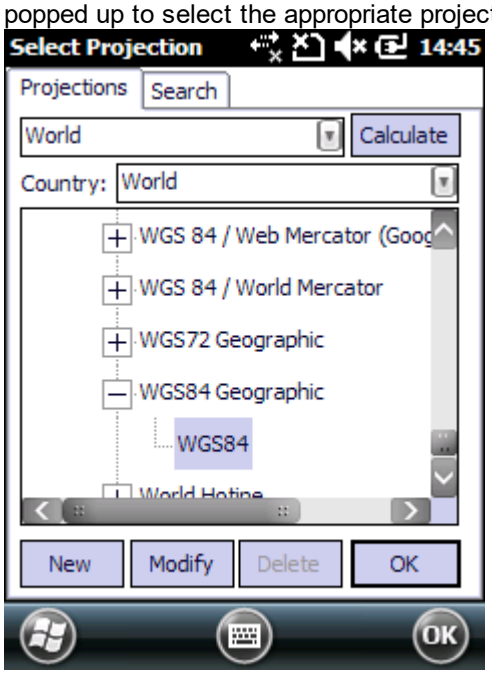
button.

New project

For starting a survey task without a prepared map project, a new project should be created by pressing the 

button. The next screen will be the following:

- **Name**: the name of the project top be created (eg.: Project07 or TreeSurveying2015etc.)
- **Path**: path of the folder where the newly created data (project, layers, code dictionary) will be saved. The folder name is the same as the project name for the easy identification. This path can be changed by pressing the displayed path.
- **Format**: the selected format will be the default format(extension) of the newly created layer files. Detailed information can be found at Quick measure.
- **Projection**: by pressing the displayed projection, the Select projection window will be popped up to select the appropriate projection.



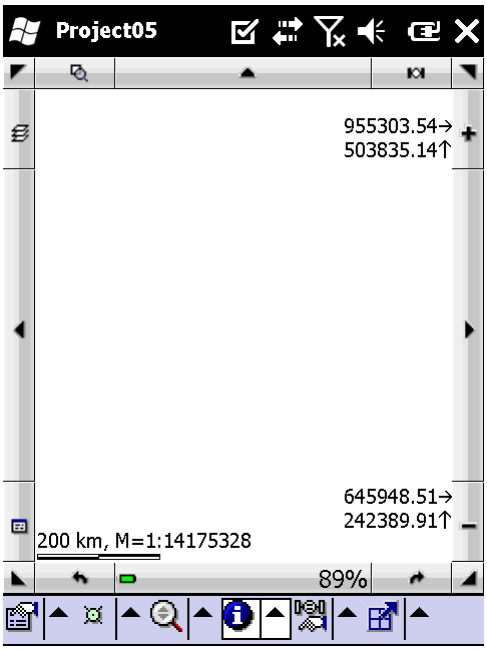
Detailed information can be found here: Select projection.

The selected projection will be saved, and it will be inherited by the newly created projects.

- By using **Code dictionary** You have the opportunity to record attribute data (eg.: tree species) from a predefined picklist to help the data collection on the field. (Usage of code dictionary is not mandatory.) Detailed information can be found here: Use of the code dictionary.

After specifying the appropriate project settings please press the 

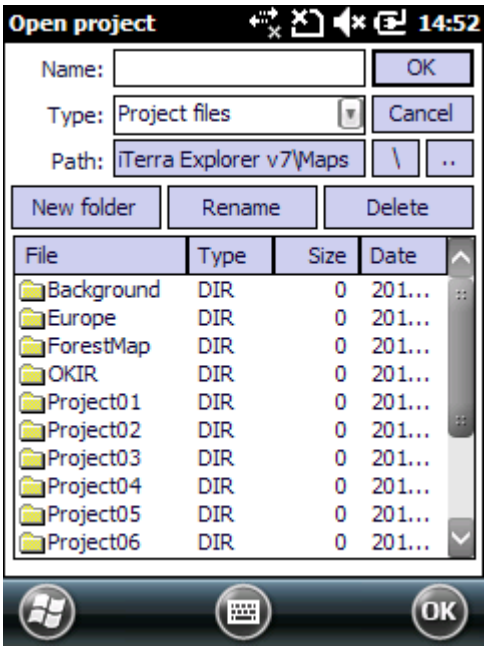
button. The main screen of the software will be displayed. From this ponint, new layers can be created to store Your measurements.



Open project

By pressing of the 

button, file browser will be popped up. Projects - created in the past - can be opened from here.



By opening an existing, project the following operations will be done:

- Setting the projection system of the project
- Adding the projects layers to the Layer manager
- Displaying the selected labels belonging to each layers
- Loading the code dictionary what is used by the project (if it exists)
- Loading the classification of each layers (layers will be colored as it was given)

Open project template

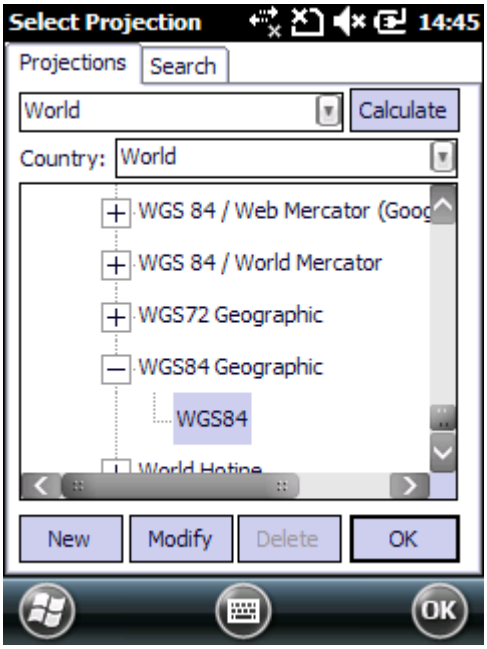
A project template can be opened by pressing the 

button. Existing map projects also can be used as templates. In this case, the newly created project will inherit all of the properties - including layers and their settings - of the selected project, except its data. By using templates it is not need to assemble a well-functioning project again.
Detailed information can be found here: Use of project templates

Tutorial video about startup screen.

DigiTerra Explorer startup screen

5.1 Set up the projection



More than 3.200 of projections are handled by DigiTerra Explorer, so the software can be used for geographical data collection on the whole Earth, using the local reference systems. Generally, most of the countries has its own projection system, in which the object coordinates are interpreted. In order to the collected data to be acceptable in the local system, surveys can be taken in the projection system of the given country.

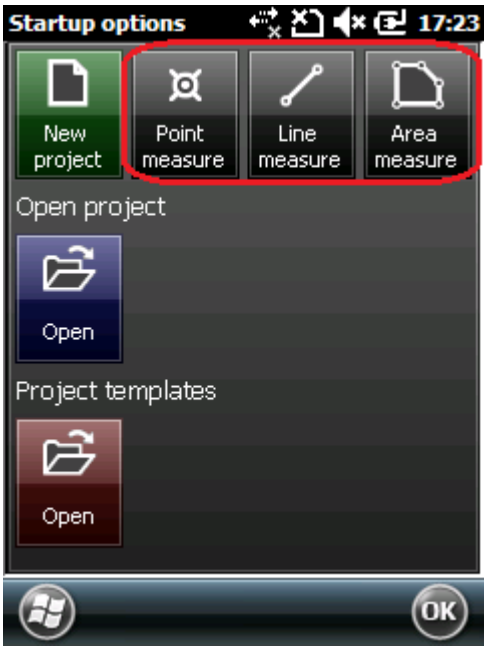
Please select the region (eg.: Europe - Western) and the Country (United Kingdom).

One country may has several projection systems. By expanding the (+ mark) tree view belonging to each countries, You can see all of the projection systems of the country.

Most of the projection systems has EPSG number. In several GIS software (in all of the open source ones), the projection systems are identified by the EPSG number, so projection search can be happened by EPSG number at DigiTerra Explorer.

After selecting the appropriate projection, please press the OK button to get back to Startup screen.

5.2 Quick measure



By the quick measure buttons, survey can be taken immediately. The only thing to do, is just select the type of the object (point, line or area) to survey. After selecting the type of the quick measure, a project will be created with one layer.

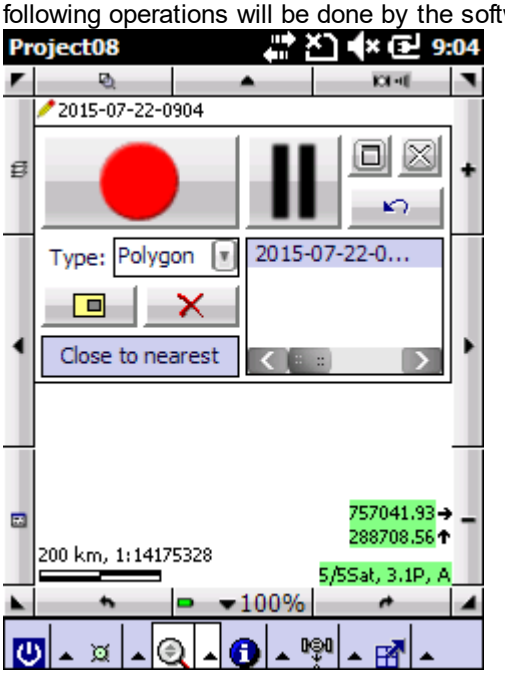
The project properties of the quick measure are the same as a normal project.
The quick measure layer **Format** / extension could be one of the followings:
MAP - DigiTerra vector format (a TAB file also will be created)
SHP - ESRI shape format (SHX, DBF, PRJ files also will be created)
MIF - Mapinfo format (a MID file also will be created)
DFX - AutoDesk Drawing Interchange Format

By scrolling down this window You can see the selected template for the point, line and area type quick measures. To switch the template to an other, please press the displayed path.

By using data templates, the attribute data fields - what should be recorded - can be specified easily by one press. Detailed information can be found here: Use of attribute table templates

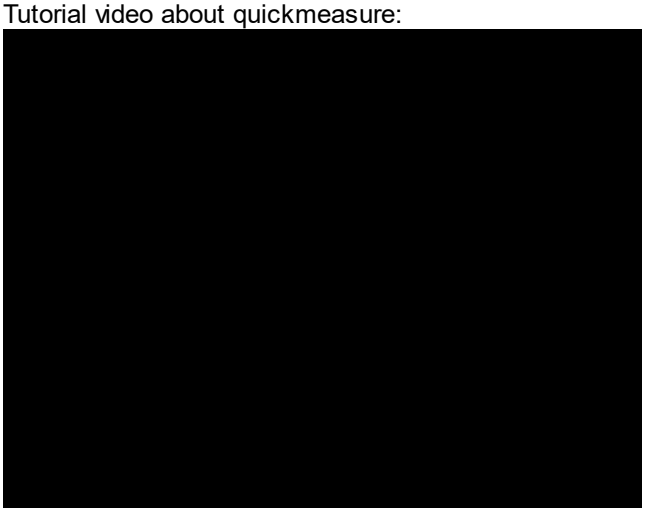
After checking project properties by pressing the 

button, the following operations will be done by the software:



1. The selected type of layer will be created, its default name will be a timestamp (eg.:2015-10-06-0854.map)
2. The layers attribute table structure will be assembled by the selected table template
3. Trying to establish a GNSS connection
4. The GNSS measure panel will be popped up to start the measuring instantly

Tutorial video about quickmeasure:



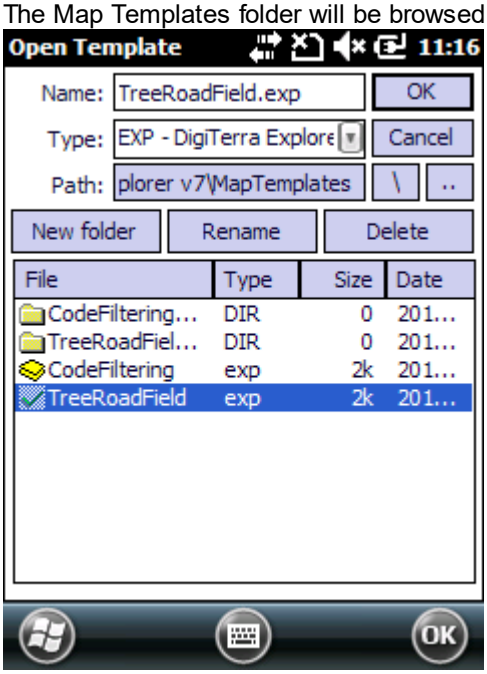
Quick measure

5.3 Use of project templates

Actually the a project template is a prepared map project but its layers do not contain any data. Layers are included with data in the project template it is advised to be used only as base map (background map). The map project contains the selected projection system, the list of the added layers, and its properties (labels, colors, classifications), the used code dictionary eventually the attribute structure belonging to each layers.

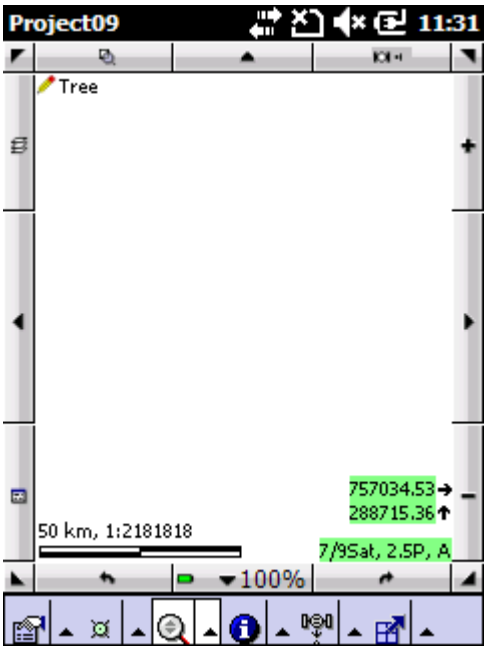
The simplest way to understand this function, is to use the map templates - found on PC, at folder: **Documents\DigiTerra Explorer\Map Templates.**
Please start the DigiTerra Explorer then press the open project template button

at Strarting screen.
The Map Templates folder will be browsed by default to open project files (*.EXP)

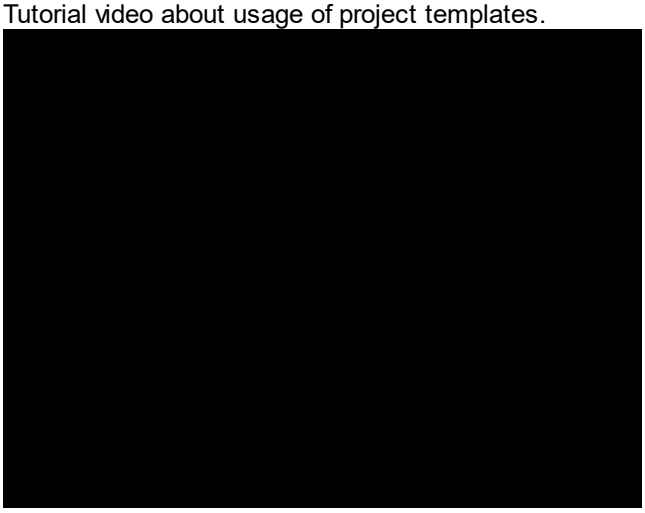


Please select the TreeRoadField.exp, then press **OK**.

At this screen the name of the project can be specified, and so the path to save, as well as the format of the layers.
By pressing the **Create Project** button, the project will be created - based on the properties of the selected template.
The survey/data collection can be started.



Tutorial video about usage of project templates.



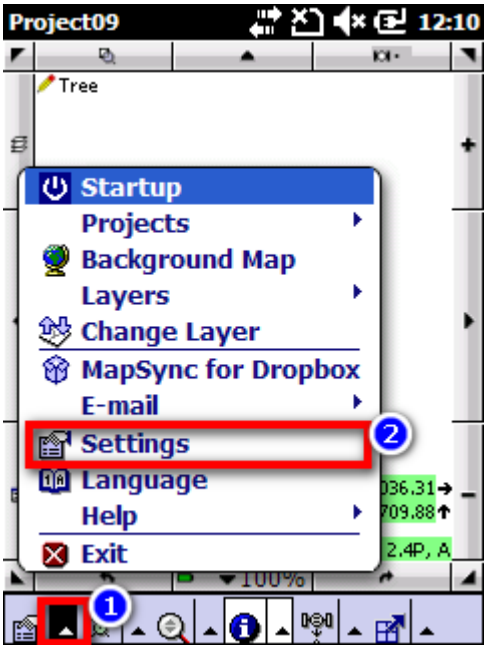
Project templates

Program Settings

6 Program Settings

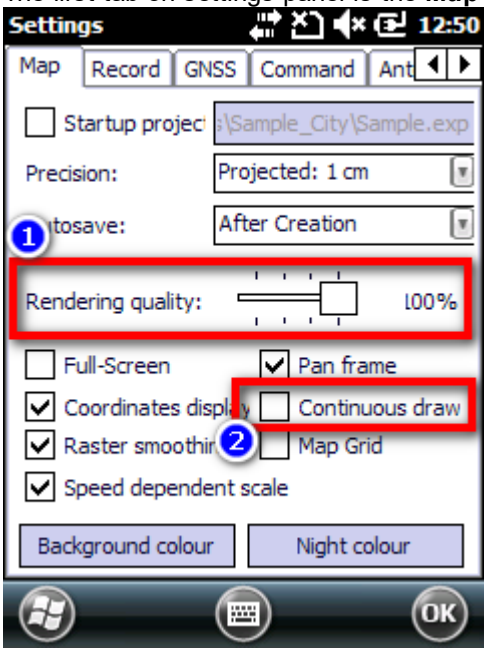
After the creation of the map project the next step is to give the device specific settings, and to customize the software settings. Generally this setting should be given once, except when the software has been removed to an other device. In this case You can give support by sending an e-mail to support@digiterra.hu.

For opening the Settings panel please press the black arrow (1) next to **File menu**, then select **Settings** (2) menu point.



Map settings

The first tab on settings panel is the **Map** - containing the map related settings.

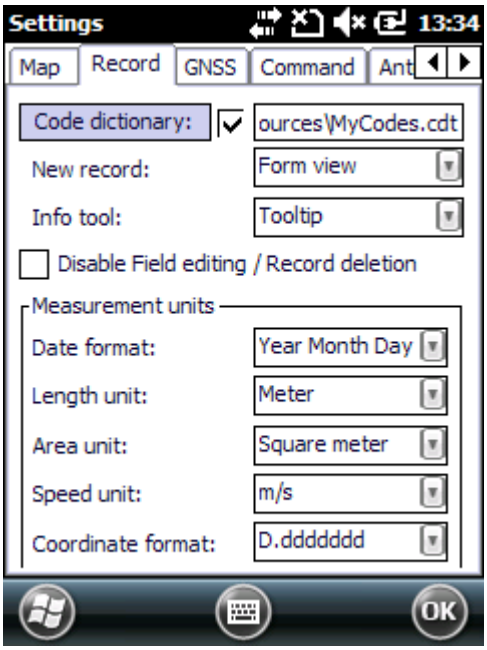


At least one thing it is worth to do, is to set the *Rendering quality* (1) to 100 %. By doing this, the drawing out of the map objects are going to have the best quality. Furthermore it is worth to check the *Continuous draw* (2) options to see the map during the panning and the zooming.

In case the device has lower speed processor, or less memory it is worth to set down the value of the rendering quality. The checking off the Continuous drawing also can help to accelerate the running of the software.

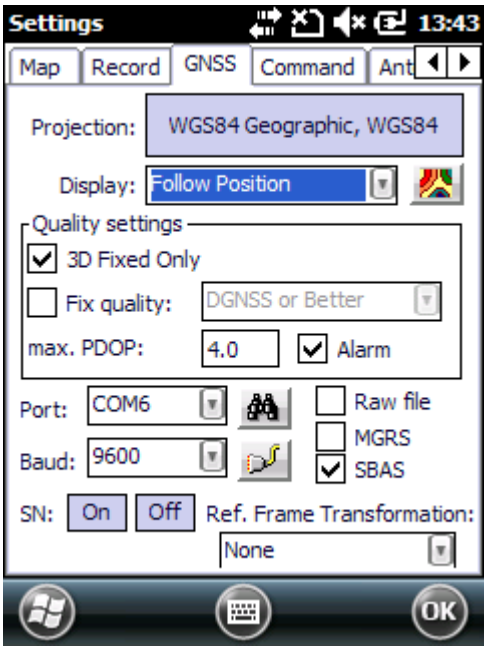
By adding an existing **Startup project,** the selected one will be loaded automatically after every start up without displaying the Starting screen.

Record (attributes) settings



The attribute and measurement unit related settings can be found at **Record** tab. The selected units will define the results of the drawing/measuring/GNSS measuring. For example if the *Hectare* area unit has been selected the calculated area will be displayed and stored in *Hectare*.

GNSS settings

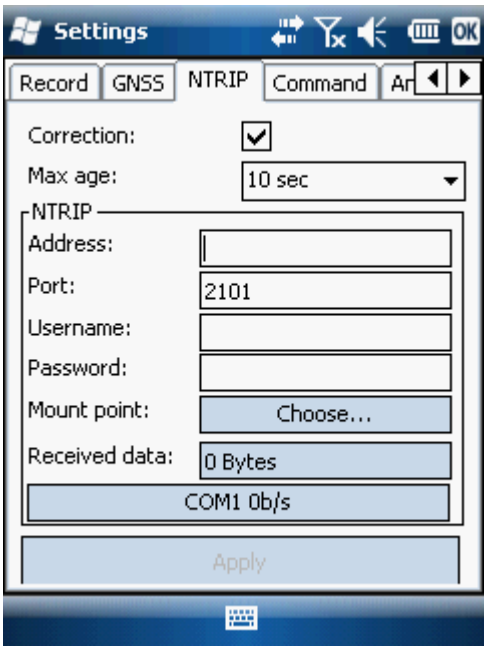


Maybe the **most important** tab at settings panel is **GNSS**. Here can be set the parameters based on the the software can get the coordinates from the GNSS receiver unit.

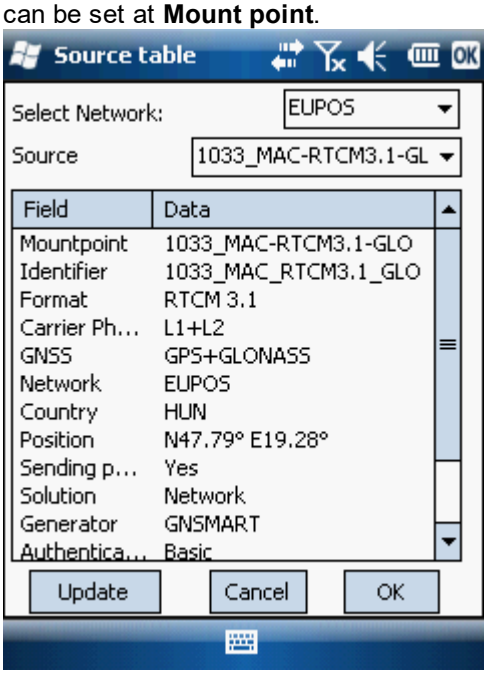
- The Projection defines the system in which the coordinates will come from GNSS. Because of this it is important to set the appropriate projection at *Starting screen*. A projects projection system cannot be changed after data has been recorded into it.
- At **Display** option the behavior of the map can be set depends on the GNSS position. In this case the *Follow position* means that the map will always follow the GNSS position without manual panning.
- The **Quality settings** is used for providing the wanted GNSS measure reliability. Detailed information can be found at GNSS quality settings.
- To set the value of the **Port** and **Baud** are key. The communication between the GNSS receiver and the software is happen via a special gateway (Port) on a given speed (Baud). This two value can be different on each devices. Generally the values can be searched and set by pressing of the  button.In case this search does not have result, please set these value by the devices user manual.


Few devices requires special settings to do. Detailed information can be found at DigiTerra website.

NTRIP settings

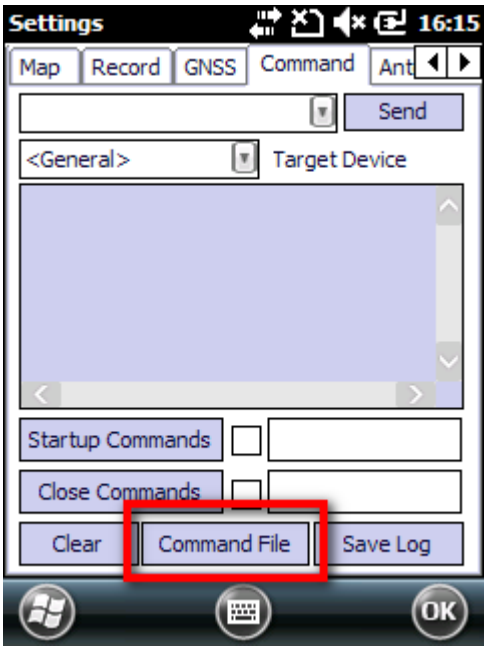


GNSS corrections what come via internet, can be set at NTRIP tab, in case the device has NTRIP capability. The parameters of this connection - **IP adress**, **Port**, **Login**, **Password** - are given by the host of the NTRIP service.
The NTRIP station and the type of the correction - based on the devices capabilities - can be set at **Mount point**.

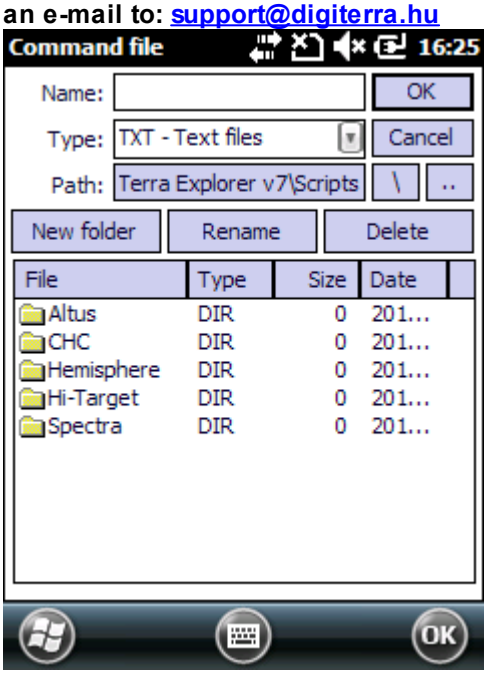


Receiving of NTRIP correction requires internet connection, what can be come from built in internet modem, and WIFI, as well as from a cellphone via Bluetooth connection.

Command tab



In case of using few devices it is not enough to set the Port and Baud values for establishing the GNSS connection. These devices (eg.: HI-TARGET, CHC, Altus etc.) have to be parametrized by Command files (scripts). By pressing the **Command File** button the appropriate file can be selected.
If You are not sure about the correct file to use, You can get support by sending an e-mail to: support@digiterra.hu



Please select manufacturer (folder name) then select the type of the device (file name).

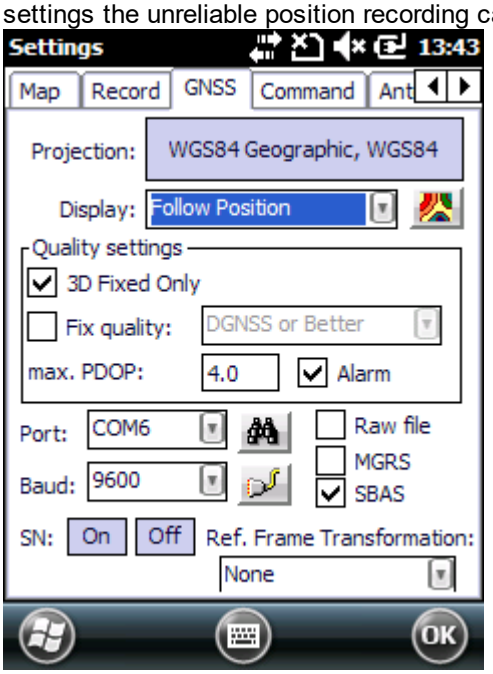
Before selecting the appropriate command file (script) please set the Port and Baud values at GNSS panel, anyway the configuration will not be succeed.

Tutorial vied about settings panel.

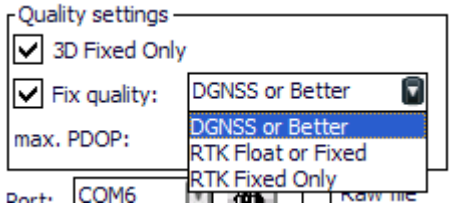
Main settings

6.1 GNSS quality settings

GNSS position is always displayed on the map if GNSS connection is alive. By Quality settings the unreliable position recording can be skipped.



- **3D Fixed only:** Position recording only happen when at least 4 sattelites in use. It is worth to keep it checked.
- **Fix quality:** Position recording only happen when there is correction available. The correction could be *DGNSS, RTK Float or Fixed, RTK Fixed Only.*



- **Max. PDOP** is an index which describes the dispersion of the satellites on the horizon. The smaller the PDOP value the more reliable GNSS measurement. (The best PDOP value is 1.0, but in practice it hardly ever goes under 1.2) At 4 PDOP value the reliability decrease significantly. Positions with the given - or higher -PDOP value will not be recorded.

In some cases (eg. at areas covered by forest, or at urban areas) it is unavoidable to increase the PDOP limit for recording positions.

- In case **Alarm** is checked, the device send a beep voice when a violation has happen according to the quality settings.

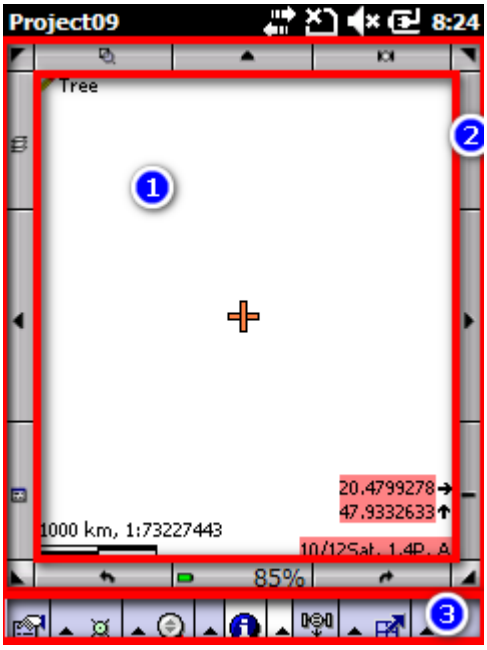
Tutorial vide about gnss quality settings

Quality settings

Handling of map layers

7 Handling of map layers

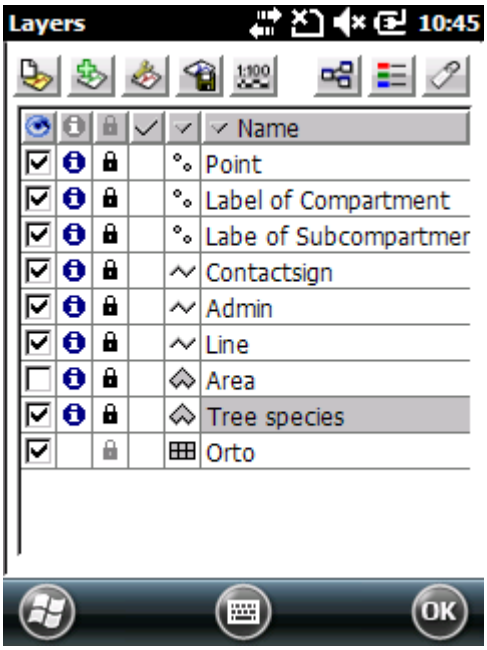
The main screen of the software will displayed after creation of the new project. Around the map view (1) the active frame (2) can be found with the frequently used and map navigation functions. At the bottom of the screen (3) the menu can be found with the toolbar.



By pressing the button the following menu points will be dropped up (from left to right):

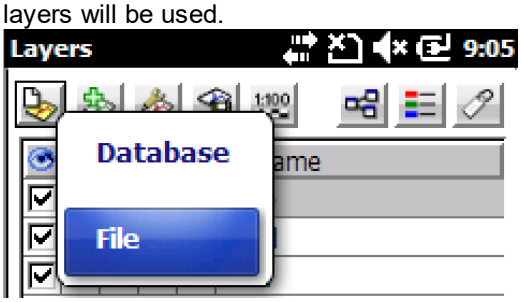
- File menu
- Edit menu
- View menu
- Query menu
- GNSS menu
- Tools menu

The quickest way to open the layer manager is to press the button.



Create new layer

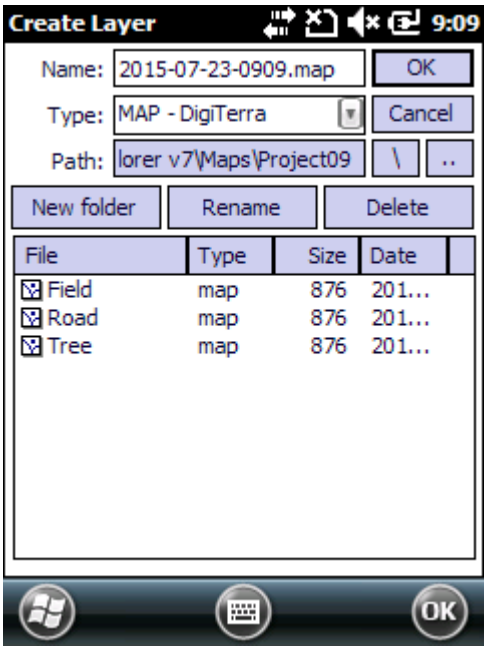
For starting data collection a new layer should be created. The collected data will be stored in this layer. Please press the new layer button.
Layers can be stored as file and in SQLite database as data table. In this guide only file layers will be used.



Tutorial video about storing data in SQLite database.

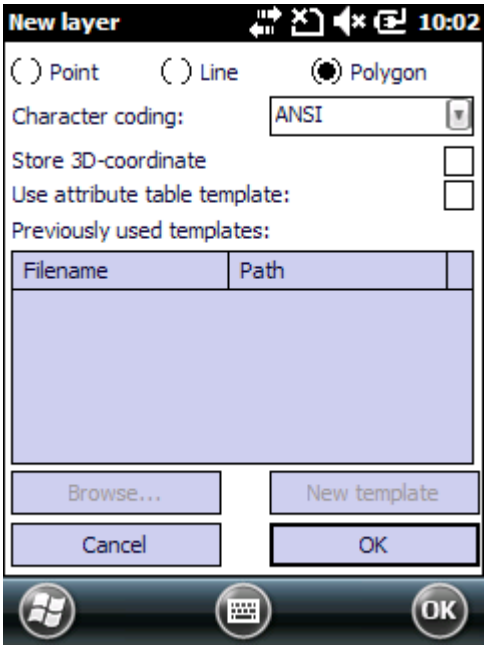
Usage of SQLite database

By selecting the File menu point the file browser will be popped up.



- The new layers default **Name** will be a time stamp - naturally it can be renamed. In name please avoid special characters like: **. , \ / + ! % = ( ) ***
- At **Type** the default type of the new layer (defined as Format at Starting screen) can be changed (*map, shp, mif, dxf stb…*).
- The newly created layer will be saved to the given **Path**.The default path is the same as the projects path - naturally it can be changed. It is important to be clear with the path, mainly when data will be moved between device and PC.

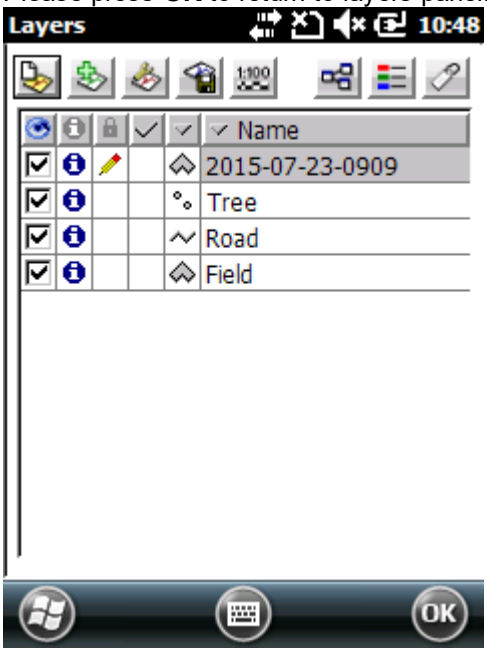
When everything is specified please press **OK**.



In the window what is popped up the **geometry type** (point, line, area) of the layer can be selected, depends on the objects to measure.
Character coding generally can be remained ANSI but in countries where special characters are used, it should be changed. For storing the Z coordinate (altitude) in objects geometry, please check the **Store 3D-coordinate** option.
By using **attribute table template,** the attribute table of the new layer can be

assembled based on an existing attribute table. Detailed information can be found at Use of attribute table templates.

Please press **OK** to return to layers panel.



The layer visibility can be turn on/off by the first checkbox. The button has influence to four properties:

1. Information request from the layer
2. Automatic snapping of the elements during drawing/editing.
3. The legend of the layer will be displayed on the printed map.
4. Objects of this layer will be represented in the result list of the searching - when search tool is used.

By the icon the layer can be set for editing, or it can be locked.

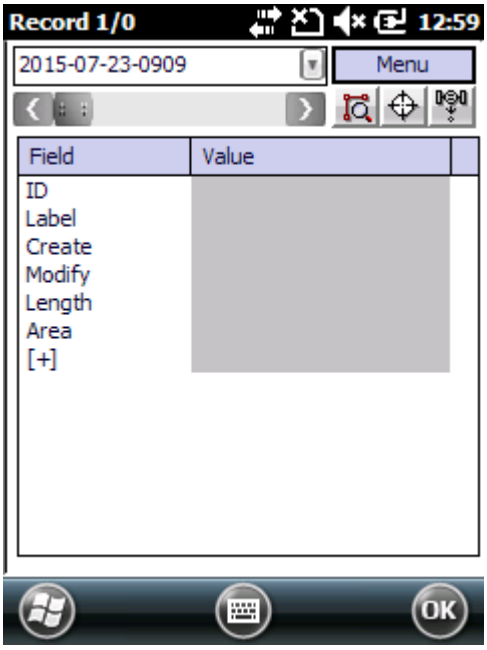
Those layers are ticked that can be Deleted, Merged or Exported in batch by pressing the button.

Tutorial video about creating a layer

Create layer

If creation of new layers is finished, let us see the attribute fields to collect date at Record panel.

Please close the Layers panel, and open Records panel by pressing the  button on active frame.

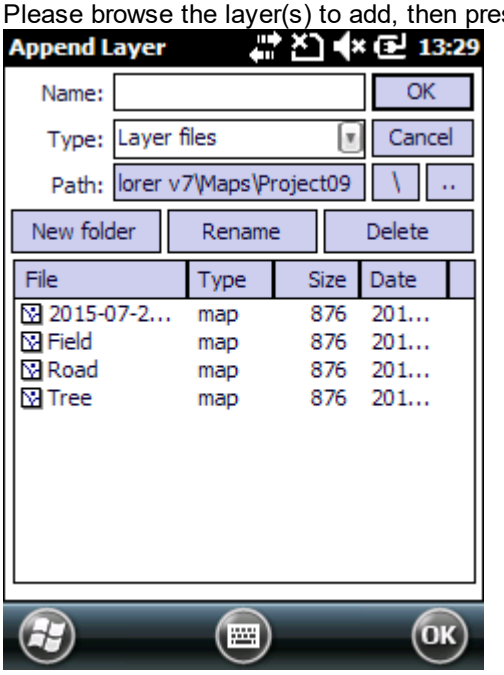


This is the default table structure, created by the software
In this case only the Label filed can be filled, because the other ones are calculated fields filled by the software after creation.(eg.: The area of the new object will be calculated and saved to Area field)
This table structure can be customized freely. Detailed information can be found at Customization of attribute fields.

Adding existing layer(s) 

Existing layers - if they are in supported file format - can be added to the project by

pressing the  button. (The wish to add layer also can be file or database table.)
Please browse the layer(s) to add, then press OK.



The icon of the selected layers will change to ✓ - this way more layer can be added to the project.

There are some special cases when adding of layers requires further parameters to add. Detailed information can be found at: Loading special map layers.

Remove layer from project

As it was written at Layer panel ,those layers are ticked ✓ the following operations can be done by pressing the  button:
Remove: the ticked layers will be removed from the project, but they will not be deleted physically.
Merge:The ticked layers will be merge and save as into a new file. This function will be operate correctly only on layers have same geometry type (area1 - area2), and same data table structure - for preserving data loss.
Batch export: The ticked layers can be exported to other format (eg.: SHP, DXF) in one step.

Tutorial video about adding, removing layers:

Adding, removing layers

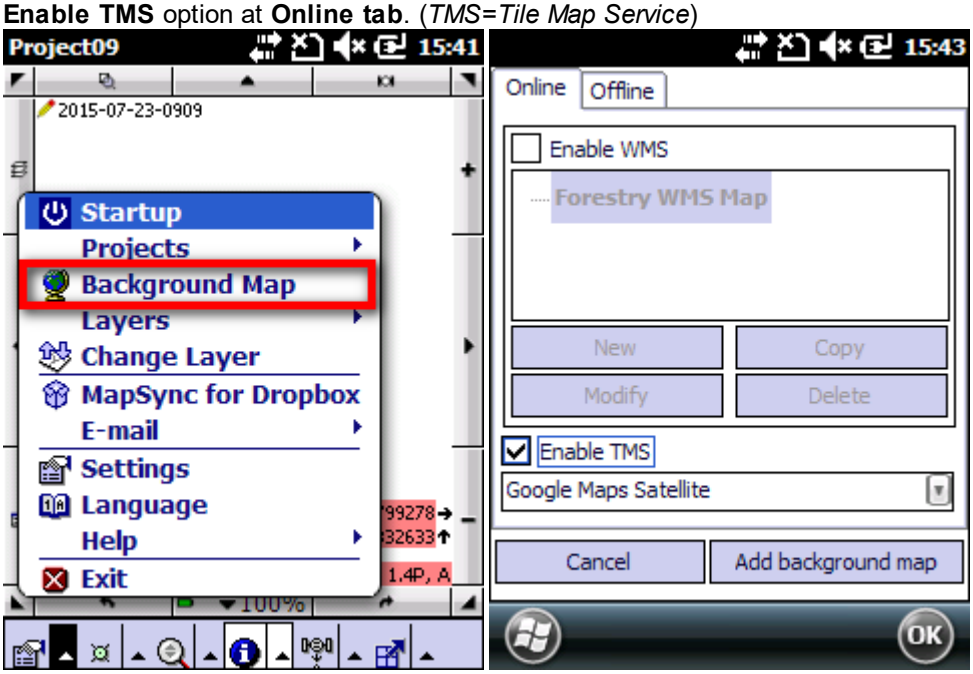
7.1 Background maps

Lack of background maps is a common problem during field data collection tasks. These background maps could be a remarkable help in navigating/measuring on the filed. Without background maps You can see only the GNSS position above an empty white screen.

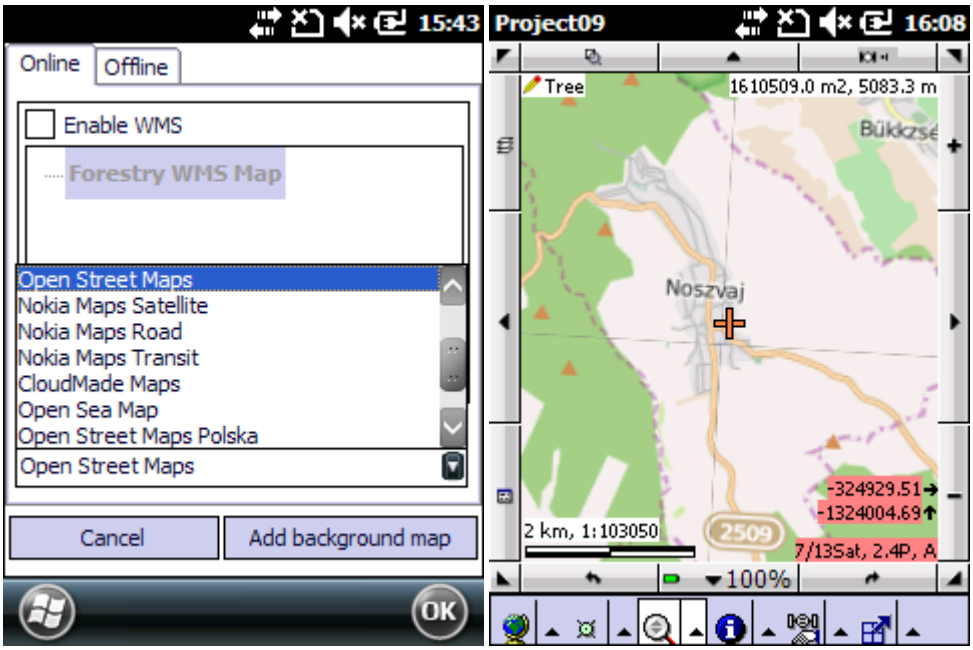
The DigiTerra Explorers *Background maps* function offers a solution to load background maps by using one of the available internet map servers (eg.:Google, Bing)

In every device - that has been manufactured after 2014 - there is built in WIFI connection or SIM card slot. By one of these, internet connection can be established for downloading background maps.

The **Background map** menu point can be found under **File** menu. Please check the **Enable TMS** option at **Online tab**. (*TMS=Tile Map Service*)

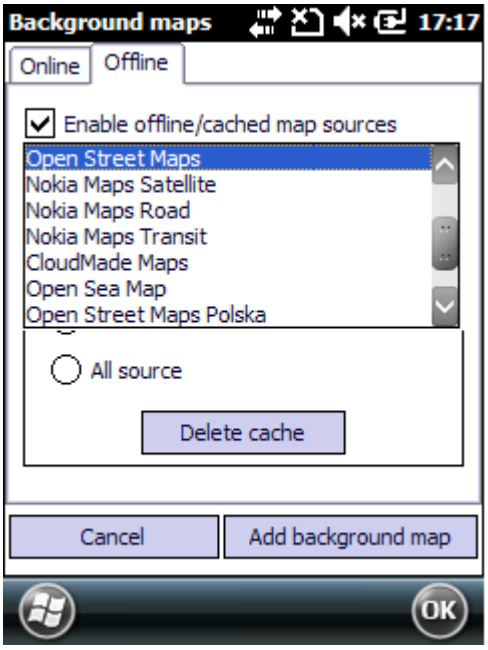


The background map sources can be selected from the picklist. By pressing the **Add background map** button the background map will be loaded and displayed on the map.



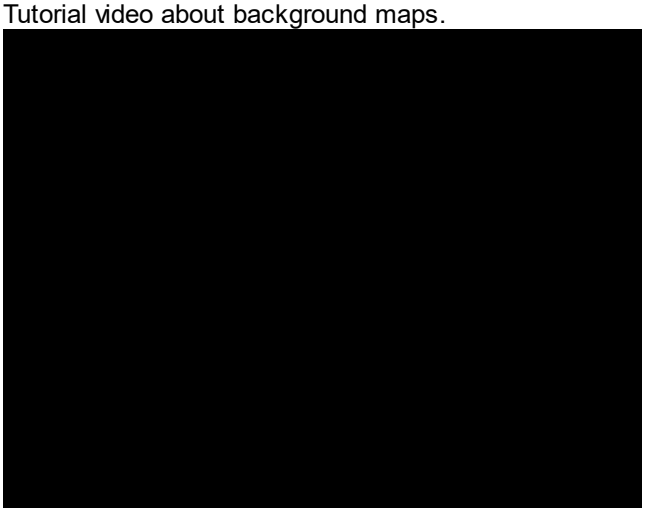
Before adding the background map it is worth to establish the GNSS connection - on GNSS status panel - in order to minimize the data traffic.

If usage of the background map is not needed any longer, please uncheck the **Enable TMS** option.
The map tiles can be saved. The path for saving can be found at **Settings>Path** tab. In case the tiles have been downloaded from the given area internet connection is no longer needed. The downloaded background map source can be found and selected at **Offline tab**.



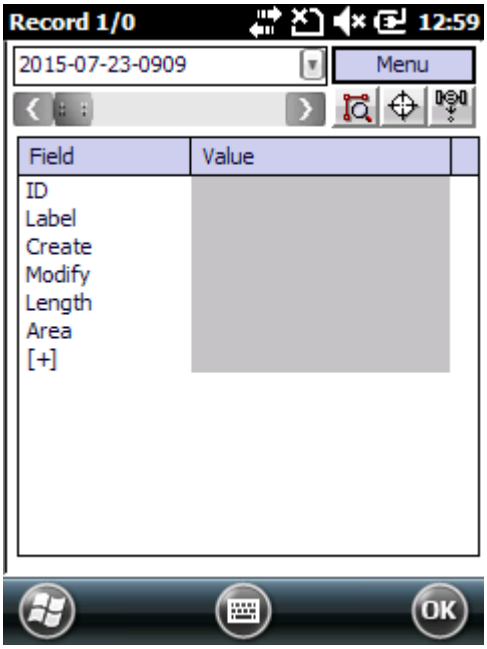
The size of the downloaded and saved tiles can be grown too large after a certain time.

Tile cache can be deleted by pressing of the **Delete cache** button.
Tutorial video about background maps.



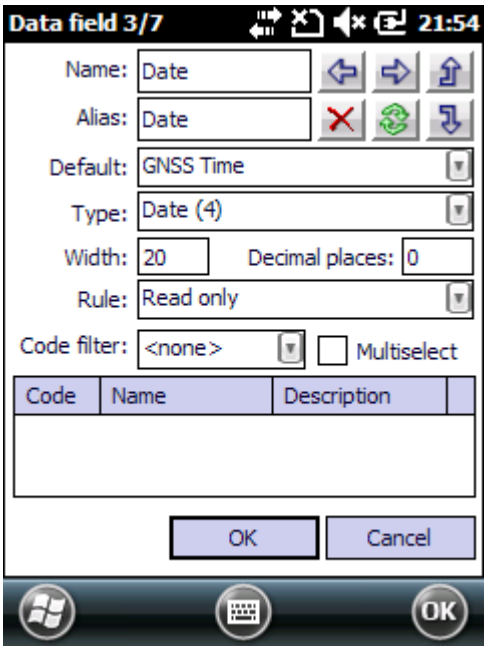
Background maps

7.2 Customization of attribute fields



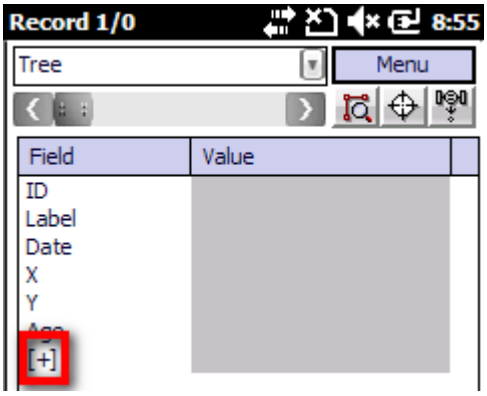
Delete field

The default structure of the created data table can be modified, according to the data collection task. It is worth to delete the needless fields. By pressing the field name at Records panel. An other panel will be popped up, containing the field properties.

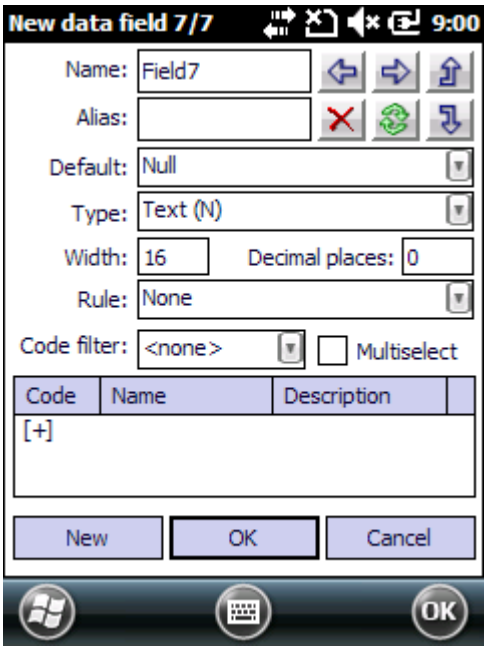


For deleting the field please press the  button. A confirmation will be asked, in case You press OK, the field will be deleted. The deletion will be saved immediately.

Create new field



For deleting an existing field please press [+] or **Menu > New filed**. The data field panel will be popped up.



At **Name** the name of the filed can be specified. Please avoid special characters. The default name is "Filed + counter". (In case using SHP format, it is worth to add max. 11 character for name.)

An **Alias** name can be specified. This will be valid only for the **recent project**.

By using Default value the field will be filled automatically after creation of the record. The frequently used default values are the followings:

- *Null*: the value will be empty, it can be entered manually
- *Copy last value*: It copies the previous records value. Eg.: The owner name has been entered at the first object (John Smith) it remains the same value until a different one (David Taylor) will be entered.
- Increment last value: It increments the previous records value. It is generally use for creating auto increment ID. In this case the data type of the field should be integer.
- *Area of geometry (ha)*: the calculated are in hectare
- *Area of geometry (custom)*: the calculated are in the unit which has been specified at Settings>Record tab.
- *Easting coordinate*: the horizontal coordinate of the surveyed position, according to the selected projection system. (In case of line and area, it will be the centroids coordinate)
- *Northing coordinate*: the vertical coordinate of the surveyed position, according to the selected projection system. (In case of line and area, it will be the centroids coordinate)
- *Lat*: the latitude of the surveyed position in WGS84 system (In case of line and area, it will be the centroids coordinate)
- *Lon*: the longitude of the surveyed position in WGS84 system (In case of line and area, it will be the centroids coordinate)
- *Altitude*: elevation of the surveyed position (Using if geoid model is required.)
- *Height above ellipsoid*: height related to the used ellipsoid
- *Satellites in use*: Number of used satellites during the surveying of the given object

At **Type**, the data type of the field can be specified.

- *Logical*: Can be used simple choices -True/False. After creation it can be specified by a checkbox. (Eg.: Isdamaged etc.)
- *Long integer*: it can be used for ID fields, codes, or area in square meter.

- *Float*: number with decimal places (eg.: area of geometry: 2.11 ha)
- *Double*: number with decimal places- it can be used for storing coordinates.
- *Date*: a date in the format which has been specified at Settings>Record tab.
- *Time*: Date and time (hh:mm:ss)
- *Text*: text typed from the keyboard.(maximum 255 characters)
- *Document*: A linked documents path can be stored. By pressing the displayed path, the linked document can be opened by the associated application. In document type field mostly documents (doc, pdf, txt etc) and photos (jpg, bmp, png etc.) are stored.

At **Width** the length of the text type field can be specified.

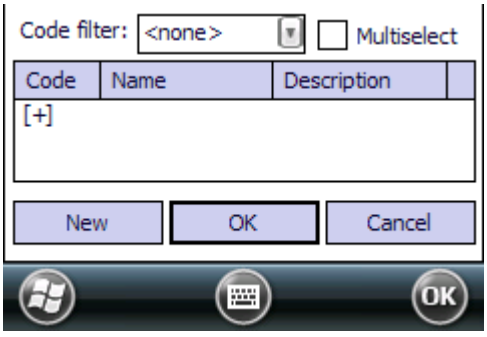
At Rule, a check rule can be specified. The available rules are the followings:
- *Read only*: Value cannot be entered manually. It is recommended to set when default value is specified.
- *Not null*: Value has to be entered. It cannot be saved until the field is empty.
- *Unique values*: the records of the data table can not contain two identical values in this field
- *Range*: The recorded value should be between the given range. (eg.: Tree Height should be 1 and 100 meters)
- *Valid value:* only an already recorded value can be entered. It is recommended to set, when at least one is represented from all of the needed values.

At the bottom of the panel the code dictionary can be specified for the field. Detailed information can be found at Use of code dictionary.

Tutorial video about Customization of attribute fields

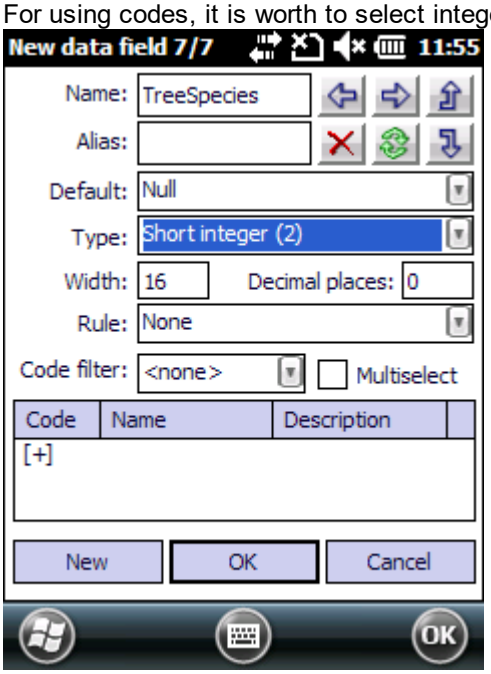
Customization of attribute fields

7.3 Use of the code dictionary

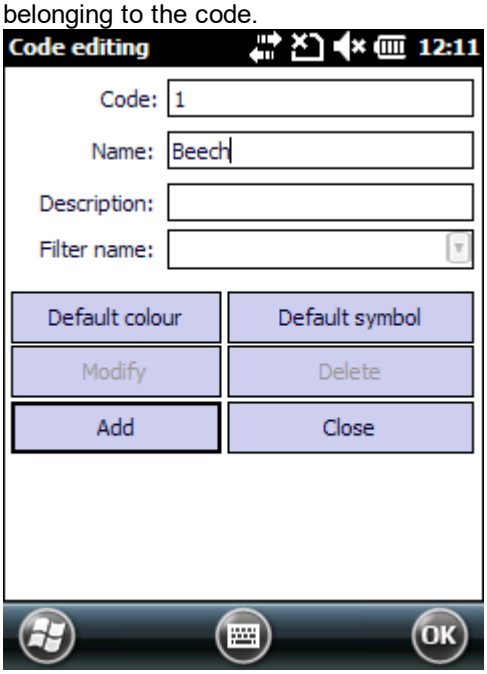


By using code dictionary the field data collection is much easier. Items can be selected

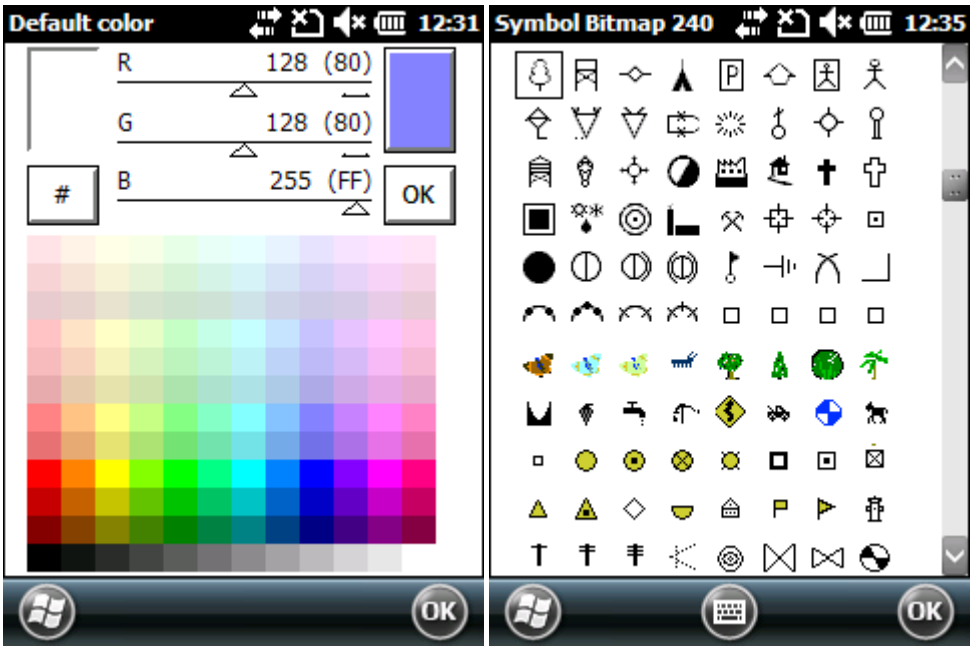
from a picklist, which is contain the code and also the name, and even description can be specified.
For using codes, it is worth to select integer data type.



Please press the **[+]** button to add a **new code**. The code editing panel will be popped up with the new code. The deafult code is 1, and this value is incrementing. Naturally the values can be changed, but values should be unique. Please specify the **Name** belonging to the code.

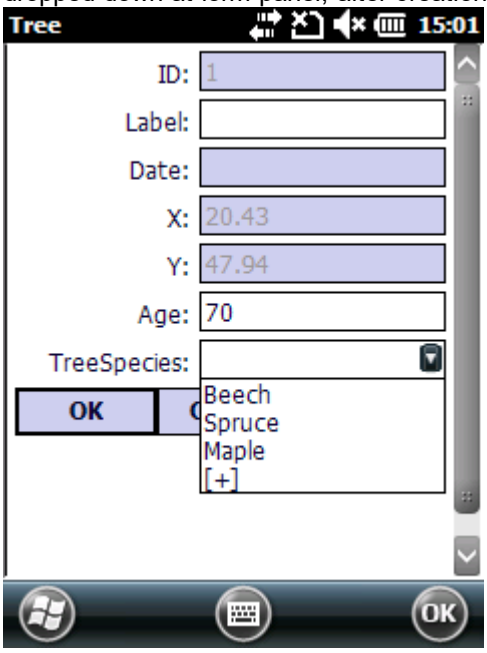


Default colour and **Default symbology** (symbol, line type, fill pattern) can be specified to each code values. By doing this, in case the layer will be classified by the actual field, the generated classes will get the specified color and symbology.
Please press the **Default color** button and select the wanted color, then press the **Default symbol** - **line type** - **fill patern** (depends on the type of the geometry: point - line - area)



In case the needed parameters are specified, please press the **Add** button. By doing this the next code can be added. If all of the needed codes are added, please press **Close** to return to Data field panel. After **closing** the Data Filed and the **Record panel,** the added codes will be **saved**.
The codes are stored in a .cdt file, what is saved into the project folder by default. If You like to use an existing code dictionary, it can be set at Settings/Record tab.

In case creating the code dictionary belonging to the selected field, a picklist will be dropped down at form panel, after creation of a new object.



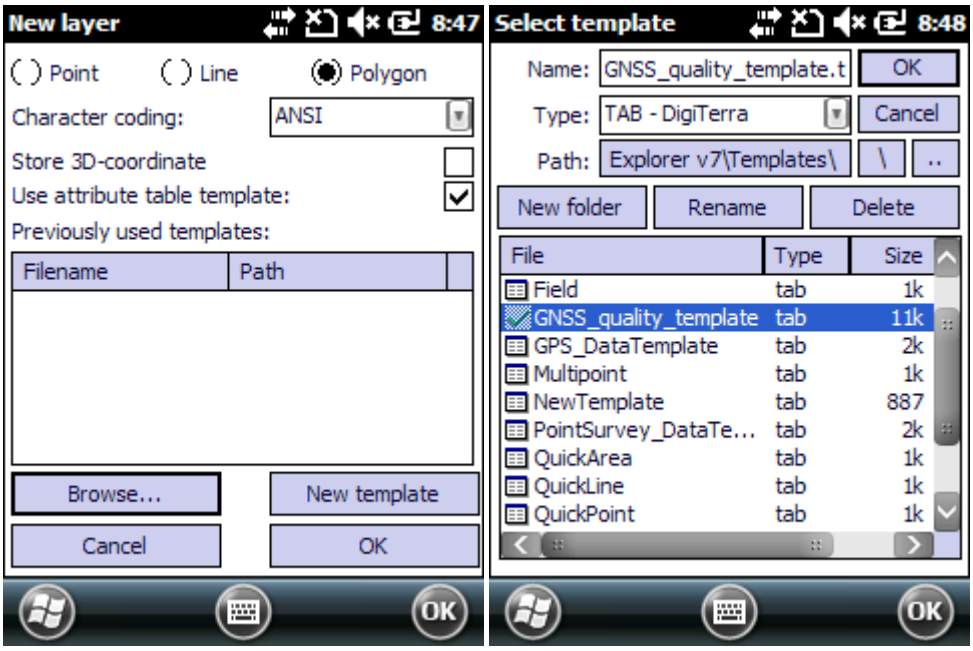
Tutorial video about use of code dictionary

Use of code dictionary

7.4 Use of attribute table templates

By using of attribute table template, an existing - well-designed - attribute table can be used, providing base for the wish to create layers data table. It means, it is not needed to create the fields again, set the aliases, default values, data types rules of them.

For loading a template please check the **Use attribute table template** option on the *New layer* panel, and **Browse** the needed template.



Tutorial video about use of attribute table template

Use of attribute table template

7.5 Loading special map layers

In some case of adding/loading the new layer, some special parameters should be given. Let us see the adding of **Text** end **DXF** files.

Adding TXT files as layer

The TXT is a multipurpose format with simple, readable structure. Because of this it is a common data exchange format in each software - in GIS and also in Database Manager ones.

In DigiTerra Explorer the TXT files can be used even as a layer. It can be helpful when coordinates are stored in TXT files. These coordinates can be displayed on the fly - in a point type layer - without doing any import operation.

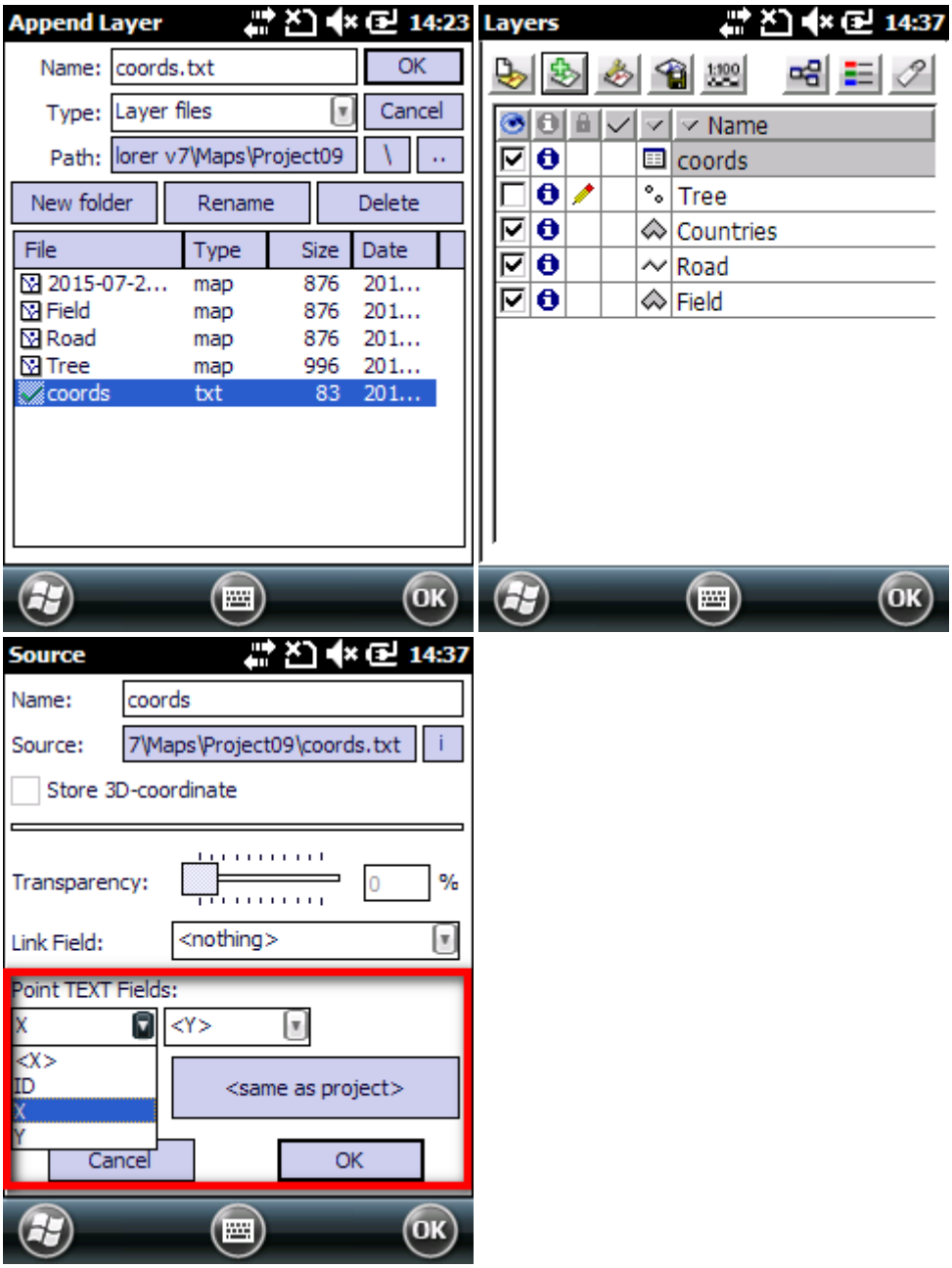
The structure of the TXT file must be the following:
-The field names are must be in the first row, separated with tabulator (TAB)

ID X Y

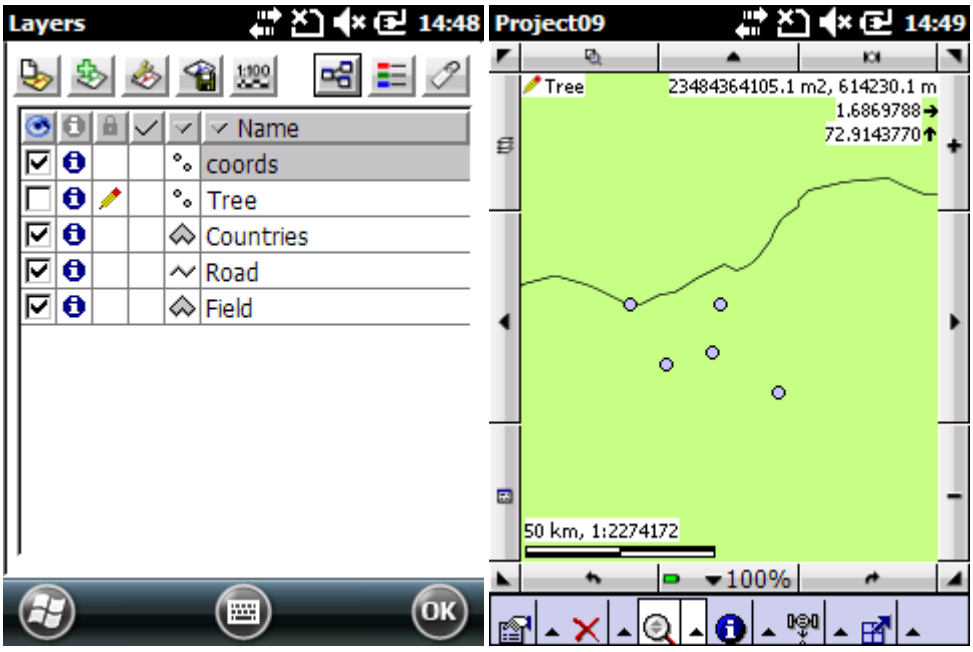
The following rows contain the tab separated data. It is recommended to use an ID field.

1 19.91 48.13
2 20.43 47.82
3 20.04 47.92
4 20.23 48.13
5 20.20 47.96

Please press the  button on Layers panel, then select the wish to add TXT file. If the file is added, please set the new layer active at list of layers, then press the **Source**  button.
There are two drop down list at source panels **Point TEXT Fields** section - containing the layers fields. Please select that data field which is contains the X position coordinate, then do so the Y ones, and press **OK**.



The TXT file will be displayed as a point type layer at Layers panel, and also on the map.



Tutorial video about adding layer from text file

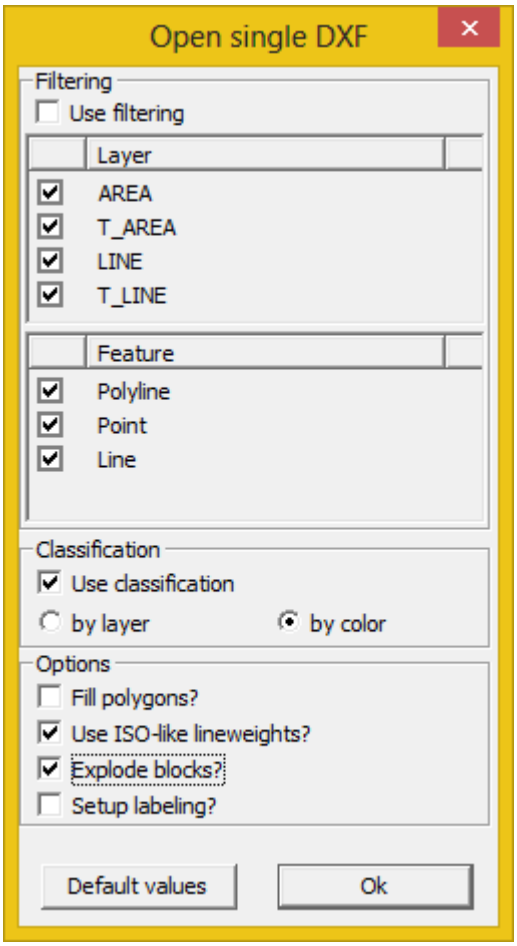
Point type layer from text file

Loading DXF files

DXF has a special place in GIS. It has several version, the R12 is supported in DigiTerra Explorer. DXFs generally contains more layers (mostly point and line type ones), but projection system can not be defined in it. For this reason DXF can not be loaded as project, but as layer. The DXF stores the data as text, so it can has quite large size what can cause problem on mobile devices - slow loading.

Loading of DXF has different way on PC and on mobile devices. On the mobile device DXF is loaded at the same way as a .MAP or .SHP file is - press the  button, browse the DXF, then press OK.

In the desktop version, a file conversion panel will be popped up after the DXF has been browsed.



At this panel, the really needed layers and elements can be predefined to display.
To use **Filtering** please check the *Use filtering* option.

- At **Layer** checklist the wish to add layers can be selected.
- At **Feature** checklist the type of the wish to use features can be selected.

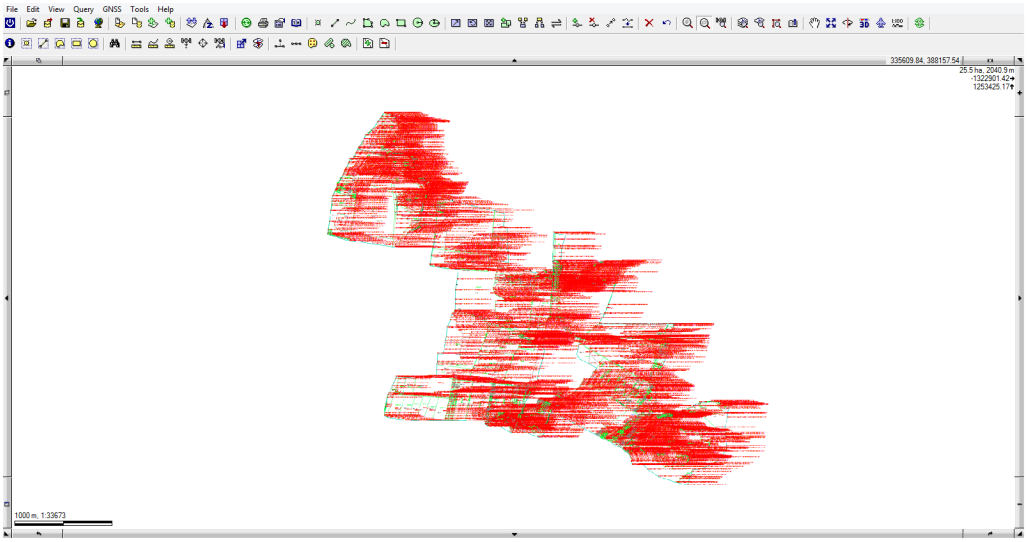
To specify the **Classification** mode, please check the *Use classification* option.

- In case **by layer** option is selected, the layers will have different color
- In case by color option is selected, the stored DXF color will be used

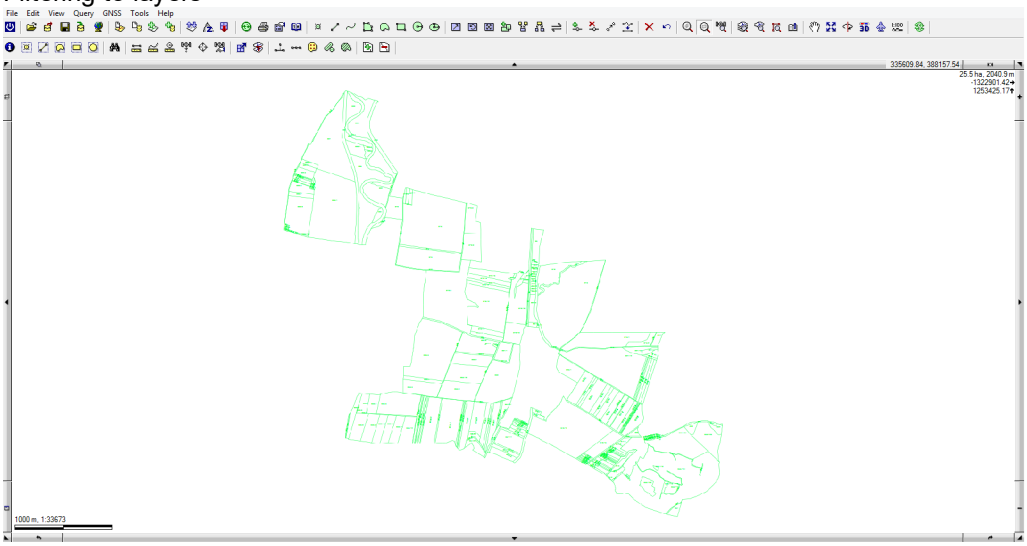
Further **Options** also can be specified:

- In case the DXF contains polygons - would they be filled, or not.
- Using of ISO-like lineweights
- Exploding DXF blocks: the blocks will become separated objects.

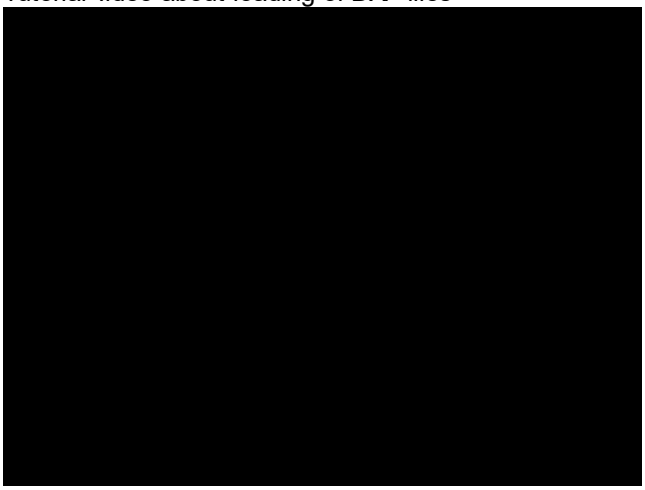
Result without filtering



Filtering to layers



Tutorial video about loading of DXF files

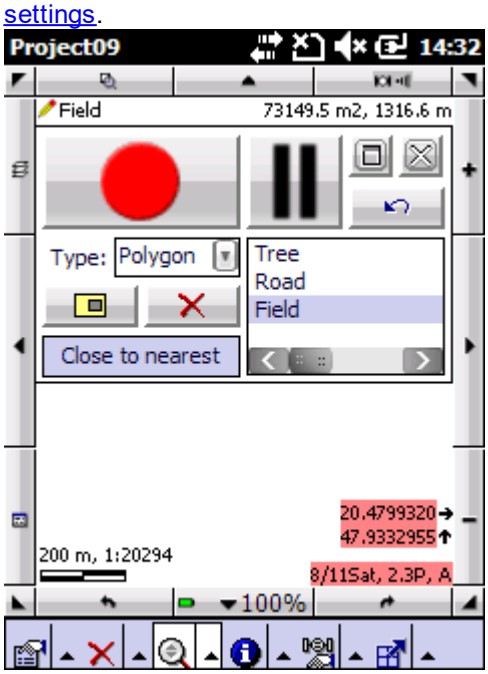


Loading DXF

GNSS survey

8 GNSS survey

After providing an editable layer - it can be new one or existing - the GNSS survey of the objects and the field data collection can be started. The easiest way to access the GNSS survey panel is to press the button on the active frame. The device immediately try to establish a GNSS connection, otherwise please check the GNSS settings.



In the software can be found 4 types of GNSS survey, and they can combined with each other. The different survey modes will be interpreted by a sample area surveying.

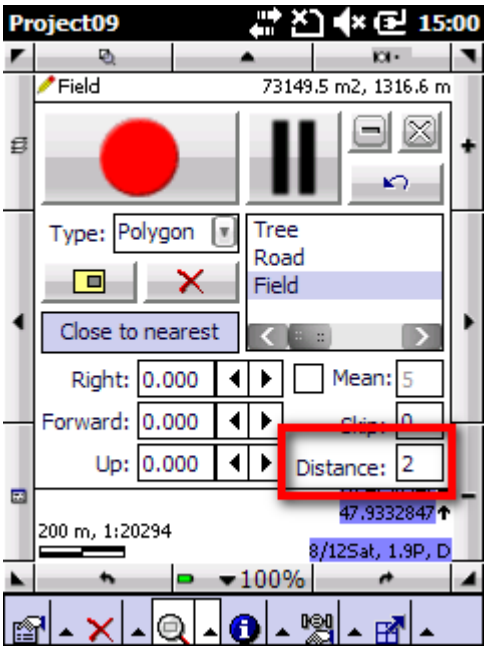
- **continuous survey**
- **vertex** (averaged) **survey**
- **combined GNSS survey** *(eg.:If the surveyed area has a non regular side, but the other ones can be measured by their vertexes.*)
- **surveying of island polygon** (In case a "hole" can be found inside of the polygon.)

There are further special surveying modes, as: surveying polygons having **joint side**, and the survey with parallel **offset** path relative to the travel distance.

Continuous survey

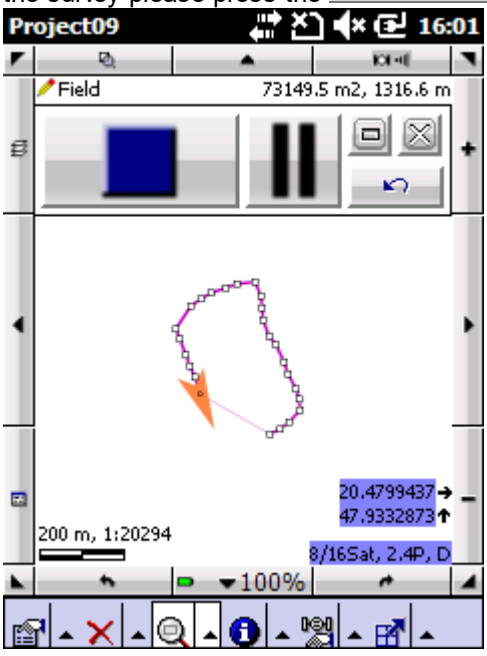
The continuous is the simplest way of GNSS survey of an area. It is needed to mention that this is less reliable then the averaged vertex survey. During this survey mode the creation of the vertexes will be CONTINUOUS by the current GNSS position. This could be a problem when a less accurate receiver is in use, because in this case the difference can be 5-10 meters. In case of using an RTK receiver, this not cause a significant difference.

For starting a continuous survey please press the button and specify the distance between the recorded positions.

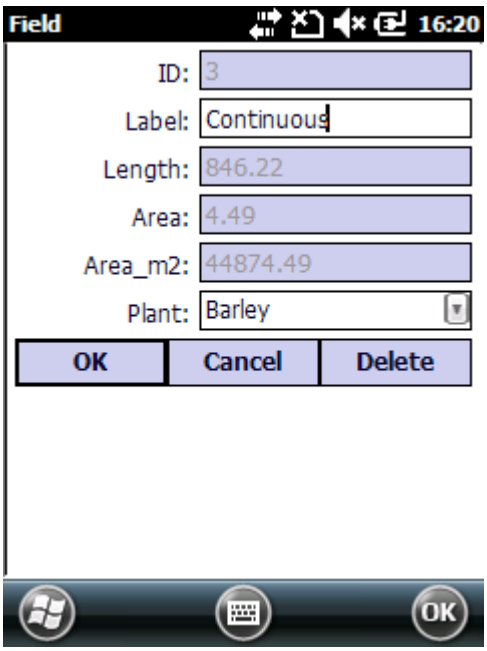


Specifying of the distance is happening by the keyboard (input panel). Keyboard will be displayed automatically when pressing on the input box. To make it disappeared please press any area outside of the GNSS panel.

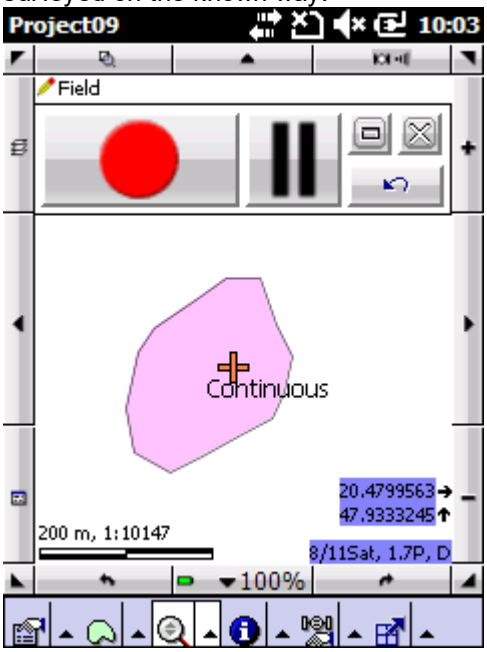
The panel can be minimized  to see the GNSS position and the map. For starting the survey please press the  button, then walk around the area.



When You are arrived to the end point, please press the button to finish the survey. A confirmation will be asked. After pressing OK, the the attribute table - in form panel - will be popped up. Please fill the appropriate data, then press **OK**.



The main screen will be displayed again, to see the results. Further objects can be surveyed on the known way.

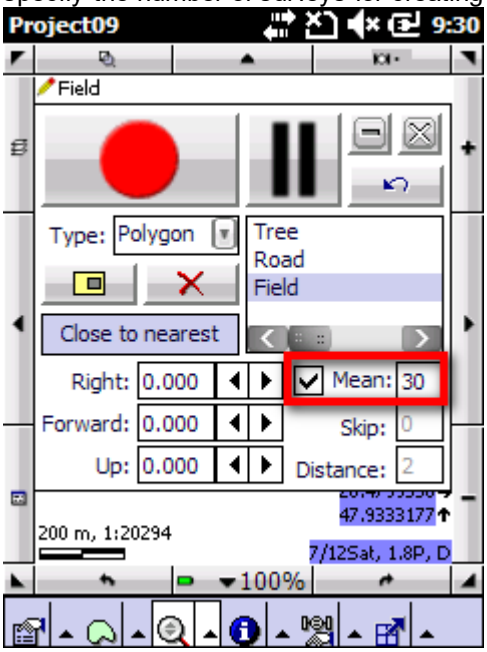


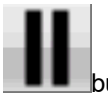
Vertex (averaged) survey

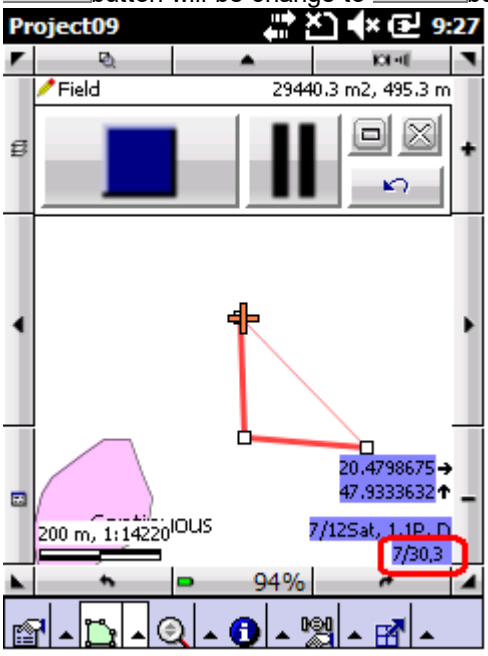
In case of using vertex survey, each vertex (GNSS position) is recorded only by user interaction. The software is able to record averaged positions. This means that the same vertex can be surveyed many times. From the surveyed positions an average position will be calculated, and this will be saved. The number of the surveys (eg.:30) of one standpoint can be specified at **Mean** option.
This will result a more reliable survey and area calculation, even by using of a less accurate receiver.

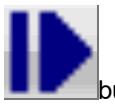
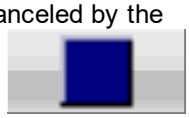
So the first task on the field is to navigate to the vertex of the wish-to survey area.

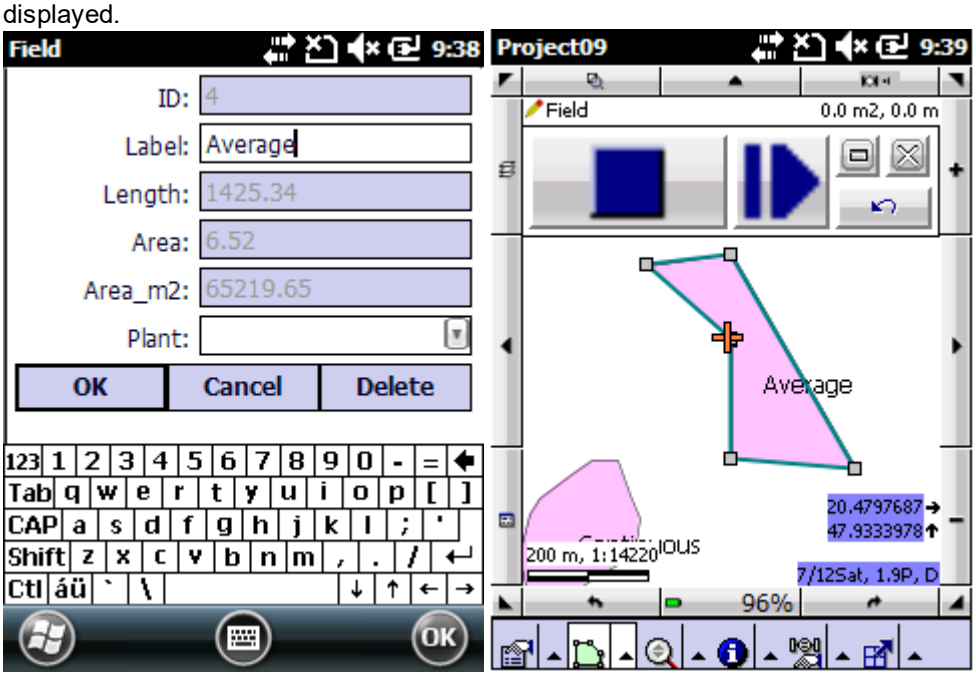
Please press the  button on the GNSS survey panel, and check the Mean option to specify the number of surveys for creating the average position.



The GNSS survey panel can be minimized by the  button. Please stand at the first point of the area, and press the  button to start the survey. The given vertex will be surveyed as many times as it is specified (eg.:30). The software is counting the positions - that is displayed at the right corner of the screen.
During the survey please **do not move from the standpoint**! In case all of the survey are done at the given vertex, the average position will be calculated ad stored. The  button will be change to  button and a beep voice can be heard.



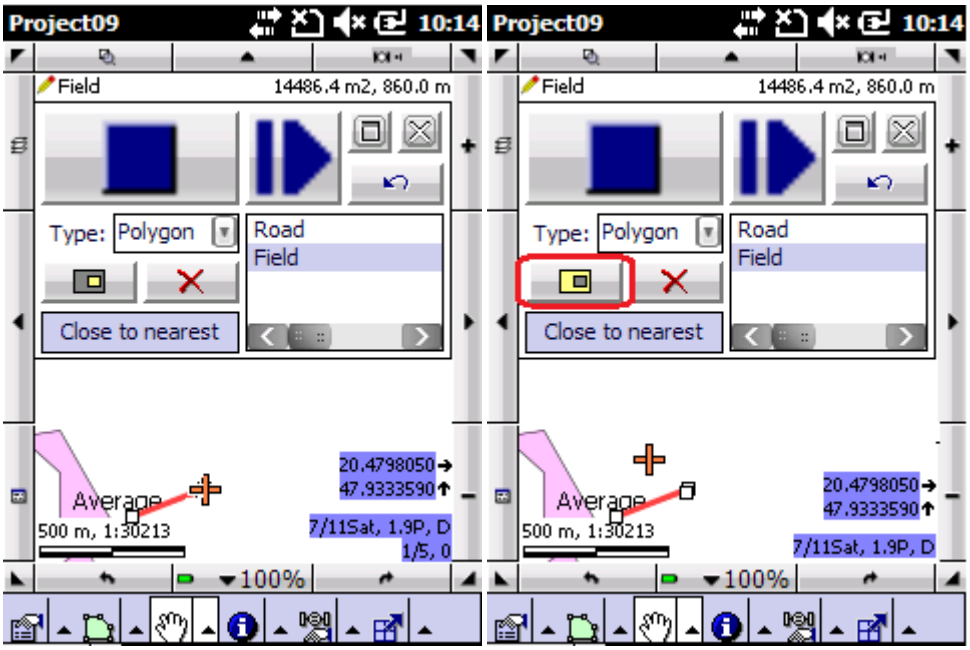
Surveying of further vertexes can be started by pressing the  button. Workflow is the same as the first vertex. Storing of an unneeded vertex can be canceled by the  button. When also the last vertex is stored, please press the  button to finish the survey. A confirmation will be asked, after the attribute table (form panel) will be popped to fill the necessary data. After pressing **OK**, the main screen will displayed.



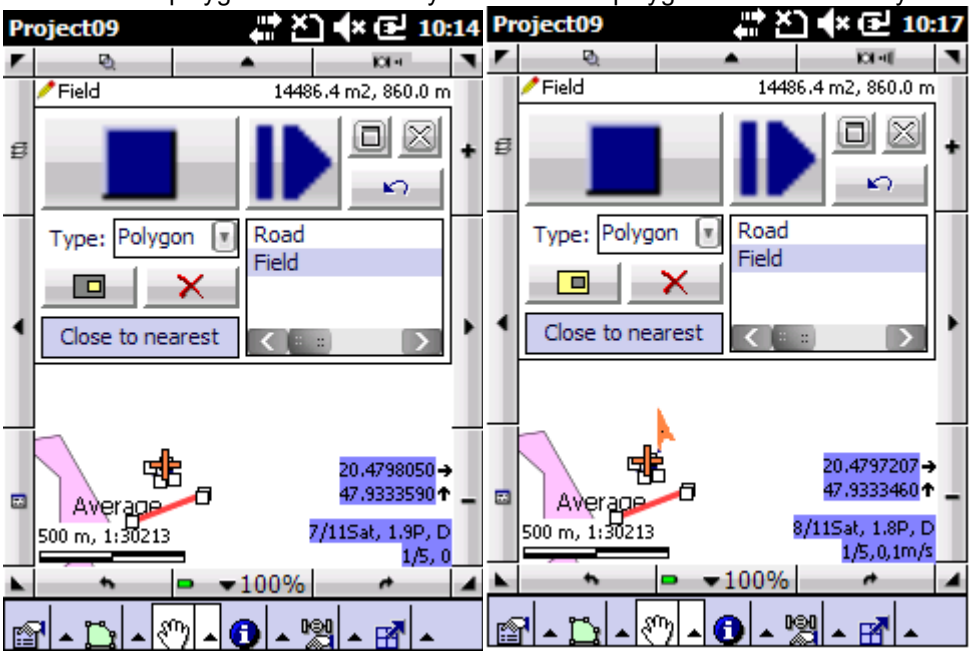
Surveying of an island polygon

Surveying of an island polygon means that a part is cut from the inside of the main polygon (area). Eg. a crop seeding will be done on a filed, but few inland water can be found - so the cultivated are is decreased by them. The island polygon should be surveyed when our position is the nearest to the island, but first time the main polygon should be surveyed. Right now only the vertex survey will be presented for surveying island.

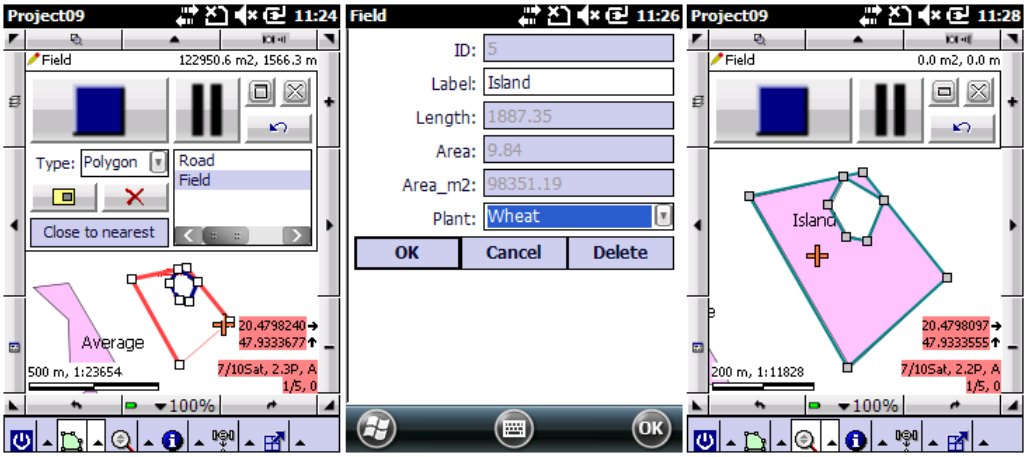
Please set the GPS survey panel to the medium view by pressing the  button. The first vertex should be recorded by pressing the  button. The surveying of the island can be started even now but in this example also the second vertex will be measured. After this, it is needed to stand at the first vertex of the island, and press the  button. From this point, the island will be surveying.



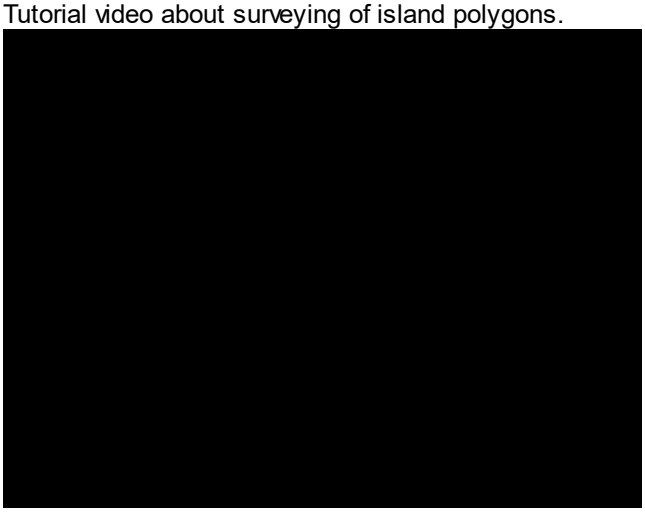
The survey can continued by pressing the  button. In case all of the inland vertexes are surveyed please press the  button to finish the inland measure. Further island polygons can be surveyed in the main polygon on the same way.



In case all of the vertexes of the main polygon are surveyed, the survey can be finished by pressing the  button.



Tutorial video about surveying of island polygons.

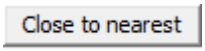


Surveying of island polygon

8.1 Special GPS survey

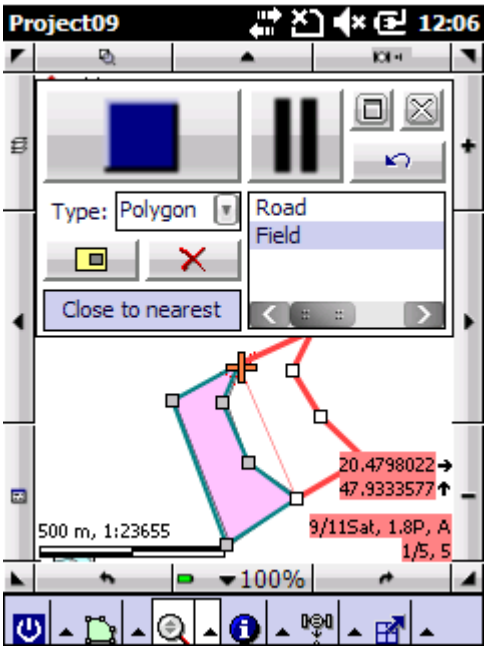
Surveying of joint sided polygons

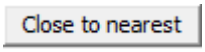
In case neighbor polygons have one or more joint sides, a procedure can be used to survey them easily. It is mainly useful in case of less accurate (> 1 cm) devices, to avoid the unwanted gaps (what can cause topology errors) between neighbor polygons. By this function, the joint sides of the neighbor polygons can be make unified - without surveying them twice - so the vertexes will possess the same coordinates.

Before finishing the survey by the  button the 

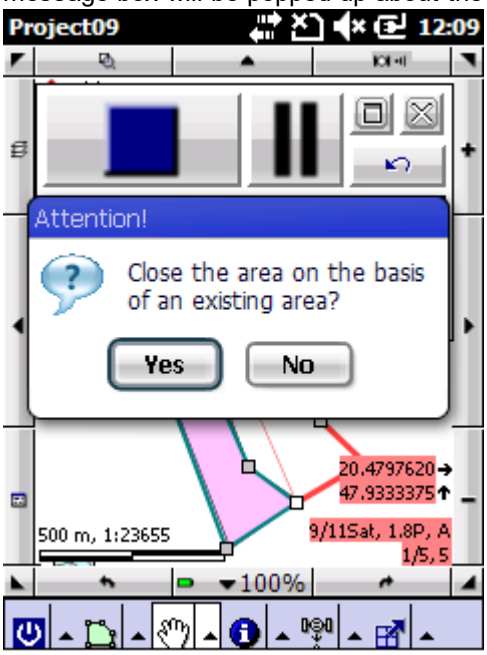
button should be pressed to instruct the software to use the existing areas vertexes for creating the joint sides.

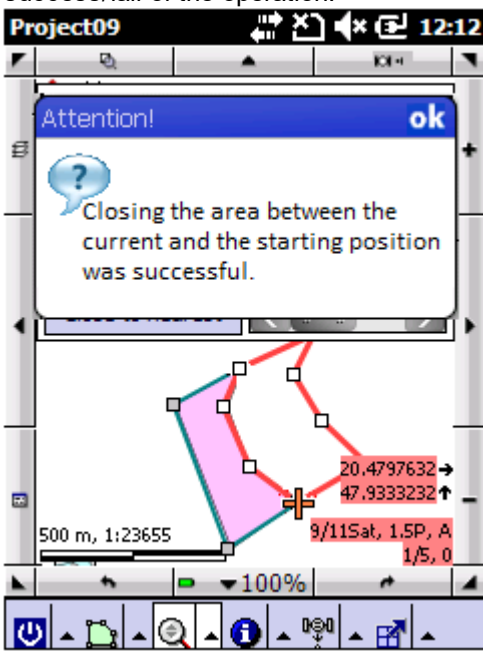
The task must be started by surveying the new polygons first vertex, what should be near - **within 5 meters** - to the existing polygon. After this the the non-neighbor sides should be surveyed in continuous or vertex survey mode.



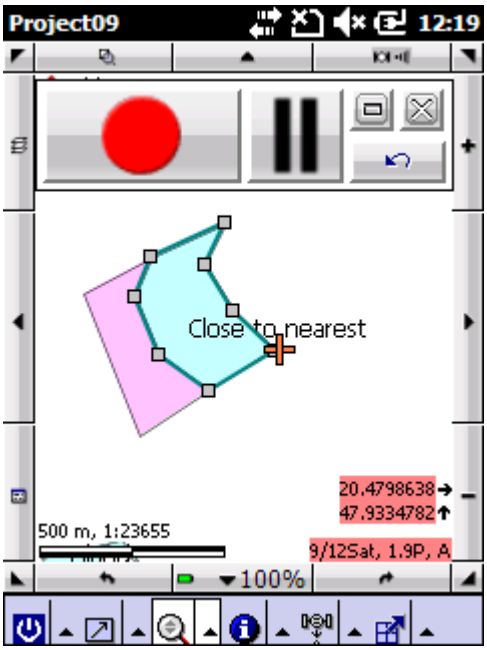
The last vertex also should be **within 5 meters** to the existing polygon. After finishing survey please press the 

button. A confirmation will be asked, and a message box will be popped up about the success/fail of the operation.

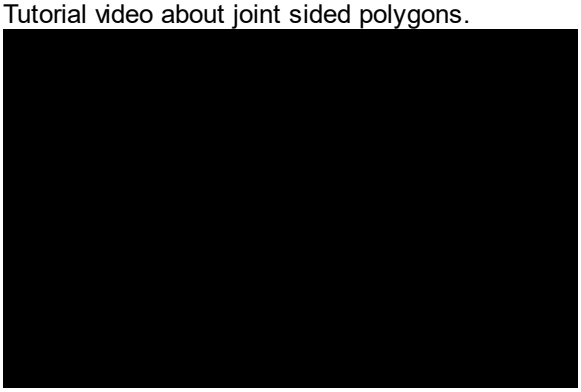




Please press the  button to finish. The attribute panel (form panel) will be popped up to fill the needed data, and after this the map panel will be displayed to see the result of the survey. On the map You can see that the vertexes of the existing polygon had been used for creating the new polygon.



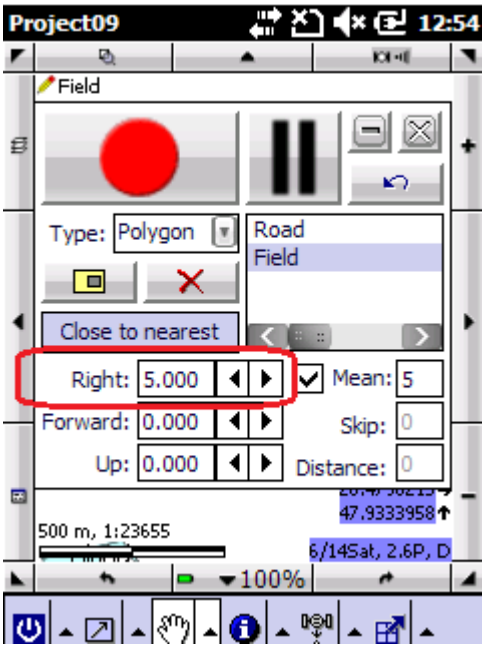
Tutorial video about joint sided polygons.



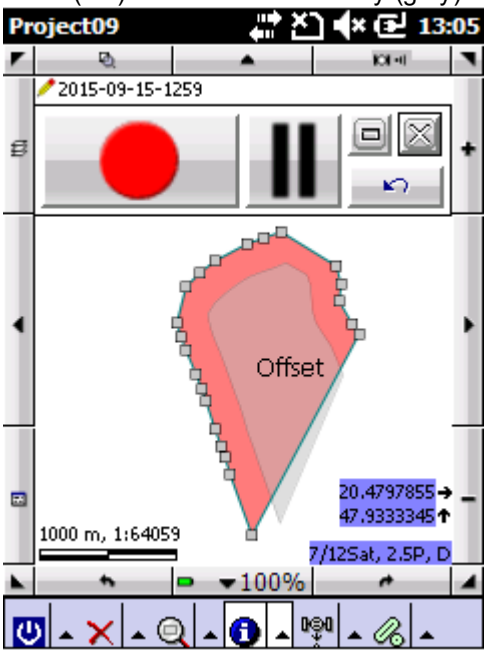
GNSS survey of oint sided polygons

Offset survey relative to the travels direction

Such situation can be happen, when one side of the wish-to-survey area is separated by an obstacle (eg. bush, fence, water etc.) In this case the offset survey can be used. The values of the offset can be specified at GNSS survey, when the panel is maximized. The following directions can be specified: Right/-Left, Forward/-Backward, Up/-Down. The direction can be switched by pressing the black arrows. The unit of the offset can be specified at Settings>Record.
For the offset requires the GNSS travel **directions**, the commitment of the offset survey should be done in **continuous survey** mode.

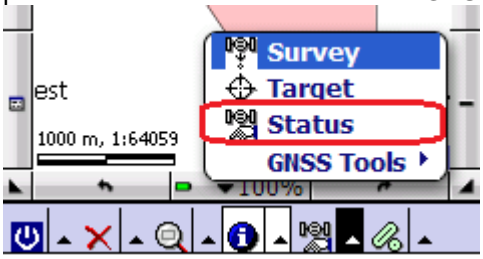


After finishing the survey, the result is displayed on the map. On this screenshot, the offset (red) and the normal survey (grey) is also presented.

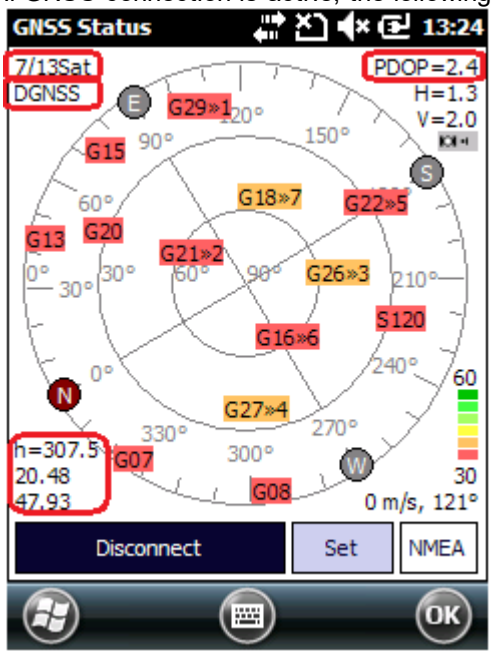


8.2 GNSS Status panel

Checking, connecting and disconnecting of the GNSS can be done at GNSS status panel. It can be accessible from the **GNSS menu**.



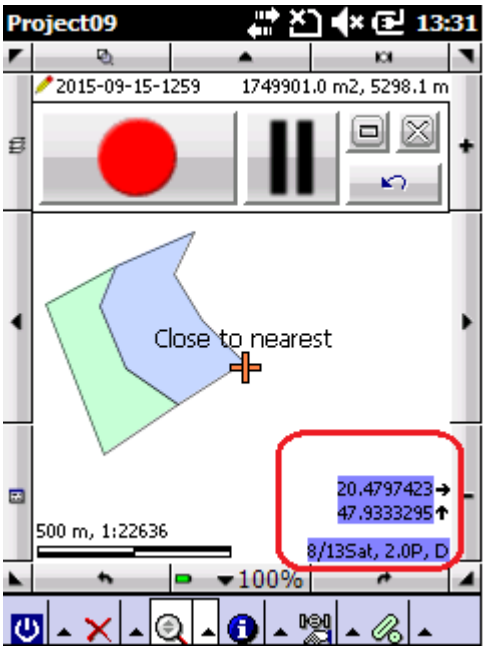
If GNSS connection is active, the following panel will be displayed.



1. Satellites in view/used
2. Type of GNSS solution
   a. **Nofix** - number of the available satellites are not enough to specify the position
   b. **Autonomous** - there is GNSS position available, but correction is not available (in case using of less accurate device the precision is *~ 5 m, in case using of high precision device the precision is ~ 1,8 m*)
   c. **DGNSS** - GNSS position and correction is also available (in case using of less accurate device the precision is *~ 5 m, in case using of high precision device the precision is ~80 cm, in case using of NTRIP corretion ~30 cm*)
   d. **FLRTK** - GNSS position and phase correction is also available, but **fixing of the phase ambiguity** has not been happen (*in case using of high precision, RTK capable device with NTRIP correction the precision ~ 10 cm*)
   e. **RTK** - GNSS position and phase correction is also available and **fixing of the phase ambiguity** has been happen (*in case using of high precision, RTK capable device with NTRIP correction the precision ~ 0.1 cm*)

Fixing of the phase ambiguity: in case of Real Time Kinematic (RTK) surveys, when the DigiTerra Explorer software is sending phase correction to the GNSS receiver, the receiver try to count the integer and the fraction waves belonging to the distance between the used satellite end the receiver.
As long the the fraction waves can not be counted by the receiver, the solution remains FLRTK (Float RTK). Ideally - depending on the receivers capabilities - counting of the fraction waves can be happened in 1 minute so the phase ambiguity will be fixed. This solution is called: Fix RTK.

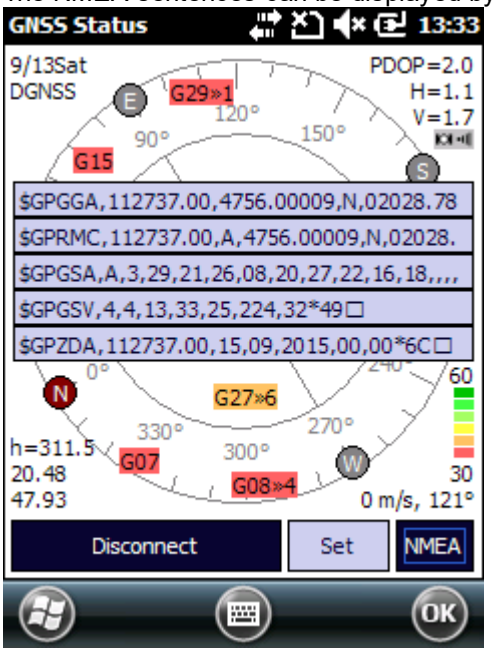
Depending on the solution types, the background color of the displayed coordinates can be the following:



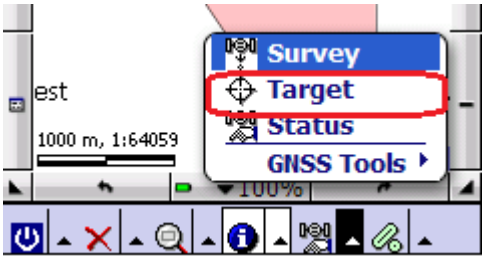
Nofix - red
Autonomous - green
DGNSS - blue
FLRTK - yellow
RTK - cian

3. The recent PDOP value *(the more little number is displayed, the higher survey precision can be reached - depending on the used solution*)
4. Satellites with prefix 'R' are the GLONASS ones.
5. Satellites with prefix 'G' are the NAVSTAR ones.
6. The recent GNSS positions X and Y coordinates, and the altitude are also found here.

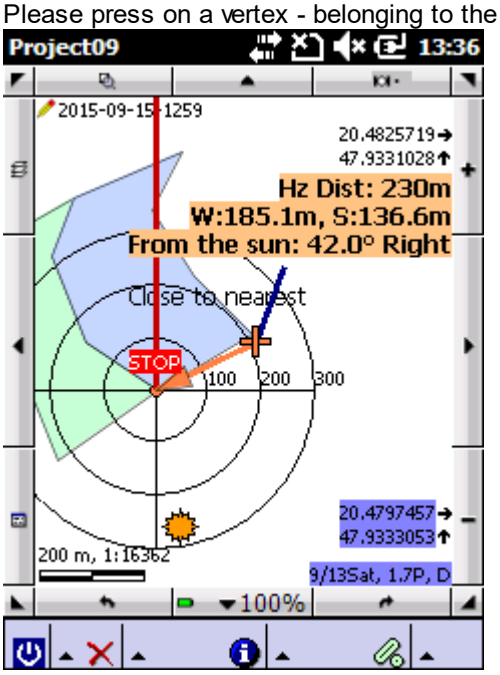
The **Connect** / **Disconnect** button is on the bottom of the screen, and by pressing the **Set** button, the Settings>GNSS panel will be displayed.
The NMEA sentences can be displayed by pressing the NMEA button.



8.3 Navigate to target (steakout)

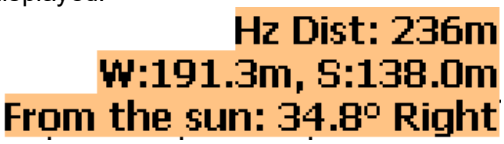


The **Target** tool also can be found at GNSS menu.
Please press on a vertex - belonging to the area - where You want to go.



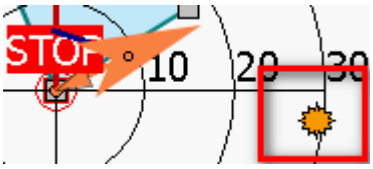
A vertex can be market correctly if only the is set on the current layer.

The horizontal distance, and the distances according to the cardinal points are displayed.

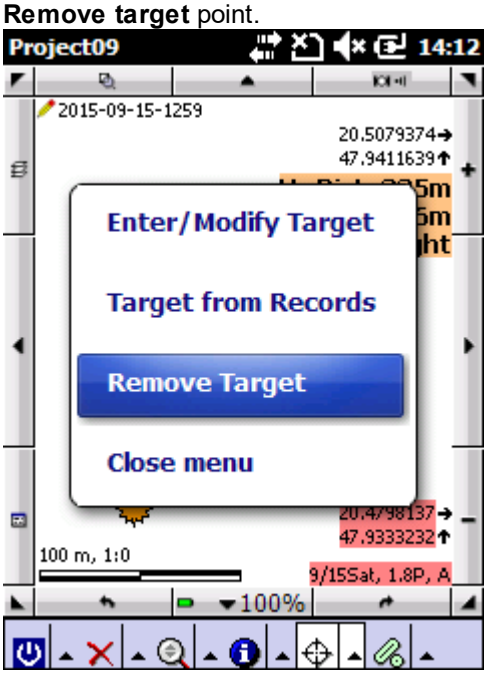


The unit of the distance can be set at Settings>Record panel.

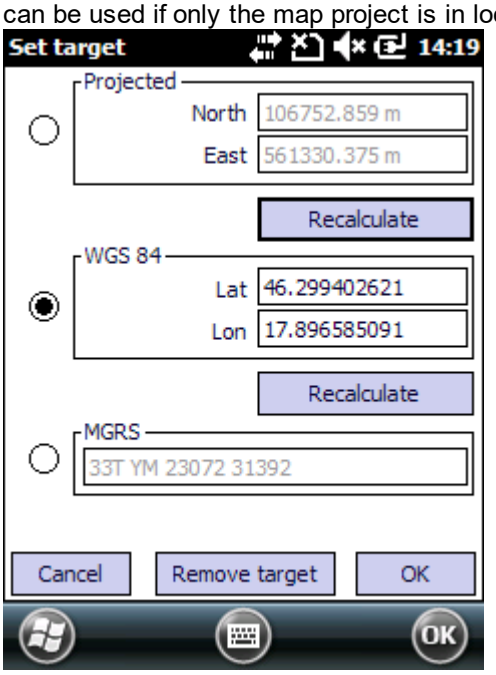
The distance circles around the target also show the distance form the target.
The displayed sun icon shows the current sun position to help the navigation/steakout.
The displayed black line - next to the GNSS position - shows Your shadow.



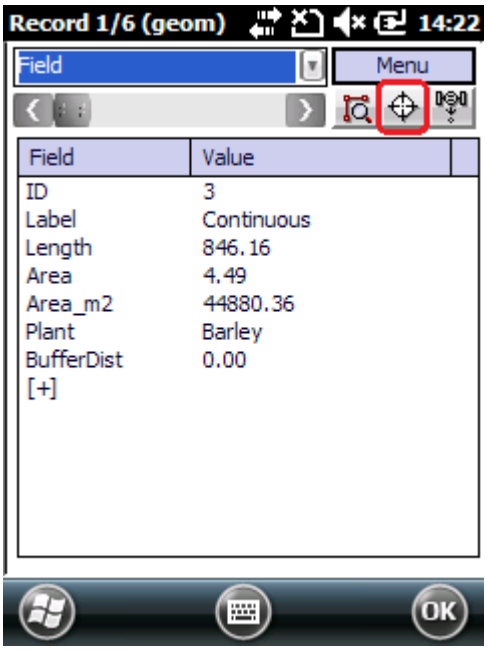
The approach of the the target is signed by a sound too.
In case You arrived to the target, please tap and hold the screen, then select the **Remove target** point.



In case of finding / steaking out a coordinate, please select the **Enter/Modify target** at Target menu. Projected, Lat/Lon and MGRS coordinates also can be entered. (Projected can be used if only the map project is in local projection system.)



The target also can be set from the record panel by a singe press.



Tutorial video about navigate to target

Navigate to target

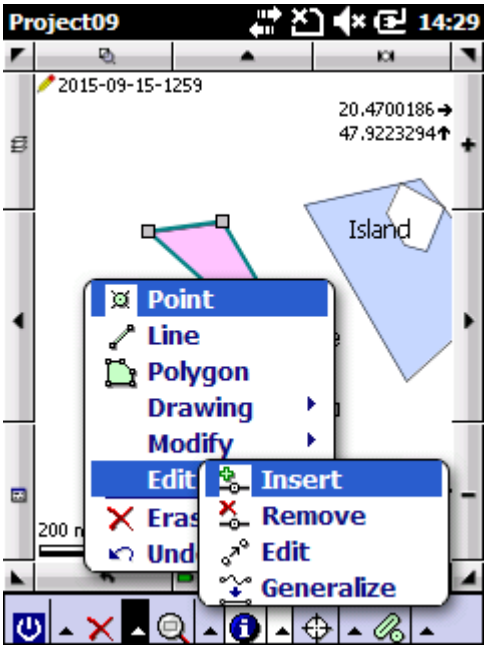
Modification and edit of survey

9 Modification and edit of survey

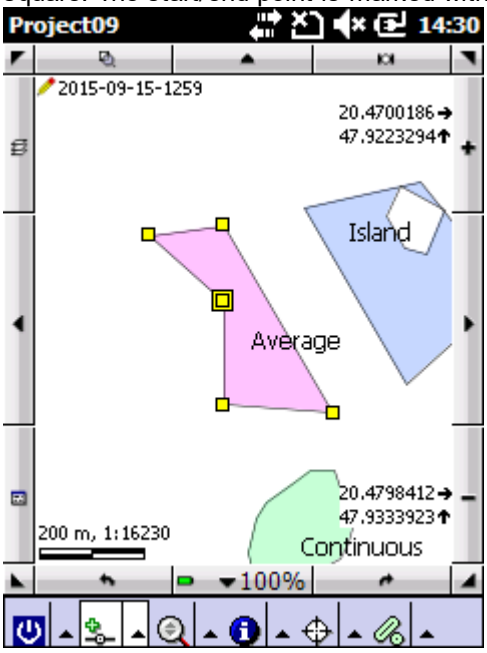
The existing maps, surveys can be modified. In this topic the simplest area editing methods are interpreted.

Vertex editing

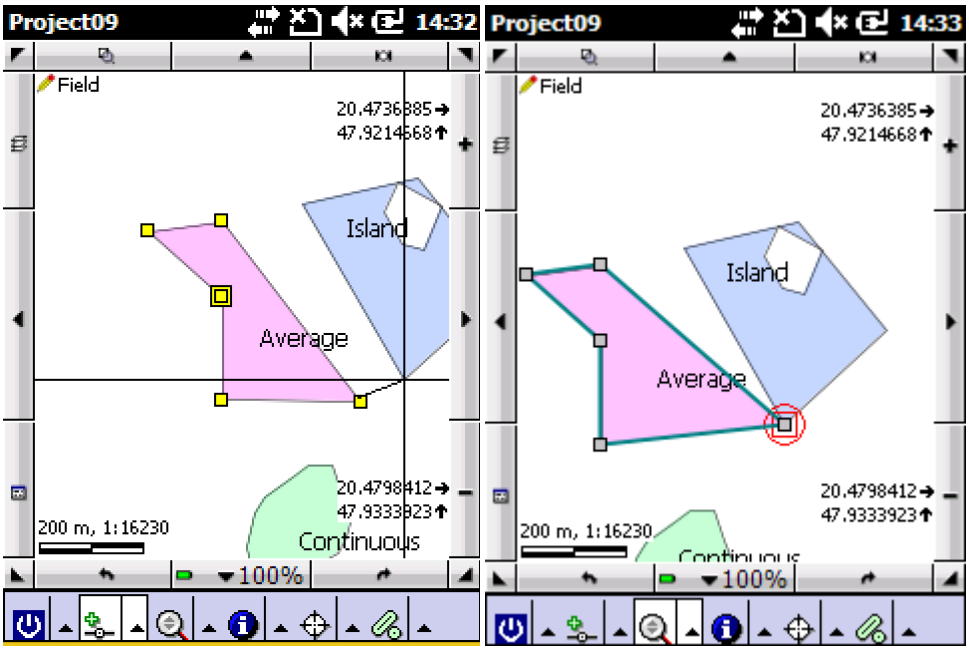
By Vertex edit the surveyed areas borders can be modified. This tool can be found at **Edit>Edit vertices** menu.



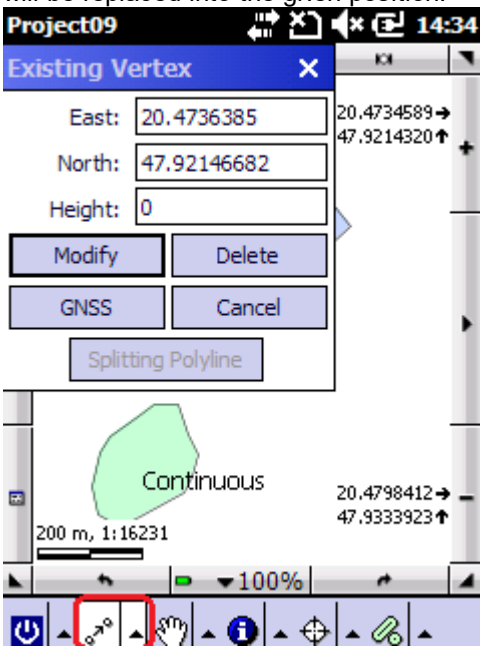
Please select the the **Vertex edit** point from the menu, then select the wish-to-edit object on the map. The vertexes of the the selected object will be marked by a yellow square. The start/end point is marked with , the other ones with .



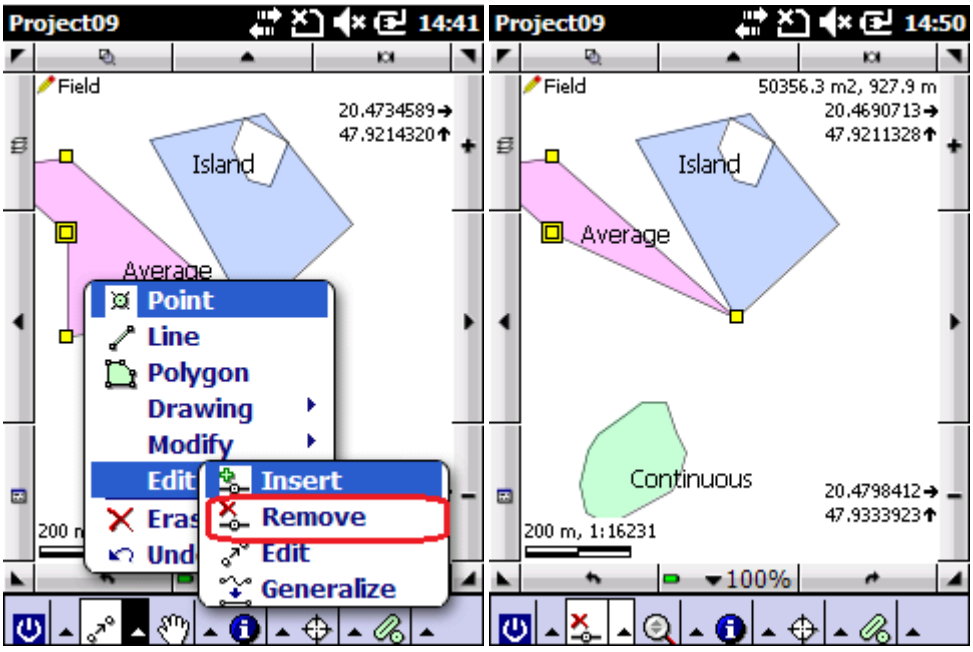
The simplest way of editing is to drag the vertex to the appropriate position. It is needed to mention, that the accurate **snapping** of the vertexes to an other object can only be when the is set on the layers panel.



The vertex position also can be modified by a specified coordinate. For doing this please press and hold the wish-to-edit vertex until the **Existing vertex** panel is popping up.
In this panel the Easting/Northig or Lat/Lon (and height) coordinates - depending on the selected projection system - can be entered. By pressing the **Modify** button the vertex will be replaced into the given position.

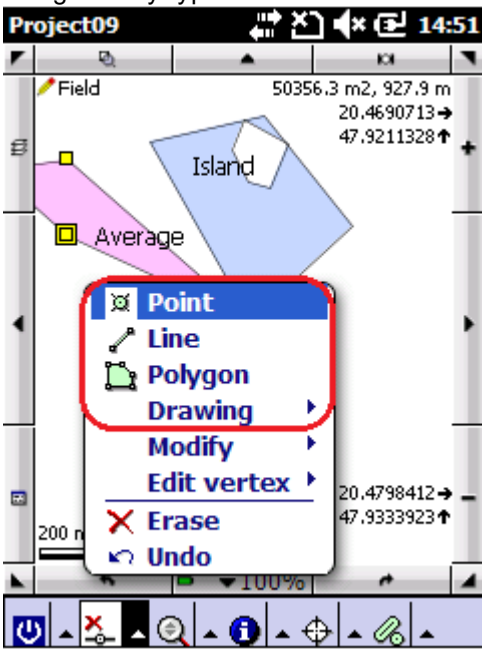


In case of active GNSS connection, the position of the vertex can be modified by the actual coordinates by pressing the **GNSS** button.
Deleting of the vertex can be happen with the **Delete** button or by the **Edit>Remove vertex** tool.

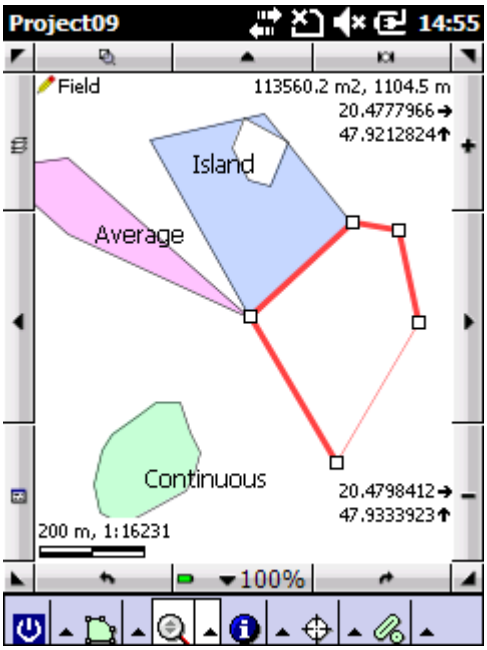


Creating(drawing) objects

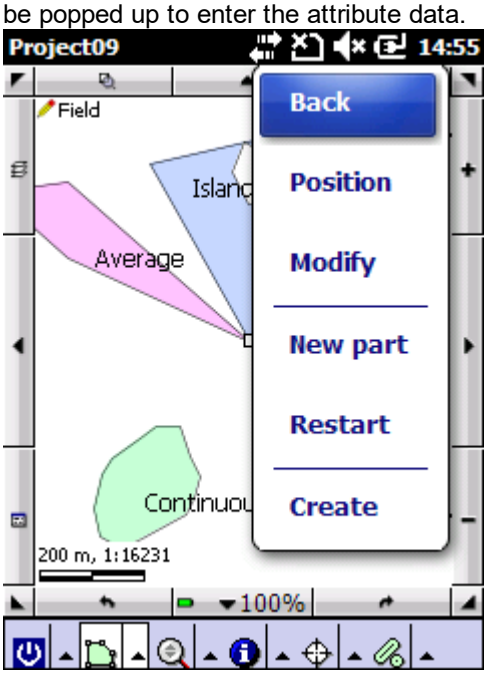
By drawing tools, objects can be created manually without using of GNSS survey. Only one geometry type can be drawn into one layer.



To draw polygons please select the **Area** point from the menu. The new vertexes can be created by tapping. The rule of snapping is also alive - as it was mentioned at vertex editing. During creating vertexes, area and length is calculated on the fly, and it is displayed at the right upper corner of the screen, according to the unit settings (Settings/Record) The displayed coordinates are belonging to the last created vertex.



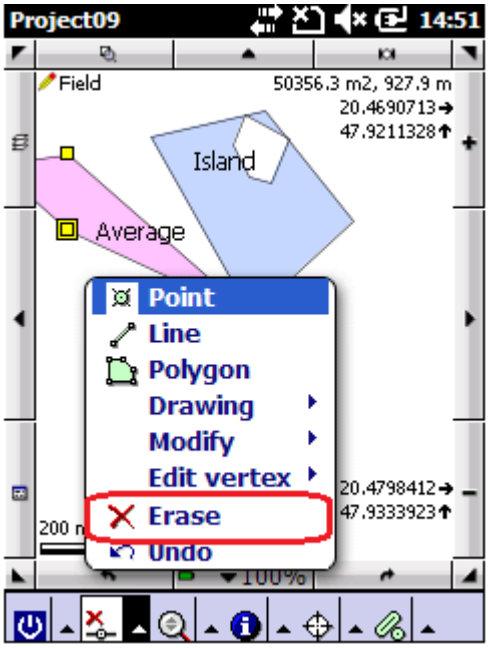
To finish the drawing, please tap and hold (on PC is right click) the screen to see the context menu, then please press **Create.** After creation the date table (form panel) will be popped up to enter the attribute data.

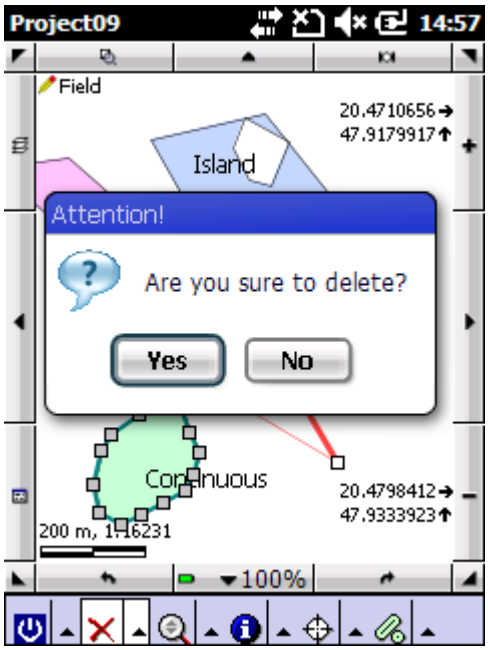


In the context menu further operations can be done, such as: delete the recently created vertex by **Back**, specifying the coordinates of the next vertex by **Position** - existing vertex also can be modified. A new part can be added to the polygon - even as multiple polygon by **New part**. By **Restart** the drawing can be started from scratch.

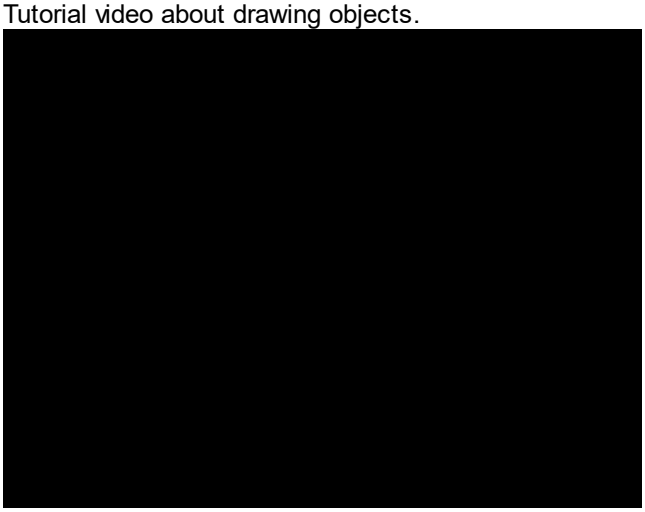
Erase(delete) objects

By selecting the **Erase** tool objects can be deleted one by one after confirmation. (For deleting more objects at one time, please use the select tool to select objects, than press Erase.)





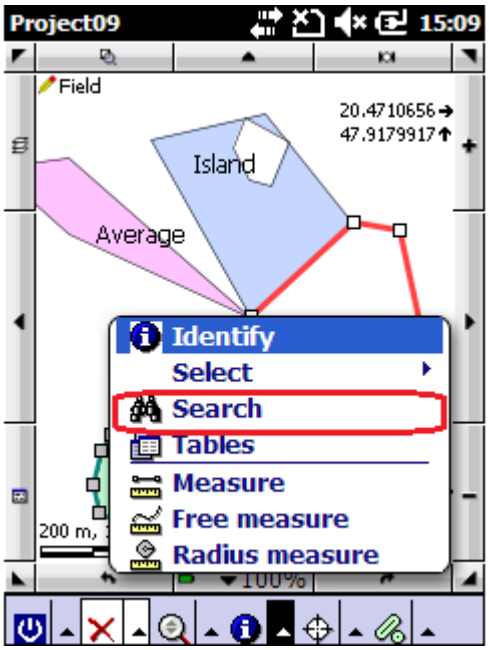
Tutorial video about drawing objects.



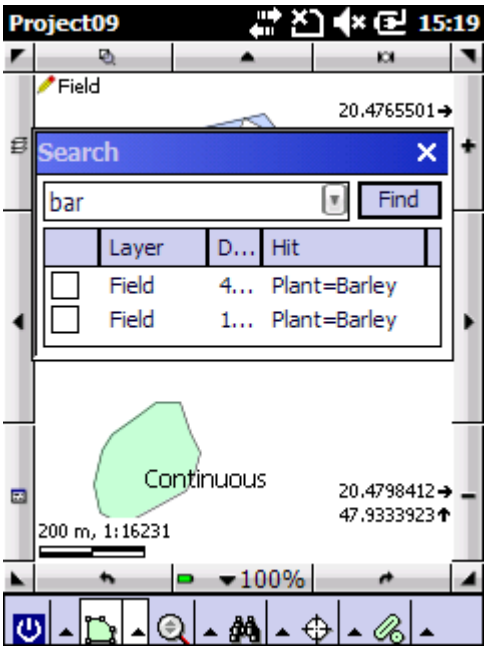
Drawing, editing, deleting of objects

9.1 Search

The search tool of the software can be found at Query menu.



This tool search in all of the layers attribute table, which are marked by the  at Layers panel. The search results are displayed on the bottom of the search panel. The software displays the containing layer name, the distance from the center of the map, and the field name.



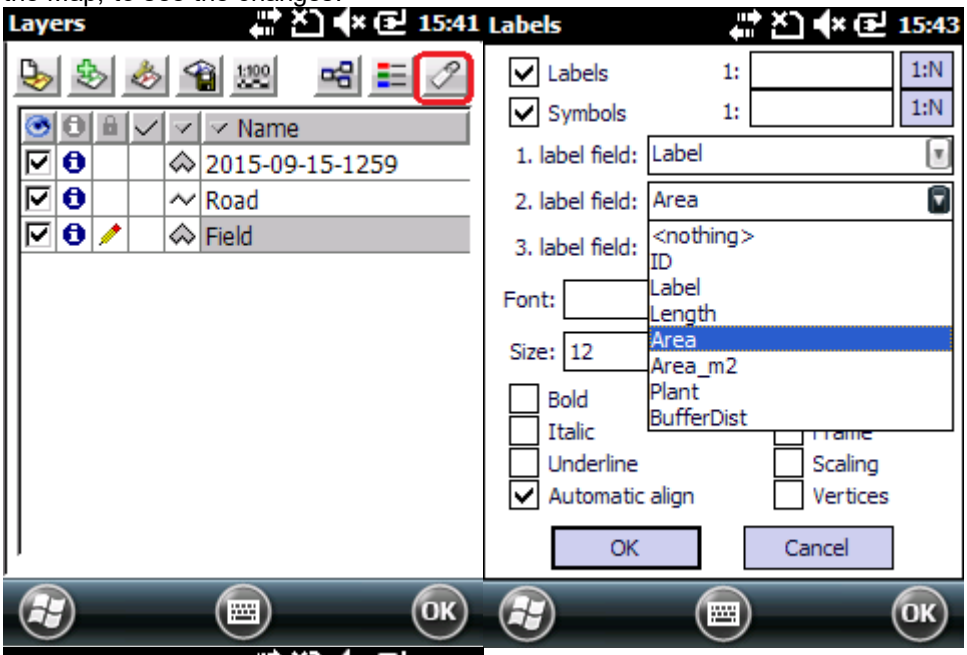
In case You click once one item in the result list, the map will be centered to the object, in case You click double the software will zoom to the object.
After closing the search panel and opening the record panel the object can be set as target.

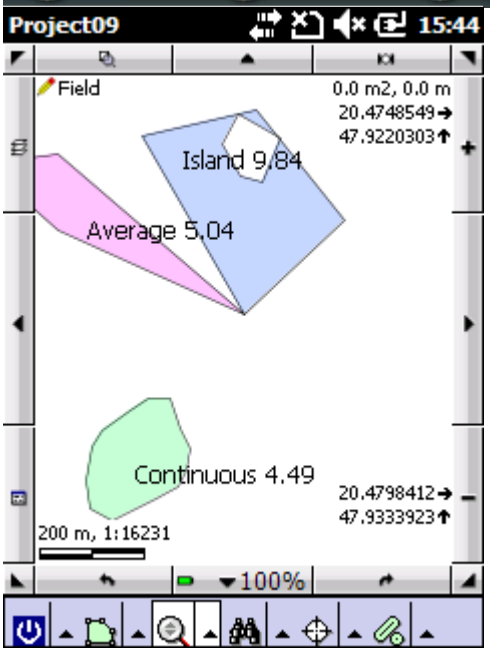
Tutorial video about search.

Search

10 Labels on the map

Labeling of a layer is an essential part of mapping. To specify fields for labeling please open the **Layers** panel and press the  button. Three fields can be selected for labeling at on time. By pressing **OK**, You can return to Layers panel, and from here to the Map, to see the changes.





The style of the label can be changed. The **foreground** and also the **background color** can be changed, **outline** and **frame** can be specified.

> The labeling is not belonging to the layer, but the map. So if the layer is added to an other map, its label fields should be specified again!

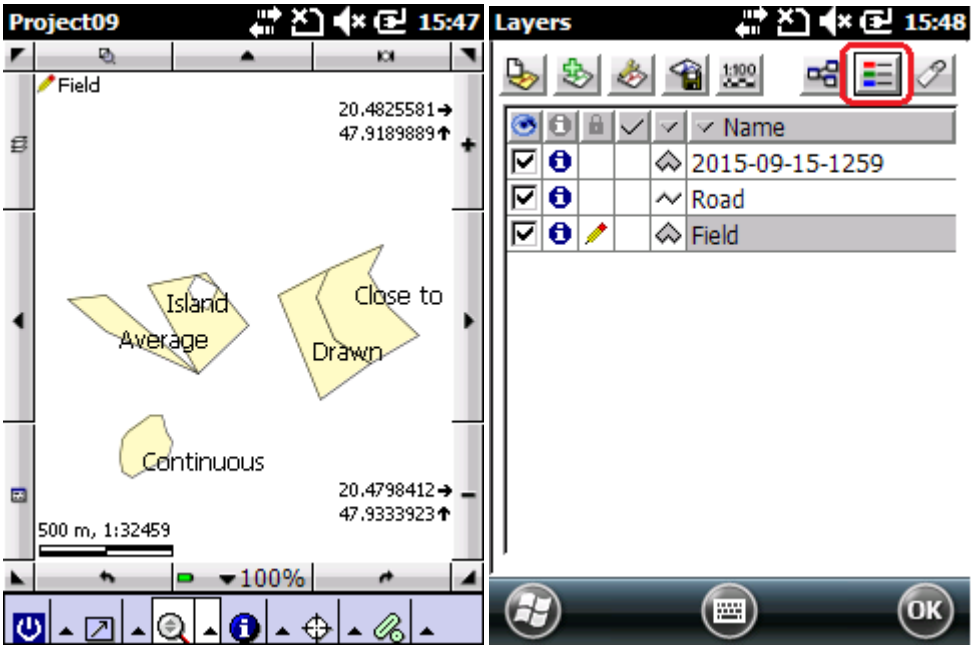
Tutorial video about labeling

Labeling

11 Classifiaction

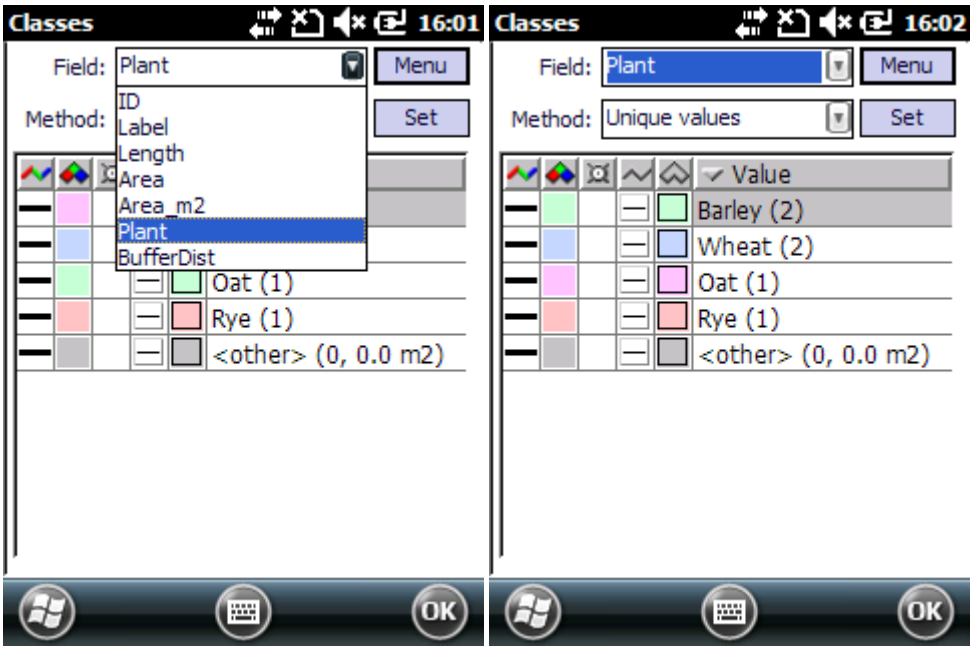
Classification is a method to visually divide the objects belonging to a layer. The classification happens based on attribute data. Fox example an area type layers objects should be displayed different colors depending on the tree species found on the given parcel (area object.)
To do this, tree species attribute data needed to be specified for each objects.

Layers have one class (only one color, fill type, line type, symbol) by default. For creating a classification please press the  button on **Layers** panel.

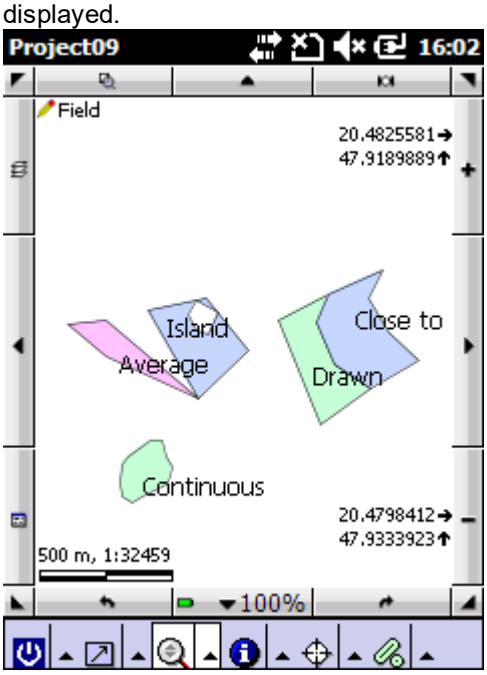


On classes panel, please specify the data field which will the base of the classification. The simplest classification **method** is the **Unique values**. Using this method, all of the different values - found in the data table - will get different color on the map. The appearance of the created classes can be modified.
The following properties can be changed:

-  Line color
-  Fill color
-  Symbol
-  Line type
-  Fill type



After exiting from the Classes and the Layers panel, the classified (thematic) map will be displayed.



Tutorial video about classification.

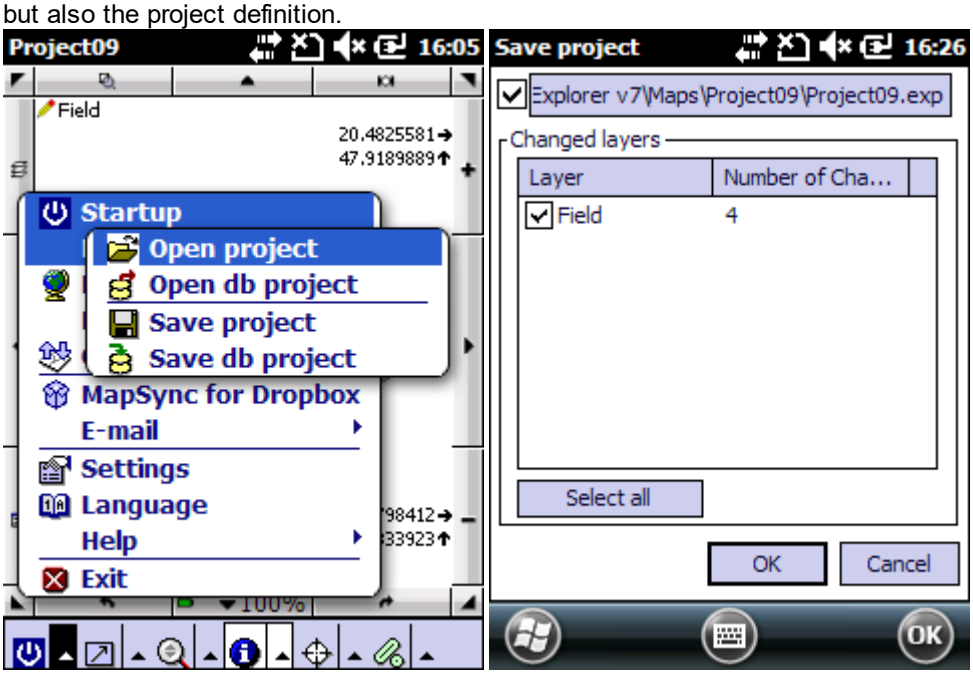
Classification

12 Saving the Map Project

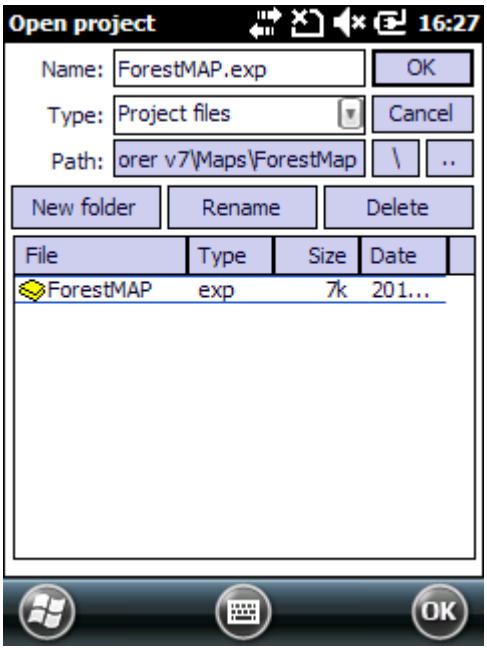
After finishing the mapping task the final step is saving of the map project. Saving of the layers data is continuous during the data collection/editing, and by saving of the project the following properties can be saved:

1. projection (spatial reference) system
2. the last position of the map
3. the name and the path of the layers - belonging to the recent project
4. sort order of the layers
5. the label settings of each layers
6. the classification settings of each layers
7. the filter criteria of each layers
8. the name and the path of the used code dictionary
9. the name and the path of the used symbol set
10. In case using of non DigiTerra MAP+TAB layer format, the project stores the non-built in properties (eg.:defaul values in case using of ESRI shape files)

Please open the File>Project>Save point from the menu. On next screen the changes are displayed what affected the layers, and the path and the format of the project.
If case the check box is checked before the path, not only the changes will be saved, but also the project definition.



If the path or the format of the project should be changed, please press on the displayed path.



The name, format and the path of the project can be changed.
The format of the project can be one of the followings:

- EXP - DigiTerra Explorer map project file

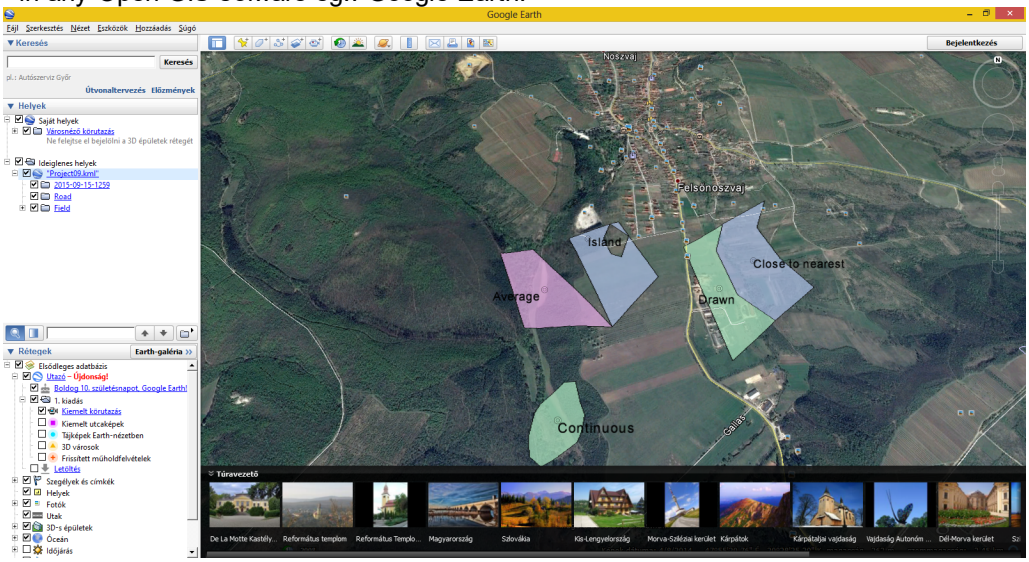
  This format contains the mentioned properties of the project, WITHOUT the DATA of the layers, ONLY those PATHs. For moving the entire project, all layer files, code dictionaries should be copied.

- DMP - DigiTerra Map Package file.

  The layer files, code dictionary and all of the settings are packed into one file. This format is worth to be used in case of NO further MODIFICATIONS will be done. DMP is a comfortable format for achieving and sharing data.

- GML, KML, KMZ - OpenGIS map files

  The survey/map - created by DigiTerra Explorer - can be shared / published by exporting to one of the supported Openg GIS map format. These formats can be opened in any Open GIS sofware eg.: Google Earth.



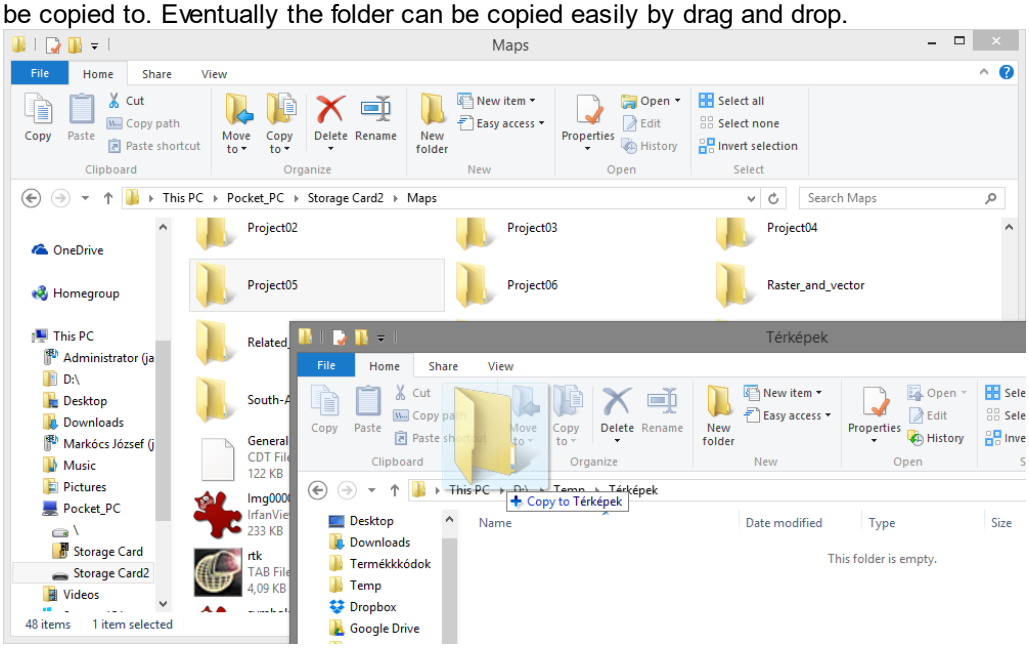
Projekt mentése

13 Transfer of data to the PC

A synchronizing software (ActiveSync, Mobile device center) is needed for copying/ moving files between the mobile device and the PC - as it was written at System requirements . After establishing the connection maps can be copied.

Copy data using the Windows Explorer

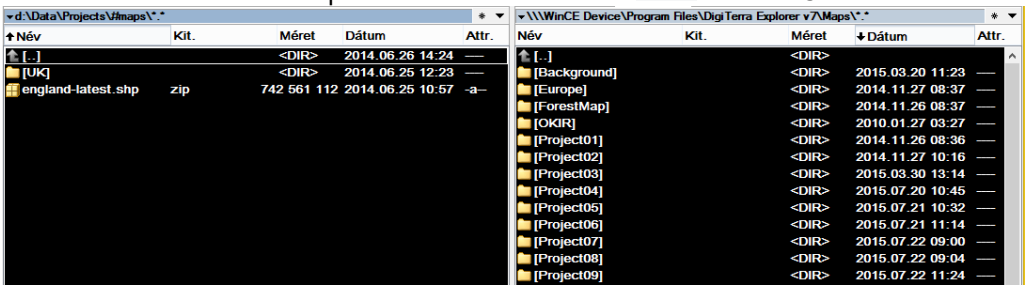
In case of alive connection is available please open the Windows Explorer. The mobile device will be appeared at **This PC** section - generally named as **Pocket_PC**.
Please browse the folder which contains the map project data, then it is worth to open an other Windows Explorer window with the target folder on the PC, where the files will be copied to. Eventually the folder can be copied easily by drag and drop.



Copy data using Total Commander

As first step please install the WinCE plugin for Total Commander, what can be downloaded from this link:http://ghisler.fileburst.com/fsplugins/wincefs.zip
In case of successful download, please browse the file (wincefs.zip) then install it by double click. Before install, a confirmation will be asked - press OK to commit the installation.

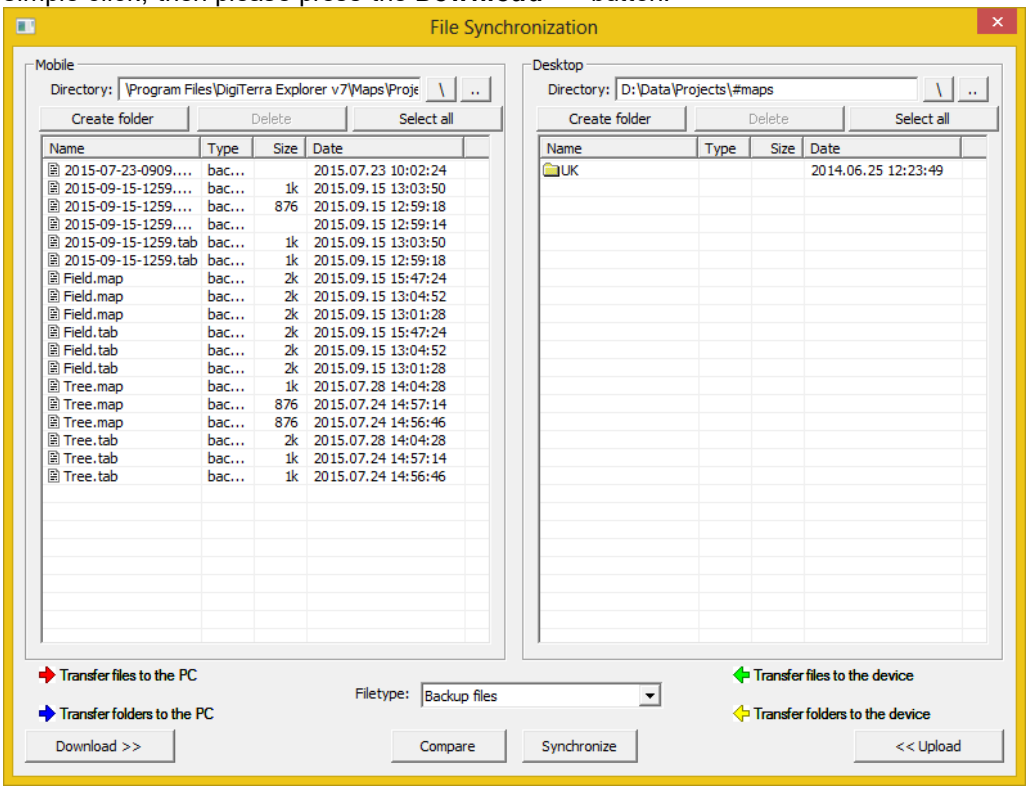
After successful installation please select the Network \ and WinCE device.



The file structure of the Device will be appeared, then please browse the folder of the Map project, and copy it to the selected PC folder.

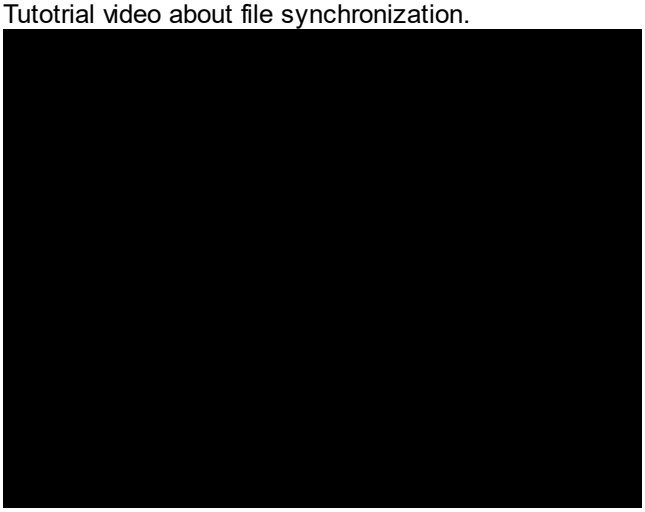
Copy data by the DigiTerra Explorer synchronization wizard

Please start the desktop version of the DigiTerra Explorer, then select and press the synchronization button in the toolbar. Please specify the "Folder" path at wizards PC and Device panel. The folders can be selected for upload and download by a simple click, then please press the **Download >>** button.



Naturally not just folders but files can be uploaded/downloaded. By using the file type filter, the wish-to copy files can be specified easily.

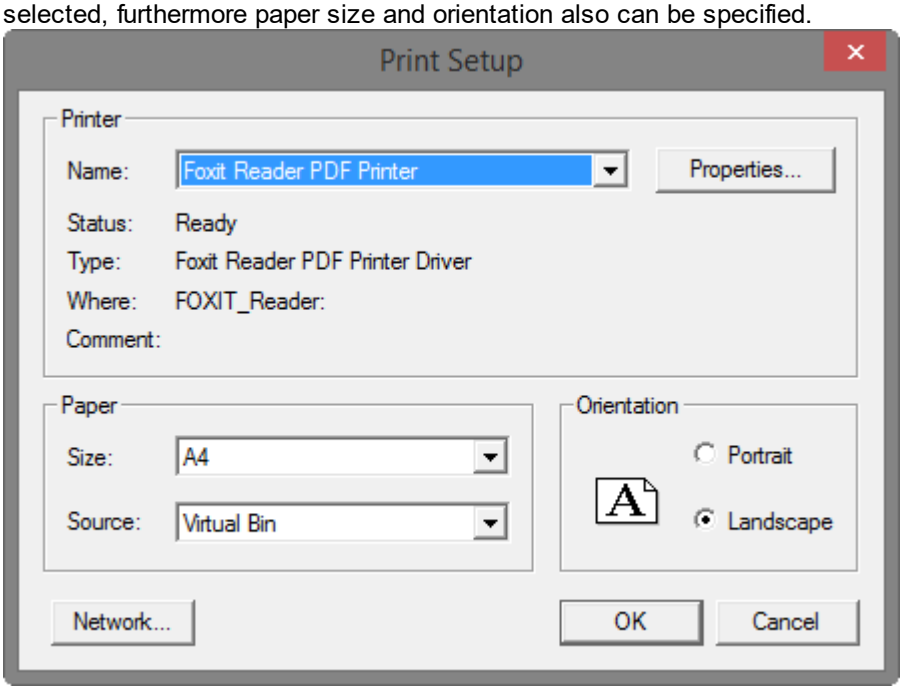
Tutotrial video about file synchronization.



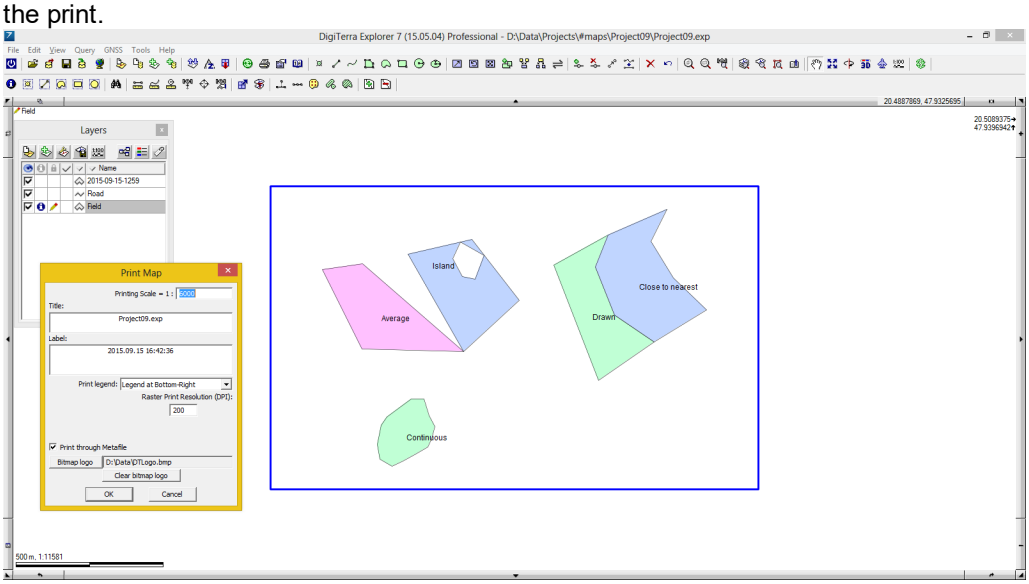
File synchronization

14 Printing of Map Project

Printing available only in the desktop version of the software. Please open the ready-to print project, then press the print tool  in toolbar. At this panel the printer can be selected, furthermore paper size and orientation also can be specified.



By pressing **OK** button the **Print Map** panel is popping up, and the print area will be marked with a blue frame depending on the Printing Scale and the selected paper.
The map is moveable by using the Pan tool or the Active frame even during the set up of the print.

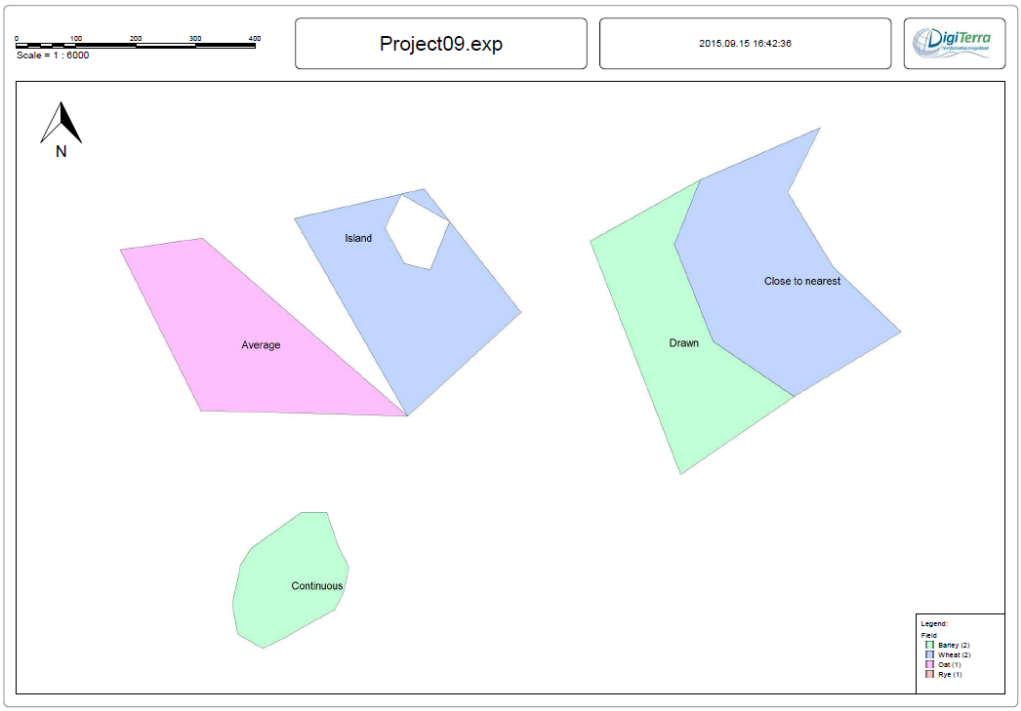


The set **Printing scale** defines the printed map scale on the sheet. The greater number is entered the greater area will be covered by the print layout.
The name of the map can be specified at **Title.** Further information can be specified at **Label** which will be appeared on the printed map under the main title.

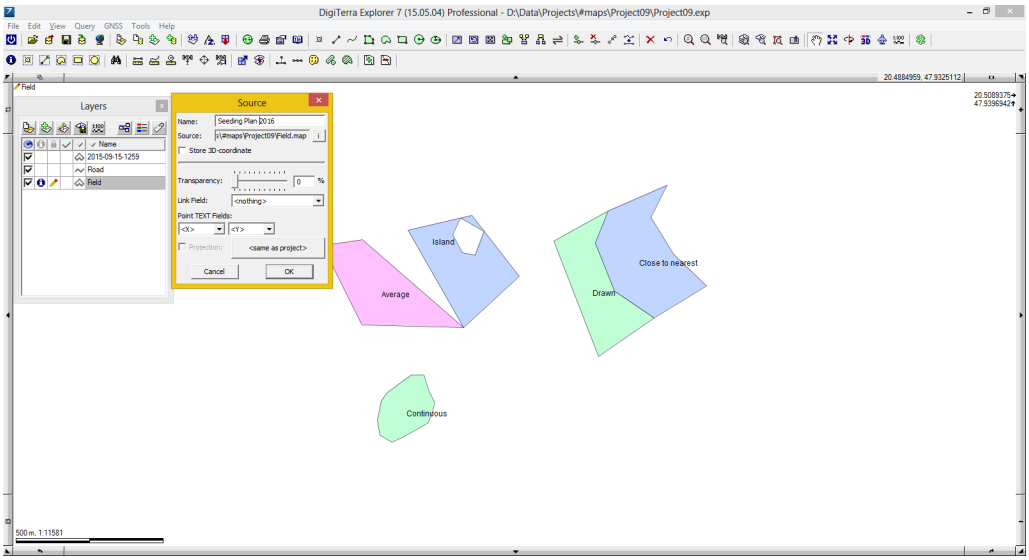
By **Print legend** pick list, the usage and the position of the legend can be specified, which will be appeared on the printed map. All of the layers of the map project will be

included in the legend, except which is not marked by  at Layers panel. The classes - belonging to each classified layers - will also be displayed.

A logo (eg.: the firms logo) also can be displayed on the printed map. For doing this please browse the appropriate bitmap image file at **Bitmap logo.**
If everything is specified please press the **OK** button.

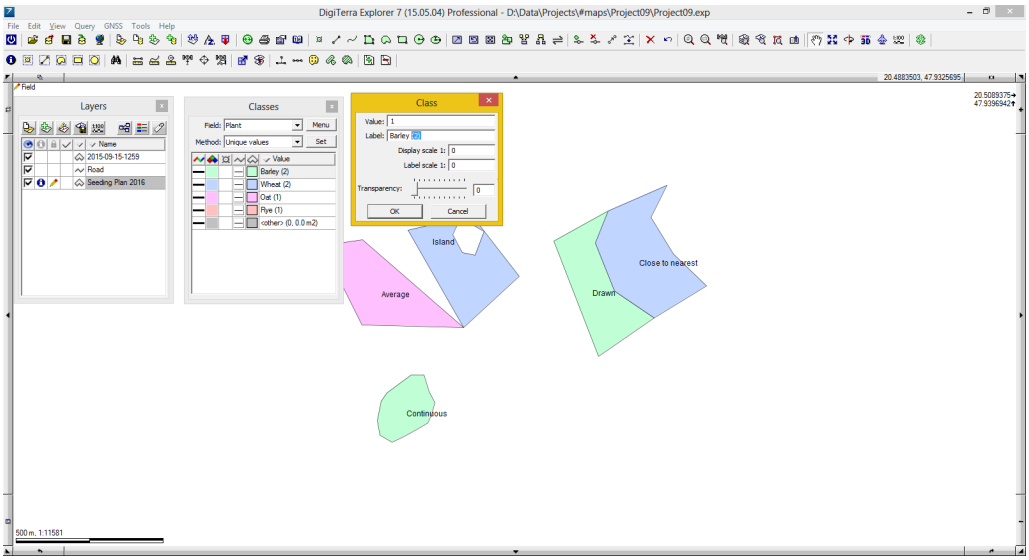


If the original (physical) name of the layer (eg.: 2015-09-15 08:35) do not provide enough information the content of the layer, an alias name can be specified for the layer. It can be done at Layers /  Source panel, by updating the **Name** text - the physical name is the default - then press **OK.**



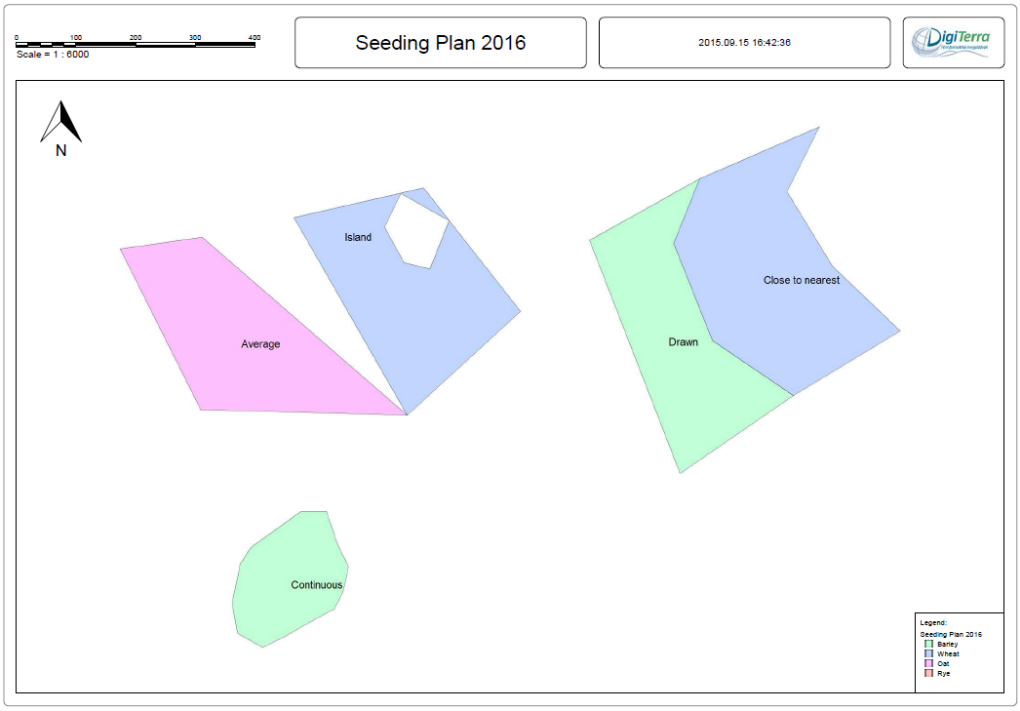
Changing of the Name will not affect the original file name, and it will be saved into the project (*.exp) file.

Even classes name can be changed. Please open the Classes panel and click double on the wish-to rename class, and type the wish-to display

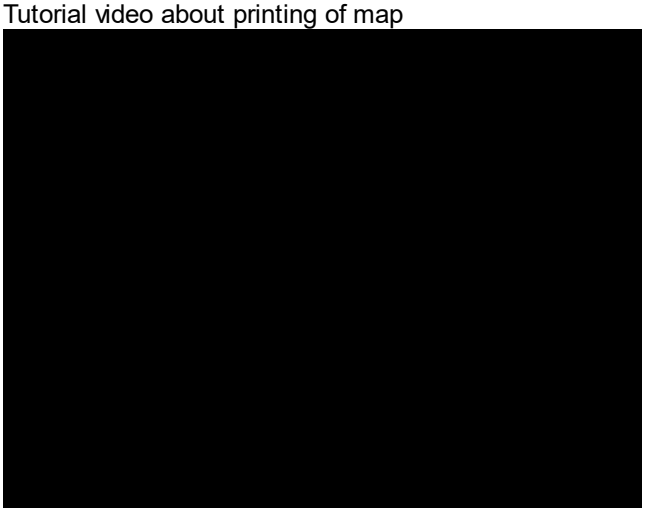


The Value field should not be modified, anyway the classification will go wrong.

The printed map after legend modification.



Tutorial video about printing of map



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