

AgroSense Manual Version 2.0





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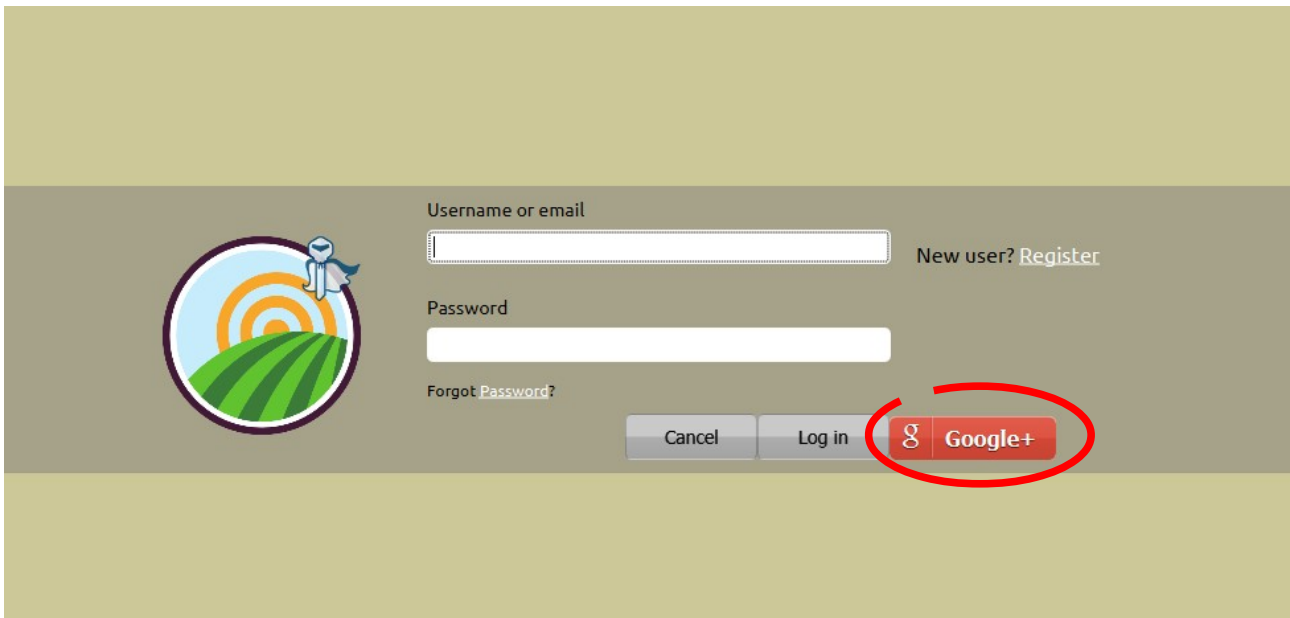
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1 Getting started with AgroSense

You can launch AgroSense from the Startmenu or by clicking **Agrosense.exe** in the installation folder/bin.

Naam	Gewijzigd op	Type
agrosense	6-7-2014 9:48	Bestand
 agrosense	6-7-2014 9:48	Toepassing
 agrosense64	6-7-2014 9:48	Toepassing

When starting AgroSense a connection with Internet is established and the login appears.



The login screen features a circular logo on the left with a green field, a yellow sun, and a blue ribbon. To the right of the logo are two input fields: "Username or email" and "Password". A "Forgot Password?" link is located below the password field. On the right side, there is a "New user? Register" link. At the bottom, there are three buttons: "Cancel", "Log in", and "Google+", which is circled in red.

At the first launch of the program you can create an account or sign in with your Google+ account.



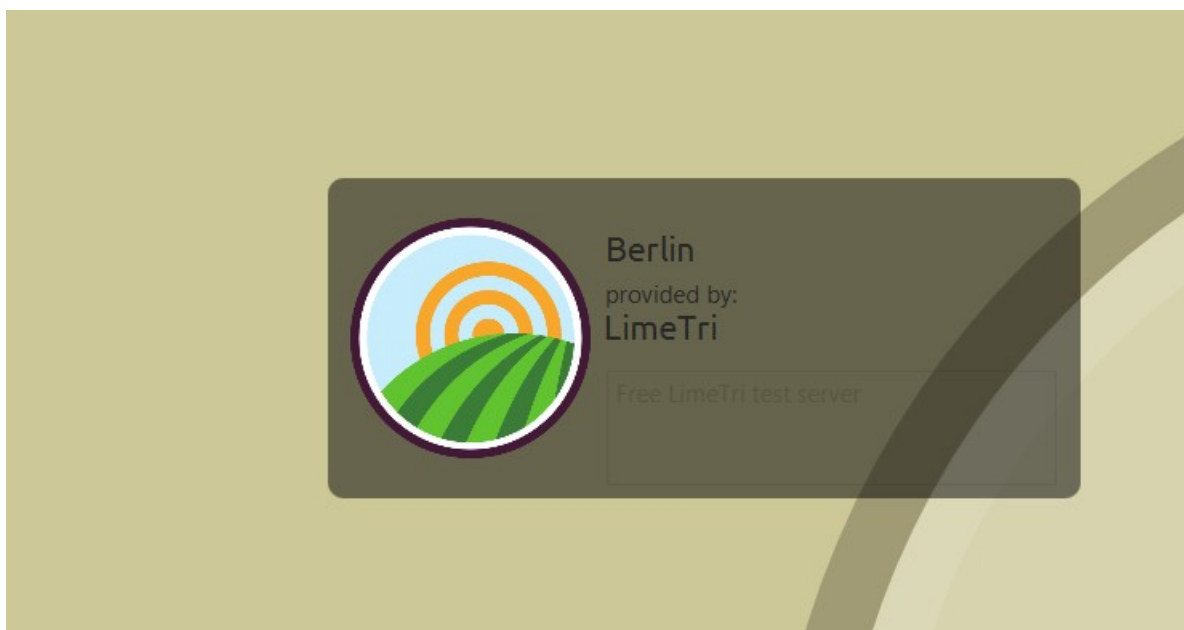
Registration form with the following fields:

- Username
- First name
- Last name
- Email
- Password
- Confirm password

Buttons: « Back to Login, Register

The AgroSense logo is displayed on the left side of the form.

Fill in your details and you receive free access to the test-server.
Choose a server (default is the test-server,) to launch AgroSense.



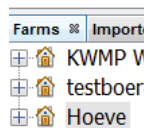
2 Create a farm

Choose  'create new farm' in the menu under 'File' to start AgroSense's functionalities. A screen 'New Farm' will open.



Provide your farm with a name and it will be created.

Your newly made farm will appear in the list of farms.



Details of a farm can be adjusted by opening the farm (right-click, open).

2.1 Create or import fields

The second step in setting up your farm is the creation of fields. Fields are the basis of any farm. They can be imported (if you possess a shapefile with fields), or can be drawn manually.

Both options will be discussed below.


2.1.1 Import fields

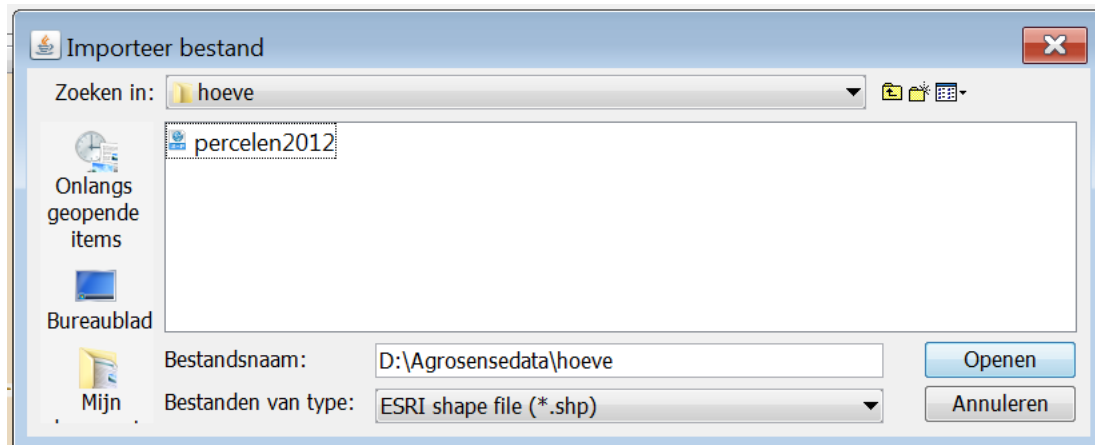
To be able to import fields it is necessary to have a shapefile (.shp) with fields.

AgroSense uses geographical data in WGS84 (lat/long data from a GPS-device). Data, for instance provided by the government, are mostly projected on a flat surface. In the Netherlands the RD-projection is used for this.

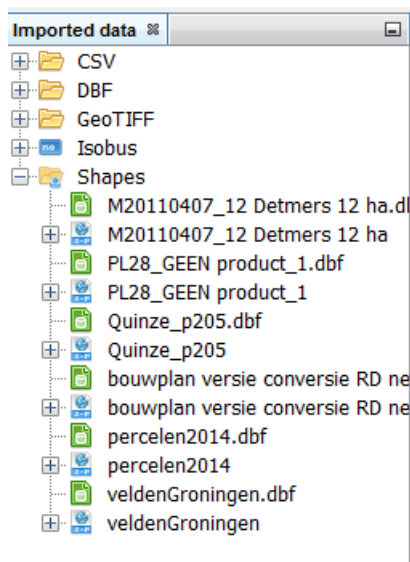
When the file contains information about the type of coordinates (e.g. RD) it contains the coordinates will automatically be transferred for use within AgroSense. If not, the provider of the data will have to add this information to the file or data in WGS84.

The following steps should be taken:

1. Choose  'Import' in the menu under 'File' to import.
2. Navigate to the right folder on your drive.
3. Choose 'Esri shapefile' (*.shp) in the file-types option so the list will only contain shapefiles.



4. Select the right shapefile.
5. Choose 'open'.
6. The imported file will be shown under 'imported data' tab in the 'Shapes' folder.



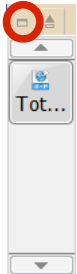
Imported data are stored in a generic format that may contain different types of data.

A shapefile can contain multiple kinds of information on surfaces like fields, cropfields and treatmentzones.

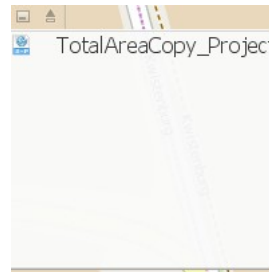
You can view the raw data on the map by dragging the file to the map(click, hold and drag). The file

will appear in the 'table of content' (TOC).

Collapsed the TOC looks like this.

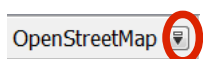


You can also maximize it by clicking the icon on the top-left.



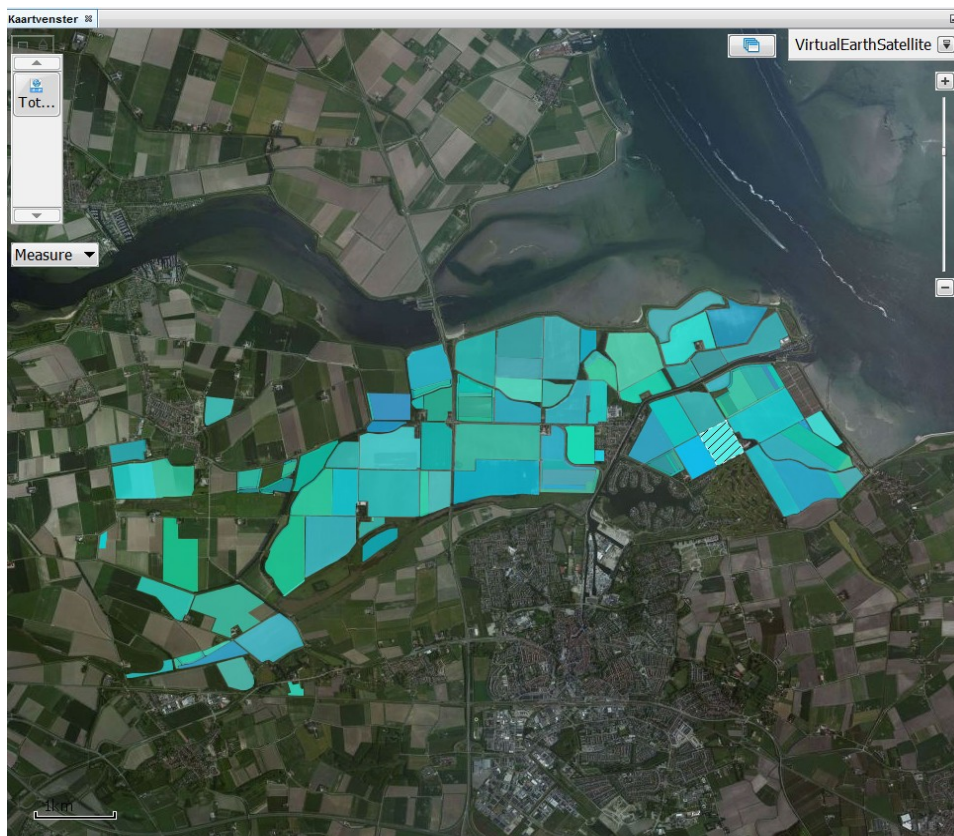
By zooming out you can see the whole file on the Openstreet background.

You can also opt for a different background.



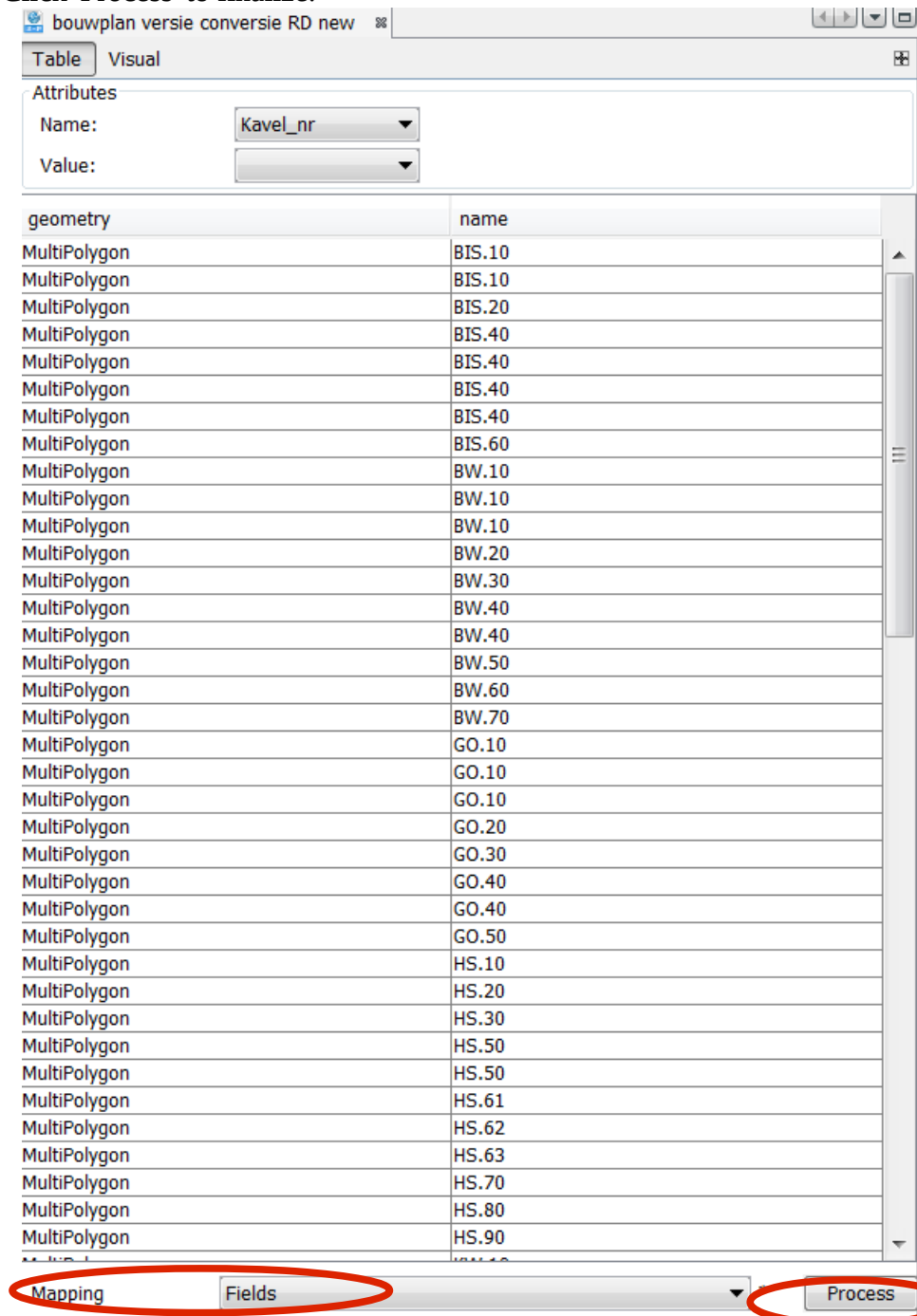
Select the icon on the right.

A list of possible background-maps and areal photos will appear. E.g. the Virtual Earth Satellite image.

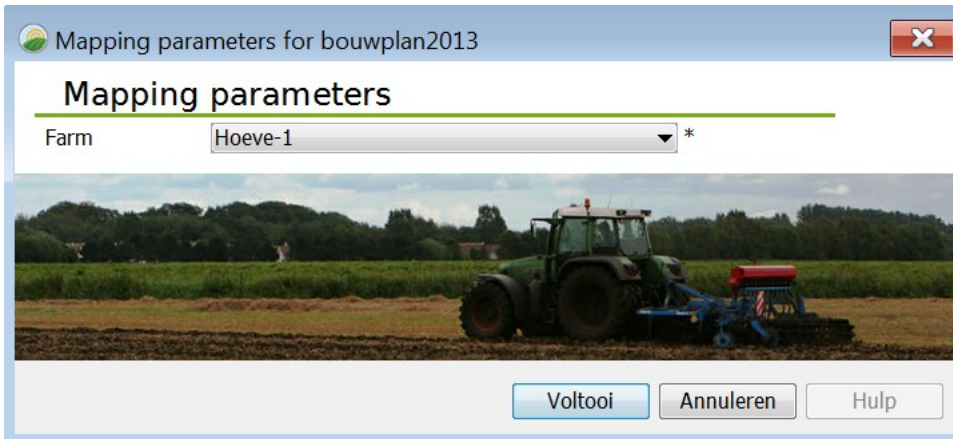


Giving imported data meaning within AgroSense is accomplished this way:

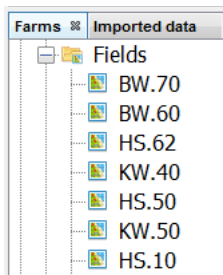
1. Choose the file in the 'imported data' map (shape, no dbf).
2. Open the file (right-click, open).
3. In the properties window:
 1. Pick the name that represents the surface.
 2. Pick the mapping of the surfaces.
 3. Click 'Process' to finalize.



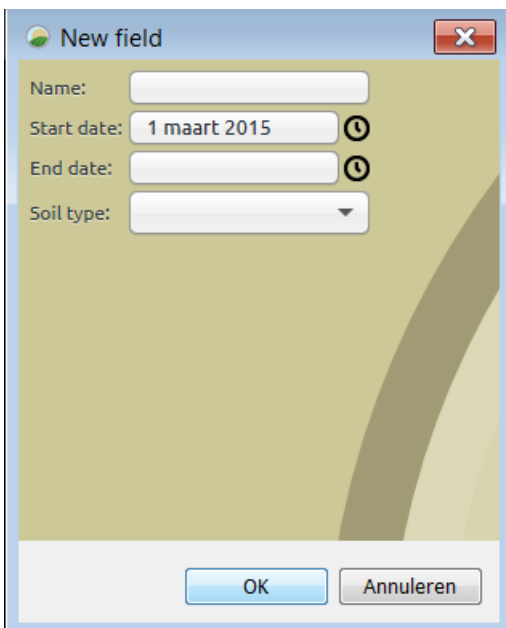
Choose the farm the fields should be deployed to. (This question will only appear when multiple farms are registered.) Click 'Process'.



The fields are now visible within the farm.



2.1.2 Draw fields manually



Pick a farm in the frame Farms.

Expand this by clicking +.







Click Fields and create a new one (right-click, new 'Field').

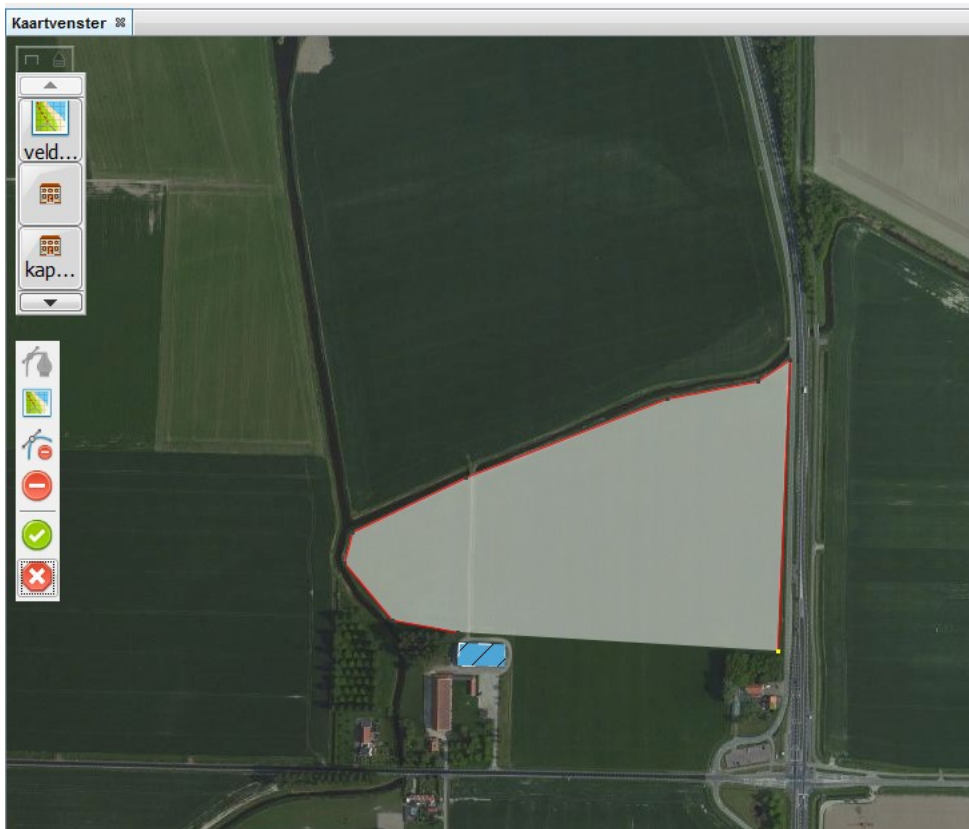
A screen 'New Field' will appear with a few administrative entries.

When a field is created you can drag it to the map (click, hold and drag).


The map will go to drawing-mode: the mouse-pointer changes to a '+' and with the edit-menu a field can be drawn.

The buttons have the following functions:

-  Pen for drawing.
-  Navigation to slide or zoom to the right location.
-  Cancel last point.
-  Cancel all drawn surface-information.
-  Store the drawn field.
-  Stop.



2.3 Create workers



The 'New worker' dialog box contains the following fields:

- Name:
- Title:
- First name:
- Prefix:
- Surname:
- Street:
- House no.:
- House no. ext.:
- Postal code:
- City:
- Country:

Buttons:

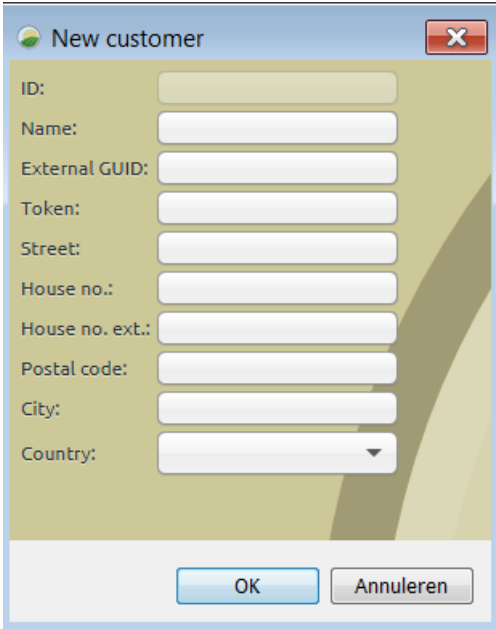
Pick a farm in the frame Farms.

Expand this by clicking +.

Click Worker and create a new one (right-click, new 'Worker').

A screen 'New Worker' will appear with a few administrative entries.

2.4 Create costumers



The 'New customer' dialog box contains the following fields:

- ID:
- Name:
- External GUID:
- Token:
- Street:
- House no.:
- House no. ext.:
- Postal code:
- City:
- Country:

Buttons:

Pick a farm in the frame Farms.

Expand this by clicking +.

Click Costumers and create a new one (right-click, new 'Costumer').

A screen 'New Costumers' will appear with a few administrative entries.

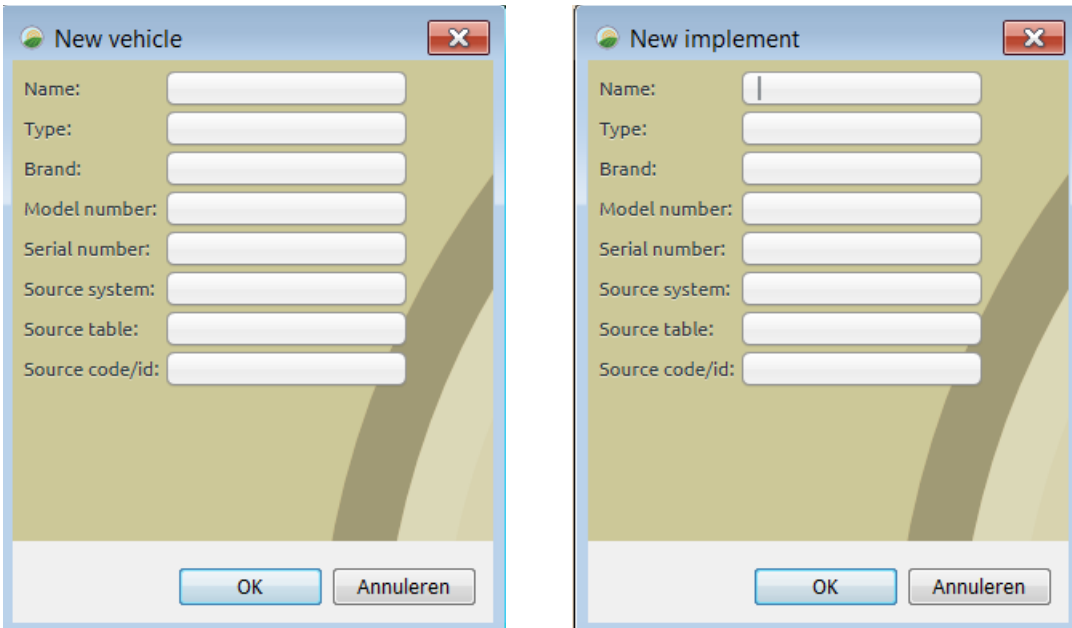
2.5 Create machines

Machines consist of Vehicles and Implements.

Pick a farm in the frame Farms.

Expand this by clicking +.

Expand Machines by clicking +.



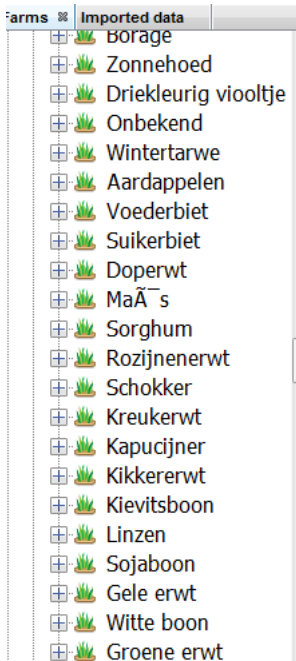
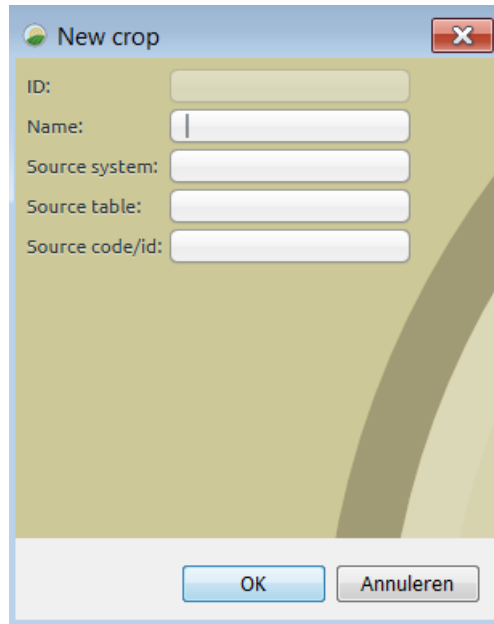
The image shows two side-by-side screenshots of software dialog boxes. The left dialog box is titled "New vehicle" and the right one is titled "New implement". Both dialog boxes have a title bar with a close button (X) in the top right corner. Each dialog box contains a list of input fields for administrative data: Name, Type, Brand, Model number, Serial number, Source system, Source table, and Source code/id. At the bottom of each dialog box, there are two buttons: "OK" and "Annuleren".

Click Vehicle or Implement and create a new one (right-click, new 'Vehicle').

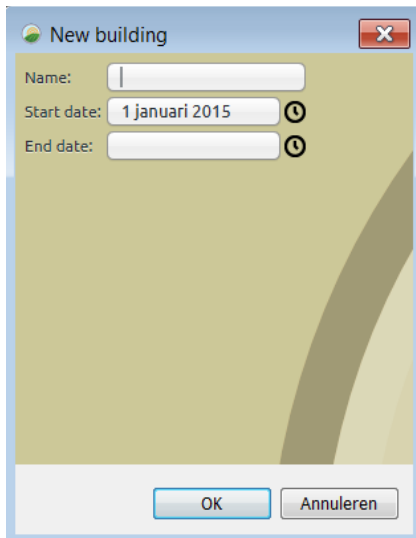
A screen 'New Vehicle' will appear with a few administrative entries.

2.6 Create croplist

Import standardized lists or fill in the crops you need.

2.7 Create buildings



Pick a farm in the frame Farms.

Expand this by clicking +.







Click Building and create a new one (right-click, new 'Building').

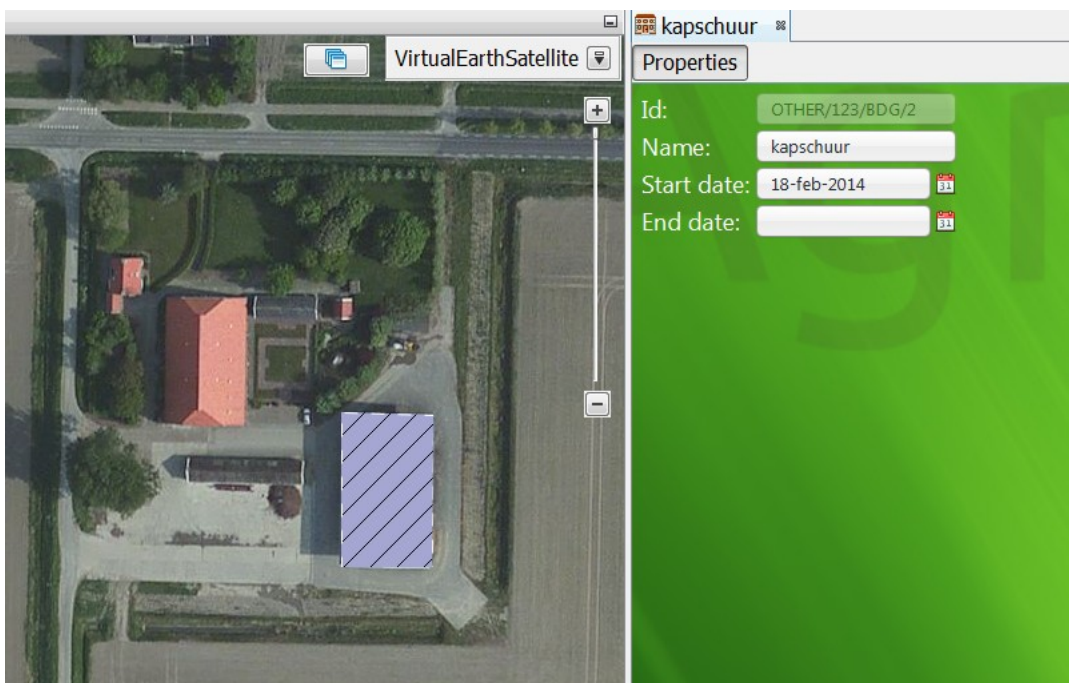
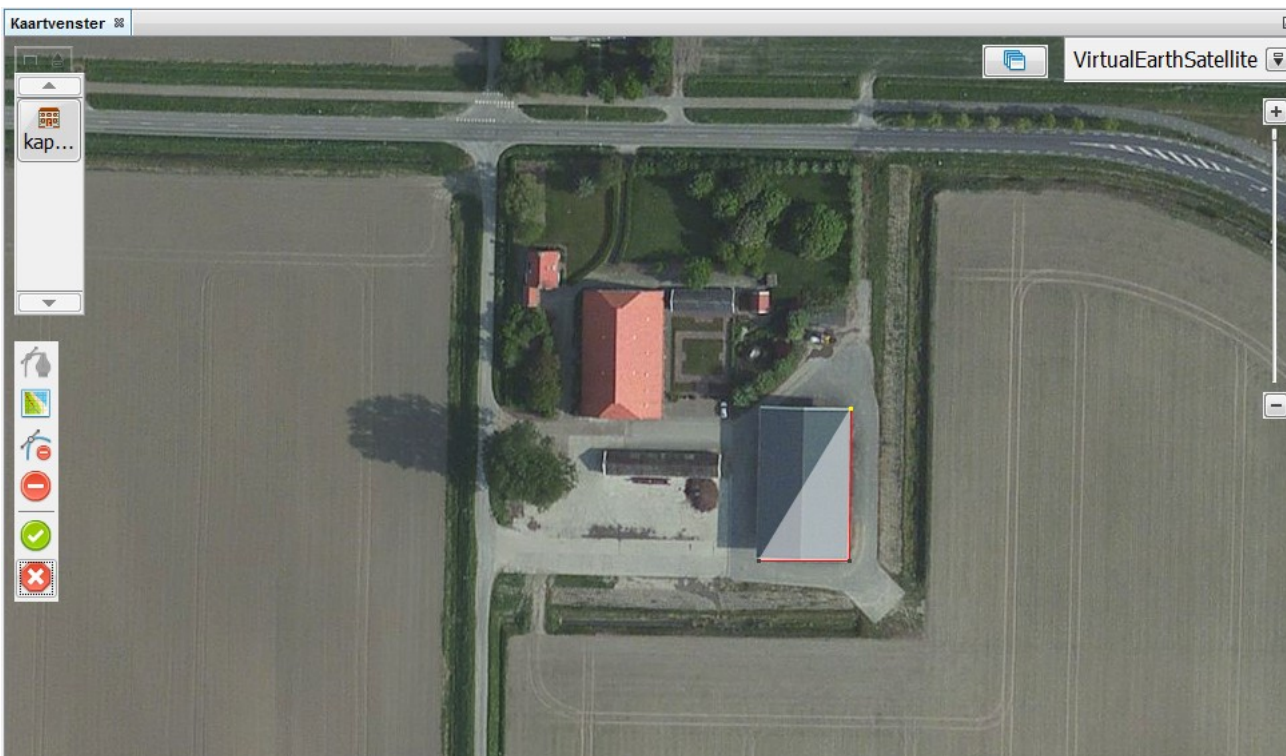
A screen 'New Building' will appear with a few administrative entries.

When a building is created you can drag it to the map (click, hold and drag).

The map will go to drawing-mode: the mouse-pointer changes to a '+' and with the edit-menu a field can be drawn.

The buttons have the following functions:

-  Pen for drawing.
-  Navigation to slide or zoom to the right location.
-  Cancel last point.
-  Cancel all drawn surface-information.
-  Store the drawn field.
-  Stop.



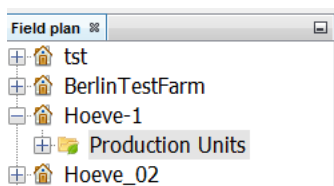
3 Create a fieldplan

3.1 Production-units

A farm is more or less a static unity of fields, machines, workers et cetera.

A fieldplan gives meaning on the dynamic side and production-units form the basis for that fieldplan.

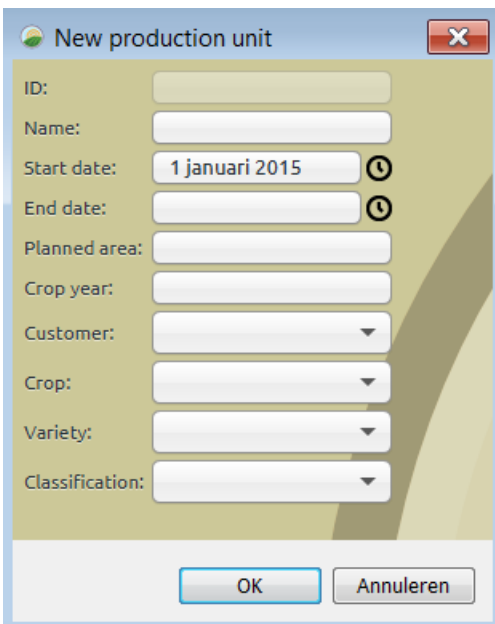
A production-unit links specific crops/races to a specific surface for a specific period in time. It is a class of surfaces with the same crop and race.



Pick a farm in the frame Farms.
Expand this by clicking +.

Click Production-unit and create a new one (right-click, new 'Production-unit').

A screen 'New Production-unit' will appear with a few administrative entries.



Planned area is global surface planned for this production-unit. This may differ from the final surface when picking the fields.

Cropyear is the year of harvest, wheat for instance is planted in the fall will belong to the cropyear and fieldplan of the following year.

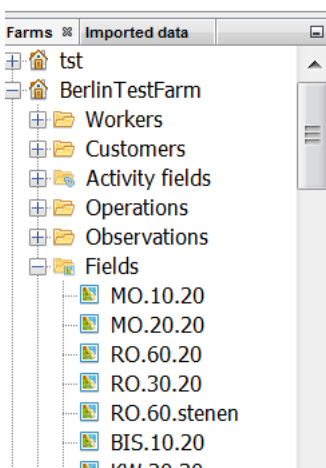
For entries Customer, Crop, Variety and Classification you can pick an option from the list.

3.2 Link fields to a production-unit

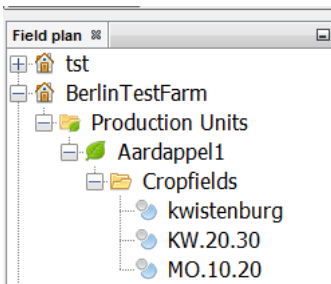
The newly created production-unit is an administrative unit.

The production-unit gets significance within the fieldplan by linking fields to it:

- 1 Expand the **farm** by clicking the +.
- 2 Expand the **fields** by clicking the +.



- 3 Select a field (or multiple by holding 'ctrl' or 'shift' during selection).



- 4 Drag the field, or fields, to the production-unit unit 'Fieldplan'.

4 Import sensor-data

During or before the growth-season many different observations can be made.


The, now supported, collected sensor-data are in most cases collected by biomass-sensors. The obtained data can be provided as digital files in different formats.

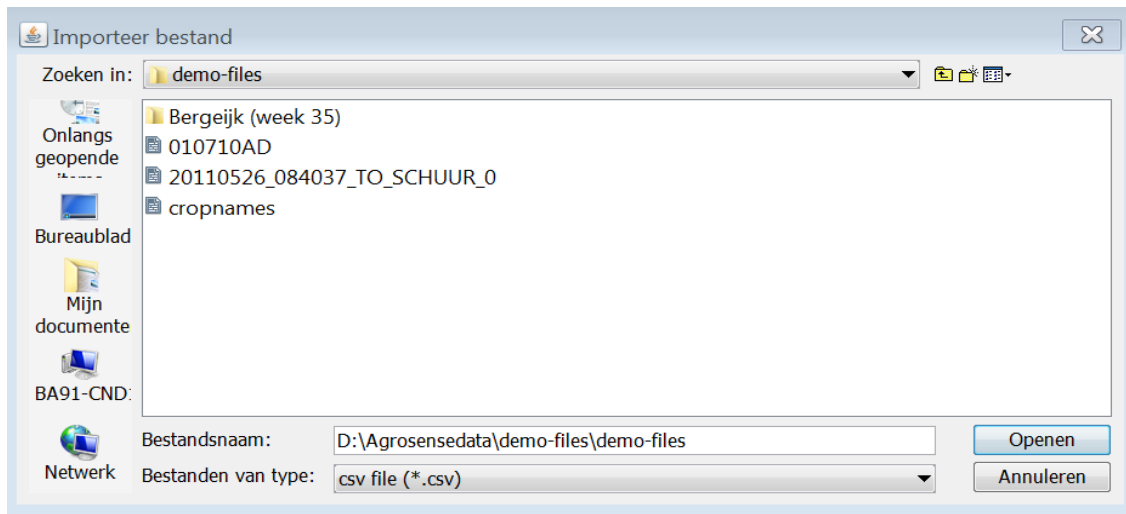
Importing data and giving meaning to it is done in two steps:

- 1 Import the raw data.
- 2 Process the data into digital observations of a specific type e.g. NDVI.

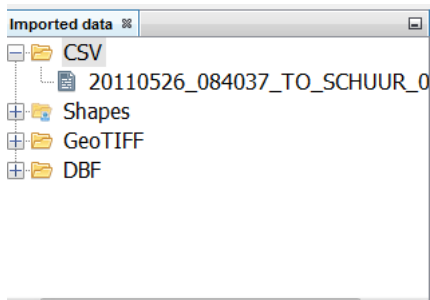
4.1 Import raw data

The following steps should be taken:

1. Choose  'Import' in the menu under 'File' to import.
2. Navigate to the right folder on your drive.
3. Choose ' csv shapefile' (*.csv) in the file-types option so the list will only contain csv-files like cropcircles. Choose 'dbf file' (*.dbf) for for instance Greenseeker or Fritzmeier files.



4. Select the right file.
5. Choose 'open'.
6. The imported file will appear under the 'Imported data' tab in the 'CSV' folder.



4.2 Processing imported data

Imported data are stored in a generic format that may contain different types of data.

Giving imported data meaning within AgroSense is accomplished this way:

1. Choose the file in the 'imported data' map.
2. Open the file (right-click, open).

20110526_084037_TO_SCHUUR_0.csv

Table Source

Separator character **Semicolon** Number of lines to skip **3**

\$L...	Lo...	Date	Ti...	He...	La...	Lo...	Alt...	Sp...	Fix...	IRMI	TC...	OS...	TC...	W...	N...
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	0.0	4	723...	110.0	0.628	0.175	410.0	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	0.0	4	725...	140.0	0.634	0.221	412.7	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	0.3	4	723...	148.0	0.647	0.229	417.7	0.085
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.5	4	724...	141.0	0.657	0.215	421.9	0.078
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.5	4	724...	129.0	0.593	0.217	395.6	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	2.1	4	724...	93.0	0.459	0.202	333.8	0.070
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	2.1	4	724...	128.0	0.606	0.212	401.2	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	30.7	2.1	4	724...	114.0	0.600	0.190	398.5	0.078
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	2.1	4	724...	133.0	0.653	0.203	420.1	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.7	4	724...	143.0	0.603	0.237	399.8	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.4	4	725...	95.0	0.474	0.200	341.2	0.075
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.4	4	724...	105.0	0.582	0.180	390.9	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.2	4	723...	160.0	0.563	0.284	382.6	0.065
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.4	4	361...	125.0	0.532	0.234	368.8	0.068
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.2	4	722...	109.0	0.455	0.240	331.6	0.063
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.3	4	725...	143.0	0.541	0.264	372.5	0.067
51....	5.1...	26....	06:...	1	51....	5.1...	30.8	1.4	4	725...	100.0	0.536	0.188	370.5	0.073
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.3	4	723...	119.0	0.592	0.200	395.3	0.081
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.3	4	727...	174.0	0.588	0.295	393.6	0.070
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.8	4	723...	132.0	0.573	0.231	386.9	0.068
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.8	4	724...	120.0	0.624	0.192	408.6	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.8	4	723...	61.0	0.310	0.199	252.2	0.056
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.7	4	724...	95.0	0.481	0.197	344.8	0.065
51....	5.1...	26....	06:...	1	51....	5.1...	30.9	1.9	4	724...	110.0	0.658	0.167	422.3	0.082
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	2.4	4	724...	139.0	0.663	0.210	424.0	0.078
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	2.8	4	724...	68.0	0.416	0.164	311.8	0.064
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	2.9	4	724...	119.0	0.451	0.264	329.8	0.068
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	3.0	4	725...	65.0	0.298	0.219	244.7	0.062
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	2.9	4	724...	115.0	0.596	0.193	396.6	0.078
51....	5.1...	26....	06:...	1	51....	5.1...	31.0	3.0	4	724...	113.0	0.679	0.166	430.6	0.084
51....	5.1...	26....	06:...	1	51....	5.1...	31.1	4.2	4	724...	111.0	0.678	0.164	430.1	0.082
51....	5.1...	26....	06:...	1	51....	5.1...	31.1	4.0	4	724...	113.0	0.686	0.165	433.0	0.084
51....	5.1...	26....	06:...	1	51....	5.1...	31.1	3.7	4	724...	114.0	0.691	0.165	435.2	0.086
51....	5.1...	26....	06:...	1	51....	5.1...	31.1	3.7	4	724...	119.0	0.676	0.177	429.2	0.082
51....	5.1...	26....	06:...	1	51....	5.1...	31.2	3.7	4	724...	96.0	0.572	0.167	386.4	0.078
51....	5.1...	26....	06:...	1	51....	5.1...	31.2	3.7	4	724...	98.0	0.592	0.166	395.1	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	31.3	3.7	4	725...	104.0	0.564	0.185	383.0	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	31.3	3.9	4	724...	100.0	0.572	0.175	386.5	0.079
51....	5.1...	26....	06:...	1	51....	5.1...	31.3	3.8	4	724...	101.0	0.637	0.159	413.9	0.081
51....	5.1...	26....	06:...	1	51....	5.1...	31.4	3.8	4	724...	107.0	0.632	0.169	412.0	0.085
51....	5.1...	26....	06:...	1	51....	5.1...	31.4	3.8	4	724...	97.0	0.613	0.158	403.8	0.080
51....	5.1...	26....	06:...	1	51....	5.1...	31.4	3.8	4	724...	122.0	0.652	0.188	419.8	0.080

Mapping **SENSOR: Fritzmeier** * **Process**

3. In the properties window:

- Data is positioned in the table based on the picked separation-marker.
- When the application recognizes the ordering a mapping will be suggested.
- Click 'Process' to finalize.