


# XENTRY Diagnosis Kit 5

Operation manual
Mercedes-Benz AG, GCSP/ROX
Valid from 01/2026

Mercedes-Benz

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# 1 Introductory notes

**Important notes on safe handling of the product.**

## 1.1 Check for damage before commissioning

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

## 1.2 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.

## 1.3 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.

# 2 New features in XENTRY Diagnosis Kit 5

### Familiar operating concept

As with XENTRY Diagnosis Kit 4, the new diagnosis device concept consists of the diagnosis computer and a multiplexer: XENTRY Diagnosis Pad 5 and XENTRY Diagnosis VCI.

### Major optimizations in XENTRY Diagnosis Kit 5:

- New XENTRY Diagnosis Pad 5.
- Improved WLAN connection between XENTRY Diagnosis Pad 5 and VCI.
- The XENTRY Diagnosis Pad 5 now comes with an improved, capacitive multi-touch display that enables you to work in a bright environment with an even sharper image.
- Increased battery capacity, with up to 8 hours operating time.
- Effective cooling concept with built-in fan.
- RFID for contactless authentication (multi-factor authentication).



*If your RFID transponder is not recognized immediately, it may be helpful to try the back of the RFID transponder. Also make sure that you hold the RFID transponder in the center, above the stylus holder on the XENTRY Diagnosis Pad.*

### 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. Adapter cables can be ordered as accessories via the familiar ordering processes.



*The adapter cables are no longer included in the standard scope of supply for the XENTRY Diagnosis Kit 5. However, you can use the adapter cables from the XENTRY Diagnosis Kit 3 | Kit 4.*

# 3 Delivery package of XENTRY Diagnosis Kit 5

The delivery package of your XENTRY Diagnosis Kit 5 includes the following:




*Fig. 1: Delivery package of XENTRY Diagnosis Kit 5*

1. XENTRY Diagnosis Pad 5
2. XENTRY Diagnosis VCI
3. Power supply unit incl. power supply plug
4. OBD cable (16-pin)
5. USB cable (5 m)

   Optional: XENTRY Scope Measurement Technology

# 4 Commissioning and configuration

## 4.1 ConfigAssist

The Windows software must be updated before initial commissioning, which may take several hours.

*Tap anywhere on the display and hold your finger down for 3 seconds. The context menu then opens. Select "Display Settings". Under "Scale", for example, you can select the desired resolution (we recommend 150%). You can also make further settings there, such as brightness and night mode.*

The XENTRY Diagnosis Pad must be configured for initial commissioning. ConfigAssist is automatically launched for this purpose when XENTRY Diagnosis Pad is switched on for the first time.



*Fig. 2: ConfigAssist*

Alternatively, you can also open ConfigAssist directly via the following path:

1. Desktop
2. Diagnosis Toolbox
3. ConfigAssist

Navigate through ConfigAssist using the "Continue" button.

The XENTRY Diagnosis Pad has two freely assignable function keys: F1 and F2. You can assign the following functions to the keys:

- XENTRY Diagnosis AQT
- XENTRY CAN Tool
- XENTRY Scope
- XENTRY Scope NVH
- Diagnosis Stop
- ConfigAssist
- VCI Manager
- Support Tool
- PDF Center
- XENTRY Portal
- Hot Topics

Then click on "Apply and continue".

After receiving further information about your XENTRY Diagnosis Kit, you can then integrate XENTRY Diagnosis Pad into your network.

**Schematic layout for network integration**

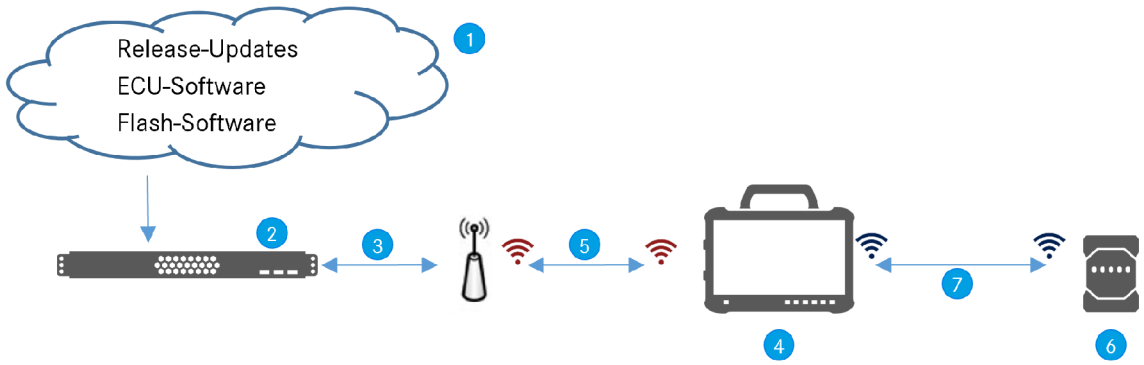



*Fig. 3: Schematic layout for network integration*

1. Release updates are always available online.
2. Depending on the given configuration, the data is downloaded overnight.
3. The Retail Data Storage unit is integrated into your workshop network so that it is located in the same network as your XENTRY Diagnosis Kit.
4. The XENTRY Diagnosis Pad is integrated into your workshop infrastructure (necessary for online services).
5. The connection between XENTRY Diagnosis Pad and the workshop network can be established 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 using a Wi-Fi connection or via USB connection cable to the VCI.

## 4.2 Configure network

### 4.2.1 WLAN

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

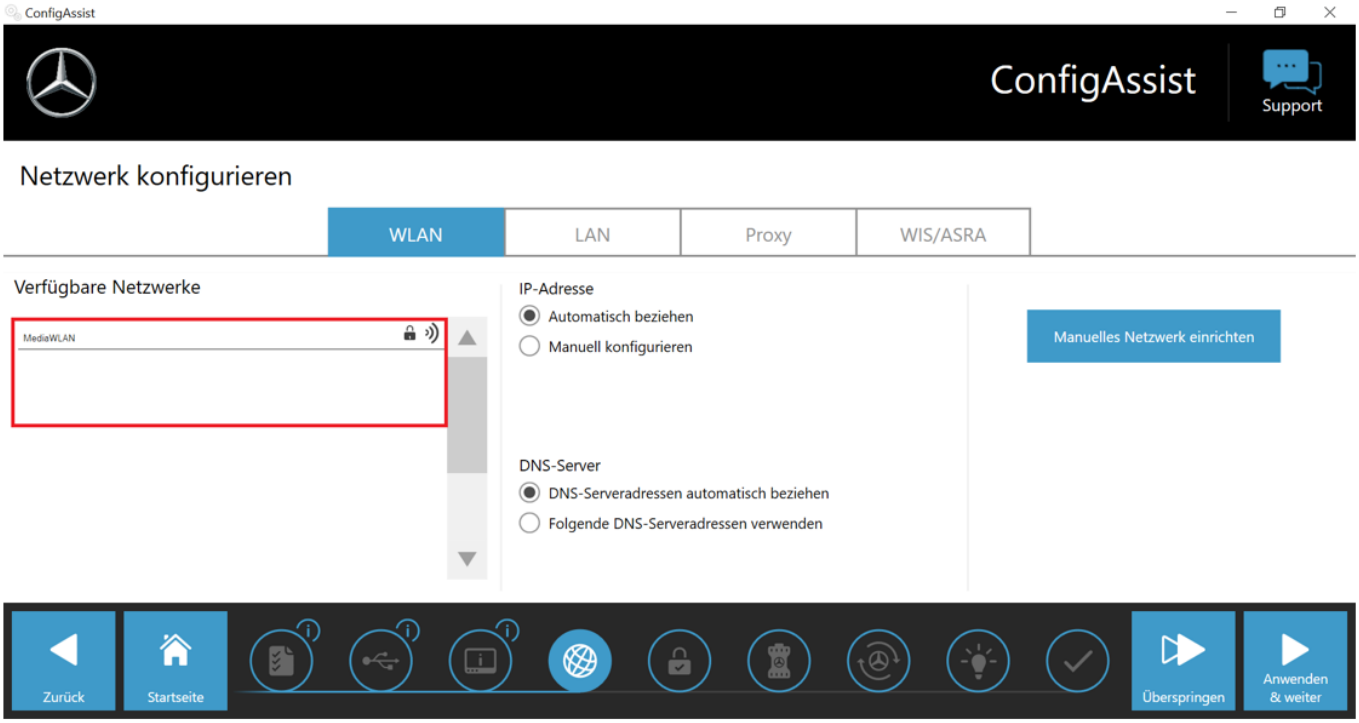



*Fig. 4: Configure WLAN network*

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.

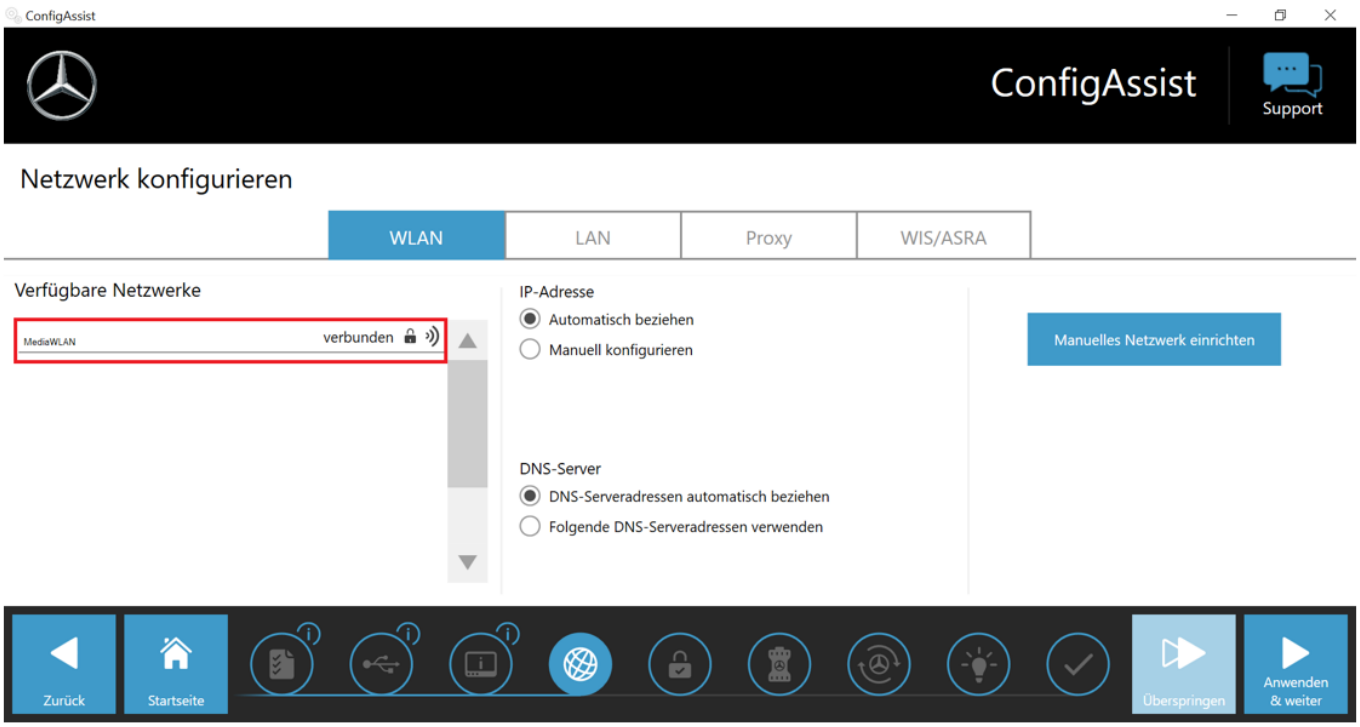



*Fig. 5: WLAN connected*

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.

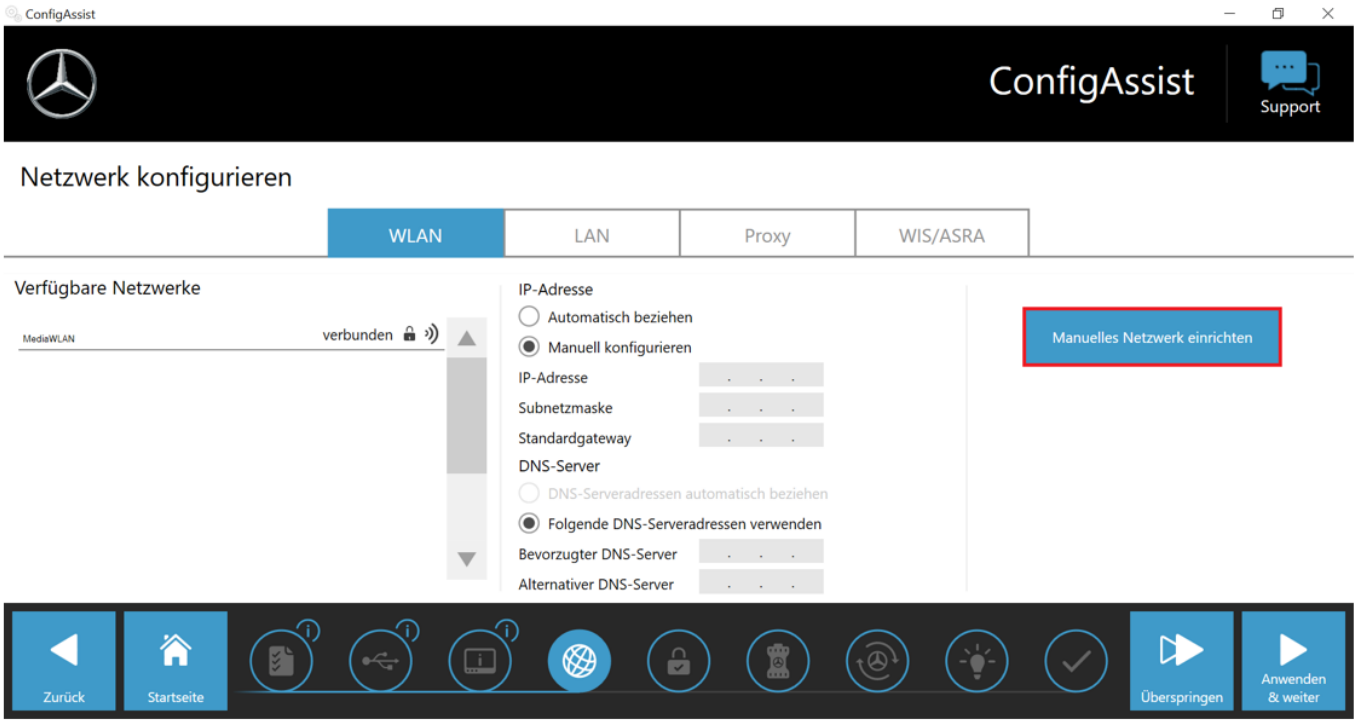



*Fig. 6: Set up manual network*

- Enter the corresponding data here:

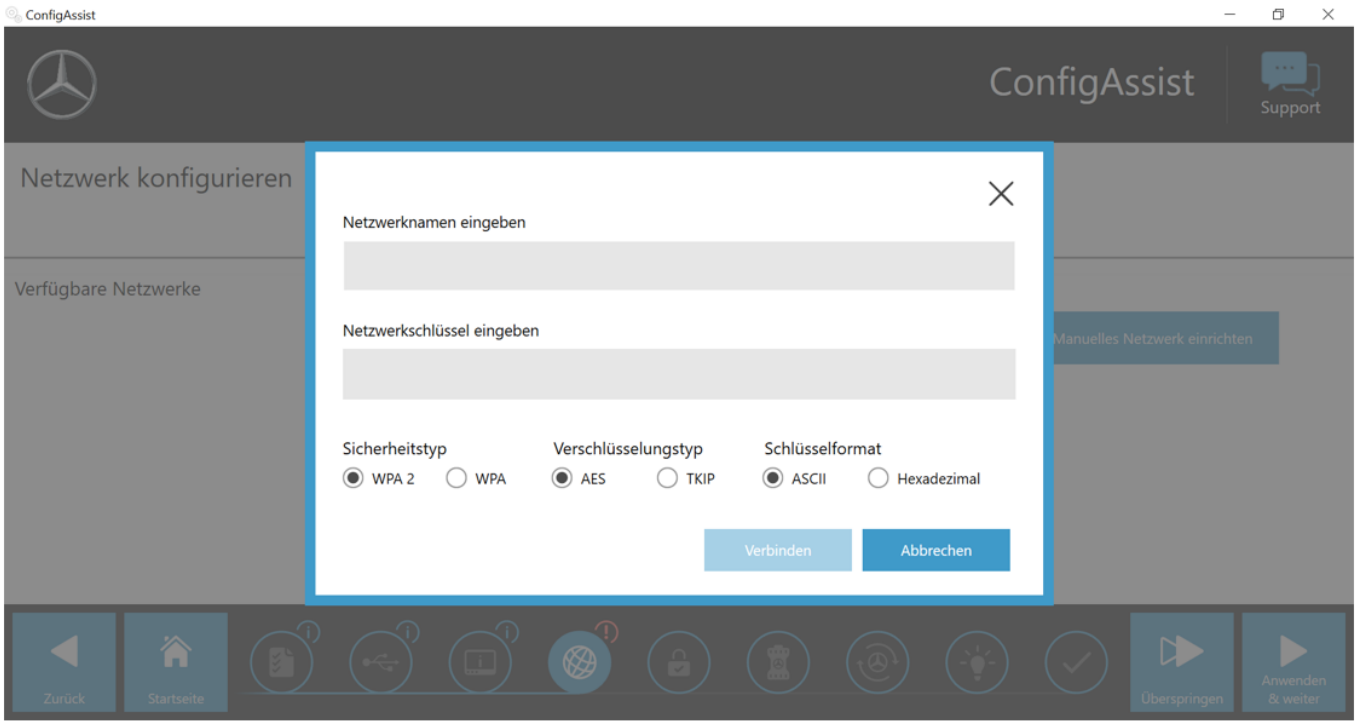



*Fig. 7: Enter data manually*

- Click on "Apply & Continue".

### 4.2.2 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.

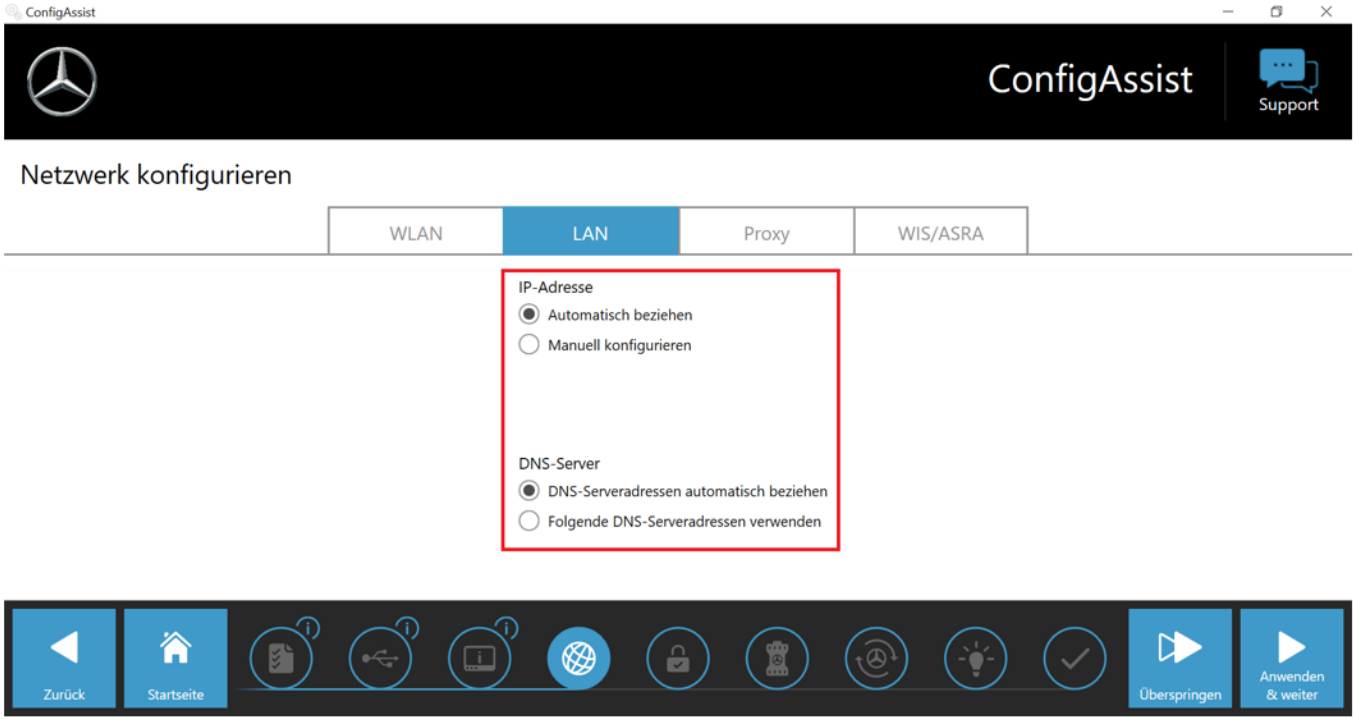



*Fig. 8: Configure LAN network*

Click on "Apply & Continue".

### 4.2.3 Proxy

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

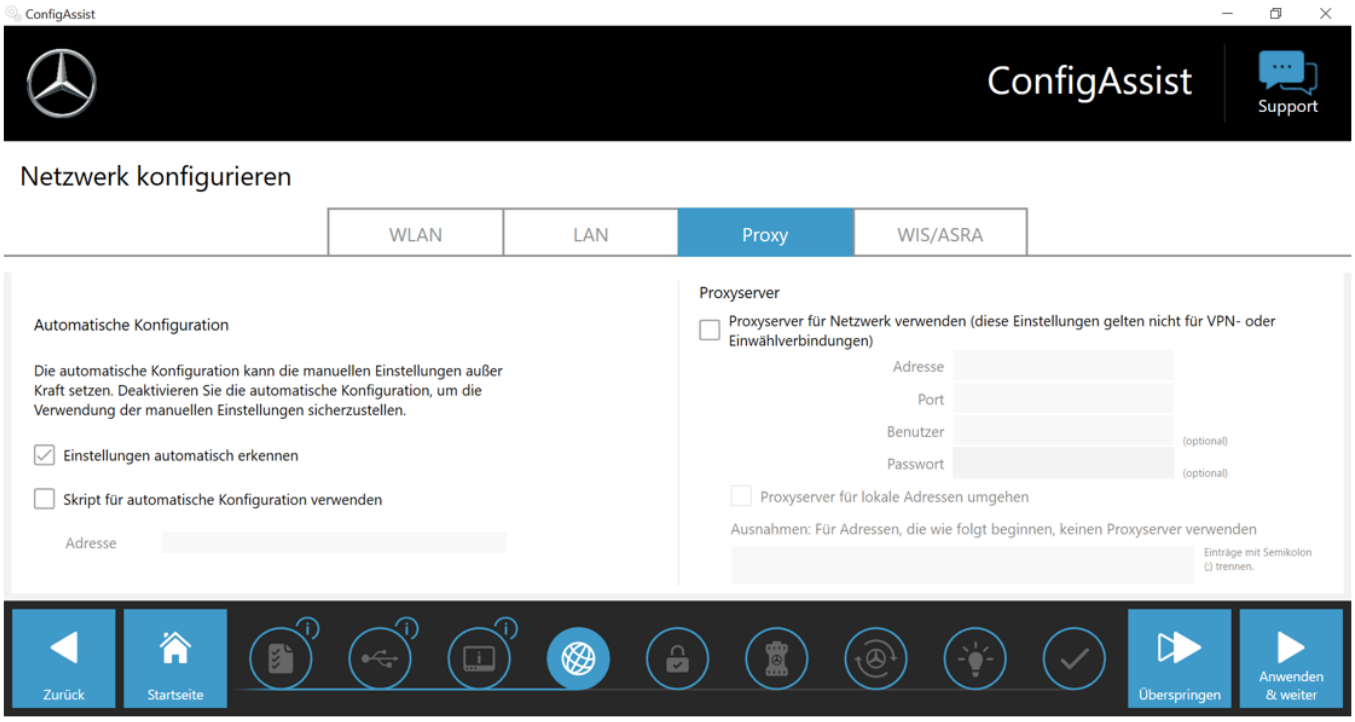



*Fig. 9: Proxy settings*

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".

## 4.3 Configuring a Hotspot

After successfully logging into XENTRY Diagnosis, the diagnosis session can be continued without an Internet connection as long as the XENTRY diagnosis software is not restarted.

To allow you to start XENTRY Diagnosis via your workshop network in situations without Internet access (for example, in Service 24h operations or during test drives), you will in future need an Internet connection via a mobile Internet access point, such as a hotspot, a mobile phone or a mobile router.

*We recommend ensuring the availability of a hotspot in your service operation for the relevant situations.*

To allow you to quickly and easily reconfigure your XENTRY Diagnosis Pad between your workshop network and hotspot if necessary, we recommend creating and saving a separate configuration in ConfigAssist for each network that you want to use. With this method, you can import the desired configuration when required and your XENTRY Diagnosis Pad is immediately configured for the corresponding network.

The steps described in ➥ Chapter 4.3 “Configuring a Hotspot” on page 12 and ➥ Chapter 4.3 “Configuring a Hotspot” on page 12 only need to be carried out once.

### 4.3.1 Exporting the workshop network configuration

To export the current configuration, proceed as follows:

1. Open ConfigAssist on your XENTRY Diagnosis Pad by clicking on the ConfigAssist symbol in the start menu. Alternatively, you can also start ConfigAssist via the Diagnosis Toolbox.
2. Ensure that your XENTRY Diagnosis Pad is correctly configured in the workshop network.
3. Click on "Export configuration" on the ConfigAssist home screen to save the configuration.
   ➥ A new window opens
4. Assign a unique file name and select a file path where you can quickly find the configuration.

5. Click on "Save".

➡ The successful export is confirmed by a message.

### 4.3.2 Configuring a new hotspot

*Please make sure that your hotspot is activated and set to visible. Otherwise it cannot be found by the XENTRY Diagnosis System*

You can now connect your diagnostic system to a hotspot as follows:

In ConfigAssist, go to the "Configure network" area.

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

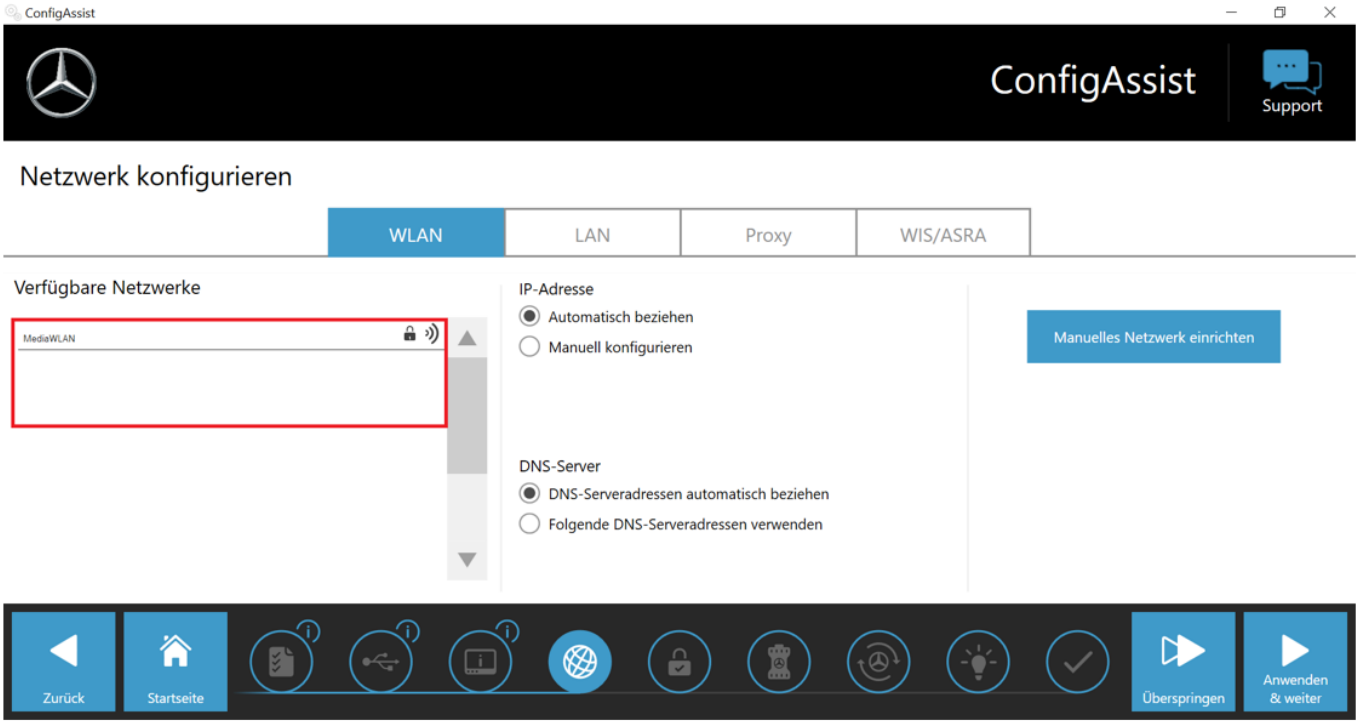



*Fig. 10: Configuring the WLAN network*

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.

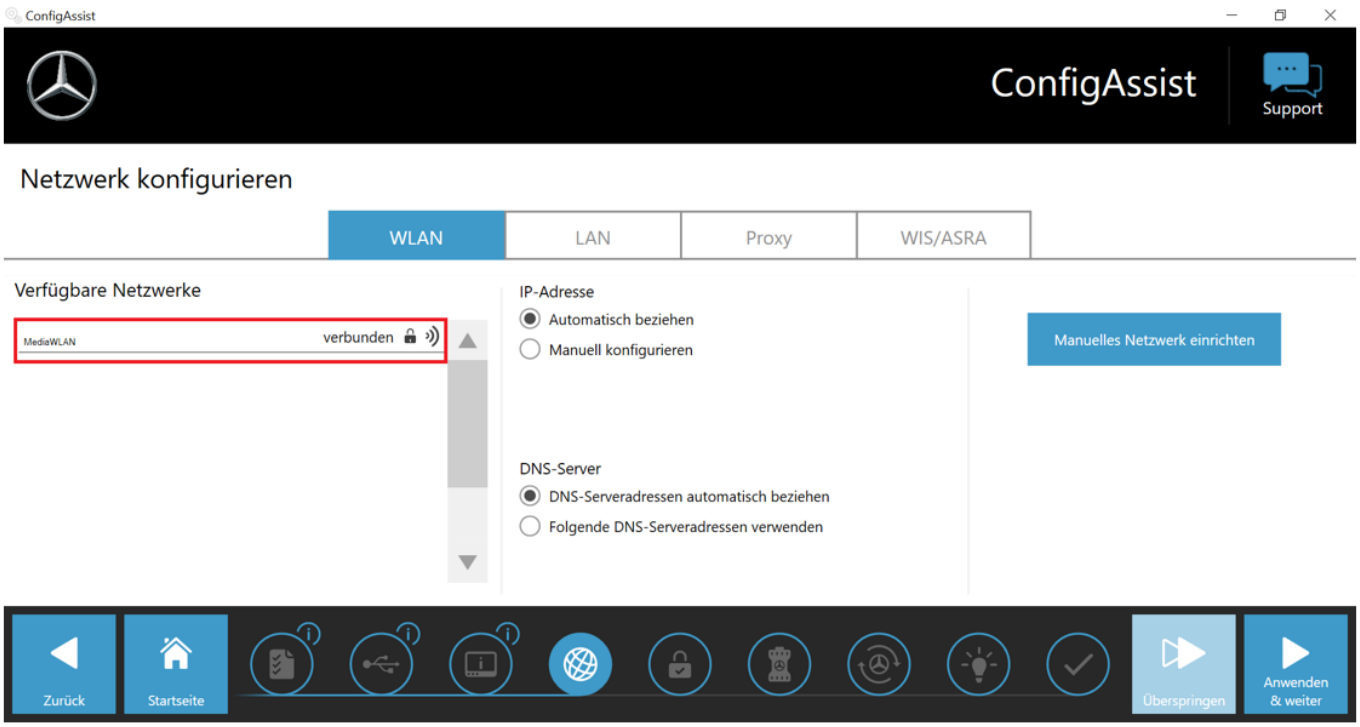



*Fig. 11: WLAN connected*

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

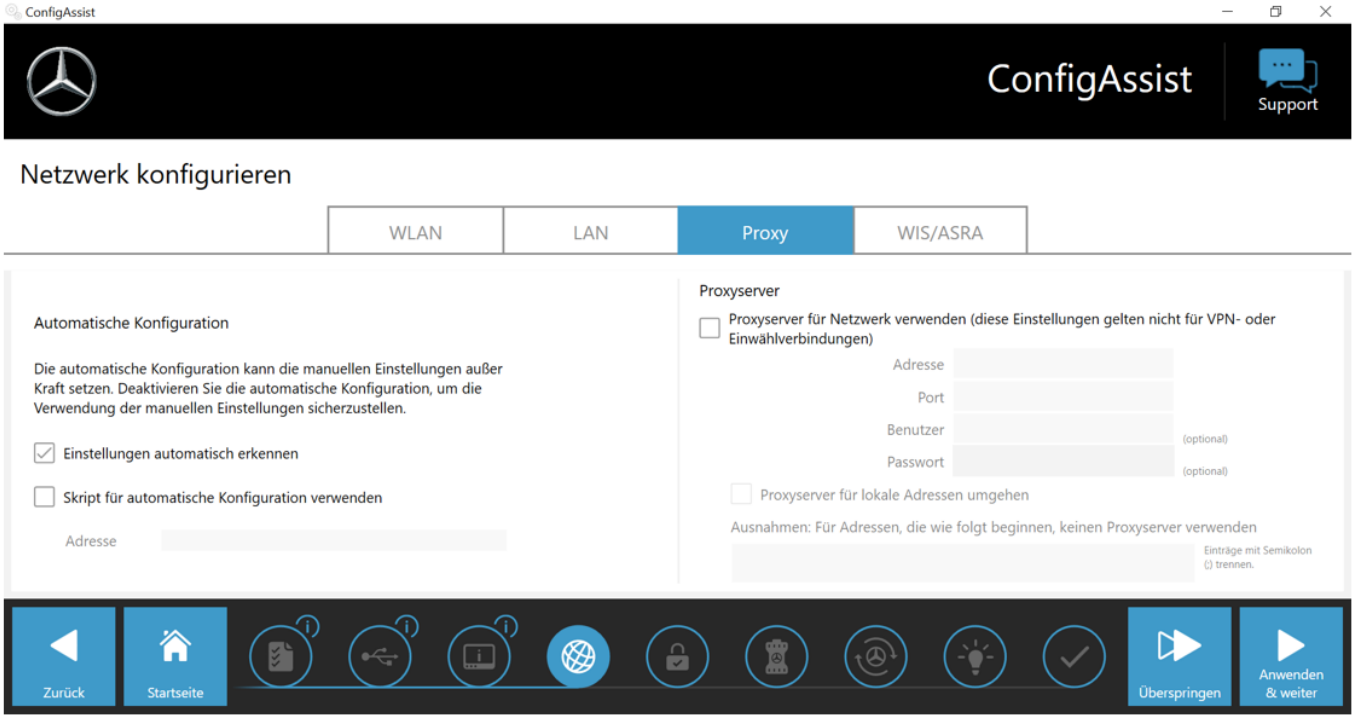



*Fig. 12: Proxy settings*

Typically, hotspots do not use proxy servers. Activate the "Automatically detect settings" checkbox and deactivate the "Use script for automatic configuration" checkbox. If your workshop network uses a proxy server, also deactivate the "Use proxy server for network" checkbox.

Click on "Apply & Continue".

Now go to the last page of ConfigAssist to the "Overview of system configuration" page to check the configuration and export it as follows:

1. Click on the "Export" button.
   ➡ A new window opens.
2. Assign a unique file name and select a file path where you can quickly find the configuration.

3. Click on "Save".

   ➡ The successful export is confirmed by a message.

The configuration is now complete. This process can be repeated with different hotspots your service operation uses a number of them. You can now continue with the configuration or switch the device back to the workshop network.

### 4.3.3 Changing the configuration

If necessary, carry out the following steps to switch between the different configurations on your XENTRY Diagnosis Pad:

1. Open ConfigAssist on your XENTRY Diagnosis Pad by clicking on the ConfigAssist symbol in the start menu. Alternatively, you can also start ConfigAssist via the Diagnosis Toolbox.
2. Click on "Import configuration" and select the desired configuration that you previously created. Importing the desired configuration may take a few seconds.

   ➡ A summary appears once the configuration has been successfully applied. The device can now be used with the desired settings.

*Flash processes and updates require very large amounts of data from the Internet. We therefore recommend that you refrain from using a hotspot for these actions and only use the device with a hotspot for as long as absolutely necessary.*

## 4.4 StartKey

### 4.4.1 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.

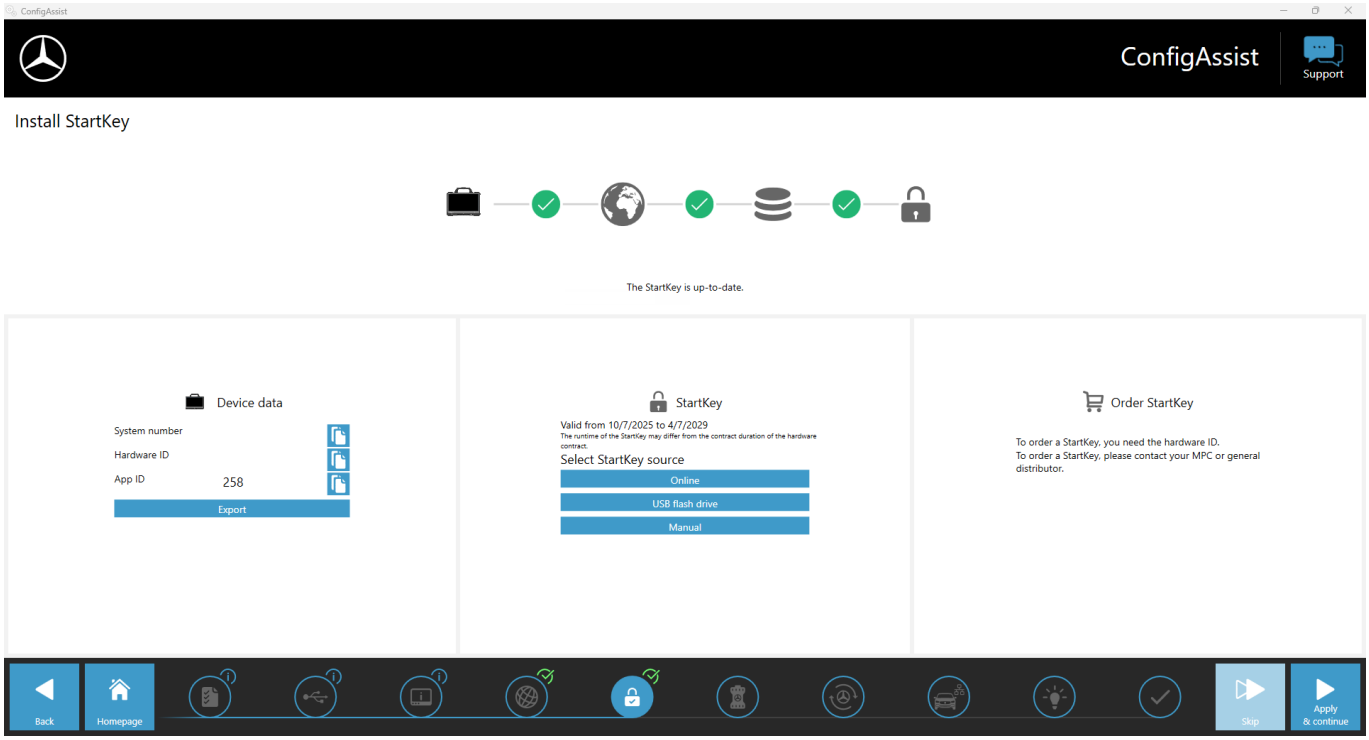



*Fig. 13: StartKey status*

*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.

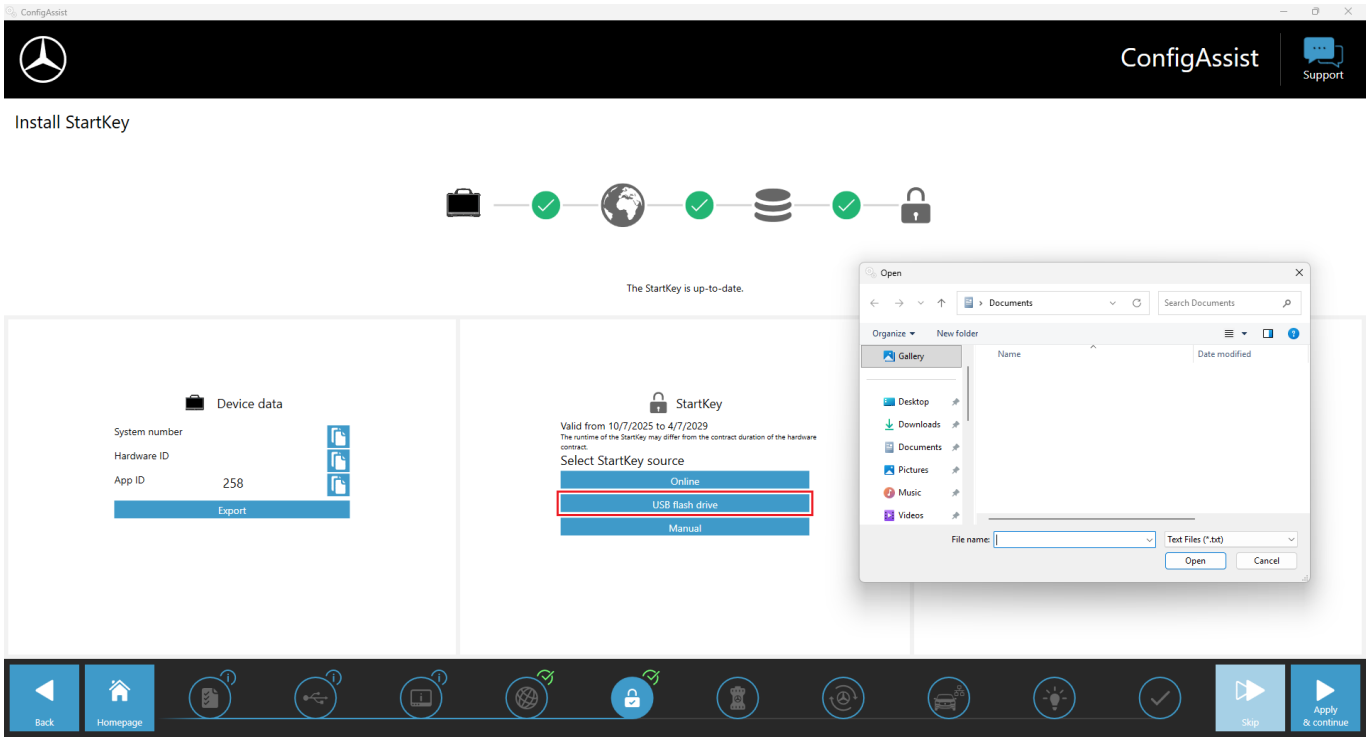



*Fig. 14: Install StartKey from USB flash drive*

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

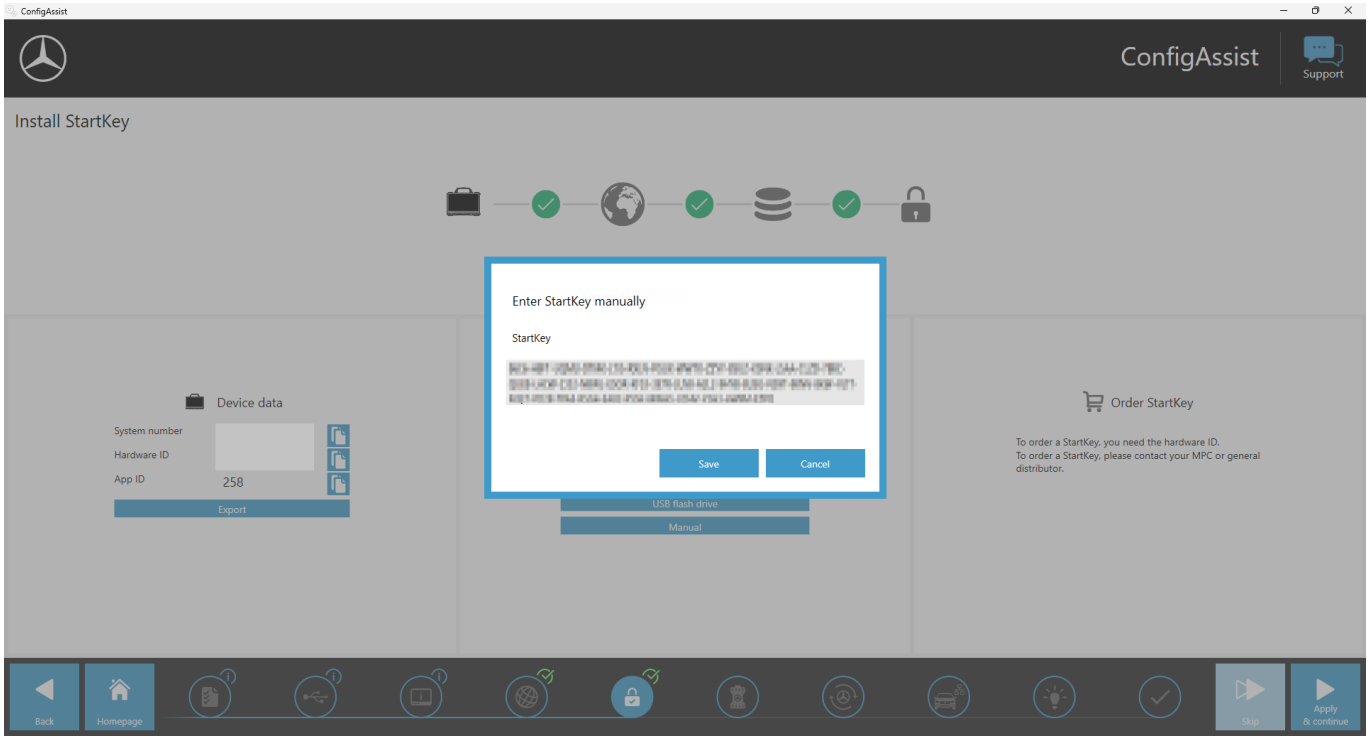



*Fig. 15: Install StartKey manually*

*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:

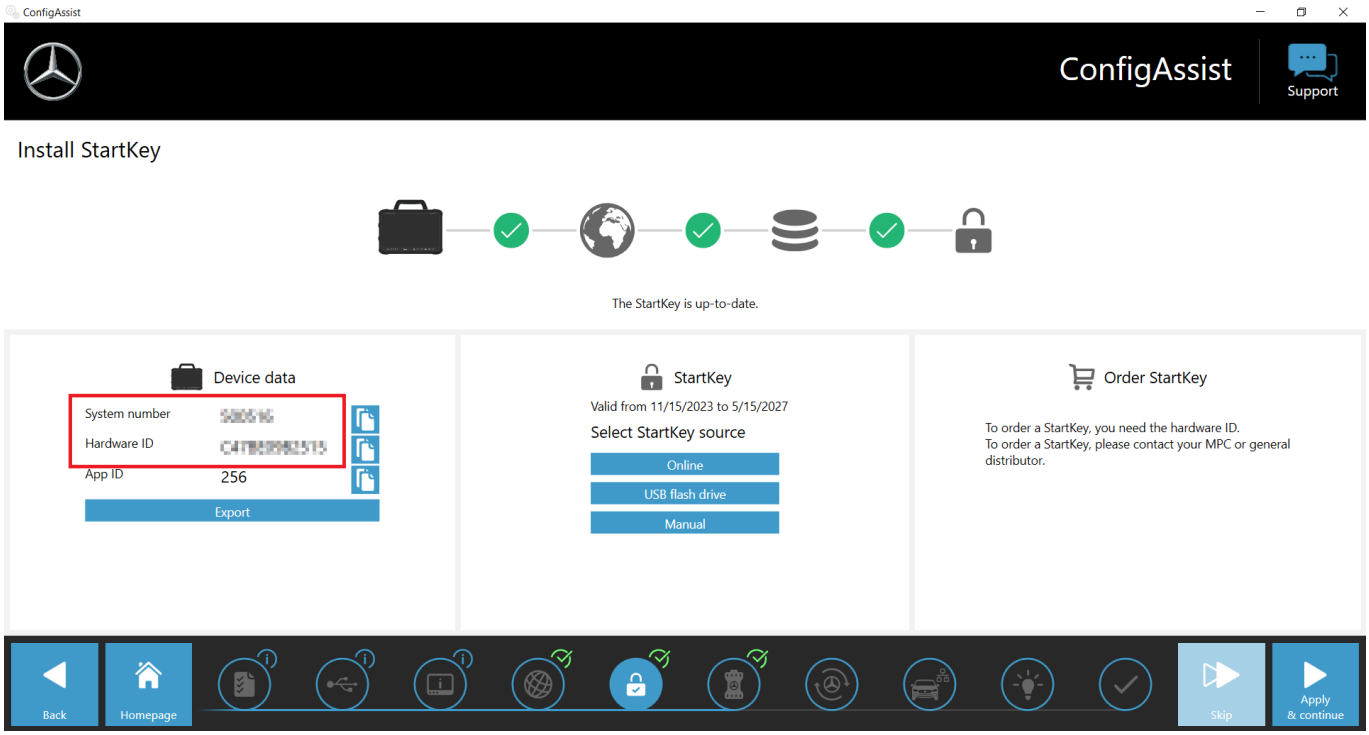



*Fig. 16: Display hardware ID*

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

## 4.5 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".

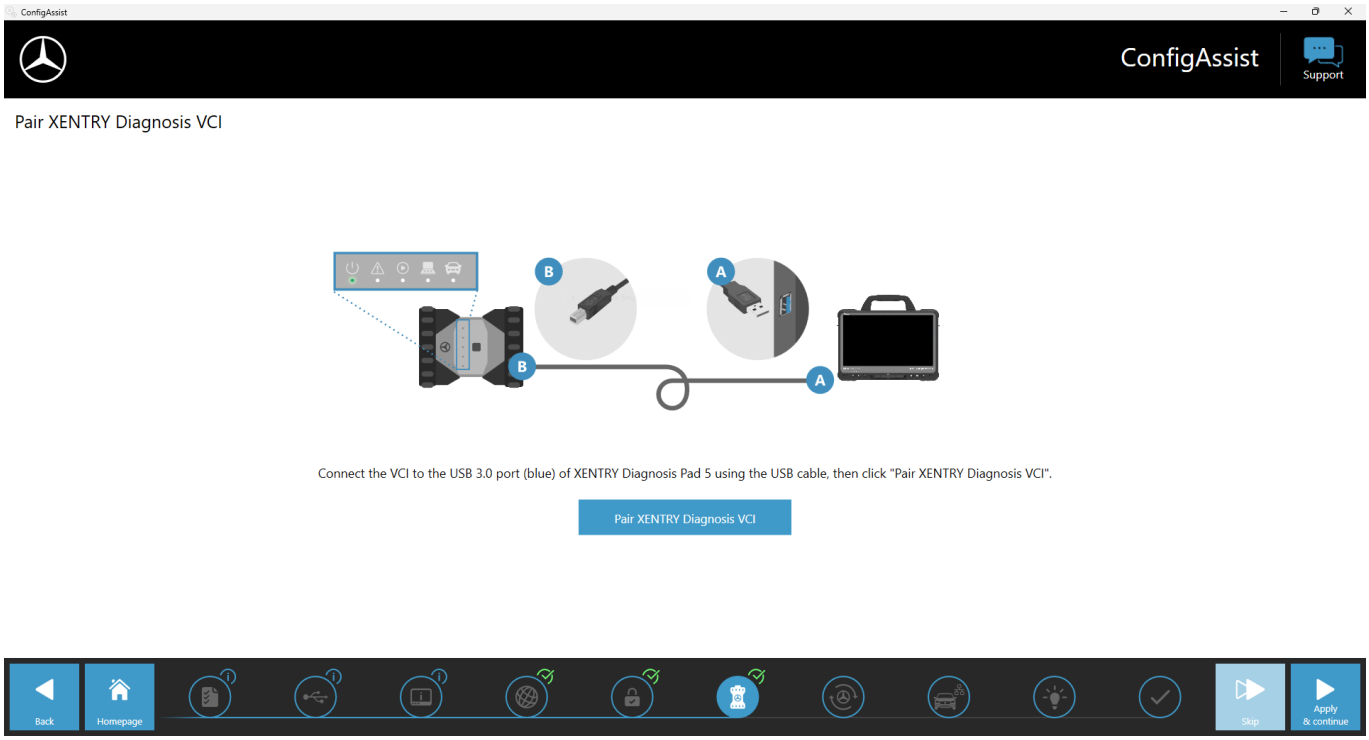



*Fig. 17: Pairing the XENTRY Diagnosis VCI*

*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".

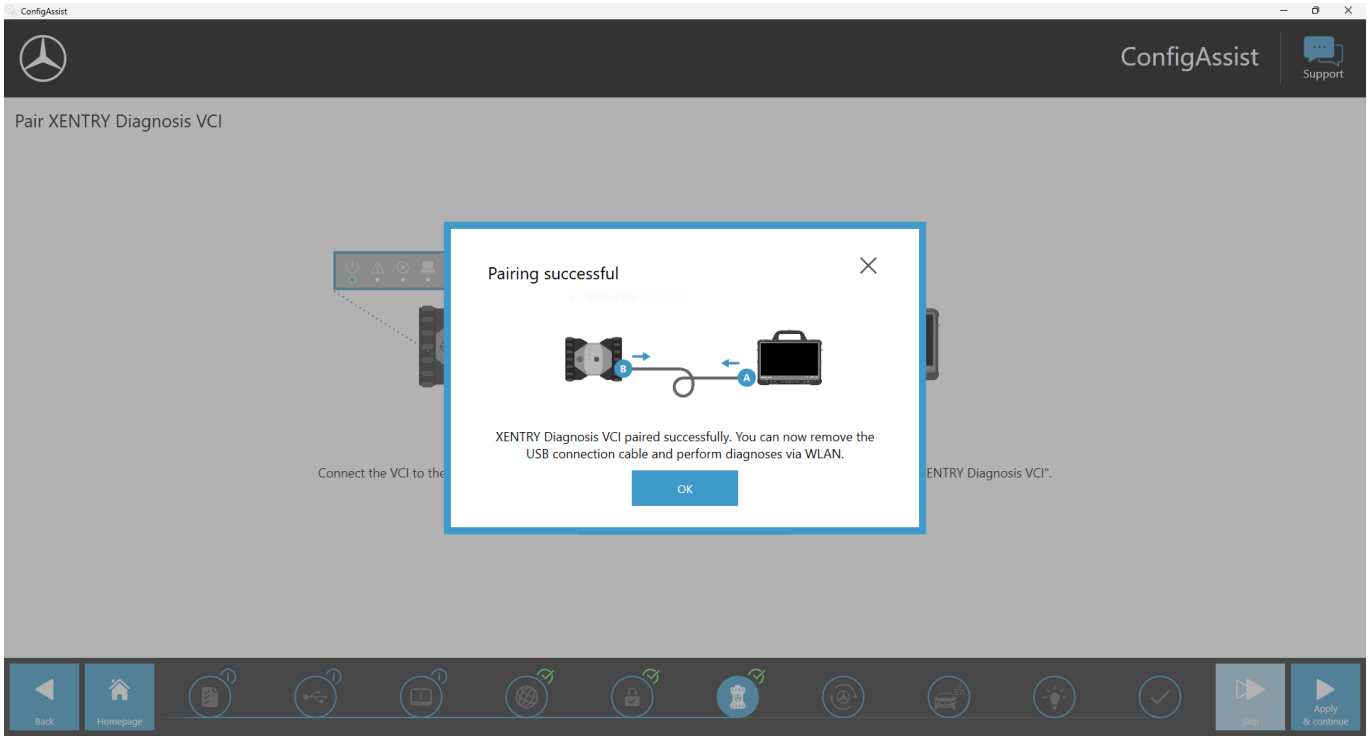



*Fig. 18: Successful pairing with XENTRY Diagnosis VCI*

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

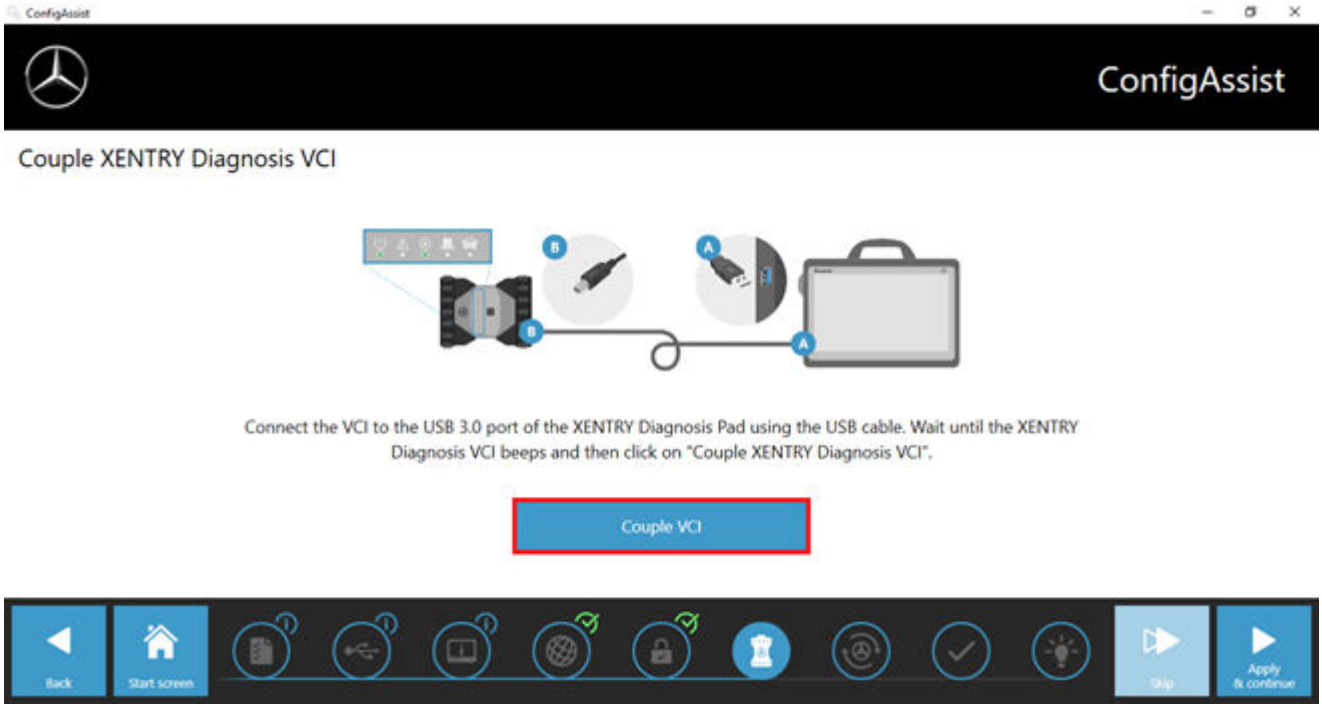



*Fig. 19: Completion of pairing to XENTRY Diagnosis VCI*

## 4.6 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.*

### 4.6.1 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.

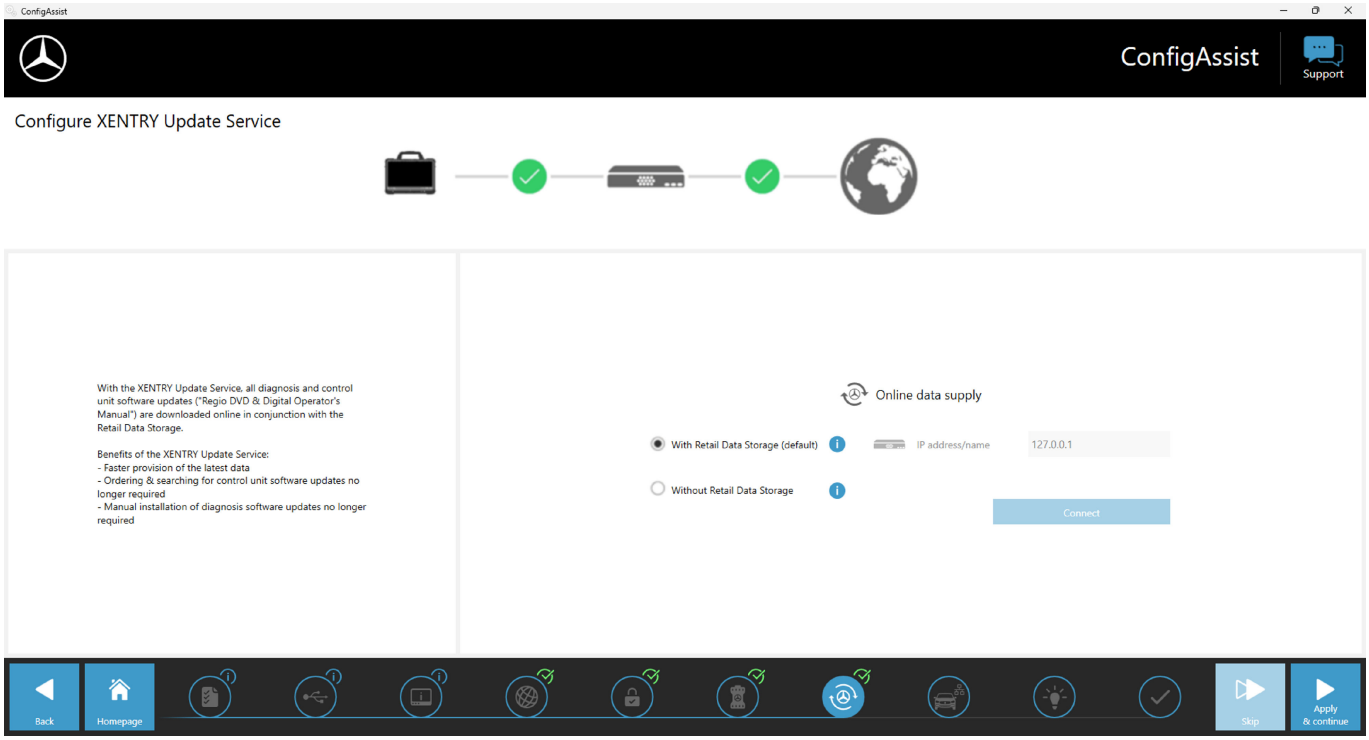



*Fig. 20: XENTRY Update Service with Retail Data Storage*

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.

### 4.6.2 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.*

### 4.6.3 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!*

## 4.7 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.

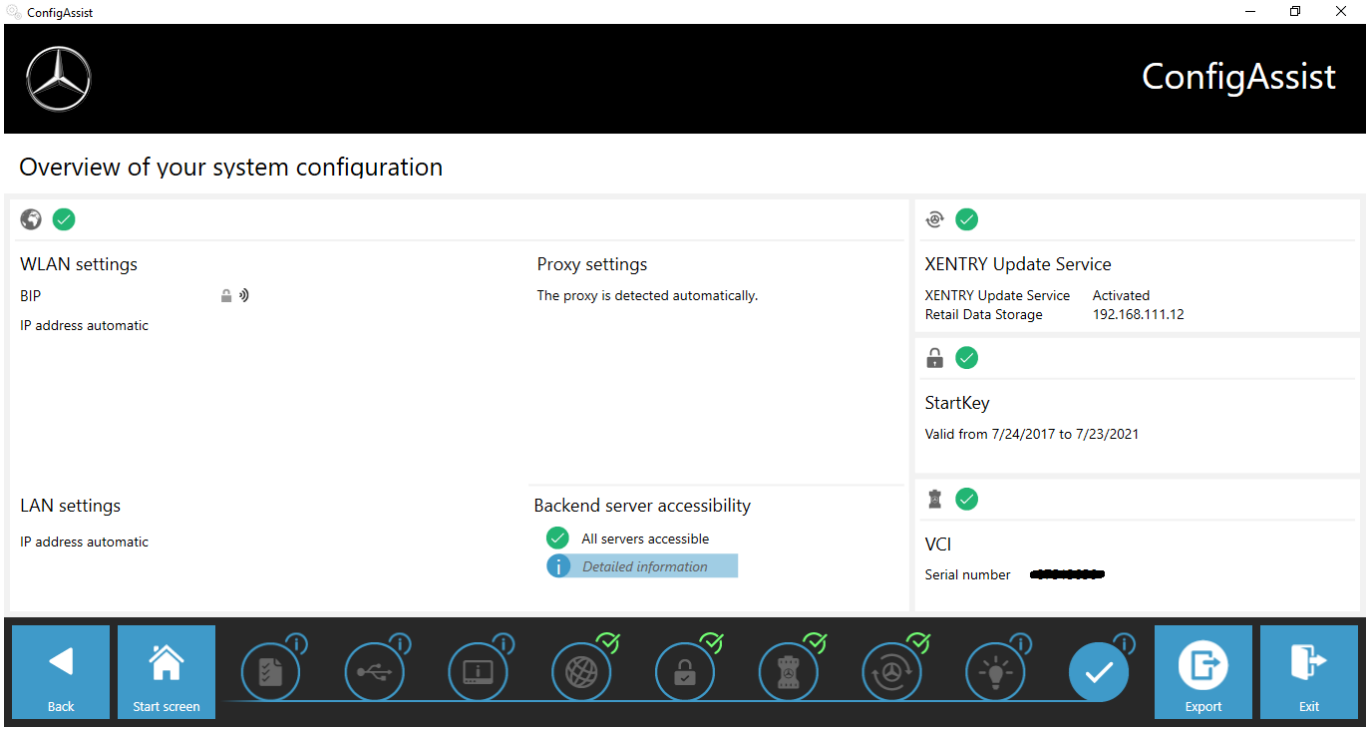



*Fig. 21: System configuration overview*

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.

## 4.8 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.

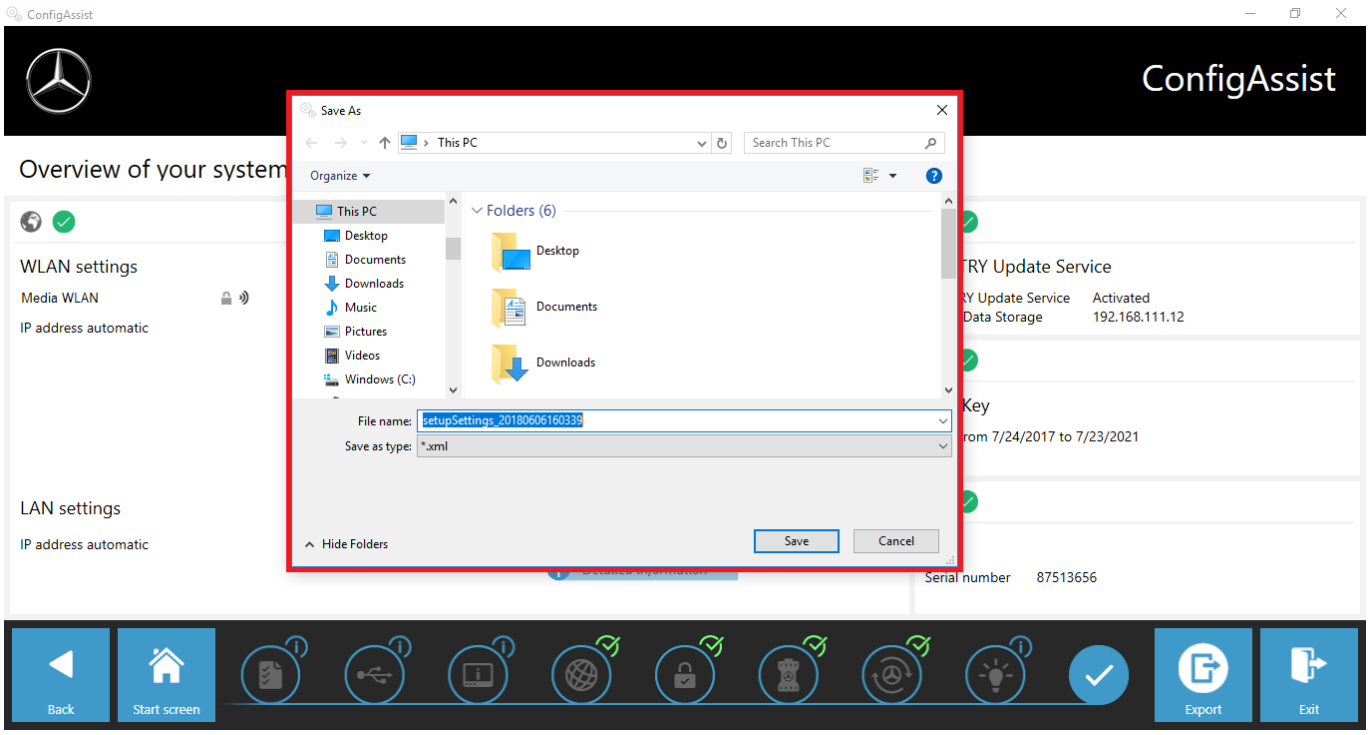



*Fig. 22: Exporting the configuration*

You have successfully set up your XENTRY Diagnosis Pad.

Now close ConfigAssist by clicking "Exit".

## 4.9 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.

### 4.9.1 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.

### 4.9.2 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.

### 4.9.3 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

### 4.9.4 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

### 4.9.5 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

### 4.9.6 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

### 4.9.7 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

### 4.9.8 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

# 5 Operation of XENTRY Diagnosis Kit

## 5.1 System start

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




*Fig. 23: XENTRY Diagnosis Pad 5 start button*

1. Start 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 cable).
   ➡ 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.

## 5.2 Connection options

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

**Connection variant 1: WLAN**

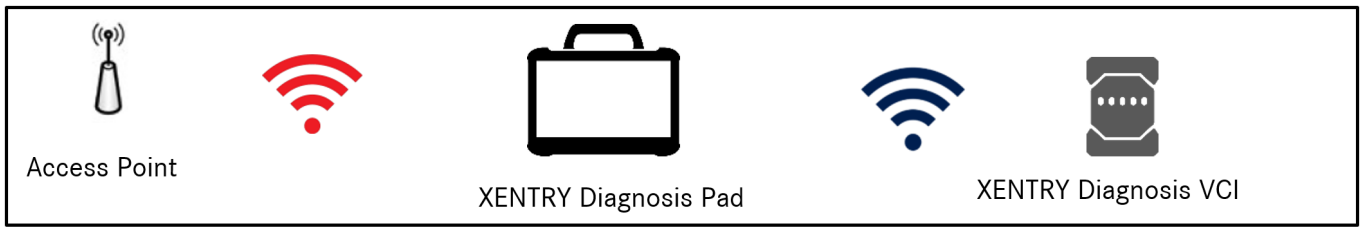



*Fig. 24: Connection variant 1: WLAN and WLAN*

**Connection variant 2: WLAN and USB**

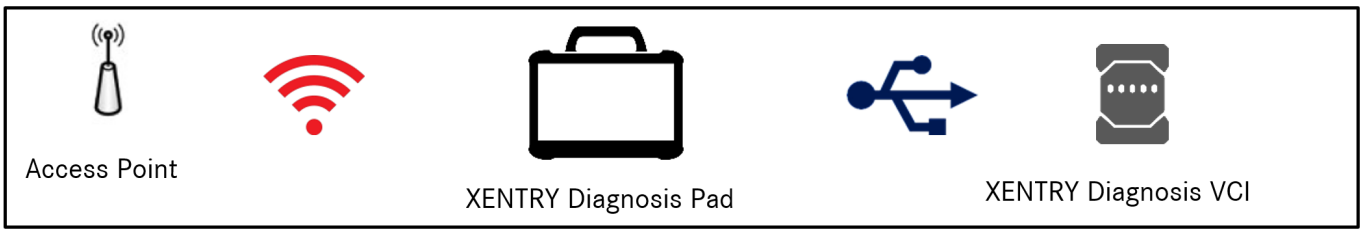



*Fig. 25: Connection variant 2: WLAN and USB*

**Connection variant 3: LAN and WLAN**

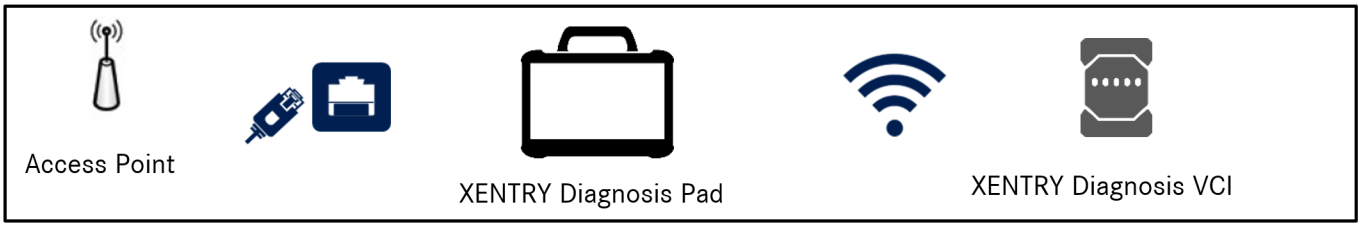



*Fig. 26: Connection variant 3: LAN and WLAN*

**Connection variant 4: LAN and USB**

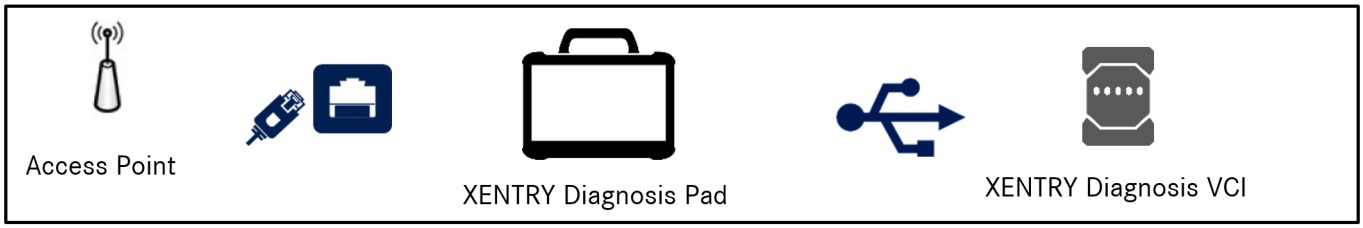



*Fig. 27: Connection variant 4: LAN and USB*

## 5.3 Printers and printing

Any commercially available Windows 11-compatible printer can be installed on the XENTRY Diagnosis Pad. This applies to both USB printers and network printers. It is recommended to use printers that are certified for Windows 11. Installation is no longer carried out via special tools, but simply via the Windows menu.

### 5.3.1 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.

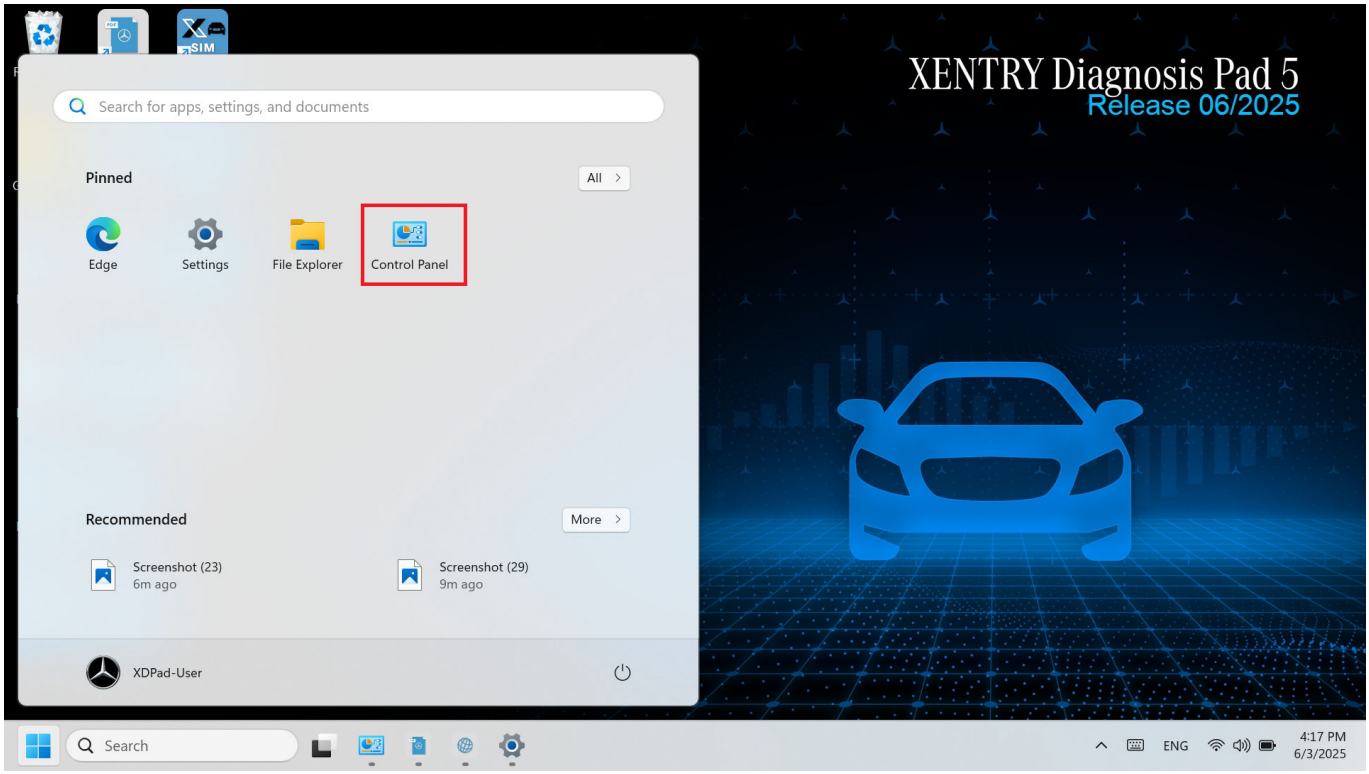



*Fig. 28: Open Control Panel*

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

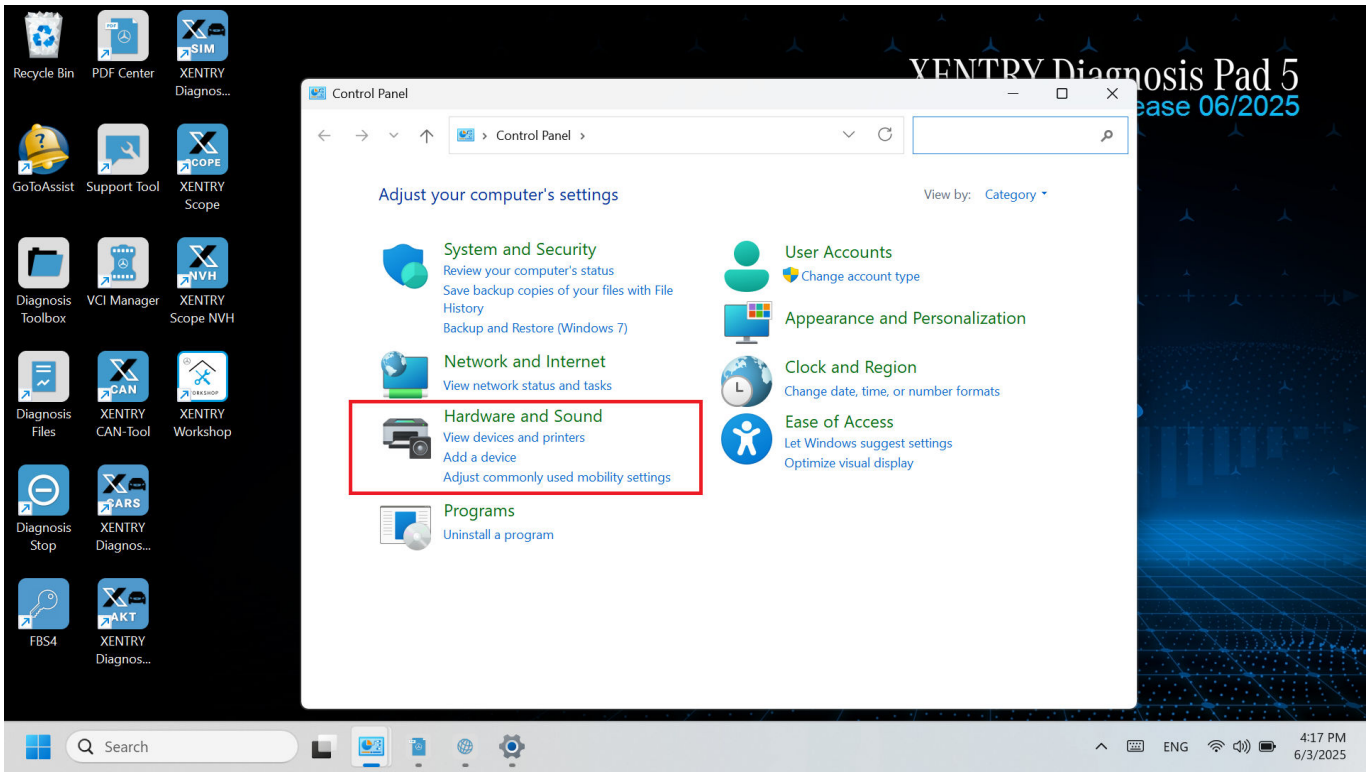



*Fig. 29: Hardware and Sound – View devices and printers*

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

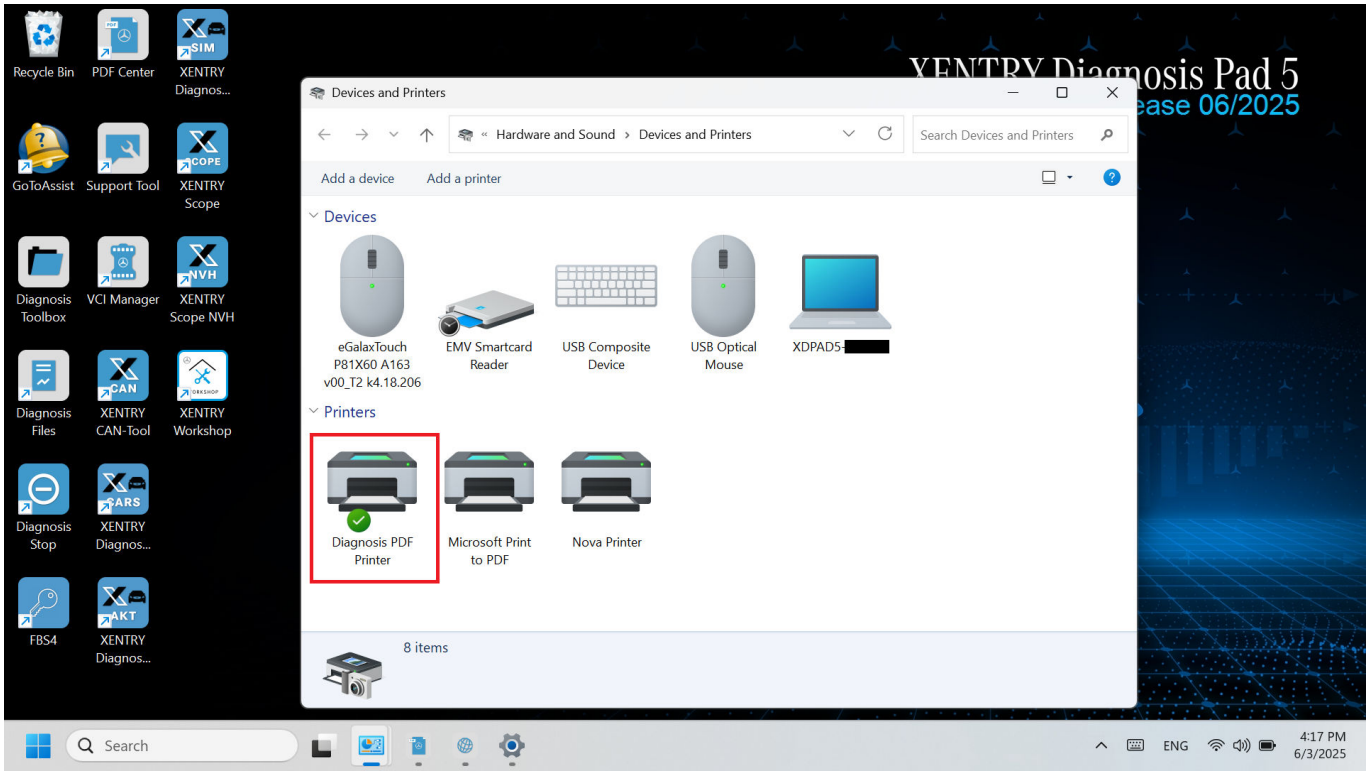



*Fig. 30: Currently installed printers*

- Next, switch on the desired USB printer and connect it to the XENTRY Diagnosis Pad via a suitable USB connection cable. The printer is initially displayed in the "Unspecified" area while the printer drivers are being installed. This process may take a few minutes.

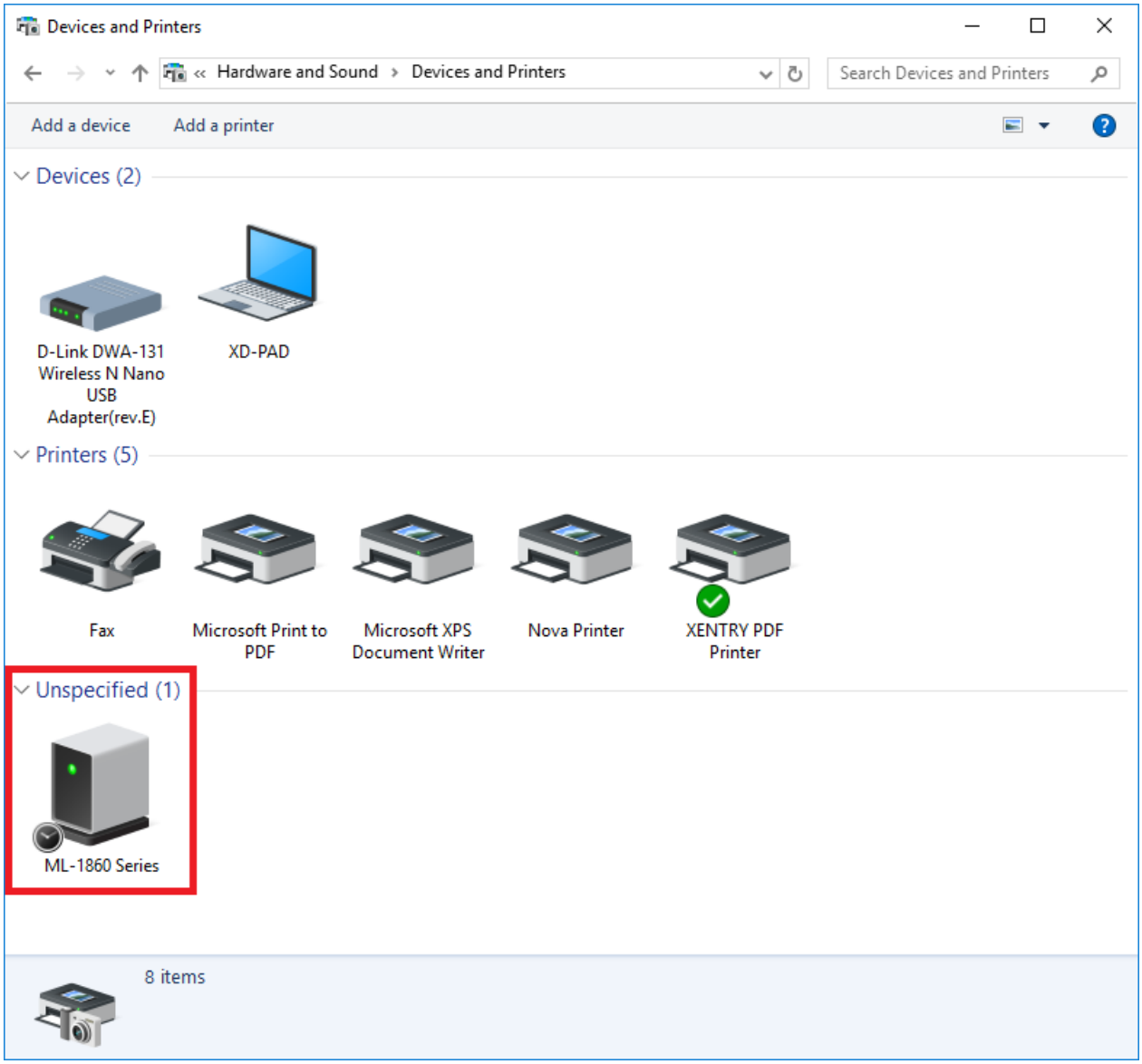



*Fig. 31: Printer recognized, installation in progress*

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

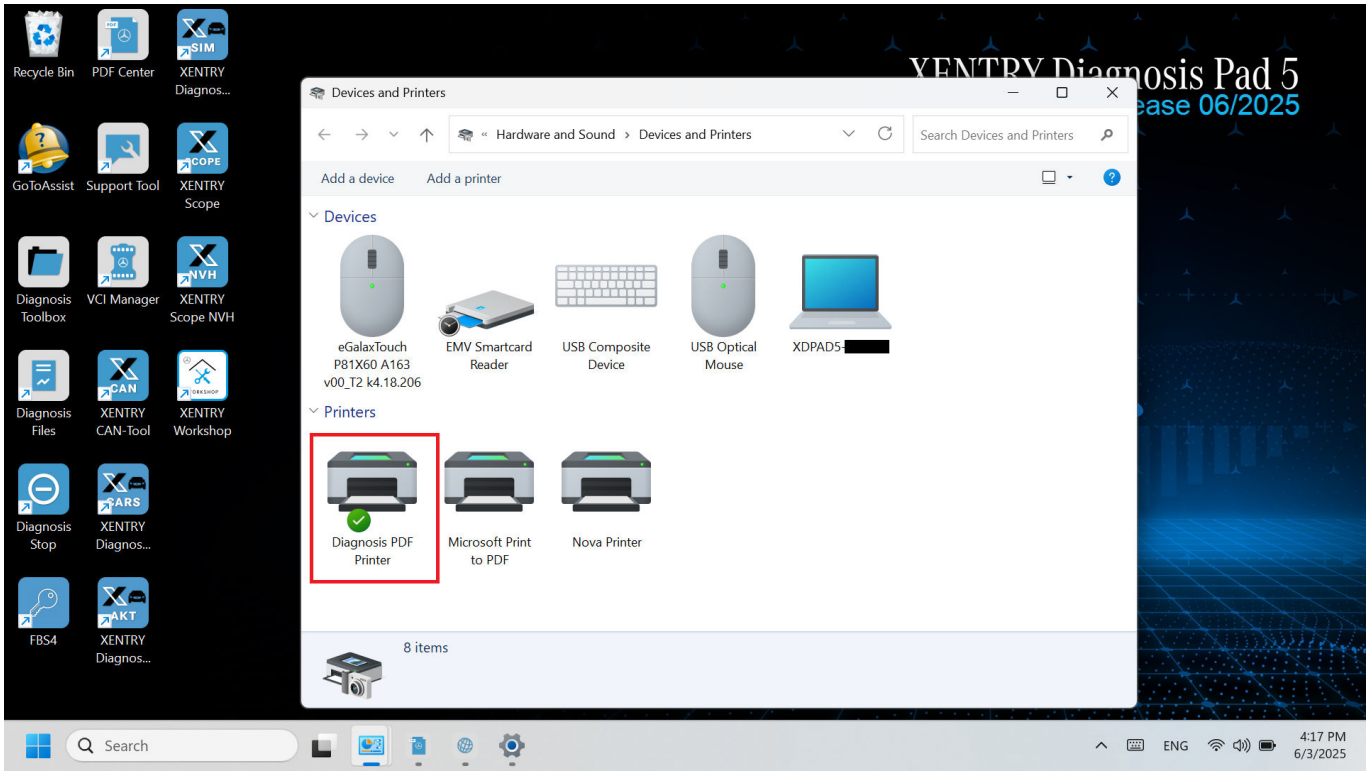



*Fig. 32: Currently installed printers*

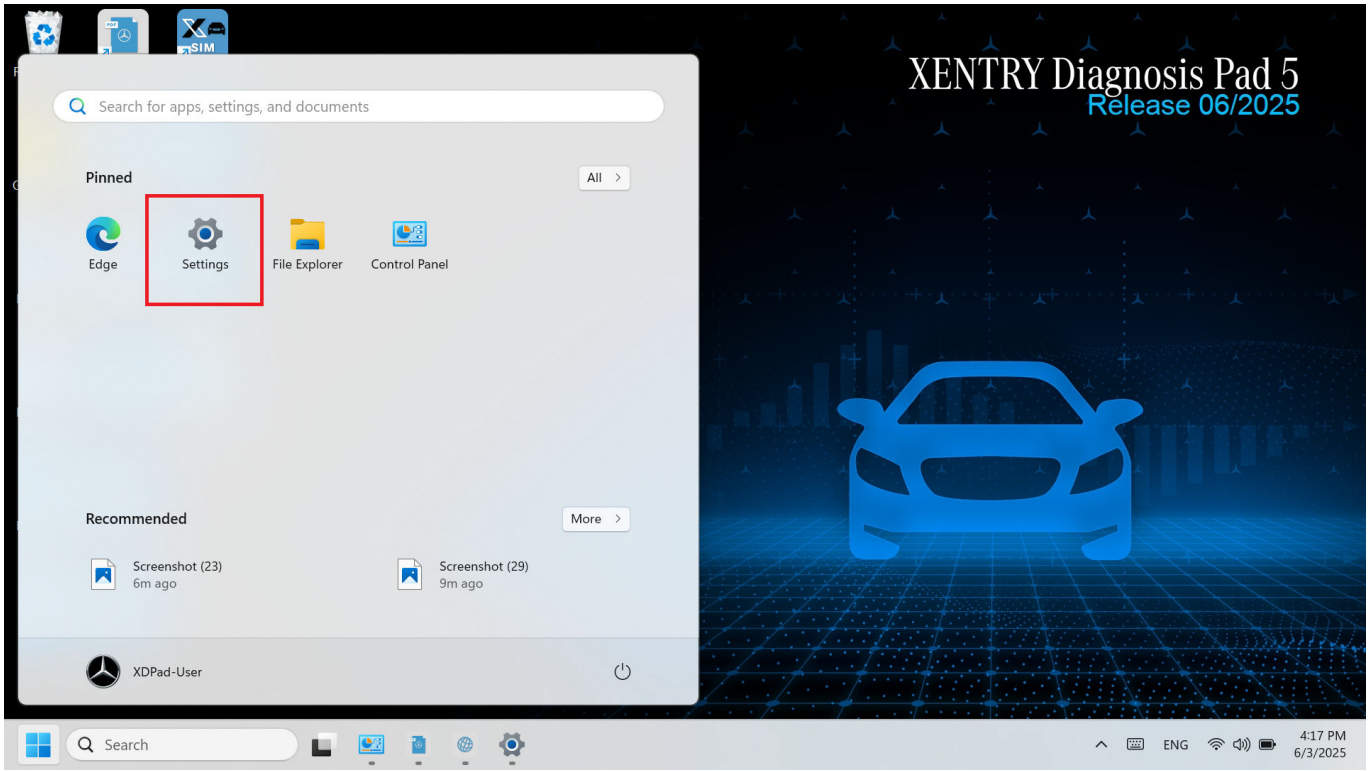
You also have the option of creating PDF files with XENTRY Diagnosis. A comprehensive description of the Diagnosis PDF Printer is available in ➥ Chapter 8.5 “PDF Center” on page 63.

### 5.3.2 Installation of a network printer

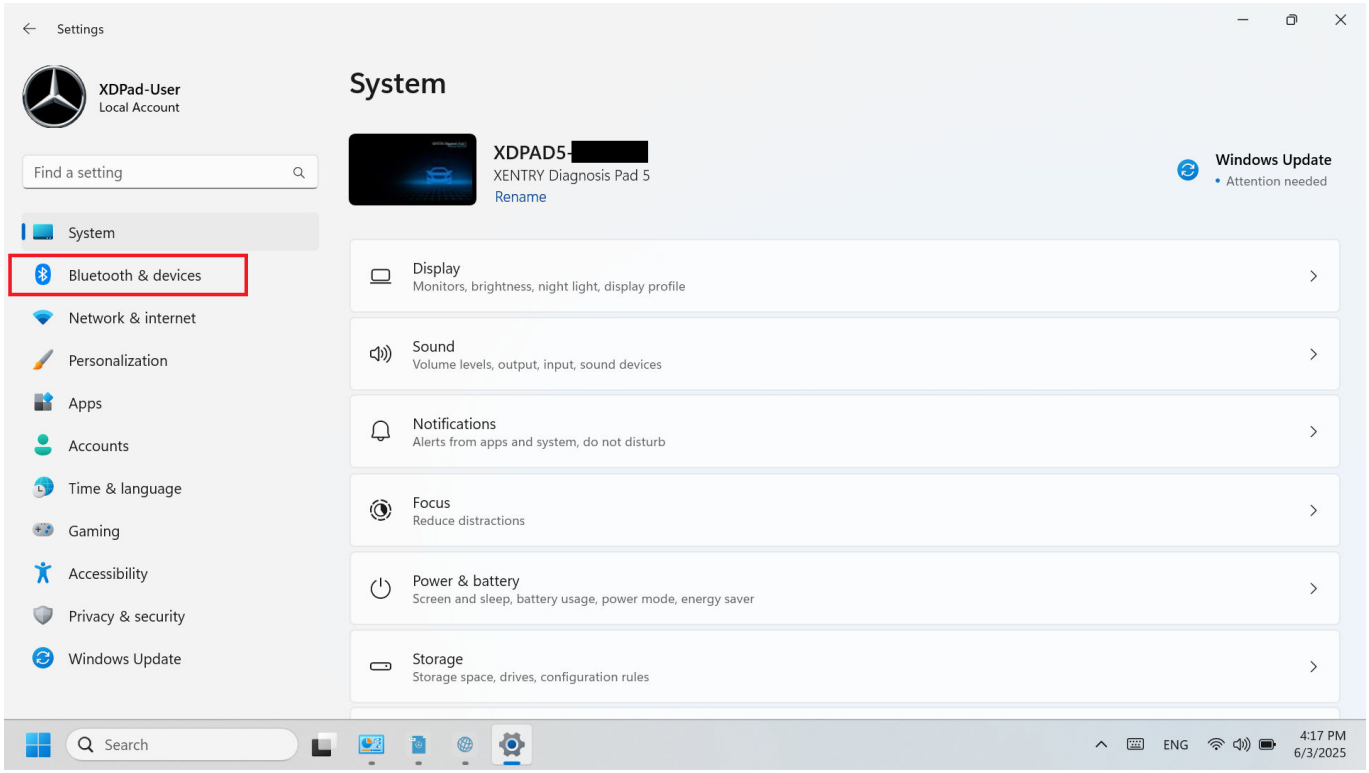
The process for setting up a network printer located on the same network as the XENTRY Diagnosis Pad is described below.

Switch on the network printer and connect to the network on which the XENTRY Diagnosis Pad is located.

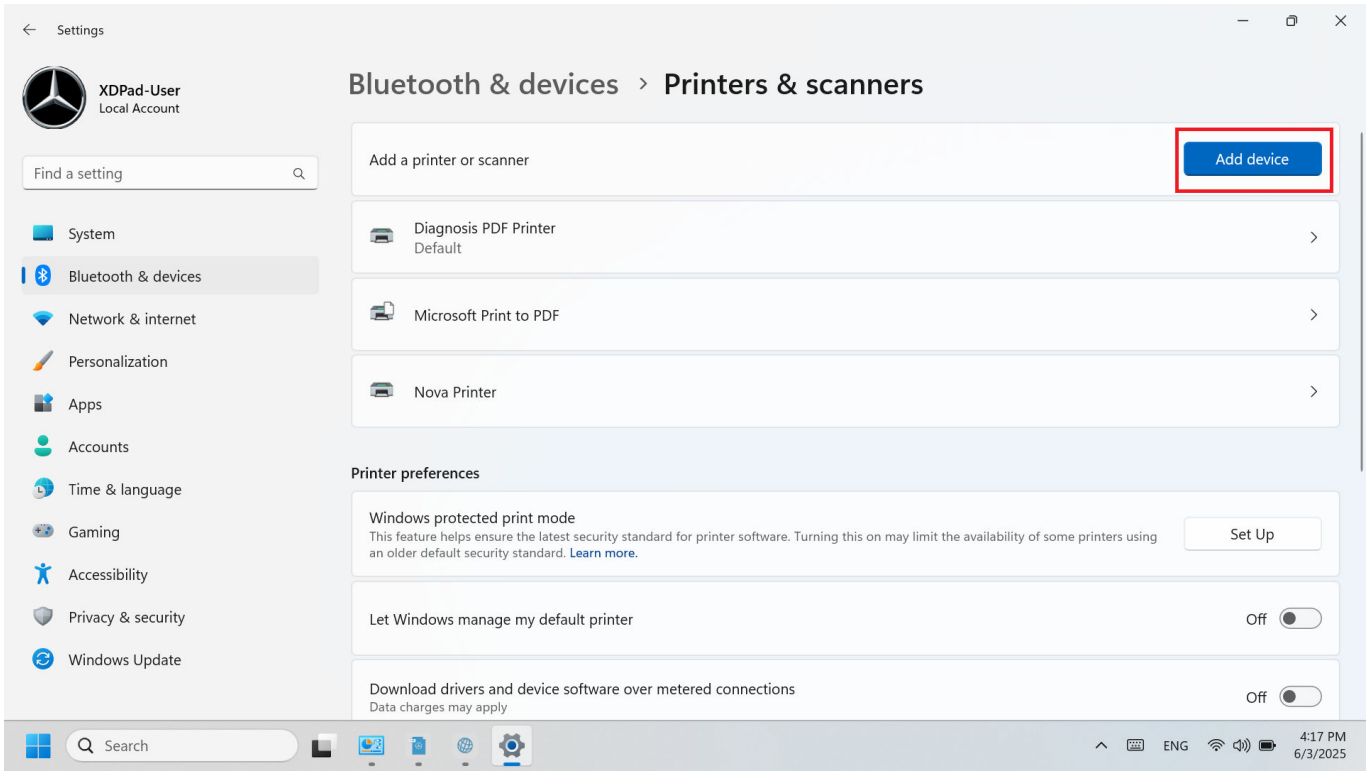
- Open "Settings" via the main menu on the XENTRY Diagnosis Pad.




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




- Click on "Add Device".



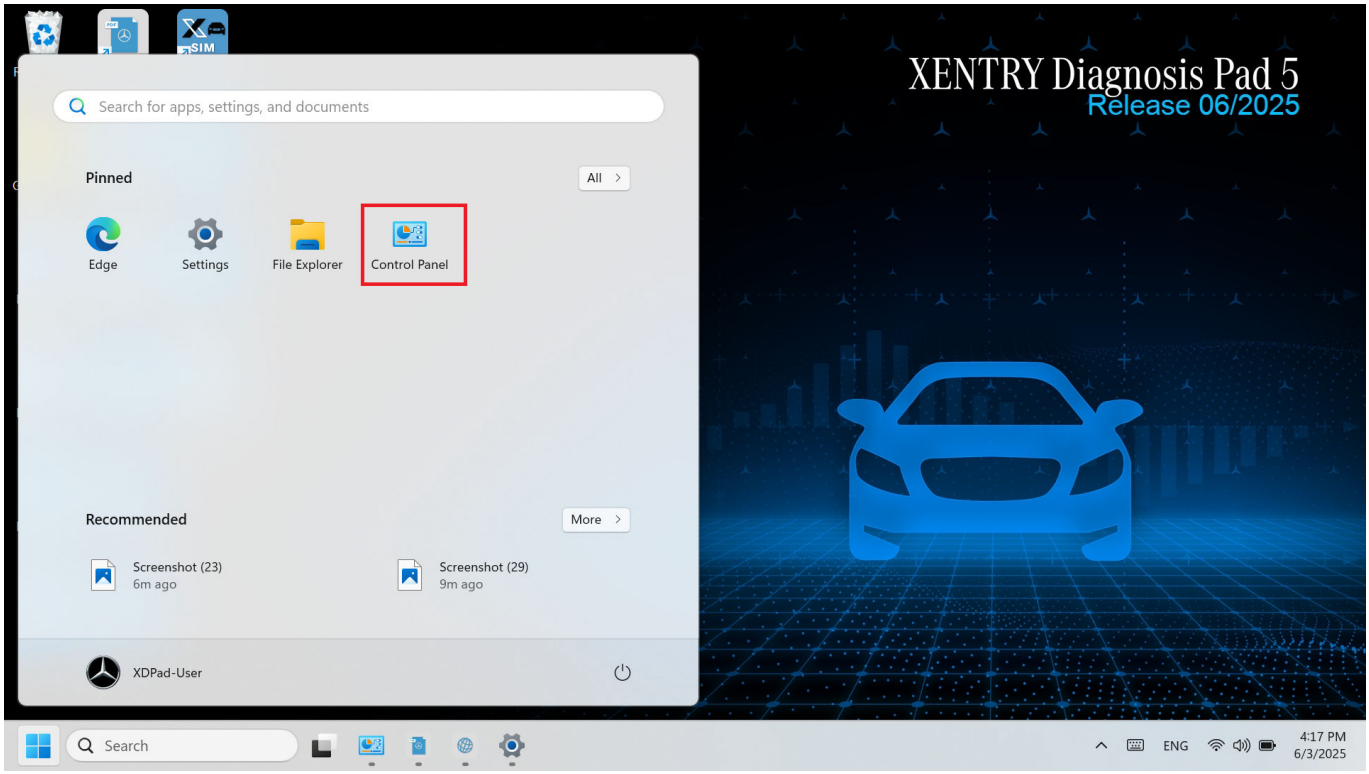

- After a brief search, the network printer is displayed.

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

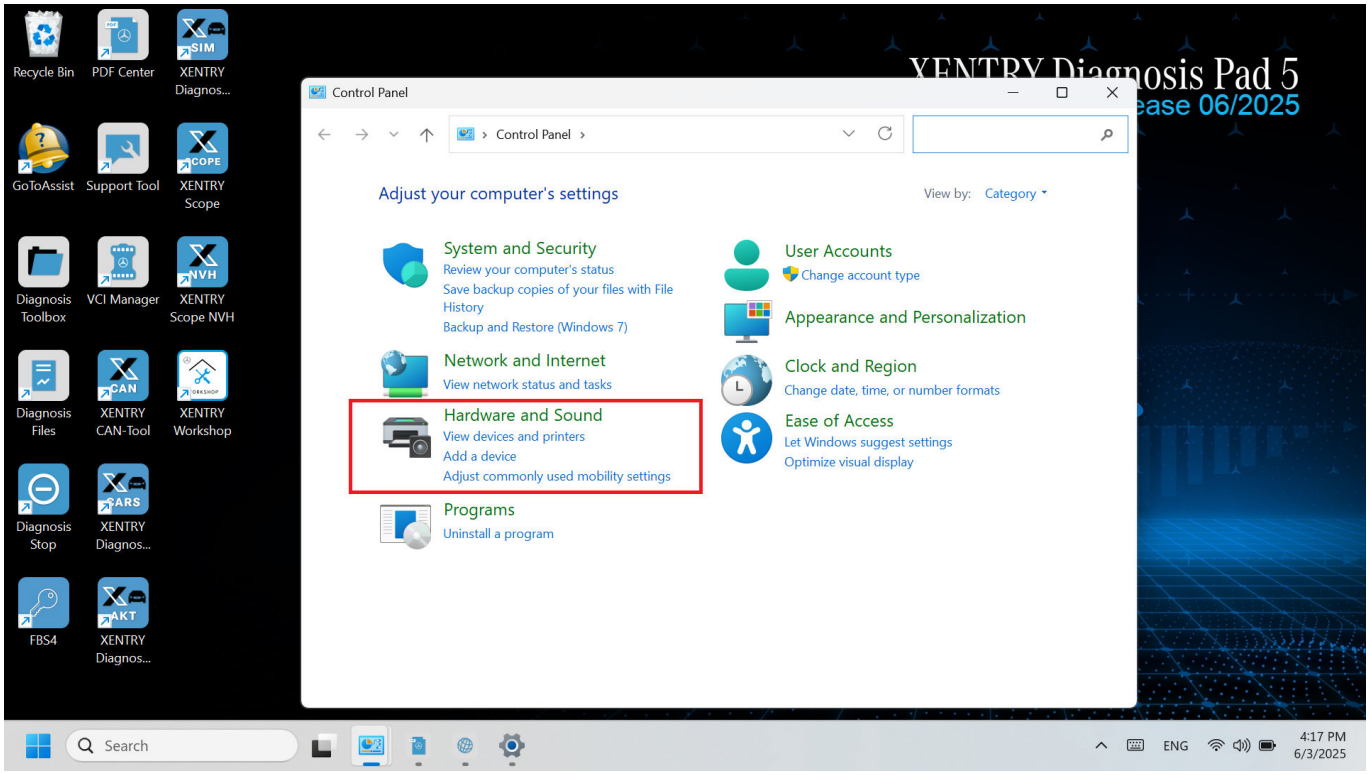
➡ The printer drivers are then automatically retrieved and installed.

The printer is now ready for use.

- If necessary, you can check 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.

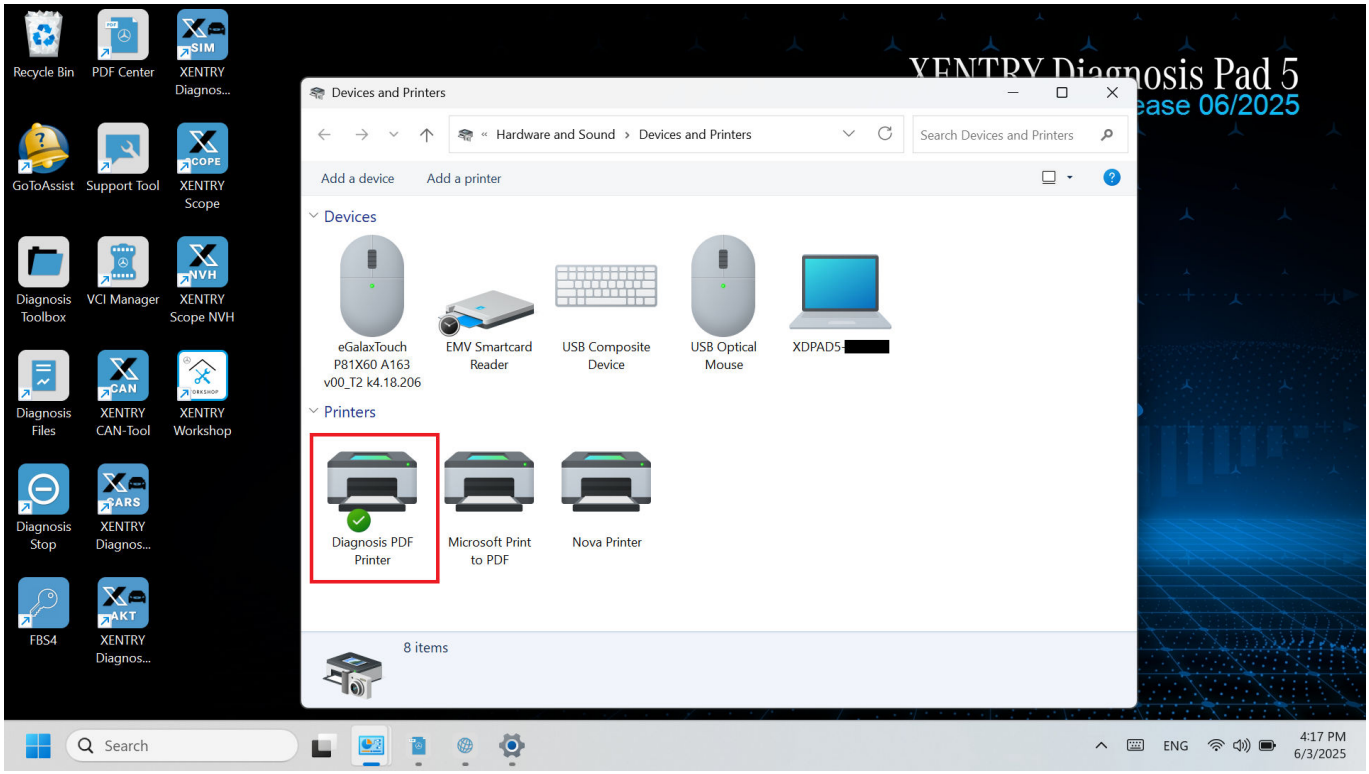



*Fig. 33: Currently installed printers*

### 5.3.3 Wizard for installing printer drivers

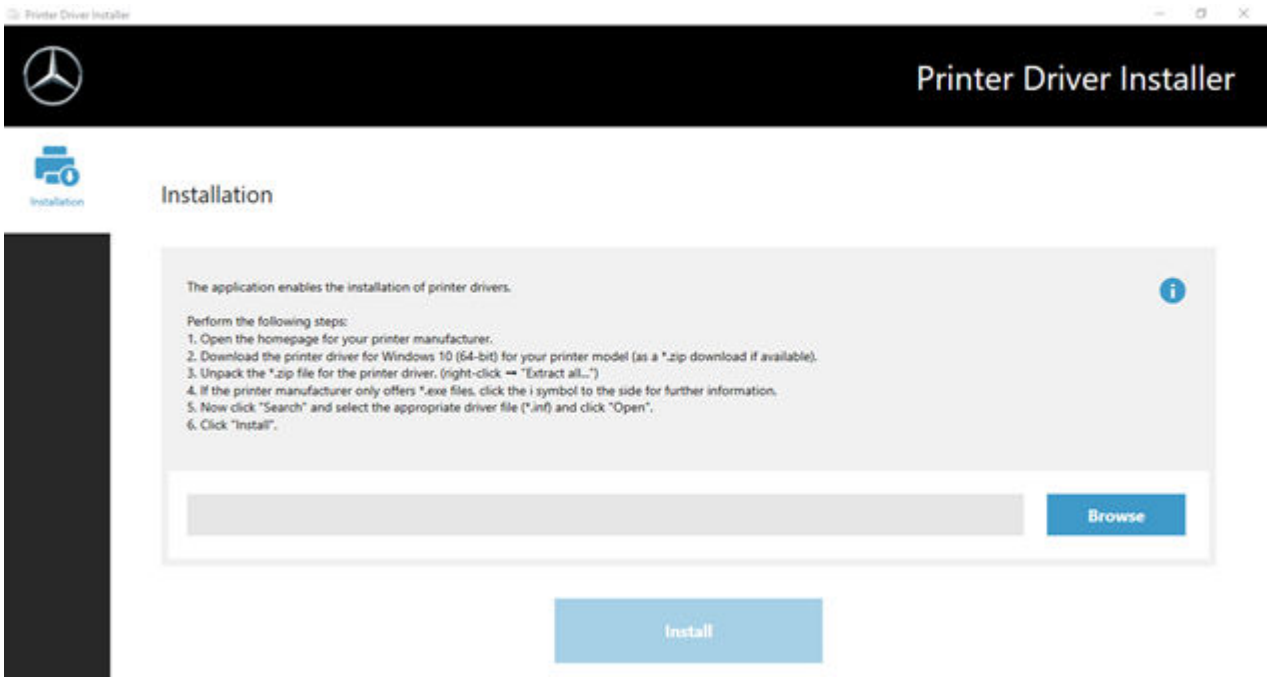
If you are prompted to enter an admin password during printer installation, you have two options:

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.

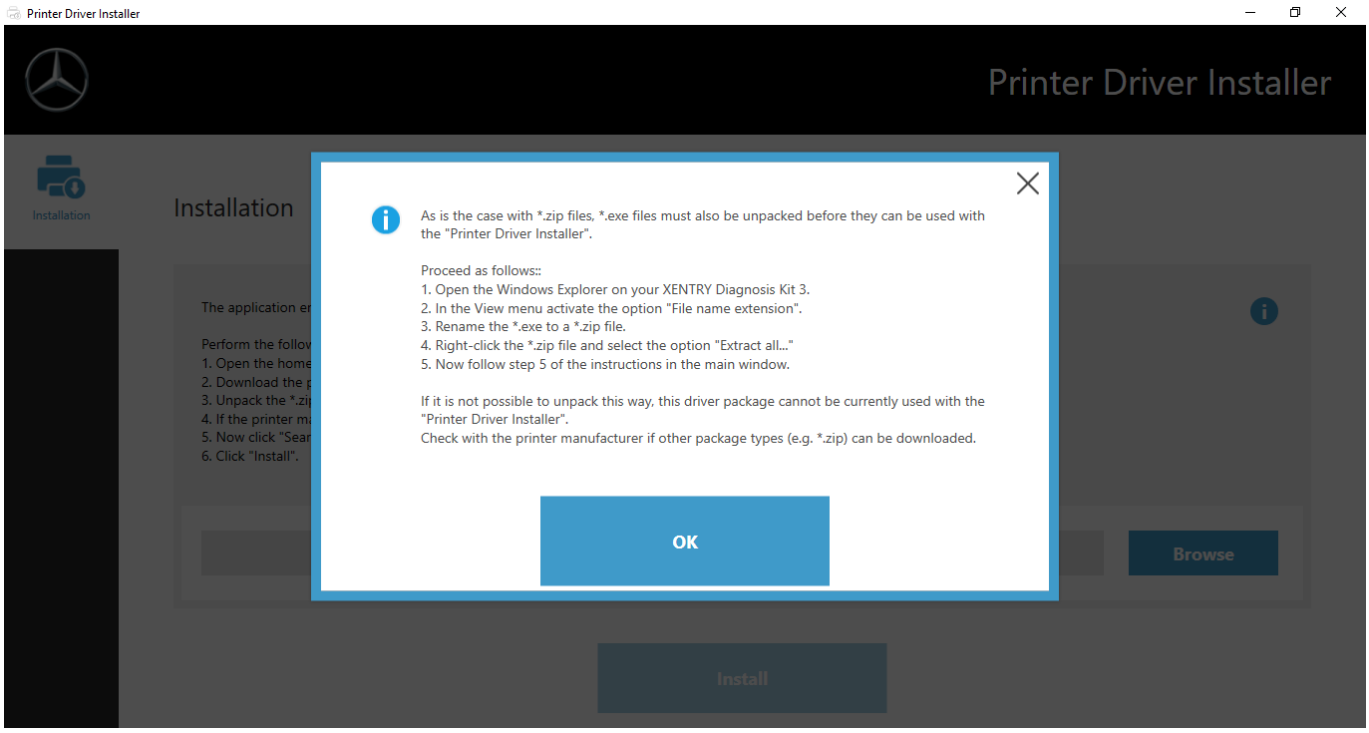



- The installation page opens:




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 click on the button on the right for instructions on how to proceed in this case:




## 5.4 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.

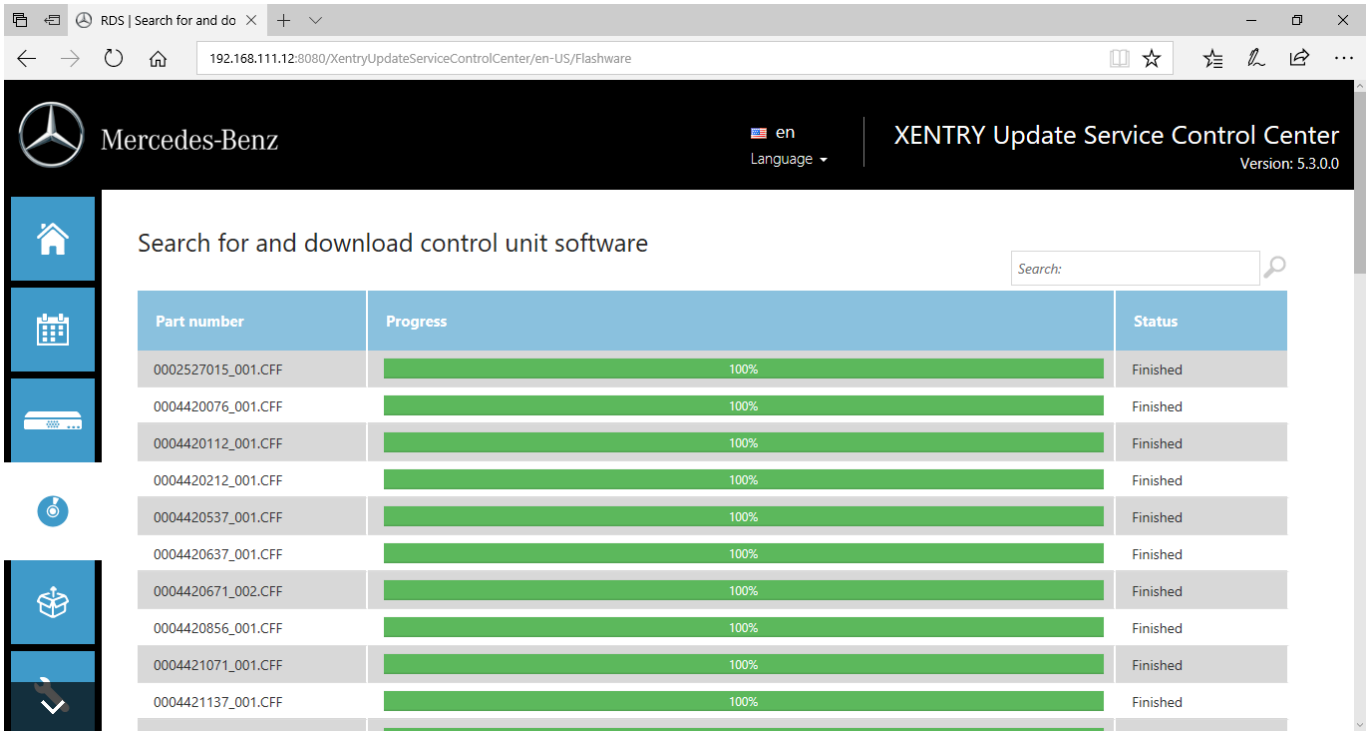



*Fig. 34: Available control unit software*

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

## 5.5 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:

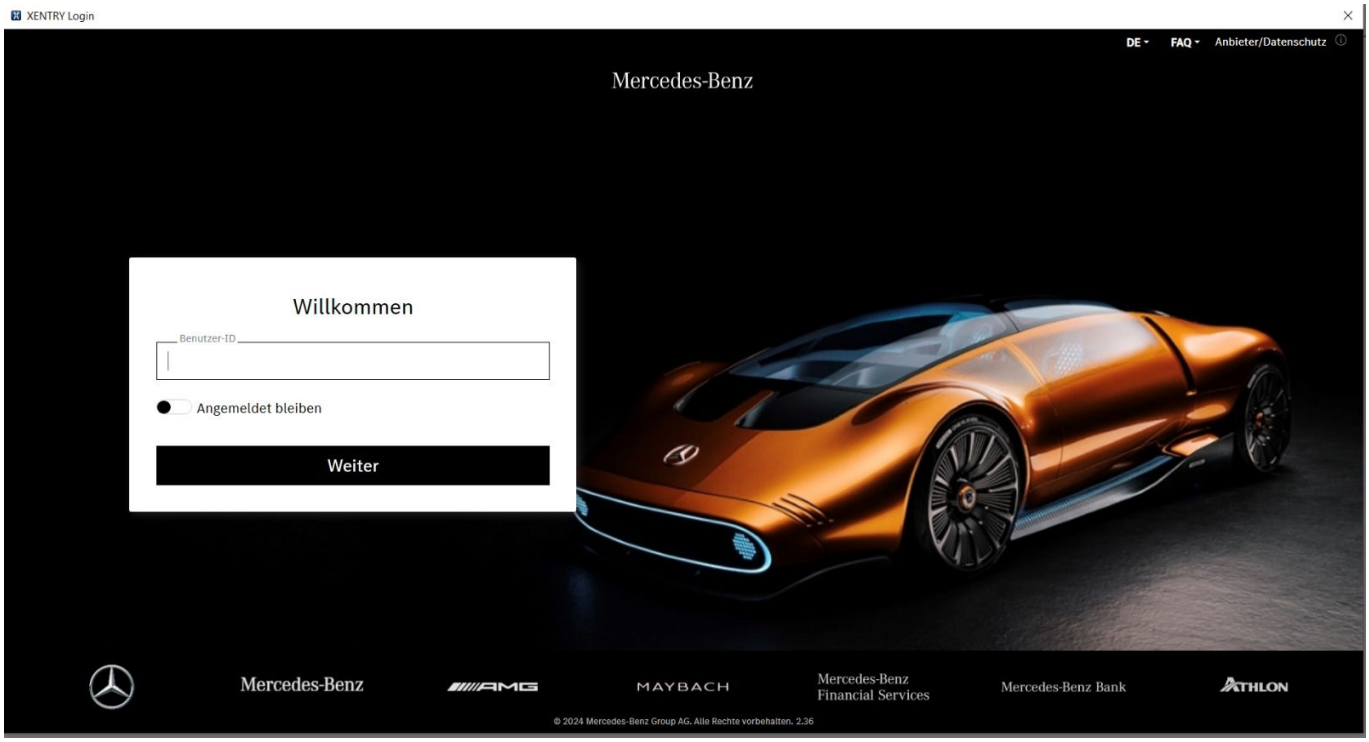



*Fig. 35: XENTRY AQT login*

XENTRY Diagnosis VCI is now ready to perform the AQT.

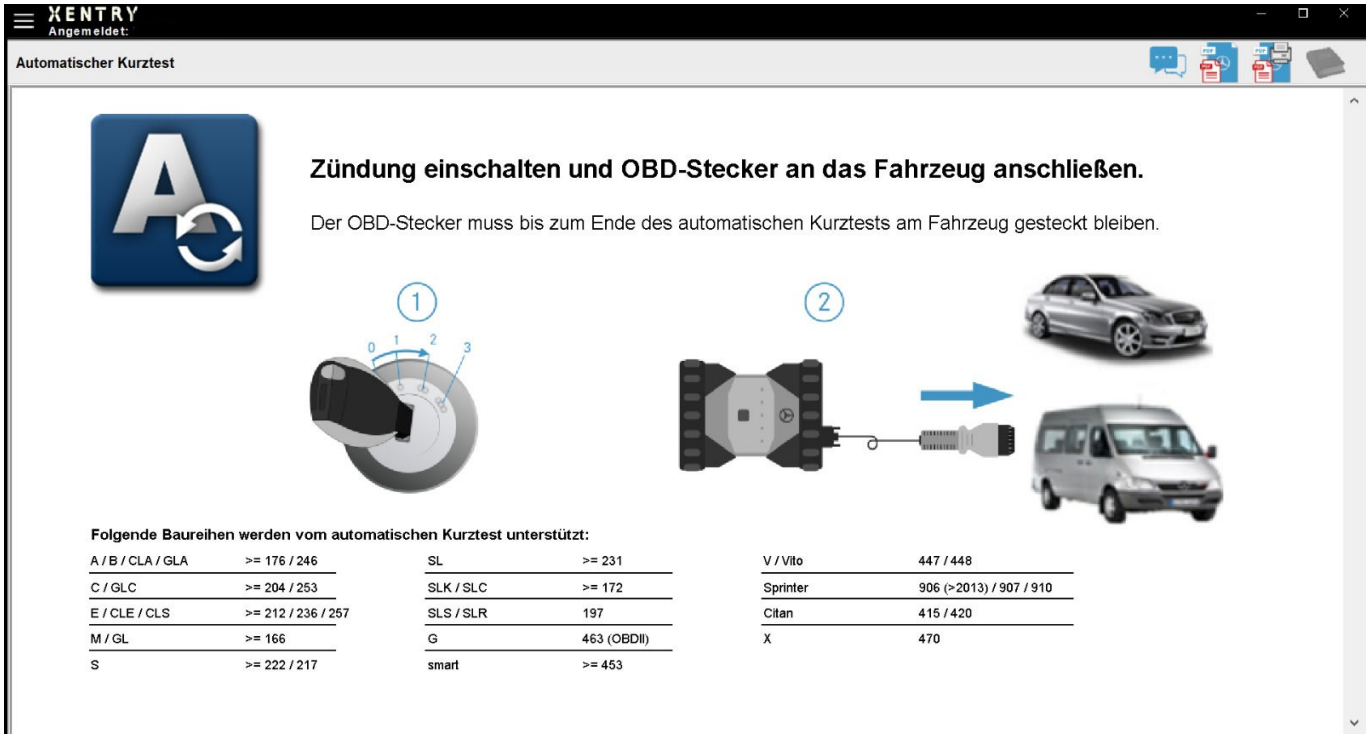



*Fig. 36: AQT main menu*

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. 37: 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.

## 5.6 XENTRY WIS / XENTRY Operation Time

### 5.6.1 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.

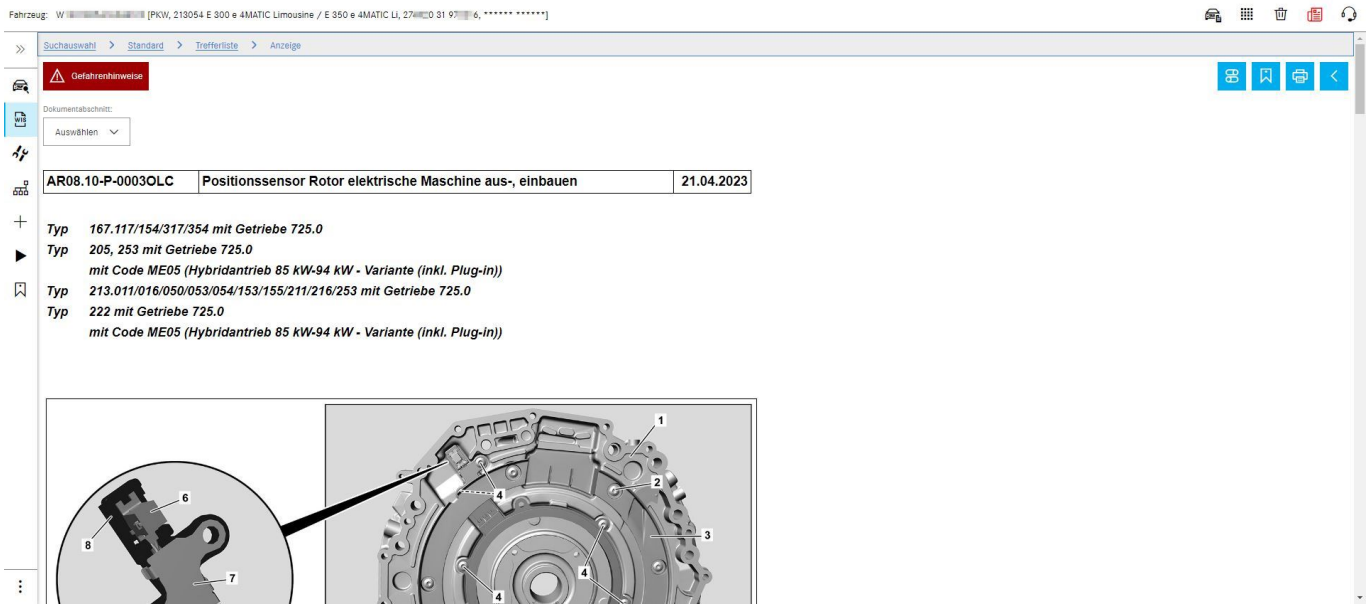



*Fig. 38: Direct launching of XENTRY WIS*

**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
- JAVA/OWS clients are no longer required
- 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
- New product design: Search for workshop information in a new, streamlined design
- Can be used on mobile devices

More information is available in the XENTRY Portal:

➦ https://xentry.mercedes-benz.com/information/content/display/xentry_wis_overview

### 5.6.2 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.

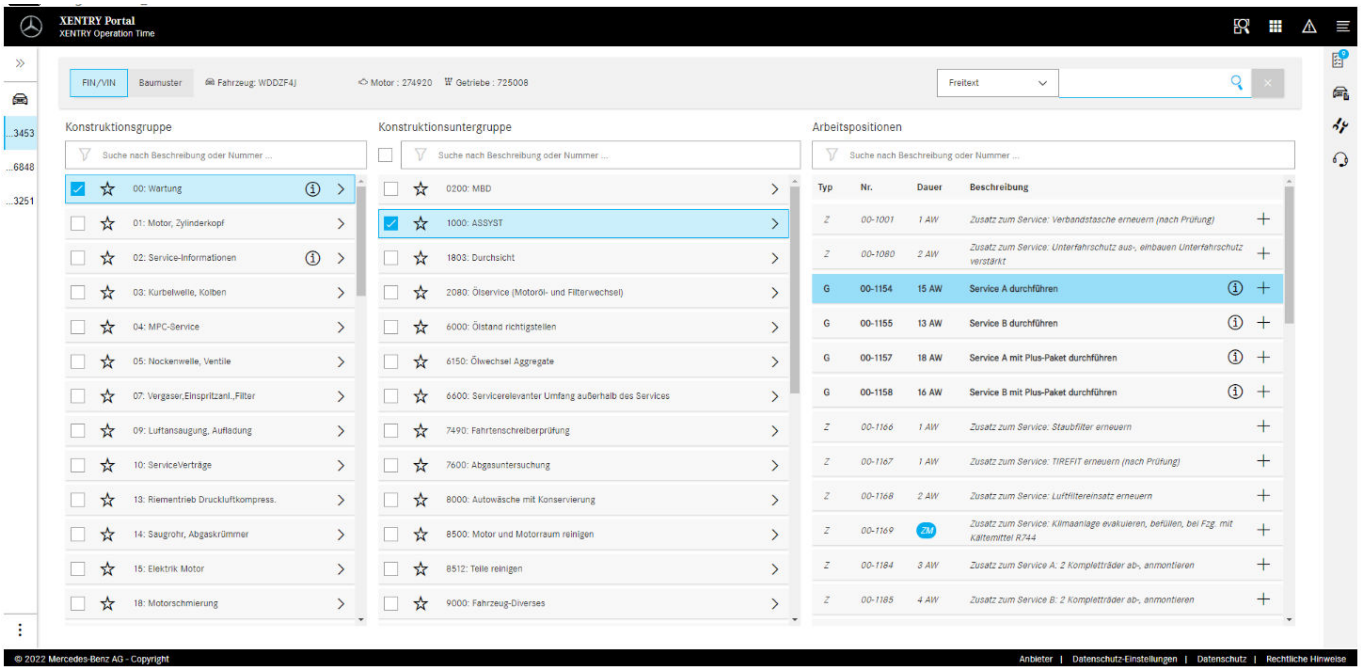



*Fig. 39: Direct launching of XENTRY Operation Time*

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
- JAVA/OWS clients are no longer required

More information is available in the XENTRY Portal:

➦ https://xentry.mercedes-benz.com/information/content/display/xentry_operation_time_overview

### 5.6.3 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.

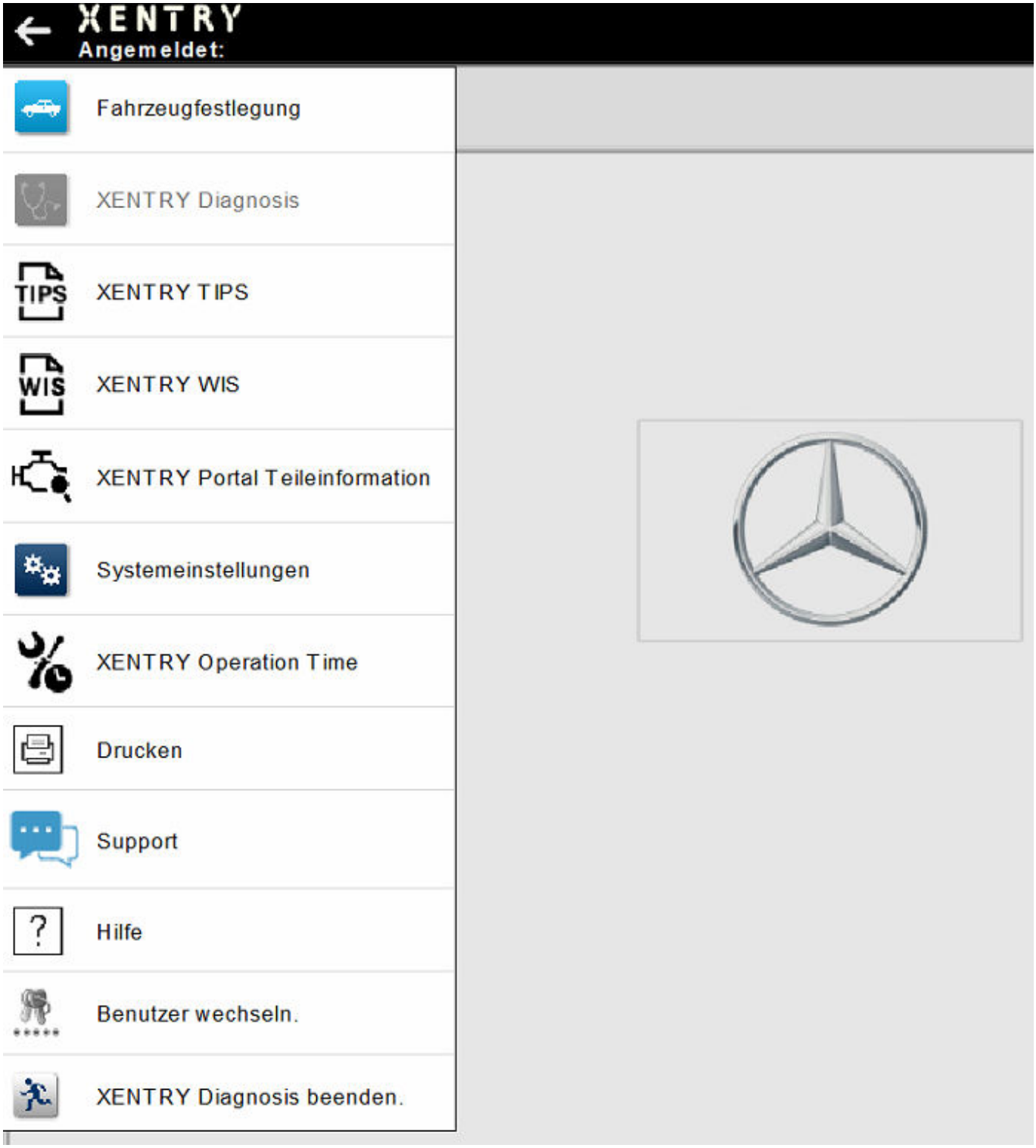



*Fig. 40: Direct launching of XENTRY WIS/Operation Time from the XENTRY frame*

*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.*

### 5.6.4 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.

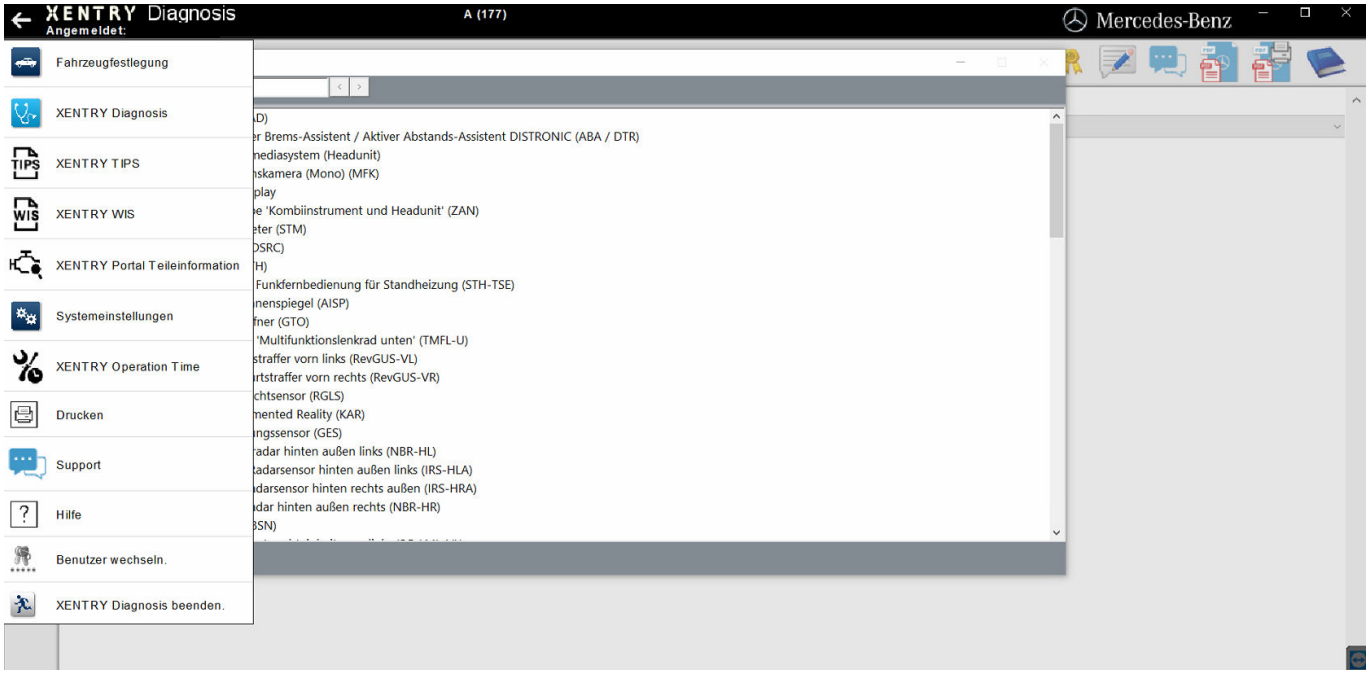



*Fig. 41: Direct launching of XENTRY WIS/Operation Time from the diagnosis session*

### 5.6.5 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.

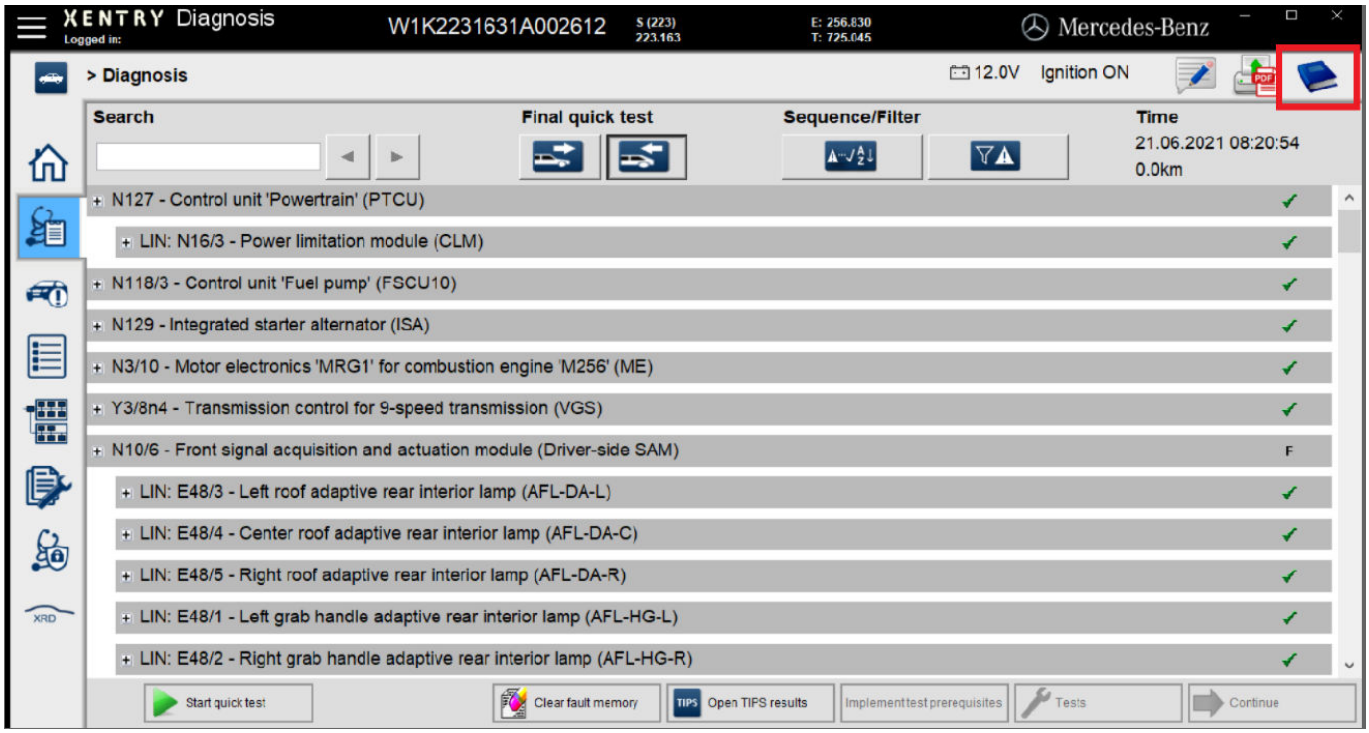



*Fig. 42: Vehicle-specific wiring diagrams via "Dynamic Wiring Diagram"*

- 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.

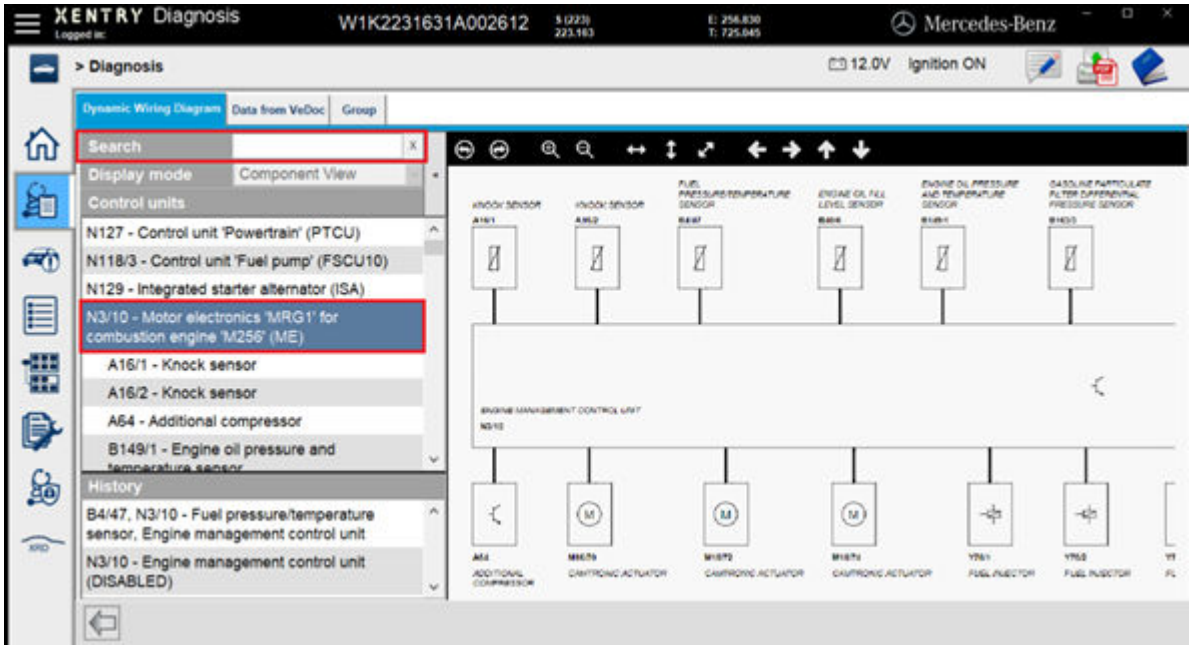



*Fig. 43: Overview of components in wiring diagram*

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

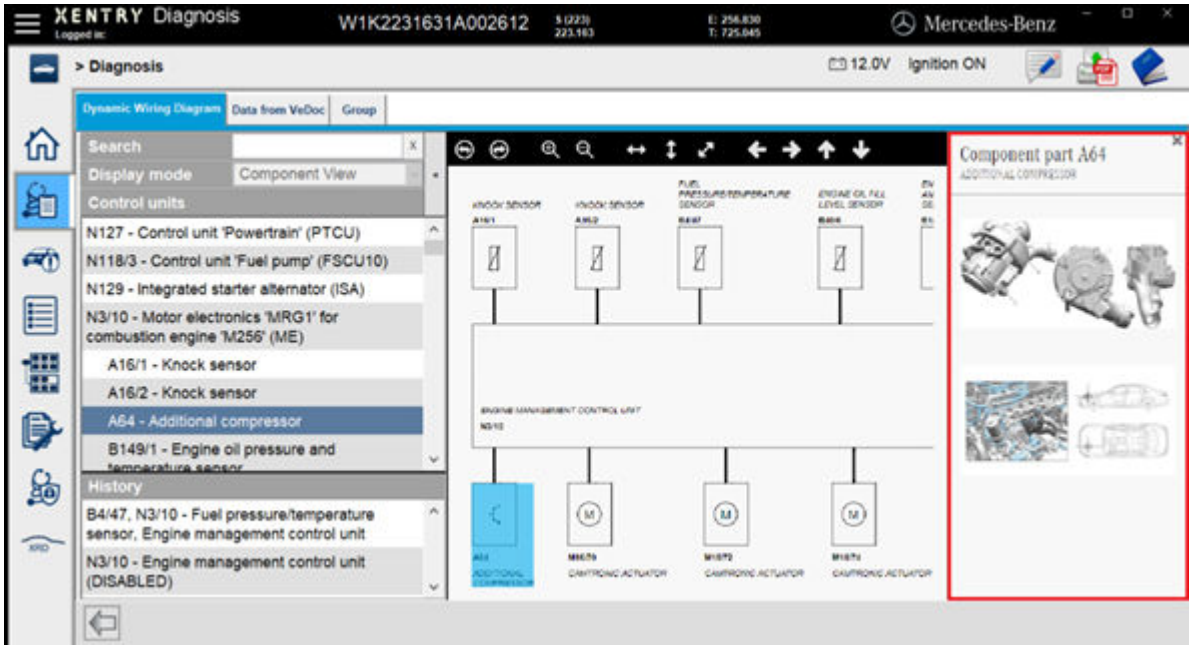



*Fig. 44: Selection of components and respective installation location*

# 6 Hardware components of XENTRY Diagnosis Kit

## 6.1 XENTRY Diagnosis Pad 5

### 6.1.1 Technical performance features of XENTRY Diagnosis Pad 5




*Fig. 45: View of XENTRY Diagnosis Pad 5*

| | |
|---|---|
| Hard drive: | 1 TB SSD |
| RAM: | 16 GB DDR4 |
| Processor: | Intel ® Core™ i5 |
| Operating system: | Windows 11 IoT |
| Dimensions: | Wait approx. 351 x 299 x 32 mm (W x L x H) |

- 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.

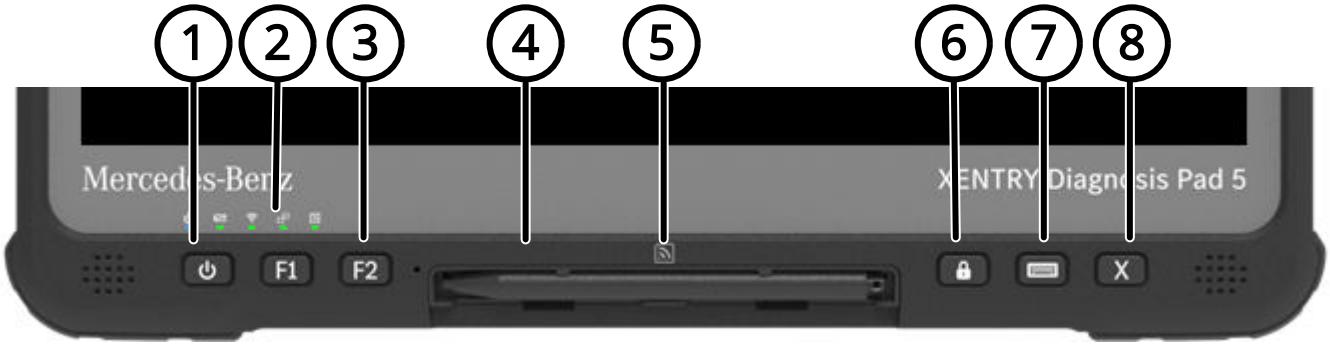
### 6.1.2 Connections on the XENTRY Diagnosis Pad 5




*Fig. 46: Connections on the XENTRY Diagnosis Pad 5*

### 6.1.3 Buttons and displays on the XENTRY Diagnosis Pad 5

The XENTRY Diagnosis Pad 5 is equipped with the following buttons and displays:




1 Power button
2 LED status displays for WLAN, hard disk operation, rechargeable battery, operating status
3 F1 and F2 function buttons, freely assignable
4 Stylus
5 RFID for contactless authentication
6 Log off
7 Show/hide virtual keyboard
8 Start XENTRY Diagnosis Software

## 6.2 XENTRY Diagnosis VCI

### 6.2.1 XENTRY Diagnosis VCI technical performance features




*Fig. 47: 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<br>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.

### 6.2.2 Connections and control elements on the XENTRY Diagnosis VCI

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

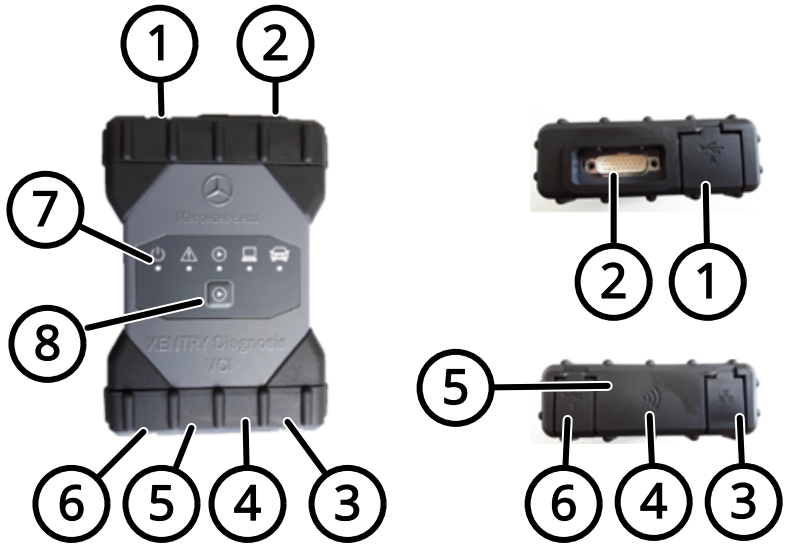



*Fig. 48: XENTRY Diagnosis VCI connection*

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

### 6.2.3 Status display and control elements on the XENTRY Diagnosis VCI



*Fig. 49: 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 |

# 7 Accessories

## 7.1 Optionally available accessories

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

The following accessories can be ordered:

- Rechargeable battery
- Power supply unit with power supply plug
- Stylus pen
- Docking station including power supply unit
- On-board charging cable 12/24 V
- XENTRY Scope

### XENTRY Diagnosis Pad 5 USB-C Docking Station

The XENTRY Diagnosis Pad 5 USB-C Docking Station provides addition connectivity, including USB ports and ports for monitors or projectors.




*Fig. 50: Docking station*

*Table 2: Technical data for the XENTRY Diagnosis Pad 5 USB-C Docking Station*

| | |
|---|---|
| Dimension | 210 x 110 x 47.5 mm without cable |
| Power consumption | 19 V DC in (default) |
| Connections | 4 x USB-A 3.0<br>1 x USB-C cable (to connect the XENTRY Diagnosis Pad 5)<br>1 x USB-C (Power in only)<br>1 x USB C (PD/ALT)<br>1 x LAN Port 1 x HDMI 1.4 |
| Operating temperature | -10 °C ~ 50 °C |
| Delivery package | Including USB-C connection |

*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.*

## 7.2 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.



*Fig. 51: XENTRY Scope*

## 7.3 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

## 7.4 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 of the Retail Data Storage to the vehicle via LAN.

# 8 Operating tools

## 8.1 ConfigAssist

ConfigAssist guides you through the configuration and initial commissioning of your new XENTRY diagnostic device. The exact configuration procedure is available in ➦ “Commissioning and configuration” on page 8.

ConfigAssist provides the following functions:

- Introduction to the hardware
- Network configuration
- Pairing of XENTRY Diagnosis Pad and VCI
- Loading the StartKey
- Configuring the XENTRY Update Service
- Additional information

## 8.2 Update Center

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



*Fig. 52: 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, an available release switchover, the current update status, and the most recently installed add-on.

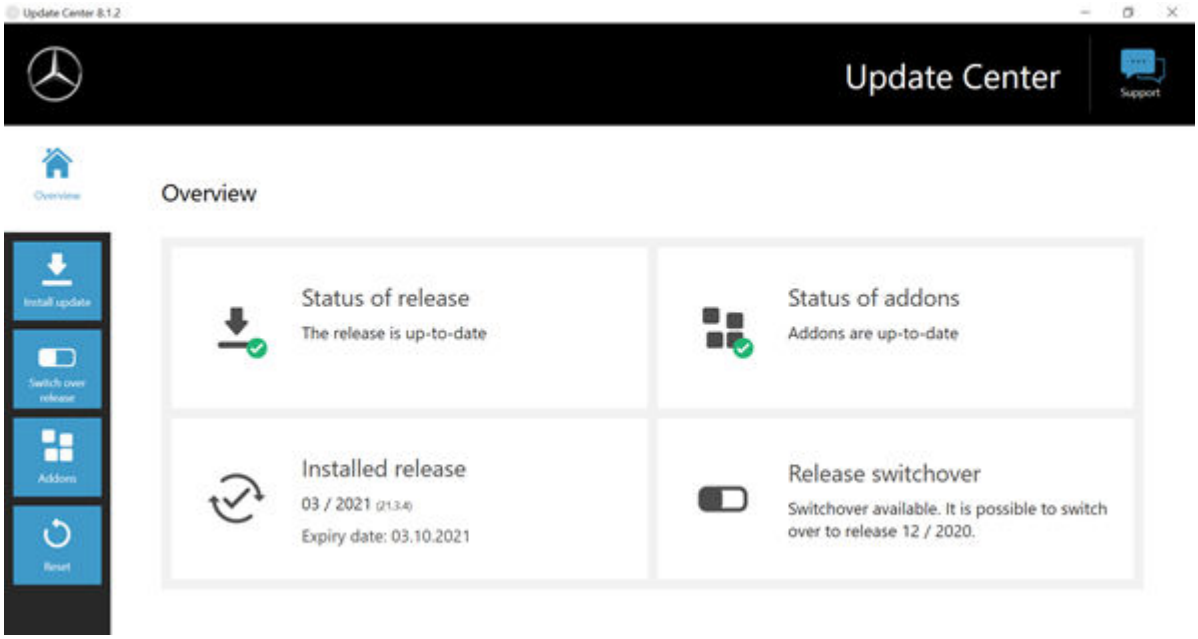



*Fig. 53: Update Center main menu*

### 8.2.1 Switch over 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, it is necessary to switch back to the predecessor software update after installing a new update, click on the "Switch release" button in the left navigation area and then on the "Switch" button. Usually, this won't take longer than ten minutes.

Once you've switched over, you can revert to the latest software update again using this same button.

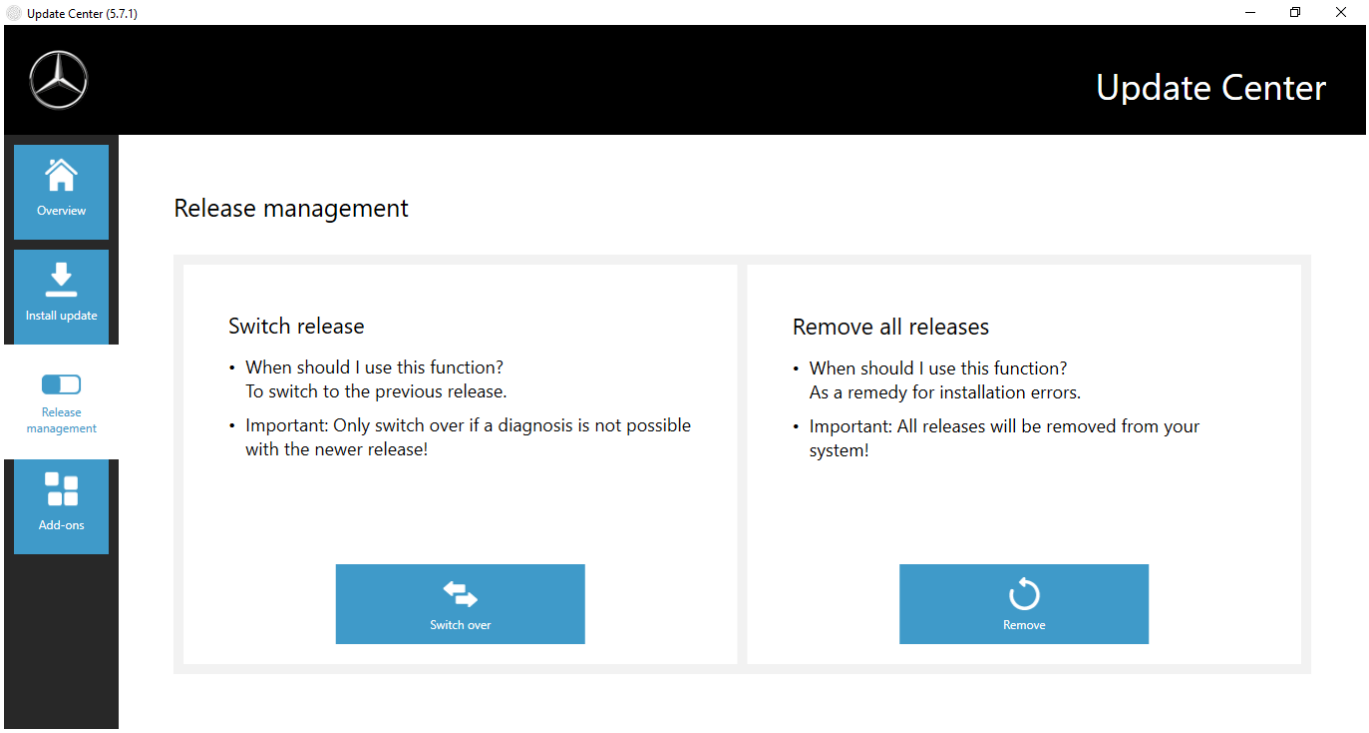



*Fig. 54: Release switching in the Update Center*

*Please note that release switching is only possible after at least two release updates have been successfully installed.*

### 8.2.2 Add-ons

Add-ons are automatically installed on the XENTRY Diagnosis Pad. This is managed via 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.

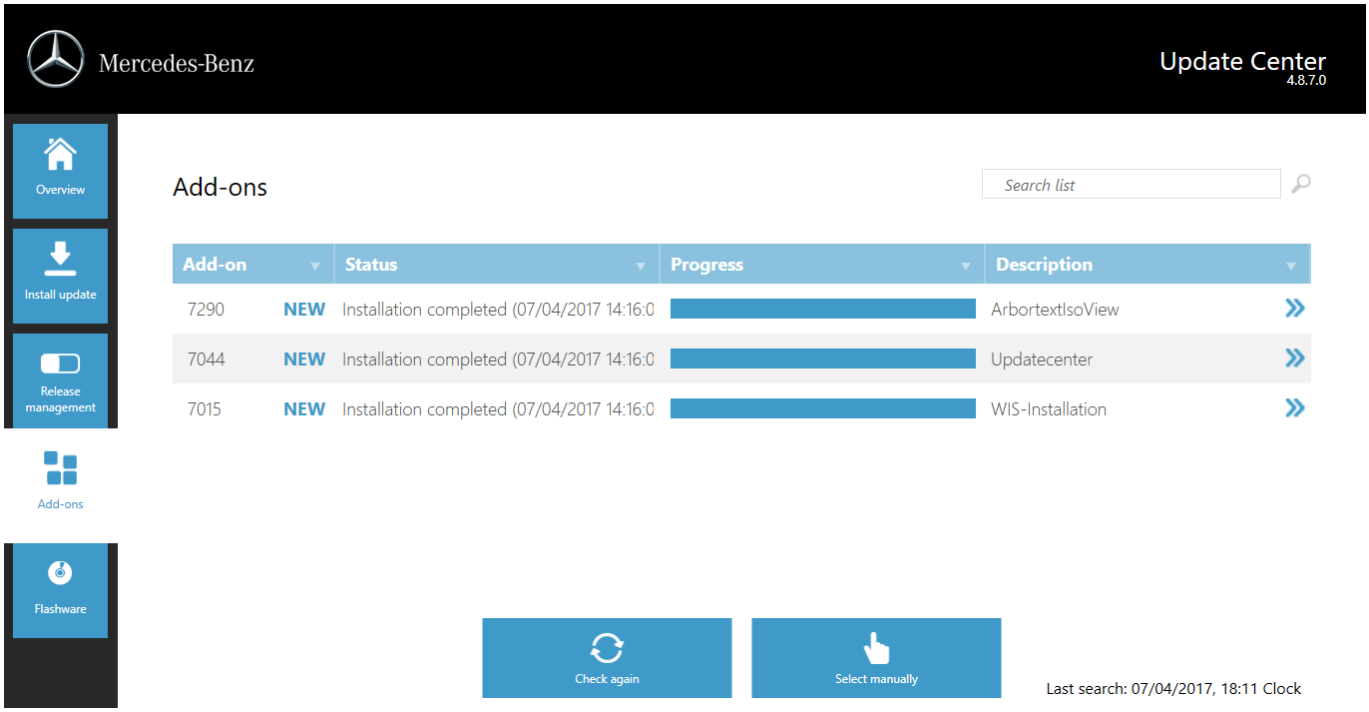



*Fig. 55: Installed add-ons*

More information on the Update Center is available in ➦ Chapter 8.2 “Update Center” on page 49

Generally, the Update Center will automatically check whether any new add-ons are available on a continual basis. You can initiate this check process manually using the "Check again" button.

If a support employee e-mails you an add-on, you can copy it onto a USB flash drive and upload and install it yourself on the XENTRY Diagnosis Pad via "USB add-on installation".

## 8.3 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.

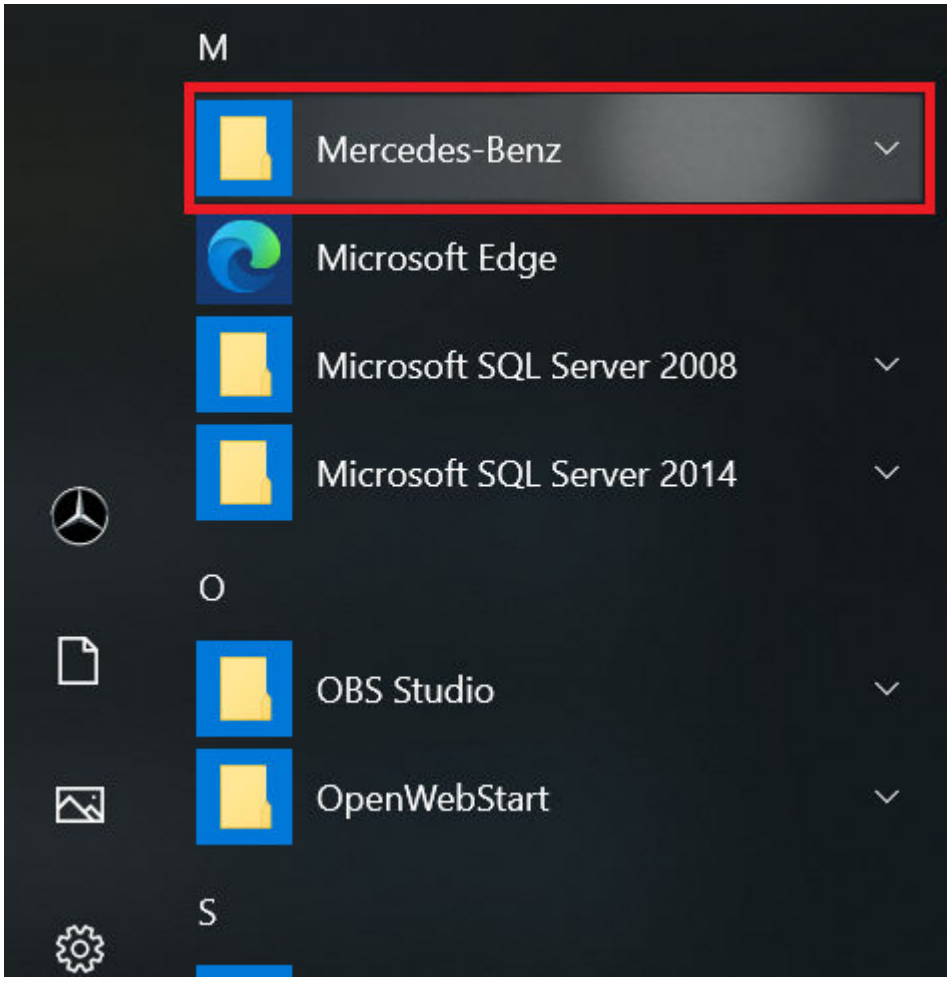



*Fig. 56: Windows Start Menu Mercedes-Benz*

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

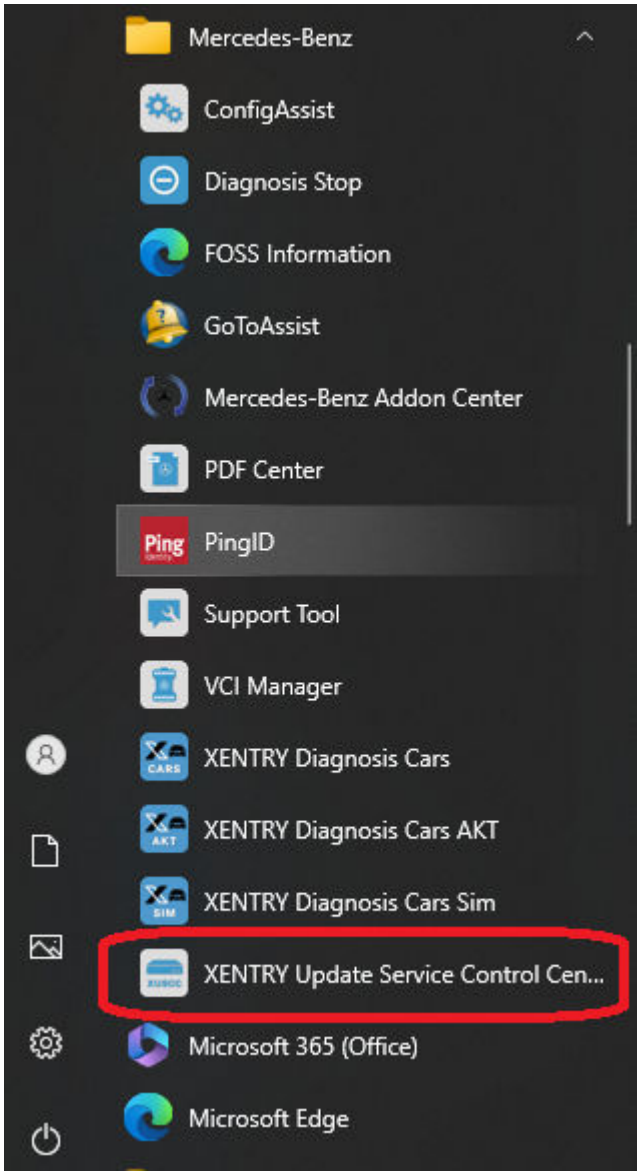



*Fig. 57: Windows Start Menu Mercedes-Benz XENTRY Update Service Control Center*

### 8.3.1 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.

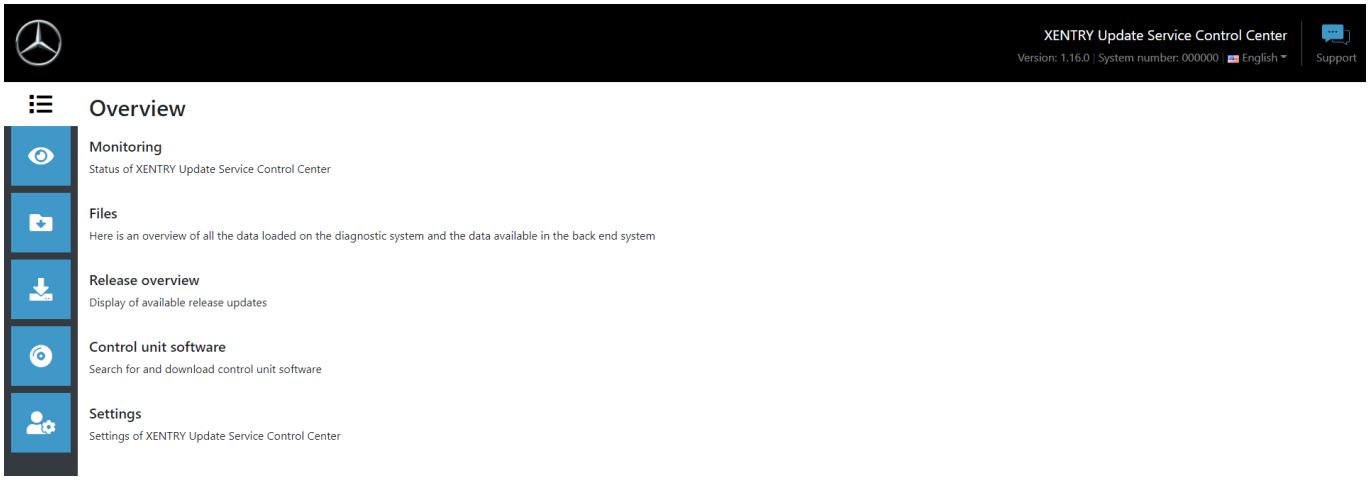



*Fig. 58: Overview of XENTRY Update Service Control Center*

## 8.3.2 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.

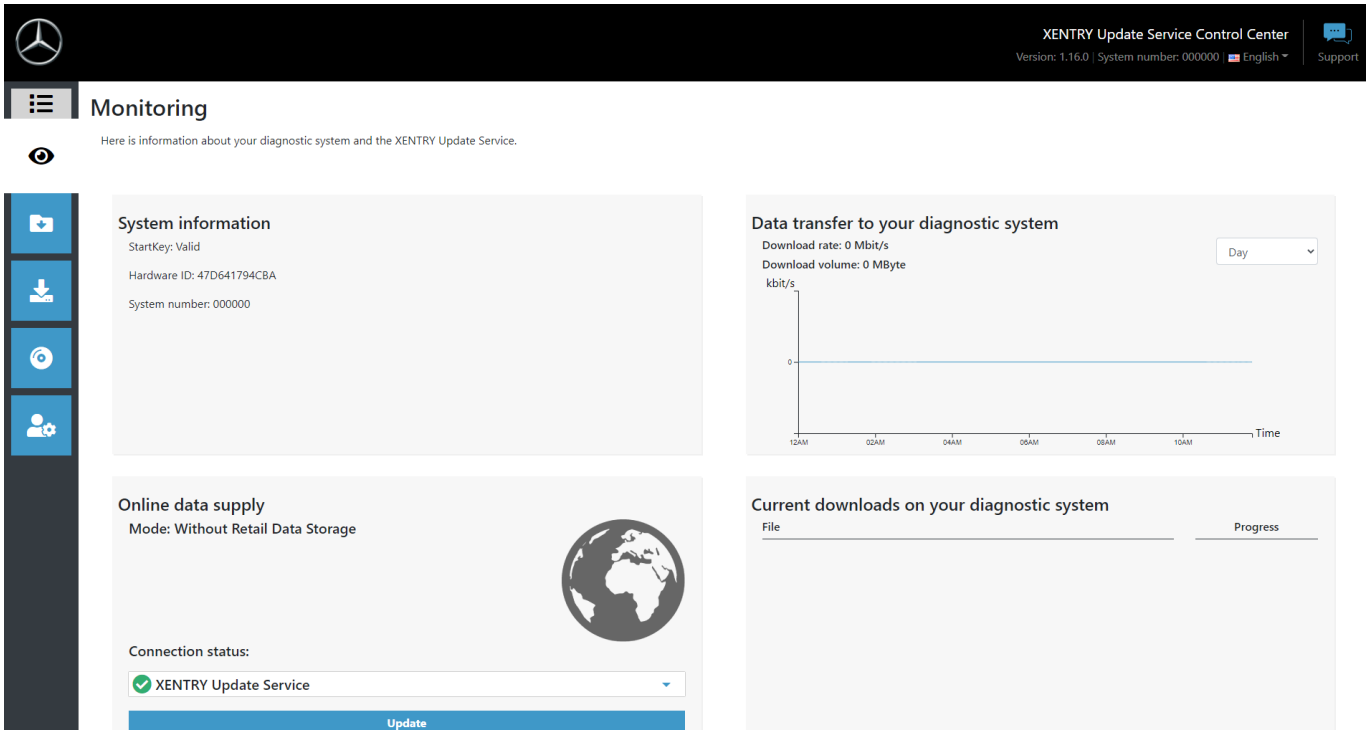



*Fig. 59: Monitoring of data supply via XENTRY Update Service*

## 8.3.3 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 8.3.4 “Release overview” on page 55.

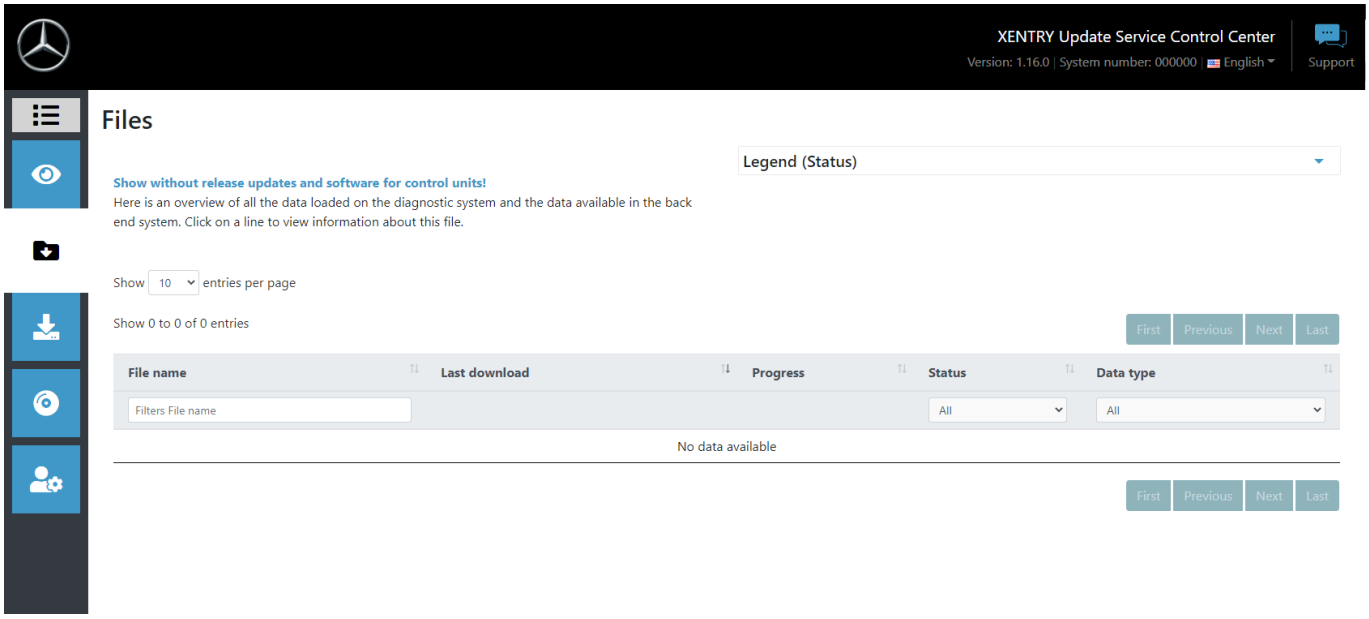



*Fig. 60: Files available in the XENTRY Update Service*

### 8.3.4 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.

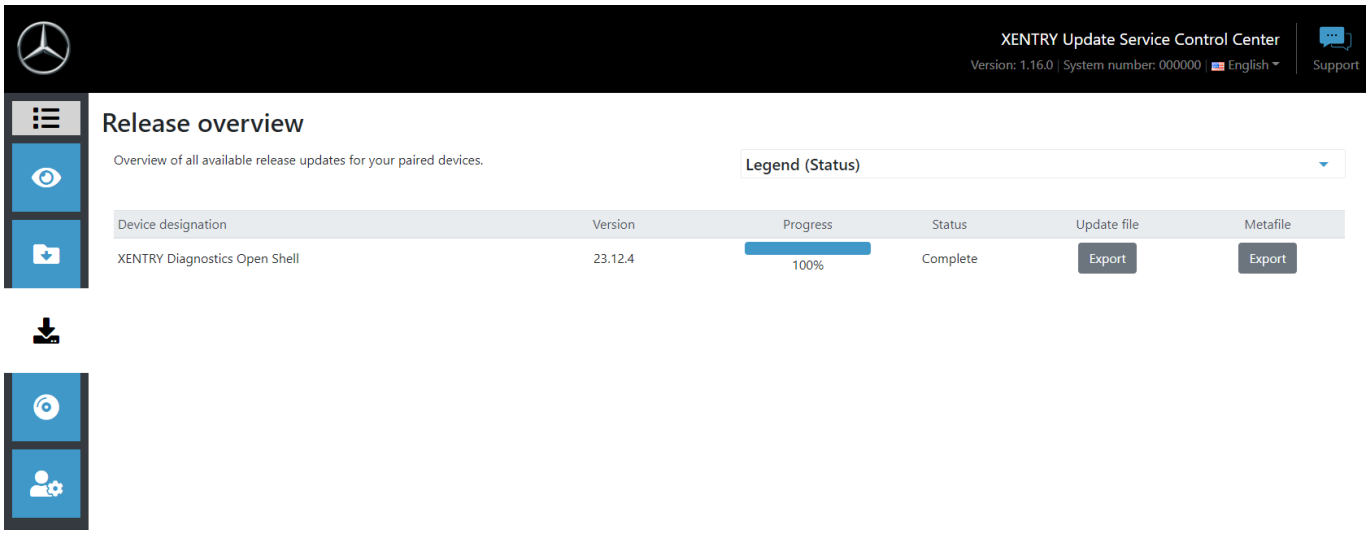



*Fig. 61: Release overview in the XENTRY Update Service Control Center (2)*

### 8.3.5 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.

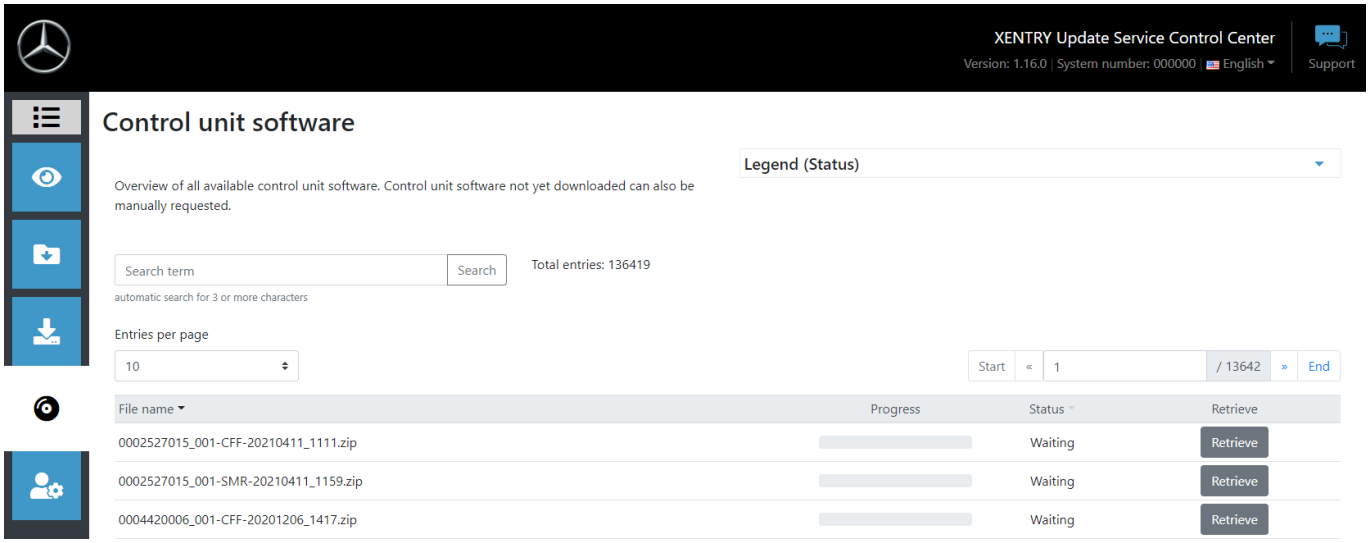



*Fig. 62: Overview of available control unit software*

### 8.3.6 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.

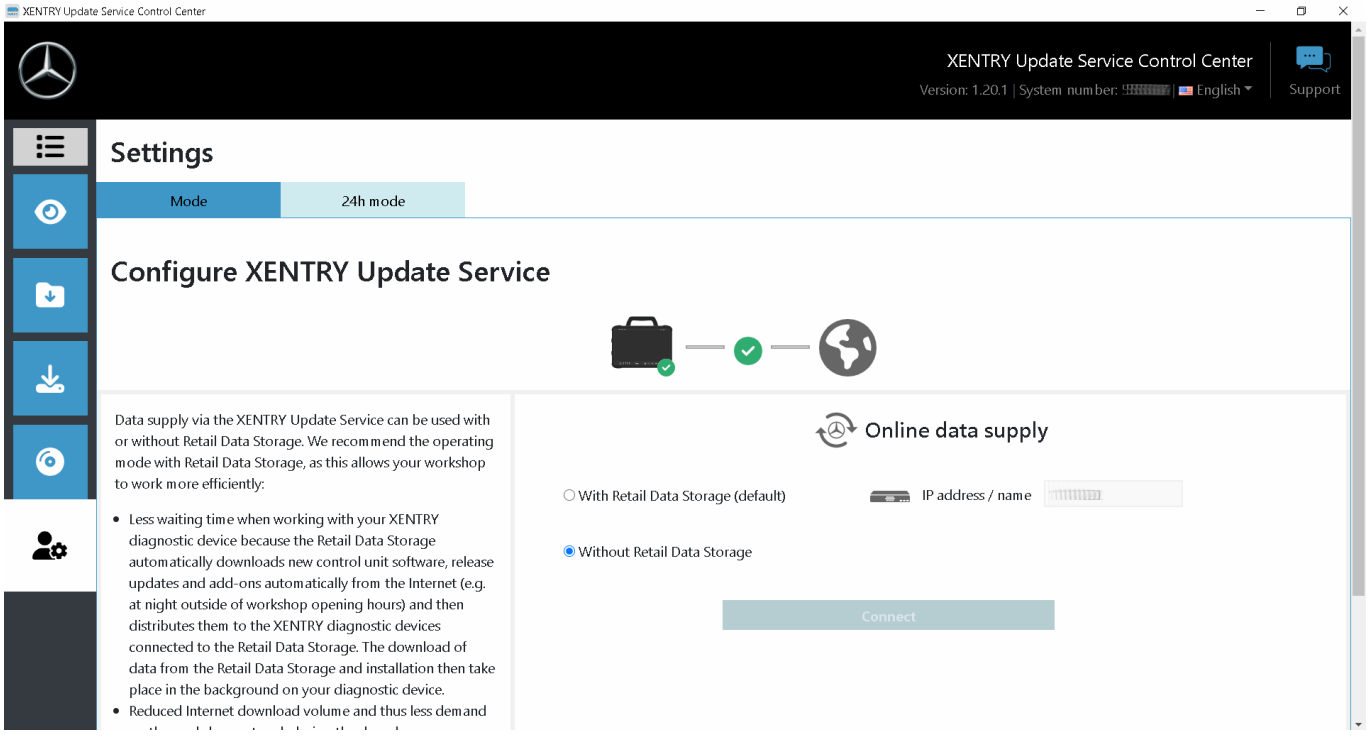



*Fig. 63: XUS mode*

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).

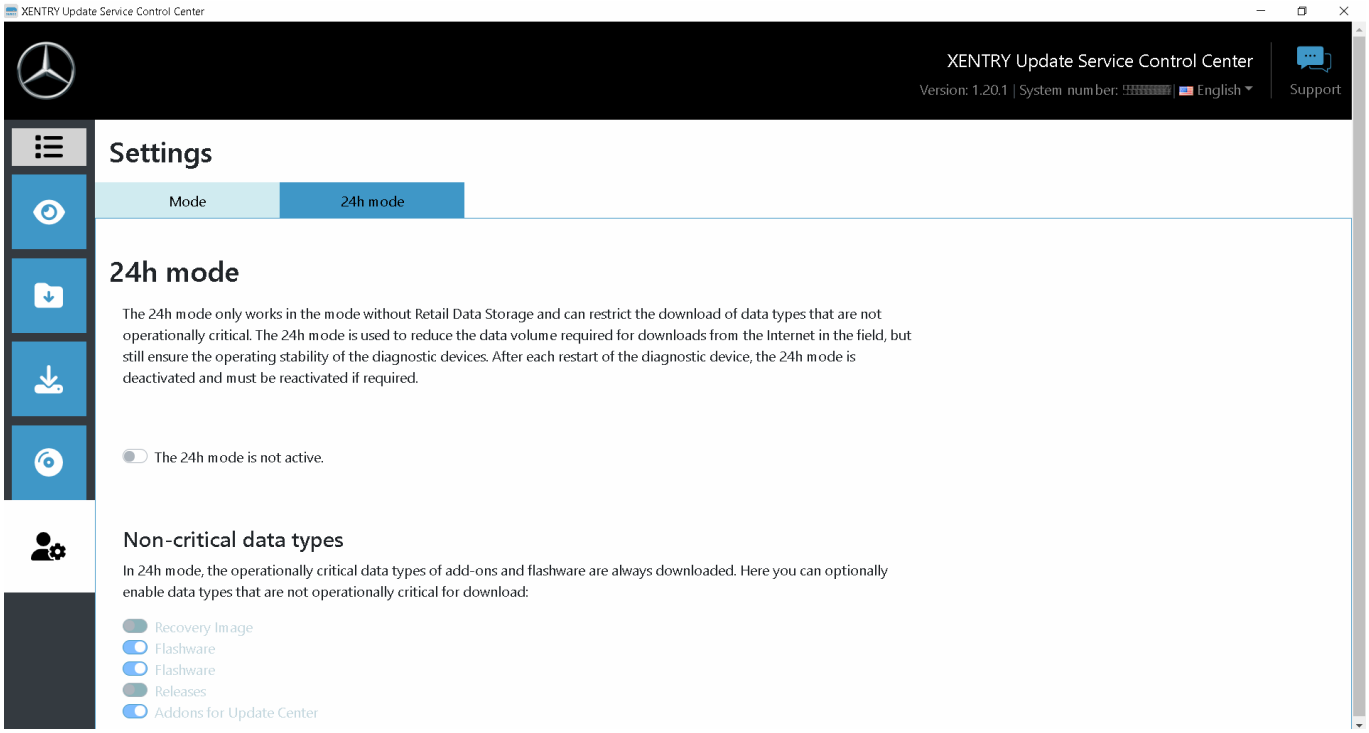



*Fig. 64: 24h mode not active*

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.

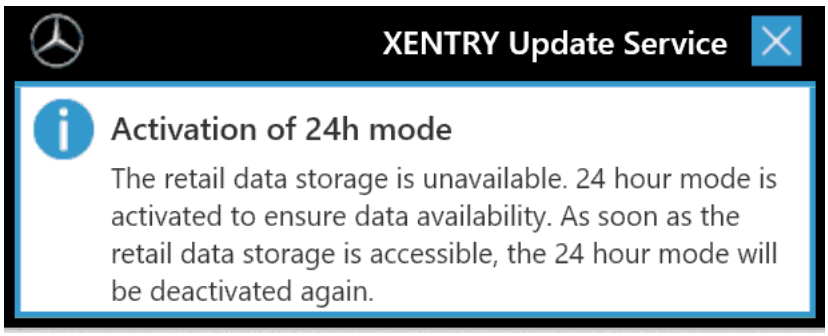



*Fig. 65: Note for 24h mode activated*

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.

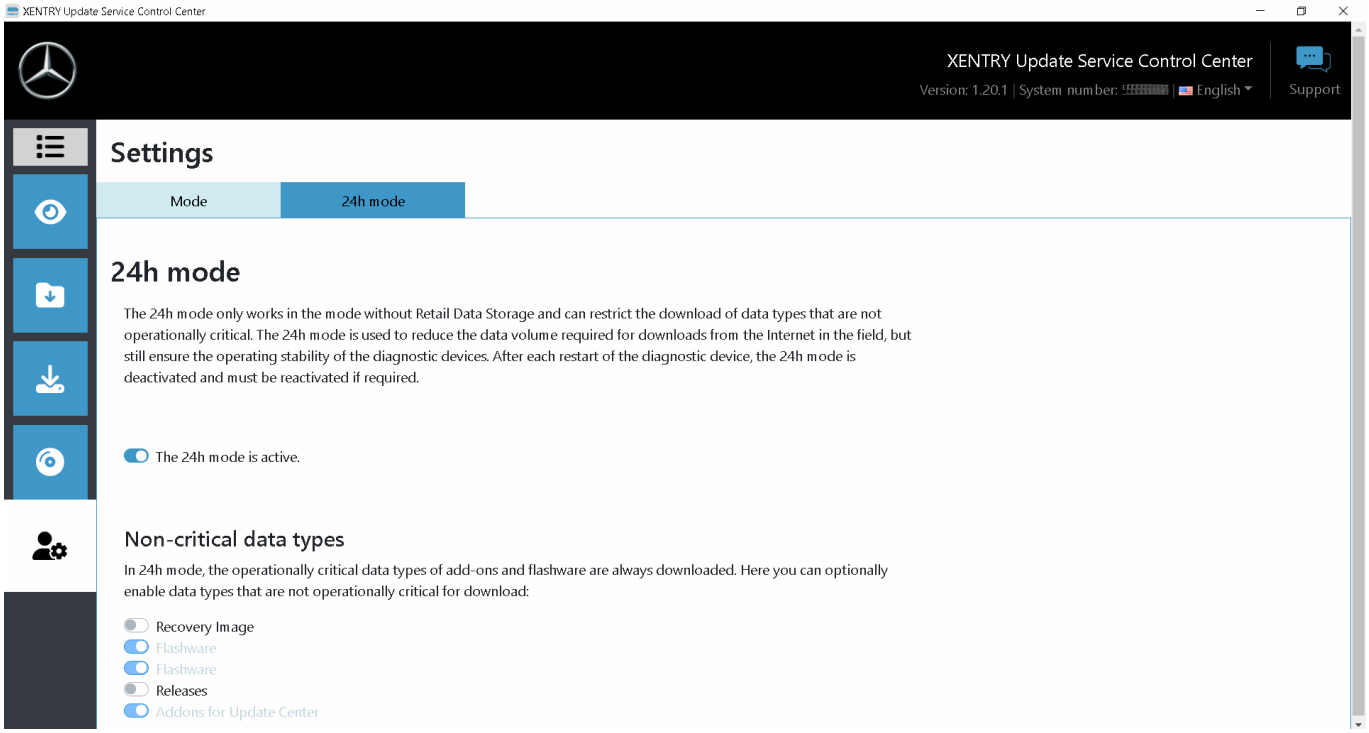



*Fig. 66: 24h mode active*

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.

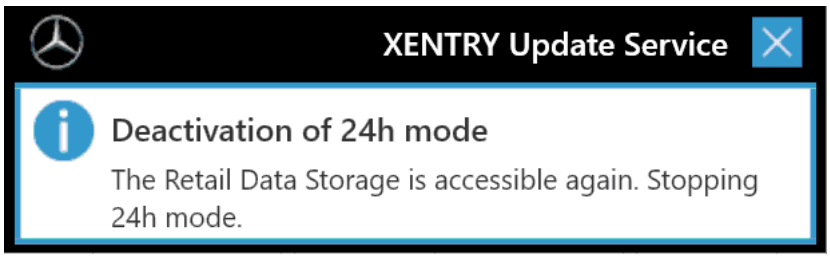



*Fig. 67: Note for 24h mode deactivated*

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. 68: XUS-24h active in task bar*




*Fig. 69: XUS-24h not active in task bar*

## 8.4 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. 70: VCI Manager icon*

### 8.4.1 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.

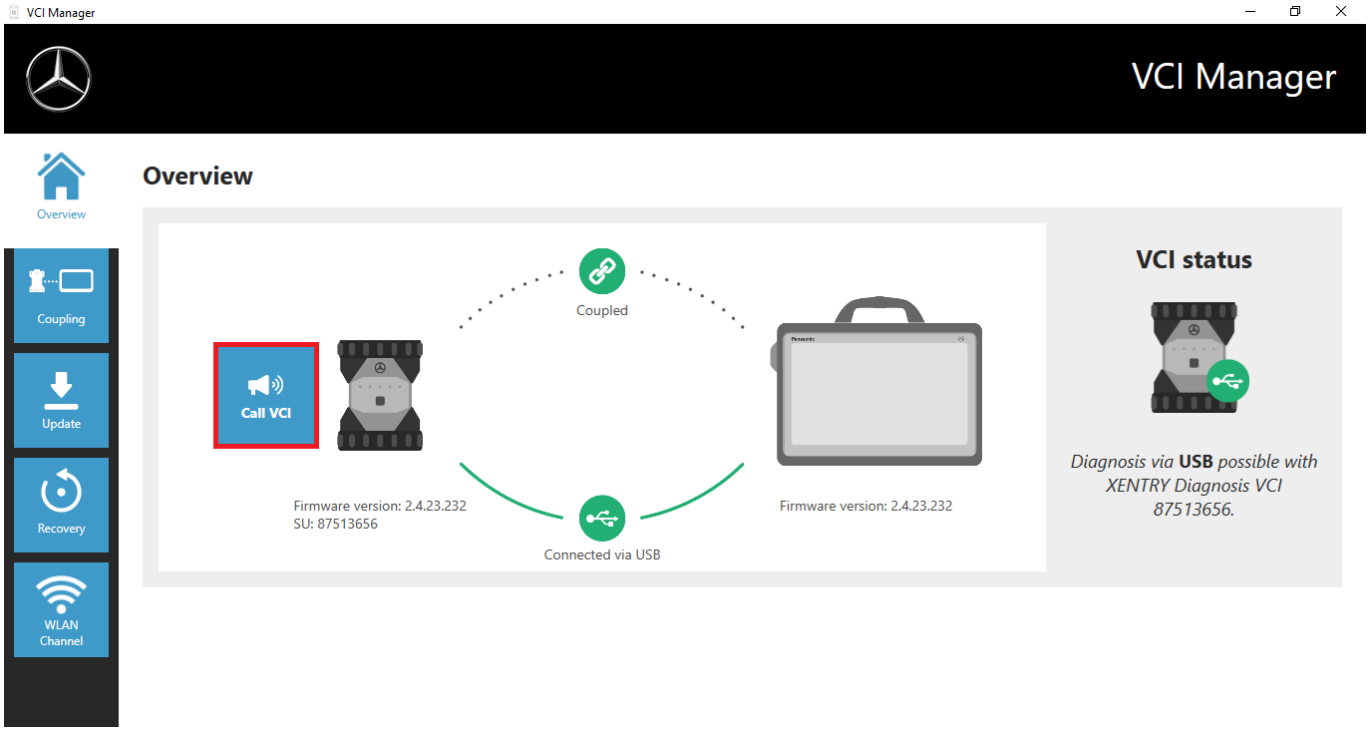



*Fig. 71: Launch VCI*

## 8.4.2 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:

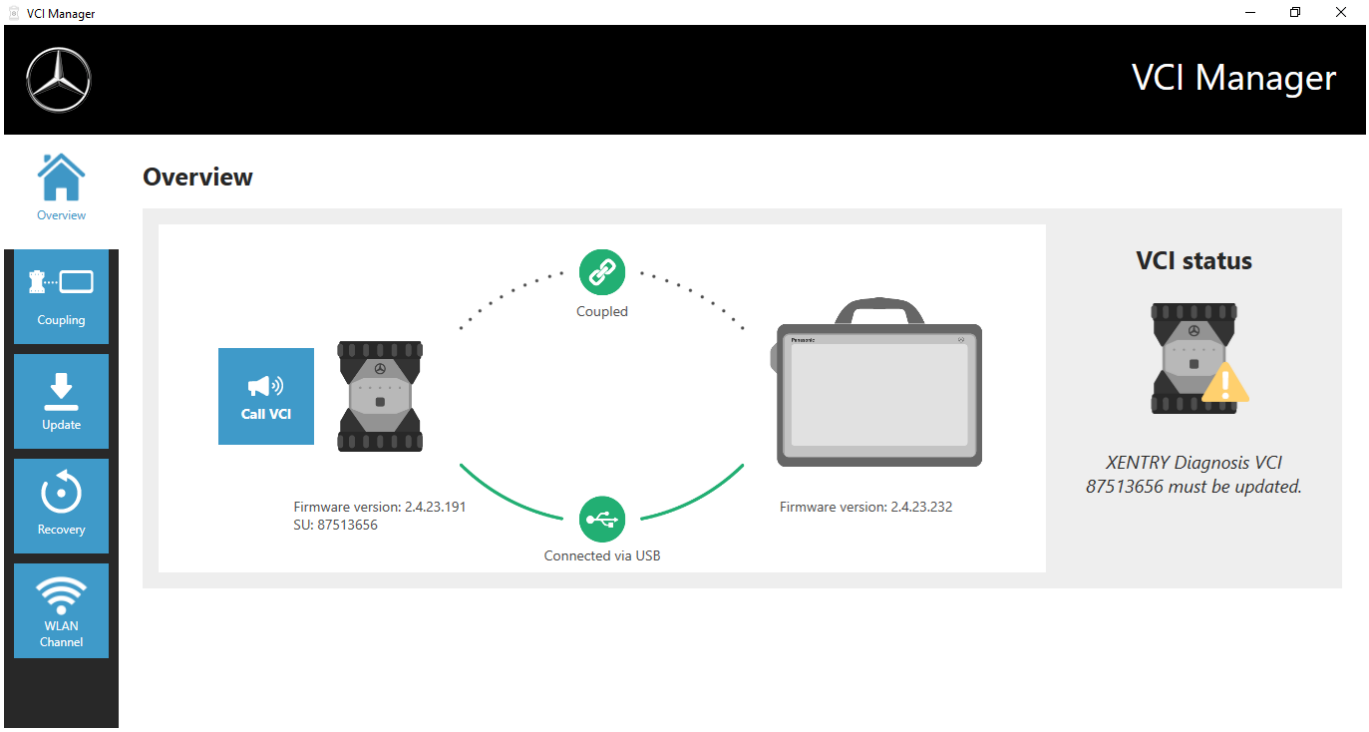



*Fig. 72: Update note*

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

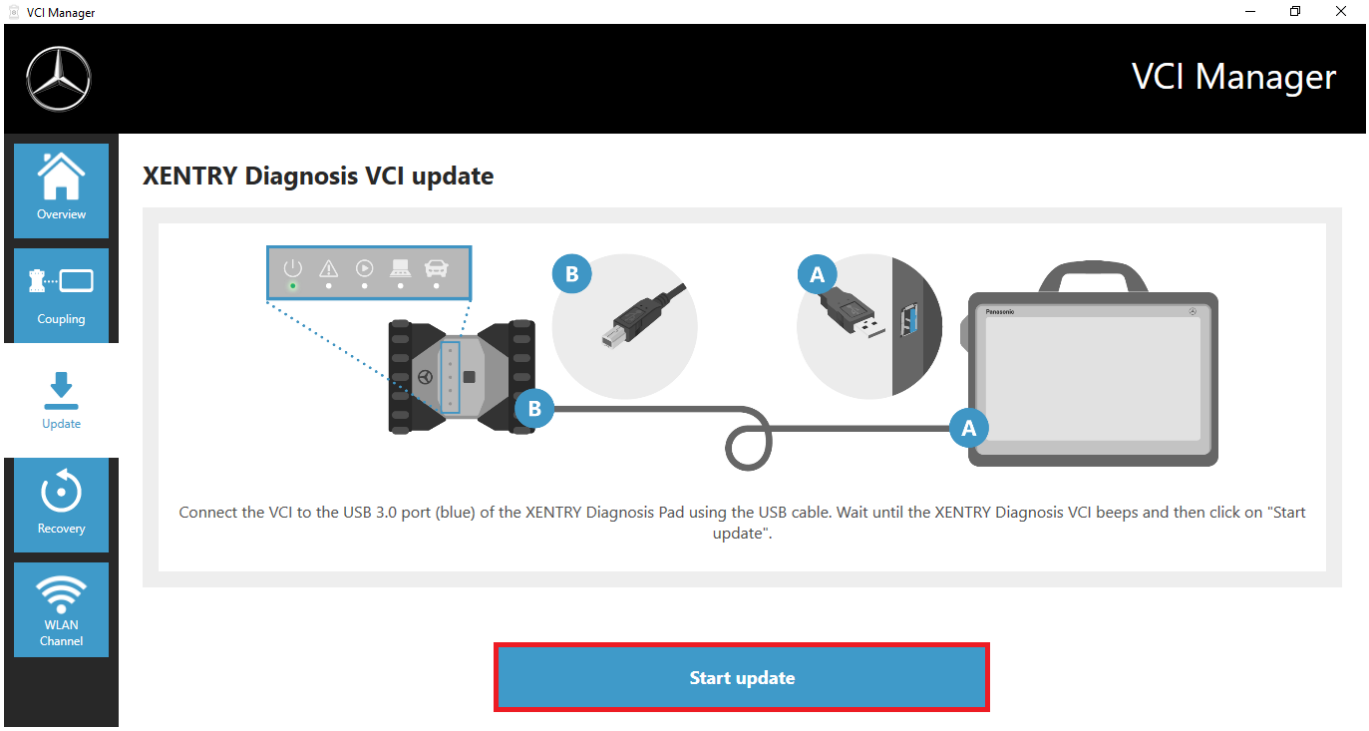



*Fig. 73: Start update*

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

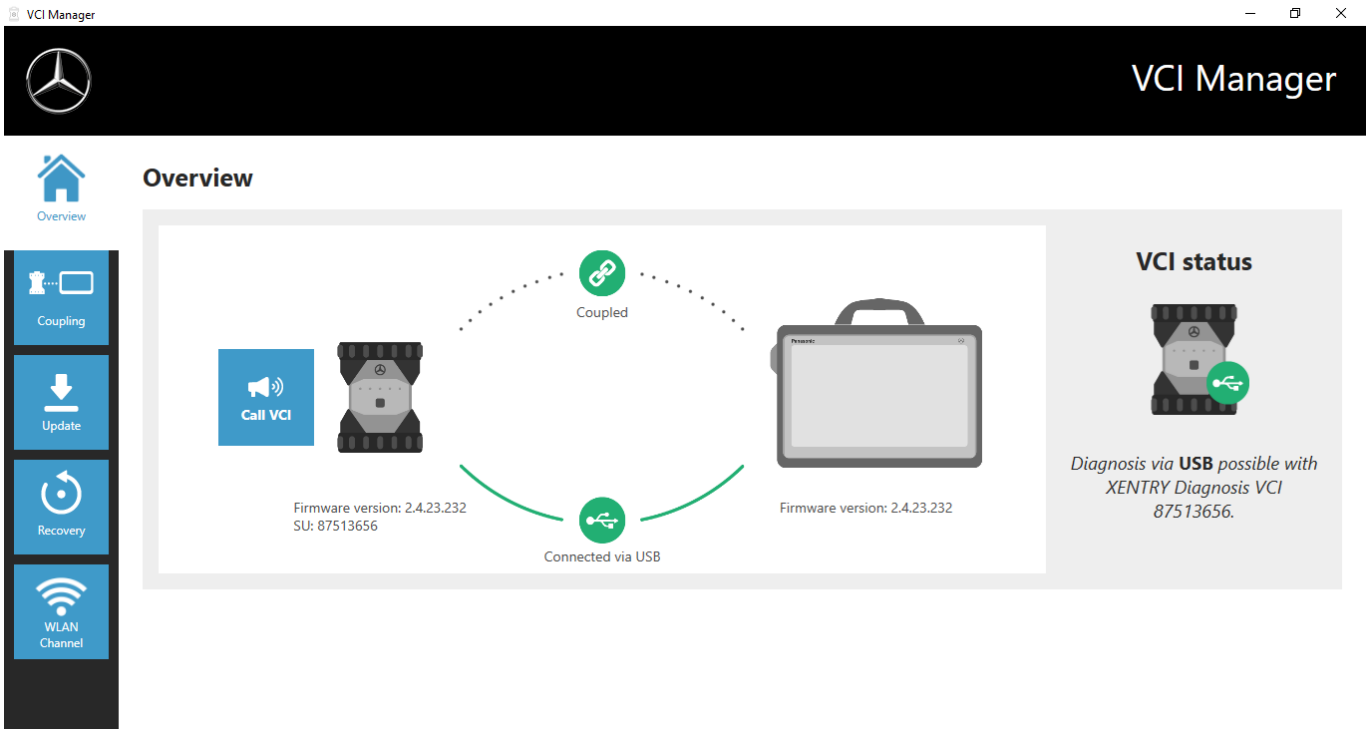



*Fig. 74: Confirmation after firmware update*

### 8.4.3 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 8.2 “Update Center” on page 49.

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.

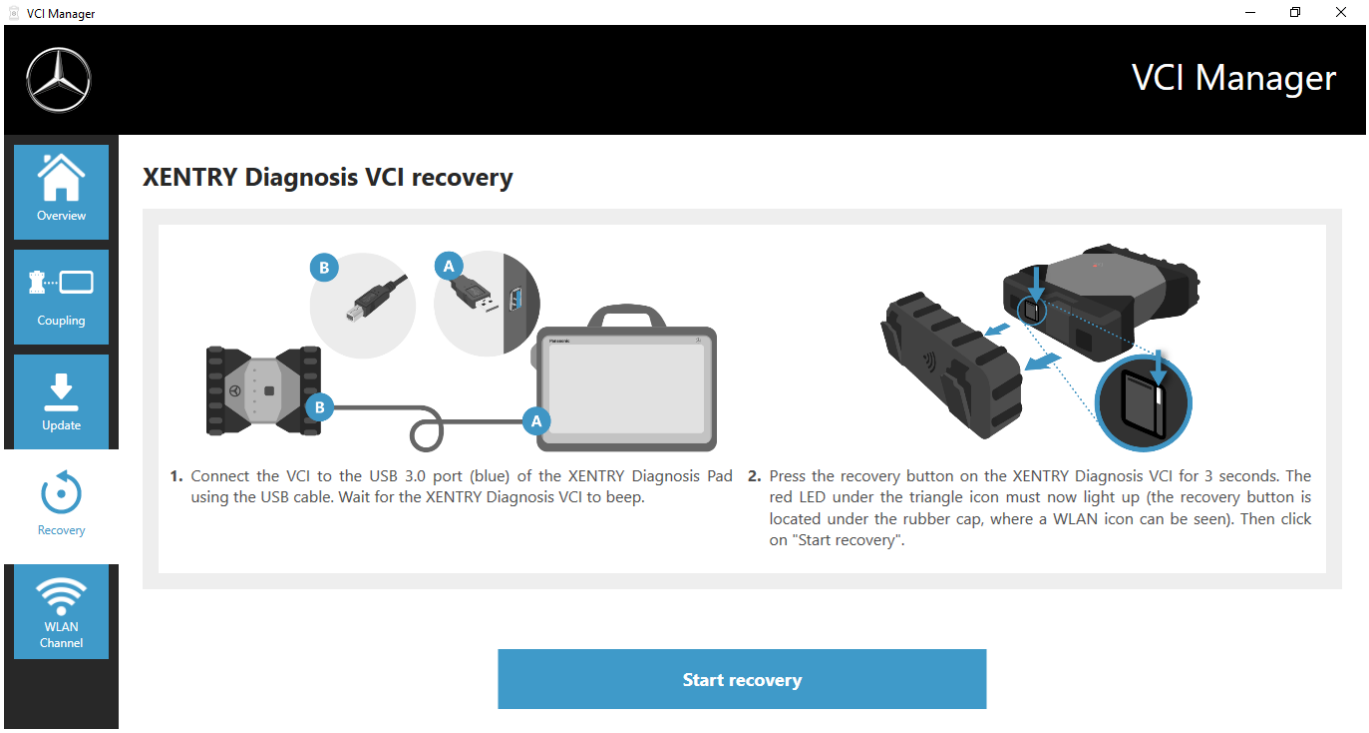



*Fig. 75: Recovery of XENTRY Diagnosis VCI*

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

### 8.4.4 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.

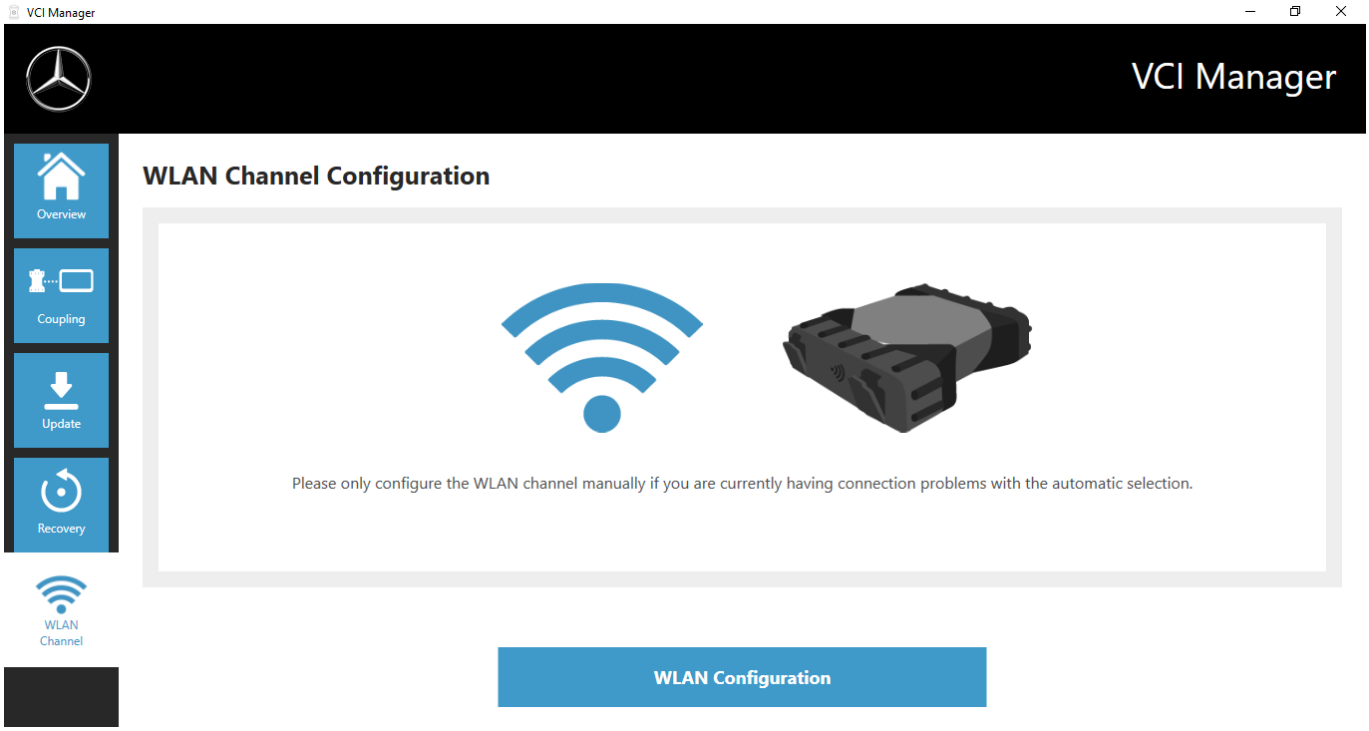



*Fig. 76: Configuration of WLAN channel*

## 8.5 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 8.5.3 “PDF Center settings” on page 68.

### 8.5.1 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 8.5.5 “PDF Center Paperless (Upload)” on page 72.

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.*

### 8.5.2 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. 77: 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. |

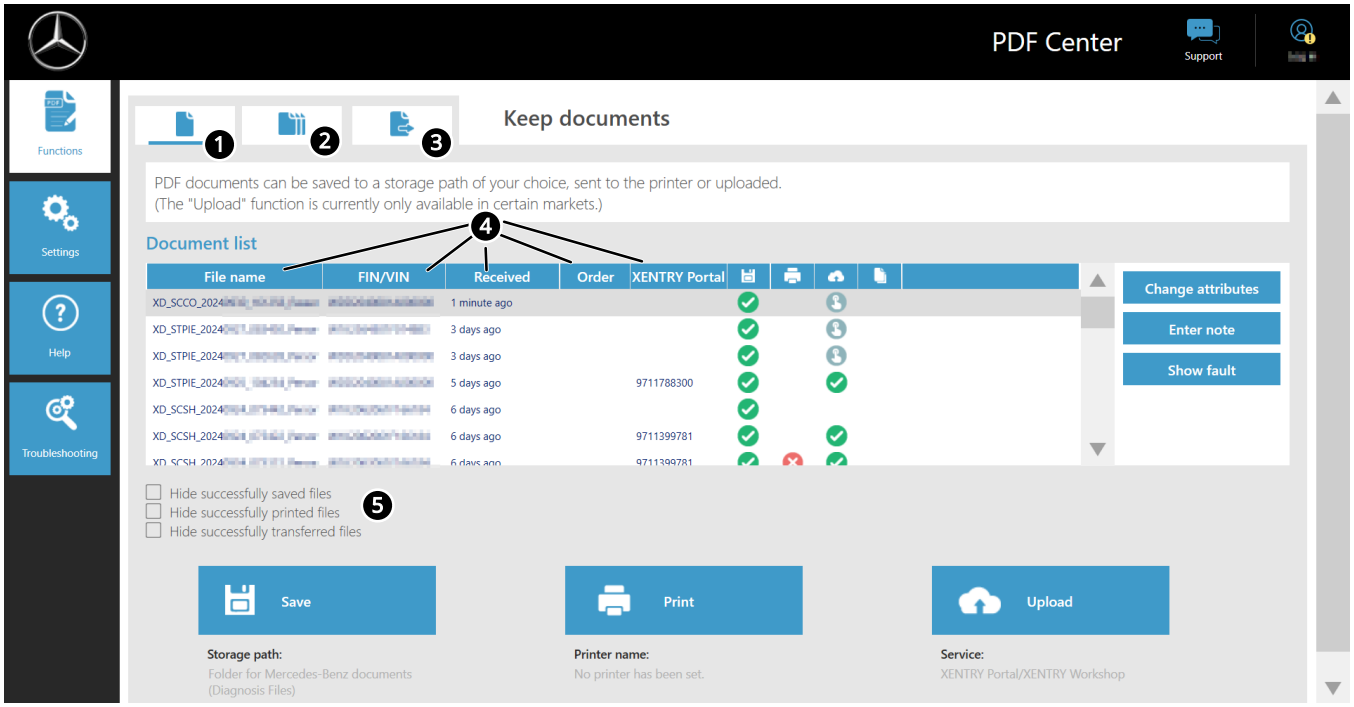



*Fig. 78: PDF Center functions – Keep documents 2*

(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.

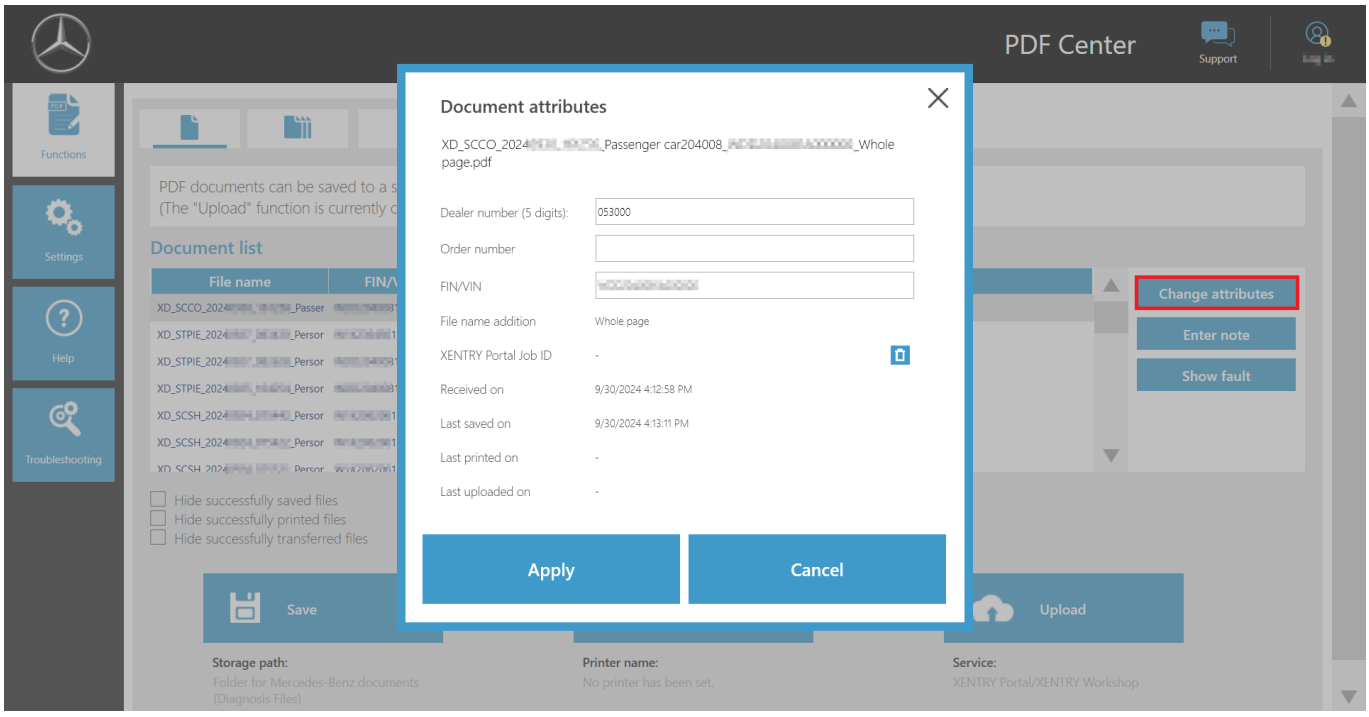



*Fig. 79: PDF Center – Document attributes*

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".

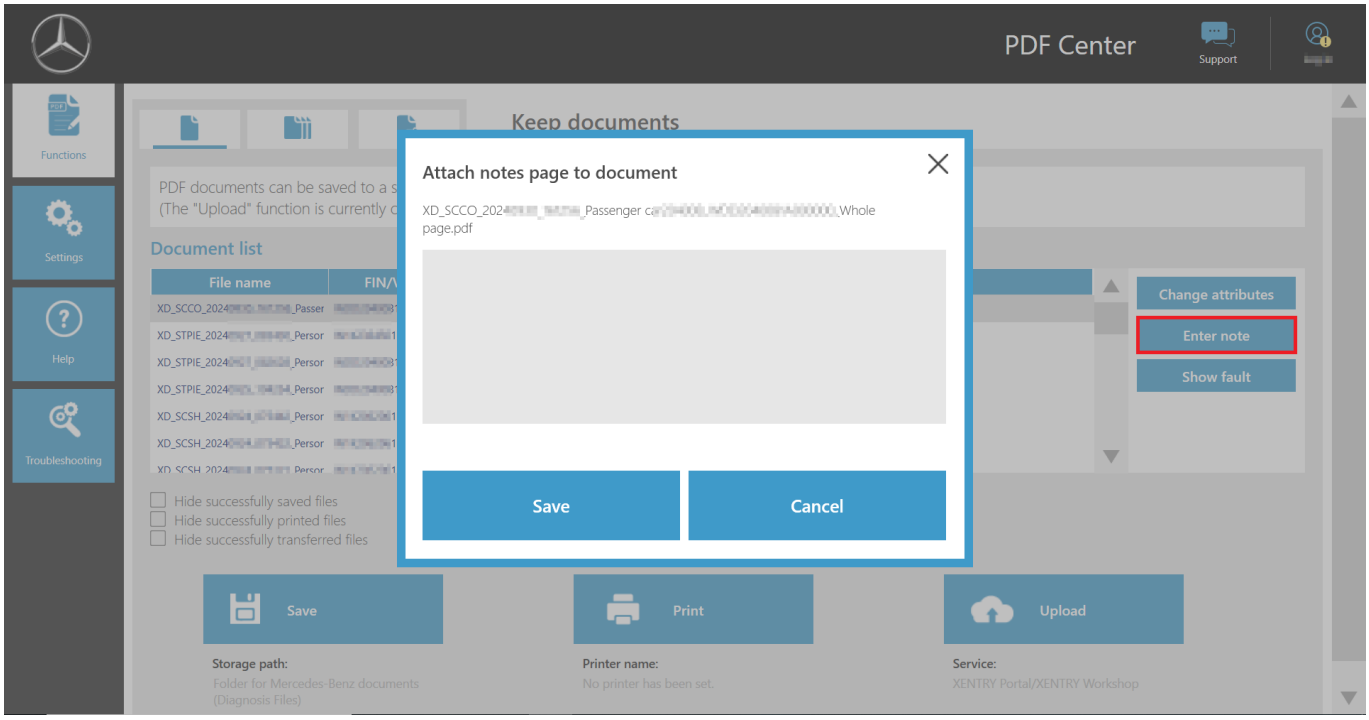



*Fig. 80: PDF Center – Create note*

**Show errors:**

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

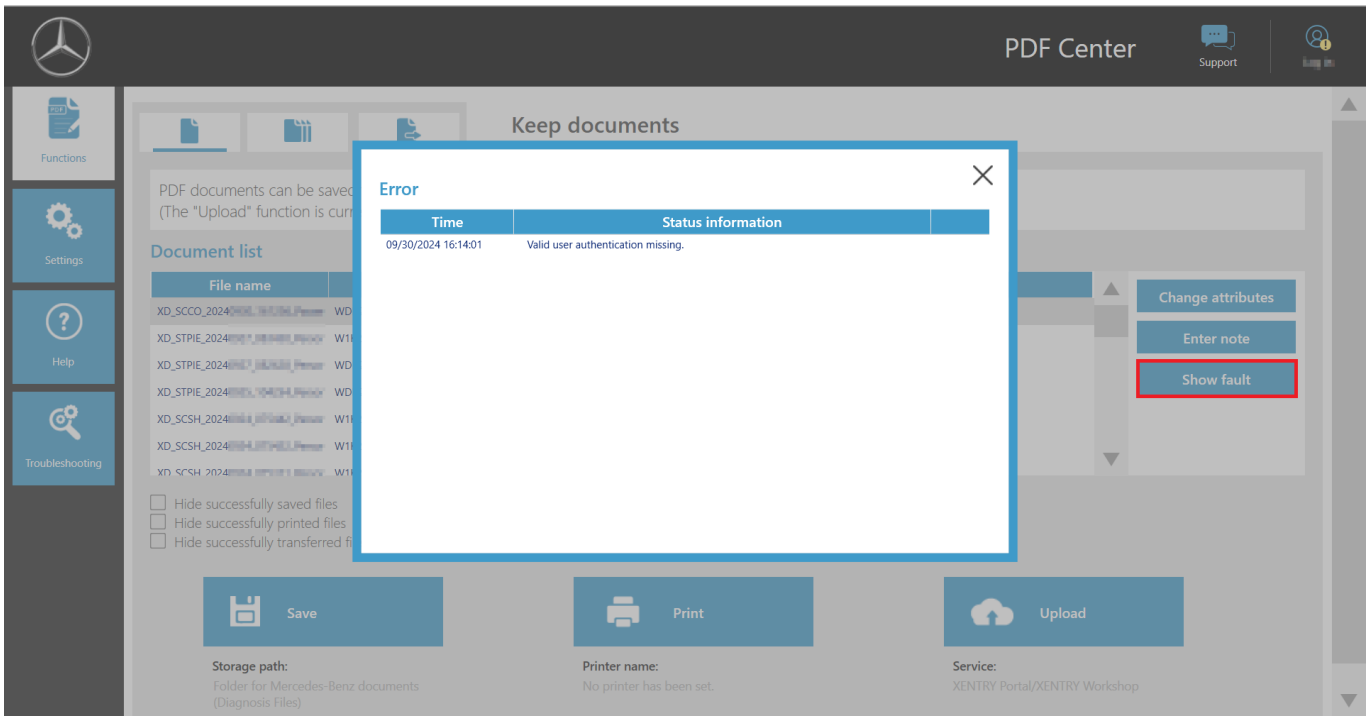



*Fig. 81: Show errors – User login required*

**b. Compile documents**

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

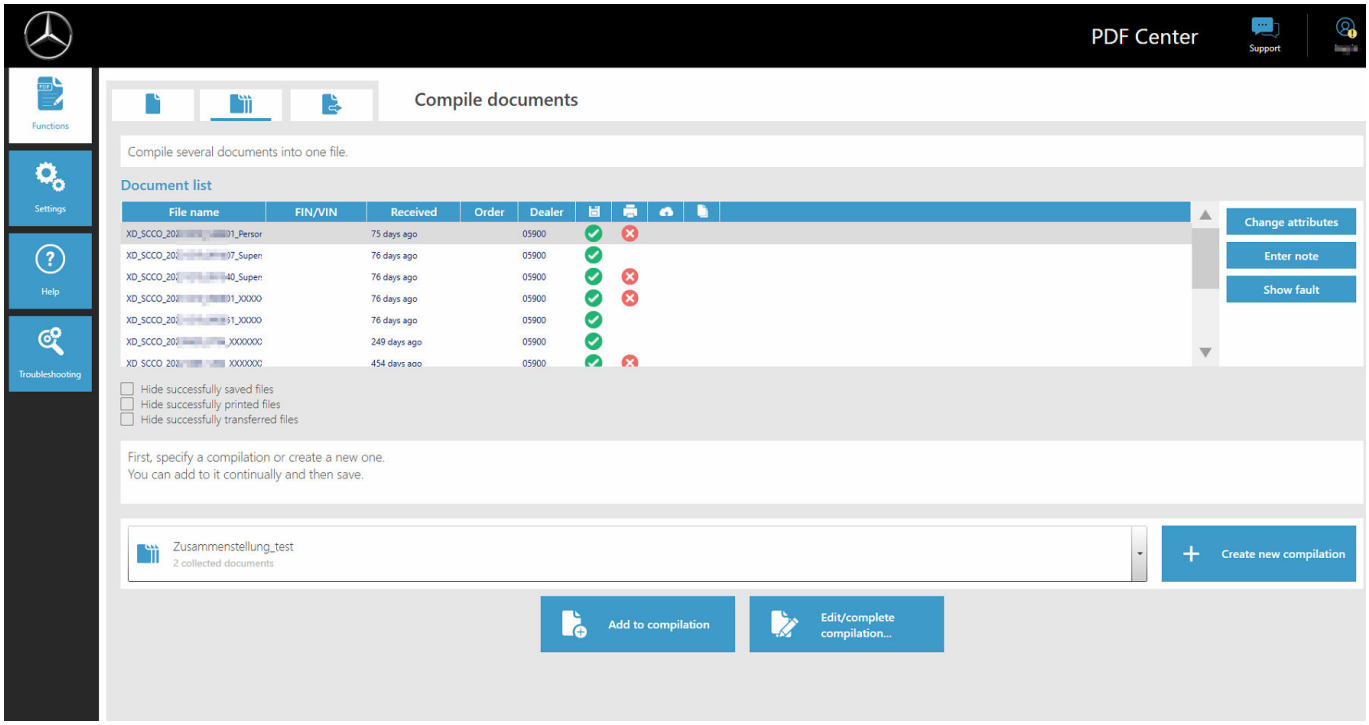



*Fig. 82: PDF Center functions – Compile documents*

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.

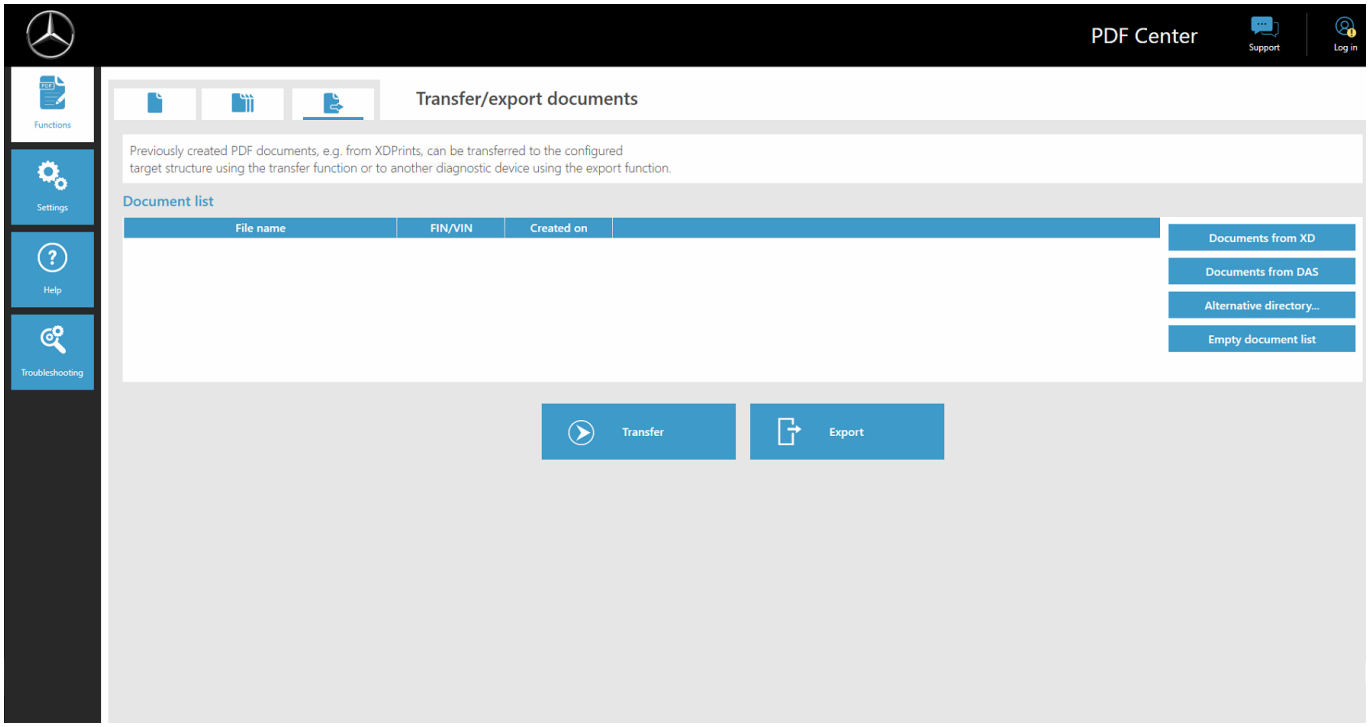



*Fig. 83: PDF Center – Transfer/export documents*

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.

## 8.5.3 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.

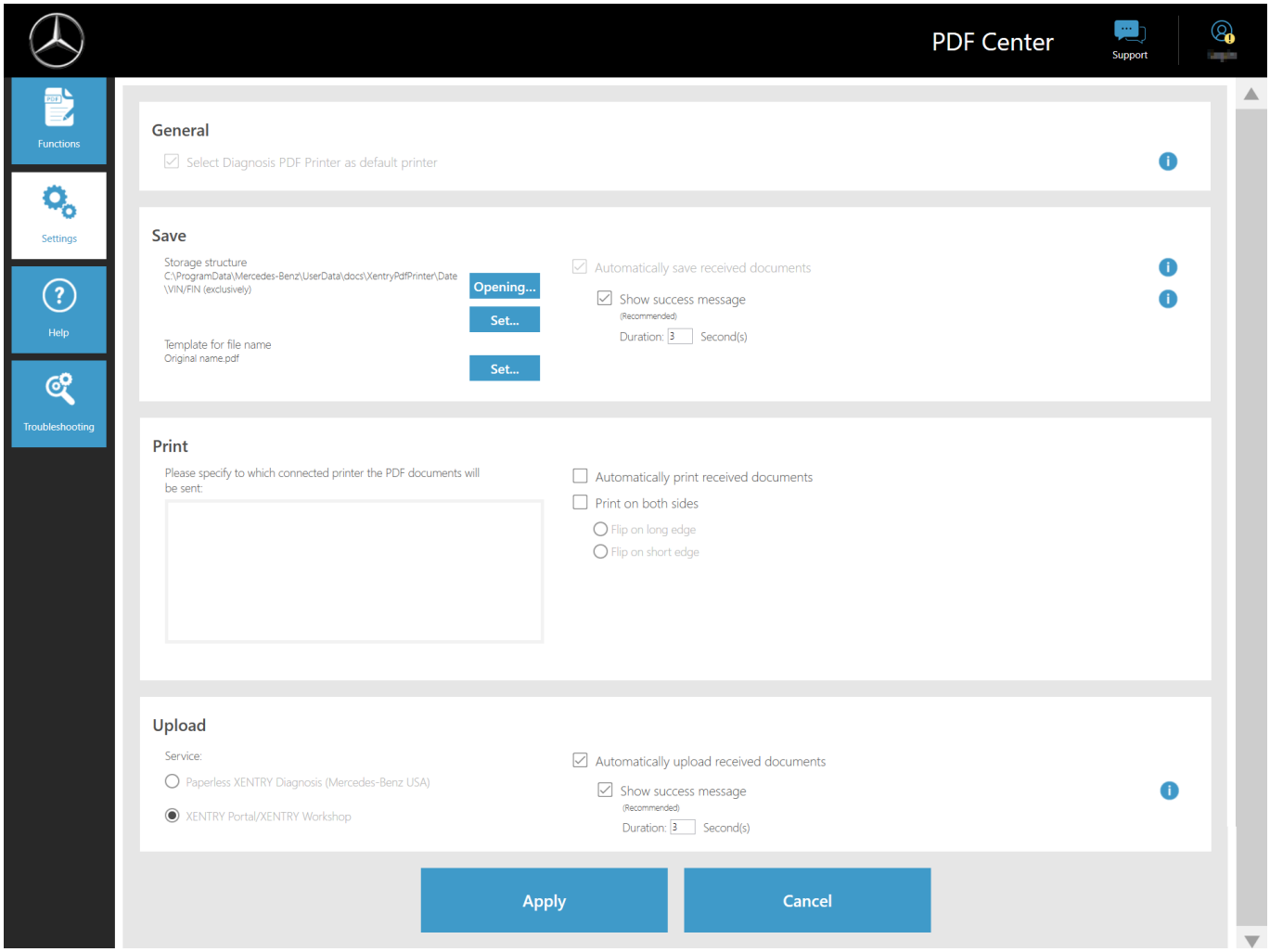



*Fig. 84: PDF Center Settings*

**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.

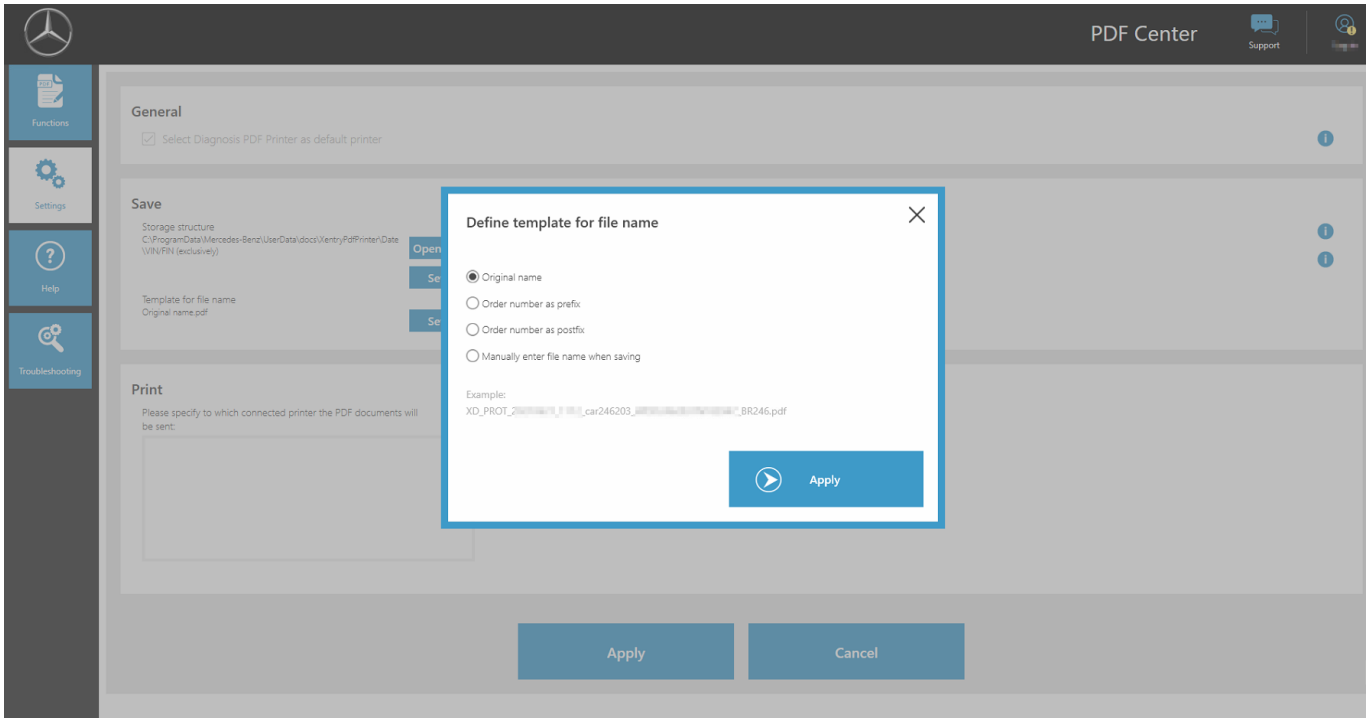



*Fig. 85: Set file name*

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.*

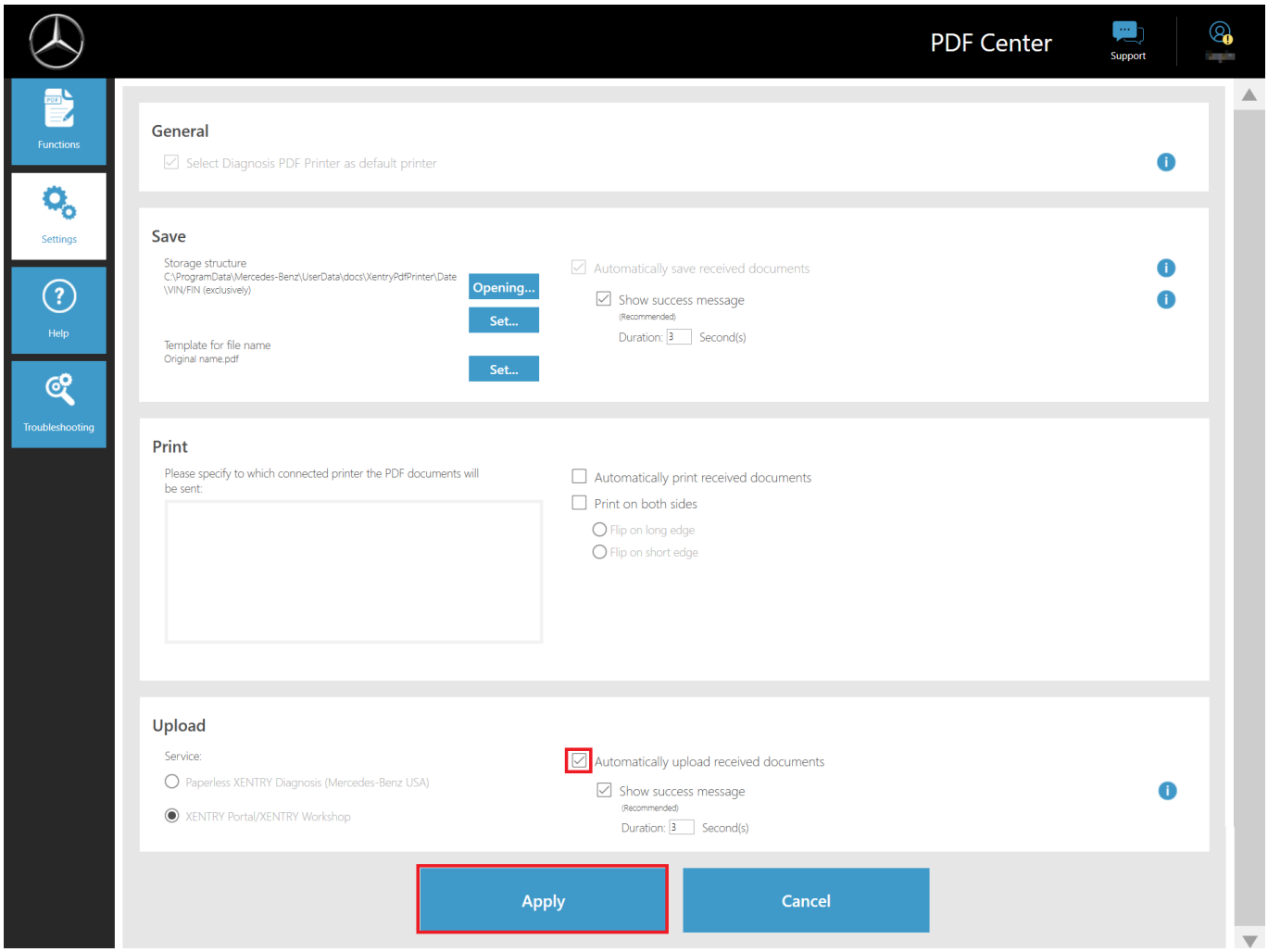



*Fig. 86: PDF Center settings "Upload"*

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.

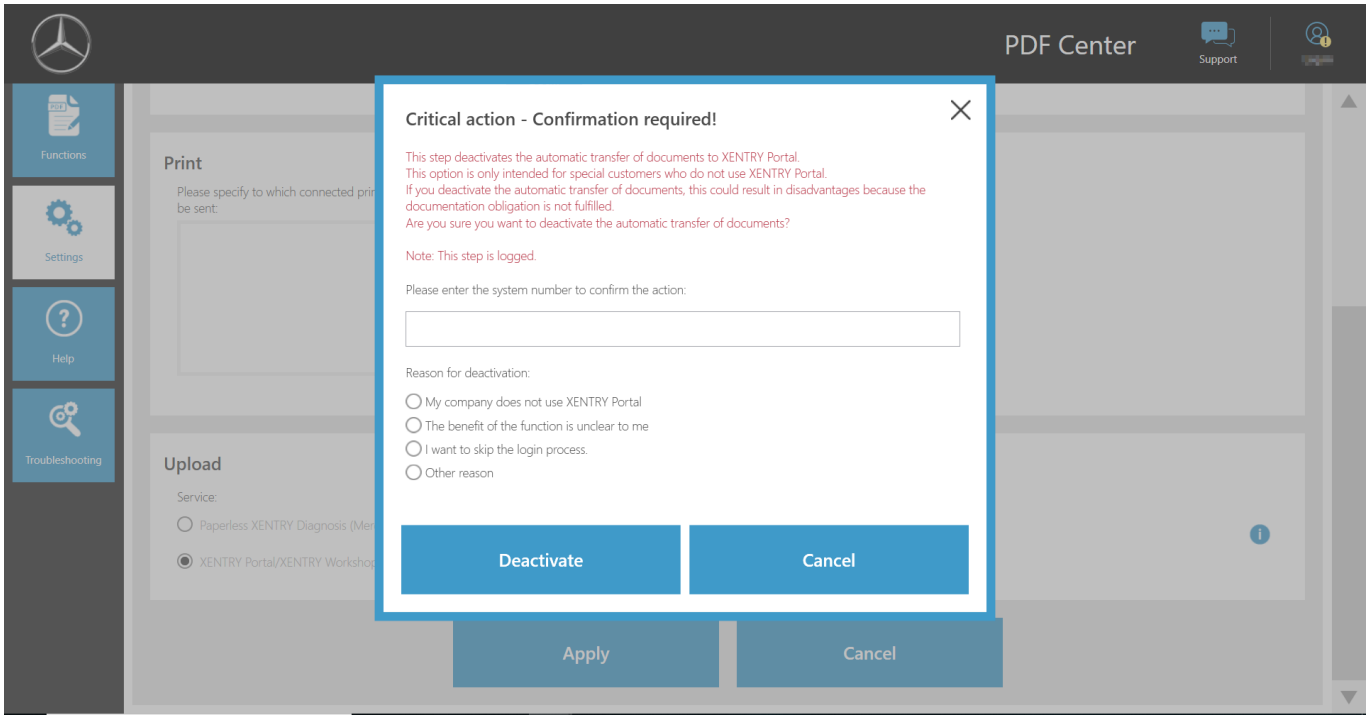



*Fig. 87: PDF Center – Change upload settings – Confirmation prompt*

### 8.5.4 PDF Center Help

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

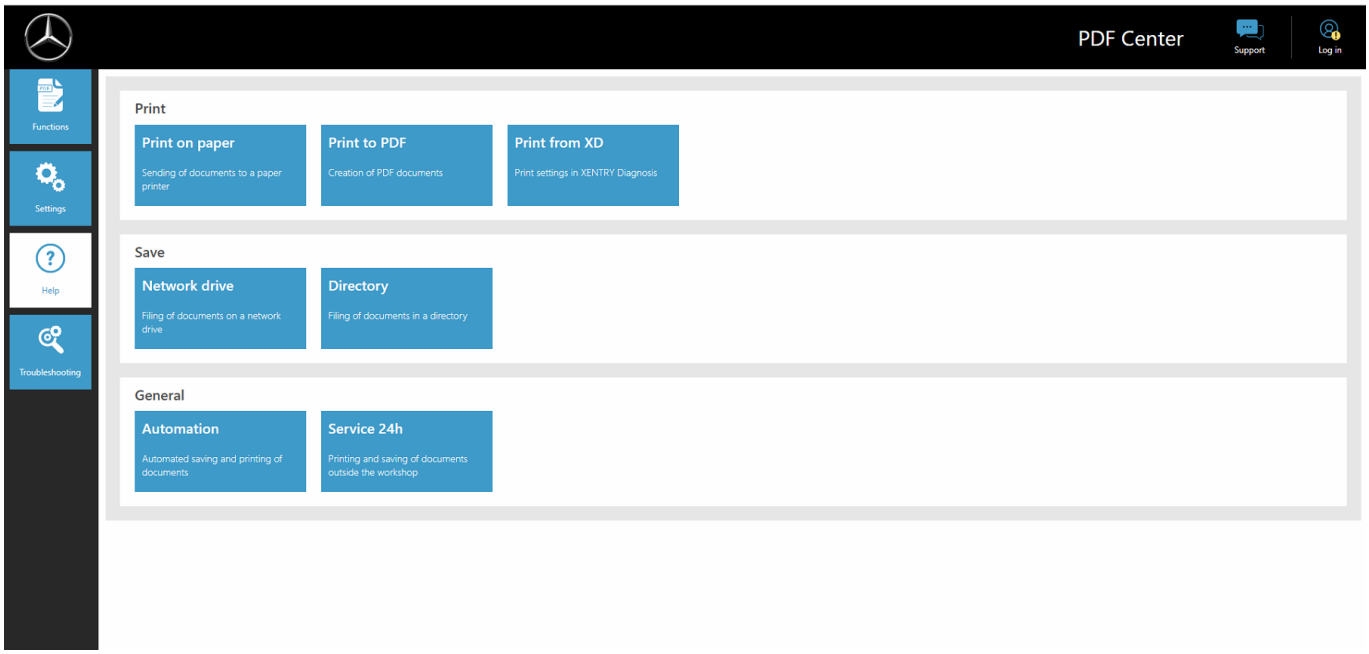



*Fig. 88: PDF Center Help*

### 8.5.5 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.

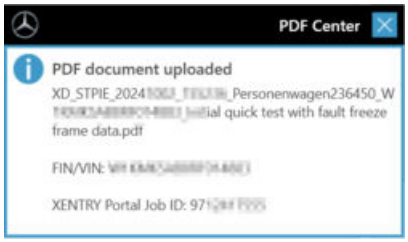



*Fig. 89: Tooltip notification – Upload completed*

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

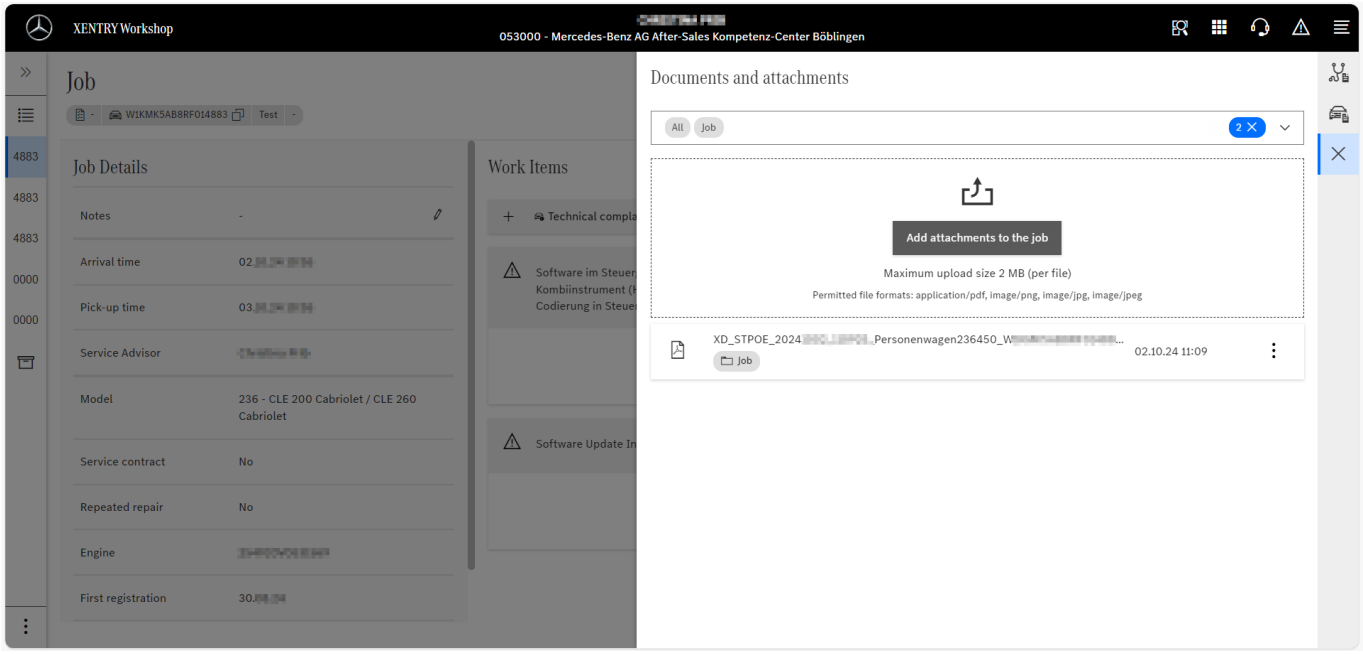



*Fig. 90: XENTRY Workshop – Documents and attachments*

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.

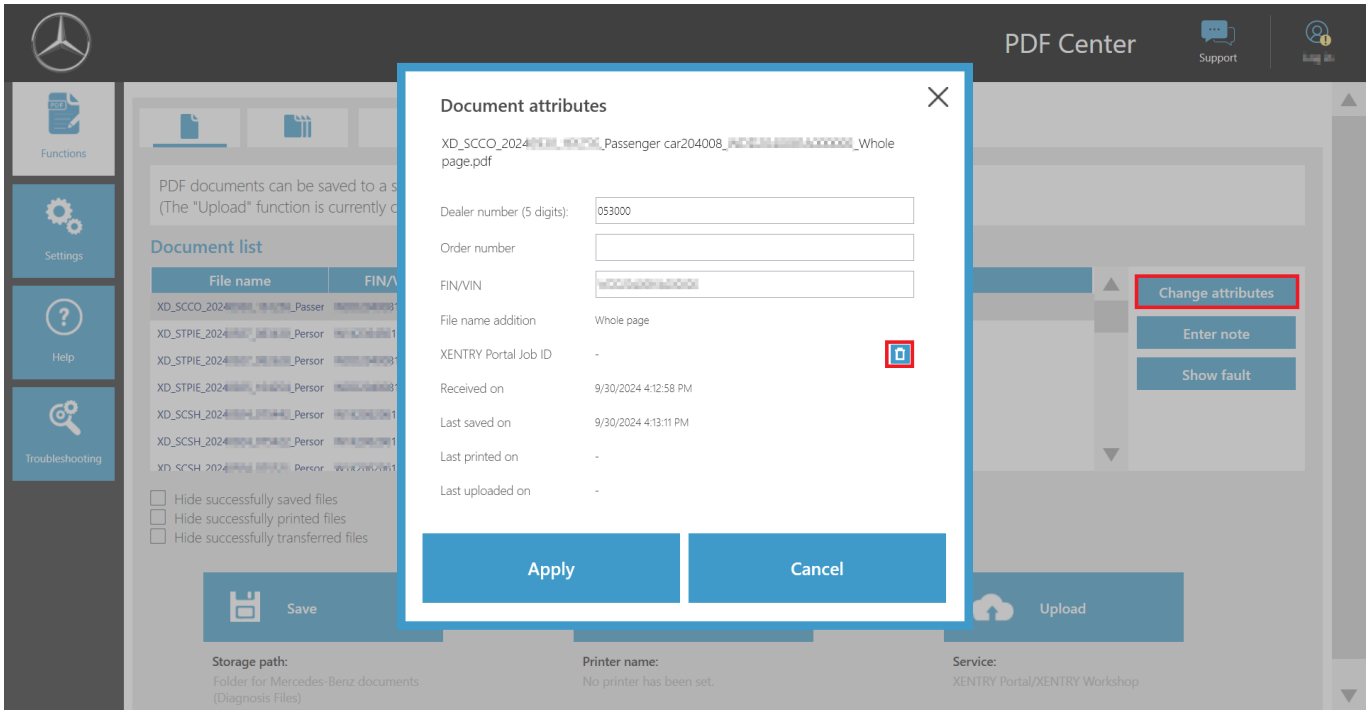



*Fig. 91: PDF Center – Change document attributes*

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. 91) 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.

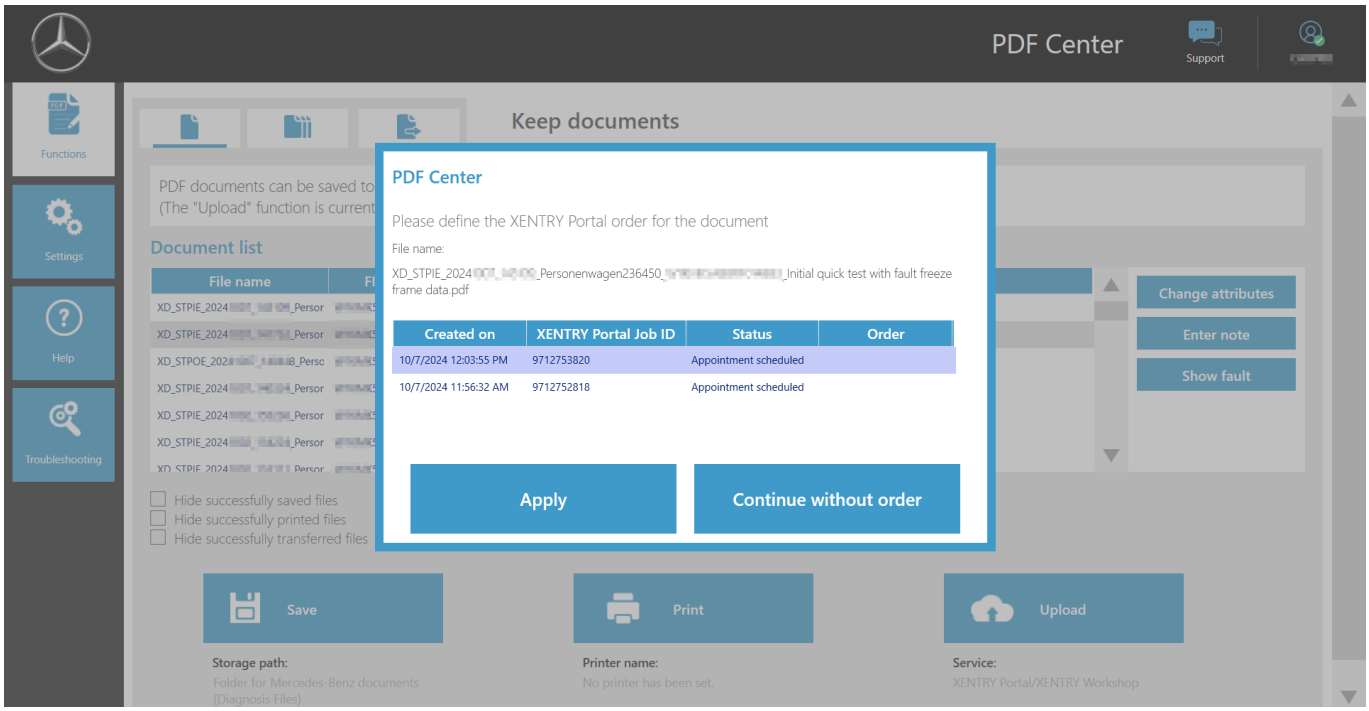



*Fig. 92: PDF Center – Set XENTRY Portal Job ID*

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. 93.

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

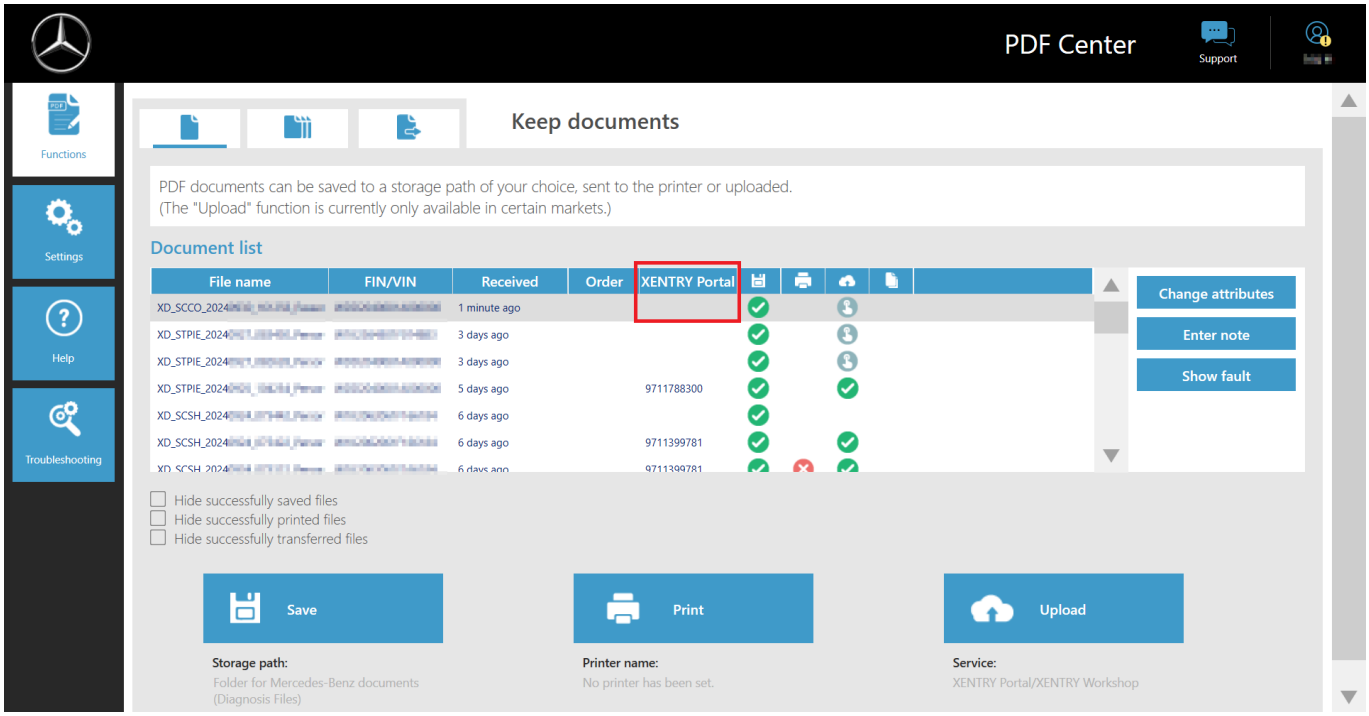



*Fig. 93: PDF Center – Document attributes – XENTRY Job ID removed*

**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. 94: XENTRY Workshop – Attachments icon*

3. Add the relevant diagnostic document by clicking on "Add attachments to order"; see Fig. 90.

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

## 8.5.6 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.

### 8.5.7 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.

## 8.5.8 Best practice for printing from XENTRY Diagnosis

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

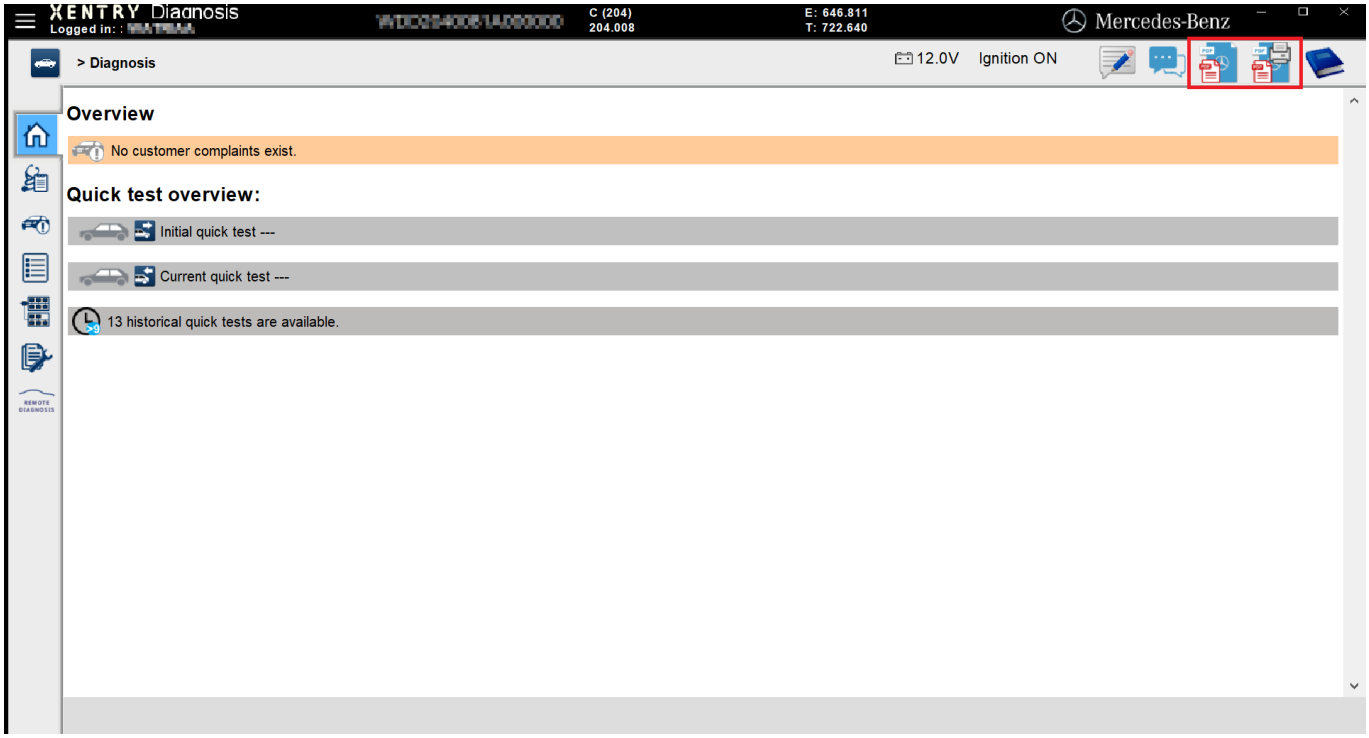



*Fig. 95: Printing from XENTRY Diagnosis*

- 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.

## 8.5.9 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.

### 8.5.10 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.*

### 8.5.11 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.

### 8.5.12 PDF Center troubleshooting

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

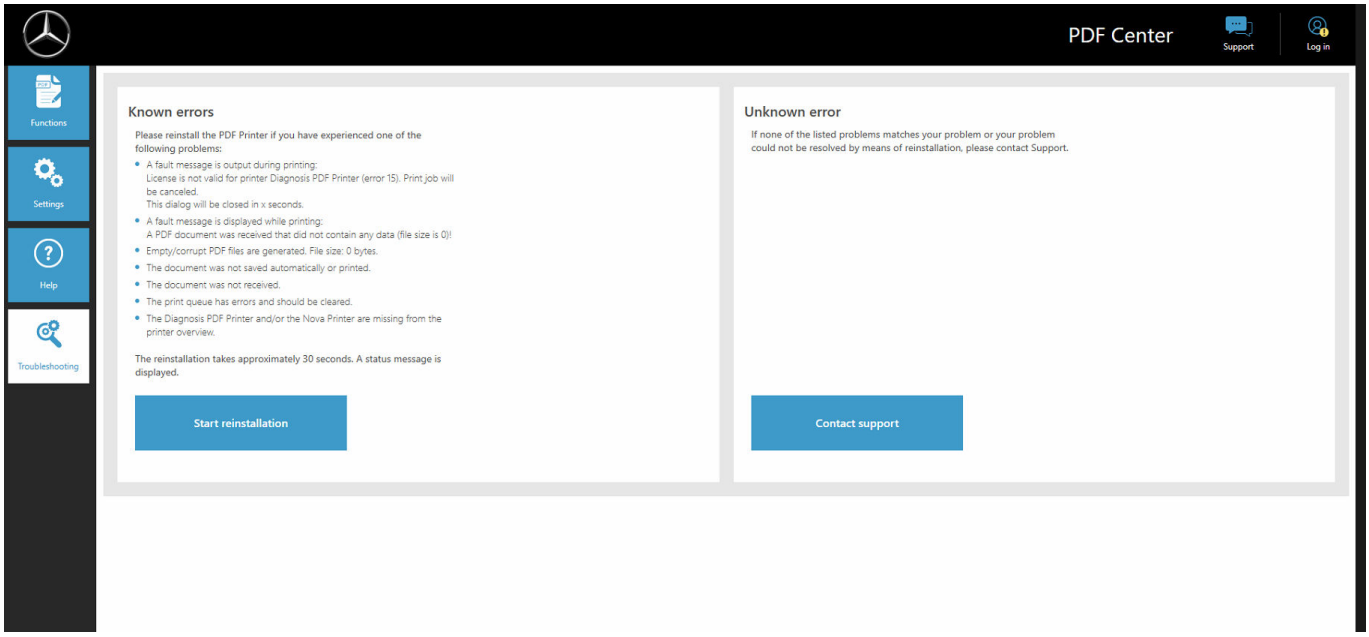



*Fig. 96: PDF Center troubleshooting*

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.*

## 8.6 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.

### 8.6.1 Basic settings of the CAN Tool

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




*Fig. 97: CAN Tool desktop icon*

The home screen for the application opens.

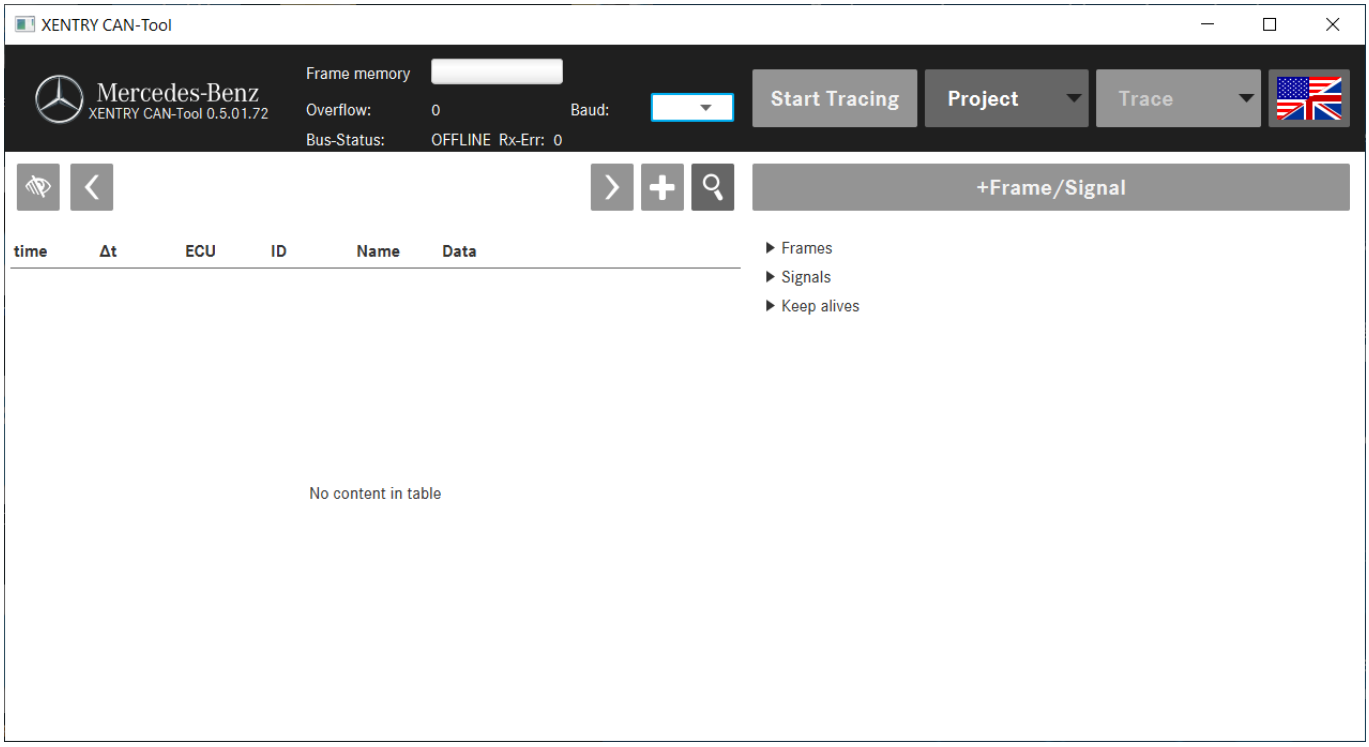



*Fig. 98: CAN Tool home screen*

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. 99: CAN Tool language options*

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

## 8.6.2 Managing and creating projects

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

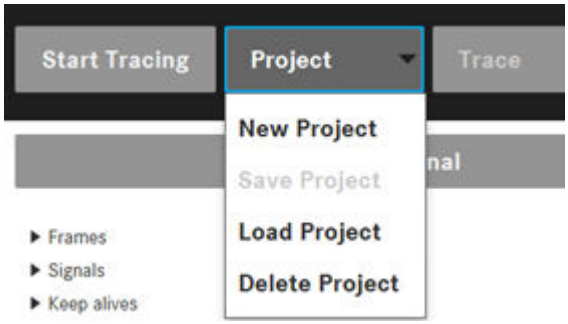



*Fig. 100: Create project creation (EN)*

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

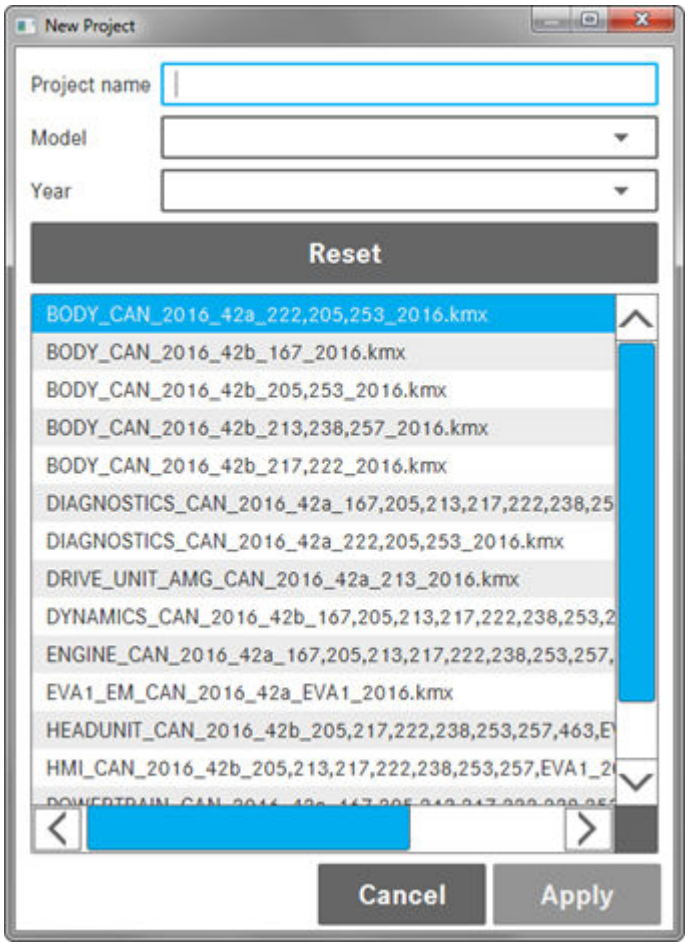



*Fig. 101: Project creation window*

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".

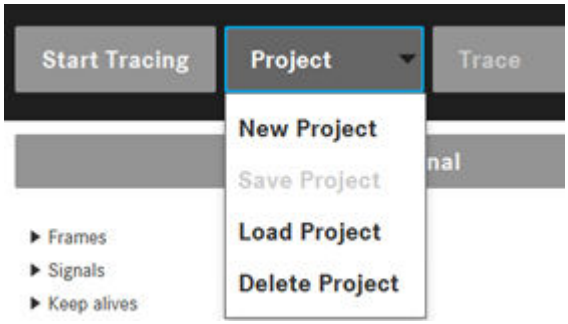



*Fig. 102: Loading an existing project*

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

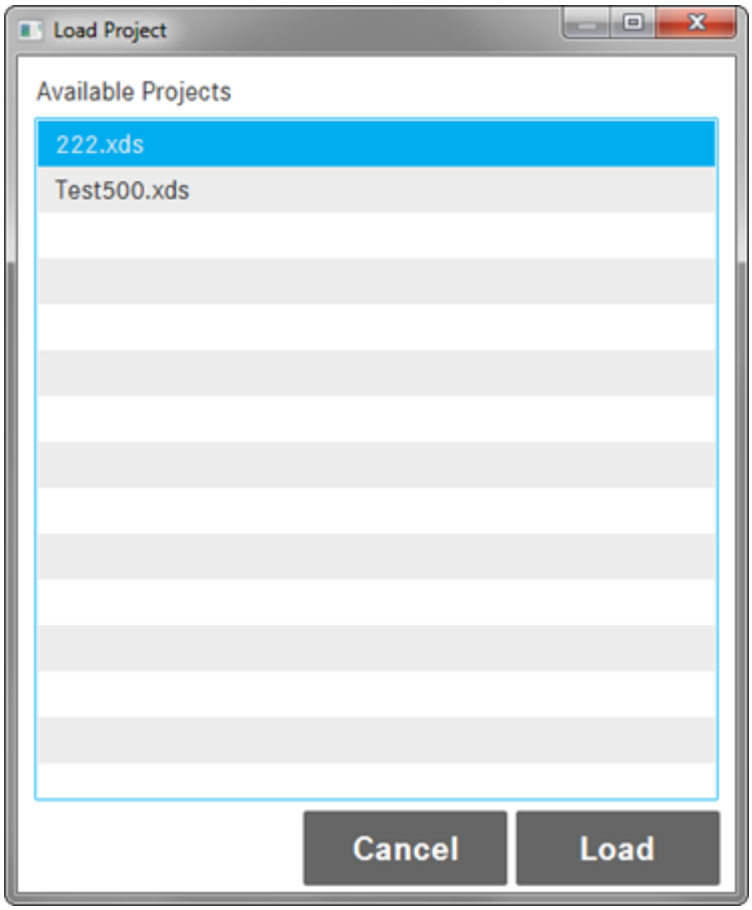



*Fig. 103: Available projects*

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".

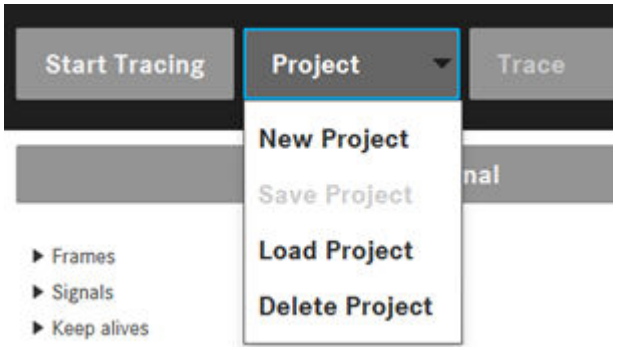



*Fig. 104: Saving a project*

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".

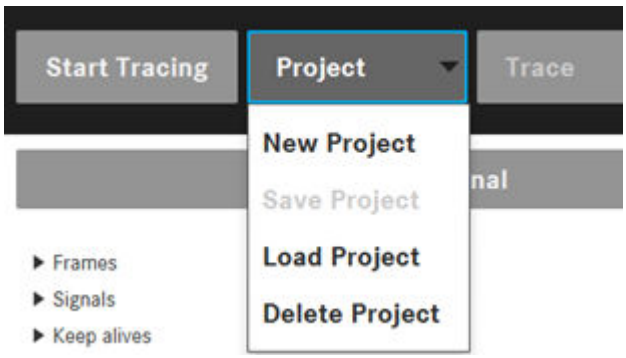



*Fig. 105: Project deletion*

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.

### 8.6.3 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 8.6.11 “Filter” on page 96.

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".

### 8.6.4 "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.



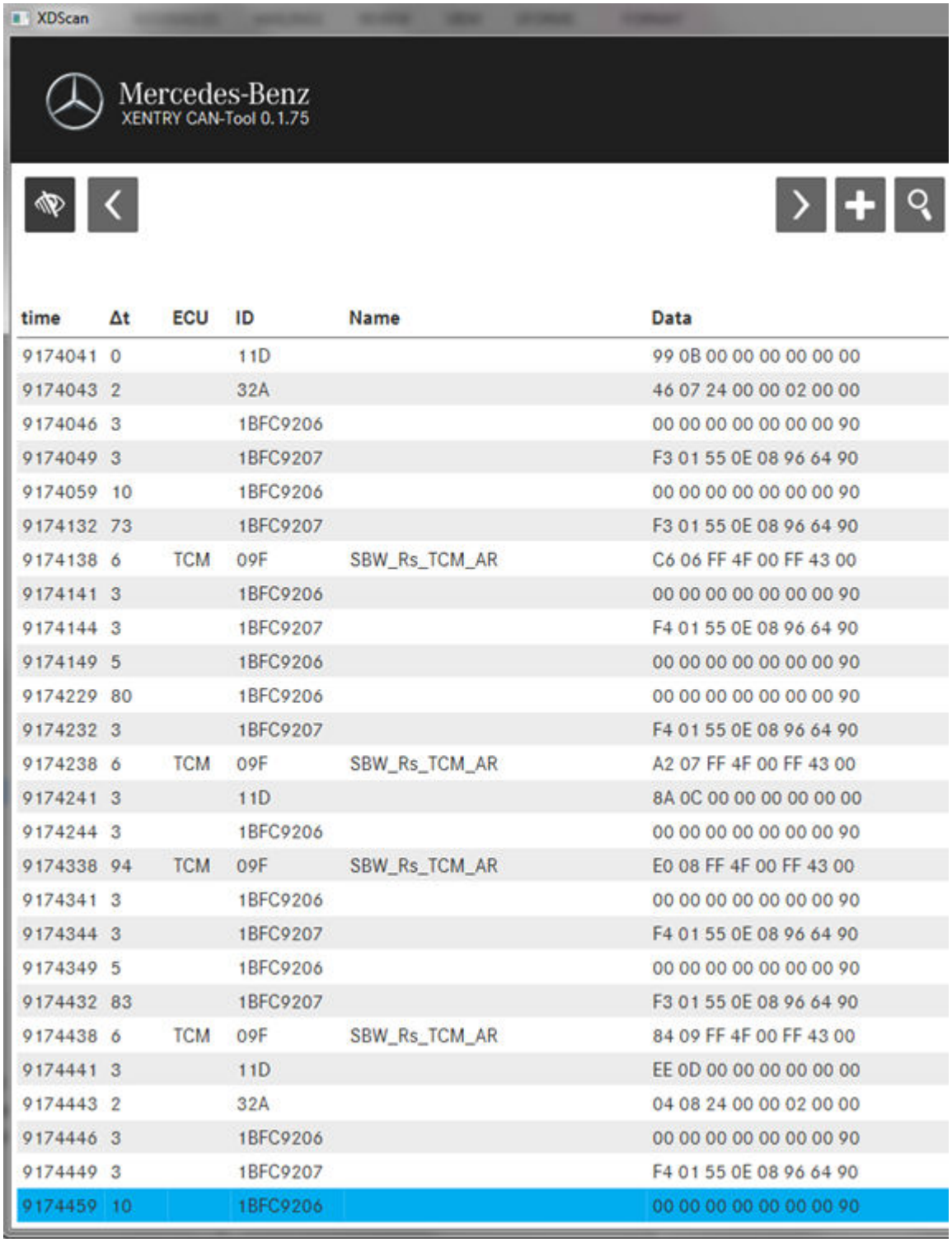

*Fig. 106: "Trace" window*

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 8.6.8 “Stop tracing” on page 89.

Further information about filtering CAN frames can be found starting from ➦ Chapter 8.6.11 “Filter” on page 96. 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. 107: 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.

### 8.6.5 "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.*

### 8.6.6 "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 8.6.8 “Stop tracing” on page 89.

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:

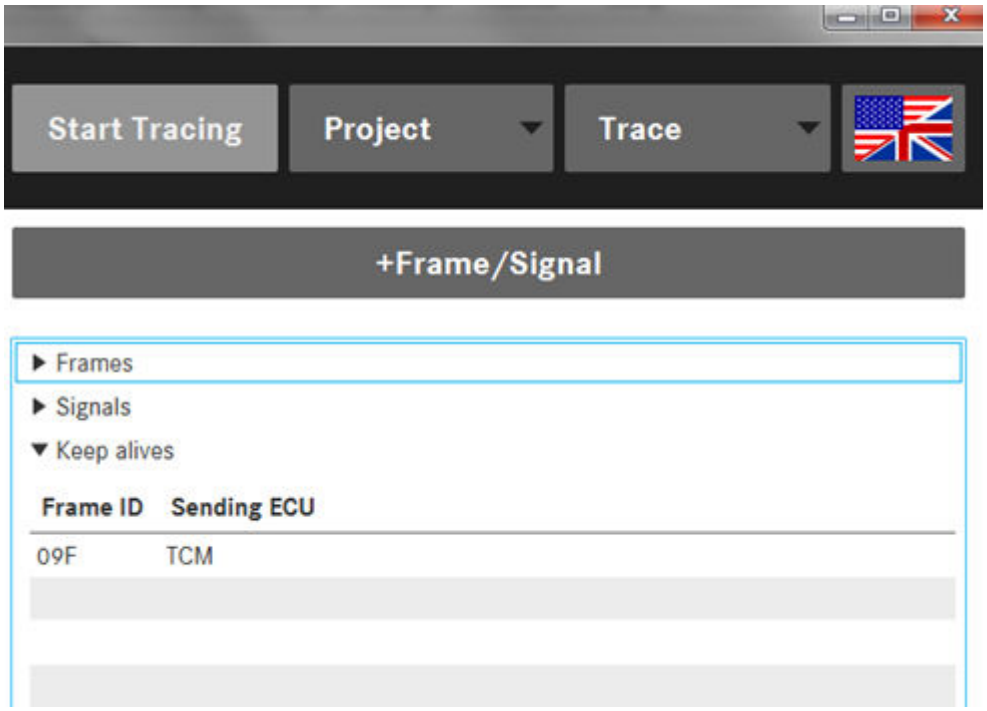



*Fig. 108: "Bus Keepawake Control Unit" area*

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.

### 8.6.7 "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.

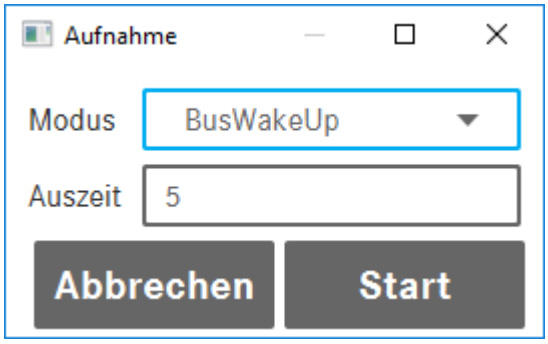



*Fig. 109: "Bus Wake-Up Event" tracing mode*

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. 110: "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.

### 8.6.8 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":

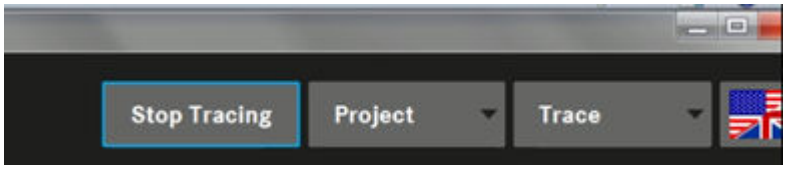



*Fig. 111: "Stop tracing" button*

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

### 8.6.9 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. 112: 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. 113: 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.

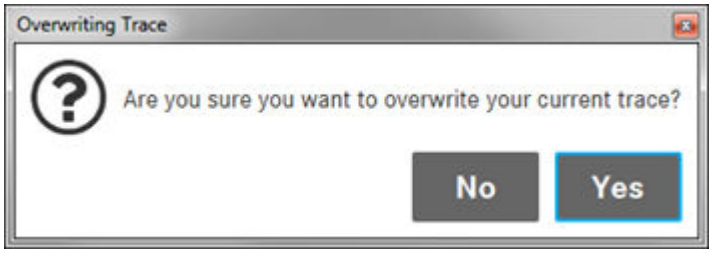



*Fig. 114: Message to confirm overwriting of trace file*

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

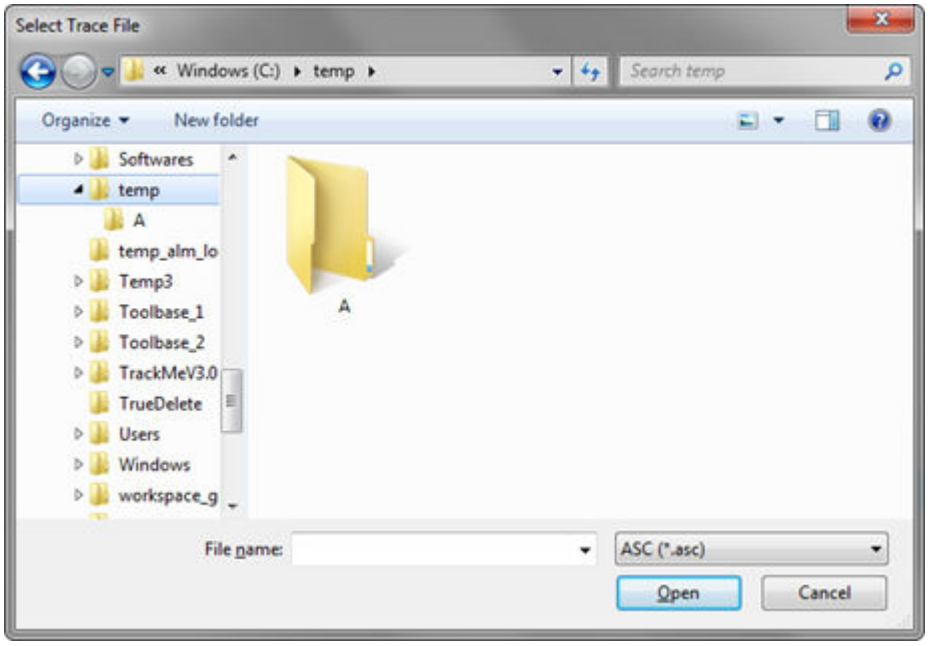



*Fig. 115: "Select trace file" window*

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:

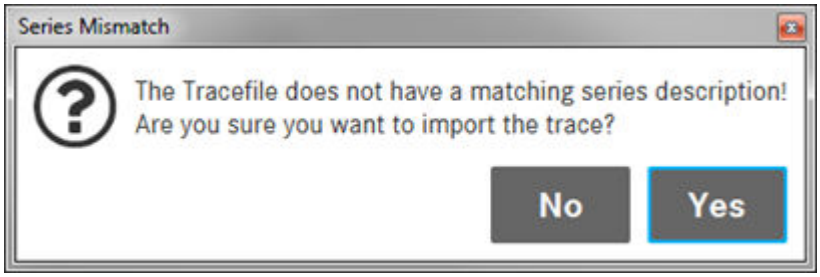



*Fig. 116: Message about model series mismatch*

*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.

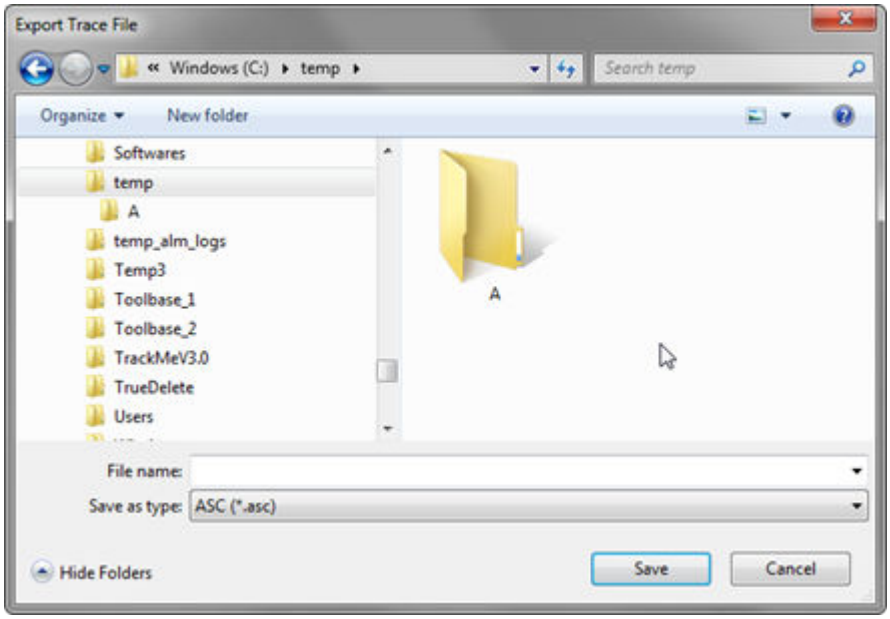



*Fig. 117: "Export trace file" window*

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:

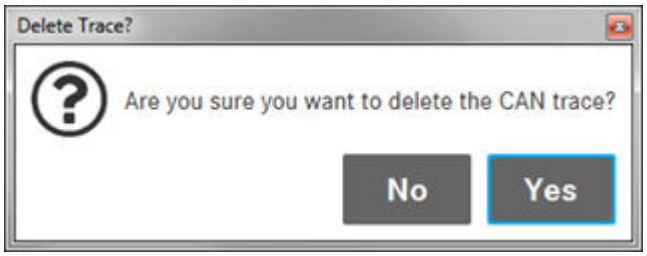



*Fig. 118: Message to confirm deletion of trace file*

*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.*

## 8.6.10 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.

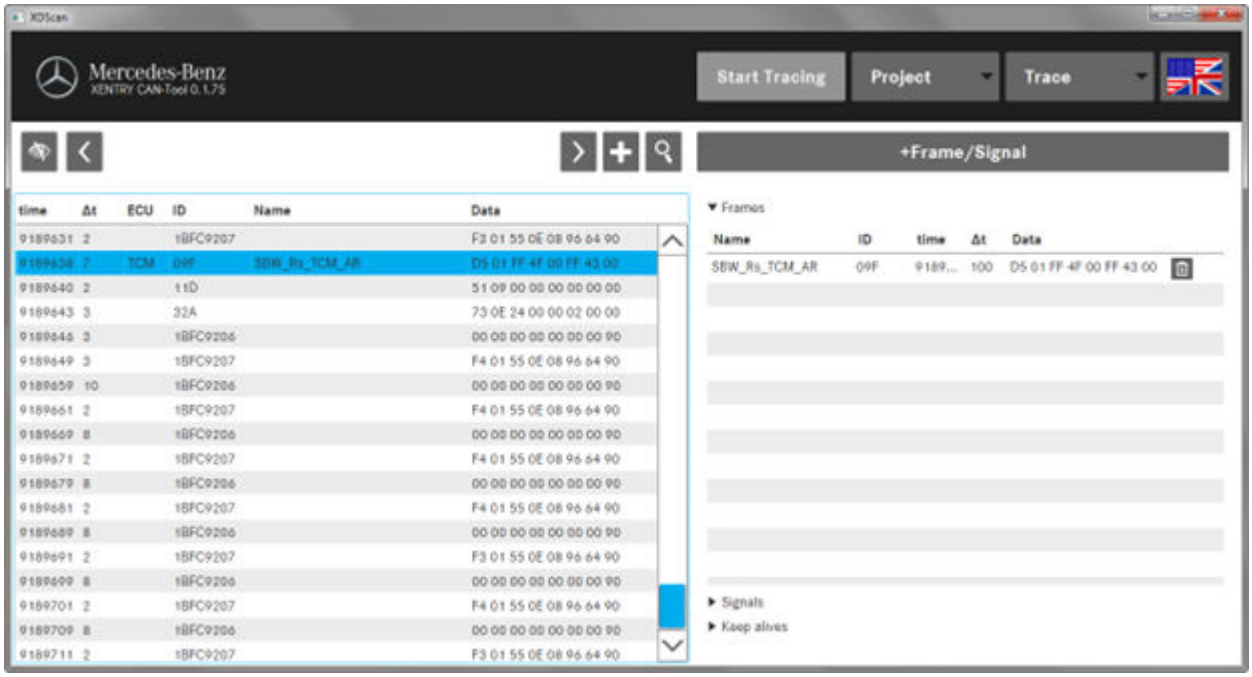



*Fig. 119: List of frames*

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.

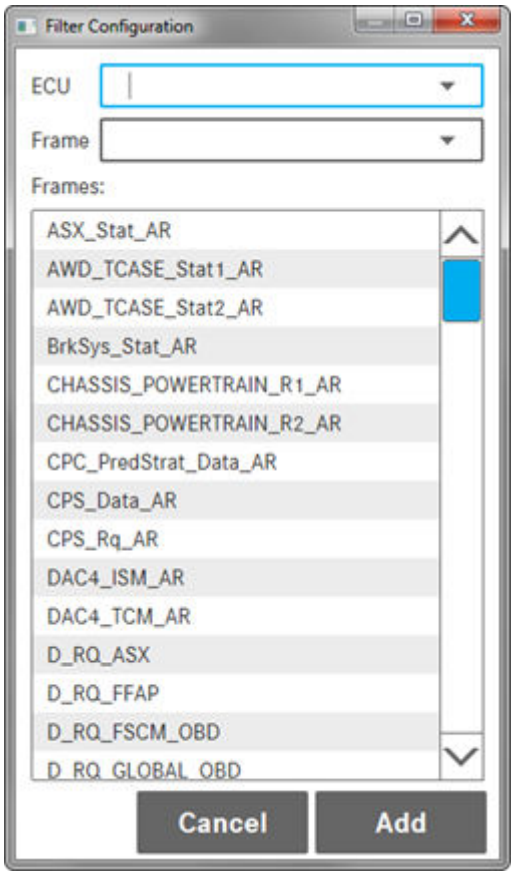



*Fig. 120: "Filter configuration" window*

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.

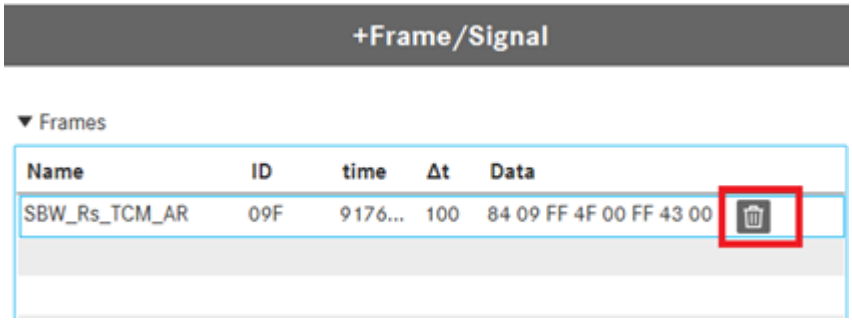



*Fig. 121: Delete button in the list of frames*

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.

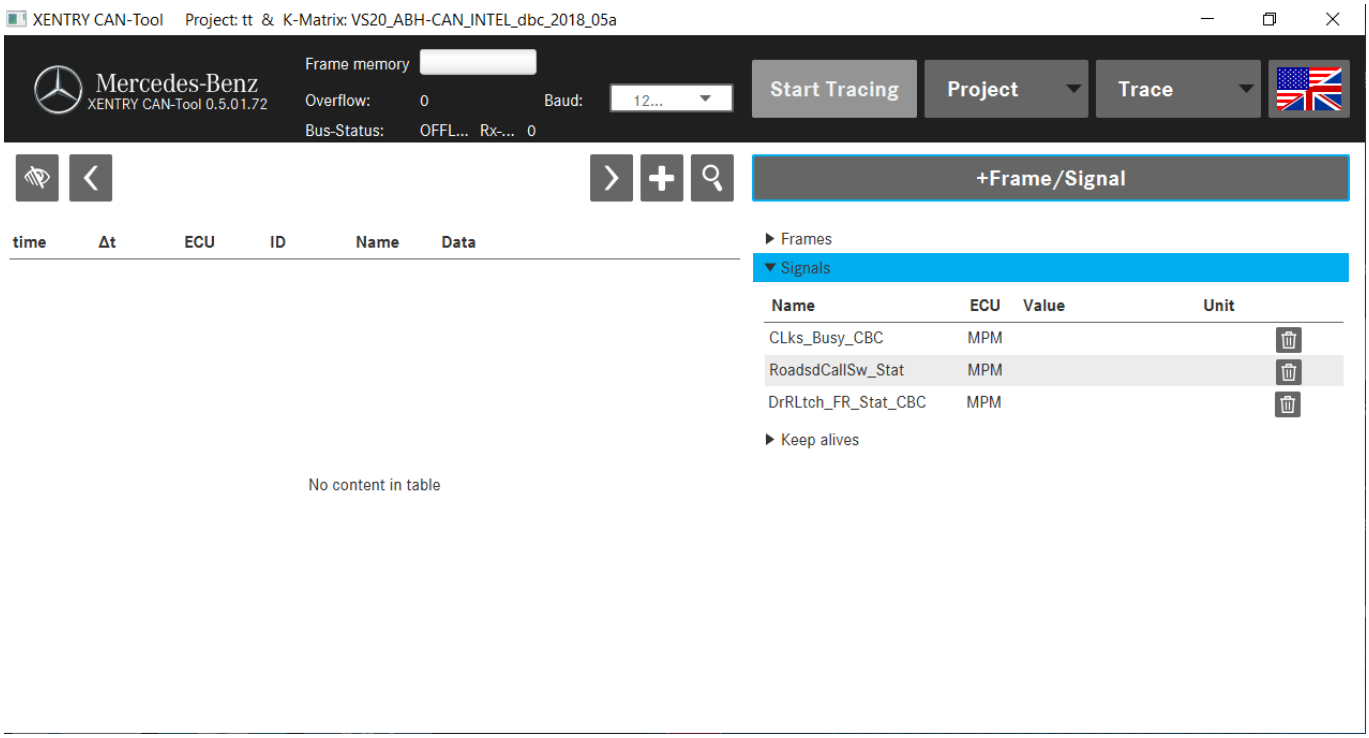



*Fig. 122: List of signals*

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:".*

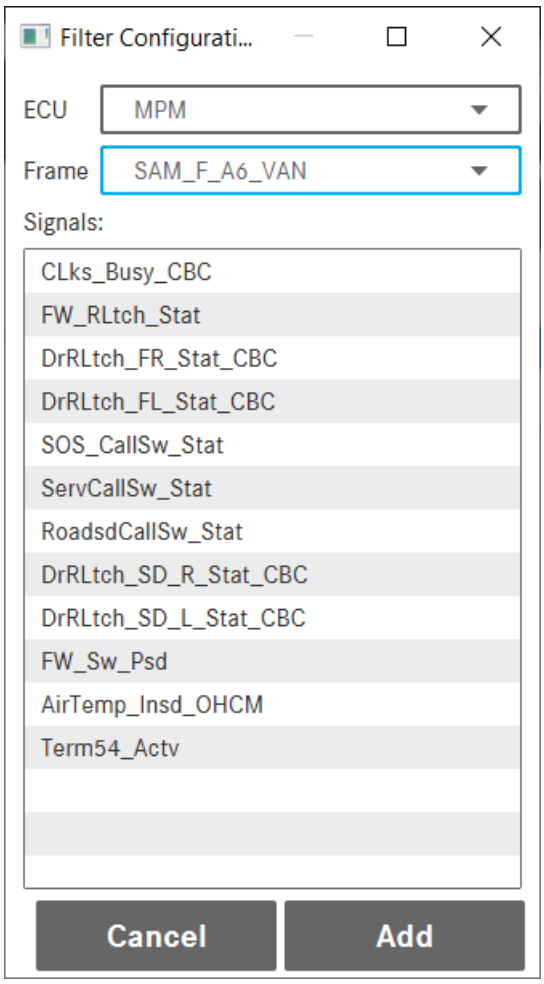



*Fig. 123: Filter configuration window*

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.

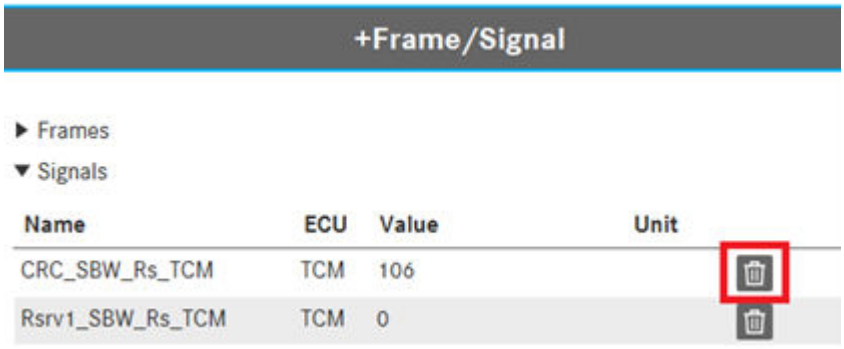



*Fig. 124: Delete button in the list of signals*

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.

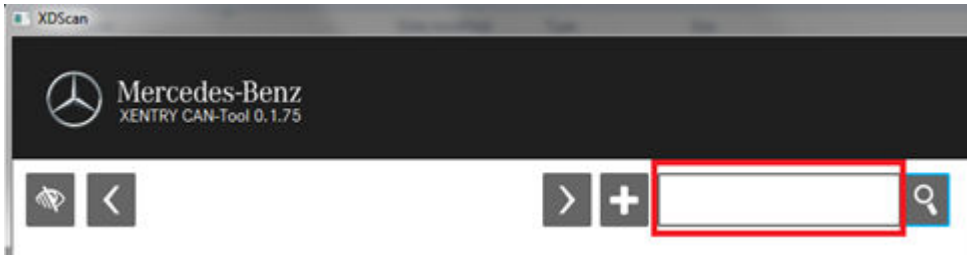



*Fig. 125: Searching in the CAN trace area*

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.

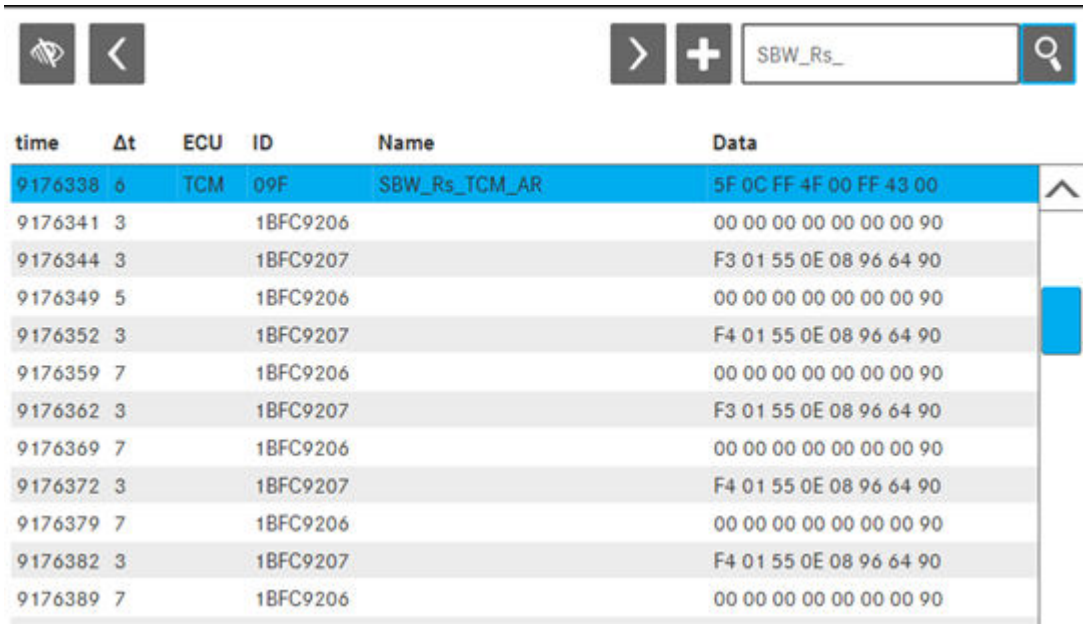



*Fig. 126: Searching for CAN frames with string "SBW_Rs_"*

### 8.6.11 Filter

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

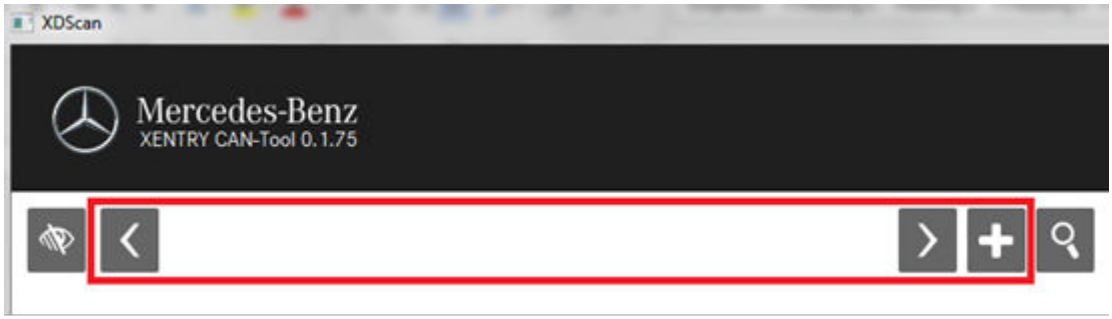



*Fig. 127: Filter area*

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.

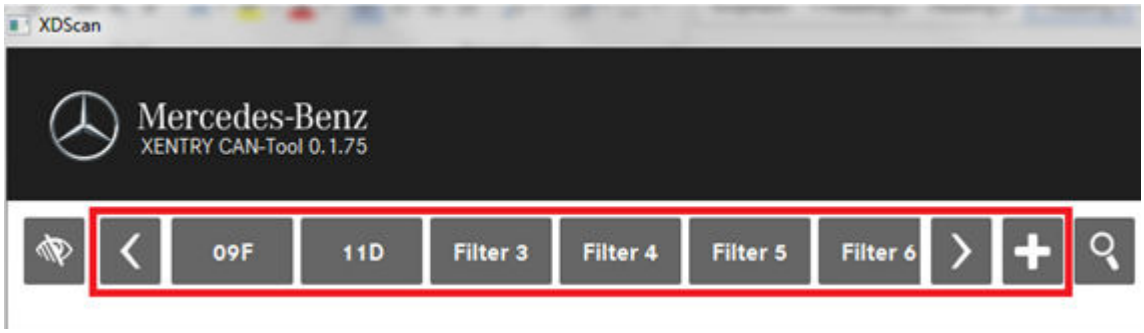



*Fig. 128: Multiple filters in filter area*

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.

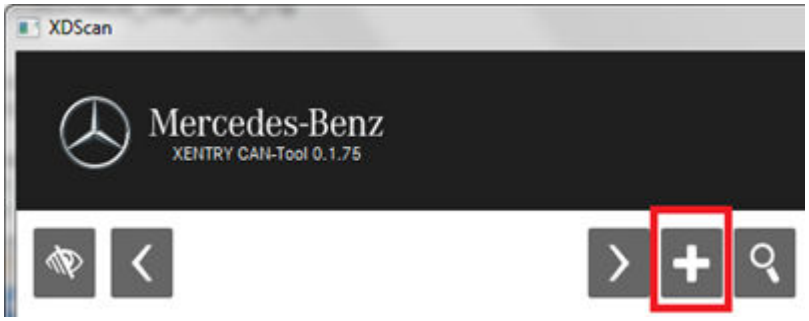



*Fig. 129: Apply filter*

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

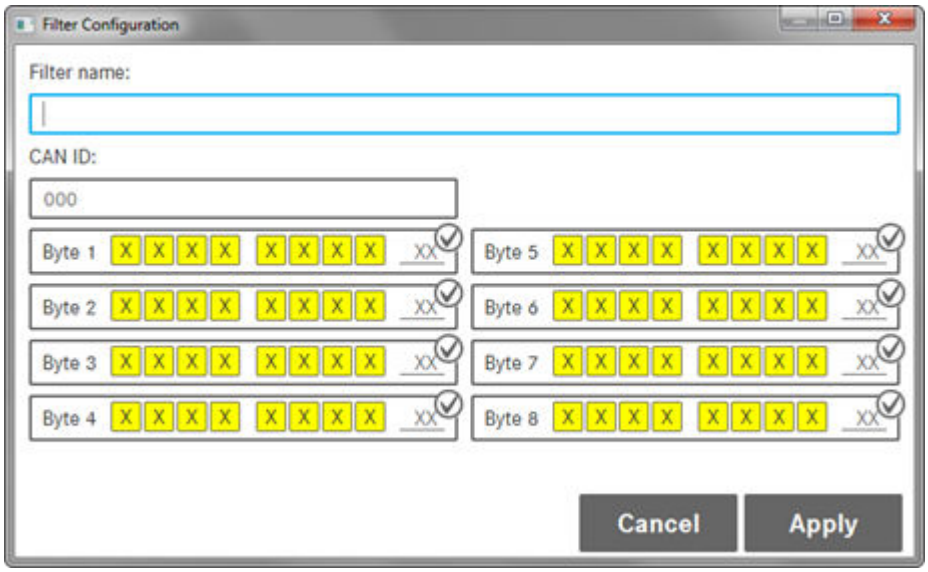



*Fig. 130: "Filter configuration" window in the filter area*

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.

## 8.6.12 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.

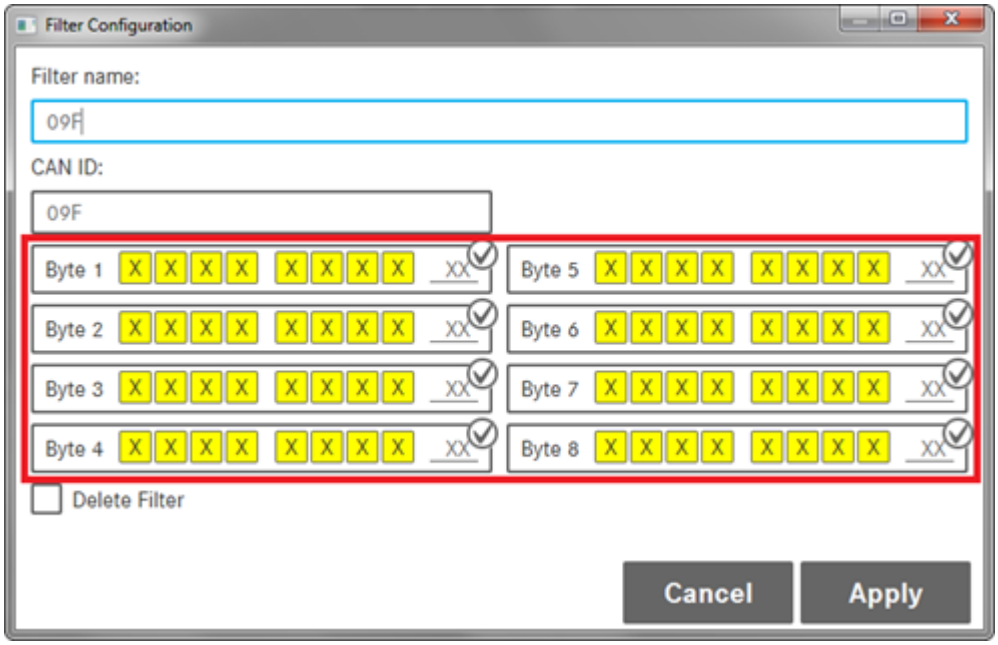



*Fig. 131: Bitmap component*

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.

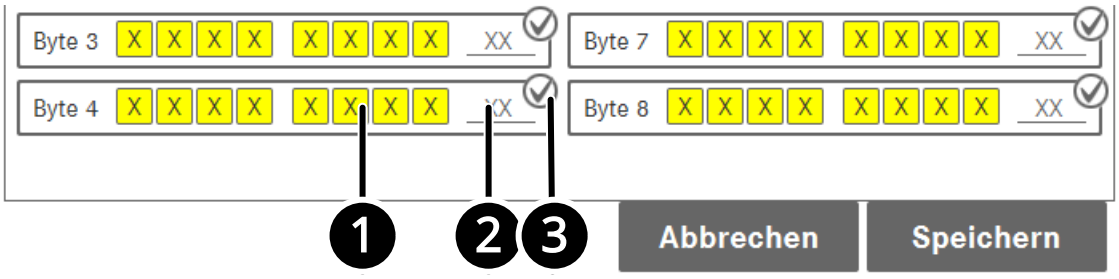



*Fig. 132: Buttons of the bitmap component*

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. 133: 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".

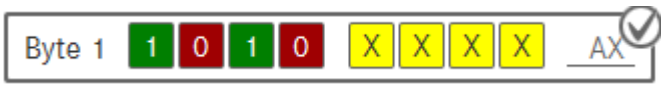



*Fig. 134: Bitmap component – Updating the value 1*

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".

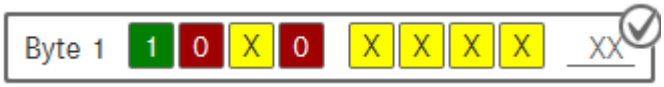



*Fig. 135: Bitmap component – Updating the value 2*

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):

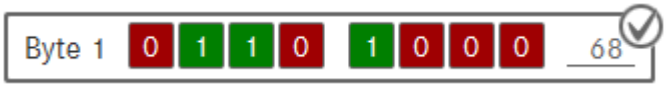



*Fig. 136: Bitmap component – Updating the value 3*

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".

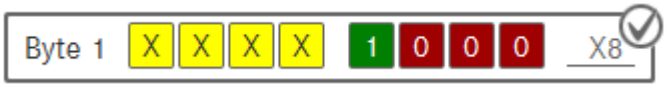
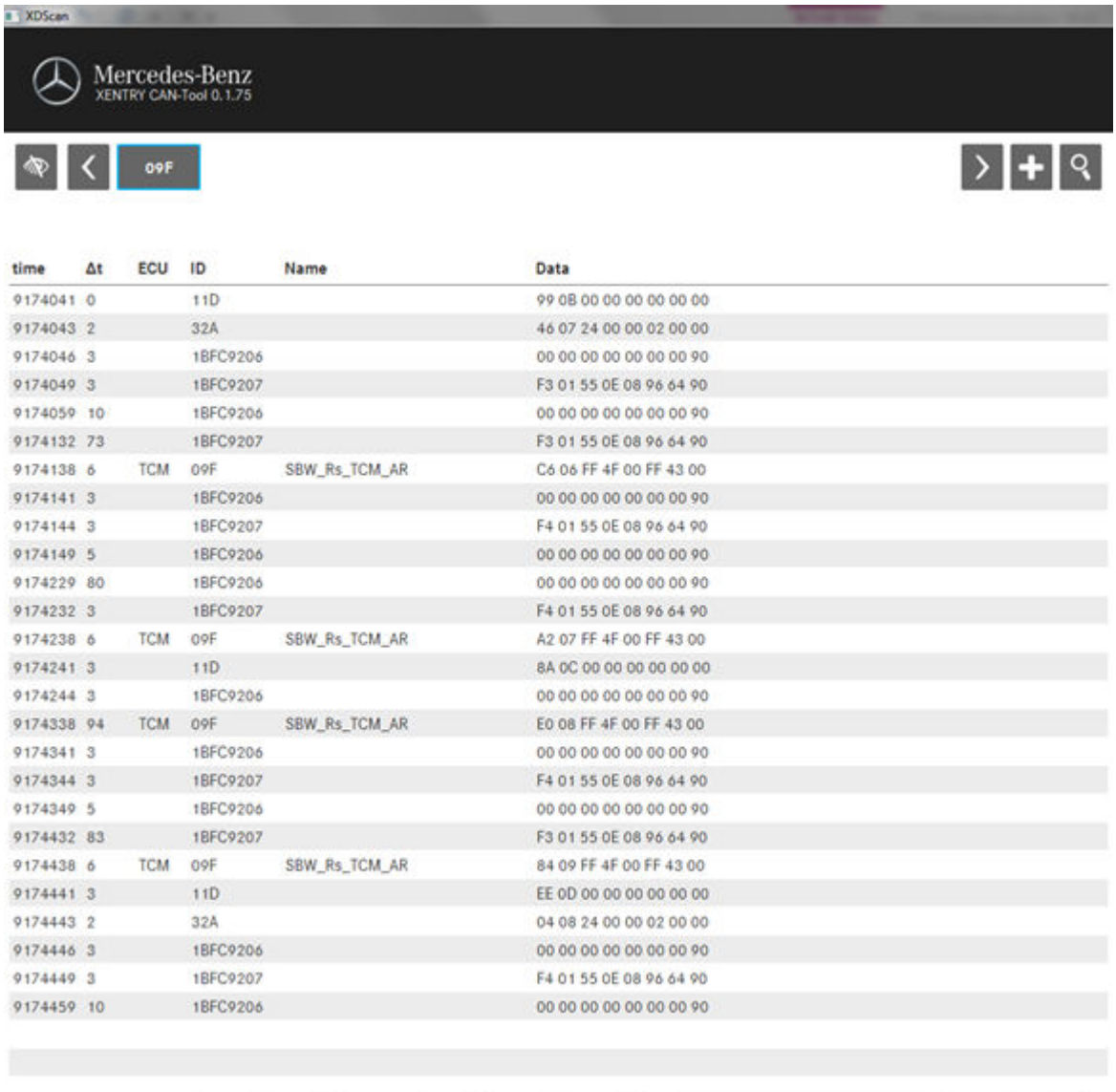



*Fig. 137: Bitmap component – Updating the value 4*

## 8.6.13 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. 138: 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".

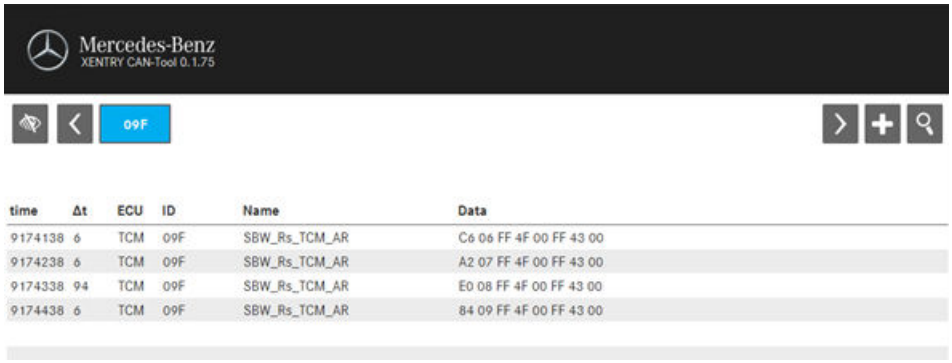



*Fig. 139: Applying the filter 09F*

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. 140: Placeholder character in "CAN ID" filter*

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

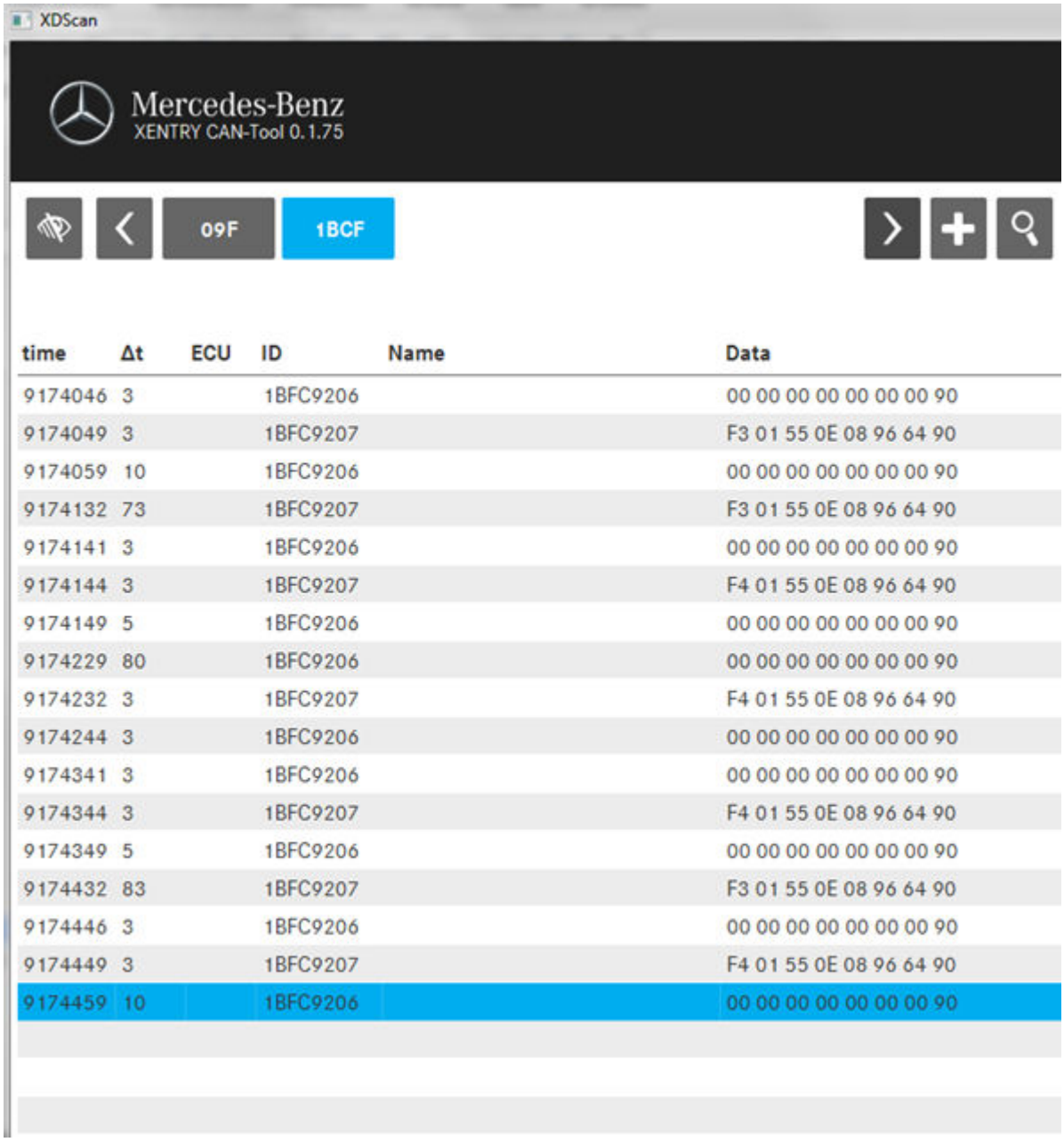



*Fig. 141: Using a placeholder character in CAN ID filter*

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.*

### 8.6.14 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 8.6.12 “Bitmap component” on page 98.

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

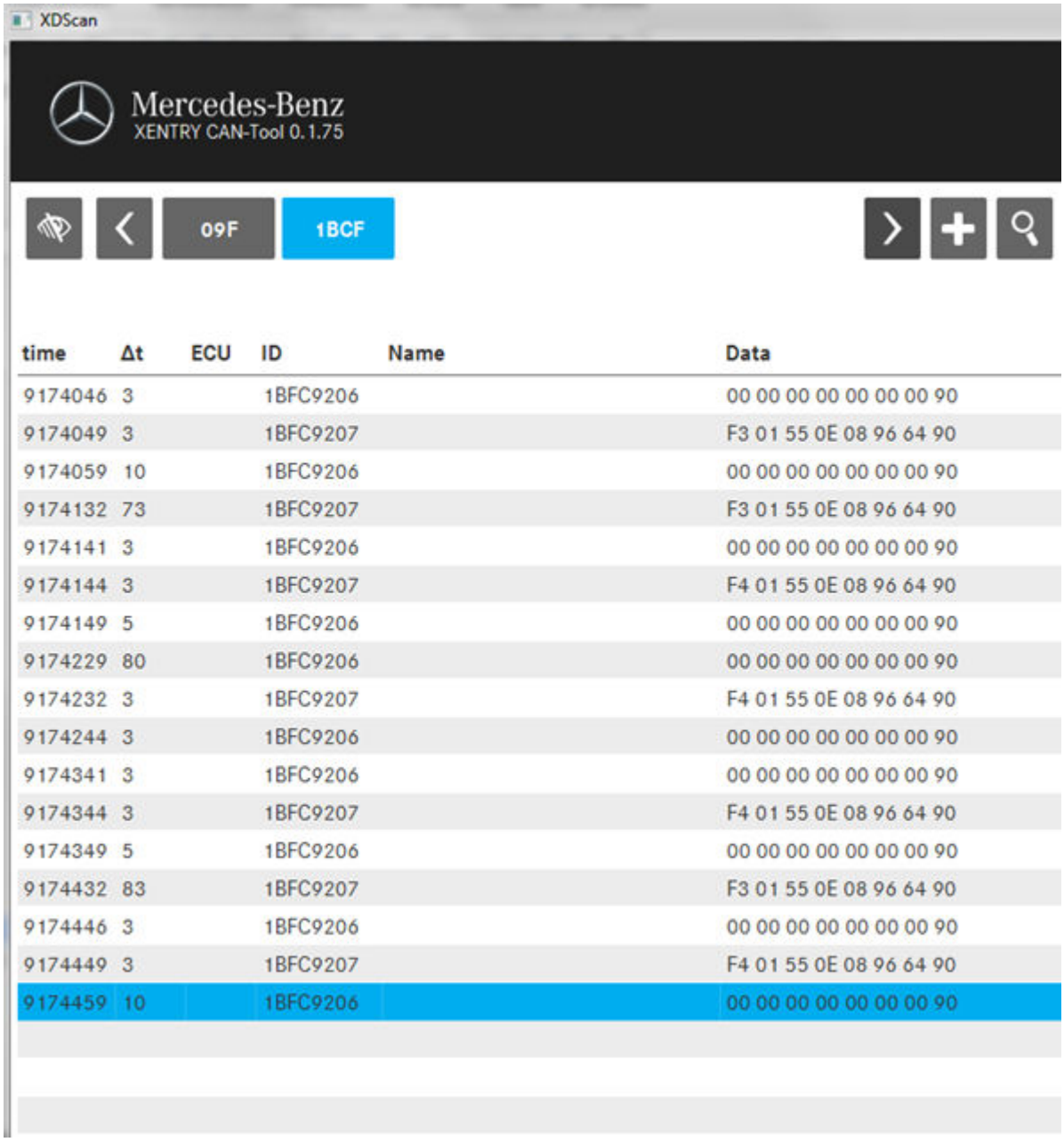
*If the focus when filtering is only on data bytes, the "CAN ID:" field should remain in ignore mode or placeholder mode. If the "CAN ID:" field is to remain in placeholder mode, enter the value "XXXXXXXX" (see screenshot below).*

**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. 142: 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. 143: 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).

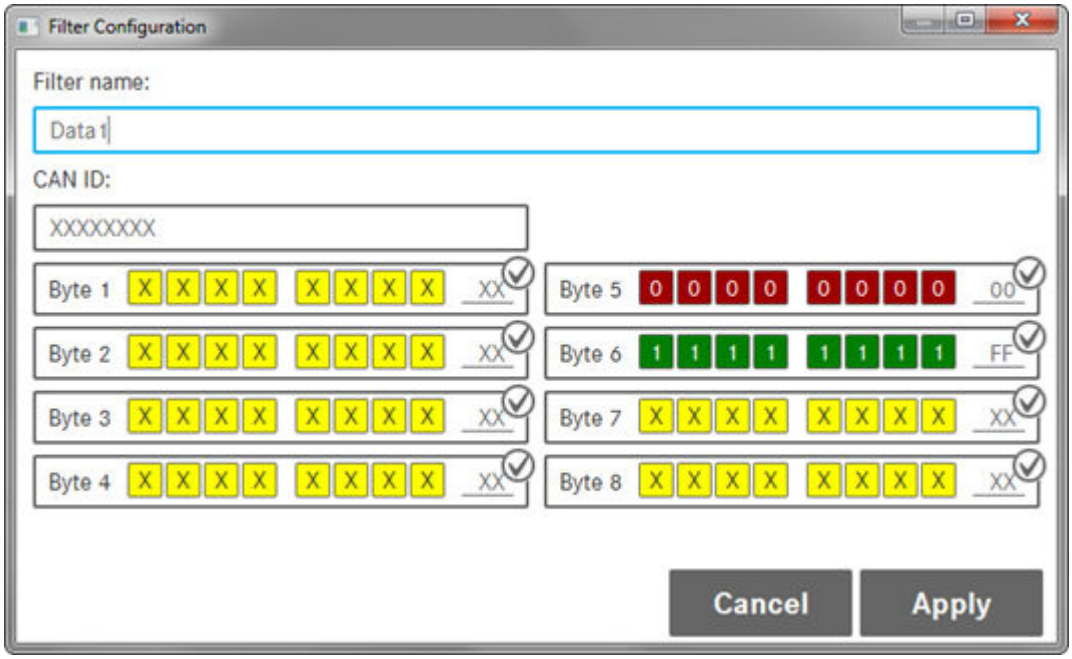



*Fig. 144: Filtering for data fields – 2*

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.

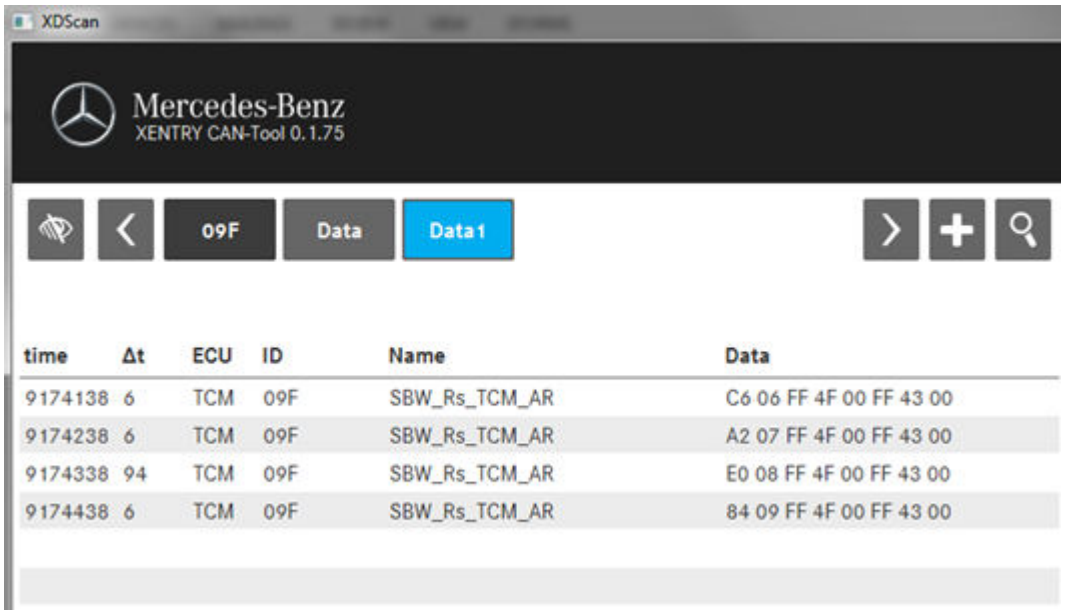



*Fig. 145: Filtering for data fields – CAN trace area – 2*

**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).

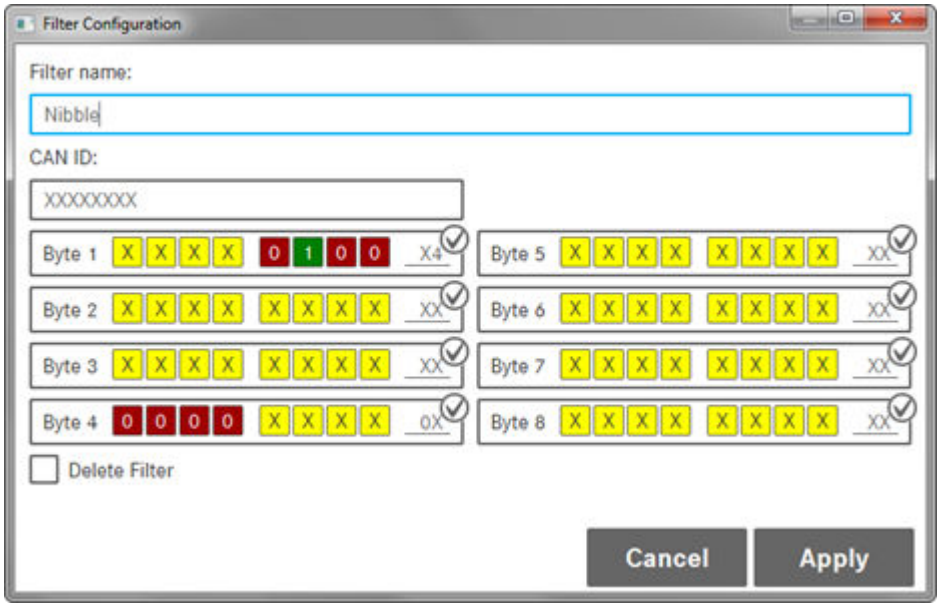
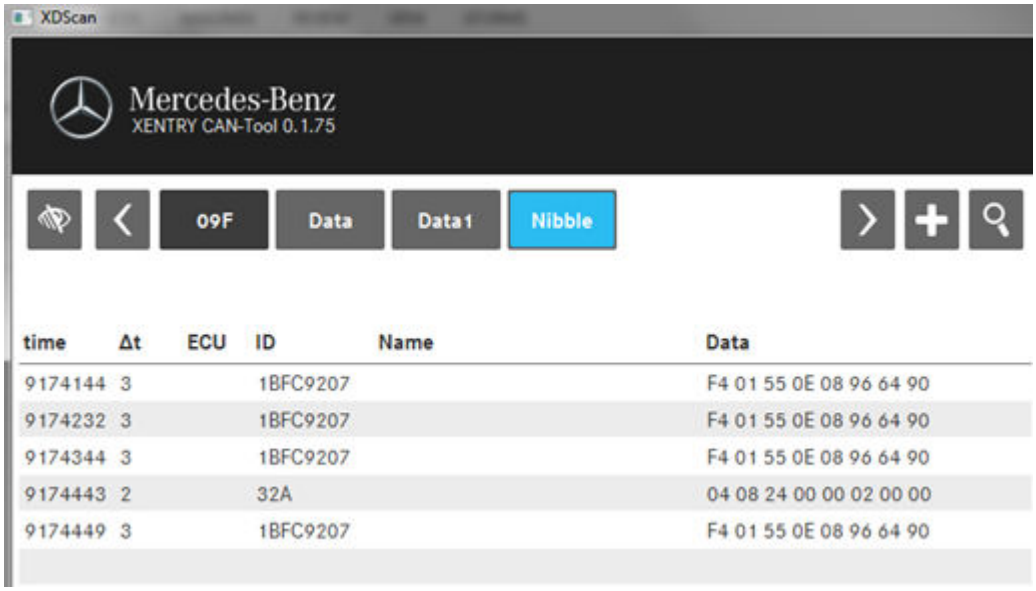



*Fig. 146: Filtering for data fields – 3*

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.




| time | Δt | ECU | ID | Name | Data |
|---|---|---|---|---|---|
| 9174144 | 3 | | 1BFC9207 | | F4 01 55 0E 08 96 64 90 |
| 9174232 | 3 | | 1BFC9207 | | F4 01 55 0E 08 96 64 90 |
| 9174344 | 3 | | 1BFC9207 | | F4 01 55 0E 08 96 64 90 |
| 9174443 | 2 | | 32A | | 04 08 24 00 00 02 00 00 |
| 9174449 | 3 | | 1BFC9207 | | F4 01 55 0E 08 96 64 90 |

*Fig. 147: 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 8.6.12 “Bitmap component” on page 98.

**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).

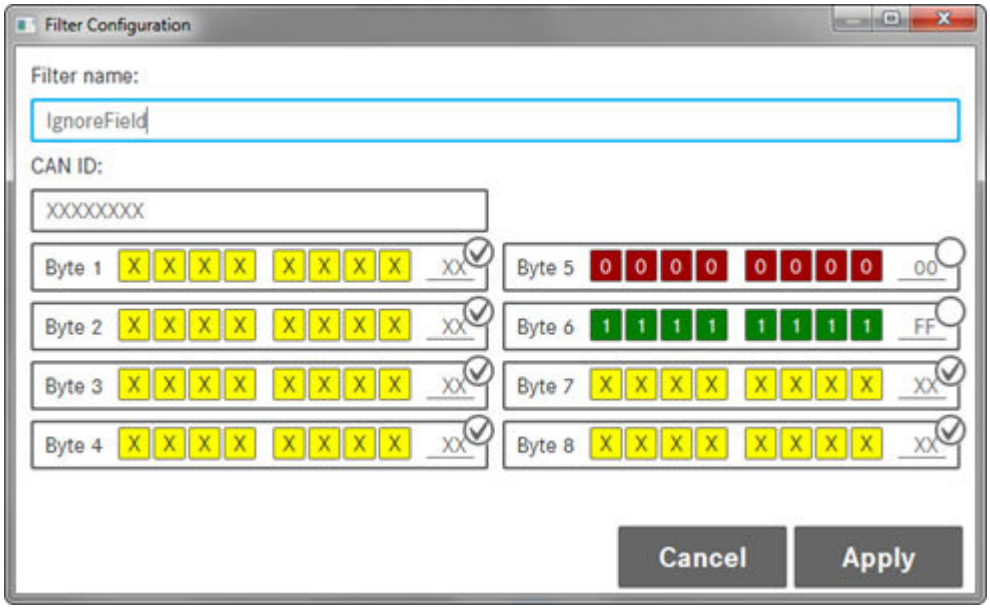



*Fig. 148: Filtering for data fields – 4*

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.

## 8.6.15 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 8.6.13 “Filtering for CAN ID” on page 100. Further information about filtering by data fields can be found in ➦ Chapter 8.6.14 “Filtering for data fields” on page 102.

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.

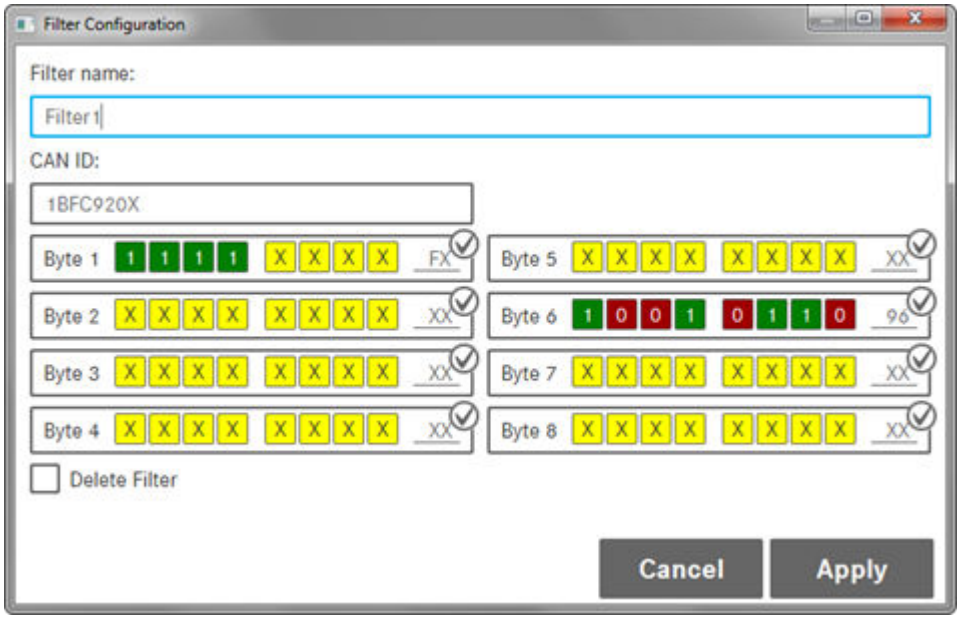



*Fig. 149: Filtering for CAN ID and for data fields*

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.

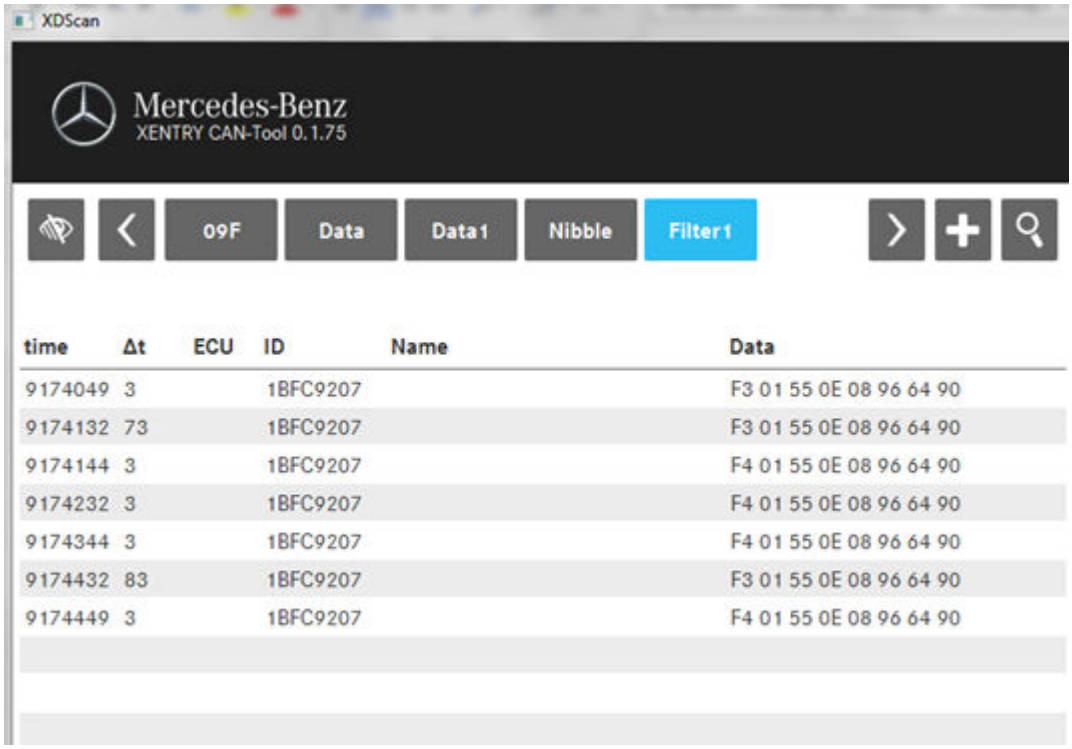



*Fig. 150: Filtering for CAN ID and for data fields – CAN trace area*

### 8.6.16 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).

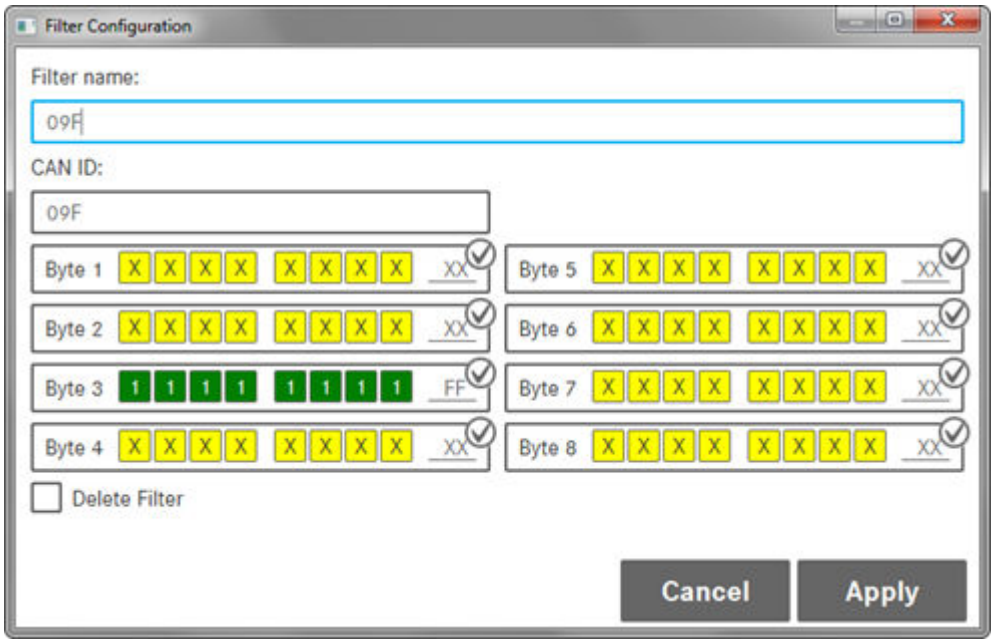



*Fig. 151: Multiple filters – Filter "09F"*

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

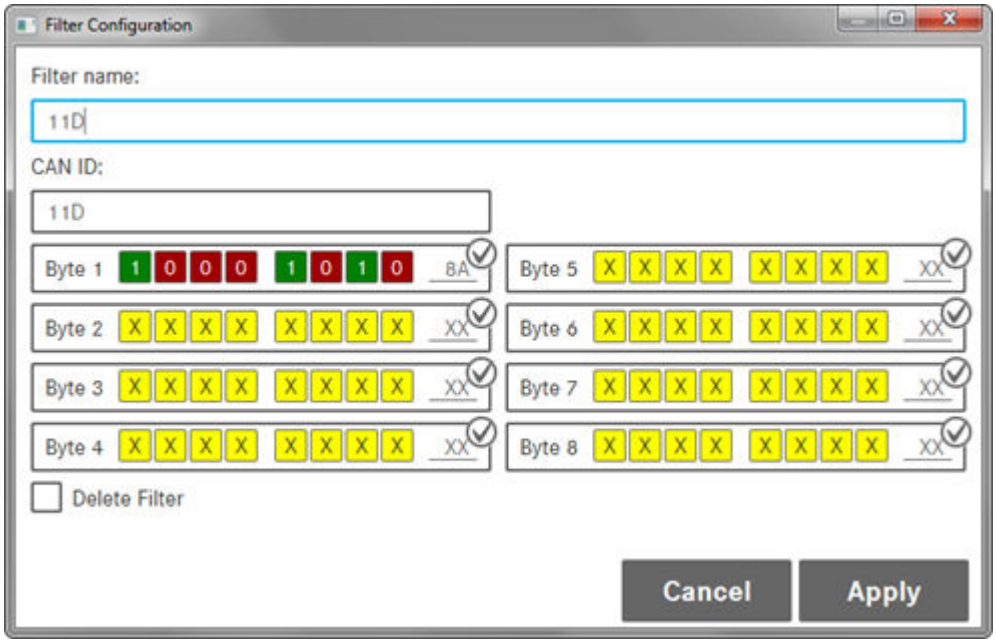
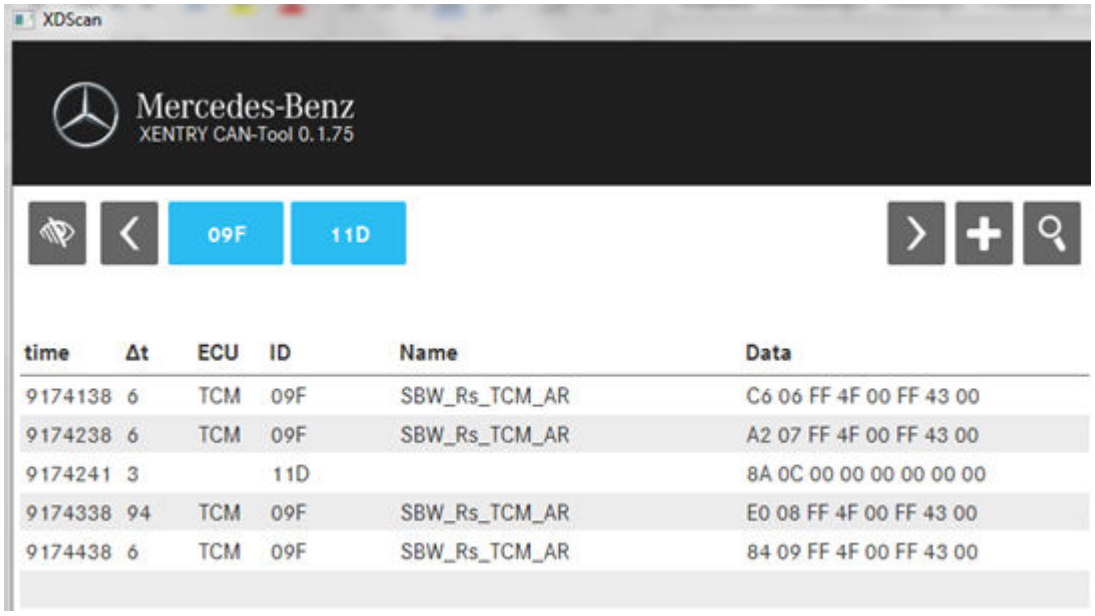



*Fig. 152: Multiple filters – Filter "11D"*

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. 153: 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.

### 8.6.17 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.

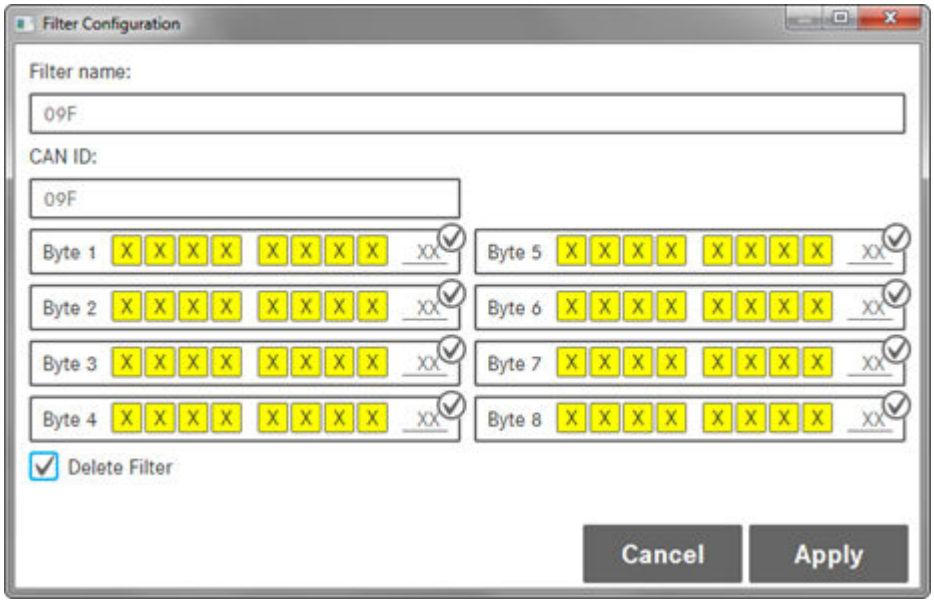



*Fig. 154: Deleting filters*

*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.

### 8.6.18 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).

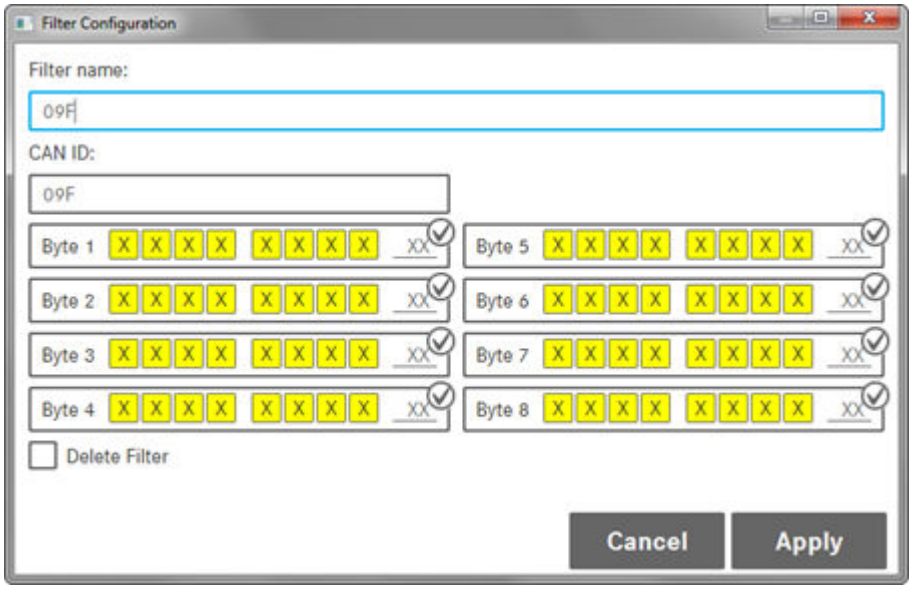



*Fig. 155: Editing filters – 1*

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.

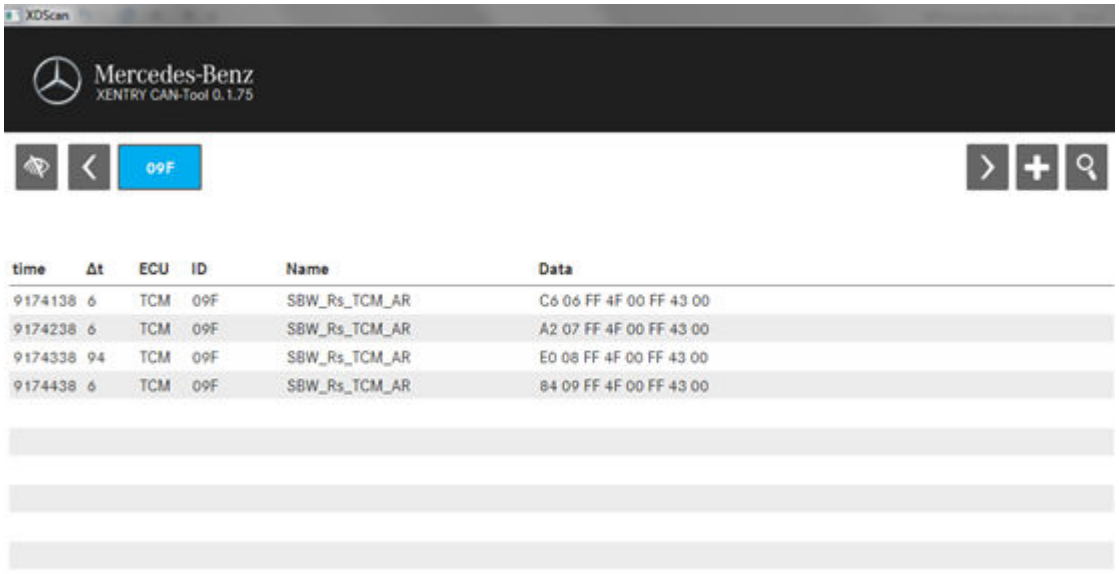



*Fig. 156: Editing filters - Applying filter 09F – 1*

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

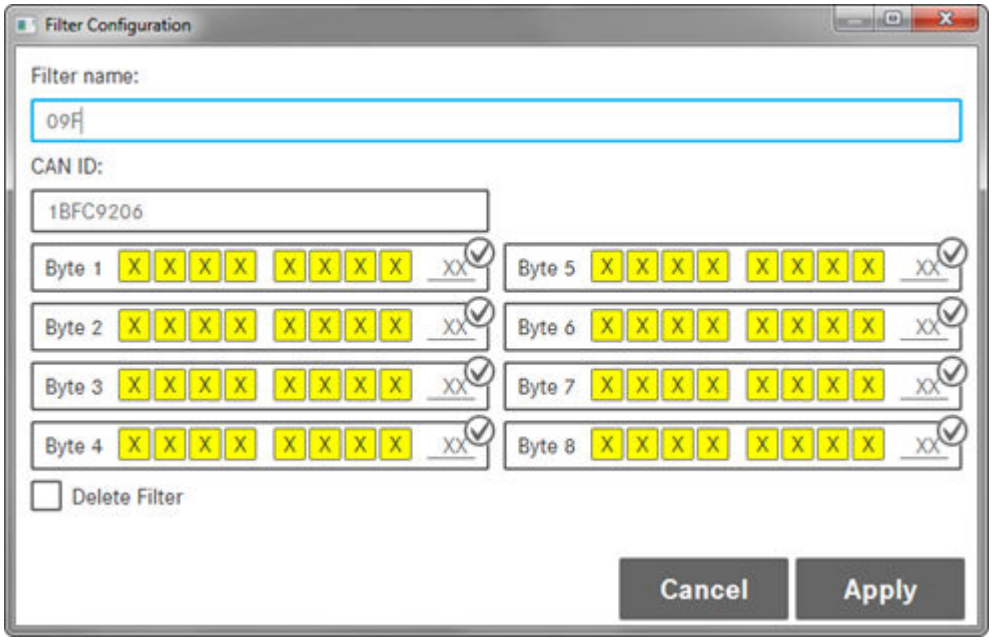



*Fig. 157: Editing filters – 2*

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

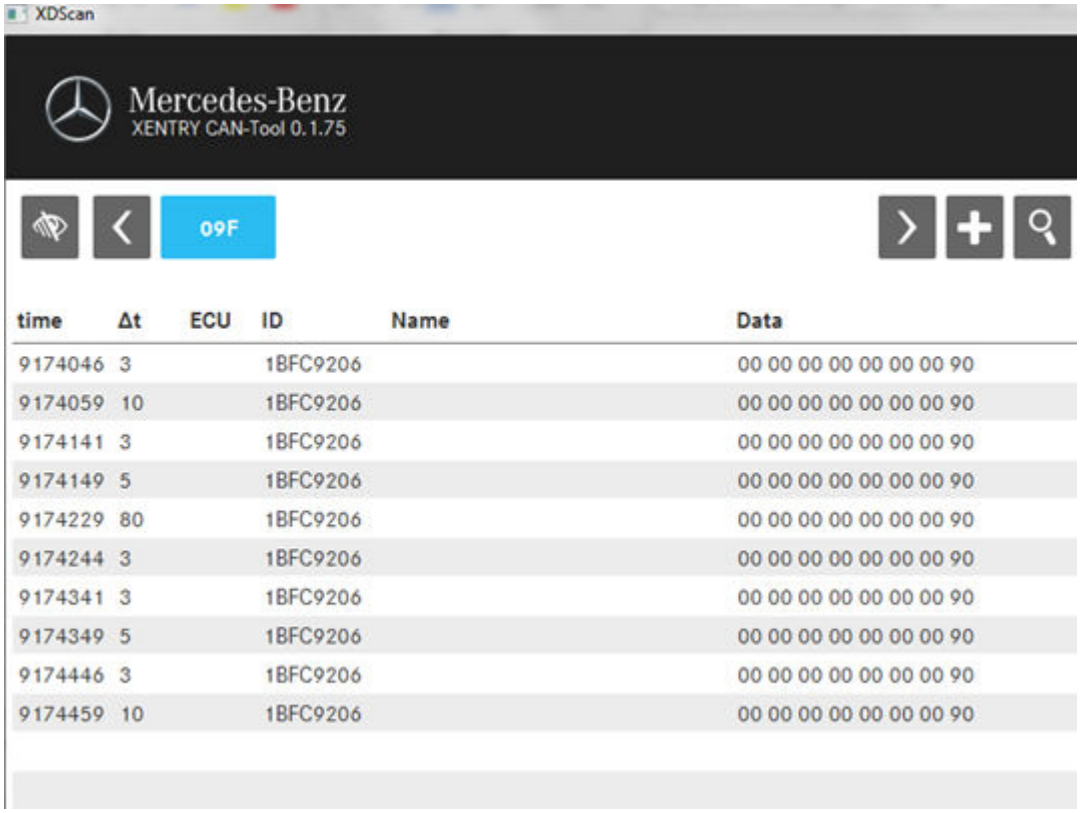



*Fig. 158: Editing filters – Applying filter 09F – 2*

### 8.6.19 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.

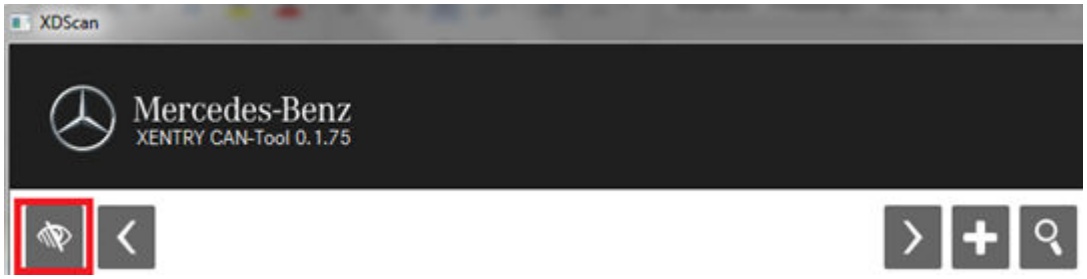



*Fig. 159: "Trigger" button*

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.

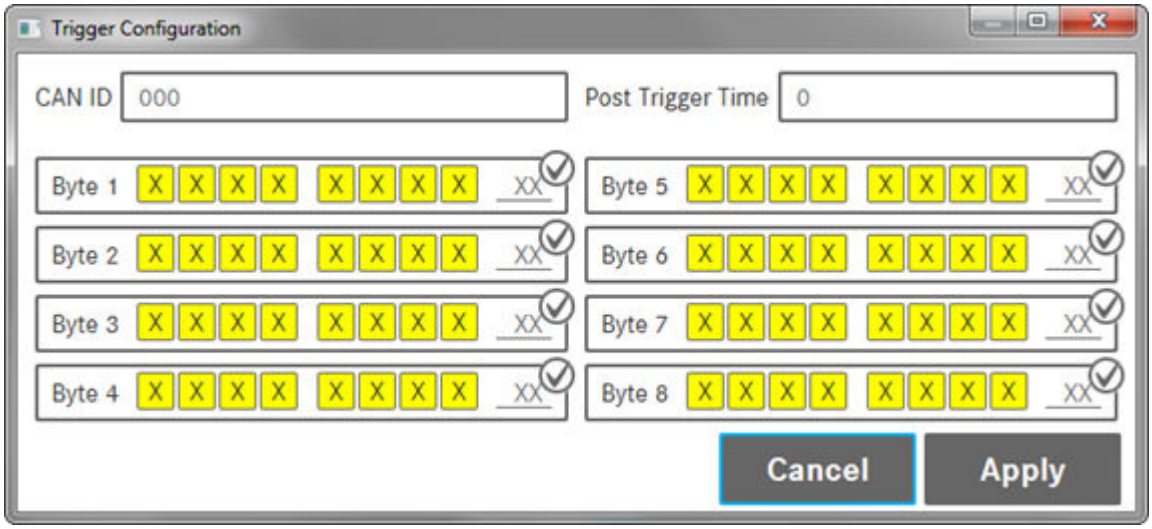



*Fig. 160: "Trigger configuration" window*

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 8.6.12 “Bitmap component” on page 98.

*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.

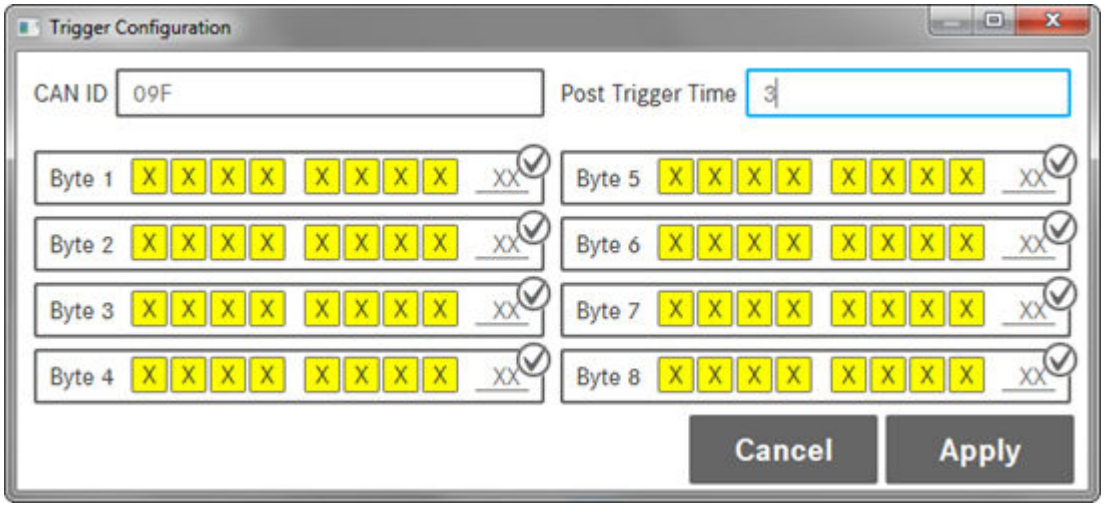



*Fig. 161: Trigger based on the CAN ID*

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.

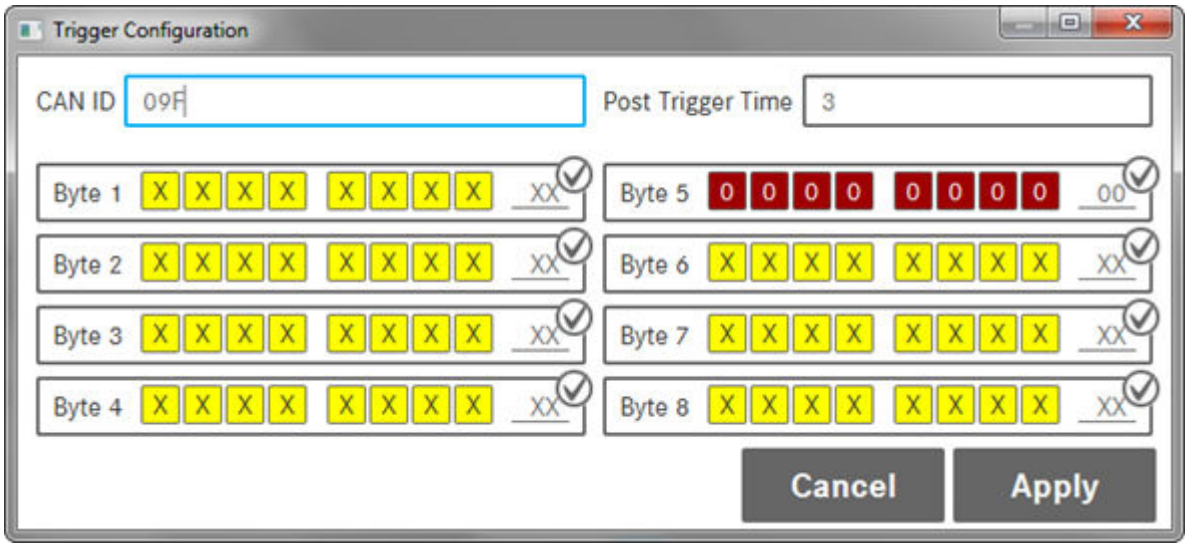



*Fig. 162: Trigger based on the CAN ID and data – 1*

**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.

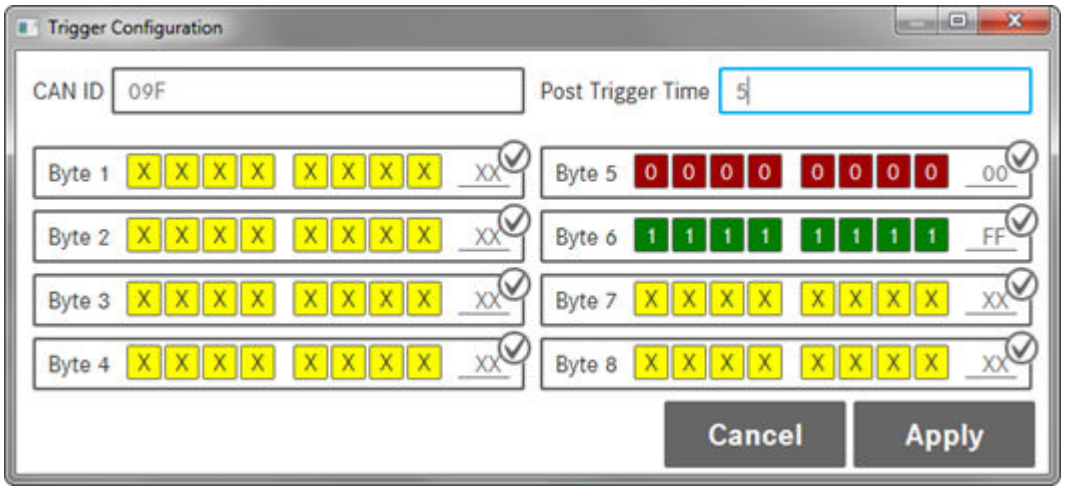



*Fig. 163: Trigger based on the CAN ID and data – 2*

**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.

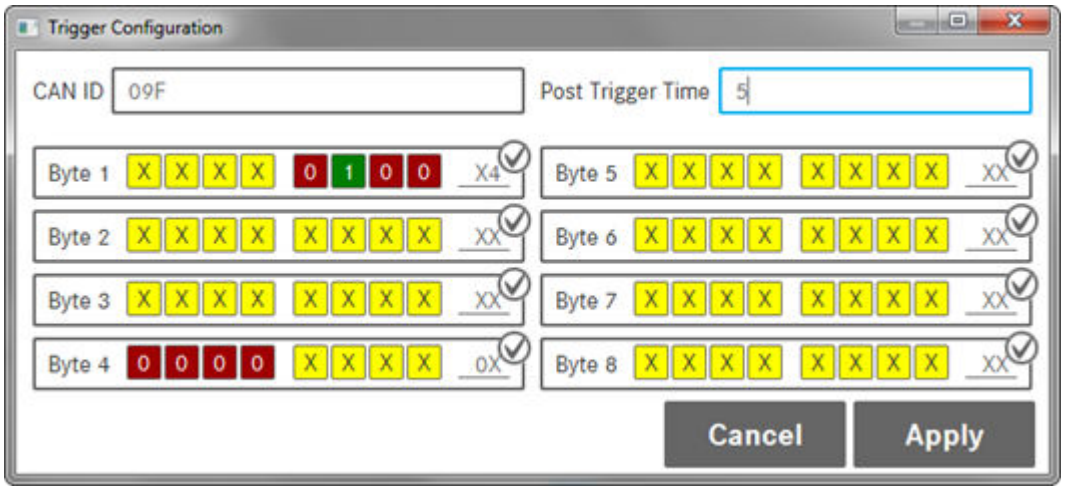



*Fig. 164: Trigger based on the CAN ID and data – 3*

**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.

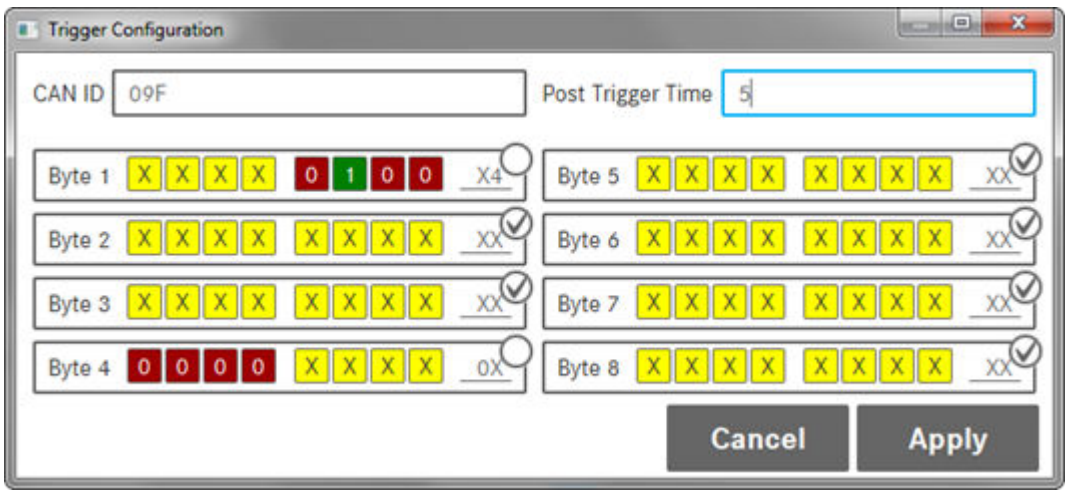



*Fig. 165: Trigger based on the CAN ID and data – 4*

Further information on using the ignore field can be found in ➦ Chapter 8.6.12 “Bitmap component” on page 98.

## 8.7 Support Tool

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

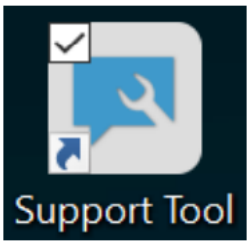



*Fig. 166: Support Tool icon*

After launching the Support Tool, the "XSS ticket" tab is already selected. This page helps you to create an XSS ticket.

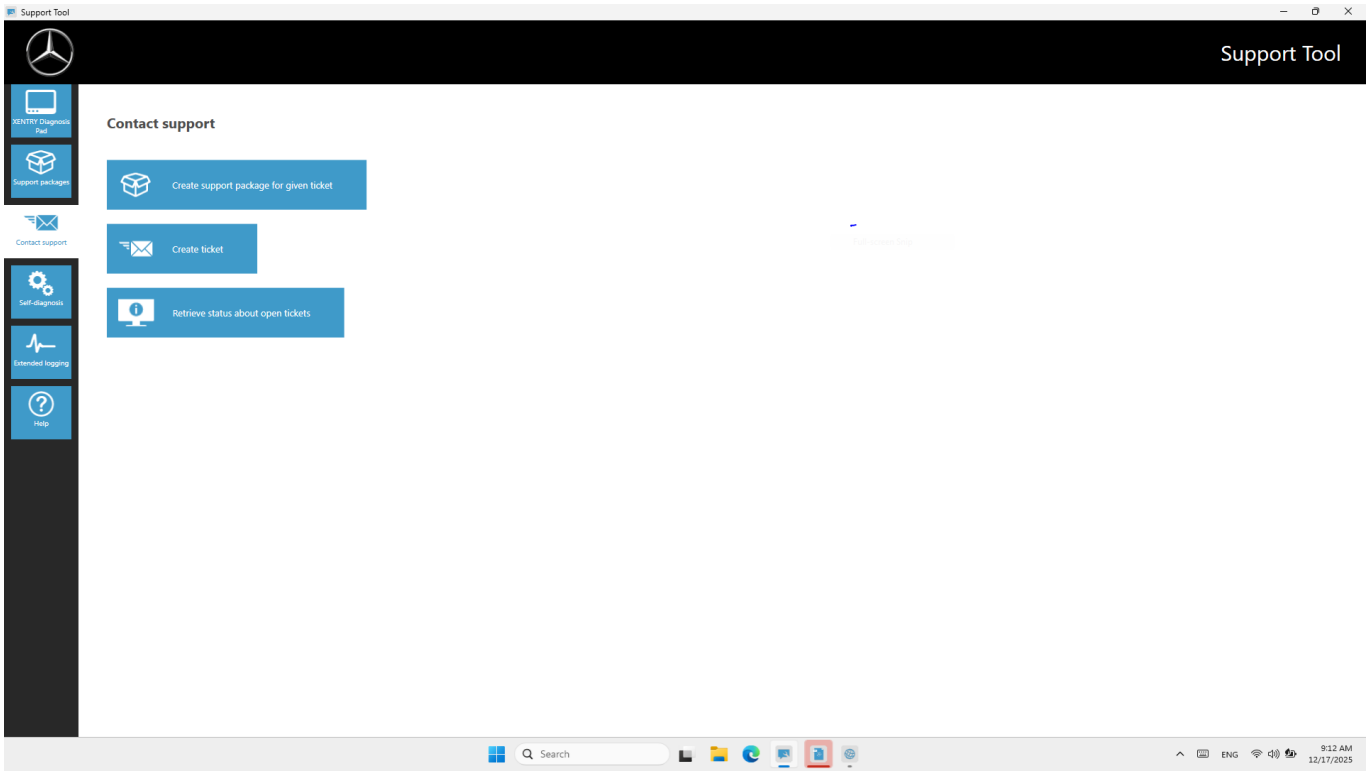



*Fig. 167: Creating XSS tickets*

- You can find system information in the menu item "XENTRY Diagnosis Pad".
- The second item "Support Packages" makes it easy for you to create support packages and therefore to compile all the relevant system information for Support.
- The status of back end server availability is listed under the "Self-diagnosis" menu item.
- The Diagnosis User Help Desk may ask you to make a change to "Extended logging"; this is selected here.
- You can find links to the online offer, help documents, instructions and release notes under "Help", the bottom menu item in the navigation bar.

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.

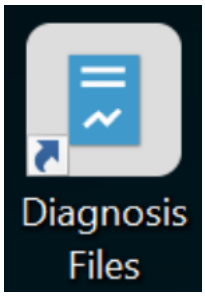



*Fig. 168: "Support Files" library icon*

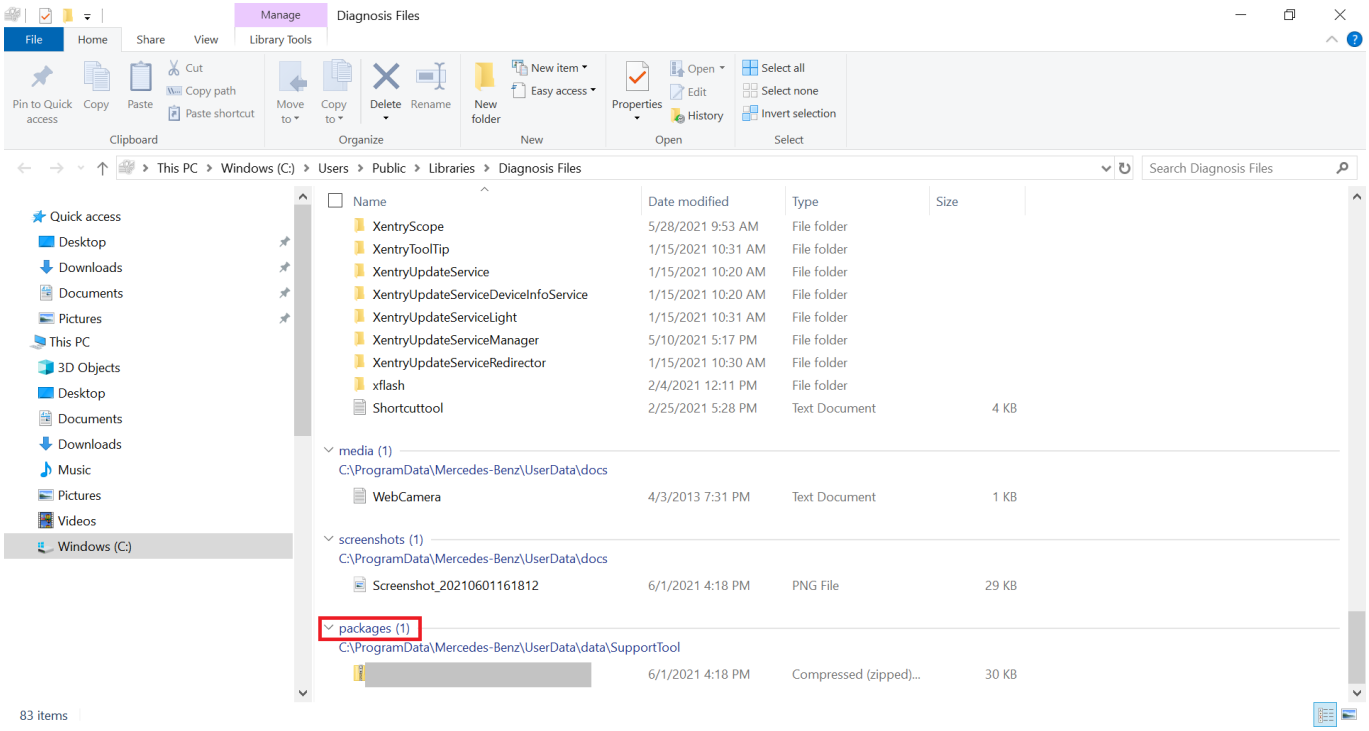


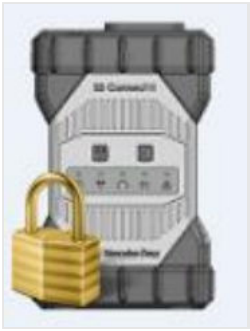
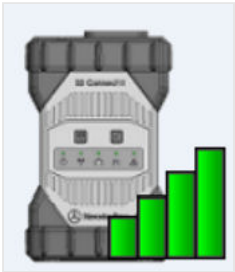

*Fig. 169: Storage location for support packages*

## 8.8 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<br>▪ VCI is not visible via WLAN | ▪ Supply power to the VCI |
|  | Pairing lost | ▪ VCI is not connected via USB<br>▪ VCI visible via WLAN<br>▪ Pairing missing | ▪ Connect the VCI via a USB connection cable<br>▪ Pair the VCI through the VCI Manager |
| | VCI firmware older than PC software | ▪ Firmware of the VCI out-dated | ▪ Update the VCI via VCI Manager |
| | PC software older than VCI firmware | ▪ VCI is not connected via USB<br>▪ VCI visible via WLAN<br>▪ PC software outdated | ▪ Downgrade the VCI firm-ware by carrying out the "Update" in the VCI Man-ager |
| | VCI in recovery mode | ▪ VCI connected via USB<br>▪ 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<br>▪ 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<br>▪ Activate Wi-Fi stick |

# 9 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.

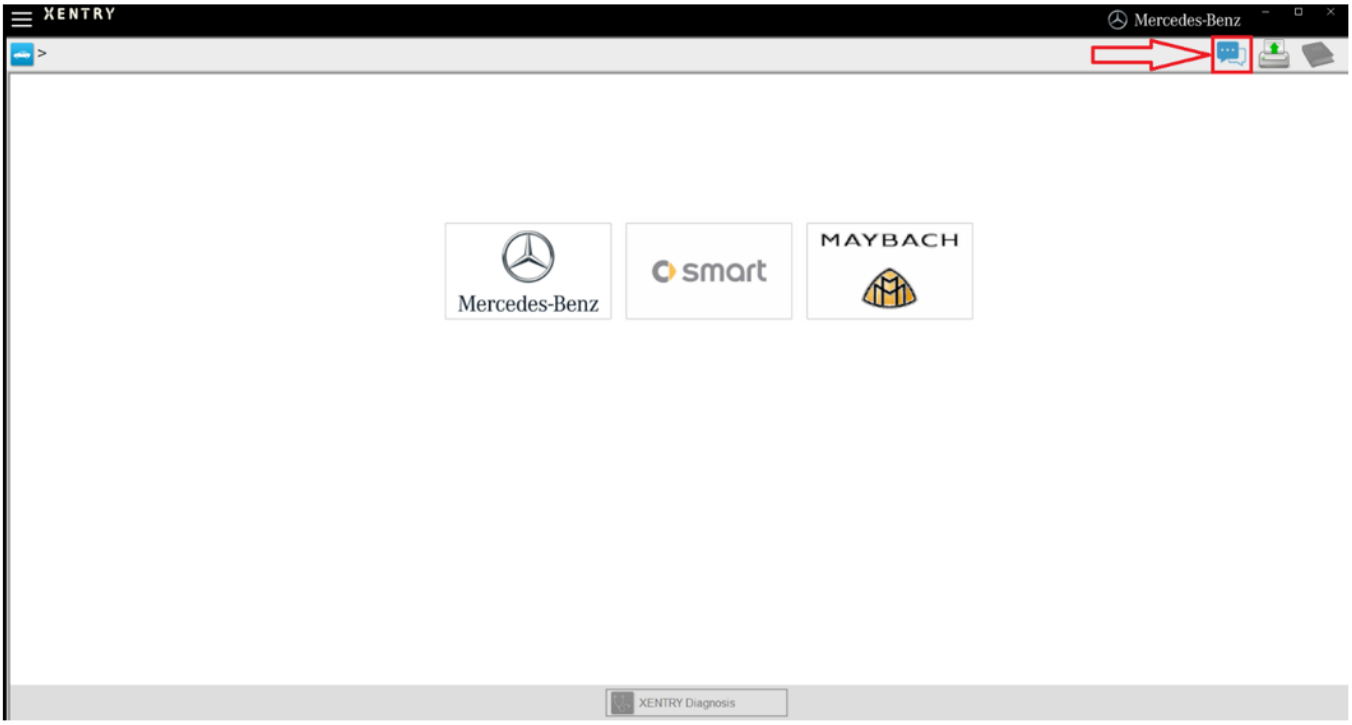



*Fig. 170: Create XSS ticket in XENTRY Diagnosis*

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

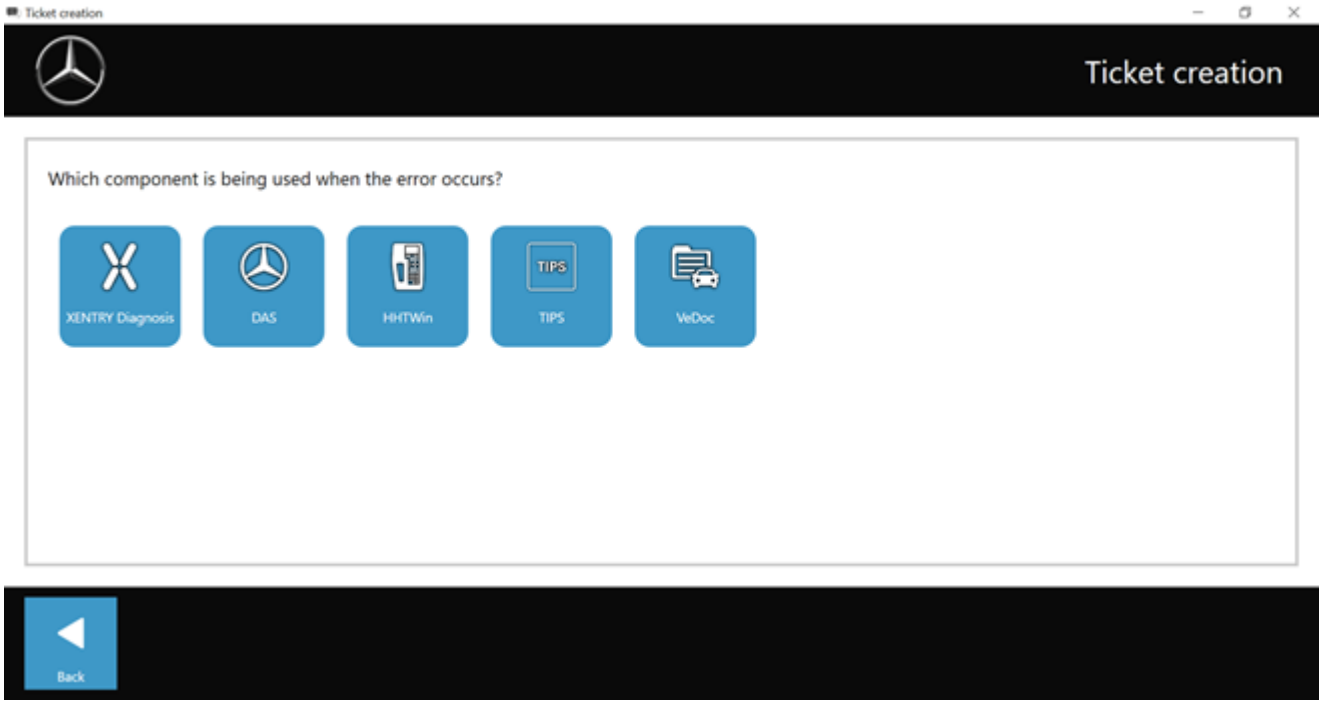



*Fig. 171: XSS ticket component selection*

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.

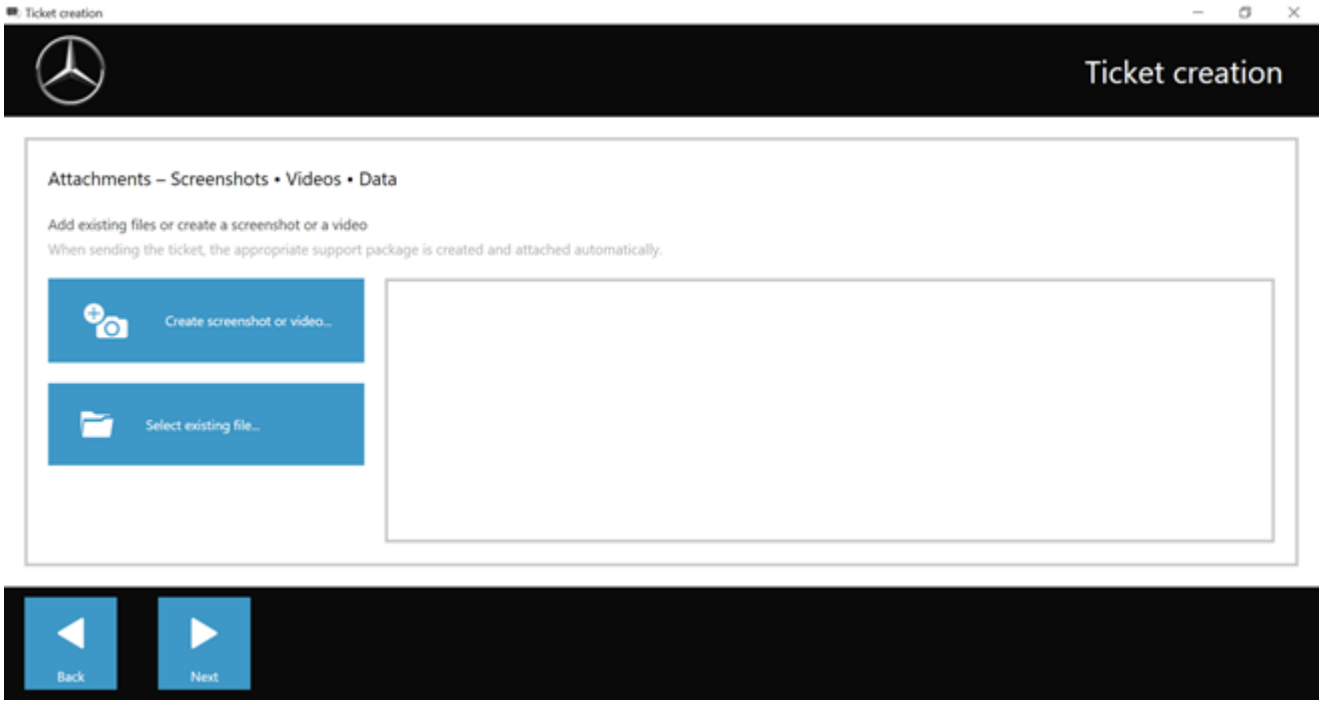



*Fig. 172: XSS ticket file attachments*

# 10 Windows licensing policies

## 10.1 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.

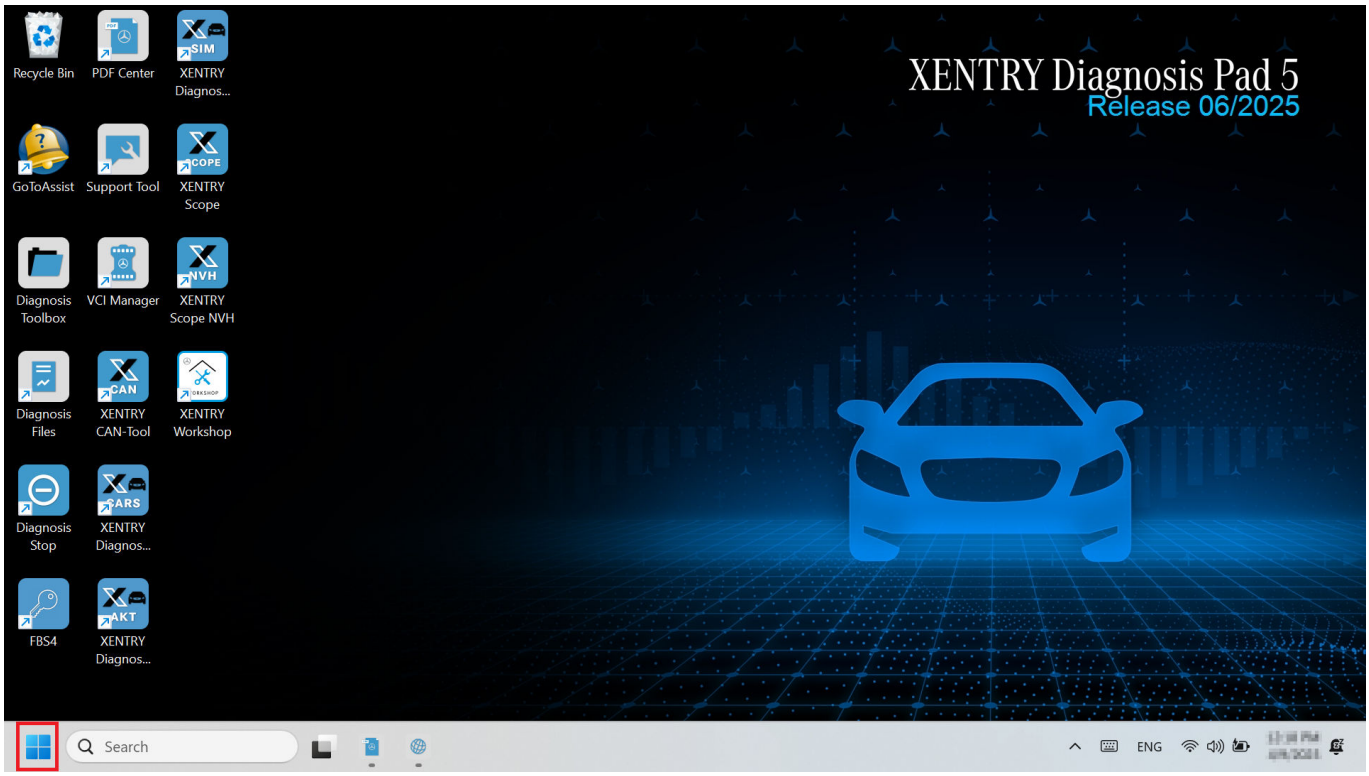



*Fig. 173: Windows 11 Start menu*

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

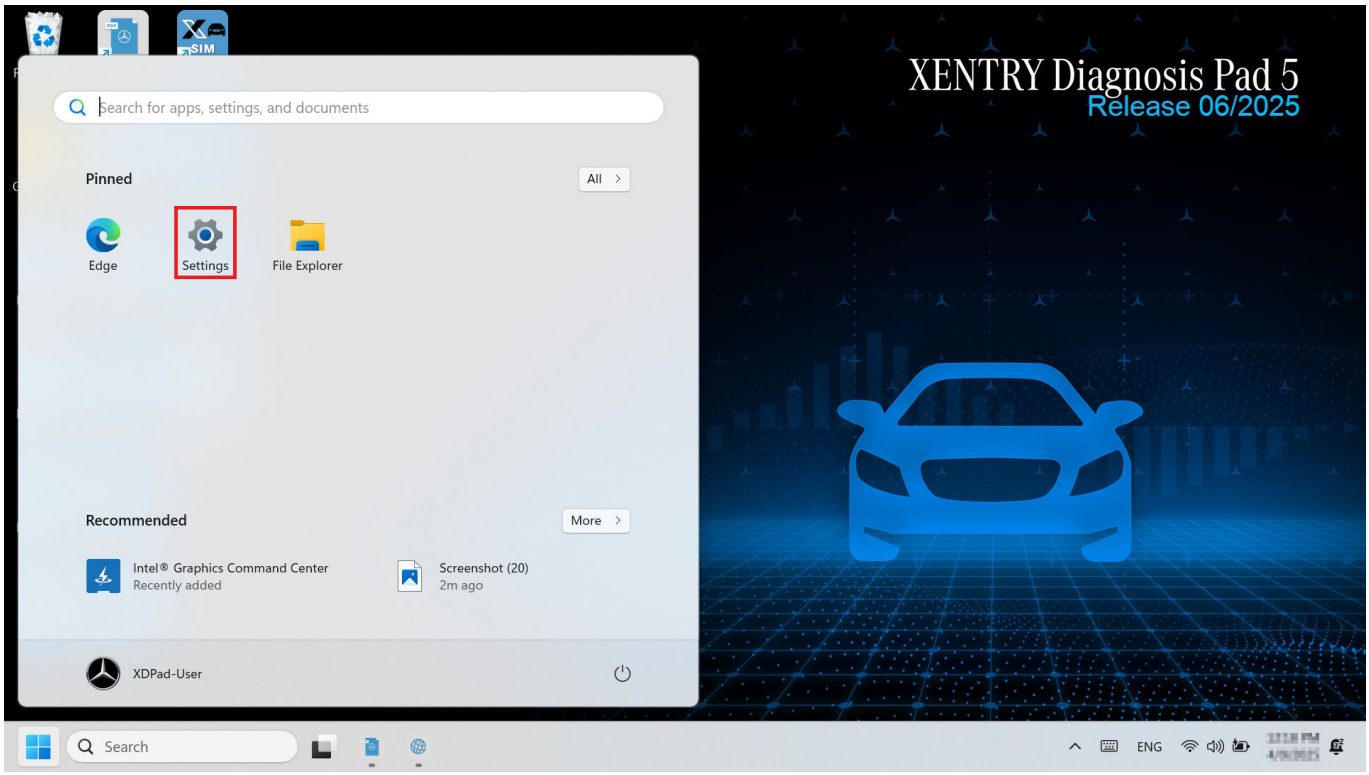



*Fig. 174: Pad settings*

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

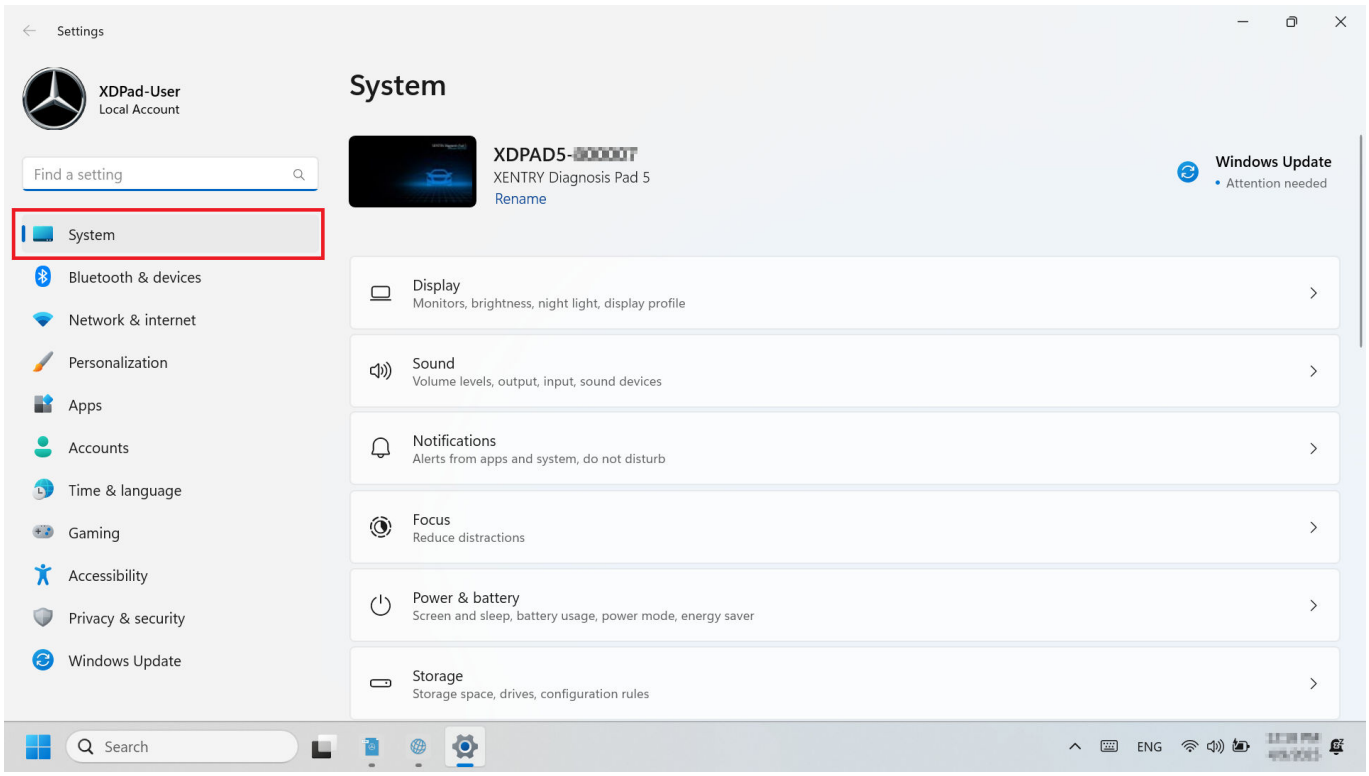



*Fig. 175: System*

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

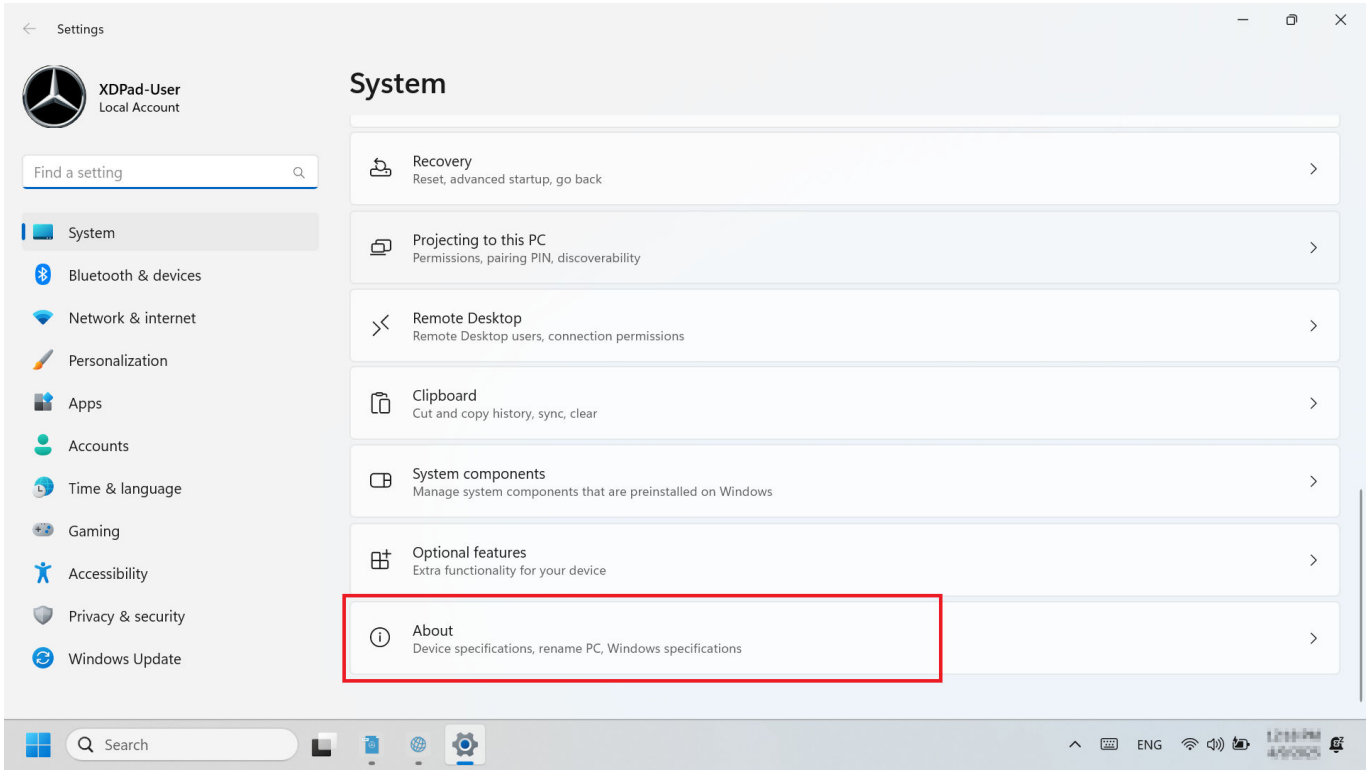



*Fig. 176: Info*

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).

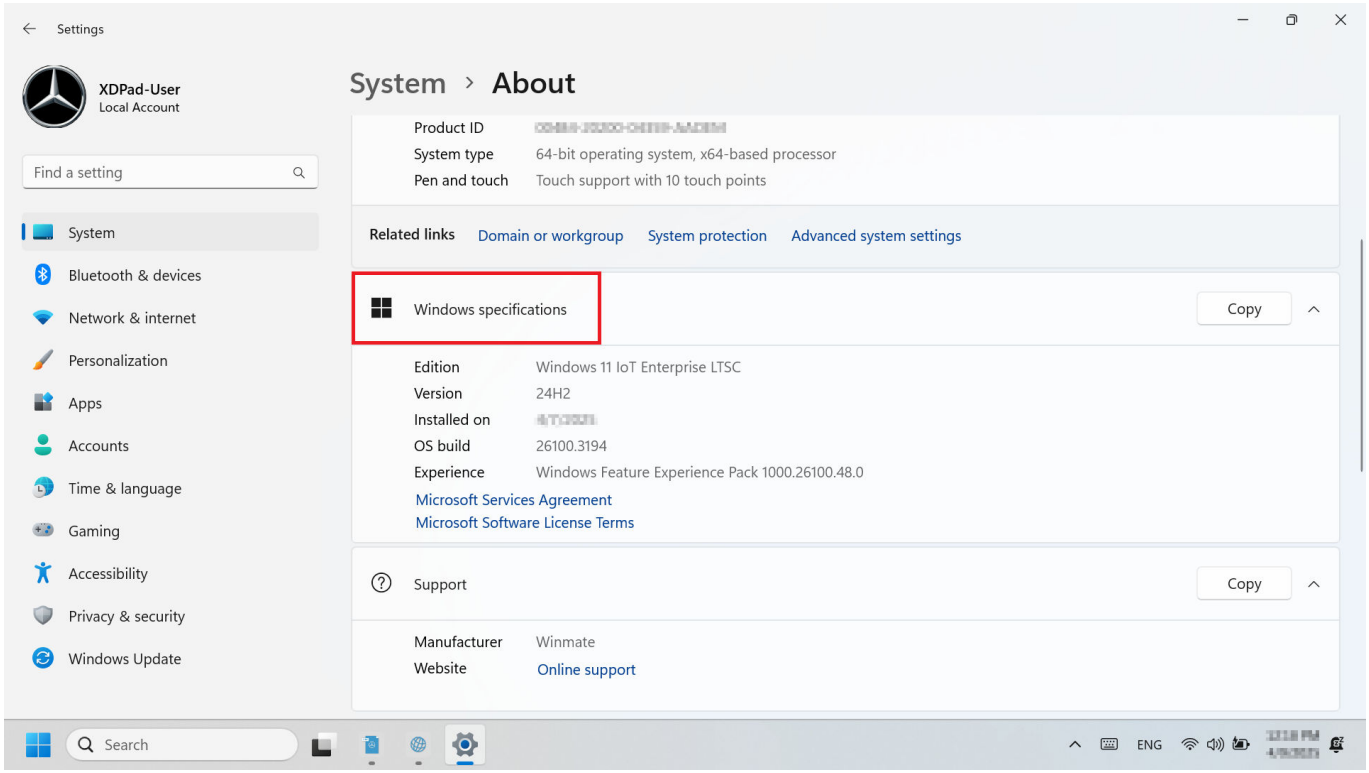



*Fig. 177: Microsoft software licensing conditions*

# 11 WLAN certifications

| Country | XENTRY Diagnosis VCI | XENTRY Diagnosis Pad 5 |
|---|---|---|
| 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 | Not certified |
| Andorra | Certified | Certified |
| Angola | Not certified | Certified |
| Antigua/Barbuda | Not certified | Certified |
| Equatorial Guinea | Not certified | Certified |
| Argentina | Certified | Certified |
| Armenia | Not certified | Certified |
| Aruba | Not certified | Certified |
| Azerbaijan | Not certified | Certified |
| Ethiopia | Not certified | Certified |
| Austr. Oceania | Not certified | Certified |
| Australia | Certified | Certified |
| Azores | Not certified | Not certified |
| Bahamas | Certified | Certified |
| Bahrain | Certified | Certified |
| Bangladesh | Certified | Certified |
| Barbados | Certified | Certified |
| Belgium | Certified | Certified |
| Belize | Not certified | Certified |
| Benin | Certified | Certified |
| Bermuda | Certified | Certified |
| Bhutan | Certified | Certified |
| Bolivia | 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 | Certified | Certified |
| Ceuta/Melilla | Not certified | Not certified |
| Chile | Certified | Certified |
| China, PR | Certified | Certified |
| Costa Rica | Certified | Certified |
| Denmark | Certified | Certified |
| Dem. Republic of Congo | Not certified | Certified |
| Germany | Certified | Certified |
| Dominica | Certified | Certified |
| Dominican Republic | Not certified | Certified |
| Djibouti | Certified | Certified |
| Ecuador | Not certified | Certified |
| El Salvador | Certified | Certified |

| Country | XENTRY Diagnosis VCI | XENTRY Diagnosis Pad 5 |
|---|---|---|
| Ivory Coast | Certified | Certified |
| Eritrea | Certified | Certified |
| Estonia | Certified | Certified |
| Falkland Islands | Certified | Certified |
| Faroe Islands | Certified | Certified |
| Fiji | Certified | Certified |
| Finland | Certified | Certified |
| France | Certified | Certified |
| French Polynesia | Not certified | Certified |
| French Guiana | Certified | Certified |
| Gabon | Certified | Certified |
| Gambia | Not certified | Certified |
| Georgia | Certified | Certified |
| Ghana | Certified | Certified |
| Gibraltar | Certified | Certified |
| Grenada | Not certified | Certified |
| Greece | Certified | Certified |
| Greenland | Certified | Certified |
| Great Britain | Certified | Certified |
| Guadeloupe | Certified | Certified |
| Guatemala | Certified | Certified |
| Guernsey | Certified | Certified |
| Republic of Guinea | Certified | Certified |
| Guinea-Bissau | Certified | Certified |
| Guyana Republic | Certified | Certified |
| Haiti | Not certified | Certified |
| Honduras | 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 | Not certified | Certified |
| Jersey | Certified | Certified |
| Jordan | Certified | Certified |
| Cayman Islands | Certified | Certified |
| Cambodia | Certified | Certified |
| Cameroon | Not certified | Certified |
| Canada | Certified | Certified |
| Canary Islands | Not certified | Certified |
| Cape Verde | Certified | Certified |
| Kazakhstan | Not certified | Certified |
| Qatar | Certified | Certified |
| Kenya | Certified | Certified |
| Kyrgyzstan | Not certified | Certified |
| Kiribati | Not certified | Not certified |

| Country | XENTRY Diagnosis VCI | XENTRY Diagnosis Pad 5 |
|---|---|---|
| Colombia | Certified | Certified |
| Comoros | Not certified | Certified |
| Congo | Certified | Certified |
| Korea Rep. (South) | Not certified | Certified |
| Korea PDR (North) | Not certified | Not certified |
| Croatia | Certified | Certified |
| Cuba | Not certified | Not certified |
| Kuwait | Certified | Certified |
| Laos | Certified | Certified |
| Lesotho | Certified | Certified |
| Latvia | Certified | Certified |
| Lebanon | Certified | Certified |
| Liberia | Not certified | Certified |
| Libya | Certified | Certified |
| Liechtenstein | Not certified | Certified |
| Lithuania | Certified | Certified |
| Luxembourg | Certified | Certified |
| Macao | Not certified | Certified |
| Madagascar | Certified | Certified |
| Madeira | Not certified | Certified |
| Malawi | Certified | Certified |
| Malaysia | Certified | Certified |
| Maldives | Certified | Certified |
| Mali | Not certified | Certified |
| Malta | Certified | Certified |
| Morocco | Certified | Certified |
| Marshall Islands | Certified | Certified |
| Martinique | Certified | Certified |
| Mauritania | Certified | Certified |
| Mauritius | 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 | Certified | Certified |
| Nepal | Not certified | Certified |
| New Caledonia | Certified | Certified |
| New Zealand | Certified | Certified |
| Nicaragua | Certified | Certified |
| Netherlands | Certified | Certified |
| Niger | Certified | Certified |
| Nigeria | Certified | Certified |
| Curaçao | Certified | Certified |
| Sint Maarten | Certified | Certified |
| Northern Cyprus | Not certified | Certified |
| Norway | Certified | Certified |
| Oman | Certified | Certified |

| Country | XENTRY Diagnosis VCI | XENTRY Diagnosis Pad 5 |
|---|---|---|
| Austria | Certified | Certified |
| Pakistan | Certified | Certified |
| Palestinian territories | Not certified | Not certified |
| Panama | Certified | Certified |
| Papua New Guinea | Certified | Certified |
| Paraguay | Certified | Certified |
| Peru | Certified | Certified |
| Philippines | Certified | Certified |
| Pitcairn Islands | Not certified | Certified |
| Poland | Certified | Certified |
| Portugal | Certified | Certified |
| Puerto Rico | Certified | Certified |
| Réunion | Certified | Certified |
| Rwanda | Certified | Certified |
| Romania | Certified | Certified |
| Russia | Not certified | Not certified |
| Saint-Martin | Certified | Certified |
| Solomon Islands | Certified | Certified |
| Zambia | Certified | Certified |
| Samoa | Certified | Certified |
| Saint Barthélemy | 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 | Not 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 | Certified | Certified |
| Saint Pierre and Miquelon | Not certified | Certified |
| Saint Vincent and the Grenadines | Certified | Certified |
| South Africa | Certified | Certified |
| Sudan | Not certified | Certified |
| South Sudan | Not certified | Certified |
| Suriname | Certified | Certified |
| Swaziland | Not certified | Certified |
| Syria | Not certified | Not certified |
| Tajikistan | Not certified | Certified |
| Taiwan | Not certified | Certified |
| Tanzania | Certified | Certified |
| Thailand | Certified | Certified |
| Timor-Leste | Not certified | Certified |
| Togo | Not certified | Certified |

| Country | XENTRY Diagnosis VCI | XENTRY Diagnosis Pad 5 |
|---|---|---|
| Tonga | Not certified | Certified |
| Trinidad and Tobago | Not certified | Certified |
| Chad | 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 | Not certified | Certified |
| Hungary | Certified | Certified |
| Uruguay | Certified | Certified |
| USA | Certified | Certified |
| Uzbekistan | Not certified | Not certified |
| Vanuatu | Certified | Not certified |
| Vatican | Certified | Certified |
| Venezuela | Certified | Certified |
| United Arab Emirates | Certified | Certified |
| Vietnam | Certified | Certified |
| Wallis and Futuna | Not certified | Certified |
| Belarus | Not certified | Not certified |
| Central African Rep. | Certified | Certified |
| Cyprus | Certified | Certified |