Operating instructions

CRG Vision10

AGRA-GPS LTD

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AGRA-GPS Ltd

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Editorial content

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1 Safety

1.1 Basic safety instructions

The following safety-related information describes possible hazards and residual risks that may occur when using the product. To avoid personal injury and damage to property, read the instructions listed here carefully and observe them when using the product.

Contact the manufacturer if anything is unclear.

Hazards during operation / installation / maintenance / disassembly / transportation / storage

- The product, its accessories and packaging material are not toys. Do not allow small children to play with it, as small children can injure themselves or others or damage the product. Keep the product with all its parts and accessories and its packaging material out of the reach of small children.
- Parts of the product can reach temperatures of >65 °C during operation. Allow the product to cool down before touching it.
- Only install the product at a sufficient distance from the intended operating position (especially the head). Observe the applicable national laws.
- Only operates the product at a minimum distance of 20 cm from other radio equipment. Observe the applicable national laws.
- Do only operate the product at a sufficient distance from the body (especially the head). Observe the applicable national laws. A minimum distance of 40 cm from the head is recommended.

Electrical hazards

- Unauthorized opening and/or repair of the product or accessories can lead to electric shock, product damage, fire, personal injury and other hazards.
- Observe the instructions on plugs and the operator-side power supply, including all connection cables (e.g. phase, polarity).
- Always keep the product and its accessories dry. Do not immerse yourself in liquids. Do not touch the product with damp or wet hands.

Hazards due to electromagnetic radiation / radio radiation

- Do not use the display in the vicinity of people with pacemakers or other medically necessary electrical devices.
- Do not use the display near small children or babies.
- Do not use the display in the vicinity of strong electromagnetic fields.

Hazards due to acoustic signals

- To avoid hearing damage, do not use the product continuously at full volume.
- To avoid hearing damage, use the product at medium volume.

Mechanical hazards

- Unauthorized opening and/or repair of the product or accessories can lead to electric shock, product damage, fire, personal injury and other hazards.

1.2 Intended use

The CRG Vision10 is an operating device with pre-installed software for use in agricultural machinery, such as tractors, implements or self-propelled vehicles.

The product and its software provide functions that control connected agricultural machinery and subsystems using the ISOBUS communication protocol (ISO 11783).

The software may only be installed, set up and run on operating devices intended by the manufacturer.

Only accessories approved by the manufacturer may be used.

Foreseeable misuse

- Independent maintenance / repair or disposal.
- Use of the product on public roads.
- Use of the product as a driver assistance system.
- Non-compliance with the applicable documents.
- Creating unsafe states on connected devices.
- Disassembling or modifying the product.
- Use of the product if it is damaged or faulty.
- Operating the product without contact protection on the opposite side.
- Use of the product if the power supply or other connections are damaged or faulty.
- Use of the product with a power supply not intended for this purpose or other connections.
- Use of the product outside the specified ambient conditions.
- Removing the pre-installed software. Unauthorized addition of additional software (system updates provided by the manufacturer / dealer are not affected).

Operator's obligations

- The owner must ensure that all operators have read and understood the instructions, in particular the safety notices and instructions - including "Other applicable documents".
- The operator must ensure that the product can be operated safely and is regularly maintained (including software updates).
- In the event of faults, the operator must inform the manufacturer / dealer.

Applicable documents

- Quick-Start Document from Agra-GPS LTD.

1.3 Structure and meaning of warning notices

All warnings in these instructions are presented as follows:

WARNING
This signal word indicates medium-risk hazards that could possibly result in death or serious injury if not avoided.

CAUTION
This signal word identifies hazards that can result in minor or moderate physical injury if they are not avoided.

NOTICE
This signal word indicates hazards that can result in material damage if they are not avoided

1.4 Markings and instructions on the product

The product and its accessories are marked with labels and information plates that provide further information on handling and use.

WARNING
Missing marking and plates
The markings and plates must be clearly legible for the entire service life of the product and must be replaced immediately if damaged or permanently soiled (contact AGRA-GPS LTD or dealer).

1.5 Alarms and messages

Warnings and alarm messages

The product displays warning and alarm messages.

An acoustic signal can also be switched on/off and the volume can be set for defined messages.

Confirm all messages and follow the instructions.

Avoid data loss
Data loss can have an impact on your collected data for example, field data and counters.

Follow the instructions for software actions that cannot be undone.

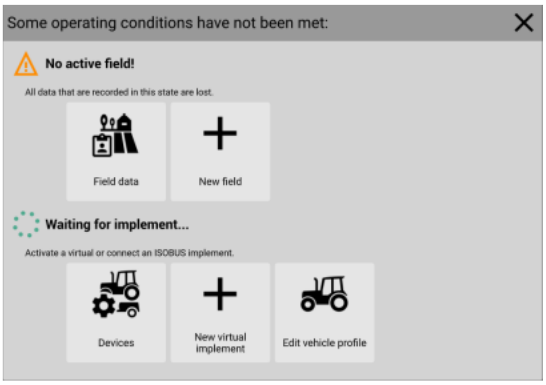
Follow the guided operation in the software.

The software guides you with input assistants (so-called wizards) or draws your attention to incorrect entries with warnings and alarms.

The software uses a warning symbol to indicate that faults have occurred or actions are necessary.

For example:

- System faults
- Correct the input data
- Enter data
- Perform action (e.g. Starting / stopping a task - Editing a field)



2 Information about these instructions

2.1 Validity of the instructions

These instructions apply from software version V01.20.0 onwards

2.2 General information

This manual contains information and instructions necessary for the safe and efficient use of the CRG Vision10 (hereinafter referred to as “product” or “software”).

- People carrying out work on the product must have carefully read and understood these instructions before starting work.
- The basic prerequisite for safe working is compliance with all safety-related information and instructions in this manual.
- Keep these instructions in an easily accessible place so that they are always available for reference.
- If you have any questions or problems handling the product, contact the manufacturer.

2.3 Illustrations in the instructions

Illustrations in the instructions will help you to find your way around the individual screens of the software.
They serve as a reference for you
Please note that the illustrations shown in the instructions may differ from the actual images on the display.
The information displayed depends, for example, on the machine type or the configuration of the machine.

2.4 Directional information in the instructions

All directional information in these instructions always refers to the direction in which the vehicle is travelling.

2.5 Structure of instructions

The instructions contain step-by-step instructions on how to carry out certain tasks with the product.
The following symbols are used:

Icon	Meaning
✓	Prerequisite that must be fulfilled before an action can be carried out.
1. 2.	Action steps must be carried out one after the other.
=>	Result of the complete action or a specific action step.

2.6 Terms and abbreviations

Abbreviation	Meaning
UT	UT Universal terminal or virtual terminal
TC	Task Controller
GNSS	Global Navigation Satellite System
FMIS	Farm Management Information System
NTRIP	Networked Transport of RTCM via Internet Protocol is a protocol that makes it possible to transmit GNSS correction data in real time over the internet, thereby significantly improving the accuracy of GNSS measurements.

2.7 Range of functions and features

The functional scope of the software depends on the activated license and its features.

Sections in these instructions generally describe functions of the basic or standard license. Extended functions that are included in other licenses are highlighted accordingly in this documentation.

The overview of available or activated licenses is displayed in the software (see Licence overview)

2.8 Contact details

Address	AGRA-GPS Ltd. Box 2585 Stony Plain, Alberta T7Z 1X9, Canada
Phone	+1 (825) 247-2477
e-mail	sales@agragps.com
Web	www.agra-gps.com

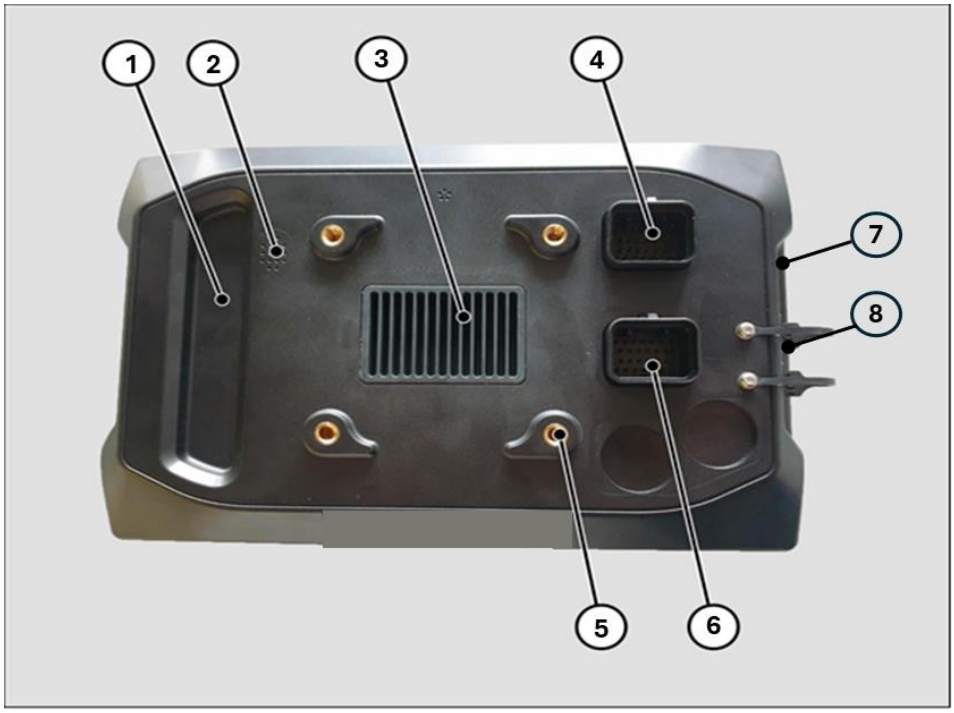
3 Technical data

3.1 Product overview

Operating side

1 Touchscreen for operation

View of the rear (opposite operating side)

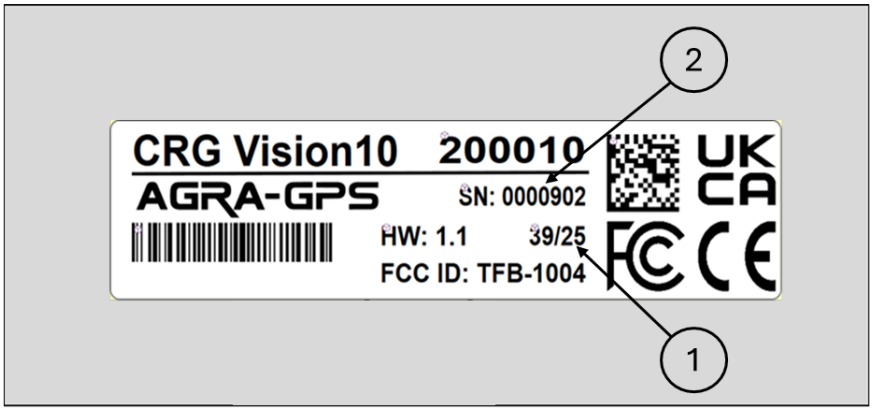


1 Recessed grip
2 Loudspeaker
3 Heat sink
4 Universal plug connector **A**
5 4x threaded bushes (M6)
6 Universal plug connector **B**
7 On/Off button
8 2x USB type A socket, with protective caps

3.2 Product data

Dimensions and mechanics	
Dimensions	251 x 170 x 79 mm
Weight	1020 g
Touch screen	1280 x 800 pixels, projected capacitive
Material / Housing type	PC-ABS plastic housing RAL 9005
Fastening	4x M6 threaded bushes (VESA75)
Protection class	IP6K5 according to ISO 20653
Radio radiation	
WLAN 2.4 GHz:	
Standard	IEEE 802.11 b/g/n
Output power 802.11(b)	16 dBm
Output power 802.11(g)	13 dBm
Output power 802.11(n)	11 dBm
WLAN 5 GHz:	
Standard	IEEE 802.11 n/a/ac
Output power 802.11(a)	15 dBm
Output power 802.11(n/ac)	13 dBm
Output power 802.11(ac)	9.5 dBm
WLAN-Antenna	2.4 GHz and 5 GHz; max. gain 2 dBi; impedance 50 Ω
Power supply	
Nominal voltage	12 V DC
Operating voltage	8 - 36 V DC
Reverse polarity protection	-36 V MAX
Power consumption:	0.8 A at 13.8 V DC
External fuse	Attach external 5 A fuse
Ambient conditions	
Operating environment	-20 °C ... +70 °C, rel. humidity: 10 % ... 90 %
Storage environment	-30 °C ... +80 °C, rel. humidity: 10 % ... 90 %
Interface Connecter USB	
2 x USB	USB 2.0 Type-A (Observe the pin assignment)
Interface Connector A	
CAN1	First CAN bus; CAN-FD and CAN2.0B (max. 1Gbit/s)
RS232	Serial Interface, 4800-115200 baud
Interface Connector B	
CAN2	Second CAN bus; CAN2.0B (max. 500kBit/s)

3.3 Type plate



Example – Type plate

1 Product hardware version **2** Product serial number

3.4 Scope of delivery

- CRG Vision10 display
- Quick guide

4 Installation and commissioning

Carry out installation and commissioning in this order:

1. Unpacking and transport inspection
2. Fitting contact protection
3. Attach to bracket
4. Electrical connection

During installation, the product must be attached to a secure bracket.

4.1 Unpacking and transport inspection

WARNING
Choking hazard

The product, its accessories and packaging material are not toys.

a) Do not allow small children to play with it, as small children can injure themselves or others or damage the product.
b) Keep the product with all its parts and accessories and its packaging material out of the reach of small children.

NOTICE
Intended use

The product and the accessories supplied may only be stored, transported or disposed of in the original packaging.

a) Do not damage or dispose of the original packaging.

NOTICE
Completeness of the delivery

Contact the manufacturer or dealer in the event of incomplete delivery or damage due to inadequate packaging or transportation.

a) Do not put the product into operation.

Procedure

1. To unpack the product, remove it from the outer packaging.
2. Then remove the packaging film and packaging inserts.

4.2 Fitting contact protection

Contact protection can be installed using various methods. The methods depend on the mounting conditions. The use of a suitable VESA adapter is recommended for easy installation.

Mounting variants:

Prerequisites	Remark	Assembly
▪ Bracket is available and compatible with C-ball connection.	▪ Only if VESA adapter is included in the scope of delivery. ▪ Requires bracket with Cball connection (1.5 inch/38 mm).	▪ Mount VESA adapter as contact protection
▪ Bracket is available with matching VESA adapter.	▪ Requires bracket with VESA adapter (75 x 75 mm hole pattern).	▪ Mount VESA adapter as contact protection
▪ Individual contact protection		▪ Installing individual contact protection

Missing accessories or tools can be obtained from the dealer.

4.2.1 Mount VESA adapter as contact protection

Procedure

✓ 4 x M6 fastening screws, maximum tightening torque 3 Nm

✓ VESA adapter

1. Attach the VESA adapter to the back of the product.
2. Fasten the VESA adapter to the threaded sockets provided using four fastening screws on the back of the product.
   - Do not exceed the maximum tightening torque of 3 Nm.
   - Do not exceed the maximum screw-in length of 7 mm.
   - If necessary, use suitable washers (only suitable for M6 threads).
3. Ensure that all connections are tight and that the product or the fastening screws do not come loose by themselves.
   - If necessary, use screw locking varnish.

4.2.2 Installing individual contact protection

CAUTION
Hazard due to combustion, hazard due to parts coming loose on their own

The heat sink can reach temperatures of >65 °C during operation.

a) Ensure that the material and composition of the individual contact protection provides sufficient protection against heat.
b) Ensure that the material and composition of the individual contact protection can withstand the conditions of daily work and that it cannot come loose on its own (e.g. due to vibrations, heat).

NOTICE
Lack of air supply to the heat sink

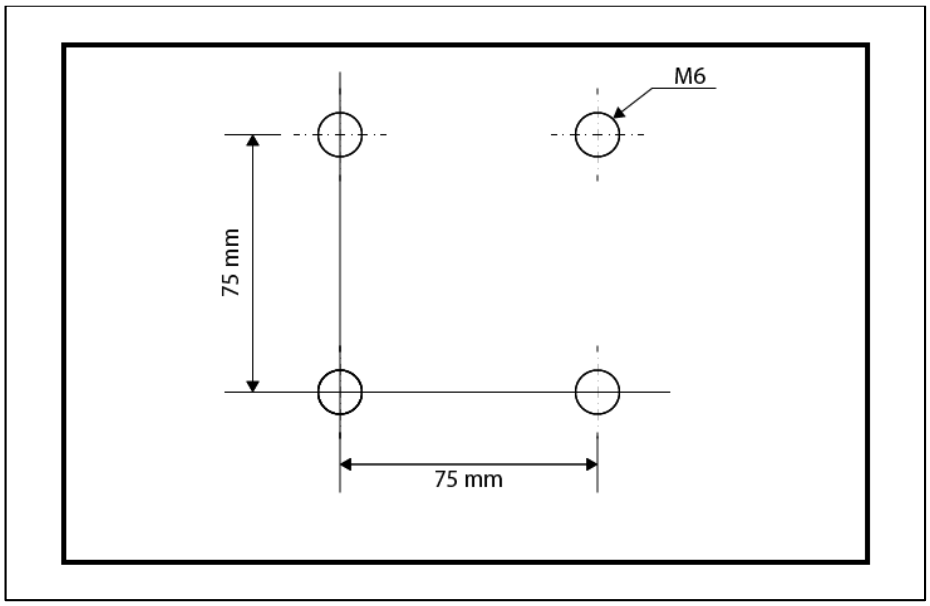
The air supply to the heat sink must be ensured for operation.

a) The individual contact protection must not completely cover the heat sink.

Procedure

✓ 4 x M6 fastening screws, maximum tightening torque 3 Nm

✓ Individual contact protection is prepared by means of a drill hole sketch for attaching the fastening screws



Drill hole sketch with hole pattern 75 x 75 mm

4.3 Attach to bracket

CAUTION
Hazards due to electromagnetic radiation

The product transmits and receives electromagnetic radiation (e.g. WiFi). Insufficient distance can lead to damage to the health of persons or property in the vicinity.

a) Always install and operate the product at a sufficient distance from the subsequent operating position (especially the head). A minimum distance of 40 cm is recommended.
b) Always install and operate the product at a minimum distance of 20 cm from other radio equipment

NOTICE
Incorrect alignment
If the device is incorrectly aligned during installation, the information on the display will be incorrect.

Observe the orientation of the product during installation.

The on/off button must be located on the right-hand side of the product (lefthand side when viewed from above from the operator's perspective).

The product with contact protection must be attached to a secure holder.
Observe the product information for the bracket (e.g. operating instructions).

4.4 Electrical connection

WARNING
Electric shock, reverse polarity

Connecting the power supply incorrectly or reversing the polarity can lead to fire, electric shock or damage to property.

a) Only use the specified power supply and observe the assignment of the connection.
b) Observe the polarity and phases of the electrical connections

Notice

Intended use

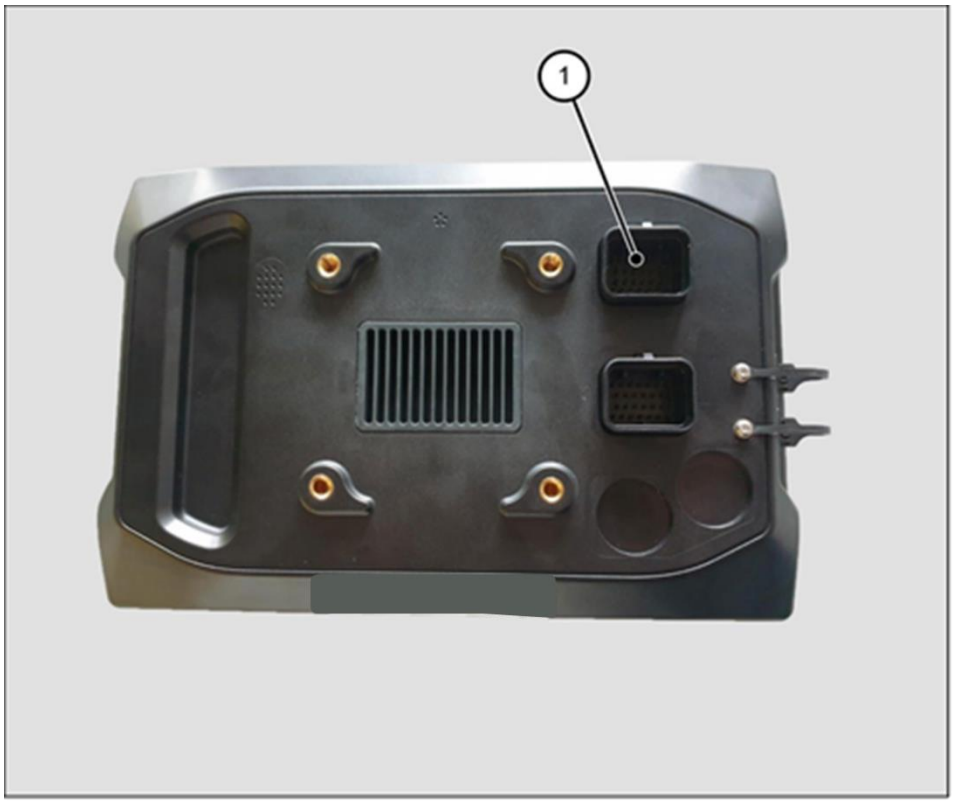
Before making the electrical connection, the operator must ensure that all pin assignments of the connections allow the product to be used as intended. This includes, for example, the assignment for CAN ISOBUS (ISO 11783) and GNSS sources.

a) Observe the intended pin assignment and configuration of the product.

Procedure

✓ Configured connection cable (type TE Connectivity 3-1437290-8)

1. Connect the cable to the plug connector A (see illustration).



View of the rear (opposite operating side)

1 Universal plug connector A

4.5 Mounting and connecting an analogue camera

An analogue camera can be connected to the terminal using a pre-configured connection cable.

NOTICE
Material damage
Use of incorrect accessories.

a) Only use accessories approved or provided by the manufacturer.

NOTICE
Automatic activation
The system has a function for automatically activating the analogue camera when reversing (see Using analogue camera at work).

If you use this function, mount and align the analogue camera on the vehicle accordingly.

Procedure

✓ AGRA-GPS connection cable
✓ AGRA-GPS analogue camera (PAL)

1. Make sure that the terminal is switched off.
2. Connect the analogue camera to the connection cable.
3. Ensure that the connection cable is connected to the intended universal plug connector.

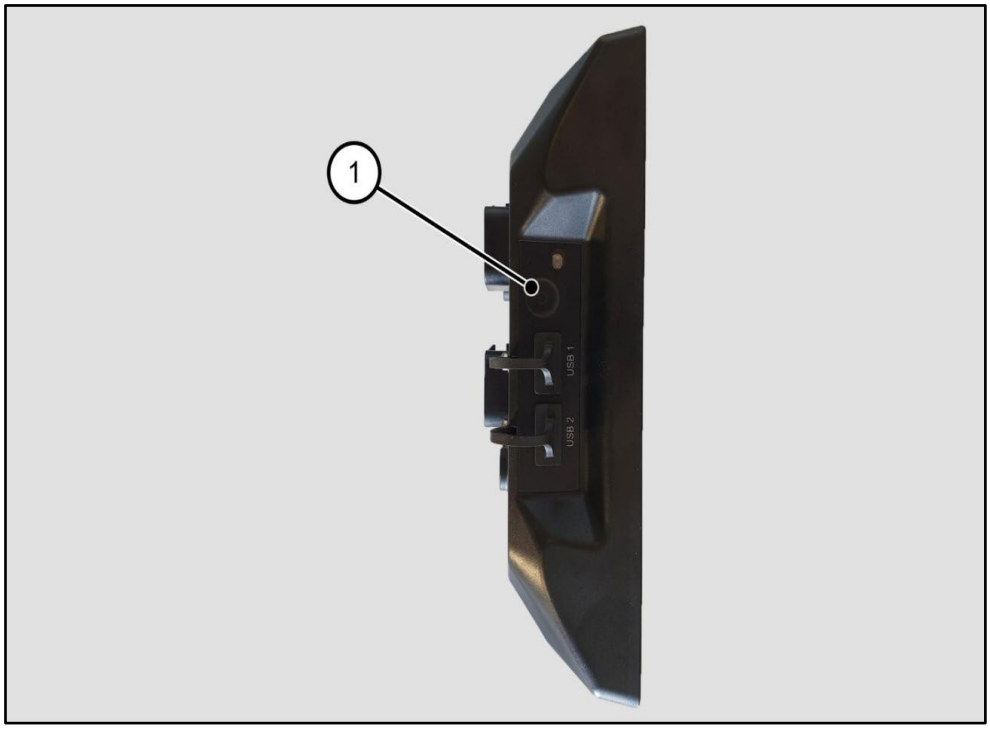
4.6 Switching on and off

NOTICE
Incorrect operation can result in data loss.

a) To ensure trouble-free operation, stop all ongoing work.
b) Only then switch off.

Procedure

1. To switch the product on or off, press and hold the on/off button until an acoustic signal sounds.



Side view (right)

1 On/Off button

5 First steps

In this chapter, you will learn how to use the software and how to prepare for your first work assignment.

5.1 Overview of the ISOBUS

ISOBUS (ISO 11783) is a standardized communication system that enables the networking of agricultural machinery and equipment.

What is the ISOBUS?
The ISOBUS (ISO 11783 standard) is an internationally recognized standard that makes it possible to connect agricultural machinery and equipment from different manufacturers and exchange data between them.

This standard was developed to improve interoperability and increase efficiency in agriculture.
The ISOBUS uses a uniform hardware interface and a standardized protocol for communication between different agricultural implements.

Functions of the ISOBUS in agriculture:

- **Implement networking**
  With ISOBUS, farmers can connect different machines such as tractors, combine harvesters, planters, fertilizer spreaders and more. This allows them to work more efficiently as the devices can exchange information and commands.
- **Data management**
  ISOBUS enables the collection, storage and exchange of data generated during agricultural work. This includes information on field yields, fertilizer consumption, soil quality and more. This data can be used for decision-making and the optimization of agricultural processes.
- **Automation**
  ISOBUS allows the automation of agricultural tasks. This means that machines can work, for example, to plow in a specific pattern or spread seed in predefined quantities.

5.2 How does CRG Vision10 work?

The CRG Vision10 is permanently installed in agricultural vehicles, such as tractors. The terminal runs software that provides functions that control connected agricultural machinery (e.g. implements or self-propelled machines) and subsystems using the ISOBUS communication protocol (ISO 11783).

External devices can be connected to the terminal via ISOBUS or other interfaces (e.g. GNSS receivers, ISOBUS connectors).

Typical setup and use

A typical procedure for setting up CRG Vision10 is as follows:

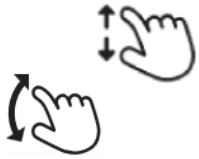
- Familiarize yourself with the operation (see 5.4 Operating the software).
- Carry out the initial setup using the wizard (see 0 Starting the software for the first time).
- Set up and adjust a tractor:
  - Select the GNSS device (GNSS source) and set it up for the tractor (see 5.6.1 Setting up the tractor's GNSS module).
  - Set all necessary connectors (see 5.6.2 Create connectors). Connectors are the physical coupling points of the connected agricultural devices.
- Then add the devices and assign them to the connectors (see 5.6.2 Create connectors)
- Create and import master data (see 6.2 Managing master data)
- Create suitable fields (see 6.4 Create fields).
- Create guidance lines for parallel driving (see 8.5 Use of guidance lines).

5.3 Touch screen

NOTICE
Dirty fingers

Only touch the touchscreen with a clean finger.

The product is operated using touch gestures.

Touch gesture	Function
	**Tap** ▪ for triggering buttons ▪ for selection in lists ▪ to operate the virtual keyboard and other input fields
	**Wipe** ▪ to scroll ▪ to change the display in the map view, e.g. scrolling, switching between 2D or 3D display
	**Swipe** ▪ to change the display in the map view, e.g. zoom, rotate

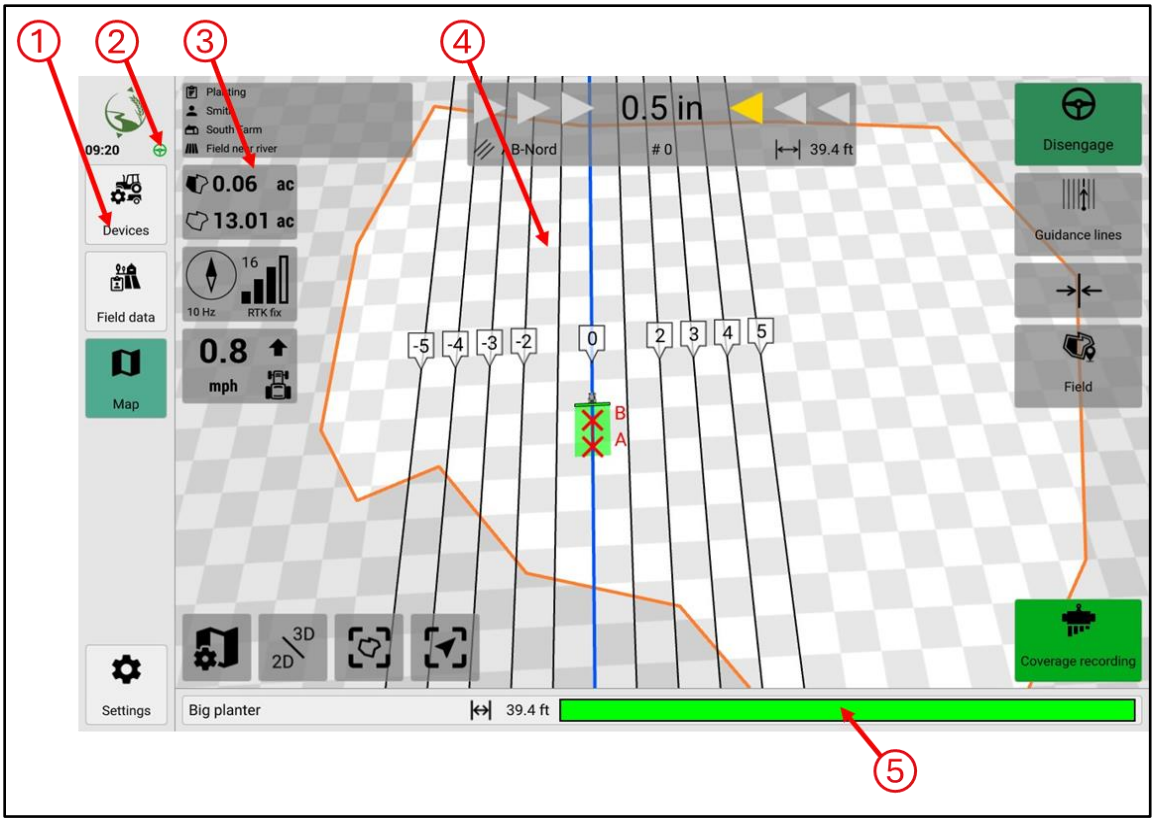
5.4 Operating software

5.4.1 User interface

The user interface of the software is clearly divided into two parts:

a) Menu - Navigation to all functions to make settings. Contains the status display.
b) Main view - Shows the map view or settings dialogs.

The user interface can be operated using touch gestures



1 Menu

2 Status display, e.g. time, WIFI

3 Quick buttons for changing the display view

4 Main view, e.g. map view with field boundaries, active guidance lines

5 Display for sections and booms

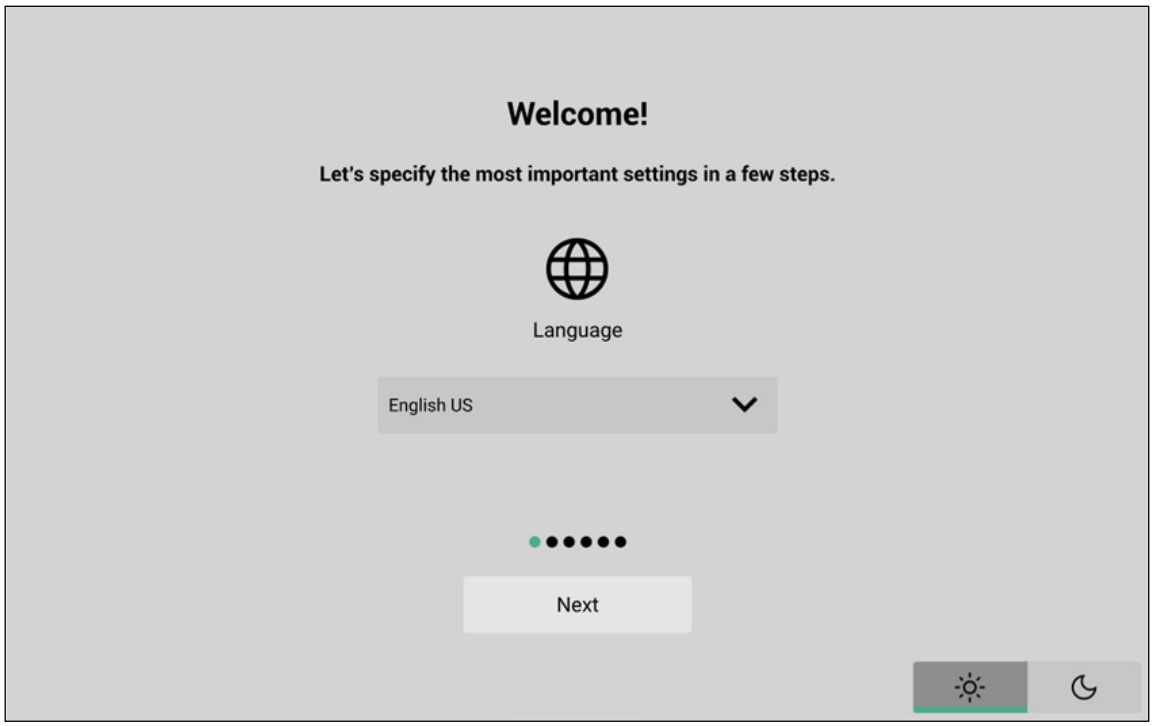
5.4.2 Input options

In the software, you can enter names / values and open additional edit-windows or information.
The following input options are available:

Icon	Function
	View / edit settings
	Edit / Rename
	Edit Opens a settings or information view
	Edit Starts a guided assistant
	Input via virtual keyboard
	View information
	Confirm input / action
	Close view or window End / cancel action
	Abandon Interrupts a connection (e.g. cloud service)
	Delete
	Start
	Pause
	Stop

5.5 Starting the software for the first time

When you start the software for the first time, you are automatically guided through some system settings.



Procedure

Time Zone
UTC is the Coordinated Universal Time and serves as a global reference time standard. All time zones are defined in relation to UTC. The reference point for UTC 0 is the prime meridian.

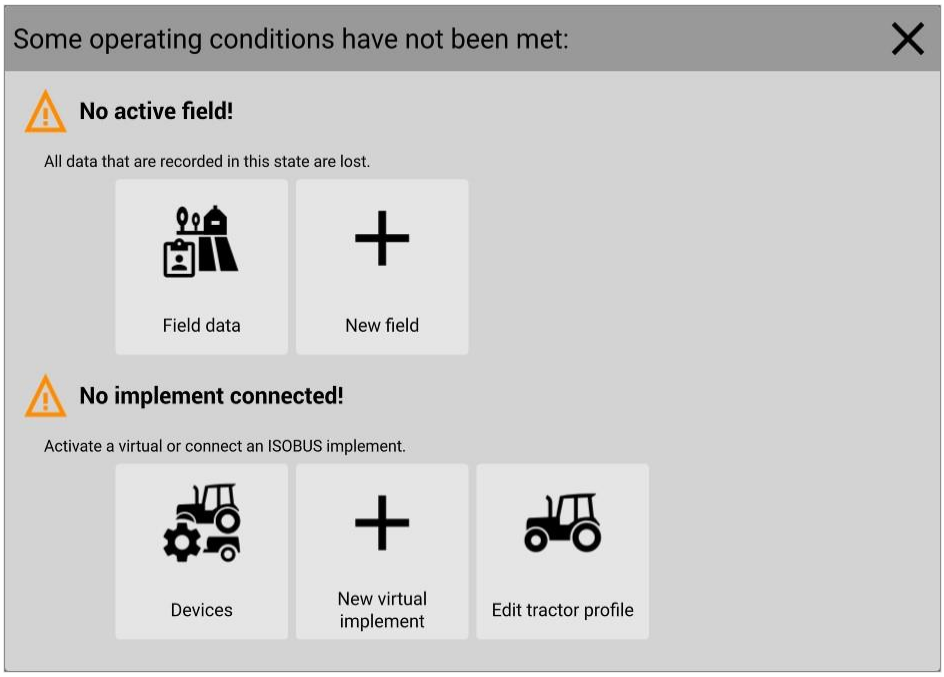
1. Select a language
2. Select a date format
3. Select a time format
4. Select a time zone
5. Select a GNSS source
   ⇨ As soon as the setup wizard has been successfully completed, the map view is displayed.

5.6 Prepare work assignment

In order to prepare and correctly record the work assignment, the following devices must be set up as standard after starting the software:

- Tractor
- GNSS source
- Implement

The following window provides an up-to-date overview of what needs to be set up:



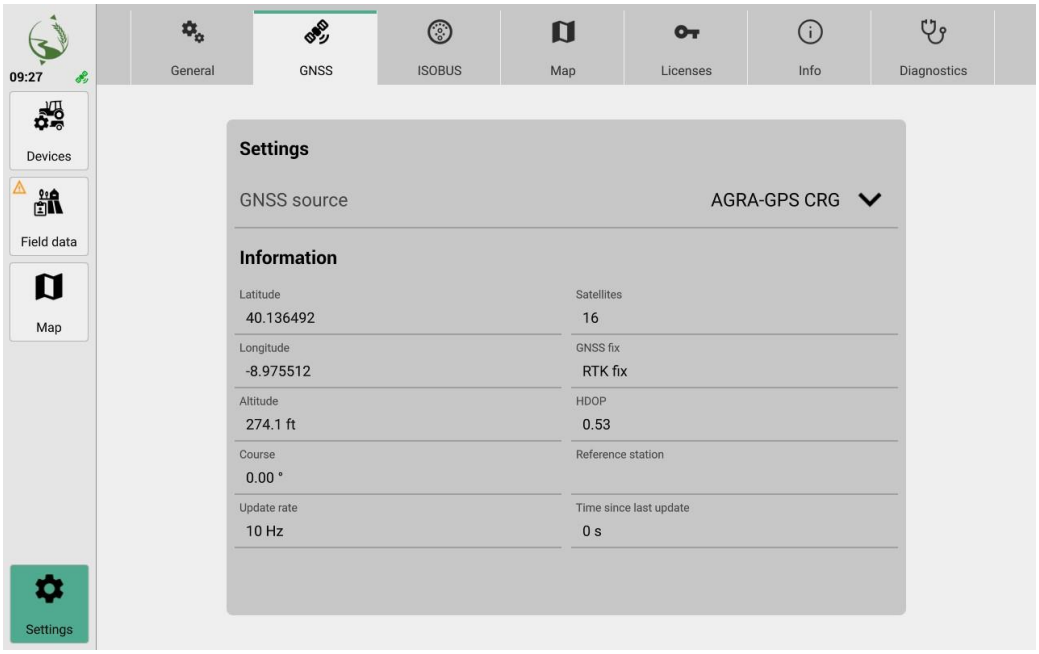
Overview window is not displayed

If the overview window is not displayed while the set-up is still being carried out, it can be called up again via **Map> Field data > Field**

5.6.1 Setting up the vehicle GNSS module

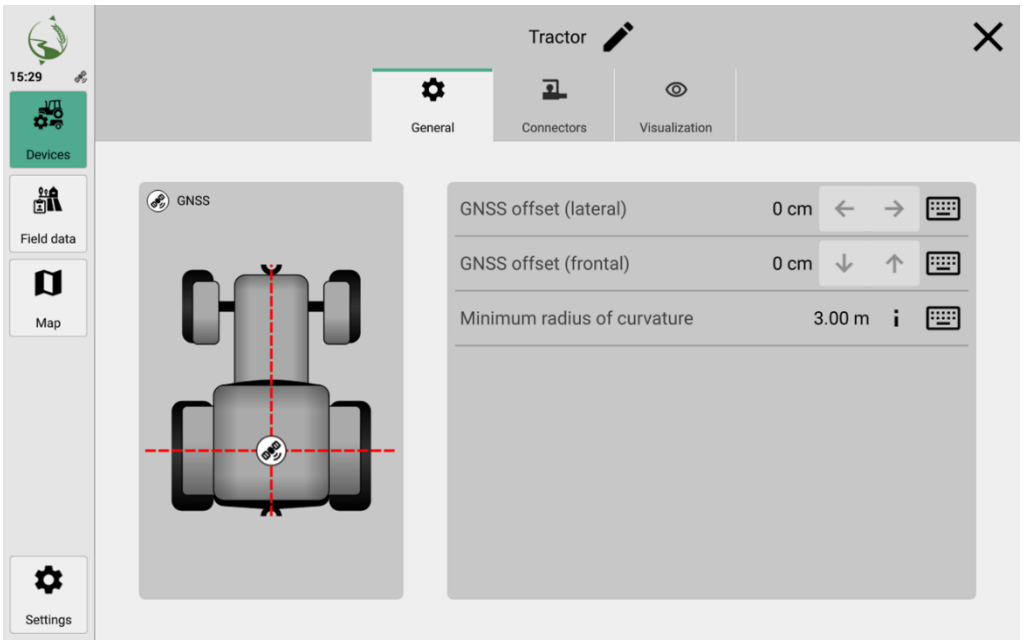
It is important to specify the position of the GNSS receiver so that the positions of the tractor and the implement can be calculated correctly. The GNSS speed can optionally be provided via the ISOBUS, if an implement requires this information, and it is not already provided by another system on the ISOBUS.

First, the appropriate GNSS receiver (GNSS source) must be selected in **Settings** > **GNSS source.**



Select as GNSS source always: “***AGRA-GPS CRG***”

The position of the GNSS receiver is then set in relation to the vehicle's rear axle.



NOTICE
Incorrect operation can result in data loss.
If the offset value is not set correctly, this will result in an incorrect map display.

Parts of the field could be covered twice or omitted.

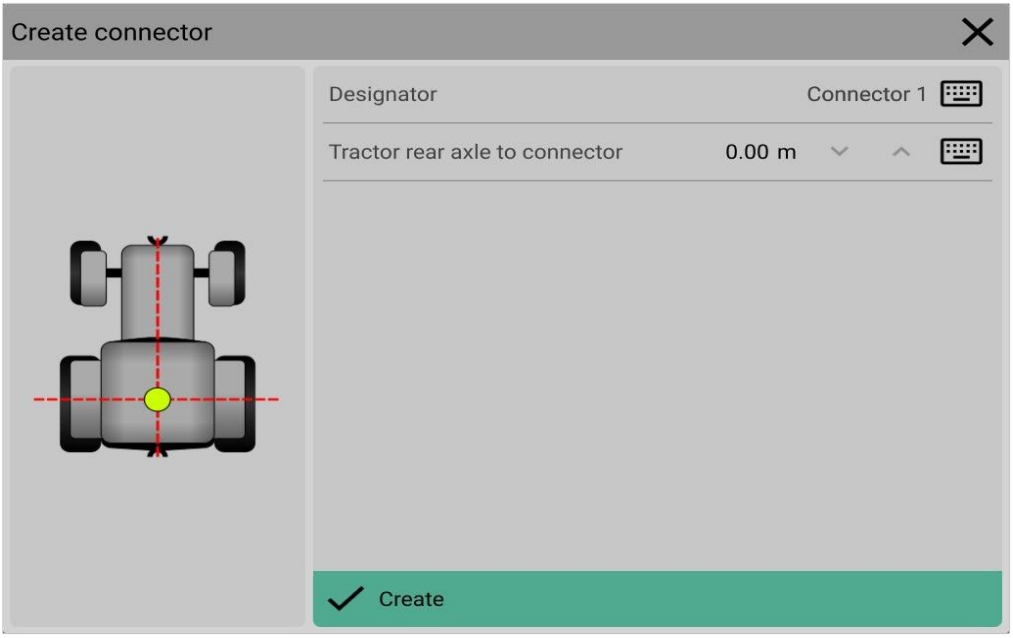
a) The offset value must always be set correctly.

Offset value
The offset value is always in relation to the center of the main axle of the vehicle.

5.6.2 Create connector

All connectors must be created and set up for each vehicle on which implements are to be mounted.
A connector is the physical coupling point via which the implement is mounted.
The position of a connector is specified in relation to the tractor rear axle.

All connectors
When setting up for the first time, it can be helpful to create and set up all connectors straight away
See also 7.1 Manage tractors

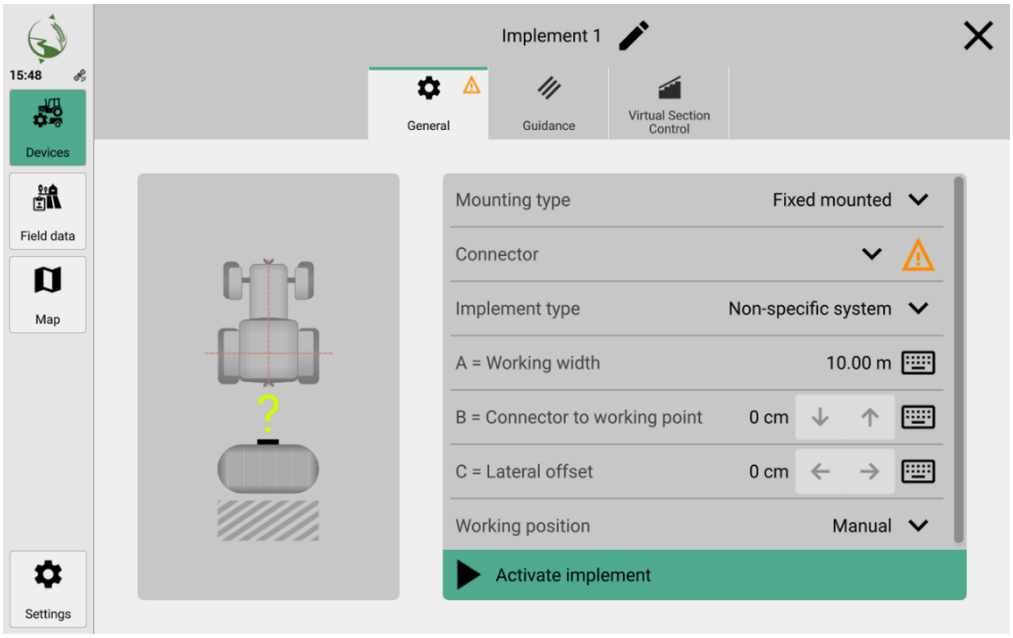


5.6.3 Add an implement

ISOBUS-capable and non-ISOBUS-capable implements can be connected to the vehicles. To be able to record data for a non-ISOBUS-capable implement, its geometry must be set independently.

The following applies:

- ISOBUS-enabled implements are automatically recognized by the software after connection and displayed in the Active implements list.
- Non-ISOBUS-capable implements are not automatically recognized. A so-called virtual implement must first be created for such implements.



Schematic aids (left) during setup

See also 7.3 Manage implements

5.6.4 Create a field

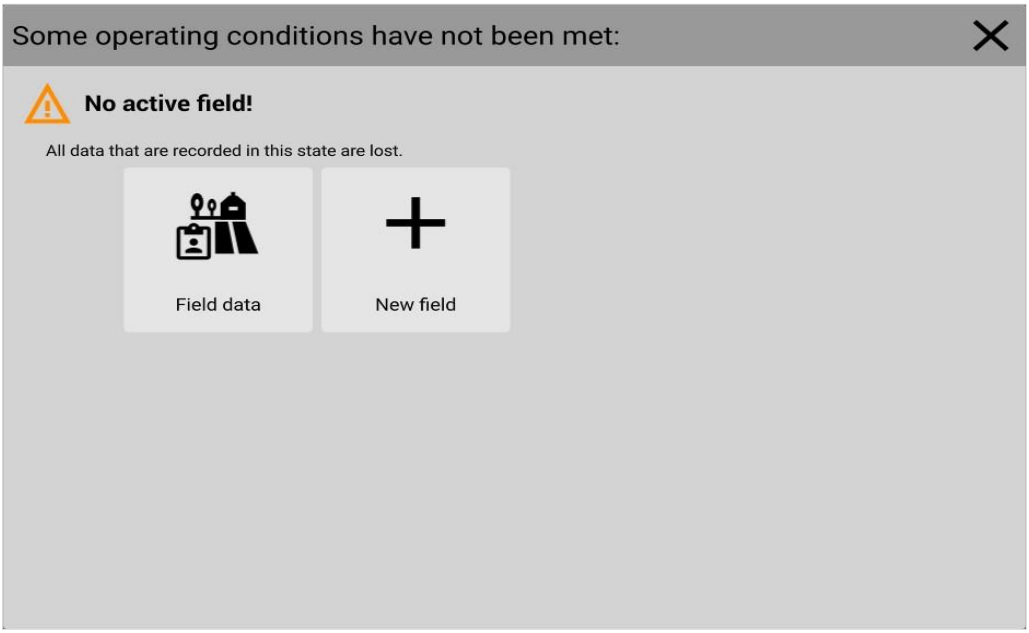
NOTICE
Data loss

If no field or job is started during the work operation, no data is recorded.

a) Make sure that a field or task has been started.

In the last step, a new field must be created that is to be used. The data for the field boundaries can then be imported.

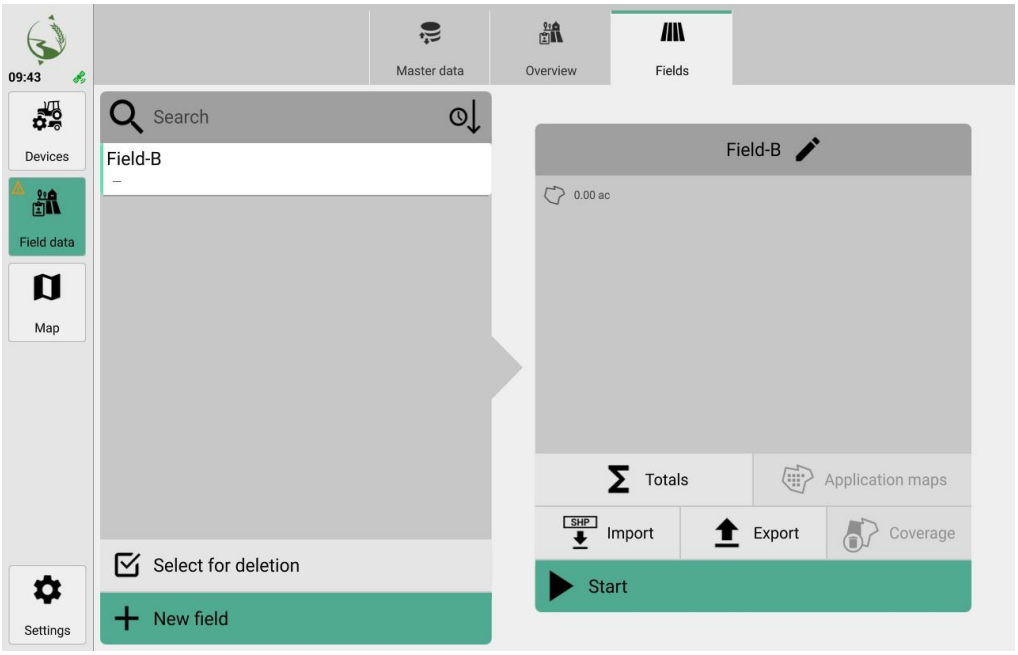
Before creating the field, master data can optionally be created and imported (e.g. from a Farm Management Information System). The master data can be linked to fields and contain additional data such as information on customers and farms (see Managing master data).



The following data can be uploaded using the import function via **Field data** > **Fields:**

- Field boundaries
- Guidance lines

The rough outline of the field or field boundaries is displayed on the right.



Recording starts as soon as the field is created in field mode.
See also under 6 Tasks, fields and farms

5.7 Map view and work assignment

The map view displays 3D representations of the tractor, the active field and the connected implements. Depending on the settings made, additional information (e.g. field boundaries, application rates) or driving aids (e.g. guidance lines, light bars) are displayed.

The map view is helpful for navigating and correctly processing the field during the work assignment.

To display the map view, press **Map** in the menu.

The map view can be rotated, panned and moved using **touch gestures.** It offers additional options, such as automatic following of the tractor.

NOTICE
Incorrect data recording

If the direction of travel of the tractor in the map view does not correspond to the direction of travel of the real tractor, the data will be recorded incorrectly.

a) Before starting work, always check that the directions of travel match.

6 Tasks, fields and farms

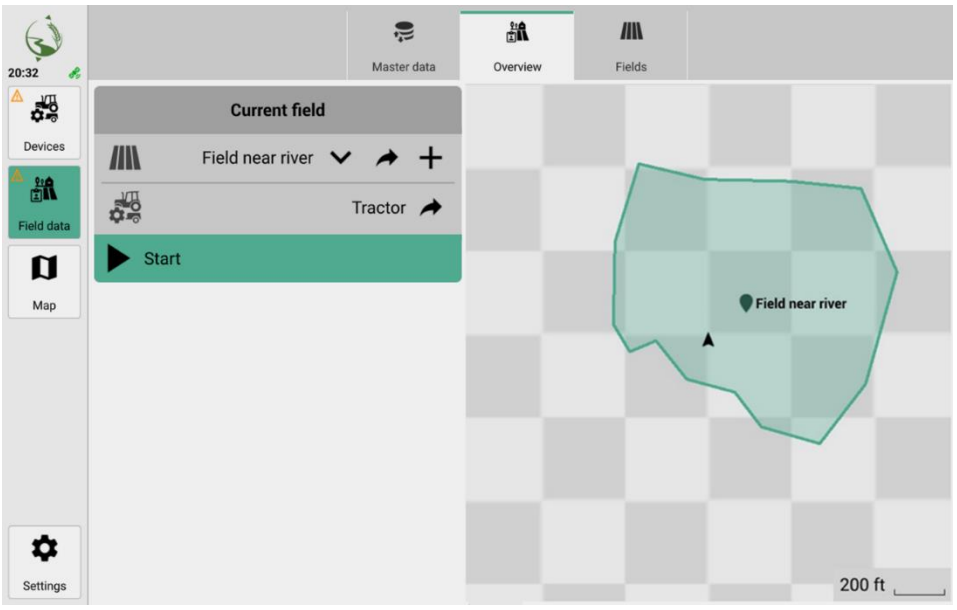
6.1 Overview

In the field data there are the options field mode and extended field mode.

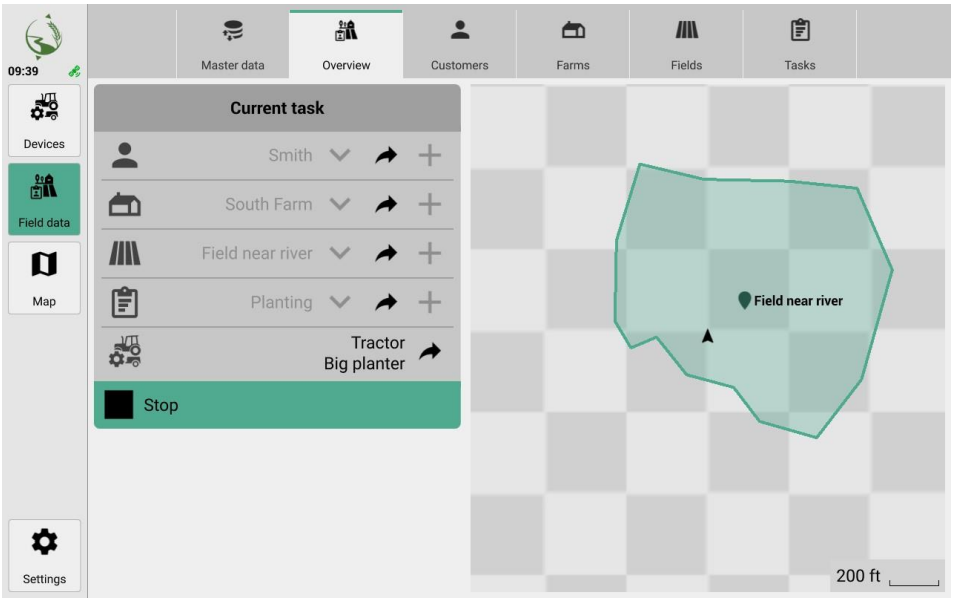
- Individual fields can be managed in **field mode.**
- The **extended field mode** offers additional options for task, customer and farm management.

This data can also be imported from FMIS data records.

Field mode



Extended field mode



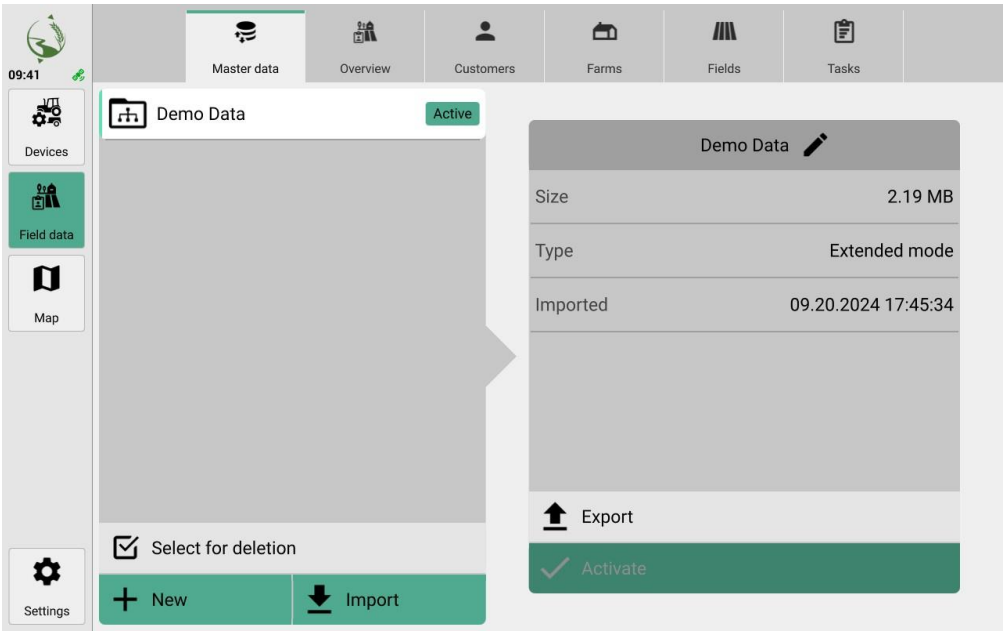
6.2 Managing master data

A master data record is an individual set of customer, farm, field or task data that can either be imported or newly created in the software. The application can manage any number of master data sets.

The following formats can be imported:

- ISOXML (TASKDATA.XML, standard ISO 11783) e.g. from a Farm Management Information System
- A complete backup of all fields with the actual field task status (e.g. coverage).

This file has the extension "***.gstl***". This file can come e.g. from another CRG Vision10 display.



6.2.1 Create master data

1. Navigate to Field data > Master data
2. Press **New**.
3. You have the following options:
   - Field mode
   - Extended mode
4. Assign a name by opening the keyboard.
5. Create the master data record

6.2.2 Import master data

1. Navigate to Field data > Master data.
2. Press **Import**.
3. Select the import file.
4. Assign a name by opening the keyboard.
5. Import the master data record.

NOTICE
Restoring via backup import only works on the "CRG Vision10" devices of the same type.

6.2.3 Converting master data to extended mode

Additional management options

If you realize during your work that you also need options for customer, company or task management in addition to field management, you can also convert a master data set to extended mode. The conversion cannot be undone. However, you can create a new, empty data set at any time.

Procedure

✓ The data record is available in field mode.

1. Navigate to Field data > Master data.
2. Select a data record for conversion.
3. Convert the data record
   ⇨ You now have access to customer, farm and task management.

6.2.4 Export master data

1. Navigate to Field data > Master data.
2. Select a master data record to export.
3. Press **Export**.
   => You have the following options:
   - **Backup:** All data is exported and can be restored 1:1 on a CRG Vision10 using “Import”
   - **ISOXML:** Only ISOXML data is exported, including guidance lines of type "Straight AB" or "Curve". Other data is lost, such as coverage, marker points, headlands, guidance lines (if not of type "Straight AB" or "Curve”).
4. Select a storage location.
5. Export the master data record.

NOTICE
Recovery
Restoring via backup import only works on " CRG Vision10" devices of the same type

6.2.5 Delete master data

Active master data cannot be deleted. If the master data set you want to delete is active, you must first activate

Procedure

Navigate to Field data > Master data.

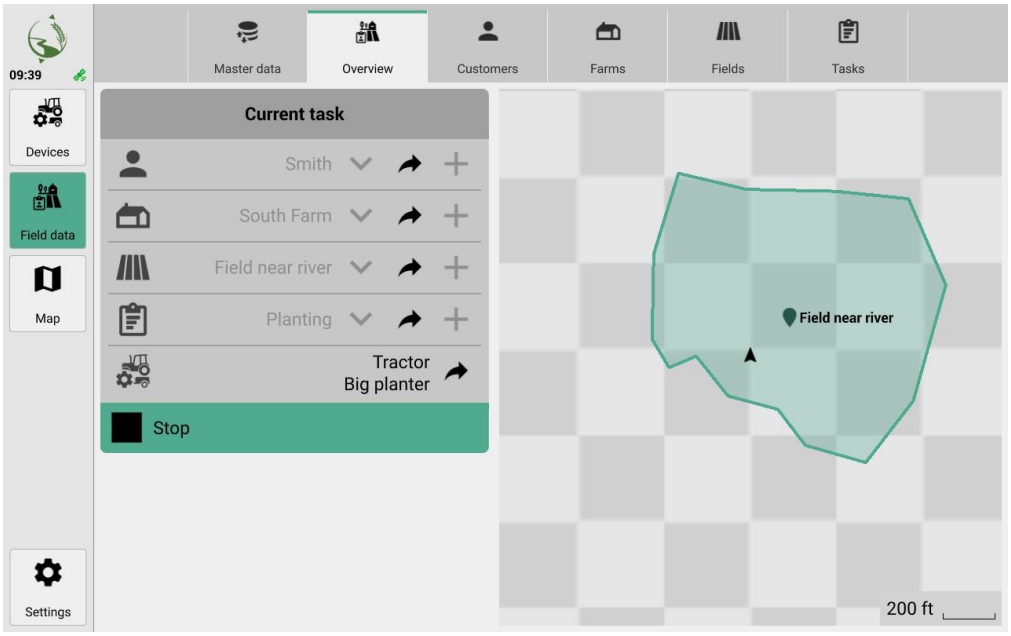
1. Press Select to delete.
2. Select one or more data records.
3. Press **Delete**.
4. Confirm the process.

6.3 Field data overview

In the field data overview, you can create new fields or activate existing fields and start the field.

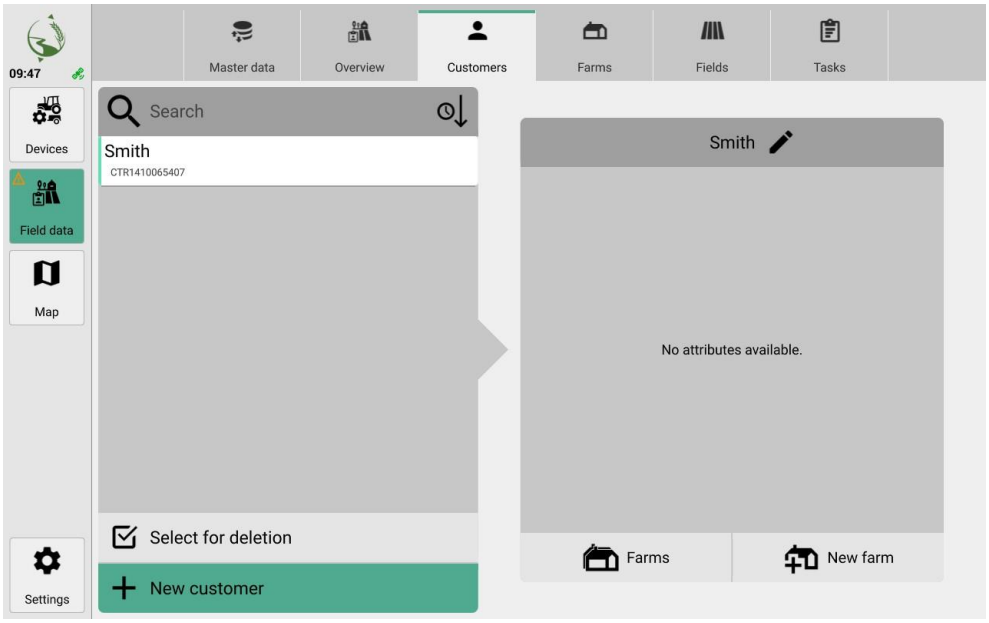
In **extended field mode,** the work assignment can be compiled with the following selection options:

- Customer
- Farm
- Field
- Task



6.4 Managing customers

In customer management, you can create new customers, delete customers and assign farms.
If you have imported customers using FMIS, you can view additional information, such as telephone number or address - if stored.



6.4.1 Creating a customer

Procedure

✓ You are in extended field mode.
1. Navigate to Field data > Customers
2. Click on New customer
3. Assign a name.
4. Confirm the entry.

6.4.2 Assigning a customer to a farm

Procedure

✓ You are in extended field mode.
✓ A customer has been created.

1. Navigate to Field data > Customers.
2. Select a customer.
3. Press New farm.
4. Assign a name.
5. Confirm the entry.
   ⇨ The newly created farm is assigned to the selected customer.

6.4.3 Delete a customer

Farms are also deleted

If farms have already been assigned to the customer, these are also deleted.

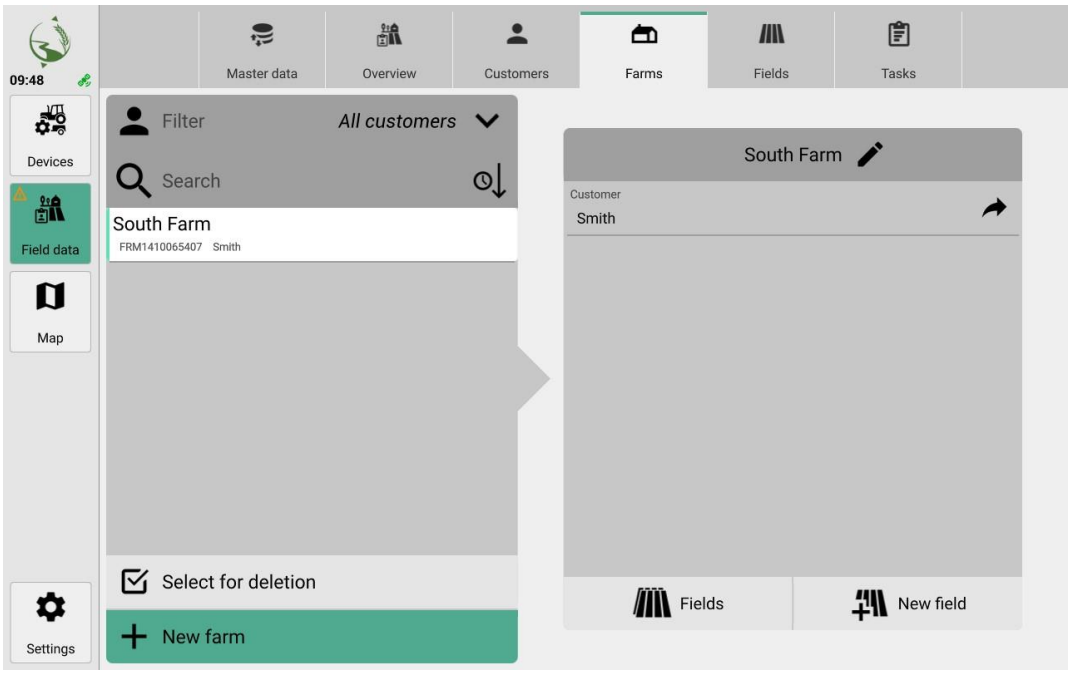
Procedure

✓ You are in extended field mode.

1. Navigate to Field data > Customers.
2. Press Select to delete.
3. Select one or more customers.
4. Press “Delete”
5. Confirm the process

6.5 Managing farms

You can create and delete new farms and assign fields in the farm administration.



6.5.1 Creating farm

Procedure

✓ You are in extended field mode.

1. Navigate to Field data > Farms.
2. Press New farm.
3. Assign a name.
4. Confirm the entry.

6.5.2 Assigning a field to a farm

Procedure

✓ You are in extended field mode.

✓ A farm was created.

1. Navigate to Field data > Farms.
2. Select a farm.
3. Press New field.
4. Assign a name.
5. Confirm the entry.
   ⇨ The newly created field is assigned to the selected farm.

6.5.3 Deleting farms

NOTICE
Data loss

If fields have already been assigned to the farm, these are also deleted. This process cannot be reversed.

a) Create backup copies before deleting. For example, by exporting data.

Procedure

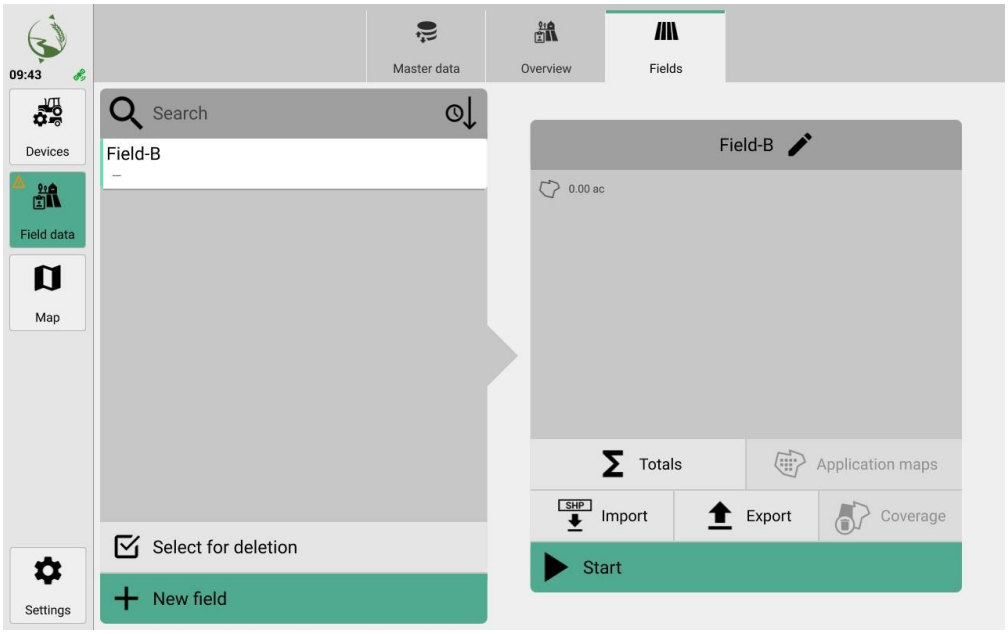
✓ You are You are in extended field mode.

1. Navigate to Field data > Farms.
2. Press Select to delete.
3. Select one or more farms.
4. Press Delete.
5. Confirm the process.

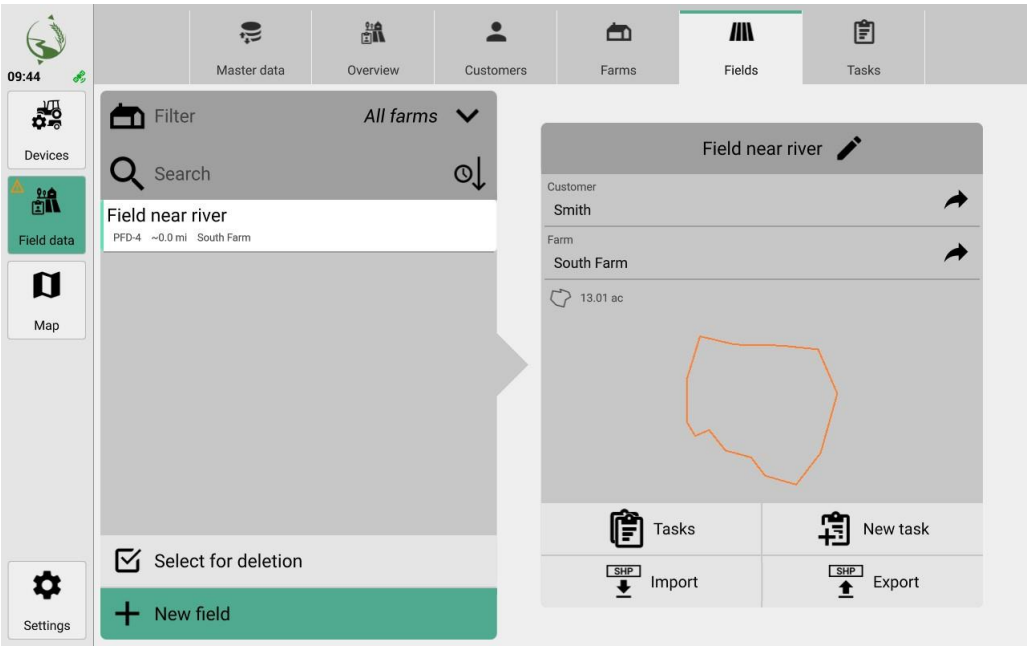
6.6 Managing fields

All fields can be managed in the field overview. As an additional option in extended field mode, you can assign tasks directly to fields.

Field mode



Extended field mode



6.6.1 Creating a field

Procedure

1. Navigate to Field data > Fields.
2. Press New field.
3. Assign a name.
4. Confirm the entry.

6.6.2 Importing a field or field boundaries

Procedure

1. Navigate to Field data > Fields.
2. Press **Import**.
3. Select Field boundaries.
4. Select a file.
5. Select the object to import.
6. Import the field boundary.

6.6.3 Assigning a task to a field

Procedure

✓ You are in extended field mode.

✓ A field has been created.

1. Navigate to Field data > Fields
2. Select a field.
3. Click on **New Task**
4. Assign a name.
5. Confirm the entry.
   ⇨ The newly created task is assigned to the selected field.

6.6.4 Exporting field boundaries

Procedure

1. Navigate to Field data > Fields
2. Select a field from which you want to export the field boundary.
3. Press **Export**
   ⇨ In Field mode the options Shapefile and PDF are available.
   ⇨ In extended Field mode the data is exported directly as a shapefile.
4. Select a storage location.
5. Press **“Next"**
6. Export the field data.

6.6.5 Deleting a coverage / coverage map of a field

The coverage map documents where in the field the implement has already been working.

In extended field mode, you will find this option under Field data > Tasks.

Procedure

✓ The field is stopped.

1. Navigate to Field data > Fields.
2. Press Coverage.
3. Confirm Delete.

6.6.6 Deleting fields

If tasks have already been assigned to the field, these are also deleted.

Procedure

1. Navigate to Field data > Fields
2. Press Select to delete
3. Select one or more fields.
4. Press **Delete**
5. Confirm the process.

6.6.7 Importing guidance lines

Procedure

1. Navigate to Field data > Fields
2. Press **Import**
3. Select Guidance lines
4. Select a file.
   => You have the following options for the import:
   a) **Guidance line(s) with propagation**:
      A base track is imported that can be used for the calculation of parallel tracks.
   b) **Guidance line set without propagation**:
      Only one set of tracks is imported for driving on the tracks.
5. Select the objects to import.
6. Import the guidance lines

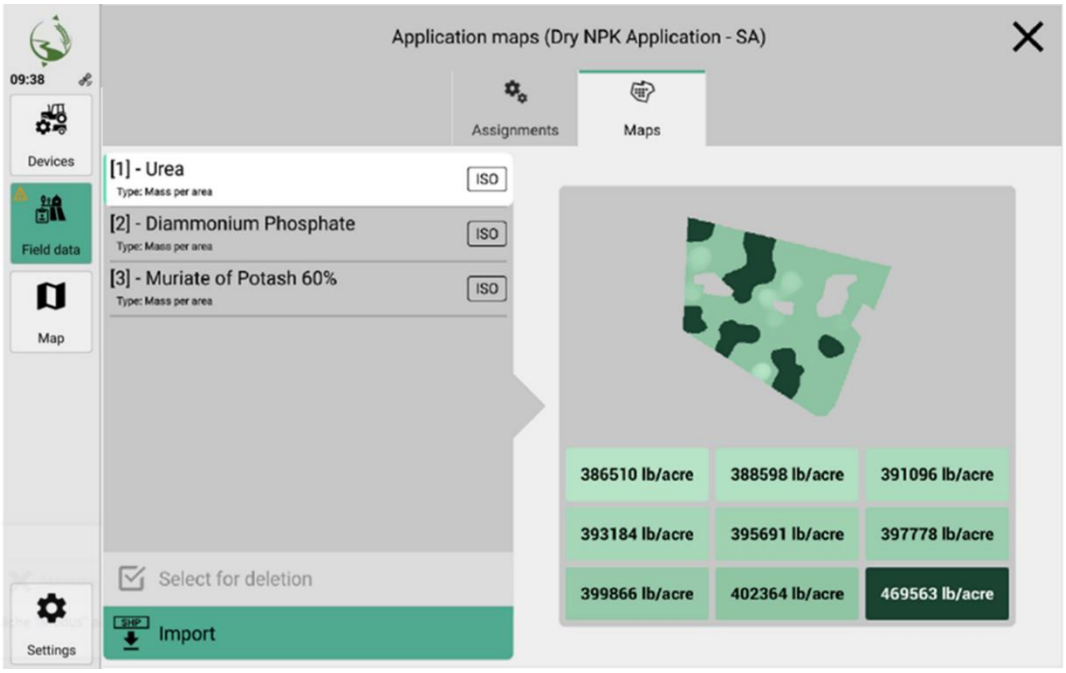
6.6.8 Importing prescription maps

In extended field mode, you will find this option under **Field data** > **Tasks**.

Procedure

1. Navigate to Field data > Fields.
2. Press **Import**.
3. Select Prescription maps (= Application maps)
4. Select a file.
5. Select a column.
6. Select a unit.
7. You can adjust the following values in the overview:
   - ⇨ Scaling' (percentage adjustment of the target rate)
   - ⇨ "Default value" (for areas for which no target rate has been defined)
   - ⇨ "Out of field value" (for areas outside the field boundary)
   - ⇨ Position lost value" (value that is used if the GNSS signal is lost)
8. Import the prescription maps.

6.6.9 Editing prescription maps

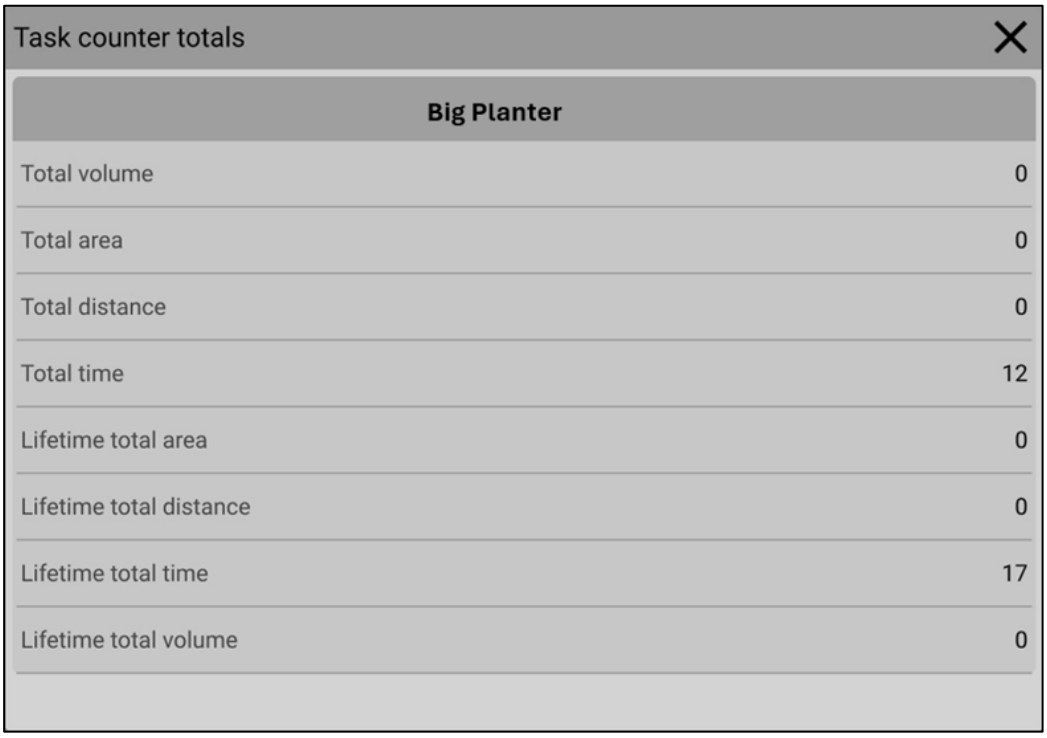


In extended field mode, you will find this option under **Field data > Tasks**.

Procedure

1. Navigate to Field data > Fields
2. Select a field or a task.
3. Press Prescription maps
4. Under Assignments, you can assign set values to the booms of an ISOBUS-enabled implement.
5. You can edit maps under "Maps". The current task must be stopped for this.
6. You can adjust the following values in the overview:
   - ⇨ "Default value "(for areas for which no set point has been defined)
   - ⇨ "Out of field value "(for area outside the field boundary)
   - ⇨ "Position lost value "(value that is used if the GNSS signal is lost)

6.6.10 Display counter values



In extended field mode, you will find this option under **Field data** > **Tasks**.

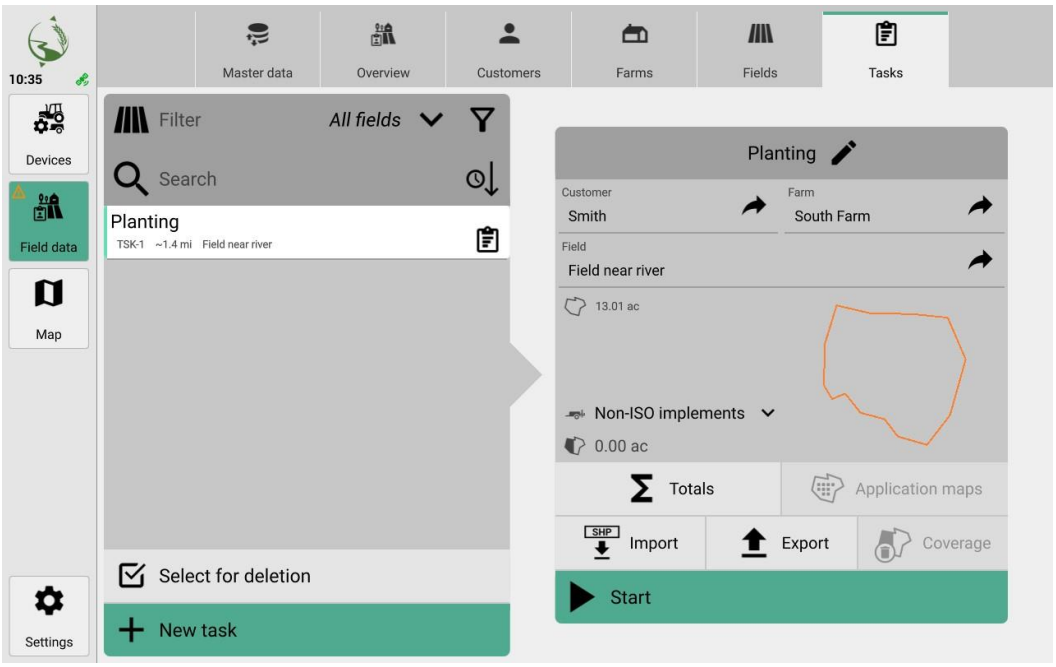
Procedure

✓ A field has been created and started.

1. Navigate to Field data > Fields
2. Press Totals

6.7 Managing tasks

In extended field mode, various recurring tasks can be defined for a field.



6.7.1 Create a task

Procedure

✓ You are in extended field mode.

1. Navigate to Field data > Tasks.
2. Click on **New task**.
3. Assign a name.
4. Confirm the entry.

6.7.2 Assign a task to a field

Procedure

✓ You are in extended field mode.

✓ A task has been created.

✓ A field has been created.

1. Navigate to Field data > Tasks.
2. Select a task.
3. Click in the task details **field**.
4. In the dialog, select the field that you want to assign.
5. Click on **Apply**.

⇨ The task has been assigned to the newly created field.

6.7.3 Delete a tasks

Procedure

✓ You are in extended field mode.

1. Navigate to Field data > Tasks.
2. Press Select to delete.
3. Select one or more tasks.
4. Press **Delete**.
5. Confirm the process.

6.7.4 Export tasks

Tasks can only be exported in extended field mode.

Procedure

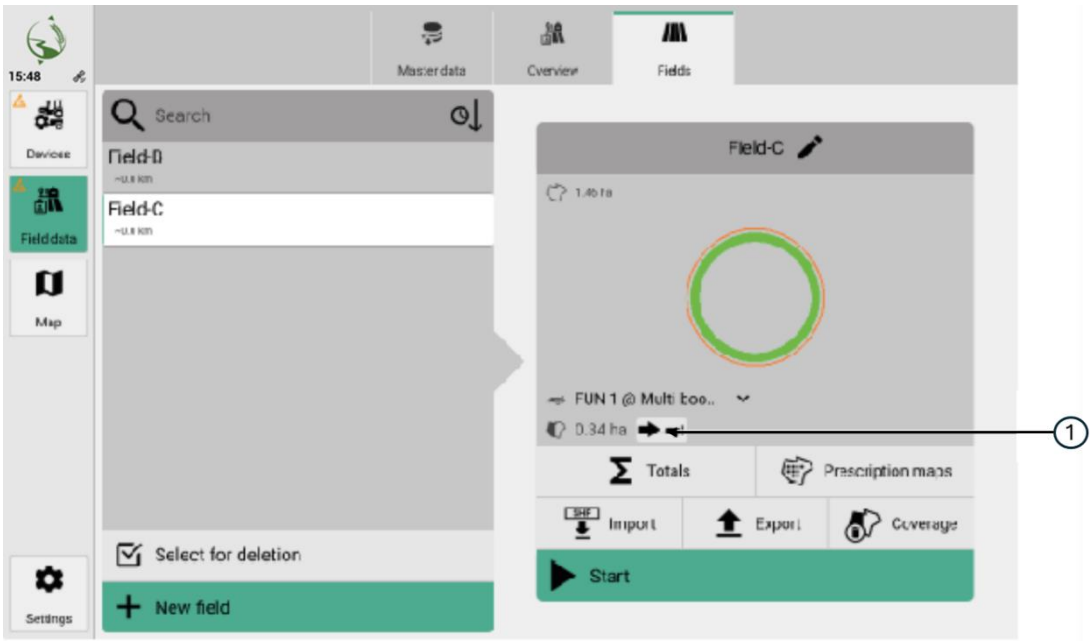
- Navigate to “Field data"> “Tasks”.
- Select a task to export.
- Press "Export”.
  => The options "Shapefile” and "PDF” are available.
- Select a storage location.
- Press “Next".
- Export the field data.

6.7.5 Reassign a coverage to another implement

With this action, it is possible to transfer a recorded coverage from one implement to another implement. This is helpful if an implement fails due to a fault or maintenance. The failed implement is replaced by the new implement. Another application is to use a transformer for hoeing, leaving out larger weed nests which should then be treated specifically with a sprayer

Prerequisites

- The implement to be replaced has a coverage recorded.
- The task or the field is stopped.
- A new ISOBUS-capable implement is available.
- The new ISOBUS-capable implement has not yet recorded any coverage for this task or field.



Procedure

1. Disconnect the implement to be detached from the vehicle.
2. Connect the new implement to the vehicle.
3. Navigate to “Field data” > "Fields” or "Tasks".
4. In the list, select the field or task whose coverage is to be reassigned.
5. Press “Assign new implement” (see illustration).
6. The reassign "Reassign coverage" is displayed.
7. In the list, select the boom of the implement to which the coverage is to be assigned.
8. Confirm with "Apply".

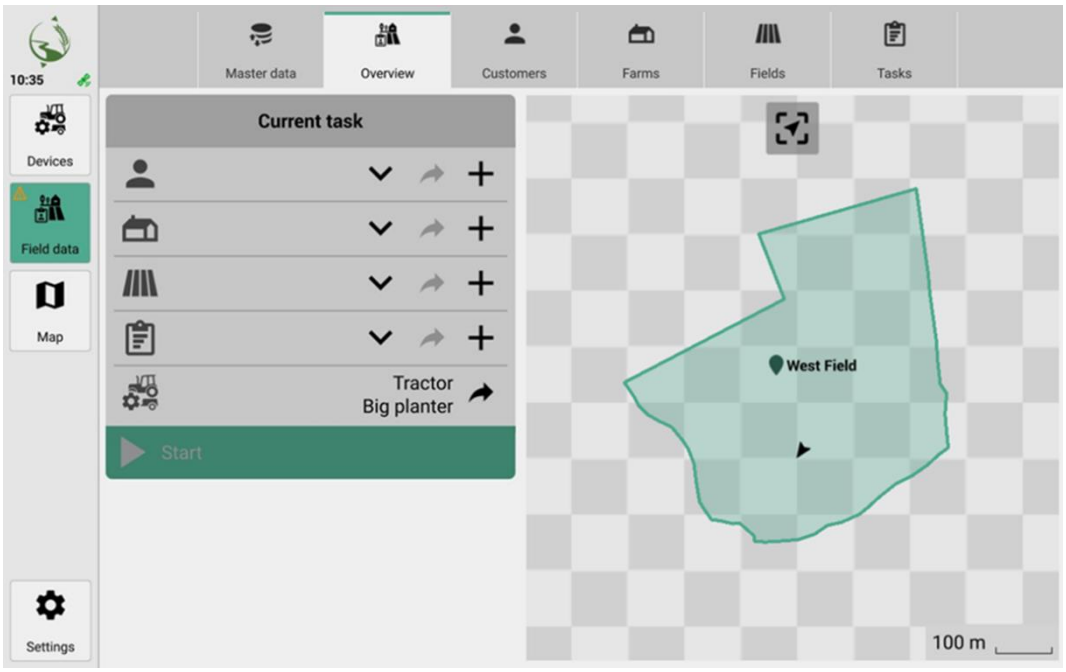
6.8 Start/Stop Job - Edit a field

NOTICE
The field is processed incorrectly

If the field is being worked incorrectly, the implement is set up incorrectly.

a) Before starting, make sure that all implements are correctly connected and set up in the software.
b) Before starting, make sure that all implements can actually carry out all the desired field tasks.

As soon as a task is started, field recording also begins.
All set parameters are taken into account - for example, the set field or the work to be carried out (e.g. fertilizing with a fertilizer implement). This enables precise connection work.



Procedure

Start field recording in field mode

1. Navigate to “Field data"> “Overview”.
2. In the “Current field” list, select the field for which you want to record data.
3. Press "Start”

Start field recording in extended field mode (perform task)

1. Navigate to “Field data"> “Overview”.
2. In the “Current task” list, select the task you want to carry out.
3. Press "Start”.

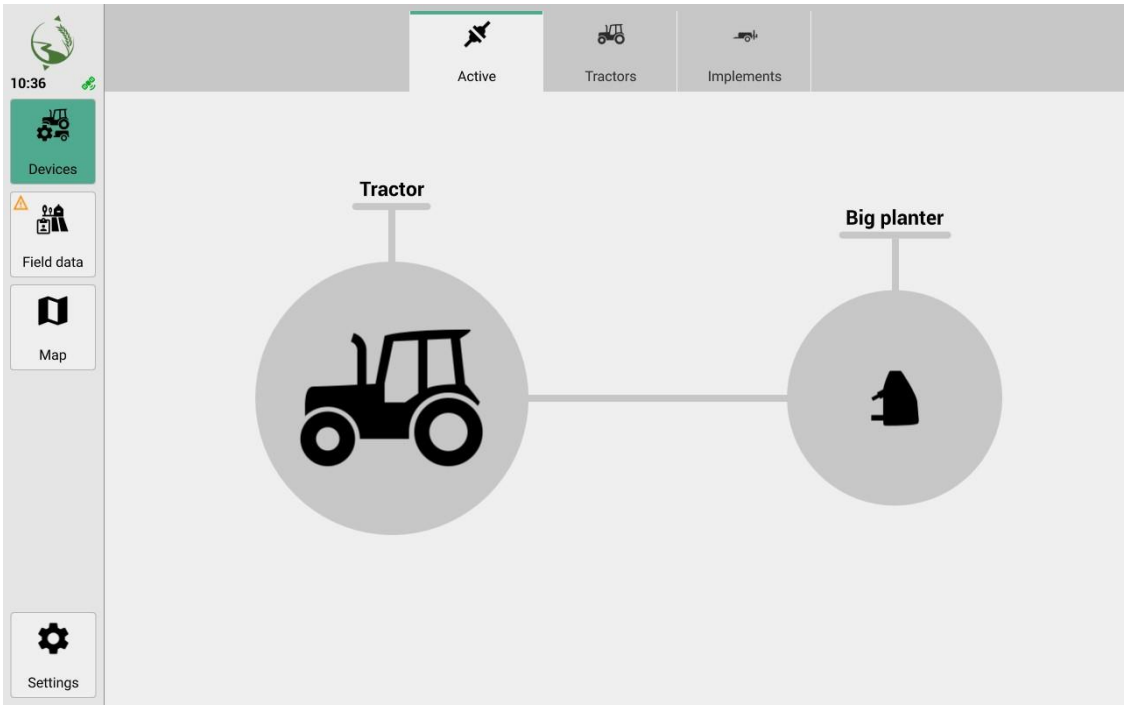
Stop field recording

1. Navigate to “Field data"> “Overview”.
2. Press "Stop”.

7 Managing devices

You can see all active implements in the implement management. New vehicles and implements can be configured.

The “Active” tab displays an overview of the active vehicle and the connected, active implements.



Additional settings for ISOBUS-capable implements are made in the Universal Terminal (UT).
See Setting ISOBUS implements using the Universal Terminal (UT).

7.1 Managing vehicles

7.1.1 Add vehicles

Naming
If possible, use meaningful names for self-created devices.

Speed sensor
The speed sensor on the terminal is always the GNSS receiver.
The speed option that the implement

Procedure

Start field recording in field mode

1. Navigate to "Devices" > "Vehicle".
2. Press "New vehicle".
3. Assign a name.
4. Enter a value for "GNSS offset (lateral)”.
5. Enter a value for “GNSS offset (frontal)”.
6. Enter the “Minimum curve radius” of the vehicle
7. Activate the vehicle.
8. Assign a connector:
   => Navigate to Connectors
   => Select or create a new connector.

7.1.2 Delete vehicles

NOTICE
Incorrect deletion
Restoring is not possible.

Active vehicles cannot be deleted.

Procedure

1. Navigate to "Devices" > "Vehicles".
2. Press “Select for deletion”.
3. Select one or more vehicles.
4. Press "Delete”.

7.1.3 Customizing the view of the vehicle

7.1.3.1 Showing or hiding 3D models

You can show or hide the 3D model of the vehicle in the map view.

Procedure

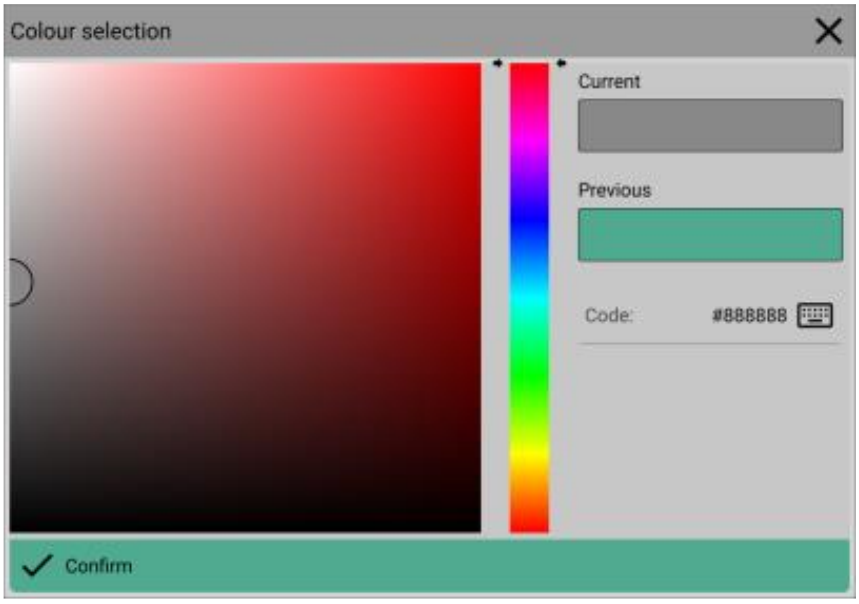
1. Navigate to "Devices” >"Vehicles" > "Visualization” >”Show vehicle 3D model”.
2. To hide the 3D model, move the slider to the left.
3. To show the 3D model, move the slider to the right.

7.1.3.2 Customizing the representation of the vehicle in the 3D model

You can show or hide the 3D model of the vehicle in the map view.

Procedure

1. Navigate to "Devices” >"Vehicles" > "Visualisation".
   ⇨ You can set the following:
   - Chassis color of the vehicle
   - Rim color of the vehicle



2. Select a color. You can individually select a color in the selection area on the left.
   Use the slider in the middle to define the color space displayed. You can enter a color code by opening the keypad.
3. In both cases, the change must be confirmed.

7.2 Setting ISOBUS devices using the Universal Terminal (UT)

NOTICE

Settings and parameterization

Settings and parameterization of ISOBUS-capable devices are product-specific.

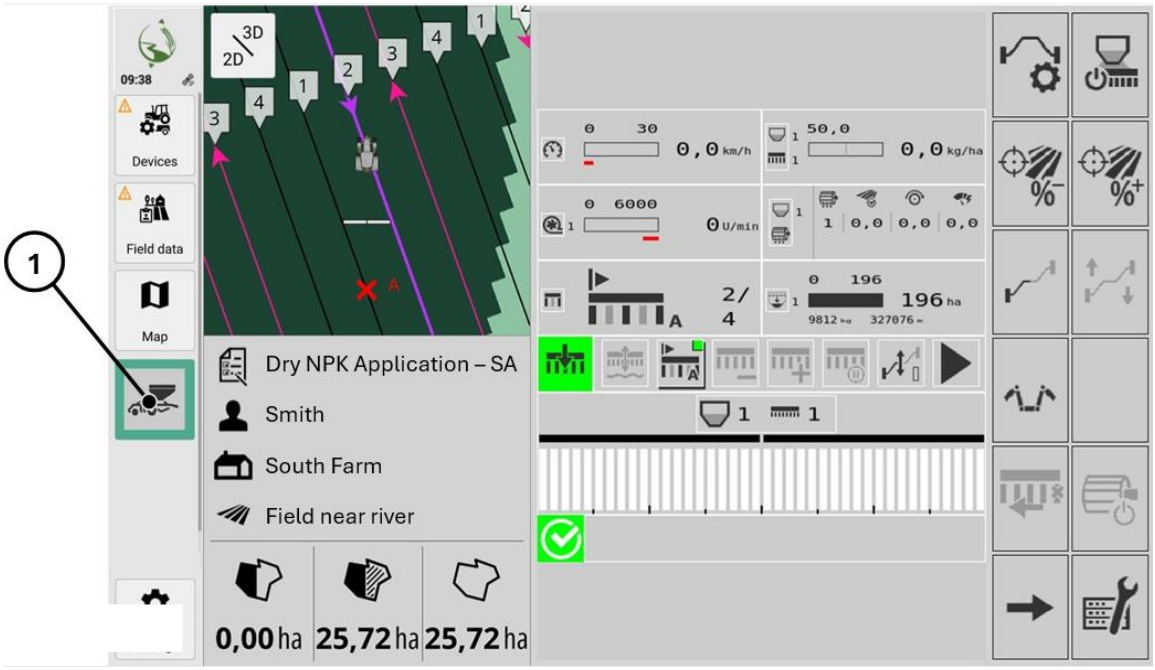
a) Observe the relevant device information and instructions (e.g. operating instructions).

Procedure

1. Switch on the Universal Terminal (UT).
2. To display the Universal Terminal (UT) , press on the corresponding symbol (1 in illustration) in the menu below Map.

Symbols

The symbol used depends on the device used. The appearance may change accordingly.



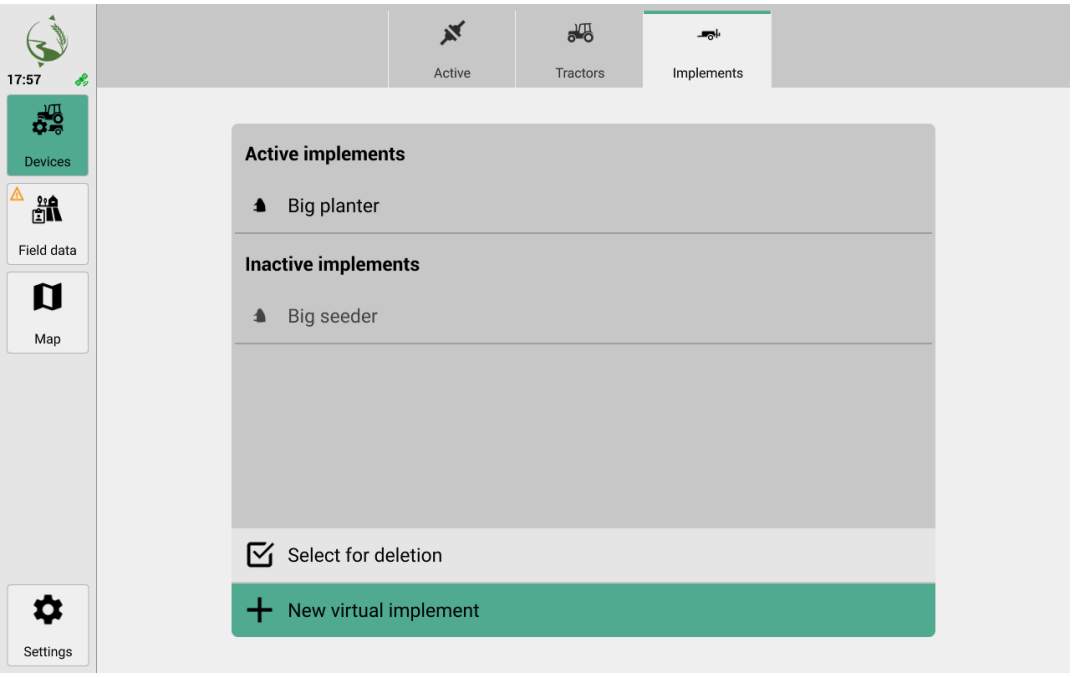
1 ISOAPP(UT) symbol (Example of Universal Terminal)

7.3 Manage implements

All configured implements are displayed in the list.

ISOBUS-enabled implements are automatically recognized by the software after connection and displayed in the Active implements list.

Non-ISOBUS-capable implements are not recognized automatically. Such implements must be added and set up as so-called Virtual implements.



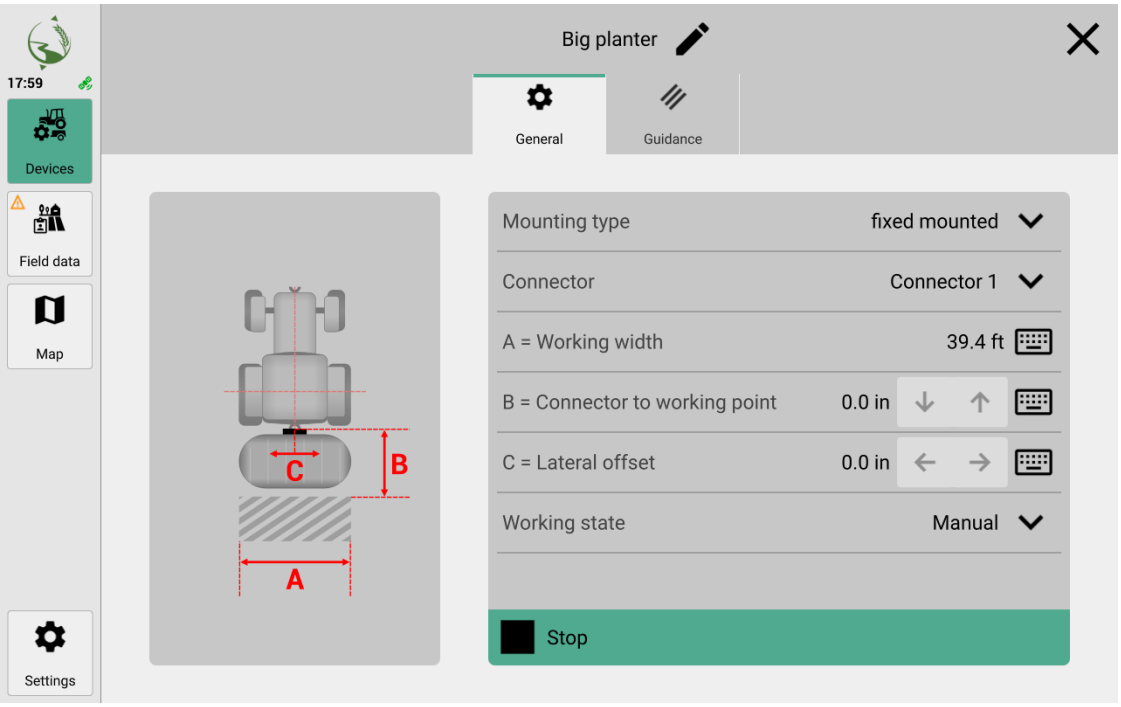
7.4 Adding a virtual implement

Intended use

Virtual implements and their purposes are not automatically recognized.
If possible, use meaningful names for self-created devices.

Guided set-up

When setting up the virtual implement, the meanings of the individual settings are shown schematically on the left.



Schematic aids (left) during Setup

Procedure

1. Navigate to "Devices "> "Implements".
2. Press "New virtual implement".
3. Assign a name.
4. Select a mounting type.
   You have the following options:
   - ⇨ “Fixed mounted”
   - ⇨ "Trailed”
   - ⇨ "Trailed & steered”
   - ⇨ “Tow between cart”
   - ⇨ “Self-propelled” (See Settings for virtual implements)
   - ⇨ "Trailed - GNSS on implement" (Settings for virtual implements)
5. Select the implement type.
6. Enter the working width. The working width refers to the entire width of the implement.
7. Enter the distance from the connector to the axis.
8. Enter the lateral offset of the implement. The offset refers to the center of the vehicle.
9. Enter the distance from the axis of the implement to the application point.
10. Select where the implement obtains information about the working position.
11. In the "GNSS" tab, you can select whether the implement has a GNSS receiver.
    To do this, activate the "Receiver for implement" parameter and configure the additional parameters.
12. In the “Guidance” tab, you can set the behavior when Guidance lines are activated:

⇨ "Individual minimum curve radius”:
This parameter defines the smallest curve radius for this individual

⇨ "Individual guidance line spacing"
By default, the guidance line spacing corresponds to the total working width of the implement. This parameter can be used to individually define the distance between the guidance lines for this implement, e.g. if overlapping processing is required.

⇨ “Preview of the activation of the guidance lines”
Distance in the direction of travel from the steering reference point to the point that determines which guidance line will be activated next.
The steering reference point is located on the non-steered (rigid) axle—either the front or rear axle, depending on the vehicle.

13. In the "Virtual Section Control" tab, you can select whether the virtual implement should work as”virtual.” You can set the following parameters for this:
    ⇨ "Number of sections"
    ⇨ “Overlap”
    ⇨ "Overlap tolerance at field boundary"
    ⇨ "Section Control switch-on delay"
    ⇨ "Section Control switch-off delay"
14. You can set up a 3D model for the implement in the “Visualisation” tab. This tab is not available for all implement types.
15. Press “Start”.

Geometry for ISOBUS-capable implement
If you are working with an ISOBUS-compatible implement, you cannot adjust geometry values manually. The values are transferred directly from the ISOBUS implement.

7.5 Delete an implement

You can delete non-ISOBUS-capable implements (so-called virtual implements) and ISOBUS capable implements if they are no longer used.

Procedure

1. Navigate to "Devices "> "Implements".
2. Press “Select for deletion”.
3. Select one or more Implements
4. Press "Delete”.

7.6 Settings for virtual implements

NOTICE
Omitted or double-tracked field areas

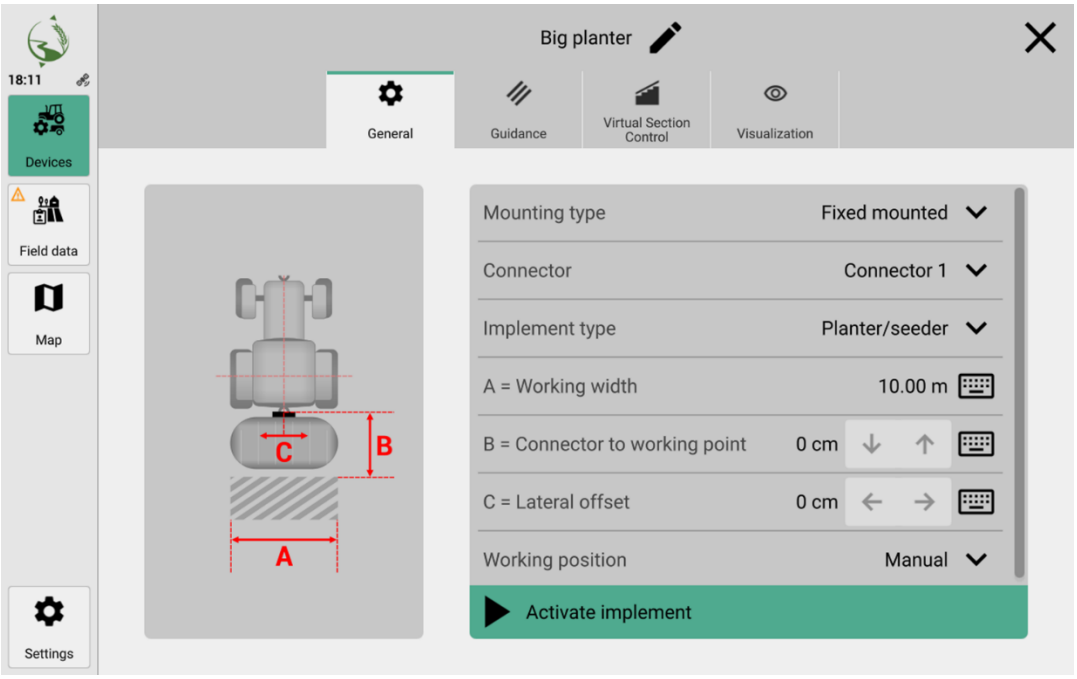
If the offset value is not set correctly, this will result in an incorrect map display.
Parts of the field could be covered twice or omitted.

a) The offset value must always be set correctly

Offset value
The offset value is always in relation to the center of the rear axle of the implement.

Settings for self-propelled implements or implements with a GNSS receiver.

When setting up self-propelled implements or implements with a GNSS receiver, additional settings can be configured.



Menu point “Working position”

The selectable sources for setting the working mode are:

1) **Manual**
   Working State is set active by the User (button pressing; is the lower right corner in map screen)
2) **Auto Steering engaged**
   Working State is set active by automatically active when Auto Steering is engaged
3) **Machine**
   Working State is set active by dedicated info coming from the vehicle

Speed sensor on the terminal
The speed sensor on the terminal is always the GNSS receiver

Settings for towed between carts

When configuring towed between carts, you can set further parameters for the additional pivot point.

7.7 Setting up automatic steering system for vehicles

For setting the automatic steering, please follow the instructions of both **AGRA-GPS ISOApps** on the screen.

7.8 Section Control for implements

Section Control (automatic section control) is a specific application of the ISOBUS standard and refers to the precise control of sections of agricultural implements such as seeders, sprayers or fertilizer spreaders. The aim is to use resources such as seeds, fertilizers or pesticides more efficiently by controlling their application in specific sections rather than continuously across the entire field.

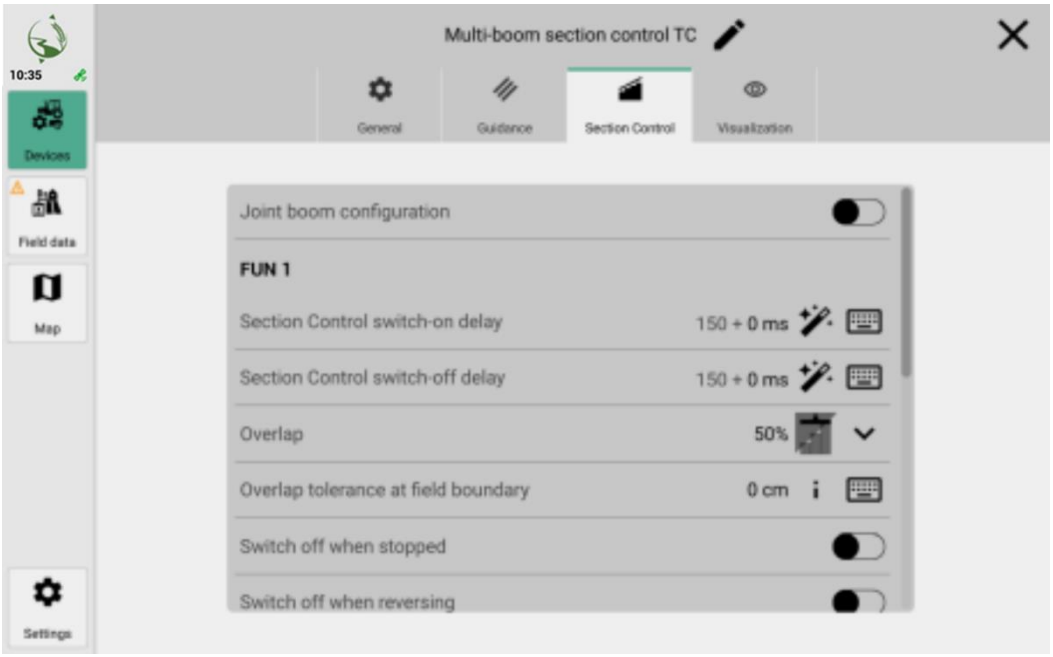
Section Control can be used to automate the switching on and off of different sections of the implements. This enables precise application of agents, for example by preventing areas that have already been treated from being treated again. This reduces costs, minimizes environmental impact and improves the overall efficiency of agricultural processes.

The terms **sections** and **booms** are used in connection with section control.

- A section is the smallest unit of application elements such as spray nozzles or sowing rows that can be controlled independently via Section Control.
- A boom is the part of the implement that carries the spreading elements.

In addition to implements with only one boom, there are also implements with several booms. A modern ISOBUS seeder can, for example, include booms for spreading the seed and booms for spreading fertilizer.

Configure section control



Procedure

1. Navigate to "Devices "> "Implements".
2. Select an implement with one or more booms.
3. Select whether you want to configure the booms together or separately.
   You must make the following configurations:
4. "Section Control switch-on delay"
   ⇨ Edit (Magic wand) - Opens a guided wizard to calculate the switch-on delay.
   ⇨ Edit (keypad) - Enter and confirm the switch-on delay manually.
5. "Section Control switch-off delay"
   ⇨ Edit (Magic wand) - Opens a guided wizard to calculate the switch-off delay.
   ⇨ Edit (keypad) - Enter and confirm the switch-off delay manually.
6. "Overlap"
   Overlap values when working on wedge-shaped areas.
   ⇨ **"0%"**
   When driving over a processed area, a section is switched off if it provides 1% of the coverage of the processed area
   When driving over a processed area, a section is switched off if it provides 1% of the coverage of the
   ⇨ **"50%**
   When driving over a processed area, a section is switched off once it provides 50% of the coverage for the processed area.
   When leaving a processed area, a section is switched on once 50% of the area has been left behind
   ⇨ **"100%**
   When driving over a processed area, a section is switched off once it provides coverage for the entire processed area.
   When leaving a processed area, a section is switched on once 1% of the area has been left behind.

7. Set overlap tolerances
   Depending on the selected overlap, information may be displayed or values may be set.
   ⇨ "Overlap tolerance"
   The permissible overlap before the outer sections switch.

- ⇨ "Overlap in driving direction"
  Permissible overlap in the direction of travel before the outer sections switch.
- ⇨ "Overlap tolerance at field boundary"
  Permissible overlap at the field boundary before the outer sections are activated.

8. "Switch off when stopped"
   - ⇨ Switch on/off
9. “Switch off when reversing"
   - ⇨ Switch on/off
10. "Prevent overdosing in curves"
    - ⇨ Show info
    - ⇨ Switch on/off

8 Map view and work assignment

The map view displays 3D representations of the tractor, the active field and the connected implements. Depending on the settings made, additional information (e.g. field boundaries, application rates) or driving aids (e.g. guidance lines, light bars) are displayed.

The map view is helpful for navigating and correctly processing the field during the work.

To display the map view, press **Map** in the menu.

The map view can be rotated, panned and moved using touch gestures. It offers additional options, such as automatic following of the tractor.

NOTICE

Incorrect data recording

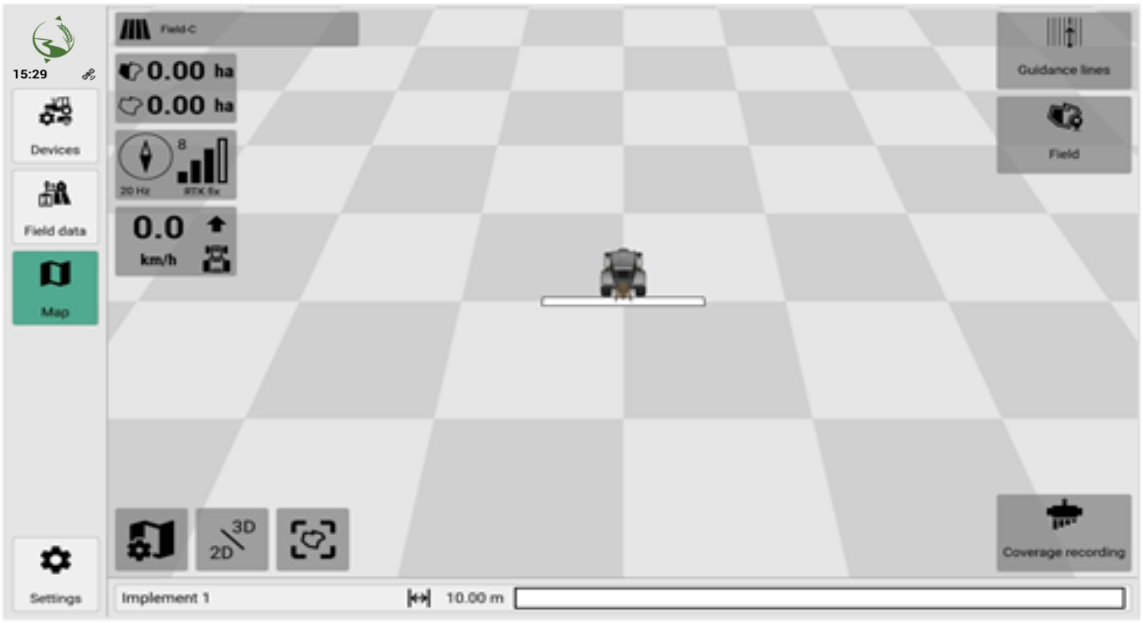
If the direction of travel of the tractor in the map view does not correspond to the direction of travel of the real tractor, the data will be recorded incorrectly.

a) Before starting work, always check that the driving directions match and correct them if necessary

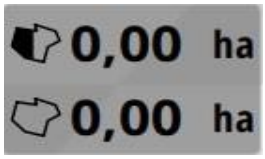
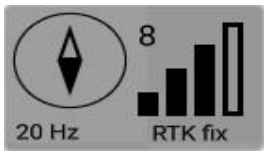
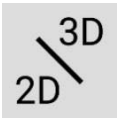
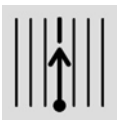
Saving application layout

You can save the application layout while working for later use.

To do this, press the symbol with the AGRA-GPS logo in the upper left corner of the screen until the message "Application layout has been saved" appears.
To use a saved layout, briefly press the symbol with the AGRA-GPS logo and select the desired layout.



You have the following functions on the map:

Icon	Function
	Displays the current field. Press to open the field data (see Field data overview)
	Displays additional information on the current field. Press to display the following information in succession: ○ Total area ○ Processed area Area still to be processed
	Displays the status and quality of the GNSS position. Press to open detailed information on the GNSS source.
	Shows the driving speed and the determined direction of travel.
	Displays the map frontally from above 2D or in 3D
 	Press to change the options: ○ Arrow active: Tractor track is being followed ○ Map active: Field is displayed from above After free movement on the map, the focus returns to the tractor when the arrow is pressed.
	Provides the option of showing and hiding individual display and control elements above the map view and changing their position. Provides the option of individually adjusting the map focus position to the vehicle (implement). ○ To set the map focus position on the tractor-trailer combination, the vehicle must first be focussed (arrow active). ○ This setting is helpful if the 3D view of the vehicle/trailer combination obscures important map information (e.g. guidance lines, field boundaries).
	Press to open the following options for guidance lines: ○ add ○ edit ○ shift ○ select

	This symbol is only displayed if it has previously been activated in the settings. Press to shift the guidance line by the preset increment in the respective direction. Press and hold for 2 seconds to set a new increment for shifting the guidance line
	Press to open the following options: o Edit field boundaries o Tilling the headland o Edit marker points
	Press to change the options: a) For ISOBUS-capable implements: Switches the Section Control automatic mode on/off. b) For non-ISOBUS-capable implements: Starts/stops the coverage recording. This allows you to visualize the field areas that have already been driven over.
 	Displays the status of the headland. Press to open the following options: o Lock headland o Unlock headland
 	Only available when the prescription map is active. Press to switch between the map views: o Coverage: Emphasizes the total coverage or the already processed area o Application quantities: Shows the quantitative application
	Press to switch the automatic steering on/off. o Engage: Switch on automatic steering o Disengage: Switch off automatic steering

8.1 Use of map layers

Different levels can be displayed in the map view using map levels.

For example:

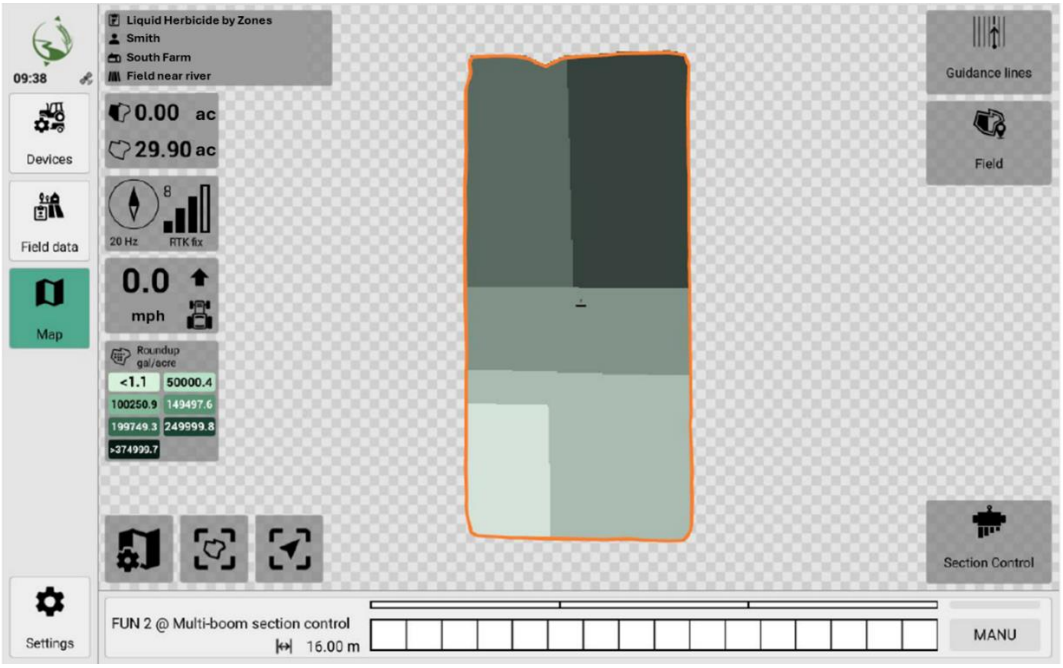
- Coverage
- Prescription map
- Prescription map and covering

Prescription map display

If a prescription map is applied to the active field and a suitable implement is active;

This prescription map is displayed in color in the map view.

The legend shows the application rates depending on the coloring.



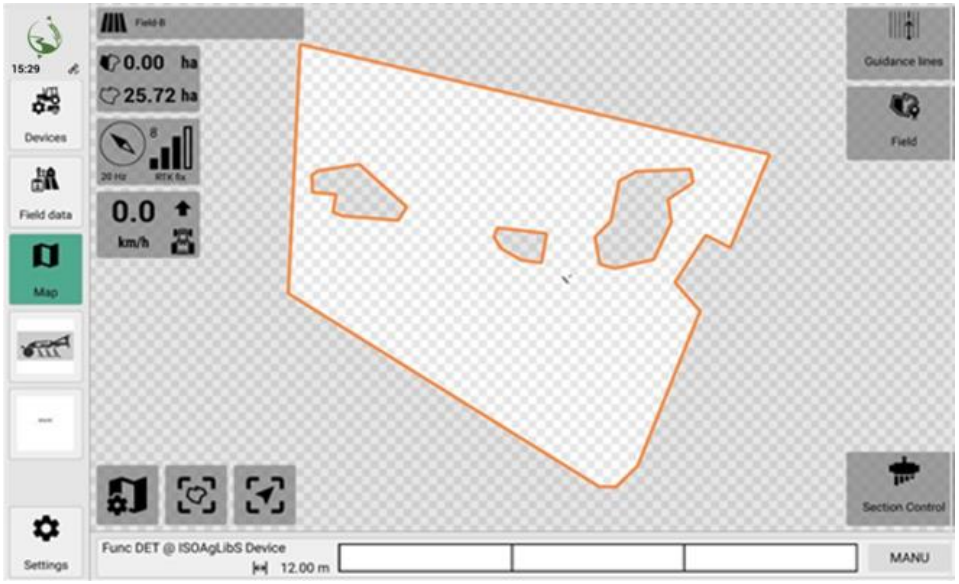
8.2 Use of field boundaries

As soon as a field with field boundaries is activated, its field boundaries are displayed on the map as a thick outline.

Fields can have several outer field boundaries and several inner field boundaries.

The following options are available for creating field boundaries for a field:

- Create field boundaries manually in the software.
  To do this, drive the tractor along the planned field boundary and "record" it in the software (see Creating a field boundary by driving along).
- Automatically calculate field boundaries in the software based on the current coverage.
  A field boundary is automatically calculated and created around the existing coverage. (see Creating a field boundary using coverage).
- Import field boundaries as an ISOXML or shape file (see Importing field or field boundaries).



8.2.1 Create field boundary by driving along it

When creating field boundaries manually, the planned field boundary is recorded in the software by driving along the field with the tractor. The software is used to set whether it is to be created as an outer or inner field boundary.

NOTICE

Recording accuracy and GNSS

This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

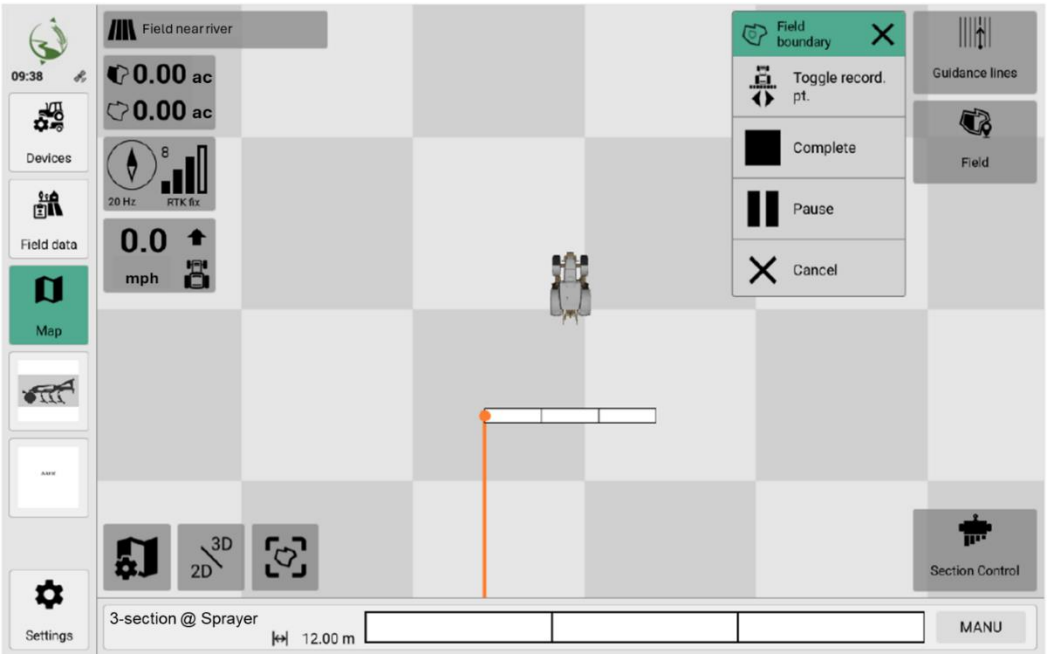
Start recording

Start recording with the outer field boundaries. You can then record the inner field boundaries.

Procedure

✓ A field is active. The field may already have field boundaries.

1. Drive the tractor to the point in the field where you want to start recording the field boundary.
2. Navigate to Map > Field > Field boundaries
3. Press Record.
4. Press Inner or Outer to specify the type of field boundary.
5. Check on the map whether the correct recording point is set for the recording.
   ⇨ The pick-up point is displayed flashing on the map on the implement.
   ⇨ To switch between different recording points, press Switch recording point.
6. Press Start.
   ⇨ The recording begins.
7. Drive the tractor on the field along the planned field boundary.
   ⇨ The planned field boundary is displayed in color on the map.
8. Regularly check the planned field boundary on the map.
9. As soon as the planned field boundary is finished, stop the tractor.
10. Press Finish.
11. Confirm the security enquiry.
    ⇨ The software generates the field boundary.
    ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions



View during recording

8.2.2 Create field boundary using coverage

When automatically calculating the field boundary using coverage, the outermost edges of the current coverage are created as the field boundary. The software automatically recognizes gaps in the coverage and indicates them.

This action only creates outer field boundaries.

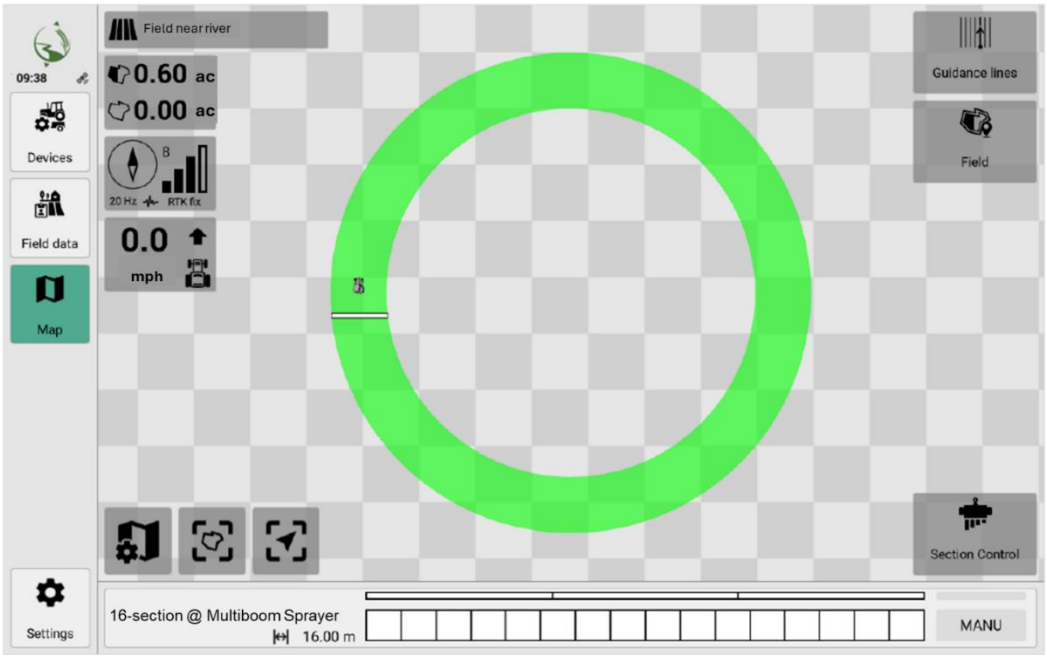
Procedure

✓ A field is active.

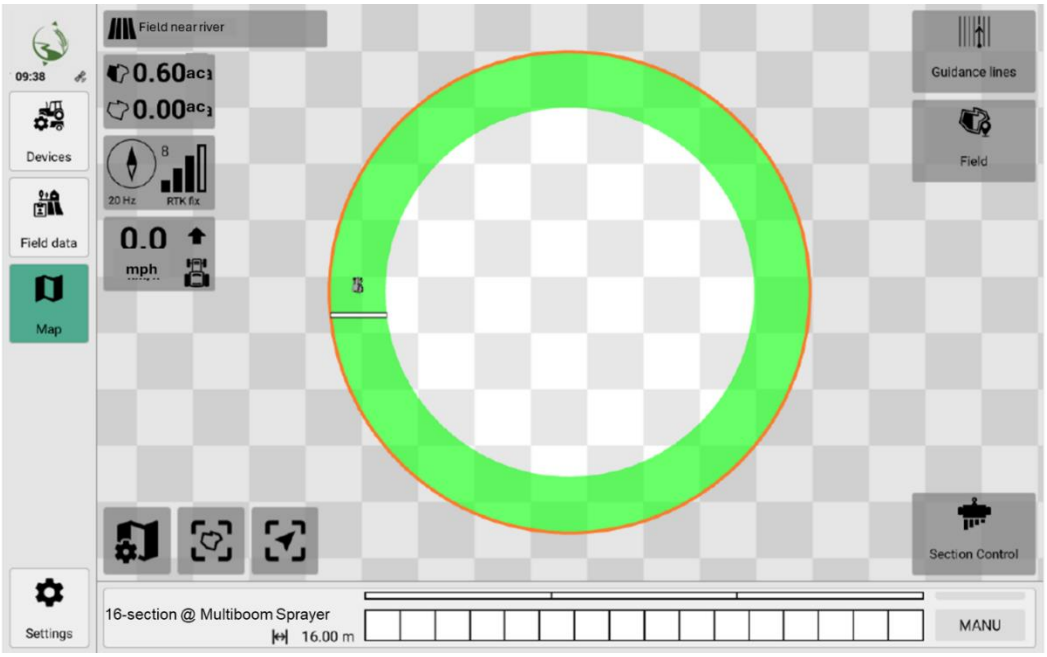
✓ There are no field boundaries (e.g. Delete field boundaries).

✓ There is at least one cover.

1. Navigate to Map > Field > Field boundaries.
2. Press Calculate.
   ⇨ The software automatically detects gaps in the coverage.
3. Confirm the security prompt.
   ⇨ The software generates the field boundary.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.



Field with coverage without field boundaries



Calculated field boundary along the coverage

8.2.3 Delete field boundaries

Delete all field boundaries

NOTICE
Data loss
This process cannot be reversed.

Procedure

✓ A field is active with field boundaries

1. Navigate to Map > Field > Field boundaries.
2. Activate Delete all
3. Confirm the security prompt.

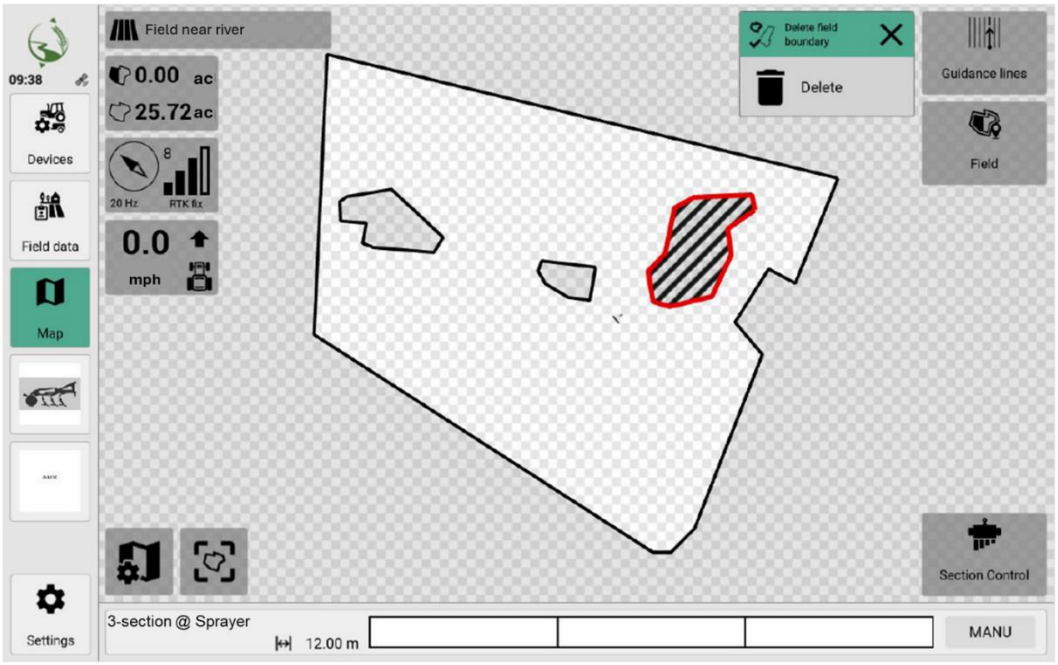
Delete an individual field boundary

NOTICE
Data loss
This process cannot be reversed.

Procedure

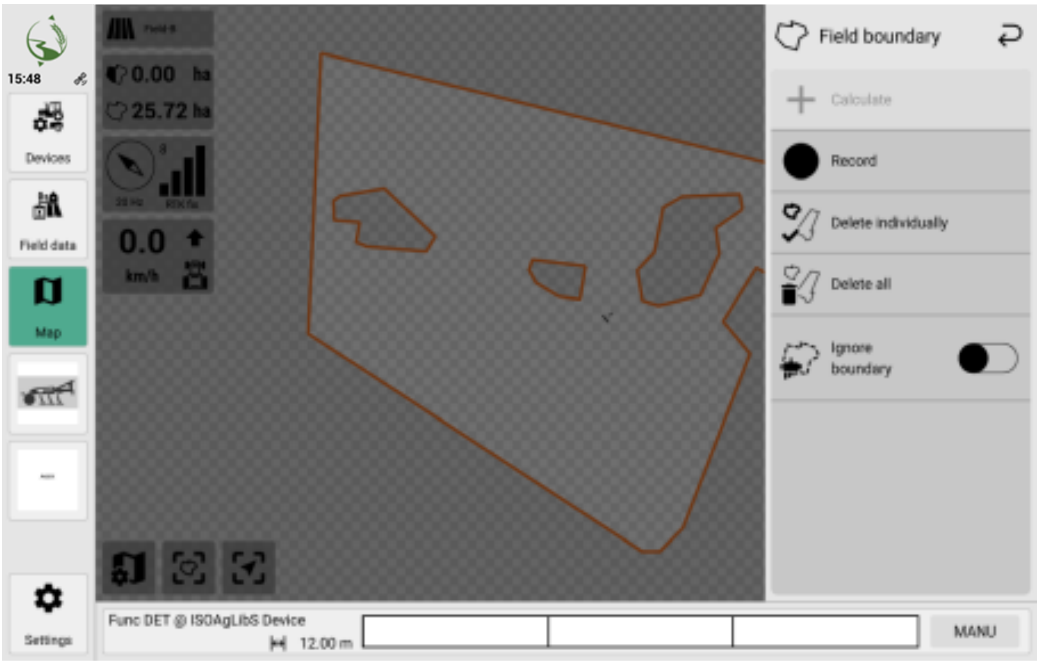
✓ A field is active with field boundaries

1. Navigate to Map > Field > Field boundaries.
2. Select the field boundary to be deleted on the map.
3. Then press **Delete** on the field boundary.
4. Confirm the security prompt.



Selecting a field boundary

8.2.4 Ignoring field boundary



This parameter is only available if you are working with a SECTION-Control-capable implement.

If you activate **the parameter, processing continues despite the field boundary being exceeded.**

Procedure

✓ A field is active with field boundaries

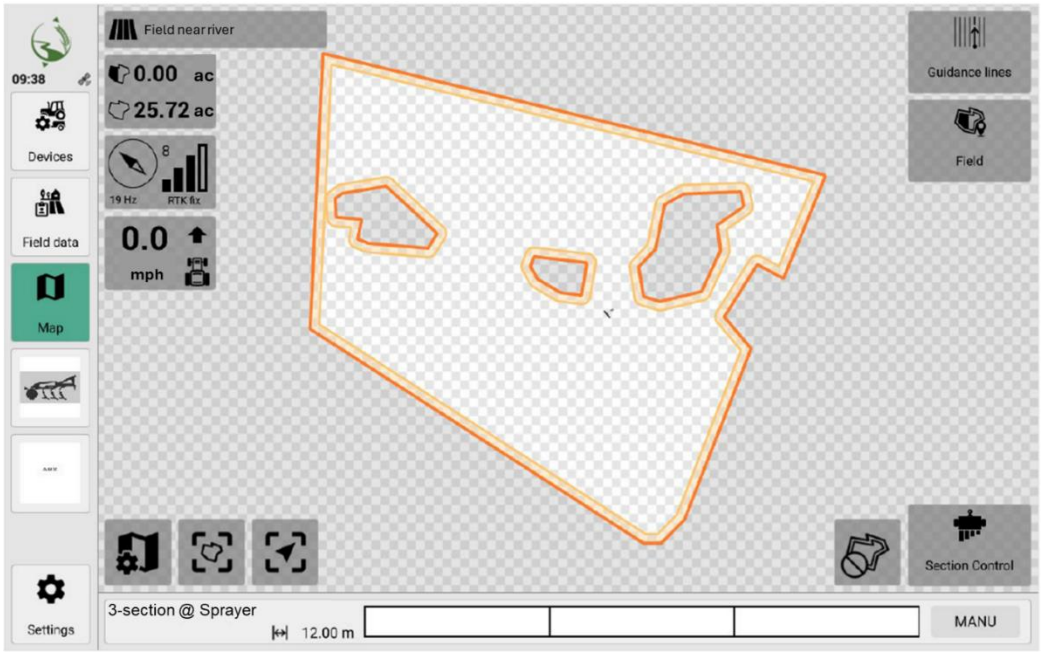
1. Navigate to "Map" > "Field" > "Field boundaries".
2. Press "Ignore boundary".

8.3 Use of headlands

Headlands are areas at the edge of a field or field that are used in agriculture to carry out turning maneuvers with agricultural machinery such as tractors or combine harvesters.

When working, headlands are only included automatically if Section Control is switched on and headlands are locked at the same time.

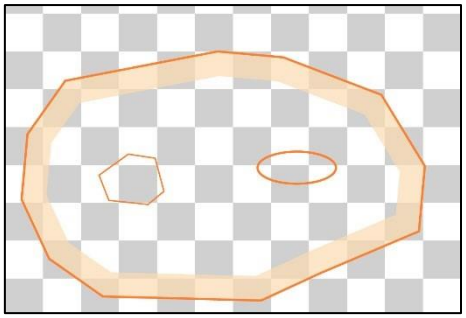
Headlands are displayed as a semi-transparent, colored area in the map view.



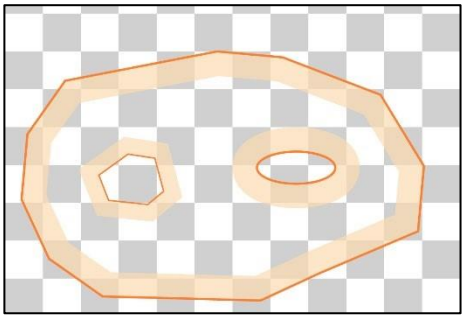
Field with locked headland

8.3.1 Create a circular headland

Circumferential headlands have the same width at every position.



Headlands around outer field boundaries



Headlands around outer and inner field boundaries

Procedure

✓ A field is active with field boundaries

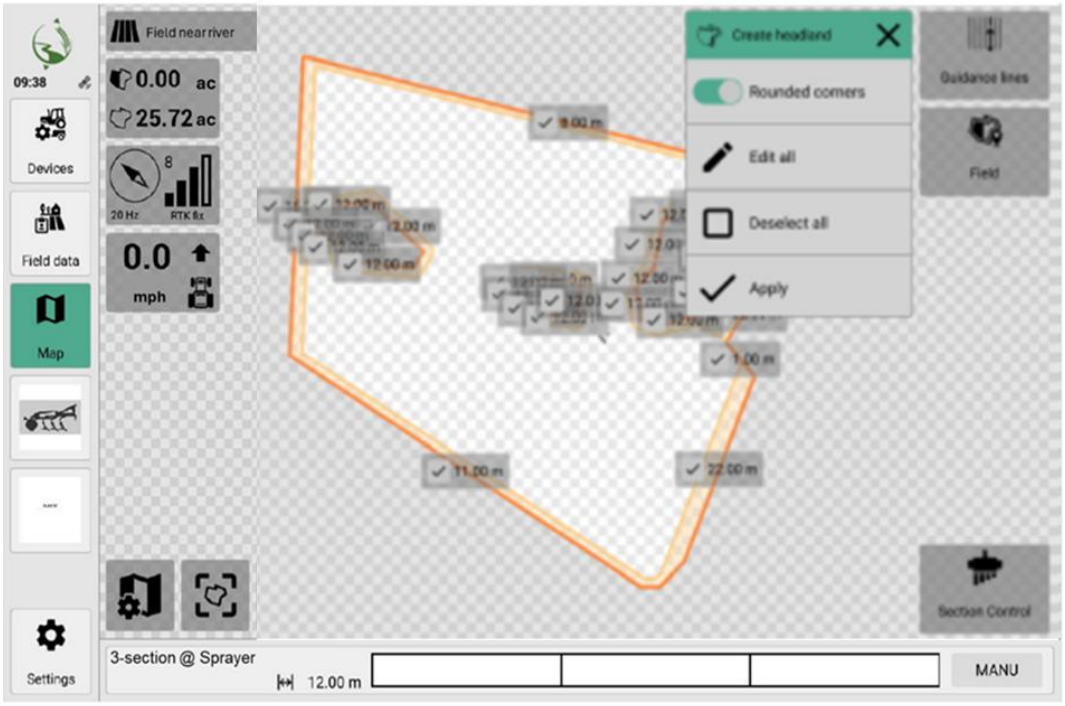
1. Navigate to Map > Field > Headland.
2. Press New (circumferential).

3. Slide the “Rounded corners” slider to the right if you want to use rounded corners.
4. Edit the width of the headland in the dialogue.
5. In addition, the option “Create headland around inner field boundaries” can be switched on/off.
   ⇨ Switched **on**:
   Headlands are created along the outer field boundaries and outside the inner field.
   ⇨ Switched **off**:
   A headland is created along the outer field boundaries.

6. Press **Create**.

8.3.2 Create individual headlands

With individual headlands, specific widths can be set for each segment of the headland.



Procedure

✓ A field is active with field boundaries

1. Navigate to Map > Field > Headland.
2. Press New (individual).
   ⇨ The headland is displayed in editor mode in the map view.
3. Slide the **Rounded corners** slider to the right if you want to use rounded corners.
4. Edit the individual widths and confirm the entry.
5. Alternatively, you can also use the **Edit all** function.
6. Click on **Apply**.

8.3.3 Unlock or lock headlands

If Section Control is switched on during operation, headlands are included:

- Locked headlands are not processed. The headland area is highlighted in color in the map view.
- Unlocked headlands are processed. In the map view, only the headland contour is highlighted in color.

Icon	Function
	Headland is locked. Pressing unlocks headland.
	Headland is unlocked. Pressing locks headland.

8.3.4 Delete headland

NOTICE
Data loss
This process cannot be reversed.

✓ A field is active with field boundaries

1. Navigate to Map > Field > Headland
2. Press Delete all.
3. Confirm the security prompt

8.4 Use of marking points

Marker points are useful for highlighting prominent or important locations in a field. Marker points are highlighted on the map with small symbols.

8.4.1 Create marker point

To create a marker point, the tractor must drive to the desired location where a marker point is located. You can create the marked location as a marker point in the software.

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

Procedure

✓ A field is active with field boundaries

1. Drive the vehicle to a prominent location.
2. Navigate to "Map” > "Field” > “Marking point"
3. Press "New”. Navigate A field is active.
   ⇨ The marker point is displayed as an icon on the map.

8.4.2 Edit marker point

Procedure

✓ A field is active with marking points.

1. Navigate to "Map".
2. Press the marking point on the map that you want to rename.
3. Enter the desired name.
4. Confirm.

8.4.3 Delete marker points

Delete a selection point

NOTICE
Data loss
This process cannot be reversed.

Procedure

1. Navigate to **Map**.
2. Click on the marker point on the map that you want to delete.
3. Press **Delete**.

Delete all marker points

NOTICE
Data loss
This process cannot be reversed.

Procedure

1. Navigate to Map > Field > Marker point.
2. Press Delete all.
3. Confirm the security prompt.

8.5 Use of guidance lines

Guidance lines, also known as tracks, are special lines in the map view that are generated by the software. They provide guidance for working in the field.

The vehicle can be navigated very precisely using guidance lines. This enables optimum utilization of the field, as overlaps and gaps can be minimized during processing.

Furthermore, guidance lines enable more efficient use of fertilizers and pesticides, as they can be applied with pinpoint accuracy.

Guidance lines can be created in different shapes and directions, for example:

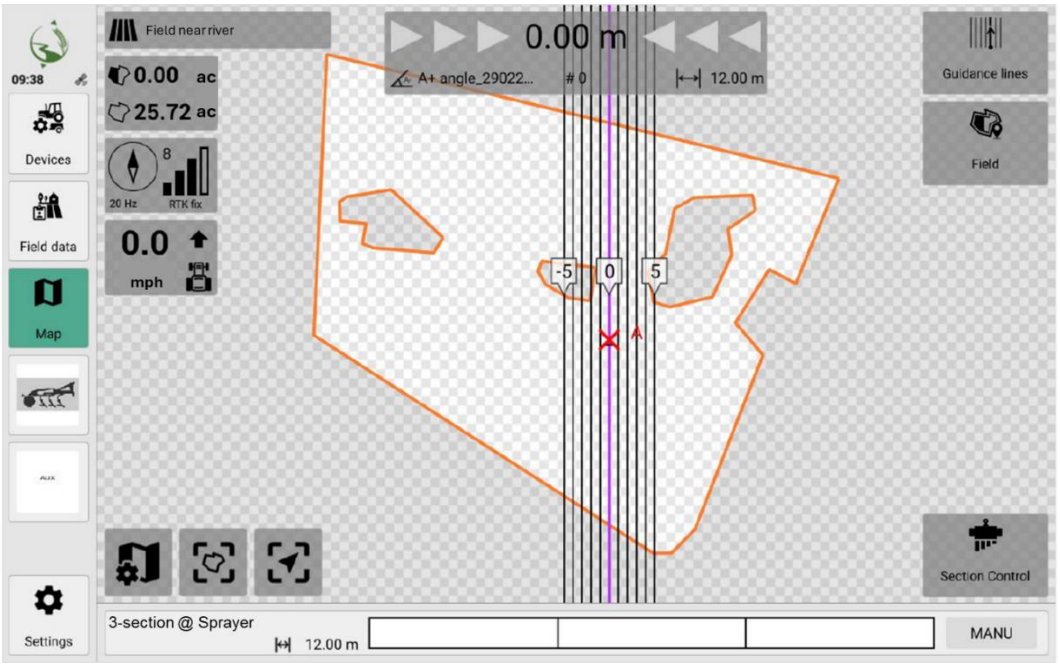
- as straight lines
- as a circle
- as a curve

The software helps you to optimally create guidance lines.
Field boundaries (inside and outside) and headlands are considered.

The software uses various methods to create and edit guidance lines. With most methods, a base track is created. All other guidance lines are aligned to it with the same offset (parallel, concentric, etc.).

Create guidance lines automatically. Field boundaries or headlands serve as base tracks.

- Create guidance lines manually:
  - Drive off with the tractor or
  - Set a starting point with the tractor and then specify a direction (angle).
- Import guidance lines from another program (e.g. FMIS).
  See Importing guidance lines.



Field with guidance lines

Additional driving aids when driving over the field

The guidance lines are displayed on the map. They help to optimize the field with the least amount of overlap.

Guidance lines are numbered consecutively - number "0" corresponds to the former base track.
The guidance lines generated depend on the following factors:

- the working width of the implement
- the position of the implement in relation to the tractor (so-called offsets)

These factors are determined automatically by the software (ISOBUS-capable implement only) or set manually by the operator (non-ISOBUS-capable implement).

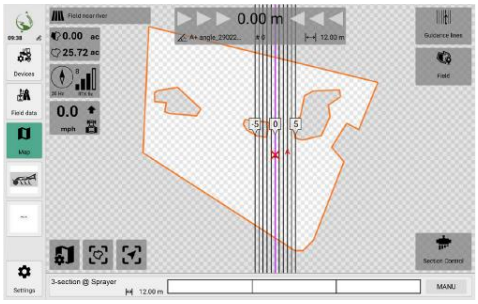
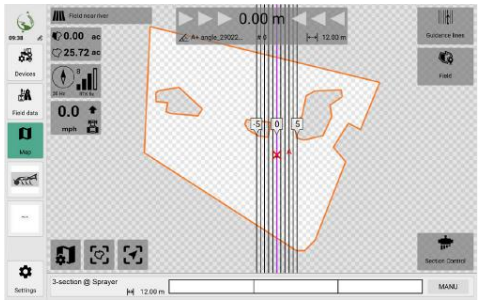
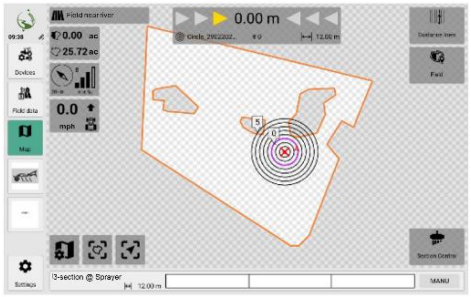
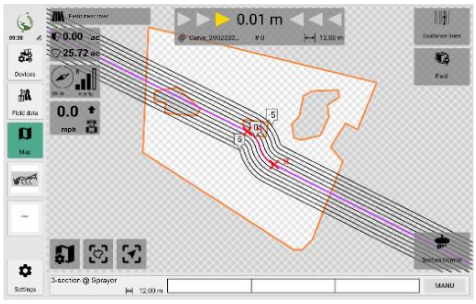
When Section Control is switched on (ISOBUS-capable implement only), the section control works fully automatically.

When using a non-ISOBUS-capable implement (virtual implement), the operator must independently switch the implement on or off and control the coverage recording
(see Working with driving aids and automatic mode).

8.5.1 Types of guidance lines

The software supports different types of guidance lines.

The type of guidance line used depends on the planned type of application, the nature and the cultivation method of the field.

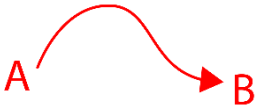
Guidance line type	Example
Straight AB Suitable for: ▪ Large fields ▪ Few obstacles (e.g. internal field boundaries) See: - Creating guidance lines automatically using **field boundaries.** - Creating straight guidance lines **manually**. - Creating straight guidance lines **manually using angles** *Straight guidance line between A and B*	
Straight guidance line with A as the starting point and an angle	
Circle Suitable for: ▪ Complex fields ▪ Circular spreading is more optimal due to the nature or boundary of the field ▪ Avoiding turning processes See Creating circular guidance lines manually.	
Curves or Curves and AB (mix guidance lines) Suitable for: ▪ Large fields with obstacles that you want to avoid (e.g. internal field boundaries)	

8.5.2 Basics for creating guidance lines

Guidance lines are always defined using a **base track.** The guidance lines are then aligned parallel to this base track.

A base track always consists of a start point (A), an end point (B) and the path between them. The path between the start and end point also determines the direction, similar to a vector.

When creating manually, all points or paths are recorded by driving the tractor on the field.

Straight AB	Circle	Curve
		

8.5.3 Create guidance lines automatically using field boundaries

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Make sure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible

NOTICE
Observe the minimum curve radius of the implements
When using Section Control (automatic section control) and the use of guidance lines, observe the minimum curve radius of the implements. Areas with radii of curves or circles that are too small are not processed accordingly.

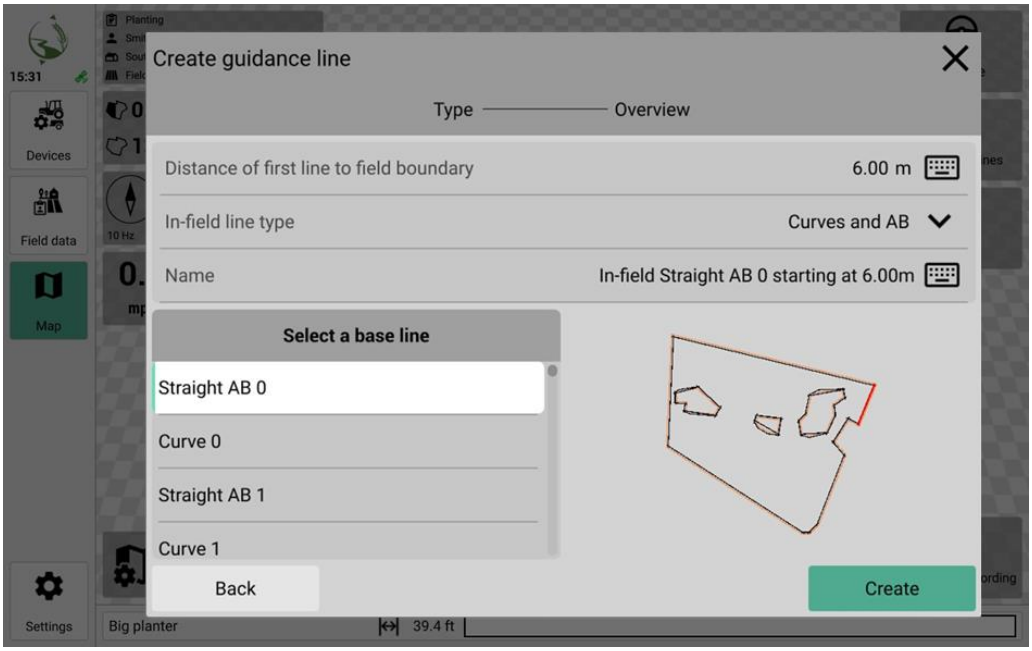
a) Adjust the settings for non-ISOBUS-capable implements (virtual implements)
See Managing implements => Settings for virtual implements

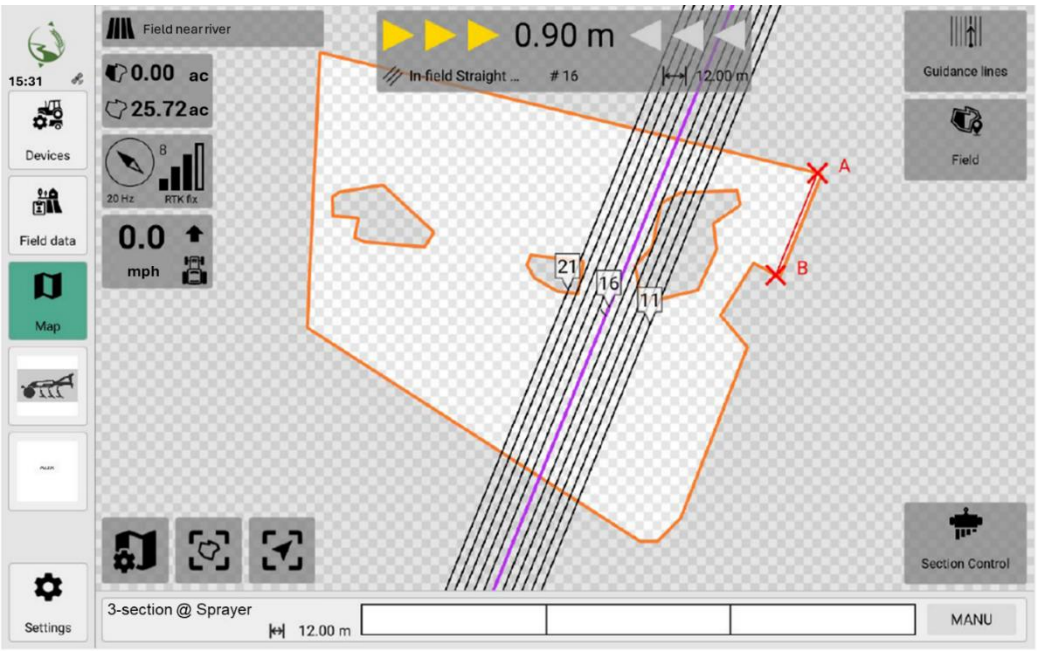
With this action, base tracks are automatically calculated based on the field boundaries and displayed in a list. A suitable base track can then be selected from the list, which in turn generates the final guidance lines.

Procedure

✓ A field is active with field boundaries.

1. Navigate to "Map"> “Guidance lines".
2. Press "New” and then “In-field lines from field boundary".
   ⇨ The software automatically calculates possible base tracks at the field boundaries.
3. In the list, select the appropriate base track that is to be used for the guidance lines.
   You can use the “In-field
   ⇨ The selected base track is highlighted in color on the right in the preview.
4. Enter the distance of first line to field boundary. It serves as a safety distance between the generated guidance lines and the field boundaries (half of the set working width by default).
5. Press "Create”.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.





8.5.4 Create guidance lines automatically for headlands

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

NOTICE
Observe the minimum curve radius of the implements
When using Section Control (automatic section control) and the use of guidance lines, observe the minimum curve radius of the implements. Areas with radii of curves or circles that are too small are not processed accordingly.

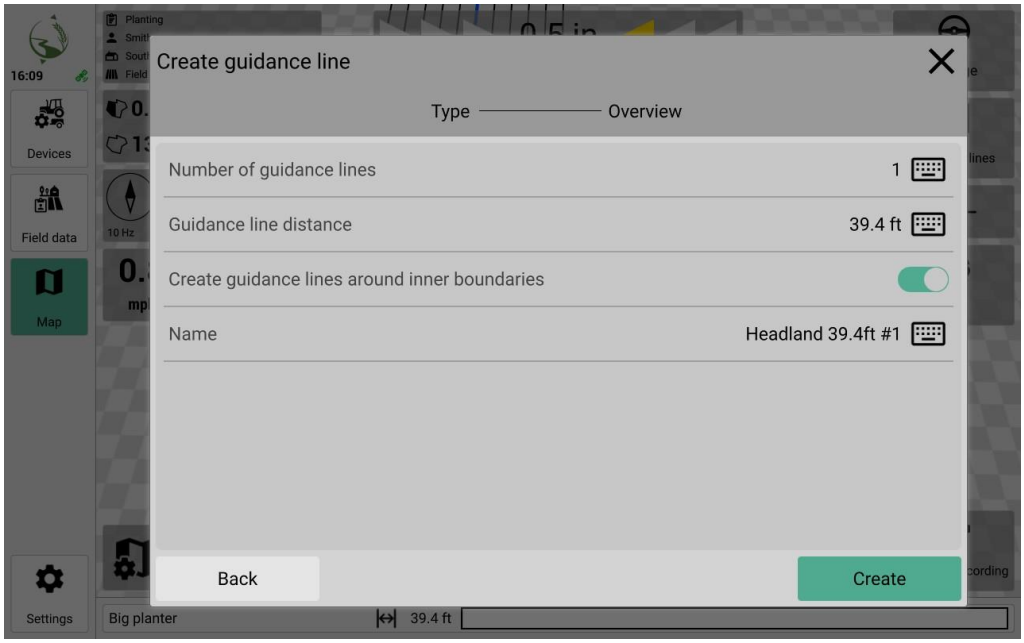
a) Adjust the settings for non-ISOBUS-capable implements (virtual implements)
See Managing implements, Settings for virtual implements

This action automatically calculates guidance lines based on the field boundary and creates them within the field boundaries.

Procedure

✓ A field is active with field boundaries.

1. Navigate to "Map"> “Guidance lines".
2. Press New and then Headland guidance lines.
3. You have the following options:
   ⇨ Set the “Number of guidance lines”.
   ⇨ With several guidance lines: Set “Guidance line spacing”
   ⇨ Switch “Half width mode” on / off
   ⇨ Switch “Create guidance lines around inner boundaries” on / off
   ⇨ With several guidance lines: Switch “Extend guidance lines to field boundary” on / off
   ⇨ Assign “Name”
4. Press "Create”.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.



8.5.5 Create straight guidance lines manually

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

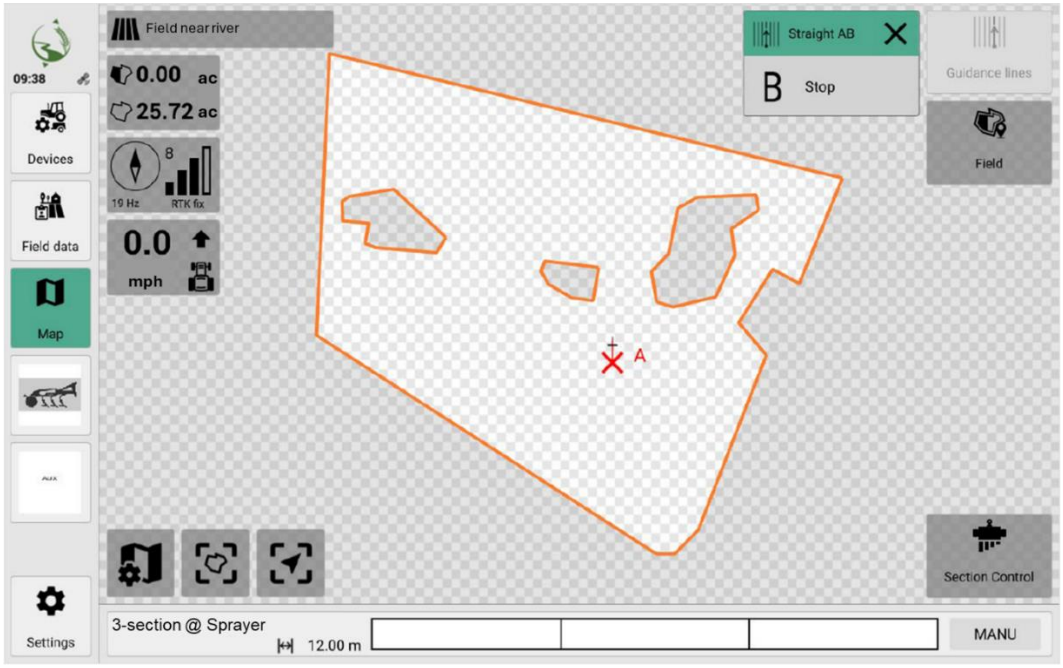
a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

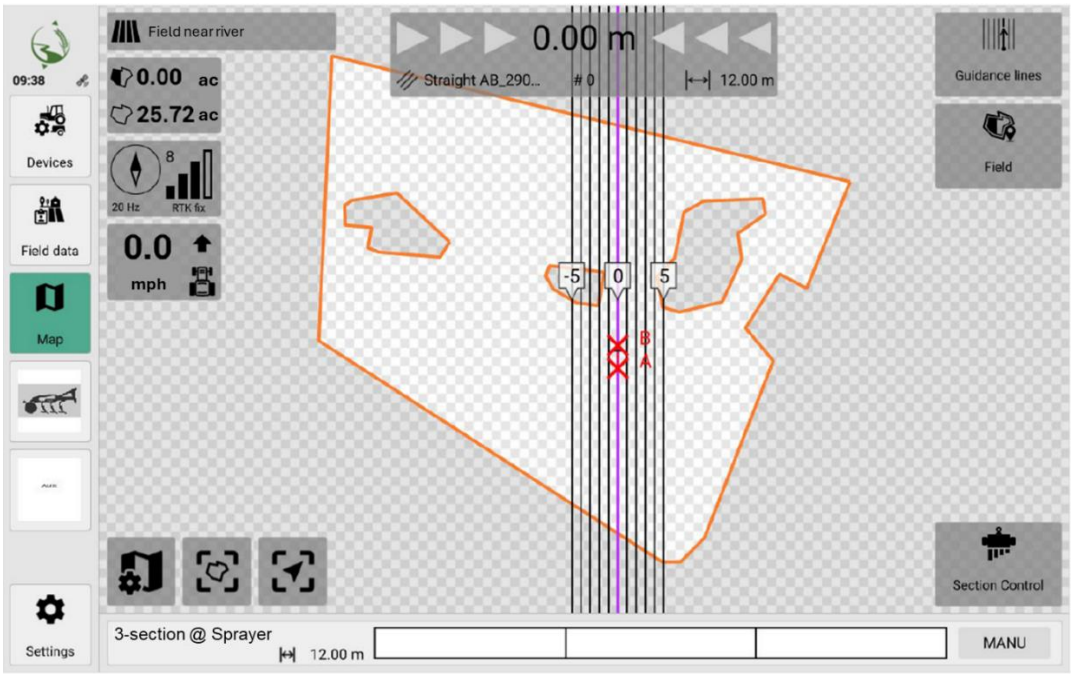
In this action, a starting point is approached with the vehicle and then the planned guidance line is driven straight across the field. The software automatically calculates a suitable, straight base track.

Procedure

✓ A field is active.

1. Drive the vehicle to the point in the field where you want to start recording the guidance line (starting point A).
2. Navigate to "Map"> “Guidance lines".
3. Press "New” and then “Straight AB".
4. Press "Start”.
   ⇨ The recording begins.
5. Drive the vehicle in a straight line.
   ⇨ The planned guidance line is displayed in color on the map.
6. Regularly check the planned guidance line on the map.
7. As soon as the planned guidance line is finished, stop the vehicle
8. Press "Stop”.
   ⇨ Guidance lines are created.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.





8.5.6 Create straight guidance lines manually using angles

NOTE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

Clockwise angle

Angles are indicated in a clockwise direction starting with 0°. For absolute angles, 0° is the imaginary north axis; for relative angles, 0° is the direction of travel forwards. For example, for absolute angles: 0° = north, 90° = east, 180° = south, 270° = west.

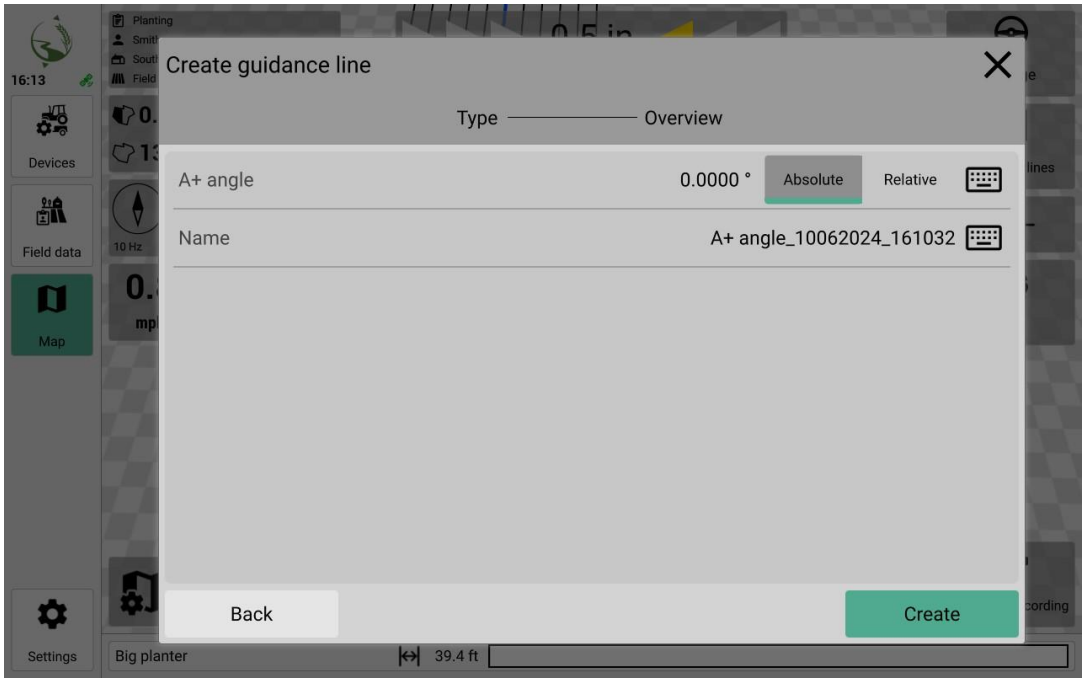
This action involves travelling to a starting point with the vehicle and then assigning an angle (absolute or relative) to create a guidance line.

This action creates a straight guidance line.

Procedure

✓ A field is active with field boundaries.

1. Drive the vehicle to the point in the field where you want to start recording the guidance line (starting point A).
2. Navigate to "Map"> “Guidance lines".
3. Press "New” and then "A+ angle".
4. Set the angle. Note the following options:
   ⇨ Relative - Sets the angle of the guidance lines in relation to the current direction of travel of the vehicle (front direction of travel = 0°).
   ⇨ Absolute - Sets the angle of the guidance lines in relation to global north (0°).
5. Enter the name of the guidance line.
6. Press "Create”.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.



8.5.7 Create circular guidance lines manually

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

NOTICE
Observe the minimum curve radius of the implements

When using Section Control (automatic section control) and the use of guidance lines, observe the minimum curve radius of the implements. Areas with radii of curves or circles that are too small are not processed accordingly.

Adjust the settings for non-ISOBUS-capable implements (virtual implements)
See “Managing implements”

For this action, a starting point is approached by vehicle and then the planned guidance line is followed in a circle

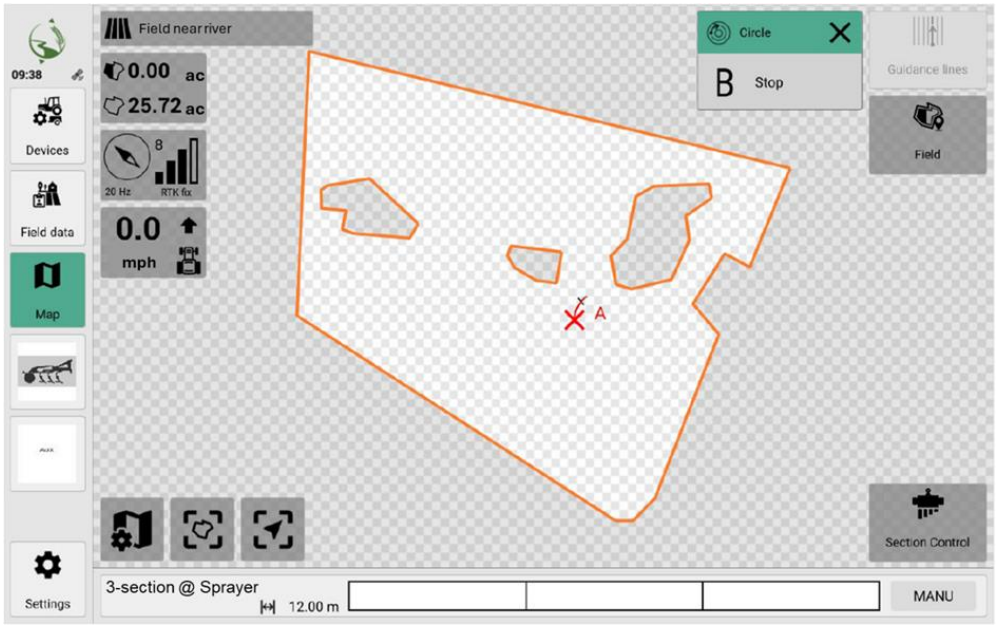
across the field. The software automatically calculates the centre point. The guidance lines are then generated based on the set working widths.

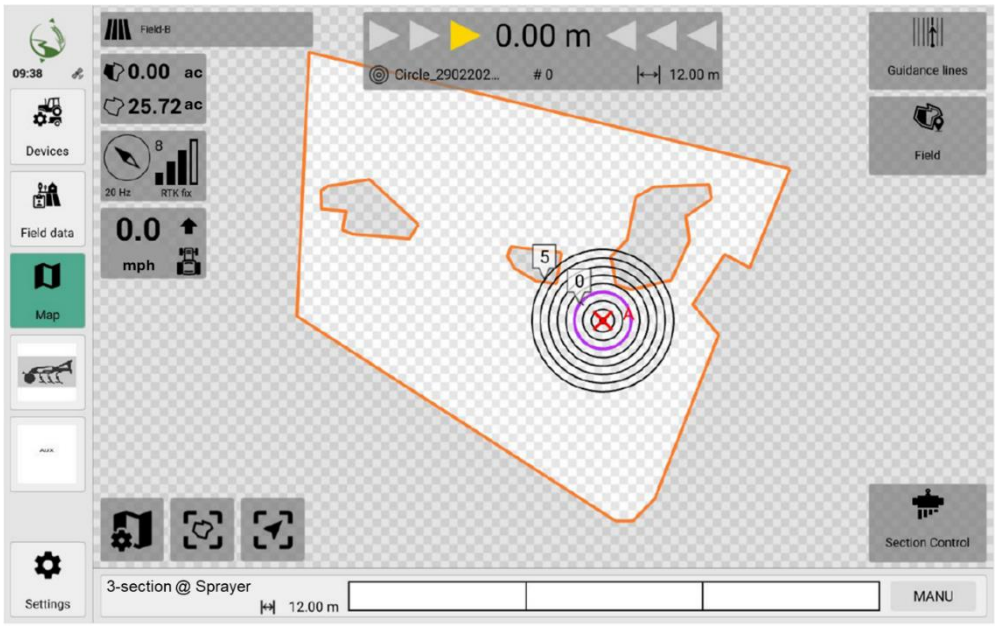
Guidance lines can be moved after they have been created.
See Shifting guidance lines.

Procedure

✓ A field is active.

1. Drive the vehicle to the point in the field where you want to start recording the guidance line (starting point A).
2. Navigate to "Map"> “Guidance lines".
3. Press "New” and then "Circle".
4. Press "Start”.
   ⇨ The recording begins.
5. Drive a circular route with the vehicle
   ⇨ The planned guidance line is displayed in color on the map.
6. Regularly check the planned guidance line on the map.
7. As soon as the planned guidance line is finished, stop the vehicle.
8. Press "Stop”.
   ⇨ Guidance lines are created.
   ⇨ Messages are displayed in the software in the event of faults during or after installation. Follow the instructions.





8.5.8 Create curved guidance lines manually

NOTICE
Recording accuracy and GNSS
This action uses coordinates from the GNSS source to transfer data to the software.

a) Make sure that the GNSS source is working properly.
b) Ensure that the correct direction of travel is set.
c) Drive or stop at the desired positions as precisely as possible.

NOTICE
Observe the minimum curve radius of the implements

When using Section Control (automatic section control) and the use of guidance lines, observe the minimum curve radius of the implements. Areas with radii of curves or circles that are too small are not processed accordingly.

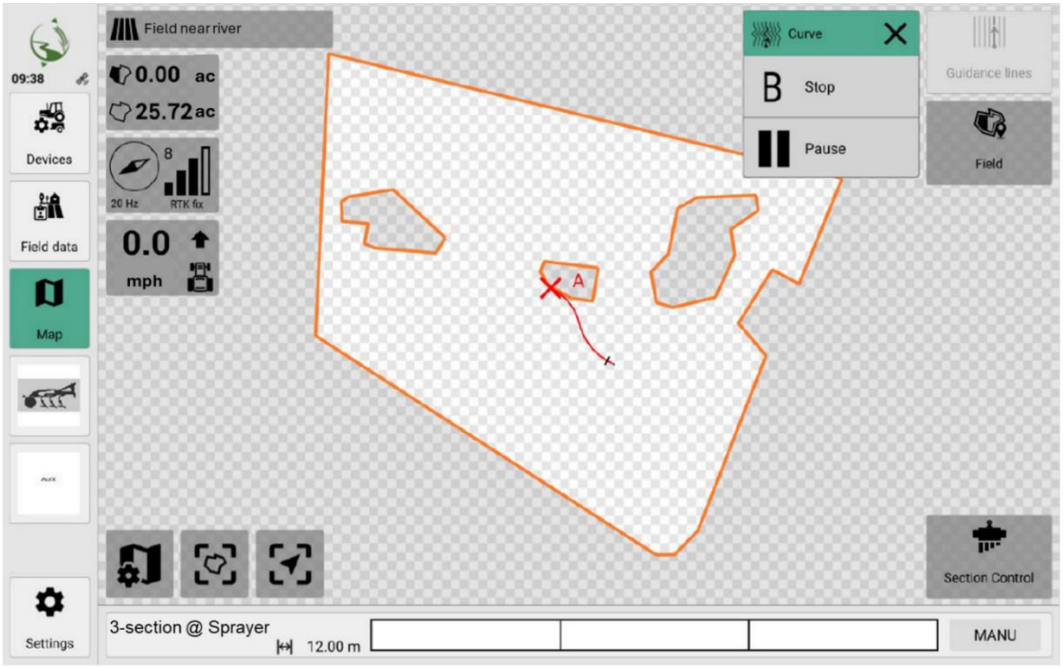
Adjust the settings for non-ISOBUS-capable implements (virtual implements)
See Managing implements

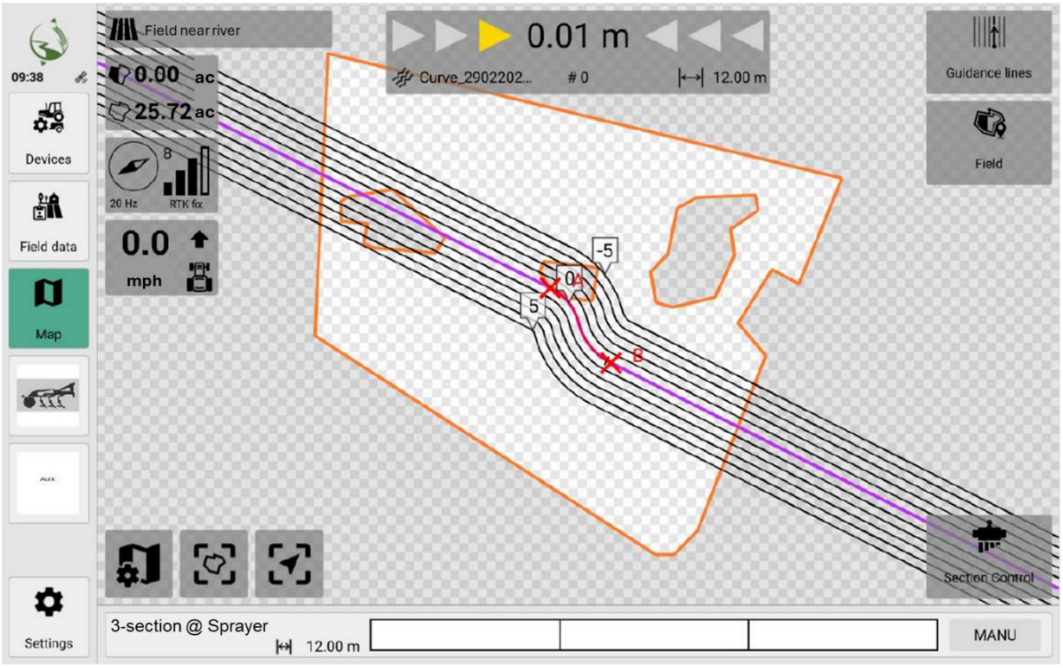
In this process, a starting point is approached by vehicle and then the planned guidance line is followed in a curve across the field. The software automatically calculates a suitable, curved base track. The curve is automatically extended at the ends with straight base tracks.

Procedure

✓ A field is active.

1. Drive the vehicle to the point in the field where you want to start recording the guidance line (starting point A).
2. Navigate to "Map"> “Guidance lines".
3. Press "New” and then "Contour".
4. Press "Start”.
   ⇨ The recording begins.
5. Drive a curved route with the vehicle
   ⇨ The planned guidance line is displayed in colour on the map.
6. Regularly check the planned guidance line on the map.
7. As soon as the planned guidance line is finished, stop the vehicle.
8. Press "Stop”.
   ⇨ Guidance lines are created.





8.5.9 Switch guidance lines on/off

Procedure

✓ A field is active with guidance lines.

1. Navigate to **Map** > Guidance lines.
2. Carry out one of the following actions:

- Select a guidance line that you would like to use.
- Select **None** to not use guidance lines.

8.5.10 Renaming guidance lines

Procedure

✓ A field is active

1. Navigate to "Map"> “Guidance lines".
2. Press "Edit”.
3. Select the guidance line that you want to rename. Then press "Edit”.
4. Rename the guidance line and confirm the entry.

8.5.11 Shifting guidance lines

Procedure

✓ A field is active

1. Navigate to Map > Guidance lines.
2. Select the guidance line you want to shift from the list.
3. Press “Shift".
4. Edit the lateral offset of the guidance line and confirm the entry.
5. Optionally, you can save the settings you have made as a new guidance line.
   ⇨ Switch on the “Save as new guidance line” option.
   ⇨ Give the new guidance line a suitable name.
6. Press "Apply”.
   ⇨ Switch on the “Save as new guidance line” option.

8.5.12 Deleting guidance lines

NOTICE
Data loss
This process cannot be reversed.

Procedure

✓ A field is active with guidance lines.

1. Navigate to "Map” > "Field” > “Guidance lines”.
2. Press "Edit”.
3. Select one or more guidance lines that you want to delete.
4. Press "Delete”.
5. Confirm the security enquiry.

8.6 Working with driving aids and automatic mode

8.6.1 Overlays during work

During operation, overlays or warning symbols draw attention to any faults or provide additional information.

Icon	Function
	▪ Vehicle approaches the field boundaries. ▪ Vehicle is outside the field boundaries.
	▪ Vehicle approaches marking point

8.6.2 Use automatic mode during work

Carry out work with an ISOBUS-compatible implement

If an active field is being driven on with an ISOBUS-capable implement, you can switch the Section Control function on or off in the map.

This automatically switches on or off all affected functions and sections of the implement (e.g. nozzles on/off). In addition, the processed area is automatically recorded depending on the degree of processing and stored in the system.

Icon	Function
	Switches the Section Control automatic mode on/off.

Carry out work with a non-ISOBUS-capable implement (virtual implement)

If an active field is travelled on with a non-ISOBUS-capable implement, you must switch the Coverage recording function and the affected functions and sections of the implement (e.g. nozzles on/off) on or off independently in the map.

Icon	Function
	Starts/stops the coverage recording for virtual implements.

8.6.3 Using driving aids at work

The following driving aids can be used during day-to-day work:

- The guidance lines - Show the lanes to be travelled on the map.
- The light bar - Indicates on the map when you deviate from the guidance line.
- The guidance indicator - Shows the direction of travel of the vehicle on the map.

The light bar helps you to precisely maintain the specified guidance lines during your journey. Its main function is to give you feedback in real time and inform you if you unintentionally leave the specified lane. It also shows you how to return safely to the right lane.

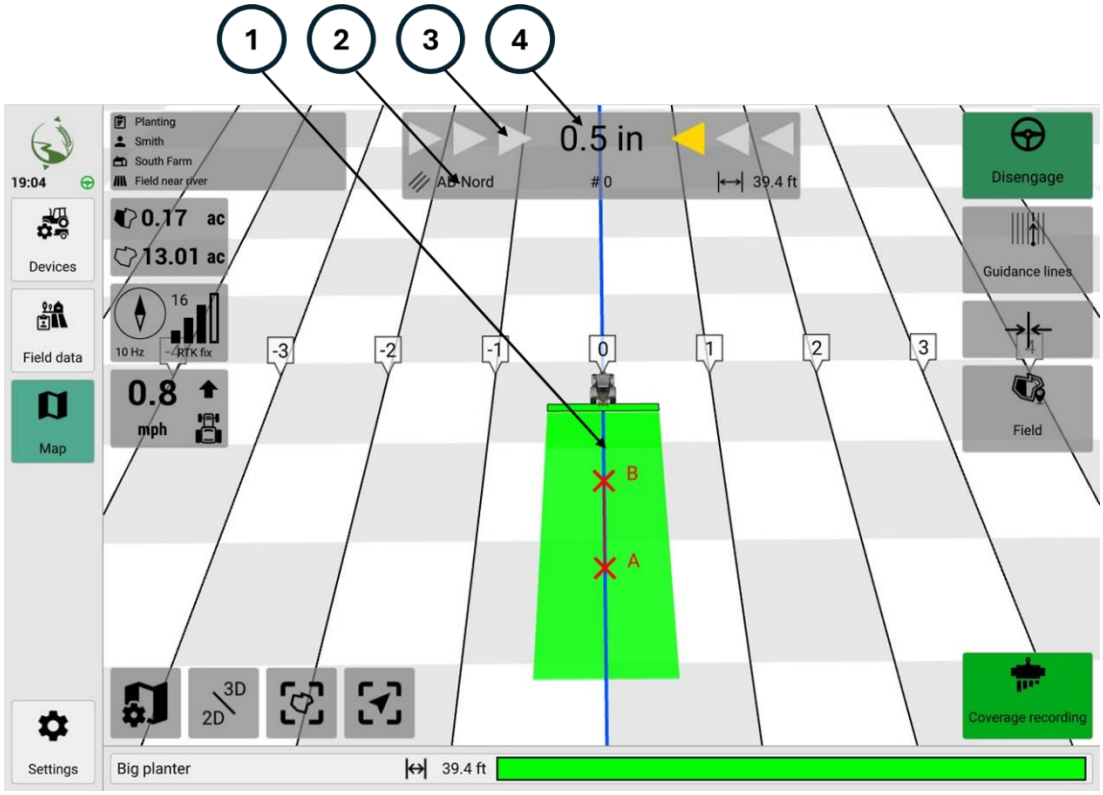
Display settings for driving aids can be made in the map settings (See Map settings).

To be able to use driving aids, guidance lines must be active (See Using of guidance lines).

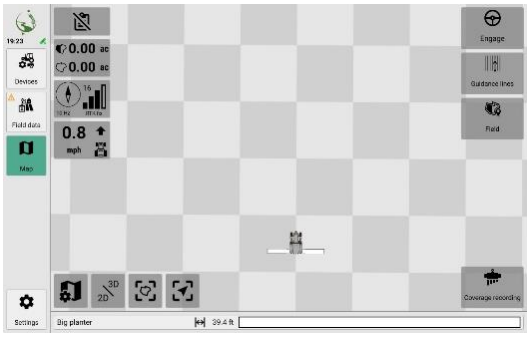
WARNING
Obstacles and incorrect driving

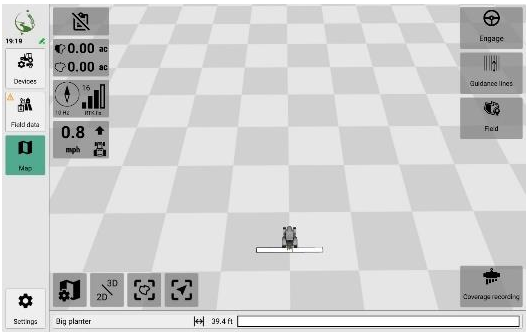
The software cannot independently recognize obstacles or incorrect driving or suggest appropriate measures.

a) The driver is responsible for safe driving.



1 Guidance line
2 Name of active guidance line
3 Direction indicator
4 Deviation from the guidance line





Detailed view of guidance indicator in 2D map view Detailed view of guide indicator in 3D map view

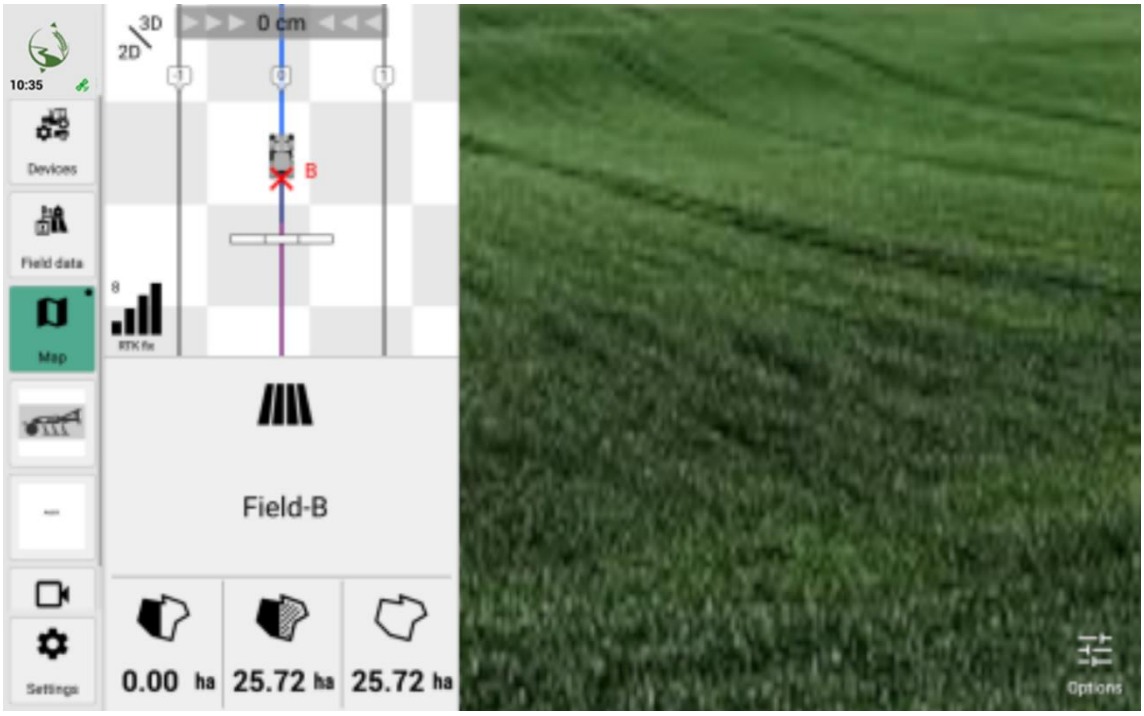
8.6.4 Using analogue camera at work

The video stream of the connected analogue camera is displayed in the camera view (See Switching analogue camera on / off).

WARNING
Reversing
The distances appear different on the terminal than they are in reality.

The orientations appear differently on the terminal than they are in reality - depending on the camera settings (horizontal or vertical mirroring).

a) Always check by looking directly to the rear, left and right when reversing.



Camera view in the main window (right) and guidance lines in the MiniView (left)

Option	Description
Mirror horizontally	Switch horizontal mirroring of the image on / off.
Mirror vertically	Switch vertical mirroring of the image on / off.
View mode – Fitting 	Press to adjust the camera image to the terminal size.
View mode - Original size 	Press to adjust the camera image to the original size.
Automatic activation when reversing	Switch automatic activation on / off when reversing. If this function is switched on: ○ When reversing, the image from the analogue camera is automatically shown on the terminal. ○ When driving forwards, the last view shown is automatically shown on the terminal.

8.6.5 Using automatic steering at work

The automatic steering supports the driver when travelling along guidance lines.

The driver continues to accelerate and brake, while the steering system takes over steering once activated. The driver must always be able to intervene in dangerous situations.

WARNING
Obstacles and incorrect driving
The software cannot independently recognize obstacles or incorrect driving or suggest appropriate measures.

a) The driver is responsible for safe driving.

NOTICE
Automatic steering and cornering
The behavior of the automatic steering when cornering depends on the settings in the steering system.

a) Adjust the corresponding settings to individually optimize the steering for driving in curves.

Switching automatic steering on / off

Icon	Function
	Press to switch the automatic steering on/off. ○ **Engage** Switch **on** automatic steering ○ **Disengage** Switch **off** automatic steering

9 System settings

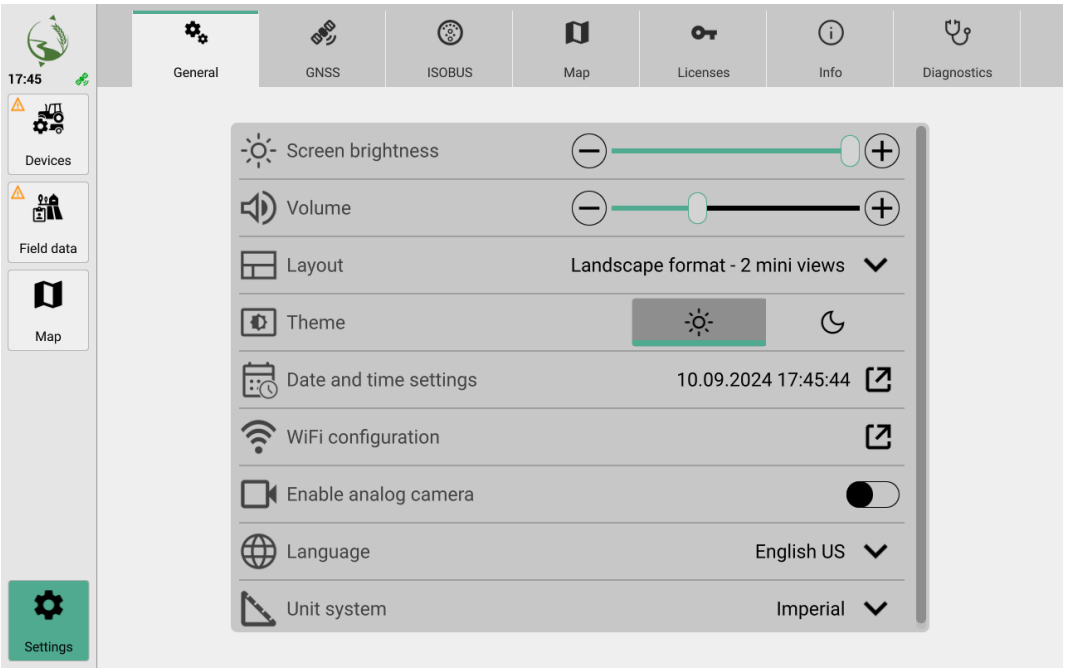
The following chapter explains the basic system settings that can be used to set up the application.

No confirmation required

If no confirmation is required, the settings made are transmitted to the system/control unit in real time and applied immediately.

9.1 General system settings

In the **General** tab, you can make basic settings for the screen, layout and system.



9.1.1 Setting the screen brightness

You can adjust the screen brightness.

Procedure

1. Navigate to Settings > General > Screen brightness.
2. You have the following options:

Icon	Function
+	Brighter
−	Darker

9.1.2 Setting the volume

CAUTION

Hearing damage

The volume of the software can be set to a level that can lead to permanent hearing damage over a longer period of time.

To avoid hearing damage, set a medium volume.

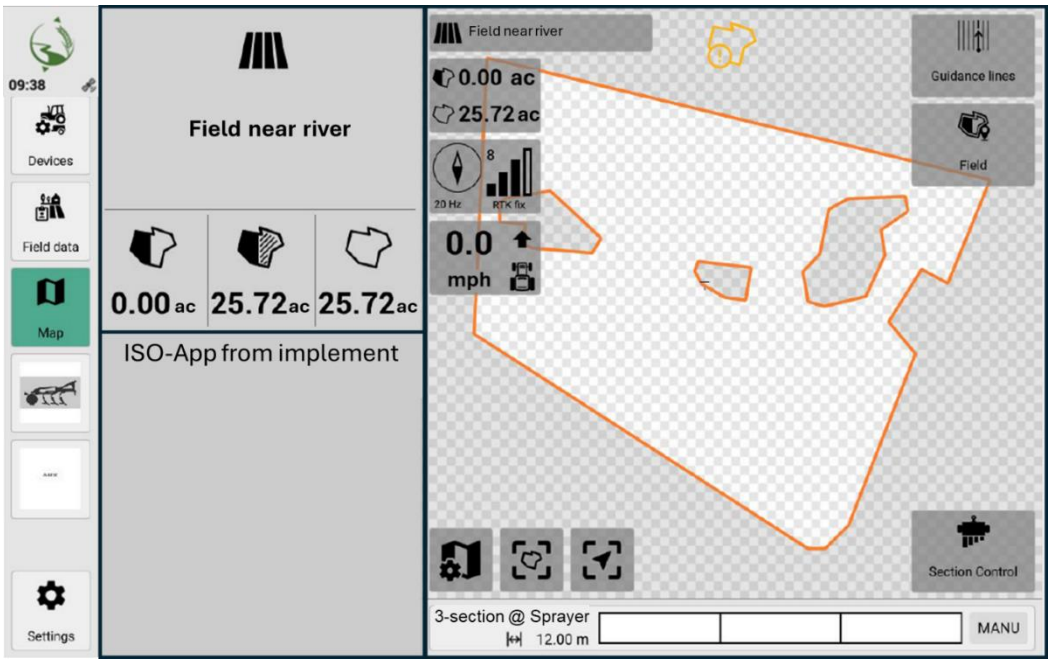
Procedure

1. Navigate to Settings > General > Volume.
2. You have the following options:

Icon	Function
+	Louder
—	Quieter

9.1.3 Customize layout

You can customize the layout of the map view, e.g. set the display in portrait or landscape format or how many view windows are displayed.



Map view in landscape format and 2 miniviews (left)

NOTICE

Restarting the software

The software is restarted when switching between landscape and portrait format.

This leads to a loss of connection to the implement. It is no longer possible to operate machine functions via the Universal Terminal. Software functions are not available during the restart, e.g. navigation or driving aids.

To ensure trouble-free operation, stop all ongoing work.

Procedure

1. Navigate to **Map** > Guidance lines. Select the guidance line you want to shift from the list.
   - ⇨ To set a landscape format with three small view windows, select “Landscape format 3 mini views”.
   - ⇨ To set a landscape format with two small view windows, select “Landscape format 2 mini views”.
   - ⇨ To set a portrait format in which the machine is operated at the top of the screen, select ***“Portrait format “Machine operation at the top”***
   - ⇨ To set a portrait format in which the machine operation takes place at the bottom of the screen, select ***“Portrait format - Machine operation at the bottom”***.

Landscape layout

When selecting a landscape layout, you can quickly switch between full screen mode and mini view and full screen mode by pressing the map view or one of the ISOBUS UT buttons in the left-hand menu bar again.

9.1.4 Select display theme

You can display the software interface in a dark and a light version.

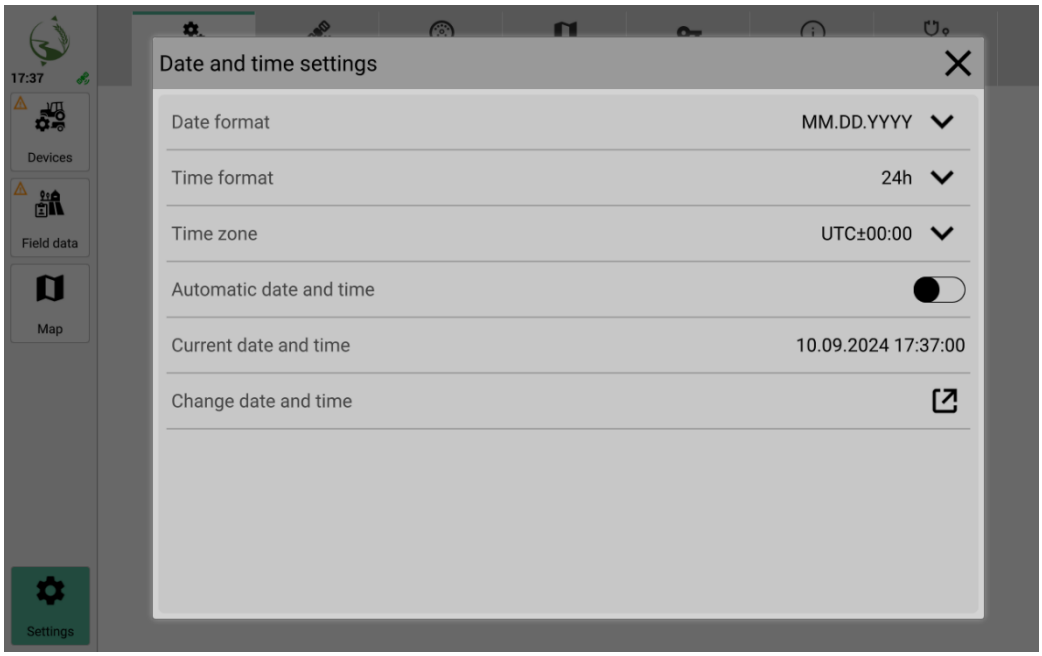
Procedure

1. Navigate to Settings > General > Theme.
2. You have the following options:

Icon	Function
	Bright display theme
	Dark display theme

9.1.5 Date and time settings

You can subsequently change the date and time settings, when the software was first started.



9.1.5.1 Set date format

Procedure

1. Navigate to "Settings" > "General" > "Date and time settings".
2. Press "Edit".
3. Under **Date format**, select a date format from the drop-down menu.

9.1.5.2 Set time format

Procedure

1. Navigate to "Settings" > "General" > "Date and time settings".
2. Press "Edit".
3. Under **Time format**, select a time format from the drop-down menu.

9.1.5.3 Set date and time automatically

Procedure

1. Navigate to "Settings" > "General" > "Date and time settings".
2. Press "Edit".
3. To set the date and time automatically, move the slider under "Automatic date and time" to the right.
   This setting causes the system time to be synchronized with the time signal from the GNSS receiver.
4. To prevent the date and time from being set automatically, move the slider under "Automatic date and time" to the left.

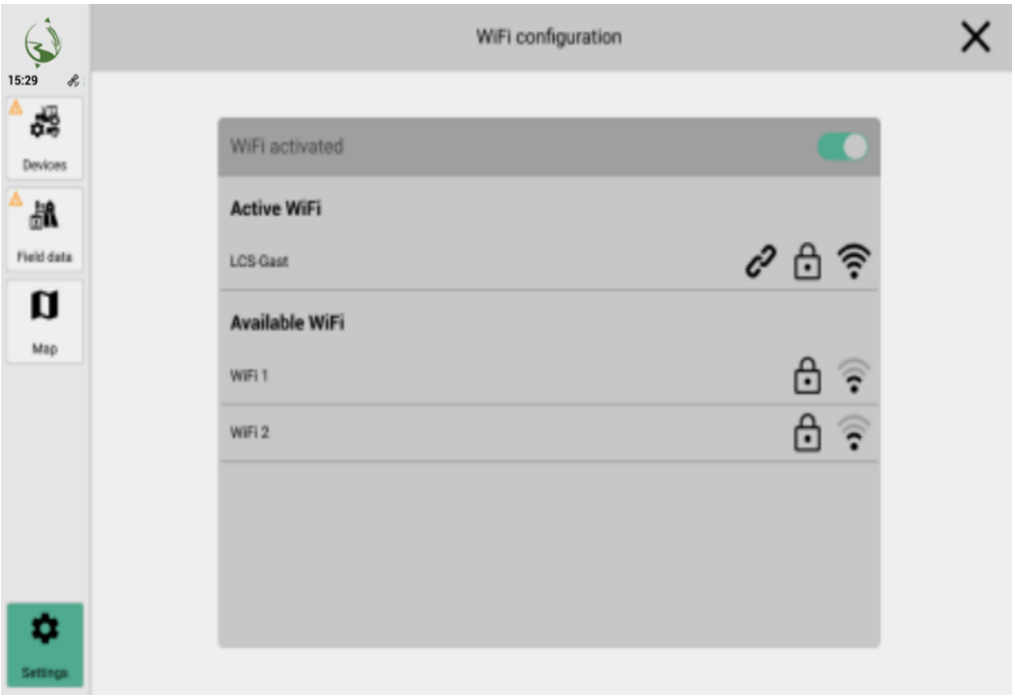
9.1.5.4 Manually changing date and time

Procedure

1. Navigate to "Settings" > "General" > "Date and time settings".
2. Press "Edit".
3. Press the arrow under **Date and time**.
4. Enter the data manually.
5. Confirm with **OK**

9.1.6 WiFi connections

Additional functions are available with an active WiFi connection.



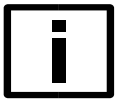
Icon	Function
	Protected WiFi
	Unprotected WiFi
	Signal strength of the WiFi ○ All bars = very good connection ○ Few bars = poor connection

9.1.6.1 Switching WiFi on/off

Procedure

1. Navigate to "Settings" > "General".
2. Press "WiFi configuration".
   ⇨ To turn on the WiFi, move the slider to the right.
   ⇨ To turn off the WiFi, move the slider to the left.

9.1.6.2 Connect with WiFi



NOTICE
Data loss / data manipulation

Connections to unprotected / unsecured WiFis can result in data loss, data manipulation or data being read by third parties. Data loss / data manipulation

Only connect to known and secure WiFis. Secure WiFis are labelled with the Protected WiFi symbol.

Procedure

✓ You are in extended field mode.

✓ A field has been created.

1. Make sure that the available WiFi is working properly.
2. Navigate to "Settings” > "General”.
3. Press "WiFi configuration”.
4. Make sure that the WiFi is activated (Switching WiFi on/off).
5. Select available WiFi.
6. Follow the instructions to enter the WiFi password.

The system "remembers" the active connection. When restarting, the device automatically connects to the selected WiFi.

9.1.6.3 Disconnect WiFi

Procedure

1. Navigate to "Settings” > "General”.
2. Press "WiFi configuration”.
3. Press "WiFi”.
4. Press "Delete”.
5. Confirm the security enquiry.

9.1.7 Switching analogue camera on / off

Procedure

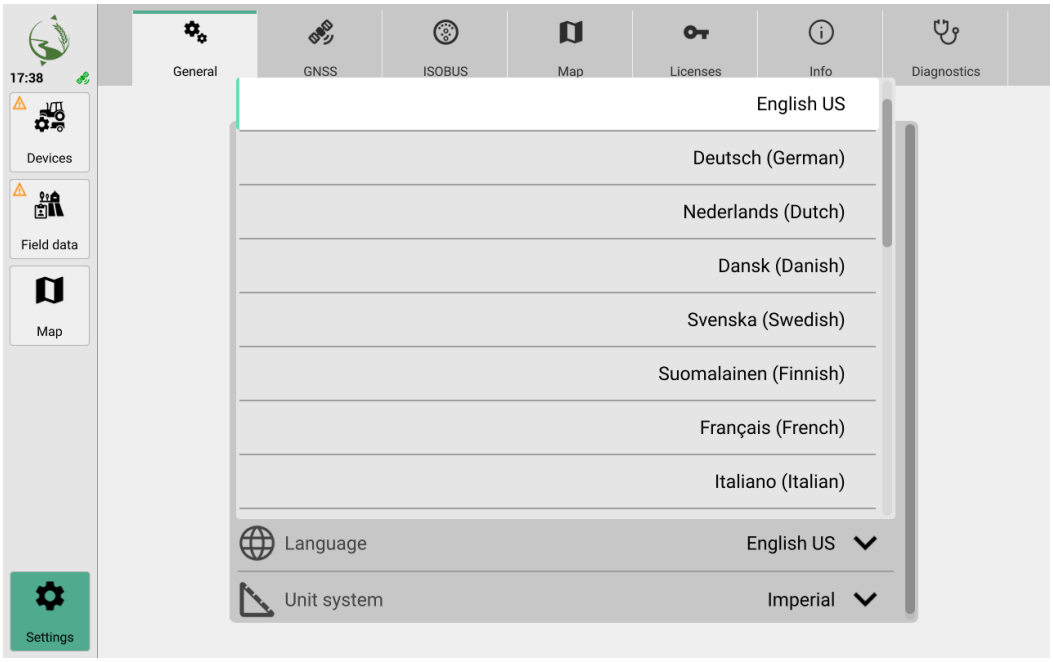
1. Navigate to "Settings” > "General”.
2. Press “Enable analogue camera".
   - ⇨ To switch on the analogue camera, move the slider to the right.
   - ⇨ To switch off the analogue camera, move the slider to the left.

9.1.8 Using LC:HOME

Procedure

1. Navigate to "Settings” > "General” > “Enable LC:Home”.
   - ⇨ To switch on the function, move the slider to the right.
   - ⇨ To switch on the function, move the slider to the left.
   - ⇨ The "LC: HOME" tab appears.

9.1.9 Setting system language

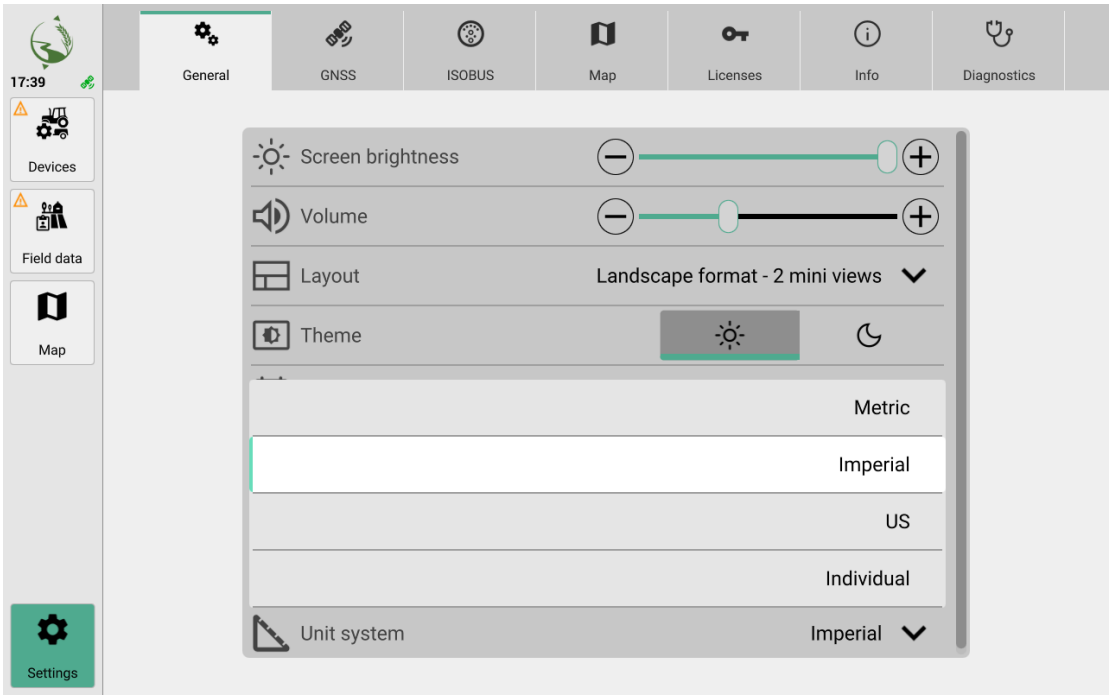


Procedure

1. Navigate to Settings > General > Language.
2. Select a language from the drop-down menu.

9.1.10 Setting the system of units

You can select the unit system from predefined systems or create your own.



9.1.10.1 Set fixed system of units

Procedure

1. Navigate to "Settings" > "General" > "Unit system".
   - ⇨ To use the metric system, select "Metric".
   - ⇨ To use the imperial system, select "Imperial". This system is used in Great Britain
   - ⇨ To use the US system, select "US".

9.1.10.2 Set individual unit system

Procedure

1. Navigate to "Settings" > "General" > "Unit system".
2. Select "Individual".
3. For each subcategory, select whether it is to be displayed according to the metric, imperial or US system of units.
4. Apply the settings.

9.1.11 Switching thousands separator on/off

Procedure

1. Navigate to "Settings" > "General" > "Thousands separator".
   - ⇨ To turn on the thousand separators, move the slider to the right.
   - ⇨ To turn off the thousand separators, move the slider to the left.

9.1.12 Operating terminal exclusively in UT mode

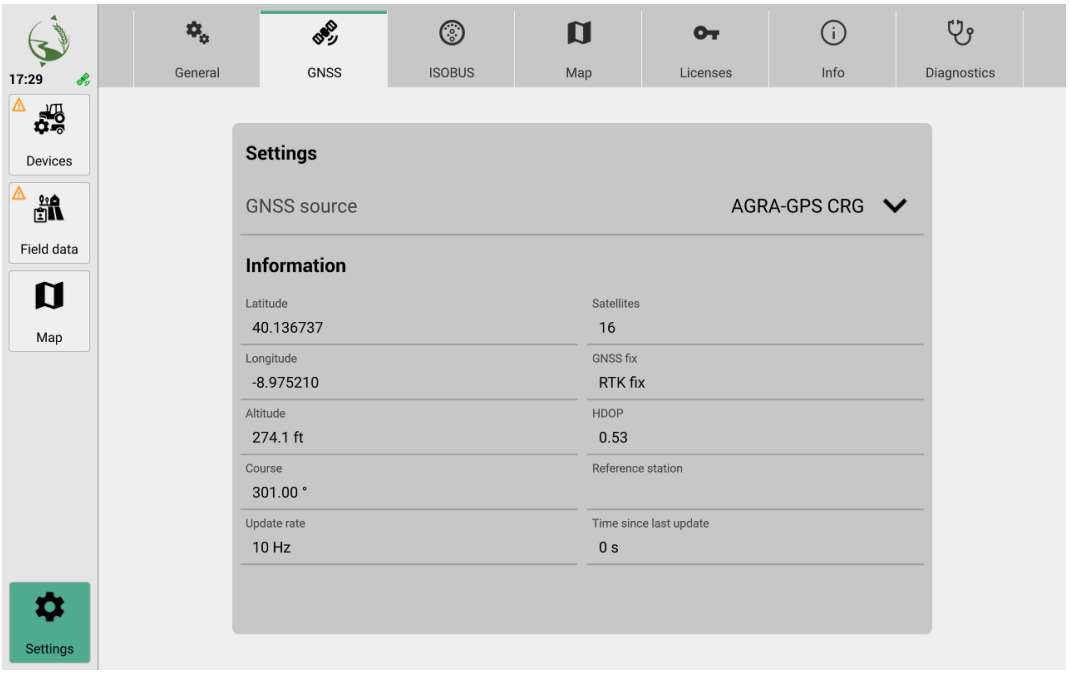
You can use this setting if you only want to use the terminal with basic UT functions.

Procedure

1. Navigate to "Settings" > "General" > "Operate terminal exclusively in UT mode".
   => If you only want to operate the terminal in UT mode, move the slider to the right.
   => If you do not want to operate the terminal in UT mode only, move the slider to the left

9.2 GNSS settings

The interface for the GNSS connection can be edited in the GNSS tab.



9.2.1 Set up GNSS source

GNSS is a global satellite navigation system used to determine locations, navigation and time references.

For using the CRG Vision10 Display together with CRG antenna for Autosteering select:

- AGRA-GPS CRG

else for other purposes select:

- NMEA0183 or NMEA2000

Procedure

1. Navigate to “Settings” > “GNSS” > “GNSS source”.
2. Use the drop-down menu to select a GNSS source. You have the following options:
   ⇨ NMEA0183 via serial interface
   ⇨ NMEA2000 via CAN
   ⇨ AGRA-GPS CRG

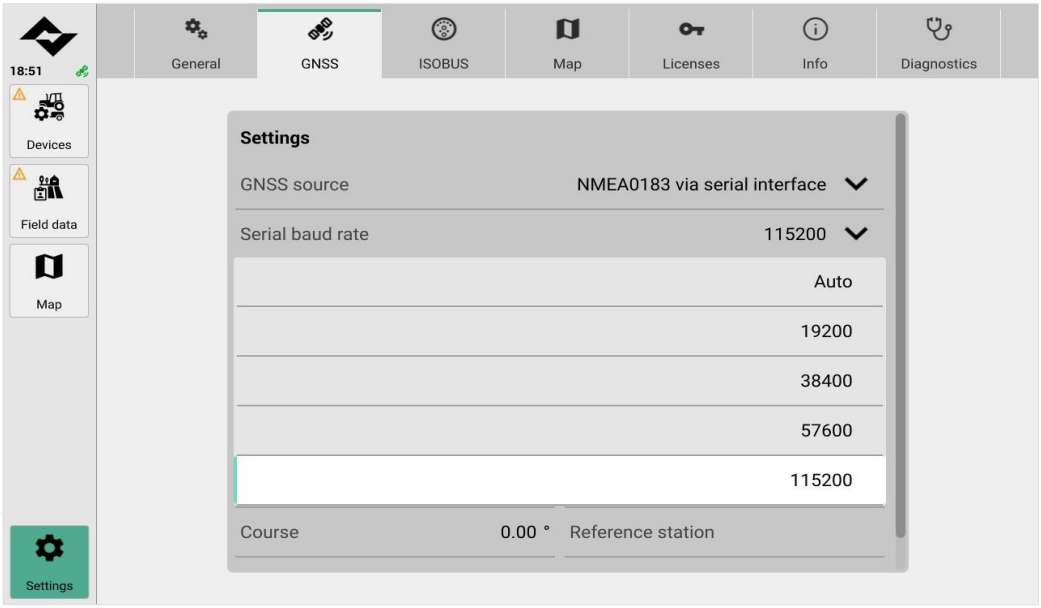
Status / Symbol	Description
	GNSS active and connected (green icon)

9.2.2 Setting the serial baud rate for NMEA0183 via serial interface

The baud rate indicates how quickly data is transferred between the transmitter and receiver.
The higher the baud rate, the faster the data is transmitted.

NOTICE
The set baud rate must correspond to the baud rate of the GNSS receiver, otherwise no data exchange is possible.

The **automatic** (Auto) setting should preferably be used.
The baud rate can also be found in the GNSS receiver manual or can be obtained from the GNSS device manufacturer.



Procedure

1. Navigate to Settings > GNSS > Serial baud rate.
2. Select a suitable baud rate from the drop-down menu.

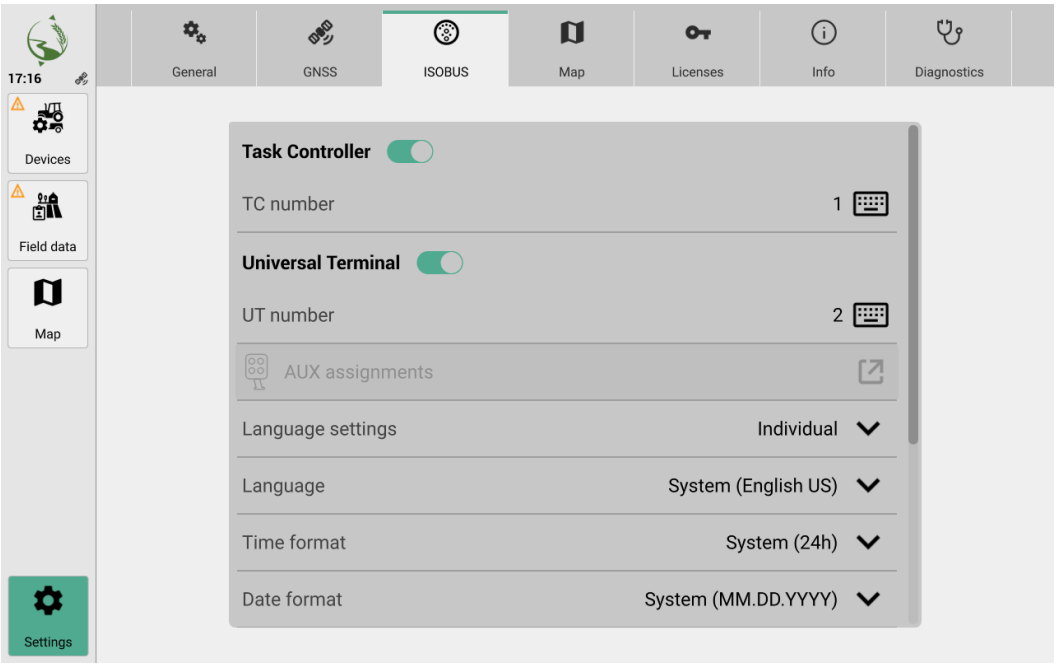
9.2.3 Display GNSS information

You can display information under **Settings** > **GNSS source**, e.g.:

- Latitude
- Longitude
- Height
- Course
- Update rate
- Satellites
- GNSS-Fix
- HDOP (Horizontal Dilution of Precision)
- Reference station

9.3 ISOBUS settings

You can make settings for the ISOBUS interface in the **ISOBUS** tab.



9.3.1 Switch off the task controller

The Task Controller (TC) enables data recording and data exchange. The TC is a prerequisite for the documentation of job data with ISOBUS implements and for the Section Control, Variable Rate Control and other functions. It is switched on by default.

Procedure

1. Navigate to " Settings > ISOBUS > Task Controller”

   ⇨ To switch off the task controller, move the slider to the left.
   ⇨ To switch on the task controller, slide the control to the right.

9.3.2 Change TC number

The TC number is the number of the task controller.

Procedure

1. Navigate to "Settings” > "ISOBUS” > "TC number".
2. Open the keyboard.
3. Enter a number and confirm your entry.

9.3.3 Switching the Universal Terminal on / off

The Universal Terminal is the interface between man and machine. It is a display or operating device that guarantees access to the data. It is switched on by default.

NOTICE
Data loss
This action will result in a loss of connection to the implement. It is no longer possible to operate machine functions via the Universal Terminal.

a) To ensure trouble-free operation, stop all ongoing work.

Procedure

1. Navigate to "Settings” > "ISOBUS” > "Universal Terminal".
   ⇨ To switch off the task controller, move the slider to the left.
   ⇨ To switch on the task controller, slide the control to the right.

9.3.4 Change UT number

The UT number is the number of the Universal Terminal. When using several ISOBUS terminals with UT function, each of the terminals must have a unique UT number. Implements prefer to connect to the terminal with the lowest UT number. If several terminals have the same UT number, there will be a conflict and safe use of the UT functionality cannot be guaranteed.

NOTICE
Data loss
This action will result in a loss of connection to the implement. It is no longer possible to operate machine functions via the Universal Terminal.

a) To ensure trouble-free operation, stop all ongoing work.

Procedure

1. Navigate to "Settings" > "ISOBUS" > "UT number"
2. Open the keyboard.
3. Enter a number and confirm your entry.

9.3.5 Assign an external input device (e.g. joystick)

While driving, it is difficult to enter commands via the touchscreen.

For better handling, various input devices can be connected via
Settings > **ISOBUS** > **AUX assignment, such as** a joystick or switch boxes.

Procedure

1. Under "Settings" > "ISOBUS" > "UT number", check whether the Universal Terminal is set up as a primary terminal with the UT number 1.
   => You can perform the AUX assignment in this screen.
2. Press "Edit assignment" under "AUX".
3. Switch on the editing mode.
4. Select the external input device (e.g. joystick).
5. Press a button on the external input device.
   Then assign one of the displayed functions to the button.
6. Confirm the assignment with "Apply".

9.3.6 Setting additional softkey navigation buttons

This parameter is only relevant for machine types that do not have softkeys for scrolling in the pool.
If the parameter is activated, 64 virtual softkeys and navigation buttons are displayed for UT operation.
If the parameter is deactivated, 12 virtual softkeys and no navigation buttons are displayed for UT operation.

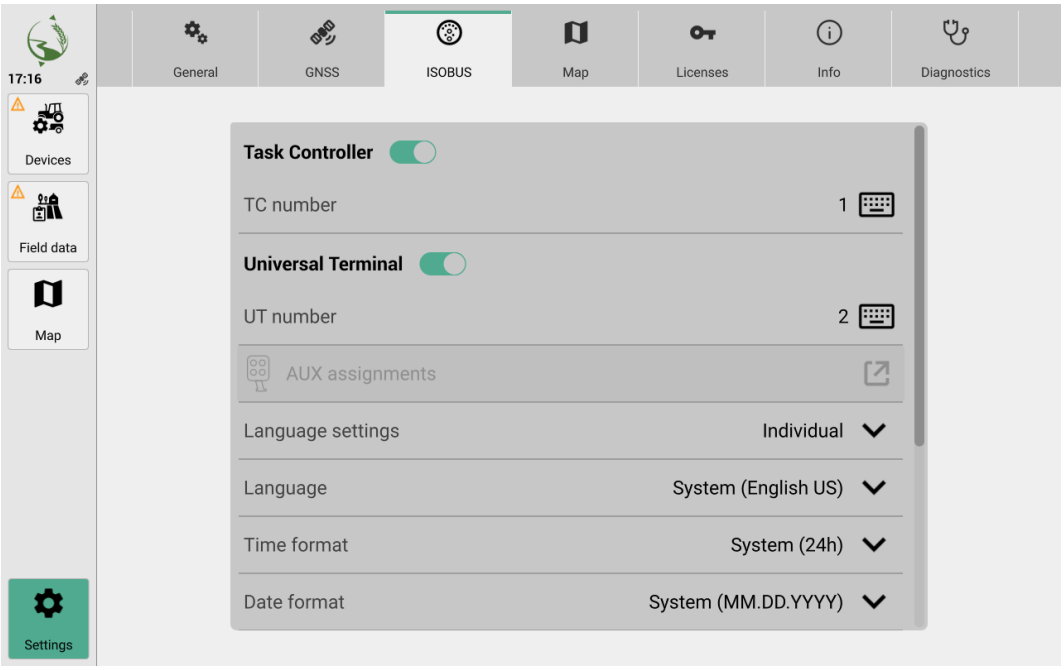
Procedure

1. Navigate to "Settings" > "ISOBUS" > "Softkey navigation buttons".
   => To show additional navigation buttons, move the slider to the right.
   => To hide additional navigation buttons, move the slider to the left.

9.3.7 Setting the ISOBUS UT system language

9.3.7.1 Setting the system language for ISOBUS UT

During this process, the language of the Universal Terminal (UT) is set to the current language (see Setting the system language).
Control elements and information in the UT are then displayed or formatted in this language.



Procedure

1. Navigate to Settings > ISOBUS > Language settings.
2. Under **Language**, select **System** from the drop-down menu.

9.3.7.2 Setting the system language for ISOBUS UT

During this process, the language and localisable content (e.g. time format) of the Universal Terminal (UT) are set individually. Control elements and information in the UT are then displayed or formatted in this language.

Procedure

1. Navigate to Settings > ISOBUS > Language settings.
2. Select “Custom” from the “Language” drop-down menu. Select a language.
3. Select a time format.
4. Select a date format.
5. Select a display for decimal characters.
6. Select a unit system.

9.3.8 Delete ISOBUS UT cache (delete temporary memory)

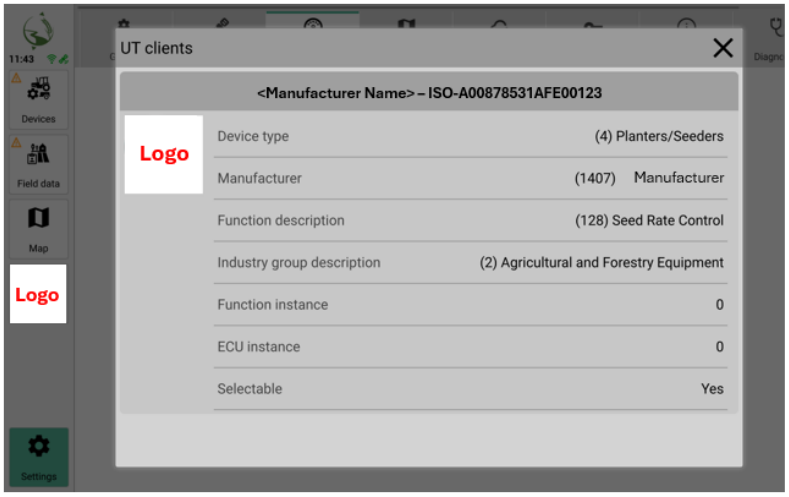
A pool contains the "cached" data of the UT operating screens of the connected devices (e.g. implements, AUX input devices). By deleting the pools, you force UT data to be uploaded again.

This helps, for example, if a change to the configuration of an implement or a software update did not result in the correspondingly changed operating screens becoming visible.

Procedure

1. Navigate to Settings > ISOBUS > Delete pools.
2. Select a pool to delete.
3. Press Delete

9.3.9 Show connected ISOBUS clients



Procedure

1. Navigate to "Settings” > "ISOBUS” > “Show connected clients”.

9.3.10 Switch File Server (FS) on/off

The File Server is a standardized protocol via which data can be exchanged.

Procedure

1. Navigate to "Settings” > "ISOBUS” > “Show connected clients”.
   => To switch on the File Server, move the slider to the right.
   => To switch off the File Server, move the slider to the left.

9.3.11 Change the File Server number

The FS number is the number of the File Server.
When using multiple File Servers, each File Server must have a unique FS number.

Procedure

1. Navigate to "Settings” > "ISOBUS” > "FS number".
2. Open a keyboard
3. Enter a number to confirm your entry.

9.3.12 Activate/Deactivate ISOBUS Shortcut Button

Pressing the ISOBUS Shortcut Button activates certain functions of the ISOBUS implement.
Which functions are activated depend on the respective implement.

Procedure

1. Navigate to “Settings“ > “ISOBUS“ > “ISB“ > “ISOBUS Short Button“.
   => To activate the ISOBUS Shortcut Button, move the slider to the right.
   => To deactivate the ISOBUS Shortcut Button, move the slider to the left
   => When the ISOBUS Shortcut Button is activated, an additional symbol appears in the menu, which you can use to deactivate it during operation.

9.3.13 Activate ISOBUS tolerance mode

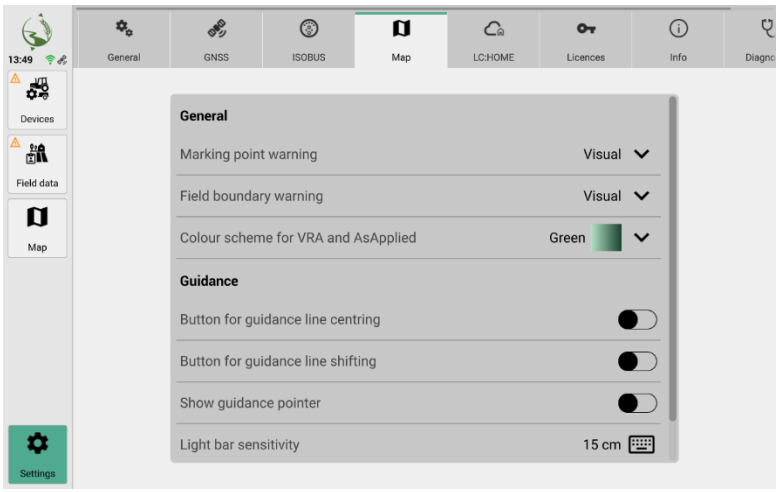
The ISOBUS tolerance mode can be used to improve compatibility with non-ISOBUS-compliant implements.

Procedure

1. Navigate to “Settings“ > “ISOBUS“ > “Miscellaneous“ > “ISOBUS tolerance mode“.
   => To activate ISOBUS tolerance mode, move the slider to the right.
   => To deactivate ISOBUS tolerance mode, move the slider to the left.
2. Confirm

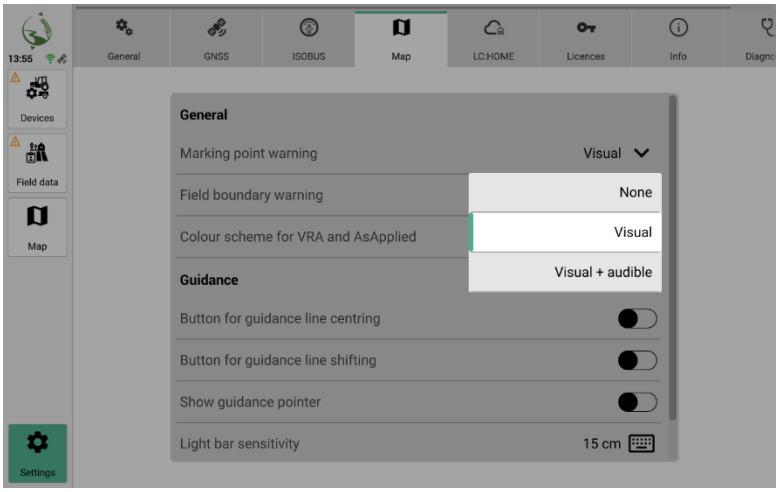
9.4 Map Settings

You can customize the map display in the "Map” tab.



9.4.1 Customize warnings and alarm message

It is possible to have the system issue warnings if you reach a field boundary, for example.



Procedure

1. Navigate to “Settings“ > “MAP“ > “General“.
2. To customize the warnings for the marking point, open the drop-down menu under “Marking point warning”.
3. To customize the warnings for the field boundaries, open the drop-down menu under “Field boundary warning”.
4. You have the following options:
   => "None":
   No warning is issued.
   => “Visual”:
   A visual warning is displayed in the map view.
   => "Visual + audible":
   A visual warning is displayed in the map view. A warning signal sounds at the same time

9.4.2 Set the color scheme for maps

You can set the color scheme for prescription and set point maps. The application rates are then set according to the color scheme.

Procedure

1. Navigate to “Settings“ > “MAP“ > “General > “Color scheme for VRA and AsApplied”.
2. Select the desired color.

9.4.3 Show or hide button for guidance line centering

You can use the guidance line centering button to re-center the guidance lines directly on the map.

Procedure

1. Navigate to “Settings” > “Map” > “Guidance” > “Button for guidance line centering”.
   => To hide the button, move the slider to the left.
   => To show the button, move the slider to the right.

9.4.4 Show or hide button for guidance line shifting

You can use the button for shifting the guidance line to shift the guidance lines directly on the map.

Procedure

1. Navigate to “Settings” > “Map” > “Guidance” > “Button for guidance line shifting”.
   => To hide the button, move the slider to the left.
   => To show the button, move the slider to the right.

9.4.5 Set the guidance line shifting increment

You can specify the increment by which a guidance line should be shifted when the button for shifting the guidance line is pressed on the map.

Procedure

1. Navigate to “Settings” > “Map” > “Guidance” > “Guidance line shifting increment”.
2. Open a Keyboard
3. Enter the desired increment and confirm your entry.
   => If you now press the button for shifting the guidance line on the map, the guidance line will be shifted by the set increment.

9.4.6 Show or hide guidance pointer

The guidance pointer is a visual aid when working with guidance lines. It helps with aiming and tracking on a guidance line.

Procedure

1. Navigate to “Settings” > “Map” > “Guidance” > “Show guidance pointer".
   => To hide the guidance pointer, move the slider to the left.
   => To show the guidance pointer, move the slider to the right.

9.4.7 Set the length of the guidance pointer

Procedure

Select first, that the guidance pointer is displayed (see under “Show or hide guidance pointer”).

1. Navigate "to Settings” > "Map” > “Guidance” > “Guidance pointer length”.
2. Open the keyboard.
3. Enter a value and confirm your entry.

9.4.8 Setting the sensitivity of the light bar

The light bar is displayed at the top of the map when working with guidance lines. The current deviation from the active guidance line is always displayed there and the required steering direction is specified.

The sensitivity specifies the deviation from the guidance line / ideal line at which the light bar should suggest.

Procedure

Select first, that the guidance pointer is displayed (see under “Show or hide guidance pointer”).

1. Navigate "to Settings” > "Map” > “Guidance” > “Light bar sensitivity”.
2. Open the keyboard.
3. Enter a value and confirm your entry**.**

9.5 LC:Home registration

In the “LC:HOME” tab, you can log in to the LC:HOME web portal.
This tab only appears if the use of LC: HOME is activated.

Procedure

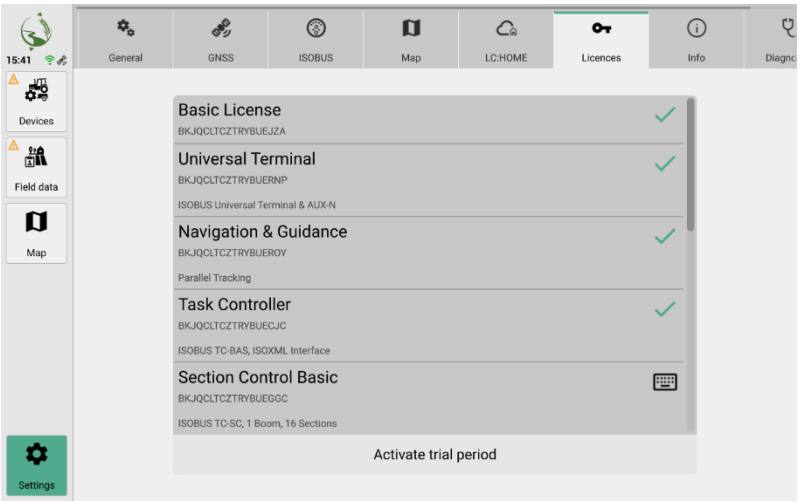
Select first, that the guidance pointer is displayed (see under “Show or hide guidance pointer”).
First make sure that
a) you have login data for the "LC:HOME" portal.
b) you have activated the use of LC:HOME.

1. Navigate to "Settings” > "LC:HOME” > “Log in”.
2. Open the keyboard under "Email".
3. Open the keyboard under “Password”.
4. Enter your password and confirm your entry.

=>The connection to LC:HOME will be established.

9.6 Licence overview

You can manage the licenses in the “Licenses” tab.



You can activate the following additional licenses:

License	Functions / Features
Section Control Basic	• Section Control automatic mode • Supports Single Boom and 16 sections
Section Control Medium	• Section Control automatic mode • Supports Single Boom and 120 sections
Section Control Advanced	• Section Control automatic mode • Supports Multi Boom and 255 sections
Variable Rate Control	• Full support ISOXML and shape files • Support for prescription maps (actual value maps for output quantities) • Support for the use of multi-boom and multi product (use of several booms with prescription maps, e.g. application of different products)
Implement Steering	• Steering with a second receiver in the implement
Autoturn Automation	• Turn automatically on the headland

9.6.1 Activate a licence

To activate a licence, you need an activation code from the dealer.

NOTICE
Data loss or loss of personal data

If you pass on codes, data loss or loss of personal data may occur.
a) Keep system information (e.g. activation codes) in a safe place.
b) Only share product codes or numbers with the manufacturer.

Procedure

1. Contact the dealer (e.g. telephone, e-mail).
   => The dealer requires additional information for activation.
   Have the product part number and the product serial number ready
   (see under chapter System information).
   => The manufacturer will send you the activation code

2. Navigate to "Settings” > “Licenses”.
3. Select the licence to be activated and press "Edit".
4. Enter the activation code sent and confirm the entry.
4. Enter your password and confirm your entry.
   => The licence and its features are activated.

9.6.2 Testing the terminal using a test licence

All the terminal’s functions and features can be tested using the one-off, time-limited trial licence.

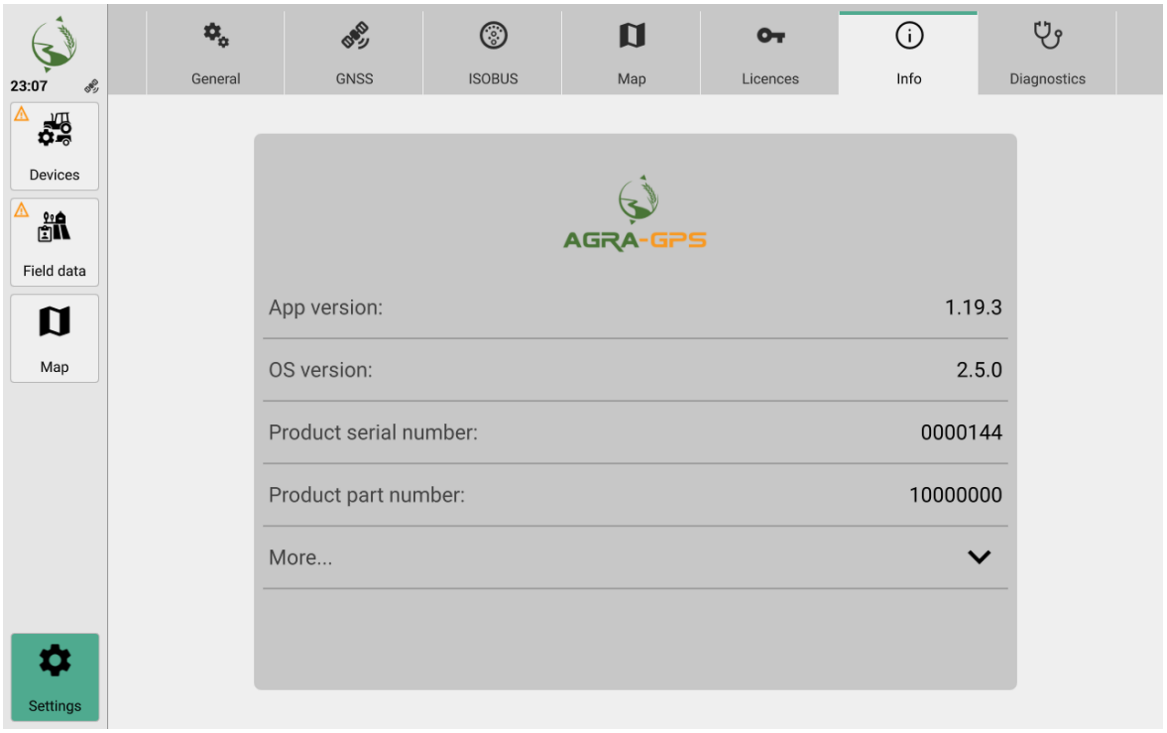
NOTICE
Data loss

The test licence and its activated functions and features are limited in time. Ongoing work, recordings and device connections are interrupted when the test licence expires.

a) Regularly check the remaining available period of the test licence in the licence overview (“Settings” > “Licences”).
b) End ongoing work, recordings and device connections before the test licence expires.

9.7 System information

Viewing product part number and product serial number
The product part number and the product serial number are required for the activation of licences.

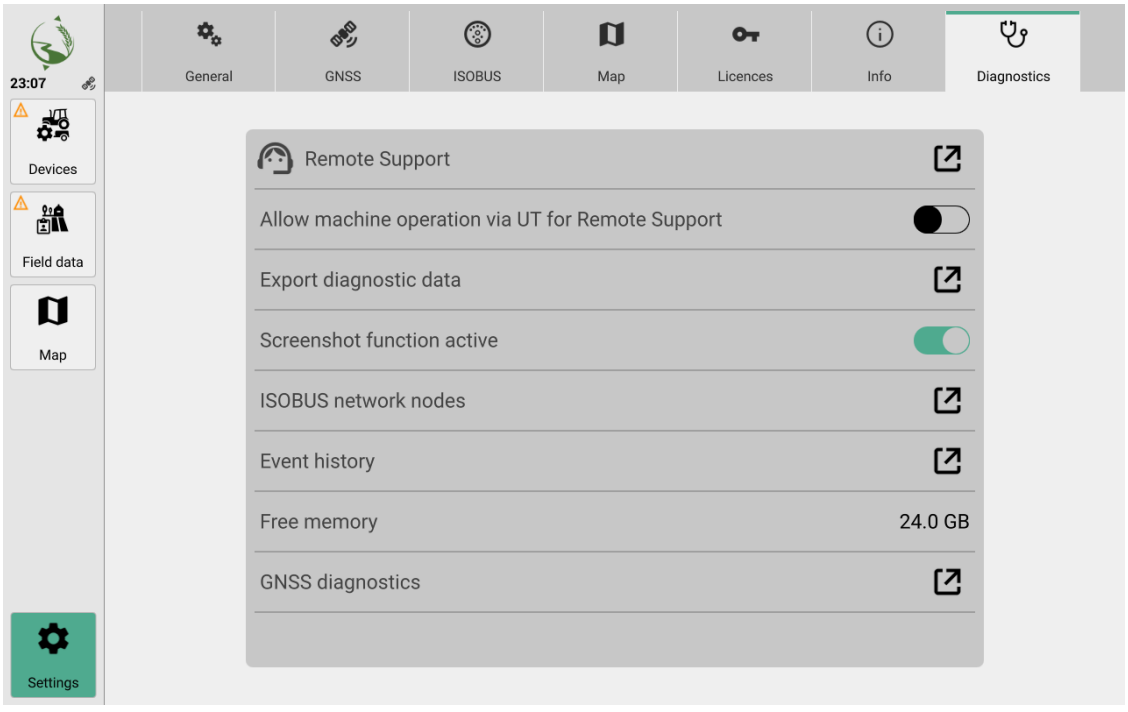


Procedure

1. Navigate to "Settings" > "Info".
2. See the product part number and the product serial number.

9.8 Diagnostic options

In the "Diagnostics" tab, you can display and export diagnostic data and activate the screen shot function. You can also activate Remote Support.



9.8.1 Using Remote Support

If you have problems with the software, it may be useful to give support access to your terminal so that they can help you. It is recommended that you always remain seated at your terminal during the entire support session.
You can also cancel Remote Support at any time.

Procedure

1. Ensure that the terminal is connected via WiFi.
2. Contact customer services (e.g. by phone or email)
   => The customer service team will send you the access code.
3. Navigate to "Settings" > "Diagnostics" > "Remote Support"
4. Confirm "Enter access code"
5. Enter the access code.
6. Confirm.
   => The support team can now remotely view functions and parameters on the terminal, but cannot operate them. You can recognise this by the corresponding symbol.
   => You can stop remote access at any time using the "Stop" button.
7. Press "Allow operation" to also give support rights to operate the terminal.
   => The support team can now remotely access functions and parameters on the terminal. You can recognise this by the corresponding symbol.
   => You can stop remote access at any time using the "Stop" button.
   => You can stop operating the terminal at any time using the "Deactivate operation" button.
8. If you also want to allow support to operate a connected implement, also activate the "Allow machine operation via UT for Remote Support" parameter.
9. Press "Stop" to end the support.

9.8.2 Exporting diagnostic data

If you have problems with the software, it may be useful to export diagnostic data so that support can help you.

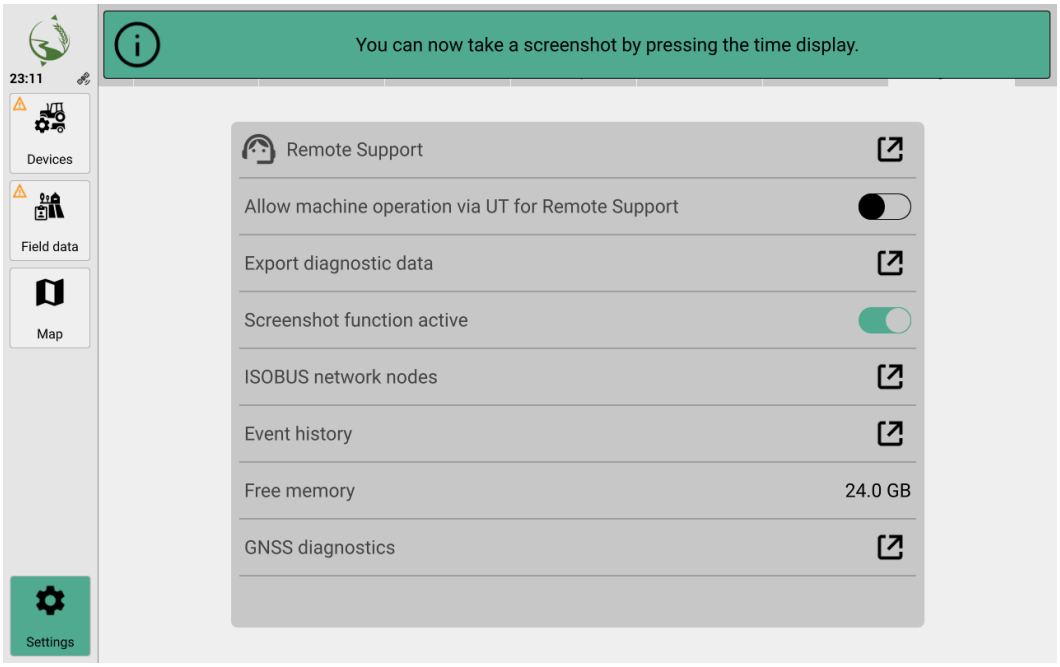
Only export the diagnostic data on the recommendation of the service technician.

Procedure

1. Navigate to "Settings" > "Diagnostics" > "Export diagnostic data".
   => The diagnostic data is stored on the terminal.
2. Connect a USB flash drive to export the diagnostics data to it.
   Alternatively, you can also export the data to the Cloud (= LC:HOME).
3. Select a storage location.
4. Export the data.

9.8.3 Activating screen shot function

A screen shot can help the support team to better identify problems with the software.



Procedure

1. Navigate to “Settings” > "Diagnostics” > “Screenshot-function active".
   => To activate the screenshot function, move the slider to the right.
   => To deactivate the screenshot function, move the slider to the left
2. You can trigger the screenshot via the time display in the top left-hand corner of the application.
   => An acoustic signal sounds.
   => The screenshot is saved in the “Screenshots” folder on a connected USB flash drive.

9.8.4 Displaying ISOBUS network participants

In the overview of the ISOBUS network participants, you will find information on the manufacturer, function type and version information on the connected ISOBUS devices.

Procedure

1. Navigate to "Settings” > "Diagnostics” > "ISOBUS network nodes."

9.8.5 View event history

Procedure

1. Navigate to "Settings” > "Diagnostics” > “Event history”
   => You can see an overview of the most recent notifications.

9.8.6 View free storage space

Procedure

1. Navigate to "Settings” > "Diagnostics” > “ “Free memory”
   => You can see the currently available memory space.

9.9 Software Update of the system

The system must be updated at regular intervals. You will be informed about updates by the manufacturer or dealer.

– Follow the instructions.

– Follow the instructions for system updates to the hardware (e.g. operating instructions).

The manufacturer or dealer provides the corresponding update files.

Follow the corresponding instructions for handling the update file and follow the instructions.

Additional information may be required for a successful system update:

– Product hardware version (see Type plate)

– Software version and other relevant system identifiers (see System information)

Notice

Restart the software

The software is restarted when switching between landscape and portrait format. This leads to a loss of connection to the implement. It is no longer possible to operate machine functions via the Universal Terminal. Software functions are not available during the restart, e.g. navigation or driving aids.

a) To ensure trouble-free operation, stop all ongoing work.

Notice

Data loss during system update

The product must be restarted during system updates.

a) Do not switch off the product or disconnect it from the power supply during system updates.

b) Do not remove the USB flash drive during the system update

Procedure

Ensure that the USB flash drive is formatted as FAT32.

1. Create a folder "updates” on an USB flash drive. Pay attention to upper and lower case.
2. Copy the update file into the folder.
3. Switch off the product.
4. Connect the USB flash drive.
5. Switch on the product.
   => After starting, the Service App is displayed.
   => Follow the instructions on the screen.
6. Select the specified update file from the list and confirm with “Start update”.
   => The system update may take a few minutes.
   => If the update is successful, the product restarts automatically.
   => After starting, the Service App is displayed.
7. To exit the Service app, press on the exit symbol in the top left-hand corner.
8. Remove the USB flash drive.
   => A system update has been carried out. The product can be operated.

10 Troubleshooting

In this section you will find solutions for faults that occur.
Faults can be caused by the software or the connected hardware. Always start with solution. If one solution does not eliminate the fault, continue with the next solution.

10.1 The product does not work

Procedure

If
a) the touch screen can no longer be operated or generate unwanted inputs or
b) the product switches on, but the terminal remains black or white or.
c) the acoustic signaling device no longer works.
then contact the dealer or service center in the event of faults.

10.2 System was not updated / update aborts with error

In the event of faults, a log is automatically created on the USB flash drive. Do not delete the log.
The manufacturer / dealer needs it for troubleshooting.

Procedure

System update cancels with error message "The update did not succeed.
An error log file was saved on your update medium. Do you want to list the log messages?

1. The fault reports confirm this.
2. To exit the Service app, press on the exit symbol in the top left-hand corner.
3. Remove the USB flash drive.
4. Contact the manufacturer / dealer.
   => No system update has been performed. The product can be operated.

10.3 Incorrect or unusual times are displayed

The internal clock (UTC format) uses summertime or wintertime to determine the time zone.
Procedures

System update cancels with error message "The update did not succeed.
An error log file was saved on your update medium. Do you want to list the log messages?

1. Check regularly whether summertime/wintertime has changed in your region.
   Make sure that the correct time zone is set in the software (see Date and time settings).
2. Use official and recognized sources for the correct setting of your UTC and time zone.
3. Ensure that the GNSS device is working correctly. Contact the GNSS device manufacturer in the event of faults.

10.4 Incorrect position in the map view

If GNSS sources report faults or do not work, there may be several reasons for this.

Procedure

1. Check under “Settings” > “GNSS” > “GNSS source” whether the appropriate GNSS device has been selected and set up (see Setting up GNSS source).
2. Ensure that the GNSS device is working correctly.

10.5 Connectors are not displayed

Procedure

1. Under “Devices” > “Vehicles” > “Vehicle properties” > “Connectors”, check whether connectors have been created

10.6 Fields/Farms are not displayed

Procedure

1. Check under “Field data” > “Fields” / “Customers” / “Farms” whether these have been created accordingly.
2. Check under “Field data” > “Master data” whether a data record has been activated.
3. Check whether a filter has been set. Delete it.

10.7 The USB flash drive is not recognized / error when saving data to the USB flash drive

Procedure

1. Make sure that there is sufficient storage space on the USB flash drive.
2. Make sure that write-protection is activated on the USB flash drive.
3. Make sure that the format of the file system is FAT32-base.

10.8 Position of the implement is displayed incorrectly

Procedure

1. Check that the distances of the implement are correct.
2. Check that the distances of the GNSS receiver to the rear axle of the vehicle are correct.
3. Check that the distances of the connector to the rear axle of the vehicle are correct.
4. Check that the correct connector is selected.

10.9 Section control switches too early / too late / incorrectly

Procedure

1. Check that the distances of the connector to the rear axle of the vehicle are correct
   => see Managing devices
2. Check that the correct connector is selected.
3. Check that the settings of the implement are correct (see Managing implements)
4. Check that the GNSS receiver is configured correctly (see GNSS settings)
5. Check that the distances between the GNSS receiver and the rear axle are correct.
6. Check that the settings for overlapping and switch-on/switch-off delay are correct.
   => Use the respective wizard to set the delays correctly (see Section Control for implements)

10.10 Incorrect application rate / prescription map is not displayed / taken into account

Procedure

1. Check whether the set point assignment under
   “Field data” > “Fields” > “Prescription maps” > “Assignments” has been made correctly
   (see Managing fields).
2. Under “Field data” > “Fields” > “Prescription maps” > “Maps”, check whether a prescription map suitable for the implement has been imported

10.11 Field data from the shape file cannot be imported

Procedure

1. Check whether the shape file (SHP) is in the WGS84 coordinate system.
2. Check whether the shape file is complete. It must contain at least the following files:
   =>.shp
   =>.shx
   =>.dbf

10.12 Warning symbols are displayed

Procedure

1. Check under “Map” > “Field” whether all parameters for the start of the work assignment are fulfilled.
2. Check whether a field has been started.

10.13 Analogue camera shows no image / shows incorrect image

Procedure

1. Ensure that the analogue camera is correctly electrically connected and switched on (see Mounting and connecting a analogue camera _ 24).
2. Make sure that the analogue camera is not covered by objects.

10.14 Coverage cannot be assigned

If the assignment of coverages does not work, this may be for the following reasons.

The new implement has already recorded a coverage for the field/task.

No other coverage can be assigned to an implement, if the implement has already recorded coverages.

Procedure

1. Contact the dealer.

11 Care / maintenance and repair

In this section you will find solutions for faults that occur.
Faults can be caused by the software or the connected hardware. Always start with solution. If one solution does not eliminate the fault, continue with the next solution.

11.1 Care

The product must be maintained regularly, e.g. when dirty.

Carry out maintenance

Caution
Hazard due to combustion, hazard due to parts coming loose on their own

The heat sink can reach temperatures of >65 °C during operation.

a) Ensure that the material and composition of the individual contact protection provides sufficient protection against heat.
b) Ensure that the material and composition of the individual contact protection can withstand the conditions of daily work and that it cannot come loose on its own (e.g. due to vibrations, heat).

Notice
Alkaline or corrosive cleaning agents and glass cleaners

Alkaline or corrosive cleaning agents and glass cleaners can cause damage.
a) Avoid the use of abrasive, highly alkaline or corrosive cleaning agents and glass cleaners.
b) Follow the care and cleaning instructions.
c) When cleaning connections, interfaces and media, observe the relevant product information (e.g. operating instructions).

Procedure

✓ The product must be disassembled for complete cleaning (incl. rear with heat sink).

1. Switch off the product.
2. Disconnect the product from the power supply.
3. Clean the touch screen and the housing.
4. Check the heat sink and the contact protection on the back for dirt and clean them.
5. Check connections, interfaces and media for soiling and clean them.
6. Only switch the product on again when it is completely dry.

Care and cleaning instructions

- Dust and light soiling in hard-to-reach areas (e.g. heat sinks) may be cleaned using a commercially available compressed air spray (55 psi / 380 kPa max).
- Clean or dry the product with a dry, clean and oil-free cloth.
- It is recommended to use only a lint-free and non-abrasive microfibre cloth (alternatively a cotton cloth).
- It is recommended that you only use care products that are specially designed for cleaning optical lenses.
- For stubborn dirt, clean with a damp, clean and oil-free cloth. Then dry.

11.2 Maintenance and repair

The product must be serviced at regular intervals. You will be informed about maintenance work by the manufacturer or dealer

Notice
Maintenance and repair

The product may only be serviced or repaired by the manufacturer or by specialist companies authorized by the manufacturer.
a) For maintenance or repair, send the product and its accessories in the original packaging to the manufacturer or dealer.

12 Packaging / storage / transport / disposal

12.1 Packaging

Notice
Original packaging

If the original packaging is damaged or lost, contact the manufacturer or dealer.

Procedure

1. Dismantle the product.
2. Carefully insert the product into the packaging film and place it in the packaging insert.
   Carefully wrap the product with film and insert in the outer packaging.
   => If necessary, use additional inserts and insulating packaging material. The product must lie firmly and securely in the outer packaging.
   => Observe the transport and packaging instructions.
3. Add the accessories supplied.

12.2 Storage

Notice
Storage in original packaging

If the product is not stored in its original packaging, it may be damaged.

a) Only store the product in its original packaging.
b) Only store the product under the specified ambient conditions.

12.3 Transport

Notice
Transport in original packaging

If the product is not in its original packaging during transport, it may be damaged.

a) Only transport the product in its original packaging.

Procedure

1. Dismantle the product.
2. Carefully insert the product into the packaging film and place it in the packaging insert.
   Carefully wrap the product with film and insert in the outer packaging.
   => If necessary, use additional inserts and insulating packaging material. The product must lie firmly and securely in the outer packaging.
   => Observe the transport and packaging instructions.

3. Add the accessories supplied.

12.4 Disposal

Notice
Disposal only in original packaging

The product may only be disposed of in its original packaging.

a) Observe the instructions for transport.

The product and its accessories (e.g. connection cable) must not be disposed of with household waste at the end of their service life.

To prevent damage to the environment or human health from uncontrolled waste disposal and to promote the sustainable reuse of material resources, separate these items from other types of waste and recycle them responsibly.

Proper disposal

- Before planning to dispose of the product, check options for waste avoidance (e.g. sale of functional products or repair).
- Before disposal, delete all personal or other "sensitive" data from the product (e.g. stored login data, usernames, passwords or files).
- Observe the applicable national regulations / laws for disposal.
- The product may only be disposed of by the manufacturer or dealer. To dispose of the product as intended, contact the manufacturer or dealer and return it in its original packaging.