CCI.OS 3.0

Software for CCI 800 and CCI 1200

Operating instructions





17517189 (en)

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About these operating instructions

These operating instructions are intended for persons who are familiar with using the software CCI.OS 3.0 and its apps on the ISOBUS terminals CCI 800 or CCI 1200. They include all necessary information for safe handling of software and terminal.

All information provided in the operating instructions relates to the following device configuration:

Terminal	CCI 800/CCI 1200		
Software version	CCI.OS 3.0		
Hardware version	0.5, 1.0 and higher		

These operating instructions introduce you to operation:

- About the CCI 800/CCI 1200
- Safety
- Setting up for operation
- User interface
- Settings
- Apps
- Troubleshooting
- Technical data, interfaces and cables

Thanks to the detailed index, you can easily find what you want in the instructions.

The technical terms used are explained in the extensive glossary.

To ensure fault-free operation of your CCI 800/CCI 1200, please read the operating instructions carefully. Keep the operating instructions for future reference.

To prevent problems during use, these operating instructions must be read and understood prior to assembly and commissioning. No liability is accepted for damage resulting from failure to observe these operating instructions!

If you need further information or if problems occur that are not covered in enough detail in these operating instructions, then please contact your dealer to obtain the required information.

Pictograms

Each function is explained with step-by-step instructions. On the left next to the operation instruction you can see the button to be pressed or one of the following pictograms:



Enter a value via the keyboard

Enter the value via the terminal's screen keyboard.

Select a value from a selection

- 1. Swipe through the selection list until you reach the desired value.
- 2. Select the value by ticking the checkbox.



Change value

Change a value.

Enter the value via the terminal's screen keyboard or via a control.



Confirm action

Confirm the action carried out previously.

Press the button "OK" or "Next" or the button with the check mark.



Repeat steps or action

Repeat the preceding steps either in full or in part.

The checkbox or the switch on the right side of a button have the following functions:



The element is selected

The checkbox is activated:

 $\rightarrow~$ The element is selected.



Function is switched off

The switch at the right edge of the button is in the "off" position: \rightarrow The function or a setting is deactivated.



Function is switched on

The switch at the right edge of the button is in the "On" position: \rightarrow The function or a setting is activated.



If this pictogram is displayed at the edge, the function described can be called up with an AUX-N control.



About the terminal

The CCI 800 and the CCI 1200 are manufacturer-independent operating terminals for controlling ISOBUS implements.

CCI 1200



The touchscreen

- Is 12.1" in size and has a resolution of 1280x800 pixels,
- Is highly luminous and suitable for day and night operation and
- has an anti-glare coating, which prevents reflections even in direct sunlight.

The user interface

- Offers flexible layouts and displays up to 6 apps simultaneously,
- Through use of a user interface developed from practical experience, enables an intuitive approach even with complex functions.
- The plastic casing reinforced with glass beads is highly resistant.
- The ON/OFF key as well as two USB 2.0 ports are integrated in the outer surround to enable quick access.

The interfaces

- Video, GPS, LH5000, WiFi, ISOBUS, signal connector, USB:
 - \rightarrow the numerous interfaces ensure maximum connectivity.
- The buzzer volume signals alarm states and provides audible feedback.
- All connectors on the back of the terminal are protected against moisture and dust by rubber caps.



CCI 800

The CCI 800 is more compact than the CCI 1200.



The touchscreen

- Is 8" in size and has a resolution of 1024x600 pixels,
- Is highly luminous and suitable for day and night operation and
- has an anti-glare coating, which prevents reflections even in direct sunlight.

The user interface

- Is optimised for operation in landscape,
- Through use of a user interface developed from practical experience, enables an intuitive approach even with complex functions.
- The reinforced plastic casing is highly resistant.

The interfaces

- Video, GPS, LH5000, WiFi, ISOBUS, signal connector, USB:
 → Numerous interfaces for very good
 - connectivity.
- The buzzer volume signals alarm states and provides audible feedback.
- All connectors on the back of the terminal are protected against moisture and dust by rubber caps.



CCI.Apps

The operating system CCI.OS 3.0 is installed on the CCI 800/CCI 1200 together with the following apps:



The following functions must be purchased separately and can only be used once enabled:



 Parallel Tracking
 Creation of tracks

 Section Control
 Automatic switching of sections

 Task Control
 Import and export of data



CCI.Assist

Assistant for field work

Structure

CCI 1200



- 1. 12.1" Touchscreen
- 2. Light sensor

- 3. ON/OFF button
- 4. 2x USB 2.0
- 5. ISOBUS, supply voltage, ECU-Power
- 6. Signal connector, GPS
- 7. Camera, Video-Multiplexer
- 8. 2x USB 2.0
- 9. Ethernet
- 10. Buzzer

CCI 800





- 1. 8" Touchscreen
- 2. Light sensor
- 3. Ethernet
- 4. Buzzer
- 5. ON/OFF button
- 6. 1x USB 2.0
- 7. Camera, Video-Multiplexer
- 8. Signal connector, GPS
- 9. ISOBUS, supply voltage, ECU-Power

The terminal is operated via the touchscreen. Common touch gestures are supported.

The light sensor measures the ambient light and matches the screen bright- Light sensor ness to the ambient light.

Switch the terminal on or off using the ON/OFF button.

ON/OFF

- To switch on, press the ON/OFF button for 1 second until you hear a signal tone.
- To switch off, press the ON/OFF button for 2 seconds until you hear a signal tone.
- Release the ON/OFF button after the signal tone is emitted.

On some tractors and self-propelled implements, you can also switch the terminal on or off with the ignition key.

The terminal switches off automatically,

- if you pull out the ignition key or
- turn the ignition key to the OFF position.

The terminal switches back on, when the ignition is turned on again.

NOTE

If the terminal has not been switched on via the ignition, then it is not possible to switch it on via the ignition.

Switch the terminal off and on via the ignition.

The LED integrated in the ON/OFF button displays the current status information. The LED is off during normal terminal operation.

The status displays are described in \Rightarrow Chapter 11.

Nameplate

Identify your device based on the information on the nameplate. The nameplate is attached on the back of the terminal.



- 1. Manufacturer
- 2. Terminal type
- 3. Serial number
- 4. Hardware version
- 5. Manufacturer's article number
- 6. Production date (week/year)

NOTE

The layout and content of the nameplate on your terminal may differ from the figure.

The nameplate is attached by the manufacturer.

USB (CCI 1200)	Both USB ports on the left casing side are of type A. Standard flash drives can be connected.		
	The USB ports on the rear side are type M12. These interfaces protect the ter- minal against the penetration of dust and water, even when there is a con- nected USB device.		
USB (CCI 800)	Both USB ports on the terminal rear side are of type A. Standard flash drives can be connected. The USB interface is protected against moisture and dust by a rubber cap.		
Buzzer	The buzzer is sized so that even if there is a very loud background, terminal and implement audio warnings can be clearly heard.		

At connector A, you connect the terminal

- to the ISOBUS and
- to the power supply.

At connector B, you connect the terminal to

- the signal connector,
- an NMEA 0183 GPS receiver,
- the serial GPS output
 - o of the tractor,
 - $\circ\;$ the self-propelled implement or
 - $\,\circ\,\,$ the automatic steering system,
- the serial interface of an N-sensor.

At connector C, you connect the terminal to

- a camera or a camera multiplexer,
- an NMEA 0183 GPS receiver,
- the serial GPS output
 - of the tractor,
 - the self-propelled implement or
 - the automatic steering system,
- the serial interface of an N-sensor.

Connector

1 Safety

These operating instructions contain basic instructions which must be observed during setting up, configuration and operation. As such, it is absolutely essential to read these operating instructions prior to setting-up, configuration and operation.

Not only do the general safety indications listed in this chapter have to be observed but also the special safety indications appearing in other chapters as well.

1.1 Identification of notes in the operating instructions

The warning notes in these operating instructions are specially identified:

WARNING - GENERAL HAZARDS!

This warning symbol identifies general warning notes the non-observance of which poses a danger for life and limb.

Strictly observe the warning notes and take particular care in these cases.

CAUTION!

This caution symbol identifies all warning notes referring to regulations, directives or working procedures which must be observed.

Non-observance can result in damage to or destruction of the terminal as well as malfunctions.

You can find tips for use in the "Notes":

NOTE



The note symbol highlights important and useful information.

Further information provides background knowledge:



The Info symbol highlights practical tips and further information.

Info-blocks

- make complex technical connections easier to understand,
- provide background knowledge,
- give practical tips.

1.2 Intended use

The terminal is intended exclusively for use with approved ISOBUS implements and devices in agriculture. Any other installation or use of the terminal is not included within the manufacturer's area of responsibility.

The manufacturer accepts no liability for any resulting personal injury or material damage. Any risks for unintended use are borne solely by the user.

Observance of the operation and maintenance conditions stipulated by the manufacturer also form part of intended use.

The accident prevention regulations in force, as well as other generally recognised safety, industrial, medical and traffic laws must be observed. Unauthorised modifications to the device exclude the manufacturer's liability.

1.3 Safety notes

WARNING - GENERAL HAZARDS!



Please take special care to ensure the following safety instructions are complied with.

Non-compliance could result in malfunctions and consequently danger for any bystanders.

- Switch the terminal off, if
 - $\circ~$ the touch-screen does not react,
 - $\circ\;$ the display is locked or
 - $\circ~$ the user interface is not properly displayed.
- Ensure that the touchscreen is dry before working with the terminal.
- Do not operate the terminal whilst wearing gloves.
- Ensure the terminal does not exhibit any external damage.

BASIC SAFETY INSTRUCTIONS

Please also observe the following safety instructions.

If they are not observed, the terminal could be damaged.

- Do not remove any safety mechanisms or safety signs.
- Do not open the terminal housing. Opening the casing can result in reduced terminal service life and malfunctions. If the terminal casing is opened, the warranty will become void.
- Disconnect the power supply to the terminal,
 - during welding work on the tractor and self-propelled implement or on a towed implement,
 - during maintenance on the tractor and self-propelled implement or on a towed implement,
 - $\circ\;$ when a charger is connected to the battery of the tractor and self-propelled implement.
- Carefully read and observe all safety information in the operating instructions and the safety labels on the terminal. Safety labels must always be in a proper legible condition. Replace missing or damaged labels. Ensure that new terminal parts are provided with the current safety labels. Spare labels can be obtained from your authorised dealer.
- Learn how to use the terminal in accordance with regulations.
- Keep the terminal and accessories in good condition.
- Only use a soft cloth moistened with clean water or a small amount of glass cleaning agent to clean the terminal.
- Do not operate the touchscreen with a sharp-edged or rough object because otherwise the anti-glare coating will be damaged.
- Do not exceed the temperature range of the terminal.
- Keep the light sensor clean.
- If the terminal is not fitted in the cab, it should be stored in a dry and clean location. Do not exceed the storage temperature range.
- Use only cables that have been approved by the manufacturer.

1.4 Installation of electrical devices

Modern farming implements use electronic components and parts the operation of which can be compromised by electro-magnetic interference from other devices. Such effects can endanger people if the following safety indications are not observed.

In the event of retrofitting electric and electronic devices, and/or components, in an implement with connection to the on-board network, the user must independently verify whether the installation interferes with vehicle electronics or other components. This is, in particular, applicable to the electronic interference of:

- EHR
- Front hoisting gear
- Power take-offs
- Engine and gears

It must be ensured in particular that the retrofitted electric and electronic components comply with the EMC Directive 89/336/EC in its respectively valid version and that they bear the CE marking.

2 Setting up for operation

Setting the terminal up for operation is a quick and uncomplicated process based on the following step-by-step guide.

2.1 Check the scope of delivery

Check the scope of delivery of your terminal before you start setting up for operation:



- 1. Terminal
- 2. Device holder
- 3. Cable A
- 4. Quick guide

NOTE

The number and type of accessories may differ between the device you have purchased and that shown in the figure.

The scope of delivery is defined by the manufacturer.

2.2 Install the terminal

The device holder is supplied with the terminal and is fitted on the terminal in the factory. Attach the terminal with the device holder to a 20mm diameter tube.

Fit the CCI 1200 in landscape or portrait, the CCI 800 in landscape.



NOTE

The terminal must be correctly installed.

- Install the terminal so that it
 - Is easy to read and operate,
 - Does not impede access to the tractor or self-propelled implement controls and
 - Does not impede the view to the outside.

Alternatively another device holder can be used, e.g.

- the VESA 75 adapter which is available in the tractor or the self-propelled implement
- the VESA 75 adapter 2461U from RAM.

CAUTION!

Do not overtighten the screws on the device holder and do not use screws that are too long.

Both will lead to damage of the terminal housing and malfunctioning of the terminal.

- ▶ Use four M5 x 0.8 hex socket cap screws.
- Tighten the screws to 1.5 to 2.0 Nm. \rightarrow This is the maximum tightening torque for the screws.
- Use screws with an 8 mm thread length. \rightarrow The length of the internal thread in the terminal housing is 8 mm.
- Secure the screws with circlip, groove washer or wave washer to prevent undoing.

2.3 Connect the terminal

Connect the terminal to the ISOBUS and supply it with power via connector A:

- Connect cable A to connector A on the terminal.
- Connect the "In-cab" coupling of cable A to the In-cab panel connector of the tractor or the self-propelled implement.

CCI 1200

CCI 800





2.4 Switch on the terminal

CCI 1200

CCI 800



- 1. Press the ON/OFF button for 1 second.
 - \rightarrow The terminal starts up.
 - \rightarrow The safety instructions are displayed in English.
- 2. Press the "Language" button.
 - \rightarrow The "Language" selection list is displayed.
- 3. Select your language.
 - \rightarrow The checkbox at the right edge of the button is selected.

2 Setting up for operation



- 4. End the process with "Back".
 - \rightarrow The language setting is changed.
 - \rightarrow The safety instructions are displayed in the selected language.
- 5. Read the safety instructions.



- 6. Drag the "Enter" button in the indicated direction.
 - \rightarrow The arrow changes its shape to a check mark.
 - \rightarrow The start screen is displayed.

2.5 Changing layout

As supplied all operating screens are output in landscape format. If you have installed the CCI 1200 in portrait, then first change the layout:

- 1. Press the "Settings" button on the start screen. \rightarrow The "Settings" operating screen is displayed.
- Press the "Layout" button.
 → The "Layout" operating screen is displayed.
- 3. In the "Orientation" line, select the "Portrait" checkbox. \rightarrow The layout is changed.



4. End the process with "Back".

2.6 Select time zone

The time zone is the basis for the time displayed by the terminal. Switching between summer and winter time takes place automatically and cannot be disabled.

NOTE

An incorrect time zone affects the documenting of tasks and the log.

Select the time zone with the correct time difference and the appropriate region.

CCI 1200



- 1. Press the "Settings" button on the start screen. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "System" button. \rightarrow The "System" operating screen is displayed.



- Press the "Date and time" button.
 → The "Date and time" operating screen is displayed.
- 4. Press the button "Time zone". \rightarrow The "Time zone" selection list is displayed.
- 5. Select the Time zone. \rightarrow The checkbox at the right edge of the button is selected. \rightarrow The time zone is changed.



6. End the process with "Back".



2.7 Switch on apps

On the CCI 1200, all frequently used apps are switched on ex works and can be used immediately.

• Do not change the presetting.

Switch CCI.UT B on, if you

- want to simultaneously display and operate two ISOBUS implements in the standard view.
- Only switch on the apps agricon, Auto Guidance, SmartConnect and ECU Updater if appropriate hardware is connected.

App ma	inagement	?	Ð
	CCI.UT A		-•
1 01			
agričáh			
℃ ¢			
	CCI.Cam		-•
	CCI.Command		-•
****	CCI.Config		
÷	CCI.Control		-•
?	CCI.Help		-•
*			
1 61			

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- 1. Press the "Settings" button on the start screen. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
 - 3. Press the button "App management". \rightarrow The "App management" operating screen is displayed.



4. Switch CCI.UT B "on". \rightarrow CCI.UT B can be used.

CCI.UT B is not available on the CCI 800.

2.8 Setting up the user interface

You want

- to operate an ISOBUS implement with CCI.UT,
- record the implement data with CCI.Control and
- during working still be able to see the camera image:

When the CCI 1200 is first started, CCI.Help and CCI.UT A are displayed in the **CCI 1200** standard view:

1. P

1. Press the button "App Menu".

 \rightarrow The app menu opens.

- 2. Press the "CCI.Control" button in the app menu. \rightarrow CCI.Control is displayed in mini view.
- In mini view, press on "CCI.Control".
 → CCI.Control is displayed in the left half of the standard view.
- 4. Repeat steps one and two for CCI.Cam.
 - \rightarrow CCI.Cam is displayed in mini view.



Example

2 Setting up for operation



When the CCI 800 is first started, CCI.Help and CCI.UT A are displayed in the standard view. Only one app can be displayed on the CCI 800 in standard view.



- 1. Press the button "App Menu". \rightarrow The app menu opens.
- 2. Press the "CCI.Control" button in the app menu. \rightarrow CCI.Control is displayed in mini view.
- 3. Repeat steps one and two for CCI.Cam. \rightarrow CCI.Cam is displayed in mini view.



3 Graphical user interface

Familiarise yourself with the essential components and the layout of the screen content.

3.1 Help

CCI.Help supports you in your daily work with the terminal.

CCI.Help

- Answers questions about operation based on practice,
- Gives useful application notes,
- Is available at the touch of a button and
- Is very concise.

Simply pressing the question mark opens the help page relevant for the current working step:

- Help in the burger menu provides information about the basic functions of the apps,
- Help in Settings supports you during configuration.



- 1. Press the "Help" button.
 - \rightarrow The help subject is displayed.
- 2. Scroll the help text for other help subjects.

3.2 Touch gestures

The terminal is operated using the touchscreen alone. The terminal supports the following common touch gestures:

Press

Press briefly at the indicated point on the touchscreen. You select an item in a selection list or trigger a function.



Long press

Press for 2 seconds at the indicated point on the touchscreen.



Swipe

Navigate quickly through a selection list.



Drag and drop

Pick up an app and move it to another position on the touchscreen.



Pinch out

Zoom in on the map.



Pinch in

Zoom out on the map.



3.3 Layout

During daily work with the terminal, you must be able to see all relevant information and operate several apps simultaneously. Here the terminal supports you due to the large-sized touchscreen.

You can configure the user interface flexibly on the CCI1200. Select the layout suitable for the installation:

You work with two apps.

CCI 1200



The apps are arranged alongside each other. The softkeys for ISOBUS implement operation are located at the right and left display edge.

Maxi Landscape

Landscape Standard

• The terminal is installed in landscape alignment.

The layout most frequently used in practice. The terminal is installed in landscape alignment.

- You are working with one app.
- The app is displayed magnified.



Portrait Standard

- The terminal is installed in portrait alignment.
- You work with two apps.
- The apps are arranged one below the other.
- The softkeys for ISOBUS implement operation are located at the right-hand edge.

Maxi Portrait

- The terminal is installed in portrait alignment.
- You work with two apps.
- The apps are arranged one below the other.
- The lower app is displayed magnified.

CCI 800

The CCI 800 can only be installed in portrait. The app can be operated in standard view. Other active apps are displayed in mini view.



Landscape Standard

•

- The layout cannot be changed.
 - The terminal is installed in landscape alignment.
- You are working with one app.

Landscape Standard is described below. The descriptions can be applied to the other layouts.

Display lay-

out

The display is divided into four areas:

CCI 1200

1

4

CCI 800



Status bar

The pictograms in the information area of the status bar give an overview of the connection status and connection quality of the following interfaces:

- GPS and
- WiFi.

The buttons in the status bar enable quick access to the ISB and frequently used functions.

Standard view

2 Up to 2 apps are displayed in the standard view. Apps can only be operated if they are included in the standard view.

3 App menu

You can activate and deactivate apps in the App menu.

Mini view

An app in mini view displays relevant information but cannot be operated.

3 Graphical user interface

Information area

Status bar

The symbols in the information area of the status bar give an overview of the connection status and connection quality:



No signal

No GPS receiver is connected.



Invalid signal

A GPS receiver is connected. However, the received position data is invalid.



GPS

A GPS receiver is connected. The received position data correspond to the GPS standard.

- \rightarrow The documenting of tasks is possible.
- \rightarrow GPS is not sufficiently accurate for Section Control.



DGPS, RTK fix, RTK float

A GPS receiver is connected. The receiving quality corresponds, depending on the display, to the requirements of DGPS, RTK fix or RTK float.

 \rightarrow The documenting of tasks and Section Control are possible.

J1939	

J1939

Some tractors make position data available in a manufacturer-specific format. You can find information on GPS accuracy in the tractor's technical information.

 \rightarrow The documenting of tasks and Section Control are possible.



No WiFi

No WiFi connection.

- No WiFi network found or .
- You have not connected to an available WiFi network.



WiFi connection is created

The terminal is connected to a WiFi network.



No Internet

The terminal is not connected to the Internet.



Connected to the Internet

The terminal is connected to the Internet.



LAN

The terminal is connected via the "Eth" interface to a network.





The status bar of the CCI 800 is split into two parts.

CCI 800

To changeover between the time and information area, press on the status bar:



Buttons

Alongside the information area is the ISB and buttons for calling frequently used functions. You have the following operating options:



Create screenshot

If you are having problems operating the terminal or ISOBUS implement, you can capture a screenshot and send it to your service partner:

- 1. Connect a flash drive to the terminal.
 - 2. Press on the clock until the message "Screenshot saved" is displayed in the status bar.
 - \rightarrow The screenshot is automatically saved in the root directory on the flash drive.

Display terminal information

You receive detailed information about the installed software version.

- Press and hold the company logo for 2 seconds.
 - \rightarrow The version information is displayed.

ISB

Use the ISB,

- If implement operation is not in the foreground,
- If you want to trigger several implement functions simultaneously.

Send the ISB command to all ISOBUS participants:

- Press the "ISB" button.
 - \rightarrow The terminal sends the ISB command over the ISOBUS.

1

2

3
You have the following additional operating options on the CCI 1200:



Settings

4

5

5

Make the basic settings before working with the terminal:

Press the "Settings" button.
 → The "Settings" operating screen is opened.

Standard/Maxi

Switch between the two layouts Standard and Maxi:

Press and hold the "Layout" button for 2 seconds.
 The new layout is displayed.

App position

Change the position of apps in standard view.

- Press the "Layout" button.
 - \rightarrow The apps in the Standard view change position.

WARNING - GENERAL HAZARDS!

Not all ISOBUS implements support ISB functioning.

Without checking you cannot assume that in hazardous situations certain implement functions will be triggered by the ISB.

Non-compliance could result in malfunctions and consequently danger for any bystanders.

Refer to the implement operating instructions to determine,

- o whether the implement reacts to the ISB
- $\circ~$ which implement functions the ISB triggers on the implement.

In the event of a fault or if an operating error exists, a message window is displayed with an error message. Before you can continue working, you must rectify the problem and acknowledge the message.

 \rightarrow The workflow is interrupted.

After successful action, you receive feedback through messages in the status bar.

The messages

- are displayed on a blue background in the information area of the status bar,
- need not be acknowledged,
- are deleted after 10 seconds and
- do not interrupt the workflow.

CCI 1200

CCI 800



Sender

The pictogram alongside the message indicates the message sender:

- Terminal or
- ISOBUS implement

Number

1

2

3

4

The number of unread messages is indicated.

Hide messages

Press the "Hide" button.

- \rightarrow The message window is closed.
- \rightarrow All message are deleted.
- \rightarrow The information area is displayed.

Mark a message as read

Press on the message.

- \rightarrow The next message is displayed and the number of unread messages is decreased by one.
- \rightarrow After the last message, the message window is closed.

Standard view

Apps can only be operated if they are included in the standard view.

App menu

The app menu is in collapsed state.

All apps that you have switched on in App management are displayed when you open the App drop-down (\Rightarrow Chapter 4.2.2) menu.

 \rightarrow In the App menu, you control whether an app is active or inactive.

Active apps

- · Are displayed in the standard view or the mini view,
- · Can only be operated in standard view,
- Have a light grey background in the app menu.

Inactive apps

- · Are not displayed in the standard view or mini view,
- Cannot be operated,
- · Are idle and do not use any CPU capacity or RAM,
- Have a dark grey background in the app menu.



1. Press the button "App Menu".

 \rightarrow The app menu opens.

- R
- 2. Select the app.
 - \rightarrow An active app is deactivated and removed from the mini view or standard view.
 - \rightarrow An inactive app is activated and displayed in the mini view or standard view.



When to deactivate, when to switch off?

If you never use an app, switch it off in app management (\Rightarrow chapter 4.2.2). \rightarrow The app is removed from the app menu.

If you are only temporarily not using an app, deactivate it.

 \rightarrow The app is available via the app menu and can be activated with just one click.

3 Graphical user interface

Example

Scroll

For example you only use CCI.Cam during fertilizer spreading. However, you will not be using this agricultural practice again for several months.

Deactivate CCI.Cam.

Mini view

Apps in mini view

- Cannot be operated,
- Only display the essential information,
- Continue running executing functions.

From the fourth activated app, the mini view extends to the right beyond the visible area:



Swipe the mini view to the left. → Apps are moved from the non-visible to the visible area.



NOTE

The swipe direction is dependent on the selected layout.

On the CCI 1200, Mini view is displayed on the left screen edge in the layouts Landscape Maxi, Portrait Standard and Portrait Maxi.

On the CCI 800, the Mini view is displayed on the left screen edge.

Swipe the mini view from the bottom to the top.

To operate an app, move it from the mini view to the standard view:

Move



- 1. Press and hold the app in mini view and keep the app pressed. \rightarrow The app visibly detaches from the mini view.
- 2. Move the app into the standard view.



NOTE

When moved, apps continue working without interruption and without a status change.

The sequence of apps in the mini view can be changed:

 \rightarrow The app visibly detaches from the mini view.

Rearrange



2. Drag the app to the new position.

1. Press and hold the app.

Special buttons

For efficient operation, the apps have special buttons:



Action Button

The Action Button provides direct access to the functions that are currently most important.

Burger button

The burger button opens the burger menu. The burger menu offers access to the settings, functions and help system of an app:

- Press the "burger button".
 - \rightarrow The burger menu opens.

Back

Close the burger menu with the "Back" button:

- Press the "Back" button in the burger menu.
 - \rightarrow The burger menu is closed and the app operating screen is displayed.

3

1

2

In an app, go back to the previous operating screen by pressing the "Back" button:

- Press the "Back" button.
 - \rightarrow The active operating screen is closed.
 - \rightarrow The previous operating screen is displayed.

App settings

Open the app-specific settings directly from the burger menu:

4

- Press the button "App Settings".
 - \rightarrow The "Settings" operating screen of the app is displayed.

Adjust the system, the apps and the user preferences in the settings area. The settings area is used regularly.

 \rightarrow Therefore, the button for opening the settings area is directly accessible:

CCI 1200

CCI 800







▶ Press the "Settings" button.

 \rightarrow The "Settings" operating screen is displayed:



Change the following settings directly in the "Settings" operating screen:

Change screen brightness

- Slide the control to the left.
 - \rightarrow The screen becomes darker.
- Slide the control to the right.
 - \rightarrow The screen becomes brighter.

Automatic screen brightness

The light sensor measures the ambient light and matches the display brightness to the ambient light.

- 1. Switch "Automatic screen brightness" "on".
 - \rightarrow In high ambient light, e.g. direct sunlight, the display brightness is increased.
 - \rightarrow In dim ambient light, e.g. during night-time operation, the display brightness is reduced.
- 2. Regulate the behaviour of the light sensor using the slide control.
 - \rightarrow To achieve maximum display brightness, slide the control to the right.
 - \rightarrow To achieve minimum display brightness, slide the control to the left.

The settings are subdivided amongst the areas "User", "Apps", "System", "Layout" and "Diagnostics":

ŝ

User

Adjust the operating behaviour of the terminal:

- Sound and touch sound,
- Language and units and
- user administration.



Apps

- Adjust the apps,
- Switch on apps and
- Activate ISOBUS functions.



System

General settings and functions are available in the "System" area:

- Call software and hardware information,
- Set date and time,
- Reset factory settings,
- Install an update,
- Create a backup,
- Update licence data and
- Adjust Internet connection.



Layout

On the CCI 1200, you can change the alignment and layout of the display:

- Press the "Layout" button.
 → The "Layout" operating screen is displayed.
- In the "Alignment" line, select landscape or portrait.
 - \rightarrow The orientation is changed.
- 3. In the "Layout" line, select Standard or Maxi. \rightarrow The layout is changed.
- 4. End the process with "Back".



Diagnostics

 \Rightarrow Chapter 11.2.3

4.1 User

The operating characteristics of the terminal are set under User settings.



▶ Press the "User" button in the "Settings" operating screen.
→ The "User" operating screen is displayed:





You have the following setting options:

Volume

The terminal and many ISOBUS implements issue audio warnings. The volume of the audio warnings can be adjusted:

1. Press the "Volume" button.

 \rightarrow The "Volume" operating screen is displayed.

- 2. Press the button with the percentage.
 - \rightarrow The screen keyboard is displayed.
- 3. Enter the volume in %.
- 4. Confirm the entry.
- 5. End the process with "Back".



Activate touch sound

► Switch "Activate touch sound" "on".
→ Upon pressing a button, you receive audible feedback.

Select language

Select the language in which the text is to be output to the display:

- 1. Press the "Language" button.
 - \rightarrow The "Language" selection list is displayed.
- 2. Select a language.
 - \rightarrow The text on the display is shown in the new language.
- 3. End the process with "Back".



Units

Change the system of units used by the terminal:

- 1. Press the "Units" button.
 - \rightarrow The "Units" selection list is displayed.
- 2. Select a system of units.
 - \rightarrow The terminal applies the system of units to all values.
- 3. End the process with "Back".



User administration

The terminal identifies the following user groups:

- User
- Service
 Doveloper
- Developer.

The "User" group is preset. Do not change this setting.

4.2 Apps



- Press the "Apps" button in the "Settings" operating screen.
 - \rightarrow The "Apps" operating screen is displayed:



You have the following operating options:

App settings

Set up the apps.

App management

Switch apps on and off (\Rightarrow Chapter 4.2.2).

ISOBUS settings

Adjust the behaviour of the terminal on the ISOBUS (\Rightarrow Chapter 4.2.3).

4.2.1 CCI.Help

For some ISOBUS implements, the manufacturer makes a help file available, that can be imported into the terminal.

 \rightarrow The help file can only be opened when using the implement.

The manufacturer will make available all other additional information on use, content and import of the help file.

4.2.2 App management

Non-required apps can be permanently switched off. This has no effect on the available CPU power or the available RAM.



It may occur that an action cannot be performed because an app is switched off.

We recommend,

NOTE

- CCI.UT B is switched on if you want to operate two ISOBUS implements,
- the apps agricon, Auto Guidance. Only switch on SmartConnect and ECU Updater if necessary,
- All other apps are always switched on.

Switch an app off as follows:



- 1. Press the "App management" button in the "Apps" operating screen.
 - \rightarrow The "App management" operating screen is displayed:





- 2. Switch the app "off". \rightarrow A message window is displayed.
- 3. Confirm the entry.
 - \rightarrow The app is ended.
 - \rightarrow The app is no longer displayed in the app menu.

To switch an app on proceed as described above. Set the switch next to the app name to "on".

4.2.3 ISOBUS settings

The terminal makes the following functions available on the ISOBUS:

- Universal terminal,
- AUX-N Terminal Functions,
- Task Controller,
- TECU,
- File server.

All ISOBUS functions are activated ex works.



NOTE

We recommend leaving all ISOBUS functions activated.

Only then can you take full advantage of the wide range of terminal functions:

- ISOBUS implement operation
- Recording of task data
- Section Control and Rate Control.

Example

If you operate two ISOBUS terminals simultaneously, you can distribute the functions over both terminals:

- You operate the ISOBUS implements via the fixed ISOBUS terminal integrated in the tractor and
- You use CCI.Command on the CCI 800/CCI 1200 for Section Control.
- 1. In the ISOBUS settings on the CCI 800/CCI 1200, switch the "Universal Terminal" off and the "Task Controller" on.
- 2. In App management on the CCI 800/CCI 1200, switch CCI.UT A off and CCI.Command on.



13:10	-C-C-ISOBUS			ISB	DGPS	LAN	G	٢	
		2	App mana				?		Ð
									•-
									•-
				CCI.Cam					-•

Adjust the behaviour of the terminal on the ISOBUS as follows:



▶ Press the "ISOBUS Settings" button in the "Apps" operating screen.
 → The "ISOBUS settings" operating screen is displayed:



If the ISOBUS function "Universal terminal" is activated, up to

- 10 implements each can be connected to CCI.UT A and CCI.UT B
- one ISOBUS implement can be operated with each of CCI.UT A and CCI.UT B.

This is also possible, if you simultaneously use a second ISOBUS terminal.

The ISOBUS function "Universal terminal" is activated ex works. \rightarrow The terminal logs on to the ISOBUS as a "Universal Terminal".

_	

- 1. Change to the operating screen "App settings".
- 2. Press the button "App management". \rightarrow The "App management" operating screen is displayed.
- 3. Switch CCI.UT A "on". \rightarrow CCI.UT A is displayed in the standard view.

You do not want to operate any ISOBUS implement with the terminal.

Switch "Universal Terminal" and the apps CCI.UT A and CCI.UT B off:

- 1. In the "ISOBUS settings" operating screen switch the "Universal Terminal" "off".
 - \rightarrow A message window is displayed.



- 2. Confirm the entry.
 - \rightarrow The "Universal Terminal" switch is "off".
 - \rightarrow The terminal is no longer logged on to the ISOBUS as a "Universal Terminal".



3. Change to the operating screen "App settings".



- 4. Press the button "App management".
 → The "App management" operating screen is displayed.
- 5. Switch CCI.UT A and CCI.UT B "off". \rightarrow CCI.UT A and CCI.UT B are no longer displayed in the app menu.

Universal Terminal



NOTE

NOTE

Without the ISOBUS function "Universal Terminal" the terminal no longer logs in to the ISOBUS as a UT.

The terminal can no longer be used to operate an ISOBUS implement.

Only switch the ISOBUS function "Universal Terminal" off if you want to operate the terminal without an ISOBUS implement.

AUX-N Termial Functions Some terminal functions can also be called with an AUX control.

Terminal functions can only be called with an AUX-N type AUX control.

Refer to the manufacturer's instruction manual to determine whether your AUX control is of type AUX-O or AUX-N.



The ISOBUS function "AUX-N Terminal Functions" is activated ex works.

- \rightarrow The terminal registers its AUX-N Terminal Functions with the ISOBUS.
- \rightarrow You can assign terminal functions to the operating elements of the AUX control.

You can call the following terminal functions with an AUX control:

- Change layout
- Display camera image
- Change to the next camera image
- Change between manual Section Control and automatic Section Control
- Switch on marking of the worked area
- Lock headland
- Start/pause field boundary recording
- End field boundary recording
- Record straight track
- Record curve
- Start/pause headland recording
- End headland recording
- Change to the next boom
- Change to the next application map
- Change direction of travel
- Move track to vehicle position

If you do not want to operate the terminal with the AUX control, switch off AUX-N terminal functions.



- 1. Switch "AUX-N Terminal Functions" off. \rightarrow A message window is displayed.
- \checkmark
- 2. Confirm the entry.
 - \rightarrow The switch "AUX-N Terminal Functions" is off.
 - \rightarrow The terminal no longer registers its AUX-N Terminal Functions with the ISOBUS.

CCI.Assist, Section Control, Rate Control and the Documentation of tasks require the ISOBUS function "Task Controller".



The ISOBUS function "Task Controller" is activated ex works. \rightarrow The terminal logs in to the ISOBUS as a "Task Controller".



1. Change to the operating screen "App settings".

2. Press the button "App management". \rightarrow The "App management" operating screen is displayed.

- 3. Switch CCI.Control "on". \rightarrow CCI.Control is displayed in the app menu.
- 4. Switch CCI.Command "on".
 - \rightarrow CCI.Command is displayed in the app menu.

You are using the Task Controller of the CCI 800/CCI 1200 **and** the Task Controller of another ISOBUS terminal.

Task Controller Number

Task Controller

Each of the two Task Controllers must have a unique number because otherwise address conflicts on the ISOBUS may occur.

An ISOBUS implement can only connect to one Task Controller. The implement selects the Task Controller based on the Task Controller number.

The implement automatically selects

- the lowest Task Controller number or
- the Task Controller number set in the implement.



NOTE

The Task Controller number cannot be set on all ISOBUS implements.

- Allocate the lowest Task Controller number to the Task Controller with which the implement is to connect.
- 1. Press the button "Task Controller number". \rightarrow The input dialogue is displayed.



- 2. Press the input field with the number. \rightarrow The screen keyboard is displayed.
- (Ab
- 3. Enter the Task Controller number.



4. Confirm the entry.



- 5. End the process with "Back". \rightarrow A message window is displayed.
- 6. Confirm the entry.



NOTE

If you change the Task Controller number of the terminal, you must also adjust this setting in the ISOBUS implement.

If different Task Controller numbers are set in the implement and the terminal,

- The implement does not connect with the Task Controller
- CCI.Config, CCI.Control and CCI.Command will no longer receive any information from the ISOBUS implement
- Section Control, Parallel Tracking and Rate Control can no longer be performed.

You are using the Task Controller of another ISOBUS terminal.



1. Switch "Task Controller" "off".

2. Confirm the entry.

 \rightarrow A message window is displayed.



→ The "Task Controller" switch is "off".
→ The terminal is no longer logged in to the ISOBUS as a "Task Controller".



3. Change to the operating screen "App settings".



4. Press the button "App management". \rightarrow The "App management" operating screen is displayed.



- 5. Switch CCI.Control "off". \rightarrow CCI.Control is no longer displayed in the app menu.
- 6. Switch CCI.Command "off".
 - \rightarrow CCI.Command is displayed in the app menu.



NOTE

CCI.Config, CCI.Control and CCI.Command require the ISOBUS function "Task Controller".

If you switch the ISOBUS function "Task Controller" off,

- CCI.Config, CCI.Control and CCI.Command will no longer receive any information from the ISOBUS implement,
- Section Control and Rate Control can no longer be carried out,
- No further task data is displayed.

TECU The ISOBUS "TECU" function sends the speed, the PTO speed and the position of the rear 3-point hitch to the ISOBUS implement.



- The "TECU" ISOBUS function is activated ex works.
- \rightarrow The terminal logs on to the ISOBUS as "TECU".

If the TECU of the tractor indicates an error message, switch the TECU of the CCI 800/CCI 1200 off.



- 1. Switch the "TECU" "off".
 - \rightarrow A message window is displayed.



- 2. Confirm the entry.
 - \rightarrow The "TECU" switch is "off".
 - \rightarrow The terminal is no longer logged on to the ISOBUS as "TECU".



NOTE

If the TECU is switched off, the terminal does not read out from the tractor's signal connector.

If you switch off the "TECU" ISOBUS function, the following functions are deactivated in the tractor settings:

- The signal connector •
- Wheel and ground speed in the GPS speed output
- Only switch the "TECU" ISOBUS function off, if the tractor TECU displays an error message.

The file server makes storage available to all ISOBUS participants. Thus, for example, an ISOBUS implement can save and read out configuration data on the terminal.



The "File server" ISOBUS function is activated ex works.

 $\rightarrow~$ The terminal logs on to the ISOBUS as "File server".

Only switch the file server off when you are sure that no ISOBUS implement is using this function.



1. Switch the "File server" "off". \rightarrow A message window is displayed.



- 2. Confirm the entry.
 - \rightarrow The "File server" switch is "off".
 - \rightarrow The terminal is no longer logged on to the ISOBUS as "File server".

4.3 System



▶ Press the "System" button in the "Settings" operating screen.
 → The "System" operating screen is displayed:

System	Ċ
i	Terminal data
31,	Date and time
Update	and backup
RESET	Restore factory settings
RESET	Delete database
٥0	CCI.OS-Update
•	Licence data
Networ	'k settings
(Internet
R	agrirouter
4	Remote maintenance



You have the following operating options:

Terminal data

In terminal data, the version of the installed software and the serial number of the terminal are displayed together with other data. The terminal data is only required for service cases of interest:

- 1. Press the "Terminal data" button.
 - \rightarrow The terminal data is displayed.
- 2. End the process with "Back".



Date and time

 \Rightarrow Chapter 4.3.1



Restore factory settings

You will delete all user settings. Tractors, implements, tasks and fields will not be deleted.

- 1. Press the "Reset factory settings" button. \rightarrow A message window is displayed.
- 2. Confirm the entry. \rightarrow The factory settings are restored.



Delete database

You will delete all tractors, implements, fields and tasks, including all master data, totals and location-based data.



CCI.OS-Update

Update the terminal software CCI.OS (\Rightarrow Chapter 4.3.2).



Licence data

Enable apps on the terminal (\Rightarrow Chapter 4.3.3).



Internet Connect the terminal to the Internet (\Rightarrow Chapter 4.3.4).



agrirouter Exchange data with the agrirouter (\Rightarrow Chapter 4.3.5).



Remote View

Remote maintenance of the terminal (\Rightarrow Chapter 11.2.2).

4.3.1 Setting date and time

NOTE

The time cannot and must not be set manually.

The terminal clock is very accurate and is set in the factory. With an active Internet connection, the terminal adjusts the time based on a time server.



- Press the "Date and time" button.
 - \rightarrow The "Date and time" operating screen is displayed:

Date and time	¢
Time zone	(UTC +01:00)
Time format	24h
Date format	DD.MM.YYYY

You have the following setting options:

Select time zone

Select the time zone with the correct time difference and the appropriate region:

1. Press the button "Time zone".

 \rightarrow The "Time zone" selection list is displayed.

- 2. Select the Time zone.
 - \rightarrow The checkbox at the right edge of the button is selected.
 - \rightarrow The time zone is changed.

Select time format

- 1. Press the "Time format" button.
 - \rightarrow The "Time format" selection list is displayed.
- 2. Select the format.
 - \rightarrow The checkbox at the right edge of the button is selected.
 - \rightarrow The time format is changed.

Select date format

The date is displayed in the selected format

- on the terminal and
- incorporated in the time stamp that the terminal sends over the ISOBUS.
- 1. Press the "Date format" button.
 - \rightarrow The "Date format" selection list is displayed.
- 2. Select the format.
 - \rightarrow The checkbox at the right edge of the button is selected.
 - \rightarrow The date format is changed.



NOTE

We recommend adherence to the factory settings for time and date formats.

The time and date are displayed in the selected format

- on the terminal and
- incorporated in the time stamp that the terminal sends over the ISOBUS.

4.3.2 Updating CCI.OS

The terminal software CCI.OS is constantly subject to further development and new functions are continuously being added. Your service partner will make new updates available to you as CCI.OS updates.

CAUTION!

The connection to the ISOBUS is disconnected during installation of a CCI.OS update.

 \rightarrow The implements connected to the ISOBUS can no longer be operated.



NOTE

Occasionally the update of CCI.OS may fail.

Then the terminal can only be started in the Rescue System.

Create a backup, before you update CCI.OS.

Update vs. Rollback



In an update, a terminal software CCI.OS versions is installed that is newer than the version installed on the terminal.

In a rollback the terminal software CCI.OS is rolled back to a previous version.

- The "Updater" operating screen can only be used to install updates.
 - Rollbacks are carried out in the Rescue System.
 - \rightarrow A previously created backup is restored.

Update from the flash drive



- Press the "CCI.OS-Update" button.
 - \rightarrow The "Updater" operating screen is displayed:

Update		Ð	
٥	CCI.OS-Update via flash drive		
٥	CCI.OS-Update via Internet		
٥			-
Backup			
ŧ	Create backup		

NOTE

The installation program saves data on the flash drive for the duration of the update.

• Use a flash drive with free space of at least 200 MB.



CAUTION!

Do not interrupt the update process for any reason.

The terminal restarts several times during the course of the update. The update is only complete once the message window "The CCI.OS-Update has been performed." is displayed.

- Do not pull out the flash drive.
- Do not switch off the terminal and do not disconnect the terminal from the power supply.

Non-observance can result in damage to or destruction of the terminal as well as malfunctions.

- 1. Connect the flash drive to the terminal.
- 2. Press the button "CCI.OS-Update via flash drive". \rightarrow The selection list with the available Updates is displayed.



- 3. Select an update.
- 4. Press the "Update CCI.OS" button. \rightarrow A message window is displayed.
- 5. Start the update with "OK".
 - \rightarrow The new terminal software is installed.
 - \rightarrow The terminal automatically restarts several times.
 - \rightarrow The update is only complete once the message window "The CCI.OS-Update has been performed." is displayed.
- 6. Confirm the message with "OK".
 - \rightarrow The new CCI.OS has been installed.
 - \rightarrow The terminal can be used again.

Create backup You can completely restore the terminal with a backup , e.g. if a problem has occurred during a CCI.OS update.

Create a backup,

- After you have completely set up the terminal,
- Before any CCI.OS update.

A backup contains the following:

- CCI.OS and all installed CCI.Apps,
- The user settings,
- Queries and master data.

CAUTION!

Do not interrupt the backup for any reason.

- Do not pull out the flash drive.
- Do not switch off the terminal and do not disconnect the terminal from the power supply.
- Wait until the button "Restart terminal" is activated.

Non-observance can result in damage to the terminal.

CAUTION!

The connection to the ISOBUS is disconnected during the backup.

 \rightarrow The implements connected to the ISOBUS can no longer be operated.



- 1. Connect a flash drive with at least 1 GB of free space to the terminal.
- 2. Press the "Create backup" button.
 - \rightarrow Message window 34005 is displayed.
- 3. Start the backup with "OK".
 - \rightarrow The backup is saved in the directory \CCI_OS_BACKUP on the flash drive.
 - \rightarrow The button "Restart terminal" is activated after creation of the backup.
- 4. Press the button "Restart terminal".
 - \rightarrow The terminal is restarting.

You restore the old version from a backup in the Rescue System.

You have the following advanced operating options:

Update CCI.OS via the Internet

Updating of CCI.OS via the Internet is only available in test mode and is unavailable until further notice.



Rescue System

Updating of the Rescue System can only be performed by the manufacturer or its sales and service partners.

4.3.3 Updating licence data

The terminal licence data must be updated under the following circumstances:

- Following a CCI.OS update,
- After acquisition of the licence for a paid-for function (e.g. Section Control, Parallel Tracking or CCI.Assist).

••••

Press the "Licence data" button.

 \rightarrow The "Licence data" operating screen is displayed:



You have the following operating options:

Update the licence data via a flash drive

A quick and reliable update method. Use this function if you have access to a PC with an Internet connection:

- 1. Connect a flash drive to the terminal.
- 2. Press the button "USB".
 - \rightarrow The "Save TAN" operating screen is displayed.
- 3. Press the "Next" button.
 - \rightarrow The file <serial number>.UT.liz is saved to the flash drive.
 - \rightarrow The operating screen "Connect flash drive" is displayed.
- 4. Connect the flash drive to your PC.
- 5. On the PC open the web page *https://pa.cc-isobus.com*
- 6. Change to the "USB" tab and follow the instructions.
 - \rightarrow The new licence data is saved on the flash drive.
- 7. Connect the flash drive to the terminal.
 - \rightarrow The licence data is automatically updated.
 - \rightarrow The "Licence data" operating screen is displayed.

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Update the licence data via the Internet

This is the fastest and easiest update method. Use this function, if the terminal is connected to the Internet:

- 1. Press the "Internet" button.
 - \rightarrow The licence data is updated.
 - \rightarrow The "Licence data" operating screen is displayed.

4.3.4 Connecting to the Internet

The updating of the licence data can be performed quickly and easily via the Internet. You must have an active Internet connection for the agrirouter.

- Connect the terminal to the Internet via WiFi.
- \rightarrow For example, you can create the WiFi connection by using your phone as a hotspot.
- \rightarrow So that the terminal can connect to the WiFi, you need the W10 WiFi adapter.





• Press the "Internet" button.

 \rightarrow The "Internet" operating screen is displayed:





The information area is displayed at the top edge of the "Internet" operating screen:

- 1: Status of the terminal connection/local area network
 - \rightarrow Green: OK
 - \rightarrow Red: no connection
- 2: Status of the connection/local area network/Internet
 - \rightarrow Green: OK
 - \rightarrow Red: no connection
- 3: MAC address of the WiFi interface
- 4: WiFi IP address of the terminal
- 5: MAC address of the LAN interface
- 6: LAN IP address of the terminal



A permanently visible overview of the connection status and the connection quality are given by the symbols in the status bar information area:

- 1: Connection to WiFi
 - \rightarrow Connected/not connected
 - \rightarrow Connection quality
- 2: Connection with the Internet
 - \rightarrow Connected/not connected

You have the following operating options:

Connect via WiFi

Use the W10 WiFi adapter to allow the terminal to connect to the Internet:

- 1. Connect the W10 WiFi adapter to the USB port.
- 2. Press the "WiFi" button.
 - \rightarrow The "WiFi networks" selection list is displayed.
- 3. Select a WLAN network.
 - \rightarrow The window for password entry is displayed.
- 4. Enter the WiFi password and confirm the entry.
 - \rightarrow The terminal connects using WiFi.
 - \rightarrow The symbols in the status bar provide information about the status and quality of the connection.

Correct an incorrectly entered WiFi password as follows:

- 1. In the selection list "WiFi networks", press the button with the WiFi network and keep the button pressed.
 - \rightarrow A context menu is displayed.
- 2. Select "Edit".
 - \rightarrow The window for password entry is displayed.
- 3. Correct the password.
- 4. Confirm the entry.

4.3.5 Connecting to agrirouter

agrirouter is a data exchange platform, via which you can send and receive data. You can find more information online under *https://www.my-agri-router.com*.

Prior preparation

- Under *my agrirouter* set up an agrirouter user account.
- Create the terminal in the agrirouter user account.
- Note the registration code for the terminal.
- Connect the terminal to the Internet. (\Rightarrow Chapter 4.3.4)



WiFi password

Setting up for

operation



Ab

- The account name can be freely selected.
- 8. Confirm the entry.
 - \rightarrow The "Account management" operating screen is displayed.
 - \rightarrow The new account is selected.



9. Press "Back" to return to the "agrirouter" operating screen.



10. Press the "Registration Code" button. \rightarrow An input dialogue is displayed.



- 11. Enter the registration code of the terminal. The code is case-sensitive. Confirm the entry.
 - \rightarrow The "agrirouter" button can be pressed now.



- 12. Switch the "agrirouter" "on" (b).
 - \rightarrow An active connection is displayed in the information area.
 - \rightarrow agrirouter set-up is completed.

Setting



In the "agrirouter" operating screen you have the following operating options: **agrirouter on/off**

Switch "agrirouter" "on".
 → The terminal connects to agrirouter.



Inbox

The inbox contains all data downloaded from the agrirouter.

Processing of the data takes place in other apps:

• ISO-XML tasks are displayed in the "Import" selection list in CCI.Control.

Data remain in the inbox even after further processing in other apps and must be manually deleted. Delete one record or all data:

1. Press the "Inbox" button.

 \rightarrow The "Inbox"" selection list is displayed.

- 2. Press the button with the record and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Delete" or "Delete all".
 - \rightarrow The record is deleted or all data is deleted.
 - \rightarrow The "Inbox"" selection list is displayed.

Outbox

Tasks, shape files and other data can be sent from the terminal using agrirouter. The outbox contains all data for which send has failed.

Data in the outbox must be sent manually:

- 1. Press the "Outbox" button.
 - \rightarrow The "Outbox" selection list is displayed.
- 2. Press the button with the record and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Upload".
 - \rightarrow The record is sent.
 - \rightarrow The "Outbox" selection list is displayed.

To free up storage, delete unused data from the outbox:

- 1. Press the "Outbox" button. \rightarrow The "Outbox" selection list is displayed.
- 2. Press the button with the record and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Delete" or "Delete all".
 - \rightarrow The record is deleted or all data is deleted.
 - \rightarrow The "Outbox" selection list is displayed.

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Account management

Create an account on the terminal for each agrirouter user account that you want to use to connect the terminal.

Adding an account:

- 1. Press the "Account management" button.
 - \rightarrow The empty account list is displayed.
- 2. Press the "+ New account" button.
 - \rightarrow An input dialogue is displayed.
- 3. Enter the account name and confirm the entry.
 - ! The account name can be freely selected.
 - \rightarrow The account is displayed in the account list.
 - \rightarrow The account is selected.
- 4. To link the account with an agrirouter user account, enter the registration code (\Rightarrow Registration code).

Selecting an account:

- 1. Press the "Account management" button.
 - \rightarrow The account list is displayed.
- 2. Select an account.
 - \rightarrow The terminal logs on to the agrirouter user account, with which you have linked the account (\Rightarrow Registration code).
- 3. End the process with "Back".
 - \rightarrow The selected account is displayed on the "Account management" button.

Modifying an account:

- 1. Press the "Account management" button.
 - \rightarrow The account list is displayed.
- 2. Press the button with the account name and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Edit".

 \rightarrow An input dialogue is displayed.

- 4. Enter the account name and confirm the entry.
 - \rightarrow The account is displayed in the account list.

Deleting an account:

- 1. Press the "Account management" button.
 - \rightarrow The account list is displayed.
- 2. Press the button with the account name and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Delete".
 - \rightarrow The account is deleted.


Registration code

You link an account on the terminal with an agrirouter user account, by entering a registration code once.

You receive the registration code in the agrirouter user account:

- 1. Change to the PC and log on to *https://www.my-agrirouter.com*.
- 2. Create the terminal in the user account.
 - \rightarrow The registration code is created.

Enter the registration code at the terminal as follows:

- 1. Press the "Registration Code" button.
 - \rightarrow An input dialogue is displayed.
- 2. Enter the registration code and confirm the entry.
 - \rightarrow The "agrirouter" operating screen is displayed.
 - \rightarrow You can see in the information area whether the terminal was able to log on to the agrirouter user account.

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Registration service address

Ex works, the registration service address is as follows *https://agrirouter-registration-service.cfapps.eu1.hana.ondemand.com/api/v1.0/registra-tion/onboard*. Only change the address if you are requested to do so by your service partner:

- 1. Press the "Registration service address" button. \rightarrow An input dialogue is displayed.
- 2. Enter the Internet address of the registration service and confirm the entry.
 - \rightarrow The "agrirouter" operating screen is displayed.



Application ID

Only change the Application ID if you are requested to do so by the service partner:

- 1. Press the "Application ID" button.
 - \rightarrow An input dialogue is displayed.
- 2. Enter the ID and confirm the entry.
 - \rightarrow The "agrirouter" operating screen is displayed.

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Certification version ID

Only change the Certification version ID if you are requested to do so by the service partner:

- 1. Press the "Certification version" button. \rightarrow An input dialogue is displayed.
- 2. Enter the ID and confirm the entry.
 - \rightarrow The "agrirouter" operating screen is displayed.

5 Display of camera images

You will learn,

- How to display a camera image,
- How you connect one or more analogue cameras to the terminal,
- How you connect one or more digital cameras to the terminal,
- How the automatic camera change is set up and started (\Rightarrow Chapter 5.2.5),
- How you use one of the connected cameras as an automatic reversing camera.

CCI.Cam is used to display camera images.

Introduction

Maintain an overview of your implement and complex work processes with up to eight cameras. Automatic camera changing makes manual switching between camera screens unnecessary.

Open CCI.Cam in standard view or mini view. In this way you can see the camera image at all times:



5.1 Setting up for operation

5.1.1 Connecting one analogue camera

You can connect one analogue camera directly to the terminal. You require the Cable C:

1. Connect Cable C to connector C of the terminal.

- 2. Connect the camera to Cable C.
 - \rightarrow The camera is automatically recognised by the terminal.
 - \rightarrow The camera receives the designation "camera 1".





NOTE

Cable C is available in variants C1 and C2.

- ▶ Use cable C1 for a camera with AEF Video coupling.
- ▶ Use cable C2 for a camera with an M12 connector.

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Adjust CCI.Cam as follows:

- 1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
- 3. Press the "CCI.Cam" button. \rightarrow The operating screen with the CCI.Cam settings is displayed.
- 4. Switch the "Video-Miniplexer" "off".
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- 5. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.
- 6. Open CCI.Cam in standard view. \rightarrow The camera image of the camera is displayed.

5.1.2 Connecting two analogue cameras

To connect two analogue cameras to the terminal, you require a Video-Miniplexer.



The Video-Miniplexer is supplied with power from the terminal.

- 1. Connect the cameras at the Video-Miniplexer.
- 2. Connect Cable C2 to connector C of the terminal.
- 3. Plug the M12-coupling "M12 Video" (cable C2) into the panel connector "Out" on the Video-Miniplexer.
 - \rightarrow The cameras receive the designations "Camera 1" and "Camera 2" respectively.

A Video-Miniplexer connected to the terminal is not automatically detected. Adjust CCI.Cam as follows:

- 1. Press the "Settings" button.
 - \rightarrow The "Settings" operating screen is displayed.

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- 2. Press the "Apps" button.
 - \rightarrow The "Apps" operating screen is displayed.

- 3. Press the "CCI.Cam" button. \rightarrow The operating screen with the CCI.Cam settings is displayed.
- 4. Switch the "Video-Miniplexer" "on". \rightarrow The Video-Miniplexer is activated.

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- 5. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.
- 6. Open CCI.Cam in standard view. \rightarrow The camera image of camera 1 is displayed.

5.1.3 Connecting eight analogue cameras

You can connect up to eight analogue cameras to the terminal using the Video-Multiplexer.



The Video-Multiplexer is supplied with power from the terminal or an external power supply.

- 1. Connect the cameras at the Video-Multiplexer.
- 2. Connect Cable C2 to connector C of the terminal.
- 3. Plug the M12-coupling "M12 Video" (cable C2) into the socket "MON1" on the Video-Multiplexer.
 - \rightarrow The video-multiplexer is automatically recognised by the terminal.
 - \rightarrow The cameras receive the designations "Camera 1" to "Camera 8" respectively.



CAUTION!

If you connect more than 3 cameras to the Video-Multiplexer, you will overload the power output of the terminal.

Overloading of the power output will result in damage to the terminal.

- Use an external power source.
- Connect an external power source to the panel connector "P1" on the Video-Multiplexer.

5 Display of camera images

Adjust CCI.Cam as follows:



- 1. Press the "Settings" button.
 - \rightarrow The "Settings" operating screen is displayed.



2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.



3. Press the "CCI.Cam" button. \rightarrow The operating screen with the CCI.Cam settings is displayed.



4. Switch the "Video-Miniplexer" "off".



- 5. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.
- 6. Open CCI.Cam in standard view. \rightarrow The camera image of camera 1 is displayed.



NOTE

Unassigned multiplexer connections output a black camera image.

5.1.4 Connecting a digital camera

You can connect one digital camera directly to the terminal.

- Connect the camera to the terminal's Ethernet interface (Connector Eth). \rightarrow The camera is automatically recognised by the terminal.
 - \rightarrow The camera receives the designation "camera A".

See the manufacturer's instruction manual for more information on connection and operation.

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Adjust CCI.Cam as follows:

- 1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
- 3. Press the "CCI.Cam" button.
 → The operating screen with the CCI.Cam settings is displayed.
- 4. Switch the "Video-Miniplexer" "off".
- \$

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- 5. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.
- 6. Open CCI.Cam in standard view. \rightarrow The camera image of the camera is displayed.

5.2 Operation

5.2.1 Display camera image

The camera image is displayed, if you open CCI.Cam in standard view, maxi view or mini view.

CCI.Cam can only be operated in standard view or maxi view.

5.2.2 Mirror camera image

The camera image is mirrored along the vertical axis. Mirroring of the camera image is, for example, useful for reversing cameras:



1. Press centrally on the camera screen. \rightarrow The burger button is displayed.



- 2. Press the burger button. \rightarrow The "burger menu" is displayed.
- 3. Switch "Mirror" "on". \rightarrow The camera image is mirrored.

To redisplay the camera image in normal view, switch "Mirror" off.



NOTE

The "Mirror" switch only affects the currently visible camera image.

NOTE



If the terminal is restarted, the position of the "Mirror" switch is retained.

5.2.3 Automatic reversing camera

The reversing camera is an optical manoeuvring aid for reversing.

You can use the following cameras as a reversing camera:

- An analogue camera connected to the Video-Miniplexer
- An analogue camera connected to the Video- Multiplexer
- A digital camera

Prerequisite here is that the terminal recognises the change in the direction of travel.

 \rightarrow The terminal detects reversing when the tractor or self-propelled implement sends a direction of travel signal over the ISOBUS.



1. Press the "Settings" button.

 \rightarrow The "Settings" operating screen is displayed:



Press the "Apps" button.
 → The "Apps" operating screen is displayed:



- 3. Press the "CCI.Cam" button.
 → The operating screen with the CCI.Cam settings is displayed:
- 4. Press the "Reversing camera" button. \rightarrow The "Reverse gear detection" selection list is displayed.



5. Select the method for detecting reverse gear.



- 6. Confirm the selection with "Back". \rightarrow The CCI.Cam settings are displayed.
- Press the "Camera number" button.
 → The "Reversing camera" selection list is displayed.



8. Select the camera to be used as the reversing camera.



- 9. Press the "Settings" button.
 - \rightarrow The process is completed.



NOTE

Not all tractors or self-propelled implements make a direction of travel signal available on the ISOBUS.

- $\rightarrow\,$ The automatic reversing camera cannot be used without a direction of travel signal.
- Select "off" in step 5.

WARNING - GENERAL HAZARDS!

The reversing camera is only an aid and displays possible obstacles with a distorted perspective, incorrectly or not at all.

The reversing camera is not a replacement for your concentration.

The reversing camera does not warn you of a collision, persons or objects.

Under certain circumstances it cannot identify people or objects and continued driving will injure people or damage objects, the tractor or the self-propelled implement.

- ▶ You are always responsible for safety.
- Moreover, you must continue to be aware of your immediate surroundings when manoeuvring. This applies not only to the area behind the tractor or self-propelled implement but also the areas to the front and side.

5.2.4 Displaying the camera image continuously

You want the image of a particular camera to be displayed. The camera image is to be displayed until you make another selection:



5.2.5 Automatic camera switching

You want

- To switch automatically between some or all camera images and
- Specify the duration of display for each camera image.

Setting

Define,

- how long each camera image is displayed and
- in which sequence the camera images change:





- 1. Press centrally on the camera screen. \rightarrow The operating buttons are displayed.
- 2. Press the burger button.
 - ightarrow The burger menu is displayed.



- Press the "Sequence" button.
 → The buttons for camera selection are displayed.
- 4. Press the button of the camera that is to be displayed first. Press the button for as long as the camera image is to be displayed.



5. Repeat the process for the other cameras. \rightarrow The information area (a) displays camera number and duration.



- 6. Press the Action button.
 - \rightarrow The camera image is displayed.

Start automatic camera switching:

1. Press centrally on the camera screen. \rightarrow The operating buttons are displayed.



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- 2. Press the burger button. \rightarrow The burger menu is displayed.
- 3. Switch "Time" "on".
 → Automatic camera switching starts.



NOTE

Not all camera images need be used for automatic camera switching.

 Omit one or more cameras in the selection of sequence and display duration.



NOTE

The settings for the sequence and the display duration of the camera images are retained.

After terminal restart you only need to start automatic camera switching.

End automatic camera switching as follows:

End

Start

- F
- 1. Press centrally on the camera screen.
 - \rightarrow The operating buttons are displayed.



- 2. Press the burger button.
 - \rightarrow The burger menu is displayed.



- 3. Switch "Time" "off".
 - \rightarrow Automatic camera switching is ended.
 - \rightarrow The latest camera image is displayed continuously.

5.2.6 Event-controlled camera switching

In event-controlled mode, the implement controls which camera image is displayed.

- Check in the operating instructions of the implement, whether the implement can control the Video-Multiplexer or the Video-Miniplexer.
 - \rightarrow If the implement does not support this function, you cannot use event-controlled camera switching.

Prior preparation

- If you use the Video-Multiplexer: Connect the implement to the Video-Multiplexer.
- ▶ In the implement, activate control of Video-Miniplexer or Video-Multiplexer.



1. Press centrally on the camera screen. \rightarrow The operating buttons are displayed.



- 2. Press the burger button.
 - \rightarrow The burger menu is displayed.
- 3. Switch the "event" "on".
 → Event-controlled camera switching is activated.



Implement controls camera image

Some implements specify which camera image is displayed. This makes sense if attention must be drawn to a particular event or the implement, e.g. opening of the hydraulic press.

These implements

- control the Video-Multiplexer via a separate cable or
- control the Video-Miniplexer without separate cabling.
- In both cases, you cannot influence the selection of the camera image and the display duration via CCI.Cam.

6 Speed, position and geometry

You will learn,

- Why you must set the positions of the GPS aerial, coupling points, reference points and sections,
- How you avoid overlaps or gaps by correcting the delay times (⇒ Chapter 6.4.4),
- When you use the signal connector of the tractor (\Rightarrow Chapter 6.2.3),
- Which implements connect automatically with the Task Controller of the terminal and which do not(⇒ Chapter 6.3),
- How you can use Section Control and Rate Control simultaneously for two implements (⇒ Chapter 6.4.7),
- How you set the terminal, when it is being used on a self-propelled implement,
- How you control the implement using CCI.Convert and an N-sensor (⇒ Chapter 6.8).

You want to use Parallel Tracking, *Rate Control*, *Section Control* or Tramline Control. These functions are location-dependent and require accurate information about the tractor combination or the self-propelled implement:

- Type and source of the speed information,
- Position of the GPS aerial,
- · Geometry of tractor and implement,
- Implement mounting type.

You make these settings in CCI.Config.

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- Press the "Settings" button.
 → The "Settings" operating screen is displayed:
- ---
- 2. Press the "Apps" button.
 - \rightarrow The "Apps" operating screen is displayed.



3. Press the "CCI.Config" button. \rightarrow The "CCI.Config" operating screen is displayed.

CCI.Config	1	?	Ų
阖	Select tractor		
للتشت	Select implement		
للفقف	Select implement		
Advanc			
10 A	GPS		RS232 - serial
` @'	CCI.Convert		Deactivated

Proceed as follows:

Set up and adjust tractor

Add an entry to the tractor list for each tractor on which you use the terminal.

Define the following:

- Position of the GPS aerial,
- Mounting types of the tractor,
- Use the *signal connector*,
- Output of the GPS speed.

 \Rightarrow Chapter 6.1, \Rightarrow Chapter 6.2

Set up and adjust implement

Add each implement to the implement list.

There are two "Select implement" buttons.

- \rightarrow You can select and operate two implements simultaneously.
- \rightarrow Section Control and Rate Control can be used on both implements.

Define the following:

- Position of the GPS aerial,
- Implement type,
- Working width,
- Coupling point,
- Mounting type.

 \Rightarrow Chapter 6.3, \Rightarrow Chapter 6.4



Adjust GPS receiver

The GPS receiver is connected directly at the terminal or connected to the terminal via the ISOBUS.

Define the following:

- Position of the GPS aerial,
- Interface of the GPS receiver.

\Rightarrow Chapter 6.6



Tacho

Set up a tacho. In Tacho

- you can see the applied speed,
- you can see if you are in the optimum working area,
- you have direct access to the tractor and implement settings.

 \Rightarrow Chapter 6.9

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6.1 Adding a tractor

- 1. Press the "Tractor" button in the CCI.Config operating screen. \rightarrow The "Tractor" operating screen is displayed.
 - 2. Press the "+ New Tractor" button.



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- 3. Enter the tractor name.
- \checkmark
- 4. Confirm the entry.
 - \rightarrow The "CCI.Config" operating screen is displayed.
 - \rightarrow The new tractor is selected and provided with a warning symbol.
- 5. Set up the tractor.
 - \rightarrow The tractor symbol is displayed instead of the warning symbol. The tractor can now be used.



Create an entry in the tractor list for each tractor on which the terminal is used.

We recommend adding all tractors immediately, setting them up and giving them unique names.



NOTE

The settings must be changed when switching to another tractor.

If no tractor or the incorrect tractor is selected, Parallel Tracking, Rate Control, Tramline Control and Section Control with incorrect settings.

• Select a tractor from the list (\Rightarrow Chapter 6.10.1).

If the tractor is not in the list of tractors:

- 1. Add the tractor to it (\Rightarrow Chapter 6.1).
- 2. Set up the tractor (\Rightarrow Chapter 6.2).

6.2 Set up tractor

NOTE

Distance C must be set for all mounting types present on the tractor.

If the distance C is not set,

- The position cannot be precisely calculated
- Rate Control, Parallel Tracking, Section Control and Tramline Control can still be used but operate inaccurately.
- Set the distance C for all mounting types present on the tractor.



Adjust the tractor:

- 1. Press the "Tractor settings" button in the "CCI.Config" operating screen. \rightarrow The tractor settings are displayed.
- 2. Follow the instructions in \Rightarrow Chapter 6.2.1 to \Rightarrow Chapter 6.2.4.



Then check the settings:



 In the "CCI.Config" operating screen, press the arrow button in the tractor button.
 → The "Tractor" information area is displayed.



- 1: Wheel speed
- 2: Ground speed
- 3: GPS speed
- 4: Power take off speed
- 5: Work position
- 6: Direction of travel
- 7: Mounting type and distance C2, reference point tractor - rear coupling point
- 8: Distance B, reference point tractor - GPS aerial
- 9: Distance A, reference point tractor - GPS aerial
- 10: Mounting type and distance C1, reference point tractor - front coupling point

6.2.1 GPS speed



GPS speed output

If a GPS receiver is connected to the terminal, the terminal can send the GPS speed over the ISOBUS making it available to all ISOBUS participants.

- 1. Press the button "GPS speed output".
 - \rightarrow The "GPS speed output" selection list is displayed.
- 2. Select the ISOBUS message with which the GPS speed is to be sent over the ISOBUS. You can select one or more options.



Use GPS speed

The GPS speed is free from slip and also very accurate if there is no DGPS or RTK available.

 \rightarrow We recommend using the GPS speed.



If there is severe shading, the speed information is lost.

 \rightarrow Do not use GPS speed if your fields have significant shaded areas.



NOTE

NOTE

ISOBUS messages cannot always be selected.

Wheel speed and ground speed cannot be selected,

- if another ISOBUS participant is already sending this message over the ISOBUS,
- if the ISOBUS function "TECU" is already selected in the ISOBUS settings.
- Select another ISOBUS message.



NOTE

Not all implements automatically evaluate the GPS speed.

On some implements, it is possible to set which ISOBUS message should be evaluated:

Set up the implement so that the message with the GPS speed is received and correctly evaluated.

6.2.2 Position of the GPS aerial

If the tractor does not have a GPS receiver, proceed to \Rightarrow Chapter 6.2.3.



Distance A

- 1. Fit the GPS aerial centrally on the tractor. This is the recommended procedure.
- 2. Press the button "Distance A". \rightarrow An input dialogue is displayed.
- 3. Set the distance A to 0.
- 4. End the process with "Back".



Distance A

The distance in the transverse direction between the GPS aerial and the tractor reference point:

- The tractor reference point is the midpoint of the rear axis.
- The distance is measured relative to the longitudinal axis.



The GPS aerial is to the left of the reference point in the direction of travel:

• Enter distance A as a negative value.

The GPS aerial is to the right of the reference point in the direction of travel

• Enter Distance A as a positive value.

The GPS aerial is on the longitudinal axis of the tractor:

Set the distance A to 0.

6 Speed, position and geometry



Distance B

- 1. Mark the mid-point of the rear axle and the position of the GPS aerial on the ground using chalk next to the tractor.
- 2. Measure the distance.
- 3. Press the button "Distance B". \rightarrow An input dialogue is displayed.
- 4. Enter the measured value.
- 5. End the process with "Back".



Distance B

The distance in the longitudinal direction between the GPS aerial and the tractor reference point:

- The tractor reference point is the midpoint of the rear axis.
- The distance is measured along the longitudinal axis.



The GPS aerial is to the rear of the reference point in the direction of travel:

• Enter distance B as a negative value.

The GPS aerial is located prior to the reference point in the direction of travel:

• Enter Distance B as a positive value.

The GPS aerial is precisely over the rear axis:

Set the distance B to 0.



Aerial height

Distance of the highest point of the GPS aerial from the ground.

- 1. Measure the distance of the highest point of the GPS aerial from the ground.
- 2. Press the "Aerial height" button. \rightarrow An input dialogue is displayed.
- 3. Enter the measured value.
- 4. End the process with "Back".

6 Speed, position and geometry



Mounting type and distance C

The distance C must be set separately for each tractor mounting type:

- 1. Check which mounting type the tractor has.
- 2. Measure distance C for each mounting type.
- 3. Press the "Mounting type" button.
 - \rightarrow The "Mounting type" selection list is displayed.
- 4. Press the buttons of a mounting type of the tractor. \rightarrow An input dialogue is displayed.
- 5. Enter the distance C.
- 6. Press "Back" to return to the "Mounting type" selection list.
- 7. Repeat steps four to six for all other mounting types.
- 8. Press "Back" to end the process after entry of all values.



Mounting type

A tractor has several mountings on the rear.

One mounting type is assigned to each implement.

Distances C

The distance from the tractor reference point to the coupling point is different for each mounting type:

- The tractor reference point is the midpoint of the rear axis.
- The distance is measured along the longitudinal axis.



In CCI.Config, enter the distance C for each mounting type.

It is best to take the trouble to do this immediately during set-up and in this way avoid renewed measurement when coupling up the implement.

After coupling up an implement, all that is still necessary is to select the mounting type in the implement settings (\Rightarrow Chapter 6.4.2):

 \rightarrow Section Control and Rate Control automatically use the correct distance C.

Tractor with TECU

6.2.3 Tractor data

An ISOBUS tractor sends the following tractor data over the ISOBUS:

- Ground and wheel speed,
- PTO speed,
- Direction of travel,
- Position of the *Rear 3-point hitch*.

Ex-works the *Signal connector* is switched off. For an ISOBUS tractor, maintain this setting under:



Signal connector

- Switch "off" the signal connector in the "Tractor settings" operating screen.
 - \rightarrow The buttons for setting up the signal connector are deactivated.



Checks

If you have an ISOBUS tractor, you can check in the tractor settings, which tractor data the tractor sends over the ISOBUS.

Tractor se		?	Ð
— T	5 7.		
TECU			
*	Signal socket		-•
ن و م			ISOBUS
<u>*</u>			ISOBUS
i n			ISOBUS
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- 1. Connect the terminal to the signal connector as described in the section *Tractor without TECU*.
- 2. Switch the signal connector on.
 - \rightarrow The buttons of the tractor data sent from the tractor are marked with "ISOBUS".
 - \rightarrow The terminal can add missing tractor data if it is available at the signal connector.

Example

The ISOBUS tractor only sends the wheel speed over the ISOBUS. You have retrofitted a ground speed sensor and its output signal is available at the signal connector. The "Ground Speed" button is marked with "Signal", the "Wheel speed" button is marked with "ISOBUS".

- Set up the ground speed.
 - \rightarrow The terminal sends the ground speed over the ISOBUS.

Recommendation

The Tractor sends all tractor data over the ISOBUS:

Switch the signal connector "off".

Tractor data is present at the signal connector, which the tractor does not send over the ISOBUS:

Switch the signal connector "on" and set up the additional tractor data.

If the tractor data is not made available on the ISOBUS by the tractor, the terminal must undertake this task.

Tractor without TECU

You require

- Cable B,
- Cable H.
- 1. In the ISOBUS settings, switch the ISOBUS "TECU" function on (\Rightarrow Chapter 4.2.3).
- 2. Connect the terminal to the *signal connector* in the Tractor.
 - \rightarrow The terminal reads out the tractor data and sends it over the ISOBUS.
- 1. Connect cable B to connector B of the terminal.
- 2. Plug "Signal" coupling (cable B) into the "Signal" M12 plug (cable H).
- 3. Plug "Signal" plug (cable H) into the tractor signal connector.



Signal connector

- 1. Connect the terminal to the signal connector as described above.
- 2. Switch the signal connector "on".
 - \rightarrow The buttons for setting the tractor data are activated.
- 3. Set the tractor data as described below.



NOTE

The signal socket is "on" but the tractor sends the tractor data over the ISOBUS.

If the terminal detects a TECU on the ISOBUS with the signal connector switched on, then the buttons for setting the tractor data are marked with "ISOBUS" and deactivated:

- Wheel and ground speed, PTO speed and work position cannot be set.
- The terminal does not send any tractor data over the ISOBUS.



Wheel speed

Take the number of pulses per distance travelled from the tractor's technical data.

Values between 200 and 30000 pulses/100 m are valid.

- 1. Press the "Wheel speed" button.
 - \rightarrow The "Wheel speed" operating screen is displayed.
- 2. Press the input field.
 - \rightarrow The screen keyboard is displayed.
- 3. Enter the number of pulses per 100 m and confirm the entry. \rightarrow The "Wheel speed" operating screen is displayed.
- 4. End the process with "Back".

Calibrate the wheel speed,

- If the wheel speed sensor has been retrofitted in the tractor,
- If the technical data of the tractor do not contain any information about the wheel speed sensor.
- \rightarrow see section *Wheel speed calibration*.

Ground speed

Take the number of pulses per distance travelled from the tractor's technical data sheet of the ground speed sensor.

The valid value range is between 200 and 30000 pulses/100 m.

- 1. Press the "Ground speed" button.
 - \rightarrow The "Ground speed" operating screen is displayed.
- 2. Press the input field.
 - \rightarrow The screen keyboard is displayed.
- 3. Enter the number of pulses per 100 m and confirm the entry. \rightarrow The "Ground speed" operating screen is displayed.
- 4. End the process with "Back".

Calibrate the ground speed sensor, if the technical data of the ground speed sensor are not available:

 \rightarrow see section *Ground speed calibration*.



Power take off speed

Take the number of pulses per revolution from the tractor's technical data.

Values between 1 and 40 pulses/rev are valid. A frequent value in practice is 6.

- 1. Press the "PTO sensor" button. \rightarrow The "PTO sensor" operating screen is displayed.
- 2. Press the input field.
 - \rightarrow The screen keyboard is displayed.
- 3. Enter the number of pulses per PTO rotation and confirm the entry. \rightarrow The "PTO sensor" operating screen is displayed.
- 4. End the process with "Back".



Rear 3-point hitch

see section Calibrate rear 3-point hitch and Setting the work position.



X-Sensor

Switch the "X-Sensor" "on".

 $\rightarrow~$ The terminal reads out the speed data at the signal connector.



NOTE

The X-Sensor is a retrofittable speed sensor.

Only switch the X-Sensor on, if

- The tractor has an X-Sensor and,
- The sensor output is output to the signal connector.

6 Speed, position and geometry





NOTE

A field is not suitable for calibration of the speed.

• Calibrate the speed on smooth surfaces (e.g. asphalt) and not on a field.

Prior preparation

- Set out a distance of 100 m.
- Position the tractor at the start of the distance.





1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.

 \rightarrow The tractor settings are displayed.



- 2. Switch the signal connector "on". \rightarrow The "Wheel speed sensor" button is activated.
- @)) n
- 3. Press the "Wheel speed sensor" button.
 → The Wheel speed sensor" input dialogue is displayed.
- 4. Press the "Calibrate" button. \rightarrow The operating screen "Step 1 of 2" is displayed.

6 Speed, position and geometry





- 5. Press the "START" button. \rightarrow The operating screen "Step 2 of 2" is displayed. \rightarrow The pulse counter displays the current value.
- 6. Drive 100 m and then press the "STOP" button. \rightarrow The "Wheel speed sensor" operating screen is displayed. \rightarrow The "Pulses/100 m" input field indicates the measured value.
- 7. End the process with "Back". \rightarrow The "Tractor settings" operating screen is displayed.
- Proceed as described in the section *Wheel speed calibration*.
- ▶ In step 4, press the button "Ground speed sensor" button.



Calibrate rear 3-point hitch





- 1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.
 - \rightarrow The tractor settings are displayed.



2. Switch the signal connector "on". \rightarrow The "Rear 3-point hitch" button is activated.



- 3. Press the "Rear 3-point hitch" button.
 → The "Rear 3-point hitch" input dialogue is displayed.
- 4. Press the "Calibrate" button.
 → The operating screen "Step 1 of 2" is displayed.





5. Fully lift the rear 3-point hitch and then press the "MAX" button. \rightarrow The operating screen "Step 2 of 2" is displayed. \rightarrow The voltage value for the maximum is indicated.



6. Fully lower the rear 3-point hitch and then press on the "MIN" button. \rightarrow The voltage values for the maximum and minimum are indicated.



- 7. End the process with "Back".
 - \rightarrow The "Tractor settings" operating screen is displayed.
Some tractors make the work position available via the signal connector. Proceed as follows: Set working position





- 1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.
 - \rightarrow The tractor settings are displayed.



2. Switch the signal connector "on". \rightarrow The "Rear 3-point hitch" button is activated.



- 3. Press the "Rear 3-point hitch" button. \rightarrow The "Rear 3-point hitch" input dialogue is displayed.
- 4. Switch the signal connector "on".
 → Terminal uses the work position from the signal connector.

5. End the process with "Back". \rightarrow The "Tractor settings" operating screen is displayed. If the *Work position* is not available at the *Signal connector*, set this as follows:



Move the *Rear 3-point hitch* to the work position and from the "Rear 3-point hitch" input dialogue read off the percentage value for the position

 (a).



2. Switch "off" the signal connector in the "Rear 3-point hitch" input dialogue.

 \rightarrow The "Threshold" button is activated.



Ab

- 3. Press the "Threshold" input field. \rightarrow The screen keyboard is displayed.
- 4. Enter the value read off in step 1 and confirm the entry.



5. End the process with "Back". \rightarrow The "Tractor settings" operating screen is displayed.



NOTE

Sometimes the EHR impairs display of the working position.

The display of the rear 3-point hitch then alternates between work position and transport position.

- 1. End the lifting of the rear 3-point hitch in step 1 a few centimetres before the work position is reached.
- 2. Use the displayed percentage value as a threshold.

6.2.4 Power Management

Power Management is a switch-off delay. When you pull out the ignition key, the terminal is shut down with a delay.

 \rightarrow Processes running on the terminal the ISOBUS implement can be ended.

Power Management can only be used in conjunction with an ISOBUS upgrade kit.

On a tractor factory-fitted with ISOBUS, Power Management does not work:

Switch "Power Management" off.



NOTE

Only selected ISOBUS upgrade kits support Power Management.

Only switch Power Management on, if the ISOBUS upgrade kit supports this function.



Power Management

- Switch "Power Management" "on".
 - \rightarrow The terminal is shut down with a delay when you pull out the ignition switch.

6.3 Add implement

NOTE



An ISOBUS implement with *TC client* automatically inserts itself into the implement list.

The implement also automatically makes the implement setting available.

 \rightarrow An ISOBUS implement with a *TC client* need not be manually added.

If an ISOBUS implement with a *TC client* does not automatically enter itself in the list, there is an error.

• Refer to chapter \Rightarrow Chapter 11.1, to see how this error can be rectified.

Add a new implement to the implement list,

- if you want to use the implement for documentation of tasks, for *Section Control* or *Rate Control*
- If the implement
 - is not an ISOBUS implement
 - is an ISOBUS implement without a TC client.

Add an implement:

- 1. Press the "Implement" button in the "CCI.Config" operating screen. \rightarrow The "Rear implement" operating screen is displayed.
- 2. Press the "+ new Implement" button.



3. Enter the implement name.



4. Confirm the entry. \rightarrow The list of implements is displayed. The new implement is selected.



5. Return to the "CCI.Config" operating screen.

NOTE

The settings must be changed when changing the implement.

If no tractor or the incorrect tractor is selected, Rate Control and Section Control work with incorrect settings.

• Select the implement from the list (\Rightarrow Chapter 6.10.5).

If the implement is not in the list of implements:

- 1. Add the implement to it (\Rightarrow Chapter 6.3).
- 2. Set up the implement (\Rightarrow Chapter 6.4).



TC client and UT client

The implement list in CCI.Config must not be confused with the implement list stored in the "Saved implements" operating screen.

- "Saved implements" manages the implements that can be operated with the terminal.
- CCI.Config manages the implements that are to be used for documentation, Section Control or Rate Control.

You can operate an ISOBUS implement with the app CCI.UT A or CCI.UT B. Both apps log on to the ISOBUS as a Universal Terminal (UT). The ISOBUS- implement has a UT client which connects to the UT on the terminal.

You carry out the documentation of tasks, Section Control and Rate Control with the apps CCI.Control and CCI.Command. These apps log on to the ISOBUS as a Task Controller (TC). The ISOBUS implement has a TC client which connects to the TC on the terminal.

Implement operation and documentation/Section Control/Rate Control can be performed on separate ISOBUS terminals:

- "Universal Terminal" is on and "Task Controller" off on the terminal for implement operation.
 - \rightarrow The UT client of the implement connects to this terminal.
- On the second terminal, "Universal Terminal" is off and "Task Controller" on.
 - \rightarrow The TC client of the implement connects to this terminal.

6.4 Set-up Implement

You must make all settings for manually added implements.

An ISOBUS implement with *TC client* automatically enters itself in the implement list and also makes the implement settings.

 \rightarrow Settings made by the implement cannot be changed.

- Check the settings for completeness.
- Add any missing settings.

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Configure the implement:

- 1. Press the "Implement settings" button.
 - \rightarrow The implement settings are displayed.
- 2. Follow the instructions in \Rightarrow Chapter 6.4.1 to \Rightarrow Chapter 6.4.7.

Then check the settings:



- In the "CCI.Config" operating screen, press the arrow button in the implement button.
 - \rightarrow The "Implement" information area is displayed.



- 1: Number of sections
- 2: Working width
- 3: Mounting type
- Distance D1, coupling point - implement reference point
- 5: Distance E, implement reference point - midpoint of the sections
- 6: Distance D2, first implement reference point - coupling point of the second implement
- 7: Second implement mounting type
- 8: Number of booms.
 → In the example, two booms each of one section width.
- 9: Distance B
- 10: Distance A

Checks

6.4.1 Working width and implement type

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Working width

- 1. Press the "Working width" button. \rightarrow An input dialogue is displayed.
- 2. Enter the working width.
- 3. End the process with "Back".



Implement type

- 1. Press the "Implement type" button \rightarrow The "Implement type" selection list is displayed.
- 2. Select the implement type.
- 3. End the process with "Back".



Implement type

- With trailed implements (2) and self-propelled implements (3), the position of the sections for curved tracks is calculated.
- With attached implements (1), the position of the sections is fixed.



6.4.2 Mounting type and reference point



Mounting type

- 1. Press the "Mounting type" button. \rightarrow The "Mounting type" selection list is displayed.
- 2. Select the mounting type.
- 3. End the process with "Back".



Mounting type

In the tractor settings you have entered a distance C for each available tractor mounting type. Simply select the implement mounting type in the implement settings.

 \rightarrow Repeat entry of distance C is not necessary.



6 Speed, position and geometry



Distance D1

- 1. Press the button "Distance D1". \rightarrow An input dialogue is displayed.
- 2. Enter the distance D1.
- 3. End the process with "Back".



Distance D1

The distance between the *coupling point* and the implement reference point:

- With trailed implements, the reference point is on the midpoint of the first axle.
- With attached implements, the implement manufacturer specifies the position of the reference point.
- For manually created implements (e.g. tillage equipment), measure distance D1 between the coupling point and the last component (e.g. the roller).



6.4.3 Section widths: Geometry and delay times

The section geometry, the delay times and the overlap must be set separately for each implement boom.

 \rightarrow A group of buttons is made available for each boom in the implement settings.

Some implements make a designation available for the boom.

- \rightarrow This designation is preset as a title for the group.
- \rightarrow If no designation is available, the group is overwritten with "Implement" or "-".



Section geometry

The following are displayed in the "Section geometry" information area:

- The values (1)-(4), (6), (8), (9) set in the implement
- The delay times corrected on the terminal (5), (7)

This information is only of interest for servicing.

- 1. Press the "Section geometry" button.
 - \rightarrow The following are displayed in the "Section geometry" information area.



- 1: Number of sections
 - \rightarrow The numbering goes from left to right in the direction of travel.
- 2: Working width of the section
- 3: Working depth of the section
- 4: Turn on delay
- 5: Corrected turn on delay
- 6: Turn off delay
- 7: Corrected turn off delay
- 8: Distance E
 - \rightarrow The distance between the implement reference point and the midpoint of the section.
 - \rightarrow The distance is measured in the direction of travel.
- 9: Distance F
 - \rightarrow The distance between the implement reference point and the midpoint of the section.
 - \rightarrow The distance is measured perpendicular to the direction of travel.

6.4.4 Set delay times or correct them

You can

- Set up the delay times
- Correct the delay times set in the implement.



Delay times and correction values

The turn on delay specifies the time delay between the command and the application. During spraying, it is the time from the command "Turn on section" until the agent is applied.

The turn off delay specifies the time delay between the command and the actual switching off of a section.

The delay times are already set in the factory for many ISOBUS implements or can be taken from the technical data of the implement.

If this data is missing, you must determine the value by taking your own measurements.

You correct the implement factory settings using the correction values for the switch-on delay time and the switch-off delay time, e.g. if these are unusable.



Setting delay times

For some ISOBUS implements the delay times are not set in the factory.

 \rightarrow In the "Section geometry" information area (\Rightarrow Chapter 6.4.3), the delay times have the value "0" or "-".

You can enter the delay times or allow the terminal to calculate them:

5

Calculate

Calculate

The operating screen "Delay Times":



 \rightarrow Overlapping in the driving direction is set.

2: Enter delay time

3: Allow the delay time to be calculated



NOTE

🗞 🚪 Turn on delay

ở只 Turn off delay

Enter dela time

Overlapping in the driving direction affects the switching points.

If an overlap is set in the driving direction (\Rightarrow Chapter 6.4.5), you are made aware of this by an explanatory text.

When setting the delay times, consider the effect of the overlap in the driving direction on the switching points.

We recommend:

First check the set delay times, then the overlap in the driving direction.



- 1. Take the delay times from the implement technical data.
- 2. Press the button "Delay times" . \rightarrow The "Delay times" operating screen is displayed.
- 3. Press the "ISO + 0 ms" button on the right next to the "Turn on delay". \rightarrow The keyboard is displayed.

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4. Enter the turn on delay and confirm your entry. Only positive values can be entered.

5. Repeat steps 3 and 4 for turn off delay.

Allow the delay time to be calculated





- 1. Press the button "Delay times" . \rightarrow The "Delay times" operating screen is displayed.
- 2. Press the "Calculate" button on the right next to the "Turn on delay". \rightarrow The operating screen "Step 1 of 3" is displayed.
- 3. Follow the instructions and end the process in the operation screen "Step 3 of 3" with "Completed".
- \bigcirc
- 4. Repeat steps 2 and 3 for turn off delay.
 - \rightarrow The overlap in the driving direction is considered in calculating the delay times.



NOTE

Additional implement settings for implements with multiple booms.

So that Rate Control and Section Control work accurately, the delay times must be set for each boom.

- $\rightarrow~$ Additional buttons are displayed in the implement settings.
- Set the delay times for each boom.

Correct delay times

In some ISOBUS implements, the delay times are set, but the set values cannot be used. In this case, you must determine the correct values yourself by carrying out your own measurements. Then correct the delay times in the terminal.

Select the switch-on or switch-off delay time, dependent on whether you want to improve switching on or switching off.

 \rightarrow The correction value is added to or subtracted from the value set in the implement.



 \rightarrow The correction value is applied to all sections.

- 1. Turn off.
- 2. Turn on.



NOTE

Section Control uses the corrected delay times.

The corrected delay time

- is saved in the terminal, not in the implement
- is automatically set, if you start working again with the implement after an interruption
- is available again after restarting of the terminal.



You can enter the correction values or allow the terminal to calculate them:

Enter the correction value

NOTE

Overlapping in the driving direction affects the switching points.

If an overlap is set in the driving direction (\Rightarrow Chapter 6.4.5), you are made aware of this by an explanatory text.

When setting the correction values, consider the effect of the overlap in the driving direction on the switching points.

We recommend:

 First check the set correction values, then the overlap in the driving direction.



- 1. Press the button "Delay times" .
 - \rightarrow The "Delay times" operating screen is displayed.
- 2. Press the "ISO + 0 ms" button on the right next to the "Turn on delay". \rightarrow The keyboard is displayed.

- 3. Enter the correction value of the turn on delay and confirm the entry.
 - \rightarrow A positive value is added to the value set in the implement. \rightarrow A negative value is subtracted from the value set in the implement.



4. Repeat steps 2 and 3 for the correction value of the turn off delay.

6 Speed, position and geometry



- 1: Turn on delay time set in the implement: 1000 ms
- 2: Correction value -144 ms set by you. → Corrected turn on delay: 1000 ms -144 ms = 856 ms
- 3: Turn off delay time set in the implement 100 ms.
- 4: No correction value. \rightarrow Corrected turn off delay: 100 ms



Allow the correction value to be calculated

Example



1. Press the button "Delay times" . \rightarrow The "Delay times" operating screen is displayed.

- 2. Press the "Calculate" button on the right next to the "Turn on delay". \rightarrow The operating screen "Step 1 of 3" is displayed.
- 3. Follow the instructions and end the process in the operation screen "Step 3 of 3" with "Completed".

4. Repeat steps 2 and 3 for the correction value of the turn off delay.

 \rightarrow The overlap in the driving direction is considered in calculating the delay times.

NOTE

Additional implement settings for implements with multiple booms.

So that Rate Control and Section Control work accurately, the delay times must be corrected for each boom.

- \rightarrow Additional buttons are displayed in the implement settings.
- Correct the delay times for each boom.

6.4.5 Overlap

What is your priority:

- Complete working or
- The avoidance of double treatments?

You can achieve the result you want using the overlap settings.

NOTE

An overlap in driving direction of >0 cm or <0 cm influences the switching points.

- First check the set delay times, then the overlap in the driving direction.
- When setting the delay times, consider the effect of the overlap on the switching points.



Overlap in driving direction

The valid value range for the overlap in the driving direction is between - 2000 cm and +2000 cm.

- 1. Press the "Overlap in driving direction" button. \rightarrow An input dialogue is displayed.
- 2. Enter the overlap.
- 3. End the process with "Back".



Overlap in driving direction

Do you also want to avoid even the smallest possible working gaps on the headland, e.g. during sowing or crop protection?

Use "Overlap in driving direction".





Degree of overlap

Valid values for the degree of overlap are 0, 50 or 100 %.

- 1. Press the "Degree of overlap" button. \rightarrow An input dialogue is displayed.
- 2. Enter the degree of overlap.
- 3. End the process with "Back".



Degree of overlap

Specify when a section is switched off if it overlaps an already worked area. Assign the priority to

- Complete working or
- The avoidance of double treatments.



0 %

- \rightarrow The section is switched off before overlapping occurs. (left image)
- \rightarrow Missed areas may occur.
- \rightarrow Double treatments are avoided.

50 %

 \rightarrow The section is switched off, if half of this section is located in an already worked area (middle graphic).

100 %

- → The section is only switched off, if it is completely located in an already worked area (right graphic).
- \rightarrow Complete working is achieved.

Double treatments may occur.



Overlap tolerance

Specify how outer right and left sections react to overlaps. Values between 0 cm and half of the outer section are valid for the overlap tolerance.

- 1. Press the "Overlap tolerance" button. \rightarrow An input dialogue is displayed.
- 2. Enter the overlap tolerance.
- 3. End the process with "Back".



Overlap tolerance with 0 % degree of overlap

With parallel tracks in the field (e.g. with tramlines) it can occur, that the outer left and right sections are sometimes temporarily displayed over an already worked area, although actually no double treatment is occurring. \rightarrow In general the cause is GPS drift.

With 0 % degree of overlap, the outer section is switched off in this case.

- \rightarrow A "fluttering" (continuous switching on and off) can occur.
- \rightarrow Fluttering is prevented by setting the overlap tolerance.





Overlap tolerance with 100 % degree of overlap

In runs over already worked areas (e.g. the headland) the outer sections may sometimes switch on in an undesired way.

 $\rightarrow\,$ Causes for this are GPS drift or a track that has not been precisely followed.

The overlap tolerance can prevent the unwanted switching on of the sections.





Overlap tolerance at field boundary

Values between 0 cm and half of the outer section are valid for the overlap tolerance.

- 1. Press the "Overlap tolerance at field boundary" button.
- ightarrow An input dialogue is displayed.
- 2. Enter the overlap tolerance.
- 3. End the process with "Back".

CAUTION!

NOTE

GPS drift can cause switching on and off of the outer section at the field boundaries.

With a field border overlap tolerance of >0 cm

- You minimise this switching on and off
- However you may also be working beyond the field boundary.

We recommend the 0 cm setting.

If you set another value, you must check whether working beyond the field boundary is acceptable.



Additional implement settings for implements with multiple booms.

So that Rate Control and Section Control work accurately, the overlap must be set for each boom.

- $\rightarrow~$ Additional buttons are displayed in the implement settings.
- Set the overlap in the driving direction, the degree of overlap and the overlap tolerance for each boom.

6.4.6 Section control only in the headland



Section Control only in the headland on/off

Switch the button "Section control only in the headland" "on".
 → Sections are only automatically switched in the headland.



Section Control only in the headland

When using seed drills and planters with very small sections (e.g. less than a meter) then with parallel tracks the result may be undesired switching off of the outer sections.

 \rightarrow In general the cause is GPS drift.

Undesired switching off cannot always be avoided by adapting the overlap tolerance. In this case the option "Section control only in the headland", helps to avoid missed areas.

 \rightarrow The automatic switching on and off of the sections takes place in the marked headland (orange), not on the worked area (blue).



6.4.7 Second implement

A second implement is coupled to the rear of the implement. Both implements should be used for *Rate Control* or *Section Control*.

Set the mounting type and distance D2 of the second implement in the first implement.

Prior preparation

- ► Arrange the implements in the "CCI.Config" operating screen in the correct sequence (⇒ Chapter 6.10.6).
- Measure distance D2 at the first implement.



Mounting type

- 1. Press the "Mounting type" button. \rightarrow The "Mounting type" selection list is displayed.
- 2. Select the mounting type.
- 3. End the process with "Back".



Select the same mounting type in the settings of the second implement.



- 1. Open the settings of the second implement.
- 2. Select the same mounting type for the second implement as you selected in the settings of the first implement.





Distance D2

- 1. Press the button "Distance D2". \rightarrow An input dialogue is displayed.
- 2. Enter distance D2.
- 3. End the process with "Back".



Distance D2

Distance between the first implement reference point and the coupling point of the second implement:

- In total D1 and D2 add up to the distance between the coupling point of the first im-plement and the coupling point of the second implement. With trailed implements, the reference point is on the midpoint of the first axle. With attached implements, the implement manufacturer specifies the position of the
- reference point.



6.5 Set up self-propelled implement

The self-propelled implement is subdivided into two functional units:

- Tractor
- Implement

The self-propelled implement automatically inserts itself in the tractor and implement lists and makes most settings automatically.

- \rightarrow Settings made by the self-propelled implement cannot be changed.
- Check the tractor settings and implement settings of the self-propelled implement for completeness.
- Add any missing settings.

NOTE

A self-propelled implement is set up like a tractor with an attached implement.

The description of the settings can be found in \Rightarrow Chapter 6.2 "Set up tractor" and \Rightarrow Chapter 6.4 "Set-up Implement".

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Tractor settings of the self-propelled implement:

- 1. Press the "Set up self-propelled implement" button in the "CCI.Config" operating screen.
 - \rightarrow The tractor settings are displayed.
- 2. Follow the instructions in \Rightarrow Chapter 6.2.1 and \Rightarrow Chapter 6.2.3.

6 Speed, position and geometry



Implement settings of the self-propelled implement:

- 1. Press the "Implement settings" button. \rightarrow The implement settings are displayed.
- 2. Follow the instructions in \Rightarrow Chapter 6.4.3 to \Rightarrow Chapter 6.4.6.

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Then check the settings:

In the "CCI.Config" operating screen, press the arrow button in the self-propelled implement buttons.

Wheel speed
 Ground speed
 GPS speed

5: Work position

4: Power take off speed

 \rightarrow The "TECU" information area is displayed.

- 6: Direction of travel
- In the "CCI.Config" operating screen, press the arrow button in the implement button.
 - \rightarrow The "Implement" information area is displayed.

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- 1: Number of sections
 - 2: Working width
 - Distance E, implement reference point - midpoint of the sections
 - 4: Distance B
 - 5: Distance A



Checks

6.6 GPS settings

The terminal can read in position data from a GPS receiver.

NOTE

The position data must comply with the standards NMEA 0183 or NMEA 2000 or J1939.

If the GPS receiver uses another protocol, the terminal cannot read in the position data. Section Control and all other location-related functions cannot be used.

Ensure that the GPS receiver corresponds to the standards *NMEA* 0183, *NMEA* 2000 or J1939.

You must set the position and interface of the GPS receiver:



- 1. Press the "GPS" button in the "CCI.Config" operating screen. \rightarrow The "GPS settings" operating screen is displayed.
- 2. Follow the instructions in \Rightarrow Chapter 6.6.1, \Rightarrow Chapter 6.6.2 and \Rightarrow Chap
 - ter 6.6.3.
- 3. Then check the GPS settings in the information area.



The data in the information area (1) is displayed, if

Checks

- A GPS receiver is connected and sending data
- GPS source, interface and baud rate have been correctly selected.

NOTE

Accuracy requirements of the position data of the GPS receiver.

Use a receiver of accuracy 20 cm or better. With an NMEA 0183 GPS receiver, select a baud rate of at least 19200.

The minimum requirement for the data record is:

- GGA and VTG at a frequency of 5 Hz
- GSA at a frequency of 1 Hz

6.6.1 Position of the GPS aerial



Position of the GPS aerial

You specify whether the GPS aerial is attached on the tractor or the implement.

- 1. Press the button "Position of the GPS receiver". \rightarrow The "Position of the GPS aerial" selection list is displayed.
- 2. Select the position of the GPS aerial.
- 3. End the process with "Back".
 - \rightarrow The "GPS settings" operating screen is displayed.



Position of the GPS aerial

There are two options for attachment of a GPS aerial:

- 1. On the tractor.
 - \rightarrow Enter the distances A and B in the tractor settings.
- 2. On the implement.
 - \rightarrow Select "Front implement", "Implement" or "Second implement".
 - \rightarrow Only attach the GPS aerial to the implement if the implement sends distances A and B to the terminal.



We recommend attaching the GPS receiver on the tractor.

6.6.2 GPS source



GPS source

- 1. Press the button "GPS source".
 - \rightarrow The "GPS source" selection list is displayed.
- 2. Select the GPS source.
- 3. If you have selected "RS232 serial", then define the serial interface and baud rate now.
- 4. End the process with "Back". \rightarrow The "GPS settings" operating screen is displayed.



GPS source

Dependent on the model, a GPS receiver sends position data

- Using the NMEA 0183 protocol via the serial interface,
- Using the NMEA 2000 protocol via the ISOBUS or
- Using the J1939 protocol via the ISOBUS.

The terminal supports all three protocols.

Connect GPS receiver and terminal as follows:

- 1. The GPS receiver has a serial interface.
 - \rightarrow Connect the GPS receiver to connector B or C of the terminal.
 - \rightarrow Select "RS232 serial" as the GPS source.
 - \rightarrow Select the connector as the serial interface to which the GPS receiver is connected.
- 2. The automatic steering system has a serial interface for the GPS signal.
 - \rightarrow Connect the serial interface of the steering system to connector B or C of the terminal.
 - \rightarrow Select "RS232 serial" as the GPS source.
 - \rightarrow Select the connector to which the steering system is connected as the serial interface.
- 3. The GPS receiver has an ISOBUS interface.
 - \rightarrow Connect the GPS receiver at the ISOBUS.
 - \rightarrow Select "ISOBUS" as the GPS source.



If you have selected "RS232 - serial" as the GPS source, you must configure the serial interface:



Serial interface

Configure the connector to which the GPS receiver or the steering system is connected.

- 1. Press the button "Serial interface".
 - \rightarrow The "Serial interface" selection list is displayed.
- 2. Select the connector.
- 3. End the process with "Back".
 - \rightarrow The "GPS source" operating screen is displayed.



Baud rate

The baud rate of the terminal and the GPS receiver must match.

- 1. Press the "Baud rate" button. \rightarrow The "Baud rate" selection list is displayed.
- 2. Select the baud rate.
- 3. End the process with "Back".
 - \rightarrow The "GPS source" operating screen is displayed.



NOTE

The baud rate of the terminal and the GPS receiver must match.

Otherwise, the terminal cannot evaluate the position data of the GPS receiver.

- If you do not know the baud rate of the GPS receiver, select the "Auto" setting.
 - \rightarrow The terminal automatically determines the baud rate of the GPS receiver.
 - \rightarrow This may take a while.

6.6.3 Adjust GPS receiver

You can adjust some GPS receivers easily and quickly from the terminal. \rightarrow This function is only available for GPS receivers with a serial interface.

• Connect the GPS receiver to the terminal.

Prior preparation

• Set the same baud rate at the terminal and GPS receiver.

Recommended settings

Optimally adjust the GPS receiver with just a single click:

- 1. Press the button "Adjust GPS receiver". \rightarrow The "Adjust GPS receiver" operating screen is displayed.
- 2. Press the button "GPS receiver". \rightarrow The "GPS receiver" selection list is displayed.
- 3. Select the GPS receiver.
- 4. Press "Back" to return to the "Adjust GPS receiver" operating screen.
- 5. Press the button "Recommended settings".
 - \rightarrow The GPS receiver settings are changed according to our recommendations (\Rightarrow Appendix E).
- 6. End the process with "Back".
 - \rightarrow The "GPS source" operating screen is displayed.

Manually changing the settings

You can make detailed settings for the GPS receiver as described in the "GPS settings" section.



NOTE

If the configuration is made incorrectly, GPS receiving is interrupted or suspended.

Read the GPS receiver manual carefully.

6 Speed, position and geometry



- 1. Press the button "Adjust GPS receiver".
 - \rightarrow The "Adjust GPS receiver" operating screen is displayed.
- 2. Press the button "GPS receiver".
 - \rightarrow The "GPS receiver" selection list is displayed.
- 3. Select GPS receiver or "Universal"
- 4. Press "Back" to return to the "Adjust GPS receiver" operating screen.
- 5. Set the baud rate, NMEA data, SBAS and GLIDE.
- 6. End the process with "Back".
 - \rightarrow The "GPS source" operating screen is displayed.

6.7 Tilt sensor

The terminal can read in the inclination angle from a tilt sensor.



NOTE

You need the manufacturer's instruction manual.

These operating instructions only describe setting up of the terminal. See the manufacturer's instruction manual for more information on the tilt sensor:

- Connecting the sensor to the terminal
- Operation of the sensor
- Evaluation of the sensor data by the implement

The following setting options are available at the terminal:



Tilt sensor on

The "Tilt sensor" switch is set to "off" in the presetting. You have connected a tilt sensor to the terminal:

- Switch "Tilt sensor" "on".
 - \rightarrow The terminal reads out the tilt sensor data.


Distance to the ground

Distance of the highest point of the tilt sensor from the ground.

- 1. Measure the distance of the highest point of the tilt sensor from the ground.
- 2. Press the button "Distance to the ground". \rightarrow An input dialogue is displayed.
- 3. Enter the measured value.
- 4. End the process with "Back".

6.8 CCI.Convert

When working with an N-sensor and an ISOBUS implement, the application quantity should be automatically matched to the circumstances on the field. The N-sensor controls the application quantity of the ISOBUS implement. The setpoints of the N-sensor replace the setpoints of the application map.

ASD CCT ISOBUS	
TUVR	

The sensor signal must be converted to a setpoint for the ISOBUS implement.

 \rightarrow CCI.Convert converts the manufacturer-specific signals from N-sensors to implement-readable ISOBUS messages.

The following formats are supported:

- LH5000,
- ASD,
- ASD Section Control and
- TUVR.

6 Speed, position and geometry



- 1. Press the "CCI.Convert" button in the "CCI.Config" operating screen. \rightarrow The "CCI.Convert" operating screen is displayed.
- 2. Set up the protocol, interface and implement as described below.

• Determine which protocol the sensor uses for data transmission.

- Connect the sensor and implement to the ISOBUS.
- Select the implement in Implement settings (\Rightarrow Chapter 6.10.5).

You have the following setting options:

CCI.Convert on/off

Switch CCI.Convert on or off.

- Press the "CCI.Convert" button.
 - \rightarrow The switch changes the position.



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Serial interface

The terminal has one serial interface at each of the connectors B and C. CCI.Convert specifies the connector to which the sensor must be connected. Changing is not possible.

- \rightarrow The connector is indicated.
- $\rightarrow~$ Connect the sensor to this connector. Use Cable B for connector B or Cable C1 or C2 for connector C.

Prior preparation



Select protocol

Select the protocol to which the sensor sends a value.

- 1. Press the "Protocol" button.
 - \rightarrow The "Protocol" selection list is displayed.
- 2. Select the protocol.
- 3. End the process with "Back".
 - \rightarrow The "CCI.Convert" operating screen is displayed.
 - \rightarrow The selected protocol is indicated on the "Protocol" button.



Select implement

Select the implement to which the sensor setpoints are to be sent.

- 1. Press the "Implement" button. \rightarrow The list of implements is displayed.
- 2. Select an implement or the option "Automatically select the implement".
- 3. End the process with "Back".
 - \rightarrow The "CCI.Convert" operating screen is displayed.
 - \rightarrow The selected protocol is indicated on the "Implement" button.



NOTE

When selecting the implement we recommend the setting "Automatically select the implement".

This is the default setting.

CCI.Convert automatically searches for the implement to which the sensor setpoints are to be sent.

• Correct the setting, if automatic mode selects the incorrect implement.

6.9 Tacho

Set up a tacho in CCI.Config. You can obtain a quick overview of the settings of tractor and implement with tacho:



Displayed to the right alongside the tacho display

- The selected tractor,
- The selected implement,
- The CCI.Convert settings.

NOTE

Tractor and implement must be chosen correctly.

Otherwise the terminal works with incorrect settings.

• Check whether the tractor and implement are correctly selected.

The following can be displayed in the speedometer:

- the wheel speed,
- the ground speed,
- the GPS Speed or
- the PTO speed.

Select the indicated value (1) and set the display range (2) and the optimum working range (3).

In the tacho, you have direct access (4) to

- the implement settings,
- the tractor settings and
- CCI.Convert.



You have the following operating options:

Set the tacho minimum and maximum.

Ab

- 1. Four values are displayed below the tacho. Press the left outer button. \rightarrow An input dialogue is displayed.
- 2. Enter the smallest value, that is still to be displayed and confirm the entry.
- 3. Press the right outer button. \rightarrow An input dialogue is displayed.
- 4. Enter the largest value, that is still to be displayed and confirm the entry.
 - \rightarrow The tacho display range is set.



Ab

Setting the optimum working range

The optimum working range is displayed on the tacho in green. You can see at a glance whether a speed correction or PTO rpm correction is necessary.

1. Four values are displayed below the tacho. Press the second button from the left.

 \rightarrow An input dialogue is displayed.

- 2. Enter the lower limit of the optimum working range and confirm the entry.
- 3. Press the second button from the right. \rightarrow An input dialogue is displayed.
- 4. Enter the upper limit of the optimum working range and confirm the entry.
 - \rightarrow The optimum working range is displayed on the tacho in green.

Tractor, implement and CCI.Convert settings

- Press in the area to the right of the tacho.
 - \rightarrow The "CCI.Config" operating screen is displayed.

NOTE

The display range and optimum working range are saved separately for each speed and the PTO speed.

The settings are available again after a restart.

6.10 Operation

You have added and adjusted the tractors on which the terminal will be used, and the implements (\Rightarrow Chapter 6.1 to \Rightarrow Chapter 6.9).

You have the following operating options:

- Tractor selecting, deleting, editing and exporting
- Selecting, deleting, editing and exporting of implements
- Using GPS simulation

6.10.1 Select tractor

The list in the "Tractor" operating screen contains the

- tractors created by you and
- all tractors with *TC client* that have already been connected to the terminal at least once.

Select the tractor on which the terminal is to be used:

- Press the "Settings" button.
 → The "Settings" operating screen is displayed:
- ---
- 2. Press the "Apps" button.
 → The "Apps" operating screen is displayed:
- 3. Press the "CCI.Config" button. \rightarrow The "CCI.Config" operating screen is displayed.
- 4. Press the "Tractor" button. \rightarrow The list of tractors is displayed.



5. Select the Tractor.



- 6. Press "Back" to return to the "CCI.Config" operating screen.
- 7. In the "Tractor" button, press the arrow. \rightarrow The information area pops up.



- 8. Check the settings.
- 9. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.

6.10.2 Edit tractor

You can change the tractor name.



1. Press the "Tractor" button in the "CCI.Config" operating screen. \rightarrow The list of tractors is displayed.



2. Press the button with the tractor and keep the button pressed. \rightarrow A context menu is displayed.



- 3. Select "Edit".
 - ightarrow The "Tractor name" input dialogue is displayed.



4. Enter the tractor name.



- 5. Confirm the entry.
 - \rightarrow The "CCI.Config" operating screen is displayed.
 - \rightarrow The tractor is selected.

6.10.3 Delete tractor

Delete a tractor as follows:





1. Press the "Tractor" button in the "CCI.Config" operating screen. \rightarrow The list of tractors is displayed.



2. Press the button with the tractor and keep the button pressed. \rightarrow A context menu is displayed.



- 3. Select "Delete".
 - \rightarrow A message window is displayed.



- 4. Confirm the message.

 - \rightarrow The tractor is deleted. \rightarrow The "Tractor" operating screen is displayed.

6.10.4 Export tractor

• Connect a flash drive to the terminal.

1. Press the "Tractor" button in the "CCI.Config" operating screen. \rightarrow The list of tractors is displayed.



- 2. Press the button with the tractor and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Export tractor". \rightarrow The tractor is saved on the flash drive.



NOTE

Exporting a tractor to the flash drive is only relevant in service cases.



6.10.5 Select implement

The list in the "Implement" operating screen contains the

- Implements created by you and
- All ISOBUS implements with *TC client* that have already been connected to the terminal at least once.

Select the implement coupled to the tractor.

 \rightarrow The implement can be used for documentation of tasks, for Rate Control and Section Control.

1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed:



2. Press the "Apps" button.
 → The "Apps" operating screen is displayed:



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- 3. Press the "CCI.Config" button.
 → The "CCI.Config" operating screen is displayed:
- 4. Press the upper of the two "Select implement" buttons. \rightarrow The list of implements is displayed.



5. Select the implement.

8. Check the settings.



6. Press "Back" to return to the "CCI.Config" operating screen.



- 7. In the "Implement" button, press the arrow. \rightarrow The information area pops up.
- \$
- 9. Press the "Settings" button. \rightarrow The "Settings" operating screen is closed.

NOTE

Select the correct implement.

The selected implement must be coupled to the tractor.

- $\rightarrow\,$ If you select an incorrect implement, Section Control and Rate Control do not work.
- Carry out this procedure each time, if you want to couple a new implement to the tractor.

6.10.6 Select two implements

You can attach two implements to the tractor and perform two agricultural practices in one work step, e.g. sowing and fertilising. The following attachment sequences are possible:

- Both implements are located behind the tractor:
 - The first implement is coupled to the tractor
 - The second implement is coupled to the first implement
- The first implement is located in front of the tractor and the second implement is located behind the tractor.

You can use both implements for documentation of tasks, Rate Control and Section Control.

The operating screen "CCI.Config" has two "Implement" buttons for this application:



- Using the upper "implement" button, select the first implement.
- Using the lower "implement" button select the second implement.



NOTE

Assign the two implements to the two buttons in the order in which they are attached.

Rate Control and Section Control cannot correctly calculate the geometry of the tractor combination if the sequence is incorrectly selected.

 $\rightarrow~$ Switching of the sections and the change in the application rate occur in the wrong location.

NOTE



Open the settings of the first implement and set distance D2 and mounting type (⇒ Chapter 6.4.7).

6.10.7 Edit implement

You can change the implement name.

- 1. Press the "Implement" button in the "CCI.Config" operating screen. \rightarrow The list of implements is displayed.
- 2. Press the button with the implement and keep the button pressed. \rightarrow A context menu is displayed.



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- 3. Select "Edit".
 - \rightarrow The "Implement name" input dialogue is displayed.



- 4. Enter the implement name.
- . /
- 5. Confirm the entry.
 - \rightarrow The "CCI.Config" operating screen is displayed.
 - \rightarrow The implement is selected.

6 Speed, position and geometry

6.10.8 Delete implement

Delete an implement as follows:



- 1. Press the "Implement" button in the "CCI.Config" operating screen. \rightarrow The list of implements is displayed.

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2. Press the button with the implement and keep the button pressed. \rightarrow A context menu is displayed



- 3. Select "Delete". \rightarrow A message window is displayed.
- 4. Confirm the message.
 - \rightarrow The implement is deleted.
 - \rightarrow The list of implements is displayed.



NOTE

Not all implements can be deleted.

You cannot delete ISOBUS implements that have been automatically added to the implement list.

You can delete implements that you have added (\Rightarrow Chapter 6.3).

6.10.9 Export implement

Connect a flash drive to the terminal.

Prior preparation



1. Press the "Implement" button in the "CCI.Config" operating screen. \rightarrow The list of implements is displayed.



- 2. Press the button with the implement and keep the button pressed. \rightarrow A context menu is displayed.
- 3. Select "Export implement". \rightarrow The implement is saved on the flash drive.



NOTE

Exporting an implement to the flash drive is only relevant in service cases.

6.10.10GPS simulation

For tests and demonstrations, it is helpful if a GPS track previously recorded or previously imported to the terminal can be replayed.

 \rightarrow In a quiet hall, you can simulate the passage over a field.



NOTE

You need a password to play back the GPS track.



GPS simulation

You can record or import, playback, and export a GPS track using the terminal.

- 1. Press the "GPS" button in the "CCI.Config" operating screen. \rightarrow The "GPS settings" operating screen is displayed.
- 2. Press the button "GPS simulation".
 - \rightarrow The "GPS simulation" operating screen is displayed.

You have the following operating options:



Record GPS track

For example, during the working of a field, record the position data of the GPS receiver.

- 1. Drive to the start point of the recording.
- 2. Switch "Record GPS track" "on". \rightarrow A message window is displayed.
- 3. Confirm the message and travel to the end of the recording.
 - \rightarrow The GPS position data is recorded.
- 4. When you have reached the end point, switch "Record GPS track" "off".
 - \rightarrow Recording of the GPS track is completed.
 - \rightarrow The GPS track on the terminal is overwritten.
 - \rightarrow The GPS track can be played back or exported.



GPS track playback

The switch for switching on GPS track playback is password protected.

- 1. Record a GPS track or import a GPS track.
- 2. Switch "GPS simulation" on.
 - \rightarrow The password query is displayed.
- 3. Enter the password and confirm the entry.
 - \rightarrow The GPS track is played back.



Repeat simulation

You can play back the GPS track once or in an infinite loop.

- Switch "Repeat simulation" "on".
 - \rightarrow The GPS track is automatically played back again from the beginning once the end has been reached.



NOTE

Only GPS tracks of type NMEA 0183 can be imported.

-	

Import GPS track

Connect a flash drive to the terminal.
 The GPS track must be saved in the root directory of the flash drive.
 The GPS track must have the file type "nmea" or "log".

- 2. Press the "Import" button. \rightarrow A selection list with the GPS tracks on the flash drive is displayed.
- 3. Select a GPS track.
- 4. Start the import by pressing "Back". \rightarrow A message window is displayed.
- 5. Confirm the message.
 - \rightarrow The GPS track is imported.
 - \rightarrow The GPS track on the terminal is overwritten.



Export GPS track

- 1. Connect a flash drive to the terminal.
- 2. Press the "Export" button.
 - \rightarrow The GPS track is automatically saved in the root directory on the flash drive.
 - \rightarrow The GPS track has the file type ".log".
 - \rightarrow The GPS track is be of type NMEA0183.

7 ISOBUS implement and AUX control

You will learn,

- How you operate one or more ISOBUS implements with the terminal (\Rightarrow Chapter 7.3) ,
- How you assign implement functions to an AUX control (\Rightarrow Chapter 7.4.1),
- Why it takes a long time before the implement can be operated when it is first connected (⇒ Chapter 7.1.3),
- What should be done following an update to the implement software (⇒ Chapter 7.5.2),
- Why the UT number is important and how it is set (\Rightarrow Chapter 7.2),
- How you set the terminal, when it is not being used for implement operation (⇒ Chapter 7.3.9).

7 ISOBUS implement and AUX control

Introduction

The app for the operation of ISOBUS implements is Universal Terminal or UT. The CCI 1200 has two UT apps, CCI.UT A and CCI.UT B: \rightarrow You can operate two ISOBUS implements.

The CCI 800 has one UT app, CCI.UT A: \rightarrow You can operate one ISOBUS implement.

CCI 1200

CCI 800







Connecting up to 20 implements

Ten ISOBUS implements can connect with each of CCI.UT A and CCI.UT B.

One implement can be operated per UT app. The implement must be in standard view or maxi view. The other implements are in mini view and must be moved to standard view or maxi view for operation.

Sharing implements over CCI.UT A and CCI.UT B

In practice you will operate one or at most two implements with the terminal, e.g. a front fertilizer tank and a towed seed drill implement. Assign the two implements to CCI.UT A and CCI.UT B and open both UT apps in standard view:

 \rightarrow Both implements can be operated.

CCI 800



Connecting up to ten implements

Ten implements can connect with CCI.UT A.

The implement displayed in standard view can be operated. The other implements are in mini view and must be moved to standard view for operation.

Prior prepa-

ration

7.1 Setting up for operation

In app management switch CCI.UT A "on" (\Rightarrow Chapter 4.2.2).

In the ISOBUS settings, switch the Universal Terminal ISOBUS function "on" (⇒ Chapter 4.2.3)

This concludes the pre-settings.

7.1.1 Setting the UT number

Set the UT number as follows:

1. Press the "Settings" button. • \rightarrow The "Settings" operating screen is displayed: 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed. 3. Press the button "CCI.UT A". 5 \rightarrow The "CCI.UT A" operating screen is displayed. 4. Press the "UT number" button. \rightarrow The "UT number" operating screen is displayed. 5. Enter UT number "1". Ab 6. End the process with "Back". \rightarrow A message window is displayed. 7. Confirm the entry. \rightarrow CCI.UT restarts. \rightarrow CCI.UT logs in to the ISOBUS using the new UT number. 8. If you have switched on CCI.UT B in app management, repeat steps 4 to 7 for CCI.UT B. Enter UT number "2". 9. Press the "Settings" button and end the process.

7.1.2 Connecting the AUX control

Connect the AUX control to the ISOBUS.

- \rightarrow You require cable A.
- 1. Connect cable A to connector A on the terminal.
- 2. Insert the in-cab plug of the AUX control in the "InCab" coupling on cable A.
- 3. Plug the In-cab coupling of the AUX control in the In-cab panel connector of the tractor or the self-propelled implement.
 - \rightarrow The AUX control connects with CCI.UT.
 - \rightarrow The operating screen of the AUX control is displayed.
 - \rightarrow Implement functions are not yet assigned to the operating elements of the AUX control:



7.1.3 Connecting the implement

If you connect an implement to the ISOBUS, the implement connects with CCI.UT.

 \rightarrow The implement can only be used once the connection is correctly made.



If you have connected an AUX control, assign the operating elements of the AUX control to the implement functions (⇒ Chapter 7.4.1).



Object Pool

The graphical user interface of an ISOBUS implement is referred to as an Object Pool. The Object Pool contains all the operating screens of an ISOBUS implement.

The operating screens consist of display and operating elements:

- Text and pictograms,
- Buttons,
- Input fields,
- Selection lists etc. .

The operating screens are displayed in CCI.UT. The display elements provide information and the operating elements are used for implement operation.

If an ISOBUS implement connects with CCI.UT for the first time, the implement uploads the Object Pool into the UT.

Dependent on the size of the Object Pool, the upload may take several minutes. The implement cannot be used during uploading:

 \rightarrow Start using the implement only once its graphical user interface is displayed.

CCI.UT saves the Object Pool on the terminal. If the implement connects with CCI.UT again at a later point in time, CCI.UT uses the saved object pool.

- \rightarrow Uploading is not necessary.
- \rightarrow The implement can be used immediately.

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7.2 Settings





- 2. Press the "Apps" button in the "Settings" operating screen. \rightarrow The "Apps" operating screen is displayed.
- 5
- 3. Press the button "CCI.UT A".
 - \rightarrow The "CCI.UT A" operating screen is displayed.

CCI.UT A		?	Ð	
۳	UT number			1
, m	UT numbers in use			
T	AUX assignment			
٦	Connected implements			
ŝ	Saved implements			



You have the following operating options:

UT number

CCI.UT logs on to the ISOBUS using the new UT number.

• Set the UT number as described below.



Assigned UT numbers

Check which UT numbers are already assigned before you set the UT number for CCI.UT.



AUX assignment

Assign implement functions to the operating elements of an AUX control (\Rightarrow Chapter 7.4.1).

••⊞

Connected implements

The implements connected with CCI.UT are displayed (\Rightarrow Chapter 7.5.1).



Saved implements

After an implement software update, delete the implement from the terminal (\Rightarrow Chapter 7.5.2).



NOTE

UTs with the same UT number cannot connect to the ISOBUS.

The operation of an ISOBUS implement is not possible.

The CCI 800/CCI 1200 and a second ISOBUS terminal are connected to the ISOBUS:

Ensure that CCI.UT A, CCI.UT B and other UTs connected to the ISOBUS have different UT numbers.

Proceed as follows to display no longer available UT numbers:



- 1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed:
- ---
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
- 3. Press the button "CCI.UT A". \rightarrow The "CCI.UT A" operating screen is displayed.
- 4. Press the "Assigned UT numbers" button.
 → The list of no longer available UT numbers is displayed.



Now enter the UT number:

- 5. Press the "UT number" button. \rightarrow The "UT number" operating screen is displayed.
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- 6. Enter an unassigned UT number and confirm the entry.



- 7. End the process with "Back". \rightarrow A message window is displayed.
- \checkmark
- 8. Confirm the entry.
 - \rightarrow CCI.UT restarts.
 - \rightarrow CCI.UT logs on to the ISOBUS using the new UT number.



UT number

CCI.UT logs on to the ISOBUS using the new UT number.

→ CCI.UT is visible for implements and AUX controls under this UT number.
 → The implement decides with which UT it connects based on the UT number.

Implements connect first to UT number "1".

If no UT is logged onto the ISOBUS with the UT number "1", then the implement searches for the next highest UT number.

The implement saves the UT number and connects to this UT when it next connects.

AUX controls only connect with a UT with the UT number "1".

7.3 Using the CCI.UT correctly

CCI.UT adapts flexibly to your requirements.

You can

- Operate two implements simultaneously,
- Operate two or more implements in alternation,
- Operate one implement with an AUX control,
- Switch off implement operation.

The following sections describe how you use CCI.UT optimally for these applications.

• Switch an app on and off in App management (\Rightarrow Chapter 4.2.2):



• Change the UT number of CCI.UT in the CCI.UT settings (\Rightarrow Chapter 7.2):



• Drag and drop an app from mini view to standard view (\Rightarrow Chapter 3.3).



7.3.1 One implement, one terminal

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate no more than one ISOBUS implement with the terminal.



- 1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. Open CCI.UT A in standard view.
- 4. Connect the implement to the ISOBUS.
 - \rightarrow The implement connects with CCI.UT A.

7.3.2 Two implements in an alternating manner, one terminal

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements alternately with the terminal, e.g. a towed seed drill implement with a fertilizer tank.



- 1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. Open CCI.UT A in standard view.
- 4. Connect the implements to the ISOBUS.
 - \rightarrow Both implements connect with CCI.UT A.
- 5. Open the implement you want to operate in standard view.



7.3.3 Two implements simultaneously, one terminal

- The CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements simultaneously with the terminal, e.g. a towed seed drill implement with a fertilizer tank.
- Connect one implement to CCI.UT A and the other implement to CCI.UT B and open both UTs in standard view.
 - \rightarrow Both implements can be operated.

◎ ↔ ··· ↔ ··· 🌣 \mapsto 🚥 👄 📼 Þ ? ∽ ? CCI.UT A UT number CCI.UT B UT numbers in use AUX assignment Connected implements **-**57 Υø `ati⊄ CCI.Config

- 1. In app management switch CCI.UT A and CCI.UT B "on".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. In the settings of CCI.UT B set the UT number to 2.
- 4. Open CCI.UT A and CCI.UT B in standard view.
- 5. Connect the implements to the ISOBUS.
 - \rightarrow Both implements connect with CCI.UT A.
- 6. Move an implement to CCI.UT B (\Rightarrow Chapter 7.5.3).





NOTE

Not all ISOBUS implements can be moved to another UT.

If this is the case, dividing of the two implements between CCI.UT A and CCI.UT B is not possible. The two implements cannot be operated simultaneously.

• Connect both implements with CCI.UT A (\Rightarrow Chapter 7.3.2). \rightarrow The two implements must be operated alternately.



NOTE

Only one implement can be operated with the CCI 800.

7.3.4 Changing the display positions

CCI 1200

You want to change the position of the two implements in standard view:



▶ Press the "Layout" button. → The apps change position in standard view

CCI 800

The CCI 800 does not have this feature.

7.3.5 Displaying the implement in maxi view

You want to display the operating screen of the implement in maxi view: CCI 1200



- ▶ Press and hold the "Layout" button for 2 seconds.
 - \rightarrow The right app is displayed in maxi view.
 - ightarrow The left app is displayed in mini view.

Maxi view is not available in the CCI 800.

CCI 800

7.3.6 One implement, one AUX control

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate no more than one ISOBUS implement with the terminal.
- You want to use an AUX control to operate the implement.



- 1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. Connect the AUX control and the implement to the ISOBUS.
- 4. Carry out the AUX assignment (\Rightarrow Chapter 7.4.1).



7.3.7 Two implements simultaneously, one AUX control

- The CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements simultaneously with the terminal, e.g. a towed seed drill implement with a fertilizer tank.
- You want to be able to operate functions of both implements with the AUX control.



- 1. In app management switch CCI.UT A and CCI.UT B "on".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. In the settings of CCI.UT B set the UT number to 2.
- 4. Open CCI.UT A and CCI.UT B in standard view.
- 5. Connect the AUX control and the implement to the ISOBUS.
 - \rightarrow Both implements and the AUX control connect with CCI.UT A.
- 6. Move an implement to CCI.UT B (\Rightarrow Chapter 7.5.3).
- 7. Carry out the AUX assignment (\Rightarrow Chapter 7.4.1).





NOTE

You have set up the terminal as described in this section.

- \rightarrow CCI.UT A has UT number 1.
- $\rightarrow\,$ The implement connected to CCI.UT A can be operated with the AUX control.

The implement connected to CCI.UT B can only be operated with the AUX control, if the implement

- can upload the list of implement functions in CCI.UT A and
- can upload the GUI in CCI.UT B.

The implement performs this process automatically.

If the implement connected to CCI.UT B does not support dividing over two UTs, the implement cannot be operated with the AUX control.

- Switch the implements over between CCI.UT A and CCI.UT B and try again.
 - \rightarrow Possibly the other implement may support the sharing of function list and GUI.

If the other implement also does not support sharing of function list and GUI, the implements cannot be operated simultaneously.

- Connect both implements with CCI.UT A (\Rightarrow Chapter 7.3.8).
 - \rightarrow Both implements can be operated with the AUX control.
 - \rightarrow The two implements must be operated alternately.

NOTE

Only one implement can be operated with the CCI 800.

7.3.8 Two implements in alternation, one AUX control

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements alternately with the terminal, e.g. a towed seed drill implement with a fertilizer tank.
- You want to be able to operate functions of both implements with the AUX control.



- 1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
- 2. In the settings of CCI.UT A set the UT number to 1.
- 3. Open CCI.UT A in standard view.
- 4. Connect the AUX control and the implement to the ISOBUS. \rightarrow Both implements and the AUX control connect with CCI.UT A.
- 5. Carry out the AUX assignment (\Rightarrow Chapter 7.4.1).



7.3.9 No implement operation

- You are using the CCI 800/CCI 1200 and a second ISOBUS Terminal.
- You do not want to operate any ISOBUS implement with the CCI 800/CCI 1200.



- 1. In app management switch CCI.UT A and CCI.UT B "off".
- 2. In the "ISOBUS settings" operating screen switch the "Universal Terminal" "off".
 - \rightarrow CCI.UT no longer connects to the ISOBUS.

7.4 Working with an AUX control

Often and regularly required functions of an ISOBUS implement, can in the main be executed more quickly using a joystick, a toggle switch strip or some other AUX control (AUX).

7.4.1 Assigning implement functions to the auxiliary control AUX

Implement functions can be assigned to the operating elements of the AUX control. You make the AUX assignments in CCI.UT via:





NOTE

The implement saves the AUX assignment.

The AUX assignment must only be performed once. The assignment is available again after a restart of the implement and the AUX control.



NOTE

An AUX control requires a UT number "1".

The AUX control only connects to the terminal if this has logged on to the ISOBUS using the UT number "1".

In CCI.UT A set the UT number to 1.

• Perform setting up. (\Rightarrow Chapter 7.1)



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- 1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button.
 → The "Apps" operating screen is displayed.
- 3. Press the button "CCI.UT A". \rightarrow The "CCI.UT A" operating screen is displayed.
- 4. Press the button "AUX assignment". \rightarrow The "AUX assignment" operating screen is displayed.



Prior preparation

7 ISOBUS implement and AUX control

- a: Manufacturer of the AUX control
- b: AUX control
- c: Selection list of the operating elements



- 5. Switch "Editing mode" "on".
 - \rightarrow The selection list with the operating elements of the AUX control is displayed (c).

6a. Press the operating element on the AUX control.

 \rightarrow The selection list of the available implement functions is displayed.

ATTENTION:

With some AUX controls, the list of implement functions opens upon pressing the operating element.

- Proceed as described in step 6b.
- Otherwise continue with step 7.



- 6b. Press the "+" in the operating element row.
 - \rightarrow The selection list of the available implement functions is displayed.


- d: ISOBUS implement
- e: List of implement functions



7. Select the implement function.



- 8. Press "Back" to return to the operating element selection list.
 - \rightarrow The implement function is assigned to the operating element.
 - \rightarrow The list displays the operating element and the implement function.





9. To assign functions to other operating elements, repeat steps 6 to 8.



10. Press the "Settings" button.

- \rightarrow Editing mode is switched off.
- \rightarrow The "Settings" operating screen is closed.
- \rightarrow AUX assignment is ended.
- \rightarrow The implement functions can be executed with the AUX control.

Checks

Check the AUX assignment as follows:

- 1. Open the operating screen of the AUX control in standard view.
 - \rightarrow The AUX assignment is displayed.



2. Change to the AUX control in all operating levels and check the AUX assignments on the terminal.

NOTE

No changes to the AUX assignments can be made in the operating screen of the AUX control.

To make changes to the AUX assignment, switch to the "AUX assignment" operating screen and switch editing mode "on".

7.4.2 Delete AUX assignment

To delete the assignment of an individual operating element, proceed as follows:

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1. Switch "Editing mode" "on".



All operating elements of the AUX control are displayed in the selection list.

- 2. Press the "-" in the operating element button.
 - \rightarrow The assignment is deleted.
 - \rightarrow The implement function can no longer be executed with the operating element.
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 CCISOBUS
 Image: Constraint of the second of the
- 3. Switch "Editing mode" "off".

7.4.3 Delete all AUX assignments

To delete the assignment of all operating elements, proceed as follows:

1. Switch "Editing mode" "on".



2. Press the button "Delete all AUX assignments".

- \rightarrow The assignment of all operating elements is deleted.
- \rightarrow The implement can no longer be operated with the AUX control.





7.5 Managing implements

The implements connected to CCI.UT can be displayed or deleted.

• To do so, open the CCI.UT settings:





7.5.1 Displaying implement details

The implements connected with CCI.UT are displayed. \rightarrow The displayed details are only of interest for servicing.



Connected implements

- 1. Press the button "Connected implements". \rightarrow The "Connected implements" list is displayed.
- 2. End the process with "Back".



Connected implements

Additional details are displayed for the implements connected with CCI.UT:

Connected		?	Ð
	Manufacturer: Mueller-Elektronik Gmbł Pool number: 0 peerHandle: 5135 Object Pool status: Inactive	H and C	.o
<u>.</u>	Manufacturer: Maschinenfabrik Bernar Pool number: 1 peerHandle: 5122 Object Pool status: Active Selectable: Yes	d Krone	e GmbH <u>1</u>
	Manufacturer: Maschinenfabrik Bernar Pool number: 2 peerHandle: 5131 Object Pool status: Inactive 5 Selectable: No	d Krone	e GmbH

- 1: Manufacturer
- 2: Pool number and peerHandle are implement connection data and of no interest to you as a user.
- 3: The Object Pool status is "Active" and selectable, the button is green:
 - \rightarrow The implement is connected with CCI.UT.
 - \rightarrow The implement is shown in standard view and can be operated.
- 4: The Object Pool status is "inactive", but selectable:
 - \rightarrow The implement is connected with CCI.UT.
 - \rightarrow The implement is displayed in mini view.
 - \rightarrow To operate the implement, move it into the standard view.
- 5: The Object Pool status is "inactive" and non-selectable:
 - \rightarrow The implement is connected with CCI.UT.
 - \rightarrow The implement is not displayed.
 - \rightarrow Implement functions can be assigned to an AUX control.
- 6: The Object Pool status is "inactive" and there is "No implement available":
 - \rightarrow The implement is connected with CCI.UT.
 - \rightarrow The implement is not displayed.
 - \rightarrow The implement can no longer be operated with the terminal or the AUX control.

7.5.2 Saved implements



Saved implements

If an ISOBUS implement connects with CCI.UT for the first time, the implement uploads its graphical user interface, the Object Pool into the UT. CCI.UT saves the implement on the terminal.

 \rightarrow When it is reconnected, uploading of the Object Pool is not necessary.

The Object Pools of all implements that are saved on the terminal are displayed in the list of saved implements:





CAUTION!

After an update of the implement software, the implement GUI saved on the terminal is not always automatically updated.

The terminal then shows you the GUI saved on the terminal and not the new GUI:

- The implement saved on the terminal and the implement software do not match.
- Malfunctions of the implement are possible.
- New implement functions are not available.

After an implement software update, delete the implement from the terminal:

- 1. Disconnect the implement from the ISOBUS.
- 2. Delete the implement from the terminal as described in this chapter.
- 3. Connect the implement to the ISOBUS.
 - \rightarrow The implement connects with CCI.UT.
 - \rightarrow The new graphical user interface is uploaded to the UT.
 - \rightarrow CCI.UT displays the new graphical user interface of the implement.

7 ISOBUS implement and AUX control

To delete an implement, proceed as follows:

- Press the "Settings" button.
 → The "Settings" operating screen is displayed.
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
 - Press the button "CCI.UT A".
 → The "CCI.UT A" operating screen is displayed.
- 4. Press the button "Saved implements". \rightarrow The "Saved implements" selection list is displayed.



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5. Press the button with the implement and keep the button pressed. \rightarrow A context menu is displayed.



- 6. Press "Delete".
 - \rightarrow The implement is deleted without a confirmation query.
- 7. End the process with "Back".
- 8. If CCI.UT B is switched on, repeat step 3 to 7 for CCI.UT B.



NOTE

Sometimes it is not possible to unambiguously identify the implement in the list.

Then you will have to delete all implements from the terminal.

Press the "Delete all implements" button.
 The implements are deleted without a confirmation query.

Delete implement

7.5.3 Moving an implement to another UT

Some ISOBUS implements can be moved to another UT at the press of a button. In general, this function is contained in the ISOBUS settings of the implement.

Check in the operating instructions of your implement, whether this function is available.



Using this function you can operate the implement with the desired UT:

- In the left screen, both implements are connected to CCI.UT A.
 → The implements can only be operated in alternation.
- In the right screen, one implement is connected with CCI.UT A, the other implement is connected with CCI.UT B.
 The implements can only be operated simultaneously.
 - \rightarrow The implements can only be operated simultaneously.



8 Tasks and fields

You will learn,

- When you should work in task mode and when you should work in field mode (⇒ Chapter 8.2),
- How to import tasks in ISO-XML or shape format (\Rightarrow Chapter 8.3.1),
- How to start a task (\Rightarrow Chapter 8.4),
- How to create and export a report (\Rightarrow Chapter 8.5.12).

8.1 Setting up for operation

You require the Task Control licence (\Rightarrow Chapter 4.3.3).

- In app management switch CCI.Control "on" (\Rightarrow Chapter 4.2.2).
- Switch on the ISOBUS function Task Controller in ISOBUS settings (⇒ Chapter 4.2.3) and set a Task Controller number.
- Set up the tractor, implement and GPS (\Rightarrow Chapter 6.2, \Rightarrow Chapter 6.4, \Rightarrow Chapter 6.6).



- 1. Press the "Settings" button on the start screen. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button.
 → The "Apps" operating screen is displayed.



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- 3. Press the "CCI.Control" button. \rightarrow The "CCI.Control" operating screen is displayed.
- 4. Press the "Settings" button on the start screen. \rightarrow Setting up is ended.
 - \rightarrow The "Settings" operating screen is closed.

Prior preparation

Adjusting CCI.Control



You have the following setting options:

Automatic export

You have already partially or completely processed a task, but have not exported it. If you now import a task, the task on the terminal is overwritten. \rightarrow All of the already documented data will be overwritten.

The automatic export backs up the tasks stored on the terminal before each import, thus protecting against accidental deletion of tasks.

- Switch "Automatic export" "on".
 - \rightarrow Tasks imported from the flash drive are backed up to the directory \TASKDATA_BACKUP on the flash drive.
 - \rightarrow Tasks sent to the terminal using agrirouter are backed up in the inbox of the agrirouter. The tasks receive the suffix "_Backup".

You can restore accidentally overwritten tasks by re-importing the backups stored on the flash drive or in the agrirouter inbox. (\Rightarrow Chapter 8.3.1)



Field Finder (\Rightarrow Chapter 8.1.1)

When you switch "Field Finder" on,

a message is displayed; when the tractor or self-propelled implement enters a field,
A list of tasks that are assigned to the field is displayed.

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Peer Control

A nutrient sensor can control the application quantity of an ISOBUS implement. The setpoints of the nutrient sensor replace the setpoints specified in an application map.

Only switch Peer Control on, if the nutrient sensor and implement support this function.

- Switch "Peer Control" "on".
 - \rightarrow The nutrient sensor controls the application quantity of the ISOBUS implement.

8.1.1 Field Finder

Field Finder notifies you upon entry into the field and supports you in the search for the correct task.

Field Finder continuously compares the GPS coordinates of the fields in the field list with the actual position.

- Switch"Field Finder" on.
 - \rightarrow The selection list "Field Finder" is displayed upon entry into a field from the field list.

The "Field Finder" selection list contains

- The fields that belong to the actual position,
- The tasks that are assigned to one of these fields.



- 1: Field
 - \rightarrow Only the field name is displayed.
- 2: Task with application map
 - \rightarrow The field name, the task name and the symbol for the application map are displayed.
- 3: Task without application map \rightarrow The field name and the task name
 - are displayed.



NOTE

Do not use Field Finder with AUTOLOG.

If you are working with the "AUTOLOG" task or "AUTOLOG" field, documentation takes place continuously and across all fields.

- \rightarrow The reference to the entry into a new field is not required.
- Switch Field Finder off.

8 Tasks and fields

Select field

Select a field and create a new task:

- Field finder

 Rohrkämpe I

 Dungung Rohrkamp

 Rohrkämpe_II.shp

 Rohrkämpe_II.shp

 Zohrkämpe_II.shp
 Zohrkämpe_
- 1. Drive on to the field.
 - \rightarrow The "Field Finder" selection list is displayed. The list contains all fields that belong to the actual position.



- 2. Select the field and confirm the entry.
 - \rightarrow The "Name of task" input dialogue is displayed.



- 3. Enter the task names and confirm the entry.
 - \rightarrow The task view is displayed.
 - \rightarrow The new task is automatically started.

Select task

Select a task:

Field finde	r
Rohrkämpe I	-
Rohrkämpe I Düngung Rohrkamp	
Rohrkämpe_II.shp	
Rohrkämpe_II.shp	
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- 1. Drive on to the field.
 - \rightarrow The "Field Finder" selection list is displayed. The list contains all tasks that are assigned to the field that corresponds to the actual position.
- 2. Select the task and confirm the entry.
 - \rightarrow The task view is displayed.
 - \rightarrow The task is automatically started.



NOTE

The Field Finder also recognises the field exit.

If you leave the field, the current task is automatically paused.

8.2 Selecting between field mode and task mode

CCI.Control recognises two operating modes:

- Task mode and
- Field mode.

Use task mode,

- If you are importing and exporting tasks
- If you are working with application maps
- If you are documenting totals and location-based data



- 1. Press the burger button.
 - \rightarrow The "burger menu" is displayed.



2. Switch "Field mode" "off".

Use field mode,

- If you only use fields for automatic section control
- If you are not working with tasks
- If you are not working with application maps

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1. Press the burger button.

 \rightarrow The "burger menu" is displayed.



2. Switch "Field mode" "on".

8.3 Task list elements

CCI.Control opens when starting the task list.

- \rightarrow The task list contains all imported tasks or tasks created on the terminal.
- \rightarrow The task list displays a short summary about the task.



- 1: New task
 - Star symbol
 - o Green button
- 2: Paused task
 - Pause symbol
 - Green button
- 3: Running task
 - Play symbol
 - Red button
- 4: Task details
 - Name
 - Field name and field size
 - Customer and farm
 - Field boundary
- 5: Action Button
 - \rightarrow Add new task
- 6: Application map
 - \rightarrow Pictogram is displayed if the task contains an application map
- 7: Field boundary
 - \rightarrow Field is only displayed, if the field boundary exists

You have the following operating options:



Burger menu

You have the following operating options in the burger menu:

Field mode (\Rightarrow Chapter 8.2)

Select the operating mode:

- Field mode or
- Task mode



Import tasks (\Rightarrow Chapter 8.3.1)

Import tasks from the flash drive or send agrirouter tasks to the terminal.



Export all tasks (\Rightarrow Chapter 8.3.2)

Export all tasks including the master data, totals and the location-based data. The tasks can be further processed using an FMIS.



Search for task (\Rightarrow Chapter 8.3.3)

A long task list makes it difficult to find a task. Search through the list.

▶ Press and hold the button with the task. → The context menu is displayed. Context menu

The following operating options are available in the context menu:

Rename task

- 1. Press the button "Rename".
 - \rightarrow The "Name of task" input dialogue is displayed.
- 2. Enter the task names and confirm the entry.



Copy task

A copy of the task is added to the task list. The master data, field and application map are copied. The totals and the location-based data are not copied. The name of the copy has the suffix " #1"

The name of the copy has the suffix " $_{\#1}$ ".

- Press the button "Copy".
 - \rightarrow The copy of the task is displayed in the task view.
 - \rightarrow You can edit the task or start it.



Delete task

The task, including all saved totals and location-based data, is deleted. The master data is not deleted.

- Press the "Delete" button.
 - \rightarrow The task is deleted.
 - \rightarrow The task list is displayed.

NOTE

8.3.1 Import tasks

CCI.Control processes tasks in ISO-XML format, application maps in shape format and field boundaries in shape format.

Import tasks from the flash drive or send tasks to the terminal by using agrirouter.

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Importing tasks in ISO-XML format overwrites all tasks stored on the terminal.

Back up existing tasks, before you import new tasks:

► Export the tasks to a flash drive or send the tasks using agrirouter (⇒ Chapter 8.3.2).

You can automate backup:

In CCI.Control settings, switch on "Automatic export" (⇒ Chapter 8.1).
 → Before any import of new tasks, the existing tasks are automatically backed up.

Importing ISO-XML

Prior preparation

- Connect the flash drive with the task data to the terminal or
- send the task file to the terminal using agrirouter.
- Open CCI.Control in standard view (\Rightarrow Chapter 3.3).
- Switch field mode "off" (\Rightarrow Chapter 8.2).



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1. In the task list, press on the Burger Button. \rightarrow The "burger menu" is displayed.



- 2. Press the "Import" button.
 - \rightarrow The "Import data" selection list with the tasks on the flash drive and in the agrirouter inbox is displayed.
- 3. Select the task file.
 - \rightarrow The numbers and names of the tasks are displayed.
 - \rightarrow If a task contains an application map, the "Application map" symbol is displayed.
- 4. Press the "Import" Action button.
 - \rightarrow The tasks are imported and displayed in the task list.



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NOTE

A task file in ISO-XML format can contain several tasks.



NOTE

A task in ISO-XML format can contain multiple application maps.

If the task has the ISO-XML format Grid Type 2, it can contain multiple application maps.

In the order view, assign an application map to the connected implement before starting the task.

Jobs in ISO-XML format Grid Type 1 or Polygon only contain one application map.



NOTE

Importing a shape application map



A shape file only contains an application map.

You can import a shape application map.

- \rightarrow A new task is created.
- \rightarrow The application map has been assigned to the task.

Prior preparation

- Connect the flash drive with the shape application map to the terminal or
- send the shape application map to the terminal using agrirouter.
- Open CCI.Control in standard view (\Rightarrow Chapter 3.3).
- Switch field mode "off" (\Rightarrow Chapter 8.2).



1. Press the burger button. \rightarrow The "burger menu" is displayed.

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- 2. Press the "Import" button.
 - \rightarrow The "Import data" selection list with the shape application maps on the flash drive and in the agrirouter inbox is displayed.

3. Select the shape application map.

4. Press the "Import" Action button. \rightarrow The selection list "Select map type" is displayed.



 \rightarrow The task view is displayed.

NOTE

A shape application map always comprises a number of files :

- .dbf,
- shp,
- shx and optional
- .prj.
- \rightarrow If all the files of the shape application map are not on the flash drive, CCI.Control cannot perform the import.
- Copy all files of the shape application map onto the flash drive.



NOTE

The form and content of the shape application map must satisfy the specifications.

Otherwise, CCI.Control cannot process the shape application map.

• See the appendix *Application maps*.



Setpoint table

The setpoint table of a shape application map contains

- one or more columns and
- the rows with the setpoints.

When creating the shape application map, give the columns meaningful names. We recommend the use of product and unit, e.g. "Compost (t)".

Unit selection when importing

It is **not** apparent from a shape application map which units are to be used, i.e. whether the product application quantity should be measured in l/ha or kg/m².

The units are specified in two steps when importing the shape application map. First make a pre-selection and then select the units to be used:

- Volume/area
 - o l/ha
 - o m³/ha
 - o ...
- Mass/area
 - o kg/ha
 - o t/ha
 - o g/m²
 - \circ mg/m²
 - o ...
- Number/area
 - $\circ 1/m^2$
 - o 1/ha
 - o ...
- Distance
 - o mm
 - o cm
 - o dm
 - o **m**
 - o ...
- Percent
 - o %
 - o **‰**
 - o ppm
 - o ...

Therefore if you want to apply the product in t/ha, select

- mass/area in step 8 of the import process and
- then in step 10, t/ha.

Importing a shape field boundary

You can import a shape field boundary.

- \rightarrow A new task is created.
- \rightarrow The field boundary has been assigned to the task.

Prior preparation

- Connect the flash drive with the shape field boundary to the terminal or
- ▶ send the shape field boundary to the terminal using agrirouter.
- Open CCI.Control in standard view (\Rightarrow Chapter 3.3).
- Switch field mode "off" (\Rightarrow Chapter 8.2).





- 1. Press the burger button.
 - \rightarrow The "burger menu" is displayed.



- 2. Press the "Import" button.
 - \rightarrow The "Import data" selection list with the shape field boundaries on the flash drive and in the agrirouter inbox is displayed.

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3. Select the shape file.

- 4. Press the "Import" Action button.
 - \rightarrow The selection list "Select map type" is displayed.

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- 5. Select "Field boundary".
 - \rightarrow The shape field boundary is imported.
 - \rightarrow A task is created.
 - \rightarrow The field size and the field boundary are displayed in the task view.

8.3.2 Exporting all tasks

Export all tasks including the master data, totals and the location-based data. You can further process the tasks in the FMIS.

You have the following options:

- Export the tasks to a flash drive or
- send the tasks using agrirouter.

Saving to a flash drive

Export the tasks to a flash drive as follows:



- 1. Connect a flash drive to the terminal.
- 2. In the task list, press on the Burger Button. \rightarrow The "burger menu" is displayed.

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- 3. Press the "Export" button. \rightarrow The "Export" selection list is displayed.
- 4. Press the button "USB".
 - \rightarrow The tasks are saved in the directory \TASKDATA on the flash drive.
 - \rightarrow The tasks are not deleted from the terminal.



NOTE

Data in \TASKDATA is automatically backed up.

If the directory \TASKDATA on the flash drive is not empty, the data saved there is moved to the directory \TASKDATA_BACKUP.

Then the tasks are saved in the directory TASKDATA.

8 Tasks and fields

Sending with agrirouter

Send the tasks using agrirouter as follows:





1. In the task list, press on the Burger Button. \rightarrow The "burger menu" is displayed.



2. Press the "Export" button. \rightarrow The "Export" selection list is displayed.



3. Press the "agrirouter" button. \rightarrow The selection list "Send to:" is displayed.



- 4. Select the destination points to which the task is to be sent and confirm the entry.
 - \rightarrow The tasks are sent to the destinations.
 - \rightarrow The tasks are not deleted from the terminal.



NOTE

If the terminal is not connected to the Internet, the tasks cannot be sent.

The tasks are saved in the outbox of the agrirouter.

• Manually send the tasks in the outbox (\Rightarrow Chapter 4.3.5).

8.3.3 Find task

A long task list makes it difficult to find a task. Search through the list:



- 1. In the task list, press on the Burger Button. \rightarrow The "burger menu" is displayed.
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- 2. Press the "Search" button.
 - \rightarrow The screen keyboard is displayed.
 - \rightarrow The flashing cursor is displayed in the entry field.
- 3. Enter the search term and confirm your entry.
 - \rightarrow The screen keyboard is closed.
 - \rightarrow Only tasks that meet the search criterion are displayed in the task list.
 - \rightarrow The search term is displayed above the task list.
- 4. Press the "Delete" button on the right next to the search term. \rightarrow The search term is deleted.
 - \rightarrow All tasks are displayed.



8.4 Starting a task

After starting the task, the totals and the location-based data are recorded. These values are added to the task. The implement manufacturer indicates which totals and location-based data are made available.

Totals are for example:

- Worked area,
- Quantity spread,
- Time in the work position,
- Distance travelled in the work position.

Location-based data is for example:

- Work position,
- Actual value of the application rate,
- Pump speed,
- Spraying pressure,
- Container volume.

Select

- Select the task in the task list.
 - \rightarrow The task view is displayed.

Start

- Press the "Start" Action button.
 - \rightarrow Totals and location-based data are documented.
 - \rightarrow If the task has a field and an application map, these are displayed in the map view.



Pause or end

You want to suspend processing of the task or want to finish the task:

Press the "Pause" action button.

8.5 Task view

To edit a task or to display the task details, open the task in the task view.

- Select the task from the task list.
 - \rightarrow The task view is displayed.
 - \rightarrow The task can be edited or started:



You have the following operating options in the burger menu:

Burger menu

1

Export task (\Rightarrow Chapter 8.5.11)

For further processing with an FMIS, the task can be saved to a flash drive or sent to agrirouter.

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0

Export task (\Rightarrow Chapter 8.5.12)

A summary of the task can be saved to a flash drive or sent to agrirouter.

8 Tasks and fields



Rename task

- 1. Press the button "Rename".
 - \rightarrow The "Name of task" input dialogue is displayed.
- 2. Enter the task names and confirm the entry.

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	_	_

Copy task

A copy of the task is added to the task list.

The master data, field and application map are copied. The totals and the location-based data are not copied.

The name of the copy has the suffix " $_{\#1}$ ".

- Press the button "Copy".
 - \rightarrow The copy of the task is displayed in the task view.
 - \rightarrow You can edit the task or start it.



Delete task

The task, including all saved totals and location-based data, is deleted. The master data is not deleted.

- Press the "Delete" button.
 - \rightarrow The task is deleted.
 - \rightarrow The task list is displayed.

8.5.1 Add Field

A task, which you have newly created on the terminal (\Rightarrow Chapter), is not assigned to a field.

 \rightarrow The "Field" button in the task view is empty:

	5	-4: MyNewTas		
•	ha			
			о <mark>-</mark> ,	
ſø	Products			
ΣΞ	Counters Total time			
2028	Counters Total time			
1 * *	Details			

All fields available on the terminal are managed in the field list. Assign a field from the field list to the task:



1. Press the button with the field in the task view. \rightarrow The field list is displayed.



2. Select the field.

3. End the process with "Back".

- \rightarrow The field has been assigned to the task.
- \rightarrow The task view is displayed.



NOTE

A field can be assigned to multiple tasks.

8 Tasks and fields

You want to assign a task to a field, but the field is not in the field list. Add a new field to the field list as follows:

Field_2 (6.79 ha)	
(F)	

1. Press the button with the field in the task view. \rightarrow The field list is displayed.



- 2. Press the "New" Action button. \rightarrow The "Field Name" input dialogue is displayed.
- Ab
- 3. Enter the field names and confirm the entry. \rightarrow The "Field Size" input dialogue is displayed.
- 4. Confirm the preset field size of 0.00 ha.
 - ightarrow The field list is displayed.
 - \rightarrow The new field is selected.

- 5. End the process with "Back".
 - \rightarrow The new field has no field boundary and no field size.
 - \rightarrow The field has been assigned to the task.
 - \rightarrow The task view is displayed.

NOTE

The new field has no field boundary and a field size of 0.00 ha.

The documentation of the task data also functions without a field boundary. The precise field size not normally known.

- Do not change the preset value of 0.00.
- Start the task and create a field boundary in CCI.Command. → The field size is automatically calculated.



NOTE

Field, field boundary and field size are optional.

The task can be started without a field. The totals and the location-based data are documented.

Add a field to the field list as follows:

- Create the new field in the field list (\Rightarrow Chapter 8.5.1)
- Create the new field in the map view and add the field to the field list
- Create the field with the FMIS and import the field as an ISO-XML file (\Rightarrow Chapter 8.3.1)

8.5.2 Find field

A long field list makes it more difficult to find a field.

Search through the list as follows:

₩ Fields	
_1	×
Field_1 (6.79 ha)	
+	

1. Press the button with the field in the task view. \rightarrow The field list is displayed.



2. Press the burger button. \rightarrow The "burger menu" is displayed.



3. Press the "Search" button. \rightarrow An input field is displayed.

,	,
Ab	

- 4. Enter the search term and confirm your entry.
 - \rightarrow Only those fields are displayed whose name contains the search term.
 - \rightarrow The search term is displayed above the field list.

5. Select the field.

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- 6. End the process with "Back".
 - \rightarrow The field has been assigned to the task.
 - \rightarrow The task view is displayed.

You can change or delete the search term.

8.5.3 Export field

You have added a field to the field list in CCI.Control and recorded the field boundary in CCI.Command. You want to use the field on another terminal.

- Export the field in shape format to a flash drive.
- Connect a flash drive to the terminal.

Prior preparation



- 1. Press the button with the field in the task view. \rightarrow The field list is displayed.
- 2. Press and hold the button with the field. \rightarrow A context menu is displayed.
- 3. Press the "Export" button. \rightarrow The field is saved on the flash drive in the directory \SHAPE_EXPORT.



NOTE

The shape file only contains the field boundary.

No other field-related data is exported.

8.5.4 Delete field

Unused fields can be deleted from the field list.



- 1. Press the button with the field in the task view. \rightarrow The field list is displayed.
- 2. Press and hold the button with the field. \rightarrow A context menu is displayed.
- Î
- 3. Press "Delete".
 - \rightarrow The field is deleted without a confirmation query.
 - \rightarrow The field list is displayed.



NOTE

The deletion can be undone.

If you have pressed "Delete", a message window is displayed for approximately 3 seconds. The "Undo" button is located on the right edge.

- 4. Press the "Undo" button.
 - \rightarrow The field is added back to the field list.
NOTE



Not every field can be deleted.

You can delete:

- A field that you have created on the terminal.
- A field that you have imported as a shape file.

You cannot delete:

• A field that you have imported into the terminal as part of a task.

If the field cannot be deleted, the "Delete" button is not displayed in the context menu.

8.5.5 Edit field

You can change the field name and size in the field list.



- 1. Press the button with the field in the task view. \rightarrow The field list is displayed.
- 2. Press and hold the button with the field. \rightarrow A context menu is displayed.



3. Select "Edit". \rightarrow The "Field Name" input dialogue is displayed.



Ab

- 4. Enter the field names and confirm the entry. \rightarrow The "Field Size" input dialogue is displayed.
- 5. Enter the field size and confirm the entry. \rightarrow The field list is displayed.



NOTE

The field boundary can also be changed.

You change the field boundary in CCI.Command:

- 1. Delete the old field boundary (\Rightarrow Chapter 9.3.3).
- 2. Record the new field boundary (\Rightarrow chapter 9.3.2).



Not every field can be edited.

You can edit:

NOTE

- A field that you have created on the terminal.
- A field that you have imported as a shape file.

You cannot edit:

• A field that you have imported into the terminal as part of a task.

If the field cannot be edited, the "Edit" button is not displayed in the context menu.

8.5.6 Adding an application map

An application map is not assigned to every task.

 \rightarrow The "Application map" button in the task view is empty:



You can add an application map to the task in shape format.

Connect the flash drive with the shape application map to the terminal.
Prior preparation



- 1. Press the "Application map" button in the task view. \rightarrow The selection list with application maps is displayed.
- 2. Select the shape application map.
- 3. Press the "Import" Action button.

 \rightarrow The selection list with the columns of the setpoint table is displayed.

8 Tasks and fields





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- 4. Select a column.
- 5. Press the "Next" Action button. \rightarrow The list for preselection of the units is displayed.



- 6. Make a preselection.
- 7. Press the "Next" Action button. \rightarrow The selection list with the units is displayed.
- 8. Select the units.



- 9. Press the "Completed" Action button.
 - \rightarrow The shape application map is imported.
 - \rightarrow The field size, the field boundary and the products are displayed in the task view.

NOTE

A shape application map always comprises a number of files:

- .dbf,
- .shp,
- .shx and optional
- .prj. \rightarrow If all the files of the shape application map are not on the flash drive, CCI.Control cannot perform the import.
- Copy all files of the shape application map onto the flash drive.



NOTE

The form and content of the shape application map must satisfy the specifications.

Otherwise, CCI.Control cannot process the shape application map.

See the appendix *Application maps*.

8.5.7 Editing an application map

If the task is paused, you can make the following settings to the application map:

≡	5 162.75 248.85 kg/hectare	
₩ - % +	Adjust setpoint	+5 %
\bigoplus	Default rate	100.00
	Out of field rate	5.00
00	Rate when GPS fails	100.00

- Adjust setpoint
 - → The setpoint stored in the application map can be adjusted up or down in percent.
- Default rate
 - \rightarrow This absolute setpoint is used at locations at which the application map does not provide a setpoint.
- Out of field rate
 - \rightarrow This absolute setpoint is used outside the field boundaries.
- Rate when GPS fails
 - \rightarrow This absolute setpoint is used when no GPS signal is available due to shading.
- 1. Press on the "Application map" button in the task view. \rightarrow The Settings list is displayed.
- 2. Press the button with the setting that you want to change. \rightarrow An input dialogue is displayed.
- 3. Enter the value and confirm the entry.

8.5.8 Assign implement

Assign every application map in the task to an implement.

- 1. Press on the "No implement" button in the task view. \rightarrow The connected implements list is displayed.
- 2. Select an implement and press "back" to end the process.

8.5.9 CCI.Assist

If a task is running, CCI.Assist shows additional information about the tank or loading space as well as about the field:



Top line: Information about the tank or loading space

- 1: Remaining tank contents or free volume in the loading space
- 2: Remaining area until tank empty or loading space full
- 3: Time until tank empty or loading space full
- 4: Distance until tank empty or cargo bay full

Bottom line: Field data

- 5: Quantity and/or required loading space required to process the remaining area
- 6: Remaining area



NOTE

You require a licence for CCI.Assist.

8.5.10 Add product

A product is applied to the field, e.g. fertiliser, pesticide or seed. For complete documentation add all products used together with units and quantity to the task.

You can

- Add a product from the product list to the task
- Create a new product and add it to the task.

All imported products or products created on the terminal are managed in the product list.

Add a product from the product list to the task:		
	E D Products Arit. 28% Liner Wataremeneralipeter 2 C	
ľä	1. Press the "Products" button in the task view. \rightarrow The "Products" operating screen is displayed.	
•	2. Press the "New" Action button. \rightarrow The product list is displayed.	
	3. Select the product.	
\bigcirc	4. Press the "Next" Action button. \rightarrow The "Unit" selection list is displayed.	
	5. Select the units.	
	6. Press the "Next" Action button. \rightarrow The "Quantity" input dialogue is displayed.	
Ab	7. Enter the quantity and confirm the entry. \rightarrow The "Quantity" operating screen is displayed.	
	 8. Press the "Completed" Action button. → The product has been assigned to the task. → The "Products" operating screen is displayed. 	
Ð	9. End the process with "Back". \rightarrow The task view is displayed.	



NOTE

The product can be added to the task multiple times.

If the originally planned quantity is insufficient, add product again.



NOTE

The product cannot be deleted.

A product added to the task cannot be deleted.

Instead, set the quantity to zero.

You want to assign a product to the task, but the product is not in the product list. Add a new product to the product list:

Products	Products	
	Kalkammonsalpeter	
	UAN 32%	
		~
2	3	



Ab

1. Press the "Products" button in the task view. \rightarrow The "Products" operating screen is displayed.



- Press the "New" Action button.
 → The "Product Name" input dialogue is displayed.
- 4. Enter the product name and confirm the entry.
 - \rightarrow The product list is displayed.
 - \rightarrow The new product is selected.

8 Tasks and fields



8.5.11 Export task

To further process a task using an FMIS, export the task. The export comprises the task including the master data, totals and the location-based data.

You have the following options:

- Export the task to a flash drive or
- send the task using agrirouter.

You can also export all tasks at once (\Rightarrow Chapter 8.3.2).

Saving to a flash drive

Export the task to a flash drive as follows:



- 1. Connect a flash drive to the terminal.
- 2. In the task view, press on the Burger Button. \rightarrow The "burger menu" is displayed.



- 3. Press the "Export" button.
- 4. Press the button "USB".
 - \rightarrow The task is saved in the directory \TASKDATA on the flash drive.
 - \rightarrow The task is not deleted from the terminal.



NOTE

Data in \TASKDATA is automatically backed up.

If the directory \TASKDATA on the flash drive is not empty, the data saved there is moved to the directory \TASKDATA_BACKUP. Then the task is saved in the directory \TASKDATA.

8 Tasks and fields

Sending with agrirouter

Send the task with agrirouter as follows:





1. In the task view, press on the Burger Button. \rightarrow The "burger menu" is displayed.



2. Press the "Export" button.



3. Press the "agrirouter" button. \rightarrow The selection list "Send to:" is displayed.



- 4. Select the destination points to which the task is to be sent and confirm the entry.
 - \rightarrow The task is sent to the destinations.
 - \rightarrow The task is not deleted from the terminal.



NOTE

If the terminal is not connected to the Internet, the task cannot be sent.

The task is saved in the outbox of the agrirouter.

• Manually send the tasks in the outbox (\Rightarrow Chapter 4.3.5).

8.5.12 Send report

The report contains a summary of the task. The report is in the form of a PDF file.

You have the following options:

- Export the report to a flash drive
- Send the report to agrirouter

Saving to a flash drive

Export the report to a flash drive as follows:



- 1. Connect a flash drive to the terminal.
- 2. In the task view, press on the Burger Button. \rightarrow The "burger menu" is displayed.



- 3. Press the "Report" button.
- 4. Press the button "USB". \rightarrow The report is saved in the directory \TASKDATA on the flash drive.



8 Tasks and fields

Sending with agrirouter

Send the report with agrirouter as follows:





1. In the task view, open the Burger Button.



- 2. Press the "Report" button.
- 3. Press the "agrirouter" button.
 - \rightarrow The report is sent to all destinations.

9 Map view

You will learn,

- What the view and control elements of the map view mean (⇒ Chapter 9.2),
- How to create field boundary, headlands, tracks and markings,
- What the GPS drift is and how to correct it (⇒ Chapter 9.7.3),
- How to operate Auto Guidance.

CCI.Command contains a detailed map view for use with Auto Guidance, Par- Introduction allel Tracking, Rate Control, Section Control or Tramline Control.

Using GPS, Section Control automatically switches off the sections of an ISO-BUS implement upon passing over field boundaries and already treated areas and switches them back on upon leaving them. Possible overlaps are thus reduced to a minimum and the driver's work load reduced. Section Control can be used with ISOBUS implements that support this function.



NOTE

You require the Section Control licence to be able to use automatic section control.

The parallel driving aide, Parallel Tracking, enables exact parallel driving on fields without tramlines, e.g. for crop spraying and fertilizer application. Overlaps and missed areas are avoided.

Parallel Tracking shows parallel tracks taking into account the current working width and position and suggests necessary steering corrections. Amongst others, the tracks can be recorded as straight A-B lines or as curves.



NOTE

You require the Parallel Tracking licence to be able to use the parallel driving aide. Some self-propelled implements have an automatic steering system, comprising the ECU-S1 steering computer and the *Auto Guidance* app on the terminal.

 \rightarrow Set up the steering computer in *Auto Guidance*.

 \rightarrow You can switch the automatic steering system on or off in map view.



You require the Parallel Tracking licence to be able to use Auto Guidance.

WARNING

NOTE



The automatic steering system takes control of steering of the vehicle.

- $\rightarrow\,$ The steered parts of the vehicle (wheels, axles, pivoting points) may behave unpredictably and endanger people close to the vehicle.
- Ensure there are no people or obstacles near the vehicle before activating automatic steering.

The system does not replace the driver.

- $\rightarrow\,$ As driver, you are responsible for safe use of the automatic steering system.
- Remain in the driver's seat while automatic steering is switched on.

The automatic steering system does not divert around obstacles.

Observe the route in front of you and take control of the steering if an obstacle must be driven around.

The driving speed is not controlled by the automatic steering system.

• As the driver, you are responsible for maintaining a safe driving speed.

Use of the automatic steering system on public roads is not permitted.

Take control of the steering before driving on public roads.

9.1 Setting up for operation

- ► Enter the licence for Section Control and/or Parallel Tracking in the terminal (⇒ Chapter 4.3.3).
 Pri rat
- In app management switch CCI.Command "on" (\Rightarrow Chapter 4.2.2).
- Switch on the ISOBUS function Task Controller in ISOBUS settings (⇒ Chapter 4.2.3) and set a Task Controller number.
- Set up the tractor, implement and GPS (\Rightarrow Chapter 6.2, \Rightarrow Chapter 6.4, \Rightarrow Chapter 6.6).
- Before using the automatic steering system for the first time with the Auto Guidance app, set up the ECU-S1 steering computer as described in the operating instructions of the steering computer.



- 1. Press the "Settings" button on the start screen. \rightarrow The "Settings" operating screen is displayed.
- 2. Press the "Apps" button. \rightarrow The "Apps" operating screen is displayed.
- 3. Press the "CCI.Command" button. \rightarrow The "CCI.Command" operating screen is displayed.



- a: Automatic reverse gear detection
- b: Set minimum GPS accuracy for Section Control
- c: Switch for Krone Big-M
- d: Avoid missed areas or double treatment by setting the overlap
- e: Beds mode
- f: Adjust the internal lightbar
- g: Track capture
- h: Steering response
- i: Steering response in reverse gear

Prior preparation 4. Adjust CCI.Command (\Rightarrow Chapter 9.1.1, \Rightarrow Chapter 9.1.2, \Rightarrow Chapter 9.1.3).



- 5. Press the "Settings" button on the start screen.
 - \rightarrow Setting up is ended.
 - \rightarrow The "Settings" operating screen is closed.

9.1.1 Setting up Section Control

You have the following setting options:

Reverse gear detection

- 1. Press the "Reverse gear detection" button.
 - \rightarrow The "Reverse gear detection" selection list is displayed.
- 2. Select the method for detecting reverse gear.
- 3. End the process with "Back".



NOTE

Without a direction of travel signal, automatic reverse gear detection does not work.

Not all tractors or self-propelled implements send a direction of travel signal over the ISOBUS:

Select "GPS" or "off" in step 2.



Reverse gear detection

The terminal detects the change in driving direction

- Via the GPS data or
 - Via the direction of travel signal which the tractor or self-propelled implement sends over the ISOBUS.

The navigation arrow in the map view changes its direction upon reverse gear detection. The map does not rotate.

If you have selected reverse gear detection via GPS and the direction of travel displayed does not correspond to the actual direction of travel, proceed as follows:

In the map, press on the vehicle position indicator that is displayed.

 \rightarrow The vehicle position indicator changes direction and colour.

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Minimum GPS signal quality

The automatic mode of Section Control requires a GPS signal with DGPS accuracy or better.

- $\rightarrow\,$ Automatic mode is automatically deactivated when the GPS accuracy is insufficient.
- 1. Press the button "Minimum GPS accuracy". \rightarrow The "Minimum GPS accuracy" operating screen is displayed.
- 2. Select the accuracy class.
- 3. End the process with "Back".



NOTE

Only change the pre-setting for "Minimum GPS accuracy" if DGPS is not available.

In some regions, DGPS is permanently unavailable:

Set the "Minimum GPS accuracy" to "GPS". \rightarrow Then Section Control automatic mode also works with GPS.



Overwrite DeviceClass

Only switch on the "Overwrite DeviceClass" option, if the terminal is being operated on the Big-M.

- Press the "Overwrite DeviceClass" button.
 - \rightarrow The switch setting changes to "On".

9.1.2 Setting up Parallel Tracking

You have the following setting options:



Overlap

- 1. Press the "Overlap" button \rightarrow An input dialogue is displayed.
- 2. Enter the overlap as a positive or negative value in centimetres.
- 3. End the process with "Back".



Overlap

The overlap compensates for steering errors and position data inaccuracies.

- 1. Avoid missed areas.
- Enter a positive overlap.
 - \rightarrow The distance between the guidance tracks reduces by the entered value.
 - \rightarrow The effective working width is reduced.
 - \rightarrow Missed areas are avoided.
 - \rightarrow Overlapping can occur.
- 2. Avoid overlaps.
- Enter a negative overlap.
 - \rightarrow The distance between the guidance tracks increases by the entered value.
 - \rightarrow Overlapping is avoided.
 - \rightarrow Missed areas can occur.



Beds

In bed mode, you can jump tracks and thus U-turn in a single turning manoeuvre in smaller working widths.

- \rightarrow With setting "1" each guidance track is used.
- \rightarrow Setting 2/3/4/5 means that every second/third/fourth/fifth guidance track is highlighted in the portrayal. The remaining guidance tracks are shown as dashes.
- 1. Press the "Beds" button.
 - \rightarrow An input dialogue is displayed.
- 2. Enter a value between 1 and 5.
- 3. End the process with "Back".



Lightbar

The white segments of the lightbar indicate the deviation from the guidance track.

Specify what deviation a segment of the lightbar represents.

- 1. Press the "Lightbar" button.
 - \rightarrow An input dialogue is displayed.
- 2. Enter a value between 10 and 100 cm.
- 3. End the process with "Back".

9.1.3 Setting up Auto guidance

NOTE



- \rightarrow Not all self-propelled implements are equipped with it.
- \rightarrow The steering computer ECU-S1 is required for automatic steering using Auto Guidance.

You have the following setting options:



Track capture

Set how quickly the vehicle steers in the direction of a newly acquired guidance track.

- 1. Press the "Track capture" button. \rightarrow An input dialogue is displayed.
- 2. Enter a value between 1 and 10.
- 3. End the process with "Back".



Track capture

The vehicle should take the shortest path to the recorded guidance track, without steering sharply or suddenly in doing so.

The value to be set is heavily dependent on the vehicle type.

Determine the ideal value by trial and error.



Steering response

Adjust how quickly the vehicle responds to the automatic steering commands during forward travel.

- 1. Press the "Steering response" button. \rightarrow An input dialogue is displayed.
- 2. Enter a value between 1 and 10.
- 3. End the process with "Back".



Steering response

The vehicle should remain on the guidance track without steering too sharply or too suddenly.

The value to be set is heavily dependent on the vehicle type.

• Determine the ideal value by trial and error.





- 1: The set value is too high.
 - \rightarrow The system responds too quickly.
 - \rightarrow The wheels are very skittish.
- 2: The set value is ideal.
- 3: The set value is too low.
 - \rightarrow The system responds too slowly.
 - \rightarrow The vehicle deviates too far from the guidance track.



Steering response in reverse gear

Adjust how quickly the vehicle responds to the automatic steering commands during travel in reverse gear.

- 1. Press the "Steering response in reverse gear" button. \rightarrow An input dialogue is displayed.
- 2. Enter a value between 1 and 10.
- 3. End the process with "Back".

9.2 Map elements

The map provides view and control elements.

9.2.1 View elements



- 1: Compass
- 2: Lightbar
- 3: Guidance tracks
- 4: Reference track
- 5: Vehicle position and direction of travel
 - Section Control mode
 - \rightarrow Green bar: Automatic mode
 - \rightarrow White bar: manual mode
- 7: Boom
 - If a field boundary is present: \rightarrow Remaining area
- 8: If no field boundary is present: \rightarrow Worked area
- 9: Number and activity of sections \rightarrow Blue: on
 - \rightarrow Black: off
 - \rightarrow Red: manual override
- 10: Field size
- 11: Working width
- 12: Actual setpoint
- 13: Implement
- 14: Setpoints in the application map

View elements not visible in the example:

- Reference point
- Markings
- Area preview, remaining area until tank empty or loading space full
- Position preview, position with tank empty or full cargo bay
- Status of the automatic steering



2D map view

The map is displayed two-dimensionally.

The 2D map is displayed using a self-centred coordinate system:

- \rightarrow The vehicle position is centred and points upwards.
- \rightarrow The map rotates.

3D map view

The map is displayed three-dimensionally.

The 3D map is displayed using a self-centred coordinate system:

- \rightarrow The vehicle position is centred and points forwards.
- \rightarrow The map rotates.



3D

Overview

The entire field is displayed in overview. The overview is displayed using the geographical coordinate system:

- \rightarrow The map is oriented to the North.
- \rightarrow North is upwards.
- \rightarrow The vehicle indication moves.
- ► To open, drag downwards → The deviation from the track is displayed as a numerical value and in the segment display.

► To close, push upwards → The deviation from the track is also shown as a numerical value.



Vehicle position

Position of the tractor or self-propelled implement:

- \rightarrow The vehicle is stationary or moving forward.
- \rightarrow The tip of the arrow points in the direction of travel.
- \rightarrow The vehicle position is calculated based on the position of the GPS aerial.
- \rightarrow The implement depiction takes into consideration the mounting type.
- \rightarrow The sections and their geometries are also displayed.



Vehicle position in reverse

Position of the tractor or self-propelled implement. The vehicle travels backwards.



Compass

Vehicle position



CCI.assist supports work planning on the field during application and harvesting.

• Open the CCI.Control settings and switch on CCI.Assist (\Rightarrow Chapter 8.1).

a: Position preview
 → At this position, the tank will be empty or the loading space full
 b: Area preview
 → This area can still be worked until the tank is empty or the loading space is full
 c: Vehicle position

NOTE

The preview is only available if you have a licence for CCI.Assist.

The status of the automatic steering is displayed:

Auto Guidance

Position pre-

view, area

preview



The closest guidance track is headed towards

- \rightarrow Automatic steering is on.
- $\rightarrow\,$ The vehicle is steered by the automatic steering in the direction of the closest guidance track.



The vehicle follows the guidance track

- \rightarrow Automatic steering is on.
- \rightarrow The automatic steering steers the vehicle along the guidance track.



Automatic steering is disabled

Automatic steering cannot be switched on due to an error.

 \rightarrow The driver must steer the vehicle.



• Rectify the error (\Rightarrow Chapter 9.2.2).

Automatic steering is off

 \rightarrow You must steer the vehicle.



9.2.2 Operating elements

- 1: Centre map
- 2: Toggle between 2D view, 3D view and overview
 - Move track
- 4: Open the burger menu
 - Change between manual Section Control and automatic Section Control
- 6: Select boom
 - Show application map
 - \rightarrow Switch between the task application maps or
 - \rightarrow Hide the display of the setpoints

Control elements not visible in the example:

- Zoom into the map
- Select track, rename or hide
- Edit marking
- Display actual values of the implement
- Undoing delete actions
- Switch automatic steering on and off

Centre map

-\$

The button "Centre map" is only displayed if you have moved the map by swiping.

- \rightarrow The vehicle position is no longer centred.
 - \rightarrow Tracking is off, i.e. the map does not move with the vehicle.
- Press the "Centre map" button.
 - \rightarrow The map is centred.
 - \rightarrow The "Centre map" button is hidden.



The map is in 2D view

Press the "2D Compass" button.
 → The map is displayed in 3D.



The map is in 3D view

▶ Press the "3D Compass" button.
 → The map is displayed in overview.



The map is in the overview

▶ Press the "Compass" button.
 → The map is displayed in 2D.



- Add reference track
- Move reference track
- Delete reference track



Marking (\Rightarrow Chapter 9.6)

You have the following operating options:

- New marking
- New marking line
- Delete marking



Field (\Rightarrow Chapter 9.7)

You have the following operating options:

- Delete worked area
- Save field
- Add reference point
- Calibrate reference point
- Delete field







Section Control is in automatic mode

- Press the "Automatic section switching" button.
 - \rightarrow Section Control switches to manual mode.

Section Control is in manual mode

- Press the "Manual section switching" button.
 - \rightarrow Section Control switches to automatic mode.

Select boom



- Press the "Boom" button.
 - \rightarrow The next boom is selected and visually highlighted.
 - \rightarrow The worked area of the selected boom is displayed.



A task can contain several application maps.

 \rightarrow Only one application map can be displayed in the map view.

- Press the "Show application maps" button.
 - \rightarrow In doing so, you switch between the application maps of the task or hide the setpoints display.





Pinch in

Pinch out

 \rightarrow Zoom out on the map.

 \rightarrow Zoom in on the map.

- \Rightarrow Chapter 9.5.1
- Press the track name.
 - \rightarrow The *Reference* track is selected.
 - \rightarrow The guidance tracks are calculated and displayed.

\Rightarrow Chapter 9.5.5

- 1. Press and hold the track name.
 - \rightarrow The "Track name" input dialogue is displayed.
- 2. Enter the track name and confirm the entry.

Show application map



Zoom

Select track

Renaming a track

Move marking

- \Rightarrow Chapter 9.6.3
- 1. Press and hold the marking and keep the marking pressed. \rightarrow Map changes to editing mode.
- 2. Use your finger to move the markings to the new location and confirm your entry.



NOTE

A marking line can also be moved

• Move one or both markings to change the position of the marking line.

Change marking type

\Rightarrow Chapter 9.6.4

- 1. Press and hold the marking and keep the marking pressed. \rightarrow Map changes to editing mode.
- 2. Select the new marking type in the selection bar.
 - \rightarrow The marking type has been changed.
- 3. Confirm the entry.

Actual values

Instead of the worked area, a map can be displayed on the basis of implement data, e.g.

- The application rate
- The harvest quantity
- The harvest quality or
- The work quality.

You define the upper and lower limits of the display values and the number of intermediate steps:



- 1. Push the section display up.
- 2. Press the "worked area" button.
 - \rightarrow The "Implement data" selection list is displayed.
 - \rightarrow The number and content of the list elements depend on the connected implement.



 \rightarrow Instead of the worked area, the actual values are displayed in the map.

3

The following map view elements can be deleted:

- Field boundary
- Headland
- Tracks
- Markings
- Worked area
- Field

The deletion can be undone.

If you have pressed "Delete", a message window is displayed for approximately 3 seconds. The "Undo" button is located on the right edge.

Press the "Undo" button.

 \rightarrow The previous condition is restored.

Undoing de-

lete actions

Manual marking

The button is displayed, if

- No ISOBUS implement is connected to the terminal
- The ISOBUS implement does not support Section Control
- You do not have a licence for Section Control.



Marking of the worked area is on

The worked area is marked.

► To switch off marking of the worked area, press the "Mark area" button.
→ The area is not marked.



Marking of the worked area is off

The worked area is not marked.

- To switch on marking of the worked area, press the "Do not mark area" button.
 - \rightarrow The area is marked according to the working width of the implement.

The button is displayed, if

- The ECU-S1 steering computer is installed on the vehicle and
- You have a licence for Parallel Tracking.

Auto Guidance

CAUTION The drive

The driver is always responsible for the vehicle's route, including

when using automatic steering. If an error occurs, automatic steering is switched off without a confirmation

- query.
- \rightarrow The driver must take over steering of the vehicle.
- Remain in the driver's seat even when automatic steering is activated and observe the route ahead and the terminal.



Automatic steering is off

- Press the "Automatic steering is off" button.
 - \rightarrow Automatic steering is switched on.
 - \rightarrow The vehicle is steered automatically.

Automatic steering is on

- Move the steering wheel or press the "Automatic steering is on" button.
 - \rightarrow Automatic steering is switched off.
 - \rightarrow You are steering the vehicle.



Automatic steering cannot be switched on

- 1. Press the "Automatic steering is disabled" button.
 - \rightarrow Status information is displayed (see below).
 - \rightarrow Errors are marked with a red cross.
- 2. Rectify the error.
- 3. Switch automatic steering on.

Auto Guidance not available				
 Steering data Working width GPS accuracy Attitude Vehicle calibration 	 Driver present Licence key ISOBUS connection ISOBUS steering system Seat switch Designment 			
System ready	Koda switch ISOBUS/CAN bridge			

Status information	Cause/remedy
Steering data	There is no reference track or a reference track has not been selected.
	 / Option a: There is no reference track: ▶ Add a reference track (⇒ Chapter 9.5.3).
	 Option b: None of the available reference tracks have been selected: ▶ Select a reference track (⇒ Chapter 9.5.1).
Working width	The working width of the implement has not been set. The guidance tracks can- not be calculated. /
	Set the implement's working width (\Rightarrow Chapter 6.4.1).
GPS accuracy	The GPS accuracy is insufficient. /
	1. Check the symbol in the status bar (\Rightarrow Chapter 3.3).
	 → Three green dots must be displayed. → Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float".
	 Wait until the signal is available with the required accuracy. Switch automatic steering on.
Attitude	There is a problem with the GPS data. /
	 Wait until the GPS signal is available with the required accuracy. Switch automatic steering on.
Vehicle calibration	Initial set-up of the ECU-S1 steering computer has not been performed.
	• Perform the initial set-up using the Auto Guidance app (\Rightarrow Chapter 9.1.3).
Valid data	There is no reference track or a reference track has not been selected.
	Option a: There is no reference track:
	Add a reference track (\Rightarrow Chapter 9.5.3).
	Option b: None of the available reference tracks have been selected:
	Select a reference track (\Rightarrow Chapter 9.5.1).
System ready	The ECU-S1 steering computer is not yet ready for use.
	► Wait a few minutes.
Driver present	The seat switch reports that the driver's seat is empty.
	► Sit in the driver's seat.
Licence key	The Auto Guidance licence has not been input. /
	► Enter the licence for the ECU-S1 steering computer in Auto Guidance. → Contact your dealer or service partner to purchase a licence.
Condition	Cause/remedy
-----------------------------	--
ISOBUS connection	The ECU-S1 steering computer is not connected to the ISOBUS.
	Connect the steering computer to the ISOBUS.
ISOBUS steering sys- tem	The vehicle's steering is not ready. /
	 Refer to the vehicle's operating instructions to see how the ISOBUS steering is switched on.
Seat switch	The seat switch is not present, is defective or is not detected.
	 Contact your dealer or service partner.
Road switch	The road switch is "on".
	ightarrow Automatic steering is not permitted on the road.
	/
	If the vehicle is in a field, switch the road switch to "off".
ISOBUS/CAN bridge	The ECU-S1 steering computer is not connected to the ISOBUS. /
	Connect the steering computer to the ISOBUS.

9.2.3 Editing mode

When a function is called, e.g. "Record field boundary", the map switches to editing mode:

 \rightarrow Depending on the function called, one or more action buttons are displayed.



Performing several work steps simultaneously

Field boundary, headlands, and *Reference* **track** can be recorded simultaneously. The combination of work steps is useful, for example, for the first journey around the field perimeter.



The action buttons associated with a recording are labelled with a unique label.

 $\rightarrow\,$ In this way, recordings can be individually started, paused and stopped.

The "Cancel" action button aborts all current recordings.

 \rightarrow Previously completed steps, such as a recorded track, are not undone.

9.3 Field boundary

9.3.1 Calculate

Use the "Calculate boundary" function , if you are working the outer area during the first journey around the field perimeter:



- 1. Drive around the field and in doing so, mark the worked area.
 - \rightarrow The worked area is indicated as a closed shape.
- 2. Press the "Field boundary" button in the burger menu.
 - ightarrow The "Field boundary" menu is displayed.
- 3. Press the "Calculate" button.
 - \rightarrow The field boundary is calculated.
 - \rightarrow The field boundary is indicated in orange.
 - \rightarrow Small gaps are automatically closed.

9.3.2 Record

Use the function "Record field boundary",

- If you do not work the field during the first travel around its perimeter,
- If you want to add an inner field boundary.

|--|

1. Press the "Field boundary" button in the burger menu of the map view. \rightarrow The "Field boundary" menu is displayed.



2. Press the "Record" button.

 \rightarrow The input dialogue "Record field boundary" is displayed:



- a: Position of the marker \rightarrow Left or right outer edge of the implement
- b: Outer or inner field boundary



3. Select the position of the marker.

4. Select the outer or inner field boundary and confirm the entry. \rightarrow Map changes to editing mode.



- 5. Drive to the start point of the recording.
- 6. Press the "Record" button and drive around the field. \rightarrow The field boundary is recorded.





- 7. End recording with "Stop".
 - \rightarrow The field boundary is saved.
 - \rightarrow Small gaps are automatically closed.



NOTE

Pause, Start and Cancel

You can interrupt recording with "Pause" and continue it with "Start". \rightarrow A straight line is drawn between the Pause and Record points.

You can end recording of the field boundary with "Cancel".

 \rightarrow The field boundary recorded up until then is deleted.







NOTE

A field must have an outer field boundary.

An inner field boundary can only be recorded in a field with an outer field boundary.

Several inner field boundaries can be recorded.



NOTE

A field boundary can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

- Set the "Minimum GPS accuracy" to "GPS" (\Rightarrow Chapter 9.1.1).
 - \rightarrow The field boundary can be recorded with a GPS signal of GPS accuracy.

9.3.3 Delete



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- 1. Press the "Field boundary" button in the burger menu. \rightarrow The "Field boundary" menu is displayed.
- 2. Press the "Delete" button. \rightarrow Map changes to editing mode.
- 3. Select the field boundary.
- 4. Press the "Delete" action button.
 - \rightarrow The field boundary is deleted.
 - \rightarrow The deletion can be undone.

9.4 Headland

In the Headland menu you can

- Lock the processing of the headland,
- Calculate a circumferential headland,
- Record a headland in sections,
- Assemble the headland based on the field boundary sections,
- Delete a headland.

9.4.1 Lock

You can lock an existing headland or release it for working.

If the switch is in the "on" position, the headland cannot be worked:

- \rightarrow The headland is displayed with orange hatching.
- \rightarrow Sections are automatically switched off in the headland.
- \rightarrow The inner field can be worked.

If the switch is in the "off" position, the headland is released for working:

- \rightarrow The headland is still present, but is not displayed.
- \rightarrow Headland and inner field can be worked.



- Switch "Locked" "on".
 - \rightarrow Sections are switched off in the headland.

9.4.2 Circumferential headland

The circumferential headland is calculated based on an existing field boundary.

• Create a field boundary (\Rightarrow Chapter 9.3)



- 1. Press the "Headland" button in the burger menu. \rightarrow The "Headland" menu is displayed.
- 2. Press the "Circumferential" button. \rightarrow An input dialogue is displayed.
- 3. Enter the width of the headland and confirm the entry.
 - \rightarrow The headland is displayed.
 - \rightarrow The headland is locked.

Prior prepa-

ration

9.4.3 Record

You can record an individual headland, e.g. with a headland at each of the field ends.

A field boundary is not necessary.



1. Press the "Headland" button in the burger menu of the map view. \rightarrow The "Headland" menu is displayed.

2. Press the "Record" button.

 \rightarrow The input dialogue "Individual headland" is displayed:



- a: Width of the headland
- b: Position of the marker
 → Left or right outer edge of the implement, implement middle or outer edge of the implement
 - Headland as straight line → The headland is the straight line between the start and end points of the recording
- d: Headland follows driving track
 → The headland has the shape of the path driven between the start and end of the recording
- 3. Press the "Width" input field and enter the width of the headland.



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- 4. Select the position of the marker.
- 5. Select the form of the headland and confirm the entry. \rightarrow Map changes to editing mode.
- 6. Drive to the start point of the recording.





7. Press the "Record" button and drive to the end point of the headland. \rightarrow The headland is recorded.



8. End recording with "Stop". \rightarrow The headland is saved.



9. To record a headland comprising one or more sections (as shown in the figure), repeat step 1 to 8 for each section.



Headland marker

The width of the headland marker is pre-set as the working width of the implement.

The width of the headland and thus the headland marker, can be manually changed. If the width of the marker is bigger than the working width, the position of the headland marker can be changed. The setting can be changed between central (default) and right or left outside of the implement.

Selecting right or left outside edge as the setting makes it possible for example to drive with the implement directly along the field boundary and to mark the entire set width of the headland within the field boundary.



NOTE

A headland can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

Set the "Minimum GPS accuracy" to "GPS" (\Rightarrow Chapter 9.1.1). \rightarrow The headland can be recorded with a GPS signal of GPS accuracy.

9.4.4 Select

The field boundary is automatically sub-divided into sections. You can assign each section a headland of different width.

 \rightarrow Use the function if the field boundary has been recorded with RTK GPS accuracy.

Prior preparation

• Create a field boundary (\Rightarrow Chapter 9.3)

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- 1. Press the "Headland" button in the burger menu. \rightarrow The "Headland" menu is displayed.
- 2. Press the "Select" button.
 - \rightarrow Map changes to editing mode.
- 3. Select the sections.
- Press the text field with the headland width.
 → The "Headland Width" input dialogue is displayed.
- 5. Enter the width of the headland and confirm the entry.
- 6. Confirm the entry with the "OK" action button.
 - \rightarrow The headland has been saved and is displayed.



The "Select" function is only available if a field boundary is present.

9.4.5 Delete

NOTE



- Î
- 1. Press the "Headland" button in the burger menu. \rightarrow The "Headland" menu is displayed.
- 2. Press the "Delete" button. \rightarrow Map changes to editing mode.
- 3. Select the headland.
- 4. Press the "Delete" action button.
 - \rightarrow The headland is deleted.
 - \rightarrow The deletion can be undone.

9.5 Tracks

For a *Reference* track, you will learn how to

- Select,
- Hide,
- Add,
- Move,
- Rename,
- Change,
- Delete.

9.5.1 Select

If you have created multiple reference tracks, you can select which ones are to be used in map view.





- 1. Press the compass until the map is displayed as an overview.
 - \rightarrow All reference tracks are displayed.
- 2. Press on the track name.
 - \rightarrow The reference track is selected.
 - \rightarrow The guidance tracks are calculated and displayed.

9.5.2 Hide

You can hide the *Reference* track and guidance tracks when they are not in use.

- 1. Press the compass until the map is displayed as an overview.
 - \rightarrow All reference tracks are displayed.
- 2. Press on the track name of the active reference track.
 - \rightarrow The flag with the track name goes grey.
 - \rightarrow The reference track and the guidance tracks are hidden.

9.5.3 Add

Add a new *Reference* track.

 \rightarrow The guidance tracks are automatically calculated with a distance equal to the working width of the implement.



- 1. Press the "Tracks" button in the burger menu of the map view. \rightarrow The "Tracks" menu is displayed.
- 2. Press the "New" button.
 - \rightarrow The input dialogue "New tracks" is displayed:

	New	track	
6-	•! •	/	-0
e –		0 -	-0
d –			-0
		~	

- a: Curve
 - \rightarrow The track has the shape of the path driven between the start and end of the recording.
- b: Circle
 - \rightarrow The distance travelled between the start and end of the recording is a section of a circle. The track is the entire circle.
- c: Peripheral
 - \rightarrow The track is created along the field boundary. The number of guidance tracks can be specified.
- d: Manual entry
 - \rightarrow You enter the geo-coordinates of points A and B in decimal degrees. The track is the straight line between the two points.
- e: A+
 - \rightarrow You enter an angle. The track passes through the position of the tractor and is created at the entered angle in degrees from North.
- f: Straight track
 - \rightarrow The track is the straight line between the start and end points of the recording.

The next steps are dependent on the form selected.



NOTE

You can record multiple reference tracks for a field.

Only the guidance tracks of one *Reference* track are displayed.

• Select the reference track in the map view.



NOTE

A *Reference* track can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

Set the "Minimum GPS accuracy" to "GPS" (⇒ Chapter 9.1.1).
 → The reference track can be recorded with a GPS signal of GPS accuracy.

Straight line, circle and curve



To create a track in the form of a straight line, circle or curve, record the path travelled:

- Select the form of the track and confirm the entry.
 → Map changes to editing mode.
- 4. Drive to the start point of the recording.







- 5. Press the "Record" button and drive to the end point of the track.
 - \rightarrow Point A is drawn in.
 - \rightarrow The track is recorded.



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- 6. End recording with "Stop".
 - \rightarrow Point B is drawn in.
 - \rightarrow The track is saved.
 - \rightarrow The track is automatically used for Parallel Tracking.



Peripheral

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- 3. Select "Circumferential" and confirm the entry. \rightarrow The input dialogue "Number of tracks" is displayed.
- 4. Enter the number of guidance tracks and confirm the entry.
 - \rightarrow The *Reference* track and the calculated guidance tracks are displayed.
 - \rightarrow The reference track is automatically used for Parallel Tracking.



ΝΟΤΕ

The circumferential track can only be added, if a field boundary is present.

You enter the geo-coordinates of two points that are on the Reference track. Manual



Select "Manual" and confirm the entry.
 → The "Enter point A" input dialogue is displayed.



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- 4. Enter the geo-coordinates of point A as a decimal degree and confirm the entry.
 - \rightarrow The "Enter point B" input dialogue is displayed.
- 5. Enter the geo-coordinates of point B as a decimal degree and confirm the entry.
 - \rightarrow The Reference track and the calculated guidance tracks are displayed.
 - \rightarrow The reference track is automatically used for Parallel Tracking.



- Select "A+" and confirm the entry.
 → Map changes to editing mode.
- 4. Drive to the start point of the recording.



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- 5. Press the "Record" button. \rightarrow The input dialogue "Enter A+ angle" is displayed.
- 6. Enter the angle in degrees from North and confirm the entry.
 - \rightarrow The Reference track passes through the position of the tractor and is created at the entered angle in degrees from North.

9.5.4 Move

Move the track,

- To correct for GPS drift
- If when changing the implement, the working width also changes, if for example a field sprayer with 24m working width follows a slurry tank with 12m working width.





- 1. In map view, open the light bar.
 - \rightarrow The "Move" button is displayed.
 - \rightarrow The button is greyed out and disabled.
- 2. Press the "Move" button.
 - \rightarrow The button is enabled.
- 3. Press the "Move" button again.
 - \rightarrow The track is moved to the actual position of the tractor.

A+

Alternatively you can move the track manually via the burger menu or automatically:

- \rightarrow For manual moving, enter the size and direction of the movement.
- \rightarrow With automatic moving, the track is moved to the actual position of the tractor.





Manually move tracks

- 1. Press the "Tracks" button in the burger menu of the map view. \rightarrow The "Tracks" burger menu is displayed.
- Press the "Move" button.
 → The input dialogue "Move tracks" is displayed.
- 3. Press the "Movement size" input field and enter the movement.
- 4. Select the direction of the movement.
- 5. Confirm the entry.
 - \rightarrow The track is moved.
 - \rightarrow The map view is displayed.





Automatically move tracks

- 1. Drive to the point to which the track is to be moved to.
- 2. Press the "Tracks" button in the burger menu of the map view. \rightarrow The "Tracks" burger menu is displayed.
- 3. Press the "Move" button.
 - \rightarrow The input dialogue "Move tracks" is displayed.
- 4. Select automatic movement.
- 5. Confirm the entry.
 - \rightarrow The track is moved to the actual position of the tractor.
 - \rightarrow The map view is displayed.

9.5.5 Rename

If you crate a new track, it is automatically named, e.g. "AB 1", "A+ 1", "Curve 1" or "Circle 1".

You can rename the track in the map view:



- 1. Press the compass until the map is displayed as an overview. \rightarrow The reference tracks are displayed.
- 2. Press and hold on the track name. \rightarrow The "Track name" input dialogue is displayed.
- 3. Enter the track name and confirm the entry.

9.5.6 Change

The angle can be changed for A+ tracks.

- 1. Press the compass until the map is displayed as an overview. \rightarrow The reference tracks are displayed.
- 2. Press on the angle specification below the track name. \rightarrow The input dialogue "Enter A+ angle" is displayed.
- 3. Enter the angle and confirm the entry.

9.5.7 Delete



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- 1. Press the "Tracks" button in the burger menu. \rightarrow The "Tracks" menu is displayed.
- 2. Press the "Delete" button. \rightarrow Map changes to editing mode.
- 3. Select the track.
- 4. Press the "Delete" action button.
 - \rightarrow The track is deleted.
 - \rightarrow The deletion can be undone.

9.6 Markings

Points of interest (POI) in the field can be tagged with a marking and saved in the task.

The following marking types can be selected:

- Field entrance
- Obstacles
- Unloading locations
- Comments

In the Markings menu, you can perform the following for a marking

- Set,
- Move,
- Delete.

9.6.1 Add



- 1. Press the "Marking" button in the burger menu of the map view. \rightarrow The "Marking" menu is displayed.
- 2. Press the "New" button.
 - \rightarrow Map changes to editing mode.
 - \rightarrow A new marking of "Unloading location" type is added at the vehicle position.



The marking type can be changed and the marking can be moved:

3. Select the desired marking type in the selection bar. \rightarrow The marking type has been changed.



4. Press the marking and move it.



5. Confirm the entry. \rightarrow The marking has been saved.



NOTE

Multiple markings can be added to one field.

9.6.2 Adding a marking line

The marking line is a signal to the implement, e.g. to trigger a certain implement function.

 \rightarrow The terminal signals each crossing of the marking line to the implement.



1. Press the "Marking" button in the burger menu of the map view. \rightarrow The "Marking" menu is displayed.



- 2. Press the "New line" button.
 - \rightarrow Map changes to editing mode.
 - \rightarrow A marking line is added at the vehicle position at a 90° angle to the direction of travel.
 - \rightarrow Two markings are added to the marking line with a separation equal to the working width.





NOTE

Multiple marking lines can be added to one field.

NOTE

You need the manufacturer's instruction manual.

Read the manufacturer's instruction manual to determine if the implement supports this function.

9.6.3 Move

You change the position of markings and marking lines in map view:





- 1. Press and hold the marking and keep the marking pressed. \rightarrow Map changes to editing mode.
 - \rightarrow A grey circle is displayed below the marking.



- 2. Move the marking to the new position.
- 3. Confirm the entry.
 - \rightarrow The new position of the marking has been saved.

Carry out the following to change the position of a marking line:

- 1. Press and hold one of the markings belonging to the line and keep the marking pressed.
 - \rightarrow Map changes to editing mode.
 - \rightarrow A grey circle is displayed below both line markings.
- 2. Move one or both of the markings to the new position.
 - \rightarrow The orientation and position of the line change.
- 3. Confirm the entry.
 - \rightarrow The new position of the marking line has been saved.

9.6.4 Changing the type

Change the marking type in map view:





- 1. Press and hold the marking and keep the marking pressed.
 - \rightarrow Map changes to editing mode.
 - \rightarrow The selection bar with the marking types is displayed.



- 2. Select the marking type.
- 3. Confirm the entry.
 - \rightarrow The new marking type has been saved.

9.6.5 Enter comment

Use a "Comment" type marking if the other marking types are not suitable for tagging the position.

 \rightarrow You can assign a tag of your own to a "Comment" type marking.





2. Enter the comment and confirm the entry. \rightarrow The comment has been saved.





- 1. Press the "Marking" button in the Burger Menu. \rightarrow The "Marking" menu is displayed.
- 2. Press the "Delete" button. \rightarrow Map changes to editing mode.
- 3. Select the marking.
- 4. Press the "Delete" action button.
 - \rightarrow The marking is deleted.
 - \rightarrow The deletion can be undone.

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9.7 Field

9.7.1 Delete worked area

To work the field again, delete the worked area:

- 1. Press the "Field" button in the burger menu.
 - \rightarrow The "Field" menu is displayed.
 - 2. Press the "Delete worked area" button.
 - \rightarrow The worked area is deleted.
 - \rightarrow The deletion can be undone.

9.7.2 Save

The field boundary, headland and tracks are saved in the field list and can be reused:



- 1. Press the "Field" button in the burger menu.
 - \rightarrow The "Field" menu is displayed.
- 2. Press the button "Save".
 - \rightarrow The "Field Name" input dialogue is displayed.
- 3. Enter the field names and confirm the entry.
 - \rightarrow The field is saved in the field list.
 - \rightarrow A new task with the field is created in task mode.



NOTE

Saving the field is only possible in AUTOLOG.

If you have started a task, saving of the field is not necessary and not possible. The field, the tracks, the headland and the worked area are automatically saved in the task.

9.7.3 Correct GPS drift



GPS drift

Due to the Earth's rotation and the changing positions of the satellites in the sky, the calculated position of a point moves. This is referred to as GPS-drift.



If you open saved position data after some time, then you will often notice a drift relative to the actual position.

Affected are

C

- Field boundary
- Worked area
- Reference track
- Guidance tracks.

The lower the accuracy of the correction data, the stronger the GPS drift.

Correct the GPS drift:

- 1. Calibrate the Reference point (\Rightarrow Chapter 9.7.3).
 - \rightarrow Field boundary, tracks and obstacles are moved.
- 2. Move the reference track (\Rightarrow Chapter 9.5.4).



Add reference point

Select a prominent point, e.g. a gulley lid or a permanent marking in the entry to the field. Mark this point.

- $\rightarrow\,$ To calibrate the reference point, you must be able to approach the exact same position from exactly the same direction again.
- 1. Drive to the reference point and bring the tractor or self-propelled implement to a stop.
- 2. Press the "Field" button in the burger menu. \rightarrow The "Field" menu is displayed.
- 3. Press the "Set new reference point" button.



Calibrate reference point

- 1. Approach the reference point with the tractor or the self-propelled implement. In doing so, approach from the same compass point as when adding the point.
- 2. Come to a stop precisely over the reference point.
- 3. Press the "Field" button in the burger menu. \rightarrow The "Field" menu is displayed.
- 4. Press the "Calibrate reference point" button.

NOTE

You must be able to find the reference point again.

The recorded data is of no use if you can no longer find the position of the reference point.

• Note the exact position of the reference point.



NOTE

No reference point is needed with RTK.

If you use RTK, there is no GPS drift. You do not need to set the reference point.

9.7.4 Delete

Delete the field, tracks, headland and worked area:

- 俞
- 1. Press the "Field" button in the burger menu.
- ightarrow The "Field" menu is displayed.
- 2. Press the "Delete" button.
 - \rightarrow A message window is displayed.
- 3. Confirm the message.
 - \rightarrow The field, the tracks, the headland and the worked area are deleted.
 - \rightarrow The deletion can be undone.

10 Miscellaneous

10.1 Testing apps

A licence is needed for the following functions:

- Parallel Tracking
- Section Control
- Task Control
- CCI.Assist
- Auto Guidance

Before purchasing a licence, you can test the apps without restriction, without any obligation and free of charge for 50 hours:



1. Press the "Settings" button on the start screen.

 \rightarrow The "Settings" operating screen is displayed.



- 2. Press the "System" button. \rightarrow The "System" operating screen is displayed.
- 3. Press the "Licence data" button.

 \rightarrow The "Licence data" operating screen is displayed.

 \rightarrow The buttons for the start of the trial period are displayed.

Licence data	?	ţ
Terminal licence		
CCI.Command		
Parallel Tracking		50:0
Section Control		50:00 h
CCI.Control		
Task Control		50:00 h
CCI.Assist		50:00 h
• •• ••		?

- 4. Press the button "50:00 h" for the app that you want to test.
- 5. Open the app in standard view (\Rightarrow Chapter 3.3, App menu section). \rightarrow The message window "Remaining test hours" is displayed:

10 Miscellaneous



- 6. Only confirm the message if you want to test the app.
 - \rightarrow You can use the app without any restrictions.
 - \rightarrow The trial period starts to count down.
- 7. Check the remaining trial period in the "Licence data" operating screen.



NOTE



Only confirm the message window when starting to test the app.

The message window "Remaining test hours" is displayed when you start the app. The remaining test hours only count down after you have confirmed the message.

 Do not confirm the message when restarting the terminal or when launching the app, rather only when you actually want to test the app.
 → You have full control over when the trial period starts to count down.

10.2 Eject flash drive

NOTE

Do not simply pull out a connected flash drive.

It is possible that at an app will be reading or writing to the flash drive at just this point in time. It will not be possible to end the data access cleanly. Loss of data could occur.

Use "Unmount drive".



- 1. Press the "Settings" button.
 - \rightarrow The "Settings" operating screen is displayed:





- 2. Press on the "Unmount drive" button.
 - \rightarrow CCI.OS ends all accesses to the flash drive.
 - \rightarrow The message "Flash drive removed" appears in the status bar
- 3. Pull out the flash drive.

10.3 Closing Rescue System

The Rescue System can only be used by the service partner.

For easy differentiation from the CCI.OS, the Rescue System has a graphical user interface of a different colour:



The service partner uses the Rescue System for

- Backing up and restoring
- Updating components of the operating system
- Error analysis.

The Rescue System can only be intentionally started by the service partner. After an internal error, it may occur that the terminal starts up in the Rescue System.

• Exit the Rescue System and restart CCI.OS.

	Exit the Rescue System as follows:	
	Name Approx Approx Image: State	
	1. Press the "Language" button. \rightarrow The "Language" selection list is displayed.	
	2. Select your language. \rightarrow The checkbox at the right edge of the button is selected.	
5	3. Press "Back". \rightarrow The Rescue System is displayed.	
	Statistic Statistic Statistic Statistic Statistic Statistic Statistic Statistic Statistic Sta	
	4. Press the "Shutdown System" button. \rightarrow The "Shutdown System" menu is displayed.	
	5. Press the "Reboot to CCI.OS" button. \rightarrow The terminal restarts. \rightarrow The safety instructions are displayed.	
	 6. Drag the "Enter" button in the indicated direction. → The arrow changes its shape to a check mark. → The start screen of CCI.OS is displayed. 	

NOTE

CCI.OS will no longer start.

If the CCI.OS terminal can no longer start, a severe error has occurred.

- $\rightarrow~$ You will not be able to rectify the error yourself.
- Contact your service partner.

11 Troubleshooting

You will learn,

- How to solve common problems during operation,
- How you support your service partner in troubleshooting by provision of screenshots and logs,
- How your service partner can monitor what's happening on the terminal via remote maintenance,
- The best way to respond to a specific error message on the terminal.



CAUTION!

If a technical failure occurs, the work process must be interrupted.

Continuation of working after technical failures can result in damage to the terminal or the implement!

- 1. Stop working.
- 2. Look for a solution in this chapter of the operating instructions.
- 3. Contact your dealer if the problem persists.

In the event of a fault, the terminal may no longer respond to user inputs. **Forced shut-**1. Press the ON/OFF button for 2 seconds. **Forced shut-**

- \rightarrow The terminal shuts down.
- 2. Press the ON/OFF button for 1 second.
 - \rightarrow The terminal restarts.



CAUTION!

In a forced shut-down all internal supply voltages are switched off.

Unsaved data is lost. The terminal and its software are not damaged by the switch-off.

Perform a forced shut-down only if it is absolutely unavoidable.

Blue flashing signals of the ON/OFF button If a hardware problem exists, the terminal switches off automatically. The LED of the ON/OFF button transmits a series of blue flashes.



The LED flashes once per second and, dependent on the error, 1 to 27 times in succession. There is a two second pause at the end of the sequence. The sequence then starts again from the beginning. This makes counting easier for you.

Restart the terminal. If the terminal switches off again, and the LED of the ON/OFF button flashes blue again, the problem still exists.

You can rectify the problems listed in the following table locally.

Flashing signals	Cause/remedy
7	The temperature measured in the terminal exceeds 95 °C. Possibly the temperature sensor is defective.
	Allow the terminal to cool before restarting. If the error reoccurs, the terminal must be sent in.
25	The internal 12V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
26	The internal 5V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
27	The internal 3.3V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.

For all other hardware problems, the terminal must be sent in. Tell the service partner the number of flashes there are.

The ON/OFF button is permanently red if the terminal is operating under the Rescue System.

 \rightarrow No error exists.

The Rescue System can only be used by Service.

• Close the Rescue System and restart CCI.OS (\Rightarrow Chapter 10.3).

The ON/OFF button flashes during the switching on process. \rightarrow No error exists. White flashing signals of the ON/OFF button

ON/OFF but-

ton is perma-

nently red

11.1 Problems during operation

This chapter lists problems that may occur during use of the terminal.

A suggestion is made for rectification for each problem.

- ▶ Try to rectify the problem.
- Contact your dealer if you cannot resolve the problem.

Problem	Cause/remedy		
The terminal does not switch off, if you switch off	The tractor does not switch off the supply to the In-cab connector.		
the tractor ignition.	 Switch the terminal off using the ON/OFF button or 		
	 disconnect cable A. 		
The terminal does not	Terminal not connected to the ISOBUS.		
switch on.	• Connect the terminal to the ISOBUS as described in \Rightarrow Chapter 2.		
	Ignition is not switched on.		
	 Start the tractor. 		
The connected implement	Implement is not connected or is incorrectly connected.		
is not displayed on the terminal.	Ensure that the implement's ISOBUS cable is correctly connected at the tractor.		
	Bus terminator missing.		
	Check whether a bus terminator must be attached to the implement.		
	Incorrect configuration of the UT.		
	 Configure the UT of the terminal according to this manual. 		
	The "Universal Terminal" is not on.		
	In the "ISOBUS settings" operating screen switch the "Universal Terminal" on. ISOBUS settings are located in Settings under "Apps".		
Problem	Cause/remedy		
--	---	--	--
Two ISOBUS terminals are present on the ISOBUS.	The universal terminals have the same UT number and thus cannot log on to the ISOBUS.		
The connected implement is not displayed on either of the terminals.	 Set different UT numbers in the two terminals. 		
An update has been in- stalled on the implement.	The old version of the implement is still saved on the ter- minal.		
However, the terminal dis- plays the implement's old	1. Disconnect the implement from the ISOBUS.		
operating screens.	2. Delete the implement from the terminal (\Rightarrow Chapter 7.5.2).		
	3. Connect the implement to the ISOBUS.		
The connected AUX control	Incorrect configuration of the UT.		
is not displayed.	1. Disconnect the AUX control from the ISOBUS.		
	2. Set the UT number to "1" in the terminal for CCI.UT.		
	3. Reconnect the AUX control to the ISOBUS.		
The cable of the AUX con-	You require A and Y cables:		
trol only has an In-cab connector instead of a Y-	1. Connect cable A to connector A on the terminal.		
cable.	 Insert the plug "UT" on cable Y into the "InCab" socket on cable A. 		
	3. Insert the plug "AUX" on cable Y into the In-cab coupling of the AUX control.		
	4. Insert the "InCab" coupling on cable Y into the In-cab panel connector of the tractor or the self-propelled implement.		

Problem	Cause/remedy
No GPS data is displayed	No power supply at the GPS receiver
in the information area of the GPS settings.	Check the power supply to the GPS receiver.
	GPS receiver not connected to the terminal
	Check the connection of the GPS receiver with the terminal
	\rightarrow If serial data is to be used, the RS232-I interface
	must be used. \rightarrow If CAN data is to be used, the receiver must be
	connected to the CAN-Bus.
	Incorrect GPS source selected
	Under GPS settings check whether the GPS source is selected that is currently being used.
	Incorrect baud rate set
	When using serial data under GPS settings, set the same baud rate with which your receiver is config- ured.
	Incorrect configuration of the receiver
	To see how the receiver is configured, refer to the operating instructions of your GPS receiver.
	Incorrect assignment of the cable wiring
	Use an original cable.
No implement functions	Does the implement support operation via AUX control?
are displayed in the "AUX assignment" operating screen.	The implement operating instructions provide infor- mation.
	The implement is not connected to the UT with UT num- ber "1".
	Move the implement into the UT with UT number "1". Most implements offer a function for moving to an- other UT.
My ISOBUS implement has the Task Controller func- tion, however, it does not	A second ISOBUS terminal with Task Controller is logged in on the ISOBUS. The implement has connected to the Task Controller of the other terminal.
register in the implement list in CCI.Config. Also, I cannot use it for Section Control or documentation.	 Switch the Task Controller of the second ISOBUS ter- minal off.

Problem	Cause/remedy
I want to use the GPS re- ceiver A101 on the termi- nal and accordingly am using cables B and N.	 Cable N is not suitable for operation of the A101. → The contacts for the voltage signal V+ are not assigned. → The GPS receiver is not supplied with current. You require a cable that has an M8 coupling for connection to cable B and a 12-pole coupling for connection to
	the A101.
The warning symbol next to the tractor name is dis- played, although I have set up the tractor.	 The warning icon is displayed, if No tractor is selected The distance C is not set for the implement mounting type. Only if both conditions are met, will the warning symbol not be displayed.
	Select the tractor (⇒ Chapter 6.10.1) and set distance C for all implement mounting types (⇒ Chapter 6.2.2).
I cannot connect my ISO- BUS implement to CCI.Convert. It does not appear in the list of imple- ments in the CCI.Convert settings.	 The Task Controller is not set up correctly on the terminal 1. Switch the ISOBUS function "Task Controller" "on". 2. Set a Task Controller number. 3. Switch the app CCI.Control "on". The implement is not connected to the ISOBUS.

11.2 Remote maintenance and diagnostics

If you have a persistent problem that you cannot resolve on your own, your service partner will be more than happy to help.

Describe in detail the work steps that led to the error. If requested by your service partner, provide a screenshot (\Rightarrow Chapter 11.2.1) or the log (\Rightarrow Chapter 11.2.3).

Using remote maintenance, you can demonstrate the problem to the service partner directly on the terminal (\Rightarrow Chapter 11.2.2).

11.2.1 Create screenshot

A picture says more than a thousand words.

If you are having problems operating the terminal or ISOBUS implement, you can capture a screenshot and send it to your service partner:

Prior preparation

• Connect a flash drive to the terminal.



Press on the left time in the status bar (1) until a message is displayed in the status bar (2).

 \rightarrow The screenshot is automatically saved in the root directory on the flash drive.

11.2.2 Remote maintenance using Remote View

If you are having problems operating the terminal or ISOBUS implement, you can grant your service partner remote access.

You are the long arm of the service partner:

 \rightarrow The service partner can see the screen contents, but cannot perform any actions on the terminal.



NOTE

Not all service partners offer remote maintenance.



NOTE

Remote maintenance is only possible after you have granted your permission.

Access to the terminal via the Internet is only possible if

- You have switched on remote maintenance and
- The service partner has the session code.

Only switch on remote maintenance if expressly asked to do so by your service partner.

 \rightarrow You can end the session at any time by turning off remote maintenance.

• Connect the terminal to the Internet.

Prior preparation



1. Press the "Settings" button. \rightarrow The "Settings" operating screen is displayed.

-			-
-			-
-			-
-			-
			_

2. Press the "System" button. \rightarrow The "System" operating screen is displayed.

- 3. Press the "Remote View" button. \rightarrow The "Remote View" operating screen is displayed.
- 4. Switch "Remote View" "on".
 - \rightarrow The session starts.
 - \rightarrow The session code is displayed.



- 5. Inform your service partner of the Session Code.
 - \rightarrow The service partner sees the screen contents.
 - \rightarrow The status bar goes blue.
 - \rightarrow The mouse pointer is displayed.
- 6. Demonstrate the problem.



7. Repeat steps 1 to 3.



- 8. Switch "Remote View" "off".
 - \rightarrow The session ends.
 - \rightarrow The status bar takes on the dark background colour.

11.2.3 Export log

The terminal records a log. The log is only saved on the terminal and is not transmitted.

If you are having problems operating the terminal or ISOBUS implement, you can send the log to your service partner:

Prior preparation

• Connect a flash drive to the terminal.



Press the "Settings" button.
 → The "Settings" operating screen is displayed:



Press the "Diagnostics" button.
 → The "Diagnostics" operating screen is displayed:



3. Press the button "Export". \rightarrow The log is saved on the flash drive.



4. Press the "Settings" button. \rightarrow The process is ended.

11.2.4 ISOBUS

For troubleshooting, the terminal provides you with detailed information about activities on the ISOBUS:

- List of all participants logged in on the ISOBUS
- Loading of the ISOBUS and evaluation of data packets on the ISOBUS

You can provide your service partner with a recording of data traffic on the ISOBUS:

- Connect a flash drive and press "CAN trace".
 - \rightarrow Two files with the file extension *.trc are saved in the main directory on the flash drive.

11.3 Messages

Messages

- indicate incorrect operation or an error state or
- allow you to interrupt the execution of a command.

Messages are dialogue windows, interrupt the program flow and must be acknowledged. Each message is identified by a unique error number.



"Caution" type messages can be acknowledged in 2 ways:



Cancel

- \rightarrow The started action is aborted,
- $\rightarrow~$ The previous condition is restored.



ОК

 \rightarrow Message is understood, I want to continue.

"Warning" type messages have no "Cancel" button.

▶ Read the message. and confirm it with "OK".

Error num- ber	Type/Message text/Remedy
14	Warning
	/ <number> logs have been saved on the flash drive. <number> remain. The flash drive is full. Connect a new flash drive. /</number></number>
	You want to save all the logs created on the terminal on the flash drive. The free storage on the flash drive is insufficient. Only some of the logs could be saved.
	Ensure that the flash drive has at least 10 MB of free storage.
21	Warning
	/ Exporting of the licence data has failed. Connect a flash drive and repeat the process. /
	You want to update the licence data via flash drive. Saving of the TAN on the flash drive has failed.
	Ensure that,
	 the flash drive is functioning, the write-protection switch of the flash drive is in the "off" position and the flash drive has at least 100 kB of free storage.
36	Warning
	/ The log could not be exported. Connect a flash drive and repeat the process.
	/ You want to save all the logs created on the terminal to a flash drive. The terminal has not recognised the flash drive.
	\rightarrow The terminal has recognised the flash drive is connected if the notification "Flash drive connected" is displayed.
	If you have not connected a flash drive to the terminal:
	 Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ► Use a different flash drive or a different USB port on the terminal.

Error num- ber	Type/Message text/Remedy
7035	Warning
	/ No flash drive connected. /
	You want to export the log. Saving of data on the flash drive has failed. The terminal has not recognised the flash drive.
	\rightarrow The terminal has recognised the flash drive is connected if the notification "Flash drive connected" is displayed.
	If you have not connected a flash drive to the terminal: ► Connect a flash drive.
	If you have already connected a flash drive to the terminal: ▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ► Use a different flash drive or a different USB port on the terminal.
31001	Caution
	/ Disconnect all implements from the terminal before restoring the factory settings. Check all set- tings once the process is completed.
	Safety note. Follow the instructions.
31002	Caution
	/ Do you want to deactivate the app? /
	Confirmation query.
	 To switch the app off, press "OK". To interrupt the process, press "Cancel".
	\rightarrow The app remains switched on.

Error num- ber	Type/Message text/Remedy
31003	Warning
	/ The time zone cannot be set. /
	y You want to change the time zone in the system settings. The change fails.
	 Switch the terminal off and on again. Change the time zone. Use another time zone as a test.
	If the error cannot be cleared:
	► Contact your dealer.
31004	Caution
	/ You are switching the "TECU" ISOBUS function off. The terminal will not send any more speed information over the ISOBUS. /
	, Confirmation query.
	 To switch the TECU ISOBUS function off, press "OK". Press "Cancel" if the terminal is to remain logged on to the ISOBUS as TECU.
31005	Caution /
	You are switching the "Task Controller" ISOBUS function off. It will only be possible to use CCI.Config, CCI.Control and CCI.Command with limited functional- ity.
	/ Confirmation query.
	 To switch off the ISOBUS Task Controller function, press "OK". Press "Cancel" if the terminal is to remain logged on to the ISOBUS as Task Controller.
31006	Caution
	y Do you want to change the Task Controller number?
	/ Confirmation query.
	 To change the Task Controller number, press "OK". If the Task Controller number is to be retained, press "Cancel".
31007	Caution
	/ You are switching the "UT" ISOBUS function off. The terminal can no longer be used to operate an ISOBUS implement. /
	, Confirmation query.
	 To switch ISOBUS UT function off, press "OK". If the terminal is to remain logged on to the ISOBUS as UT, press "Cancel".

Error num- ber	Type/Message text/Remedy
31008	Caution
	/ You are switching the "File Server" ISOBUS function off. The terminal will not provide any storage space for the ISOBUS participants. /
	, Confirmation query.
	 To switch File Server ISOBUS function off, press "OK". If the terminal is to remain logged on to the ISOBUS as File Server, press "Cancel".
31009	Caution
	ν Do you want to delete the database? All tasks, fields, and implement settings are deleted.
	/ Confirmation query.
	 To delete the database, press "OK". All tractors, implements, fields and tasks, master data, totals and location-dependent data will be deleted. Press "Cancel", if the database is to be retained.
32000	Warning /
	/ No bus participants have been found. The terminal must be restarted for safety reasons. Press "OK" to continue. /
	, Confirmation query.
	► Press "OK".
	\rightarrow The terminal restarts.

Error num- ber	Type/Message text/Remedy
32001	Warning
	/ Internal error. Connection to the ISOBUS lost. Restart the terminal.
	An internal error has occurred. The connection to the ISOBUS is automatically interrupted. \rightarrow Operation of the implement is no longer possible.
	The terminal must be restarted.
	 ▶ Press "OK". → The terminal restarts. → The connection to the implement is interrupted for the duration of the restart.
	 Before restarting, screenshots can be created for fault analysis or the log can be exported: 1. Press "Cancel". The terminal is not shut down. The error message is closed. The connection to the ISOBUS remains interrupted. Instead of the ISB, the button "No ISOBUS" is displayed: 2. Take screenshots of the active apps and the settings and export the log. Send this information to your service partner. 3. Press the button "No ISOBUS". The terminal restarts.
32002	Warning / Internal error. Connection to the ISOBUS lost. Restart the terminal. / ⇒ 32001
32003	Warning / The ISOBUS functions of the terminal have been disabled. You require version <no.> of the APA-Supervisor. Repeat the CCI.OS update. / Without the named version of the APA-Supervisor, the ISOBUS functions UT, Task Controller, TECU and File Server cannot be run. Contact your service partner. → The service partner will install the version of APA-Supervisor referred to in the message.</no.>
32003	Warning / Login of user <username> has failed. The entered password is incorrect. / You have entered an invalid password. ▶ Repeat the process.</username>

Error num- ber	Type/Message text/Remedy
33004	Warning
	/ Login of user <username> has failed. The user is unknown.</username>
	/ You have entered an invalid user name. ▶ Request a valid user name from the terminal administrator.
33006	Warning
	/ User <username> is logged in and cannot be deleted.</username>
	/ The logged in user cannot delete themselves. ▶ Log on to the terminal as an administrator and repeat the process.
33009	Warning
	/ User name <username> is invalid. A valid user name is 1-32 characters long. The special characters $V:*?""<>$ are not allowed.</username>
	/ You want to create a new user. The user name must not contain any of the special characters referred to in the message.
33010	Warning
	/ Changes to standard user <username> are not possible.</username>
	/ The user profile cannot be changed.
33012	Warning
	/ User name <username> is already in use. Select another user name.</username>
	/ You want to create a new user. A user with this user name already exists. ▶ Select another user name.
34000	Update
	/ The Rescue System update has failed. Repeat the process.
	/ The update has failed for an unknown reason.
	Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
34001	Warning
	/ The CCI.OS-Update has failed. /
	/ The update has failed for an unknown reason.
	Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.

Error num- ber	Type/Message text/Remedy
34002	Warning
	/ The terminal could not be disconnected from the ISOBUS.
	/ Confirmation query. ▶ Press "OK".
34003	Warning
	/ The backup has failed.
	y You want to create a backup, e.g. before carrying out a CCI.OS update. The backup cannot be created or cannot be saved on the flash drive.
	Ensure that,
	 the flash drive is functioning, the write-protection switch of the flash drive is in the "off" position and that the flash drive has at least 1GB of free storage.
	Repeat the process.
34004	Caution
	/ Do you want to run the CCI.OS-Update? The terminal cannot be used during the update.
	Confirmation query. An update of CCI.OS could take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	 To Start the update, press "OK". Press "Cancel", if the update is not to be performed.
34005	Caution
	/ Do you want to create the backup? The terminal cannot be used while the backup is being created. /
	, Confirmation query. The backup could take several minutes. The terminal and the ISOBUS im- plement cannot be operated for the duration of the backup.
	 To create the backup, press "OK". Press "Cancel", if you do not want to perform the backup.
34006	Caution
	/ Do you want to restart the terminal?
	/ Confirmation query.
	► To restart the terminal, press "OK".
	\rightarrow The connection to the implement is interrupted for the duration of the restart.
	If you want to continue working without restarting, press "Cancel".

Error num- ber	Type/Message text/Remedy
34007	Caution
	/ Do you want to run the CCI.OS-Update? /
	Confirmation query. An update of CCI.OS could take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	 To Start the update, press "OK". Press "Cancel", if the update is not to be performed.
34008	Warning
	/ Not enough free space on the flash drive. Use a flash drive with additional free space of at least <number> bytes. /</number>
	/ You want to save data to the flash drive, e.g. a backup or a log. The free space on the flash drive is insufficient.
	 Connect a flash drive with enough free space to the terminal.
34009	Caution
	/ Do you want to update the Rescue System? The terminal cannot be used during the update. /
	Confirmation query. The update of the Rescue System may take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	 To Start the update, press "OK". Press "Cancel", if the update is not to be performed.
34010	Warning
	/ The Rescue System update has failed. /
	 Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.

Error num- ber	Type/Message text/Remedy
34011	Warning
	/ The update of the "APA-Supervisor" module has failed. Repeat the CCI.OS update or perform the update of the APA-Supervisor in the Rescue System. /
	 Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the APA-Supervisor fails again, the APA-Supervisor must be updated separately.
	 Contact your service partner.
	\rightarrow The service partner has a special installation file. \rightarrow The service partner performs the update in the terminal's Rescue System.
	The Rescue System is not described in these operating instructions.
34012	Warning
	γ The update of the "System-Supervisor" module has failed. Repeat the CCI.OS update or perform the update of the System-Supervisor in the Rescue Sys- tem.
	 Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the System-Supervisor fails again, the System-Supervisor must be updated separately.
	Contact your service partner.
	\rightarrow The service partner has a special installation file. \rightarrow The service partner performs the update in the terminal's Rescue System.
	The Rescue System is not described in these operating instructions. ▶ Contact your dealer.
34013	Warning /
	, The update of the "Bootloader" module has failed. Repeat the CCI.OS update or perform the update of the Bootloader in the Rescue System. /
	Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the U-Boot fails again, the U-Boot must be updated separately.
	\rightarrow You need a special installation file. \rightarrow The update must be performed in the Rescue System of the terminal.
	The Rescue System is not described in these operating instructions. ▶ Contact your dealer.

Error num- ber	Type/Message text/Remedy
34014	Warning
	/ The backup could not be restored.
	 Press ON/OFF button for 12 seconds. Press the ON/OFF button and start the Rescue System Restore another backup or reset the terminal to its delivery state.
	/ You want to restore a backup, e.g. to install the previous version of CCI.OS after a failed up- date. Restoration of the backup has failed. Start the Rescue System and repeat the process. If necessary, use another backup:
	1. Press ON/OFF button for 12 seconds.
	 2. Release the ON/OFF button and then press it briefly. The Bessue System of the terminal starts.
	→ The Rescue System of the terminal starts.3. Press the "Restore backup" button.
	If restoring of the backup fails again, you can reset the terminal to its delivery state. ► In the Rescue System press the button "Restore delivery state".
34015	Warning
	/ The terminal cannot be reset to the delivery state.
	 Press ON/OFF button for 12 seconds. Press the ON/OFF button and start the Rescue System. Restore a different backup.
	/ You want to reset the terminal to its delivery state, before you transfer the device to another user. The delivery state cannot be restored. Start the Rescue System and repeat the process. If necessary, use another backup:
	1. Press ON/OFF button for 12 seconds.
	\rightarrow The terminal beeps softly several times.
	2. Release the ON/OFF button and then press it briefly.
	→ The Rescue System of the terminal starts.
	If the delivery state cannot be restored:
	 Contact your dealer.

Error num- ber	Type/Message text/Remedy
34017	Caution
	/ Do you want to download the CCI.OS-Update? /
	Confirmation query. The size of the update file is several MBs. Downloading it over a mobile phone network will incur a data charge.
	 To start the download, press "OK". Press "Cancel", if you do not want to download the update.
34018	Update
	/ The CCI.OS-Update could not be downloaded.
	The download update has failed. Either the Internet connection is unstable or the update server has malfunctioned.
34019	Caution
	/ Do you want to cancel the process? /
	, Confirmation query. You want to cancel an active process.
	 To interrupt the process, press "OK". To continue the process, press "Cancel".
34986	Update
	/ The CCI.OS-Update has been downloaded. Now perform the update. /
	Confirmation query. A CCI.OS update has been downloaded from the Internet for your terminal. The update is now available on the terminal and can be installed. The update may take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	► To perform the CCI.OS update, press "OK".
	\rightarrow The terminal restarts several times. Do not interrupt the update process.
	If you want to perform the CCI.OS update at a later time, press "Cancel".

Error num- ber	Type/Message text/Remedy
34986	 Update Update CCI.OS update available. > Download the new version: Size <file size=""></file> / If the terminal is connected to the Internet, an automatic check is performed as to whether a new version of CCI.OS is available for your terminal. → This message is displayed if a new version is available. To start the download, press "OK". → The size of the update file is several MBs. Downloading it over a mobile phone network will incur a data charge. To interrupt the process, press "Cancel".
34987	 Update Update CCI.OS updates available. Select an update. If the terminal is connected to the Internet, an automatic check is performed as to whether a new version of CCI.OS is available for your terminal. → This message appears if several new versions are available. To select an update, press "OK". The selection list "CCI.OS Updates" is displayed. Select an update and press the "Download" button. → The update is downloaded. → The size of the update file is several MBs. Downloading it over a mobile phone network will incur a data charge.
34989	 Update // The CCI.OS-Update has been downloaded. Now perform the update. / Confirmation query. A CCI.OS update has been downloaded from the Internet for your terminal. The update is now available on the terminal and can be installed. The update may take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update. To perform the CCI.OS update, press "OK". → The terminal restarts several times. Do not interrupt the update process. If you want to perform the CCI.OS update at a later time, press "Cancel".
34990	Caution / The Rescue System update has been carried out. / The operation has been successfully completed Confirm the message with "OK".

Error num- ber	Type/Message text/Remedy
34991	Update
	/ The CCI.OS-Update has been performed.
	/ The operation has been successfully completed ▶ Confirm the message with "OK".
34992	Caution
	/ You have reset the terminal to the delivery state. /
	/ The operation has been successfully completed. ▶ Confirm the message with "OK".
34993	Caution
	/ The backup has been restored.
	/ The operation has been successfully completed. ▶ Confirm the message with "OK".
35000	Caution
	/ The connected flash drive cannot be read. Use a different flash drive.
	 ✓ The flash drive cannot be read by the terminal. ▶ Use a different flash drive.

Error num- ber	Type/Message text/Remedy
36000	Warning /
	/ The logs could not be exported. Connect a flash drive and repeat the process. /
	/ You want to save all the logs created on the terminal to a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	\rightarrow The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal: ▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	Use a different flash drive or a different USB port on the terminal.
36001	Warning /
	The log level could not be set.
	/ The log level should only be set by the developer or Service.
37004	Caution
	/ Connection to WiFi failed.
	The password entered is invalid.
	/ You have entered an incorrect WiFi password.
	1. In the "WiFi networks" selection list, press and hold the button with the WiFi network.
	\rightarrow A context menu is displayed.
	2. Select "Edit".
	ightarrow The window for password entry is displayed.
	3. Correct password and confirm entry.

Error num- ber	Type/Message text/Remedy
39000	Warning
	/ Only %2% of internal storage left. Export all logs to a flash drive to clear storage space.
	You have created so many logs, that the terminal's internal storage is nearly full. Free up some internal storage so that the terminal does not become unstable during operation. ► Export all logs to a flash drive (⇒ Chapter 11.2.3).
39001	Warning
	/ Only <number>% or <number> MB of internal storage left.</number></number>
	/ The terminal's internal storage is nearly full. Free up some internal storage so that the terminal does not become unstable during operation.
	 Export all logs to a flash drive (⇒ Chapter 11.2.3). Export all completed tasks (⇒ Chapter 8.3.2).
39992	Warning
	/ The event log could not be created.
	/ Internal error. The cause is unknown. ▶ Repeat the process.
40003	Caution
	/ Do you want to delete the licence data? Confirm the message and restart the terminal.
	y This message is only displayed in developer mode.
	Confirmation query. You want to delete the terminal licence and licence key of the apps:
	→ The terminal can only be used for implement operation. → CCI.Command, CCI.Control, CCI.Assist and Auto Guidance can no longer be used.
	 To delete the licence data, press "OK". To retain the Licence data, press "Cancel".

Error num- ber	Type/Message text/Remedy
40005	Warning
	/ The licence data could not be deleted.
	/ You want to delete the licence data saved on the terminal. The process has failed for an un- known reason.
	Repeat the process.
40006	Warning
	/ No licence data are present.
	y This message is only displayed in developer mode. The licence data should be deleted. However no licence data is present on the terminal.
40007	Warning
	/ No Internet connection. Update the licence data using the flash drive.
	/ You want to update the licence data over the Internet. This is the fastest and easiest update method. However, the terminal is not connected to the Internet.
	 Connect the terminal to the Internet (⇒ Chapter 4.3.4). Update the licence data.
40008	Warning
	/ Updating of the licence data failed. Update the licence data using the flash drive.
	/ You want to update the licence data over the Internet. This is the fastest and easiest update method. The terminal is connected to the Internet, however the licence server signals an error.
	• Update the licence data using the flash drive (\Rightarrow Chapter 4.3.3).
41000	Warning
	/ Server error. Try again later.
	/ You want to connect the terminal to agrirouter. The terminal is connected to the Internet, but agrirouter cannot be reached.
	Repeat the process in a few minutes' time.

Error num- ber	Type/Message text/Remedy
41002	Warning
	/ Registration at agrirouter has failed. /
	You have entered the registration code in the agrirouter settings. This is received under the URL www.myagrirouter.com. The terminal is connected to the Internet. Registration with the agrirouter has failed.
	 Read out the registration code for your account under www.myagrirouter.com. De optor the registration code at the terminal
	Re-enter the registration code at the terminal.
41008	Warning
	/ Login failed. The entered ID is invalid.
	/ The Application ID and the Certification ID are preset in the agrirouter settings. The presetting has been changed by you or is invalid for another reason.
	 Contact your dealer for the correct IDs and enter them in the terminal (⇒ Chapter 4.3.5). Switch agrirouter on.
	ightarrow The terminal logs in to the agrirouter using the new IDs.
41009	Warning
	/ Login failed. The entered internet address is invalid.
	/ The Internet address of the registration service is preset in the agrirouter settings. The preset- ting has been changed by you or is invalid for another reason.
	Contact your dealer for the correct address of the registration service and enter it in the terminal (⇒ Chapter 4.3.5).
	► Switch agrirouter on. → The terminal logs in to the agrirouter using the new address.
41011	Warning
	The registration code has expired. Go go my-agrirouter.com to create a new code and enter it in the terminal.
	/ Your agrirouter registration code is no longer valid.
	 Go to www.my-agrirouter.com to create a new registration code for your account. Enter the new registration code at the terminal.

Error num- ber	Type/Message text/Remedy
50000	Caution /
	Implement could not be loaded.
	/ The Object Pool of the implement cannot be displayed clearly by the terminal. Operation of the implement is thus not possible.
	 Disconnect the implement form the ISOBUS and wait 5 seconds. Reconnect the implement to the ISOBUS.
	If the error cannot be cleared, there is probably a fundamental problem with the implement:
50001	Caution /
	The connection to the implement is lost.
	/ The terminal no longer has a connection to the implement.
	You have disconnected the implement from the ISOBUS or
	 a connection problem has occurred on the ISOBUS.
	1. Disconnect the implement form the ISOBUS and wait 5 seconds.
	2. Reconnect the implement to the ISOBUS.
50002	Warning
	/ The automatic AUX assignment has failed. Perform the AUX assignment manually.
	/ The AUX assignment must only be performed once. The AUX assignment is available again after a restart of the implement and the AUX control and is performed automatically. The automatic AUX assignment has failed.
	• Carry out the AUX assignment manually (\Rightarrow Chapter 7.4.1).
50003	Warning /
	The AUX assignment has failed. Repeat the process.
	, If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	 Contact the implement manufacturer or its service partner.

Error num- ber	Type/Message text/Remedy
50004	Caution
	/ No connection to implement <name>. The implement cannot be operated using the AUX operating unit.</name>
	 The terminal no longer has a connection to the implement. You have disconnected the implement from the ISOBUS or a connection problem has occurred on the ISOBUS.
	 Disconnect the implement form the ISOBUS and wait 5 seconds. Reconnect the implement to the ISOBUS.
50005	Warning
	/ No connection to AUX. The implement cannot be operated using the AUX operating unit. /
	 The terminal no longer has a connection to the AUX control. You have disconnected the AUX control from the ISOBUS or a connection problem has occurred on the ISOBUS.
	 Disconnect the AUX control form the ISOBUS and wait 5 seconds. Reconnect the AUX control to the ISOBUS.
50006	Warning
	/ The AUX assignment has failed. The AUX operating unit is signalling an error.
	Repeat the process.
	If the error cannot be cleared, there is probably a fundamental problem with the AUX control: Contact your dealer.
50007	Warning
	/ The AUX assignment has failed. The implement is not responding. /
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds. 2. Reconnect the implement and AUX control to the ISOBUS. 3. Repeat the AUX assignment (\Rightarrow Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	 Contact the implement manufacturer or its service partner.

Error num- ber	Type/Message text/Remedy
50008	Warning /
	/ The AUX assignment has failed. The implement is signalling an error. /
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds. 2. Reconnect the implement and AUX control to the ISOBUS. 3. Repeat the AUX assignment (\Rightarrow Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	 Contact the implement manufacturer or its service partner.
50009	Warning
	/ The AUX assignment has failed. The AUX operating unit is not responding. /
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds. 2. Reconnect the implement and AUX control to the ISOBUS. 3. Repeat the AUX assignment (\Rightarrow Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	Contact the implement manufacturer or its service partner.
50010	Warning /
	/ The selected UT number is already being used. > Select another UT number. /
	The UT is the ISOBUS function for operating ISOBUS implements. Generally each ISOBUS termi- nal has a UT. Each UT on the ISOBUS must receive a unique UT number. Therefore if you oper- ate multiple ISOBUS terminals and thus UTs on the ISOBUS, then you must assign each UT a unique number.
	I The UT with which you want to operate the AUX control, must receive the UT number 1. The error message appears if two UTs have the same UT number. Change the UT number of the UT on the CCI 800/CCI 1200 or on the other ISOBUS terminal.

Error num- ber	Type/Message text/Remedy
50012	Caution
	/ The implements could not be exported. Check that a flash drive is connected.
	/ You want to save one or more implements to a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	\rightarrow The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	 Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ► Use a different flash drive or a different USB port on the terminal.
50995	Caution
	/ Do you want to change the UT number? The connection to the implement will be interrupted and CCI.UT restarted.
	/ Confirmation query. You have changed the UT number, e.g. to ensure that all UTs connected to the ISOBUS have different UT numbers.
	► To accept the changes, press "OK".
	\rightarrow The connection to the implement will be interrupted and CCI.UT restarted. \rightarrow No implement operation will be possible for the duration of the process
	 To retain the UT number, press "Cancel".
50996	Warning /
	/ This UT number is assigned to another CCI.UT. Select another UT number. /
	You have changed the UT number of CCI.UT A (or B), e.g. to ensure that all UTs connected to the ISOBUS have different UT numbers. However, the number you want to assign to CCI.UT A (or B) is already assigned to CCI.UT B (or CCI.UT A).
	Set another UT number.
50997	Caution
	The terminal must be restarted to apply the changes.
	y Confirmation query. Some changes only become effective once the terminal has been restarted.
	► To restart the terminal, press "OK".
	\rightarrow No implement operation will be possible for the duration of the process.

Error num- ber	Type/Message text/Remedy
51001	Warning
	/ No flash drive connected. /
	/ The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	\rightarrow The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal: ► Connect a flash drive.
	If you have already connected a flash drive to the terminal: ▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ▶ Use a different flash drive or a different USB port on the terminal.
51003	Warning
	/ The tasks could not be imported.
	/ The error can have the following causes:
	You removed the flash drive before the action was completed.The free space on the terminal is insufficient.
	Repeat the process and leave the flash drive plugged in until the process has completed.
51005	Warning
	/ The tasks could not be exported.
	/ You want to save tasks to a flash drive. The tasks cannot be saved on the flash drive.
	Ensure that,
	 the flash drive is functioning, the write-protection switch of the flash drive is in the "off" position and that the flash drive has at least 20MB of free storage.
	Repeat the process.
	The flash drive must remain connected to the terminal until the process has completed: \rightarrow The notification 51004 "Tasks exported" is displayed.

Error num- ber	Type/Message text/Remedy
51007	Warning
	/ The Shape file could not be imported.
	 ✓ ✓ Did you remove the flash drive before the action was completed? ▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51009	Warning
	/ The Shape file could not be exported.
	/ Did you remove the flash drive before the action was completed? ▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51011	Warning
	/ The report could not be exported.
	 / Did you remove the flash drive before the action was completed? > Repeat the process and leave the flash drive plugged in until the process has completed.
51013	Warning
	/ The tasks could not be exported.
	/ Did you remove the flash drive before the action was completed? ▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51014	Warning
	/ The task could not be deleted.
	/ The task must (and can) not be deleted.
	 ▶ Press "OK". → The task will not be deleted.
51015	Warning
	/ The driver could not be deleted.
	/ The driver must (and can) not be deleted. ▶ Press "OK".
	\rightarrow The driver will not be deleted.

Error num- ber	Type/Message text/Remedy
51016	Warning
	/ The agricultural practice could not be deleted.
	 The agricultural practice must (and can) not be deleted. ▶ Press "OK". → The agricultural practice will not be deleted.
51017	Warning /
	, The technique could not be deleted. /
	, The technique must (and can) not be deleted. ▶ Press "OK".
	\rightarrow The technique will not be deleted.
51018	Warning
	/ The customer could not be deleted.
	/ The customer must (and can) not be deleted.
	 ▶ Press "OK". → The customer will not be deleted.
51019	Warning
	/ The farm could not be deleted. /
	/ The farm must (and can) not be deleted.
	 ▶ Press "OK". → The farm will not be deleted.
51020	Warning
	/ The field could not be deleted.
	/ The field must (and can) not be deleted.
	 ▶ Press "OK". → The field will not be deleted.
51021	Warning
	/ The product could not be deleted.
	/ The product must (and can) not be deleted.
	 ▶ Press "OK". → The product will not be deleted.

Error num- ber	Type/Message text/Remedy
51022	Warning
	/ The Task Controller function of the implement is defective. Rate Control and Section Control cannot be performed.
	The implement Task Controller has an error. \rightarrow Rate Control and Section Control cannot be performed.
	Contact your dealer.
51025	Warning
	agrirouter could not send the tasks.
	You have exported tasks, reports or other data to agrirouter. The data could not be sent to agrirouter from the terminal. The data is saved in the outbox of the agrirouter. \rightarrow Data in the outbox must be sent manually.
	1. Connect the terminal to the Internet. 2. Manually send the data in the outbox (\Rightarrow Chapter 4.3.5).
51028	Warning
	The task could not be started. An application map in the task is not assigned to any implement.
	/ The task contains several application maps. However, one of the application maps is not as- signed to any implement.
	 Open task view and press on the "Application maps" button. Assign an implement or boom to each task application map.
51031	Warning
	/ No field was found at the current position. Create the field. /
	Field Finder could not find a field for the current position in the entire task data. ▶ Create a new field and assign it to the task.
51032	Warning
	/ Field %1 has already been selected.
	/ You have triggered the "Field Finder" function, although the field corresponding to the current position has already been selected.
	Acknowledge the error message with "OK" and continue processing.

Error num- ber	Type/Message text/Remedy
52001	Caution /
	Do you want to delete the field boundary?
	Confirmation query.
	To delete the field boundary, confirm the query with "OK". To cancel the deletion, confirm the query with "Cancel"
	\rightarrow The field boundary will not be deleted.
52002	Caution
	/ Do you want to delete the headland?
	/ To delete the headland, confirm the query with "OK".
	To cancel the deletion, confirm the query with "Cancel".
	\rightarrow The headland will not be deleted.
52003	Warning /
	First calculate or record the field boundary. Then create the new headland.
	, Confirmation query.
	Confirm the query with "OK".
	The surround headland can only be calculated, if a field boundary is present.
	1. Record the field boundary or calculate the field boundary (\Rightarrow Chapter 9.3). 2. Create the headland (\Rightarrow Chapter 9.4.2).
52004	Caution
	/ Do you want to delete the worked area? /
	Confirmation query.
	► To delete the worked area, confirm the query with "OK".
	→ The worked area will not be deleted.

Error num- ber	Type/Message text/Remedy
52007	Caution
	The field could not be exported. Check that a flash drive is connected.
	 / You want to export a field saved on the terminal. The field cannot be saved on the flash drive. No flash drive is connected or the terminal did not recognise the flash drive. → The terminal has recognised the flash drive if the notification "Flash drive is connected" is dis-
	played.
	If you have not connected a flash drive to the terminal: ► Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: Use a different flash drive or a different USB port on the terminal.
52008	Caution
	/ The field could not be imported.
	The error can have the following causes:
	 You removed the flash drive before the action was completed. The free space on the terminal is insufficient.
	Repeat the process and leave the flash drive plugged in until the process has completed.
52009	Caution
	/ The field could not be loaded.
	/ Unknown cause.
	► Import the field again.
52010	Warning
	Automatic mode Section Control has been deactivated. The GPS accuracy is insufficient.
	/ Section Control requires a GPS signal of accuracy class DGPS or better if it is to perform loca- tion-based section switching. Atmospheric interference and shadowing can result in failures of the DGPS.
	1. Check the symbol in the status bar (\Rightarrow Chapter 3.3).
	 → Three green dots must be displayed for Section Control. → Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float".
	 Wait until the signal is available with the required accuracy. Switch automatic mode on.

Error num- ber	Type/Message text/Remedy
52011	Warning
	Automatic mode Section Control could not be activated. The GPS accuracy is insufficient.
	/ $⇒$ Warning 52010
	 Wait until the GPS signal is available with the required accuracy. Repeat the process.
52012	Warning
	/ Stop the vehicle to change the calibration or reference point.
	/ The reference point can only be set if the vehicle is at a complete standstill.
52013	Caution
	/ Do you want to change the calibration?
	/ Confirmation query. You want to change the calibration of the reference point.
	To change the calibration, confirm the query with "OK".
	→ The position of the tractor is saved as a reference point. The existing reference point is overwritten.
	To retain the existing reference point, confirm the query with "Cancel".
52014	Caution
	The existing reference point will be replaced by the new reference point.
	/ Confirmation query. You want to add a reference point, although a reference point already ex- ists
	 To change the calibration, confirm the query with "OK".
	ightarrow The existing reference point is overwritten.
	► To retain the existing reference point, confirm the query with "Cancel".
52015	Warning
	/ There is no flash drive plugged in. /
	/ The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is dis- played.
	If you have not connected a flash drive to the terminal:
	Connect a flash drive.
	 If you have already connected a flash drive to the terminal: Pull out the flash drive and plug it back in
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	Use a different flash drive or a different USB port on the terminal.
Error num- ber	Type/Message text/Remedy
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52016	Caution
	/ Section Control is more accurate with DGPS than with GPS. Do you want to allow GPS for Section Control? /
	, Confirmation query. You have set GPS as the Minimum GPS signal quality in the Section Control Settings.
	 To set the GPS accuracy to GPS, confirm the query with "OK". To retain the set GPS accuracy, confirm the query with "Cancel".
	Note: Only change the pre-setting for "Minimum GPS accuracy" if DGPS is not available.
52017	Caution
	/ The worked area is too large. Long loading times or section control errors may occur. Do you want to delete the worked area? /
	/ The message is most frequently displayed if you have worked for too long with the Autolog task, without deleting the worked area. So much data is saved in the task, that further working takes place in a delayed manner.
	• Delete the worked area (\Rightarrow Chapter 9.7.1).
52018	Caution /
	, Recording could not be started. The GPS accuracy is insufficient. /
	 Confirm the query with "OK".
	The GPS accuracy is insufficient for recording of location-based data. You may possibly be in an area with a high degree of shading.
	1. Check the symbol in the status bar (\Rightarrow Chapter 3.3).
	 → Three green dots must be displayed for Section Control. → Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float".
	 Wait until the signal is available with the required accuracy. Start the recording.
52019	Caution
	/ Section Control not possible. The implement cannot have more than four booms. Reconfigure the implement. /
	 Section Control only supports implements with up to four booms. Change the implement configuration.

11 Troubleshooting

Error num- ber	n- Type/Message text/Remedy	
52020	Warning	
	/ Auto Guidance has been deactivated. Error 2: GPS accuracy is insufficient. /	
	The position data is missing or erroneous. The automatic steering system requires a GPS signal with DGPS accuracy or better. Atmospheric interference and shadowing can result in failures of the DGPS.	
	\rightarrow Automatic steering is switched off. \rightarrow You must steer the vehicle.	
	 Check the symbol in the status bar (⇒ Chapter 3.3). → Three green dots must be displayed for automatic steering. → Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float". Wait until the signal is available with the required accuracy. 	
	3. Switch automatic steering on.	
52021	Warning /	
	/ Auto Guidance has been deactivated. Error 3: No or erroneous GPS data. /	
	The GPS data does not contain or contains erroneous direction information. \rightarrow Automatic steering has been deactivated. \rightarrow You must steer the vehicle.	
	Wait for a short time and then turn the automatic steering back on.	
52022	Warning	
	/ Auto Guidance has been deactivated. Error 5: Vehicle stationary for too long. /	
	The vehicle has been stationary for too long. \rightarrow Automatic steering is switched off.	
	Switch automatic steering on after start-up.	
52023	Warning	
	/ Auto Guidance has been deactivated. Error 7: Maximum permitted speed exceeded.	
	/ The vehicle is travelling too quickly. → Automatic steering is switched off.	
	 Reduce the speed. Switch automatic steering on. 	

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Error num- ber	Type/Message text/Remedy
52024	Warning
	/ Auto Guidance has been deactivated. Error 9: Inconsistent GPS position data.
	/ The position data or the guidance track differ by more than 0.8m from the location of the vehi- cle. Automatic steering cannot correct this deviation. → Automatic steering is switched off.
	 Steer the vehicle in the direction of the guidance track. Switch automatic steering on.
52025	Warning
	/ Auto Guidance has been deactivated. Error 10: The driven curve is too tight. /
	The automatic steering cannot follow the curvature of the guidance track, e.g. in the event of a turn whose radius is too small. \rightarrow Automatic steering is switched off.
	 Steer the vehicle until the guide track is a straight line. Switch automatic steering on.
52026	Warning /
	Auto Guidance has been deactivated. Error 12: The vehicle cannot follow the specified lane.
	/ Automatic steering cannot follow this guidance track. → Automatic steering is switched off.
	 Steer the vehicle in the direction of the guidance track. Switch automatic steering on.
52027	Warning /
	/ Auto Guidance has been deactivated. Error 21: Too far from track.
	/ The vehicle is more than half an implement's width from the track. → Automatic steering is switched off.
	 Steer the vehicle in the direction of the guidance track. Switch automatic steering on.
52028	Warning /
	/ Auto Guidance has been deactivated. Error 32: Too far from track.
	The vehicle is more than half an implement's width from the track. \rightarrow Automatic steering is switched off.
	 Steer the vehicle in the direction of the guidance track. Switch automatic steering on.

Г

11 Troubleshooting

Error num- ber	Type/Message text/Remedy	
52029	Warning / Auto Guidance has been deactivated.	
	Error 82: No driver in the driver's seat. / Automatic steering without control by the driver is not permitted. → Automatic steering is switched off.	
	 Sit in the driver's seat. Steer the vehicle in the direction of the guidance track. Switch automatic steering on. 	
52030	Warning	
	Auto Guidance has been deactivated. Error 85: Four-wheel steering mode is not available.	
	/ Four-wheel steering mode is not available on your vehicle. → Automatic steering cannot be used.	
52031	Warning /	
	Auto Guidance has been deactivated. Error 86: Maximum permitted speed in four-wheel steering mode is 20 km/h.	
	/ The vehicle is travelling too quickly for the selected steering mode. ightarrow Automatic steering cannot be used.	
	 Reduce your speed to less than 20 km/h. Switch automatic steering on. 	
52032	Warning /	
	Auto Guidance has been deactivated. Error 87: Minimum permitted speed in four-wheel steering mode is 5 km/h.	
	/ The vehicle is travelling too slowly for the selected steering mode. ightarrow Automatic steering is switched off.	
	 Increase your speed to more than 5 km/h. Switch automatic steering on. 	
52033	Warning /	
	Auto Guidance has been deactivated. Error 88: Steering mode cannot be changed when Auto Guidance is activated.	
	/ Generally, vehicles with four-wheel steering can be switched to front or rear wheel steering. Nevertheless, the steering mode must not be changed while automatic steering is activated. → Automatic steering cannot be used.	
	 Switch automatic steering off. Change to the desired steering mode. Switch automatic steering on. 	

Error num- ber	Type/Message text/Remedy
52034	Warning
	/ Auto Guidance has been deactivated. Error 89: Four-wheel steering mode is not available.
	/ Four-wheel steering mode is not available on your vehicle. \rightarrow Automatic steering cannot be used.
52035	Warning
	Automatic mode Section Control is deactivating. Too few NMEA records per time unit.
	/ Section Control has minimum GPS accuracy requirements for performing location-based section switching (\Rightarrow Appendix E). The connected GPS receiver does not comply with this or is set incor- rectly.
	Adjust the GPS receiver as described in Appendix E.
52036	Warning
	/ Automatic mode Section Control cannot be activated. Too few NMEA records per time unit.
	/ ⇒Warning 52035
52037	Warning
	Automatic mode Section Control is deactivating. Distance C of the tractor is not set.
	/ Distance C must be entered in the tractor settings for the mounting type of the currently con- nected implement in order that location-based section switching can be performed.
	Set up distance C (\Rightarrow Chapter 6.4.2).
52038	Warning
	/ Automatic mode Section Control cannot be activated. Distance C of the tractor is not set.
	/ ⇒ Warning 52037
52041	Caution
	/ Do you want to delete the implement?
	/ Confirmation query.
	To delete the implement, confirm the query with "OK".
	\rightarrow The implement and implement settings are deleted from the terminal. \rightarrow If you want to use the implement again, the implement must be set again.
	To retain the implement, confirm the query with "Cancel".

11 Troubleshooting

Error num- ber	n- Type/Message text/Remedy	
54002	Caution	
	/ Do you want to delete the tractor? /	
	/ If you confirm the message with "OK", the tractor and tractor settings are deleted from the ter- minal. The settings must be re-entered. Confirmation query.	
	To delete the tractor, confirm the query with "OK".	
	\rightarrow The tractor and tractor settings are deleted from the terminal. \rightarrow If you want to use the tractor again, the tractor must be set again.	
	► To retain the tractor, confirm the query with "Cancel".	
54003	Warning	
	The entered value $\langle x \rangle$ is not in the permissible range from 0 $\langle x1 \rangle$.	
	/ The entered value is outside the permitted range.	
	Enter a valid value.	
54004	Warning	
	The entered value <x>is not in the permissible range from <x1> <x2>.</x2></x1></x>	
	The entered value is outside the permitted range.	
	Enter a valid value.	
54005	Warning /	
	The entered value <x>is not in the permissible range from <x1> <x2>.</x2></x1></x>	
	The entered value is outside the permitted range.	
	Enter a valid value.	
54006	Caution	
	/ TECU will be restarted to activate Power Management. /	
	, To switch on Power Management, TECU must be restarted.	
	ightarrow The connection of the TECU to ISOBUS is interrupted for the duration of the app restart.	

Error num- ber	Type/Message text/Remedy
54007	Caution
	/ TECU will be restarted to deactivate Power Management.
	/ To switch off Power Management, TECU must be restarted. \rightarrow The connection of the TECU to ISOBUS is interrupted for the duration of the app restart.
54012	Warning
	/ There is no flash drive plugged in. /
	The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive. → The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal: ► Connect a flash drive.
	If you have already connected a flash drive to the terminal: ▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ► Use a different flash drive or a different USB port on the terminal.
54013	Warning
	/ Importing of the GPS track has failed.
	/ The free space on the terminal is insufficient. \rightarrow The GPS track cannot be copied to internal memory.
54014	Warning
	/ Exporting of the GPS track has failed. Check that a flash drive is connected.
	/ You want to export the GPS track saved on the terminal. The GPS track cannot be saved on the flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	\rightarrow The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection: ► Use a different flash drive or a different USB port on the terminal.

11 Troubleshooting

Error num- ber	Type/Message text/Remedy	
54018	Warning /	
	No GPS track has been recorded yet.	
	You have pressed the "Export" button in the "GPS simulation" operating screen. However, no GPS track is yet available on the terminal that could be exported.	
	▶ Record a GPS track using "Record GPS track NMEA 0183" (\Rightarrow Chapter 6.10.10).	
54019	Warning	
	/ The GPS receiver was not recognised. Check the GPS settings. /	
	The GPS receiver set in the terminal is not the connected GPS receiver:	
	Select the correct GPS receiver.	
	The set GPS receiver and the connected GPS receiver are identical. Presumably then the settings in the terminal and GPS receiver are incompatible.	
	Check the settings of the GPS receiver and adjust the terminal settings.	
54020	Warning /	
	The GPS receiver has not saved the changes.	
	 Ensure that the correct GPS receiver is selected. Repeat entry of the settings. 	
	 Proceed as described in the error message. 	
54021	Caution	
	/ The GPS connection will be lost when adjusting the GPS receiver.	
	To reset the GPS receiver, the connection to the receiver must be briefly interrupted. \rightarrow The terminal will not receive any position data for the duration of the interruption.	
54022	Warning	
	/ Invalid entry. Select 2 PRNs or switch to AUTO mode. /	
	 In the "SPAS" operating screen, select at least two PRNs or switch on AUTO mode. 	

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Error num- ber	· Type/Message text/Remedy	
54024	Warning	
	/ The tractors and implements could not be exported. Connect a flash drive with enough free space and repeat the process. /	
	/ You want to export the implement and tractor settings. The settings cannot be saved on the flash drive.	
	Ensure that,	
	 the flash drive is functioning, the write-protection switch of the flash drive is in the "off" position and that the flash drive has at least 20MB of free storage. 	
54026	Warning /	
	Tractors and implements could not be imported.	
	/ The error can have the following causes:	
	 The free space on the terminal is insufficient. File DEVICEDATA.XML on the flash drive has an incorrect format. 	
54027	Caution	
	Only one GPS track can be stored. The current GPS track will be overwritten.	
	Confirmation query. You want to record a GPS track. Recording overwrites the GPS track already saved on the terminal.	
	To Start the recording, confirm the query with "OK".	
54028	Caution	
	/ Only one GPS track can be stored. The current GPS track will be overwritten.	
	/ Confirmation query. You are importing a GPS track from the flash drive. The import will over- write the GPS track already saved on the terminal.	
	To save the new GPS track on the terminal, confirm the query with "OK".	
56000	Caution	
	The terminal is not connected with the ISOBUS. Control of the camera by the implement is not possible.	
	/ Some ISOBUS implements can use/control the camera connected at the terminal. Both terminal and implement must be connected with the ISOBUS.	
	 Restart the terminal. Disconnect the implement form the ISOBUS and wait 5 seconds. Reconnect the implement to the ISOBUS. 	

11 Troubleshooting

Error num- ber	Type/Message text/Remedy	
60000	Warning	
	/ There is no Updater app on the flash drive. The ECU update cannot be performed.	
	 You require the manufacturer's specific updater app. This app is not available on the flash drive. ▶ Connect a flash drive containing the updater app to the terminal. 	
60001	Warning	
	/ The update application could not be loaded. Reconnect the flash drive and try again.	
	/ The manufacturer's updater app has found the update for the ECU. However, the update cannot be loaded.	
	The error can have the following causes:	
	The connection to the flash drive has been lost.	
	Pull out the flash drive and plug it back in.	
60002	Warning	
	/ The update application could not be loaded. Reconnect the flash drive and try again.	
	/ The manufacturer's updater app has found the update for the ECU. However, the update cannot be loaded.	
	The error can have the following causes:	
	The connection to the flash drive has been lost.	
	Pull out the flash drive and plug it back in.	

Error num- ber	Type/Message text/Remedy
	Warning
	/ Do you really want to delete all tasks? Fields and products will not be deleted. /
	The process data will be deleted: Tasks, application maps, worked areas, counters The master data will not be deleted - fields, farms, customers, products, drivers
	Confirmation query.
	 To delete the tasks, press "OK". → All tasks, application maps, worked areas and counters are deleted. → Fields, products, farms, customers and drivers are not deleted. Press "Cancel", if the tasks are to be retained.
	Warning The Shape file could not be imported. The values are too large.
	One or more points in the Shape file are greater than the maximum permitted value.
	Warning The headland cannot be created. Change the selection and try again.
	The user' selection leads to an error in calculating the headland. The user must change the se- lection and command recalculation of the headland.
	Warning No field could be found.
	The "Field Finder" function, manually triggered by the driver, cannot find a field in the current location of the tractor. Drive to another location or check the GPS signal.

Agricultural practice	Crop cultivation measure
	The action performed on a field such as tillage or fertilising.
agrirouter	A data exchange platform for farmers and contractors, with which implements and agricultural software can be connected independent of the software developer.
	agrirouter transports data but does not store it.
Application map	Section-specific setpoint map on which the quantity of product to be applied for each section in a field is specified, e.g. in the case of fertilising.
	The terminal processes it according to the position on the field during work.
	Usually during the planning of application maps, in addition to the yield maps, lots of other information is entered such as weather information, results of the variety tests as well as the results of the location analysis such as soil tests, soil maps or aerial views.
Auto Guidance	Software for setting up the automatic steering system.
	Auto Guidance can be used on self-propelled implements equipped with the ECU-S1 steering computer.
AUX control	Also: AUX-Control.
	Typical AUX controls are joysticks or toggle switch strips.
	An AUX control enables the comfortable and efficient operation of frequently used implement functions.
AUX Control	AUX control, see also AUX control
Baud rate	Unit with which the speed of data transfer over the serial interface is measured.
Burger menu	Navigation element of the graphical user interface.
	You can access all functions and settings not directly available on the screen via the burger menu.
Button	Operating element in the operating screen that is activated by pressing the touchscreen.
CAN	Controller Area Network
ССІ	Competence Center ISOBUS e.V.
COG	Course over ground
Coupling	Female connector on the end of a cable.
Coupling point	The point on the implement to which the tractor is coupled.
Crop type	Types or species of a crop such as corn or barley
Crop variety	Special sort or breed of a crop type.
Customer	The owner or tenant of the operation on which the task is executed.

Delay time	The delay time specifies the time delay between the command and the actual activation of a section (e.g. during spraying, the time from the command: "Switch on section", until when the agent is actually applied).
ECU	Electronic Control Unit Control unit, task computer
EHR	Electronic Lift Control
FMIS	Farm Management Information System Also: FMIS Software for yield data processing and the creation of application maps.
GPS	Global Positioning System Satellite-based system for position determination.
GPS drift	Due to the Earth's rotation and the changing position of the satellites in the sky, the calculated position of a point moves. This is referred to as GPS drift.
Ground speed sensor	It emits a specific number of electrical pulses in proportion to the distance already covered. As such, the real, slip-free speed, the ground speed, can be calculated. Note that under certain circumstances, ground speed sensors may supply inaccu-
	rate speed values depending on the surface, for example, high grass or puddles.
GUI	G raphical U ser I nterface The purpose of the graphical user interface is to ensure apps and ISOBUS imple- ments can be operated on the terminal using graphical symbols. The GUI com- prises all Operating screens of an app or implement.
Guidance track	Track created in parallel to the reference track, which is used as an orientation aide for correct adjoining parallel driving
Headland	The area at the edge of a field used during working of the land.
Implement	Towed or attached implement. An implement with which a task can be executed.
In-cab	Term from the standard ISO 11783. Describes the nine-pole ISOBUS panel connector in the tractor cab.
Input dialogue	Element of the graphical user interface. Enables the input or selection of values.
Interface	Part of the terminal which is used to communicate with other devices.
ISB	ISOBUS Shortcut Button The ISB makes it possible to deactivate implement functions that have been activated via an ISOBUS terminal. This is necessary if implement operation on the terminal is not currently in standard view. Which precise functions an ISB is able to deactivate on an implement, differs widely. You can find this information in the operating instructions for your implement.

ISOBUS	ISO 11783
	International standard for data transfer between farming implements and devices.
ISOBUS participant	A device that is connected over the ISOBUS and communicates via this system.
ISO-XML	ISOBUS-specific format for task data files based on XML.
LAN	Local Area Network
	A LAN network is usually taken to mean the entire network of a building or a house.
Location-based data	Implement data and yield data such as hoisting gear version, bale length, section or application rate per hectare. This data is recorded and saved together with the current GPS position.
Master data	Customer or field data managed in the terminal or FMIS that can be assigned to a task.
Miniplexer	Device for switching between video signals which facilitates operating of two cameras via one video input (similar to a multiplexer, but with limited functions).
Multiplexer	Device for switching between video signals which facilitates operating multiple cameras over one video input.
NMEA 0183	NMEA 0183 is a standard for communication between GPS receiver and terminal. It comprises a serial interface and data records in a standardised format.
NMEA 2000	NMEA 2000 is a CAN based network for data transfer that is primarily used in shipping. In land-based technology NMEA 2000 is used for communication be-tween GPS receivers and terminals via ISOBUS.
Object Pool	A term taken from the ISOBUS standard ISO 11783.
	All operating screens of an ISOBUS implement are combined in the Object Pool. The operating screens consist of display and operating elements:
	• Text and pictograms,
	Buttons, Input fields
	 Selection lists etc
	These display and operating elements are displayed on the terminal for implement operation.
	The Object Pool is sent to the ISOBUS terminal by the implement the first time the implement is connected to the terminal. The terminal saves the Object Pool.
Operating screen	The part of the graphical user interface (GUI) of an app or an ISOBUS implement visible on the display.
	The operating screen comprises the indication and operating elements shown on the display. The indication elements provide information and the operating elements can be selected directly via the touchscreen.
Overlap	Double treatment
Panel connector	Male connector permanently integrated in a device casing.

Parallel Tracking	Parallel driving aide
	Indicates, taking into account the current working width and position, parallel tracks and the current deviation from the track and suggests necessary steering corrections via a lightbar or similar.
	For optimum driving of parallel tracks when spreading fertilizer or spraying herbi- cides or pesticides on meadows and pasture or during pre-emergence spraying.
PDF	Portable Document Format
	File format for documents
Plug	Male connector on the end of a cable.
Product	A product is applied to or removed from a field as part of an agricultural practice, e.g. fertiliser, pesticide or harvested product.
PTO sensor	Measures the speed of the power take off.
	It emits a specific number of electrical pulses in proportion to the power take off speed.
Rate Control	Rate Control enables the import of maps for section-specific application in shape or ISO-XML format. Information such as masses, volumes, distances and percent are supported.
Rear 3-point hitch	Hydraulic device on tractors for coupling up and raising attachable devices (work- ing devices).
	Also: 3-point, rear 3-point hitch or rear hoisting gear.
Reference track	Track recorded by the driver, that is used for the calculation of other lead tracks created in parallel for track guidance.
Screenshot	Capture and saving of the display content in a file.
Section	Using yield maps and other methods of location analysis such as ground or con- tour maps, aerial photographs or multi-spectral images, it is possible, based on in- dividual experience, to define zones within the field, if these significantly differ over periods of four to five years.
	If these zones have a sufficient size and, for example with winter wheat a differ- ence in yield potential of approximately 1.5 t/ha, it makes sense to , match the cultivation and agricultural practices in these zones to the yield potential.
	Such areas are then designated as sections.
Section Control	Automatic Section Control
Section-specific working	Satellite support use of an application map.
Seed skip %	Missed areas are the result of omissions.
Signal connector	Seven pole socket based on the ISO 11786 standard, at which signals for speed, PTO speed and position of the rear 3-point hitch can be read.
Socket	Female connector permanently integrated in a device casing.

SOG	Speed over ground
Steering computer	Part of an automatic steering system or steering assist system. The position data of the GPS receiver is passed to the steering computer, which implements the set parameters and forwards the corresponding steering com- mands to the steering wheel motor or to the steering hydraulics.
TAN	Transaction number: A single-use password that you need to obtain new licence data.
Task Controller	An ISOBUS function. The Task Controller undertakes the documenting of totals and location-based data, which are made available by the implement.
Task set	A task set is a collection of multiple tasks. There must not be any connection between the individual tasks of a task set. All task sets access the same master data.
TC client	Task Controller Client The part of the implement software that connects with the Task Controller on the terminal. The implement requires a TC client for documentation, Section Control and Rate Control.
TECU	 Tractor ECU On an ISOBUS tractor, the TECU establishes the connection between the tractor bus system and the ISOBUS. The tractor sends its tractor data to all ISOBUS participants: Ground and wheel speed, PTO speed, Direction of travel, Position of the rear 3-point hitch.
Terminal	The CCI 800/CCI 1200 terminal
Totals	Totals of countable implement data such as number of bales, total consumption or total application rate.
Touchscreen	Touch-sensitive display for operation of the terminal.
Tramline Control	Function for automatic switching of the tramlines via GPS. This function can be used in beds during sowing, laying or planting; the tramlines are still precisely laid out.
URL	U niform R esource L ocator A standard used for website addressing in the World Wide Web; the Internet ad- dress.
USB	U niversal S erial B us: Serial bus system to connect the terminal to a storage medium.

UT	The Universal Terminal is the human machine interface (HMI) of ISOBUS. This is the display and operating device.
	Each implement connected to the ISOBUS logs on to the UT and uploads its Object Pool. You operate the implement via the operating screens of the Object Pool.
UT client	Universal Terminal Client
	The part of the implement software that connects with the Universal Terminal on the terminal. Used for implement operation.
Wheel speed sensor	It emits a specific number of electrical signals in proportion to the wheel rotation. As such, the theoretical slip-including speed of the tractor, the wheel speed, can be calculated.
	Wheel based speed sensors may supply inaccurate speed values when slip occurs.
WiFi	Wireless Local Area Network
	Wireless or WiFi network
Work position	Position of the rear 3-point hitch (and thus the attached implement) can be edited in the field.
XML	Extended Markup Language Logical markup language and both successor and enhancement of HTML. XML per- mits the specification of its own language elements so that other markup lan- guages such as HTML or WML can be defined by using XML.

Metal

13 Disposal

Dispose of a defective or no longer used terminal with due care for the environment:

- Dispose of the device parts in an environmentally friendly manner.
- Observe the local regulations.

Dispose of plastics with normal domestic waste or according to the local regulations.

Enter metal into a metal recycling chain.

Deliver the terminal PCBs to a specialist recycling company. **PCBs**

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A Technical Information

	CCI 1200	CCI 800
Dimensions (B x H x D) [mm]	312 x 213 x 66	226 x 151 x 55
Casing Type	Glass fibre reinforced polyamide	Glass fibre reinforced polyamide
Fastening	VESA75	VESA75
Operating Temperature [°C]	-15 - +70	-30 - +70
Supply voltage [V] Permitted Range [V]	12 VDC or 24VDC 7.5 VDC - 32VDC	12 VDC or 24VDC 7.5 VDC - 32VDC
Power consumption (at 12V) [W]	17, typical 143, maximum	12, typical 83, maximum
Display [inch]	12.1 TFT	8 TFT
Display resolution [px]	WXGA, 1280 x 800	WSVGA, 1024 x 600
Colour depth	24 bit	24 bit
Buzzer	85 dBA	85 dBA
Storage temperature [°C]	-30 - +80	-30 - +80
Weight [gr]	2000	1100
Protection class	IP65	IP65
EMC	ISO 14982	ISO 14982:2009
ESD protection	ISO 10605:2008	ISO 10605:2008

B Interfaces

CAUTION!

Do not connect or disconnect cable during live operations.

Connection or disconnection of a cable during live operation can cause an overvoltage at the terminal or a peripheral.

Overvoltages can destroy the electronics of the terminal or peripherals.

Switch the terminal off before connecting or disconnecting connector A, B or C.



CAUTION!

Plugs and sockets with dissimilar coding must not be connected.

The connecting together of connectors with dissimilar coding will result in damage to socket or plug.

All terminal connectors are mechanically protected to prevent incorrect connection or interchanging.

- Ensure that *plugs* and *sockets* have the same coding.
- ▶ Do not apply excessive force when connecting plug and socket.



CAUTION!

Panel connectors with bent contacts must not be used.

If a pin becomes bent, the connection no longer functions reliably. Every time the connector is plugged in again, the contact pin bends further.

Submit the device for repair.



NOTE

Seal off unused connectors.

If a connector is not sealed, dust or moisture can get into the terminal.

• Seal off unused connectors with blanking caps.

CCI 1200



CCI 800



B.1 Connector A



Connector type Panel connector German DT, 12 pole, A-

coded

- Function
 - CAN1 CAN2

 - ECU power Power supply

A ISOBUS

Use ISOBUS, switched ECU supply

Pin	Signal	Comment
1	V+ in	Supply voltage, 12VDC or 24VDC
2	ECU Power enable	Switched ECU supply voltage
3	Power enable	Switched supply voltage
4	CAN_H	CAN1 High
5	CAN_L	CAN1 Low
6	CAN_GND	CAN 1 earth
7	CAN_H	CAN2 High
8	CAN_L	CAN2 Low
9	CAN_GND	CAN2 earth
10	Key Switch State	Ignition signal
11	Shield	Shielding
12	GND	Mass



B.2 Connector B

Signal connector, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	12VDC or 24VDC
2	ISO 11786, Ground based speed	Ground speed sensor
3	ISO11786, Wheel based speed	Wheel speed sensor
4	ISO11786, PTO speed	Power take off speed
5	ISO11786, In/out of work	Working position of the 3-point hitch
6	ISO11786, Linkage position	Position of the rear 3-point hitch
7	Key Switch State	Ignition signal
8	GND	Mass
9	Direction signal	Direction of travel
10	RS232 TxD	RS232-1
11	RS232 RxD	RS232-1
12	GND	Mass

B.3 Connector C



Connector type

Panel connector German DT, 12 pole, C-coded

Function • RS232 • RS485 • Video

Use Camera, Video-Miniplexer, Video-Multiplexer, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	Camera power supply
2	Video IN	
3	Video GND	Mass
4	RS485B	
5	RS485A	
6	V+ out	Supply voltage Video-Miniplexer or Video-Multiplexer
7	NC	Not connected
8	NC	Not connected
9	RS232, V+ out	Supply voltage RS232
10	RS232, TxD	RS232-2
11	RS232, RxD	RS232-2
12	RS232, GND	Mass

B.4 Connector 3 and 4



Connector type

Socket M12, 5-pole, A-coded

Function

• USB 2.0

Use

Flash drive, W10 WiFi adapter

Pin	Signal	Comment
1	V+	Supply voltage
2	D-	Data -
3	D+	Data +
4	GND	Mass
5	GND	Mass

B.5 Connector Eth



Connector type

Socket M12, 8-pole, X-coded

Function

• Ethernet

Use

LAN

Pin	Signal	Comment
1	TR0+	
2	TRO-	
3	TR1+	
4	TR1-	
5	TR3+	
6	TR3-	
7	TR2+	
8	TR2-	

C Cables



NOTE

Where possible only use the original cable to connect the terminal.

Identifier: Cable A

You can order this from the manufacturer or its approved dealers.



"InCab":

Length: 150 cm

Coupling, 9-pole \rightarrow In-cab panel connector in the tractor

"A":

Coupling, 12-pole \rightarrow Connector A on the terminal

Use:

Connect terminal to the power supply and ISOBUS

InCab

#1: V+ in
#2: CAN_L IN
#3: CAN_L OUT
#4: CAN_H IN
#5: CAN_H OUT
#6: #7: V+ in
#8: -

#9: GND



Cable B

Length:

30 cm

"Signal":

Coupling M12, 12-pole \rightarrow Cable H "Signal"

"В":

Coupling, 12-pole \rightarrow Connector B on the terminal

"RS232":

Plug M8, 4-pole

 \rightarrow GPS receiver, sensor

Use:

- Connect terminal to signal connector
- Connect a GPS receiver or sensor with a serial interface to the terminal

Signal #1: -

#2: GND

#8 - #12: -

#3: PTO speed

#4: Linkage position#5: Wheel based speed#6: In/out of work#7: Ground based speed

RS232

- #1: V+ out #2: RS232 TxD #3: GND
- #4: RS232 RxD

Cable C1

Length:

35 cm

"AEF Video":

Plug, 7-pole → Camera

Coupling, 12-pole \rightarrow Connector C on the terminal

"RS232":

Plug M8, 4-pole

 \rightarrow GPS receiver, sensor

Use:

- Connect terminal to camera •
- Connect a GPS receiver or sensor . with a serial interface to the terminal

AEF-Video	RS232
#1: V+ out	#1: V+ out
#2: V+ out	#2: RS232 TxD
#3: Video GND	#3: GND
#4: Video IN	#4: RS232 RxD
#5: -	
#6: -	
#7: GND	

"C": С



Cable C2

Length:

30 cm

"Video":

Coupling M12, 8-pole \rightarrow Camera

"C":

Coupling, 12-pole \rightarrow Connector C on the terminal

"RS232":

Plug M8, 4-pole

 \rightarrow GPS receiver, sensor

Use:

- Connect terminal to camera or to Video-Miniplexer or Video-Multiplexer
- Connect a GPS receiver or sensor with a serial interface to the terminal

M12-Video

#1: Video IN
#2: RS485B
#3: RS485A
#4: V+ out
#5: V+ out
#6: V+ out
#7: GND
#8: Video GND

RS232

#1: V+ out #2: RS232 TxD #3: GND #4: RS232 RxD

Cable H (also: cable type H)

Length:

200 cm

····:



Plug, 7-pole \rightarrow Signal connector in the tractor



"Signal":

Plug, M12, 12-pole \rightarrow Coupling "Signal" on cable B

Use:

Connect terminal to signal connector

Note:

The ISO 11786-Signal "Work position" and the "Direction of travel" signal are not available over cable H

....

#1: Ground based speed

#2: Wheel based speed

- #2: Wheel base #3: PTO speed
- #3:F #4:-
- #5: Linkage position
- #6: V+
- #7: GND

Signal #: -

3

- #2: GND
- #3: PTO speed
- #4: Linkage position
- #5: Wheel based speed
- #6: -#7: Ground based speed
- #8, #9: -#10: V+ (Key Switch)
- #11,#12: -

343 / 352

Cable N (also: cable type N)

Length:

200 cm

"NMEA":

Plug D-SUB, 9-pole → GPS receiver

"RS232":

Coupling M8, 4-pole \rightarrow Plug "RS232" to cable B or C

Use:

Connecting the terminal to the GPS receiver

Note:

Power supply to the GPS receiver is not possible with the cable $\ensuremath{\mathsf{N}}$

NMEA

RS232

#1: -#2: RS232 RxD #3: RS232 TxD #4: -#5: GND #6 - #9: - #1: -#2: RS232 TxD #3: GND #4: RS232 RxD


Identifier:

Cable Y

Length:

15 cm

"InCab":





"UT": *Plug*, 9-pole

 \rightarrow Coupling "InCab" on cable A

"AUX":

Plug, 9-pole \rightarrow AUX control

Use:

Connect terminal and AUX control to the ISOBUS

D Application maps

D.1 ISO-XML

An application map in ISO-XML format may contain any approved DDI in the *Data Dictionary*.

Percentage values can be processed.

Zones	 Grid type 1: max. 255 Grid type 2: no limit Polygon: max. 255
Colours	Up to 12 colours can be displayed in the legend
Maximum number of application maps contained in the ISO-XML file	 Grid Type 1: 1 Grid Type 2: ≥1 Polygon: 1
D.2 Shape	
Permitted formats	WGS84 projection PolygonZ

Points

Max. 50,000

E GPS receiver

The following receivers comply with standard NMEA 0183 and are connected to the terminal via the serial interface.

- \rightarrow We have already saved the settings we recommend for these receivers in the terminal.
- Change the settings of your receiver as follows (\Rightarrow Chapter 6.6.3).

E.1 Hemisphere A100 / A101

SBAS	EGNOS active	
Baud rate	19200	
Data	GGA, VTG and ZDA: 5HzGSA: 1Hz	

E.2 Hemisphere A222 / A631

SBAS	EGNOS active		
Correction service	ATLAS active		
Baud rate	38400		
Data	 GGA, VTG: 10Hz GSA, ZDA: 5Hz 		

E.3 Novatel AgStar

SBAS	Auto		
Baud rate	38400		
Data	•	GGA,RMC and VTG: 10Hz GSA, GSV and ZDA: 1Hz	
Satellite systems used	•	GPS + SBAS GPS + GLONASS + SBAS	
(Northern hemisphere)			
Satellite systems used	•	GPS GPS + GLONASS	

(Southern hemisphere)

E.4 Novatel SMART2

Auto	
38400	
•	GGA,RMC and VTG: 10Hz GSA, GSV and ZDA: 1Hz
•	SBAS SBAS + Terrastar
•	No SBAS No SBAS + Terrastar
	Au 38 • •

(Southern hemisphere)

Receivers that send their position data to the terminal via ISOBUS cannot be set up from the terminal.

• Set up these receivers as described in the device's manual.

We recommend the following settings:

E.5 NMEA 2000

PGN decimal	PGN hex	Description	Repetition rate	Abbreviation in CCI.Config
129029	1F805	GNSS position data	1Hz	POS
129025	1F801	Position, Rapid Update	at least 5Hz	POSR
129026	1F802	COG and SOG, Rapid Update	at least 5Hz	COGR

E.6 SAE J1939

PGN hex	Description	Repetition rate
0xFEF3	Vehicle position	5Hz
0xFEE8	Vehicle direction Speed	5Hz

F AEF functionalities

CCI.OS undergoes the AEF conformance test with each new version.

CCI.OS 3.0 is certified for the following AEF ISOBUS functionalities:



Universal Terminal

So that the terminal can be used to operate different implements.



Task Controller basic (totals)

For the documentation of totals and data exchange between FMIS and terminal via ISO-XML files.



Task Controller geo-based (variables)

For the documentation of location-based data and the planning of location-based tasks.



Task Controller Section Control

For the automatic switching of sections depending on the GPS position.

Auxiliary Control (new)

AUX-N

For the operation of frequently used implement functions with an AUX control.

Here there are "old" and "new" versions that are not compatible with each other. AUX controls that are AUX-N certified cannot be used with terminals that are certified AUX-O and vice-versa.



Basic Tractor ECU

For the provision of tractor data over the ISOBUS relating to ground and wheel speed, PTO speed, direction of travel and position of the rear 3-point hitch.



ISOBUS Shortcut Button

For rapid deactivation of implement functions without ISO-BUS implement operation.

G Time zones

- (UTC -09:00) Alaska
- (UTC -08:00) Tijuana, Baja California (Mexico)
- (UTC -08:00) Los Angeles, Vancouver
- (UTC -07:00) Chihuahua, Mazatlan
- (UTC -07:00) Denver, Salt Lake City, Calgary
- (UTC -07:00) Dawson Creek, Hermosillo, Phoenix
- (UTC -06:00) Costa Rica, Guatemala, Managua
- (UTC -06:00) Chicago, Winnipeg
- (UTC -06:00) Cancun, Mexico City, Monterrey
- (UTC -05:00) Havana
- (UTC -05:00) Detroit, New York, Toronto
- (UTC -05:00) Bogota, Lima, Panama
- (UTC -04:00) Caracas
- (UTC -04:00) Bermuda, Halifax
- (UTC -04:00) Campo Grande, Cuiaba
- (UTC -04:00) Asuncion
- (UTC -04:00) Santiago
- (UTC -03:00) Montevideo
- (UTC -03:00) Sao Paulo
- (UTC -03:00) Buenos Aires, Cordoba
- (UTC -03:00) Mendoza, Recife, San Luis
- (UTC +00:00) Casablanca, Reykjavik
- (UTC +00:00) Dublin, Lisbon, London
- (UTC +01:00) Windhoek
- (UTC +01:00) Algiers, Porto Novo
- (UTC +01:00) Berlin, Oslo, Paris, Rome, Stockholm
- (UTC +01:00) Tunis
- (UTC +02:00) Cairo
- (UTC +02:00) Jerusalem, Tel Aviv
- (UTC +02:00) Kaliningrad, Minsk
- (UTC +02:00) Athens, Helsinki, Istanbul, Riga
- (UTC +02:00) Johannesburg, Tripoli
- (UTC +03:00) Moscow, Volgograd
- (UTC +04:00) Yerevan, Samara
- (UTC +05:00) Yekaterinburg
- (UTC +05:30) Calcutta, Colombo
- (UTC +05:45) Kathmandu
- (UTC +06:00) Novosibirsk, Omsk
- (UTC +07:00) Krasnoyarsk
- (UTC +08:00) Hong Kong, Perth, Singapore
- (UTC +08:00) Irkutsk
- (UTC +08:45) Eucla
- (UTC +09:00) Seoul, Tokyo
- (UTC +09:00) Yakutsk
- (UTC +09:30) Darwin
- (UTC +09:30) Adelaide
- (UTC +10:00) Vladivostok
- (UTC +10:00) Canberra, Melbourne, Sydney
- (UTC +11:00) Magadan
- (UTC +12:00) Kamchatka
- (UTC +12:00) Auckland

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