

XENTRY Diagnosis Kit 4

Operation manual
Mercedes-Benz AG, GCSP/ROX
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Mercedes-Benz

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1 Glossary

Add-ons
- Add-ons are automatically loaded on your XENTRY Diagnosis Pad, and update your system. The prerequisite is that XENTRY Diagnosis Pad is connected to the Internet.
- Please note that all add-ons should always be installed on XENTRY Diagnosis Pad

AQT
- Automatic quick test

ConfigAssist
- Provides step-by-step help in setting up the diagnostic system, from connecting the cables through setting up the network to importing the StartKey. Is launched automatically during commissioning, and can be launched again, if required

Control unit commissioning
- Control unit commissioning refers to the control unit programming of a vehicle using XENTRY Diagnosis software

Diagnosis software updates
- Diagnosis software updates are controlled through the Update Center. These are made as an online update using Retail Data Storage or, as an exception, without Retail Data Storage

DiBA
- Digital Operator's Manuals are required for control unit commissioning. When using Retail Data Storage, you can check the availability of DiBAs through XENTRY Update Service Control Center.

Firmware update
- Occasionally, the XENTRY Diagnosis VCI firmware has to be updated after a diagnosis software update.

OBD
- On Board Diagnosis

Pairing
- A 1:1 connection is established per WLAN between VCI and the XENTRY Diagnosis Pad. This process is known as "pairing".

PDF Center
- PDF printer for user-friendly creation of PDF documents

Retail Data Storage
- Network storage for buffering diagnosis updates in XENTRY Update Service

StartKey
- Use of diagnosis applications is not possible without the StartKey. It defines your rights of use. It can be ordered when you order the XENTRY Diagnosis Kit*.

Support Tool
- Tool with information for support case and for creation of support packages

Update Center
- The Update Center is used for installing new software updates, switching between releases (release management), add-on installation and administration

VCI Manager
- VCI Manager enables XENTRY Diagnosis Pad & XENTRY Diagnosis VCI to be paired

XENTRY Diagnosis Kit
- Product bundle: XENTRY Diagnosis Pad & XENTRY Diagnosis VCI

XENTRY Diagnosis Pad
- A workshop-compatible PC on which the XENTRY diagnosis software is installed

XENTRY Diagnosis VCI
- The multiplexer or Vehicle Communication Interface (VCI) that forms the interface from the vehicle to the XENTRY Diagnosis Pad and "translates" data from the vehicle so that it can be used by the software

XENTRY Update Service
- XENTRY Update Service is the option of loading updates onto the XENTRY Diagnosis Pad over the Internet.

XENTRY WIS
- XENTRY Workshop Information System contains detailed information and work instructions for repair and maintenance work on the Mercedes-Benz, Maybach and smart brands

XOT
- XENTRY Operation Time: Operation & standard texts, flat rates and work units
- The data determined with XOT form the basis for creation of precise estimates, work orders, invoices and warranty claims

2 Introductory notes

Important instructions for the safe handling of the product.

2.1 Check for damage before commissioning

Check the product for visible damage (e.g. shipping damage) before commissioning. Do not operate the product if it is damaged.

2.2 Reading the document

Please read this document carefully to understand all the important information and safety instructions. Proper handling of the product is crucial for your safety and for ensuring smooth operation.

2.3 Important notes

Please observe the following four important types of notes in this user guide, as these are essential for safe and proper use of the product. You will find these notes below:



Handling recommendation.



NOTICE

A situation that can lead to property damage to the product or other property if not avoided.



CAUTION

A potentially imminent hazardous situation. If this is not avoided, (personal) injury may occur.



ENVIRONMENT

A situation that can be detrimental to the environment if it is not avoided. One example of a preventive measure would be only printing something if it is really necessary to do so.

3 New features in XENTRY Diagnosis Kit 4

Familiar operating concept

As with XENTRY Diagnosis Kit 3, the new diagnosis device concept consists of the diagnosis computer and a multiplexer: XENTRY Diagnosis Pad 2 and XENTRY Diagnosis VCI.

Major optimizations in XENTRY Diagnosis Kit 4:

- New XENTRY Diagnosis Pad 2
- Modified Wi-Fi connection between XENTRY Diagnosis Pad 2 and VCI.
- The XENTRY Diagnosis Pad 2 now comes with an improved, capacitive multitouch display that enables you to work in a bright environment with an even sharper image.
- Interchangeable rechargeable battery in XENTRY Diagnosis Pad 2

Easy IT integration

- **Familiar connection variant:** The connection between the XENTRY Diagnosis Pad 2 and VCI is made as usual, independent of the given IT infrastructure at the workshop. New: XENTRY Diagnosis Pad 2 now comes with a second WLAN card installed in it, which sets up the connection between XENTRY Diagnosis Pad 2 and the VCI.
- **WLAN integration:** XENTRY Diagnosis Pad 2 is directly integrated into the workshop network, as was the case with the previous XENTRY Diagnosis Pad model. During initial commissioning, you are taken through the configuration procedure with ConfigAssist.

Online update

The XENTRY Update Service is a standard service we provide to ensure that your XENTRY Diagnosis Kit 4 always receives the latest release updates, Regio-DVDs and Digital Operator's Manuals.

- Depending on the given configuration, diagnosis updates are downloaded overnight over the Internet onto your Retail Data Storage unit, and distributed from there over the workshop network to XENTRY Diagnosis Pad | Pad 2.
- "Zero-time update" ensures that diagnosis software updates are transferred to the XENTRY Diagnosis Pad | Pad 2 in the background. During this time, you can continue to work as usual. As soon as the process has been completed, you will be notified that you can now install the new software update. Generally, the installation takes no longer than approx. 5 minutes; after this time, you can then continue to work with your XENTRY Diagnosis Pad | Pad 2 as normal.
- The Update Center also offers you the option to quickly switch between the latest release update and the preceding update.
- Along with the diagnosis software updates, the control unit software and Digital Operator's Manuals are supplied through the Retail Data Storage unit on demand for the XENTRY Diagnosis Pad | Pad 2.

Adapter cable concept

As was previously the case, adapter cables that can be connected to the OBD cable are available to you as an option for special use cases.



These are no longer included in the standard scope of supply for XENTRY Diagnosis Kit 4. However, you can still use the XENTRY Diagnosis Kit 3 adapter cables; these do not have to be returned when the contractual period expires.

Schematic layout for network integration

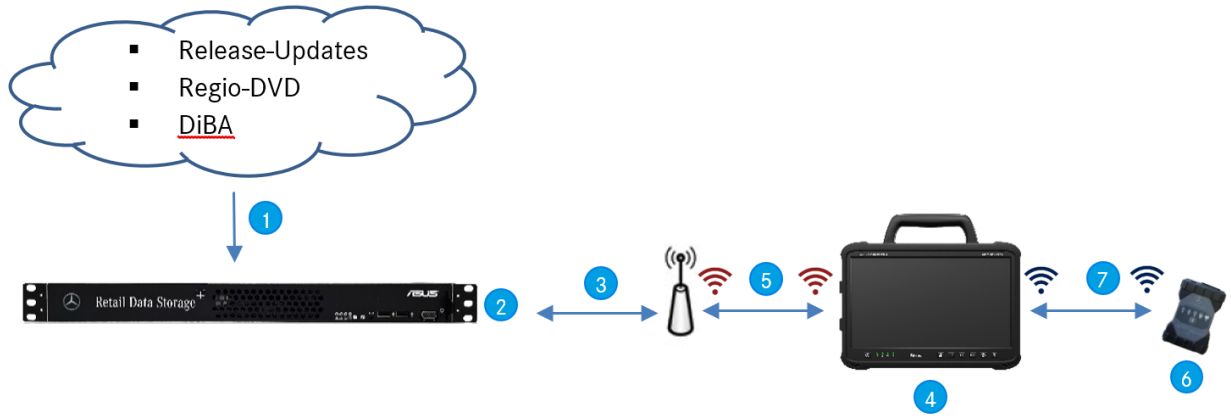


Fig. 1: Schematic layout for network integration

1. Release updates, Regio-DVD and Digital Operator's Manuals are always kept up to date online.
2. Depending on the given configuration, the data is downloaded overnight.
3. The Retail Data Storage unit is integrated into the workshop network so that it is located in the same network as your XENTRY Diagnosis Kit 4.
4. XENTRY Diagnosis Pad | Pad 2 is integrated into your workshop infrastructure (necessary for online services)
5. The connection between XENTRY Diagnosis Pad 2 and the workshop network can be made via LAN or WLAN.
6. XENTRY Diagnosis VCI (multiplexer) in compact and sturdy design without PC core, without rechargeable battery, without fan, without display
7. You can connect your XENTRY Diagnosis Pad 2 using a Wi-Fi connection or via USB connection cable to the VCI.

4 Delivery package of XENTRY Diagnosis Kit 4

The delivery package of your XENTRY Diagnosis Kit 4 includes the following:

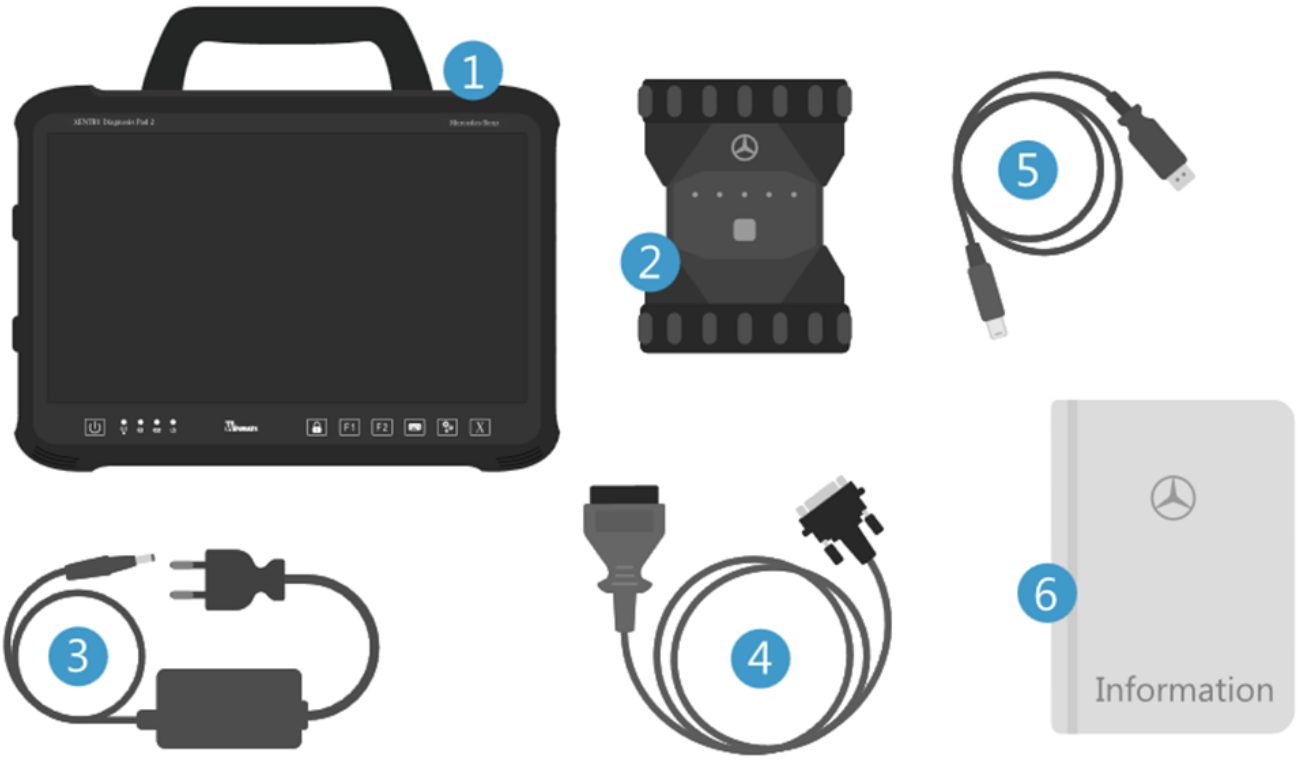


Fig. 2: Delivery package of XENTRY Diagnosis Kit 4

1. XENTRY Diagnosis Pad 2
2. XENTRY Diagnosis VCI
3. Power supply unit incl. power supply plug
4. OBD cable (16-pin)
5. USB cable (5 m)
6. User information and safety notes
   Optional: XENTRY Scope Measurement Technology

5 Commissioning and configuration

5.1 Configure network

5.1.1 WLAN

Select your desired WLAN in the "Available networks" field.

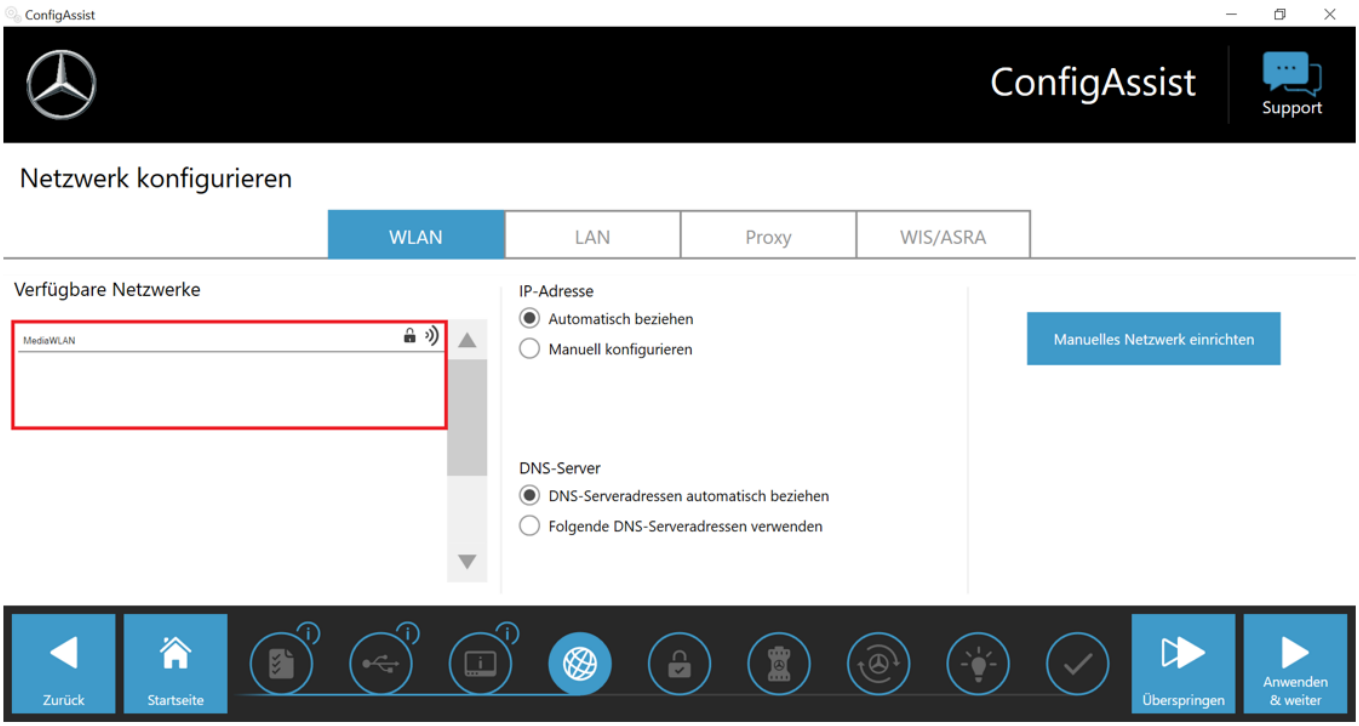


Fig. 3: Configure WLAN network

Enter your network key in the window that appears, then click on "Connect".

In the "Available networks" list that appears, the status "Connected" appears next to the network you selected.

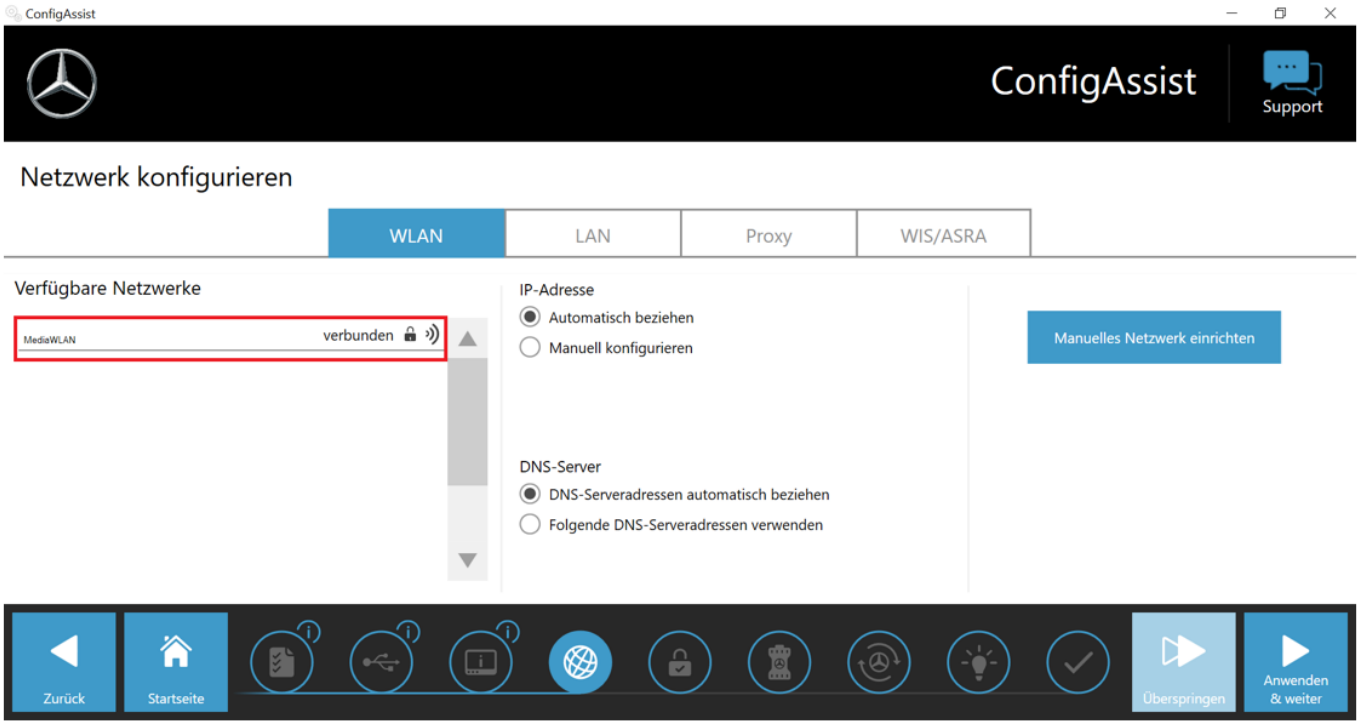


Fig. 4: WLAN connected

Here, you also have the option of manually configuring the IP address and selecting a different DNS server.

Alternatively, you can also configure the network manually.

- Click on the "Manual network setup" button to do so.

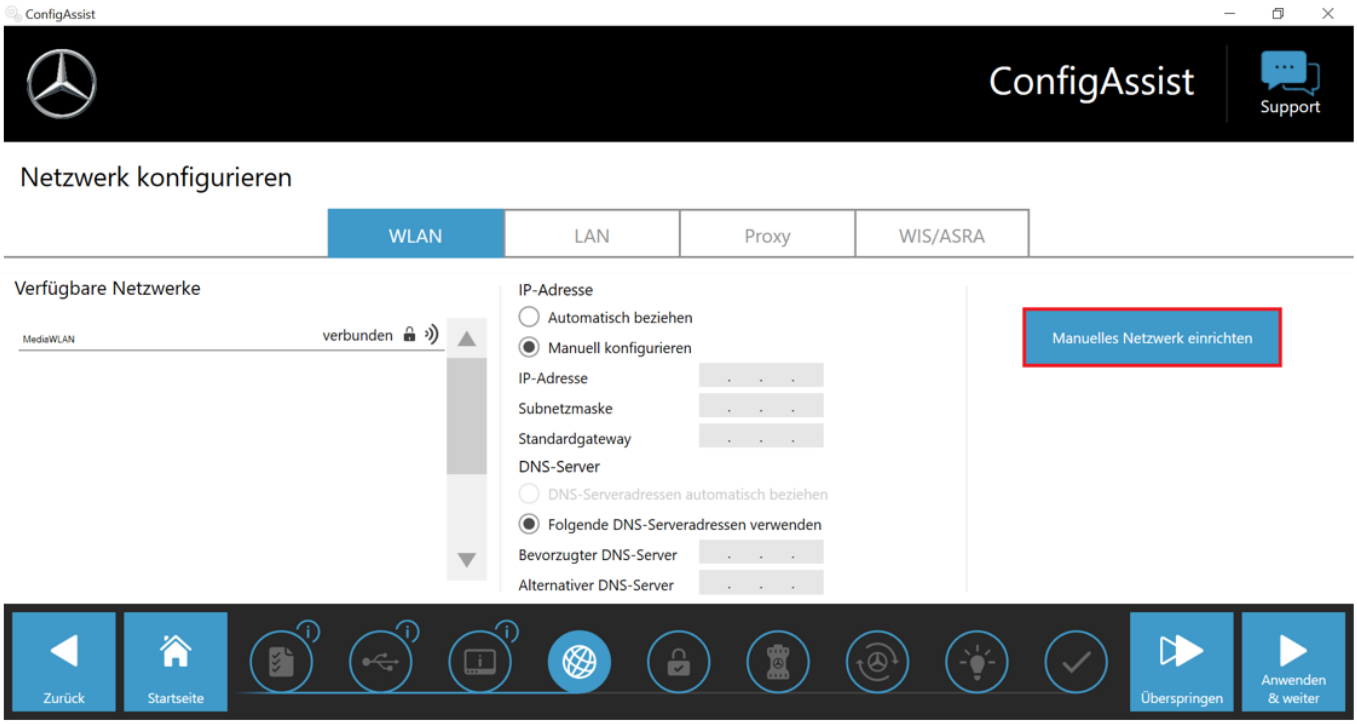


Fig. 5: Set up manual network

- Enter the corresponding data here:

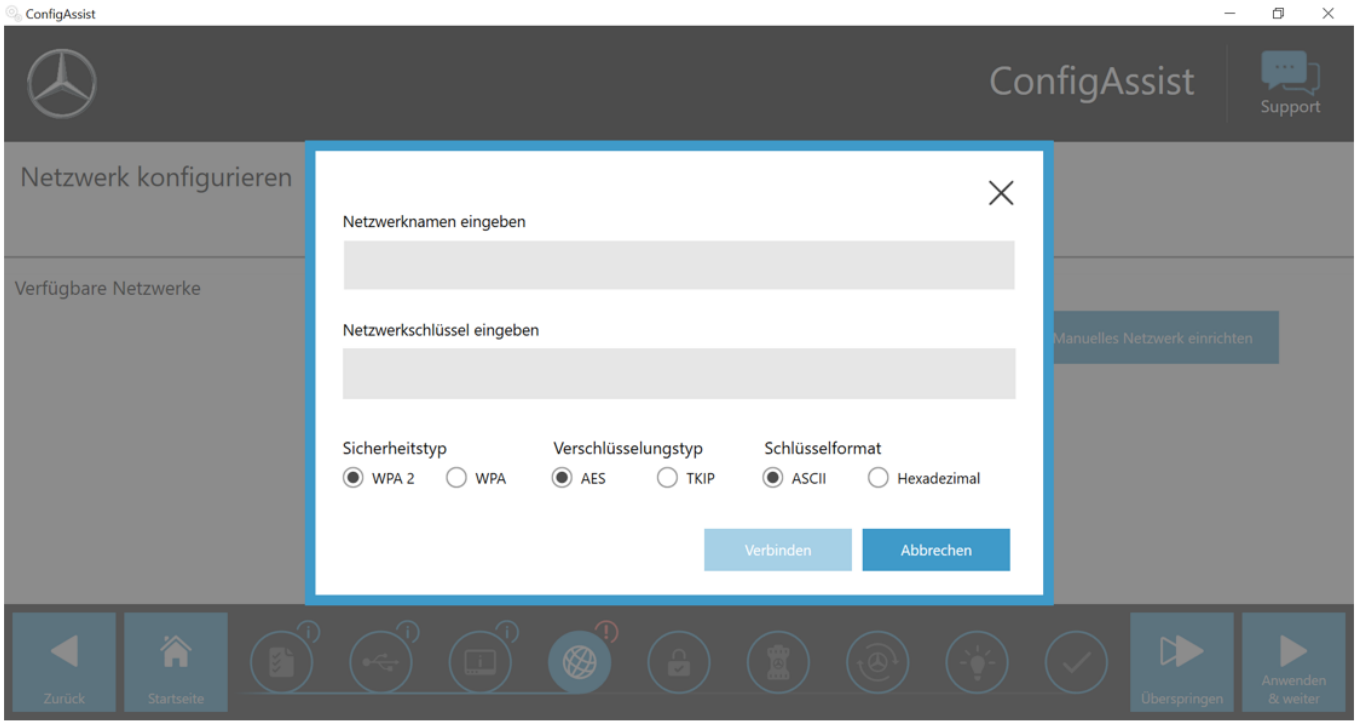


Fig. 6: Enter data manually

- Click on "Apply & Continue".

5.1.2 LAN

Alongside the settings for the WLAN, you can also configure settings for use of the LAN. You can obtain the IP address automatically or configure this manually, and also configure the DNS server.

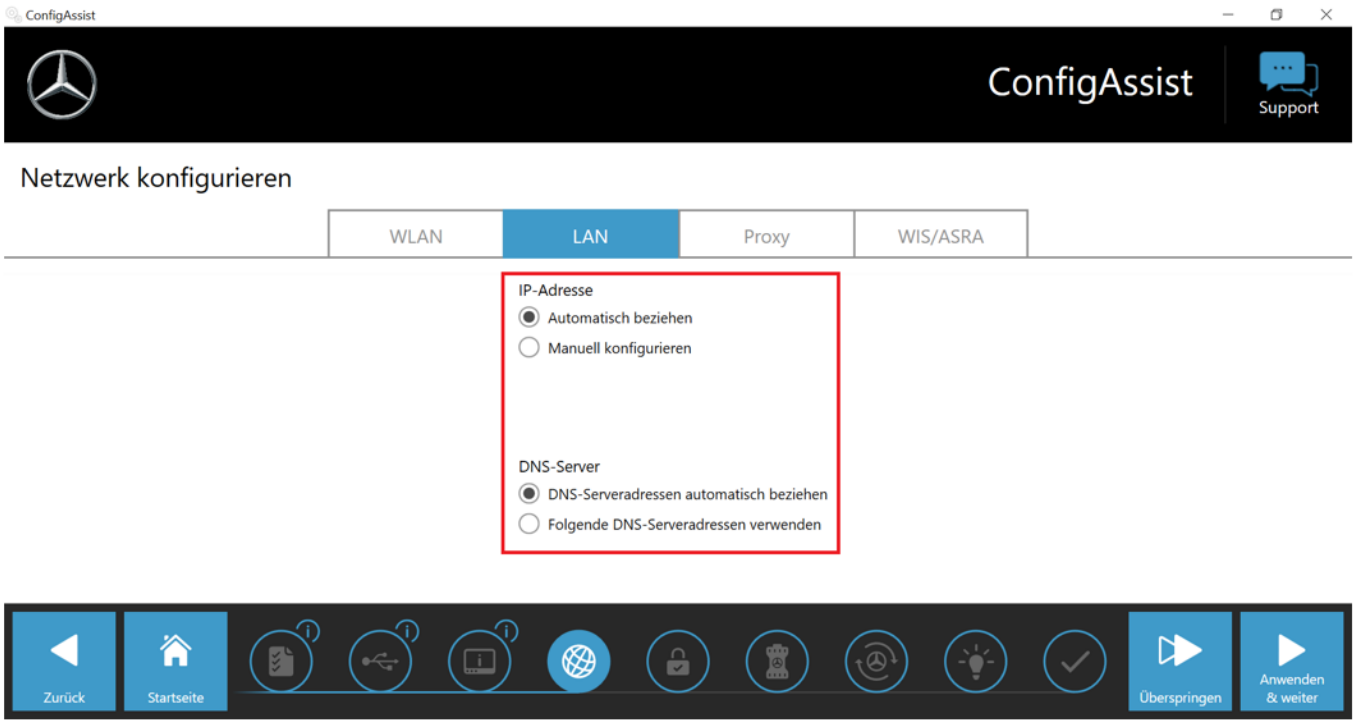


Fig. 7: Configure LAN network

Click on "Apply & Continue".

5.1.3 Proxy

In the Proxy area, you can configure various settings for the proxy server.

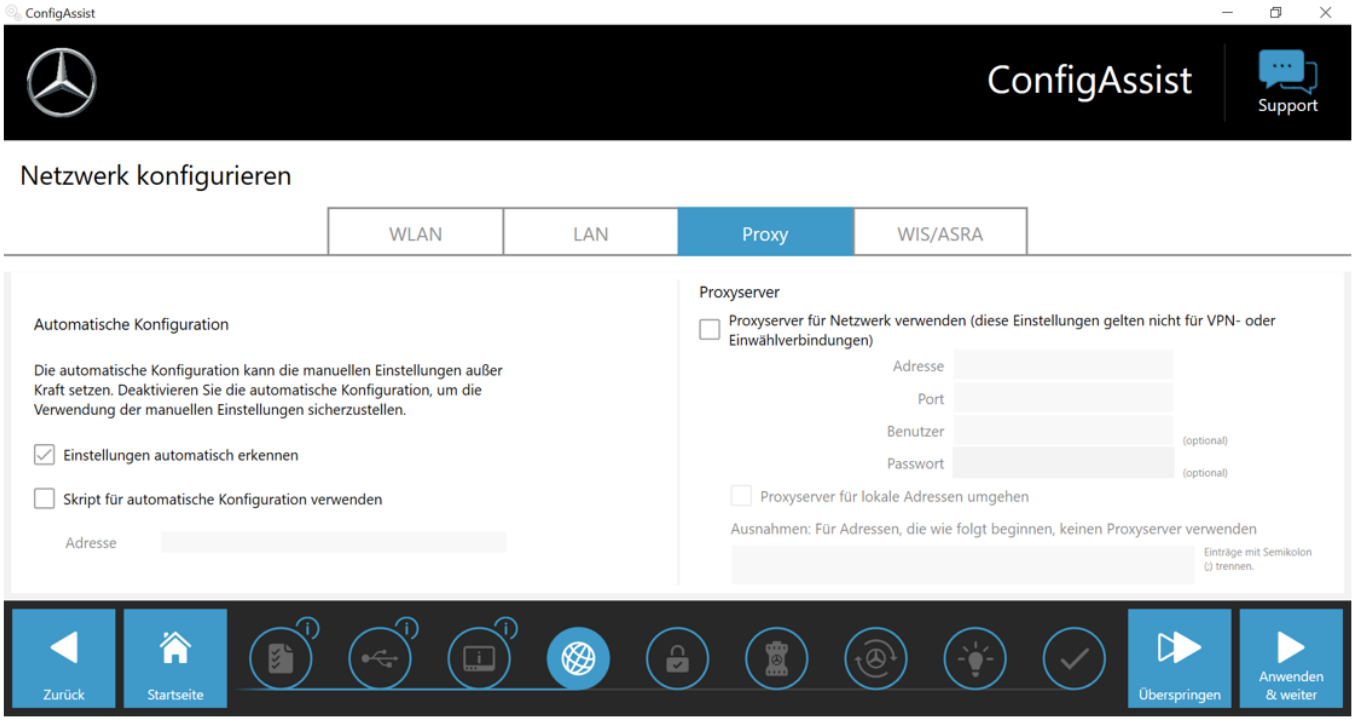


Fig. 8: Proxy settings

You can have the system identify the settings for the proxy server automatically, or use a script for automatic configuration. You can also configure further settings for the proxy server here.

Click on "Apply & Continue".

5.2 StartKey

5.2.1 Install StartKey

The system automatically searches for the latest StartKey on the StartKey server via the Internet connection. The StartKey is stored on the system.

Using the "Online" button, the online query and download of the StartKey can be repeated – if, for example, no Internet connection was available when ConfigAssist was called up or during the "Install StartKey" process step.

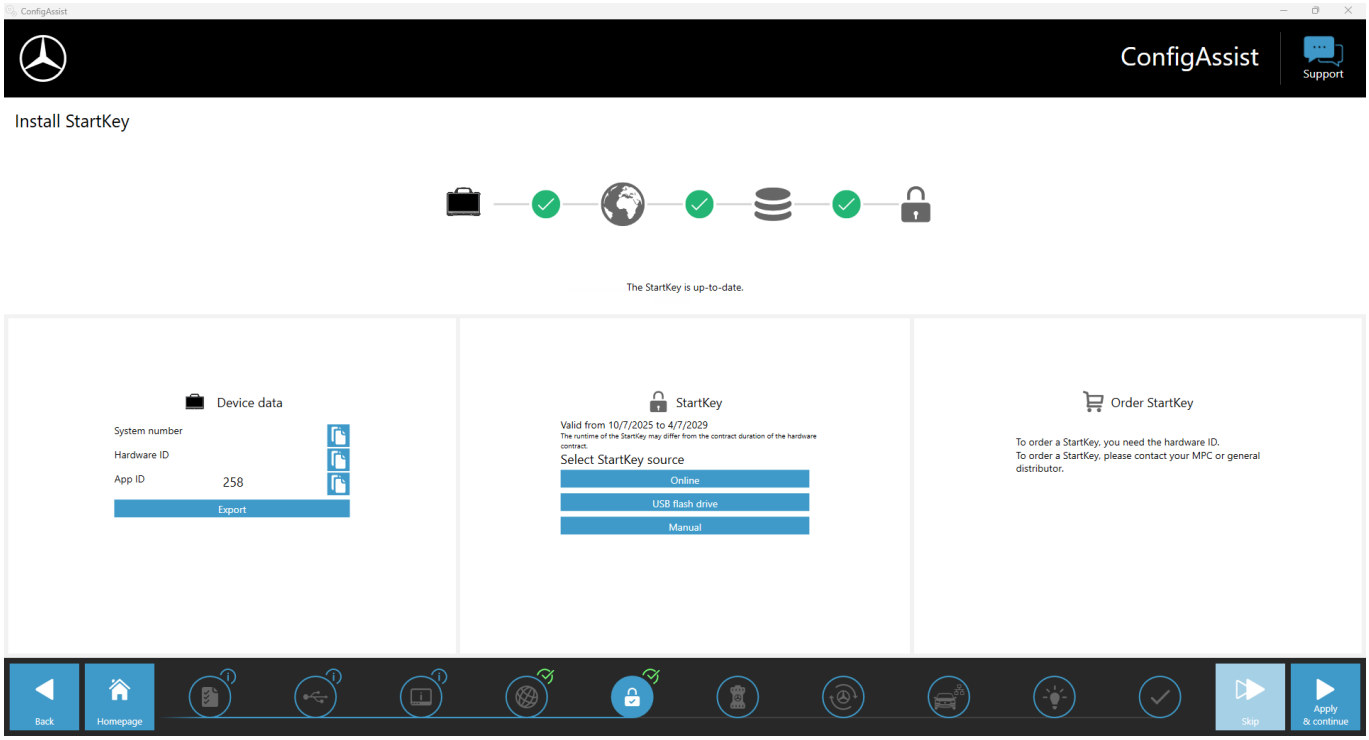


Fig. 9: StartKey status

For the online retrieval to work, please ensure that an Internet connection has been established before running the function, and that connection requests are not blocked by firewall settings.

The latest firewall settings can be found in the system prerequisites for after-sales.

Alternatively, if the system operates offline, you can also install the StartKey using a USB flash drive, for example.

Save the text file from the StartKey e-mail attachment to a USB flash drive. You can recognize the file by its name – which begins with the hardware ID of the XENTRY diagnostic system and includes the application ID – as well as the .txt format.

The file with the StartKey must be located on the top level of the USB flash drive.

Please note that the USB flash drive must not be partitioned and encryption must not be activated.

Plug the USB flash drive into the diagnostic system and select the "USB flash drive" button:

If importing the StartKey from the USB flash drive fails, a Windows Explorer window opens. You can then navigate manually to the storage folder of the StartKey file via this window.

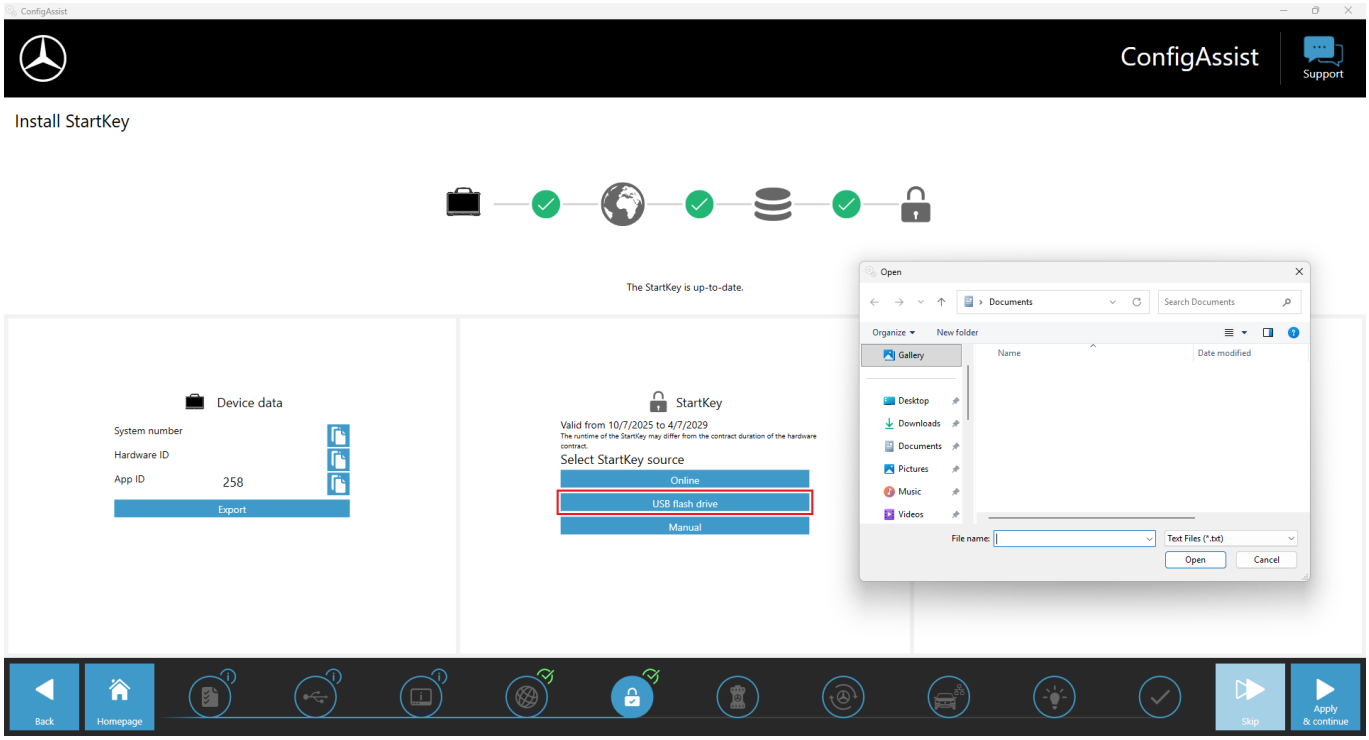


Fig. 10: Install StartKey from USB flash drive

It is also possible to enter the StartKey manually: To do this, select the "Manual" button

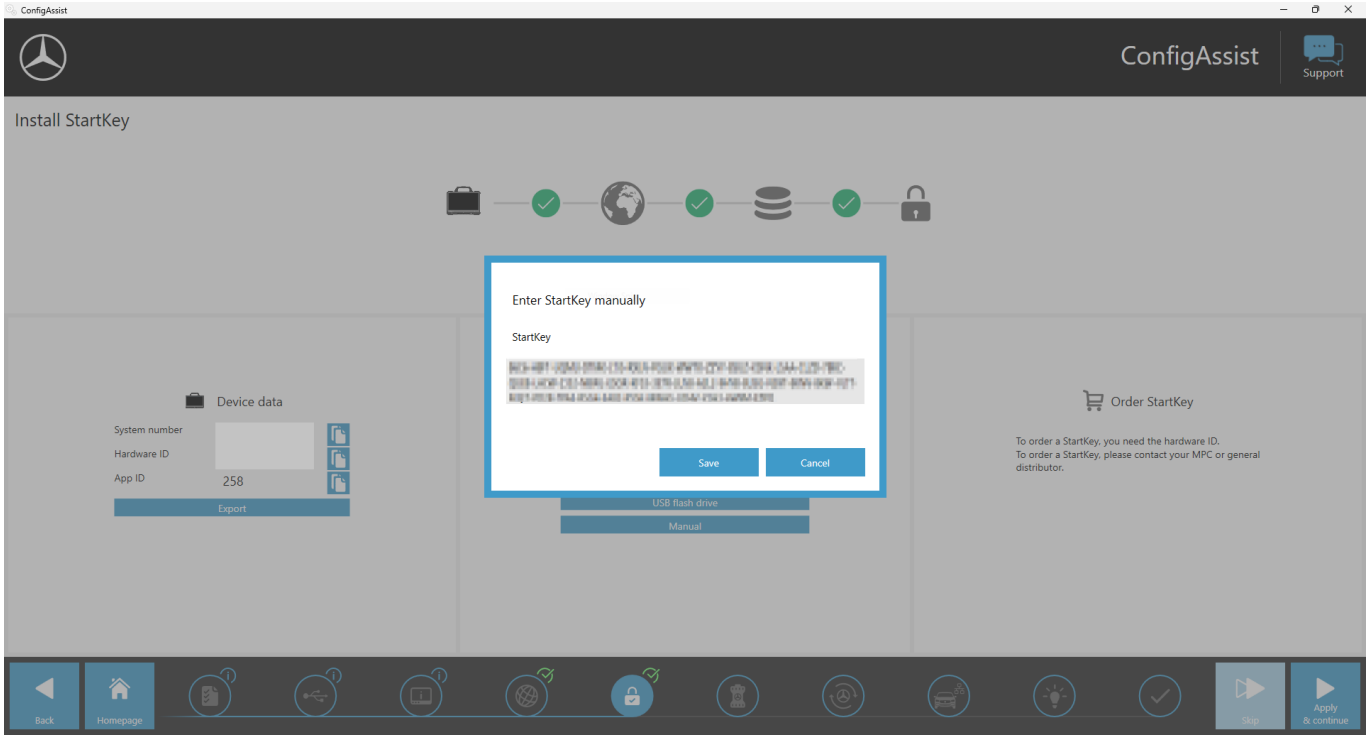


Fig. 11: Install StartKey manually

The StartKey string can be inserted by copying and pasting it. Then click on "Save".

IMPORTANT:

The XENTRY Diagnosis release can only be downloaded and installed in the following step if a "suitable" and valid StartKey is available. For these reasons, the system-specific StartKey must be ordered before installing XENTRY Diagnosis and installed on the diagnostic system in this step.

The hardware ID required for ordering is displayed to you here in "ConfigAssist". The corresponding field can be highlighted and copied:

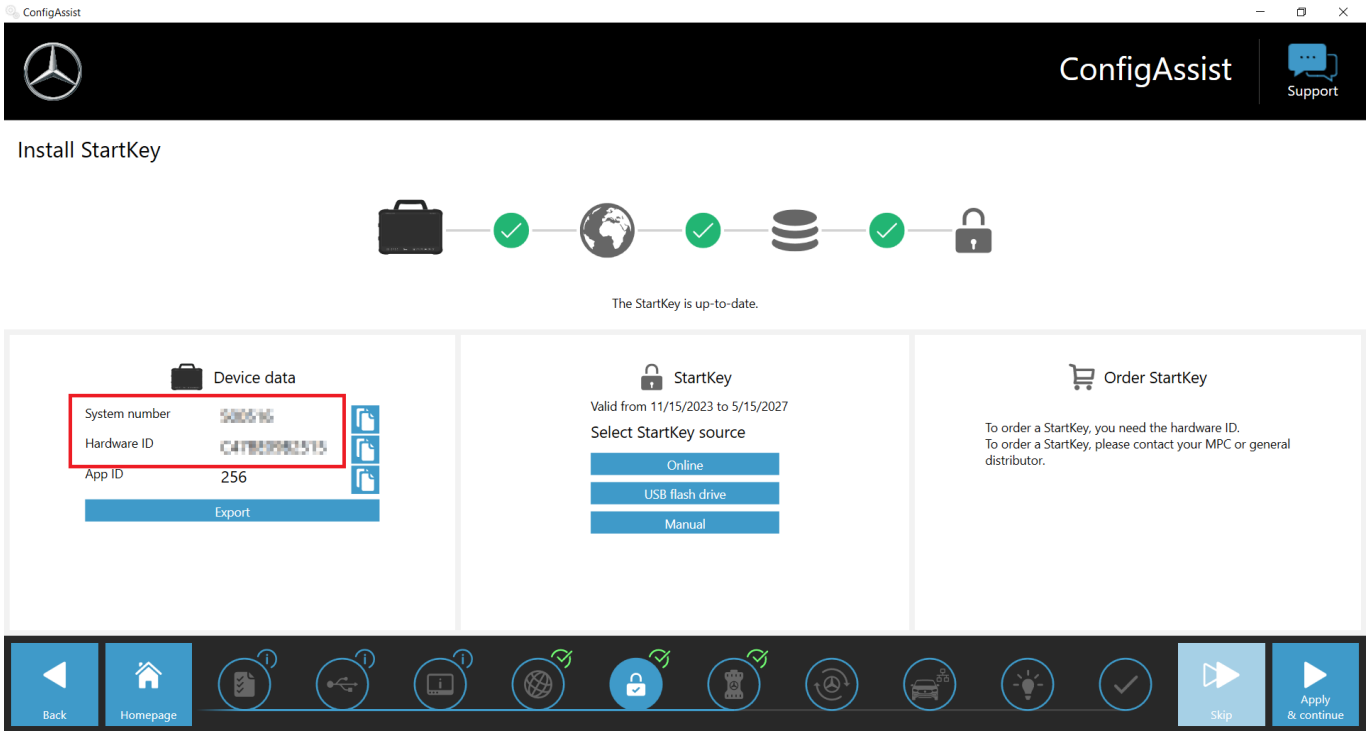


Fig. 12: Display hardware ID

If necessary, you may have to request your system number from the Customer Support Center (XCA) or from your market manager.

5.3 XENTRY Diagnosis VCI pairing

Connect the XENTRY Diagnosis VCI to the XENTRY Diagnosis Pad via the USB cable, wait for the acoustic signal of the XENTRY Diagnosis VCI, then click on "Pair VCI".

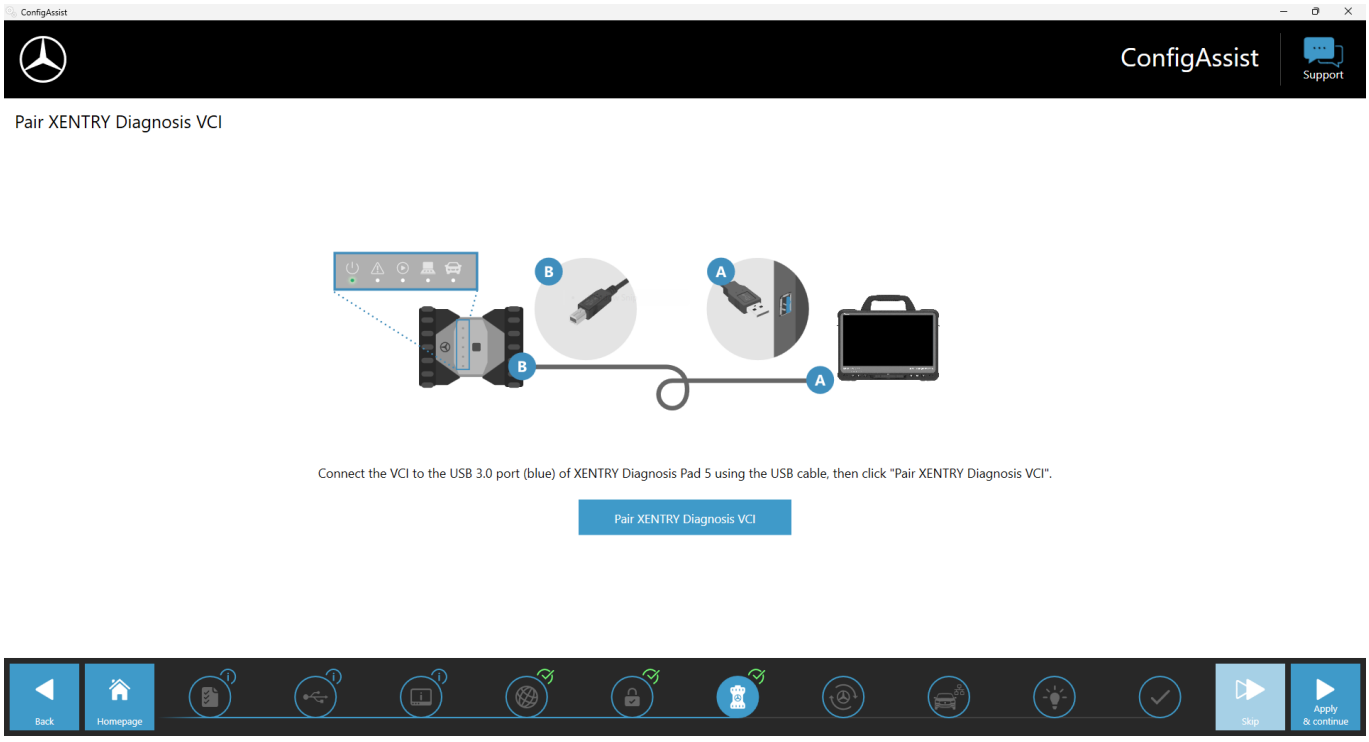


Fig. 13: Pairing the XENTRY Diagnosis VCI

Please note that only one VCI can be paired with the XENTRY Diagnosis Pad at any given time. If an attempt is made to pair another VCI, the VCI manager will indicate that the current VCI configuration will be overwritten.

After successfully pairing, you will receive a relevant message which you can confirm with "OK".

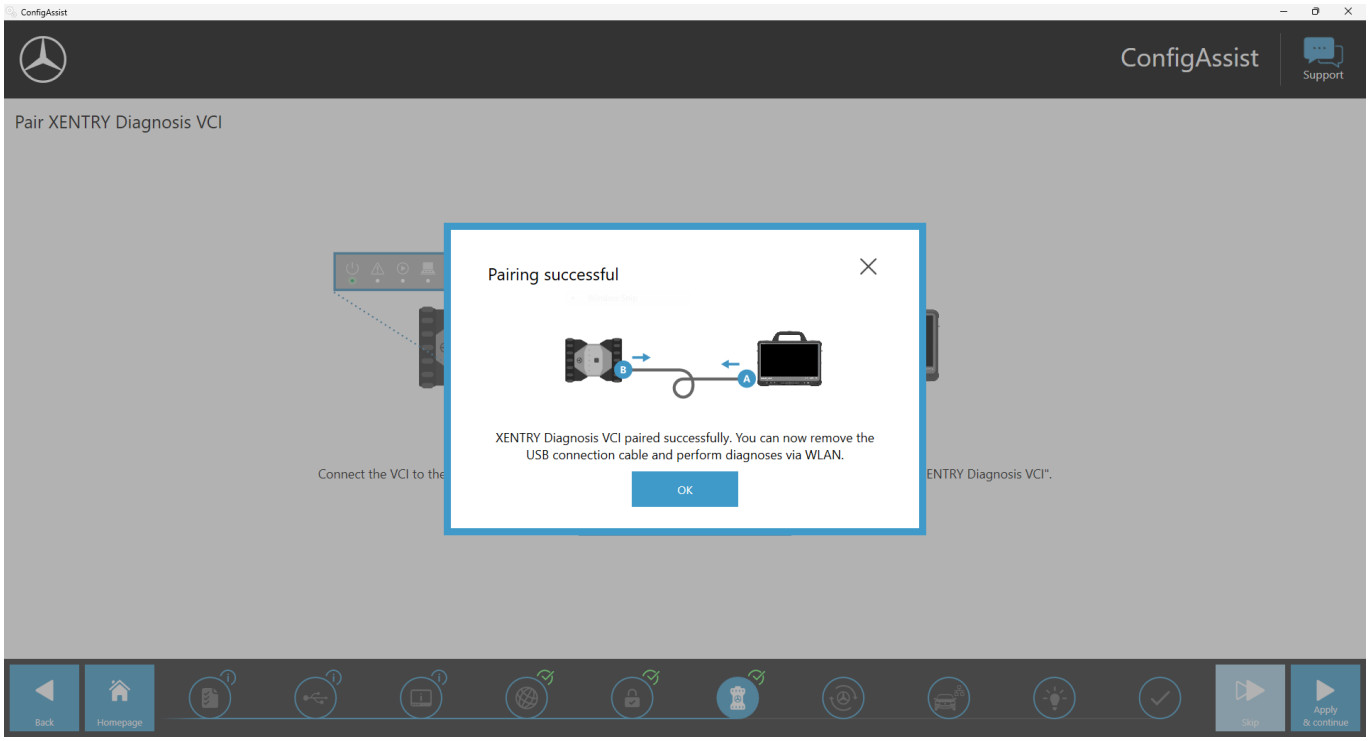


Fig. 14: Successful pairing with XENTRY Diagnosis VCI

On the following screen, click on "Apply and continue".

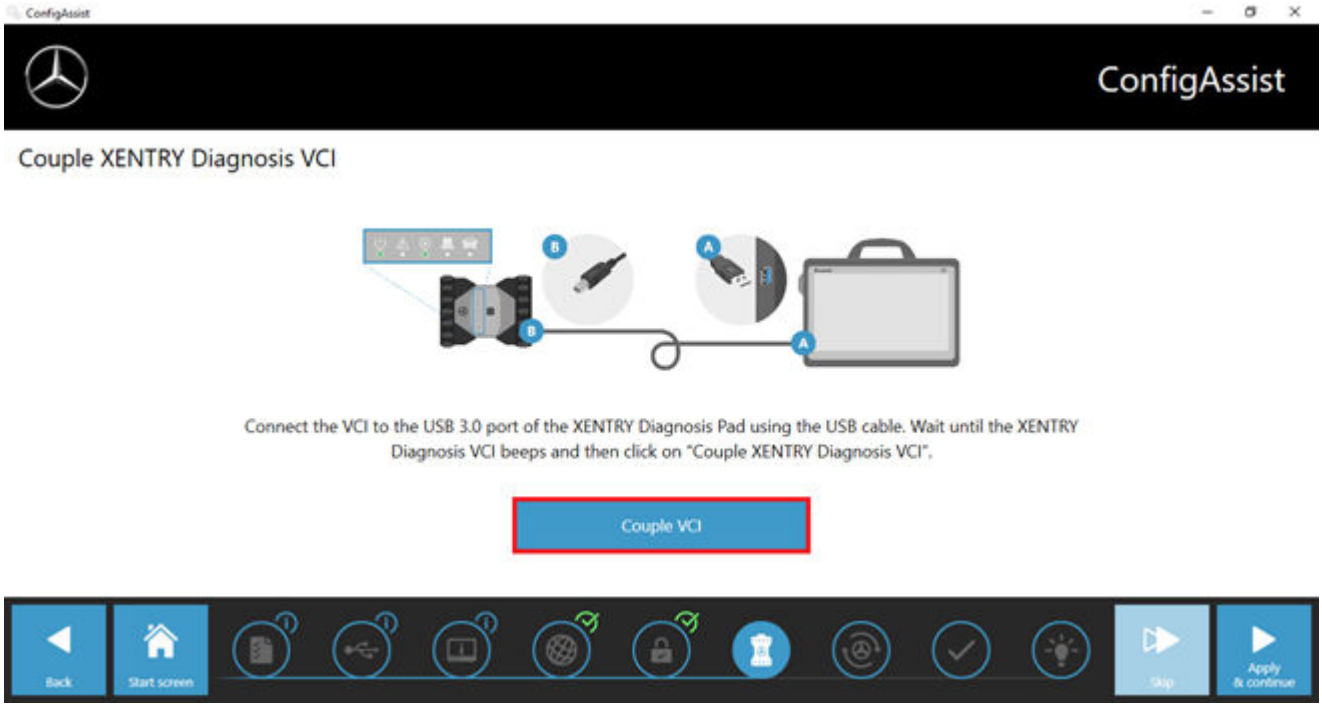


Fig. 15: Completion of pairing to XENTRY Diagnosis VCI

5.4 Configuring the XENTRY Update Service

In this section, you can configure XENTRY Update Service. The XENTRY Update Service defines how the diagnostic data (release updates and control unit software) should be downloaded to your XENTRY Diagnosis Kit.

There are two ways to configure the XENTRY Update Service:

- **Way 1:** XENTRY Update Service with Retail Data Storage

  The diagnostic data (release updates and control unit software) are downloaded from the Internet onto the Retail Data Storage unit first, then onto the XENTRY Diagnosis system.
- "Zero-time update" ensures that release updates are transferred to the XENTRY Diagnosis Pad in the background. During this time, you can continue to work as usual. As soon as the process has been completed, you will be notified that you can now install the new diagnosis update. Generally, the installation takes no more than a few minutes; once this has been done, you can then continue to work as usual with your XENTRY Diagnosis Pad.
- **Way 2:** XENTRY Update Service without Retail Data Storage

  The diagnostic data (release updates, control unit software and Digital Operator's Manuals) are downloaded directly from the Internet onto the XENTRY Diagnosis system.

Please be aware that the Retail Data Storage unit belongs to the Retail Standards.

5.4.1 XENTRY Update Service with Retail Data Storage

If your workshop has Retail Data Storage, you can obtain diagnosis updates, control unit software and Digital Operator's Manuals (DiBA) via the XENTRY Update Service online on the Internet.

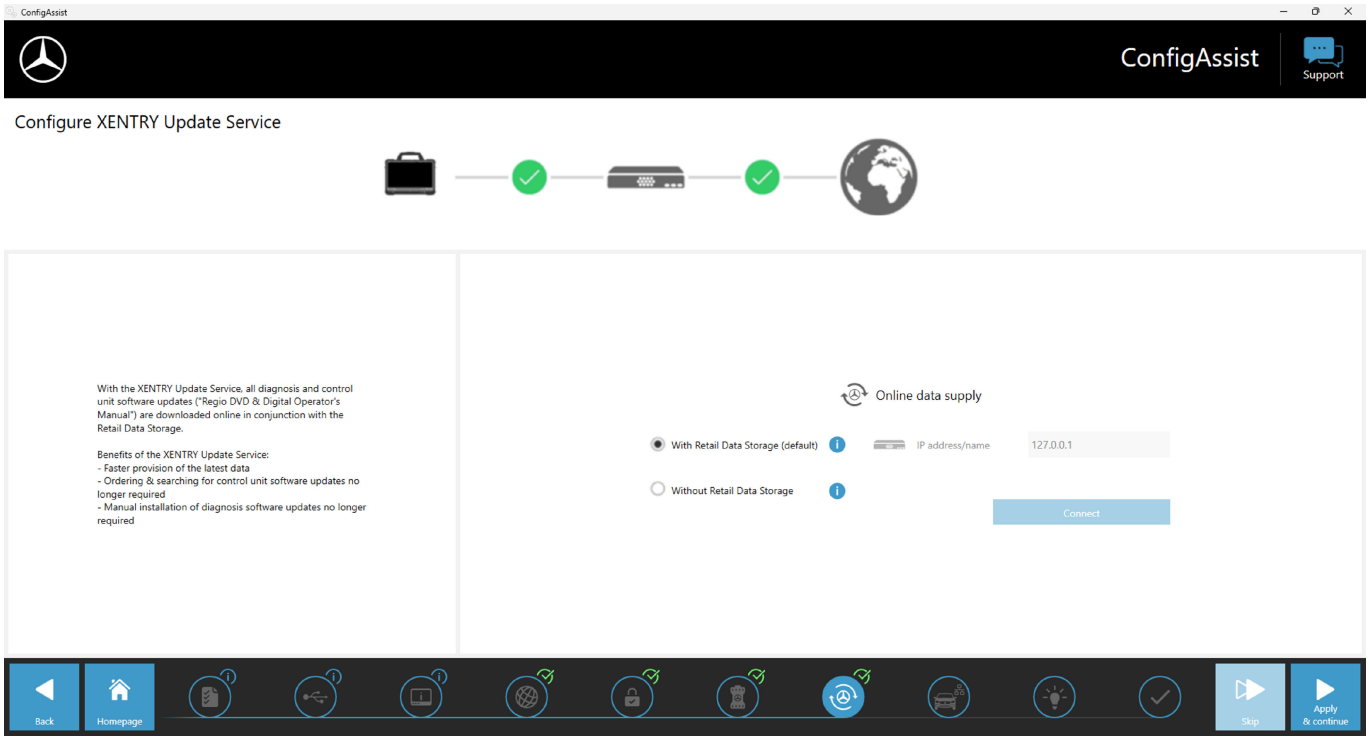


Fig. 16: XENTRY Update Service with Retail Data Storage

To establish a connection to the Retail Data Storage unit, proceed as follows:

1. In ConfigAssist, in the section "Configure XENTRY Update Service", select **"With Retail Data Storage (Standard)"**.
2. Enter the IP address that you have defined for the Retail Data Storage unit into the "IP address / Name" field.
3. Then click on the "Test connection" button.

   ➡ A successful connection will be denoted by a green tick.
4. Once this has been done, select the "Apply and continue" button.

5.4.2 XENTRY Update Service without Retail Data Storage

If your workshop does not have a Retail Data Storage unit, you can download diagnosis and control unit software updates directly from the Internet onto your XENTRY Diagnosis Kit.

We recommend that this option is only used by workshops with one or two diagnostic devices. This option entails the following limitations in comparison to the XENTRY Update Service with Retail Data Storage:

- ***Higher network load***
  - *Data, especially control unit software, will need to be downloaded on demand from the Internet while the unit is running (in contrast to the Retail Data Storage unit, which downloads this overnight).*
  - *Multiple downloads of data required.*
  - *High data volume required for Internet connection.*
- ***Longer waiting times for end customers, depending on download duration.***

To use the option of XENTRY Update Service without Retail Data Storage, proceed as follows:

1. Go to the "Retail Data Storage" area.
2. Select the button **"Without Retail Data Storage"**.
3. Click on "Test connection".
4. Click on "Apply and continue".

➡ Your XENTRY diagnostic device has now been configured for the XENTRY Update Service without Retail Data Storage, and will download release updates and control unit software automatically.

Note: In the event of a Retail Data Storage unit malfunction, it is also possible to configure your XENTRY Diagnosis Kit to this option at any given time.

5.4.3 Configuration of the USB-to-LAN adapter

The USB-to-LAN adapter is an additional product that is not included in the delivery package. It is used to transfer control unit software more quickly to a vehicle.

To set up the adapter, connect it to the USB-C interface on the pad and to the LAN interface on the LAN port of the workshop network (the Retail Data Storage unit must be on the same network).

Then click on "Test connection"; provided that the connection is successful, click on "Apply and continue".

If you do not want to set up a USB-to-LAN adapter, you can skip this section.

You can find more information about the product via the B2B Connect homepage, as well as other information such as the user guide, which provides you with a detailed overview of the configuration process.

You need a Retail Data Storage unit in order to be able to use the product!

5.5 Completing the configuration

The "Additional information" page has links on it that lead you to helpful additional information.

Click the "Continue" button. An overview of your system configuration appears.

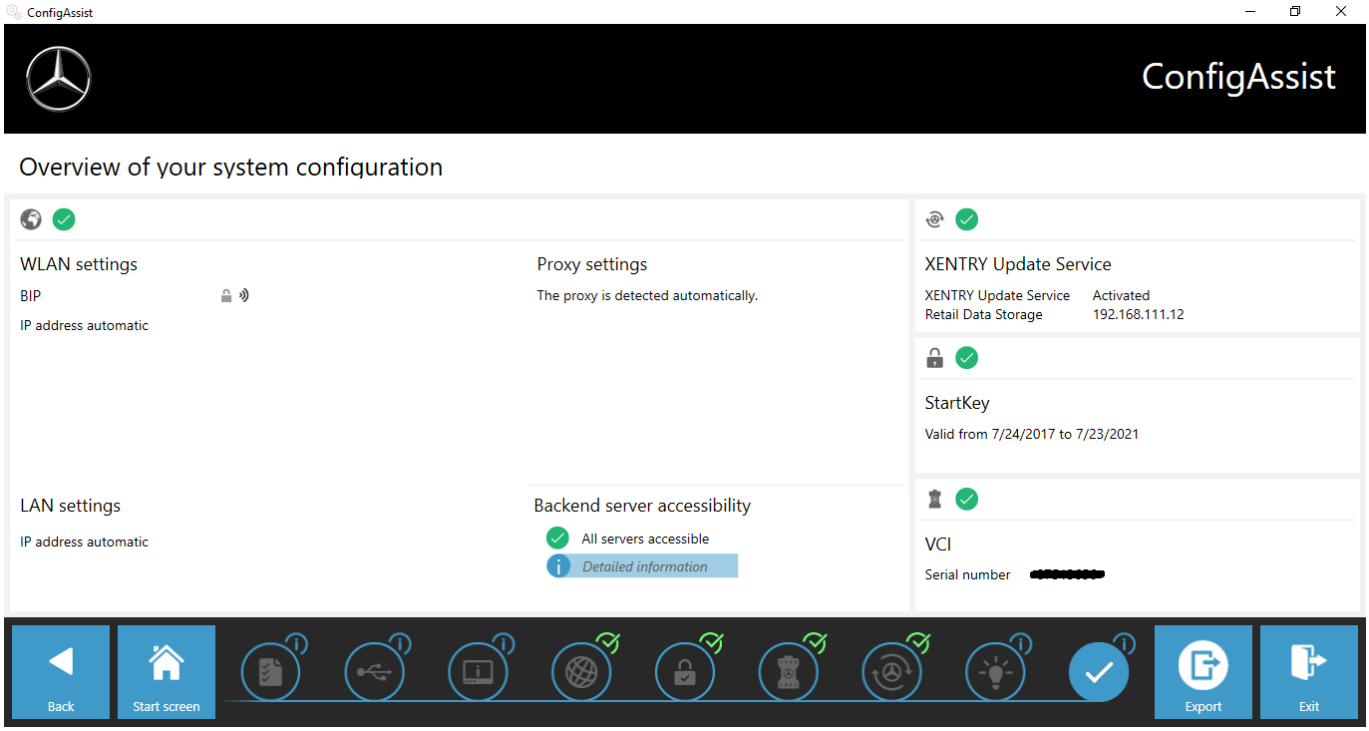


Fig. 17: System configuration overview

A green tick next to the globe indicates that an online connection has been established successfully. If the symbol is gray, no online connection has been established. if this is the case, please check your network settings. You're also provided with information regarding your network settings, XENTRY Update Service, StartKey and paired XENTRY Diagnosis VCI.

5.6 Exporting the configuration

Using the "Export" function, you can save your configuration as an *.XML file to the XENTRY Diagnosis Pad hard drive. If you are using multiple XENTRY Diagnosis devices in your company, you have the option of installing the configuration on every XENTRY Diagnosis Pad by means of a USB flash drive or via the network.

You can find this export function on the first and last page of ConfigAssist.

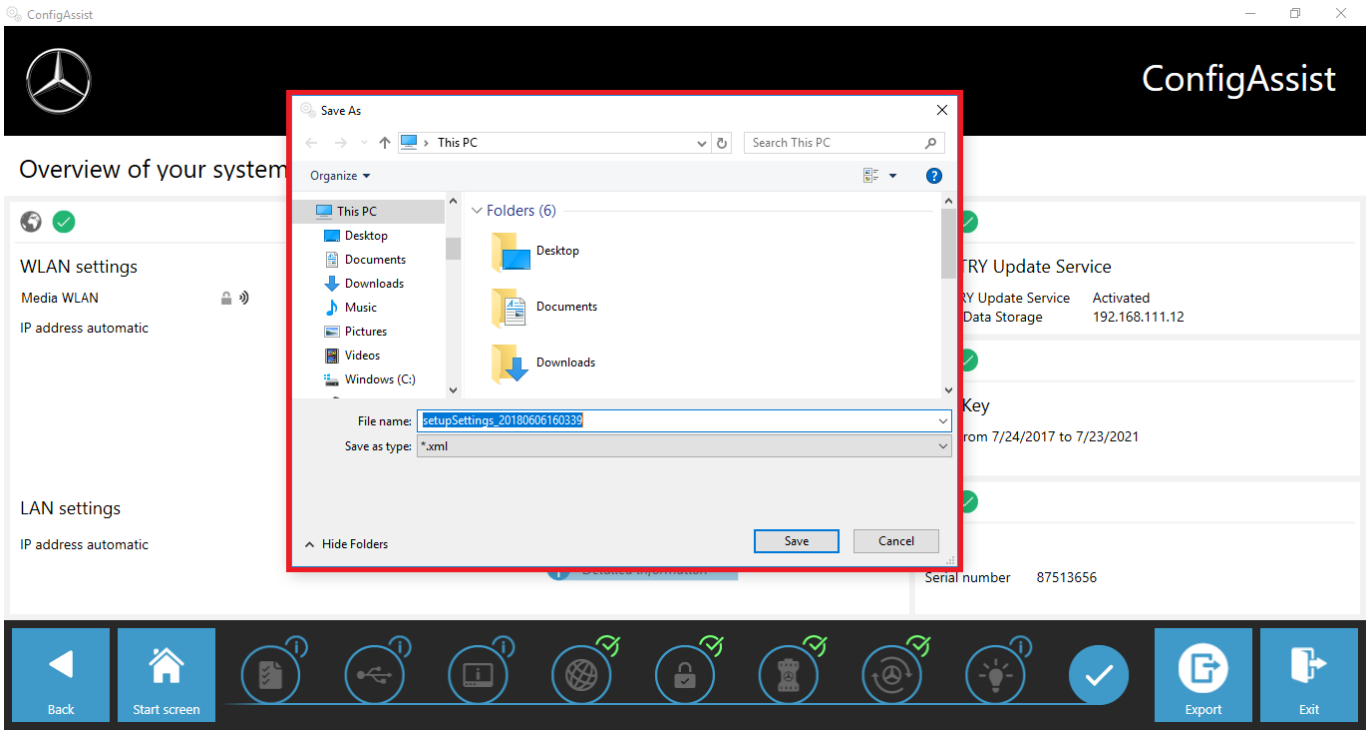


Fig. 18: Exporting the configuration

You have successfully set up your XENTRY Diagnosis Pad.

Now close ConfigAssist by clicking "Exit".

5.7 Printers and printing

Any commercially available printer compatible with Windows can be installed on the XENTRY Diagnosis Pad. This applies to both USB printers and network printers. The printer needs to support the Windows operating system installed. Installation is no longer carried out via special tools but simply via the Windows menu.

5.7.1 Installation of a USB printer

To install a USB printer, proceed as follows:

1. Switch on the USB printer.
2. Connect the USB printer to the XENTRY Diagnosis Pad using a suitable USB cable.
3. Then wait for a few minutes.
4. The USB printer is installed automatically by Microsoft Windows.
5. The printer is now ready for use.

Alternatively, you can install the printer as follows:

- Open the Control Panel from the Windows main menu.

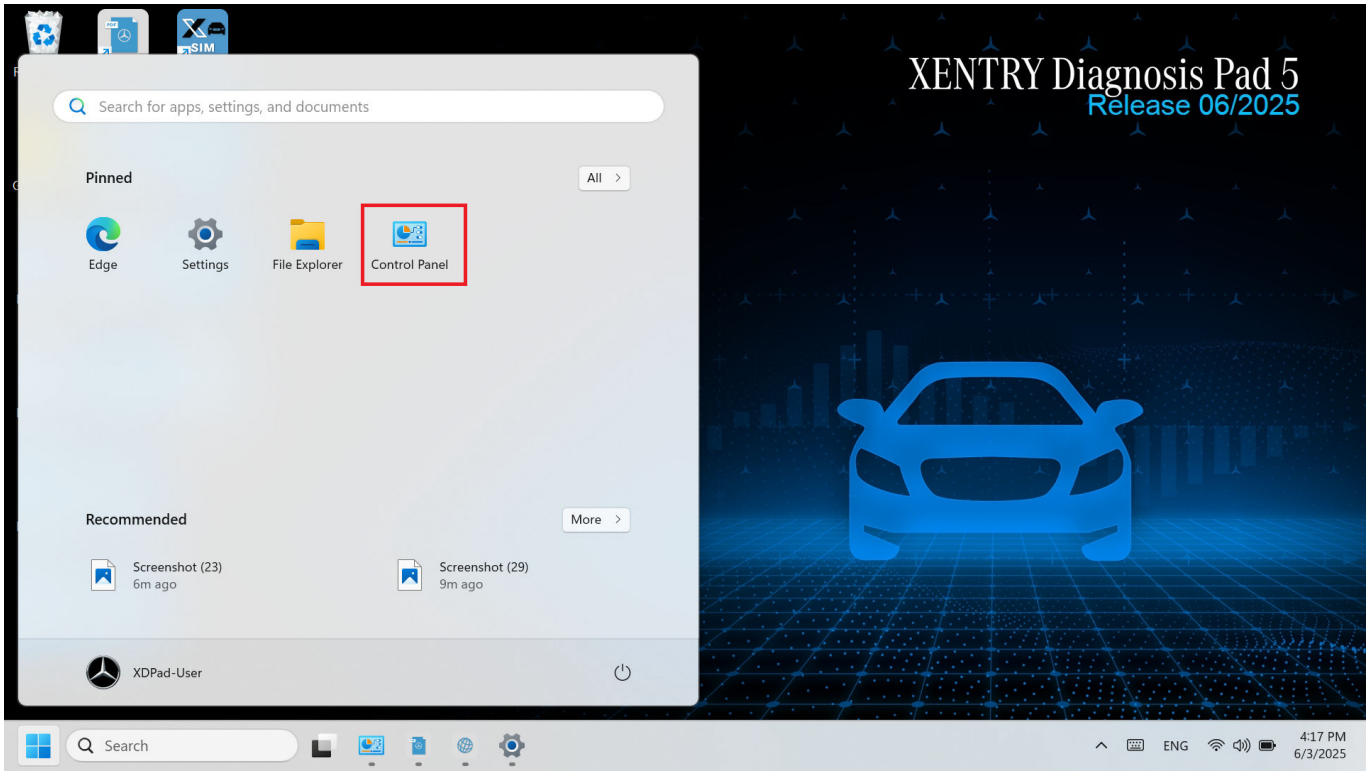


Fig. 19: Open Control Panel

- Click "View devices and printers" in the "Hardware and Sound" area.

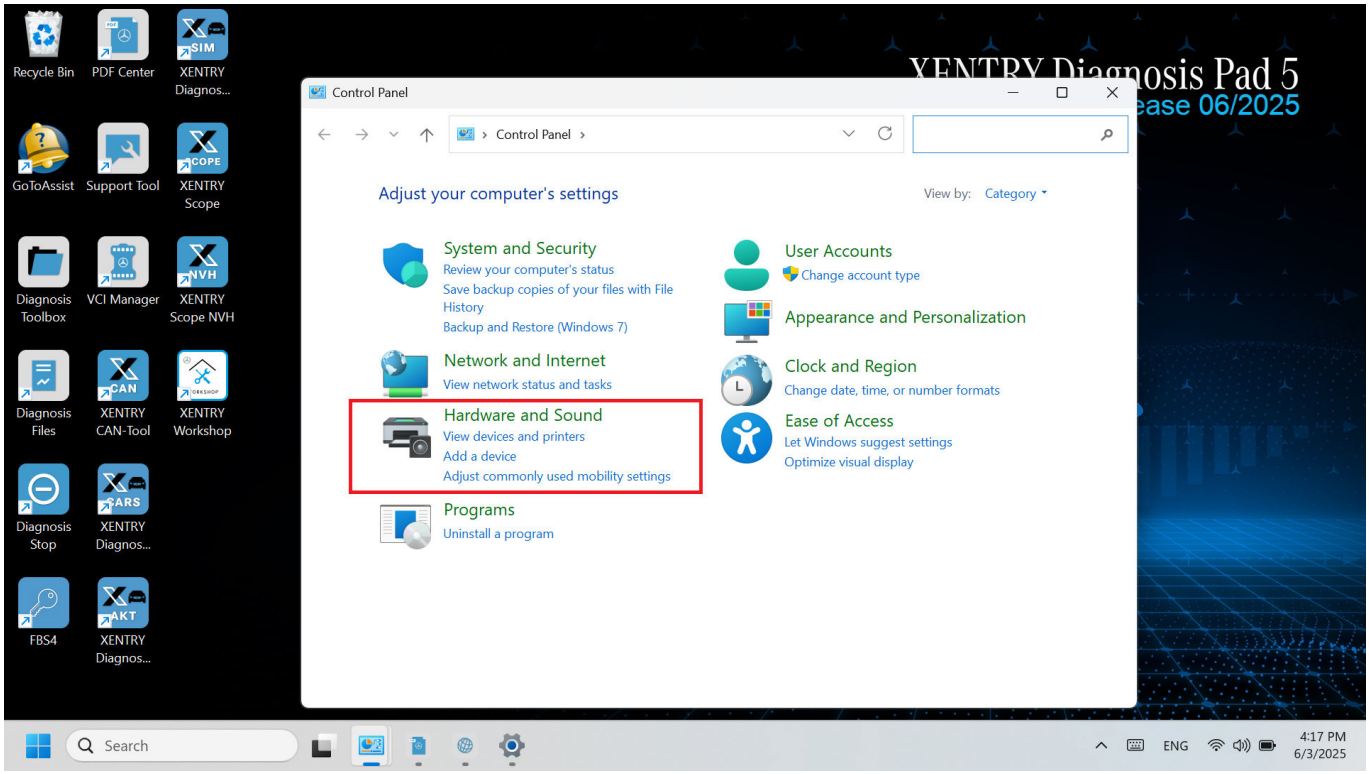


Fig. 20: Hardware and Sound – View devices and printers

- First, the currently installed printers are displayed. The printer identified by the green checkmark is the selected default printer:

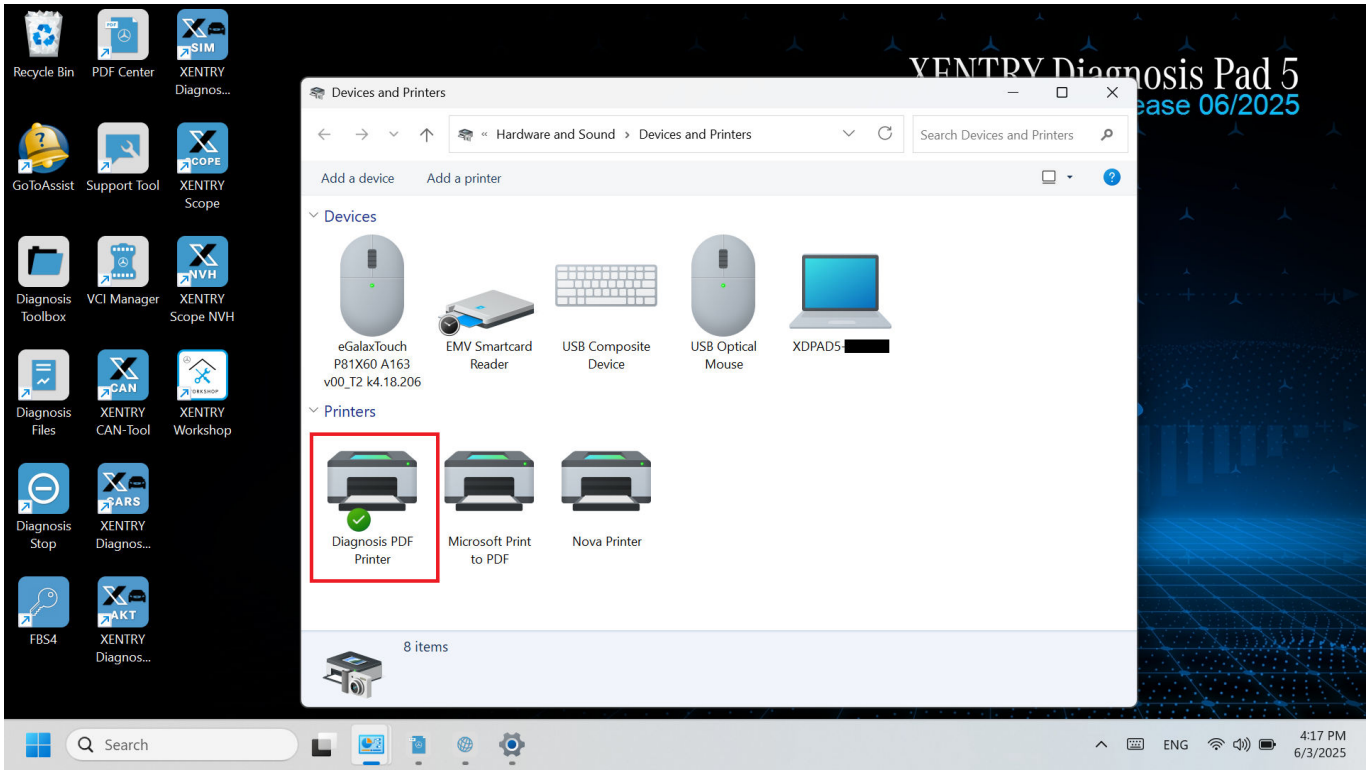


Fig. 21: Currently installed printers

- Now turn on the desired USB printer and connect it with the pad using a suitable USB cable XENTRY Diagnosis . The printer is initially displayed in the "Not specified" area while the printer drivers are being installed. This process may take a few minutes.

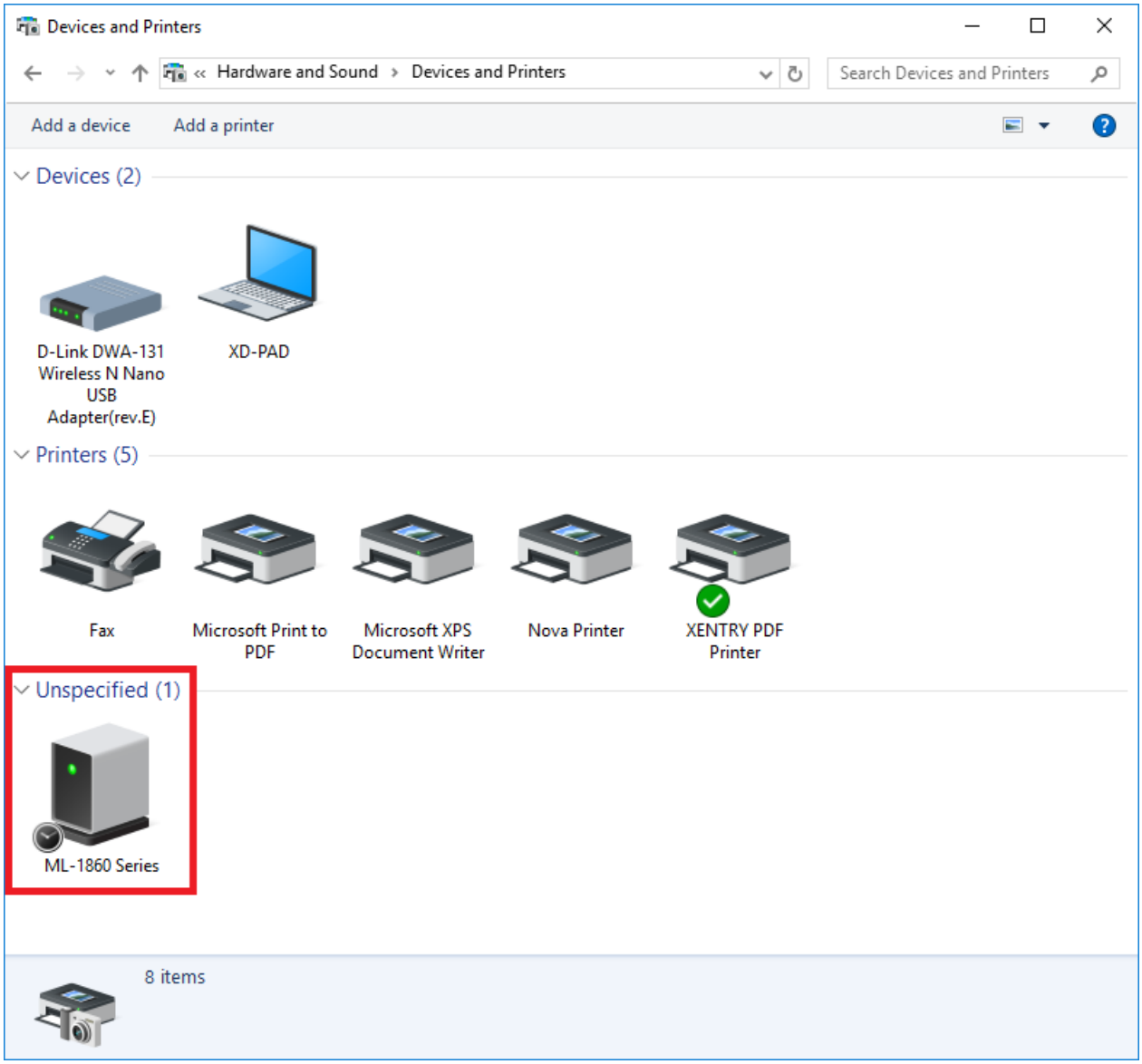


Fig. 22: Printer recognized, installation in progress

- Once it has been successfully installed, the printer is displayed in the "Printers" area.

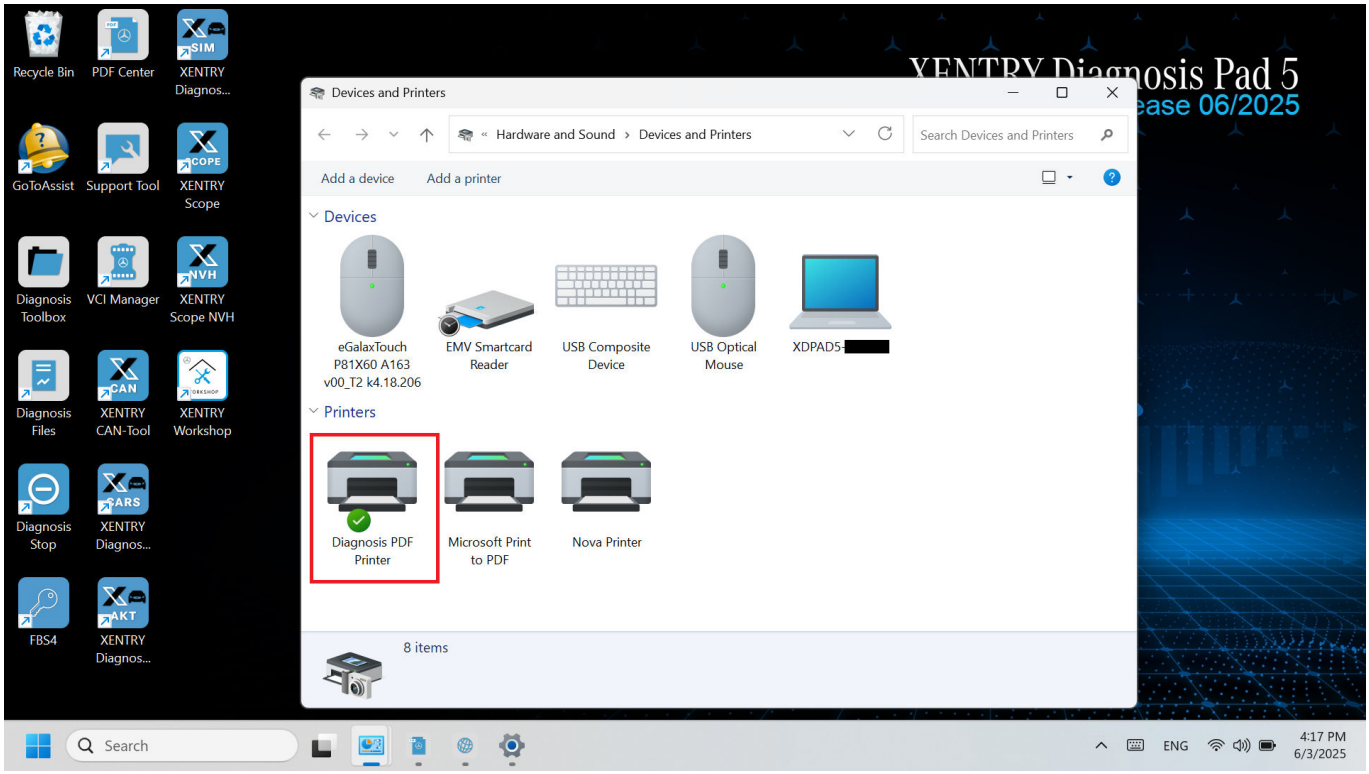


Fig. 23: Currently installed printers

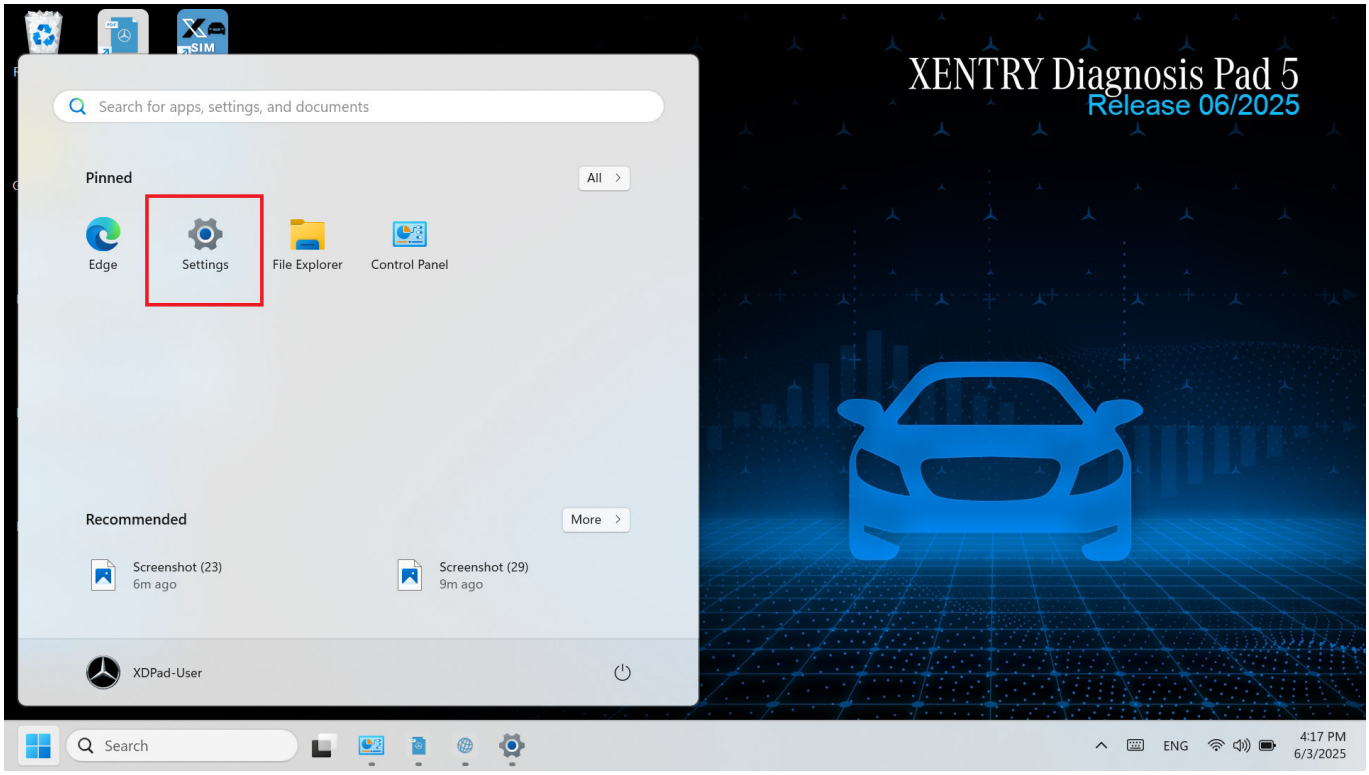
You also have the option of creating PDF files with XENTRY Diagnosis. A comprehensive description of the Diagnosis PDF Printer is available in ➦ Chapter 9.5 “PDF Center” on page 62.

5.7.2 Installation of a network printer

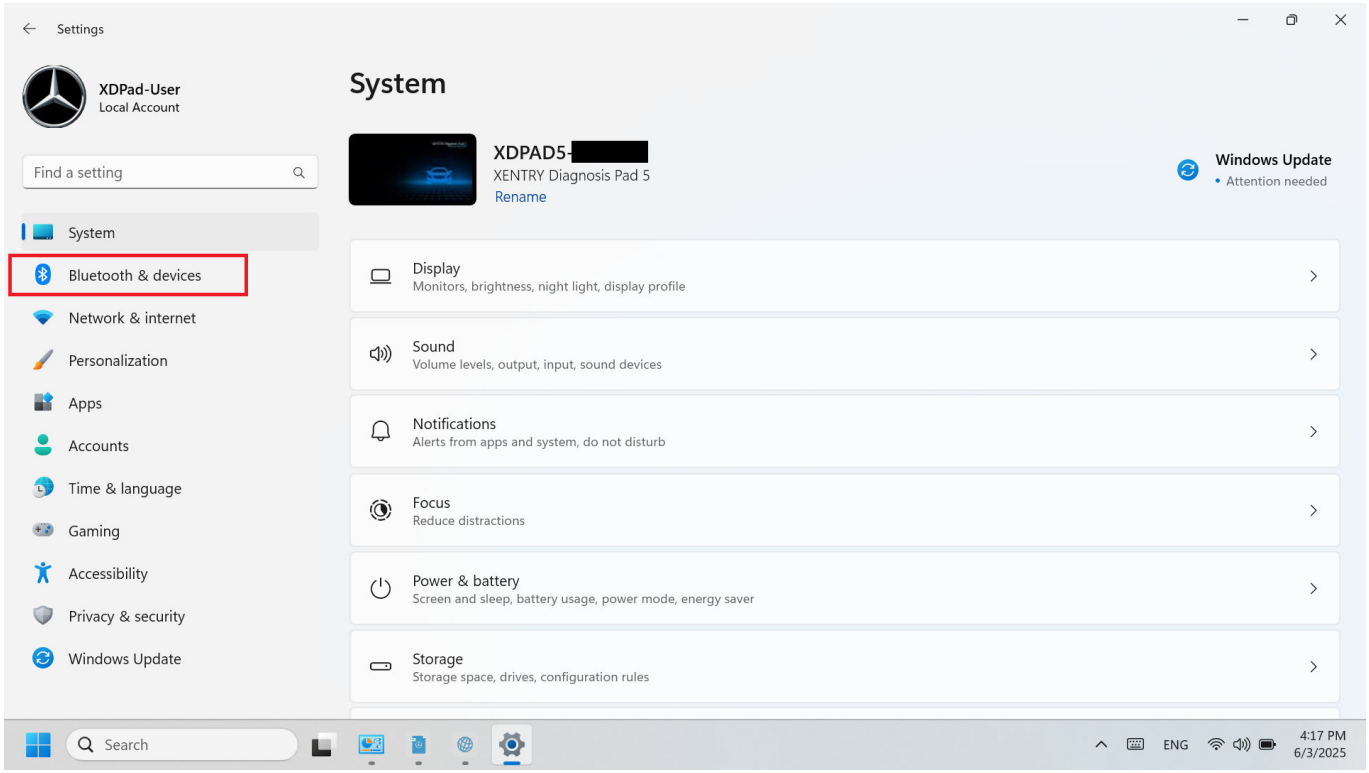
The process for setting up a network printer that must be located on the same network as the XENTRY Diagnosis Pad is described below.

Please switch on the network printer, and connect to the network on which the XENTRY Diagnosis Pad is located.

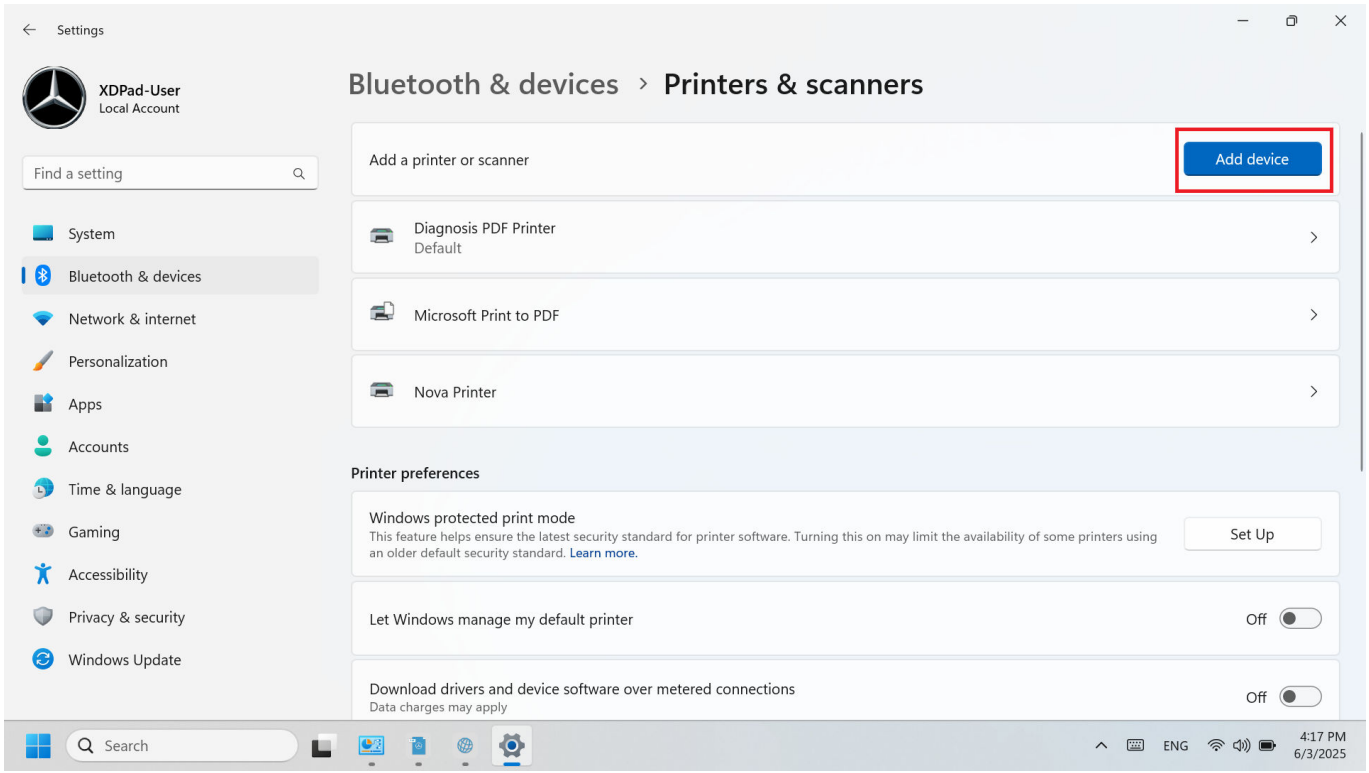
- Open "Settings" via the start menu on the XENTRY Diagnosis .



- Select "Devices – Bluetooth, Printer, Mouse".



- Click on "Add Device".



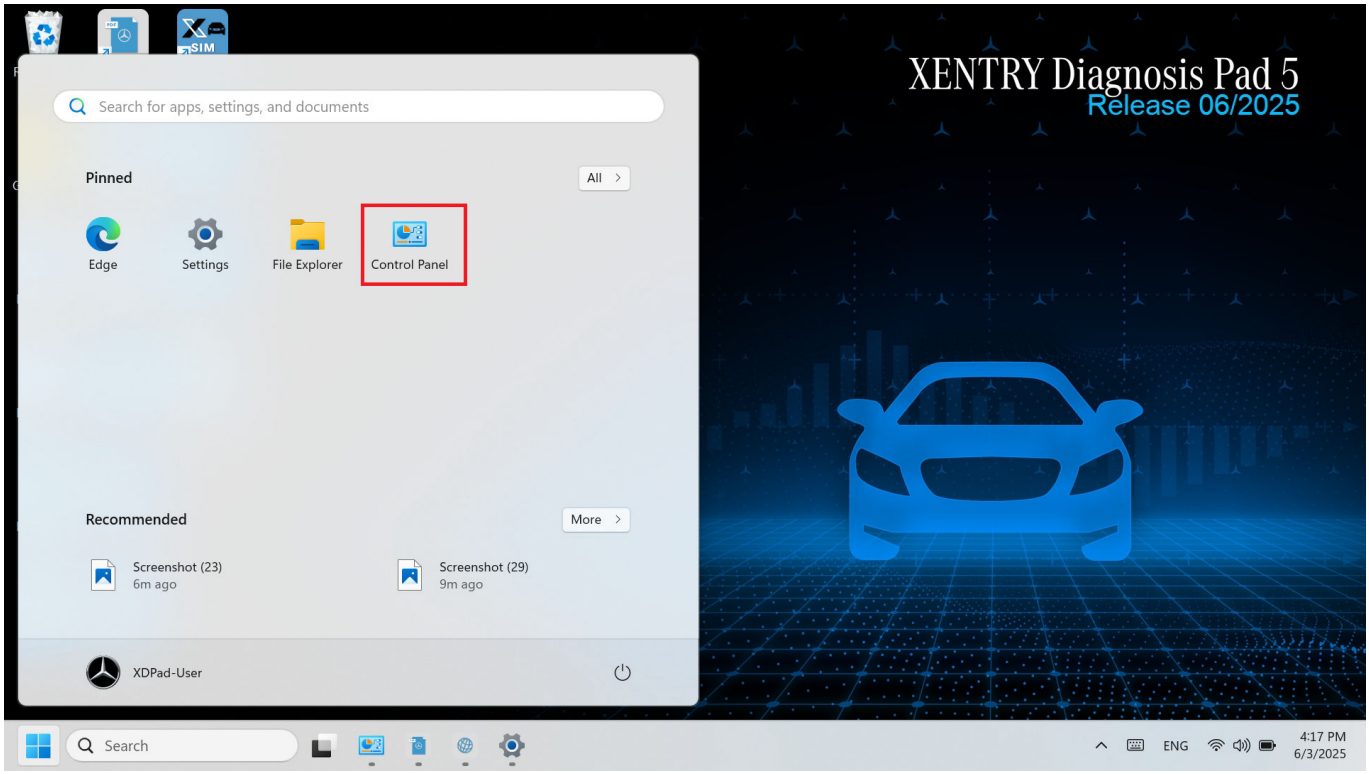
- After a brief search, the network printer is displayed.

Select the printer to be installed, then select "Add device".

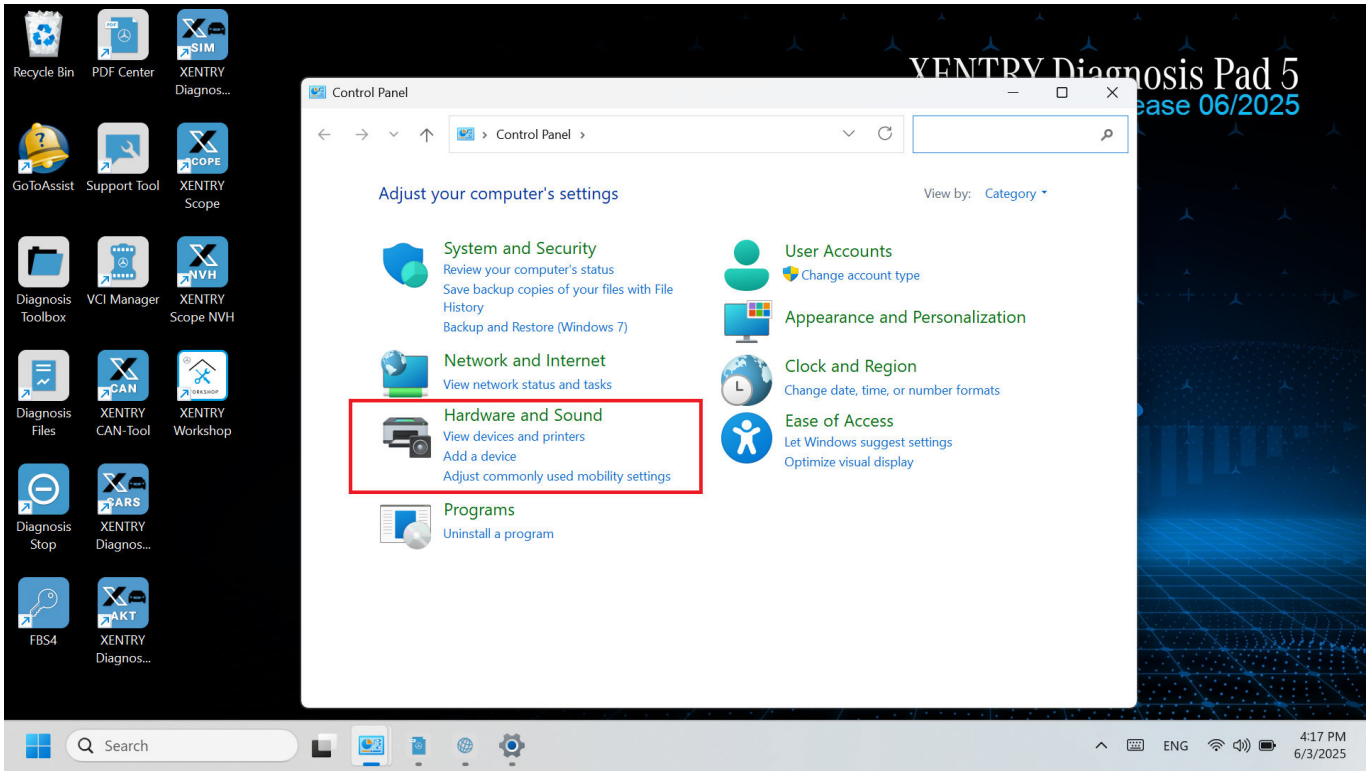
➡ The printer drivers are then automatically retrieved and installed.

The printer is now ready for use.

- If necessary, you can verify this via the Control Panel. To do so, click the "Control Panel" button in the main menu.



- All installed printers are displayed under the "Hardware and Sound – View devices and printers" menu item.



- The installed printer will be visible in the "Printers" area.

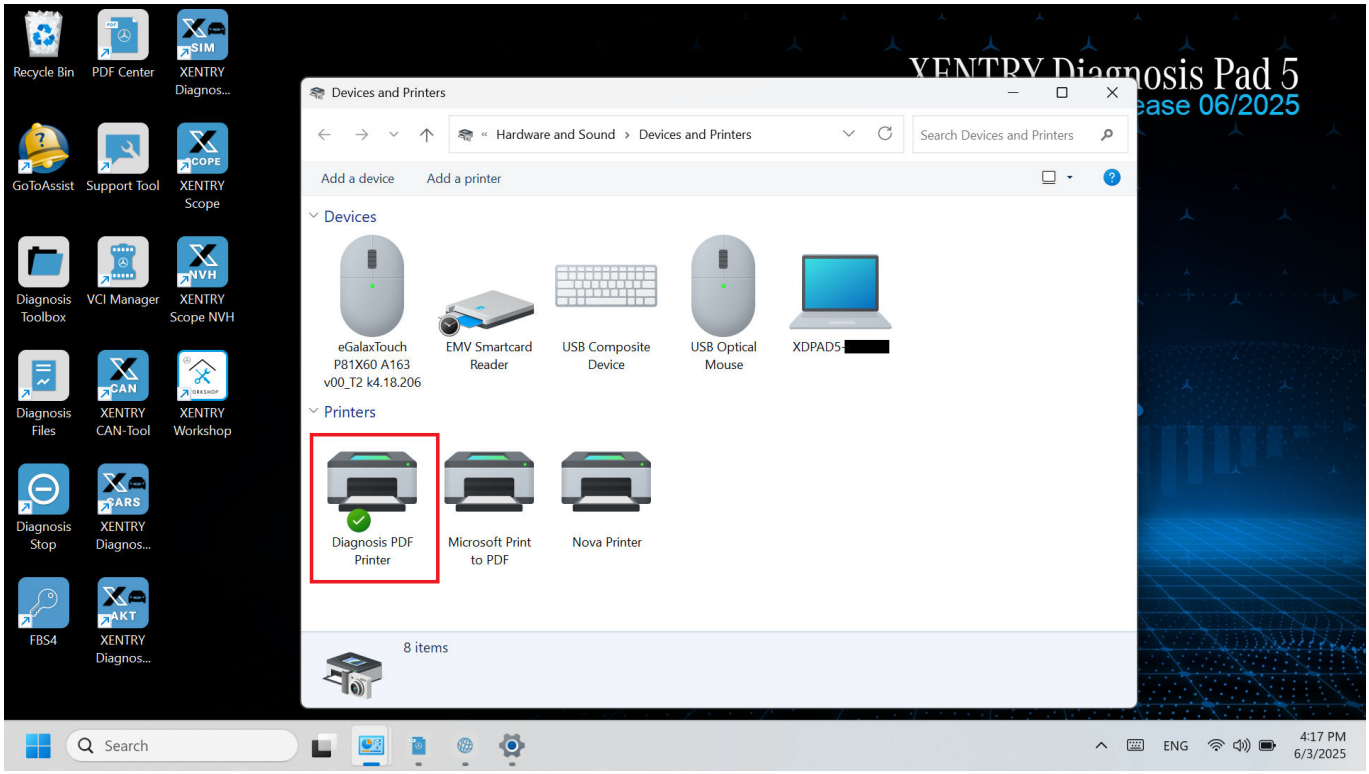


Fig. 24: Currently installed printers

5.7.3 Wizard for installing printer drivers

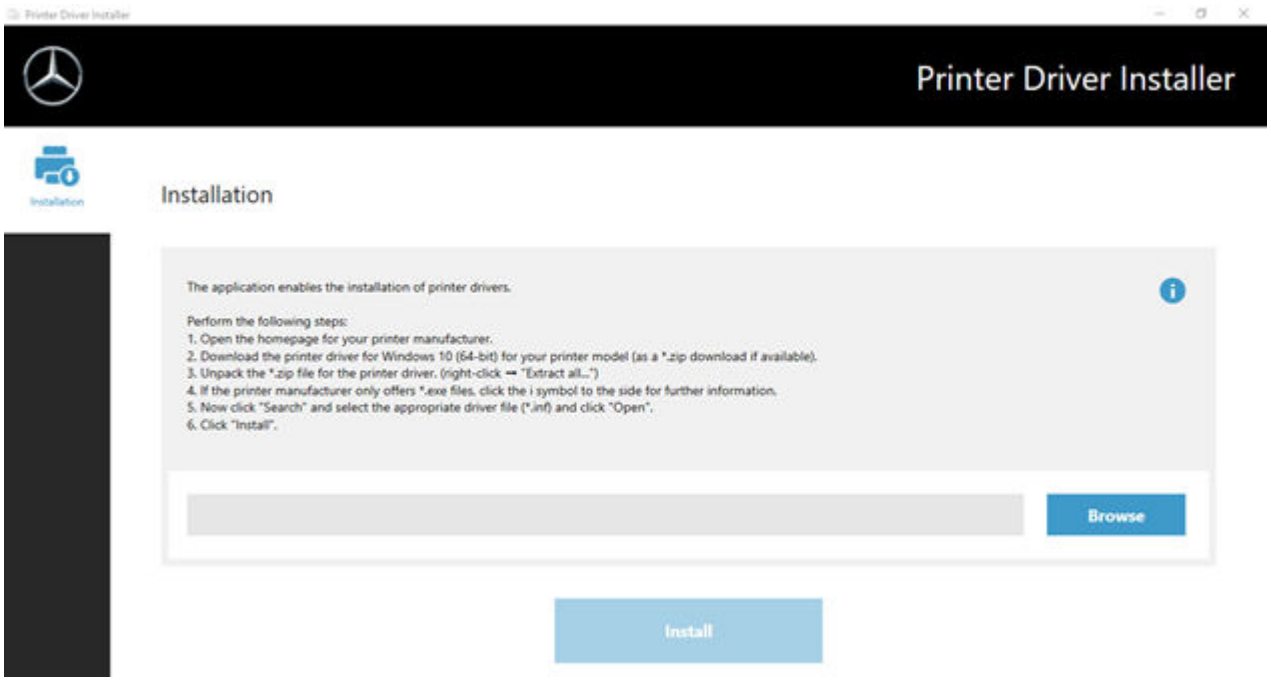
If you are prompted to enter an admin password during printer installation, you have two options:

Install the printer driver via the "Printer Driver Installer" desktop shortcut. The procedure for this is described below:

- Open the Printer Driver Installer via the desktop shortcut on your XENTRY Diagnosis Pad.

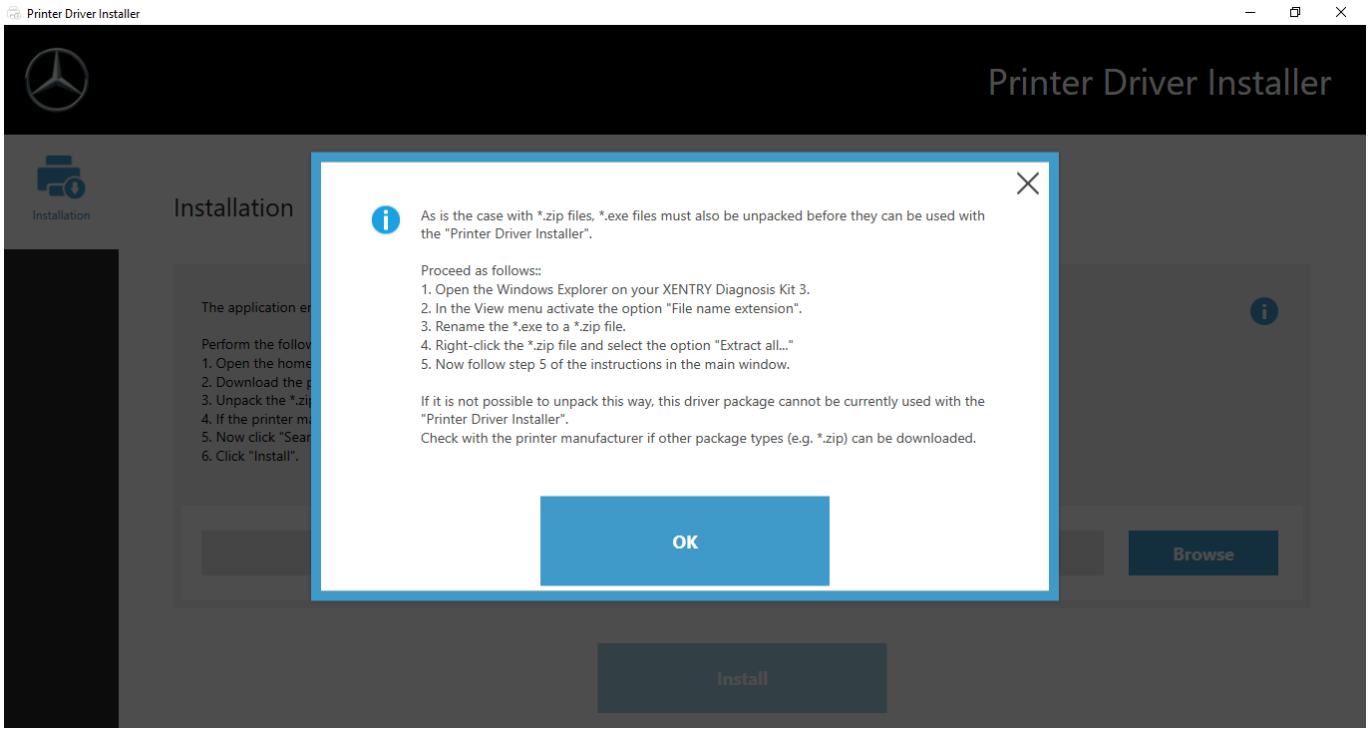


- The installation page opens:



Here, you can directly download and install the printer driver onto the XENTRY Diagnosis Pad.

Please note that the Printer Driver Installer currently only handles *.INF files. If your printer driver is only available as an *.EXE file, then please click on the button on the right for instructions on how to proceed in this case:



5.8 Multi-factor authentication

Multi-factor authentication (MFA) increases security by requiring more than one proof of authentication when logging in. You will need your personal login details, consisting of your user name and password and a code for verification.

5.8.1 New features as of Release 03/2026

You now log in as soon as XENTRY Diagnosis starts. Thanks to the Single Sign-On (SSO) process, you only have to log in once with multi-factor authentication. You do not need to log in again until you exit XENTRY Diagnosis, restart the diagnostic device or after 10 hours have elapsed. The prerequisite is that your diagnostic device has an Internet connection and that this remains active while you log in. After successfully logging in online, you can also operate the device without an Internet connection.

Helpful information on how to set up an Internet connection, for example for 24-Hour Service, can be found in the "Configuring a hotspot" chapter of the operator's manual.

5.8.2 Options for multi-factor authentication

There are several options available for multi-factor authentication:

- **Using a smartphone app**

  For authentication, we recommend using the PingID authentication app (described in the following guide), which is available free of charge in the Apple App Store and Google Play Store. Other authentication apps also work, but have to correspond with the RFC6238 TOTP standard.

- **Using a USB security key**

  As an alternative to the smartphone app, you can use a USB security key for authentication. In this guide, we describe how to use a USB security key from Yubico. Other USB security keys also work, provided that they support the FIDO2 standard or UFC. You can order a USB security key from an electronics retailer or directly from the manufacturer. These are not marketed by Mercedes-Benz.

5.8.3 Initial setup of the second factor for XENTRY Diagnosis

If you have not yet added a second factor for authentication to your user account, you can do this via "Identity & Access Management" (IAM).

To do this, go to the relevant website and follow the steps on the website: ➦ https://login.mercedes-benz.com/password/mfa-settings

5.8.4 Initial setup of the PingID smartphone app

You can view the current smartphone requirements directly on the PingID website: ➦ https://www.pingidentity.com/

Once you have installed the PingID app on your smartphone via the Apple Store or Google Play Store, proceed as follows.

1. Log in to a XENTRY application or visit the following website: ➦ https://login.mercedes-benz.com/password/mfa-rollout
2. Open the PingID app.
3. The app will ask you to allow access to push notifications and the camera
   ➦ The QR code scanner then starts directly within the app
4. Scan the QR code or enter the pairing key manually
   ➦ Successful pairing is confirmed with a message.

You can find detailed instructions and further information at ➦ https://login.mercedes-benz.com/password/mfa/guide

5.8.5 Initial setup of a USB security key

1. Log in to a XENTRY application or visit the following website: ➦ https://login.mercedes-benz.com/password/mfa-rollout
2. Please log in with your user name and password
   ➦ You will now be automatically redirected to the page for activating the security key
3. Click on the "Rollout" tab
   ➦ You will now be taken back to the page for activating the security key
4. In the window that opens, select the "YubiKey" authentication method
5. Make sure that your security key is inserted in your device and connected. Now click on the contact of the YubiKey
   ➦ An automatic pairing key is generated and saved

You can find detailed instructions and further information at ➦ https://login.mercedes-benz.com/password/mfa/guide

5.8.6 General use

1. Make sure your chosen multi-factor authentication method is to hand (smartphone) or that the YubiKey is inserted
2. Open a XENTRY application
3. Please log in with your user name and password
   ➦ You will now be automatically redirected to the page for entering the security key
4. Now open PingID to obtain a security key and enter it. If you are using a YubiKey, press the integrated button.
   ➦ You will receive a message about successful authentication

5.8.7 Change of smartphone

If you change your smartphone, you can transfer the PingID as follows:

1. Install the PingID app on your new smartphone and open it
2. Now open the PingID app on your old smartphone and click on the menu in the top left-hand corner
3. Click on the "Change device" menu item on your old smartphone
4. Follow the instructions on your smartphone

5.8.8 Further topics and support

You can find more information and support addresses on the topic of multi-factor authentication on the IAM platform. To do this, go to the following page: https: ➦ //login.mercedes-benz.com/password/mfa/guide.

User guides are available on the following topics:

- Using the smartphone app and a USB security key
- Managing new and additional devices
- Deleting and resetting devices
- Contact details for multi-factor authentication support

6 Operation of XENTRY Diagnosis Kit

6.1 System start

Please proceed as follows to start the components of your XENTRY Diagnosis Kit correctly:



Fig. 25: XENTRY Diagnosis Pad 2 illustration

1. Start the XENTRY Diagnosis Pad by pressing the button on the front of the device for approx. 5 seconds.
2. Start the XENTRY Diagnosis VCI by connecting it to a vehicle with the OBD cable (and if necessary an adapter).
   ➡ Once the VCI has booted, an acoustic signal will sound (after approx. 10 seconds).
3. The XENTRY Diagnosis software can then be started up to begin a diagnosis session.

6.2 Connection options

The connection to the workshop network, XENTRY Diagnosis Pad and XENTRY Diagnosis VCI can be selected individually.

Connection variant 1: WLAN

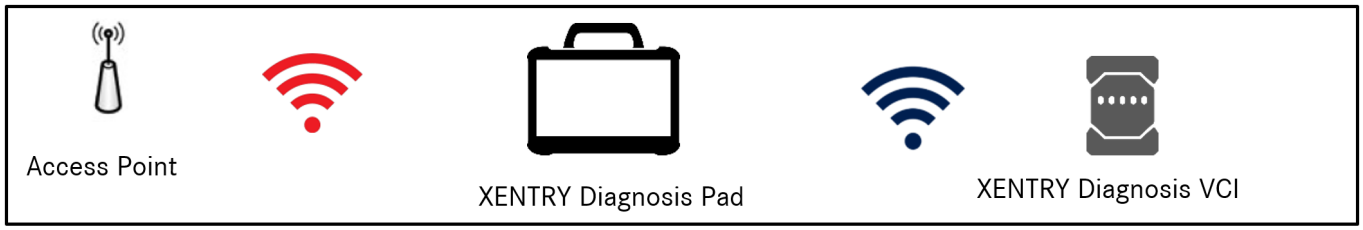


Fig. 26: Connection variant 1: WLAN and WLAN

Connection variant 2: WLAN and USB

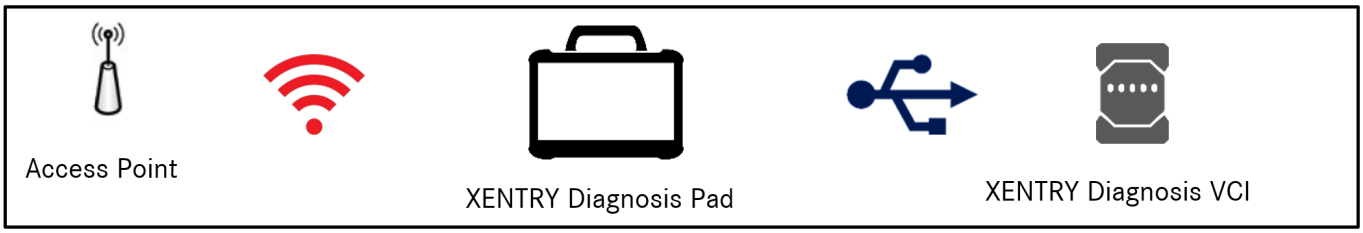


Fig. 27: Connection variant 2: WLAN and USB

Connection variant 3: LAN and WLAN

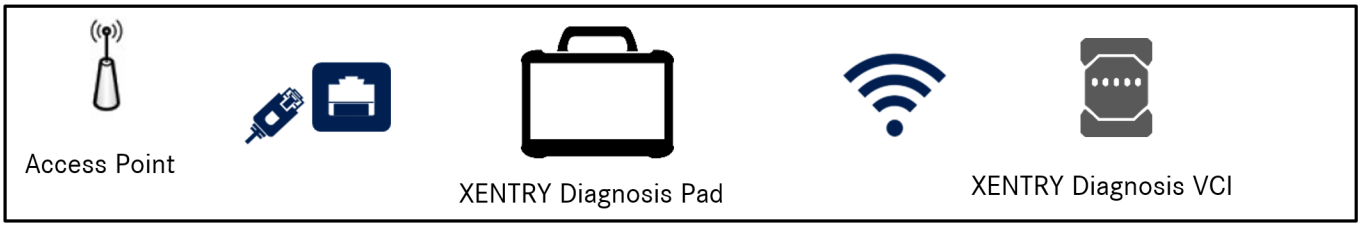


Fig. 28: Connection variant 3: LAN and WLAN

Connection variant 4: LAN and USB

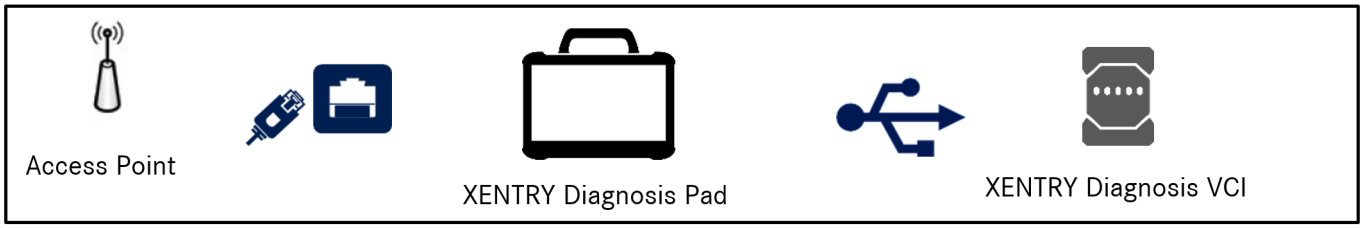


Fig. 29: Connection variant 4: LAN and USB

6.3 Use of control unit software provided online

If you are using a Retail Data Storage unit in your company, you can perform control unit commissioning online, since the control unit software is now available via the Retail Data Storage unit.

The available control unit software can be viewed in the XENTRY Update Service Control Center.

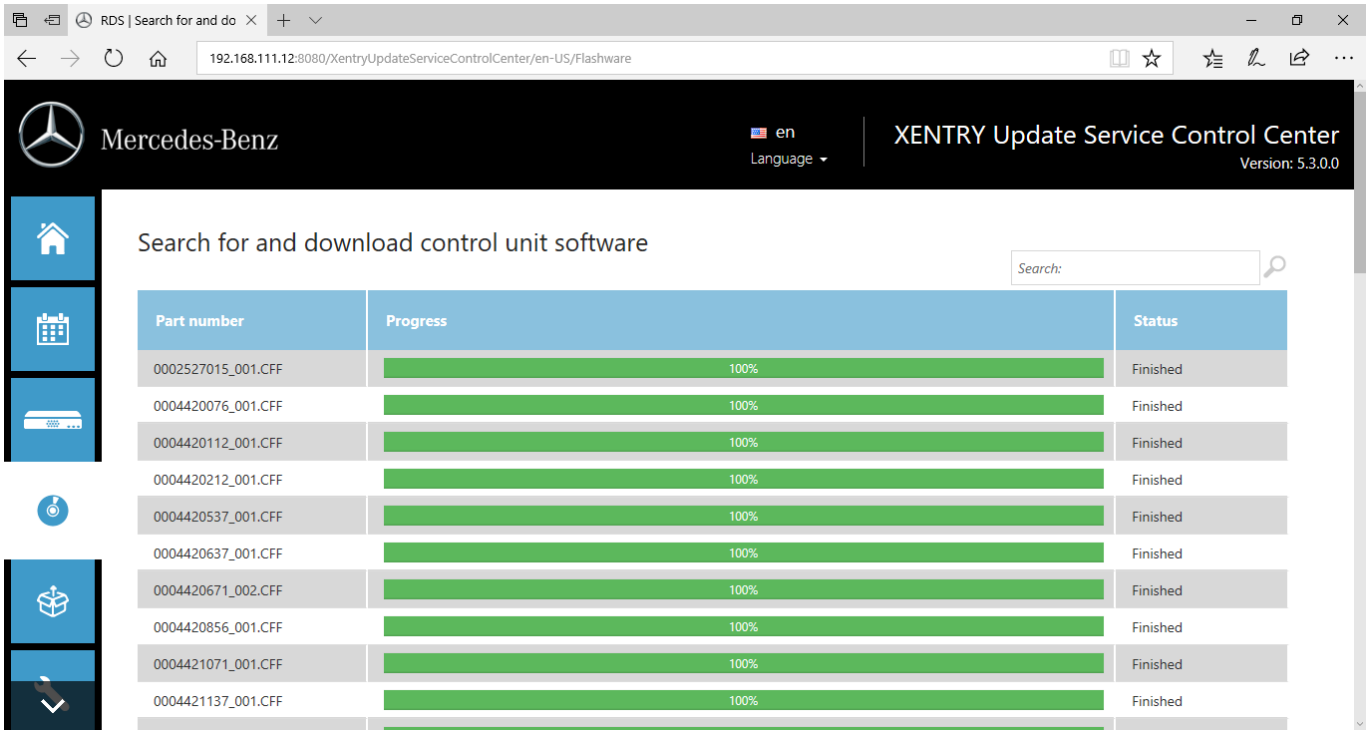


Fig. 30: Available control unit software

For more information, please see the user guide "XENTRY Update Service and Retail Data Storage".

6.4 AQT – Automatic Quick Test

In order to perform an automatic quick test (AQT) in service reception, the XENTRY Diagnosis Pad must be integrated into your company's service reception network and connected to the Internet. Please ensure when working in service reception that the XENTRY Diagnosis VCI and XENTRY Diagnosis Pad are in the direct vicinity of one another, so that the connection between the hardware components can be maintained via WLAN. Alternatively, the hardware components can be connected via a USB connection cable.

In addition, you must have access to XENTRY Portal. More information is available in the XENTRY Portal at

Service Reception > Diagnosis in Reception (Automatic Quick Test)

To activate the automatic quick test (AQT) mode, open the "XENTRY Diagnosis AQT" link on the XENTRY Diagnosis Pad desktop.



You will be prompted once to log in with your username and password:

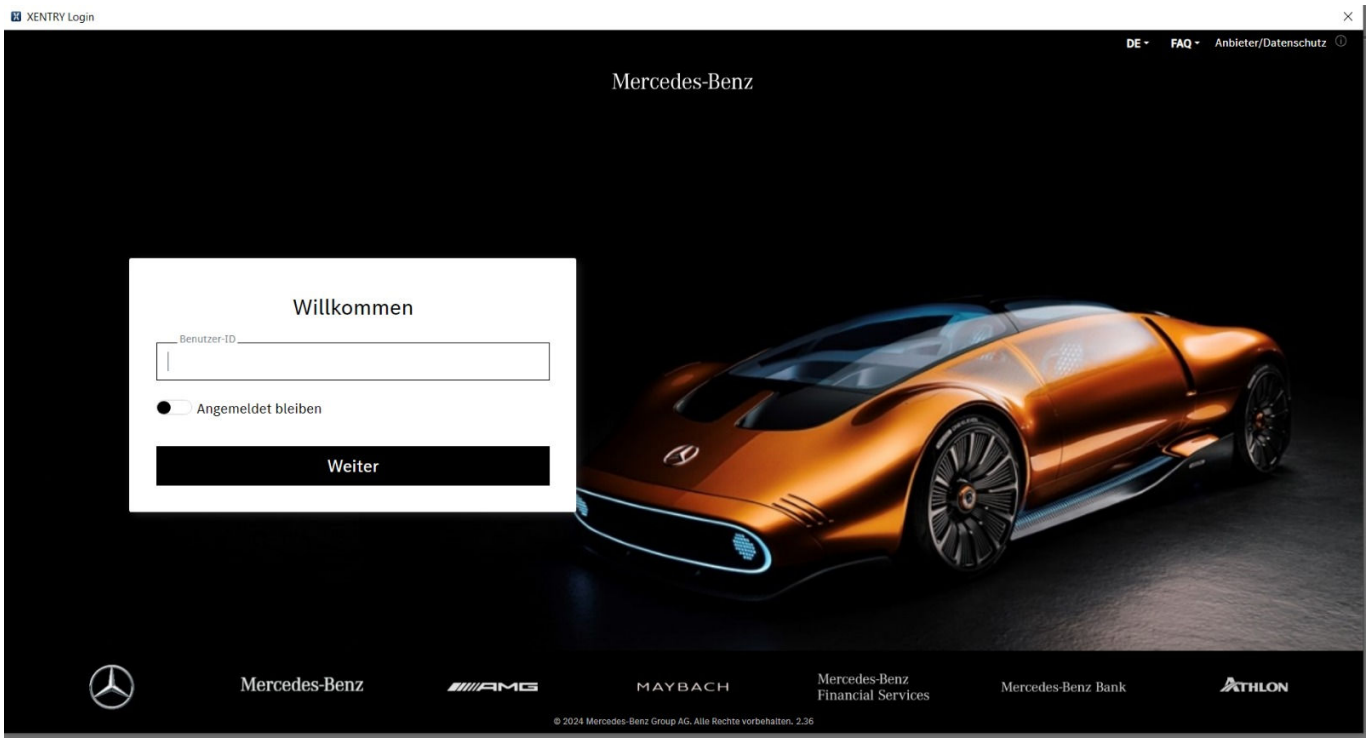


Fig. 31: XENTRY AQT login

XENTRY Diagnosis VCI is now ready to perform the AQT.

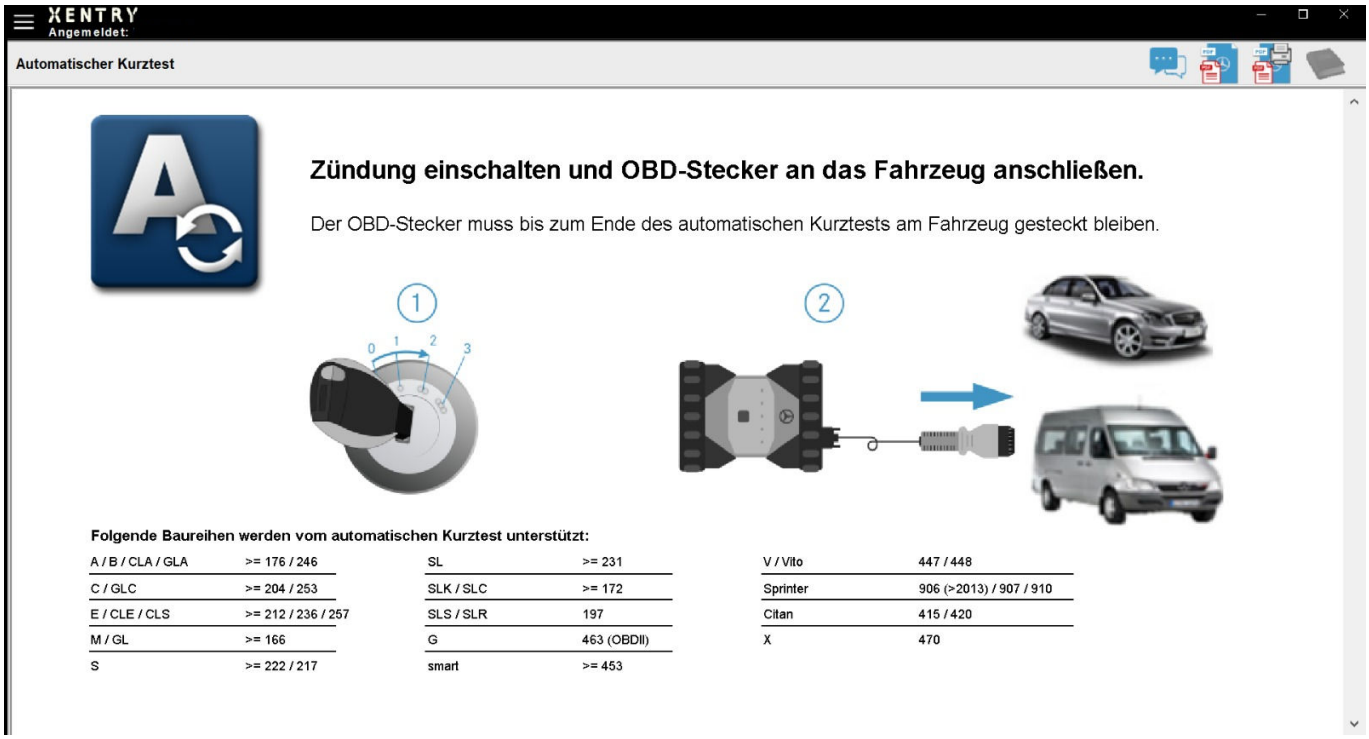


Fig. 32: AQT main menu

Proceed as follows:

- Switch the vehicle ignition on (important!).
- Connect the XENTRY Diagnosis VCI to the OBD socket on the vehicle.
- The quick test starts; you can follow its progress on the XENTRY Diagnosis Pad:



Fig. 33: Running AQT

- The quick test is usually completed within a few minutes (exact time will vary depending on the model series and vehicle equipment); the results are then automatically transmitted via the network to the XENTRY Portal (the status display for the quick test can be read from the XENTRY Diagnosis Pad).
- Once the prompt "Remove OBD plug" is shown on the XENTRY Diagnosis Pad display, disconnect the device from the vehicle.
- The quick test is now available on XENTRY Portal.

You can then use the XENTRY Diagnosis VCI on the next vehicle.

You can close AQT mode after the last automatic quick test. To do so, close the "XENTRY AQT" program on the XENTRY Diagnosis Pad.

6.5 XENTRY WIS / XENTRY Operation Time

6.5.1 The Workshop Information System (XENTRY WIS)

Information at the touch of a button with XENTRY WIS

All the technical descriptions, work instructions and information that you need for your maintenance or repairs can be found in XENTRY WIS. The Workshop Information System is conveniently integrated into XENTRY Portal and can also be used on your mobile devices. You can access up-to-date and precise data on your workshop order at the touch of a button. This allows you to process your order efficiently and act in a targeted manner.

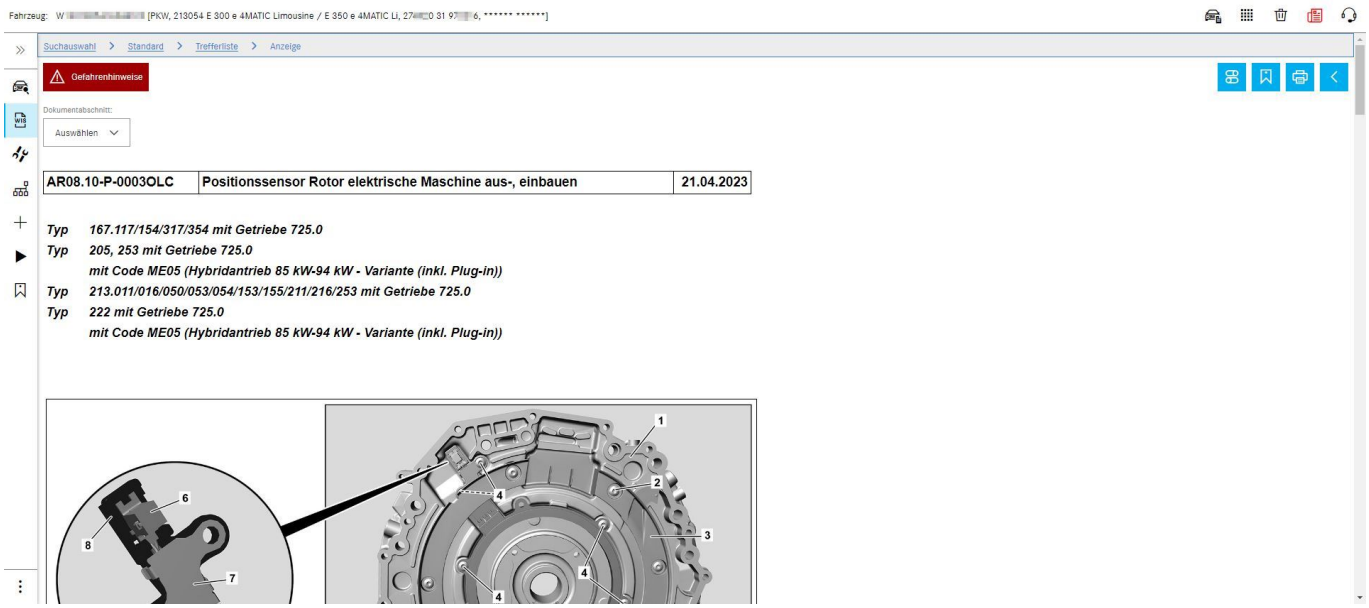


Fig. 34: Direct launching of XENTRY WIS

Optimized functions in a modern design

Take advantage of the new Workshop Information System:

- Integration into existing system landscape and after-sales processes: Uniform design, simplified application and stronger networking of after-sales information
- Operating concept remains the same, making it easy to get to grips with
- Vehicle-specific repair and maintenance information from a single source
- Up-to-date information for optimal maintenance and repair services according to manufacturer specifications
- Can be used on mobile devices

More information and training material can be found on the respective product page.

6.5.2 XENTRY Operation Time – operates more intuitively, searches faster, finds easier

Research all the necessary information on required operation items and labor times. XENTRY Operation Time provides FIN/VIN-based data of the highest quality on a daily basis. The user interface shows all the relevant information on just two screens. XENTRY Operation Time is integrated seamlessly into XENTRY Portal/XENTRY Diagnosis, and it can also be used on additional mobile devices.

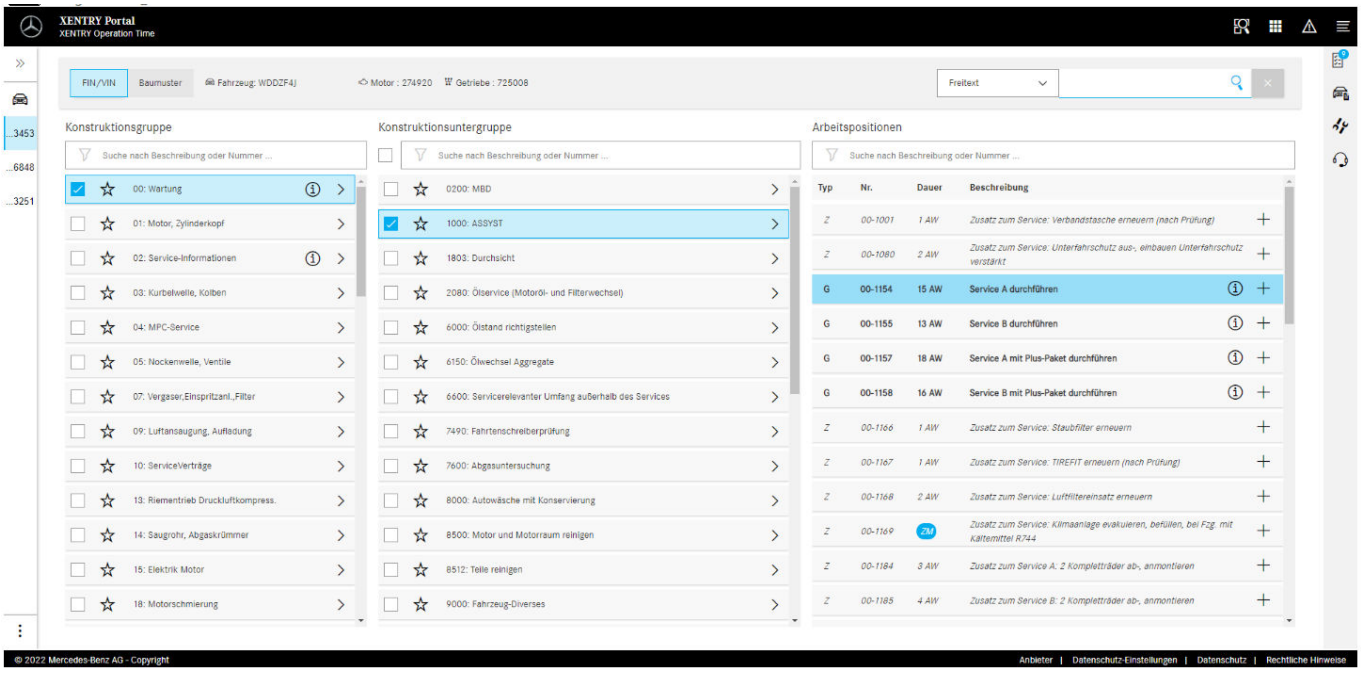


Fig. 35: Direct launching of XENTRY Operation Time

All the advantages at a glance:

- Information on operation items and times updated daily
- FIN/VIN-specific filter options
- Improved and intuitive search functions
- Continuous development allows data corrections to be updated on a daily basis
- Can be used on mobile devices
- Integration into XENTRY Portal/XENTRY Diagnosis for optimum networking of applications and information

More information and training material can be found on the respective product page.

6.5.3 Launching XENTRY WIS/XENTRY Operation Time from the XENTRY frame

You can launch XENTRY WIS and XENTRY Operation Time from the XENTRY frame. For this, you will need to log in via single sign-on using your EMEA user ID and the corresponding password.

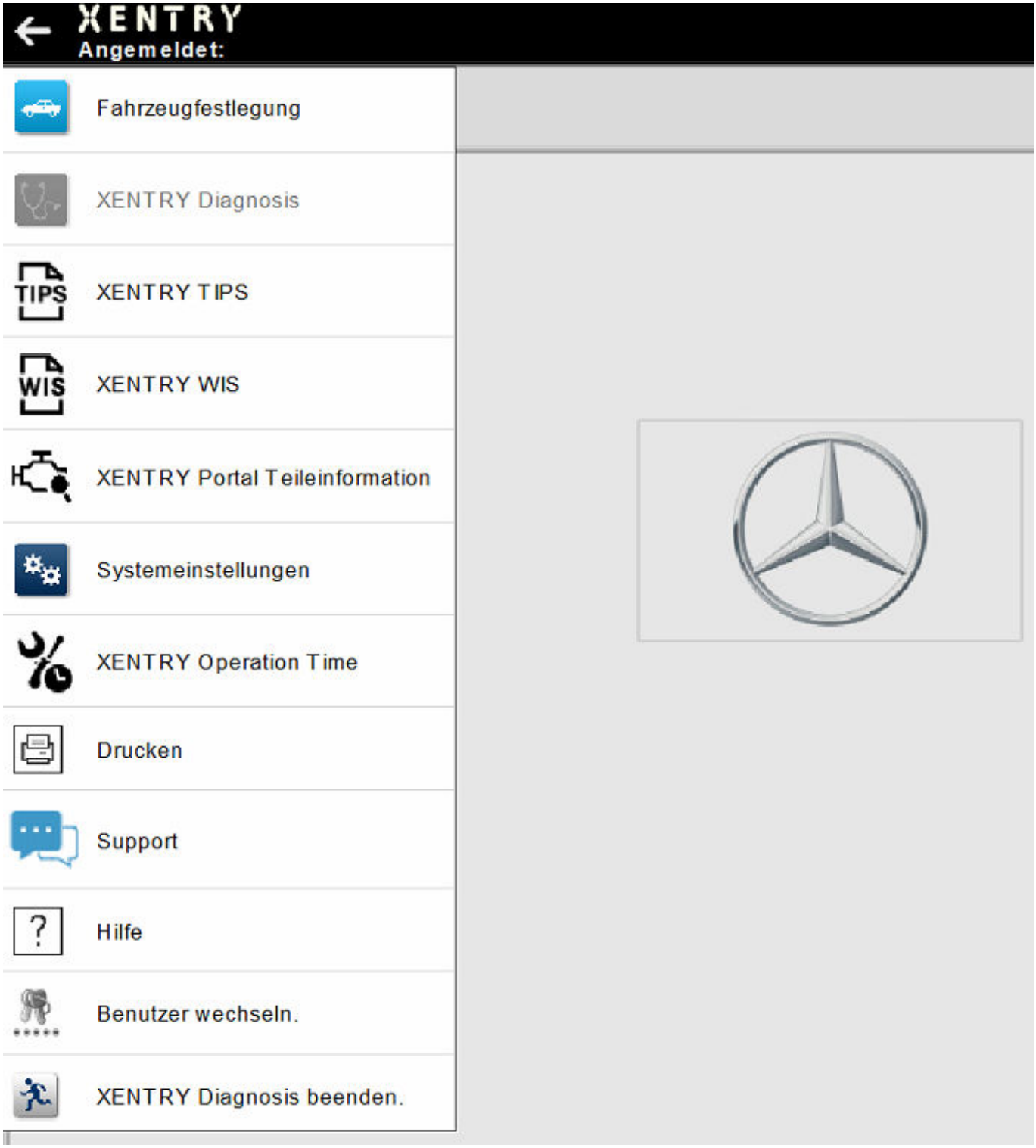


Fig. 36: Direct launching of XENTRY WIS/Operation Time from the XENTRY frame

Please note that as soon as a vehicle context has been specified in the XENTRY frame (vehicle data visible in the XENTRY footer), it is then forwarded to the applications. XENTRY WIS and XENTRY Operation Time then sets this vehicle data as the search context.

6.5.4 Launching XENTRY WIS/XENTRY Operation Time from the diagnosis session

In addition to launching XENTRY WIS/XENTRY Operation Time from the XENTRY frame, which involves transferring the vehicle context to XENTRY WIS/XENTRY Operation Time, it is also possible to launch XENTRY WIS/XENTRY Operation Time from various control units or function views within a diagnosis session.

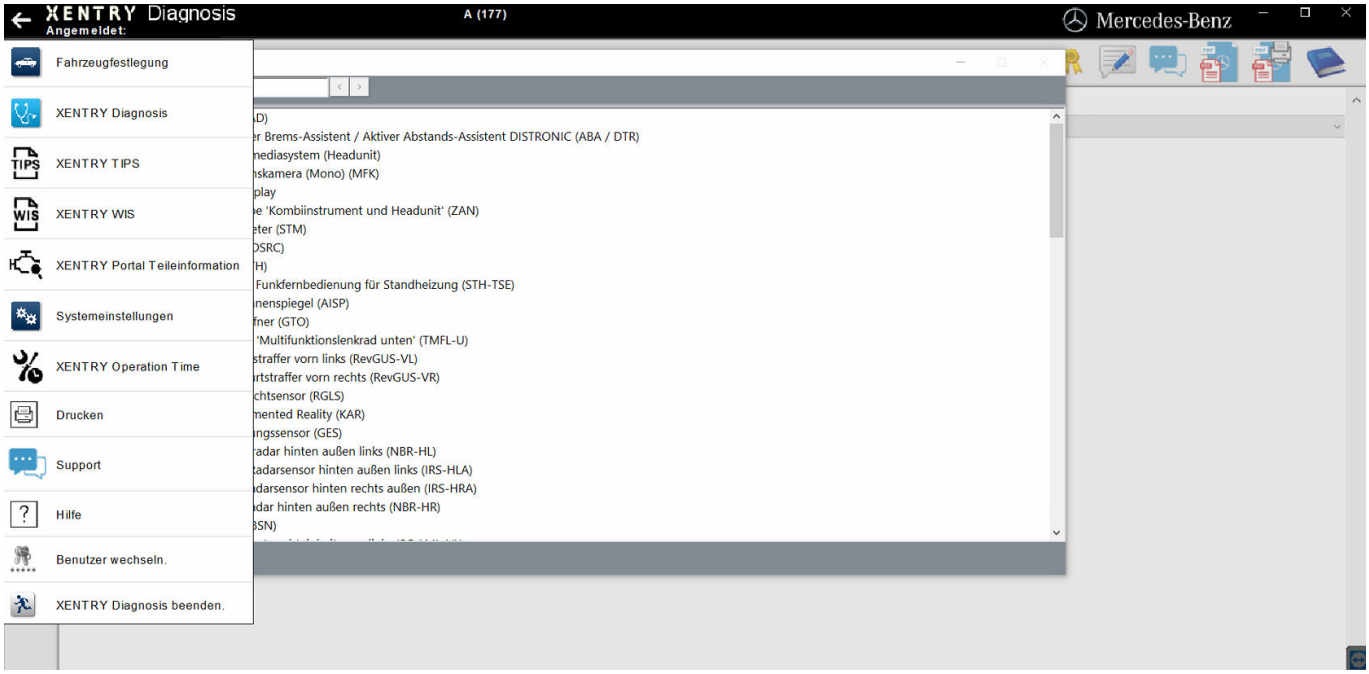


Fig. 37: Direct launching of XENTRY WIS/Operation Time from the diagnosis session

6.5.5 Vehicle-specific wiring diagrams via "Dynamic Wiring Diagram"

Dynamic Wiring Diagram (DWD) is another powerful module for use in your workshop. This provides you with access to the wiring diagrams of the car model series of Mercedes-Benz.

Thanks to the FIN/VIN-specific display of the "Dynamic Wiring Diagram", users are only shown the wiring diagram that is relevant for their particular vehicle. This eliminates the need to extensively search for vehicle equipment and jump from one system to another. The user benefits from this and other search/filter functions, which considerably help to reduce potential search errors in the repair and diagnosis process. Further information – including on component parts – can also be brought up with a single click.

"Dynamic Wiring Diagram" is linked to the XENTRY WIS user rights; a separate order is therefore not necessary.

Launching Dynamic Wiring Diagram from the home screen and quick test:

- Open "Dynamic Wiring Diagram" using the book symbol in the top right.

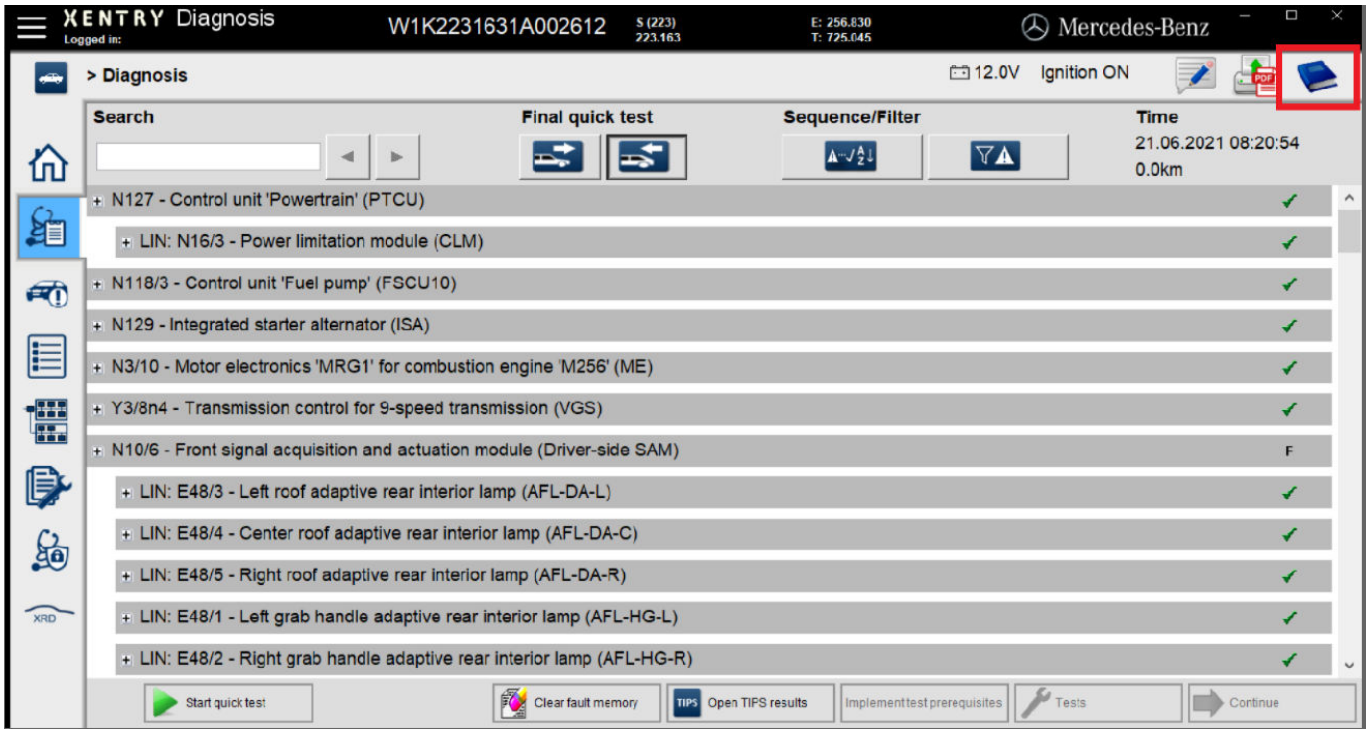


Fig. 38: Vehicle-specific wiring diagrams via "Dynamic Wiring Diagram"

- Open the list of all control units in the quick test. After opening a wiring diagram, all the components in the wiring diagram are displayed. You can use the search field to filter the displayed component parts.

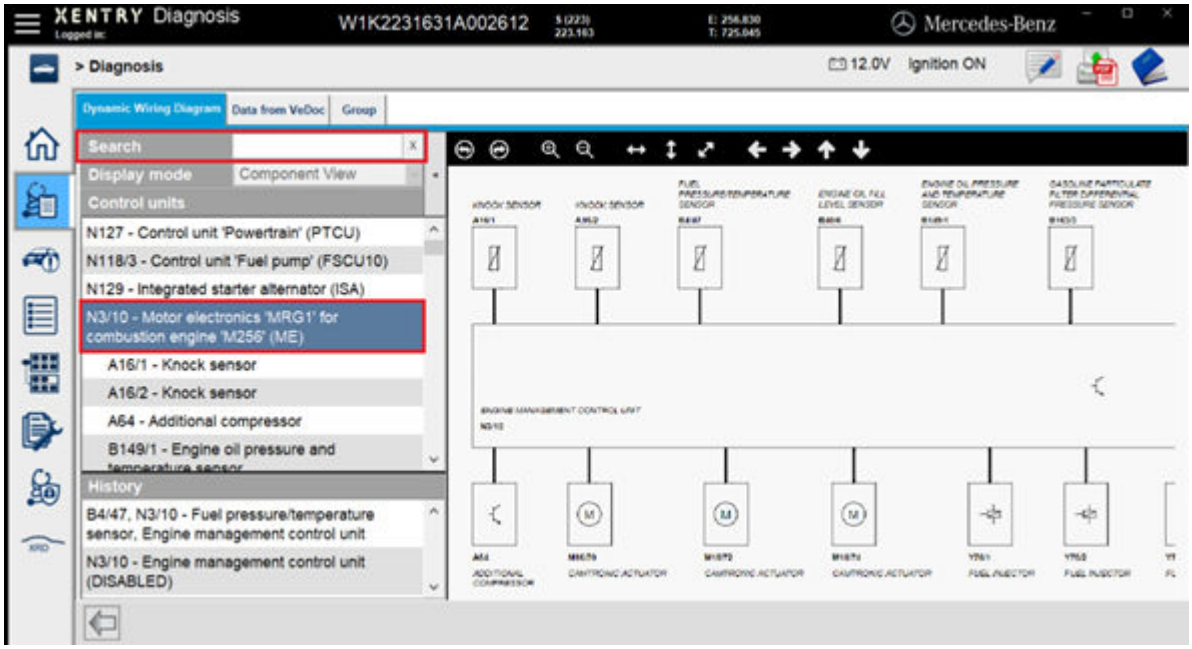


Fig. 39: Overview of components in wiring diagram

- Select the required component. You will see its corresponding installation location in the right-hand area.

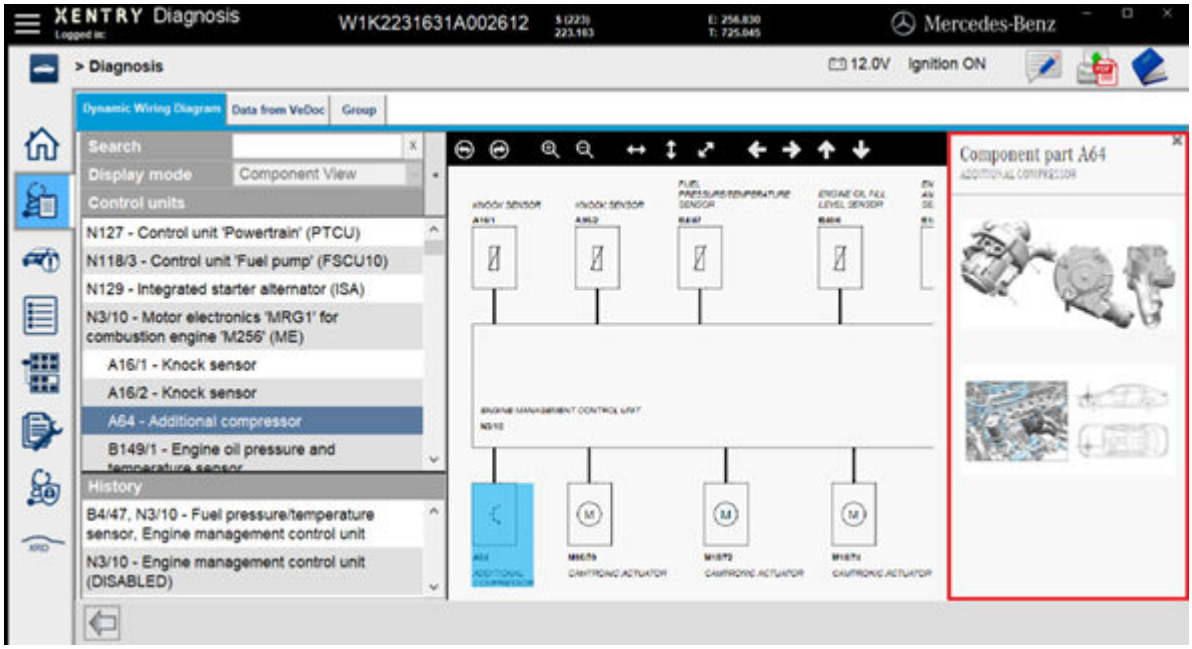


Fig. 40: Selection of components and respective installation location

7 Hardware components of XENTRY Diagnosis Kit

7.1 XENTRY Diagnosis Pad 2

7.1.1 Technical performance features of XENTRY Diagnosis Pad 2



Fig. 41: View of XENTRY Diagnosis Pad 2

Hard drive:	1 TB SSD
Memory:	16 GB DDR4
Processor:	Intel ® Core™ i5
Operating system:	Windows 10 IoT. Devices delivered starting July 2025 have Windows 11 IoT
Dimensions:	Wait approx. 338 x 240 x 33 mm (W x L x H)
Weight:	Approx. 2.3 kg

- Convenient operation via:
  - Adjustable stand (sliding scale)
  - Capacitive Full HD multi-touch display
  - Good display readability

Do not expose the pad to direct sunlight for too long; this will otherwise have a negative impact on the speed.

NOTICE

If the pad is exposed to direct sunlight for an extended period, the built-in rechargeable battery may become damaged.

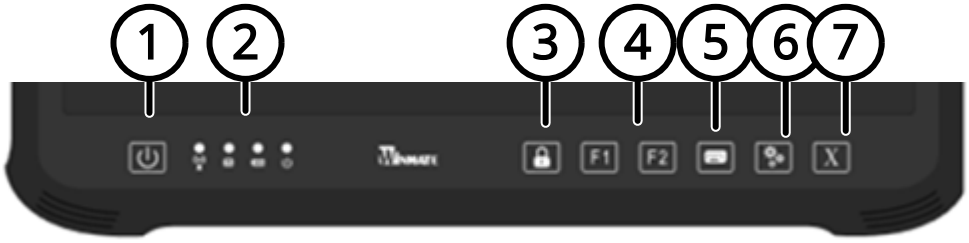
7.1.2 Connections on the XENTRY Diagnosis Pad 2



Fig. 42: Connections on the XENTRY Diagnosis Pad 2

7.1.3 Buttons and displays on the XENTRY Diagnosis Pad 2

The XENTRY Diagnosis Pad 2 is equipped with the following buttons and displays:



1 You can switch on your XENTRY Diagnosis Pad 2 here.
2 LED status displays for WLAN, hard disk operation, rechargeable battery, operating status
3 Screen lock
4 F1 and F2 function buttons, freely assignable
5 Show/hide virtual keyboard
6 Settings
7 Open XENTRY Diagnosis software

7.2 XENTRY Diagnosis VCI

7.2.1 XENTRY Diagnosis VCI technical performance features



Fig. 43: XENTRY Diagnosis VCI

- Material: Polycarbonate with rubber caps
- No rechargeable battery

- No display
- Connection of VCI to pad via WLAN using WLAN USB sticks. No existing WLAN infrastructure required.
- There is a control button on the XENTRY Diagnosis VCI. This function button is used for special use cases in the XENTRY CAN tool.
- The VCI does not require a power supply unit for external power supply.
- The VCI switches off automatically if it is not connected to a vehicle or an OBD/USB connection cable. It switches on automatically when the power supply is restored.

Table 1: XENTRY Diagnosis VCI technical data

Property	Value/range
Host interface	
Cabled	High-speed USB 2.0
Wireless Wi-Fi USB flash drive	802.11b/g/n
Processor system	
Micro processor	Intel MX6 Solo
Cycle time	800 MHz
RAM	512 MB DDR3 RAM
ROM	512 MB flash
Mass storage (opt.)	USB memory stick
User interface	
LEDs	5 status LEDs
Signal tone emitter	Acoustic signal
Power supply	
From the vehicle battery via the diagnosis connection line or via a connected USB cable. Please note: The diagnosis socket of the vehicle must be protected with a fuse of maximum 6 A/32 V.	OBD: 8 to 28 VDC; 750 mA USB: 5 VDC; 700 mA
Mechanical properties	
Dimensions	168 x 115 x 45 mm
Weight	0.41 kg
Operating temperature	-20 °C – +60 °C
Storage temperature	-40 °C – +80 °C
Air humidity at 25 °C	30% – 95%
Maximum operating altitude	4000 m
Protection class when diagnosis connection line is not plugged in	IP 30
Protection class when diagnosis connection line is screw-fitted as per IEC60529	IP 54; category 2
Degree of soiling	2
Diagnosis connection line	
J1962 (ISO 15031-3)	26-pin; rating 28 V; CAT O
VCI certifications	
EU	CE
USA	FC
South Korea	KC MSIP-REM-BO2-XENTRY-VCI
Russia	EAC
Australia	RCM
Ukraine	

Application

The XENTRY Diagnosis VCI is designed for indoor use only.

- Soiling level 2; keep the area around the XENTRY Diagnosis VCI clean.
- Avoid condensation, do not expose XENTRY Diagnosis VCI to rain or moisture.

7.2.2 Connections and control elements on the XENTRY Diagnosis VCI

The following connections and control elements are available on the XENTRY Diagnosis VCI:

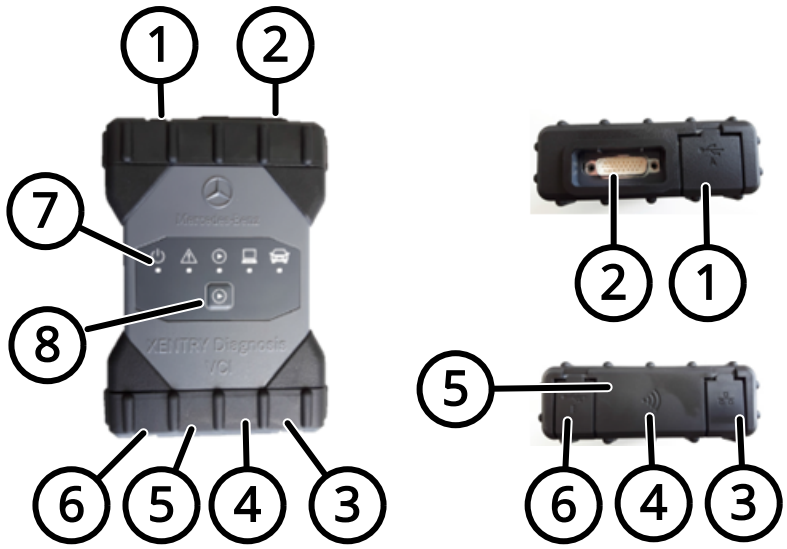


Fig. 44: XENTRY Diagnosis VCI connection

1 USB port (memory stick)
2 Diagnosis connection line
3 RJ45 network connection
4 WLAN antenna
5 Recovery function button (under rubber cover)
6 USB port, type B
7 LEDs
8 Control button

7.2.3 Status display and control elements on the XENTRY Diagnosis VCI



Fig. 45: Status display and control elements on the XENTRY Diagnosis VCI

Status displays

	Operating indicator: LED green
	Fault indicator: LED red

	For future applications: LED red | orange | green
	Connection indicator to Pad: LED flashing green
	Connection indicator to vehicle: LED flashing green
	Control element/function button in the XENTRY CAN tool

8 Accessories

8.1 Optionally available accessories

Accessories that are optionally available to you are displayed during the configuration process.

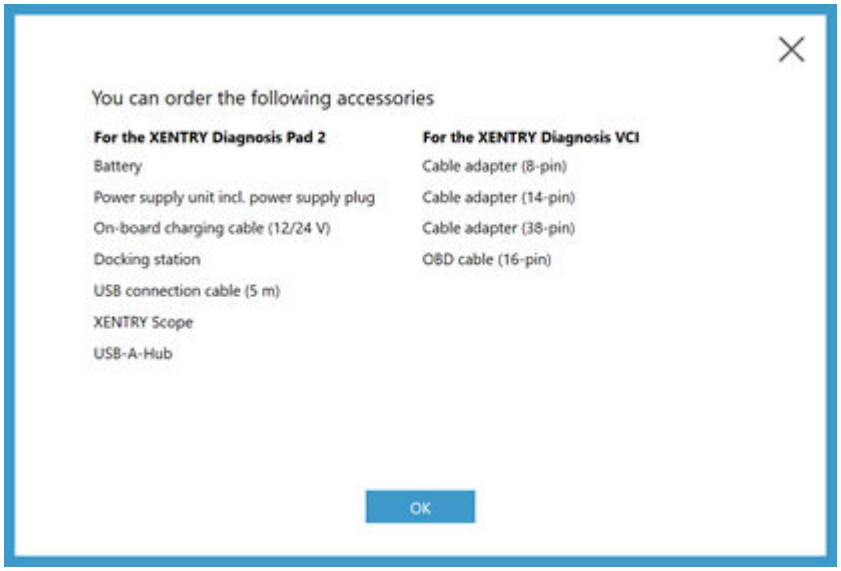


Fig. 46: Optionally available accessories

The docking station offers additional connections such as USB ports and an option for connecting a screen or projector.



Fig. 47: Docking station

Table 2: Technical data of docking station

Dimensions	384.5 x 179.85 x 141.2 mm
Power consumption	19 V DC in (default)
Connections	USB 3.0 x 4 RJ45 x 1 Audio x 1 HDMI x 1 (one-off activation) Display port x 1 (one-off activation) DVI-D x 1 (one-off activation)
Operating temperature	0 °C ~ 40 °C
Operating system	Win10
Delivery package	Including power supply unit and power cord

To be able to fully use the USB ports of the docking station, the docking station must be connected to the power supply. The functions of the ports are limited without a power supply.

8.2 XENTRY Scope measurement technology

Further information on the XENTRY Scope measurement technology is available in the XENTRY Scope documentation or in the XENTRY Scope software itself. This is already installed on your XENTRY Diagnosis Pad | Pad 2.



Fig. 48: XENTRY Scope

8.3 Diagnostic unit for high-voltage batteries

The diagnostic unit is connected to the XENTRY Diagnosis Pad via the OBD cable. The high-voltage battery test is run through the XENTRY Diagnosis software.

8.4 NVH kit

For noise and vibration measurement – this kit allows precise measurement of noise and vibrations. Can be used in combination with a XENTRY Diagnosis Kit

8.5 USB to LAN adapter

The USB to LAN adapter allows faster and more stable transfer of control unit software to a vehicle. The data transmission rate is increased by the direct connection via LAN.

9 Operating tools

9.1 Update Center

Updates are controlled through the Update Center. You can open it using the "Update Center" icon in your taskbar or via the search function on your XENTRY Diagnosis system:



Fig. 49: Update Center icon

The Update Center is used for the installation of new software updates, for switching between installed releases, and for add-on installation and administration.

The overview in the Update Center shows the currently installed release, any available release updates, the current update status, the most recently installed add-on, and the option to roll back the release.

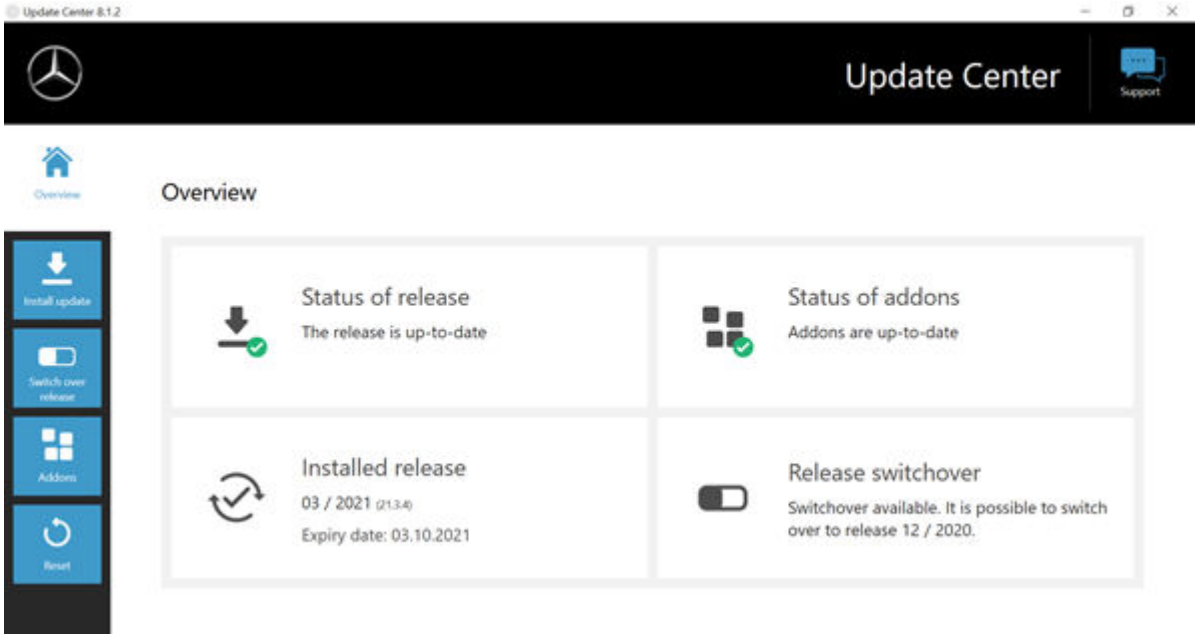


Fig. 50: Update Center home screen

9.1.1 Install update

The Install updates area allows you to search for updates, manually select an update, or track the status of the update download and update installation. This is indicated by progress bars.

9.1.2 Switch release

Release switching is embedded into the Update Center and enables you to switch back to a previously installed release update.

There are two partitions on the XENTRY Diagnosis Pad hard drive. If, in exceptional cases, you need to switch to the previous software update after installing an update, click the “Switch release” button in the left navigation area and then click the “Switch” button. This usually takes no more than ten minutes.

You can also use this button to switch back to the current software update after switching releases.

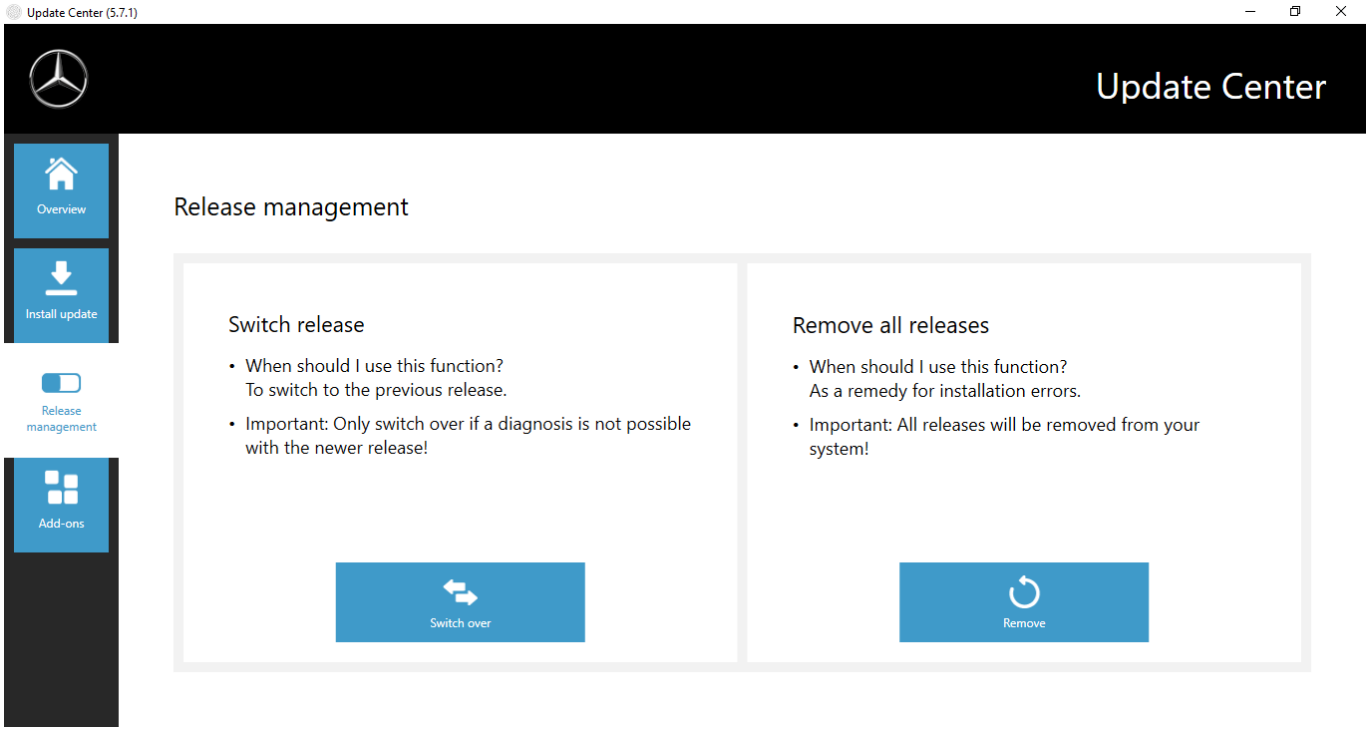


Fig. 51: Release switching in the Update Center

Please note that you can only switch releases after at least two release updates have been successfully installed.

9.1.3 Add-ons

Add-ons are automatically installed on the XENTRY Diagnosis Pad. This is controlled through the Update Center. To check the current status of the installed add-ons, open the Update Center.

Click on the "Add-ons" menu item to obtain an overview of the currently installed add-ons.

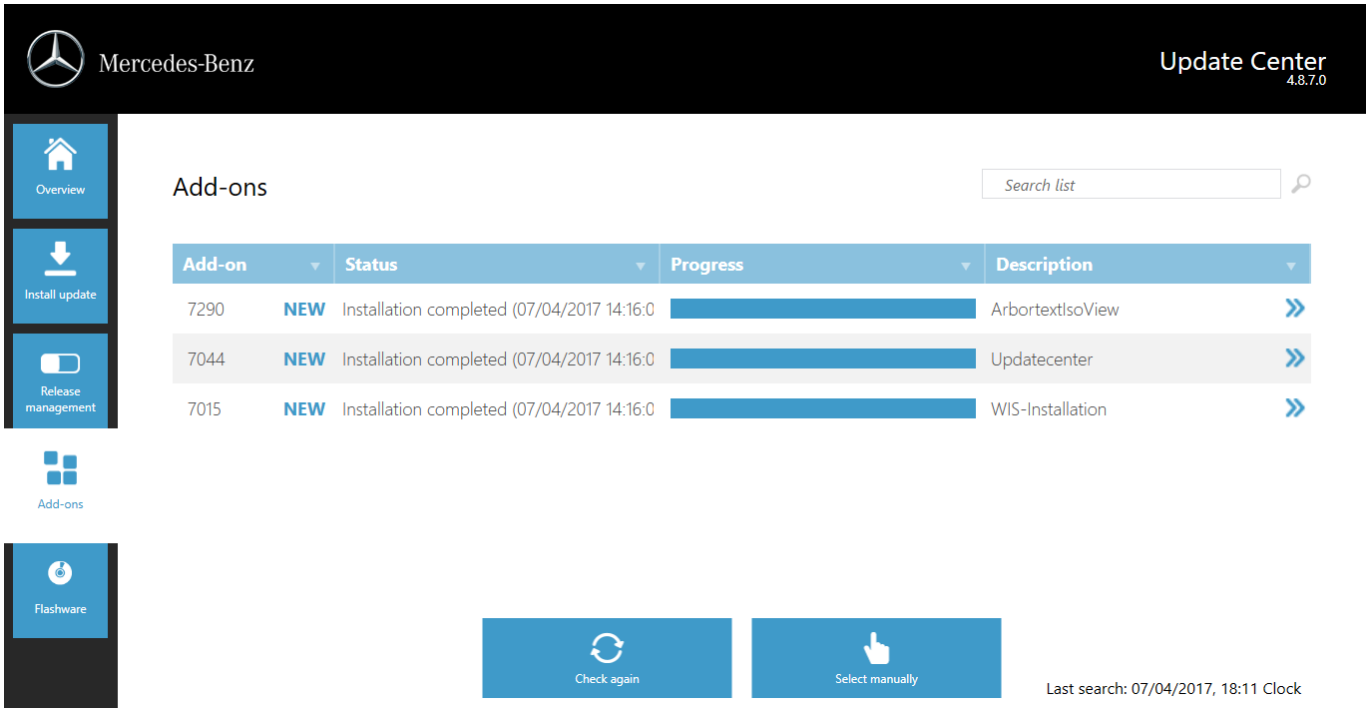


Fig. 52: Installed add-ons

More information on the Update Center is available in ➦ Chapter 9.1 “Update Center” on page 46

The Update Center generally checks continuously for newly available add-ons. You can initiate this check process manually using the "Check again" button.

If a support representative sends you an add-on by email, you can copy it to a USB flash drive and load and install it on the XENTRY Diagnosis Pad yourself via “USB add-on installation.”

9.1.4 Reset (Soft Recovery)

You can reset the release if an error occurred during installation or if you are experiencing issues with the Update Center.

The data and settings on your diagnostic device are retained.

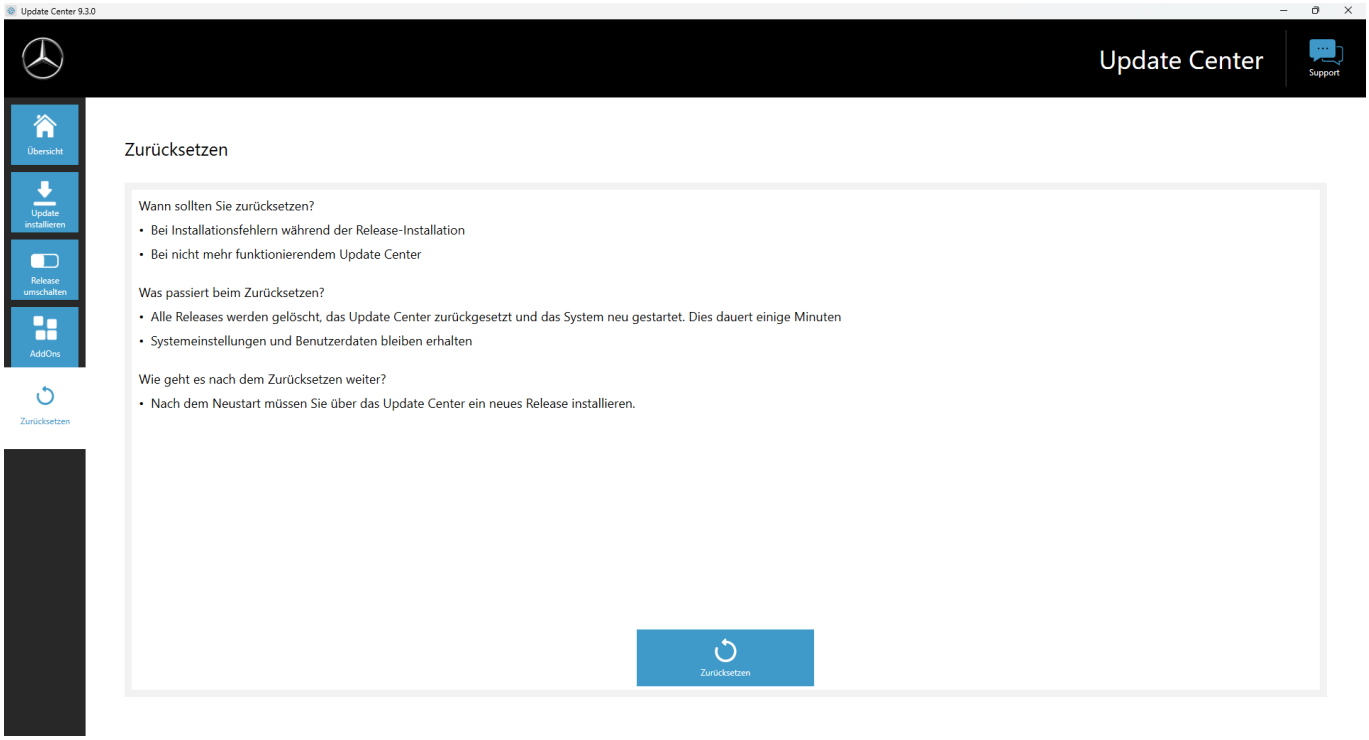


Fig. 53: Reset (Soft recovery)

To start the process, proceed as follows:

1. Open the Update Center.
2. Select the "Reset" button.
   ➡ You will be asked whether you want to start the process.
3. Confirm with "Yes".
   ➡ The Update Center will close, and progress bars will be displayed.
4. The release is now downloaded again. You can check the progress as ➦ Chapter 9.1.1 “Install update” on page 46 described in .
5. While the release is downloading, messages and progress bars may appear repeatedly on your diagnostic device.
6. Once the release has been downloaded, you will be prompted to start the installation.
7. Click "Yes" to confirm.
   ➡ The release is being installed. You can check the progress as ➦ Chapter 9.1.1 “Install update” on page 46 described in .

9.2 XENTRY Update Service Control Center

In the XENTRY Update Service Control Center, you have the option of displaying specific information about the download of data to your XENTRY Diagnosis system via the XENTRY Update Service.

- In the start menu of your XENTRY Diagnosis system, click on the "Mercedes-Benz" folder.

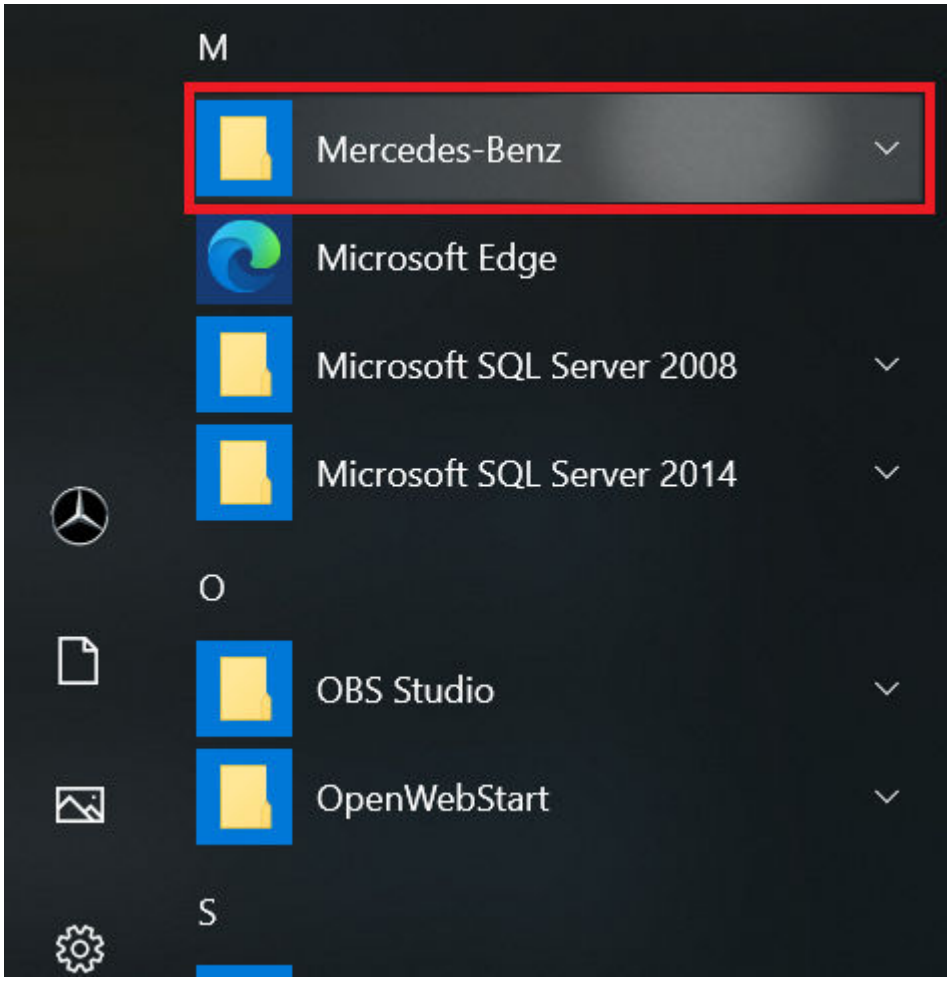


Fig. 54: Windows Start Menu Mercedes-Benz

- Select "XENTRY Update Service Control Center" in the "Mercedes-Benz" folder. This application then opens.

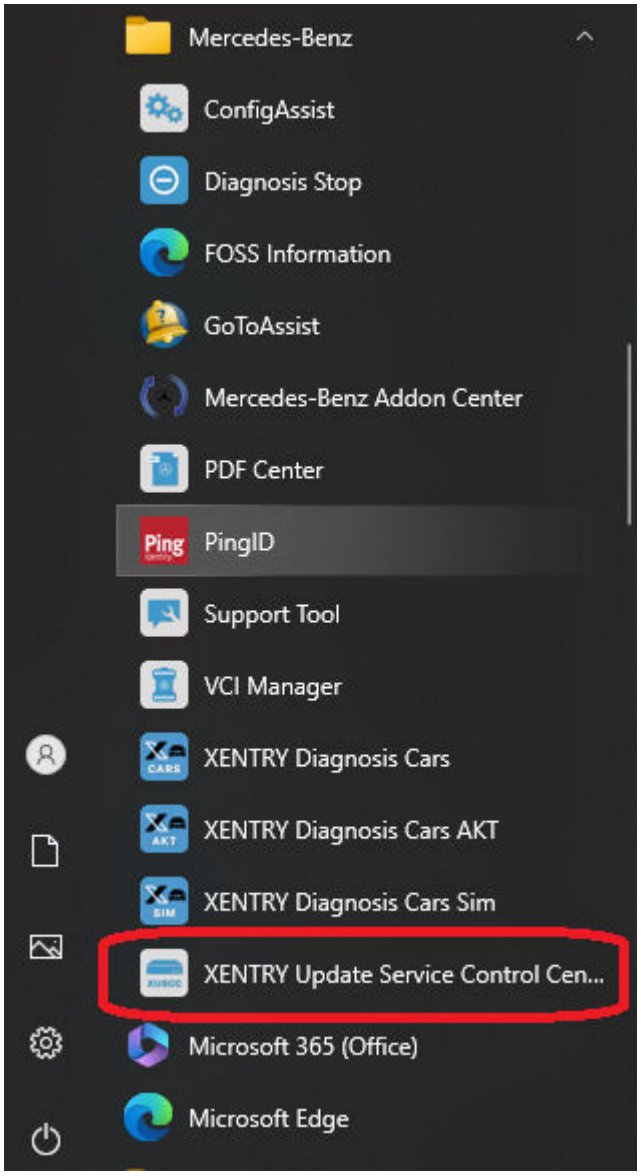


Fig. 55: Windows Start Menu Mercedes-Benz XENTRY Update Service Control Center

9.2.1 Overview

This overview page shows you a summary of the options offered by the XENTRY Update Service Control Center.

- The status of the XENTRY Update Service is displayed on your XENTRY Diagnosis system via "Monitoring".
- The "Files" button takes you to an overview of all data that is loaded onto your XENTRY Diagnosis system, as well as data that is available in the back end. Release updates and control unit software are not displayed here.
- Via "Release overview", you have the option of displaying all release updates available on your XENTRY Diagnosis system.
- Click on "Control Unit Software" to display the available control unit software.

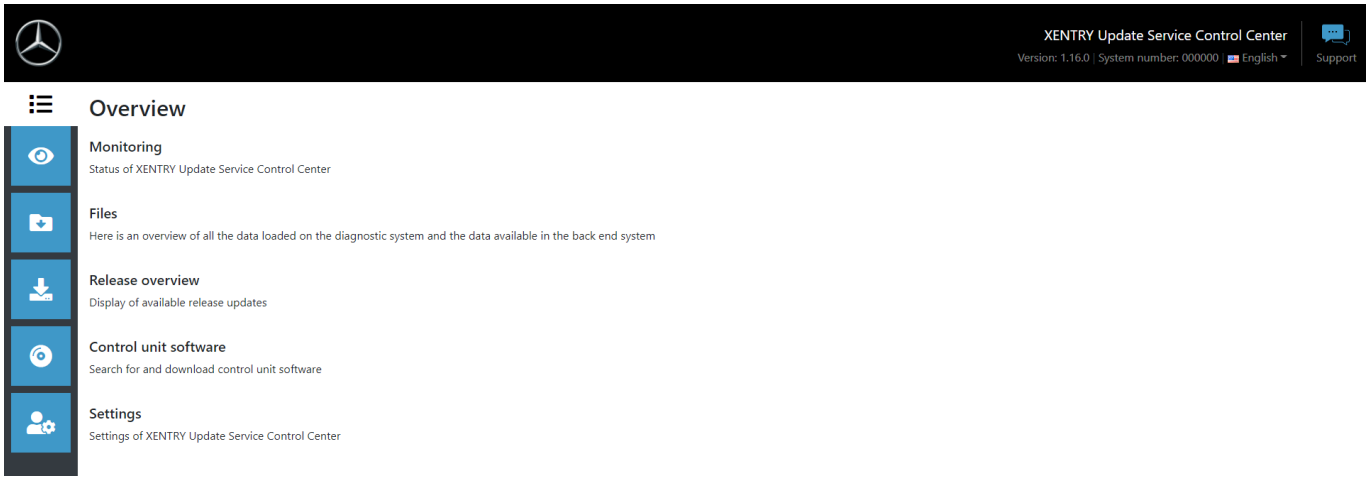


Fig. 56: Overview of XENTRY Update Service Control Center

9.2.2 Monitoring

The "Monitoring" menu item tells you if the connection between the Retail Data Storage unit and the internet has been set up correctly. System information about your XENTRY Diagnosis system is also displayed.

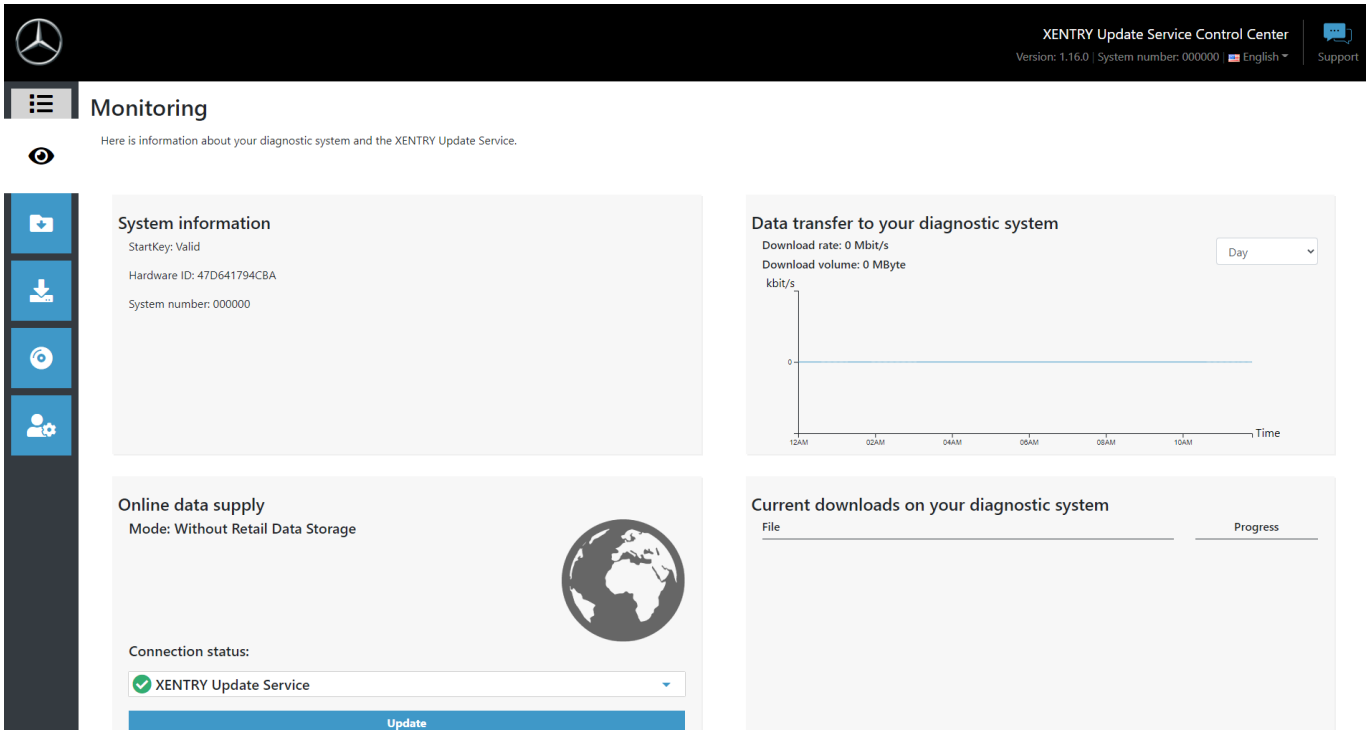


Fig. 57: Monitoring of data supply via XENTRY Update Service

9.2.3 Files

In the "Files" area, an overview of all data that is loaded onto your XENTRY Diagnosis system and data that is available in the back end is displayed. Release updates and control unit software are not displayed in this area; release updates are available in the "Release overview" section in ➦ Chapter 9.2.4 “Release overview” on page 52.

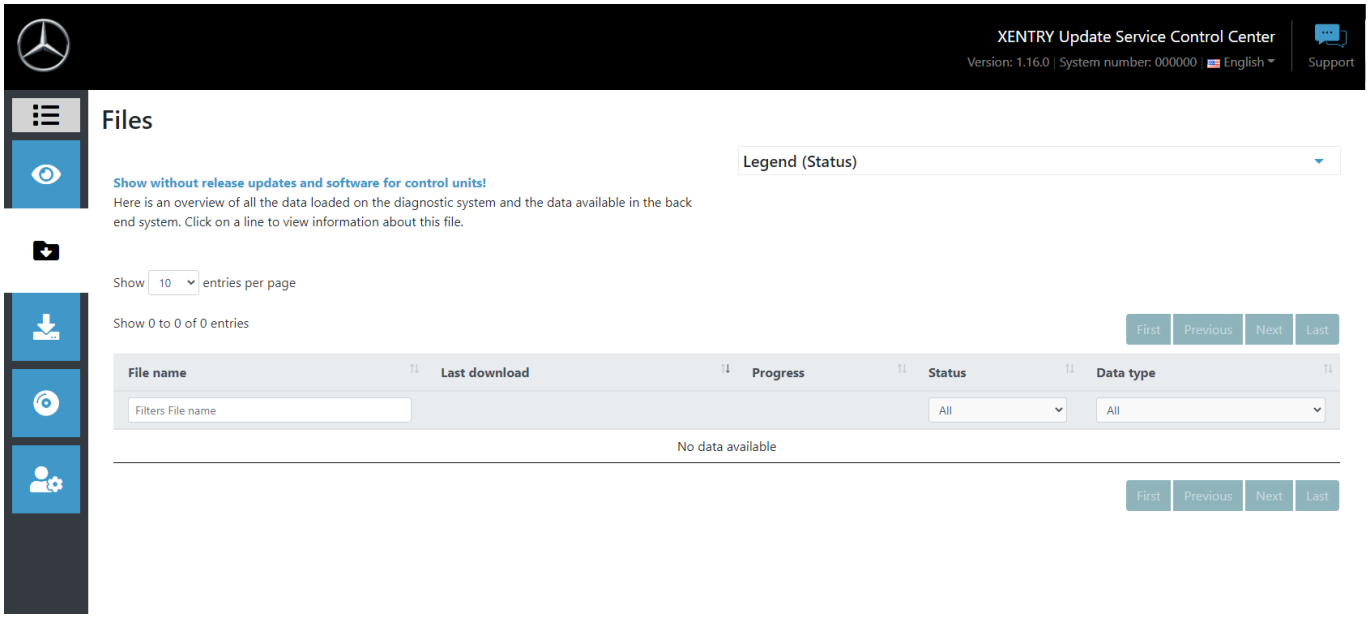


Fig. 58: Files available in the XENTRY Update Service

9.2.4 Release overview

The release overview shows you which release updates are available on the Retail Data Storage unit. The progress bar shows the percentage of the respective release update that has already been downloaded from the Internet to the Retail Data Storage unit.

You also have the option, via the function button, to only display the release updates that are suitable for the XENTRY Diagnosis system you are currently using. For example, a distinction is then made here between the release update for the XENTRY Diagnosis Pad and XENTRY Diagnosis Pad 2.

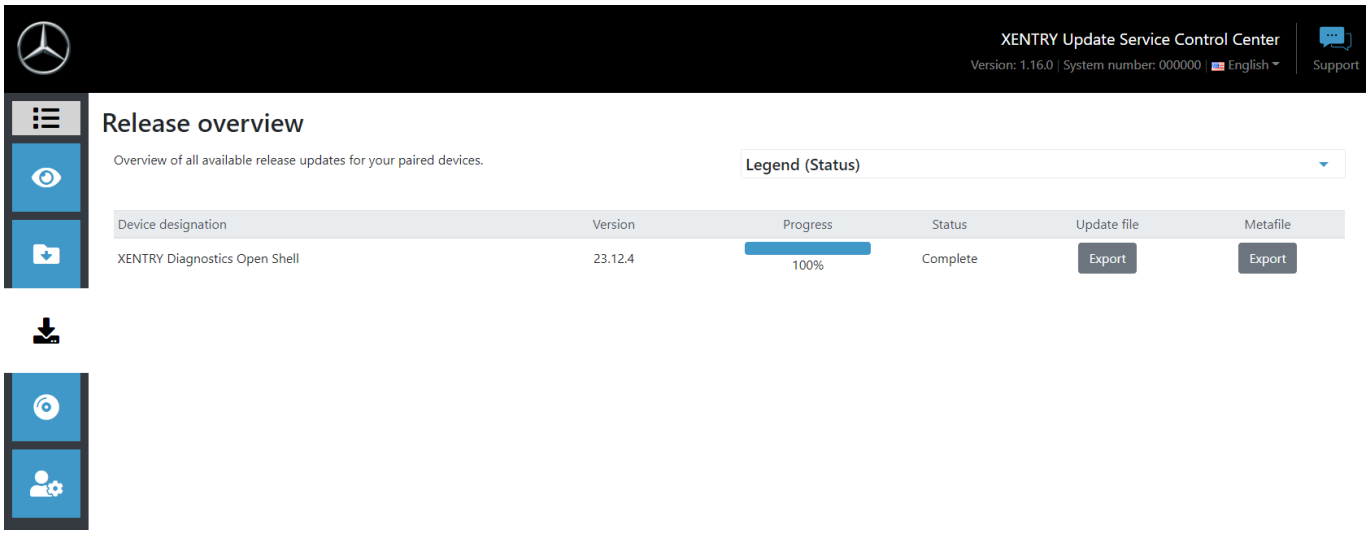


Fig. 59: Release overview in the XENTRY Update Service Control Center (2)

9.2.5 Control unit software

This overview shows you which control unit software is available for download. The status of the respective file shows you if the file is already on your XENTRY Diagnosis system or can still be downloaded.

The "Request" button allows you to manually initiate the download of control unit software that has not yet been downloaded to your XENTRY Diagnosis system. This may be necessary, for example, if you are on the road with your XENTRY Diagnosis system for a Service 24h deployment outside the workshop network and know that you will need exactly this data.

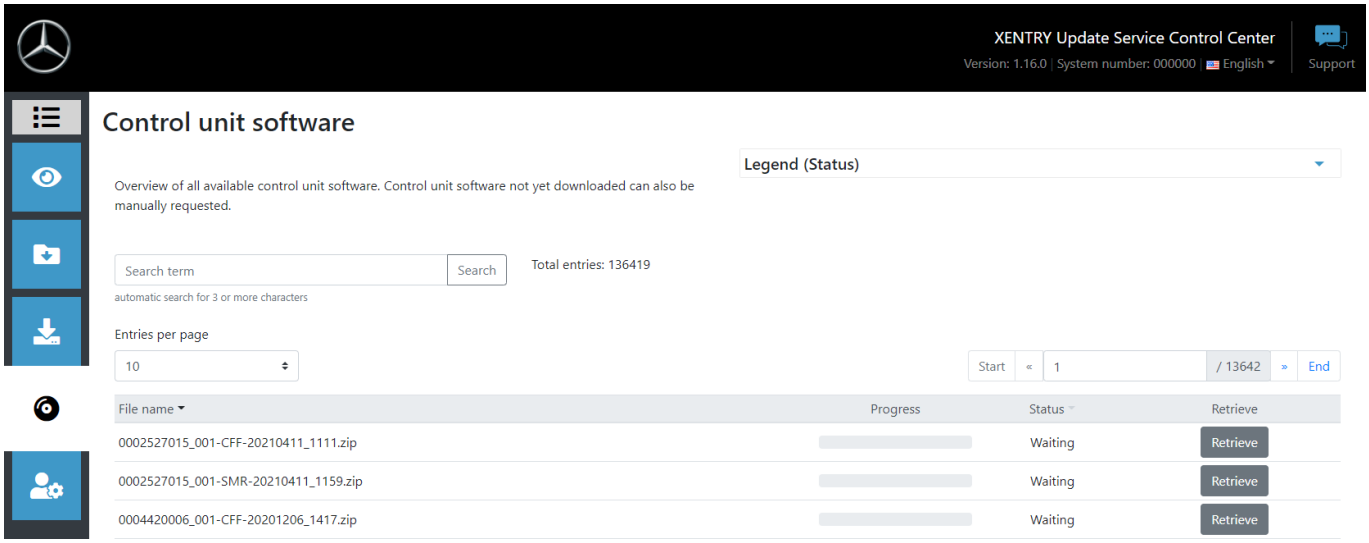


Fig. 60: Overview of available control unit software

9.2.6 Settings and 24h mode

In the "Settings" area, there are two tabs: "Mode" and "24h mode".

The "Mode" tab shows you the current configuration of the XENTRY Update Service and allows you to adjust this. You can decide whether the online data supply should be used with or without Retail Data Storage. If you select the option "With Retail Data Storage (Standard)", you'll need to enter the IP address of your Retail Data Storage. This setting can be changed at any time here or in the ConfigAssist.

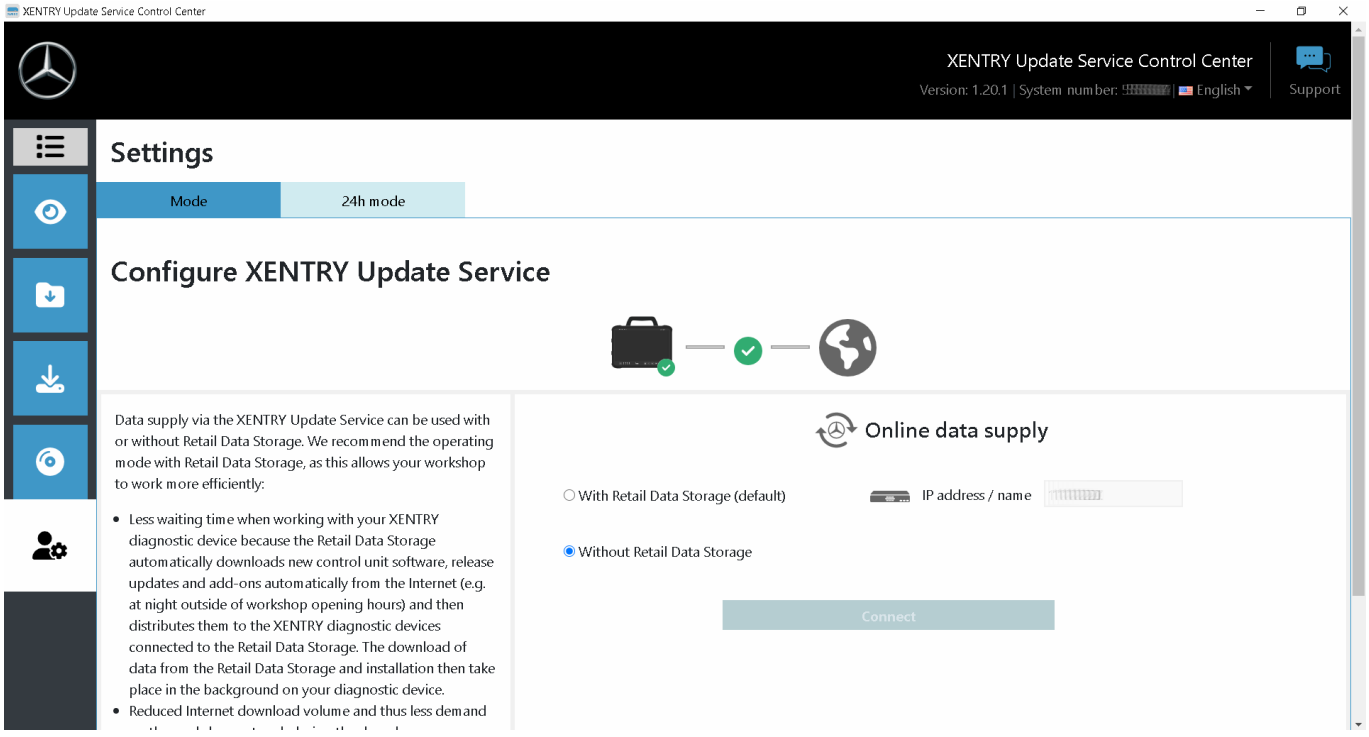


Fig. 61: XUS mode

The "24h mode" tab is where 24h mode can be switched on and off. This mode is used to reduce the data volume required for Internet downloads in the field, while maintaining the operating stability of the diagnosis. The 24h mode only works in the mode without Retail Data Storage and can restrict the download of data types that are not operationally critical. When the 24h mode is activated, the online connection of the XENTRY Update Service will automatically switch to the "without Retail Data Storage" variant (if this is not already being used).

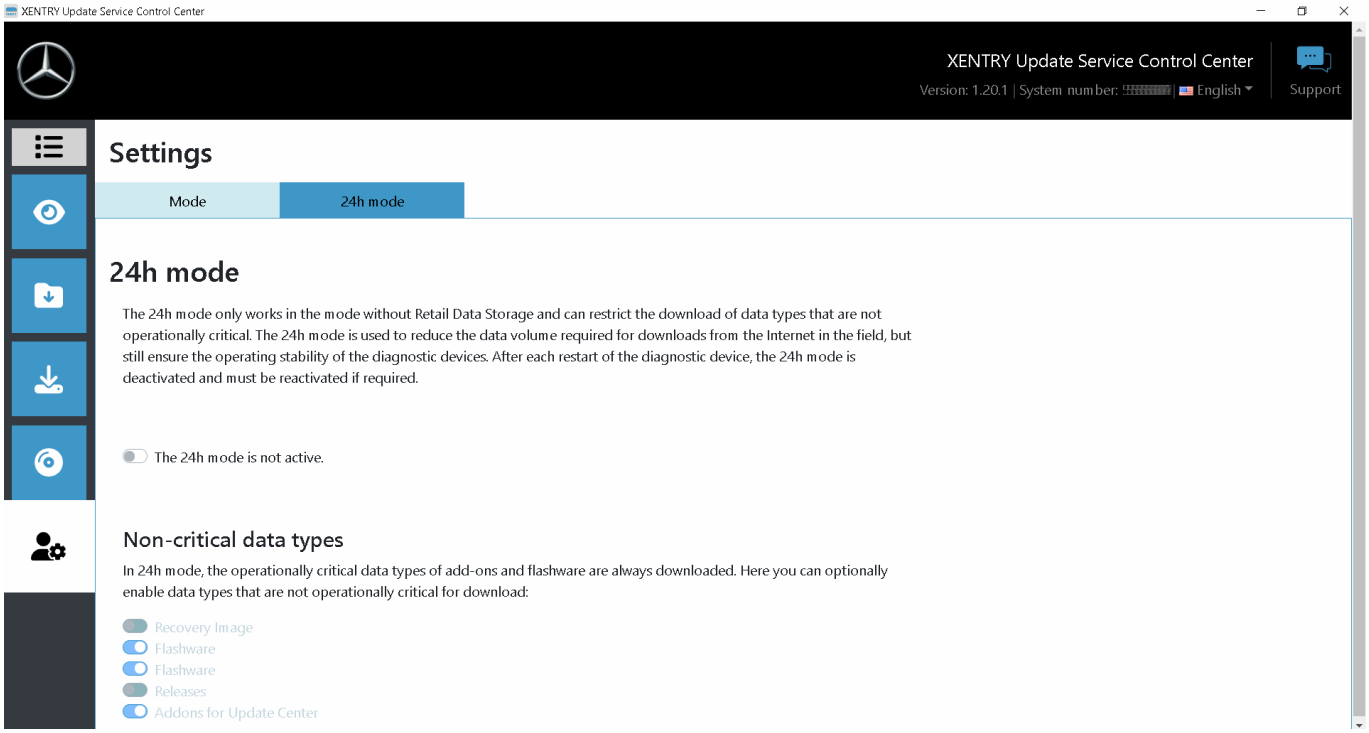


Fig. 62: 24h mode not active

24h mode is activated automatically whenever the diagnostic device cannot establish a connection to the Retail Data Storage within 60 minutes. This happens whether it is due to a change of network or a fault on the Retail Data Storage. A note appears when the mode changes.

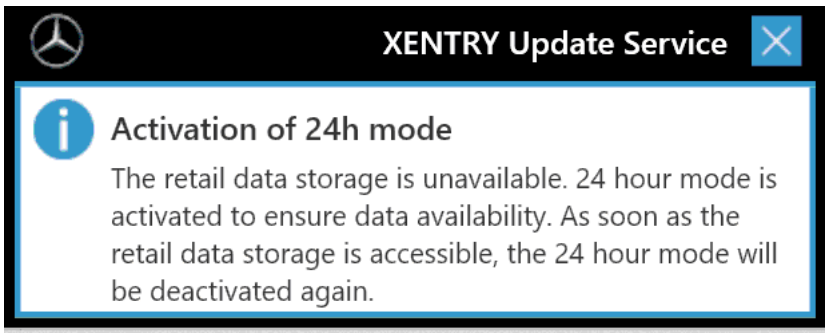


Fig. 63: Note for 24h mode activated

Once the 24h mode is active, you can set which data types should be downloaded: recovery image, flashware and releases. Only the option "Add-ons for Update Center" is permanently active and cannot be switched off, in order to ensure the add-ons are always kept up to date.

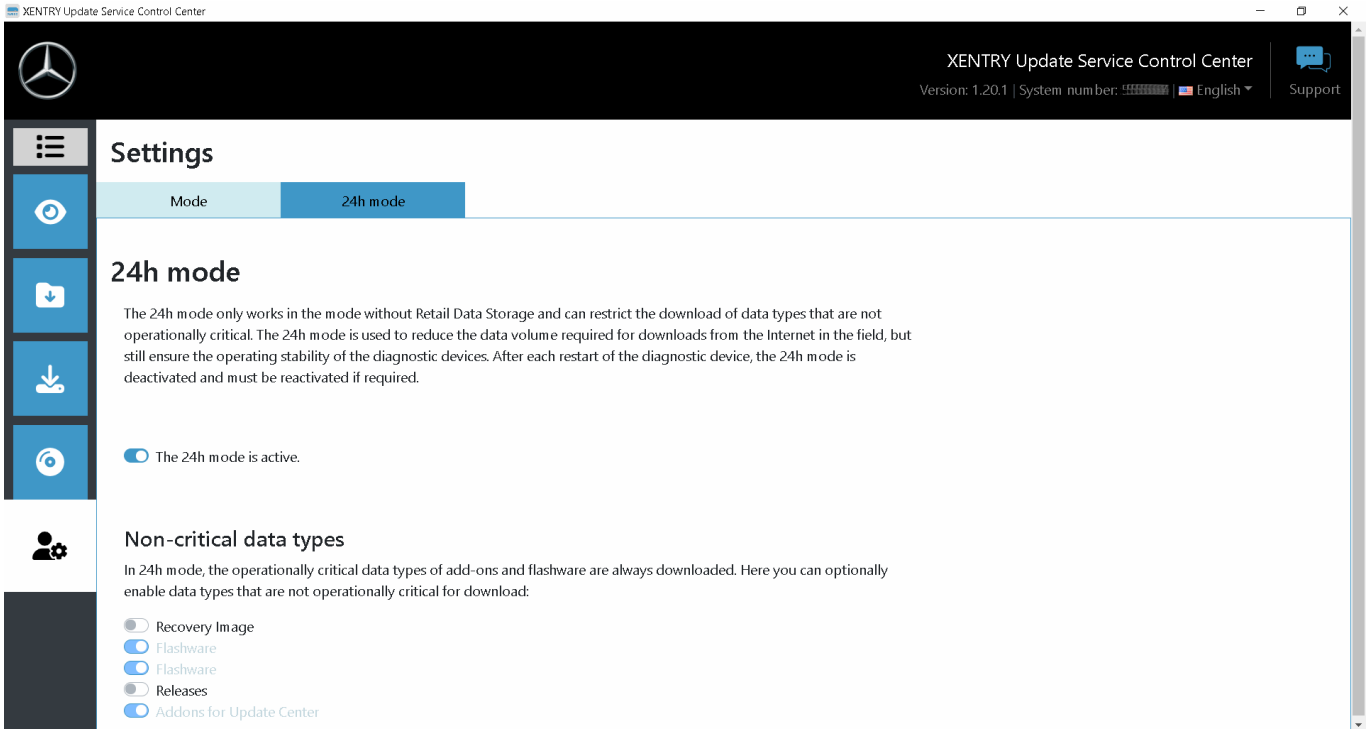


Fig. 64: 24h mode active

Once the field operation has been completed and you deactivate the 24h mode, the online data supply will automatically switch back to the connection "with Retail Data Storage (Standard)" if this connection was used before the 24h mode was activated.

At the same time, 24h mode is automatically terminated as soon as a connection to the Retail Data Storage is established for more than five minutes. Checking takes place every minute. A note appears when the mode changes.

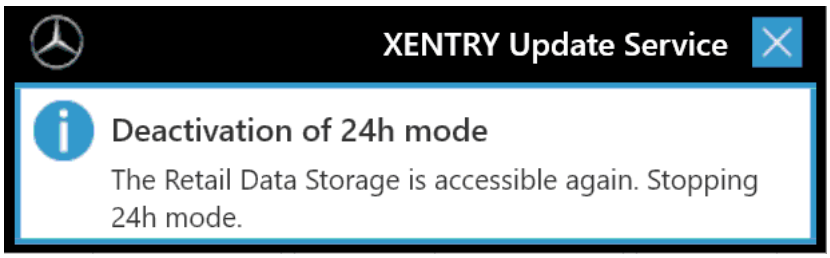


Fig. 65: Note for 24h mode deactivated

You can recognize whether or not the 24h mode is active by means of the XUS symbol in the taskbar at the bottom right. Be aware that you may need to first click the "up arrow" to be able to see all the icons.



Fig. 66: XUS-24h active in task bar



Fig. 67: XUS-24h not active in task bar

9.3 VCI Manager

The VCI Manager is used for firmware updates and recovery of the XENTRY Diagnosis VCI. The overview under "General" shows you the connection status between the diagnostic device and the XENTRY Diagnosis VCI.



Fig. 68: VCI Manager icon

9.3.1 Launch VCI

You can use the "Launch VCI" function to check the connection between the XENTRY Diagnosis system and the VCI or simply to determine which VCI is connected to the XENTRY Diagnosis system.

Please note that this function is only available if you have already paired the XENTRY Diagnosis system and the VCI.

Note: The VCI does not have its own power supply. This means that the VCI can only be launched if it is connected to a power source. This can be via the OBD cable on a vehicle or the USB cable on the XENTRY Diagnosis system.

To launch the VCI, proceed as follows:

1. Open the VCI Manager via the shortcut on the desktop of your XENTRY Diagnosis system.
2. You can see the currently paired XENTRY Diagnosis VCI and its serial number (SN) on the overview page. The "Launch VCI" button is available there. Click on it.
3. The paired VCI beeps.

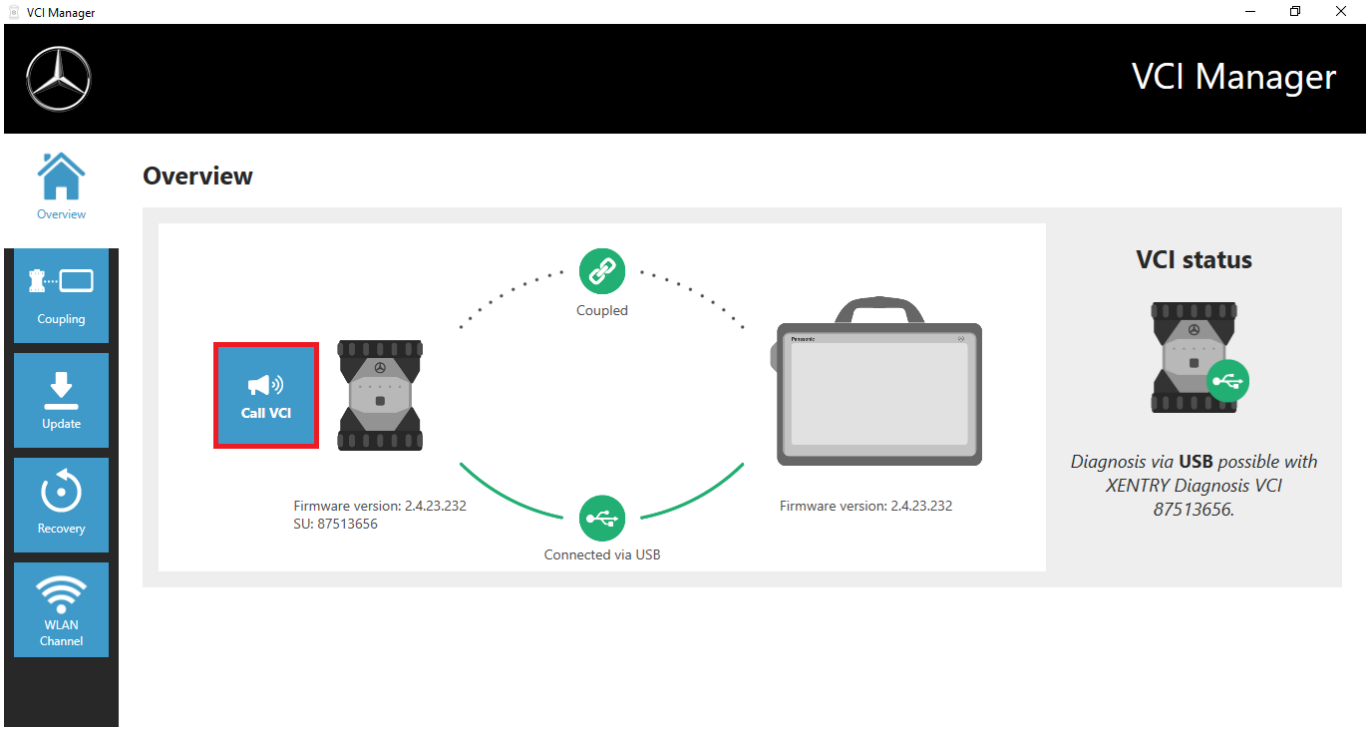


Fig. 69: Launch VCI

9.3.2 XENTRY Diagnosis VCI firmware update

After updating the XENTRY Diagnosis system, a firmware update of the XENTRY Diagnosis VCI may be required. Among other indicators, this is shown by a yellow exclamation mark in the VCI Manager on the overview page:

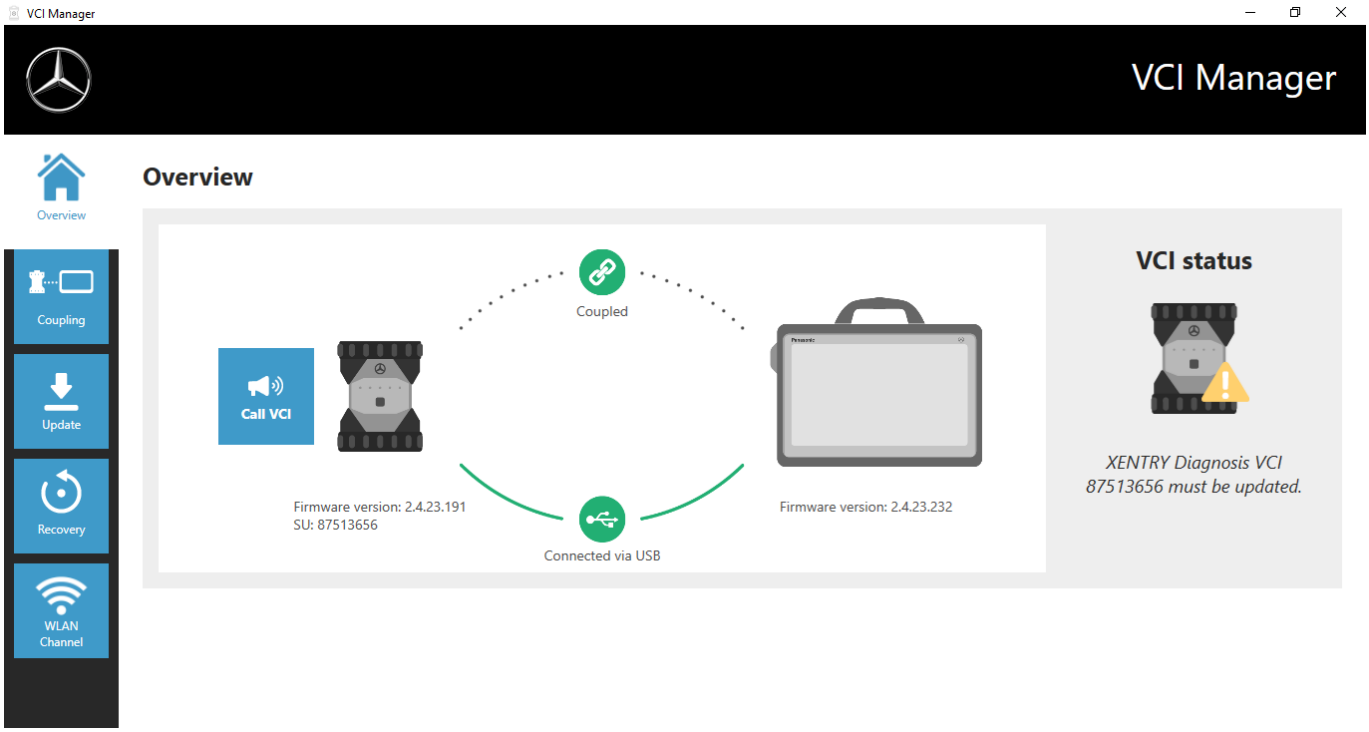


Fig. 70: Update note

1. Click on the "Update" menu item in the VCI Manager.
   ➡ Another window opens.
2. Select the "Start update" button.

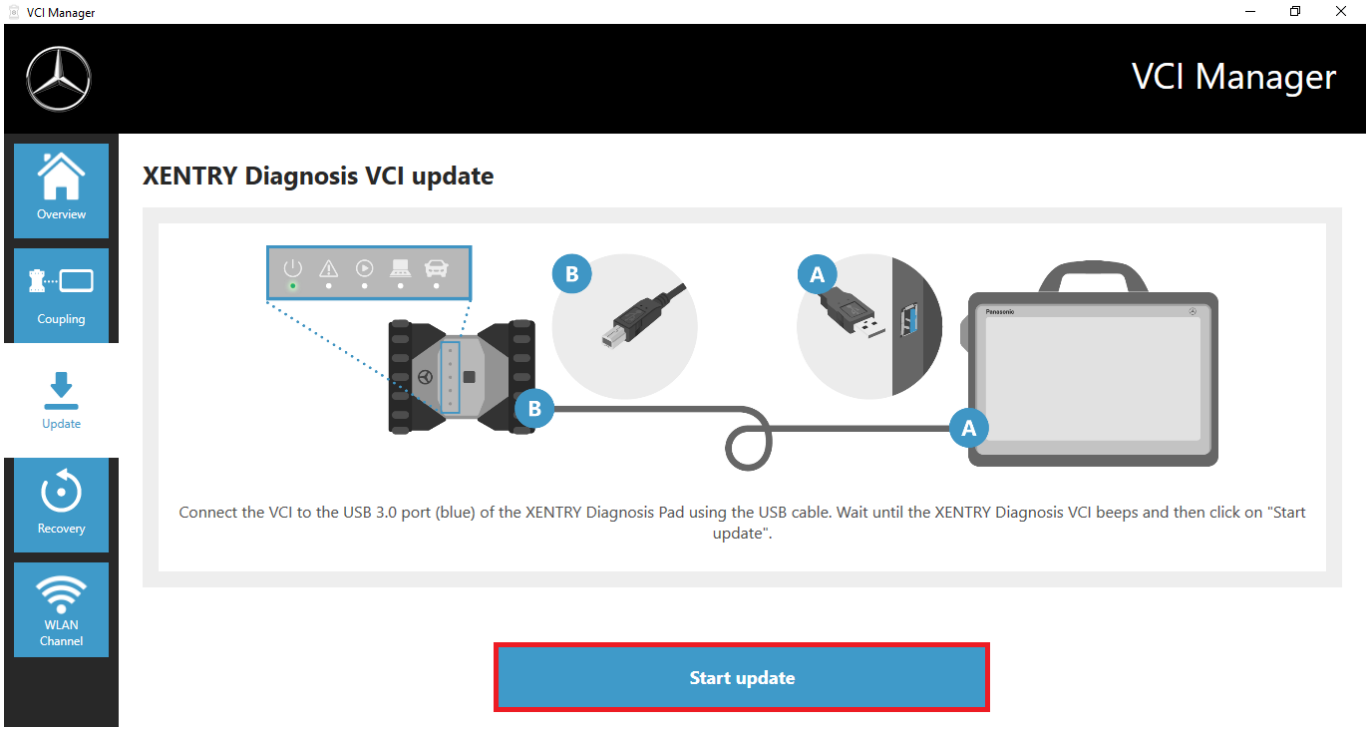


Fig. 71: Start update

When executing the update, please ensure that the USB connection between the XENTRY Diagnosis system and the VCI is not interrupted.

After the update has been completed, you can work with your XENTRY Diagnosis Kit 4 as usual.

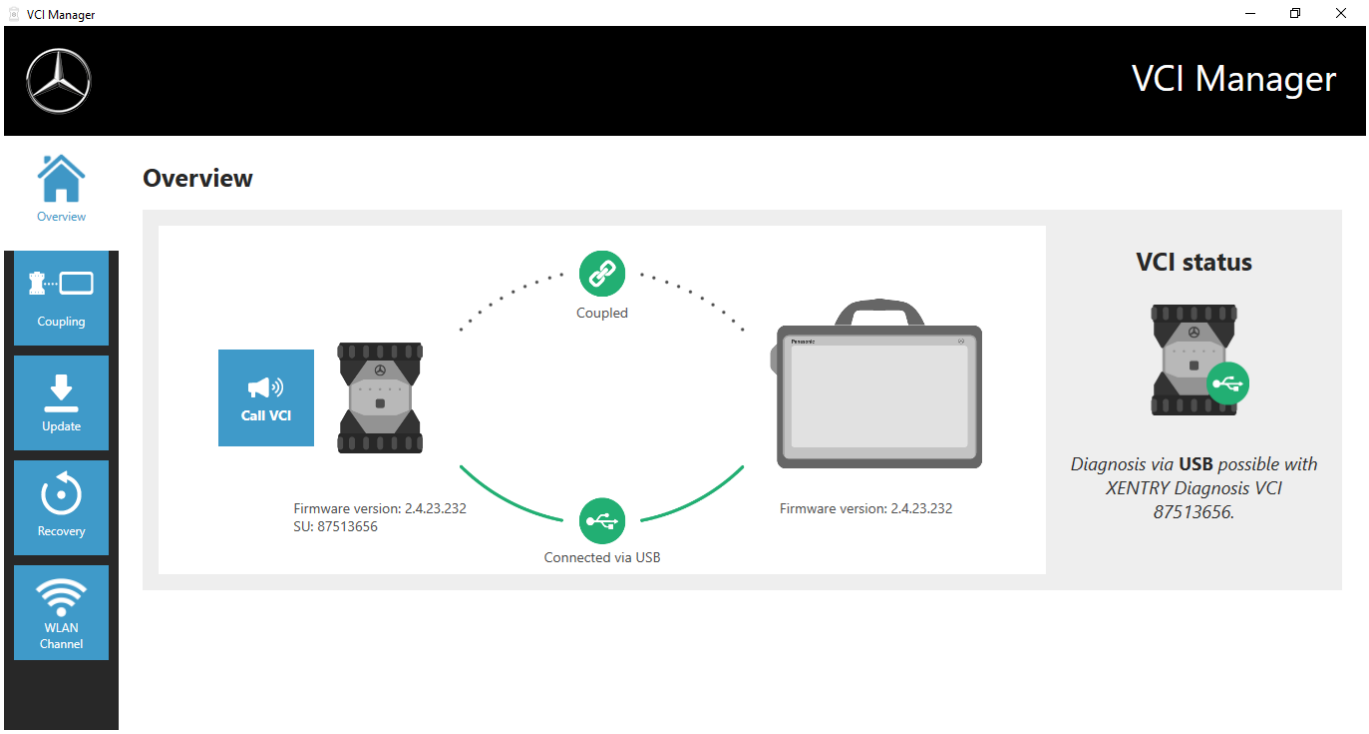


Fig. 72: Confirmation after firmware update

9.3.3 XENTRY Diagnosis VCI recovery

Recovery must only ever be performed if you are explicitly requested to do so by the Diagnosis User Help Desk!

This function is used to adapt the firmware version of the XENTRY Diagnosis VCI to the corresponding firmware version of the XENTRY Diagnosis solution.

VCI recovery is only necessary if you have switched the release on the XENTRY Diagnosis system to the preceding version and, where applicable, need to reduce the firmware version on the XENTRY Diagnosis VCI. This release switching function is described in ➦ Chapter 9.1 “Update Center” on page 46.

To carry out the VCI recovery, proceed as follows:

1. Connect the XENTRY Diagnosis VCI to the XENTRY Diagnosis system via a USB connection cable.
2. For this, the XENTRY Diagnosis VCI must be in recovery mode. To do so, remove the rubber cover with printed WLAN symbol from the XENTRY Diagnosis VCI and press the recovery button for 3 seconds.
   ➡ The red LED below the triangle symbol should now light up.
3. In the VCI Manager, click on the "Start recovery" button.

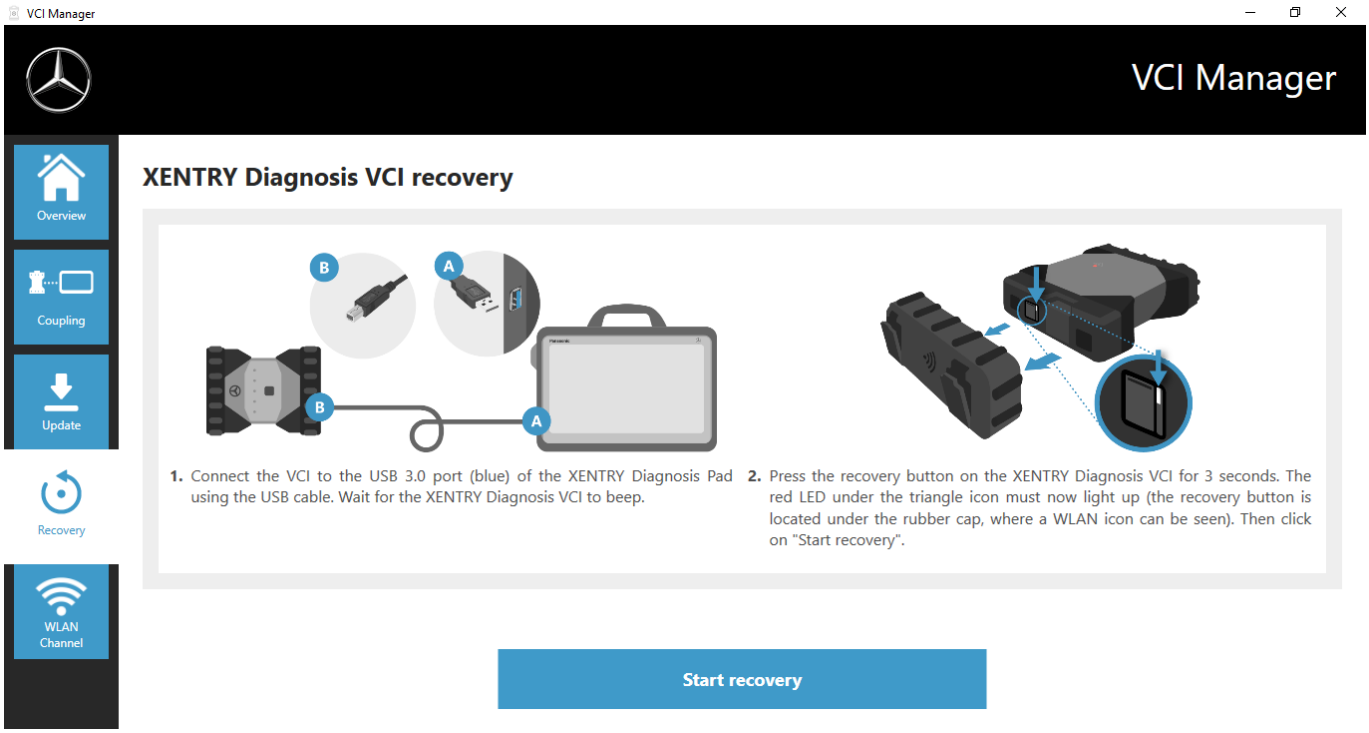


Fig. 73: Recovery of XENTRY Diagnosis VCI

Ensure that the connection between the XENTRY Diagnosis system and XENTRY Diagnosis VCI is not interrupted during recovery.

9.3.4 WLAN channel

In rare cases, the WLAN channels within the workshop can interfere with each other. If this occurs on your premises, it is possible to manually configure the WLAN channel between the XENTRY Diagnosis system and the VCI. Proceed as follows:

1. Choose the "WLAN channel" menu item.
2. Click on the "WLAN configuration" button here.
3. Follow the instructions shown.

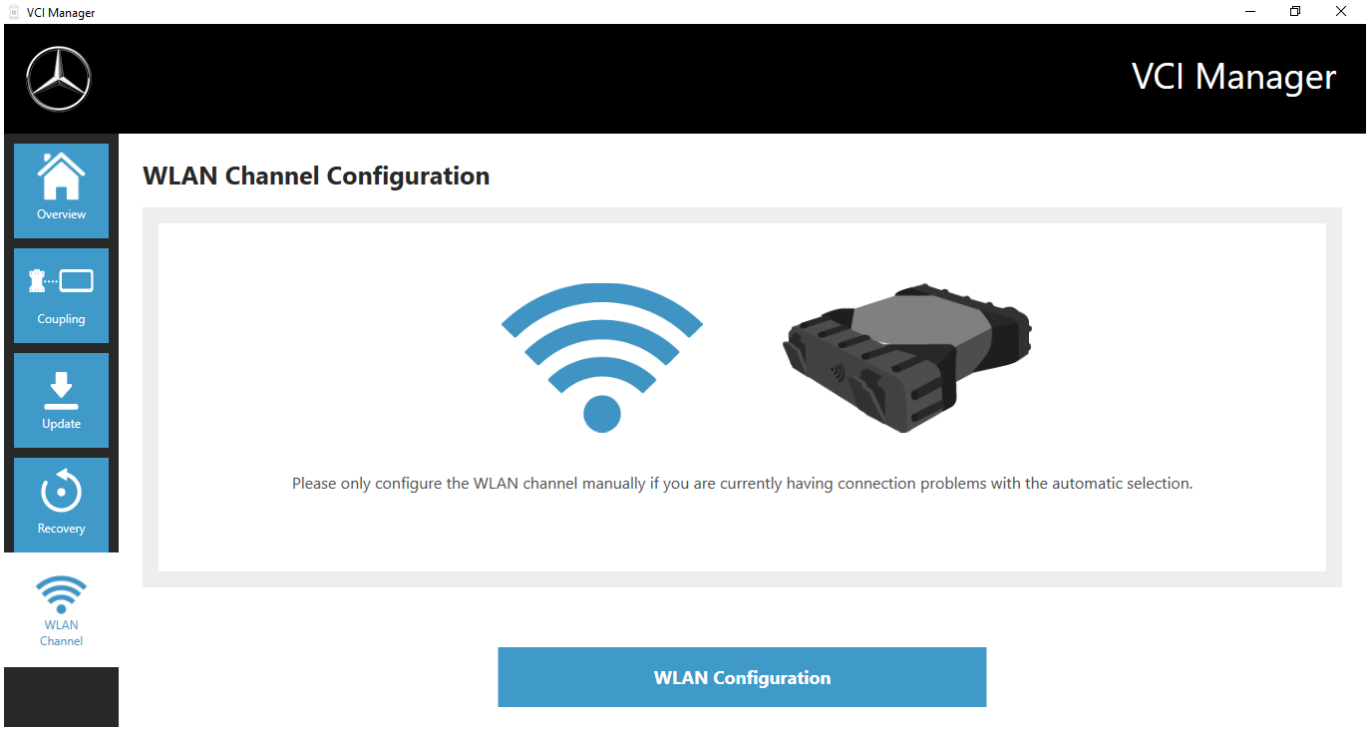


Fig. 74: Configuration of WLAN channel

9.4 VCI Monitor

The VCI Monitor shows the connection quality between the XENTRY Diagnosis system and the XENTRY Diagnosis VCI.

The following states are displayed by the "VCI Monitor" tool:

Icon	Status/cause	Description	Remedy
	VCI not paired	▪ VCI not paired	▪ Pair the VCI
	VCI not accessible (via WLAN)	▪ VCI is not connected via USB ▪ VCI is not visible via WLAN	▪ Supply power to the VCI
	Pairing lost	▪ VCI is not connected via USB ▪ VCI visible via WLAN ▪ Pairing missing	▪ Connect the VCI via a USB connection cable ▪ Pair the VCI through the VCI Manager
	VCI firmware older than PC software	▪ Firmware of the VCI outdated	▪ Update the VCI via VCI Manager
	PC software older than VCI firmware	▪ VCI is not connected via USB ▪ VCI visible via WLAN ▪ PC software outdated	▪ Downgrade the VCI firmware by carrying out the "Update" in the VCI Manager
	VCI in recovery mode	▪ VCI connected via USB ▪ VCI in recovery mode	▪ Carry out recovery in the VCI Manager

Icon	Status/cause	Description	Remedy
	VCI in use	▪ VCI in use by (another) application	
	VCI in use via WLAN	▪ VCI in use via WLAN by (another) application	
	VCI accessible via USB	▪ VCI is connected via USB connection cable	
	VCI accessible via WLAN	▪ VCI accessible via WLAN ▪ WLAN connection quality visible via bar graph	
	WLAN adapter inoperative	▪ No communication possible between VCI and Pad via WLAN	▪ Reset WLAN adapter through "Reset WLAN adapter" window or right-click the status display and then click "Reset Wi-Fi flash drive..."
	VCI in use via cable connection	▪ VCI in use by (another) application	
	Flight mode	▪ Wi-Fi stick is deactivated	▪ Deactivate flight mode on the Pad ▪ Activate Wi-Fi stick

Icon	Status/cause	Description	Remedy
	VCI overheated	▪ The Wi-Fi stick is deactivated at temperatures of more than 65 °C	▪ At temperatures up to 85 °C, use a USB connection cable. ▪ Use VCI in a cooler ambient temperature

9.5 PDF Center

The PDF Center is an application on XENTRY Diagnosis devices for generating and processing diagnostic documents from XENTRY Diagnosis. As a printing center, the PDF Center offers you the following processing options:

- Save PDF documents in a storage location that you have pre-defined
- Forward PDF documents to a printer
- Compile multiple PDF documents into a single file
- Export PDF documents
- Upload PDF documents to the XENTRY Portal

During the initial setup, it is advisable to specify in the settings of the PDF Center which actions should be performed by default whenever you create a PDF document. For more information, see chapter ➦ Chapter 9.5.3 “PDF Center settings” on page 67.

9.5.1 Logging in to the PDF Center

To use the full range of PDF Center functions on your XENTRY Diagnosis Kit, you must first log in to XENTRY Diagnosis. XENTRY Diagnosis automatically sends the login to the PDF Center, eliminating the need for a separate login in the PDF Center. This step is required to use the "Upload" function; you can find more information on this in chapter ➦ Chapter 9.5.5 “PDF Center Paperless (Upload)” on page 71.

Due to security specifications, users must be logged into the PDF Center in order to upload PDF documents to XENTRY Portal.

In many markets, automatic uploading is pre-selected by default. The function is only available to markets that also have access to XENTRY Portal. If the button is grayed out, the function is not yet available in your market.

9.5.2 Functions of the PDF Center

Three tabs with the main functions are available in the "Functions" area of the PDF Center:

- Keep documents,
- Compile documents, and
- Transfer/export documents.

You can select the desired main function by clicking on the respective tab.

The heart of the PDF Center is the **Document list**, which provides an overview of all the diagnostic documents that have been generated on the XENTRY Diagnosis device. The following columns in the document list provide you with information on the processing form of the PDF documents, with regard to whether they were...

- saved,
- printed on paper,
- uploaded, or
- compiled with further documents.



Fig. 75: Document list processing forms

The PDF Center uses the following symbols to indicate the status of the documents:

Icon	Description
	A green tick indicates a successful action.
	A spinning circle symbol indicates that the process is currently in progress.
	A finger symbol indicates that an action is required from you for the upload.

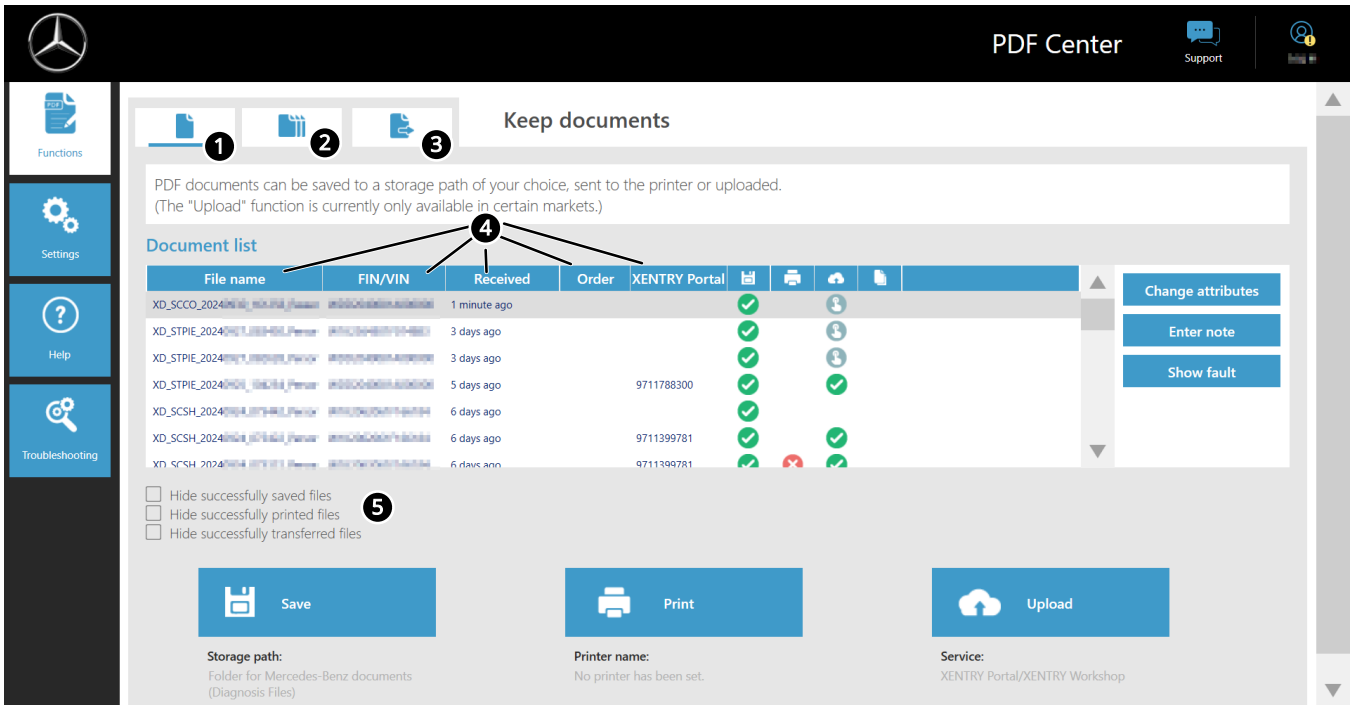


Fig. 76: PDF Center functions – Keep documents 2

(1) "Keep documents" tab
(2) "Compile documents" tab
(3) "Transfer/export documents" tab
(4) Change sort order by clicking on the headings
(5) Filter options

By clicking on the headings in the blue bar (4), you can sort the documents according to the selected attribute in ascending or descending order.

You can also filter the view of the document list by clicking on the checkboxes (5) so that you have a simpler overview. The PDF documents are hidden according to the selected checkboxes:

- Hide successfully saved files
- Hide successfully printed files
- Hide successfully transferred files

a. Keep documents

The "Keep documents" main function allows you to save, print or upload documents using the document list and the buttons below it. To do this, click on the relevant button at the bottom.

Save:

After clicking the "Save" button, the PDF document is saved to the preset storage path, which is also displayed under the button.

Print:

The PDF document is sent to the configured printer for printing on paper. The name of the printer is displayed under the "Print" button.

Upload (PDF Center Paperless):

For users and markets where the "Upload" function is available, diagnostic documents are automatically uploaded from XENTRY Diagnosis and assigned to an order in XENTRY Order. You can also initiate the upload process manually using the "Upload" button.

In many markets, automatic uploading is pre-selected by default. The function is only available to markets that also have access to XENTRY Portal. If the button is grayed out, the function is not yet available in your market.

When clicking on a document in the document list, you can use the buttons on the right-hand side to change the attributes, enter a note, or display a possible fault. A gray background on the respective document indicates that you have selected it.

Change attributes:

Any known attributes are prefilled when the documents are created from XENTRY Diagnosis. If you still want to change the order number or the FIN/VIN afterwards, you can do this using the "Change attributes" button.

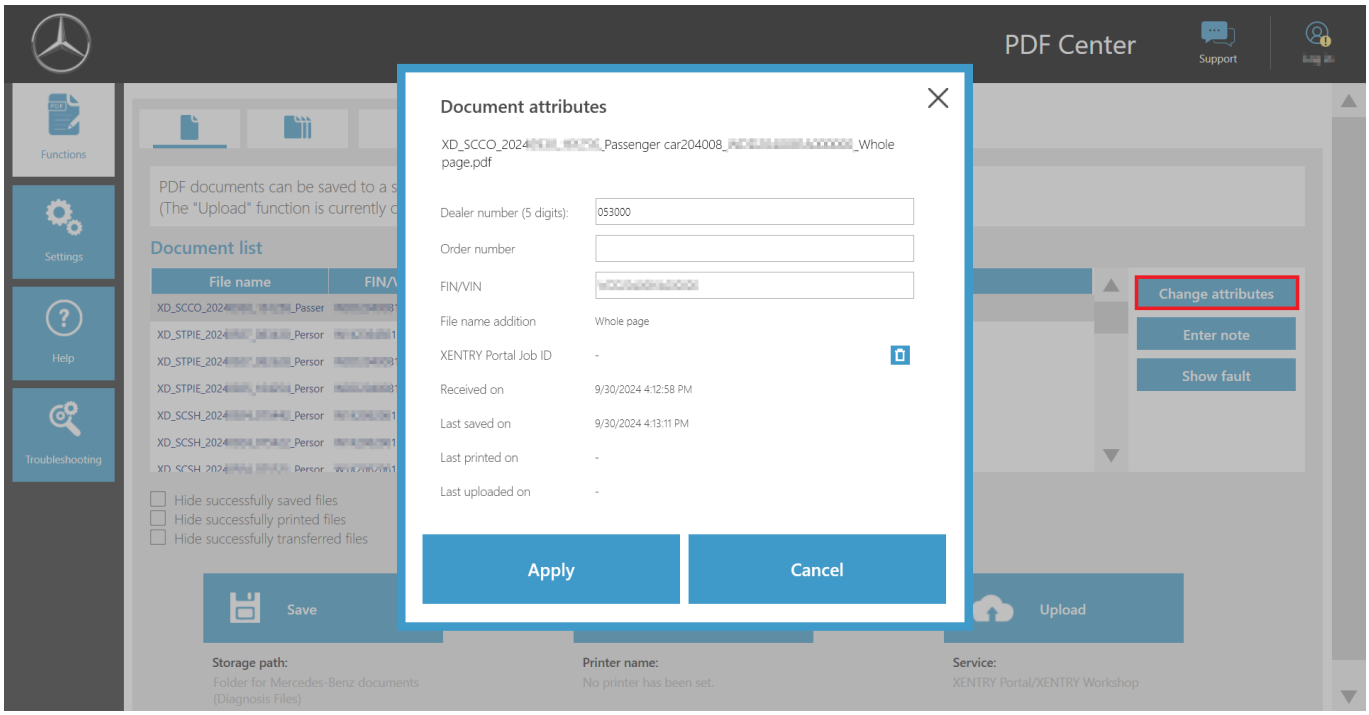


Fig. 77: PDF Center – Document attributes

After clicking on the "Change attributes" button, the corresponding overview opens to change the attributes. Once the data has been entered and completed, you can save it by clicking the "Apply" button.

Enter note:

You can add your notes to a document using the "Enter note" button. This adds another page with the note to the PDF document. The original document remains unchanged. To do this, first click on "Enter note", write the note that you want to add, then accept the note by clicking on "Save".

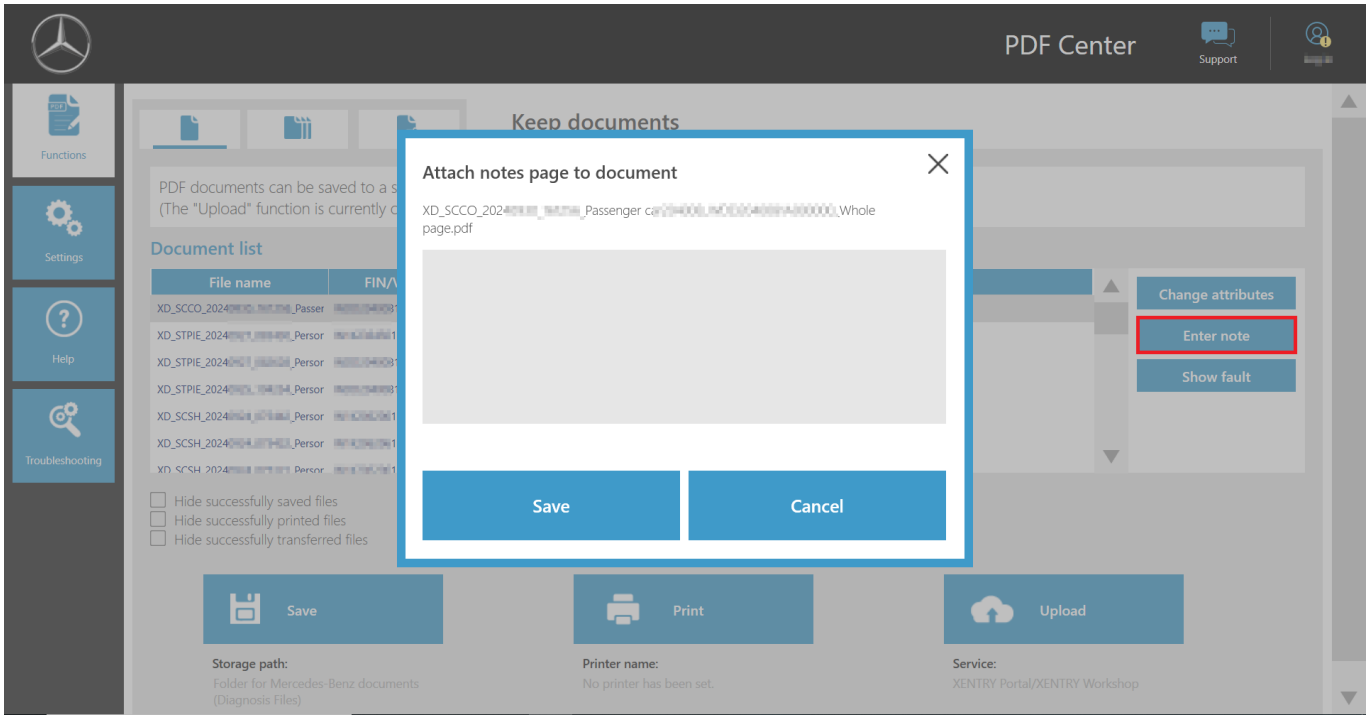


Fig. 78: PDF Center – Create note

Show errors:

The "Show errors" button displays possible errors for the PDF documents and their processing.

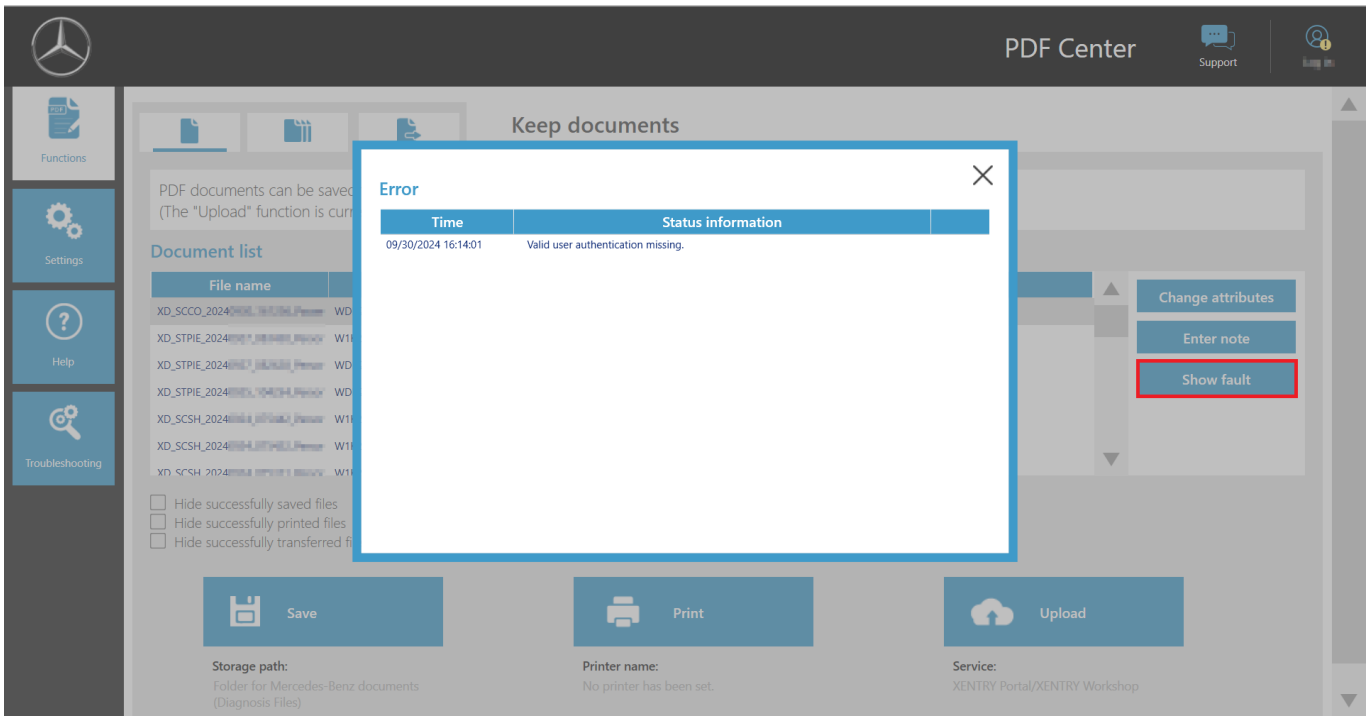


Fig. 79: Show errors – User login required

b. Compile documents

In the "Compile documents" area, you have the option of combining multiple documents and merging them into one file.

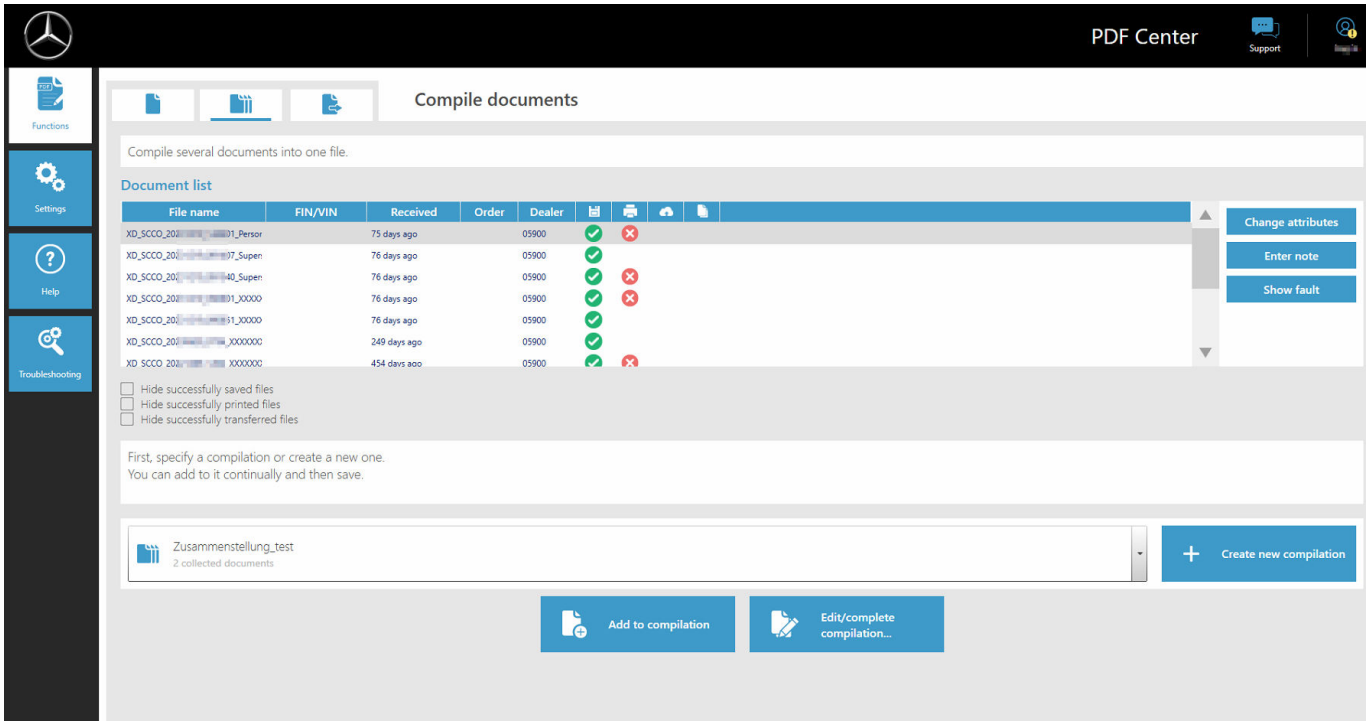


Fig. 80: PDF Center functions – Compile documents

1. To compile a PDF, click on the "Create new compilation" button.
   ➡ An input window opens.
2. In the input window, you can enter the name of the compilation, and optionally also the FIN/VIN.
3. Save the setting with the "Apply" button.
4. Now select the documents in the document list that you want to compile.
   ➡ The selected files are then highlighted in purple in the document list.
5. To add further documents, click on the "Add to compilation" button.
6. Once you have selected all documents, click on "Edit/finalize compilation".
   ➡ An input window opens.
7. Select "Finalize compilation" to merge the documents.

c. Transfer/export documents

In the "Transfer/export documents" area, you have the option of exporting documents that have already been created to another diagnostic device or transferring them to another target structure.

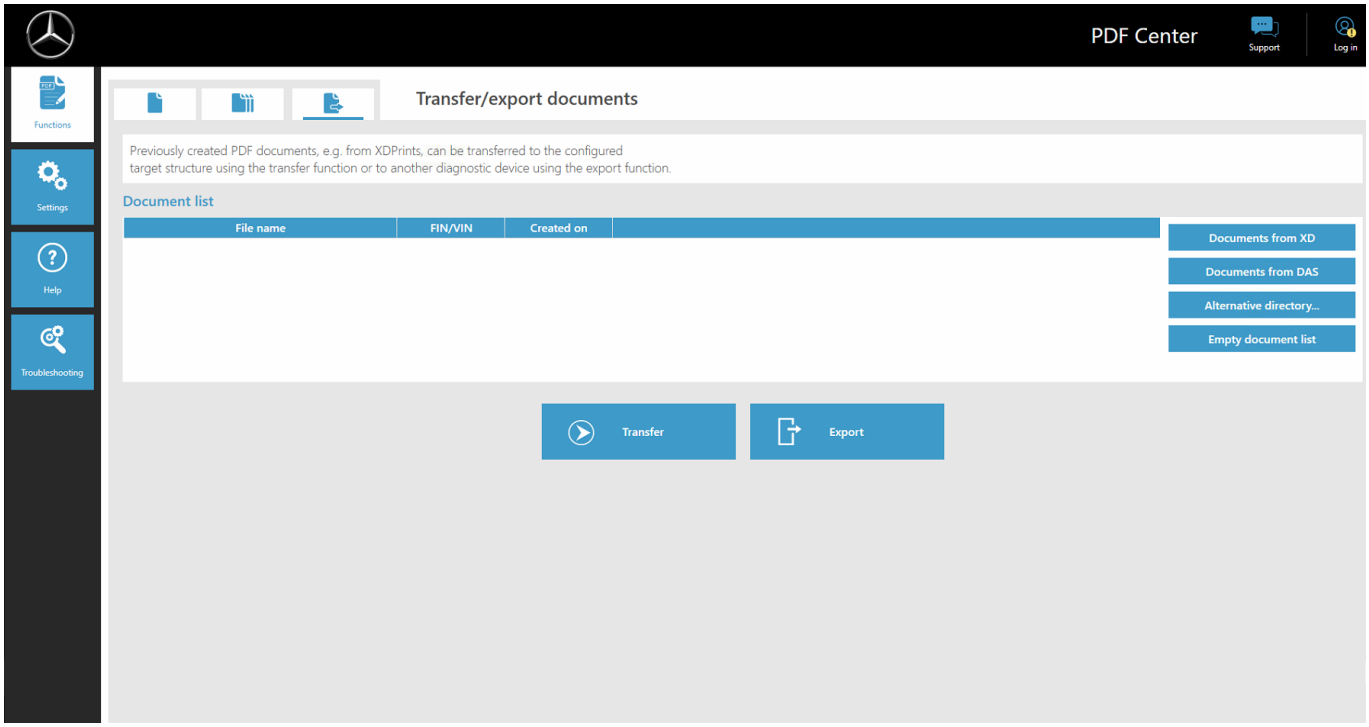


Fig. 81: PDF Center – Transfer/export documents

To do this, select a file from the document list. You can export the file via the "Export" button and transfer it accordingly via the "Transfer" button, for example to another diagnostic device.

9.5.3 PDF Center settings

In the PDF Center settings, you can define the basic settings and adapt them according to your requirements.

In the XENTRY Diagnosis Kit, the PDF Printer is set as the default printer.

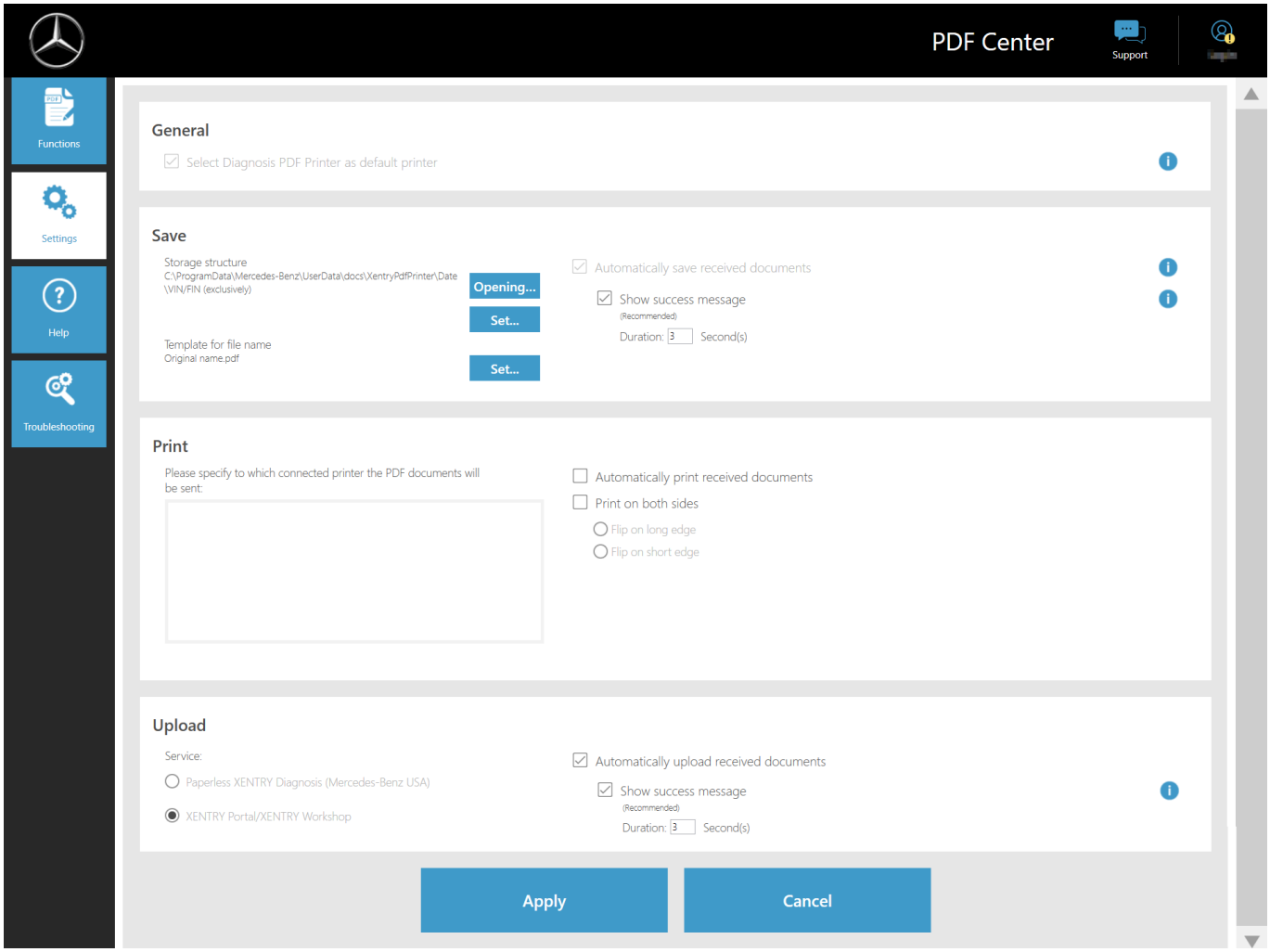


Fig. 82: PDF Center Settings

a. Save

You can change the storage location and the template for the file name in the "Save" area.

You can also specify whether you want to receive success messages, and define the time at which messages should be displayed. The success message tells you whether the processing and saving of a document was successful.

By creating a filing structure, generated PDF documents are stored directly in the defined folder. This saves you time in the workshop process.

1. Click the "Set..." button in the "Save" section to define your filing structure.
   ➡ An input window opens.
2. You can choose whether you want to save the base directory alone, or the base directory including structure.
   ➡ The Explorer window opens and all connected data storage media are displayed. These can be, for example, a USB flash drive or an external hard drive, as well as the data storage media of the diagnostic system.
3. Select the directory to be used.
4. Confirm the entry with the "Select folder" button.
   ➡ The Explorer window closes again.
5. The setting can now permanently be saved using the "Apply" button.

You can also set the file name for the generated PDF file.

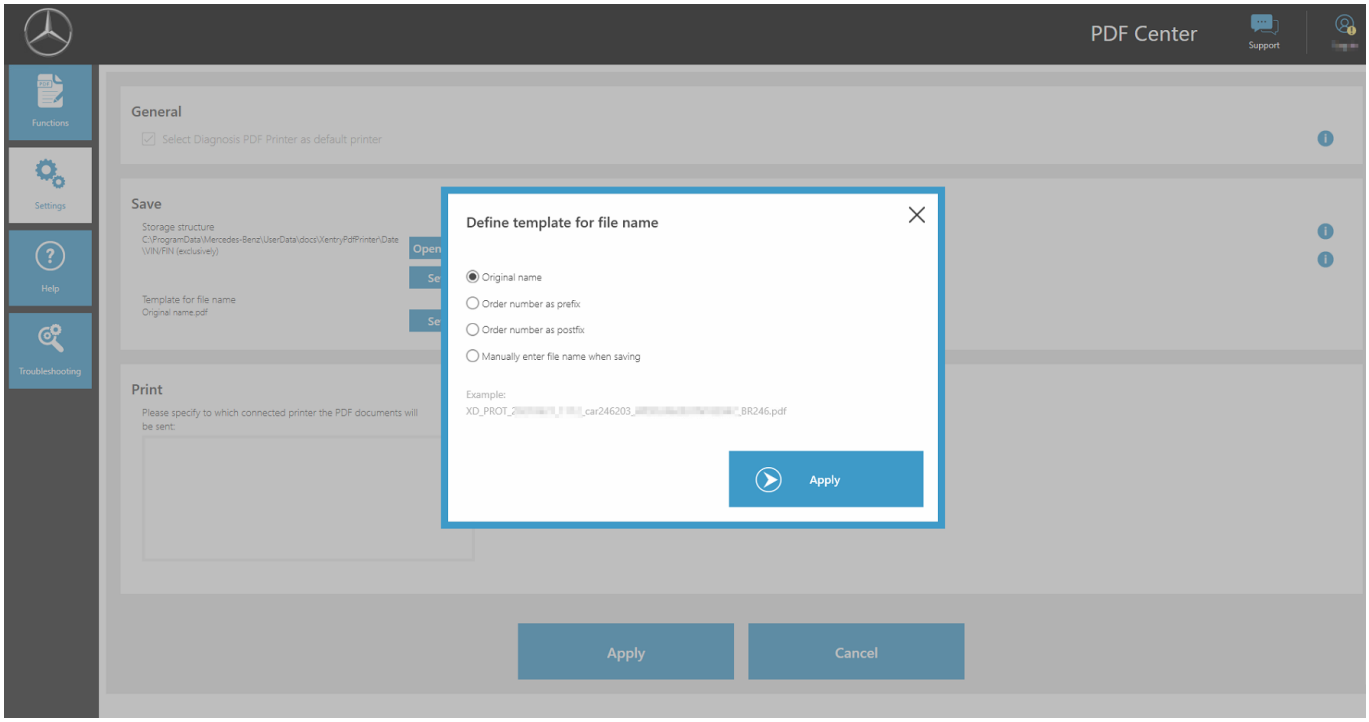


Fig. 83: Set file name

1. In the "Save" area, click the "Set..." button next to "Template for file name original name.pdf".
   ➡ An input window opens.
2. Select the desired function.
3. Save the setting using the "Apply" button.

b. Print (set and remove printer)

In the Print area, you can specify a hardware printer to print the documents. You can also specify whether the paper should be printed on both sides.

ENVIRONMENT

Before you implement printer settings, please consider whether you really need the documents in paper form.

If necessary, you can also remove the selected printer here.

c. Deactivation of automatic uploading

Deactivation of automatic uploading is intended for special customers and Independent Operators (IO).

1. In the "Settings" tab, navigate to the "Upload" section.
2. Remove the tick next to "Automatically upload received documents".

> *You can still upload your documents manually using the "Upload" button in the "Functions" tab. In this case, the PDF Center will ask you to log in.*

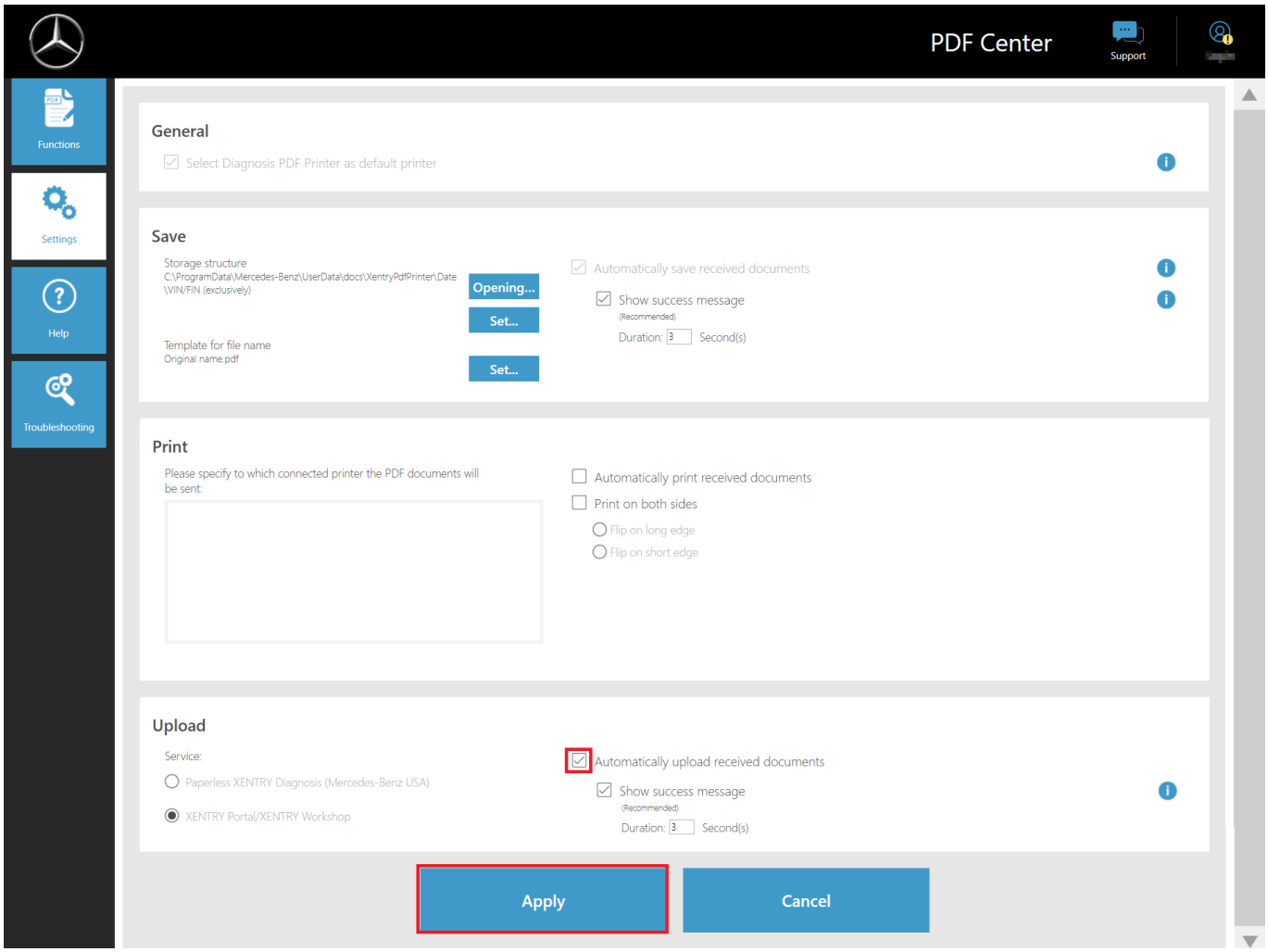


Fig. 84: PDF Center settings "Upload"

3. A new window will then open for you to confirm the deactivation of the automatic uploading.
4. To confirm the process, enter the system number of your XENTRY Diagnosis Kit and the reason for deactivating the automatic uploading.
5. Click on the "Deactivate" button to confirm the entries and close the window.
6. Finally, click on "Apply" to save the setting.

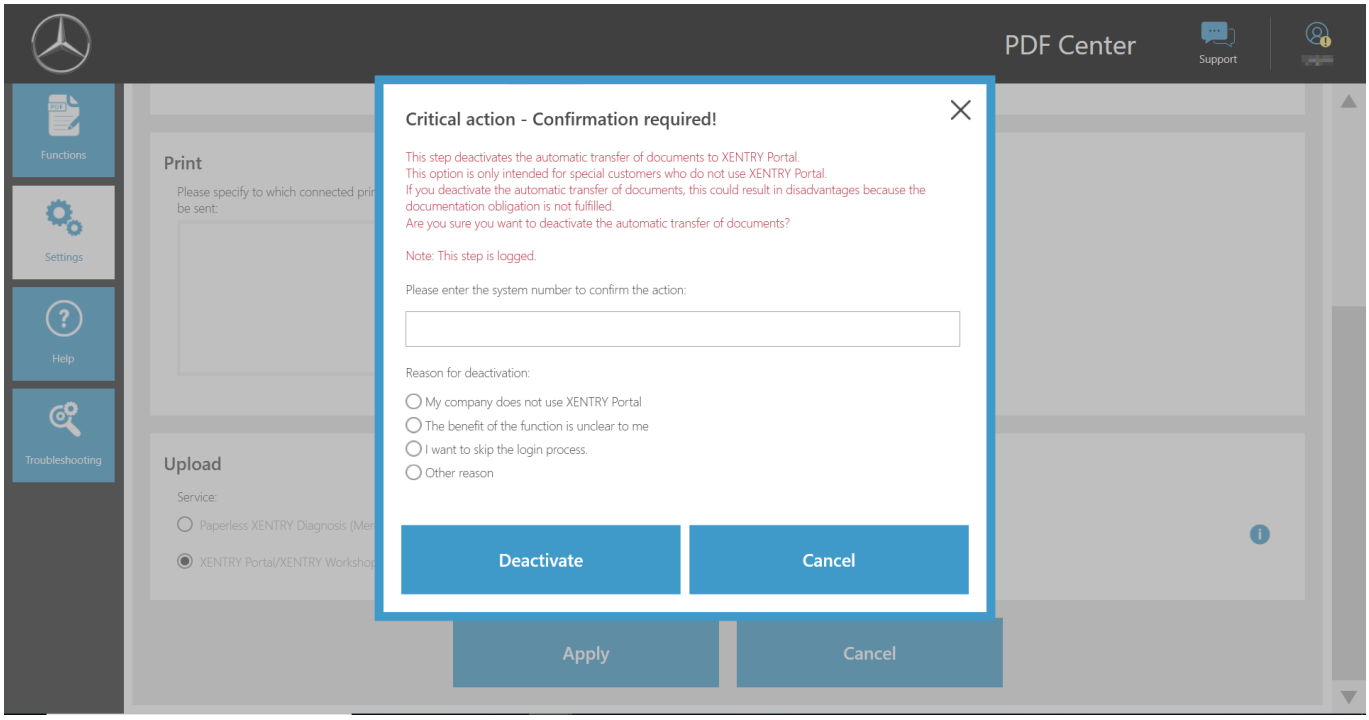


Fig. 85: PDF Center – Change upload settings – Confirmation prompt

9.5.4 PDF Center Help

In the "Help" section, you will find information on a comprehensive range of help topics.

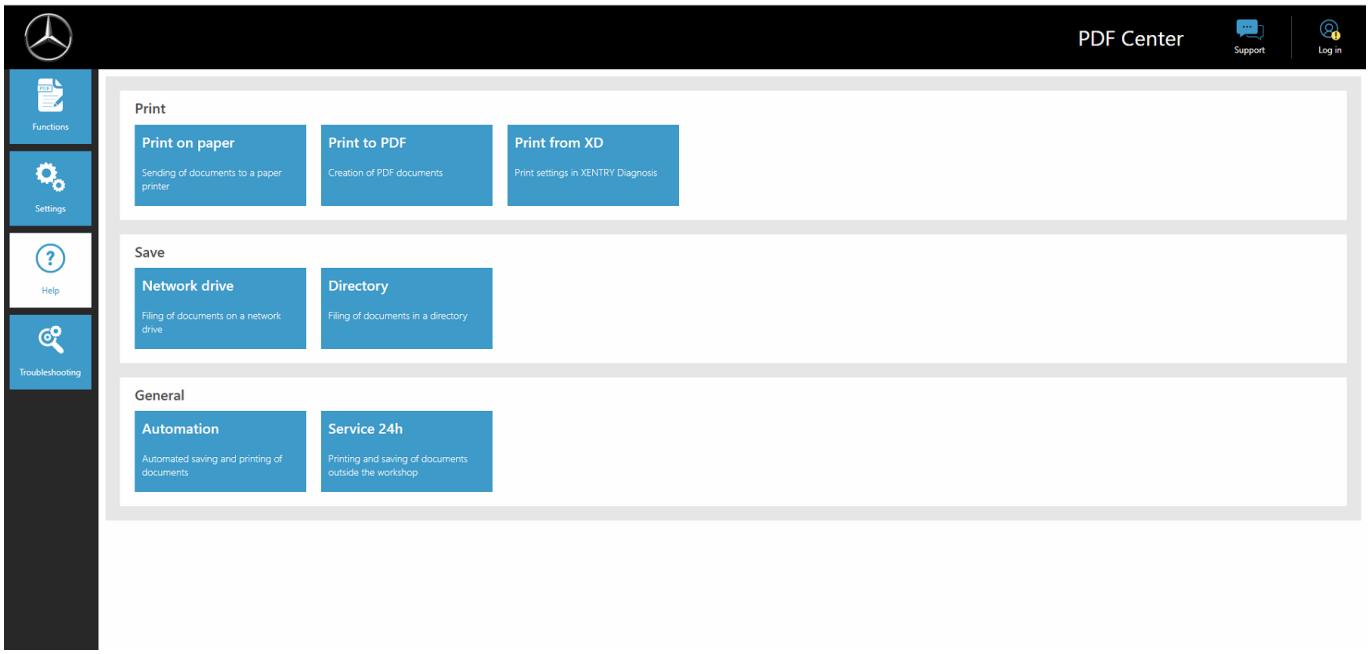


Fig. 86: PDF Center Help

9.5.5 PDF Center Paperless (Upload)

The PDF Center Paperless offers you the option of automatically and digitally attaching the diagnostic documents of your XENTRY Diagnosis Kit to an existing order in XENTRY Portal / XENTRY Workshop. The automatic upload of your documents is carried out for each diagnostic document from XENTRY Diagnosis, regardless of your settings in the PDF Center for the storage location of the diagnostic documents.

a. Requirements for uploading

The following prerequisites must be fulfilled for automatic uploading:

- **Online use of the XENTRY Diagnosis Kit**

  Using the XENTRY Diagnosis Kit in online mode is a basic requirement for using the paperless "Upload" function.
- **User logged in to the PDF Center**

  Due to security specifications, the PDF Center can only upload diagnostic documents if a user has logged in. To use the full range of PDF Center functions on your XENTRY Diagnosis Kit, you must first log in to XENTRY Diagnosis. XENTRY Diagnosis automatically sends the login to the PDF Center, eliminating the need for a separate login in the PDF Center.
- **Presence of an order/a job ID in the XENTRY Portal**

  To upload diagnostic documents to XENTRY Workshop, an order or a job ID must first be present. To do this, begin by creating and finalizing the reception report in XENTRY Order. After creating the order, you can start the diagnostic process in XENTRY Diagnosis as usual.

  Without an existing order in the XENTRY Portal, the diagnostic documents cannot be uploaded automatically. In this case, uploading must be started manually as soon as an order has been created in XENTRY Portal for the corresponding vehicle. The upload can be started manually via the corresponding "Upload" button in the PDF Center.

The "Upload" function is only available to markets that also have access to XENTRY Portal. If the button is grayed out, the function is not yet available in your market.

b. Procedure for uploading

1. Create an order in XENTRY Portal and complete the reception report.
2. Start the XENTRY Diagnosis application on your XENTRY Diagnosis Kit as usual and continue with the diagnostic process.
3. Click on the "Print" button to send the diagnostic documents to the PDF Center for further processing.
4. After successful printing, the diagnostic documents are saved in the PDF Center and listed in the document list.
5. In addition, the documents are now also automatically uploaded to XENTRY Portal. Successful uploads are indicated by tooltip notifications and a green tick under the cloud symbol.

   In addition, tooltip notifications inform you of possible remedies in the event of a failed upload.

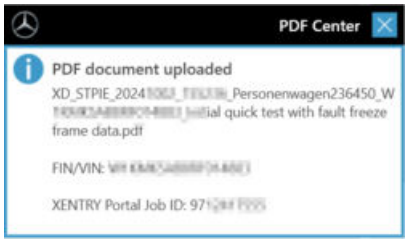


Fig. 87: Tooltip notification – Upload completed

6. After a successful upload, you will find your diagnostic documents in XENTRY Workshop as an attachment to your order.

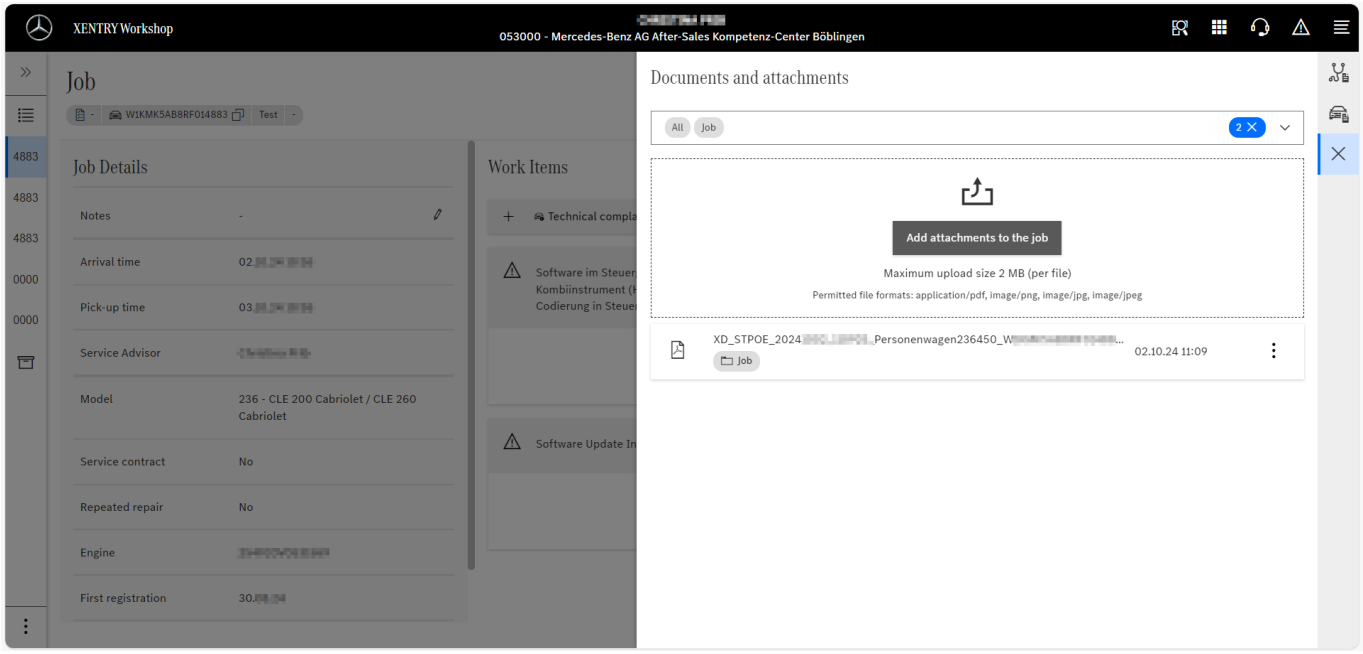


Fig. 88: XENTRY Workshop – Documents and attachments

7. You can always check the status of your documents in the document list in the PDF Center.

   To do this, check the symbol in the cloud column.

Icon	Description
	The queue symbol – a clock sign – means that the document is still in the queue and is waiting to be uploaded.
	The waiting symbol – a circle with dots – shows you that the document is currently being uploaded.
	A finger symbol indicates that you still need to perform an action for the upload to be completed successfully.
	The green tick indicates that the document has been successfully attached to an order in XENTRY Workshop. You can now call up the document in XENTRY Workshop.

c. Change attributes

By clicking on a document in the document list, you can use the buttons on the right-hand side to change the attributes, enter a note or display a possible error.

Any known attributes are prefilled when the documents are created from XENTRY Diagnosis. If you still want to change the order number or the FIN/VIN afterwards, you can do this using the "Change attributes" button.

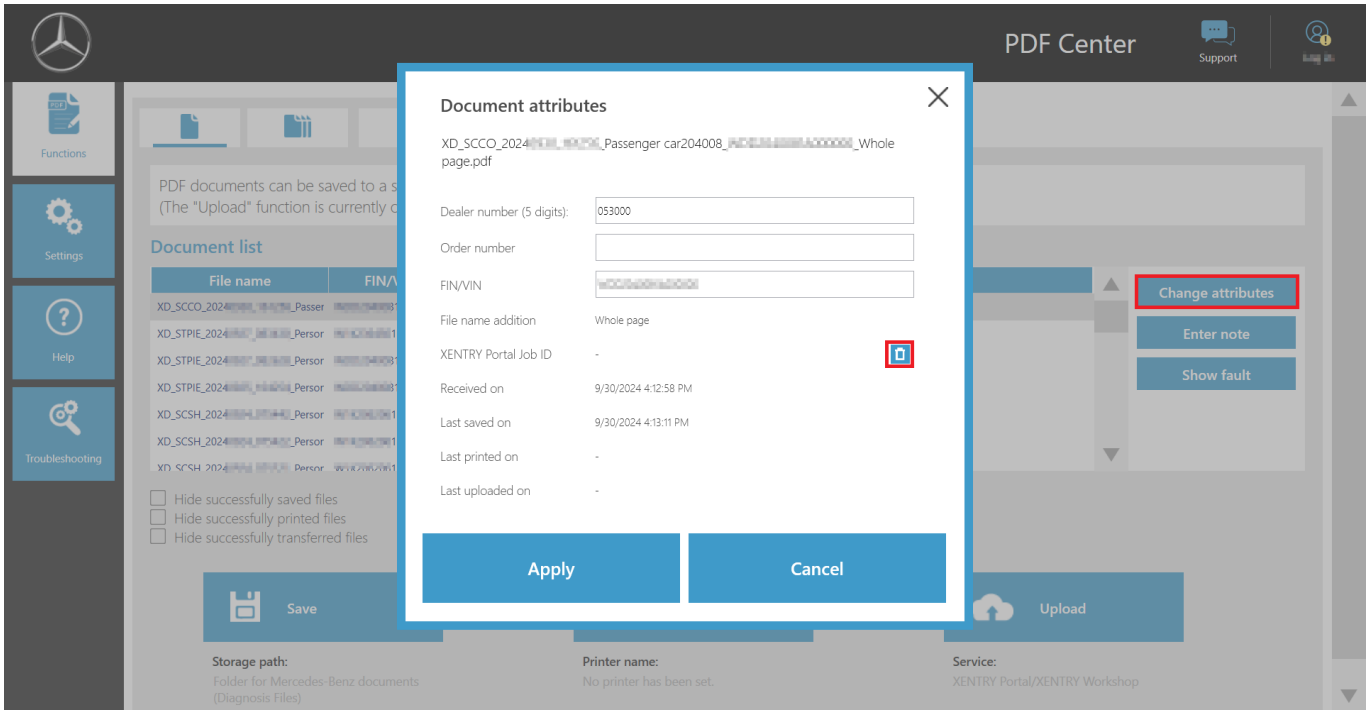


Fig. 89: PDF Center – Change document attributes

1. Click on the "Change attributes" button.

➡ The corresponding overview opens to change the attributes.

2. Make the necessary changes.

If your market is enabled for the "Upload" function, an entry in the "XENTRY Portal Job ID" field is required to use the "Upload" function. The XENTRY Portal Job ID is automatically taken from the last order created in XENTRY Workshop and cannot be changed manually.

➡ If the XENTRY Portal Job ID needs to be changed, select the bin symbol (marked red in Fig. 89) to first remove the XENTRY Portal Job ID and then reassign it.

➡ Select the order associated with the document from the available XENTRY Portal orders and click on "Apply".

3. Once all changes have been made, click on "Apply" to save the new attributes.

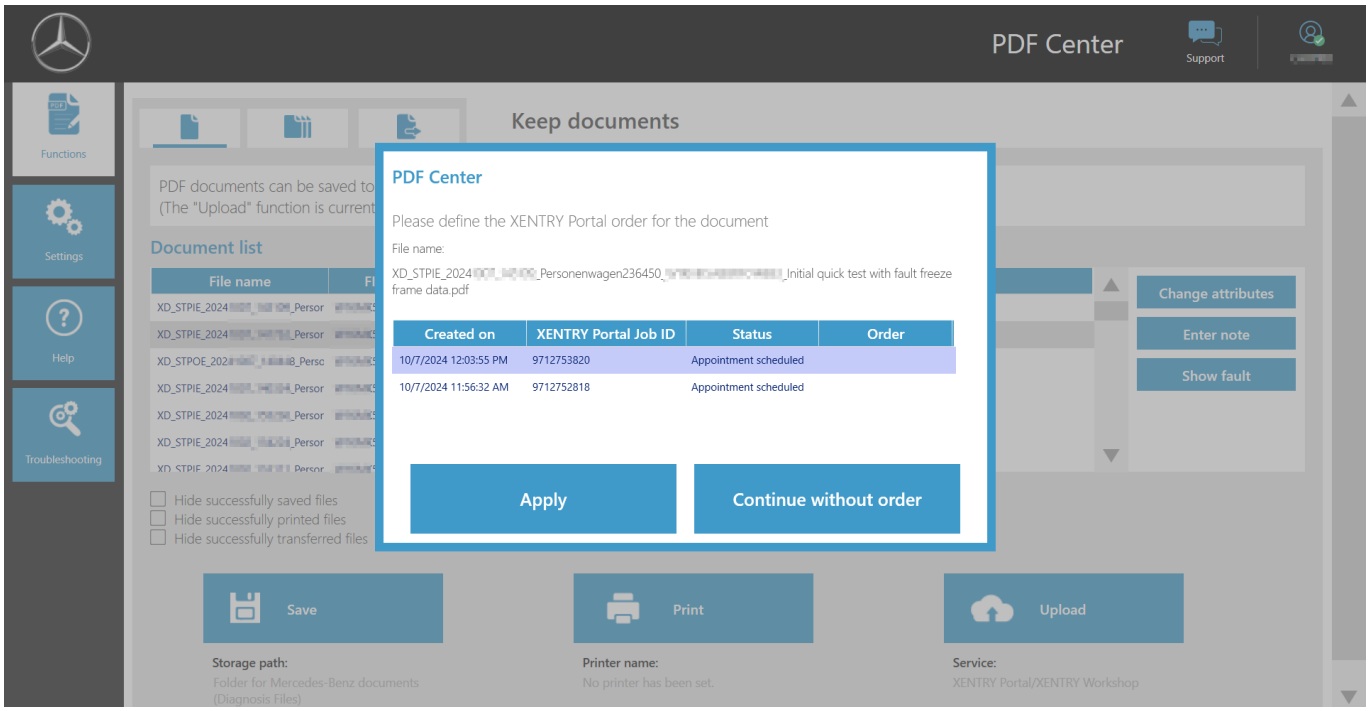


Fig. 90: PDF Center – Set XENTRY Portal Job ID

You can also continue without making a selection. To do this, click on the "Continue without order" button.

The "XENTRY Portal Job ID" column in the document list is now empty; see Fig. 91.

This procedure is not recommended, as the documents will then be unable to be assigned to the corresponding order.

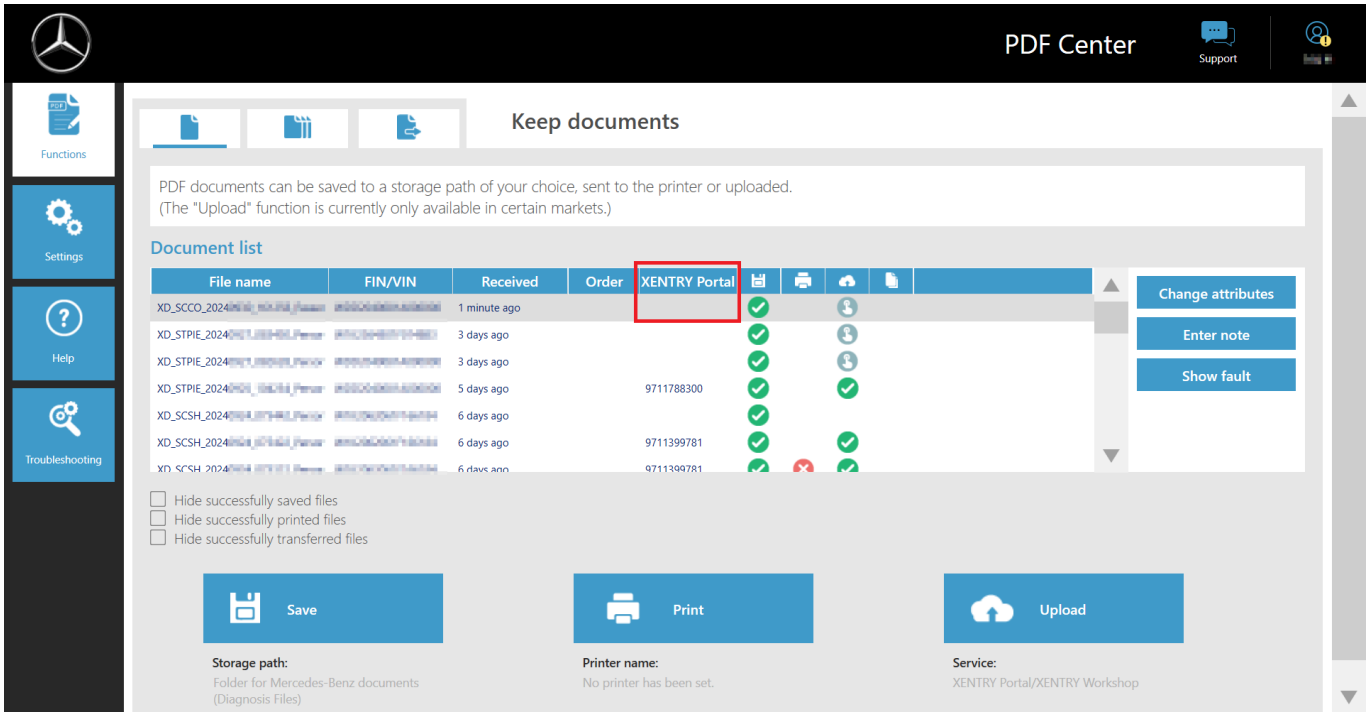


Fig. 91: PDF Center – Document attributes – XENTRY Job ID removed

d. Manual upload (in XENTRY Workshop)

The maximum size for uploading diagnostic documents to the PDF Center is 150 MB. If the document is larger, you'll need to perform a direct manual upload via XENTRY Workshop.

1. To do this, open the order in XENTRY Workshop.
2. Select the "Attachments" tab by clicking on the document icon on the right-hand side.



Fig. 92: XENTRY Workshop – Attachments icon

3. Add the relevant diagnostic document by clicking on "Add attachments to order"; see Fig. 88.

   Here, you also have the option of adding further documents that were not created using the XENTRY Diagnosis Kit.

9.5.6 Printouts on paper

It is also possible to create documents in paper form using the PDF Center.

1. Open the PDF Center.
2. Go to the "Settings" area.
3. Select the desired printer in the "Print" area.
4. If the documents that are created are to be printed automatically, tick the box for "Print received documents automatically". You also have the option of printing documents on both sides by selecting the "Print paper on both sides" setting.

5. Save the setting by clicking on the "Apply" button.

➡ The settings you have made are then applied.

ENVIRONMENT

Please consider whether you really need the documents in paper form before you print a document.

9.5.7 Compile multiple PDF documents

You can compile PDF documents as follows:

1. Open the PDF Center.
2. To compile a PDF, click on "Create new compilation".

   ➡ An input window opens.
3. In the input window, you can enter the name of the compilation, and optionally also the FIN/VIN.
4. Save the setting using the "Apply" button.
5. Now select the documents in the document list that you want to compile.

   ➡ The selected files are then highlighted in purple in the document list.
6. To add further documents, click on the "Add to compilation" button.
7. Once you have selected all documents, click on "Edit/finalize compilation".

   ➡ An input window opens.
8. Select "Finalize compilation" to merge the documents.
9. Click on the "Diagnosis files" shortcut on your desktop to open documents or on the storage location where you save your documents.

9.5.8 Best practice for printing from XENTRY Diagnosis

Within the XENTRY Diagnosis application, you have two "Print" symbols at the top right.

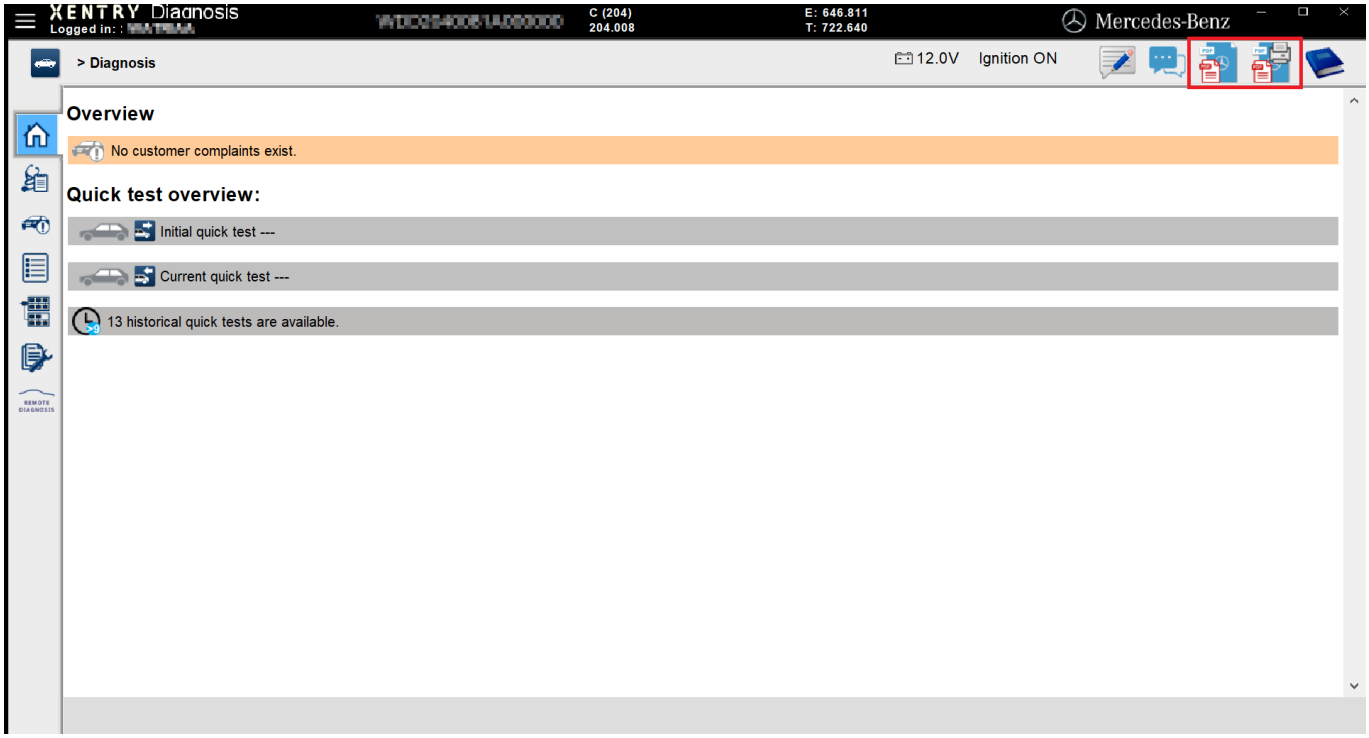


Fig. 93: Printing from XENTRY Diagnosis

- The symbol on the left creates a PDF document.

  Click on it to start creating the document. Depending on the setting, a success message will be displayed to inform you that the creation was successful.
- The symbol on the right creates a PDF document within the PDF Center and also creates a printout on the printer you have defined.

  If you have not yet set a printer, a message will appear at the bottom right indicating that no printer has been set. You can add a printer using the "Configure now" button.
- You also have the option of configuring a setting for how the automatic quick test should be created. You can select the "Start and print quick test automatically" option in the automatic quick test if you want to print it out on paper. If you have selected automatic creation of a PDF file in the automatic quick test, the PDF Center is then used.

9.5.9 Best practice for network drive

Created PDF documents can also be stored on a network drive of your choice. With Windows 10 and Windows 11, proceed as follows:

1. Open the desired drive in Explorer.
2. On the left-hand side, right-click on the desired folder where you want to store the documents in future.

   ➡ A selection window opens.
3. Select the "Pin to quick-access" option.
4. Open the PDF Center.
5. Go to the "Settings" area.
6. Click the "Set..." button in the "Save" section to define your filing structure.

   ➡ An input window opens.
7. You can choose whether you want to save the base directory alone, or the base directory including structure.

   ➡ The Explorer window opens and all connected data storage media are displayed. These can be, for example, a USB flash drive or an external hard drive, as well as the data storage media of the diagnostic system.
8. Now select the network that you have attached to the quick-access that is to be used.
9. Confirm the entry with the "Select folder" button.

   ➡ The Explorer window closes again.

10. The setting can now permanently be saved using the "Apply" button.

9.5.10 Best practice for directory

To store documents in a directory, proceed as follows.

1. Open the PDF Center.
2. Go to the "Settings" area.
3. Click the "Set..." button in the "Save" section to define your filing structure.
   ➡ An input window opens.
4. You can choose whether you want to save the base directory alone, or the base directory including structure.
   ➡ The Explorer window opens and all connected data storage media are displayed. These can be, for example, a USB flash drive or an external hard drive, as well as the data storage media of the diagnostic system.
5. Select the directory to be used.
6. Confirm the entry with the "Select folder" button.
   ➡ The Explorer window closes again.
7. The setting can now permanently be saved using the "Apply" button.



It is recommended to save a drive using the "Pin to quick-access" function as described above. However, the outdated method of "Connect network drive" is not recommended.

9.5.11 Best practice for Service 24h

PDF documents can also be created offline, for example for Service 24h, and printed and uploaded later.

1. Open the PDF Center.
2. Go to the "Settings" area.
3. Open XENTRY Diagnosis.
4. Print the documents using the print symbol in the top right-hand corner.
5. To print the documents on paper or upload them to XENTRY Workshop afterward, open the PDF Center.
6. Go to the "Functions" tab.
   ➡ You will now see all documents with the respective status. Documents that have not been printed or uploaded have a queued status.
7. As soon as you are connected to a printer again, the document will be printed out, and as soon as you are online again, the document will be uploaded.
   ➡ This is respectively indicated by a green tick on the printer symbol and/or in the cloud column in the document list.

9.5.12 PDF Center troubleshooting

In the "Troubleshooting" section, you can perform a new installation and contact support.

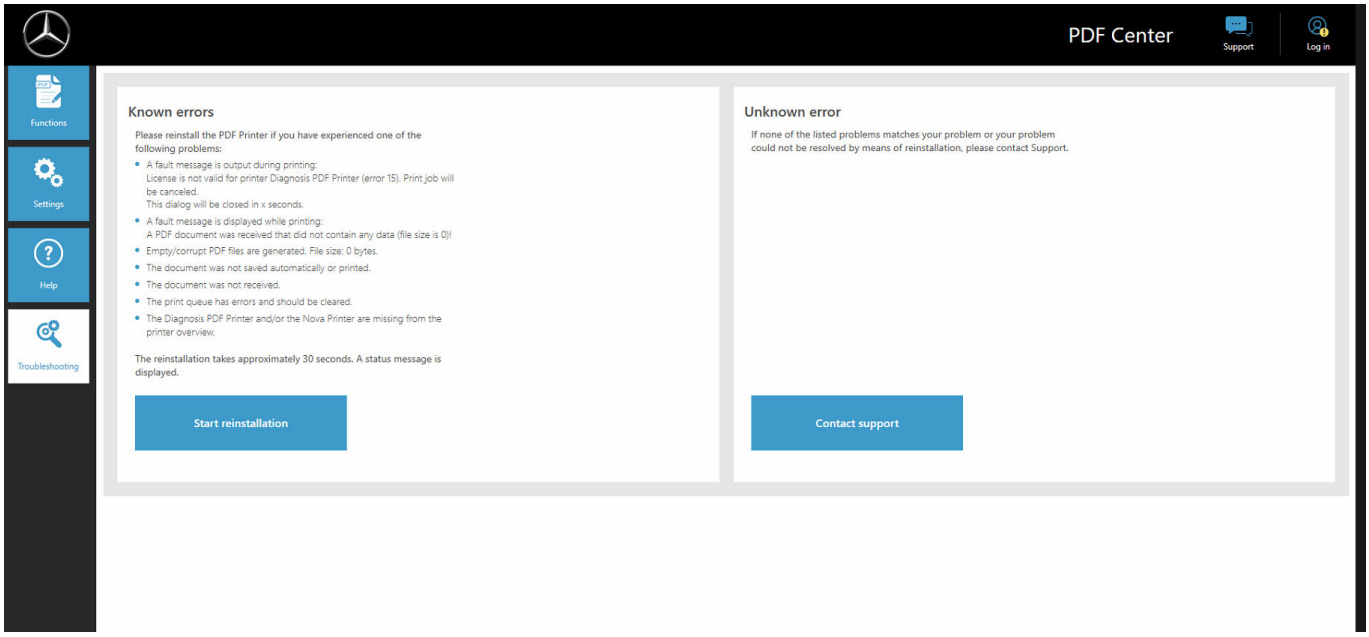


Fig. 94: PDF Center troubleshooting

You can see an overview of known error cases that can occur. A reinstallation is recommended here, which in most cases solves the problems. Perform these steps even if your specific error is not listed. Once you have clicked the "Start reinstallation" button, the installation will start immediately. Existing PDF documents will be retained.

You also have the option of contacting Support. Click on the "Contact Support" button to do so.

A XENTRY Support and Feedback ticket will then open for you to fill out.

Perform a reinstallation before contacting Support, as some errors will be repaired by this, even if this is not explicitly mentioned.

9.6 CAN Tool

The CAN tool reads and records data streams from a CAN bus in the vehicle. In addition to pure data recording, it can, as part of CAN bus monitoring, support the detection of bus wake-up events or keepawake control units.

9.6.1 Basic settings of the CAN Tool

To start the CAN Tool application, double-click on the "XENTRY CAN Tool" desktop icon.



Fig. 95: CAN Tool desktop icon

The home screen for the application opens.

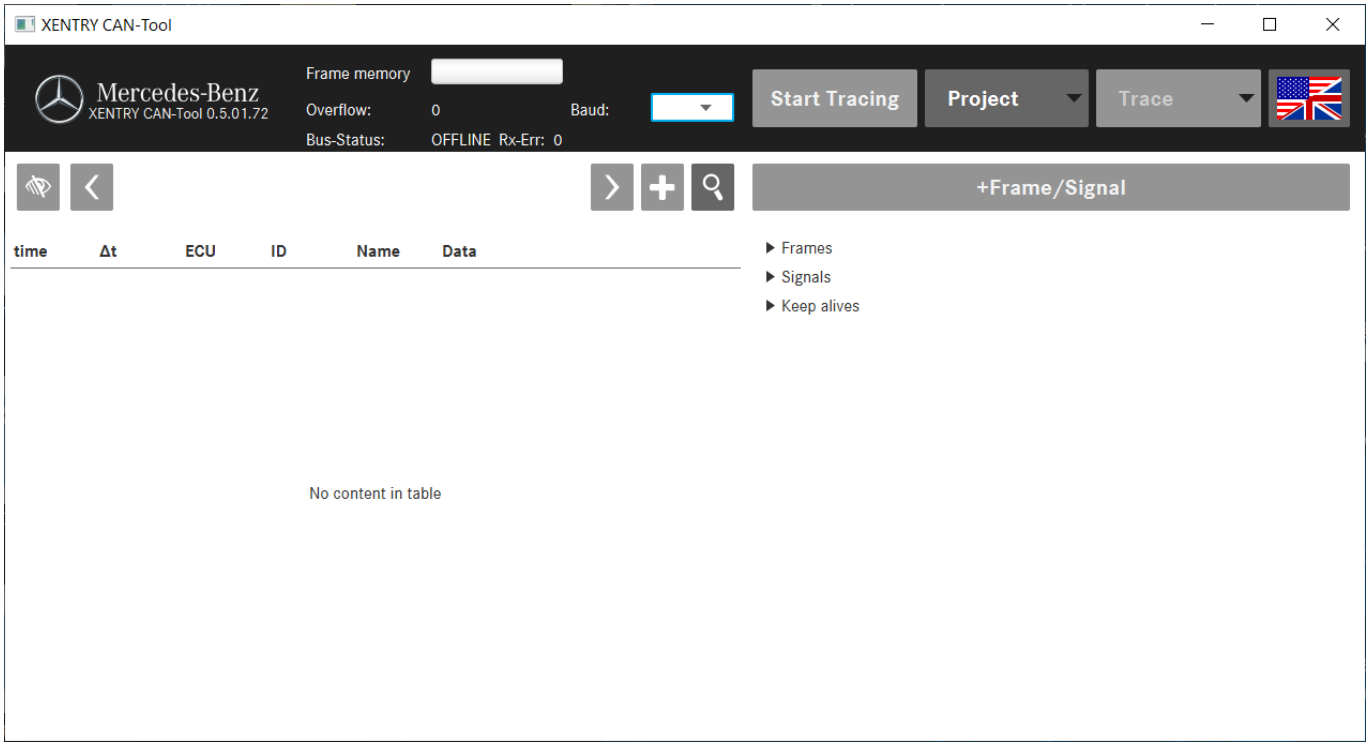


Fig. 96: CAN Tool home screen

The CAN Tool recognizes the paired VCI and establishes a connection. If a connection to the VCI is not available, the CAN Tool is launched in offline mode. All of the functions remain available in this case except for the "Start tracing" button. A message will also appear to indicate that there is no connection to the VCI.

CAN Tool supports the languages of German, English and Japanese. To select the desired language, click on the flag symbol in the top right.



Fig. 97: CAN Tool language options

The application must be restarted after the language has been changed. Confirm this by clicking on "OK".

9.6.2 Managing and creating projects

To create a new project, click on "Project" and then on "New project".

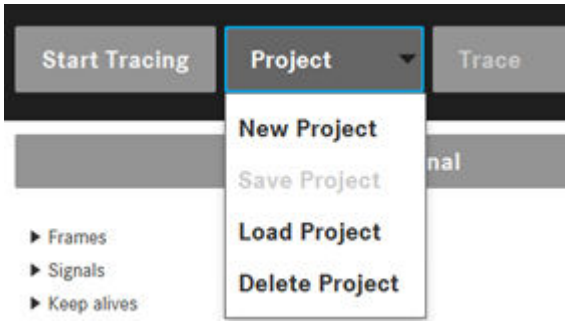


Fig. 98: Create project creation (EN)

The .kmx files present on the XENTRY Diagnosis Pad are displayed.

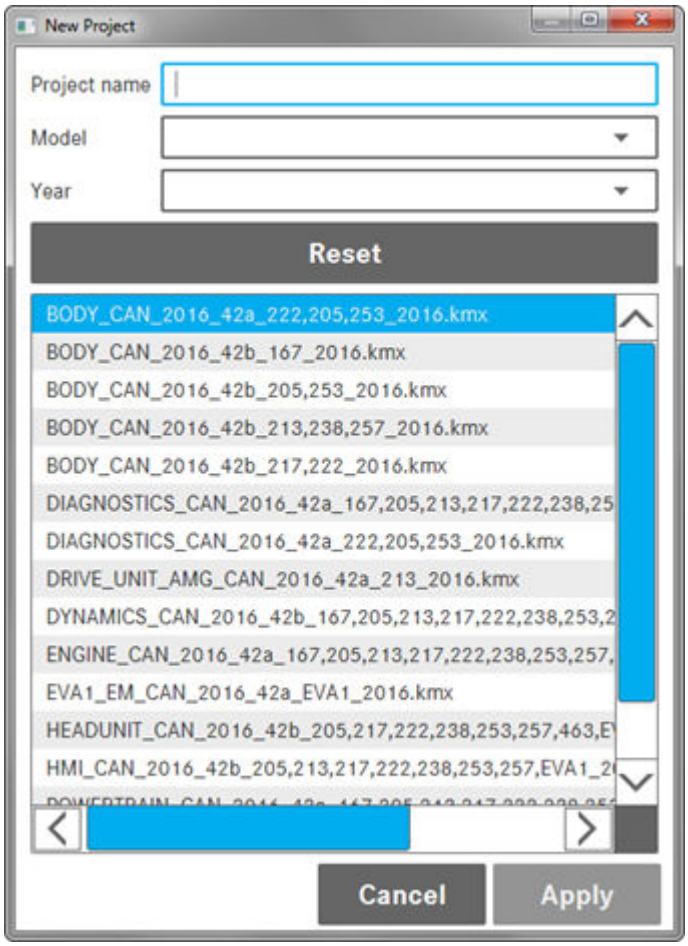


Fig. 99: Project creation window

You can enter any desired name for the project in the "Project name" field.

You can filter the list for the desired .kmx file using the "Model" and "Year" fields.

Clicking on "Cancel" deletes the entries in the "Model" and "Year" fields; all of the .kmx files available on your XENTRY Diagnosis Pad are then listed.

Select the desired entry in the list of available .kmx files and click on "Apply". This creates a project with your chosen name.

To create a valid project, vehicle details and communication parameters (K matrix) are required in the form of a .kmx file.

To load an existing project, click on "Project" and select the option "Load project".

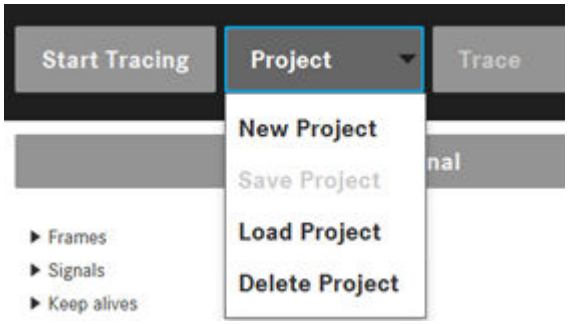


Fig. 100: Loading an existing project

A new window opens, which displays a list of all projects that have already been created and saved.

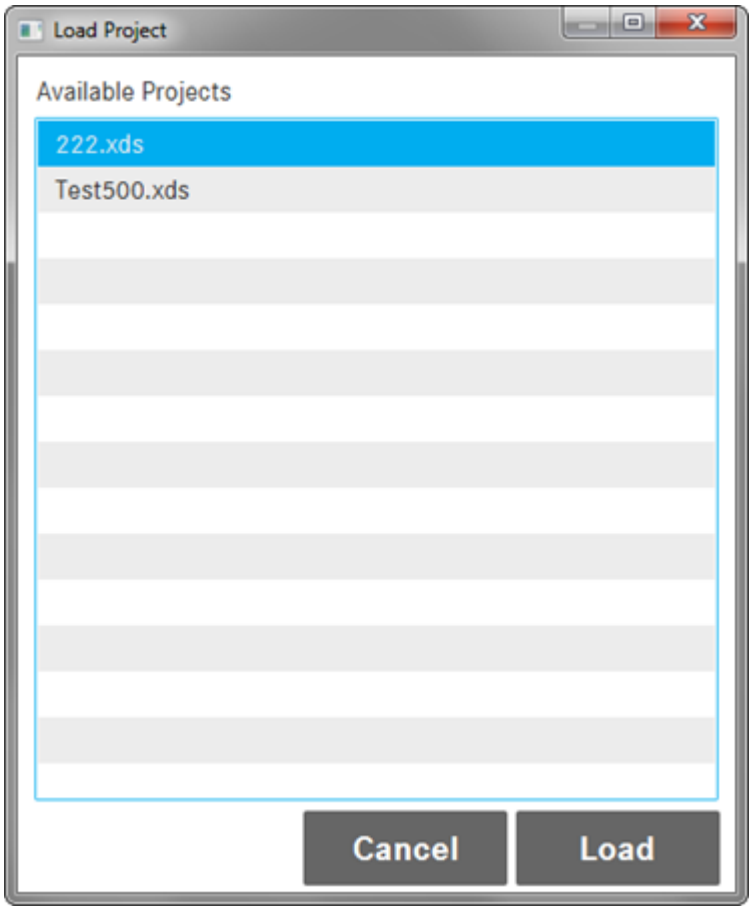


Fig. 101: Available projects

Select the desired project and click on "Load".

If the connection to the VCI has been established successfully, the CAN Tool checks whether a CAN trace created in the Flight Recorder tracing mode or a CFF buffer is available. If a CAN trace is available, the CAN Tool application checks whether or not this matches the current project.

If the CAN trace matches the currently loaded project, the CAN trace is imported directly. The CAN Tool application and the VCI remain in "active tracing mode" until tracing mode is stopped.

If the CAN trace does not match the currently loaded project, the CAN Tool application asks you whether you want to discard the old trace or save it for import later.

To save the project, click on "Project" and select the option "Save project".

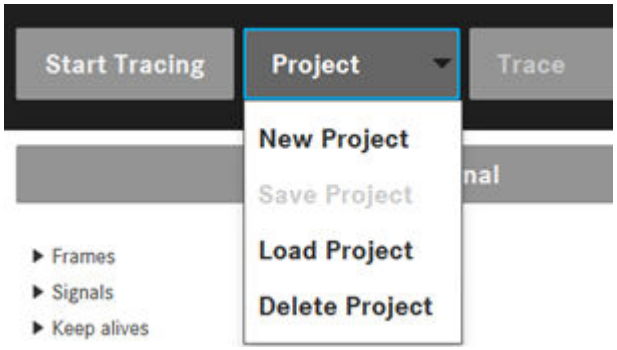


Fig. 102: Saving a project

The following settings and statuses are saved:

- The K matrix used to create the project
- The CAN trace available for the project
- The tracing mode used
- Trigger configuration and status (active/inactive)
- All filters and their status (active/inactive)
- Detail window: Configured frames and signals

To delete an existing project, click on the "Project" button and select "Delete project".

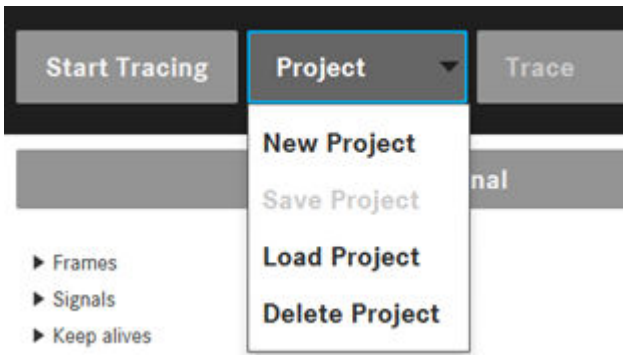


Fig. 103: Project deletion

A list of all created projects appears. You can then select the project to be deleted and permanently delete this by clicking on the "Delete project" button.

9.6.3 Tracing modes

The CAN Tool supports the following tracing modes:

- CAN Logger
- Flight Recorder
- Bus keepawake control units
- Bus wake-up events

It reads the data from the VCI and displays it on the user interface.

To activate a tracing mode, the VCI must first be supplied with a power source.

Alongside the tracing modes, the following terms are used to define how the CAN frames in the CAN Tool and VCI are interpreted:

- **Active tracing mode** The CAN frames are read out actively from the CAN bus.
- **Inactive tracing mode** No CAN frames are read out from the CAN bus. The CAN frames may come from stored tracings or a previously saved project.

Further information about filtering CAN frames can be found starting from ➦ Chapter 9.6.11 “Filter” on page 95.

CAN IDs with a length of 11 bits are in the range 0x000 to 0x7FF and are displayed as three-digit hexadecimal numbers. CAN IDs with a length of 29 bits are in the range 0x00000000 to 0x1FFFFFFF and are displayed as eight-digit hexadecimal numbers. All CAN IDs under 0x800 (0x000-0x7FF) are interpreted as IDs with a length of 11 bits and displayed as exactly three-digit hexadecimal numbers. Example: 03D instead of 3D, 0B1 instead of B1. All CAN IDs greater than or equal to 0x800 are interpreted as IDs with a length of 29 bits and displayed as exactly eight-digit hexadecimal numbers. Example: 00000801 instead of 801.

If the tracing modes "CAN Logger", "Flight Recorder", "Bus Keepawake Control Unit" or "Bus Wake-Up Event" are not activated, the tracing function is in inactive mode. If the button labeled "Trace" is displayed in the top right, this indicates that the CAN Tool is in inactive tracing mode. The label "Stop" indicates that the CAN Tool is in one of the available tracing modes of "CAN Logger", "Flight Recorder", "Bus Keepawake Control Unit" or "Bus Wake-Up Event".

9.6.4 "CAN Logger" tracing mode

In **"CAN Logger"** mode, all of the CAN frames read out from the CAN bus by the VCI are listed in the CAN trace area. This mode is an "active tracing mode". All of the CAN frames are listed according to the same order in which they are available on the CAN bus. To be able to start "CAN Logger" mode, the VCI must first be switched on i.e. connected to the vehicle via OBD cable. Click on the "Trace" button and select the "CAN Logger" option. Click on the "Start" button.



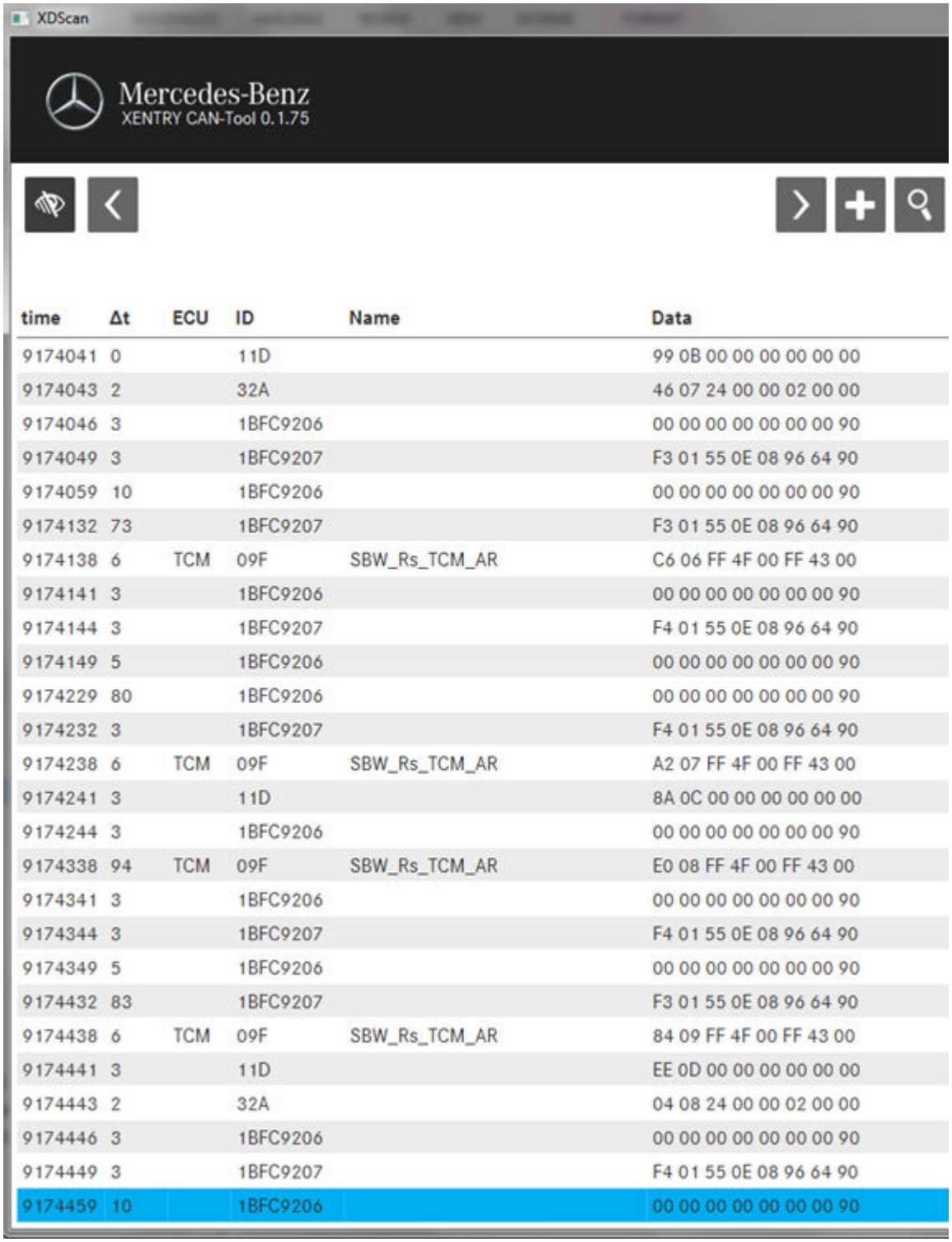
Fig. 104: "Trace" window

The "CAN Logger" mode displays the frames read out from the CAN bus. You can find more information in .

Further information about stopping "CAN Logger" mode can be found in ➦ Chapter 9.6.8 “Stop tracing” on page 88.

Further information about filtering CAN frames can be found starting from ➦ Chapter 9.6.11 “Filter” on page 95. When a filter has been applied, the CAN frames are filtered by the VCI based on the filter data. The CAN trace area then only displays the frames that correspond to the filter conditions.

The information about the CAN frame is displayed in the CAN trace area. The following screenshot shows an example of the content of the CAN trace area:



time	Δt	ECU	ID	Name	Data
9174041	0		11D		99 0B 00 00 00 00 00 00
9174043	2		32A		46 07 24 00 00 02 00 00
9174046	3		1BFC9206		00 00 00 00 00 00 00 90
9174049	3		1BFC9207		F3 01 55 0E 08 96 64 90
9174059	10		1BFC9206		00 00 00 00 00 00 00 90
9174132	73		1BFC9207		F3 01 55 0E 08 96 64 90
9174138	6	TCM	09F	SBW_Rs_TCM_AR	C6 06 FF 4F 00 FF 43 00
9174141	3		1BFC9206		00 00 00 00 00 00 00 90
9174144	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174149	5		1BFC9206		00 00 00 00 00 00 00 90
9174229	80		1BFC9206		00 00 00 00 00 00 00 90
9174232	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174238	6	TCM	09F	SBW_Rs_TCM_AR	A2 07 FF 4F 00 FF 43 00
9174241	3		11D		8A 0C 00 00 00 00 00 00
9174244	3		1BFC9206		00 00 00 00 00 00 00 90
9174338	94	TCM	09F	SBW_Rs_TCM_AR	E0 08 FF 4F 00 FF 43 00
9174341	3		1BFC9206		00 00 00 00 00 00 00 90
9174344	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174349	5		1BFC9206		00 00 00 00 00 00 00 90
9174432	83		1BFC9207		F3 01 55 0E 08 96 64 90
9174438	6	TCM	09F	SBW_Rs_TCM_AR	84 09 FF 4F 00 FF 43 00
9174441	3		11D		EE 0D 00 00 00 00 00 00
9174443	2		32A		04 08 24 00 00 02 00 00
9174446	3		1BFC9206		00 00 00 00 00 00 00 90
9174449	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174459	10		1BFC9206		00 00 00 00 00 00 00 90

Fig. 105: CAN trace area

The value in the "Data" field contains data depending on the data available on the CAN bus. The individual data bytes are separated from each other by spaces.

9.6.5 "Flight Recorder" tracing mode

"Flight Recorder" mode records the CAN frames from the CAN bus. The VCI stores the previously defined number of frames (max. 250,000 frames) in its internal memory.

A prerequisite for starting "Flight Recorder" mode is that the VCI must be connected to a power source. Click on the "Trace" button and select "Flight Recorder" mode, then click on "Start". The VCI can be disconnected from the PC after starting "Flight Recorder" mode. The VCI starts archiving the frames in its internal memory. Once the maximum permissible number of CAN frames has been reached, the VCI starts deleting CAN frames based on the principle of first-in, first-out (FIFO). In other words, the first frame in the list is removed and the last frame read out from the CAN bus is added to the end of the list. To stop the recording of CAN frames, click the Control button (►) on the VCI. If the VCI is connected to the PC and the CAN Tool application is started at the same time, the CAN frames stored on the VCI are displayed in the CAN trace area.

If CAN frames are stored on the VCI, the CAN Tool checks whether or not these match the currently loaded project.

- If the CAN trace matches the currently loaded project, it is imported directly. The CAN Tool application and the VCI remain in "active tracing mode" until the tracing mode is stopped.
- If the CAN trace does not match the currently loaded project, a pop-up message appears with the option of discarding the old trace or saving it for subsequent import. If you select the "Import trace" option, the trace is imported. In this case, the CAN Tool application and the VCI remain in "active tracing mode" until the tracing mode is stopped.

If the VCI was disconnected after configuring the tracing mode and is subsequently connected to a PC, all of the CAN frames available on the VCI are read out from the VCI in one go and displayed.

9.6.6 "Bus Keepawake Control Unit" tracing mode

In "Bus Keepawake Control Unit" mode, the VCI can record CAN frames configured in the CAN bus as keep-alive signals. Keep-alive signals are configured in the K matrix. In "Bus Keepawake Control Unit" mode, the VCI only records the CAN frames that contain keep-alive signals and ignores the other frames. "Bus Keepawake Control Unit" mode is largely identical to "CAN Logger" mode. However, in "Bus Keepawake Control Unit" mode, it is possible to define automatic filters that ensure that only the network management messages (NM_*) are read out. If the VCI is connected to the CAN Tool application, the CAN frames stored in the memory of the VCI are downloaded and displayed.

Start "Bus Keepawake Control Unit" mode by clicking on the "Trace" button. Select the "Bus Keepawake Control Unit" option and then click on "Start". This mode is an "active tracing mode". CAN frames with keep-alive signals are listed as per their availability in the CAN bus.

The control units that send keep-alive signals are listed in the "Keep Alives" area in the right-hand window section of the CAN Tool application.

Further information about stopping "Bus Keepawake Control Unit" mode can be found in section ➦ Chapter 9.6.8 “Stop tracing” on page 88.

The control units that keep the bus active are listed under "Bus Keepawake Control Units". Keep-alive signals are configured in the K matrix for network management signals. The status bit of keep-alive messages determines whether or not the respective control unit is displayed in the list. Click on the arrow button to expand or collapse the "Bus Keepawake Control Unit" area:

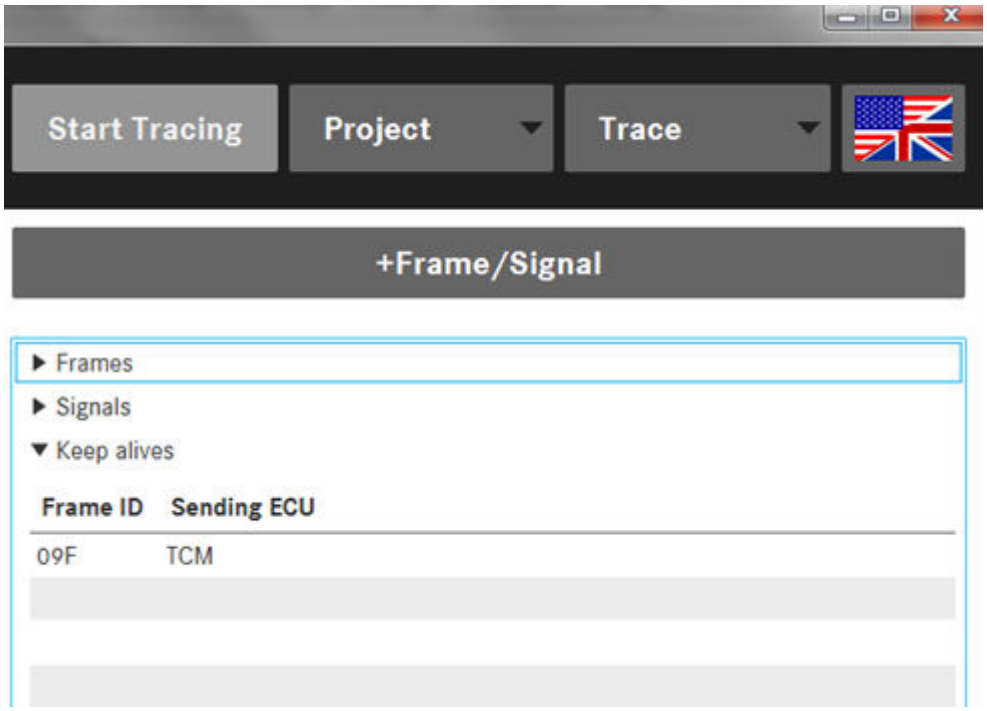


Fig. 106: "Bus Keepawake Control Unit" area

Initially, the CAN Tool application displays all of the control units that send network management signals. The control units that send a certain "stop network management" signal are subsequently deleted from the list.

9.6.7 "Bus Wake-Up Event" tracing mode

In "Bus Wake-Up Event" mode, the VCI reads out the first CAN frame transmitted on the CAN bus. To be able to start this mode, the VCI must be connected to the diagnosis computer. For this, it is important to use the USB connection and not the WLAN connection.

Click on the "Trace" button and select the "Bus Wake-Up Event" option. Enter the desired timeout period and then click on the "Start" button.

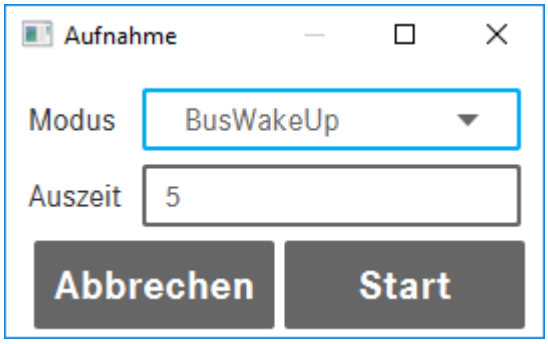


Fig. 107: "Bus Wake-Up Event" tracing mode

The CAN Tool can be closed after configuration of the VCI. In "Bus Wake-Up Event" mode, the VCI ignores all of the CAN frames on the CAN bus until no more CAN frames are transmitted on the bus. As soon as the VCI detects that no more frames are being transferred on the CAN bus, the VCI waits (for the period defined when configuring "Bus Wake-Up Event" mode) and then records the first CAN frame that is transferred via the CAN bus. The VCI then switches to the idle state and repeats the recording of the first frames transferred on the CAN bus. Once the VCI is connected to the CAN Tool, the CAN frames stored in the memory of the VCI are downloaded and displayed.

The VCI starts archiving the frames in its internal memory. Once the maximum permissible number of CAN frames has been reached, the VCI starts deleting CAN frames based on the principle of first-in, first-out (FIFO). In other words, the first frame in the list is removed and the last frame read out from the CAN bus is added to the end of the list. To stop the recording of CAN frames, click the Control button (►) on the VCI.

When the connection to the VCI has been established successfully and the CAN Tool application has been launched, the CAN Tool checks whether CAN frames are available. If CAN frames are available, the CAN Tool application checks whether or not these match the currently loaded project.

- If the CAN trace matches the currently loaded project, the CAN trace is imported directly. The CAN Tool application and the VCI remain in "active tracing mode" until the tracing mode is stopped.
- If the CAN trace does not match the currently loaded project, the CAN Tool application asks you whether you want to discard the old trace or save it for import later.

If the CAN tracing mode is stopped in the CAN Tool on the PC, the VCI is automatically restarted in the default mode.

The CAN frames stored on the VCI are displayed in the CAN trace area. Further information can be found in the . Statistics are also displayed in the "Bus Wake-Up Event" area in the right-hand window section of the CAN Tool application.

The statistics on bus wake-up events are displayed in the "Bus Wake-Up Event" area. This area is only displayed if the tracing mode "Bus Wake-Up Event" has been selected and the VCI is still connected to the CAN Tool after the recording mode on the VCI has been stopped (by selecting the control button (►) on the VCI):



Fig. 108: "Bus Wake-Up Event" area

The list shows the first three control units that send bus wake-up events. The number of events from the listed control units is also displayed. The list also contains the total number of bus wake-up events from all control units.

9.6.8 Stop tracing

If one of the tracing modes is activated and tracing is currently being carried out, the label on the "Start tracing" button changes to "Stop tracing":

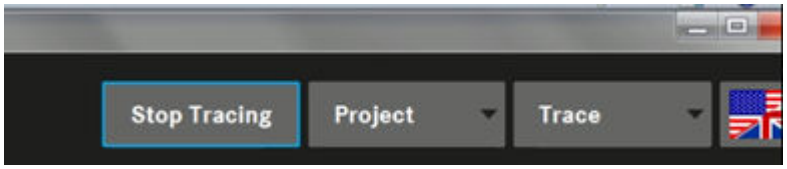


Fig. 109: "Stop tracing" button

To stop the tracing mode, click on the "Stop tracing" button.

9.6.9 Options in the "Trace" menu

The "Trace" menu only becomes available once a valid project has been loaded. In the "Trace" menu, you can select the following:

- Import trace
- Export trace
- Delete trace

.asc files are files in Vector ASCII format. They can be opened in any editor that supports the editing/display of text files. Examples: Notepad, Notepad++ etc.

```
//Baureihe: 205_217_222_253_POWERTRAIN_CAN_2016_17a
//Projekt: Test500

//Begin der Messung: 13/02/2017,13:40:34
//Ende der Messung: 13/02/2017,13:40:36

base hex  timestamps absolute$LINE_ENDING
917.4032  1  1BFC9207    Rx  d  8  F3 01 55 0E 08 96 64 90
917.4041  1  11D    Rx  d  8  99 0B 00 00 00 00 00 00
917.4043  1  32A    Rx  d  8  46 07 24 00 00 02 00 00
917.4046  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4049  1  1BFC9207    Rx  d  8  F3 01 55 0E 08 96 64 90
917.4059  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4062  1  1BFC9207    Rx  d  8  F3 01 55 0E 08 96 64 90
917.4069  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4072  1  1BFC9207    Rx  d  8  F4 01 55 0E 08 96 64 90
917.4079  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4082  1  1BFC9207    Rx  d  8  F4 01 55 0E 08 96 64 90
917.4089  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4092  1  1BFC9207    Rx  d  8  F4 01 55 0E 08 96 64 90
917.4099  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
917.4102  1  1BFC9207    Rx  d  8  F4 01 55 0E 08 96 64 90
917.4109  1  1BFC9206    Rx  d  8  00 00 00 00 00 00 00 90
```

Fig. 110: Example of display of an .asc file in Notepad++

.csv files are comma-separated value files. They can be opened in any editor that supports the editing/display of files with comma-separated values. Examples: Notepad, Notepad++, Microsoft Excel etc.

```
# Baureihe: 205_217_222_253_POWERTRAIN_CAN_2016_17a
# Projekt: Test500

# Begin der Messung: 13/02/2017,13:40:34
# Ende der Messung: 13/02/2017,13:40:36

base hex  timestamps absolute$LINE_ENDING
917.4032;1;1BFC9207;Rx;d;8;F3 01 55 0E 08 96 64 90
917.4041;1;11D;Rx;d;8;99 0B 00 00 00 00 00 00
917.4043;1;32A;Rx;d;8;46 07 24 00 00 02 00 00
917.4046;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4049;1;1BFC9207;Rx;d;8;F3 01 55 0E 08 96 64 90
917.4059;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4062;1;1BFC9207;Rx;d;8;F3 01 55 0E 08 96 64 90
917.4069;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4072;1;1BFC9207;Rx;d;8;F4 01 55 0E 08 96 64 90
917.4079;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4082;1;1BFC9207;Rx;d;8;F4 01 55 0E 08 96 64 90
917.4089;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4092;1;1BFC9207;Rx;d;8;F4 01 55 0E 08 96 64 90
917.4099;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
917.4102;1;1BFC9207;Rx;d;8;F4 01 55 0E 08 96 64 90
917.4109;1;1BFC9206;Rx;d;8;00 00 00 00 00 00 00 90
```

Fig. 111: Example of display of an .csv file in Notepad++

The **"Import trace"** option allows an existing CAN trace to be imported into the CAN Tool in "*.asc" or "*.csv" format. To import a trace, click on the "Import trace" option in the "Trace" menu. If the trace is already present in the CAN Tool, clicking on the "Import trace" option causes the following message to be displayed, which asks for confirmation to overwrite the existing trace.

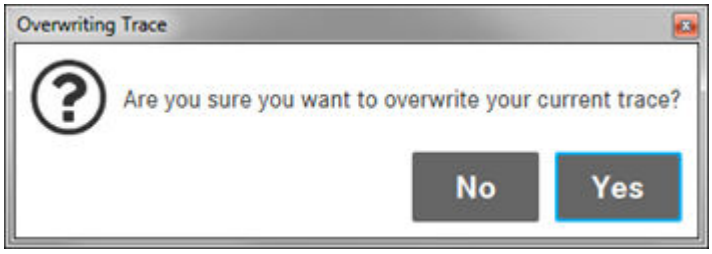


Fig. 112: Message to confirm overwriting of trace file

If the trace is not yet present in the CAN Tool, the "Select trace file" window is displayed.

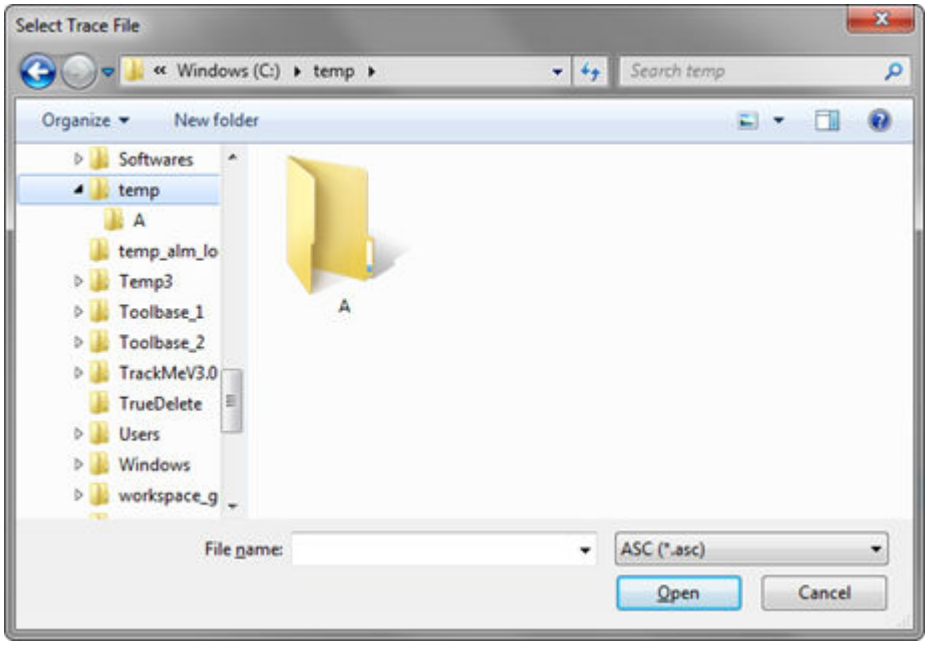


Fig. 113: "Select trace file" window

You can search the file system for the desired trace file in the left-hand area of the "Select trace file" window. For a successful import, the trace files must contain the following metadata followed by CAN frame details:

- Model series
- Project name
- Start and end of trace
- Header line

If, during import of the trace file, it is found that the model series of the project loaded in the CAN Tool does not match the model series information in the trace file, the following message is displayed to confirm the import:

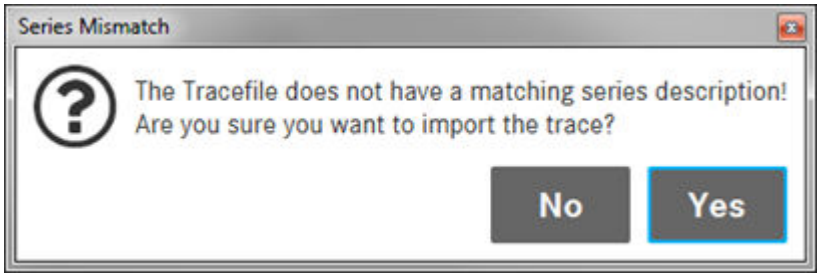


Fig. 114: Message about model series mismatch

The trace can only be imported if a valid project has been loaded in the CAN Tool and tracing mode is inactive, i.e. the tracing modes have been stopped.

The "Export trace" option allows an existing CAN trace to be saved in "*.asc" or "*.csv" format. To export the trace, click on the "Export trace" option in the "Trace" menu.

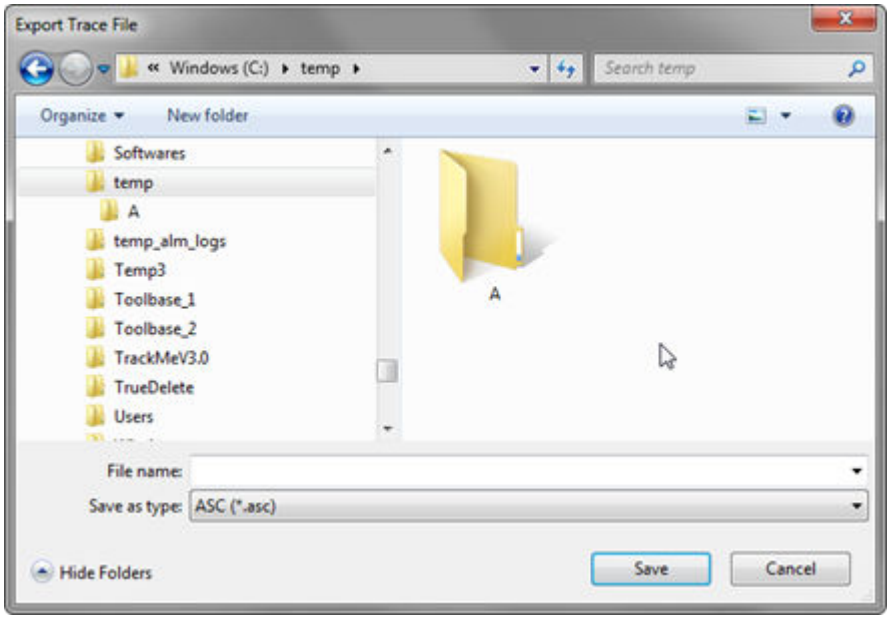


Fig. 115: "Export trace file" window

Enter the name of the file in the "File name:" field. In the "File type" field, select either ".asc" or ".csv" format. The default option is ".asc". Select the desired storage location for the file. Click on the "Apply" button.

Exported files contain the following metadata followed by CAN frame details:

- Model series
- Project name
- Start and end of trace
- Header line

The trace can only be exported if a valid project has been loaded in the CAN Tool and tracing mode is inactive, i.e. the tracing modes have been stopped.

The **"Delete trace"** option can be used to delete existing CAN traces from the CAN Tool. To delete a trace, click on the "Delete trace" option in the "Trace" menu. The following message is displayed to confirm the deletion:

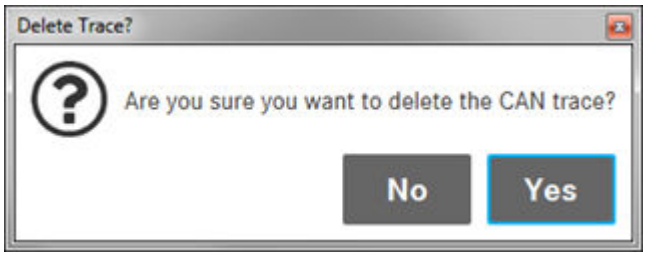


Fig. 116: Message to confirm deletion of trace file

The trace can only be deleted if a valid project has been loaded in the CAN Tool application and tracing mode is inactive, i.e. the tracing modes have been stopped.

9.6.10 Detail window

The detail window is divided into the following sections:

- Frames
- Signals
- Bus keepawake control units

The **list of frames** contains the respective detailed information. To expand or collapse the list of frames, click on the arrow button. The "+Frame/Signal" button can be used to add frames to the list of frames. Frames can also be added by clicking on the desired CAN frame in the CAN trace area and holding the mouse button down for three seconds. If you would like to add a CAN frame from the CAN trace area, tracing mode must be inactive i.e. the tracing modes must have been stopped. The "+Frame/Signal" button is only active if a valid project has been loaded in the CAN Tool.

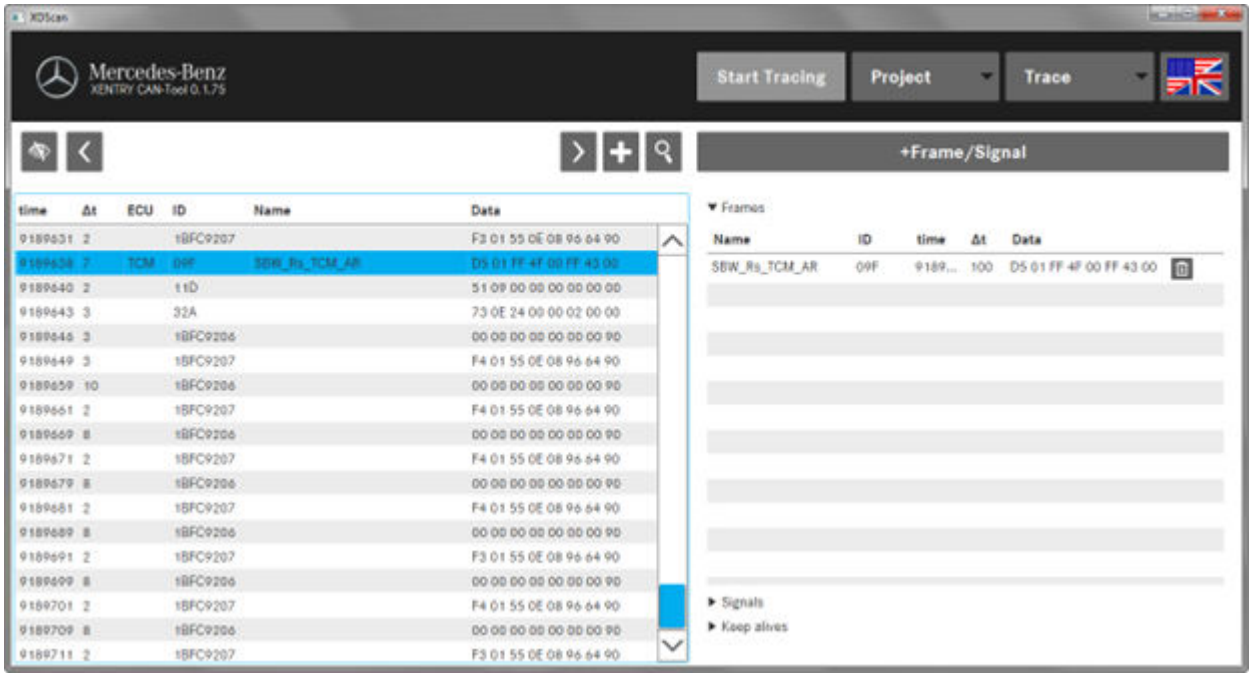


Fig. 117: List of frames

The list of frames is structured as a six-column table. It contains the columns "Name", "ID", "Time", "Delta" (time difference from previous CAN frame with the same name; previous CAN frames are available in the CAN trace area) and "Data" (data bytes sent by control unit) as well as the Delete button. The frames are listed in the order in which they were added to the list. The desired frame can be selected in the list of frames using the mouse or keyboard.

If the user selects a CAN frame in the CAN trace area, sometimes a frame that has the same frame name but different data is animated in the list of frames. In "active tracing mode", multiple frames may be animated under certain circumstances if the data in the CAN trace area changes. During the animation, the corresponding line also "vibrates" and the color of the line changes from black to blue, then finally back to black.

The "+Frame/Signal" button can be used to add frames to the list. Click on the "+Frame/Signal" button to display the "Filter configuration" window. The "+Frame/Signal" button is only active if a valid project has been loaded in the CAN Tool application.

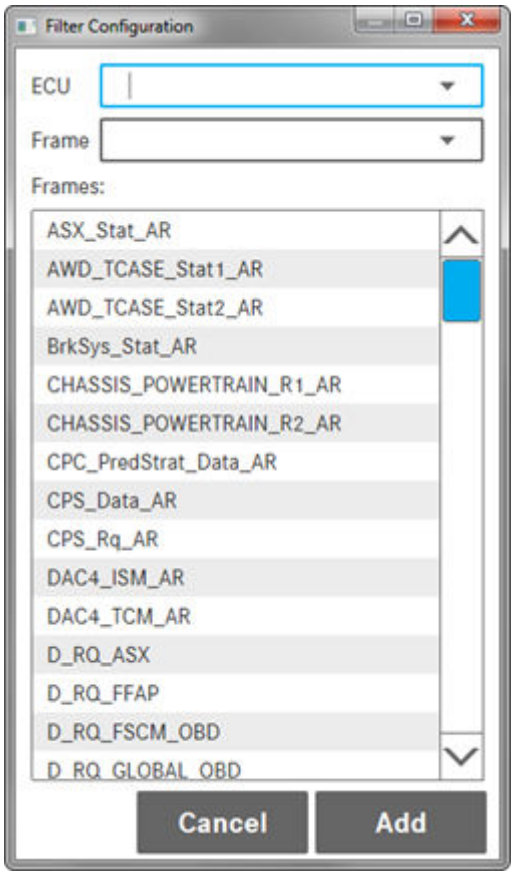


Fig. 118: "Filter configuration" window

The fields "ECU", "Frame" and "Frames:" in the "Filter configuration" window are populated with the data available in the currently loaded project. The "ECU" field can be used to filter the frames, so that only frames from a certain control unit are displayed. If you select a value in the "ECU" field, only frames that belong to the selected control unit are listed. Select the desired frame from the "Frames:" list and click on the "Add" button to add the frame to the list of frames. You can also select multiple frames in the list simultaneously using the mouse and keyboard.

Frames and signals can be selected in the "Filter configuration" window. If you only wish to select frames, do not filter the data using the "Frame" field, only use the "ECU" field.

Frames can be deleted from the list of frames by clicking on the delete button on the corresponding line. Only one frame can be deleted at a time.

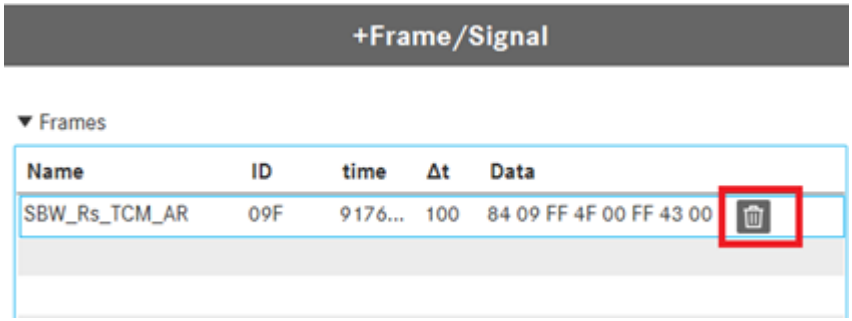


Fig. 119: Delete button in the list of frames

The list of signals contains the detailed information of the respective signals. To expand or collapse the list, click on the arrow button. The "+Frame/Signal" button can be used to add signals to the list of signals. The "+Frame/Signal" button is only active if tracing mode is inactive i.e. the tracing modes have been stopped.

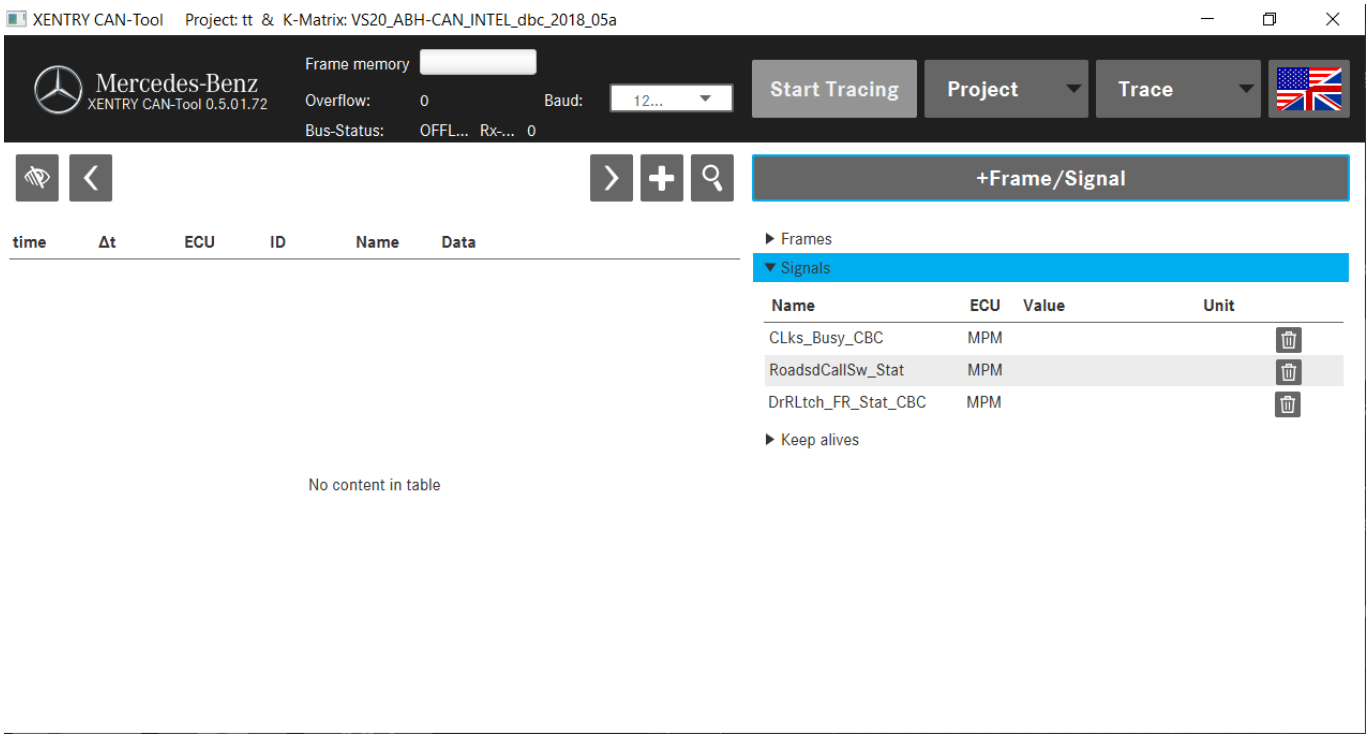


Fig. 120: List of signals

The **list of signals** is structured as a five-column table. It contains the columns "Name" (name of signal), "ECU" (name of control unit), "Value" (value of the respective signal of the selected CAN frame in the CAN trace area) and "Unit" (unit configured for the signal) as well as the Delete button. The signals are listed in the order in which they were added to the list. The desired signal can be selected in the list of signals using the mouse or keyboard.

In the list of signals, signals are sometimes animated if the CAN frame selected in the CAN trace area contains a different value to the value currently displayed in the list of signals. In "active tracing mode", multiple signals may be animated under certain circumstances if the data in the CAN trace area changes. During the animation, the corresponding line also "vibrates" and the color of the line changes from black to blue, then finally back to black.

The "+Frame/Signal" button can be used to add signals to the list of signals. If you click on the "+Frame/Signal" button, the "Filter configuration" window is displayed (see screenshot below). The "+Frame/Signal" button is only active if a valid project has been loaded in the CAN Tool application. The fields "ECU", "Frame" and "Frames:" in the "Filter configuration" window are populated with the data available in the currently loaded project. The signals can be filtered using the "ECU" and "Frame" fields. If you select a value in the "ECU" field, only frames that belong to the selected control unit are listed. If you select a value in the "Frame" field, only signals that belong to the selected frame are listed.

Signals are only listed if a value has been selected in the "Frame" field of the "Filter configuration" window. If you select a value in the "Frame" field, all available signals for the selected frame are displayed. The name of the list changes from "Frames:" to "Signals:".

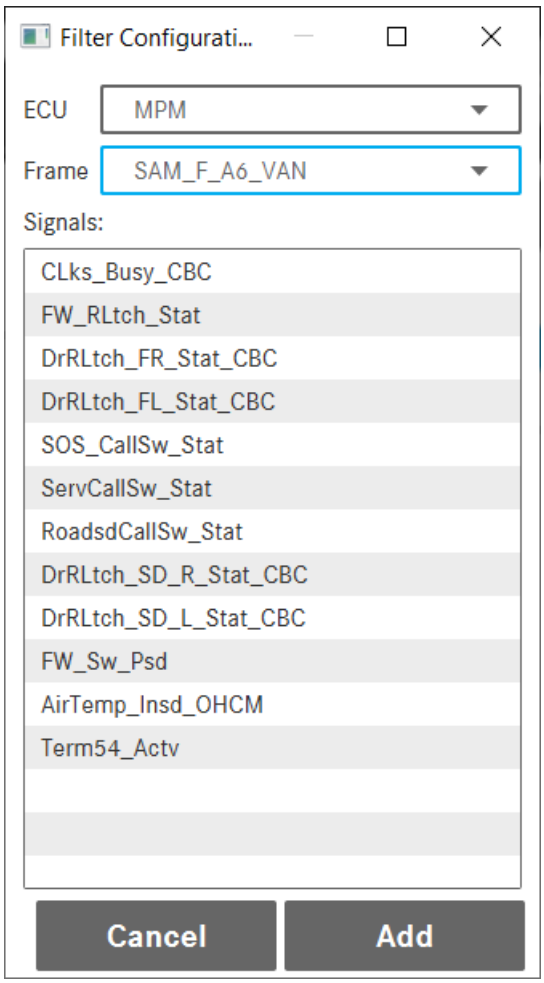


Fig. 121: Filter configuration window

Select the desired signal from the "Signals:" list and click on the "Add" button to add the signal to the list of signals. You can also select multiple signals in the list simultaneously using the mouse and keyboard.

Individual signals can be deleted by clicking on the recycle bin.

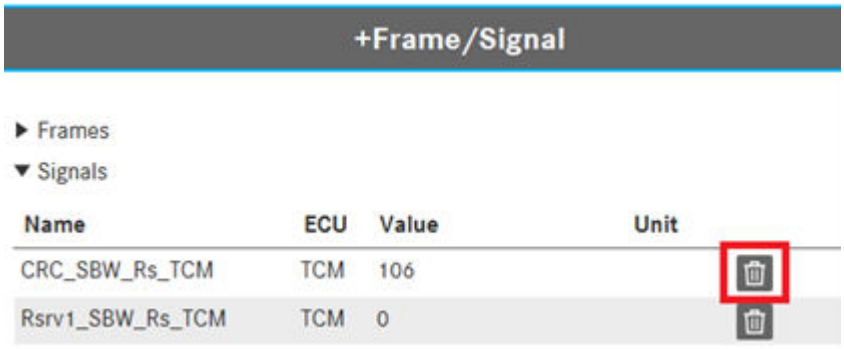


Fig. 122: Delete button in the list of signals

The "Search" button allows you to search in the CAN trace area for the CAN ID, the name of the control unit or the name of the CAN frame.

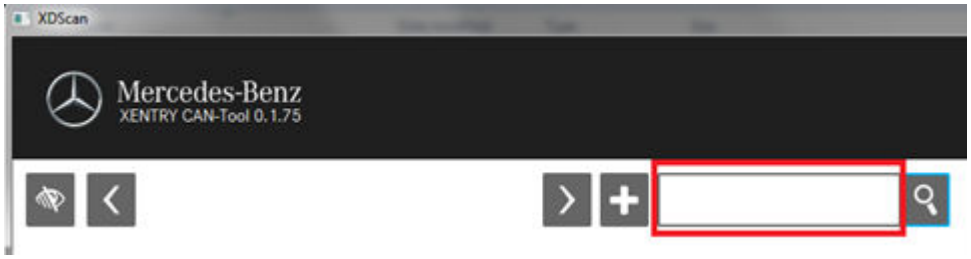


Fig. 123: Searching in the CAN trace area

Enter the value to be searched for in the input field and start the search by clicking on "Search" or pressing the enter key. If a matching frame is found in the CAN trace area, the corresponding frame is marked and highlighted. If you click on the "Search" button again or press the enter key on the keyboard again, the system searches for the next matching frame in the CAN trace area.

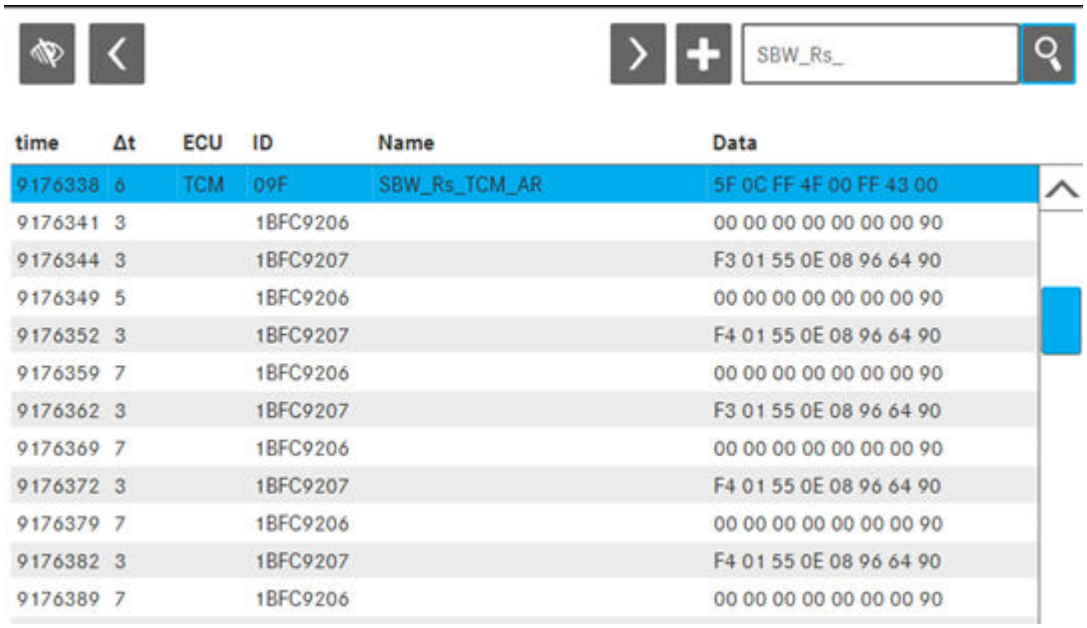


Fig. 124: Searching for CAN frames with string "SBW_Rs_"

9.6.11 Filter

The area highlighted in the screenshot below is the filter area. Filters are created using the "+" button.

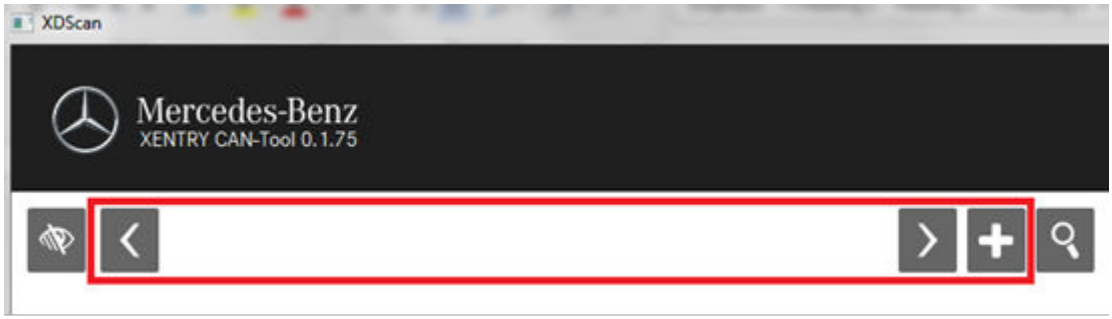


Fig. 125: Filter area

Multiple filters can be created for each project. Filters are added to the filter area from left to right. If the number of filters exceeds the space available in the filter area, newly created filters are added to the end of the last. You can then use the ">" button to navigate to the filters located towards the right of the filter area. Clicking on the ">" button will move the filters in the filter area to the left. You can use the "<" button to navigate to the filters located towards the left of the filter area. Clicking on the "<" button will move the filters in the filter area to the right.

The various filters in the filter area are shown in the screenshot below.

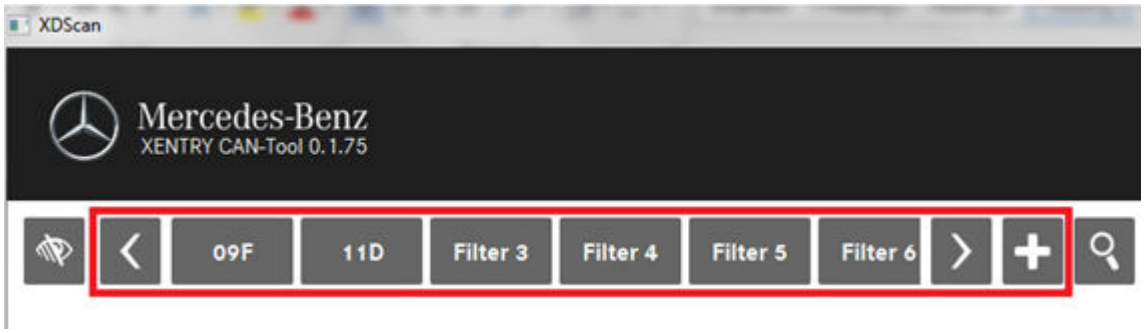


Fig. 126: Multiple filters in filter area

The filters can be used to filter the CAN frames for the CAN ID or for data. To apply filters, click on the "Filter" button - the "+" symbol.

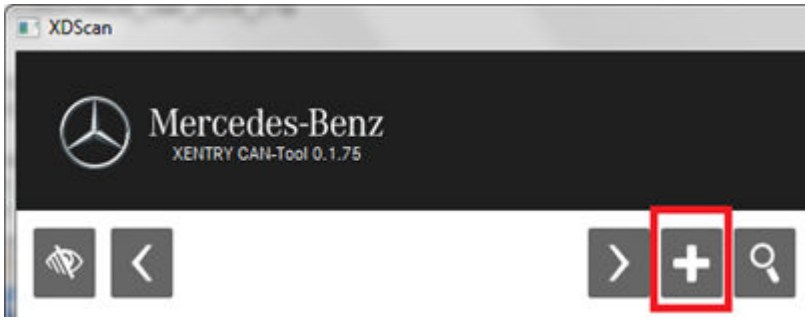


Fig. 127: Apply filter

After clicking on the "Filter" button, the "Filter configuration" window is displayed.

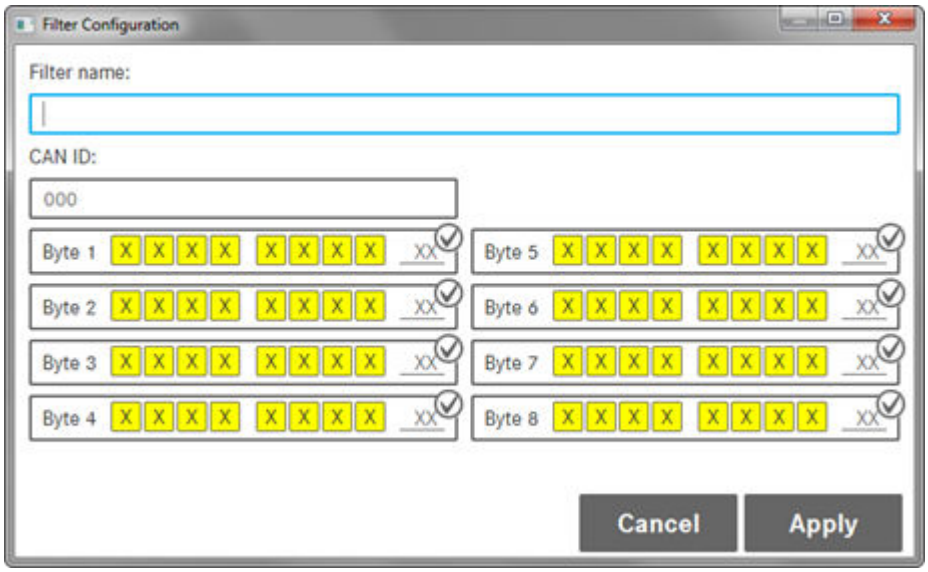


Fig. 128: "Filter configuration" window in the filter area

You can define a name for the filter in the "Filter name:" input field. If you do not enter anything in the "Filter name:" field, the default name "Filter X" is assigned. When you create your first unnamed filter, the placeholder X is replaced with "1"; this number then consecutively increases each time a new filter is created.

Filters can only be defined, applied and deactivated if tracing mode is inactive i.e. the tracing modes have been stopped.

When a filter has been applied, the VCI filters the CAN frames based on the filter data. Only frames that fulfill the filter conditions are sent to the CAN Tool. Data already present in the CAN trace area is updated after filtering.

9.6.12 Bitmap component

The area highlighted in the screenshot below is the bitmap component. The bitmap component is used to filter the specific data in the data bytes of CAN frames in the "Filter configuration" and "Trigger configuration" windows.

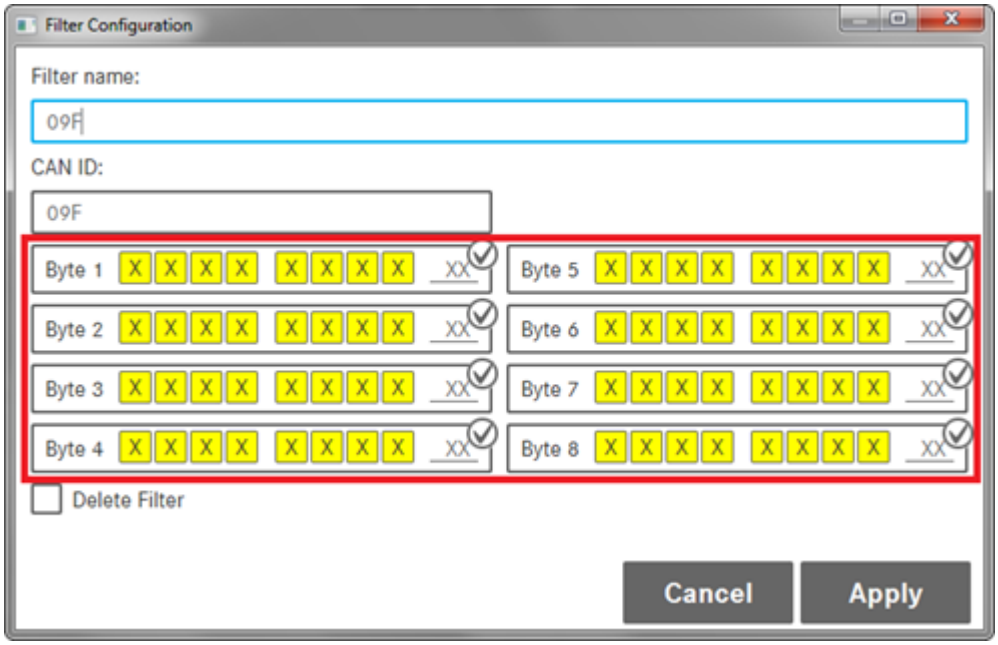


Fig. 129: Bitmap component

The bitmap component contains multiple state buttons that can be used to specify three different states. In addition, there are value input fields and ignore fields for configuring the data in the individual "Byte X" fields.

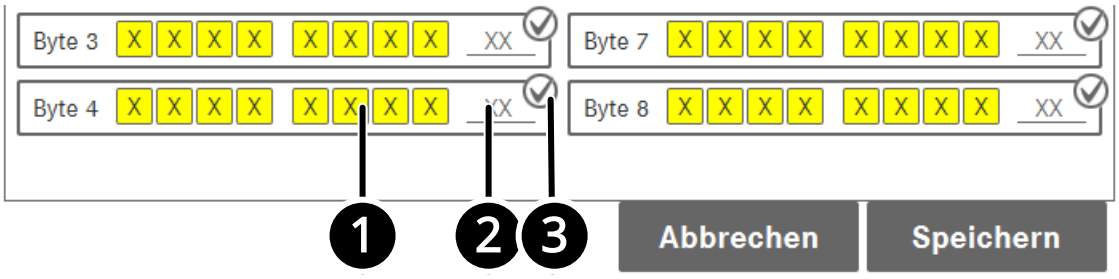


Fig. 130: Buttons of the bitmap component

1 State button
2 Value input field
3 Ignore field

State button: Three different states can be defined for these buttons: "1", "0" and "X". State "1" is represented by number "1" and the background color is green (see screenshot below). State "0" is represented by number "0" and the background color is red. State "X" is represented by the letter "X" and the background color is yellow.



Fig. 131: State buttons – State and color

A state button switches to the next respective state when you click on it. The change sequence is from "X" to "1", from "1" to "0", and from "0" to "X". The state "X" indicates that the respective bit is ignored. This means that the respective bit can have the value "1" or "0". The state "1" indicates that a specific bit has been set. The state "0" indicates that a specific bit has not been set.

Value input field: The value input fields can be used to enter the desired value for the individual bits. It is permissible to input digits from 0 to 9, as well as lowercase letters from a to f and uppercase letters from A to F. It is also possible to enter either the lowercase letter x or the uppercase letter X to include certain nibbles in the filter or to exclude them from it. If lowercase letters are entered and the cursor focus then moves elsewhere, the input is automatically converted into uppercase letters. You can enter a maximum of two digits or letters in the value input field. Each letter/digit corresponds to a nibble of a byte. In the table below, the nibbles are displayed as binary numbers and hexadecimal numbers.

Nibble value as binary number	Nibble value as hexadecimal number
0000	0

Nibble value as binary number	Nibble value as hexadecimal number
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

Ignore field: The ignore field has two states: activated and deactivated. If the ignore field is activated, this means that the data set in the corresponding "Byte X" field should be included during processing. If the ignore field is deactivated, this means that the data set in the corresponding "Byte X" field should be ignored during processing. Activating the ignore field corresponds to entering the value "XX" in the value input field or setting the state "X" for all state buttons.

The state buttons are set to the state "X" by default. The default value of the value input field is "XX". The default state of the ignore field is "Activated".

The state buttons and value input fields are linked to each other. This means that if you change the state of one of the state buttons, the corresponding data in the value input field is updated.

If all of the bits of a nibble are set to state "0" or "1" with the state buttons, the corresponding nibble value is updated in the value input field. Example: If the state of the state buttons is changed to "1010 XXXX" (see screenshot below), the input field is updated accordingly and now displays the value "AX".

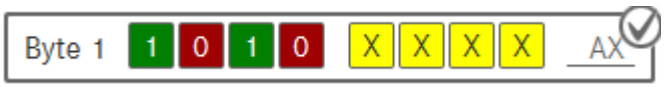


Fig. 132: Bitmap component – Updating the value 1

If one of the bits of a nibble is set to the state "X" using the state buttons, the corresponding nibble value in the value input field is updated and the value "X" is displayed. If the state of one of the bits is "X", the entire nibble value is ignored. Example: If the state of the state buttons is changed to "10X0 XXXX" (see screenshot below), the input field is updated accordingly and now displays the value "XX".

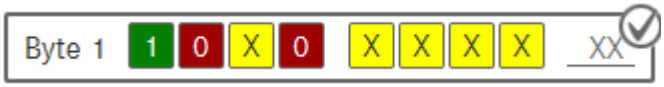


Fig. 133: Bitmap component – Updating the value 2

Entering a value in the value input field causes the state of the state buttons to be updated.

Entering a value in the value input field only updates the state of the state buttons if the cursor focus is moved away from the value input field.

Example: If you enter the value "68" in the value input field, the state of the state buttons changes as follows (see screenshot below):

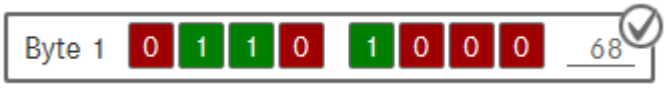


Fig. 134: Bitmap component – Updating the value 3

If one of the nibble values in the value input field is set to "X", then all of the corresponding state buttons are set to "X". Example: If you enter the value "X8" in the value input field (see screenshot below), the state of the state buttons changes to "XXXX 1000".

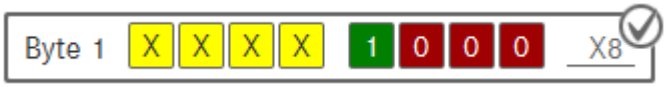
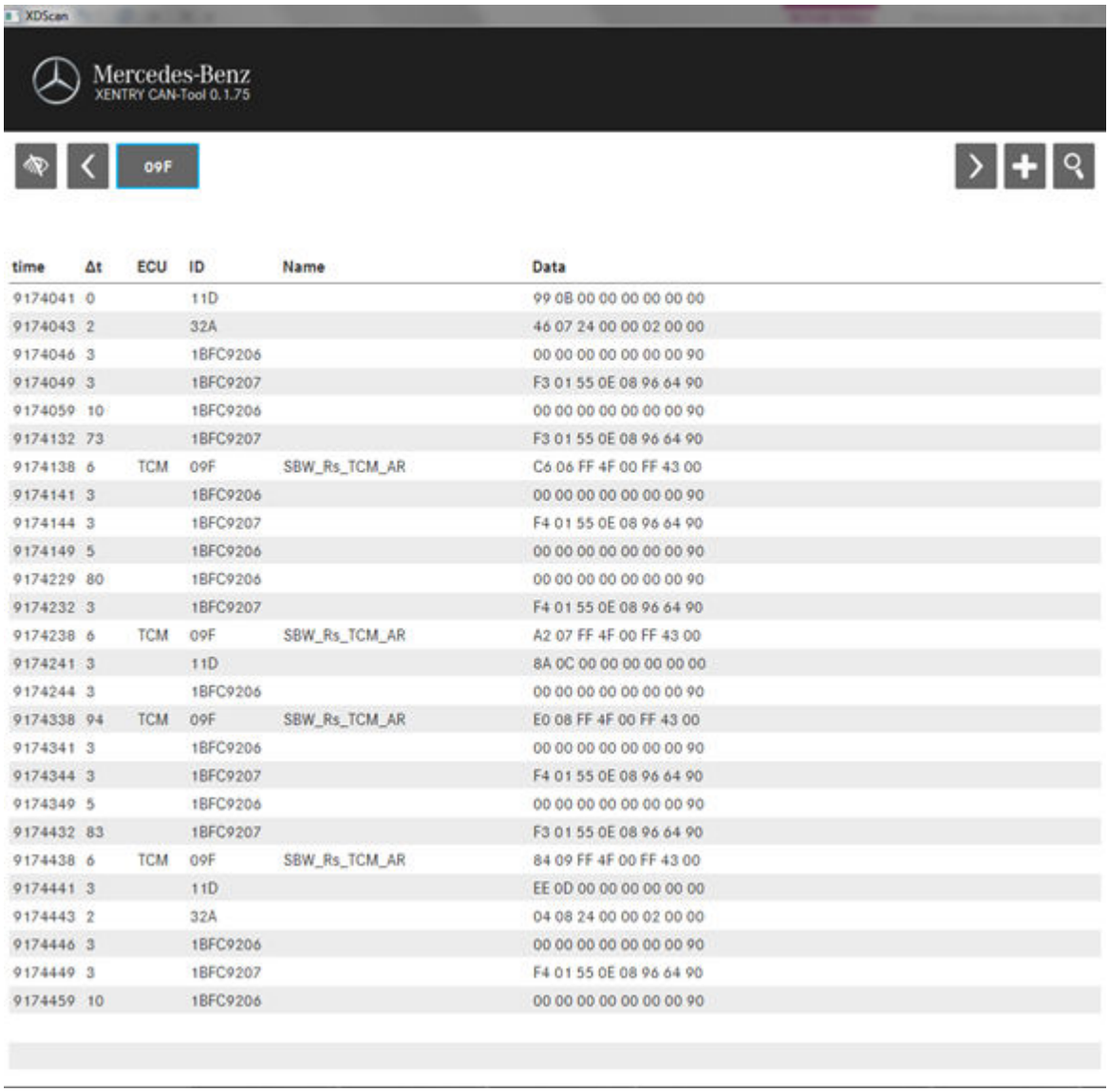


Fig. 135: Bitmap component – Updating the value 4

9.6.13 Filtering for CAN ID

You can use the "CAN ID:" field in the "Filter configuration" window to specify the filter to be used to filter the CAN frames, so that only CAN frames with the desired CAN ID are displayed. If you enter the value "09F" in the "CAN ID" input field, only CAN frames with the CAN ID "09F" are listed. Example: Enter the value "09F" in the "CAN ID" input field and in the "Filter name:" input field. Click on the "Apply" button. This creates the filter button "09F".



time	Δt	ECU	ID	Name	Data
9174041	0		11D		99 0B 00 00 00 00 00 00
9174043	2		32A		46 07 24 00 00 02 00 00
9174046	3		1BFC9206		00 00 00 00 00 00 00 90
9174049	3		1BFC9207		F3 01 55 0E 08 96 64 90
9174059	10		1BFC9206		00 00 00 00 00 00 00 90
9174132	73		1BFC9207		F3 01 55 0E 08 96 64 90
9174138	6	TCM	09F	SBW_Rs_TCM_AR	C6 06 FF 4F 00 FF 43 00
9174141	3		1BFC9206		00 00 00 00 00 00 00 90
9174144	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174149	5		1BFC9206		00 00 00 00 00 00 00 90
9174229	80		1BFC9206		00 00 00 00 00 00 00 90
9174232	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174238	6	TCM	09F	SBW_Rs_TCM_AR	A2 07 FF 4F 00 FF 43 00
9174241	3		11D		8A 0C 00 00 00 00 00 00
9174244	3		1BFC9206		00 00 00 00 00 00 00 90
9174338	94	TCM	09F	SBW_Rs_TCM_AR	E0 08 FF 4F 00 FF 43 00
9174341	3		1BFC9206		00 00 00 00 00 00 00 90
9174344	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174349	5		1BFC9206		00 00 00 00 00 00 00 90
9174432	83		1BFC9207		F3 01 55 0E 08 96 64 90
9174438	6	TCM	09F	SBW_Rs_TCM_AR	84 09 FF 4F 00 FF 43 00
9174441	3		11D		EE 0D 00 00 00 00 00 00
9174443	2		32A		04 08 24 00 00 02 00 00
9174446	3		1BFC9206		00 00 00 00 00 00 00 90
9174449	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174459	10		1BFC9206		00 00 00 00 00 00 00 90

Fig. 136: Filters – CAN trace area before applying filters

To apply the filter, click on the "09F" button. The system then filters for all CAN frames that contain the CAN ID "09F".

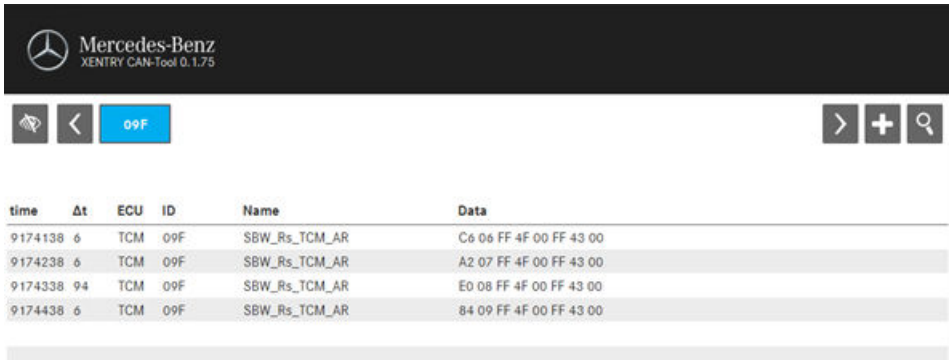


Fig. 137: Applying the filter 09F

Three or eight characters can be entered in the "CAN ID:" field. It is permissible to input digits from 0 to 9, as well as lowercase letters from a to f and uppercase letters from A to F. It is also possible to enter either the lowercase letter x or the uppercase letter X to exclude certain characters when filtering. X Acts as a placeholder character. If the "CAN ID:" filter contains X, then X can be any permissible character or number. If lowercase letters are entered and the cursor focus then moves elsewhere, the input is automatically converted into uppercase letters.

Example: The filter "1BCF" is created. The placeholder character "X" is then entered in the "CAN ID:" field. The filter then looks like this: "1BFC920X" (see screenshot below).

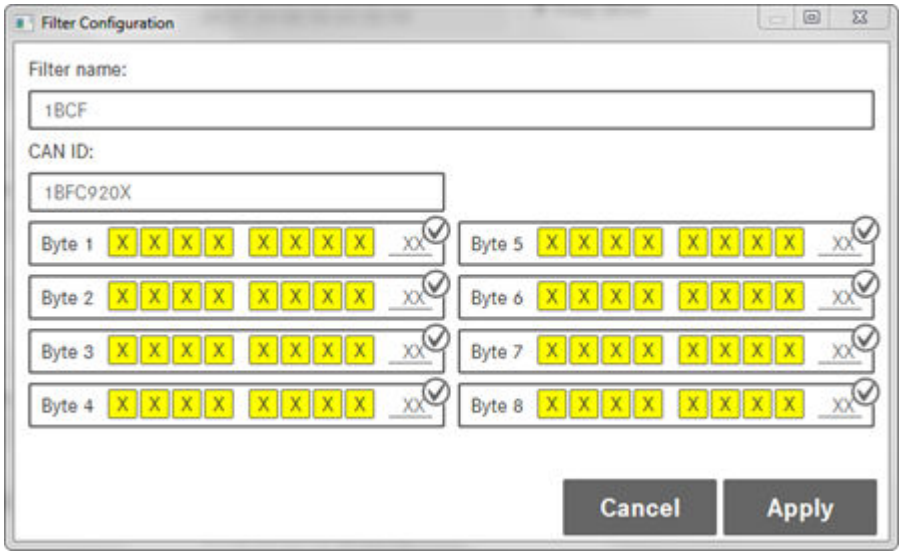


Fig. 138: Placeholder character in "CAN ID" filter

When filter "1BCF" is applied, the data is filtered as shown in the screenshot below.

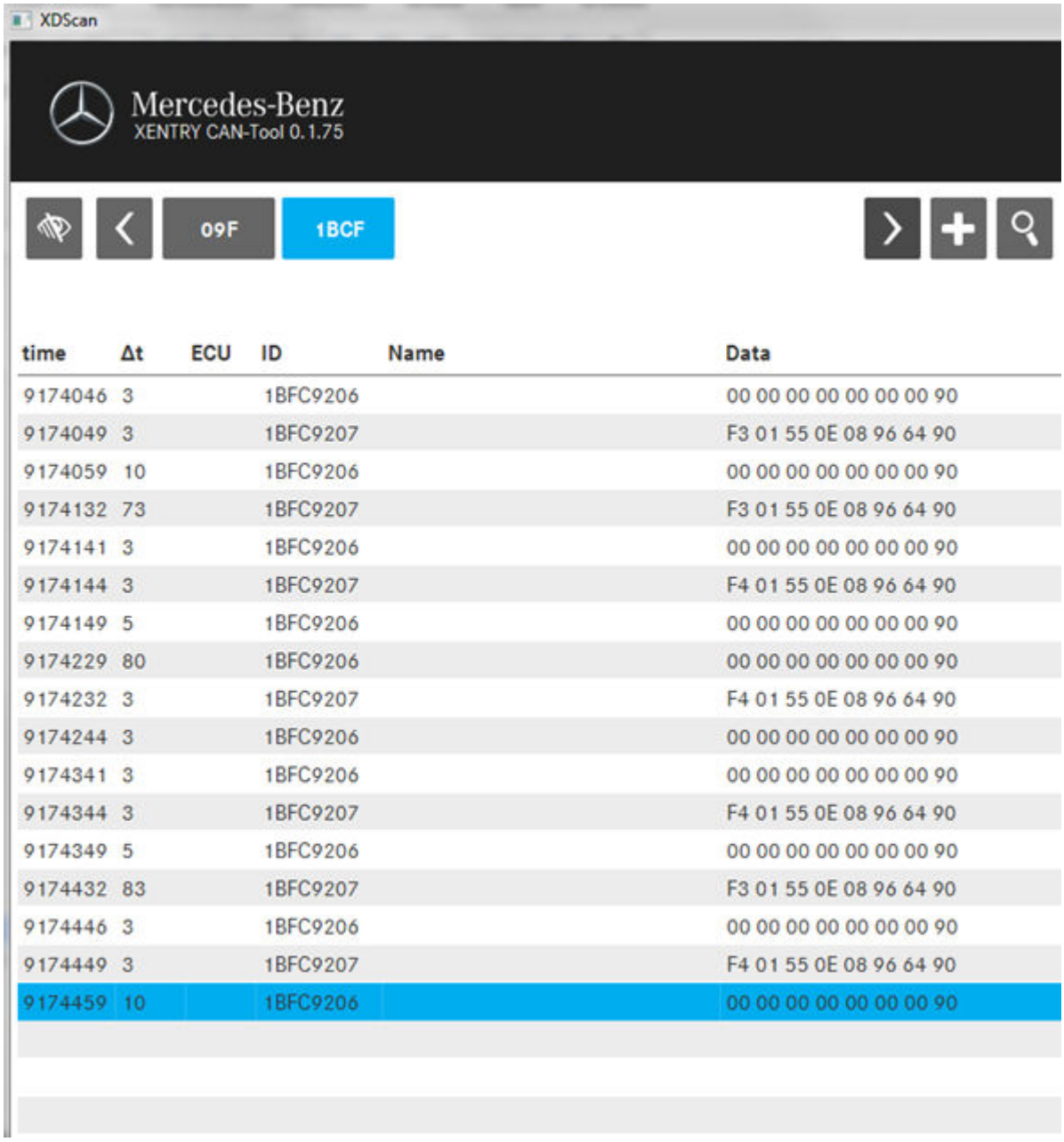


Fig. 139: Using a placeholder character in CAN ID filter

Since the character "X" is in the eighth position, both the CAN ID 1BFC9206 and CAN ID 1BFC9207 are permissible. The placeholder character "X" can be used in any position. It can be used a maximum of eight times, since a maximum of eight characters can be entered in the input field for the "CAN ID:" filter.

Filters can only be applied if a valid project has been loaded in the CAN Tool and tracing mode is inactive, i.e. the tracing modes have been stopped.

9.6.14 Filtering for data fields

The "Byte X" fields in the "Filter configuration" window (fields Byte 1 to Byte 8) can be used to define a filter that filters only for CAN frames that contain the desired data value.

The "Data" field in the CAN trace area generally contains 0 to 8 data bytes, depending on the data available on the CAN bus. The individual data bytes are separated from each other by spaces. Example: "C6 06 FF 4F 00 FF 43 00" contains 8 data bytes, separated by spaces.

Each byte contains two characters. Each character of a byte represents a nibble. The data is read from left to right. The individual bytes in the example "C6 06 FF 4F 00 FF 43 00" are Byte 1 = "C6", Byte 2 = "06", Byte 3 = "FF", Byte 4 = "4F", Byte 5 = "00", Byte 6 = "FF", Byte 7 = "43" and Byte 8 = "00".

The "Byte 1" field in the "Filter configuration" window can be used to filter for CAN frames that contain certain data at byte position 1. The "Byte 2" field window can be used to filter for CAN frames that contain certain data at byte position 2. Following this same logic, fields "Byte 3" to "Byte 8" can be used to filter for CAN frames that contain certain data at the respective byte position.

Further information on using the bitmap component to specify filter values can be found in ➦ Chapter 9.6.12 “Bitmap component” on page 97.

Various scenarios for data filtering are explained in the examples below.

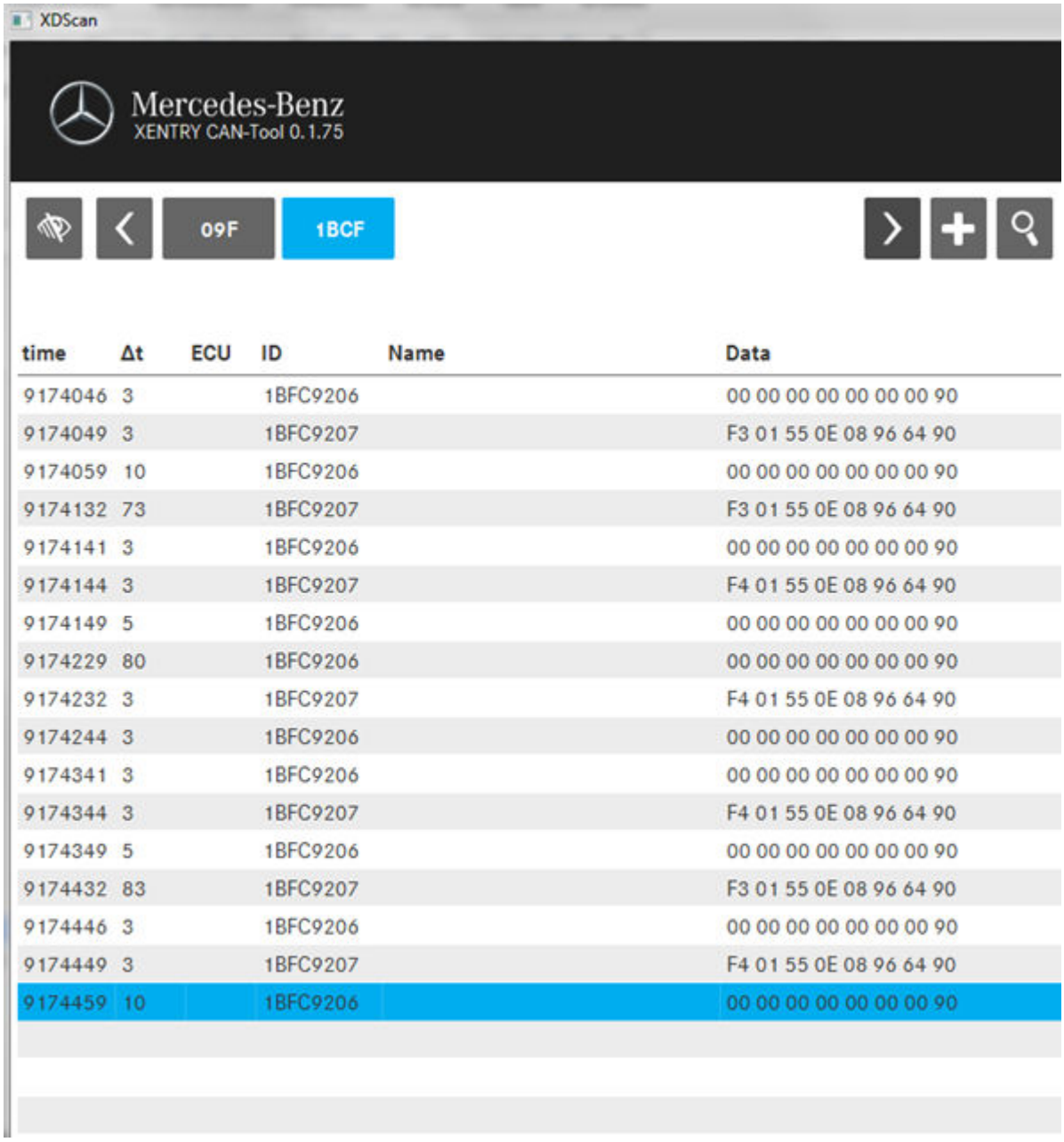
If the focus when filtering is only on data bytes, the "CAN ID:" field should remain in ignore mode or placeholder mode. If the "CAN ID:" field is to remain in placeholder mode, enter the value "XXXXXXXX" (see screenshot below).

Example 1: In order to filter for all CAN frames that contain the value "00" at byte position 5, enter the value "00" in the "Byte 5" filter input field. The filter "Data" is created. Here, the filter value "00" is defined for "Byte 5".



Fig. 140: Filtering for data fields – 1

If the "Data" filter is applied to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.



time	Δt	ECU	ID	Name	Data
9174046	3		1BFC9206		00 00 00 00 00 00 00 90
9174049	3		1BFC9207		F3 01 55 0E 08 96 64 90
9174059	10		1BFC9206		00 00 00 00 00 00 00 90
9174132	73		1BFC9207		F3 01 55 0E 08 96 64 90
9174141	3		1BFC9206		00 00 00 00 00 00 00 90
9174144	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174149	5		1BFC9206		00 00 00 00 00 00 00 90
9174229	80		1BFC9206		00 00 00 00 00 00 00 90
9174232	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174244	3		1BFC9206		00 00 00 00 00 00 00 90
9174341	3		1BFC9206		00 00 00 00 00 00 00 90
9174344	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174349	5		1BFC9206		00 00 00 00 00 00 00 90
9174432	83		1BFC9207		F3 01 55 0E 08 96 64 90
9174446	3		1BFC9206		00 00 00 00 00 00 00 90
9174449	3		1BFC9207		F4 01 55 0E 08 96 64 90
9174459	10		1BFC9206		00 00 00 00 00 00 00 90

Fig. 141: Filtering for data fields – CAN trace area – 1

Example 2: In order to filter for all CAN frames that contain the value "00" at byte position 5 as well as "FF" at byte position 6, enter the value "00" in the "Byte 5" filter input field and the value "FF" in the "Byte 6" filter input field. The filter "Data1" is created. Here, the filter value "00" is defined for "Byte 5" and filter value "FF" is defined for "Byte 6" (see screenshot below).

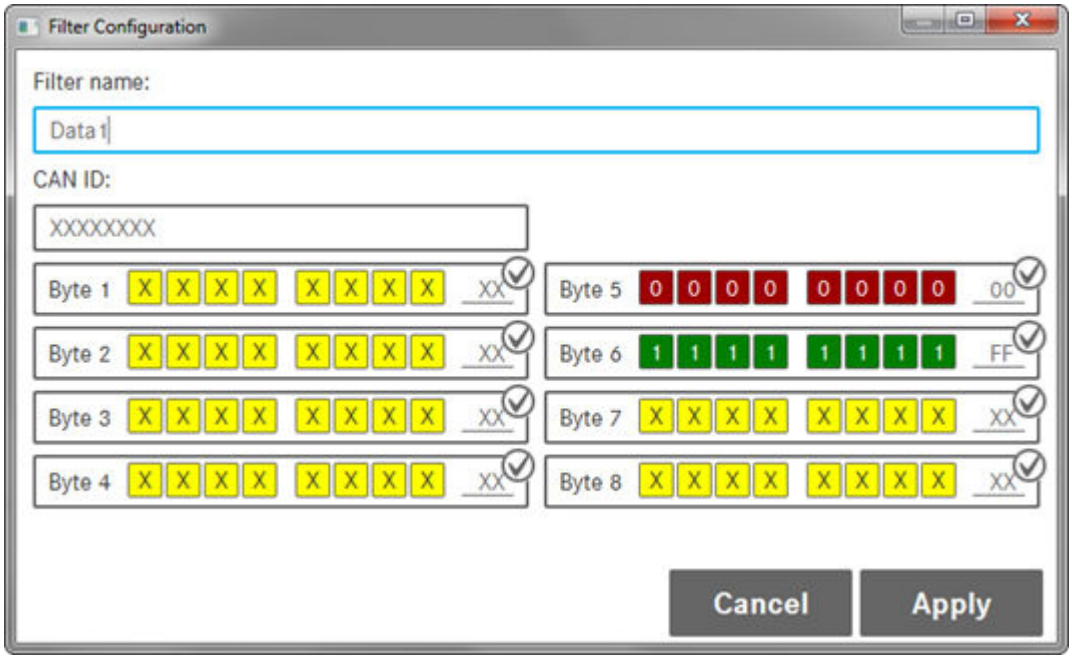


Fig. 142: Filtering for data fields – 2

If the filter "Data1" is applied to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.

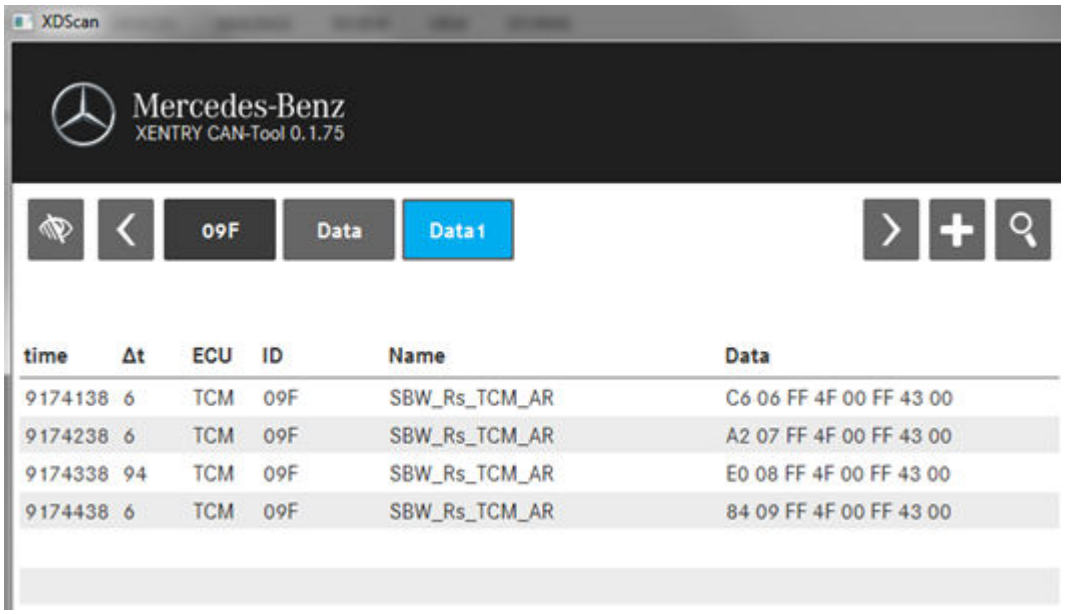


Fig. 143: Filtering for data fields – CAN trace area – 2

Example 3: It is also possible to filter for a nibble value. In order to filter for all CAN frames that contain the value "4" at byte position 1 as well as the value "0" at the first nibble of byte position 4, enter the value "X4" in the "Byte 1" filter input field and the value "0X" in the "Byte 4" filter input field. The filter "Nibble" is created. Here, the filter value "X4" is defined for "Byte 1" and filter value "0X" is defined for "Byte 4" (see screenshot below).

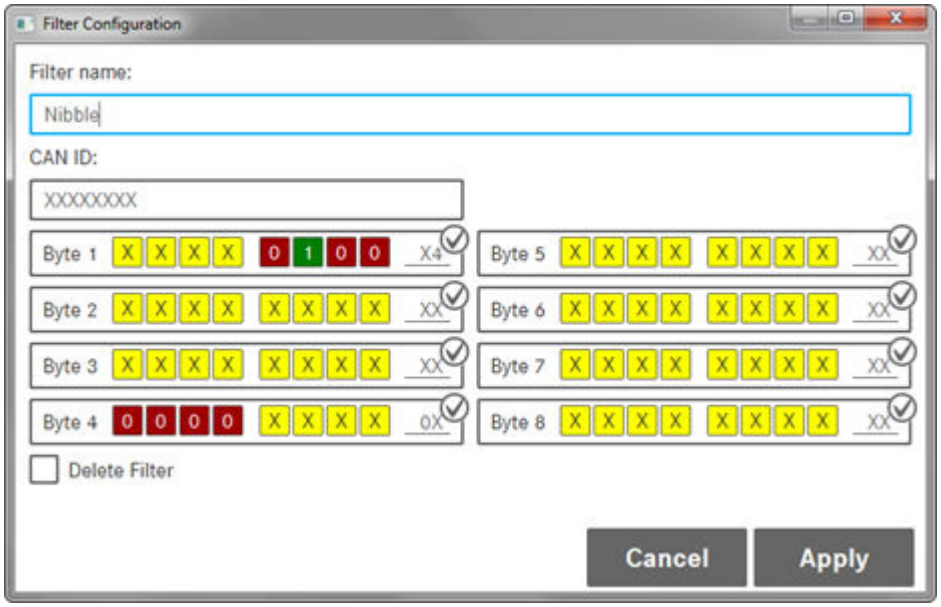


Fig. 144: Filtering for data fields – 3

If the filter "Nibble" is applied to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.

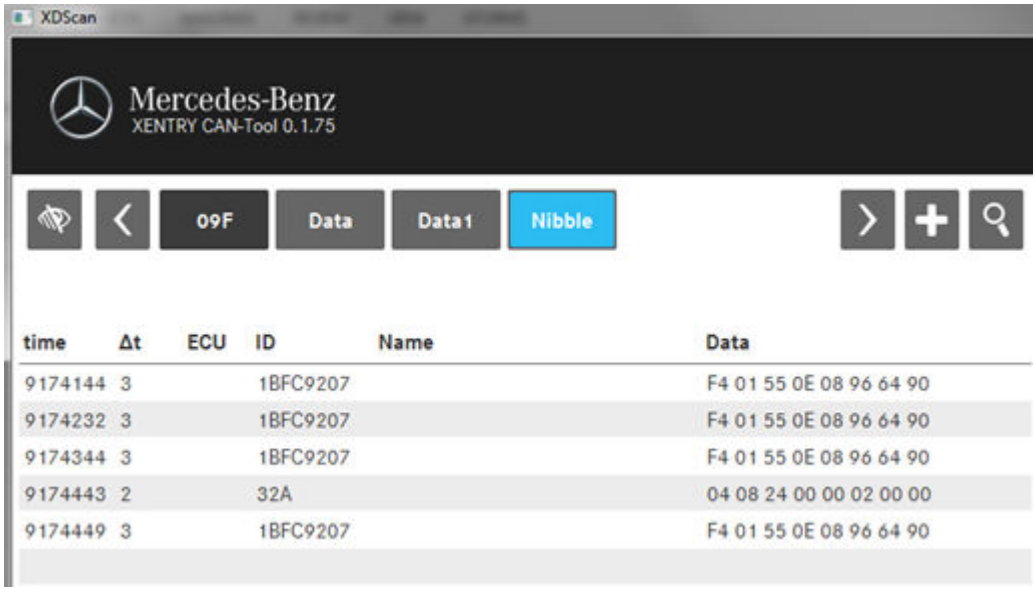


Fig. 145: Filtering for data fields – CAN trace area – 3

Behavior of the filter when using the ignore field: If data is configured for the "Byte X" field and the ignore field is deactivated, the configured filter data for byte position X is ignored. Further information on using the ignore field can be found in the section Filters – Bitmap component ➦ Chapter 9.6.12 “Bitmap component” on page 97.

Example 4: The "IgnoreField" filter was configured to filter for all CAN frames that contain the value "00" at byte position 5 and the value "FF" at byte position 6 (see screenshot below). The ignore field is deactivated for the fields "Byte 5" and "Byte 6" and the filter is saved (see screenshot below).

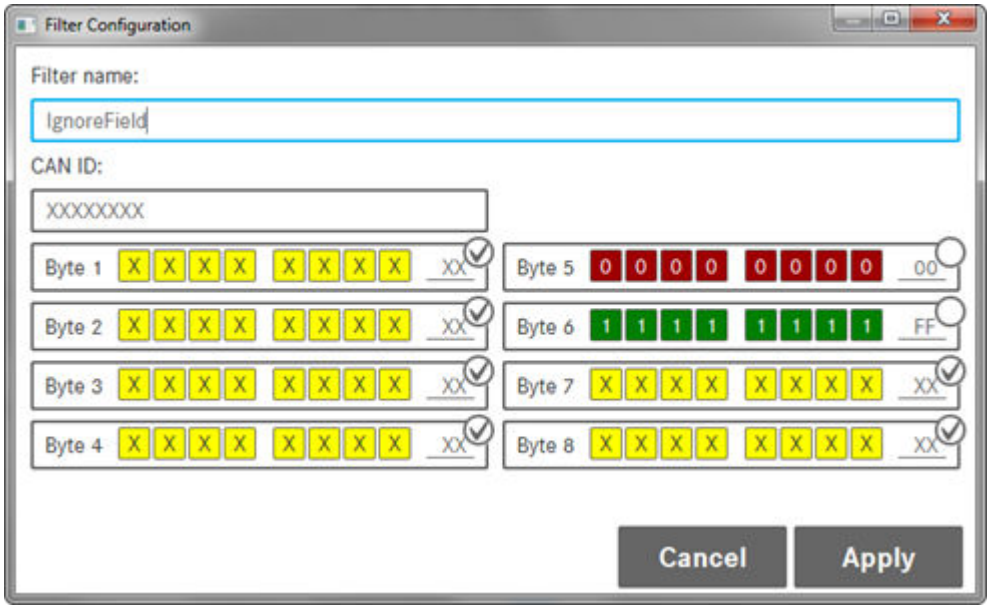


Fig. 146: Filtering for data fields – 4

If the filter "IgnoreField" is applied to the data displayed in the CAN trace area before the application of filters, the filter has no effect because it is ignored in this case. The displayed data is identical to the data that was displayed in the CAN trace area before the application of filters.

9.6.15 Filtering for CAN ID and for data fields

It is possible to filter CAN frames simultaneously for CAN ID and for data fields. Further information about filtering based on CAN ID can be found in ➦ Chapter 9.6.13 “Filtering for CAN ID” on page 99. Further information about filtering by data fields can be found in ➦ Chapter 9.6.14 “Filtering for data fields” on page 101.

You can use the "CAN ID:" field and the "Byte X" fields in the "Filter configuration" window to define the filter to be used to filter the CAN frames, so that only CAN frames with the desired CAN ID and desired data are displayed.

Example 1: To filter for all CAN frames that contain the CAN ID "1BFC920X" and the value "F" in the first nibble of the first byte as well as the value "96" in Byte 6, create the filter "Filter1" as shown in the screenshot below.

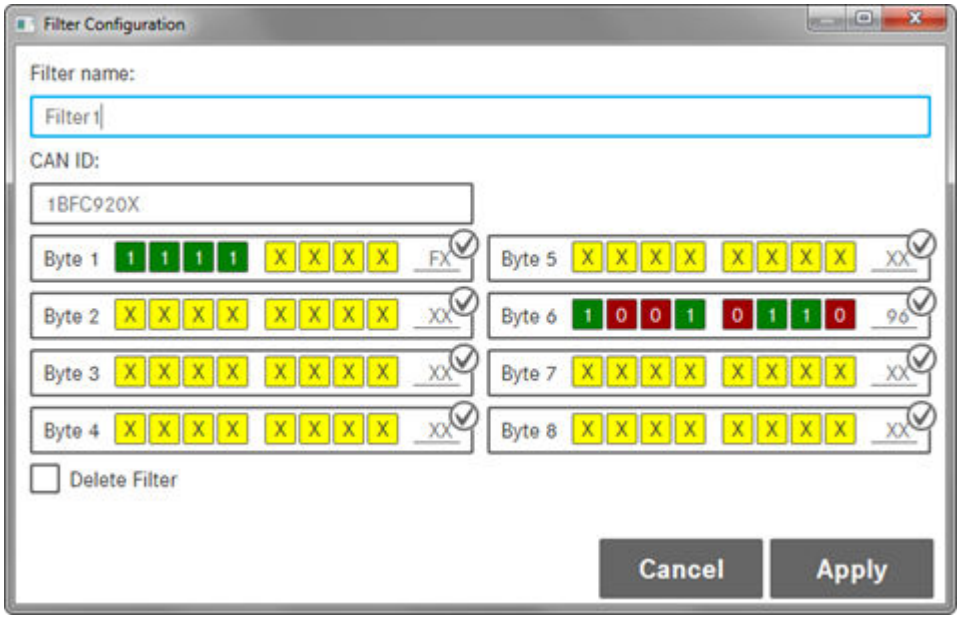


Fig. 147: Filtering for CAN ID and for data fields

If the filter "Filter1" is applied to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.

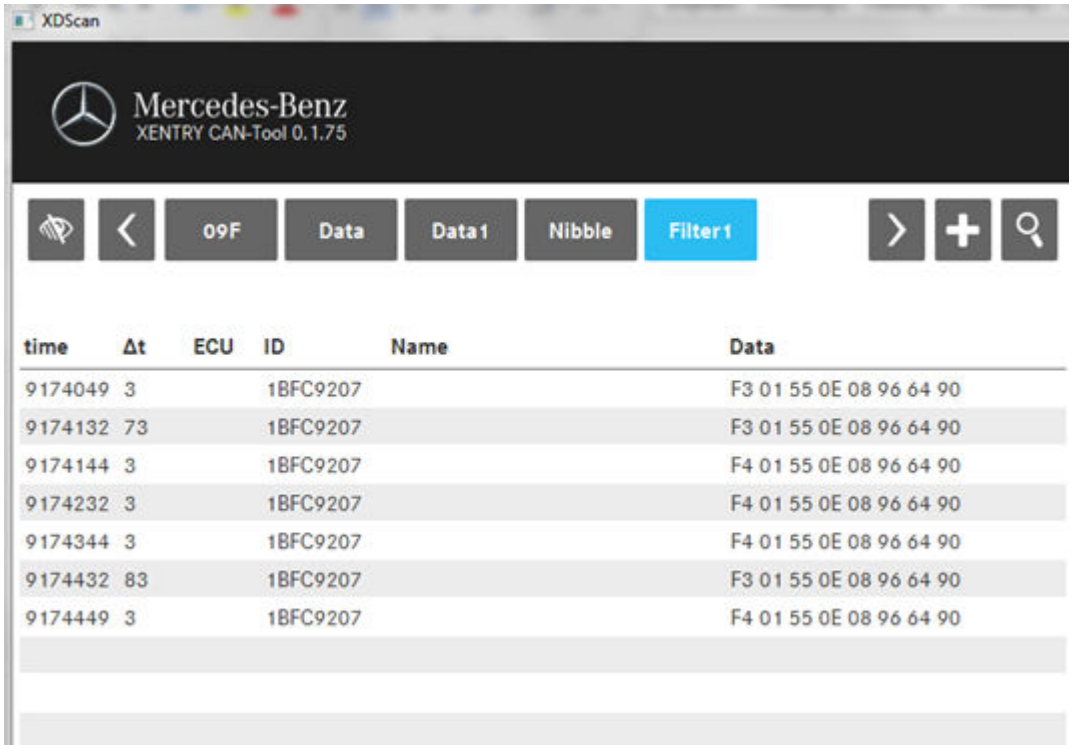


Fig. 148: Filtering for CAN ID and for data fields – CAN trace area

9.6.16 Applying multiple filters

It is possible to create and apply multiple filters. If you apply multiple filters simultaneously, the data is filtered in "OR" mode.

Example: Create the filter "09F" (see screenshot below).

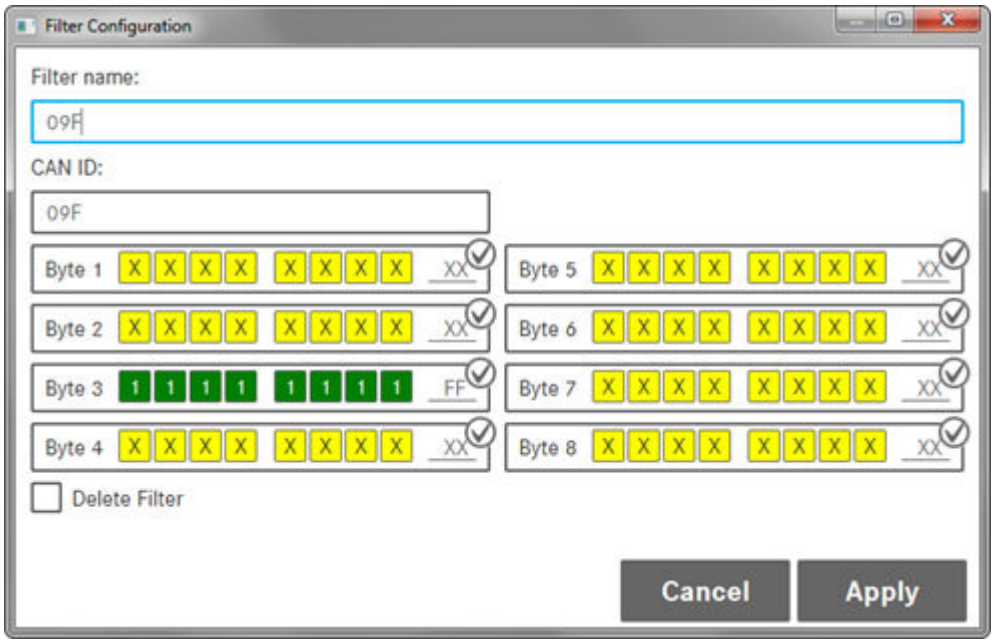


Fig. 149: Multiple filters – Filter "09F"

Create the filter "11D" (see screenshot below).

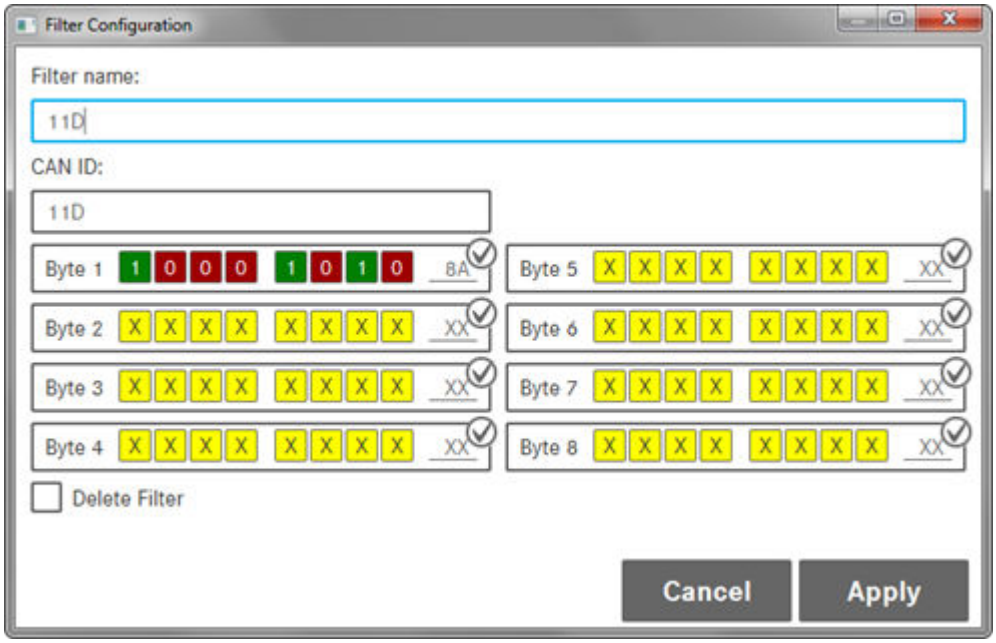
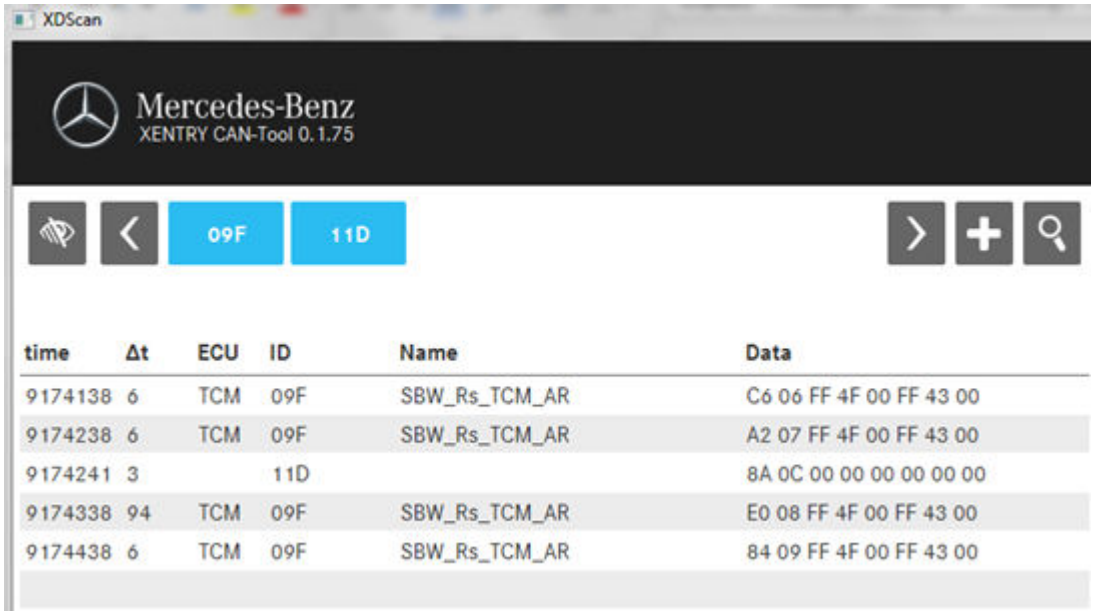


Fig. 150: Multiple filters – Filter "11D"

If the filters "09F" and "11D" are applied together to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.



time	Δt	ECU	ID	Name	Data
9174138	6	TCM	09F	SBW_Rs_TCM_AR	C6 06 FF 4F 00 FF 43 00
9174238	6	TCM	09F	SBW_Rs_TCM_AR	A2 07 FF 4F 00 FF 43 00
9174241	3		11D		8A 0C 00 00 00 00 00 00
9174338	94	TCM	09F	SBW_Rs_TCM_AR	E0 08 FF 4F 00 FF 43 00
9174438	6	TCM	09F	SBW_Rs_TCM_AR	84 09 FF 4F 00 FF 43 00

Fig. 151: Multiple filters – CAN trace area

In addition, the CAN frames are filtered with filter "09F" and listed in the CAN trace area. In addition, the CAN frames are filtered with filter "11D" and listed in the CAN trace area. The results of both filters are listed accordingly.

9.6.17 Clear filter

To delete a filter from the list of filters, left-click on the filter and hold down the mouse button for two seconds. If you are using a XENTRY Pad, you'll need to connect a mouse for this, as holding down the touchpad for a time will instead trigger a right-click.

The "Filter configuration" window is displayed. Activate the "Delete filter" checkbox in the bottom-left corner. Then click on the "Save" button. This deletes the filter button from the list of filters.

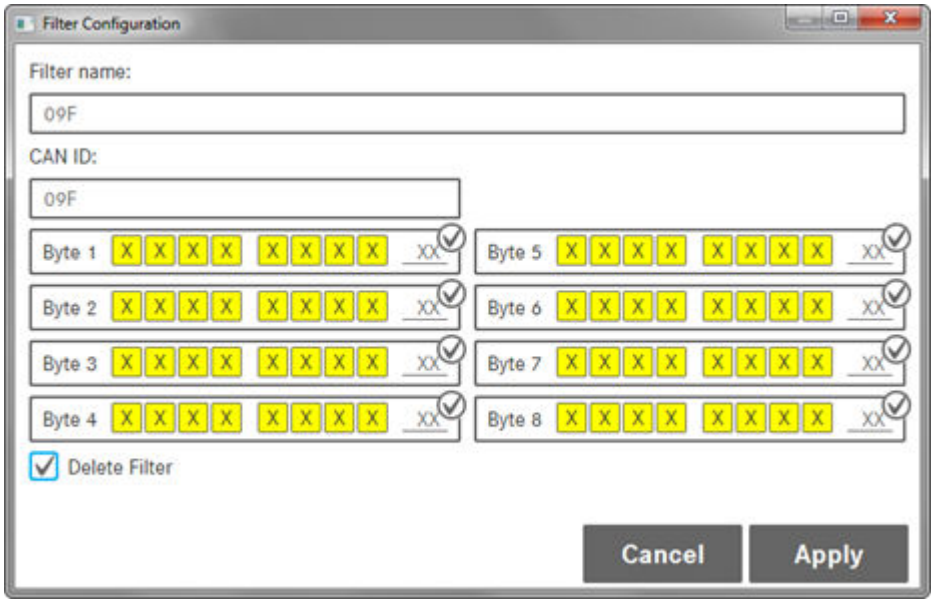


Fig. 152: Deleting filters

Filters can only be deleted if a valid project has been loaded in the CAN Tool and tracing mode is inactive, i.e. the tracing modes have been stopped.

When you delete the filter, the filtering applied to the list of CAN frames is also canceled.

9.6.18 Editing filters

Previously created filters can be edited. To edit a filter in the list of filters, left-click on the filter you want to edit and hold down the mouse button for two seconds. The "Filter configuration" window is displayed for editing the filter. Make the required changes to the filter, then click on the "Apply" button to save the settings.

If the filter has already been applied, the CAN trace area is updated after the modified filter is applied again.

Example: Create the filter "09F" (as in the screenshot below).

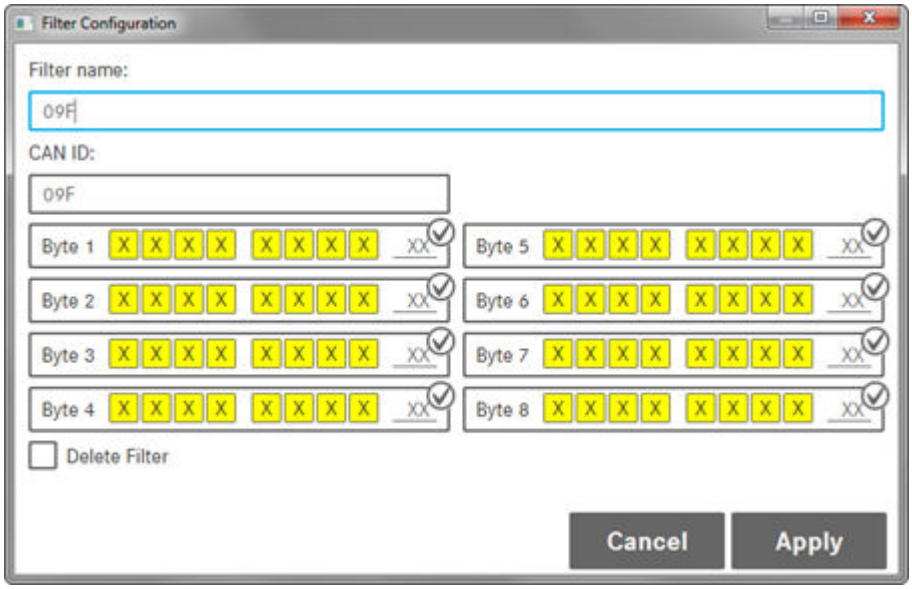


Fig. 153: Editing filters – 1

If the filter "09F" is applied to the data displayed in the CAN trace area before the application of filters, the data is filtered as shown in the screenshot below.

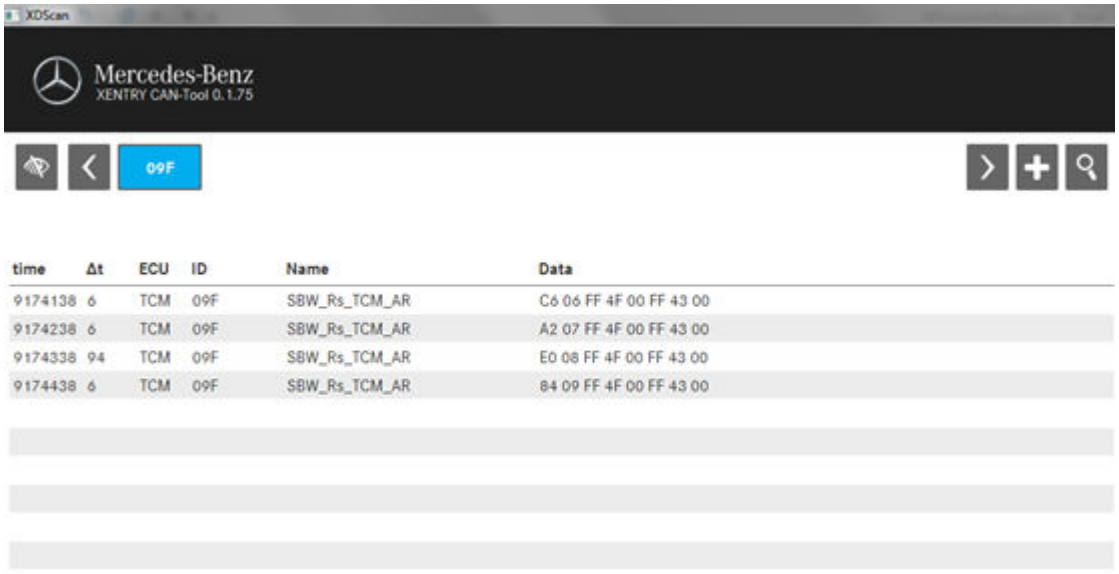


Fig. 154: Editing filters - Applying filter 09F – 1

Edit the filter "09F" (as in the screenshot below).

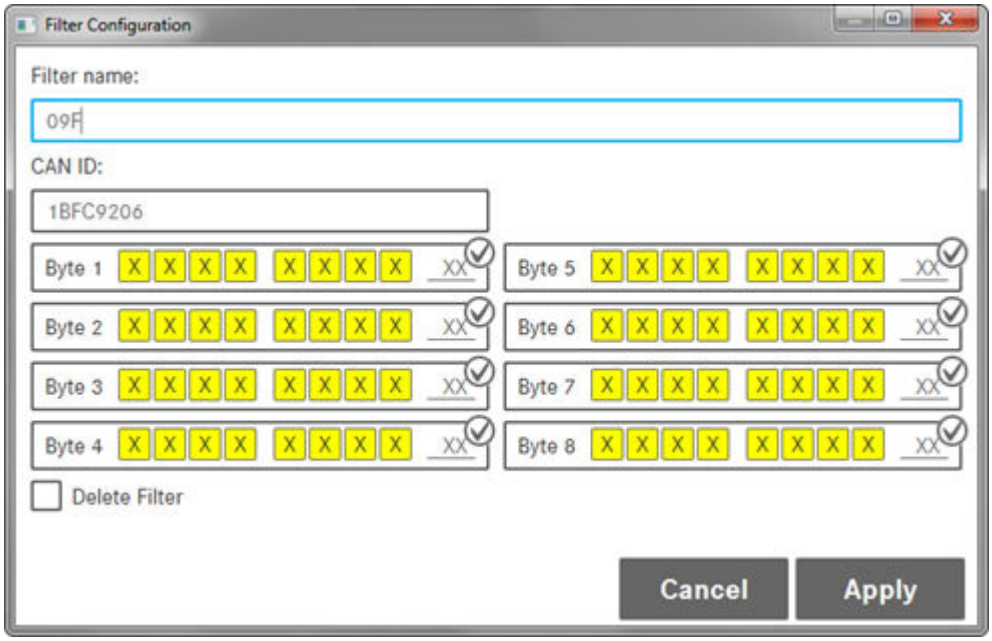


Fig. 155: Editing filters – 2

When you click on the "Save" button in the "Filter configuration" window, the data is updated accordingly (see screenshot below).

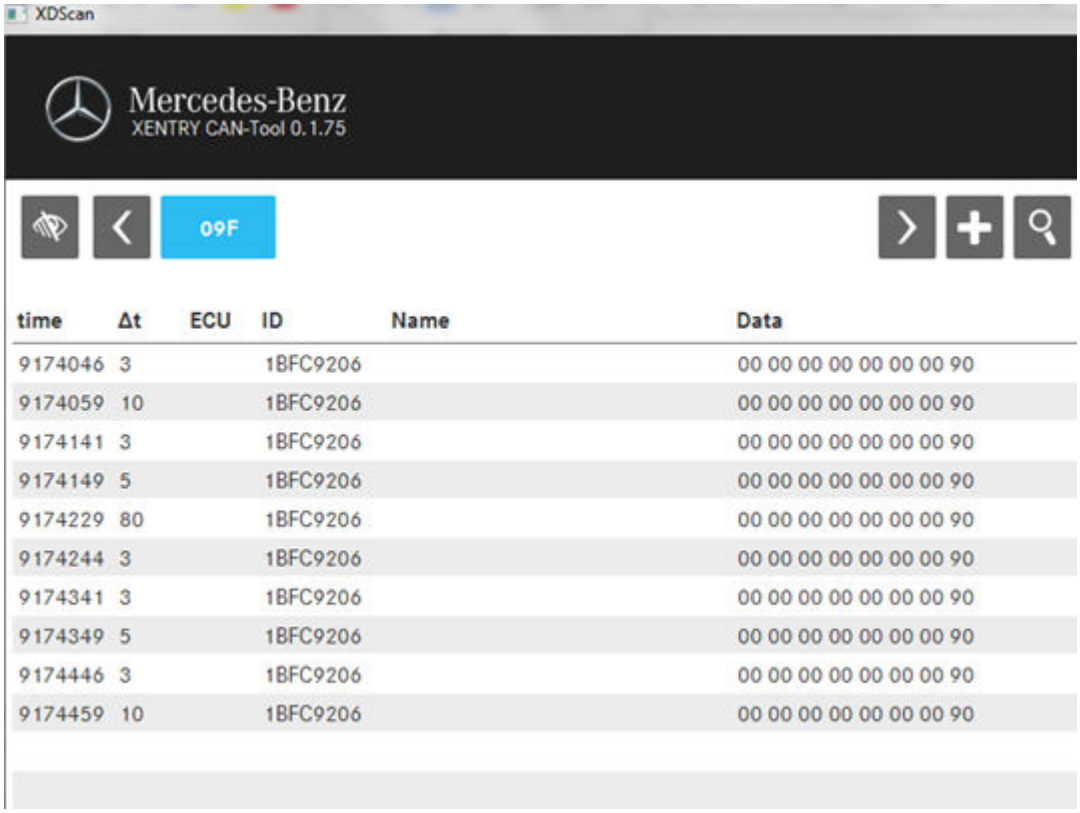


Fig. 156: Editing filters – Applying filter 09F – 2

9.6.19 Trigger

The "Trigger" option can be used to define a series of conditions that govern the readout of CAN frames from the CAN bus. Once a trigger condition is met, the tracing of CAN frames is stopped. The "Trigger" button is highlighted in the screenshot below.

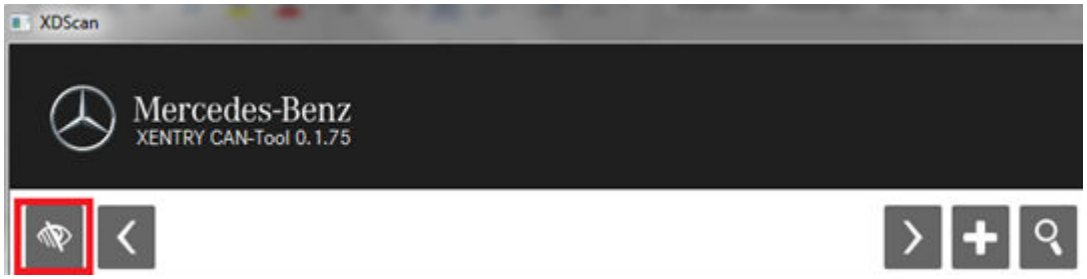


Fig. 157: "Trigger" button

To define the trigger, left-click on the "Trigger" button and hold down the mouse button for two seconds. If you are using a XENTRY Pad, you'll need to connect a mouse for this, as holding down the touchpad for a time will instead trigger a right-click.

The "Trigger configuration" window is then displayed.

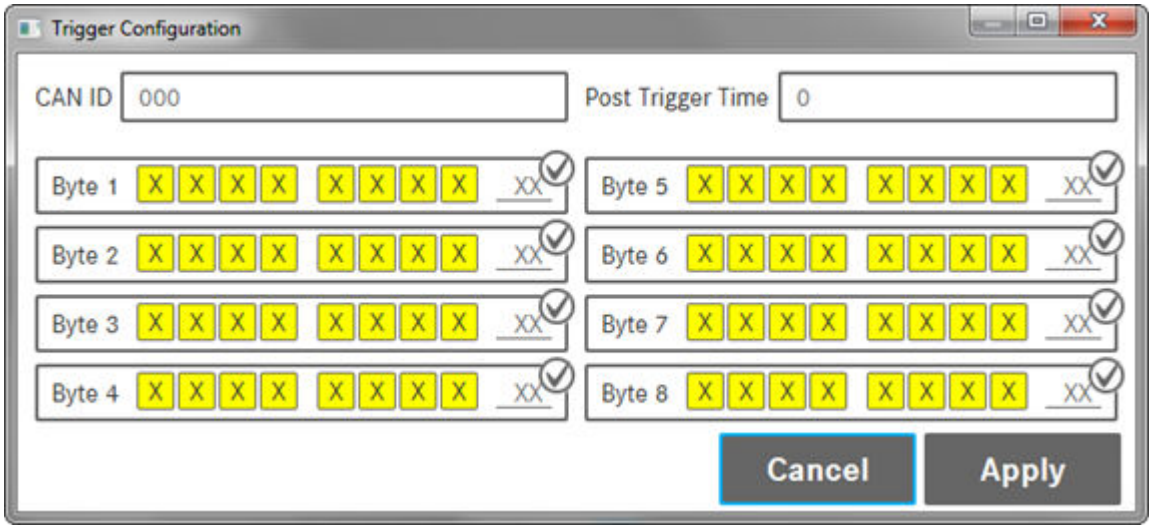


Fig. 158: "Trigger configuration" window

The trigger conditions can be defined based on the CAN ID and on data. The "Post-trigger time" field is used to define the time in seconds during which CAN frames continue to be read out after the trigger conditions are met.

Further information on using the bitmap component to specify trigger values can be found in ➦ Chapter 9.6.12 “Bitmap component” on page 97.

Triggers can only be defined, applied and deactivated if tracing mode is inactive i.e. the tracing modes have been stopped.

When a trigger is activated, the "Trigger" button is shown in blue. If no trigger is activated, the "Trigger" button is shown in dark gray.

Clicking on the "Trigger" button activates the trigger if it is not already activated, or deactivates it if the trigger is already active.

When the trigger conditions are met, tracing mode is deactivated. In other words, the tracing modes are stopped.

The triggers can be based on the CAN ID or based on the CAN ID and data fields.

Trigger based on the CAN ID

In the "Trigger configuration" window, define the "CAN ID" field to read out CAN frames from the "CAN bus" until the CAN frame with the specified CAN ID is detected. If you enter the value "09F" in the "CAN ID" input field and the trigger is applied, CAN frames are read out from the CAN bus until the CAN frame with CAN ID "09F" has been detected. Once the CAN frame with CAN ID "09F" has been detected, the tracing is stopped and tracing mode is deactivated.

Three or eight characters can be entered in the "CAN ID" field. It is permissible to input digits from 0 to 9, as well as lowercase letters from a to f and uppercase letters from A to F. If lowercase letters are entered and the cursor focus then moves elsewhere, the input is automatically converted into uppercase letters.

Example: Enter the value "09F" in the "CAN ID" input field and enter the value "3" in the "Post trigger time" input field. Click on the "Save" button to save the trigger configuration.

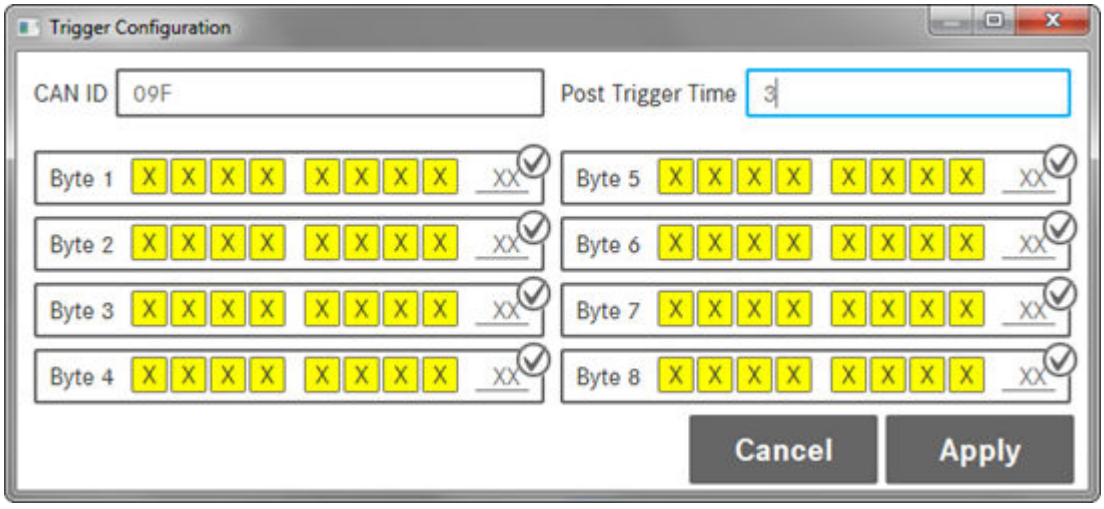


Fig. 159: Trigger based on the CAN ID

The trigger is activated if you click on the "Trigger" button. The application then scans the CAN bus for CAN frames until the CAN frame with CAN ID "09F" is detected. Once the CAN frame with CAN ID "09F" has been detected, the scanning of the CAN bus for CAN frames continues for another three seconds because a period of three seconds was specified as the post trigger time. The tracing is stopped after three seconds and tracing mode is deactivated.

Trigger based on the CAN ID and data fields

In the "Trigger configuration" window, define the desired "Byte X" fields (fields Byte 1 to Byte 8) to read CAN frames out from the CAN bus until the configured bytes/data are detected. If you enter the value "00" in the "Byte 1" input field and the trigger is applied, CAN frames are read out from the CAN bus until a CAN frame which contains "00" as the first byte value has been detected. Once a CAN frame that contains "00" as the first byte value has been detected, the tracing is stopped and tracing mode is deactivated.

CAN frames generally contain 0 to 8 data bytes depending on the data available on the CAN bus. The individual data bytes are separated from each other by spaces. Example: "C6 06 FF 4F 00 FF 43 00" contains 8 data bytes, separated by spaces.

Each byte contains two characters. Each character of a byte represents a nibble. The data is read from left to right. The individual bytes in the example "C6 06 FF 4F 00 FF 43 00" are Byte 1 = "C6", Byte 2 = "06", Byte 3 = "FF", Byte 4 = "4F", Byte 5 = "00", Byte 6 = "FF", Byte 7 = "43" and Byte 8 = "00".

The "Byte 1" field in the "Trigger configuration" window can be used to configure a trigger condition with certain data at byte position 2 of the CAN frame. The "Byte 2" field in the "Trigger configuration" window can be used to configure a trigger condition with certain data at byte position 2 of the CAN frame. Following the same logic, the fields "Byte 3" to "Byte 8" in the "Trigger configuration" window can be used to configure a trigger condition with certain data at the respective byte positions of the CAN frame.

Various scenarios for trigger conditions are explained in the examples below.

Example 1: To create a trigger condition with CAN ID "09F" and a post trigger time of "3" seconds as well as the CAN frame value of "00" in the 5th byte, configure the condition as shown in the screenshot below.

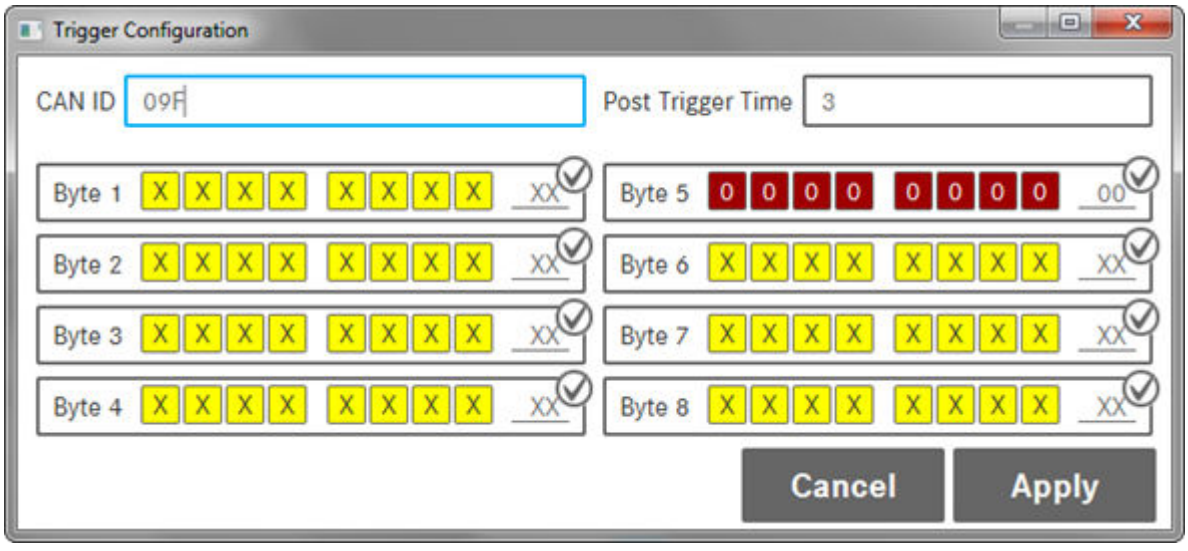


Fig. 160: Trigger based on the CAN ID and data – 1

Example 2: To create a trigger condition with CAN ID "09F" and a post trigger time of "5" seconds as well as the CAN frame value of "00" in the 5th byte and the value of "FF" in the 6th byte, configure the condition as shown in the screenshot below.

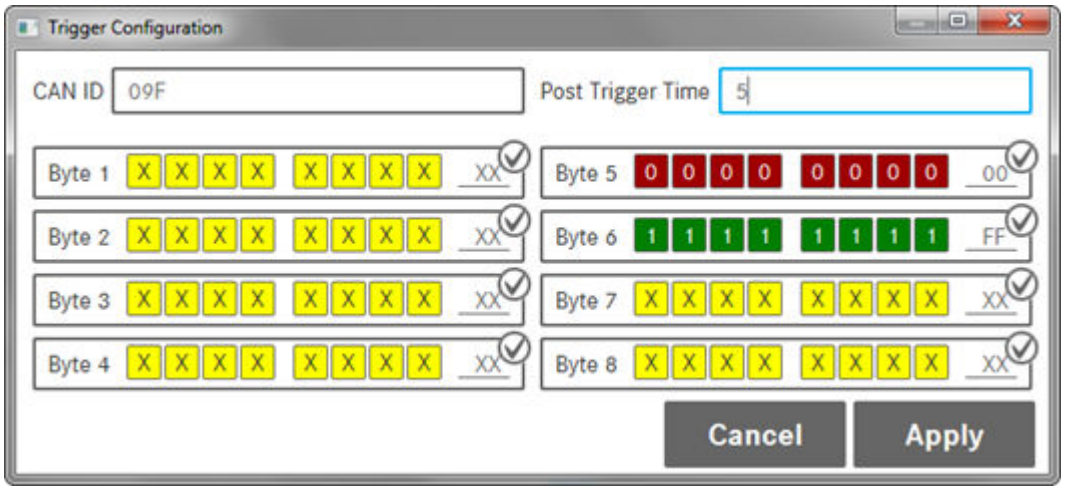


Fig. 161: Trigger based on the CAN ID and data – 2

Example 3: To create a trigger condition with CAN ID "09F" and a post trigger time of "5" seconds to detect a CAN frame with the value of "4" in the second nibble of byte position 1 and the value of "0" in the first nibble of byte position 4, configure the condition as shown in the screenshot below.

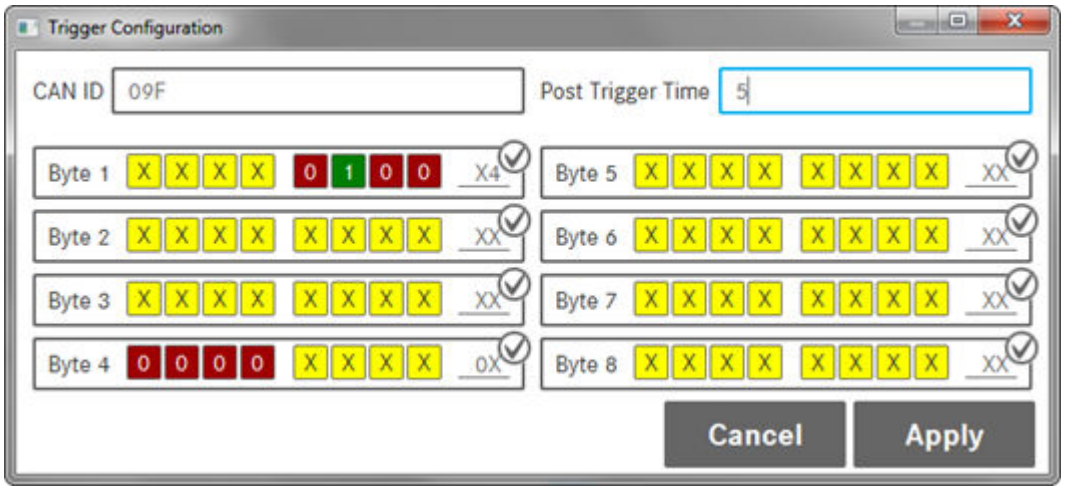


Fig. 162: Trigger based on the CAN ID and data – 3

Example 4: If the trigger has been configured as shown in the screenshot below, i.e. the ignore field is deactivated for "Byte 1" and "Byte 4", the trigger ignores the data and only takes the CAN ID and the value for the post trigger time into account as trigger conditions.

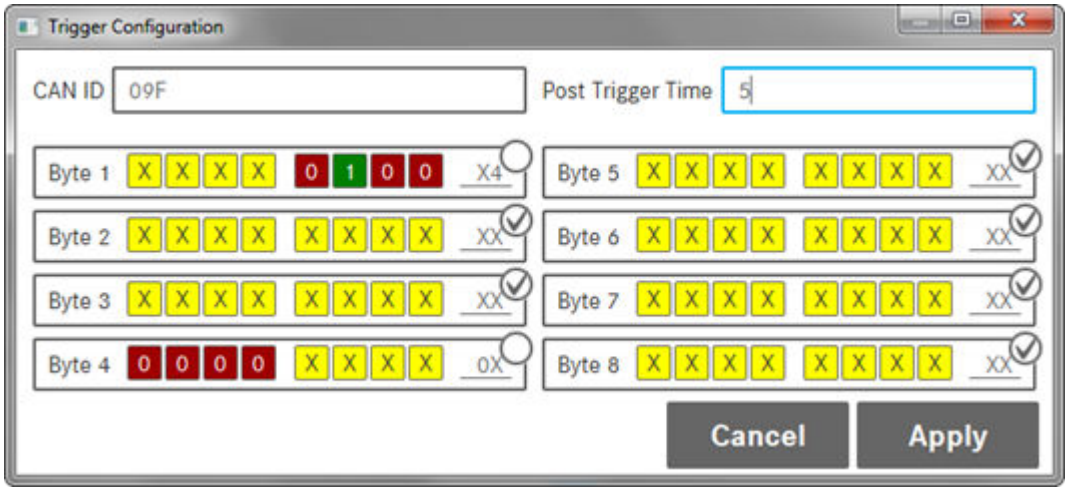


Fig. 163: Trigger based on the CAN ID and data – 4

Further information on using the ignore field can be found in ➦ Chapter 9.6.12 “Bitmap component” on page 97.

9.7 Support Tool

In the Support Tool, you can view system information, create support tickets, and generate log files for support. You can also find useful self-help resources.

You can open the Support Tool through the link on the desktop:

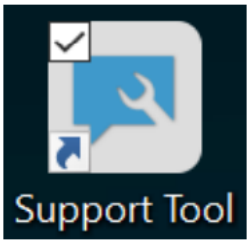


Fig. 164: Support Tool icon

You can find all relevant system information in the "XENTRY Diagnosis Pad" tab.

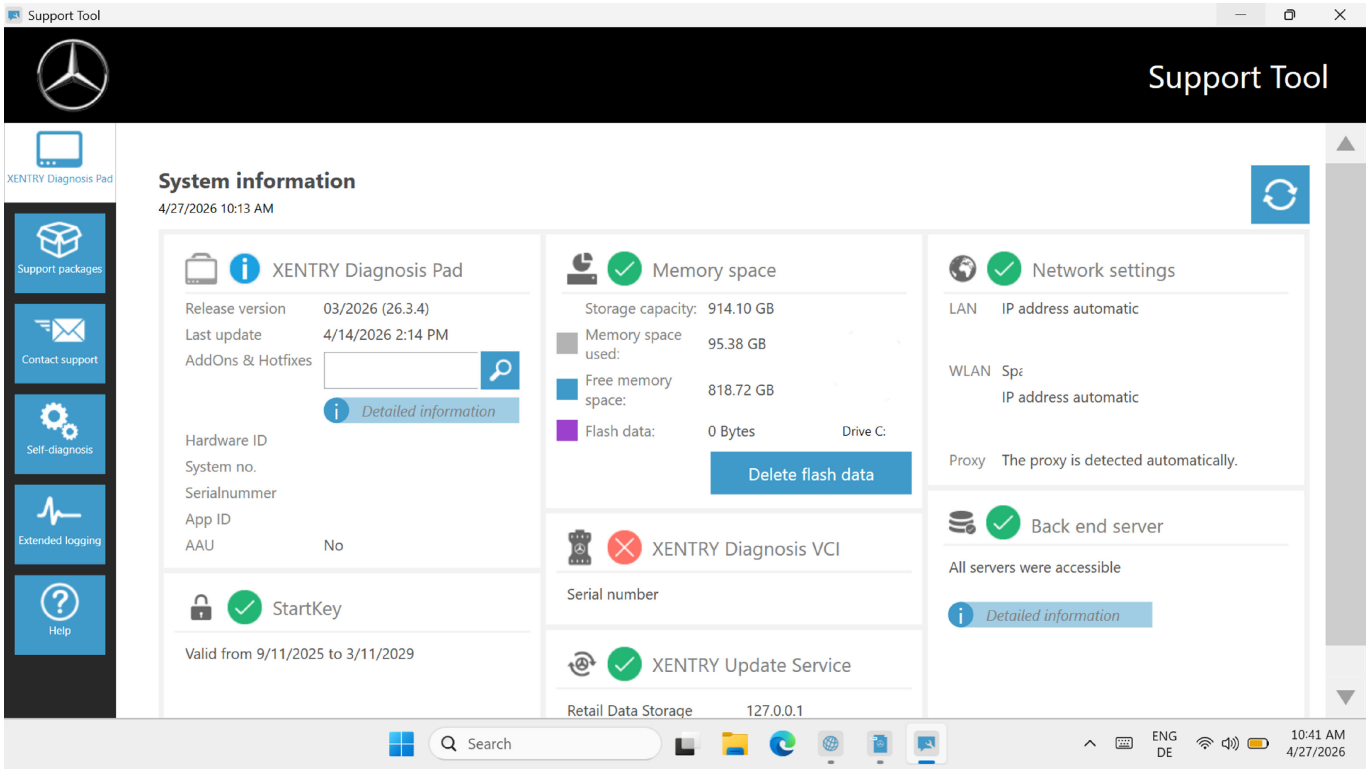


Fig. 165: System Information Kit (German)

You can create support packages in the "Support packages" tab.

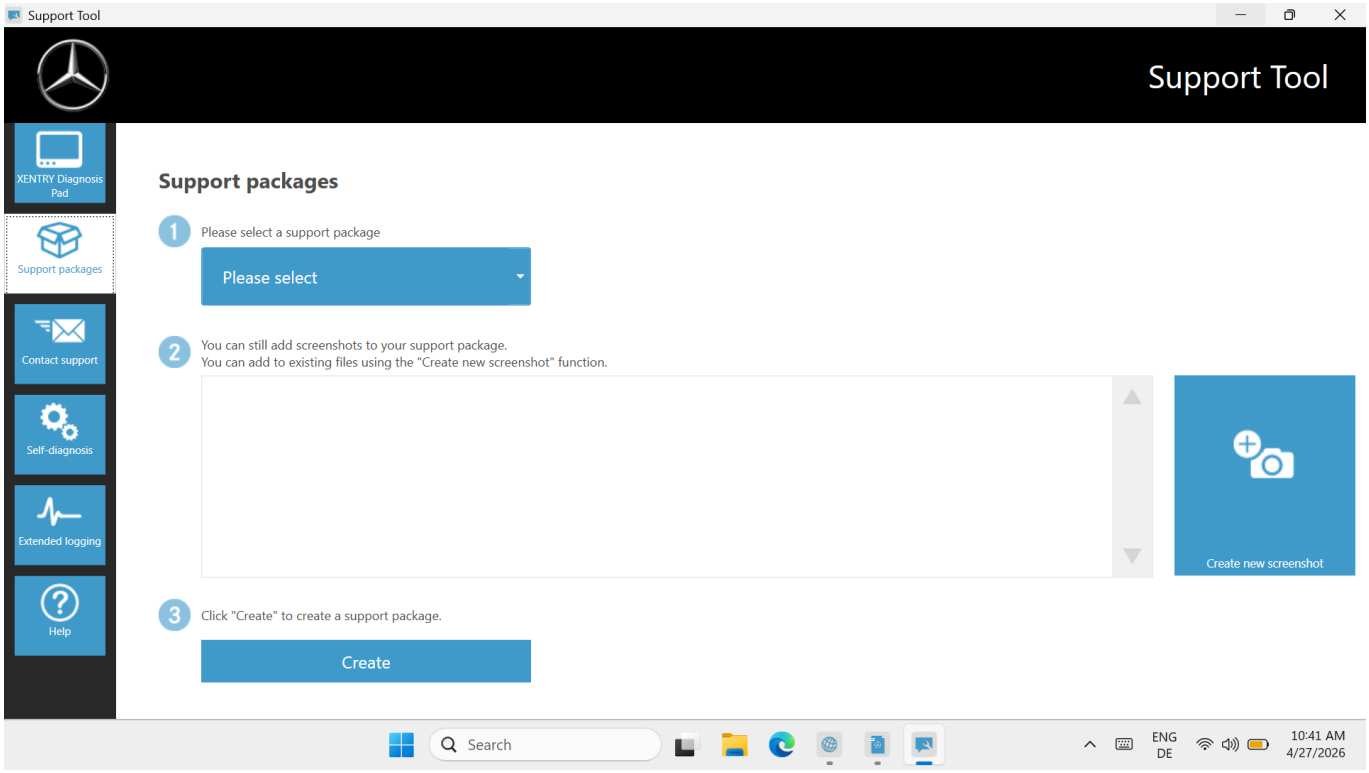


Fig. 166: Support packages

First, use the dropdown menu to select the type of support package.

Here are your options:

Support package	ID	Description
Diagnosis	1	Extensive collection of files and information from the XENTRY Diagnosis Software
XENTRY Diagnosis Pad	23	Extensive collection of files and information from the XENTRY Diagnosis Pad
Screenshots	-	Optional: To collect screenshots without providing any additional information about your system

You can optionally create and add a screenshot In the second step. To do this, click on the "Take new screenshot" button. A pop-up window will then open. There, you can choose whether to select the entire screen or just a portion of it. In the third step, the support package is generated by clicking the "Create" button. You will then see a progress bar.

Once the support package has been created, you will see the following pop-up message, which also provides a list of the support packages that have been created:

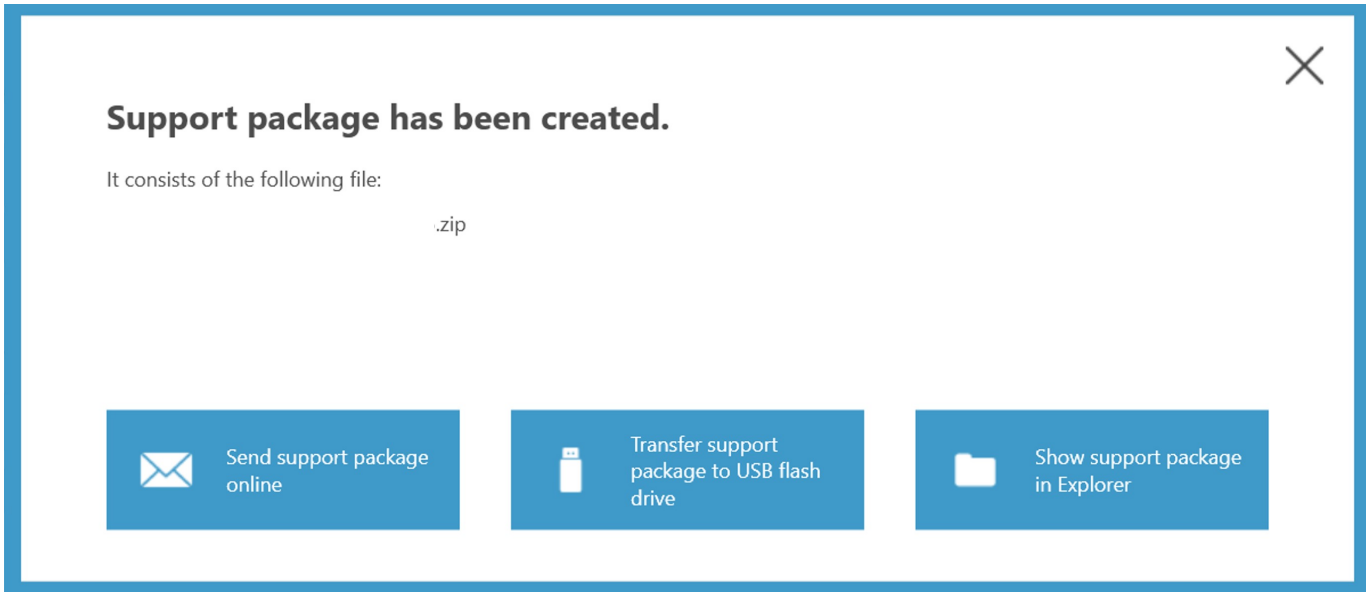


Fig. 167: Support package created

- Click on the "Send support package online" button if requested to do so by the Diagnosis User Help Desk.
- Click the "Transfer Support Package to USB Flash Drive" button to save the support package to an USB flash drive. The button is only available if the diagnostic device has detected an USB flash drive.
- Click the "View Support Package in Explorer" button to view the created support package in Explorer. You will then be able to save the support package to a network drive, for example.

Created support packages are available in the "Diagnosis Files" library, at the very bottom of the "Packages" area. The link for this is available on the desktop of your XENTRY Diagnosis Pad.

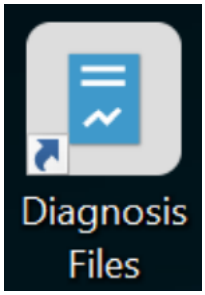


Fig. 168: "Support Files" library icon

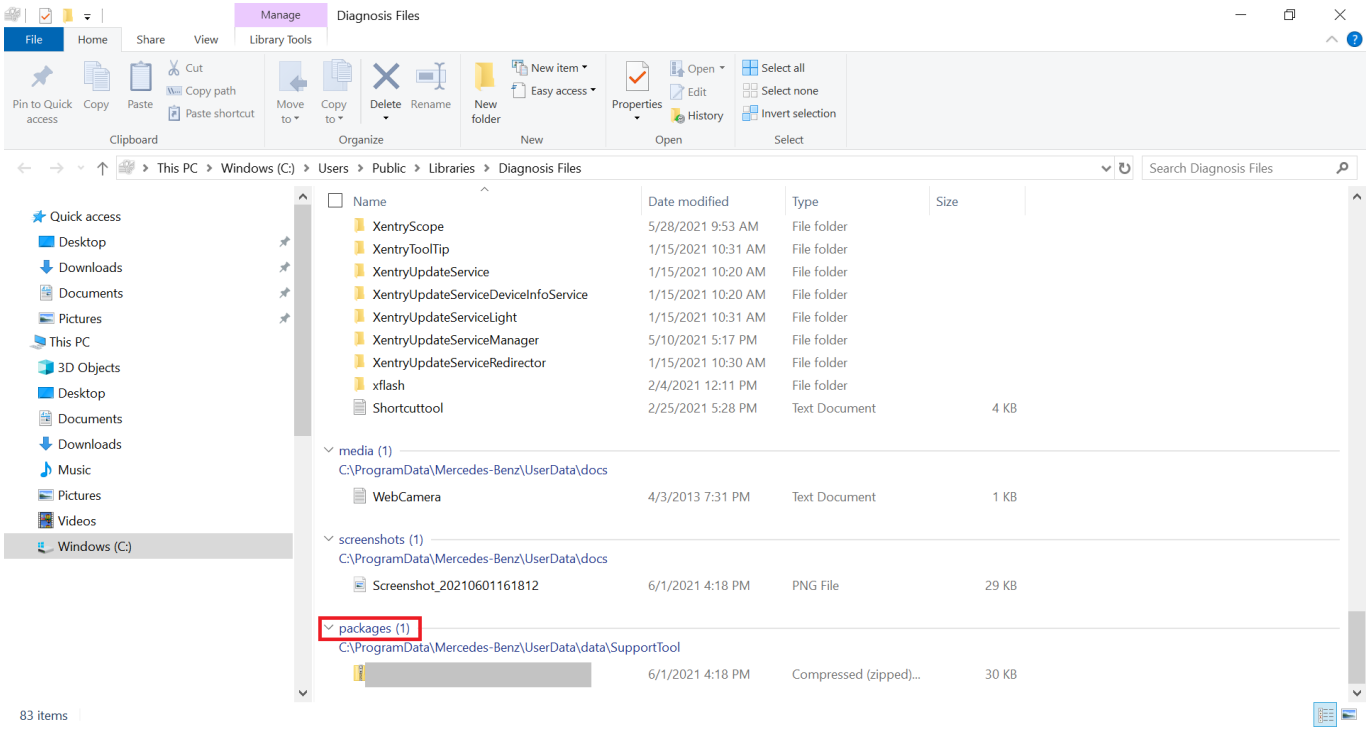


Fig. 169: Storage location for support packages

In the "Contact Support" tab, you can submit the support tickets you've created to the support team, create a new XSS ticket, or view the status of open support tickets.

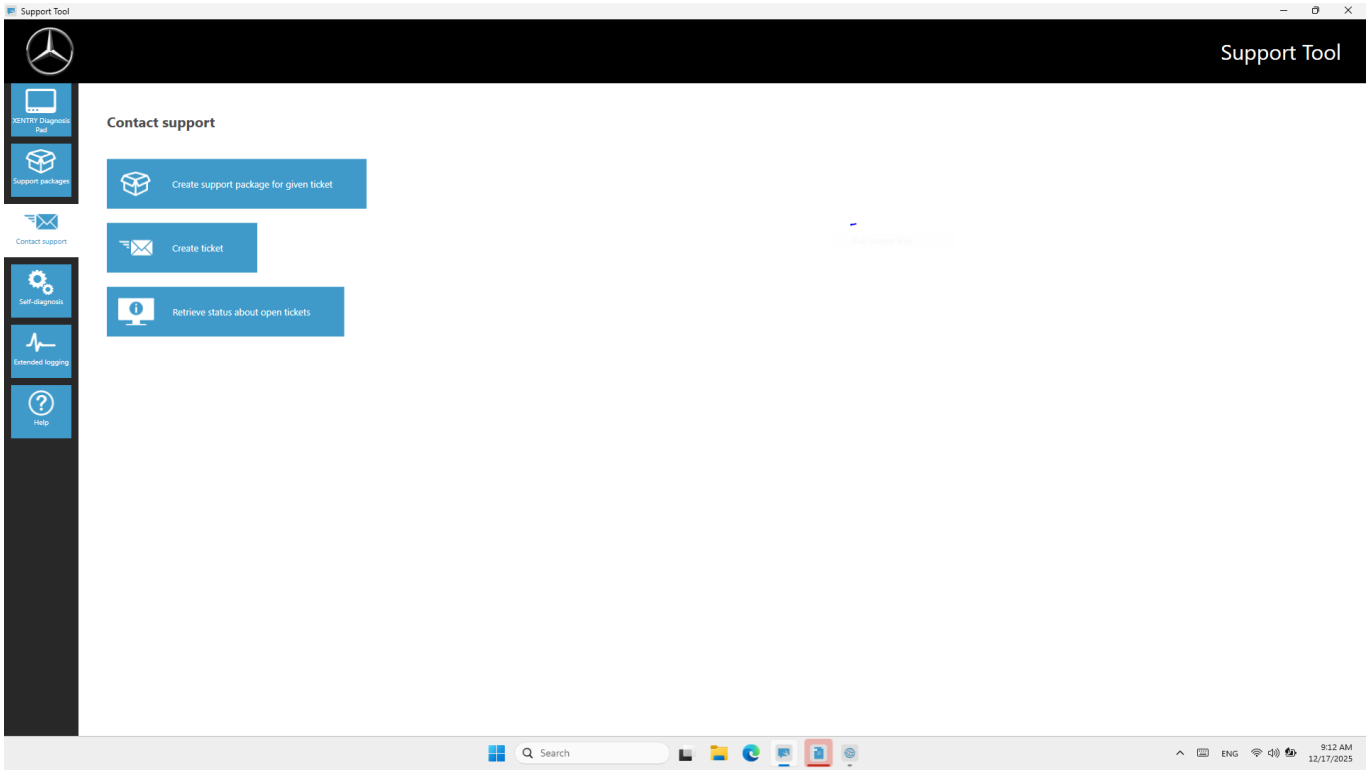


Fig. 170: Creating XSS tickets

In the "Self-Diagnosis" tab, you are able to diagnose all services and devices.

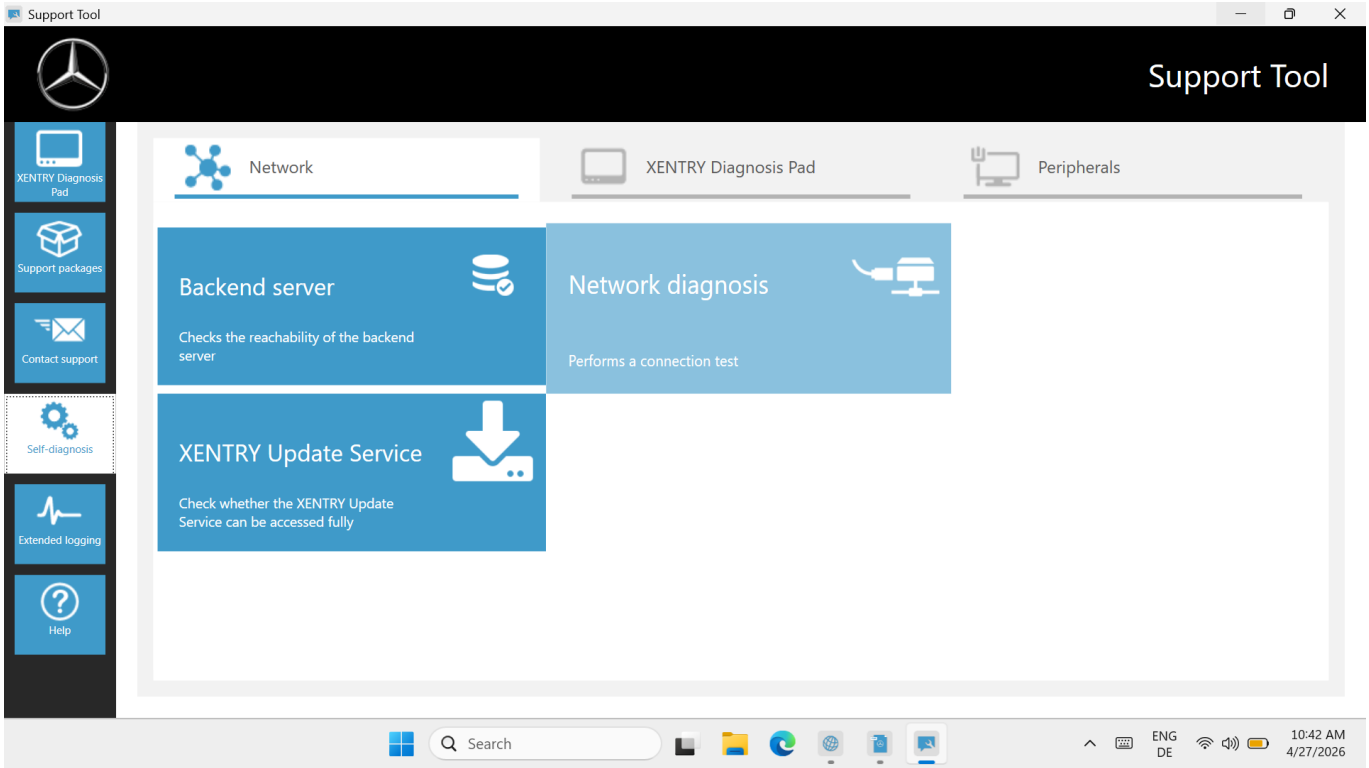


Fig. 171: Self-diagnosis

In the "Network" sub-tab, you can check the availability of the back end servers and XENTRY Update Service, as well as run a network diagnostic.

In the sub-tab "XENTRY Diagnosis Pad" You can run a Windows diagnostic, repair the hard drive, or view the tooltip history.

In the "Peripherals" sub-tab, you can run a VCI diagnostic test.

In the "Advanced Logging" tab, you can change the log level if prompted by support. To do this, click on the log level requested by Support and confirm your selection by clicking the "Set Log Level" button. You will then see a progress bar.

Change the log level only if explicitly instructed to do so by Support!

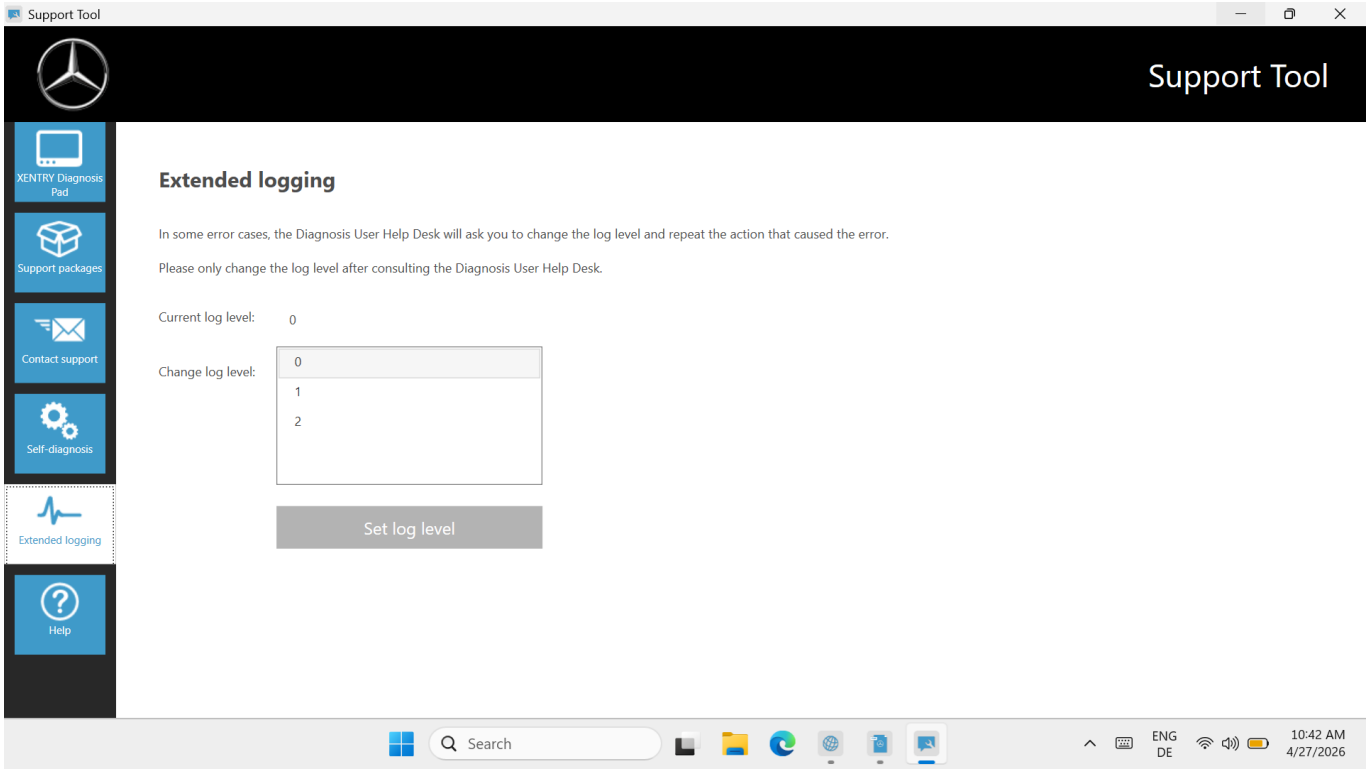


Fig. 172: Extended logging

In the "Help" tab, you'll find a button for this "XENTRY Portal" and a "Help" button for help documents, instructions, and release notes.

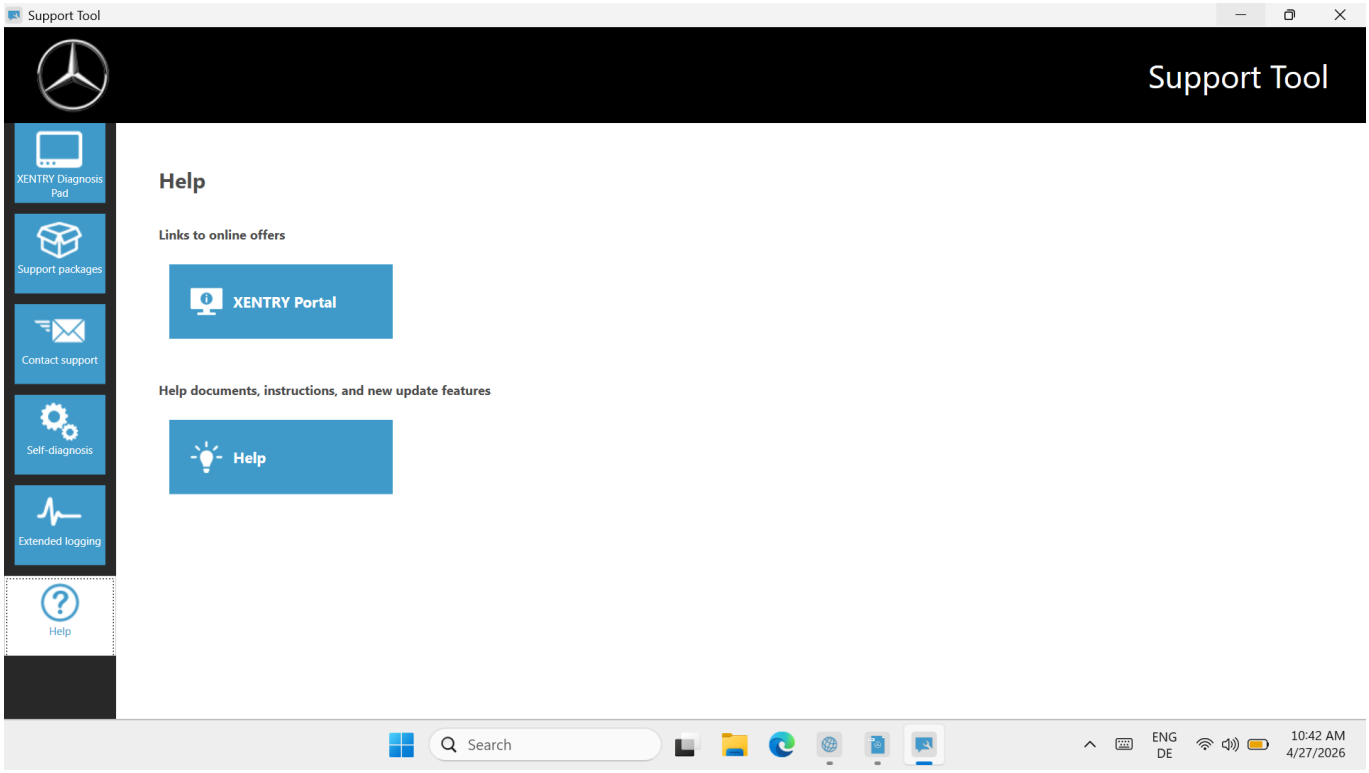

Support Tool
Support Tool
XENTRY Diagnosis Pad
Support packages
Contact support
Self-diagnosis
Extended logging
Help
Help
Links to online offers
XENTRY Portal
Help documents, instructions, and new update features
Help
Search
ENG
DE
10:42 AM
4/27/2026

Fig. 173: Help

10 Service & support

- To create an XSS ticket, we recommend using a tool for ticket generation. You can start this directly within the XENTRY Diagnosis Software. To do so, click on the speech bubble symbol at top right.

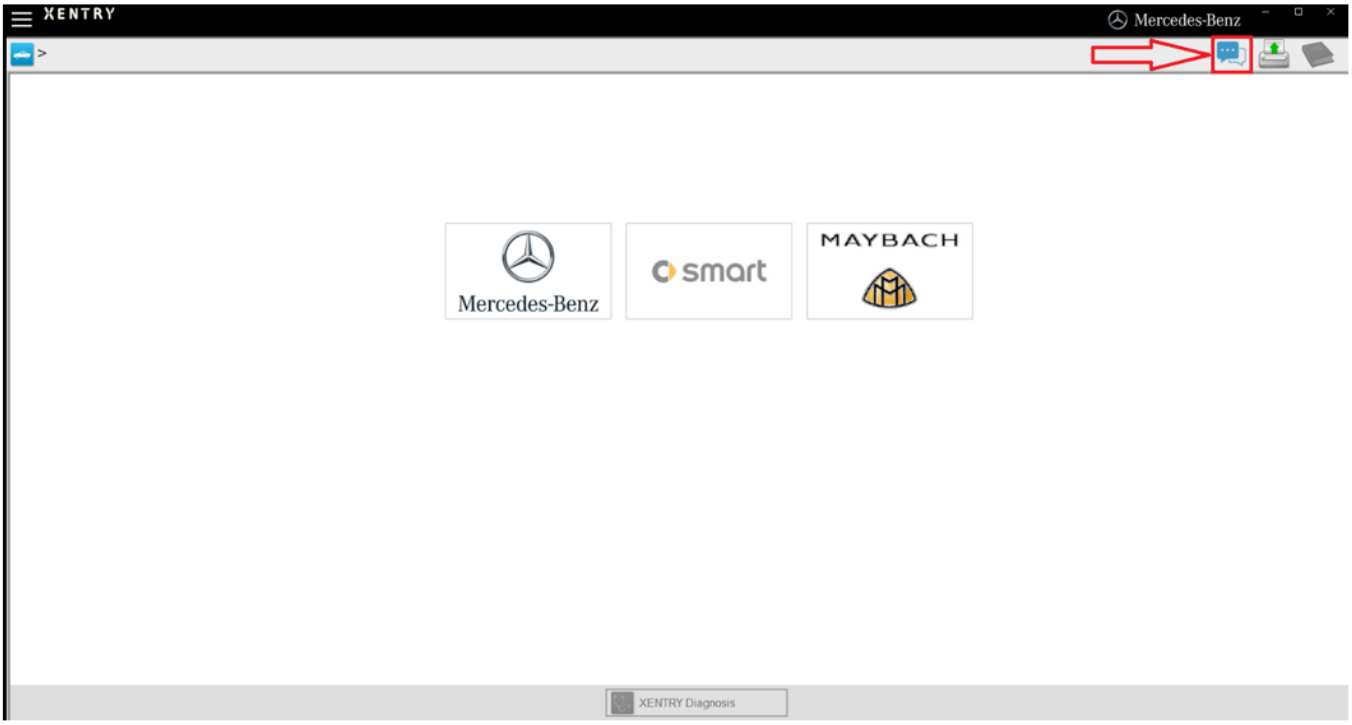


Fig. 174: Create XSS ticket in XENTRY Diagnosis

- If necessary, log on in the following window and then select the component for which you would like to create the XSS ticket.

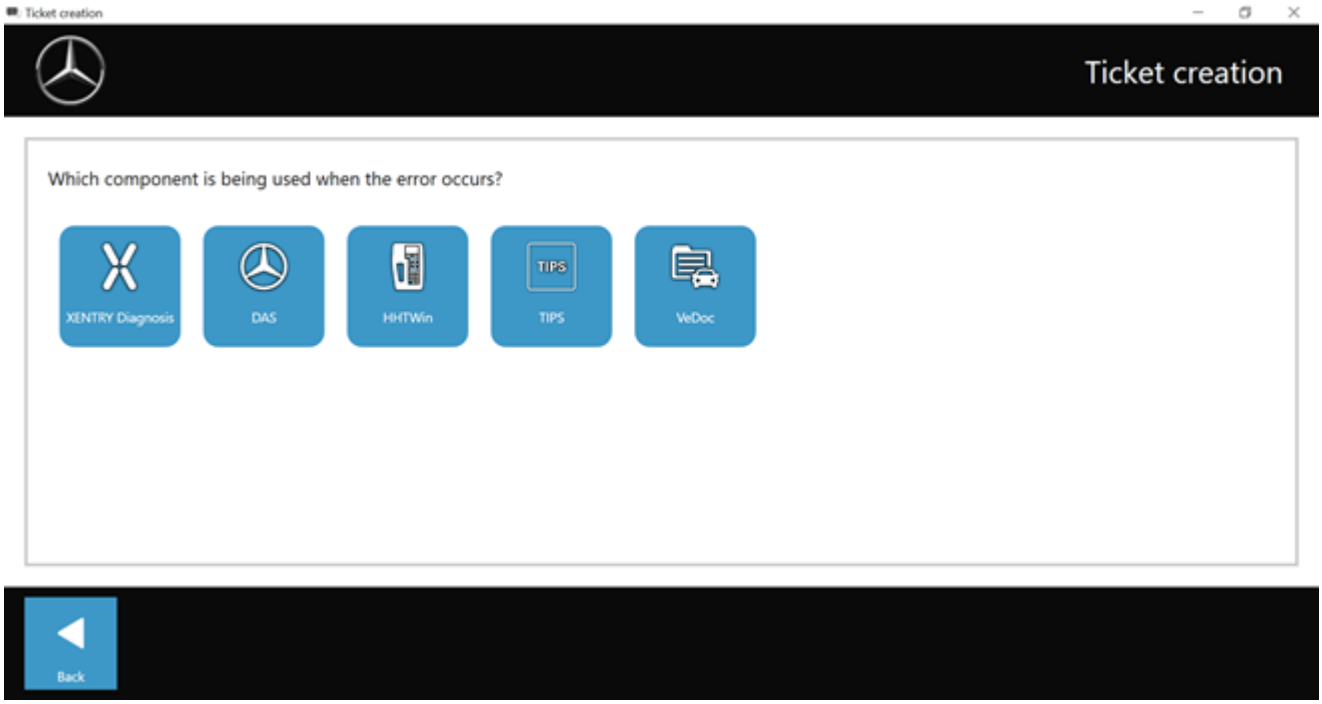


Fig. 175: XSS ticket component selection

Please answer all of the questions that you are asked during the process.

- Attach screenshots or videos. When sending the XSS ticket, the appropriate support package is created and attached automatically.

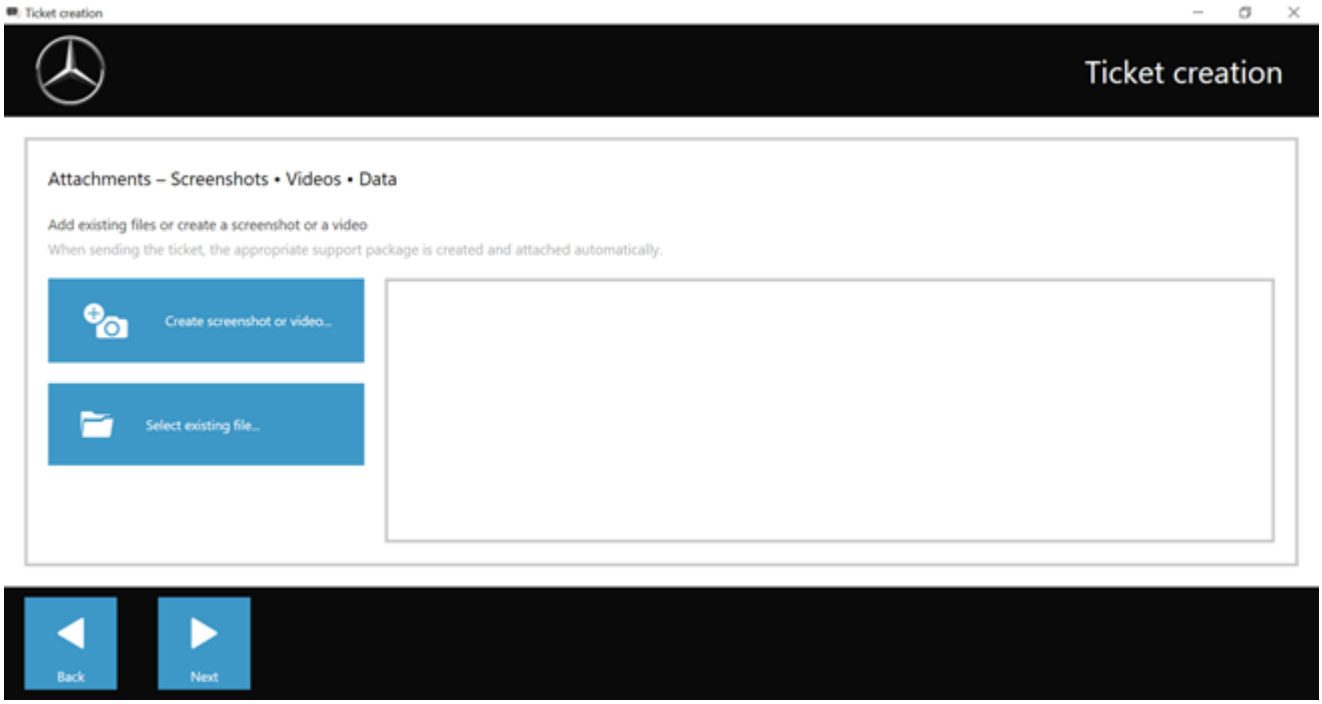


Fig. 176: XSS ticket file attachments

11 Windows licensing policies

11.1 Windows 10 licensing policies

MICROSOFT SOFTWARE LICENSE TERMS

WINDOWS OPERATING SYSTEM

IF YOU LIVE IN (OR IF YOUR PRINCIPAL PLACE OF BUSINESS IS IN) THE UNITED STATES, PLEASE READ THE BINDING ARBITRATION CLAUSE AND CLASS ACTION WAIVER IN SECTION 10. IT AFFECTS HOW DISPUTES ARE RESOLVED.

Thank you for choosing Microsoft!

Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or if a business where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft.

This agreement describes your rights and the conditions upon which you may use the Windows software. You should review the entire agreement, including any supplemental license terms that accompany the software and any linked terms, because all of the terms are important and together create this agreement that applies to you. You can review linked terms by pasting the (aka.ms/) link into a browser window.

By accepting this agreement or using the software, you agree to all of these terms. If you do not accept and comply with these terms, you may not use the software or its features. You may contact the device manufacturer or installer, or your retailer if you purchased the software directly, to determine its return policy and return the software or device for a refund or credit under that policy. You must comply with those policies. They might require you to return the software with the entire device on which the software is installed for a refund or credit.

Overview.

- Applicability. This agreement applies to the Windows software that is preinstalled on your device, or acquired from a retailer and installed by you, the media on which you received the software (if any), any fonts, icons, images or sound files included with the software, and also any Microsoft updates, upgrades, supplements or services for the software, unless other terms come with them. It also applies to Windows apps developed by Microsoft that provide functionality such as contacts, music, photos and news that are included with and are a part of Windows. If this agreement contains terms regarding a feature or service not available on your device, then those terms do not apply.
- Additional terms. Additional Microsoft and third-party terms may apply to your use of certain features, services and apps, depending on your device's capabilities, how it is configured, and how you use it. Please be sure to read them.
  - Some Windows apps provide an access point to, or rely on, online services. The use of those services is sometimes governed by separate terms and privacy policies, such as the Microsoft Services Agreement at (aka.ms/msa). You can view these terms and policies by looking at the service terms of use or the app's settings, as applicable. The services may not be available in all regions.
  - Microsoft, the manufacturer or installer may include additional apps, which will be subject to separate license terms.
  - The software includes Adobe Flash Player that is licensed under terms from Adobe Systems Incorporated at (aka.ms/adobeflash). Adobe and Flash are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
  - The software may include third-party programs that are licensed to you under this agreement, or under their own terms. License terms, notices and acknowledgments, if any, for the third-party programs can be viewed at (aka.ms/thirdpartynotices).

    To the extent included with Windows, Word, Excel, PowerPoint and OneNote are licensed for your personal, non-commercial use, unless you have commercial use rights under a separate agreement.

Installation and Use Rights.

- License. The software is licensed, not sold. Under this agreement, we grant you the right to install and run one instance of the software on your device (the licensed device), for use by one person at a time, so long as you comply with all the terms of this agreement. Updating or upgrading from non-genuine software with software from Microsoft or authorized sources does not make your original version or the updated/upgraded version genuine, and in that situation, you do not have a license to use the software.
- Device. In this agreement, "Device" means a hardware system (whether physical or virtual) with an internal storage device capable of running the software. A hardware partition or blade is considered to be a device.
- Restrictions. The manufacturer or installer and Microsoft reserve all rights (such as rights under intellectual property laws) not expressly granted in this agreement. For example, this license does not give you any right to, and you may not:
  - use or virtualize features of the software separately;
  - publish, copy (other than the permitted backup copy), rent, lease, or lend the software;
  - transfer the software (except as permitted by this agreement);
  - work around any technical restrictions or limitations in the software;

- use the software as server software, for commercial hosting, make the software available for simultaneous use by multiple users over a network, install the software on a server and allow users to access it remotely, or install the software on a device for use only by remote users;
- reverse engineer, decompile, or disassemble the software, or attempt to do so, except and only to the extent that the foregoing restriction is permitted by applicable law or by licensing terms governing the use of open-source components that may be included with the software; and
- when using Internet-based features you may not use those features in any way that could interfere with anyone else's use of them, or to try to gain access to or use any service, data, account, or network, in an unauthorized manner.

- Multi use scenarios.
  - Multiple versions. If when acquiring the software you were provided with multiple versions (such as 32-bit and 64-bit versions), you may install and activate only one of those versions at a time.
  - Multiple or pooled connections. Hardware or software you use to multiplex or pool connections, or reduce the number of devices or users that access or use the software, does not reduce the number of licenses you need. You may only use such hardware or software if you have a license for each instance of the software you are using.
  - Device connections. You may allow up to 20 other devices to access the software installed on the licensed device for the purpose of using the following software features: File services, print services, Internet information services, and Internet connection sharing and telephony services on the licensed device. You may allow any number of devices to access the software on the licensed device to synchronize data between devices. This section does not mean, however, that you have the right to install the software, or use the primary function of the software (other than the features listed in this section), on any of these other devices
  - Use in a virtualized environment. This license allows you to install only one instance of the software for use on one device, whether that device is physical or virtual. If you want to use the software on more than one virtual device, you must obtain a separate license for each instance.
  - Remote access. No more than once every 90 days, you may designate a single user who physically uses the licensed device as the licensed user. The licensed user may access the licensed device from another device using remote access technologies. Other users, at different times, may access the licensed device from another device using remote access technologies, but only on devices separately licensed to run the same or higher edition of this software.
  - Remote assistance. You may use remote assistance technologies to share an active session without obtaining any additional licenses for the software. Remote assistance allows one user to connect directly to another user's computer, usually to correct problems.
- Backup copy. You may make a single copy of the software for backup purposes, and may also use that backup copy to transfer the software if it was acquired as stand-alone software, as described in Section 4 below.

Privacy.

- Your privacy is important to us. Information on privacy and the Microsoft Privacy Statement is available at (aka.ms/privacy).

Transfer.

- The provisions of this section do not apply if you acquired the software as a consumer in Germany or in any of the countries listed on this site (aka.ms/transfer). In this case, any transfer of the software to a third party, and the right to use it, must comply with applicable law.
- Software preinstalled on device. If you acquired the software preinstalled on a device (and also if you upgraded from software preinstalled on a device), you may transfer the license to use the software directly to another user, only with the licensed device. The transfer must include the software and, if provided with the device, an authentic Windows label including the product key. Before any permitted transfer, the other party must agree that this agreement applies to the transfer and use of the software.
- Stand-alone software. If you acquired the software as stand-alone software (and also if you upgraded from software you acquired as stand-alone software), you may transfer the software to another device that belongs to you. You may also transfer the software to a device owned by someone else if (i) you are the first licensed user of the software and (ii) the new user agrees to the terms of this agreement. You may use the backup copy we allow you to make or the media that the software came on to transfer the software. Every time you transfer the software to a new device, you must remove the software from the prior device. You may not transfer the software to share licenses between devices.

Authorized Software and Activation.

- You are authorized to use this software only if you are properly licensed and the software has been properly activated with a genuine product key or by other authorized method. When you connect to the Internet while using the software, the software will automatically contact Microsoft or its affiliate to confirm the software is genuine and the license is associated with the licensed device. You can also activate the software manually by Internet or telephone. In either case, transmission of certain information will occur, and Internet, telephone and SMS service charges may apply. During activation (or reactivation that may be triggered by changes to your device's components), the software may determine that the installed instance of the software is counterfeit, improperly licensed or includes unauthorized changes. If activation fails the software will attempt to repair itself by replacing any tampered Microsoft software with genuine Microsoft software. You may also receive reminders to obtain a proper license for the software. You may not bypass or circumvent activation. To help determine if your software is genuine and whether you are properly licensed, see (aka.ms/genuine). Certain updates, support, and other services might only be offered to users of genuine Microsoft software.

Updates.

- The software periodically checks for system and app updates, and downloads and installs them for you. You may obtain updates only from Microsoft or authorized sources, and Microsoft may need to update your system to provide you with those updates. By accepting this agreement, you agree to receive these types of automatic updates without any additional notice.

Downgrade rights.

- If you acquired a device from a manufacturer or installer with a Professional version of Windows preinstalled on it, you may use either a Windows 8.1 Pro or Windows 7 Professional version, but only for so long as Microsoft provides support for that earlier version as set forth in (aka.ms/windowslifecycle). This agreement applies to your use of the earlier versions. If the earlier version includes different components, any terms for those components in the agreement that comes with the earlier version apply to your use of such components. Neither the manufacturer or installer, nor Microsoft, is obligated to supply earlier versions to you. You must obtain the earlier version separately. You may be charged a fee for this. At any time, you may replace an earlier version with the version you originally acquired.

Geographic and Export Restrictions.

- If your software is restricted for use in a particular geographic region, then you may activate the software only in that region. You must also comply with all domestic and international export laws and regulations that apply to the software, which include restrictions on destinations, end users, and end use. For further information on geographic and export restrictions, visit (aka.ms/georestrict) and (aka.ms/exporting).

Support and Refund Procedures.

- For software preinstalled on a device. For the software generally, contact the device manufacturer or installer for support options. Refer to the support number provided with the software delivery package. For updates and supplements obtained directly from Microsoft, Microsoft may provide limited support services for properly licensed software as described at (aka.ms/mssupport). If you are seeking a refund, contact the manufacturer or installer to determine its refund policies. You must comply with those policies. This might require you to return the software with the entire device on which the software is installed for a refund.
- For software acquired from a retailer. Microsoft provides limited support services for properly licensed software as described at (aka.ms/mssupport). If you purchased the software from a retailer and are seeking a refund, and you cannot obtain one where you acquired the software, contact Microsoft for information about Microsoft's refund policies. See (aka.ms/msoffices).

Binding Arbitration and Class Action Waiver if You Live in (or, if a Business, Your Principal Place of Business is in) the United States. We hope we never have a dispute. But if we do, you and we agree to try for 60 days to resolve it informally. If we can't, you and we agree to binding individual arbitration before the American Arbitration Association ("AAA") under the Federal Arbitration Act ("FAA"), and not to sue in court in front of a judge or jury. Instead, a neutral arbitrator will decide and the arbitrator's decision will be final except for a limited right of appeal under the FAA. Class action lawsuits, class-wide arbitrations, private attorney-general actions, and any other proceeding where someone acts in a representative capacity aren't allowed. Nor is combining individual proceedings without the consent of all parties. "We", "our" and "us" includes Microsoft, the device manufacturer, and software installer.

- Disputes covered – everything except IP. The term "dispute" is as broad as it can be. It includes any claim or controversy between you and the manufacturer or installer, or you and Microsoft, concerning the software, its price, or this agreement, under any legal theory including contract, warranty, tort, statute, or regulation, except disputes relating to the enforcement or validity of your, your licensors', our, or our licensors' intellectual property rights.
- Mail a Notice of Dispute first. If you have a dispute and our customer service representatives can't resolve it, send a Notice of Dispute by U.S. Mail to the manufacturer or installer, ATTN: LEGAL DEPARTMENT. If your dispute is with Microsoft, mail it to Microsoft Corporation, ATTN: LCA ARBITRATION, One Microsoft Way, Redmond, WA 98052-6399, USA. Tell us your name, address, how to contact you, what the problem is, and what you want. A form is available at (aka.ms/disputeform). We'll do the same if we have a dispute with you. After 60 days, you or we may start an arbitration if the dispute is unresolved.

- Small claims court option. Instead of mailing a Notice of Dispute, and if you meet the court's requirements, you may sue us in small claims court in your county of residence (or, if a business, your principal place of business) or our principal place of business – King County, Washington, USA if your dispute is with Microsoft. We hope you'll mail a Notice of Dispute and give us 60 days to try to work it out, but you don't have to before going to small claims court.
- Arbitration procedure. The AAA will conduct any arbitration under its Commercial Arbitration Rules (or if you are an individual and use the software for personal or household use, or if the value of the dispute is $75,000 USD or less whether or not you are an individual or how you use the software, its Consumer Arbitration Rules). For more information, see (aka.ms/adr) or call 1-800-778-7879. To start an arbitration, submit the form available at (aka.ms/arbitration) to the AAA; mail a copy to the manufacturer or installer (or to Microsoft if your dispute is with Microsoft). In a dispute involving $25,000 USD or less, any hearing will be telephonic unless the arbitrator finds good cause to hold an in-person hearing instead. Any in-person hearing will take place in your county of residence (or, if a business, your principal place of business) or our principal place of business – King County, Washington, USA if your dispute is with Microsoft. You choose. The arbitrator may award the same damages to you individually as a court could. The arbitrator may award declaratory or injunctive relief only to you individually to satisfy your individual claim.
- Arbitration fees and payments.
  - Disputes involving $75,000 USD or less. The manufacturer or installer (or Microsoft if your dispute is with Microsoft) will promptly reimburse your filing fees and pay the AAA's and arbitrator's fees and expenses. If you reject our last written settlement offer made before the arbitrator was appointed, your dispute goes all the way to an arbitrator's decision (called an "award"), and the arbitrator awards you more than this last written offer, the manufacturer or installer (or Microsoft if your dispute is with Microsoft) will: (1) pay the greater of the award or $1,000 USD; (2) pay your reasonable attorney's fees, if any; and (3) reimburse any expenses (including expert witness fees and costs) that your attorney reasonably accrues for investigating, preparing, and pursuing your claim in arbitration. The arbitrator will determine the amounts unless you and we agree on them.
  - Disputes involving more than $75,000 USD. The AAA rules will govern payment of filing fees and the AAA's and arbitrator's fees and expenses.
  - Disputes involving any amount. If you start an arbitration we won't seek our AAA or arbitrator's fees and expenses, or your filing fees we reimbursed, unless the arbitrator finds the arbitration frivolous or brought for an improper purpose. If we start an arbitration we will pay all filing, AAA, and arbitrator's fees and expenses. We won't seek our attorney's fees or expenses from you in any arbitration. Fees and expenses are not counted in determining how much a dispute involves.
- Must file within one year. You and we must file in small claims court or arbitration any claim or dispute (except intellectual property disputes – see Section 10.a.) within one year from when it first could be filed. Otherwise, it's permanently barred.
- Severability. If the class action waiver is found to be illegal or unenforceable as to all or some parts of a dispute, those parts won't be arbitrated but will proceed in court, with the rest proceeding in arbitration. If any other provision of Section 10 is found to be illegal or unenforceable, that provision will be severed but the rest of Section 10 still applies.
- Conflict with AAA rules. This agreement governs if it conflicts with the AAA's Commercial Arbitration Rules or Consumer Arbitration Rules.
- Microsoft as party or third-party beneficiary. If Microsoft is the device manufacturer or if you acquired the software from a retailer, Microsoft is a party to this agreement. Otherwise, Microsoft is not a party but is a third-party beneficiary of your agreement with the manufacturer or installer to resolve disputes through informal negotiation and arbitration.

Governing law.

- The laws of the state or country where you live (or, if a business, where your principal place of business is located) govern all claims and disputes concerning the software, its price, or this agreement, including breach of contract claims and claims under state consumer protection laws, unfair competition laws, implied warranty laws, for unjust enrichment, and in tort, regardless of conflict of law principles, except that the FAA governs all provisions relating to arbitration.

Consumer rights, regional variations.

- This agreement describes certain legal rights. You may have other rights, including consumer rights, under the laws of your state or country/region. You may also have rights with respect to the party from which you acquired the software. This agreement does not change those other rights if the laws of your state or country do not permit it to do so. For example, if you acquired the software in one of the below regions, or mandatory country law applies, then the following provisions apply to you:
- Australia. References to "Limited warranty" are references to the warranty provided by Microsoft or the manufacturer or installer. This warranty is given in addition to other rights and remedies you may have under law, including your rights and remedies in accordance with the statutory guarantees under the Australian Consumer Law. In this section, "goods" refers to the software for which Microsoft or the manufacturer or installer provides the express warranty. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
- Canada. You may stop receiving updates on your device by turning off Internet access. If and when you re-connect to the Internet, the software will resume checking for and installing updates.
- European Union. The academic use restriction in Section 13.d(i) below does not apply in the jurisdictions listed on this site: (aka.ms/academicuse).

- Germany and Austria.
  - Warranty. The properly licensed software will perform substantially as described in any Microsoft materials that accompany the software. However, the manufacturer or installer, and Microsoft, give no contractual guarantee in relation to the licensed software.
  - Limitation of liability. In case of intentional conduct, gross negligence, claims based on the Product Liability Act, as well as in case of death or personal or physical injury, the manufacturer or installer, or Microsoft is liable according to the statutory law. Subject to the preceding sentence, the manufacturer or installer, or Microsoft will only be liable for slight negligence if the manufacturer or installer, or Microsoft is in breach of such material contractual obligations, the fulfillment of which facilitate the due performance of this agreement, the breach of which would endanger the purpose of this agreement and the compliance with which a party may constantly trust in (so-called "cardinal obligations"). In other cases of slight negligence, the manufacturer or installer, or Microsoft will not be liable.
- Other regions. See (aka.ms/variations) for a current list of regional variations.

Additional notices.

- Networks, data and Internet usage. Some features of the software and services accessed through the software may require your device to access the Internet. Your access and usage (including charges) may be subject to the terms of your cellular or Internet provider agreement. Certain features of the software may help you access the Internet more efficiently, but the software's usage calculations may be different from your service provider's measurements. You are always responsible for (i) understanding and complying with the terms of your own plans and agreements, and (ii) any issues arising from using or accessing networks, including public/open networks. You may use the software to connect to networks, and to share access information about those networks, only if you have permission to do so.
- H.264/AVC and MPEG-4 visual standards and VC-1 video standards. The software may include H.264/MPEG-4 AVC and/or VC-1 decoding technology. MPEG LA, L.L.C. requires this notice: THIS PRODUCT IS LICENSED UNDER THE AVC, THE VC-1, AND THE MPEG-4 PART 2 VISUAL PATENT PORTFOLIO LICENSES FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE ABOVE STANDARDS ("VIDEO STANDARDS") AND/OR (ii) DECODE AVC, VC-1, AND MPEG-4 PART 2 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE SUCH VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE (AKA.MS/MPEGLA).
- Malware protection. Microsoft cares about protecting your device from malware. The software will turn on malware protection if other protection is not installed or has expired. To do so, other anti-malware software will be disabled or may have to be removed.
- Versions with limited rights. If the software version you acquired is marked or otherwise intended for a specific or limited use, then you may only use it as specified. You may not use such versions of the software for commercial, non-profit, or revenue-generating activities.
  - Academic. For academic use, you must be a student, faculty or staff of an educational institution at the time of purchase.
  - Evaluation. For evaluation (or test or demonstration) use, you may not sell the software, use it in a live operating environment, or use it after the evaluation period. Notwithstanding anything to the contrary in this agreement, evaluation software is provided "AS IS".
  - NFR. You may not sell software marked as "NFR" (Not for Resale).

Entire Agreement. This agreement (together with the printed paper license terms or other terms accompanying any software supplements, updates, and services that are provided by the manufacturer or installer, or Microsoft, and that you use), and the terms contained in web links listed in this agreement, are the entire agreement for the software and any such supplements, updates, and services (unless the manufacturer or installer, or Microsoft provides other terms with such supplements, updates, or services). You can review this agreement after your software is running by going to (aka.ms/useterms) or going to Settings - System - About within the software. You can also review the terms at any of the links in this agreement by typing the URLs into a browser address bar, and you agree to do so. You agree that you will read the terms before using the software or services, including any linked terms. You understand that by using the software and services, you ratify this agreement and the linked terms. There are also informational links in this agreement. The links containing notices and binding terms are:

- Microsoft Services Agreement (aka.ms/msa)
- Adobe Flash Player License Terms (aka.ms/adobeflash)

****

LIMITED WARRANTY

The device manufacturer or installer warrants that properly licensed software will perform substantially as described in any Microsoft materials that accompany the software. If you obtain updates or supplements directly from Microsoft during the 90-day term of this limited warranty, Microsoft provides this limited warranty for them. This limited warranty does not cover problems that you cause, that arise when you fail to follow instructions, or that are caused by events beyond the reasonable control of the manufacturer or installer, or Microsoft. The limited warranty starts when the first user acquires the software and lasts for 90 days. Any supplements, updates, or replacement software that you may receive from the manufacturer or installer, or Microsoft during that 90-day period are also covered, but only for the remainder of that 90-day period or for 30 days, whichever is longer. Transferring the software will not extend the limited warranty.

The manufacturer or installer, and Microsoft give no other express warranties, guarantees, or conditions. The manufacturer or installer, and Microsoft exclude all implied warranties and conditions, including those of merchantability, fitness for a particular purpose, and non-infringement. If your local law does not allow the exclusion of implied warranties, then any implied warranties, guarantees, or conditions last only during the term of the limited warranty, and are limited as much as your local law allows. If your local law requires a longer limited warranty term, despite this agreement, then that longer term will apply, but you can recover only the remedies this agreement allows.

If the manufacturer or installer, or Microsoft breaches its limited warranty, it will, at its election, either: (i) repair or replace the software at no charge, or (ii) accept return of the software (or at its election the device on which the software was preinstalled) for a refund of the amount paid, if any. The manufacturer or installer (or Microsoft if you acquired them directly from Microsoft), may also repair or replace supplements, updates, and replacement software or provide a refund of the amount you paid for them, if any. These are your only remedies for breach of warranty. This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state or country to country.

Except for any repair, replacement, or refund the manufacturer or installer, or Microsoft may provide, you may not under this limited warranty, under any other part of this agreement, or under any theory recover any damages or other remedy, including lost profits or direct, consequential, special, indirect, or incidental damages. The damage exclusions and remedy limitations in this agreement apply even if repair, replacement or a refund does not fully compensate you for any losses, if the manufacturer or installer, or Microsoft knew or should have known about the possibility of the damages, or if the remedy fails of its essential purpose. Some states and countries do not allow the exclusion or limitation of incidental, consequential, or other damages. So those limitations or exclusions may not apply to you. If your local law allows you to recover damages from the manufacturer or installer, or Microsoft, even though this agreement does not, you cannot recover more than you paid for the software (or up to $50 USD if you acquired the software for no charge). WARRANTY PROCEDURES

For service or refund, you must provide your proof of purchase and comply with Microsoft's return policies. These may require you to uninstall the software and return it to Microsoft, or to return the software with the entire Microsoft brand device on which the software is installed; the Certificate of Authenticity (COA) label including the product key (if provided with your device) must remain affixed.

Contact the manufacturer or installer at the address or toll-free telephone number provided with your device to find out how to obtain warranty service for the software. If Microsoft is your device manufacturer or if you acquired the software from a retailer, contact Microsoft at:

1. United States and Canada. For warranty service or information about how to obtain a refund for software acquired in the United States or Canada, contact Microsoft via telephone at (800) MICROSOFT; via mail at Microsoft Customer Service and Support, One Microsoft Way, Redmond, WA 98052-6399, USA; or visit (aka.ms/nareturns).
2. Europe, Middle East, and Africa. If you acquired the software in Europe, the Middle East, or Africa, contact either Microsoft Ireland Operations Limited, Customer Care Centre, Atrium Building Block B, Carmenhall Road, Sandyford Industrial Estate, Dublin 18, Ireland, or the Microsoft affiliate serving your country (see aka.ms/msoffices).
3. Australia. If you acquired the software in Australia, contact Microsoft to make a claim at 13 20 58; or Microsoft Pty Ltd, 1 Epping Road, North Ryde NSW 2113 Australia.
4. Other countries. If you acquired the software in another country, contact the Microsoft affiliate serving your country (aka.ms/msoffices).

11.2 Windows 11 licensing policies

The licensing conditions for Windows 11 can be called up directly on the Pad as "Microsoft Software Licensing Conditions". Proceed as follows:

1. Open the Windows Start menu, for example by clicking on the Windows icon in the taskbar or pressing the Windows key on the keyboard.

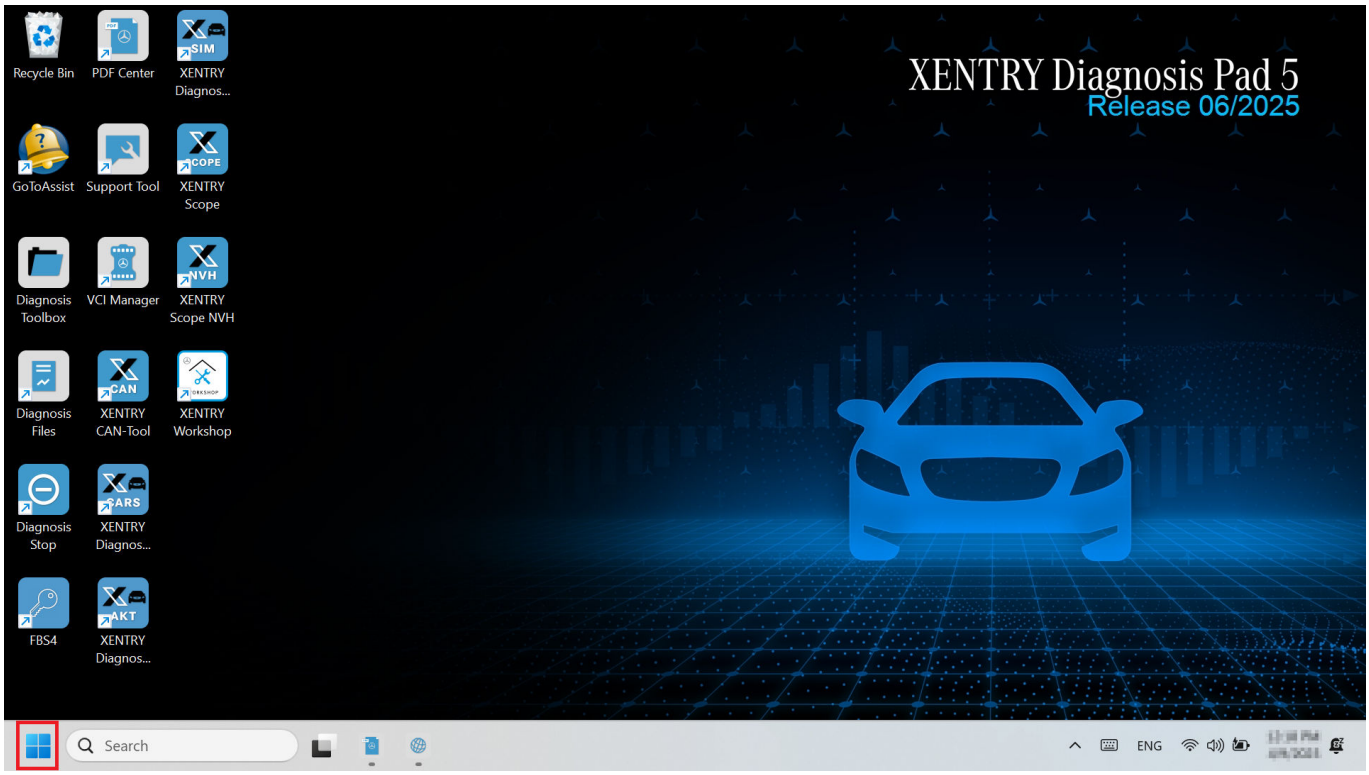


Fig. 177: Windows 11 Start menu

2. In the Windows Start menu, click on the "Settings" gearwheel icon.

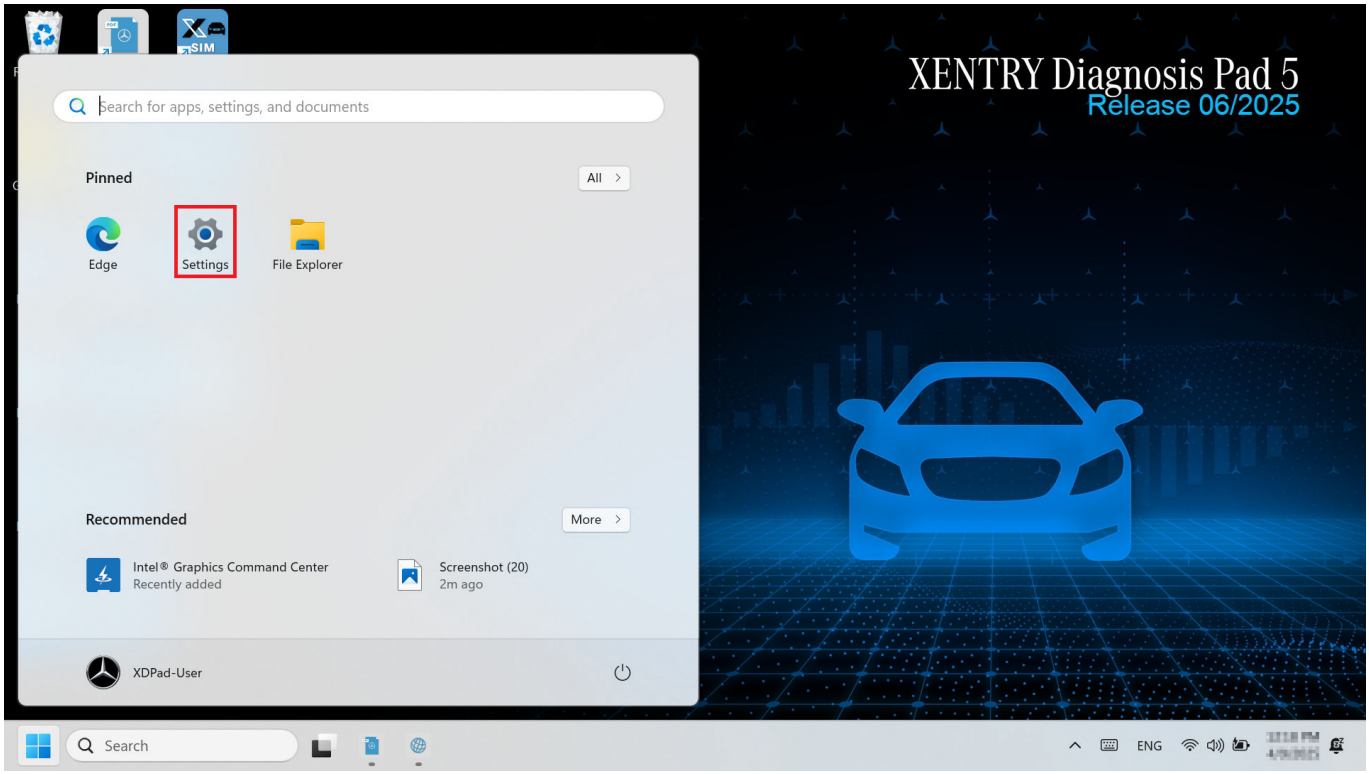


Fig. 178: Pad settings

3. The Windows settings window will now open. Click on "System" at the top left.

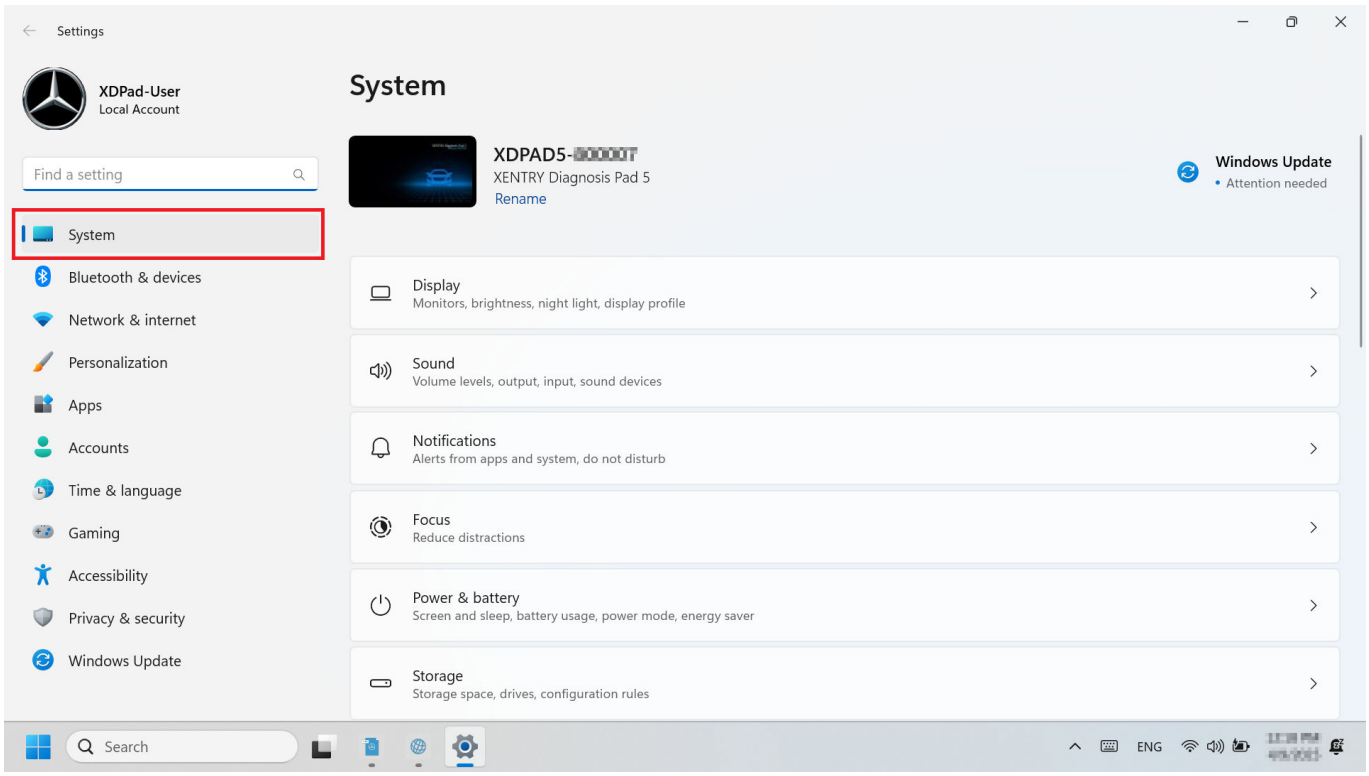


Fig. 179: System

4. In the list of possible system settings, scroll to the bottom and select "Info" (device specifications, rename PC, Windows specifications).

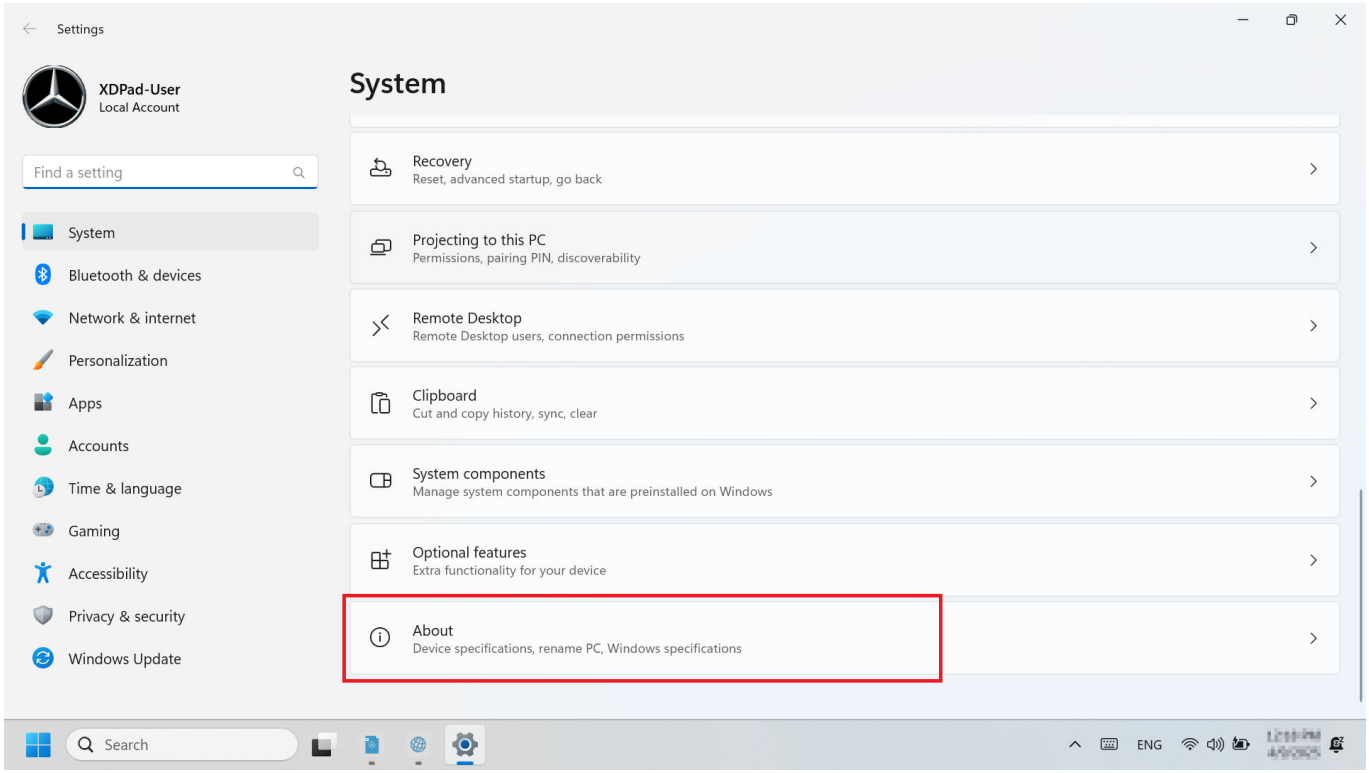


Fig. 180: Info

5. In the system information displayed, scroll down a little until you see the "Windows specifications" section. Here you can click on "Microsoft Software Licensing Conditions" and then read them in a new window. The Microsoft service contract can also be viewed here and opens in the browser (an Internet connection is required).

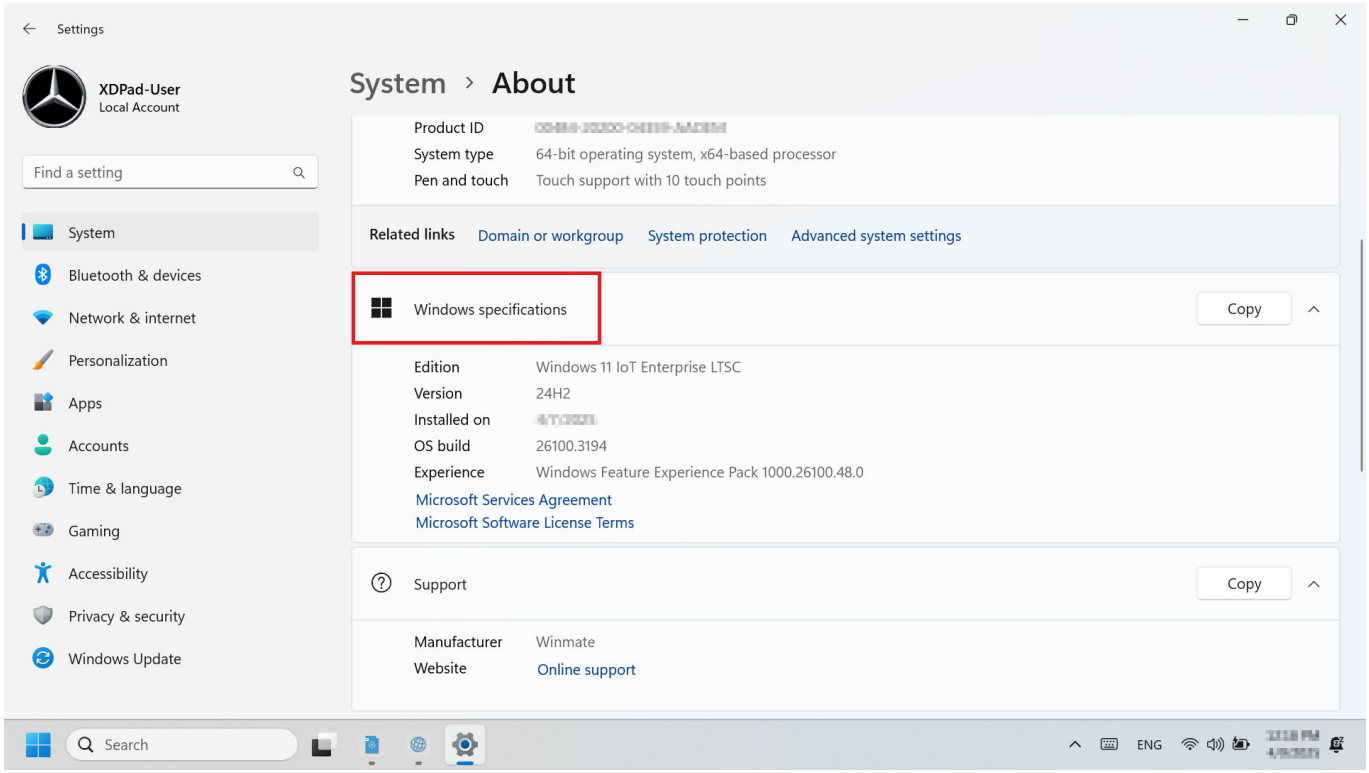


Fig. 181: Microsoft software licensing conditions

12 WLAN certifications

Country	XENTRY Diagnosis VCI	XENTRY Diagnosis Pad 2
Afghanistan	Not certified	Certified
Egypt	Certified	Certified
Åland Islands	Not certified	Certified
Albania	Certified	Certified
Algeria	Certified	Certified
Amer. Virgin Islands	Certified	Certified
Amer. Oceania	Certified	Certified
Andorra	Certified	Certified
Angola	Not certified	Certified
Antigua/Barbuda	Certified	Certified
Equatorial Guinea	Not certified	Certified
Argentina	Certified	Certified
Armenia	Certified	Certified
Aruba	Not certified	Certified
Azerbaijan	Certified	Certified
Ethiopia	Not certified	Certified
Austr. Oceania	Certified	Certified
Australia	Certified	Certified
Azores	Certified	Certified
Bahamas	Certified	Certified
Bahrain	Not certified	Certified
Bangladesh	Certified	Certified
Barbados	Not certified	Certified
Belgium	Certified	Certified
Belize	Not certified	Certified
Benin	Not certified	Certified
Bermuda	Certified	Certified
Bhutan	Not certified	Certified
Bolivia	Not certified	Certified
Bonaire	Not certified	Certified
Bosnia-Herzegovina	Certified	Certified
Botswana	Not certified	Certified
Brazil	Certified	Certified
Brit. Virgin Islands	Certified	Certified
Brit. Ind. Ocean Territory	Certified	Certified
Brunei	Certified	Certified
Bulgaria	Certified	Certified
Burkina Faso	Certified	Certified
Burundi	Not certified	Certified
Ceuta/Melilla	Certified	Certified
Chile	Certified	Certified
China, PR	Certified	Certified
Costa Rica	Not certified	Certified
Denmark	Certified	Certified
Dem. Republic of Congo	Not certified	Certified
Germany	Certified	Certified
Dominica	Certified	Certified
Dominican Republic	Certified	Certified
Djibouti	Not certified	Certified
Ecuador	Not certified	Certified
El Salvador	Certified	Certified

Country	XENTRY Diagnosis VCI	XENTRY Diagnosis Pad 2
Côte d'Ivoire (Ivory Coast)	Not certified	Certified
Eritrea	Not certified	Certified
Estonia	Certified	Certified
Falkland Islands	Certified	Certified
Faroe Islands	Not certified	Certified
Fiji	Not certified	Certified
Finland	Certified	Certified
France	Certified	Certified
French Polynesia	Certified	Certified
French Guiana	Certified	Certified
Gabon	Certified	Certified
Gambia	Not certified	Certified
Georgia	Certified	Certified
Ghana	Certified	Certified
Gibraltar	Certified	Certified
Grenada	Certified	Certified
Greece	Certified	Certified
Greenland	Certified	Certified
United Kingdom	Certified	Certified
Guadeloupe	Not certified	Certified
Guatemala	Not certified	Certified
Guernsey	Certified	Certified
Republic of Guinea	Not certified	Certified
Guinea-Bissau	Not certified	Certified
Guyana Republic	Not certified	Certified
Haiti	Not certified	Certified
Honduras	Not certified	Certified
Hong Kong	Certified	Certified
India	Certified	Certified
Indonesia	Certified	Certified
Iraq	Not certified	Certified
Iran	Not certified	Not certified
Ireland	Certified	Certified
Iceland	Certified	Certified
Isle of Man	Certified	Certified
Israel	Certified	Certified
Italy	Certified	Certified
Jamaica	Not certified	Certified
Japan	Certified	Certified
Yemen	Certified	Certified
Jersey	Certified	Certified
Jordan	Certified	Certified
Cayman Islands	Certified	Certified
Cambodia	Not certified	Certified
Cameroon	Not certified	Certified
Canada	Certified	Certified
Canary Islands	Certified	Certified
Cape Verde	Certified	Certified
Kazakhstan	Certified	Certified
Qatar	Certified	Certified
Kenya	Certified	Certified
Kyrgyzstan	Not certified	Certified
Kiribati	Not certified	Not certified

Country	XENTRY Diagnosis VCI	XENTRY Diagnosis Pad 2
Colombia	Certified	Certified
Comoros	Not certified	Certified
Congo	Not certified	Certified
Korea Rep. (South)	Certified	Certified
Korea PDR (North)	Not certified	Not certified
Croatia	Certified	Certified
Cuba	Not certified	Not certified
Kuwait	Not certified	Certified
Laos	Certified	Certified
Lesotho	Not certified	Certified
Latvia	Certified	Certified
Lebanon	Certified	Certified
Liberia	Not certified	Certified
Libya	Not certified	Certified
Liechtenstein	Certified	Certified
Lithuania	Certified	Certified
Luxembourg	Certified	Certified
Macao	Not certified	Certified
Madagascar	Not certified	Certified
Madeira	Certified	Certified
Malawi	Certified	Certified
Malaysia	Not certified	Certified
Maldives	Not certified	Certified
Mali	Not certified	Certified
Malta	Certified	Certified
Morocco	Certified	Certified
Marshall Islands	Certified	Certified
Martinique	Certified	Certified
Mauritania	Not certified	Certified
Mauritius	Not certified	Certified
Mayotte	Certified	Certified
Macedonia	Certified	Certified
Mexico	Certified	Certified
Micronesia	Certified	Certified
Moldova	Certified	Not certified
Mongolia	Certified	Certified
Montenegro	Certified	Certified
Mozambique	Not certified	Certified
Myanmar (Burma)	Not certified	Certified
Namibia	Not certified	Certified
Nauru	Not certified	Certified
Nepal	Not certified	Certified
New Caledonia	Certified	Certified
New Zeal. Oceania	Certified	Certified
New Zealand	Certified	Certified
Nicaragua	Certified	Certified
Netherlands	Certified	Certified
Niger	Not certified	Certified
Nigeria	Certified	Certified
Curaçao	Certified	Certified
Sint Maarten	Certified	Certified
Northern Cyprus	Certified	Certified
Norway	Certified	Certified

Country	XENTRY Diagnosis VCI	XENTRY Diagnosis Pad 2
Oman	Not certified	Certified
Austria	Certified	Certified
Pakistan	Certified	Certified
Palestinian territories	Not certified	Not certified
Panama	Certified	Certified
Papua New Guinea	Not certified	Certified
Paraguay	Not certified	Certified
Peru	Certified	Certified
Philippines	Certified	Certified
Pitcairn Islands	Certified	Certified
Poland	Certified	Certified
Portugal	Certified	Certified
Puerto Rico	Certified	Certified
Réunion	Certified	Certified
Rwanda	Not certified	Certified
Romania	Certified	Certified
Russia	Certified	Certified
Saint-Martin	Certified	Certified
Solomon Islands	Certified	Certified
Zambia	Certified	Certified
Samoa	Not certified	Certified
Saint Barthélemy	Not certified	Certified
São Tomé and Príncipe	Not certified	Certified
Saudi Arabia	Certified	Certified
Sweden	Certified	Certified
Switzerland	Certified	Certified
Senegal	Not certified	Certified
Serbia	Certified	Certified
Seychelles	Certified	Certified
Sierra Leone	Certified	Certified
Zimbabwe	Not certified	Certified
Singapore	Certified	Certified
Sint Maarten	Certified	Certified
Slovak Republic	Certified	Certified
Slovenia	Certified	Certified
Somalia	Not certified	Certified
Spain	Certified	Certified
Sri Lanka	Not certified	Certified
Saint Helena	Certified	Certified
Saint Lucia	Not certified	Certified
Saint Pierre and Miquelon	Certified	Certified
Saint Vincent and the Grenadines	Not certified	Certified
South Africa	Certified	Certified
Sudan	Not certified	Certified
South Sudan	Not certified	Certified
Suriname	Not certified	Certified
Swaziland	Not certified	Certified
Syria	Not certified	Not certified
Tajikistan	Not certified	Certified
Taiwan	Certified	Certified
Tanzania	Certified	Certified
Thailand	Not certified	Certified
Timor-Leste	Not certified	Certified

Country	XENTRY Diagnosis VCI	XENTRY Diagnosis Pad 2
Togo	Not certified	Certified
Tonga	Not certified	Certified
Trinidad and Tobago	Not certified	Certified
Chad	Not certified	Certified
Czech Republic	Certified	Certified
Turkey	Certified	Certified
Tunisia	Not certified	Certified
Turkmenistan	Not certified	Certified
Turks and Caicos Islands	Certified	Certified
Tuvalu	Not certified	Certified
Uganda	Not certified	Certified
Ukraine	Certified	Certified
Hungary	Certified	Certified
Uruguay	Certified	Certified
USA	Certified	Certified
Uzbekistan	Not certified	Not certified
Vanuatu	Not certified	Not certified
Vatican	Certified	Certified
Venezuela	Not certified	Certified
United Arab Emirates	Certified	Certified
Vietnam	Not certified	Certified
Wallis and Futuna	Not certified	Certified
Belarus	Certified	Not certified
Central African Rep.	Not certified	Certified
Cyprus	Certified	Certified