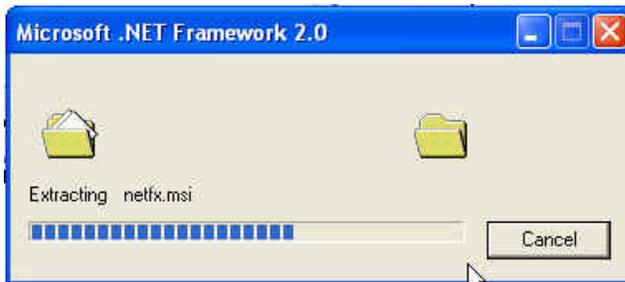# FarmerGPS

March 2009

This handout provides an introduction to the fundamentals of FarmerGPS. It covers the installation, starting of FarmerGPS and a short overview of the simulation mode.

Installing FarmerGPS for the first time

FarmerGPS requires the Microsoft Framework 2.0 to be installed on your PC or laptop. This is a one-time install and many other programs will benefit from this installation. Upgrades of FarmerGPS will not require a new installation of the Framework.

Start Windows Explorer and find the file "dotnetfx.exe" on the CD. Double-click to get the installation started:

After you have completed the .NET Framework installation, find "FarmerGPS4.msi". Double-click to get the installation started:
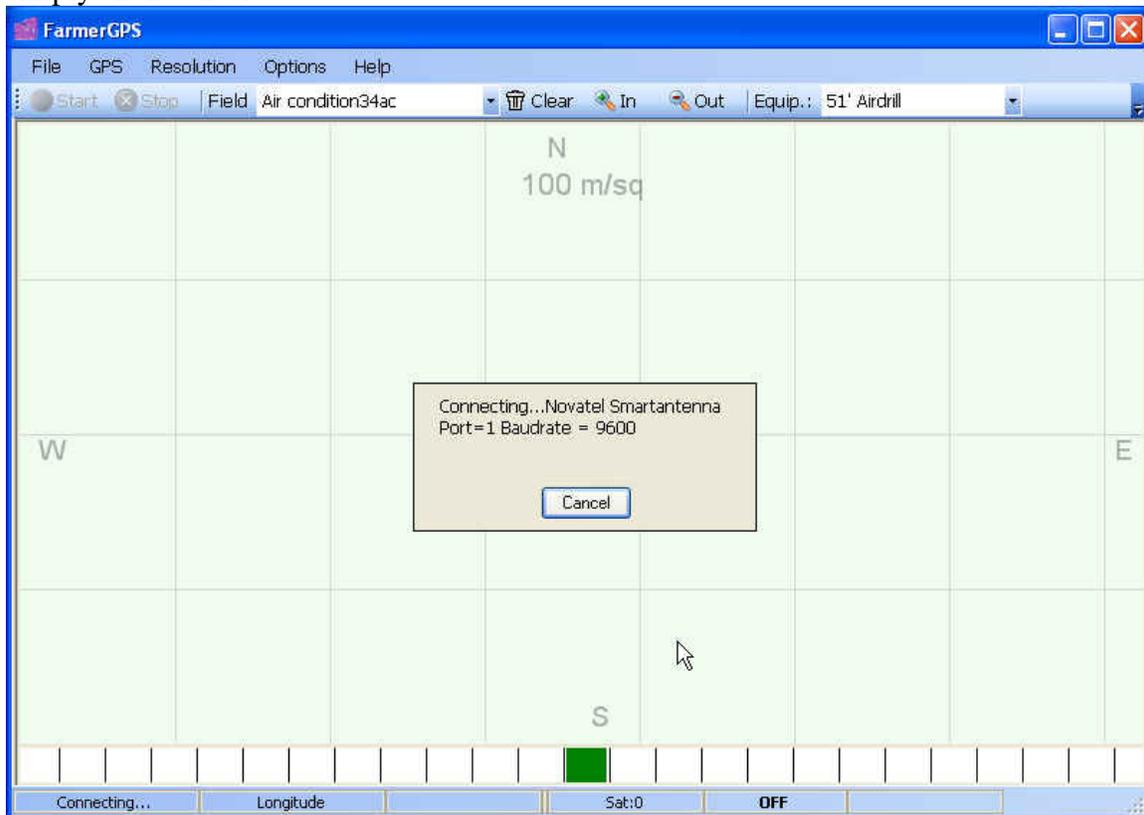

Simply accept the default settings. A shortcut to FarmerGPS will be installed on your desktop.

1. Getting Started with FarmerGPS (simulation mode)

FarmerGPS will by default look for a GPS-receiver and try to connect. For a desktop PC this can be turned off in the Setup menu. If you do not have a GPS receiver connected, simply click cancel.

Pic.: 1 Attempting to connect to GPS receiver on serial port 1 at 9600 bd

For a quick introduction of the main concepts of FarmerGPS, we are going to use the simulation mode. In this mode, NMEA messages will be send to FarmerGPS simulating a GPS receiver. (NMEA is a standard format for positional information send by your GPS receiver).

You can start the simulation mode, by selecting the GPS menu, and then use "Start simulation".

In simulation mode steering is achieved by using the arrow keys. Press left and the unit will steer to the left. Holding the key too long may result in a left turn on the spot, so don't hold the key instead use repeated clicks to turn sharper. The right arrow turns right. The up arrow stops the turning and will go straight. You may also change the speed by using the PageUp and PageDn buttons. Holding the PageDn button will reduce the speed to 0 and the unit will stop.

The simulation mode is not ideal, however it should provide a good idea on how the application works without the need for a full GPS receiver setup.
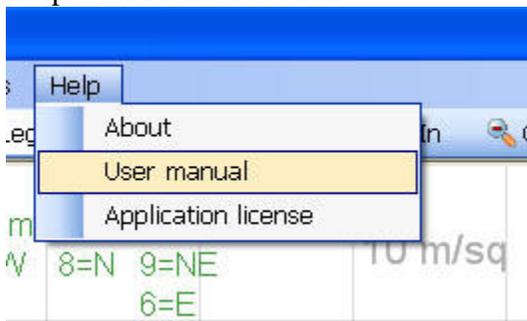
Should you own a GPS receiver with NMEA output you may go ahead and try it out. The trial version is limited to 10 min of GPS connectivity.

Start the simulation by going to the GPS menu:

Pic.: 2 Starting simulation mode in FarmerGPS

Notice the field and equipment selection dropdowns at the top of the screen. These are default selections after a first install. You can add, edit delete etc. in the Setup menu. The configuration for fields and equipment is described in detail in the help under the Help/User Manual section:

Clicking "User manual" will display the manual.

The "LOGGING OFF! Click Start" warning at the top right indicates that the application does not record any of this data.

LOGGING OFF! Click Start

For the simulation that may be OK, however if you see this warning be aware that nothing is stored!! Click "Start" to start recording against your field selection.
This is simply to ensure that the operator does not miss to record his field operations.

At the start of each operation, check that the right field is selected (data is stored under that fieldname) and that the right equipment is selected. Then click "Start" to record all information.

For our first look at FarmerGPS we are going to use the default selections:
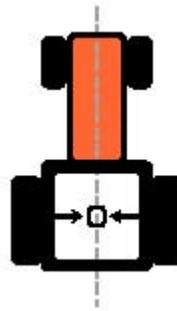A "40' Airdrill" as our equipment and the "Field 1 Legal Desc…." as our field of operation.

2. Using a GPS receiver
FarmerGPS can be used with any GPS-receiver providing NMEA output. RMC and GGA information is being used.
For agriculture guidance we recommend a sub-meter receiver with a 5 Hz update rate (latitude, longitude values are updated 5 times per second). For tests a simple hunting GPS receiver with a serial cable may be used, however the 1 Hz update rate will result in jumps especially at faster speeds. (Going 20 km/h equals 5.5 m/s !) Also accuracy of these devices are only 3 m with WAAS and as bad as 10 m without WAAS.

Please mount the GPS receiver in the left/right center of your equipment!

The receiver must have a clear view of the sky (to all sites).

After you have connected your GPS receiver, ensure that you selected the correct serial port in FarmerGPS. If you use the RS232-USB converter, you can find the assigned serial port by clicking "Find USB". The baudrate should be set to "AUTO" when connecting the first time. After a successful connection, FarmerGPS will change this to a fixed baudrate.

If a known GPS device is selected, FarmerGPS will send an initialization string to the device. If you use an unknown GPS receiver, please select "Generic" and configure the receiver to output NMEA at the highest baudrate possible (minimum 4800 bd). Ideally RMC should be send 5 times a sec, GGA once every 2 s.

If you have a newer laptop and use the USB – RS232 converter shipped with the complete package, please make sure you install the software delivered with the USB-RS232 converter! A small CD is hidden in between the background paper!

Please follow the instructions in the word document.

IMPORTANT: When plugging in the USB-RS232 cable, windows will show a "New Hardware found" wizard. Make sure you point this wizard to the USB-driver provided on the small CD. This "New Hardware found" wizard will show up twice and you will need to point it twice to the driver folder. This is a one-time configuration, however if it is not done right, FarmerGPS will not be able to get any information from your antenna!

After the successful install you can find the assigned serial port in Control Panel/System/Hardware/Device Manager/Ports

On this computer, the USB-RS232 converter created a virtual serial port COM5. This may be different from PC to PC, so please make sure you check the port-settings on your laptop.
This port setting must be set in FarmerGPS/Setup/GPS for the serial port of the GPS receiver. (see GPS tab in Options/Setup on previous page).

IMPORTANT:
When the antenna is connected during the Windows boot-up process, Windows detects the antenna and mistakenly "thinks" that you antenna is a mouse! The result is erratic behavior of your mouse to the point where you cannot control your laptop!
In addition Windows has now occupied the GPS-port, thus FarmerGPS cannot communicate with the antenna. A error message will show that the port is already in use!

This can be corrected with the following steps:

1. Boot the computer with the GPS receiver attached.
The cursor will be jumping around and all sorts of unwanted stuff will be happening.

2. Disconnect the power from the GPS. The computer will settle down.

3. Open the Device Manager in the Windows Control Panel by selecting
Control Panel -> System -> Hardware -> Device Manager.

4. Click on the "+" next to Mice and other pointing devices.

5. Click on "Microsoft Serial Mouse" or "Microsoft Serial Ball Point" -
This is what Windows thinks that your GPS receiver is.

6. Choose "Do not use this device (disable) " under "Device Usage" or
Select "Actions" and then "disable". Accept the message verifying that you want to
disable this device.

7. Click "OK" to close each window

8. Reboot the computer with the GPS power attached. All should be well.

Please use the user manual in FarmerGPS and explore more of FarmerGPS features. Also
don't hesitate to call us at **780 990 4052** for any questions you may have.