Leica T-Scan 5
PC Installation Manual

- when it has to be **right**

Leica
Geosystems

# 1 Contents

2 Windows Settings

2.1 Set NVIDIA global Preset

1. With the right mouse button click into an empty area on the Windows desktop to open the context menu. Click on 'NVIDIA Control Panel'.
2. In the Task Menu on the left side select 3D-Settings -> 'Manage 3D settings'.
3. In the 'Global Settings' tab click on the drop down box for the 'Global presets'.
4. Select '3D App – Visual Simulation' and click 'Apply'.
5. Close the 'NVIDIA Control Panel'.
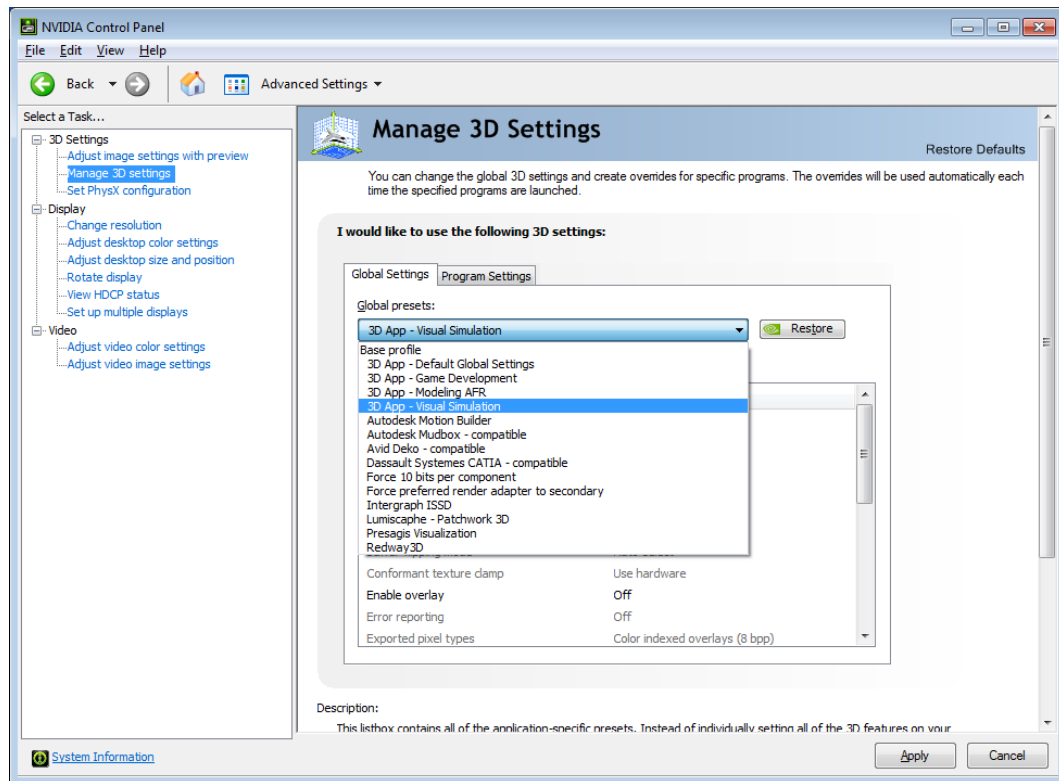
2.2   Deactivate Windows Aero

1. Press the Windows key , enter 'Personalization' in the control panel and start the application.
2. Select the 'Windows 7-Basic' design.
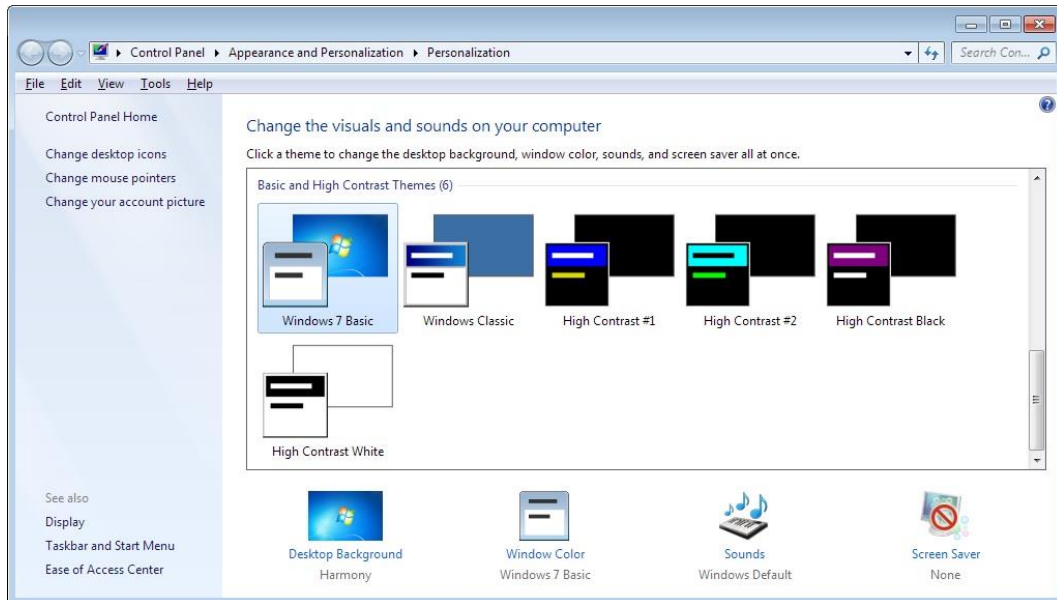
3. Close the dialog window.
4. Aero has been deactivated successfully, if switching dialogs with key combination <Windows> + < TAB> is disabled.

2.3   Change Display Options of Files and Folders

1. Press the Windows key [image of Windows key] , enter 'Folder Options' in the control panel and start the application.
2. Switch to the 'View' tab.
3. Make sure to uncheck 'Hide extensions for known file types' in the 'Advanced settings' list.
4. Make sure to check 'Show hidden files, folder and drives' below item 'Hidden files and folders'.
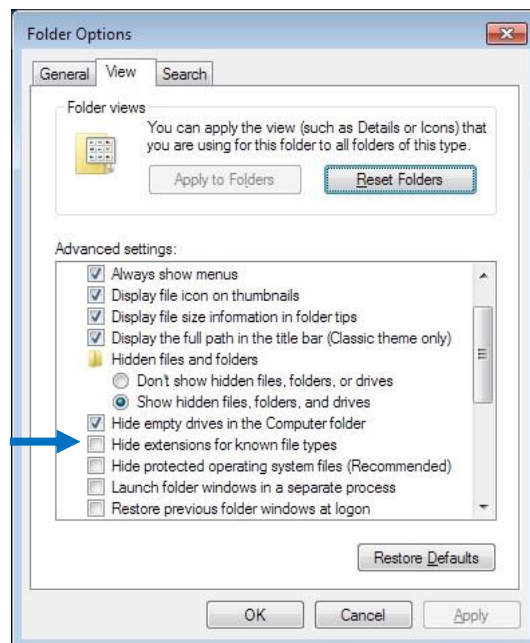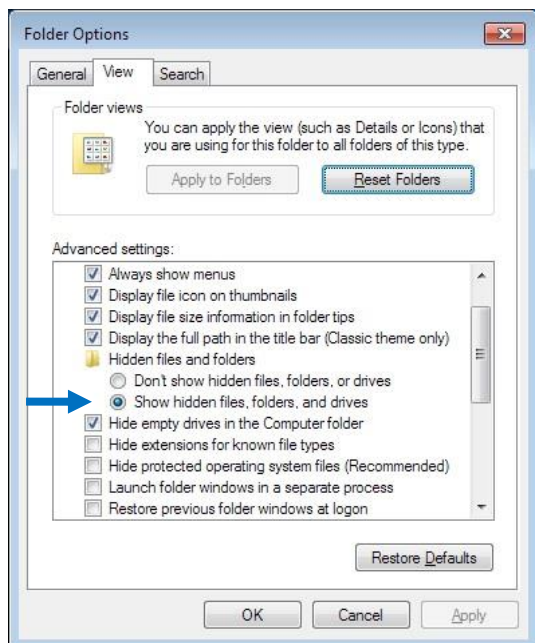
2.4 Deactivate Sleep after and Energy saving Modes

1. Press the Windows key [image], enter 'Power options' in the control panel and start the application.
2. Enlarge the option 'Sleep' and modify the following items:
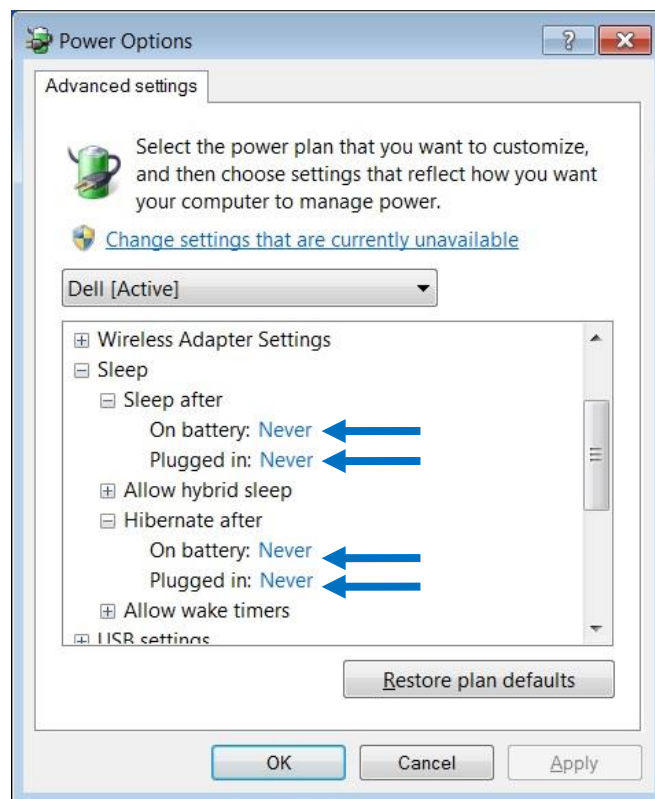   - 'Sleep after' ->
                    On battery: Never (0 min)
                    Plugged in: Never (0 min)
   - 'Hibernate after' ->
                    On battery: Never (0 min)
                    Plugged in: Never (0 min)

3. Close the dialog by pressing 'OK".

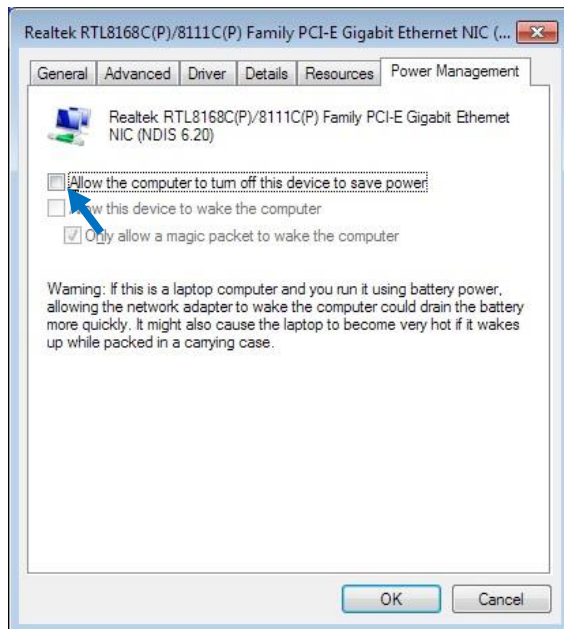## 2.5 Deactivate the Energy saving Mode of Network Adapters

1. Press the Windows key [image], enter 'Device Manager' in the control panel and start the application.
2. Enlarge the option 'Network adapters'.
3. Click with right mouse button on the network adapter (e.g. 'Intel(R) 82579'), to which the scanner controller is connected with and click on 'Properties'.
4. If an error message occurs, confirm it by pressing 'OK'.
5. Switch to the 'Power Management' tab and deactivate the energy saving mode. The following instructions apply to specific Ethernet cards. If you are using a different card, you may have to check the manual of the Ethernet card on how to deactivate the energy saving mode.
   Modify settings depending on your card e.g.:
   - 'Allow the computer to turn of this device to save power' -> remove check mark
   or
   - 'Reduce link speed during standby' -> remove check mark

Example for Realtek RTL8168C(P)/8111C(P) PCI-E Gigabit Ethernet NIC

Example for Intel® Gigabit CT Desktop Family Adapter

Example of power management settings. Your settings might be different, depending on the Ethernet card you are using.
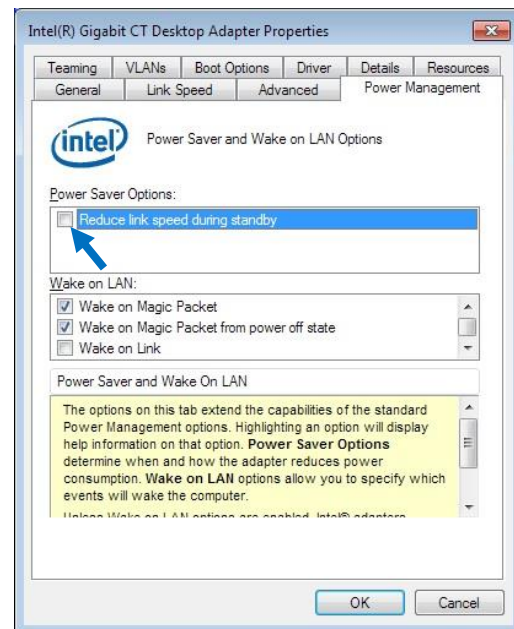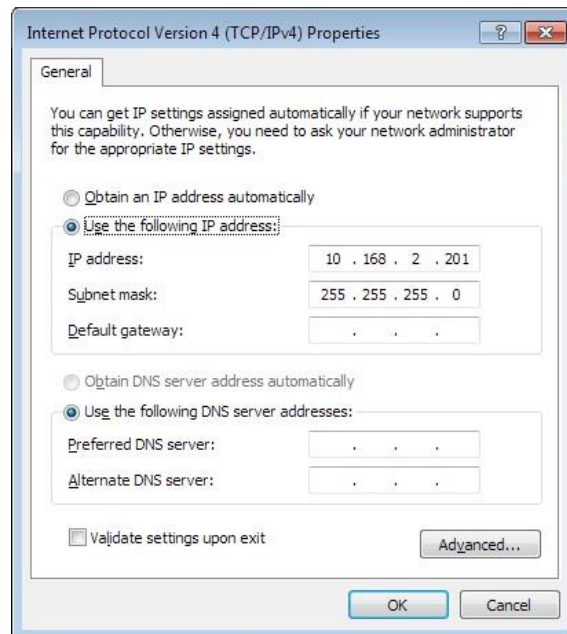
2.6 Setting the IP Address

1. Press the Windows key [⊞] , enter 'View network connections' in the control panel and start the application.
2. Use the right mouse button to click on the network adapter of the scanner controller and choose 'Properties'.
3. Select Internet Protocol Version 4 (TCP/IPv4) and click the 'Properties' button.
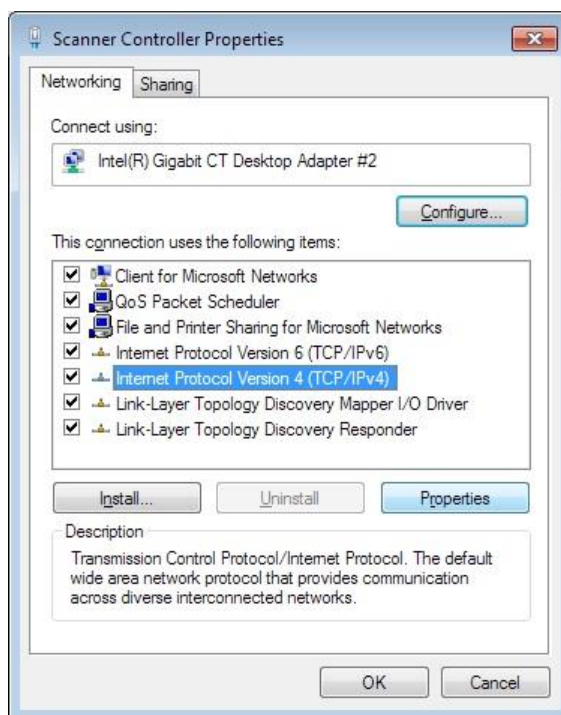
4. If an IP address is already present, write it down in order not to lose it. Also note the subnet mask.
5. Change the IP address as shown in the image below. IP = 10.168.2.201
6. Change subnet mask to 255.255.255.0

7. Press the 'Advanced…' button and make sure only the just added IP address is in the list. In case more entries are listed, write them down if they should be conserved. Afterwards delete them by selecting the IP address and pressing 'Remove'.
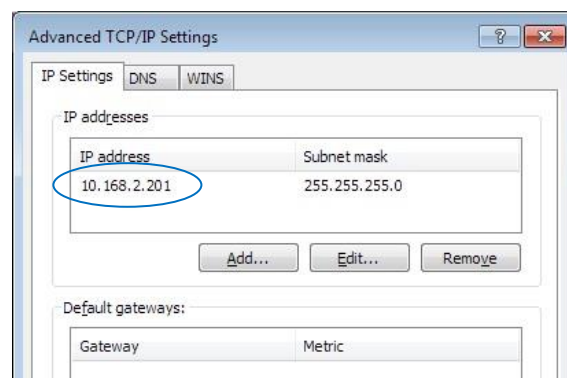
8. Close the dialog by pressing the button 'OK' twice.

3 TwinCAT Engineering

3.1 Update TwinCAT Engineering

Important: In order to update TwinCAT Engineering, the software needs to be uninstalled first. For this purpose, execute the following steps. If there is no TwinCAT Engineering installed on your PC yet, skip this chapter and continue with chapter 'Install TwinCAT Engineering'.
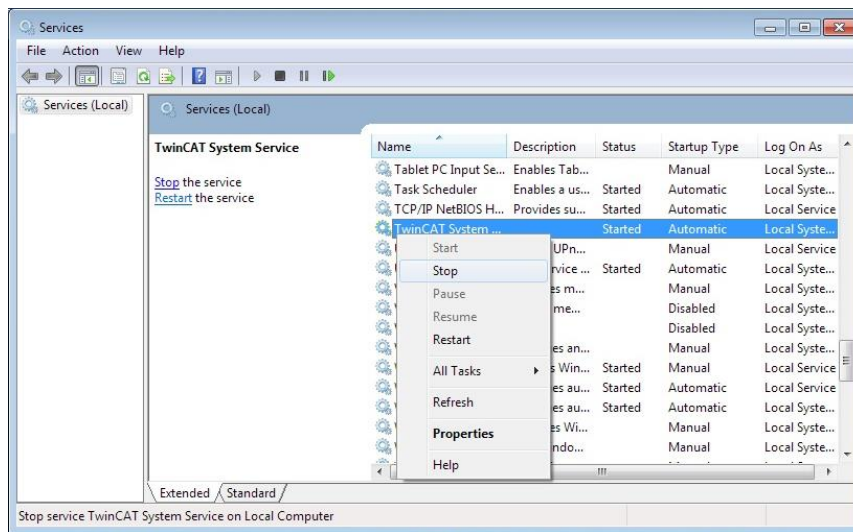
3.2 Uninstall TwinCAT Engineering

1. Make sure to have administrator privileges on this PC.
2. Use the left mouse button to click on the TwinCAT symbol in the taskbar. Then click 'System' -> 'Stop'.
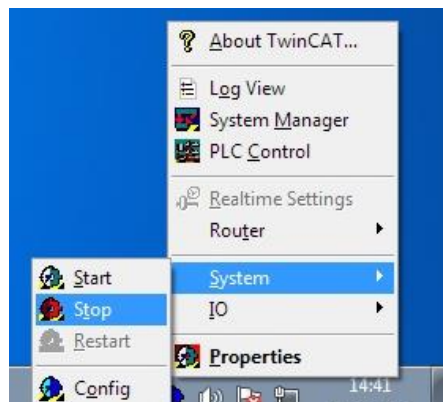
3. Press the Windows key , enter 'Services' in the control panel and start the application.

4. Search for 'TwinCAT System Service' in the service list and stop the application by clicking on 'TwinCAT System Service' with the right mouse button and then clicking on 'Stop' with the left mouse button.
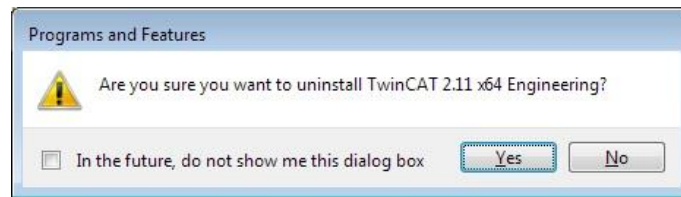

5. Close the application 'Services'.

6. Press the Windows key , enter 'Uninstall a program' in the control panel and start the application.
7. Search for 'TwinCAT x.xx x64 Engineering' in the list and then click 'Uninstall'.
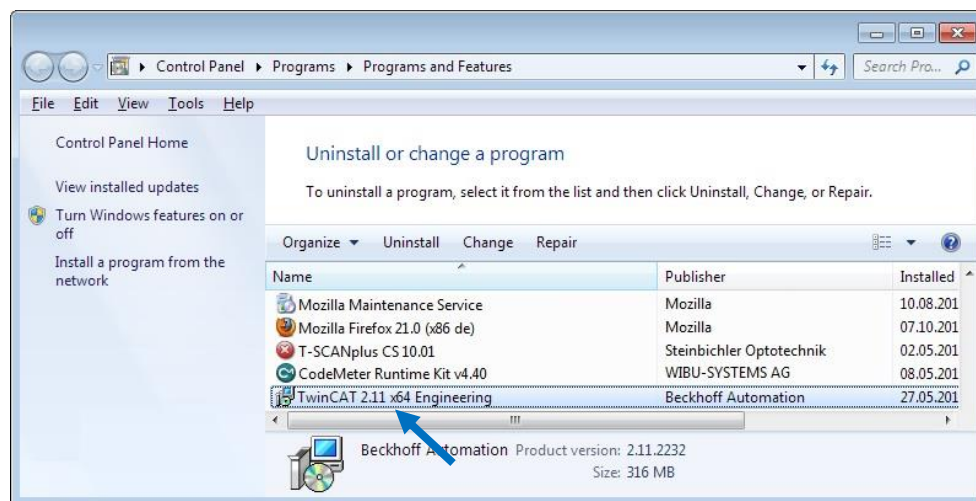
8. Confirm the message 'Are you sure you want to uninstall TwinCAT …?' with 'Yes'.

9. Restart the PC after uninstall has finished.

## 3.3 Install TwinCAT Engineering

1. Make sure to have administrator privileges on this PC.
2. Start the TwinCAT Engineering installer 'Tcxxxx64Engineering_xxxx_xxxx.exe'.
3. Confirm the safety message with 'Yes'.
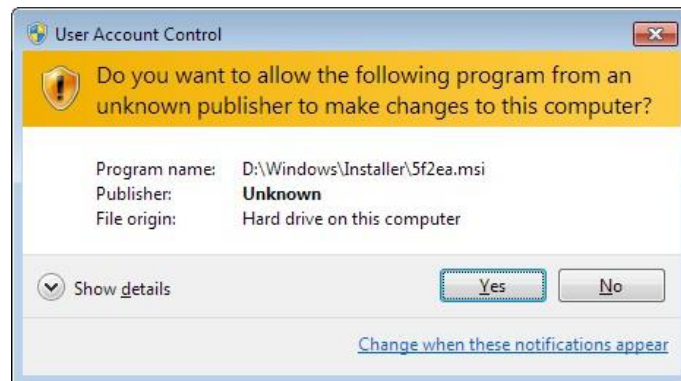
4. In case TwinCAT was uninstalled previously:
   Activate the radio button 'Do not close applications. (A reboot may be required)' and confirm with 'OK'.
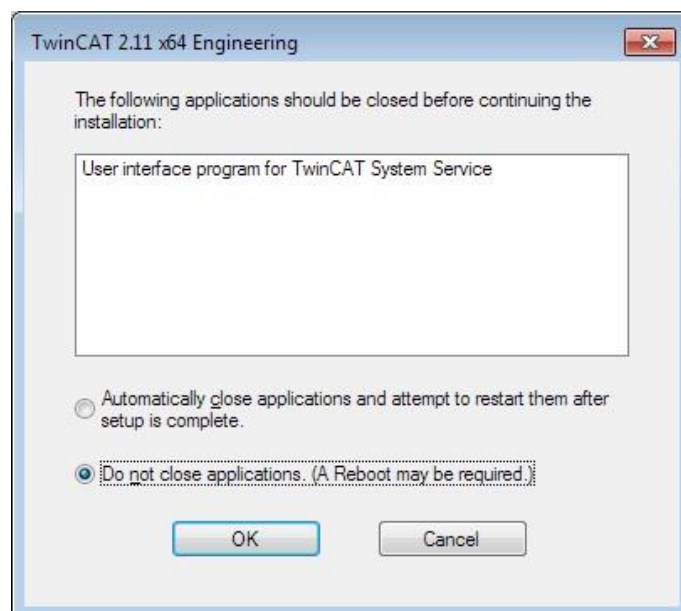
5. Confirm the following dialog with 'Yes'.
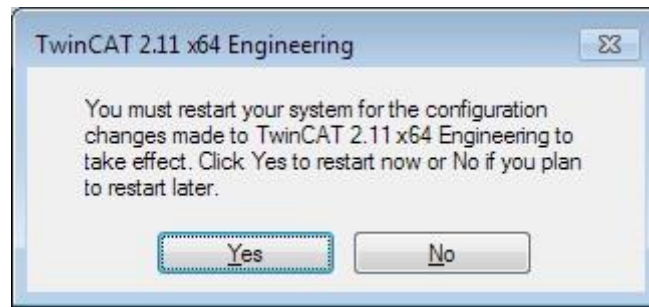
6. Confirm the following dialog with 'Yes'.
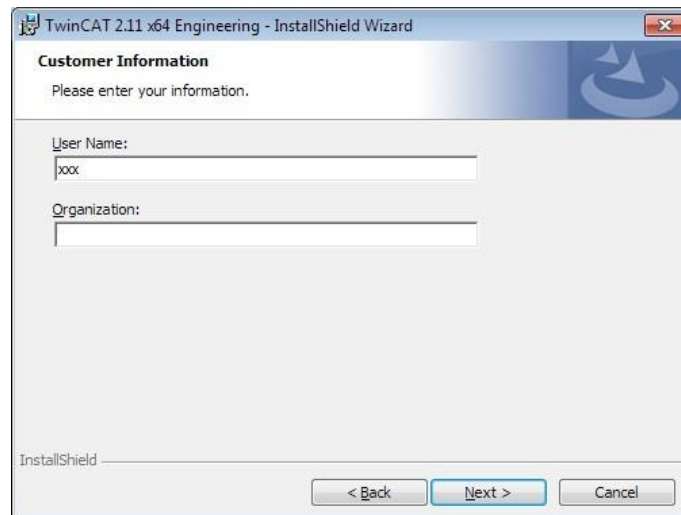

7. Select the installation language.

8. Click 'Next' in the following dialog.

9. Confirm the License Agreement by activating the checkbox 'I accept the terms in the license agreement' and then click 'Next'.
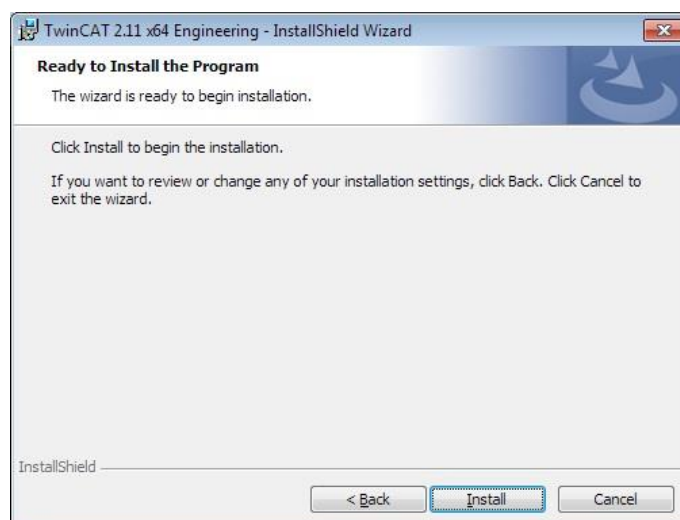
10. In the following dialog do not change the user name. Click 'Next'.

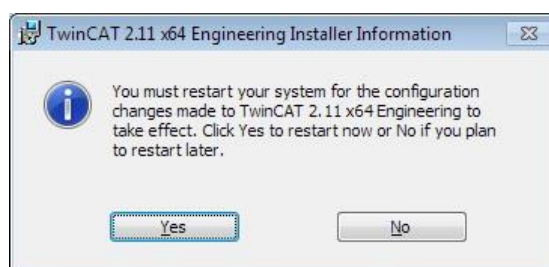11. In the following dialog select 'Complete' and click 'Next'.

12. In the following dialog confirm the installation by clicking 'Install'.

13. Complete the installation by clicking 'Finish'.

14. In the following dialog confirm the message about restarting the computer by clicking 'Yes'

3.4 TwinCAT Engineering: Show Icon in Taskbar

1. Press the Windows key ⬚, enter 'Customize icons on the taskbar' in the control panel and start the application.
2. Select the icon 'User interface program for TwinCAT System Service' and choose behavior :
   - Show icon and notifications
3. Confirm the modification with the 'OK' button.
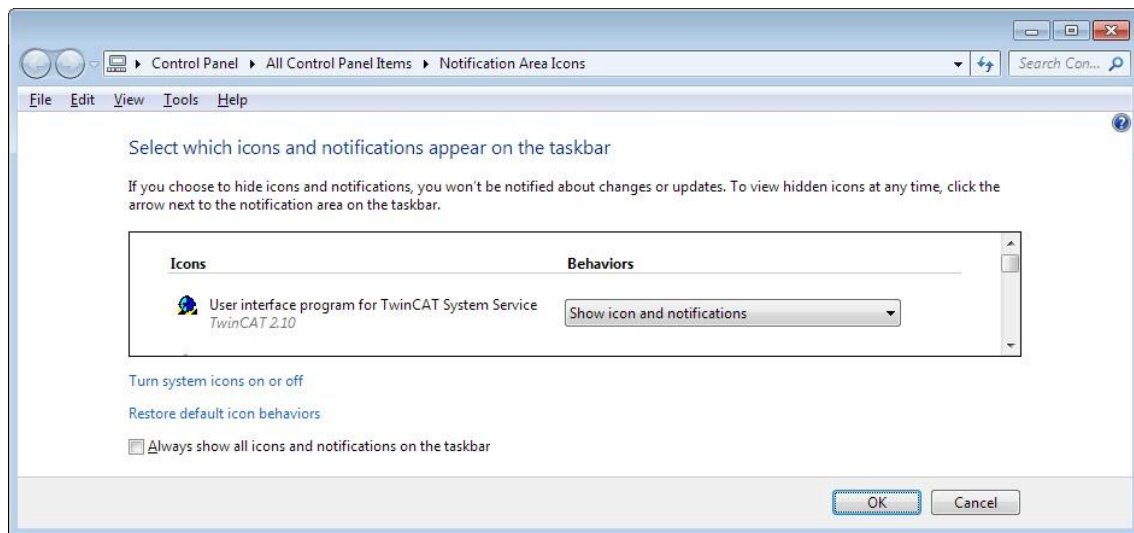
## 3.5   Set up a Route for the Scanner Controller

1. Make sure that just one fixed IP address is configured for the network adapter of the scanner controller (see 'Setting the IP Address'). If more than one IP address is registered the broadcast search below will fail.
2. Use a LAN cable to connect the LAN interface of the scanner controller with the respective PC LAN interface.
3. Switch on the controller and wait for at least two minutes until the controller has booted.
4. Click on the TwinCAT-Symbol 🐱 in taskbar at the bottom right and start the 'System Manager'.
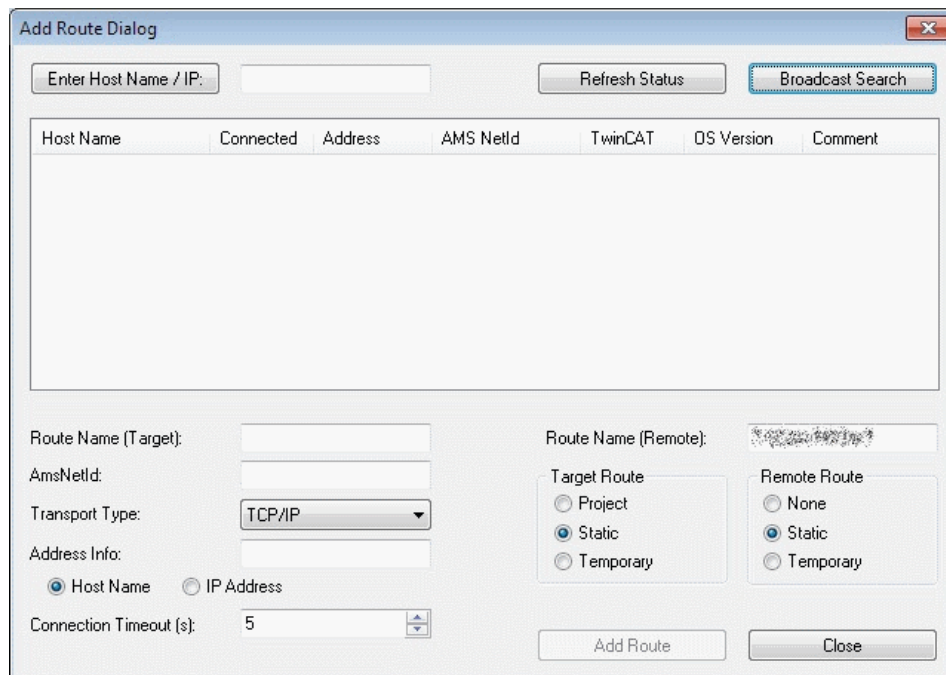

5. Click on 'System – Configuration' on the left selection tree of the TwinCAT System Manager and choose File/New. Click the 'Choose Target…' button on the 'General' or 'Version (Local)' tab.


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6. Click on the 'Local' entry and on 'Search (Ethernet)…'.
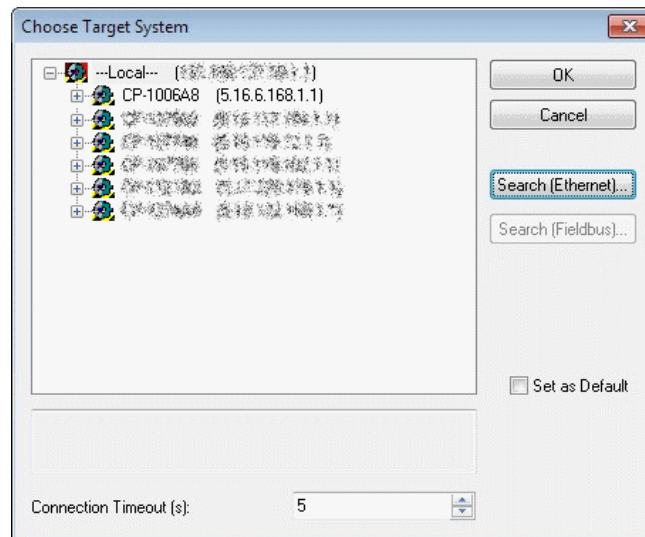
7. If required confirm message with 'OK'.
8. Search target (controller) by clicking the 'Broadcast Search' button.

9. After some processing time more than one Host name can appear in the list. Choose the controller to be configured. For this the AMSNetID needs to correspond to the ID labeled on the bottom of the controller.
10. Select 'Target Route' -> 'Static'.
11. Select 'Remote Route' -> 'Static'.
12. Select 'IP Address' below 'Adress Info'.
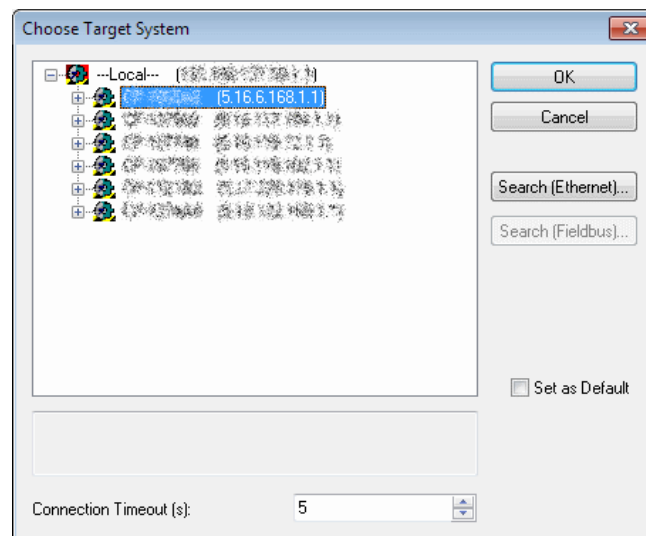13. Click on 'Add Route' button.
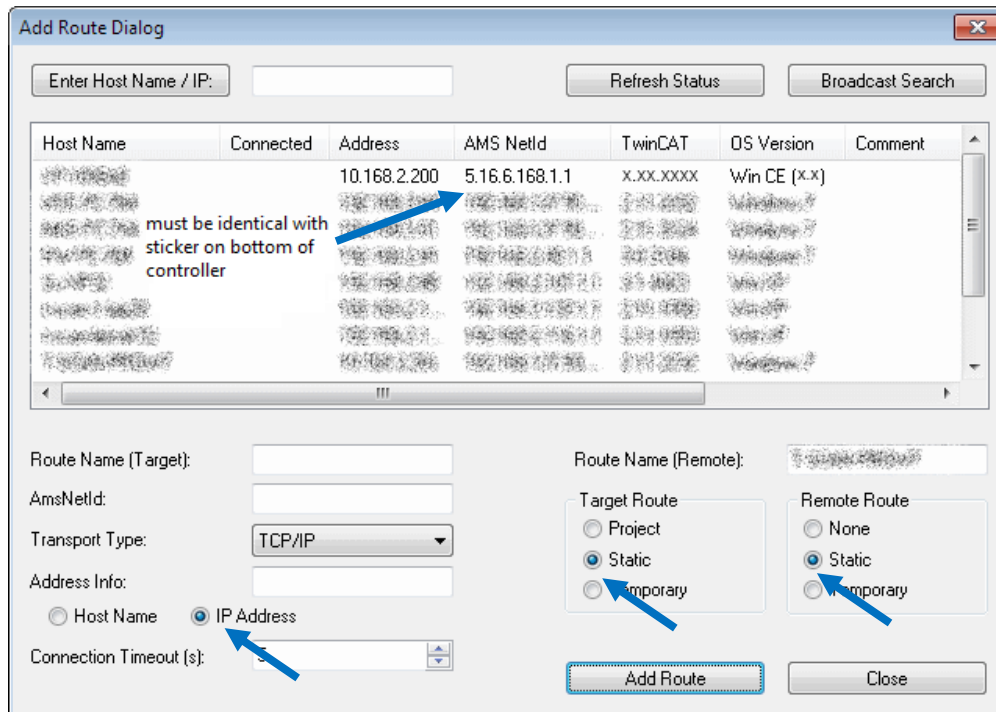
14. Confirm user name and password in the Logon Information box with the 'OK' button.

15. Make sure a cross is displayed below 'Connected' at the correct controller. Close the dialog by pressing 'Close'.
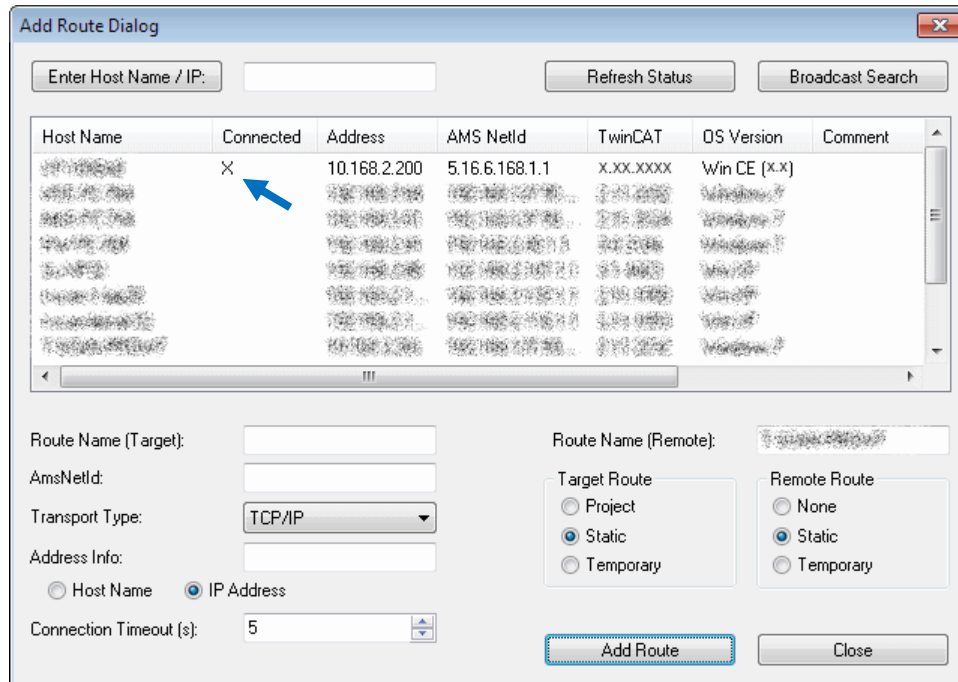
16. Now choose the correct controller (compare AMSNetID) and confirm with the 'OK' button.

17. The System Manager can now be closed by pressing 'OK'.

4 Setting the Lasertracker's IP Address

1. Press the Windows key [image], enter 'View network connections' in the control panel and start the application.
2. Use the right mouse button to click on the network interface card of the scanner controller and select 'Properties'.
3. Select 'Internet Protocol Version 4 (TCP/IPv4)' and click 'Properties'.
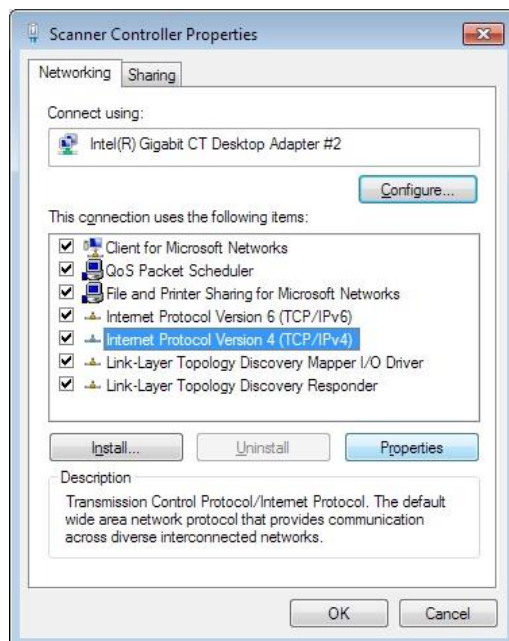
4. Click 'Advanced…'.

5. Click 'Add…'.
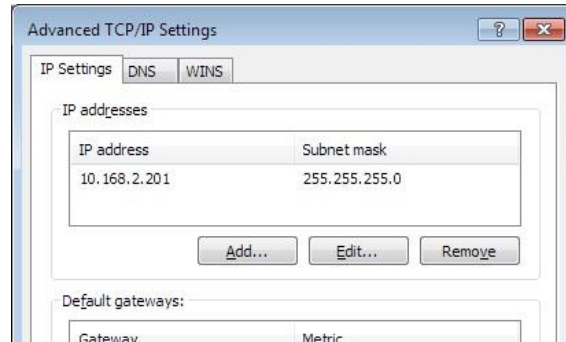
6. Enter an IP address and subnet mask in the lasertracker's address space. Confirm by clicking 'Add'.
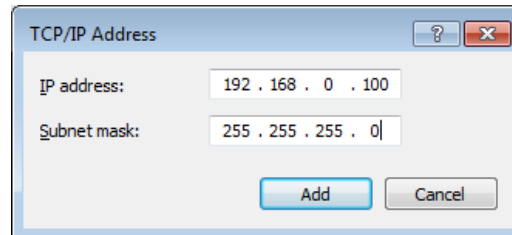
7. Check whether the desired IP address is listed now and close all opened dialogs.
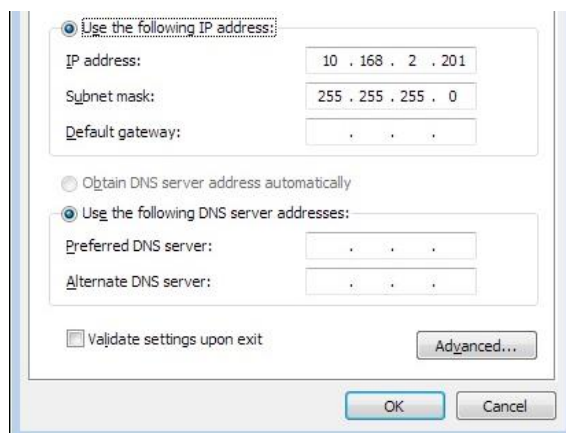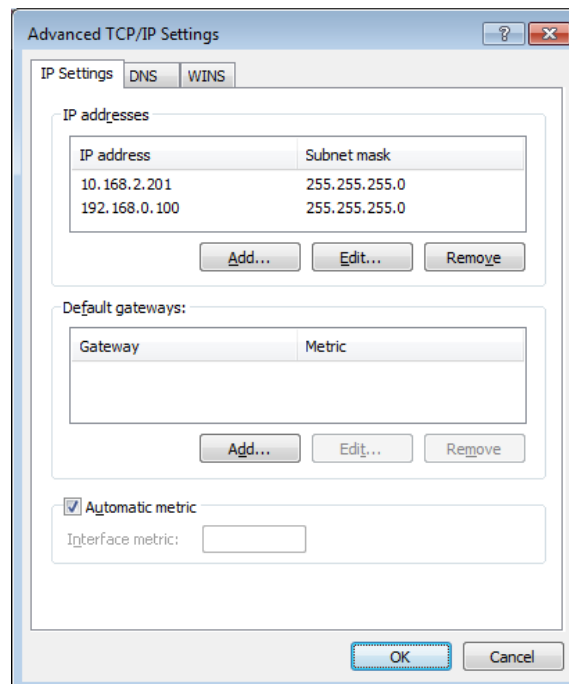

Please note:
If the PC uses more than one LAN adapter, it is also possible to define the fixed IP address for another LAN adapter. Make sure that you do not configure more than one LAN adapter in the same IP address C class. Example: if you have a LAN adapter 1 configured to 192.168.0.100 you shouldn't configure LAN adapter 2 to 192.168.0.50.

5 Installing T-SCAN Interface/Collect

Usually a T-Scan 5 system is delivered with a license for T-SCAN Interface. Please check if you have a license for T-SCAN Interface or T-SCAN Collect and install the corresponding software. Previous versions do not need to be uninstalled before updating the T-SCAN Interface/Collect application. During re-installation all required files will be updated. All calibration files and the .ini file will be conserved.
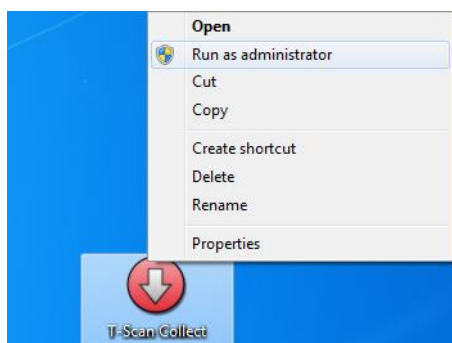
1. Make sure to have administrator privileges on this PC.
2. Run file 'T-SCAN Interface xx.x.x.x.exe' (e.g. from the Product USB Stick that comes along with the T-Scan) by clicking with the right mouse button on the file and by selecting 'Run as administrator' from the pop-up menue.

3. Confirm safety message by clicking 'Yes'.
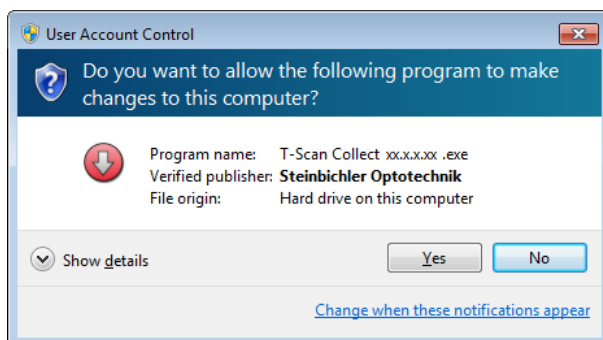
4. Choose the installation language and confirm by clicking 'OK'.
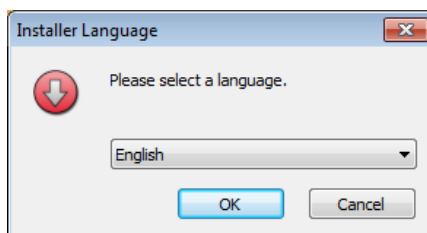
5. Use the default destination folder and click 'Next'.
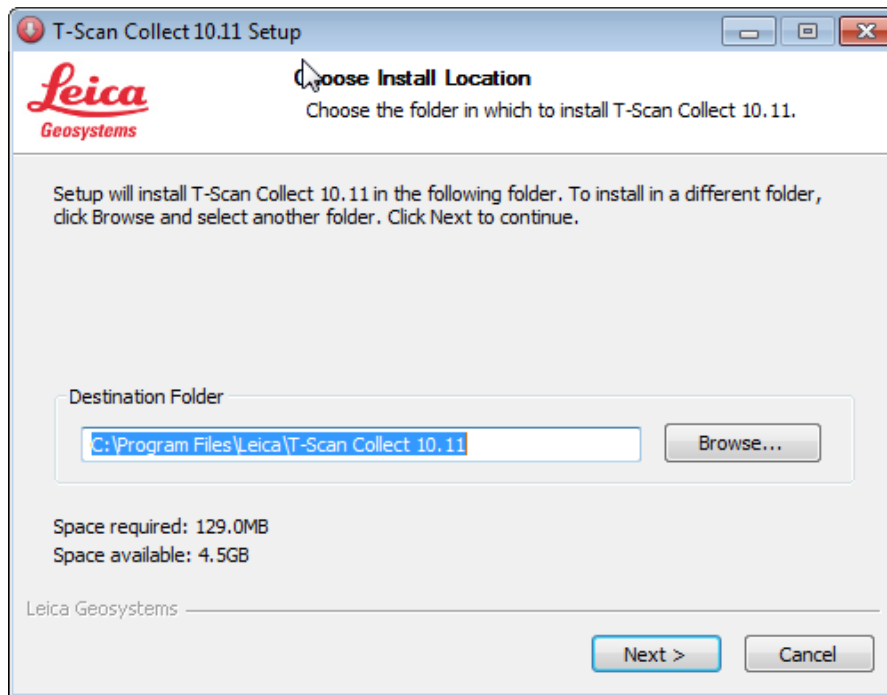
6. Use default start menu folder and click 'Install'.
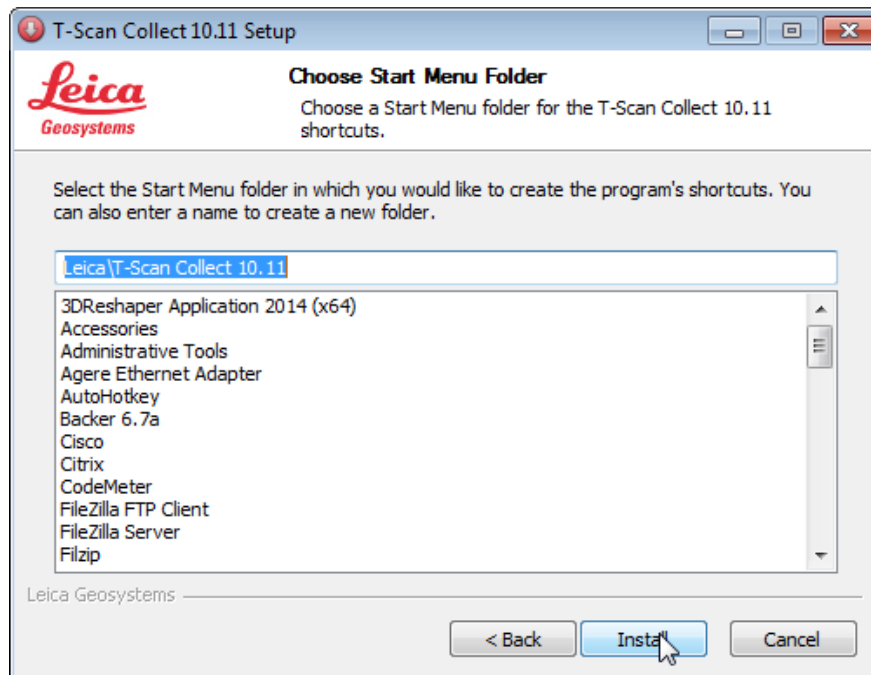
7. The 'CodeMeter Control Center' might pop up during installation. This window can be closed anytime.
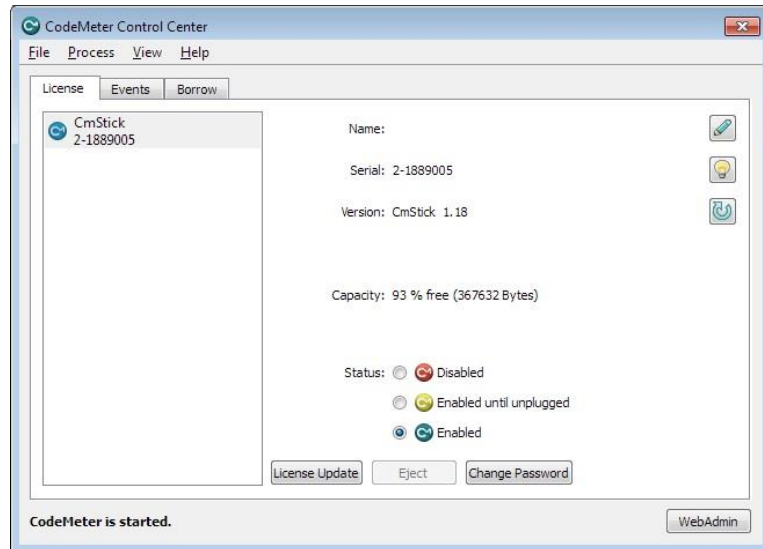
8. When setup was completed successfully confirm by clicking 'Next'.
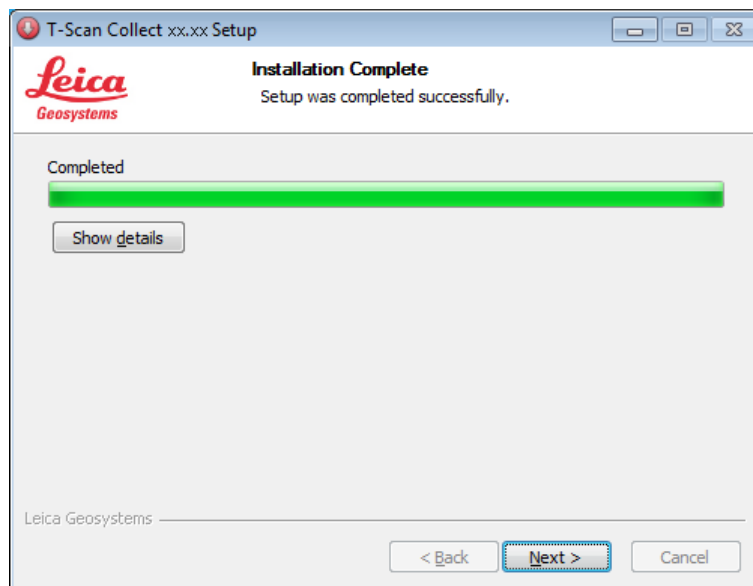
9. Complete the installation by clicking 'Finish'.
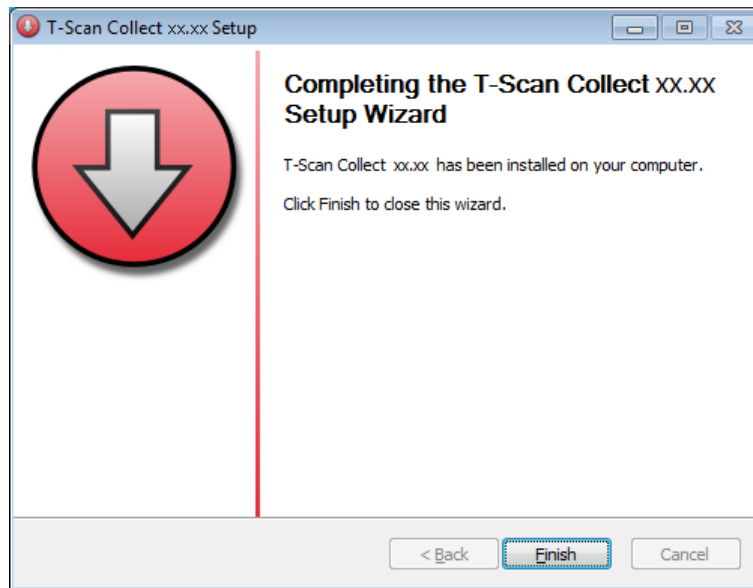
6 Installing Calibration Files

1. Create a new folder named 'Calibration' in 'C:\ProgramData\Steinbichler\T-SCAN\' if it does not exist, yet.

2. If alignment files named 'LLS[SN]R[1-4].mtx' (e.g. LLS1000032R3.mtx) are available, copy the files to 'C:\ProgramData\Steinbichler\T-SCAN\Calibration' now. If no alignment files are available a new alignment calibration has to be accomplished in T-SCAN Interface for each of the scanner faces.

7 Customizing TScanCol.ini

1. Close the T-SCAN Interface application. Otherwise modifications will not be applied.
2. Open the 'TScanCol.ini' file in folder 'C:\ProgramData\Steinbichler\T-SCAN\T-Scan Collect xx.xx\' with a text editor (e.g. Notepad).

```
TScanCol.ini - Notepad

File   Edit   Format   View   Help

[TrackerSettings]
TrackerIPAddress =192.168.0.1                    1
TrackerIPPort =700
TrackerFrameFrequency =200.000000
CollectionTime =100.000000
TrackerStdTimeout =20000
; Specifies the type of tracker interface
;                 EMSCON      = emScon interface
;                 LMF         = LMF interface
TrackerInterfaceType =LMF                         2

[ScannerSettings]
ScannerAlignmentBaseName =LLSxxxxxxx              3
AMSNetID =5.x.x.x.1.1                             4
```

|	
1	Move the cursor to entry 'TrackerIPAddress' : User can change IP address of the Tracker next to 'TrackerIPAddress =', when IP differs from default. (e.g. 'TrackerIPAddress =192.168.0.1')
2	Move the cursor to entry 'TrackerInterfaceType' : Enter the type of the tracker interface (for AT960 =LMF and for the AT901 =EMSCON) next to 'TrackerInterfaceType =' (e.g. 'TrackerInterfaceType =LMF)
3	Move the cursor to entry 'ScannerAlignmentBaseName' : Enter the current serial number of the connected scanner (see label on bottom side of scanner) next to ' ScannerAlignmentBaseName =' (e.g. ' ScannerAlignmentBaseName = LLS1000001') Since T-Scan Collect version 10.2.0 this value can be left blank as the software receives the information about the locked on T-Scan directly from the tracker.
4	Move the cursor to entry 'AMSNetID' : Enter the current AMSNetID of the connected controller (see label at the bottom of controller) next to 'AMSNetID =' (e.g. 'AMSNetID =5.16.6.132.1.1').

3. Save the "TScanCol.ini" file and close the text editor.

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8 Uninstall T-SCAN Interface/Collect

Note: For an update of T-SCAN Interface application the pre installed application does not need to be uninstalled. In case the application shall be uninstalled anyway, the following instructions should be used. Possibly installed calibration files will be kept in folder 'C:\ProgramData\Steinbichler\T-SCAN\Calibration', even after uninstalling.

1. Press the Windows key , enter 'Uninstall a program' in the control panel and start the application.
2. Select item 'T-SCAN Interface xx.xx' and choose 'uninstall'.
3. Now click 'Uninstall' in order to uninstall application.
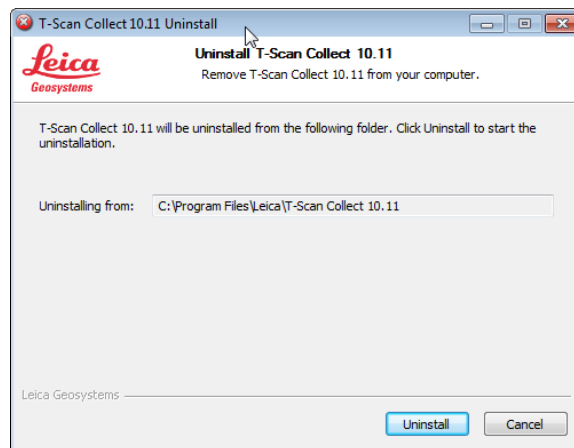
4. Complete the uninstallation by clicking 'Close'.
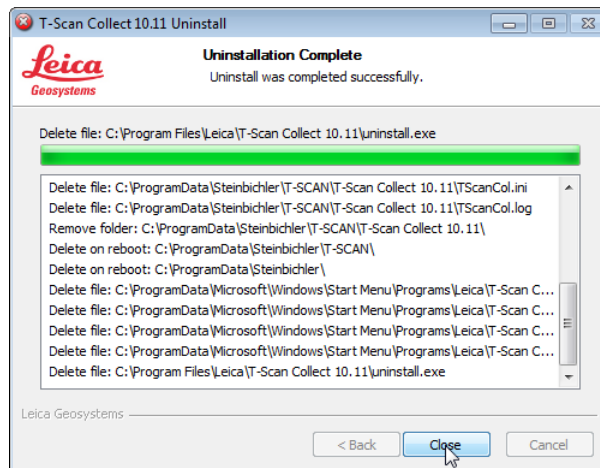
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- when it has to be **right**

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