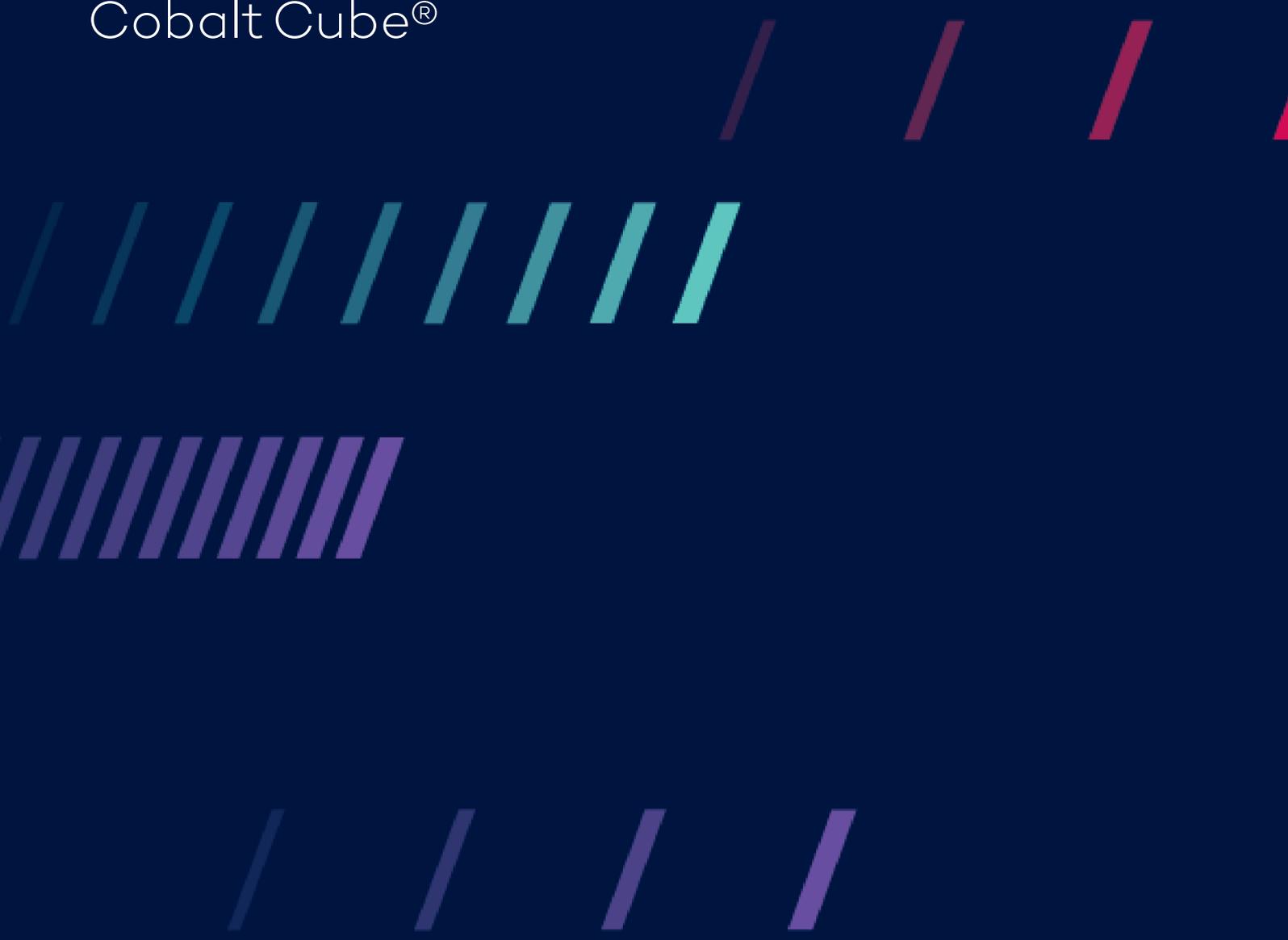


System Update Guide

Cobalt Cube®



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1 Introduction

This document lays out the strategy of keeping the Cobalt Cube® up to date with the latest security, performance and functionality updates during the lifetime of the device.

The term “update file” will be used throughout this document. This refers to the file provided by VNC Automotive that will update the system software on a Cobalt Cube. These files will have a `.ccu` extension.

We constantly test the Cobalt Cube with various vehicles and use customer feedback to ensure our software continues to function appropriately and safely. Furthermore, we regularly improve usability, add new functionality and carry out performance optimisations. For these reasons, keeping the Cobalt Cube System up to date with the latest release is vital.

2 Frequency of software updates

Typically, you should expect system updates to be made available from VNC Automotive at least 3 times a year. The exact timing can vary but is usually evenly spread every 3-4 months.

Note: The date at which an update is made available to your specific units may depend on your Cobalt Cube supplier, if that's not VNC Automotive directly. As modern cars get software updates over the air regularly, we need to ensure the Cobalt Cube's software is up to date and in line with the latest updates by the car manufacturer.

For this reason, the Cobalt Cube needs to be updated on average three times a year or every four months to guarantee its optimal and secure performance.

VNC Automotive cannot guarantee the correct working order of the Cobalt Cube if regular updates are not installed.

3 Software update strategies

Once a new system update is released, several strategies exist to apply it on the Cobalt Cube installed in a vehicle. VNC Automotive is committed to making this process as streamlined and secure as possible.

During bootup, the update service will detect a valid system update package on the file system.

Three potential approaches are offered to keep the device up to date:

1. Software update via a USB stick when having physical access to the Cobalt Cube. See section 6 for details.
2. Software update via an in-vehicle computer connected over Ethernet to the Cobalt Cube. The computer receives the update package over an Internet connection and transfers it to the Cobalt Cube via a Cobalt Link+ connection. See section 7 for details.
3. Software update via a direct Internet connection to the Cobalt Cube.

4 Update Files

4.1 File name

System update files will have a `.ccu` file extension and must no more than 85 characters in length excluding the extension. Make sure file extensions are visible in the file browser before checking either of these cases. For most cases you can use the update file you have

received from your VNC Automotive technical representative without any modifications to the name or extension.

4.2 File security

System update files make use of several security mechanisms designed to ensure that they are genuine and have not been tampered with in transmission.

Validation checks are performed by the Cobalt Cube when an update file is found on the file system before installation is attempted. Should these fail, the user will be alerted.

5 Automatic System Update option

The Automatic update feature is intended to minimize or eliminate the requirement for user interaction with the update process. This feature is enabled from the Cobalt Cube admin settings menu (see Figure 1).

The effect of this setting is different depending on the way the update is delivered to the Cobalt Cube:

Update Type	State	Behaviour
USB	On	If only one update file is present then the update will start automatically as soon as the USB stick is detected by the Cobalt Cube (see Figure 3). If multiple files are found the user will be prompted to select which update file to use (see Figure 5).
USB	Off	The user will be prompted to start the update process manually(see Figure 6).
REMOTE	On	The user will be prompted with a countdown dialog when the update file is detected (see Figure 2). This allows a user the opportunity to defer the update if the Cobalt Cube is in active use. If the dialog is not dismissed before the countdown completes the update will start automatically.
REMOTE	Off	The user will be prompted to start the update process manually(see Figure 6).

Note: From V2.5.242 onwards the Automatic update feature supports both USB and Remote updates and is on by default.

Note: Prior to V2.5.242 this feature only applied to remote updates such as those from Cobalt Link+ and was called Unattended Update. This feature was off by default.

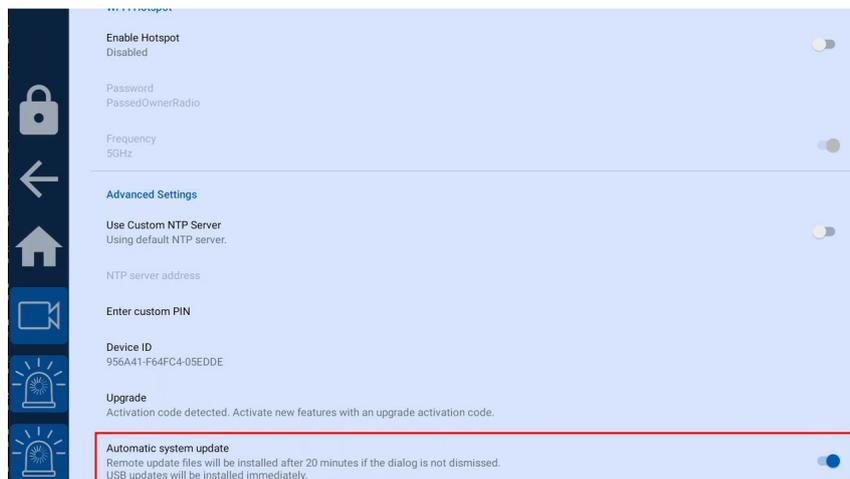


Figure 1: Automatic Update setting

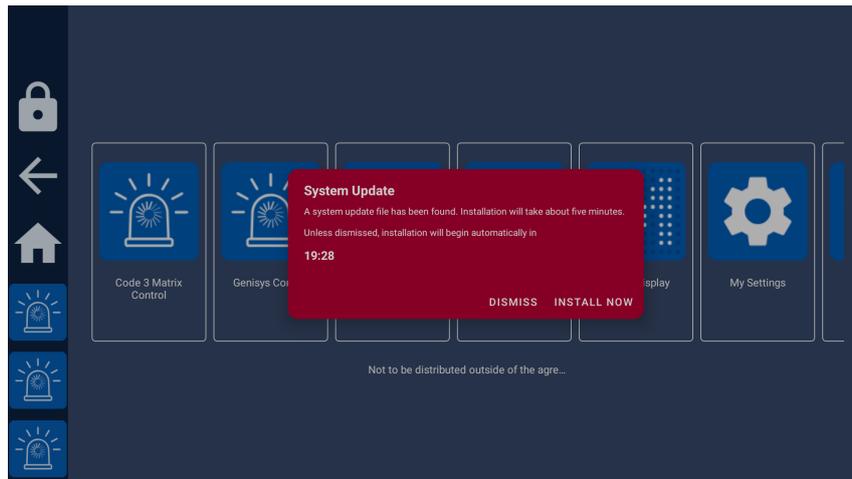


Figure 2: Automatic Update Countdown

6 Updating the system from USB

To apply a system update via USB you will need a FAT32 formatted USB stick and an update file provided by VNC Automotive.

Note: While it is not essential for the update process, if you experience any issues during the update process we recommend a HDMI monitor is connected to the Cobalt Cube to allow you to monitor the progress of the update. While the update is in progress there will be nothing displayed on the vehicle screen.

Warning: Take care not to interrupt the power while the Cobalt Cube is being updated. From V2.5.2.42 onwards the system is robust to accidental USB stick removal (see section 6.1). For older release please be careful **not to** remove the USB stick while the update is in progress otherwise it may result in the device needing to be returned to VNC Automotive for repair.

6.1 Copy Update

To make the update process more robust in the event of power being lost or the USB stick being removed prematurely the update file will be automatically copied to internal storage prior to the update being started, see Figure 3.

With this feature it is safe to remove the USB stick once the Cobalt Cube reboots to apply the update and is no longer visible on the vehicle screen.

This allows you to update multiple Cobalt Cubes in parallel with a single USB stick.

Note: Copy Update is enabled on Cobalt Cubes with V2.5.2.42 or later already installed. Older devices will install directly from the USB stick.

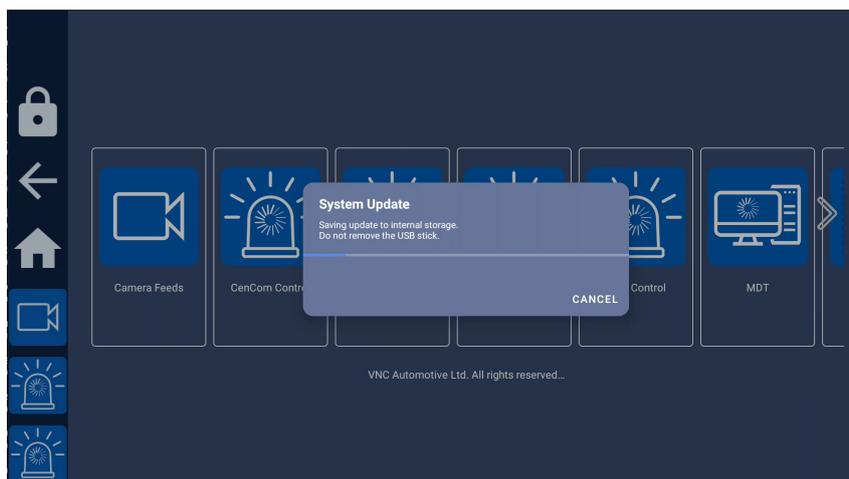


Figure 3: Copy dialog

In some cases it will not be possible to save the update file to internal storage due to insufficient space being available. In these cases you will see a dialog as in Figure 4. In this case you **must not** remove the USB stick from the Cobalt Cube until the update process has completed and the Cobalt Cube display is visible on your vehicle screen again.

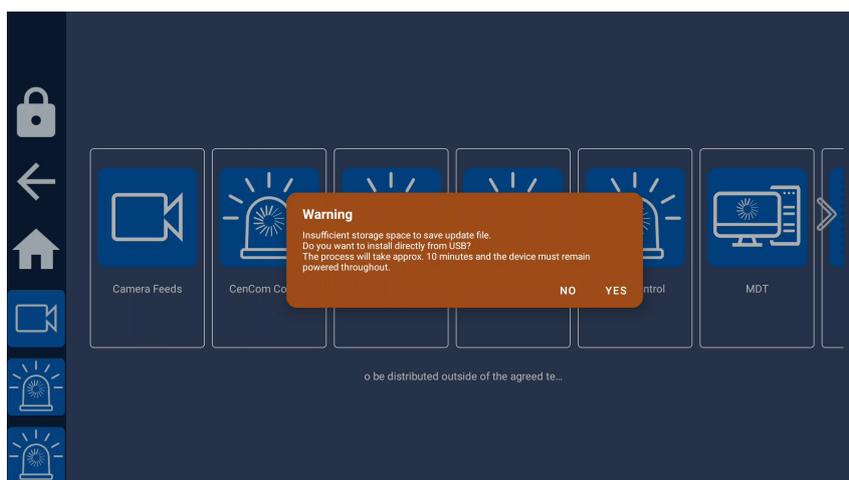


Figure 4: Not enough space warning

6.2 Applying the update

The exact steps involved will depend on the Automatic Update setting (see section 5).

Follow these steps to apply the update:

1. Copy the update file into the root directory of the USB stick.
2. Insert the USB stick into the Cobalt Cube HOST port.
3. After a few seconds the update will either start automatically or a dialog will pop up, notifying that an update has been found on the USB stick (see Figure 6 and section 5). If more than one update file is found you will be asked to select which you want to install (see Figure 5).
4. The Cobalt Cube will install the update, and automatically reboot in the process. This may take a few minutes - do not power off the Cobalt Cube until the process is completed. If installing directly from the USB stick (see Figure 4) do not remove this from the Cobalt Cube.

Note: If the update process appears to be stuck on a black screen, press the physical reboot button on the Cobalt Cube. The button can be found on the same side as the HDMI port.

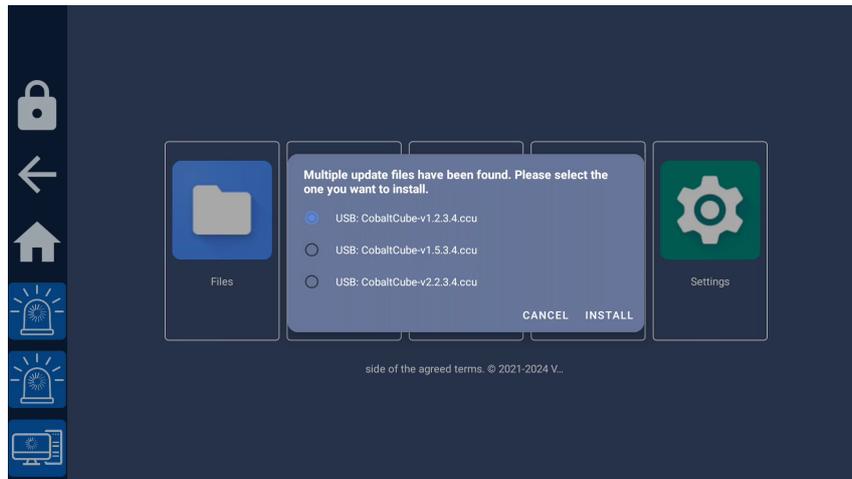


Figure 5: Multiple update dialog

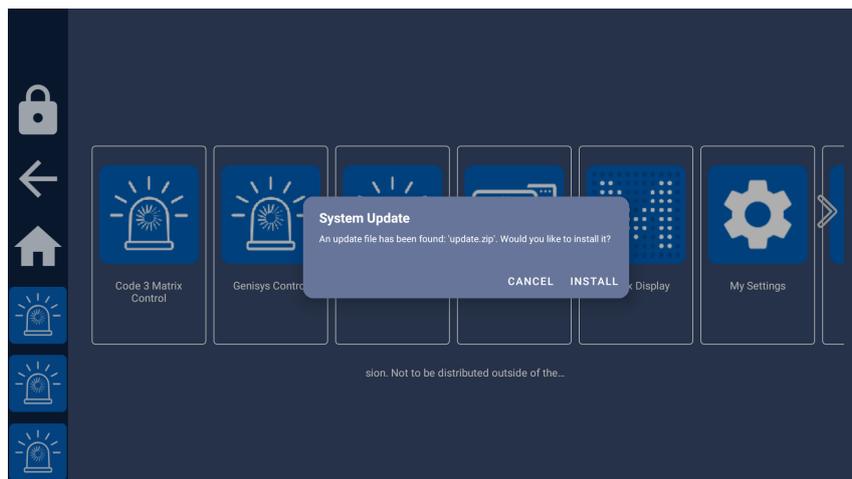


Figure 6: Update dialog

The Cobalt Cube will automatically display a dialog notifying of the successful update after it has been rebooted. If installing directly from the USB stick (see Figure 4) the user will be asked whether they want to delete the update file from the USB stick, to prevent the process from starting again (see Figure 7). If you do not remove the USB stick after the update the system may offer the update again.

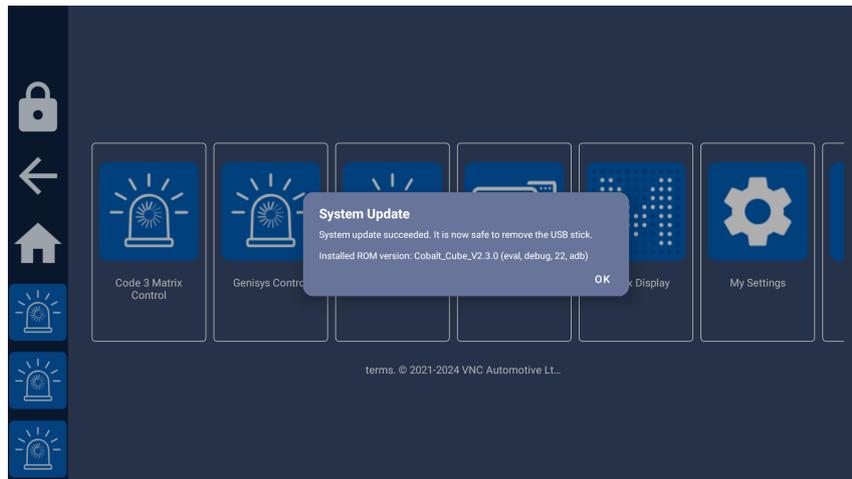


Figure 7: "Update successful" dialog

7 System Update via Cobalt Link+ on Windows PC

7.1 Introduction

The MDT application can be used to transfer and install the Android system update file while connected to a Microsoft Windows PC.

The Cobalt Link+ Server can be configured to search for an update file in a specific directory. On discovery of a new update file, the Cobalt Link+ Server will copy the file to the Cobalt Cube. On reboot the Cobalt Cube will then offer to prepare the update for installation.

7.2 Setting up the Cobalt Link+ Server

7.2.1 Update Directory Path

The Cobalt Link+ Server will look in a specified directory for a suitable update file. This directory is specified as a command line argument. The following argument is used (replacing with the desired update directory path):

-u "C:\Directory Path"

Note: quotes are required as the directory path is likely to contain spaces.

For further details please see the **Configuration options** section in the **Cobalt Link+ Server for Windows Getting Started Guide**.

If this argument is not given or an incorrect directory path is provided, the Cobalt Link+ Server will continue to function without the Automatic System Update functionality.

7.2.2 Post File Transfer Options

A "manual start argument" can also be used to define what will happen to the update file on the Microsoft Windows PC after a successful file transfer to the Cobalt Cube. The default behaviour is to do nothing and leave the update file in place.

To do nothing after a successful file transfer, use the following argument:

-p donothing

To delete the file after a successful file transfer, use the following argument:

-p delete

To move the file after a successful file transfer, use the following argument:

```
-p move "C:\Directory Path"
```

Note: quotes are required as the directory path is likely to contain spaces.

Further details of how to configure the Cobalt Link+ Server can be found in the **Server Configuration** section of the **Getting Started Guide for the Cobalt Link+ Server for Windows**.

7.3 Update File Staging

In preparation for transferring the update file to the Cobalt Cube, copy or move it to the directory path specified above. When the next Cobalt Link+ session to a Cobalt Cube is successfully started, the file transfer process will begin. This file transfer process includes a check to ensure only new update files are transferred. Provided the update file is a genuine update to the Cobalt Cube system the file transfer will begin.

If the Cobalt Link+ session is interrupted during the file transfer, the Cobalt Link+ Server will attempt to continue when reconnected. If this is not possible, the file transfer will resend the entire file.

Once the update file has been transferred, the Cobalt Link+ Server will do nothing to the file on the Windows PC unless told otherwise. It will not attempt to resend the file, provided that it has been successfully transferred to the Cobalt Cube. It will not attempt to resend the file once the Cobalt Cube has been updated.

7.4 Update File Preparation

Note: The exact sequence will depend on the Automatic Update setting (see section 5). Once the update file has been transferred, and the Cobalt Cube has been rebooted the File Preparation dialog will appear (see Figure 6) or the countdown dialog will be shown (see Figure 1). Pressing "INSTALL NOW" will move the file for use by the Cobalt Update application. After a brief pause, the Cobalt Update dialog will appear (see Figure 8). The system will then update and reboot, which takes about ten minutes.

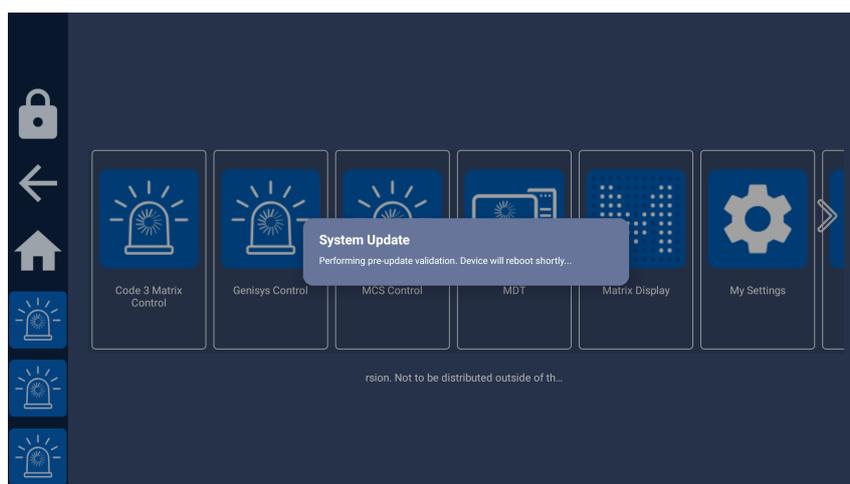


Figure 8: System updating dialog

7.5 Resetting the Update Process

If there has been a problem with the file transfer, the whole process can be reset on the Cobalt Cube in the My Settings application. Choose "Remove left-over update files" (see Figure 9). A dialog will appear as in Figure 10. Select "Remove" to delete any old update files.

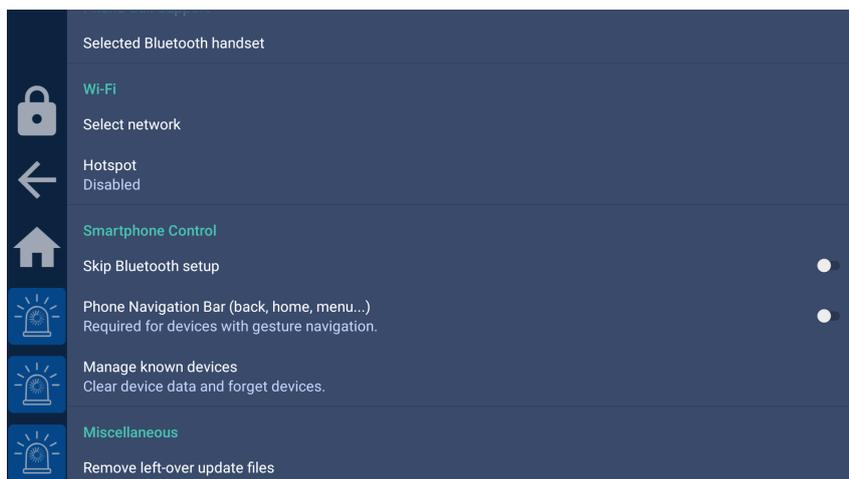


Figure 9: My Settings “Remove left-over update files”

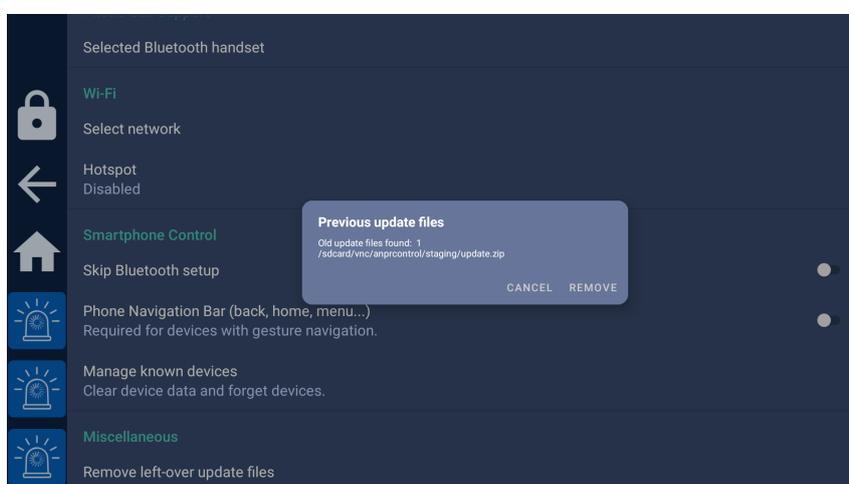


Figure 10: Left-over update file removal dialog

7.6 Setting up the Cobalt Cube

The MDT settings menu contains two options for the System Update via Cobalt Link+ process (see Figure 11). The “Enable” option will tell the Cobalt Cube to accept (or reject) any update files offered by the Cobalt Link+ Server (note that checks will always be made to ensure the file is a new update file). The “Rate Limiting” option will transfer the file slowly in the background so as to not interfere with the user experience. The file will take more than an hour to transfer. If this option is disabled the file will be transferred as quickly as possible. The file would normally take a few minutes to transfer (depending on network conditions).

These options can also be configured via a file located at:

```
/vnc/anprcontrol/config.properties
```

These options are defined using <name>=<value> syntax as follows:

```
fileTransferEnabled=true
fileTransferRateLimitEnabled=false
```

A more general overview of MDT settings can be found in the **MDT configuration** section of the **Cobalt Cube Getting Started Guide**.

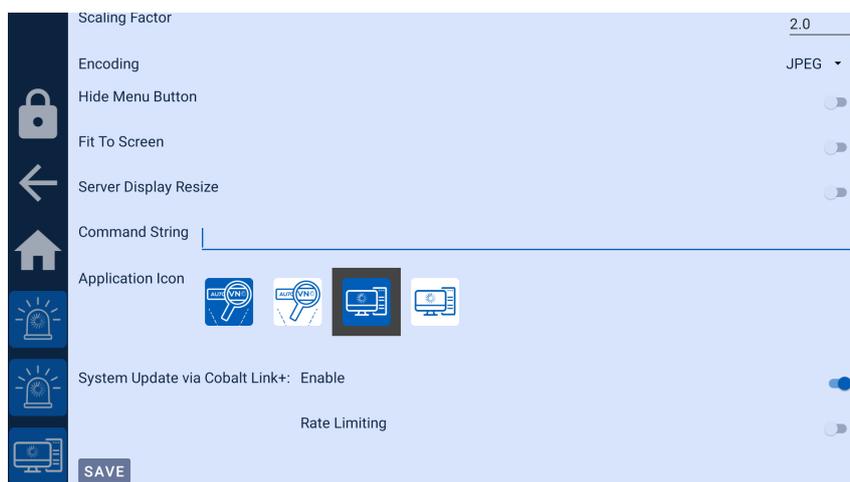


Figure 11: Cobalt Cube Settings to Enable and Limit the file transfer

8 Appendix

8.1 Product Operation and Vehicle Compatibility

Usually, a car gets serviced once a year. However, software features are becoming increasingly sophisticated and more frequent updates are necessary. Car manufacturers roll out new software over the air to their cars. This means that new software is installed through an Internet connection directly to the car without the vehicle visiting a service centre. These updates can affect the operation of the infotainment system, which means it can affect the operation of the Cobalt Cube.

Let's discuss your project

As industry pioneers, we will help you cut through the complexity and deliver ingenious connectivity technology for the vehicles of tomorrow.

Get in contact via:

www.vncautomotive.com

technicalsupport@vncautomotive.com

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